



City of Muscatine

CITY COUNCIL

Thursday, June 20, 2024

Brad Bark, Mayor

Don Lampe, 1st Ward
Jeff Osborne, 2nd Ward
Peggy Gordon, 3rd Ward
Nadine Brockert, 4th Ward
John Jindrich, 5th Ward

Angie Lewis, At Large
Matt Conard, At Large
Carol Webb, City Administrator
Cinda Hilger, Admin. Professional
Brent Hinders, City Attorney

City Council meetings are held at 6:00 p.m. on the 1st and 3rd Thursday of each month. In-depth sessions are held at 6:00 p.m. on the 2nd Thursday of each month. All meetings are available for review on the City of Muscatine YouTube page.

June 20, 2024, 6:00 PM

AGENDA

1. CALL TO ORDER
2. INVOCATION
3. ROLL CALL
4. PLEDGE OF ALLEGIANCE

5. **FROM THE MAYOR**

6. **APPROVAL OF AGENDA AS PRESENTED AND/OR AS AMENDED**

7. **COMMUNICATIONS - CITIZENS**

8. **COUNCILMEMBER FOLLOW UP TO CITIZEN COMMUNICATION**

9. **CONSENT AGENDA * (ITEMS 10-14)**

The following items are considered to be routine by the City Council and will be enacted by one motion. There will be no separate discussion of these items unless a Council Member so requests, in which event the item will be removed from the Consent Agenda and considered separately.

10. *** REVIEW AND POTENTIAL VOTE TO APPROVE MINUTES**

- A. June 6, 2024 City Council Regular Meeting Minutes
- B. June 16, 2024 In-depth City Council Meeting Minutes

11. *** PETITIONS AND COMMUNICATIONS**

- A. Request for Road Closure on 8th Street between Poplar and Spring Streets for Sanitary Sewer Replacement at 813 E. 8th Street
- B. Request for renewal of a Class "C" Retail Alcohol License and Catering for Osaka Sushi and Steak House, 1903 Park Avenue – Kume Sushi and Steak House LLC (pending inspections)
- C. Request for renewal of a Class "B" Retail Alcohol License for KWIK Star #1064, 3605 University Drive – KWIK Trip, Inc. (pending inspections)
- D. Request for renewal of a Class "C" Retail Alcohol License and Outdoor Service for The Pearl, 101 West Mississippi Drive – The Pearl LLC (pending inspections and insurance)
- E. Request for renewal of a Class "C" Retail Alcohol License for Creations by Oz, 110 East 2 nd Street – Melissa Osborne (pending inspections and insurance)
- F. Request for renewal of a Class "C" Retail Alcohol License for BigBear's, 218 Walnut Street – BigBear's LLC (pending inspections and insurance)
- G. Request for renewal of a Class "C" Retail Alcohol License, Catering and Outdoor Service for Proof Social, 208 West 2 nd Street – Wine-Nutz, LLC (pending inspections and insurance)

- H. Request for Outdoor Service Permit for Keep Muscatine Beautiful, Harbor Drive to be held on June 25, 2024 through June 29, 2024 (pending inspection and insurance)
- I. Request for Outdoor Service Permit for Keep Muscatine Beautiful, Harbor Drive to be held on July 2, 2024 through July 6, 2024 (pending inspection and insurance)
- J. Request for Outdoor Service Permit for Keep Muscatine Beautiful, Harbor Drive to be held on July 23, 2024 through July 27, 2024 (pending inspection and insurance)
- K. Request for Outdoor Service Permit for Keep Muscatine Beautiful, Harbor Drive to be held on August 20, 2024 through August 24, 2024 (pending inspection and insurance)
- L. Request for Outdoor Service Permit for Keep Muscatine Beautiful, Harbor Drive to be held on September 24, 2024 through September 28, 2024 (pending inspection and insurance)
- M. Request for Outdoor Service Permit for Keep Muscatine Beautiful, Harbor Drive to be held on October 10, 2024 through October 14, 2024 (pending inspection and insurance)

12. * COMMUNICATION – RECEIVE AND FILE

- A. June 3, 2024 Muscatine County Board of Supervisors Meeting Minutes

13. * PURCHASE ORDERS AND AGREEMENTS

- A. Request to Approve the Issuance of a Purchase Order in the Amount of \$24,883.90 to Axon Enterprise for Fifteen (15) Axon Tasers with (18) Battery Packs and (71) Training Cartridges.
- B. Request to Approve the Issuance of a Purchase Order in the Amount of \$12,900.00, to Martin and Whitacre Surveyors & Engineers, Inc. for Construction Staking Professional Services for the Weed Park Lagoon Project.

14. * APPROVAL OF BILLS

It is recommended bills totaling \$2,210,614.12, be approved and that the City Council authorize the Mayor and City Clerk to issue warrants for the same. It should be noted that this listing is subject to the approval of any related agenda item(s).

- A. June 20, 2024 Bills For Approval

15. PUBLIC HEARING

- A. Public Hearing for the Purpose of Hearing Community Comments Regarding Revisions to Title 7, Chapter 5 of City Code - Automated Traffic Enforcement
- B. Public Hearing for the Purpose of Hearing Community Comments Regarding the Muscatine Indoor Sports Complex.

16. BOARDS AND COMMISSIONS

17. FROM THE CITY ADMINISTRATOR

- A. Resolution Setting a Public Hearing for July 18, 2024, at 6:00 pm, in City Council Chambers on an Amendment to Title 10, Chapter 3, Section 1 of City Code Establishing a Law Enforcement Training Facility and Range as a Permissive Use In Specific Locations Within the Agricultural Zoning District
- B. Resolution Authorizing Special Assessments for Unpaid Abatement Service Fees and Rental Housing Fees to Private Properties
- C. Resolution Approving the Contract and Bond for the Weed Park Lagoon Project in the Amount of \$442,172.25 to SulzCo, LLC.
- D. Resolution to Approve Plans, Specifications, Form of Contract, and Cost Estimate for the Muscatine Indoor Sports Complex Project.
- E. Resolution Approving a Preliminary/Final Plat for Niemann Acres
- F. Motion to Take from the Table a Request to Approve a Secondary Driveway Entrance at 408 Parham Street, that was laid on the table at the June 6, 2024 Regular City Council Meeting.
- G. Request to Approve a Secondary Driveway Entrance at 408 Parham Street
- H. Request To Approve the Issuance of a Purchase Order to MH Equipment Company in the Amount of \$50,543.80 for the Purchase of a Fork Truck for the Water and Resource Recovery Facility.
- I. Request to Approve the Issuance of a Purchase order to ZWB Construction in the Amount of \$36,630.00, for the Demolition and Removal of the Old Deck and the Installation of a New Observation Deck for the Weed Park Lagoon Project.
- J. Request to Approve Entering into a Professional Services Agreement with RDG Planning & Design, Inc. in the amount of \$85,000 for the Development of a Comprehensive Plan
- K. Request to Approve Insurance Renewal for various lines of insurance coverage
- L. Request to Approve Contract with RDG Planning & Design Inc. for an Amount not to Exceed \$84,616.00, to Implement the Commercial Facade Activity of the Mulberry Neighborhood Revitalization Grant.

18. MAYOR AND COUNCIL REPORTS

19. ADJOURNMENT



City of Muscatine

CITY COUNCIL MINUTES

Thursday, May 16, 2024

1. **CALL TO ORDER**

Mayor Bark called the City Council meeting for May 16, 2024 to order at 06:00 PM.

2. **INVOCATION**

3. **ROLL CALL**

Councilmembers Present: John Jindrich, Jeff Osborne, Angie Lewis, Don Lampe, Matt Conard. Councilmembers Absent: Nadine Brockert, Peggy Gordon.

4. **PLEDGE OF ALLEGIANCE**

5. **FROM THE MAYOR**

- A. Proclamation Declaring May 19 -25, 2024 as "National Public Works Week"
- B. Proclamation Declaring May as Historic Preservation Month
- C. Police Officer Life Saving Award presentation to Detective Britt Jameson
- D. Proclamation for EMS Week

6. **APPROVAL OF AGENDA AS PRESENTED AND/OR AS AMENDED**

Councilmember Jeff Osborne, seconded by Councilmember Don Lampe moved to approve the agenda as presented. Vote: Ayes -5, Nays - 0, Motion Passed.

7. **COMMUNICATIONS - CITIZENS**

Ben Eversmeyer, 1737 Devitt Avenue was present to thank the City for the efforts being put forth on Devitt regarding traffic and parking and stated he looks forward to continued efforts on this issue.

8. **COUNCILMEMBER FOLLOW UP TO CITIZEN COMMUNICATION**

9. CONSENT AGENDA * (ITEMS 10-14)

Councilmember Jeff Osborne, seconded by Councilmember Don Lampe, moved to approve the Consent Agenda including Items 10-14. Ayes - 5 , Nays - 0, Motion Passed.

10. * REVIEW AND POTENTIAL VOTE TO APPROVE MINUTES

- A. May 2, 2024 City Council Regular Meeting Minuts
- B. May 9, 2024 City Council In-Depth Meeting Minutes

11. * PETITIONS AND COMMUNICATIONS

- A. Request for Use of City Property from Denise Greenhaw with NextGen Motors for the Annual Mental Health Awareness 5K run/walk to be held on September 21, 2024
- B. Request for Use of City Property from Jamie Orr for the 5K Santa Run to be held on November 23, 2024
- C. Request to Approve a Revitalization Property Tax Abatement Application for 906 1/2 E. 9th Street
- D. Request on first and second reading on a Special Class "C" Retail Alcohol License for Keep Muscatine Beautiful, Harbor Drive - Community Foundation of Iowa (pending inspections and insurance)

12. * COMMUNICATION – RECEIVE AND FILE

- A. April 29, 2024 Muscatine County Board of Supervisors Meeting Minutes
- B. May 6, 2024 Muscatine County Board of Supervisors Meeting Minutes

13. * PURCHASE ORDERS AND AGREEMENTS

- A. Request to Approve Temporary Golf Cart Rental Agreement
- B. Request to Issue a Purchase Order to AccuJet Sewer and Drain Cleaning in the Amount of \$19,966.92 for the Purpose of Lining Sewer Manholes.

14. * APPROVAL OF BILLS

- A. May 16, 2024 Bills for Approval

15. PUBLIC HEARING

- A. Public Hearing on the Review of the Plans, Specifications, Form of Contract and Cost Estimate, and Setting a Bid Date for the Airport Fuel System Relocation Project.

There were no written or oral comments regarding this public hearing.

Councilmember Lewis, seconded by Councilmember Conard, moved for the

public hearing to be closed. Vote: Ayes - 5, Nays - None, Motion Passed.

- B. Public Hearing Regarding Amendment #2 to the Fiscal Year 2023/2024 City Budget

There were no written or oral comments regarding this public hearing.

Councilmember Angie Lewis, seconded by Councilmember Jeff Osborne, moved for the public hearing to be closed. Vote: Ayes - 5, Nays - None, Motion Passed.

16. BOARDS AND COMMISSIONS

17. FROM THE CITY ADMINISTRATOR

- A. Resolution Approving the Plans and Specifications, Form of Contract, and Cost Estimate for the Muscatine Airport Fuel System Relocation Project
Councilmember Don Lampe, seconded by Councilmember John Jindrich moved to Adopt the Resolution.

Vote: Ayes - 5, Nays - 0, Motion Passed.

- B. Resolution Approving Amendment #2 to the Fiscal Year 2023/2024 City Budget
Councilmember Angie Lewis, seconded by Councilmember Matt Conard moved to Adopt the Resolution.

Vote: Ayes - 5, Nays - 0, Motion Passed.

- C. Second Reading of an Ordinance Amending the Zoning Ordinance of the City of Muscatine, Iowa (Rezoning at 910 E. 2nd St)
Councilmember Lewis, Seconded by Councilmember Osborne, moved to Approve the second reading of the ordinance. Vote: Ayes - 5, Nays - 0, Motion Passed.

- D. Second Reading of an Ordinance Amending Title 10, Chapter 12, Section 1 Of City Code Allowing for a Portion of the Ground Floor to be Used for Residential Purposes in the C-2 Zoning District, Outside the Downtown Core
Councilmember Lewis, Seconded by Councilmember Jindrich, moved to Approve the second reading of the ordinance. Vote: Ayes - 5, Nays - 0, Motion Passed.

- E. Request to Waive Third Reading and to Adopt on Second Reading, an Ordinance Repealing Title 1-10-2.E (1)(b) of the Muscatine City Code - Elected Official Communication with City Department Heads and Employees
Councilmember Lewis, Seconded by Councilmember Lampe, moved to waive the third reading and adopt on second and final reading and to direct for its publication as required by law.

Vote: Ayes - 5, Nays - 0, Motion Passed.

- F. Resolution Authorizing Special Assessments for Unpaid Abatement Service Fees and Rental Housing Fees to Private Properties
Councilmember Jindrich, seconded by Councilmember Lewis moved to Adopt the Resolution. Vote: Ayes - 5, Nays - 0, Motion Passed.

- G. Resolution to Write Off Debts of Former Housing Tenants

Councilmember Osborne, seconded by Councilmember Lewis moved to Adopt the Resolution. Vote: Ayes - 5, Nays - 0, Motion Passed.

- H. Resolution to Award Contract for Fulliam Avenue Reconstruction Phase 2 to Heuer Construction in the Amount of \$702,915.00
Councilmember Osborne, seconded by Councilmember Lewis moved to Adopt the Resolution.
Vote: Ayes - 5, Nays - 0, Motion Passed.

- I. Resolution Approving Contract and Bond with Heuer Construction for the Fulliam Avenue Reconstruction Project Phase 2
Councilmember Lewis, seconded by Councilmember Conard moved to Adopt the Resolution. Vote: Ayes - 0, Nays - 0, Motion .

- J. A Resolution Authorizing the Execution of a Special Warranty Deed to Said Described Real Estate Located at 6208 41st St S.
Councilmember Osborne, seconded by Councilmember Lampe moved to Adopt the Resolution. Vote: Ayes - 5, Nays - 0, Motion Passed.

- K. Resolution Accepting Completed Work for the Taylor Park Pickleball Court Project.
Councilmember Lewis, seconded by Councilmember Conard moved to Adopt the Resolution.
Vote: Ayes - 5, Nays - 0, Motion Passed.

- L. Resolution authorizing and approving a Loan Agreement, providing for the sale and issuance of \$4,880,000 General Obligation Corporate Purpose Bonds, Series 2024 and providing for the levy of taxes to pay the same
Councilmember Lewis, seconded by Councilmember Lampe moved to Adopt the Resolution. Vote: Ayes - 5, Nays - 0, Motion Passed.

- M. Resolution Supporting an Application to the Iowa Economic Development Authority by Build to Suit, LLC for Workforce Housing Credits for the Proposed Redevelopment of the Former Hawkeye Lumberyard at 910 E. 2nd Street
Councilmember Lewis, seconded by Councilmember Osborne moved to Adopt the Resolution. Vote: Ayes - 0, Nays - 0, Motion .

- N. Request to Approve the Certified Local Government (CLG) Grant Agreement for an Intensive Survey and Host the 2025 Preserve Iowa Summit
Councilmember Lewis, seconded by Councilmember Osborne moved to Approve the Request. Vote: Ayes - 5, Nays - 0, Motion Passed.

- O. Request to Execute a Memorandum of Understanding with the Iowa Department of Inspections, Appeals, and Licensing
Councilmember Jindrich, seconded by Councilmember Lewis moved to Approve the Request. Vote: Ayes - 5, Nays - 0, Motion Passed.
- P. Request to Approve Declaration of Items as Surplus and Authorize Sale of Items at Public Surplus Auction
Councilmember Lewis, seconded by Councilmember Osborne moved to Approve the Request. Vote: Ayes - 5, Nays - 0, Motion Passed.
- Q. Request to Approve the Greenwood Cemetery Office Operations and Retail Sales Agreements to Amy Laue and Leyda, Burrus and Metz dba LBM, Inc. in the amount of \$25,000.00 to be paid to the City annually with a 5% escalator after the first year of the 3-year proposed agreement.
Councilmember Lampe, seconded by Councilmember Conard moved to Approve the Request. Vote: Ayes - 5, Nays - 0, Motion Passed.
- R. Request to Approve Change Order #2 for the Replacement UV Disinfection System Project in the amount of \$1,392.73.
Councilmember Lewis, seconded by Councilmember Conard moved to Approve the Request. Vote: Ayes - 5, Nays - 0, Motion .
- S. Request to Approve and Purchase Easements for West Hill Sewer Separation Phase 6 C Construction in the amount of \$14,014.70.
Councilmember Jindrich, seconded by Councilmember Lewis moved to Approve the Request. Vote: Ayes - 5, Nays - 0, Motion Passed.

18. MAYOR AND COUNCIL REPORTS

Councilmember Jindrich had questions regarding the use of a stop sign at Bidwell and Leroy that were addressed by Public Works Director Stineman.

Councilmember Lampe had suggestion to look into the Muscatine Trolley to be used during special events.

Councilmember Webb stated zoom meetings would be discontinued and only be

- A. Request by Councilmember Lampe to discuss no parking signage on Devitt Avenue
Councilmember Lampe moved to delay indefinitely the Devitt Sidewalk project, transfer the funds to a different project, monitor the area for the need for signs and reevaluate next year. Council consented to the request.

19. ADJOURNMENT

Councilmember Lewis moved the meeting be adjourned at 7:16.



City of Muscatine

CITY COUNCIL MINUTES

Thursday, June 13, 2024

1. **CALL TO ORDER**

Mayor ProTem Lewis called the City Council meeting for June 13, 2024 to order at 06:00 PM.

2. **ROLL CALL**

Councilmembers Present: Brockert, Jindrich, Osborne, Gordon, Lewis, Lampe, Conard.

3. **PLEDGE OF ALLEGIANCE**

4. **COUNCIL DISCUSSION ITEMS**

- A. 2024 Muscatine River Boat Stops Update
Rebecca Paulsen, GMCCI, was present to share information regarding the upcoming 10 riverboat stops in Muscatine over the 2024 summer.
- B. Presentation on Pet Data program progress
Captain Jirak and Officer Patel were present from the City of Muscatine Police Department to give City Council members an update on the Pet Data online registration process. There were questions from Council regarding residents being able to register at City Hall, better marketing of the system, follow up of non registered animals that were addressed by the officers.
- C. Discussion regarding establishing Council Liaisons to City Boards and Commissions
City Administrator Webb presented information on the establishment of Council Liaisons to the City Boards and Commissions and asked City Councilmembers for feedback on if they would like to proceed with implementation.
Council consented to move forward with guidelines in place, to enforce a healthy relationship between the boards and Council.
- D. Discussion regarding a mobile pay parking option in Muscatine's Downtown Business District
Item Pulled and added to July 11th agenda.
- E. Downtown Parking Strategy - Proposal presented by Councilmember Osborne

Councilmember Jeff Osborn presented on Strategy and Tools to better the parking system in the Muscatine Downtown Area. Councilmembers had comments regarding increase in parking fees, increased parking fines, reduction in meters, addition of longer use metered spots, etc.

City Council consented to moving forward with more discussion regarding the options for downtown parking improvements to include creating a parking committee to evaluate the current parking system and to suggest changes for the future.

City Administrator Webb will bring back this item with more information on a timeline at the July 11, 2024 In-depth meeting.

F. Urban Renewal and Tax Increment Financing Overview

Finance Director Nancy Lueck gave a presentation explaining the Urban Renewal and Tax Increment Financing processes for the City of Muscatine.

5. **MAYOR AND COUNCIL REPORTS**

6. **ADJOURNMENT**

Councilmember Gordon moved the meeting be adjourned at 8:30 P.M.



City of Muscatine

ITEM NUMBER 2024-0260

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Brian Stineman, Public Works Director

SUBJECT

Request for Road Closure on 8th Street between Poplar and Spring Streets for Sanitary Sewer Replacement at 813 E. 8th Street

EXECUTIVE SUMMARY

Request for Road Closure on 8th Street between Poplar and Spring Streets for Sanitary Sewer Replacement at 813 E. 8th Street

STAFF RECOMMENDATION

Approve the Request

BACKGROUND/DISCUSSION

This request is from Broders Excavating to repair the sanitary sewer service to 813 E. 8th Street.

CITY FINANCIAL IMPACT

There is no cost to the city for this project

ATTACHMENTS

1. Road Closure Request Form

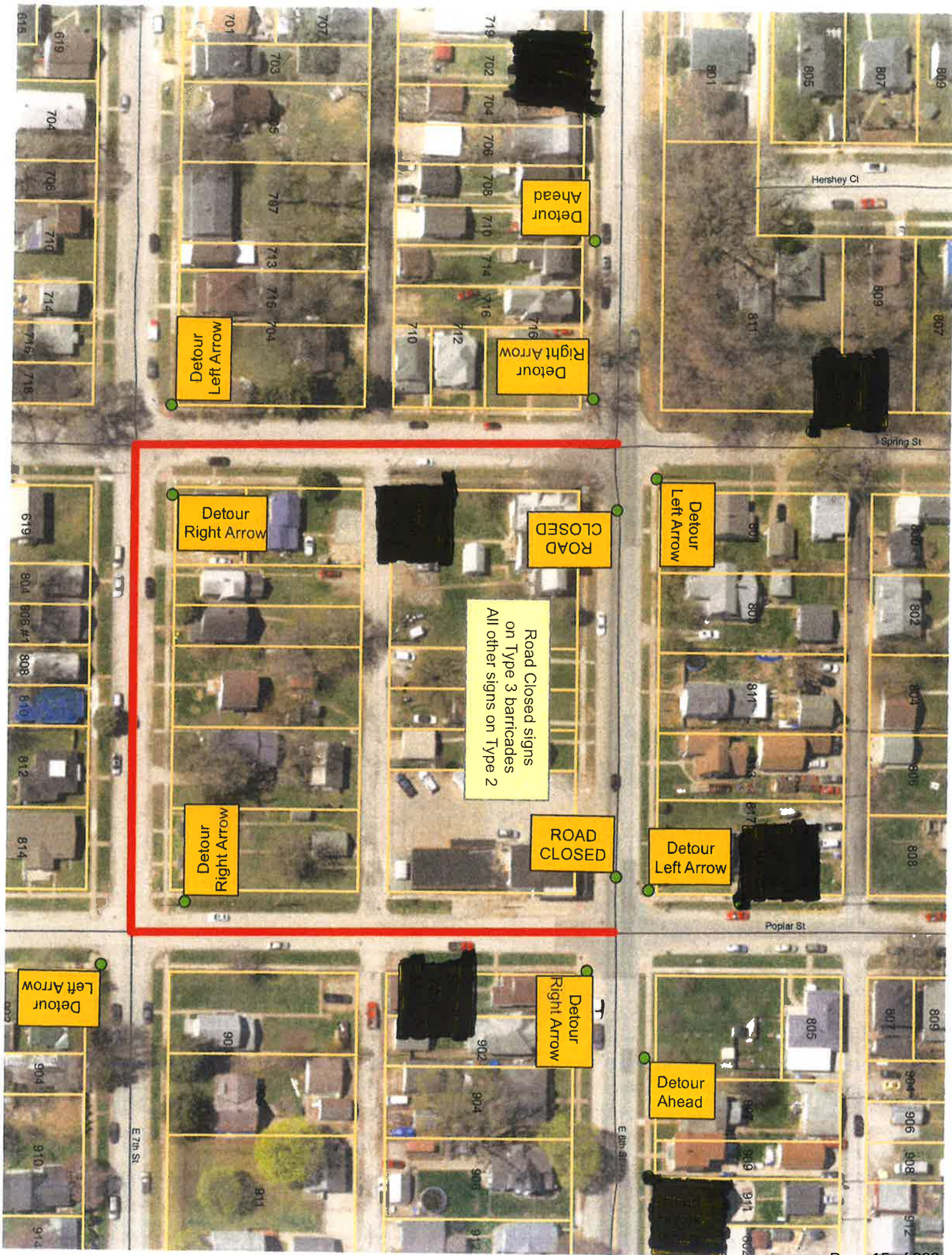


Request for Closure

- 1: Location of Closure 813 E 8th St
- 2: Contractor Broders Exc
- 3: Dates and Duration of Closure 7-15-24 - 7-19-24
- 4: Company Responsible for Detour and Signage Selco INC
- 5: Reason Closure is Needed Sewer Replacement

Date Submitted 8/12-24

Applicant Broders Exc Inc



Muscatine County Board of Supervisors
Monday, June 3, 2024

The Muscatine County Board of Supervisors met in regular session at 9:00 A.M. with Chick, Kirchner, Mather, Sauer and Sorensen present. Chairperson Sorensen presiding.

On a motion by Sauer, second by Mather, the agenda was approved with a change to Agenda Item #14, to replace the wording of closed session to non-public session. Ayes: All.

A Public Hearing was called to order by Chairperson Sorensen at 9:01 A.M. on the proposed amendments to the Fiscal Year 23/24 Muscatine County Budget. Budget Administrator Kala Naber reviewed the proposed amendments to the Fiscal Year FY23/24 Muscatine County Budget.

On a motion by Mather, second by Kirchner, the public hearing was closed at 9:03 A.M. Roll call vote. Ayes: All.

On a motion by Mather, second by Sauer, the Board approved Resolution #06-03-24-01 Amending the Fiscal Year 23/24 Budget. Roll call vote: Ayes: All.

**RESOLUTION #06-03-24-01
AMENDING THE FISCAL YEAR 2023/24 BUDGET**

WHEREAS, the Board of Supervisors has held a Public Hearing pursuant to Chapter 331, Code of Iowa, to amend the Fiscal Year 2023/24 County Budget; and

WHEREAS, the explanation is increased expenditures and revenues during the current fiscal year; and

WHEREAS, after consideration of all comments at said hearing, the Board of Supervisors has determined that it will be necessary to amend the Fiscal Year 2023/24 budget; and

WHEREAS, the amendment does not increase the taxes to be collected in the Fiscal Year ending June 30, 2024;

THEREFORE, BE IT HEREBY RESOLVED that the following service area expenditures and revenues of the Fiscal Year 2023/24 County Budget be amended:

PUBLIC SAFETY & LEGAL SERVICES expenditures increased by	\$109,850
PHYSICAL HLTH & SOCIAL SERVICES expenditures increased by	\$27,000
COUNTY ENVIRONMENT expenditures decreased by	\$0
ROADS & TRANSPORTATION expenditures increased by	\$0
GOV'T SERVICES TO RESIDENTS expenditures increased by	\$0
ADMINISTRATION expenditures increased by	\$0
NONPROGRAM expenditures increased by	\$0
CAPITAL PROJECTS expenditures increased by	\$0

DEBT SERVICE expenditures increased by	<u>\$0</u>
	\$136,850
INTERGOVERNMENTAL revenues increased by	\$940,000
LICENSES & PERMITS revenues increased by	\$0
CHARGES FOR SERVICES revenues increased by	\$0
USE OF MONEY & PROPERTY revenues increased by	\$900,000
MISCELLANEOUS revenues increased by	\$30,000
LONG TERM DEBT PROCEEDS increased by	\$0
PROCEEDS OF FIXED ASSET SALES increased by	<u>\$0</u>
	\$1,870,000

PASSED AND APPROVED this 3rd day of June, 2024.

ATTEST:

/s/Tibe Vander Linden
Muscatine County Auditor

/s/Jeff Sorensen, Chairperson
Muscatine County Board of Supervisors

On a motion by Kirchner, second by Chick, the Board approved Resolution #06-03-24-02 Fiscal Year 23/24 Budget Appropriations. Roll call vote: Ayes: All.

RESOLUTION # 06-03-24-02
FY 2023/24 BUDGET APPROPRIATIONS

WHEREAS, a public hearing has been held pursuant to Section 331.434(6), Code of Iowa, regarding proposed increases in expenditure amounts for Fiscal Year 2023/24: and

WHEREAS, the amendment does not increase the taxes to be collected in the Fiscal Year ending June 30, 2024: and

WHEREAS, all comments from the public have been heard;

THEREFORE, BE IT RESOLVED that the following amounts be appropriated as follows:

01	Board/Administration	0
02	Auditor	0
03	Treasurer	0
04	Attorney	3,000
05	Sheriff	15,850
06	Jail	91,000
07	Recorder	0
20	Engineer	0

22	Conservation Board	0
24	DHS	0
25	Community Services	27,000
28	Medical Examiner	0
30	Court Services	0
31	Board of Health	0
51	General Services	0
52	Information Services	0
53	Zoning	0
60	Mental Health Administration	0
99	Nondepartmental with Transfers	0
		\$136,850

It is further resolved that all appropriations made pursuant to this RESOLUTION lapse at the close of business on June 30, 2024.

Passed and approved this 3rd day of June, 2024.

ATTEST:

/s/Tibe Vander Linden
Muscatine County Auditor

/s/Jeff Sorensen, Chairperson
Muscatine County Board of Supervisors

On a motion by Sauer, second by Chick, the Board approved Resolution #06-03-24-03 Transferring funds in the amount of \$20,000, from the County Attorney Fine Collection Fund to the General Basic Fund. Roll call vote: Ayes: All.

RESOLUTION # 06-03-24-03
TRANSFERRING FUNDS FROM THE COUNTY ATTORNEY FINE COLLECTION
FUND TO THE GENERAL BASIC FUND

WHEREAS, the Muscatine County Attorney desires to transfer funds determined to be in excess of the amount necessary for use by the County Attorney's Office from the County Attorney Fine Collection Fund to the General Basic Fund; and

WHEREAS, it is desired to authorize the Auditor to transfer those funds from the County Attorney Fine Collection Fund to the General Basic Fund; and

WHEREAS, said transfers must be in accordance with Section 331.429 and 331.432 of the Code of Iowa.

NOW, THEREFORE, BE IT RESOLVED by the Muscatine County Board of Supervisors that the Auditor is authorized to transfer \$20,000 from the County Attorney Fine Collection Fund to the General Basic Fund.

PASSED AND APPROVED this 3rd day of June, 2024.

ATTEST :

/s/Tibe Vander Linden
Muscatine County Auditor

/s/Jeff Sorensen, Chairperson
Muscatine County Board of Supervisors

Joshua Leyh of Klingner & Associates reviewed with the Board a Road and Right-of-Way Use Agreement with Legacy Corporation, for use during the Muscatine Island Levee Improvement project. Leyh stated the “Trucks Entering Highway” signage along the haul route at the borrow and at the Feature 2 project, were placed at the project area on Friday, May 31, 2024. Leyh stated a right to access property agreement has been requested with a private landowner, located across the road from River Trading Company on Pettibone Avenue and as once an agreement is signed, the County Engineer Bryan Horesowsky and County Attorney Jim Barry will be contacted to complete a haul agreement for that area of the project. Barry stated the haul road agreement is for Feature 2 (the Louisa County portion of the project) and further stated the agreement is appropriate for projects with excessive traffic, as the agreement is a mechanism to monitor and meet the requirements for traffic. Barry stated Feature 1 will be the project at the road crossing from the borrow pit and directly toward the levee, if that comes to fruition. Barry stated if it does not come to fruition then it will go the regular route down Pettibone Avenue to 41st Street for access. Barry stated the contract was bid with 57th Street being used to Pettibone Avenue and going out around Bayer Corporation, however it was changed to go east to Stewart Road, which increased the distance on 57th Street. Barry stated the contract has a lineal foot number to repair 57th Street toward Pettibone and not toward Stewart Road. Barry stated if the project can cross the road there will be some cost savings in the contract and change order may need to be presented if there are any repairs needed. Barry stated a haul road agreement will be created for Feature 1, which was previously called Phase II. Barry stated Feature 2 of the levee improvement project was previously called Phase III.

On a motion by Mather, second by Chick, the Board affirmed the Chair’s signing of a Road and Right-of-Way Use Agreement with Legacy Corporation, for use during the Muscatine Island Levee Improvement project. Ayes: All.

Leyh updated the Board in regards to the Muscatine Island Levee Improvement project and presented a project schedule.

On a motion by Chick, second by Sauer, the Board approved the purchase of one 2024 Smooth Drum Utility Compactor from Altorfer CAT, Cedar Rapids, Iowa, in the amount of \$36,660.00, with

a potential trade of Unit #62-2012 Wacker RD 19-90 Roller, in the amount of \$5,000, for a net amount (if trade is applied) of \$31,660.00. Ayes: All.

County Engineer Bryan Horesowsky updated the Board on secondary road projects.

On a motion by Mather, second by Sauer, the Board approved Resolution #06-03-24-04 Suspending the Collection of Taxes. Roll call vote: Ayes: All.

**RESOLUTION #06-03-24-04
SUSPENDING THE COLLECTION OF TAXES**

WHEREAS, notice from the Director of Human Services has been received regarding the eligibility of Teresa Phillips, Muscatine, Iowa, (the 'recipient') for medical and facility care; and

WHEREAS, as such recipient of such assistance is deemed to be unable to contribute to the public revenue pursuant to Section 427.9, Code of Iowa; and

WHEREAS, the recipient is the owner of property described as follows:

Address: 201 Ash St, Muscatine, IA 52761
Parcel No: 1302177010
Legal Description: 2-76-2W
Lots 1 & 2 BLK 41

NOW, THEREFORE, BE IT HEREBY RESOLVED by the Muscatine County Board of Supervisors:

1. That the County Treasurer is hereby ordered to suspend the collection of all taxes, including special assessments, rates or charges, interest, fees and costs for the current year and those unpaid from prior years. As long as the petitioner is authorized by DHS no interest accrues during suspension but payments can be made.
2. If the parcel is sold, passes by bequest or inheritance to any person other than the spouse or minor child of the petitioner, all taxes and special assessments become due and payable by the next semi-annual installment date. Interest at the rate of 1 ½% per month will start on the next delinquency date after the suspended taxes become due.

Passed and approved this 3rd day of June, 2024.

ATTEST:

/s/Tibe Vander Linden
Muscatine County Auditor

/s/Jeff Sorensen, Chairperson
Muscatine County Board of Supervisors

On a motion by Sauer, second by Kirchner, the Board approved renewal of an Iowa Retail Cigarette/Tobacco/ Nicotine/Vapor Permit for Stewart Road Truck Stop, 2418 Stewart Road, Muscatine, Iowa. Ayes: All.

On a motion by Sauer, second by Kirchner, the Board approved the minutes of the May 20, 2024 regular meeting. Ayes: All.

Correspondence:

All Supervisors received a call from a resident with questions regarding 3D print houses.

Mather had a discussion with a resident in the Moscow area regarding speed limit signs. Mather contacted County Engineer Bryan Horesowsky.

Sorensen received an email from Chuck Houseman who expressed his discontent with the process of the 245th Street bridge.

Kirchner received a call from Bill Furlong regarding the Visioning meeting for the County Comprehensive Plan held in West Liberty, Iowa, as he did not attend the meeting and requested information on how to submit his issues, suggestions and complaints. Kirchner has talked to Planning and Zoning Administrator Eric Furnas to obtain information for Furlong.

Committee Reports:

Kirchner and Sorensen attended a Visioning meeting for the County Comprehensive Plan held in West Liberty, Iowa on May 22, 2024.

Kirchner announced the Muscatine County Fair Board will be hosting harness horse races on Saturday, June 5, 2024 at the Muscatine County Fairgrounds. Kirchner stated it is the 5th year for this event.

Chick attended a Landfill Committee meeting on May 21, 2024.

Chick attended a Bi-State Trails Committee meeting on May 23, 2024.

Chick attended a Greater Muscatine Chamber of Commerce and Industry meeting on May 29, 2024.

Chick attended a Mississippi Valley Workforce Development Finance meeting on May 29, 2024.

Sorensen attended a Robert Young Center Board meeting on May 21, 2024.

Sorensen attended a Bi-State Regional Planning Commission meeting on May 22, 2024.

Mather attended a Community Action of Eastern Iowa meeting on May 23, 2024. Mather stated the Director has submitted a resignation.

On a motion by Mather, second by Sauer, the Board authorized the Chair to execute the FY 24/25 Contract for Specialized Transportation services with River Bend Transit, in the amount of \$7,000.00. Ayes: All.

On a motion by Mather, second by Kirchner, the Board authorized the execution of the Wellmark third party administration documents for FY24/25. Ayes: All.

Administrative Director Nancy Schreiber reviewed the proposed FY24/25 health and dental premiums with the Board. Schreiber stated the current year health insurance costs have had a significant increase. Schreiber stated the proposed premium amounts are an attempt to set costs for adequate funding so the plan is approved by the state as a self-funded plan. Schreiber stated the consultants reviewed and strongly recommended the county remains covered with Wellmark Blue Cross Blue Shield (BCBS) as a self-funded health plan. In addition, Wellmark BCBS offers deep discounts with their provider agreements. Schreiber reviewed the five proposed plan options and stated there are two additional plan offerings that are an HMO option, which requires using providers within the HMO network and requires a pre-authorization and recommendation from a network physician to see a specialist. Schreiber recommended to remain with the same employee costs for the dental plan. Schreiber stated Wellmark BCBS typically requires a minimum of 10% employee participation per plan or a plan with low participation maybe dropped; however, Wellmark is waiving the requirement for the next two years.

On a motion by Mather, second by Sauer, the Board set the FY24/25 health and dental premiums.
Ayes: All.

On a motion by Chick, second by Sauer, the Board set Action to set the health insurance annual enrollment and dental insurance open enrollment periods for FY24/25 for June 5 –19, 2024.
Ayes: All.

Chick stated the current 28E agreement with the City of Muscatine in regards to the Muscatine County Solid Waste Management Agency is outdated and he had a discussion with Muscatine City Administrator Carol Webb, who stated the City of Muscatine will review and present an updated 28E agreement to the Board.

Planning and Zoning Administrator Eric Furnas updated the Board on the Courthouse Roofing Project stating the scaffolding is being erected around the majority of the building and some of the areas of the courthouse have been taped off and barricaded for walking traffic. Furnas stated the project material lay down area is set at the old jail.

County Auditor Tibe Vander Linden stated the 2024 Primary Election is June 4, 2024. Polls are open 7:00 A.M. to 8:00 P.M. Vander Linden stated voters can call the Auditor's office if they need to inquire about the location of their precinct/poll or check on the Iowa Secretary of State website. The final day for early voting is today in the Auditor's office until 4:30 P.M. Vander Linden stated approximately 350 voters have cast an early vote in person or by mail.

Schreiber reminded the Board the Primary Election Canvass will be Tuesday, June 11, 2024 at 9:00 A.M.

Mark Temple, 720 Leroy Street, Muscatine, stated his concerns with the 3D house projects in Muscatine. Temple stated he believes there is large amount of funding from the government

thrown into the projects and stated there is zero progress on 3D house projects. Temple stated one of the projects is only partially completed and no one has mowed the lot. Chick stated his understanding is the projects are on hold. Sorensen recommended Temple contact Community Foundation Housing Initiative Manager Ron Monahan with questions and concerns. Temple asked who owns the property of the partially completed 3D project. Sorensen stated the property is owned by Ace Signature Homes, LLC. Sorensen stated the City of Muscatine can be contacted and a nuisance complaint filed if Temple so desires.

The Board recessed at 9:50 A.M. The Board reconvened at 9:57 A.M.

On a motion by Mather, second by Sauer, the Board went into a non-public session at 9:57 A.M. pursuant to Chapter 20.17(3), Code of Iowa, to discuss strategy in union negotiations. Roll call vote: Ayes: All. On a motion by Sauer, second by Chick, the Board returned to open session at 11:04 A.M. Roll call vote: Ayes: All.

The meeting was adjourned at 11:04 A.M.

ATTEST:

Tibe Vander Linden
County Auditor

Jeff Sorensen, Chairperson
Board of Supervisors



City of Muscatine

ITEM NUMBER 2024-0262

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Anthony Kies, Police Chief

SUBJECT

Request to Approve the Issuance of a Purchase Order in the Amount of \$24,883.90 to Axon Enterprise for Fifteen (15) Axon Tasers with (18) Battery Packs and (71) Training Cartridges.

EXECUTIVE SUMMARY

Presented for City Council's consideration is a request to approve the issuance of a purchase order to Axon Enterprise in the amount of \$24,833.90 for fifteen (15) Axon X26P Tasers, eighteen (18) Axon X26P Taser Battery Packs and seventy-one (71) Axon X26P Taser Training Cartridges.

STAFF RECOMMENDATION

Staff recommends approving the issuance of the Purchase Order.

BACKGROUND/DISCUSSION

Officers of the Muscatine Police Department currently carry Axon Tasers while on duty as a Less Lethal option for Use of Force situations. The Department is requesting to replace the out of date Tasers to keep up with technology. The current Tasers are over 9 years old, out of warranty and tend to malfunction.

CITY FINANCIAL IMPACT

Funding for this purchase will be absorbed by the Police Department budget.

ATTACHMENTS

1. Axon Taser 2024



Axon Enterprise, Inc.
17800 N 85th St.
Scottsdale, Arizona 85255
United States
VAT: 86-0741227
Domestic: (800) 978-2737
International: +1.800.978.2737



Q-581721-45441.966DA
Issued: 05/29/2024
Quote Expiration: 06/28/2024
Estimated Contract Start Date: 09/01/2024
Account Number: 110661
Payment Terms: N30
Delivery Method:

SHIP TO	BILL TO	SALES REPRESENTATIVE	PRIMARY CONTACT
Muscatine Police Department - IA 312 E 5th St Muscatine, IA 52761-4258 USA	Muscatine Police Department - IA 312 E 5th St Muscatine IA 52761-4258 USA Email:	David Arth Phone: Email: darth@axon.com Fax:	Steve Snider Phone: 1-563-263-9922 Email: ssnider@muscatineiowa.gov Fax:

Quote Summary

Program Length	60 Months
TOTAL COST	\$24,833.90
ESTIMATED TOTAL W/ TAX	\$24,833.90

Discount Summary

Average Savings Per Year	\$150.00
TOTAL SAVINGS	\$750.00

Payment Summary

Date	Subtotal	Tax	Total
Aug 2024	\$24,833.90	\$0.00	\$24,833.90
Total	\$24,833.90	\$0.00	\$24,833.90

Pricing

Quote Unbundled Price: \$25,583.90
Quote List Price: \$25,583.90
Quote Subtotal: \$24,833.90

All deliverables are detailed in Delivery Schedules section lower in proposal

Item	Description	Qty	Term	Unbundled	List Price	Net Price	Subtotal	Tax	Total
A la Carte Hardware									
22010	AXON TASER - X2/X26P BATTERY PACK - PPM STANDARD	18			\$87.20	\$87.20	\$1,569.60	\$0.00	\$1,569.60
22188	AXON TASER - X26/X26P CARTRIDGE - 15 FT STANDARD NS	71			\$43.30	\$43.30	\$3,074.30	\$0.00	\$3,074.30
11002	AXON TASER X26P - HANDLE - BLACK	15			\$1,396.00	\$1,346.00	\$20,190.00	\$0.00	\$20,190.00
Total							\$24,833.90	\$0.00	\$24,833.90

Delivery Schedule

Hardware

Shipping Locations

Location Number	Street	City	State	Zip	Country
1	312 E 5th St	Muscatine	IA	52761-4258	USA

Payment Details

Aug 2024					
Invoice Plan	Item	Description	Qty	Subtotal	Tax
Uptfront	11002	AXON TASER X26P - HANDLE - BLACK	15	\$20,190.00	\$0.00
Uptfront	22010	AXON TASER - X2/X26P BATTERY PACK - PPM STANDARD	18	\$1,569.60	\$0.00
Uptfront	22188	AXON TASER - X26/X26P CARTRIDGE - 15 FT STANDARD NS	71	\$3,074.30	\$0.00
Total				\$24,833.90	\$0.00
					\$24,833.90

Tax is estimated based on rates applicable at date of quote and subject to change at time of invoicing. If a tax exemption certificate should be applied, please submit prior to invoicing.

Standard Terms and Conditions

Axon Enterprise Inc. Sales Terms and Conditions

Axon Master Services and Purchasing Agreement:

This Quote is limited to and conditional upon your acceptance of the provisions set forth herein and Axon's Master Services and Purchasing Agreement (posted at <https://www.axon.com/sales-terms-and-conditions>), as well as the attached Statement of Work (SOW) for Axon Fleet and/or Axon Interview Room purchase, if applicable. In the event you and Axon have entered into a prior agreement to govern all future purchases, that agreement shall govern to the extent it includes the products and services being purchased and does not conflict with the Axon Customer Experience Improvement Program Appendix as described below.

ACEIP:

The Axon Customer Experience Improvement Program Appendix, which includes the sharing of de-identified segments of Agency Content with Axon to develop new products and improve your product experience (posted at www.axon.com/legal/sales-terms-and-conditions), is incorporated herein by reference. By signing below, you agree to the terms of the Axon Customer Experience Improvement Program.

Acceptance of Terms:

Any purchase order issued in response to this Quote is subject solely to the above referenced terms and conditions. By signing below, you represent that you are lawfully able to enter into contracts. If you are signing on behalf of an entity (including but not limited to the company, municipality, or government agency for whom you work), you represent to Axon that you have legal authority to bind that entity. If you do not have this authority, please do not sign this Quote.



City of Muscatine

ITEM NUMBER 2024-0269

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Melissa Baker, Parks Supervisor
Richard Klimes, Parks and Recreation Director

SUBJECT

Request to Approve the Issuance of a Purchase Order in the Amount of \$12,900.00, to Martin and Whitacre Surveyors & Engineers, Inc. for Construction Staking Professional Services for the Weed Park Lagoon Project.

EXECUTIVE SUMMARY

Request to Approve the Issuance of a Purchase Order in the Amount of \$12,900.00, to Martin & Whitacre Surveyors & Engineers, Inc. for Construction Staking Services for the Weed Park Lagoon Project.

STAFF RECOMMENDATION

Staff recommends City Council approve the purchase order to Martin and Whitacre Surveyors & Engineers, Inc. for Construction Staking Services for the Weed Park Lagoon Project.

BACKGROUND/DISCUSSION

The City Council has entered into a professional services agreement with Martin and Whitacre Surveyors & Engineers, Inc. to develop the plans and specifications for the Weed Park Lagoon Project. As the project is proceeding, it is now time to approve a professional services purchase order for Construction Staking Services for the Weed Park Lagoon Project.

CITY FINANCIAL IMPACT

The project budget, including engineering fees, is \$500,000.00. The expected total project cost is roughly \$548,122.25. The project expense overage will be covered by other available project funds, recent park donations or future bond proceeds.

ATTACHMENTS

1. M&W - Weed Park Lagoon



**Martin & Whitacre
Surveyors & Engineers, Inc.**

June 12TH, 2024

Richard Klimes, Parks and Recreation Director
City of Muscatine
215 Sycamore St.
Muscatine, IA 52761

Re: Weed Park Improvement Project

Richard,

Thank you for the opportunity to provide a bid for construction staking services on the Weed Park Improvement Project. We propose to provide all labor, equipment and materials to complete the construction staking outlined below:

1. Assumed location of existing RCBC elbow for headwall construction
2. Two RCBC plug locations
3. Overflow inlet location
4. Three temporary rock ditch locations
5. Rip rap/fabric limits
6. Sidewalk at 25' intervals and handicap ramps
7. Slope and pond grading

This will be billed at our hourly rates with a N.T.E. fee of \$12,900.

Please contact me if you have any questions or need additional information. We look forward to continuing our work with you.

Respectfully submitted,

MARTIN & WHITACRE SURVEYORS & ENGINEERS, INC.

Seth Whitacre

#WEED PARK

BILLS FOR APPROVAL SUMMARY
June 21, 2024

Computer Bill Lists

Regular Bills 6/21/24		\$	933,767.09
Special Ck Run 6/7/24	Operating		1,188.78
Special Ck Run 6/14/24	Operating		695.33
Special Ck Run 6/18/24	Section 8		1,317.00
Grandbridge - June	Hershey		20,232.34
Payroll Vendor Checks 6/7/24			17,127.06
Payroll Vendor ACH Payments 6/7/24			97,344.93
	Subtotal	\$	<u>1,071,672.53</u>

ACH Debit Memo Payments

Wellmark Insurance	Health/Dental Insurance June	\$	82,000.00
Wellmark Insurance	Health/Dental Insurance June		82,000.00
Payroll Account	Transfer		483,488.03
Treasurer State of Iowa	State Tax Withholding		30,240.23
IPERS	May Contributions		122,541.88
UMB	Paying Agent Fee		300.00
Internal Revenue Service	Federal Withholding		123,866.11
Maverik	Fuel Costs		37,719.30
	Subtotal	\$	<u>962,155.55</u>

Voucher Program

Various Landlords	Estimated July Rent	\$	180,000.00
		\$	<u>180,000.00</u>

Voids

Void CK 6/7/24	Operating	\$	(1,188.78)
Void CK 6/14/24	Operating		(708.18)
Void CK 6/18/24	Section 8		(1,317.00)
	Subtotal	\$	<u>(3,213.96)</u>

Total Expenditures	\$	<u><u>2,210,614.12</u></u>
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Accounts Payable

Transactions by Account

User: SMeyer
 Printed: 06/18/2024 - 2:13PM
 Batch: 00002.06.2024



Account Number	Vendor	Description	GL Date	Check No	Amount	PO No
1000-00-0000-23550	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024	Life Insurance	05/24/2024	0	2.99	
1000-00-0000-23550	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024	Life Insurance	05/24/2024	0	1.20	
	Vendor Subtotal:				4.19	
1000-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00001.05.2024	Optional Life	05/10/2024	0	319.91	
1000-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024	Optional Life	05/24/2024	0	319.93	
	Vendor Subtotal:				639.84	
1000-01-1111-52300	CINDA HILGER	Reimb Breakfast Food - Biscuits/Sausage	06/18/2024	0	61.80	
	Vendor Subtotal:				61.80	
1000-01-1111-69900	4IMPRINT USA	Employee Awards	06/14/2024	0	882.72	
	Vendor Subtotal:				882.72	
1000-01-1111-69900	TCM BANK NA VISA	Hy-Vee - Credit	06/18/2024	0	-214.00	
1000-01-1111-69900	TCM BANK NA VISA	Hy-Vee - Credit	06/18/2024	0	-375.78	
1000-01-1111-69900	TCM BANK NA VISA	Hy-Vee - Employee Breakfast 2023	06/18/2024	0	551.20	
	Vendor Subtotal:				-38.58	
1000-01-1121-61220	QUAD CITY TIMES & MUSC JOURN.	Minutes 6/13/24	06/18/2024	0	45.02	
	Vendor Subtotal:				45.02	
1000-01-1121-61220	LAW OFFICES OF HOPKINS & HUBBARD	May Legal - Nuisance Matter	06/18/2024	0	757.00	

1000-01-1121-61220	LAW OFFICES OF HOPKINS & HUBBARD	May Legal - Taylor Park Pickleball Court	06/18/2024	0	180.00
1000-01-1121-61220	LAW OFFICES OF HOPKINS & HUBBARD	May Legal - American Cruise Line Agree	06/18/2024	0	652.50
1000-01-1121-61220	LAW OFFICES OF HOPKINS & HUBBARD	May Legal - Handbook & Policies	06/18/2024	0	1,446.00
1000-01-1121-61220	LAW OFFICES OF HOPKINS & HUBBARD	May Legal - Greenwood	06/18/2024	0	130.00
1000-01-1121-61220	LAW OFFICES OF HOPKINS & HUBBARD	May Legal - General	06/18/2024	0	6,697.00
	Vendor Subtotal:				9,862.50
1000-01-1121-61225	MUSCATINE COUNTY TREASURER	Quarterly City Prosecutor Services	06/18/2024	0	10,000.00
	Vendor Subtotal:				10,000.00
1000-01-1131-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	53.76
	Vendor Subtotal:				53.76
1000-01-1131-46600	RELIANCE STANDARD LIFE INS CO	Life Ins June 24	06/17/2024	0	66.23
	Vendor Subtotal:				66.23
1000-01-1131-51400	SYCAMORE PRINTING INC	Name Plate - C Hilger	06/14/2024	0	21.01
	Vendor Subtotal:				21.01
1000-01-1131-52300	PHELPS CUSTOM IMAGE WEAR	Uniforms - K Jension Anniversary Shirts	06/18/2024	0	78.10
	Vendor Subtotal:				78.10
1000-01-1131-61340	TCM BANK NA VISA	Adobe - Adobe ID	06/18/2024	0	59.99
1000-01-1131-61340	TCM BANK NA VISA	QR Code - QR Code Plan	06/18/2024	0	197.25
	Vendor Subtotal:				257.24
1000-01-1132-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	18.44
	Vendor Subtotal:				18.44
1000-01-1132-46600	RELIANCE STANDARD LIFE INS CO	Life Ins June 24	06/17/2024	0	22.61

			Vendor Subtotal:		22.61
1000-01-1132-61660	TENANT REPORTS.COM LLC	Background Checks	06/18/2024	0	14.00
			Vendor Subtotal:		14.00
1000-01-1132-62530	CROSSROADS INC.	Shredding	06/18/2024	0	22.00
			Vendor Subtotal:		22.00
1000-01-1144-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	5.31
			Vendor Subtotal:		5.31
1000-01-1144-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	6.12
			Vendor Subtotal:		6.12
1000-01-1144-52840	ANDY SUMMITT	Reimb Safety Glasses - A Summitt	06/18/2024	0	75.00
			Vendor Subtotal:		75.00
1000-01-1144-61550	UNITY HEALTHCARE - TRINITY MU	Randoms - S Snider	06/18/2024	0	80.00
1000-01-1144-61550	UNITY HEALTHCARE - TRINITY MU	Randoms - W Pena	06/18/2024	0	80.00
			Vendor Subtotal:		160.00
1000-01-1144-61550	DSI Medical Services	Randoms - Cardoza/Allen/Kruse	06/18/2024	0	196.00
1000-01-1144-61550	DSI Medical Services	Post Accident - Frantz	06/18/2024	0	97.00
			Vendor Subtotal:		293.00
1000-01-1218-61240	DORSEY & WHITNEY LLP	Legal Services Grandview & Colorado Lc	06/14/2024	0	950.00
			Vendor Subtotal:		950.00
1000-01-1218-69200	FEDEX	Shipping	06/14/2024	0	24.94

1000-01-1218-69200	FEDEX	Shipping	06/14/2024	0	24.94
		Vendor Subtotal:			49.88
1000-05-1141-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	31.36
		Vendor Subtotal:			31.36
1000-05-1141-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	53.89
		Vendor Subtotal:			53.89
1000-05-1141-65100	QUAD CITY TIMES & MUSC JOURN.	Minutes 5/9/24	06/18/2024	0	41.71
1000-05-1141-65100	QUAD CITY TIMES & MUSC JOURN.	Ordinance Repealing 10-2-2E1b	06/18/2024	0	43.69
1000-05-1141-65100	QUAD CITY TIMES & MUSC JOURN.	Minutes/Bills 5/16/24	06/18/2024	0	431.62
1000-05-1141-65100	QUAD CITY TIMES & MUSC JOURN.	Ordinance 2024-0193	06/18/2024	0	73.48
1000-05-1141-65100	QUAD CITY TIMES & MUSC JOURN.	Ordinance 2024-0192	06/18/2024	0	30.45
1000-05-1141-65100	QUAD CITY TIMES & MUSC JOURN.	Public Hearing - ATE Changes	06/18/2024	0	23.17
		Vendor Subtotal:			644.12
1000-05-1143-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	42.49
		Vendor Subtotal:			42.49
1000-05-1143-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	48.78
		Vendor Subtotal:			48.78
1000-05-1143-51100	AMAZON.COM	Calculator Ribbon	06/14/2024	0	19.50
1000-05-1143-51100	AMAZON.COM	Pens	06/18/2024	0	7.46
		Vendor Subtotal:			26.96
1000-05-1143-64120	LEANNA MCCULLOUGH	Reimb Travel 6/8/24 - 6/12/24	06/18/2024	0	927.83
		Vendor Subtotal:			927.83
1000-05-1145-63300	PITNEY BOWES GLOBAL FINANCIAL	Postage Lease	06/14/2024	0	424.32

			Vendor Subtotal:		424.32
1000-05-1146-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	28.01
			Vendor Subtotal:		28.01
1000-05-1146-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	36.49
			Vendor Subtotal:		36.49
1000-05-1146-61340	WINSOR CONSULTING	Connect Wise	06/14/2024	0	730.24
			Vendor Subtotal:		730.24
1000-05-1146-61340	TCM BANK NA VISA	Jamf - Subscription	06/18/2024	0	20.00
			Vendor Subtotal:		20.00
1000-05-1146-65240	MUSCATINE POWER & WATER	May Internet - Greenwood	06/14/2024	0	83.18
1000-05-1146-65240	MUSCATINE POWER & WATER	May Internet - Aquatic Center	06/14/2024	0	83.18
			Vendor Subtotal:		166.36
1000-05-1146-65260	VERIZON WIRELESS	May Cell	06/14/2024	0	40.01
1000-05-1146-65260	VERIZON WIRELESS	April Cell	06/14/2024	0	40.01
			Vendor Subtotal:		80.02
1000-10-1221-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	84.70
			Vendor Subtotal:		84.70
1000-10-1221-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	119.68
			Vendor Subtotal:		119.68
1000-10-1221-52300	TARA LUSSOW	Reimb Shoes - T Lussow	06/18/2024	0	75.00

		Vendor Subtotal:			75.00
1000-10-1221-61340	TCM BANK NA VISA	Adobe - Monthly Subscription	06/18/2024	0	21.19
		Vendor Subtotal:			21.19
1000-10-1221-62310	XEROX CORPORATION	Base Charge	06/18/2024	0	27.58
1000-10-1221-62310	XEROX CORPORATION	Print Charge	06/18/2024	0	0.61
		Vendor Subtotal:			28.19
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 35 Gas Lantern Sq		06/14/2024	0	49.01
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 405 Kindler		06/14/2024	0	38.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 417 Mulberry		06/14/2024	0	175.14
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1204 Kansas St		06/14/2024	0	91.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 34 Gas Lantern		06/14/2024	0	490.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 842 Newell Ave		06/14/2024	0	49.01
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1816 Hershey		06/14/2024	0	49.01
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 607 Grandview		06/14/2024	0	115.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 519 Main St		06/14/2024	0	168.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 31 Gas Lantern		06/14/2024	0	1,063.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 400 Bartlett		06/14/2024	0	129.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 114 Fulliam		06/14/2024	0	118.38
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - Parcel 0825478000		06/14/2024	0	62.13
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 508 Sycamore St		06/14/2024	0	91.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1200 Iowa Ave		06/14/2024	0	278.13
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 2003 Breese		06/14/2024	0	78.44
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1815 Schley Ave		06/14/2024	0	78.44
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 511 W 59th Ave		06/14/2024	0	77.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1114 Nebraska St		06/14/2024	0	39.94
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - Parcel 0834328017		06/14/2024	0	81.32
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1216 E 2nd St		06/14/2024	0	39.94
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1632 Beach Cir		06/14/2024	0	78.44
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 606 Chestnut St		06/14/2024	0	77.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 2203 Lucas St		06/14/2024	0	38.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 713 Mulberry Ave		06/14/2024	0	38.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 519 Orange St		06/14/2024	0	38.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 112 Roscoe Ave		06/14/2024	0	38.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 2003 Breese Ave		06/14/2024	0	49.56
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1815 Schley Ave		06/14/2024	0	39.94
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 5111 W 59th Ave		06/14/2024	0	77.00

1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1114 Nebraska St	06/14/2024	0	78.44
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1216 E 2nd St	06/14/2024	0	38.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1632 Beach Cir	06/14/2024	0	39.94
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 606 Chestnut St	06/14/2024	0	38.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 2203 Lucas St	06/14/2024	0	78.44
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 713 Mulberry Ave	06/14/2024	0	38.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 519 Orange St	06/14/2024	0	59.19
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 112 Roscoe Ave	06/14/2024	0	59.19
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 400 Bartlett	06/14/2024	0	336.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 207 E 2nd St	06/14/2024	0	168.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1504 Hershey	06/14/2024	0	77.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 103 E 6th St	06/14/2024	0	437.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - Parcel 0825276024	06/14/2024	0	81.32
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - Parcel 0836226022	06/14/2024	0	81.32
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 2003 Breese	06/14/2024	0	78.44
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1815 Schley Ave	06/14/2024	0	39.94
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 5111 59th Ave	06/14/2024	0	77.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1114 Nebraska	06/14/2024	0	39.94
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - Parcel 0834328017	06/14/2024	0	248.25
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1216 E 2nd St	06/14/2024	0	77.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1632 Beach Cir	06/14/2024	0	78.44
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 606 Chestnut St	06/14/2024	0	38.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 2203 Lucas St	06/14/2024	0	39.94
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 713 Mulberry	06/14/2024	0	38.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 519 Orange St	06/14/2024	0	39.94
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 112 Roscoe Ave	06/14/2024	0	39.94
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 417 Mulberry	06/14/2024	0	57.75
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1112 W 3rd	06/14/2024	0	91.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 710 Newell Ave	06/14/2024	0	231.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 710 Grandview Av	06/14/2024	0	485.63
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1499 Washington St	06/14/2024	0	245.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 2702 Spinning Wh	06/14/2024	0	168.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 25 Gas Lantern	06/14/2024	0	168.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - Parcel 1302505001	06/14/2024	0	231.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 2003 Breese	06/14/2024	0	59.19
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1815 Schley Ave	06/14/2024	0	39.94
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1114 Nebraska St	06/14/2024	0	59.19
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 1632 Beach Cir	06/14/2024	0	78.44
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 2203 Lucas St	06/14/2024	0	38.50
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 112 Roscoe Ave	06/14/2024	0	39.94
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 709 Grandview Av	06/14/2024	0	308.00
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - 609 E 8th St	06/14/2024	0	211.75
1000-10-1221-62470	KELLOR & KELLOR LANDSCAPE INNuisance Abatement - Parcel 0835357012	06/14/2024	0	140.50

Vendor Subtotal:					8,938.83
1000-10-1221-64120	JODI ROYAL-GOODWIN	Reimb Travel 5/29/24 - 5/31/24	06/18/2024	0	182.89
Vendor Subtotal:					182.89
1000-10-1221-64120	TCM BANK NA VISA	Frontier - Flight for Training Royal-Good	06/18/2024	0	388.96
Vendor Subtotal:					388.96
1000-10-1221-64200	TCM BANK NA VISA	Iowa Utility Assoc - Registration Dev24 C	06/18/2024	0	90.00
1000-10-1221-64200	TCM BANK NA VISA	Iowa League of Cities - Registration	06/18/2024	0	160.00
1000-10-1221-64200	TCM BANK NA VISA	Halfmoon Education - Registration	06/18/2024	0	339.00
Vendor Subtotal:					589.00
1000-10-1221-65275	VERIZON WIRELESS	May 2024	06/14/2024	0	232.87
Vendor Subtotal:					232.87
1000-10-1221-65275	TCM BANK NA VISA	Google - Google Voice	06/18/2024	0	73.23
Vendor Subtotal:					73.23
1000-10-1221-69400	TCM BANK NA VISA	Doodle - Subscription	06/18/2024	0	83.40
1000-10-1221-69400	TCM BANK NA VISA	Doodle - Subscription International Trans	06/18/2024	0	2.34
1000-10-1221-69400	TCM BANK NA VISA	ICC - Registration	06/18/2024	0	160.00
Vendor Subtotal:					245.74
1000-15-1311-33440	MUNICIPAL COLLECTIONS OF AME	Agent Fee - May 2024	06/14/2024	0	577.00
Vendor Subtotal:					577.00
1000-15-1311-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	283.55
Vendor Subtotal:					283.55

1000-15-1311-46600	RELIANCE STANDARD LIFE INS COBW LTD June		06/17/2024	0	11.60
1000-15-1311-46600	RELIANCE STANDARD LIFE INS COLTD June 24		06/17/2024	0	240.46
	Vendor Subtotal:				252.06
1000-15-1311-52720	TCM BANK NA VISA	Casey's - Fuel	06/18/2024	0	26.76
1000-15-1311-52720	TCM BANK NA VISA	Casey's - Fuel	06/18/2024	0	76.11
	Vendor Subtotal:				102.87
1000-15-1311-52830	TCM BANK NA VISA	Wal-Mart - External Hard Drive	06/18/2024	0	68.00
	Vendor Subtotal:				68.00
1000-15-1311-52890	MENARDS (MUSC)	Wipes/Glass Cleaner/Blue Towels	06/14/2024	0	20.93
	Vendor Subtotal:				20.93
1000-15-1311-52890	TCM BANK NA VISA	Blood/Urine Specimen Collection Kit	06/18/2024	0	135.24 00027152
	Vendor Subtotal:				135.24
1000-15-1311-61340	WEST PUBLISHING CORPORATION	Clear Web Plus	06/18/2024	0	469.97
	Vendor Subtotal:				469.97
1000-15-1311-61520	ADVANCED RADIOLOGY S.C	Medical J Elliott DOS 5/23/24 Code: 731	06/18/2024	0	30.62
	Vendor Subtotal:				30.62
1000-15-1311-61520	EQUIAN LLC	Medical Fee N Avis DOS 3/26/24	06/18/2024	0	140.96
1000-15-1311-61520	EQUIAN LLC	Medical Fee J Elliott DOS 5/23/24	06/18/2024	0	0.16
	Vendor Subtotal:				141.12
1000-15-1311-61520	UNITY HEALTHCARE	Medical N Avis DOS 3/26/24 Code: 8030	06/18/2024	0	129.69
1000-15-1311-61520	UNITY HEALTHCARE	Medical N Avis DOS 3/26/24 Code: 9928	06/18/2024	0	881.66
1000-15-1311-61520	UNITY HEALTHCARE	Medical N Avis DOS 3/26/24 Code: 9300	06/18/2024	0	139.93

		Vendor Subtotal:		1,151.28
1000-15-1311-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - J Hesseling	06/18/2024	0 545.00
1000-15-1311-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - A Fry	06/18/2024	0 464.00
1000-15-1311-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - J Roseman	06/18/2024	0 525.00
1000-15-1311-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - M Patel	06/18/2024	0 545.00
1000-15-1311-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - T Koch	06/18/2024	0 464.00
1000-15-1311-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - M Fowler	06/18/2024	0 545.00
1000-15-1311-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - J Devrieze	06/18/2024	0 545.00
1000-15-1311-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - J Elliott	06/18/2024	0 464.00
1000-15-1311-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - J Elliott	06/18/2024	0 79.00
		Vendor Subtotal:		4,176.00
1000-15-1311-62370	LUPTON & TOYNE PRINTERS	Business Cards - Reddick	06/18/2024	0 30.00
		Vendor Subtotal:		30.00
1000-15-1311-62370	MAILBOXES & PARCEL DEPOT	Copies	06/18/2024	0 8.99
		Vendor Subtotal:		8.99
1000-15-1311-62410	TEMP ASSOCIATES	Temp Employees Week Ending 5/26/24	06/18/2024	0 790.53
1000-15-1311-62410	TEMP ASSOCIATES	Temp Employees Week Ending 6/2/24	06/18/2024	0 810.80
1000-15-1311-62410	TEMP ASSOCIATES	Temp Employees Week Ending 6/9/24	06/18/2024	0 790.53
		Vendor Subtotal:		2,391.86
1000-15-1311-64120	MATT FOWLER	Reimb Meal 6/6/24	06/18/2024	0 25.00
		Vendor Subtotal:		25.00
1000-15-1311-64120	TCM BANK NA VISA	Coralville Parking - Parking	06/18/2024	0 8.00
1000-15-1311-64120	TCM BANK NA VISA	Coralville Parking - Parking	06/18/2024	0 7.00
1000-15-1311-64120	TCM BANK NA VISA	Coralville Parking - Parking	06/18/2024	0 4.00
1000-15-1311-64120	TCM BANK NA VISA	Hilton - Lodging Hazelett	06/18/2024	0 327.26
1000-15-1311-64120	TCM BANK NA VISA	Iowa Athletic Club - Meals (3)	06/18/2024	0 45.00
		Vendor Subtotal:		391.26

1000-15-1311-64200	IOWA LAW ENFORCEMENT ACADE	Registration - Hazelett/Elliott	06/18/2024	0	350.00
1000-15-1311-64200	IOWA LAW ENFORCEMENT ACADE	Registration - Hazelett/Elliott	06/18/2024	0	350.00
Vendor Subtotal:					700.00
1000-15-1311-64200	TCM BANK NA VISA	NTOA - Membership Jirak	06/18/2024	0	489.00
1000-15-1311-64200	TCM BANK NA VISA	NTOA - Registration DeVrieze	06/18/2024	0	489.00
1000-15-1311-64200	TCM BANK NA VISA	PSI - Drone Test Wheeler	06/18/2024	0	175.00
1000-15-1311-64200	TCM BANK NA VISA	Covert Media - Registration Jensen/Raisb	06/18/2024	0	675.00
1000-15-1311-64200	TCM BANK NA VISA	88 Tactical - Registration Jameson	06/18/2024	0	795.00
1000-15-1311-64200	TCM BANK NA VISA	88 Tactical - Registration DeVrieze	06/18/2024	0	795.00
Vendor Subtotal:					3,418.00
1000-15-1311-64400	MENARDS (MUSC)	Water	06/18/2024	0	6.96
Vendor Subtotal:					6.96
1000-15-1311-69200	MAILBOXES & PARCEL DEPOT	Shipping	06/18/2024	0	17.11
Vendor Subtotal:					17.11
1000-15-1311-69200	TCM BANK NA VISA	USPS - Postage	06/18/2024	0	17.65
1000-15-1311-69200	TCM BANK NA VISA	USPS - Postage	06/18/2024	0	19.75
1000-15-1311-69200	TCM BANK NA VISA	USPS - Postage	06/18/2024	0	19.75
1000-15-1311-69200	TCM BANK NA VISA	USPS - Postage	06/18/2024	0	17.65
Vendor Subtotal:					74.80
1000-15-1311-69400	TCM BANK NA VISA	NTOA - Membership Jirak	06/18/2024	0	35.00
Vendor Subtotal:					35.00
1000-15-1311-69900	TCM BANK NA VISA	FAA - Drone Registration	06/18/2024	0	5.00
Vendor Subtotal:					5.00
1000-15-1312-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	3.13

			Vendor Subtotal:	3.13
1000-15-1312-46600	RELIANCE STANDARD LIFE INS COBW LTD June	06/17/2024	0	13.78
			Vendor Subtotal:	13.78
1000-15-1312-61650	PETDATA, INC Pet Licensing	06/18/2024	0	500.00
			Vendor Subtotal:	500.00
1000-15-1316-61530	MUSCATINE VETERINARY HOSPIT. Vet Services - Frankie	06/18/2024	0	123.48
			Vendor Subtotal:	123.48
1000-15-1320-61660	TODD KOCH Reimb Travel 5/30/24 - 6/1/24	06/18/2024	0	73.98
			Vendor Subtotal:	73.98
1000-15-1320-61660	DAKOTA MULLEN Reimb Travel 5/30/24 - 6/1/24	06/18/2024	0	70.30
			Vendor Subtotal:	70.30
1000-20-1321-46200	RELIANCE STANDARD LIFE INS CO Life Ins June	06/17/2024	0	408.41
			Vendor Subtotal:	408.41
1000-20-1321-46600	RELIANCE STANDARD LIFE INS COLTD June 24	06/17/2024	0	183.17
			Vendor Subtotal:	183.17
1000-20-1321-52300	DINGES FIRE COMPANY LION RedZone Particulate Blocking Hoo	06/14/2024	0	884.89 00027602
			Vendor Subtotal:	884.89
1000-20-1321-52720	TCM BANK NA VISA Kum & Go - Fuel for #301	06/18/2024	0	68.54
			Vendor Subtotal:	68.54

1000-20-1321-52820	TCM BANK NA VISA	Red Junior FF Hat w/Fireman & Axe Des	06/18/2024	0	82.00 00027442
1000-20-1321-52820	TCM BANK NA VISA	Black Firetruck Junior FF Hat	06/18/2024	0	211.95 00027442
Vendor Subtotal:					293.95
1000-20-1321-52830	MENARDS (MUSC)	Mega Noodles/Ultimate Compound/Towe	06/14/2024	0	21.47
Vendor Subtotal:					21.47
1000-20-1321-52830	DINGES FIRE COMPANY	1" Tubular Mil-Spec (webbing) Green - 3	06/14/2024	0	271.00 00027619
Vendor Subtotal:					271.00
1000-20-1321-52840	TCM BANK NA VISA	Replacement parts for MultiRAE Gas Mo	06/18/2024	0	509.00 00027413
1000-20-1321-52840	TCM BANK NA VISA	Replacement parts for MultiRAE Gas Mo	06/18/2024	0	5.44
Vendor Subtotal:					514.44
1000-20-1321-52890	TCM BANK NA VISA	New Pig - HazMat Supplies	06/18/2024	0	61.82
Vendor Subtotal:					61.82
1000-20-1321-61520	EQUIAN LLC	Medical Fee M Fleming DOS 3/18/24	06/18/2024	0	574.75
1000-20-1321-61520	EQUIAN LLC	Medical Fee M Fleming DOS 5/14/24	06/18/2024	0	1.30
1000-20-1321-61520	EQUIAN LLC	Medical Fee M Fleming DOS 5/16/24	06/18/2024	0	1.30
1000-20-1321-61520	EQUIAN LLC	Medical Fee M Fleming DOS 5/23/24	06/18/2024	0	1.30
1000-20-1321-61520	EQUIAN LLC	Medical Fee M Fleming DOS 5/21/24	06/18/2024	0	1.30
Vendor Subtotal:					579.95
1000-20-1321-61520	ROCK VALLEY PT	Medical M Fleming DOS 5/14/24 Code: 9	06/18/2024	0	127.40
1000-20-1321-61520	ROCK VALLEY PT	Medical M Fleming DOS 5/23/24 Code: 6	06/18/2024	0	63.70
1000-20-1321-61520	ROCK VALLEY PT	Medical M Fleming DOS 5/14/24 Code: 9	06/18/2024	0	63.70
1000-20-1321-61520	ROCK VALLEY PT	Medical M Fleming DOS 5/16/24 Code: 9	06/18/2024	0	127.40
1000-20-1321-61520	ROCK VALLEY PT	Medical M Fleming DOS 5/16/24 Code: 9	06/18/2024	0	63.70
1000-20-1321-61520	ROCK VALLEY PT	Medical M Fleming DOS 5/23/24 Code: 9	06/18/2024	0	127.40
1000-20-1321-61520	ROCK VALLEY PT	Medical M Fleming DOS 5/23/24 Code: 9	06/18/2024	0	63.70
1000-20-1321-61520	ROCK VALLEY PT	Medical M Fleming DOS 5/21/24 Code: 9	06/18/2024	0	63.70
1000-20-1321-61520	ROCK VALLEY PT	Medical M Fleming DOS 5/14/24 Code: 9	06/18/2024	0	63.70

1000-20-1321-61520	ROCK VALLEY PT	Medical M Fleming DOS 5/16/24 Code: 9	06/18/2024	0	63.70
1000-20-1321-61520	ROCK VALLEY PT	Medical M Fleming DOS 5/21/24 Code: 9	06/18/2024	0	127.40
1000-20-1321-61520	ROCK VALLEY PT	Medical M Fleming DOS 5/21/24 Code: 9	06/18/2024	0	63.70
Vendor Subtotal:					1,019.20
1000-20-1321-61520	UNITY HEALTHCARE	Medical L Creamer DOS 7/29/23 Code: 9	06/18/2024	0	108.62
1000-20-1321-61520	UNITY HEALTHCARE	Medical L Creamer DOS 7/29/23 Code: 9	06/18/2024	0	108.62
1000-20-1321-61520	UNITY HEALTHCARE	Medical L Creamer DOS 7/29/23 Code: 9	06/18/2024	0	522.03
Vendor Subtotal:					739.27
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - M Hartman	06/18/2024	0	301.00
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - D Brooke	06/18/2024	0	404.00
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - A Summitt	06/18/2024	0	404.00
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - J Timmsen	06/18/2024	0	404.00
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - J Verschoore	06/18/2024	0	404.00
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - S Paustian	06/18/2024	0	404.00
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - J Rymars	06/18/2024	0	404.00
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - T Edwards	06/18/2024	0	404.00
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - J Rudolph	06/18/2024	0	404.00
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - B Barrett	06/18/2024	0	404.00
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - C Chelf	06/18/2024	0	404.00
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - N Paxston	06/18/2024	0	404.00
1000-20-1321-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - D Grafton	06/18/2024	0	404.00
Vendor Subtotal:					5,149.00
1000-20-1321-61520	ANESTHESIA & ANALGESIA PC	Medical M Fleming DOS 3/18/24 Code: 6	06/18/2024	0	1,133.00
1000-20-1321-61520	ANESTHESIA & ANALGESIA PC	Medical M Fleming DOS 3/18/24 Code: 6	06/18/2024	0	398.00
Vendor Subtotal:					1,531.00
1000-20-1321-61560	TMESYS LLC	Prescription - K McCarthy	06/18/2024	0	623.28
1000-20-1321-61560	TMESYS LLC	Prescription - K McCarthy	06/18/2024	0	15.37
1000-20-1321-61560	TMESYS LLC	Prescription - M Collins	06/18/2024	0	150.23
1000-20-1321-61560	TMESYS LLC	Prescription - J Barnhart	06/18/2024	0	9.07
1000-20-1321-61560	TMESYS LLC	Prescription - J Barnhart	06/18/2024	0	680.62
Vendor Subtotal:					1,478.57

1000-20-1321-62530	SAFETY-KLEEN, INC	Used Oil Recycling	06/14/2024	0	76.50
Vendor Subtotal:					76.50
1000-20-1321-64120	TCM BANK NA VISA	Kum & Go - Meal Grafton	06/18/2024	0	5.45
1000-20-1321-64120	TCM BANK NA VISA	Raising Cane's - Meal Grafton	06/18/2024	0	10.15
1000-20-1321-64120	TCM BANK NA VISA	Raising Cane's - Meal Collins	06/18/2024	0	11.33
1000-20-1321-64120	TCM BANK NA VISA	Casey's - Meal Grafton	06/18/2024	0	10.24
1000-20-1321-64120	TCM BANK NA VISA	Jethro's - Meal Grafton	06/18/2024	0	19.59
1000-20-1321-64120	TCM BANK NA VISA	Jethro's - Meal Collins	06/18/2024	0	22.16
1000-20-1321-64120	TCM BANK NA VISA	Stoney Creek - Lodging Grafton/Collins	06/18/2024	0	448.00
1000-20-1321-64120	TCM BANK NA VISA	Texas Roadhouse - Refund	06/18/2024	0	-25.72
1000-20-1321-64120	TCM BANK NA VISA	Texas Roadhouse - Meal Collins	06/18/2024	0	14.97
1000-20-1321-64120	TCM BANK NA VISA	Texas Roadhouse - Meal Grafton	06/18/2024	0	17.85
1000-20-1321-64120	TCM BANK NA VISA	Jethro's - Meal Collins	06/18/2024	0	20.07
1000-20-1321-64120	TCM BANK NA VISA	Jethro's - Meal Grafton	06/18/2024	0	23.23
1000-20-1321-64120	TCM BANK NA VISA	Texas Roadhouse - Meal Grafton	06/18/2024	0	24.85
1000-20-1321-64120	TCM BANK NA VISA	Texas Roadhouse - Meal Collins	06/18/2024	0	28.01
1000-20-1321-64120	TCM BANK NA VISA	Casey's - Meal Grafton	06/18/2024	0	9.60
1000-20-1321-64120	TCM BANK NA VISA	Casey's - Meal Collins	06/18/2024	0	7.49
1000-20-1321-64120	TCM BANK NA VISA	Kum & Go - Meal Grafton	06/18/2024	0	6.93
1000-20-1321-64120	TCM BANK NA VISA	Raising Cane's - Meal Grafton	06/18/2024	0	10.15
1000-20-1321-64120	TCM BANK NA VISA	Raising Cane's - Meal Collins	06/18/2024	0	11.55
1000-20-1321-64120	TCM BANK NA VISA	Pancheros - Meal Collins	06/18/2024	0	13.96
1000-20-1321-64120	TCM BANK NA VISA	Raising Cane's - Meal Grafton	06/18/2024	0	20.61
1000-20-1321-64120	TCM BANK NA VISA	Casey's - Meal Grafton	06/18/2024	0	6.93
1000-20-1321-64120	TCM BANK NA VISA	Kum & Go - Meal Grafton	06/18/2024	0	9.81
1000-20-1321-64120	TCM BANK NA VISA	Stoney Creek - Lodging Grafton/Collins	06/18/2024	0	364.00
1000-20-1321-64120	TCM BANK NA VISA	Raising Cane's - Meal Grafton	06/18/2024	0	10.15
1000-20-1321-64120	TCM BANK NA VISA	Raising Cane's - Meal Collins	06/18/2024	0	16.53
1000-20-1321-64120	TCM BANK NA VISA	Texas Roadhouse - Meal Collins	06/18/2024	0	25.72
1000-20-1321-64120	TCM BANK NA VISA	Texas Roadhouse - Meal Grafton	06/18/2024	0	23.39
1000-20-1321-64120	TCM BANK NA VISA	Kum & Go - Meal Grafton	06/18/2024	0	8.65
1000-20-1321-64120	TCM BANK NA VISA	Texas Roadhouse - Meal Collins	06/18/2024	0	25.72
1000-20-1321-64120	TCM BANK NA VISA	Texas Roadhouse - Meal Grafton	06/18/2024	0	19.25
1000-20-1321-64120	TCM BANK NA VISA	Taco Johns - Meal Collins	06/18/2024	0	14.42
1000-20-1321-64120	TCM BANK NA VISA	Taco Johns - Meal Grafton	06/18/2024	0	14.65
Vendor Subtotal:					1,249.69
1000-20-1321-64200	TCM BANK NA VISA	City of Fort Collins - Registration Fee Ew	06/18/2024	0	400.00

			Vendor Subtotal:	400.00
1000-25-1115-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0 3.00
			Vendor Subtotal:	3.00
1000-25-1115-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0 5.12
			Vendor Subtotal:	5.12
1000-25-1115-61520	UNITY HEALTHCARE - TRINITY MU	Hep B - J Leza	06/18/2024	0 235.00
1000-25-1115-61520	UNITY HEALTHCARE - TRINITY MU	Hep B - J Leza	06/18/2024	0 45.00
			Vendor Subtotal:	280.00
1000-25-1115-61550	ARMOR UP AMERICA	June EAP	06/18/2024	0 318.50
			Vendor Subtotal:	318.50
1000-25-1411-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0 3.13
			Vendor Subtotal:	3.13
1000-25-1411-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0 16.38
			Vendor Subtotal:	16.38
1000-25-1411-52720	PRICE OIL	GASOLINE (GALLONS)	06/14/2024	0 1,919.50 00027528
			Vendor Subtotal:	1,919.50
1000-25-1411-52730	PRICE OIL	DIESEL (GALLONS)	06/14/2024	0 730.00 00027528
			Vendor Subtotal:	730.00
1000-25-1411-52740	MUSCATINE LAWN & POWER	Oil	06/14/2024	0 46.20

Vendor Subtotal:					46.20
1000-25-1411-52830	AMAZON.COM	Electrical Tester	06/14/2024	0	143.99
Vendor Subtotal:					143.99
1000-25-1411-52830	TCM BANK NA VISA	Harbor Freight - Dual Cup Section Lifter	06/18/2024	0	17.98
Vendor Subtotal:					17.98
1000-25-1411-53110	TCM BANK NA VISA	1/4" 8'x4' Steel	06/18/2024	0	215.00 00027507
1000-25-1411-53110	TCM BANK NA VISA	1/4" 8'x4' Steel	06/18/2024	0	20.80
Vendor Subtotal:					235.80
1000-25-1411-53220	ARNOLD MOTOR SUPPLY	Brake Cleaner/O Ring	06/14/2024	0	8.78
Vendor Subtotal:					8.78
1000-25-1411-53220	MUSCATINE LAWN & POWER	Filter	06/14/2024	0	53.20
Vendor Subtotal:					53.20
1000-25-1411-62210	PHELPS THE UNIFORM SPECIALIST	Laundry - Greenwood	06/14/2024	0	13.05
Vendor Subtotal:					13.05
1000-25-1411-65210	MUSCATINE POWER & WATER	May Phones - Greenwood	06/14/2024	0	30.69
1000-25-1411-65210	MUSCATINE POWER & WATER	May Electric - Greenwood	06/14/2024	0	33.70
Vendor Subtotal:					64.39
1000-25-1421-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	27.13
Vendor Subtotal:					27.13
1000-25-1421-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	32.91

			Vendor Subtotal:		32.91	
1000-25-1421-51100	LUPTON & TOYNE PRINTERS	Envelopes	06/14/2024	0	40.00	
			Vendor Subtotal:		40.00	
1000-25-1423-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	27.75	
			Vendor Subtotal:		27.75	
1000-25-1423-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	14.85	
1000-25-1423-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	77.68	
			Vendor Subtotal:		92.53	
1000-25-1423-51100	APPLE	MK893LL/A Apple iPad Mini, WiFi + Cellular	06/14/2024	0	599.00	00027630
			Vendor Subtotal:		599.00	
1000-25-1423-51100	AMAZON.COM	OtterBox Defender Series Case for iPad Mini	06/14/2024	0	39.92	00027631
			Vendor Subtotal:		39.92	
1000-25-1423-51300	SOURCE NOW LLC	W2113A HP #206A Magenta Toner Cartridge	06/18/2024	0	82.51	00027708
1000-25-1423-51300	SOURCE NOW LLC	W2110A HP #206A Black Toner Cartridge	06/18/2024	0	70.52	00027708
1000-25-1423-51300	SOURCE NOW LLC	W2112A HP #206A Yellow Toner Cartridge	06/18/2024	0	82.51	00027708
1000-25-1423-51300	SOURCE NOW LLC	W2111A HP #206A Cyan Toner Cartridge	06/18/2024	0	82.51	00027708
			Vendor Subtotal:		318.05	
1000-25-1423-52100	MENARDS (MUSC)	Hose Tap/Pruner/Chain Oil	06/14/2024	0	99.20	
			Vendor Subtotal:		99.20	
1000-25-1423-52250	D & K PRODUCTS	TRIBUNE - 40 GALLONS	06/14/2024	0	1,264.00	00027462
1000-25-1423-52250	D & K PRODUCTS	PENDULUM AQUACAP - 40 GALLON	06/14/2024	0	830.00	00027462
1000-25-1423-52250	D & K PRODUCTS	AQUASWEEP - 40 GALLONS	06/14/2024	0	1,248.80	00027462

		Vendor Subtotal:			3,342.80
1000-25-1423-52300	PHELPS CUSTOM IMAGE WEAR	Uniforms - S Day	06/18/2024	0	58.50
		Vendor Subtotal:			58.50
1000-25-1423-52300	TREA KOLLER	Reimb Shoes - T Koller	06/18/2024	0	75.00
		Vendor Subtotal:			75.00
1000-25-1423-52400	DOG WASTE DEPOT	6000 BOX OF ROLL BAGS	06/14/2024	0	433.74 00027594
		Vendor Subtotal:			433.74
1000-25-1423-52400	TCM BANK NA VISA	Royce Rolls - Toilet Paper	06/18/2024	0	91.08
1000-25-1423-52400	TCM BANK NA VISA	Harbor Freight - Dual Cup Section Lifter	06/18/2024	0	10.99
		Vendor Subtotal:			102.07
1000-25-1423-52400	CR LANDSCAPING	EZ Grabber	06/18/2024	0	39.98
		Vendor Subtotal:			39.98
1000-25-1423-52830	MENARDS (MUSC)	Channellock Wrench	06/14/2024	0	33.95
		Vendor Subtotal:			33.95
1000-25-1423-52830	TCM BANK NA VISA	HYDRAULIC JACK KIT	06/18/2024	0	279.99 00027595
		Vendor Subtotal:			279.99
1000-25-1423-52890	MENARDS (MUSC)	Safety Glasses/Gloves/Reflective Vest	06/14/2024	0	96.28
1000-25-1423-52890	MENARDS (MUSC)	Gloves/Class 2 Vest	06/14/2024	0	78.73
1000-25-1423-52890	MENARDS (MUSC)	Binder/Pruner	06/18/2024	0	95.79
		Vendor Subtotal:			270.80

1000-25-1423-53110	MENARDS (MUSC)	Lumber	06/14/2024	0	24.99
		Vendor Subtotal:			24.99
1000-25-1423-53120	MENARDS (MUSC)	Nipple/Connector Soow Cable	06/14/2024	0	77.15
		Vendor Subtotal:			77.15
1000-25-1423-53130	MENARDS (MUSC)	Valve Box	06/14/2024	0	52.96
		Vendor Subtotal:			52.96
1000-25-1423-53130	PLUMB SUPPLY COMPANY	ELKAY DIAPHRAGM KIT	06/14/2024	0	109.60 00027377
1000-25-1423-53130	PLUMB SUPPLY COMPANY	ELKAY LK140 BUBBLER	06/14/2024	0	300.00 00027377
1000-25-1423-53130	PLUMB SUPPLY COMPANY	ELKAY LK140 BUBBLER	06/14/2024	0	0.01
		Vendor Subtotal:			409.61
1000-25-1423-53220	MENARDS (MUSC)	Spray Paint/Bolts	06/14/2024	0	49.96
1000-25-1423-53220	MENARDS (MUSC)	Hitch Pin/Flange/Bolt	06/14/2024	0	15.52
		Vendor Subtotal:			65.48
1000-25-1423-53220	MUSCATINE LAWN & POWER	Plate	06/14/2024	0	23.99
1000-25-1423-53220	MUSCATINE LAWN & POWER	Cover/Valve	06/14/2024	0	81.41
		Vendor Subtotal:			105.40
1000-25-1423-62210	PHELPS THE UNIFORM SPECIALIST	Laundry - Weed Park	06/14/2024	0	9.20
		Vendor Subtotal:			9.20
1000-25-1423-64200	TCM BANK NA VISA	Iowa Agriculture - Idals Pesticide	06/18/2024	0	25.00
		Vendor Subtotal:			25.00
1000-25-1423-65275	VERIZON WIRELESS	May 2024	06/14/2024	0	40.01

Vendor Subtotal:					40.01
1000-25-1423-65310	ALLIANT ENERGY	May Gas - Pearl City Station	06/14/2024	0	38.90
1000-25-1423-65310	ALLIANT ENERGY	May Gas - Harbor	06/14/2024	0	38.55
1000-25-1423-65310	ALLIANT ENERGY	May Gas - Weed Park	06/14/2024	0	190.10
Vendor Subtotal:					267.55
1000-25-1423-65320	MUSCATINE POWER & WATER	April Electric - Maint Shed	06/14/2024	0	73.40
1000-25-1423-65320	MUSCATINE POWER & WATER	April Electric - Park Comm	06/14/2024	0	17.97
1000-25-1423-65320	MUSCATINE POWER & WATER	April Electric - Musser	06/14/2024	0	35.94
1000-25-1423-65320	MUSCATINE POWER & WATER	April Electric - River Center	06/14/2024	0	25.30
Vendor Subtotal:					152.61
1000-25-1423-65410	MUSCATINE POWER & WATER	April Water - River Center	06/14/2024	0	26.15
1000-25-1423-65410	MUSCATINE POWER & WATER	April Water - Maint Shed	06/14/2024	0	6.16
Vendor Subtotal:					32.31
1000-25-1424-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	8.57
Vendor Subtotal:					8.57
1000-25-1424-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	8.08
1000-25-1424-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	8.44
Vendor Subtotal:					16.52
1000-25-1424-52250	SITEONE LANDSCAPE SUPPLY	TRIFLURALIN 5G	06/14/2024	0	269.93 00026687
Vendor Subtotal:					269.93
1000-25-1424-52400	TCM BANK NA VISA	Ebay - Plunger	06/18/2024	0	19.00
1000-25-1424-52400	TCM BANK NA VISA	Ebay - Plunger	06/18/2024	0	10.76
Vendor Subtotal:					29.76

1000-25-1424-52720	SPRATT OIL SALES	REGULAR UNLEADED	06/18/2024	0	486.57 00027591
		Vendor Subtotal:			486.57
1000-25-1424-52730	SPRATT OIL SALES	RED-DYE DIESEL	06/18/2024	0	568.00 00027591
1000-25-1424-52730	SPRATT OIL SALES	RED-DYE DIESEL	06/18/2024	0	42.60
		Vendor Subtotal:			610.60
1000-25-1424-53130	MOST DEPENDABLE FOUNTAINS I	MDF-19 - SS BOWL	06/14/2024	0	564.00 00027592
1000-25-1424-53130	MOST DEPENDABLE FOUNTAINS I	#19 HOSE - 1/4 X 16'	06/14/2024	0	132.00 00027592
1000-25-1424-53130	MOST DEPENDABLE FOUNTAINS I	#56 HOSE - 3/8 X 32'	06/14/2024	0	162.00 00027592
1000-25-1424-53130	MOST DEPENDABLE FOUNTAINS I	STRAINER- PVD COATED	06/14/2024	0	234.00 00027592
1000-25-1424-53130	MOST DEPENDABLE FOUNTAINS I	BUBBLER REPLACEMENT	06/14/2024	0	612.00 00027592
1000-25-1424-53130	MOST DEPENDABLE FOUNTAINS I	GASKET- #3/16 TTK1-7/16 IDX2-3/16	06/14/2024	0	60.00 00027592
1000-25-1424-53130	MOST DEPENDABLE FOUNTAINS I	3/8 - 16 X 1 1/2 SS FLAT HEAD T45	06/14/2024	0	60.00 00027592
1000-25-1424-53130	MOST DEPENDABLE FOUNTAINS I	Shipping	06/14/2024	0	48.00
		Vendor Subtotal:			1,872.00
1000-25-1424-53210	CARQUEST OF MUSCATINE	Lubricant/Filters	06/14/2024	0	46.48
1000-25-1424-53210	CARQUEST OF MUSCATINE	Filters/Spin-On	06/18/2024	0	94.16
		Vendor Subtotal:			140.64
1000-25-1424-53220	MTI DISTRIBUTING INC	SHIPPING	06/14/2024	0	23.06 00027647
1000-25-1424-53220	MTI DISTRIBUTING INC	104-1093 ROLLER	06/14/2024	0	278.16 00027647
1000-25-1424-53220	MTI DISTRIBUTING INC	ROLLER 112-5291	06/18/2024	0	347.78 00027672
		Vendor Subtotal:			649.00
1000-25-1424-53220	CR LANDSCAPING	Ez Reachers	06/14/2024	0	57.97
		Vendor Subtotal:			57.97
1000-25-1424-53330	CR LANDSCAPING	CONCRETE WORK AT EAST CONCE	06/18/2024	0	500.00 00027689
		Vendor Subtotal:			500.00
1000-25-1424-53340	WENDLING QUARRIES INC	Rock	06/18/2024	0	597.19

Vendor Subtotal:					597.19
1000-25-1424-53340	SITEONE LANDSCAPE SUPPLY	TURFACE QUICK DRY	06/14/2024	0	384.00 00026687
1000-25-1424-53340	SITEONE LANDSCAPE SUPPLY	TURFACE QUICK DRY	06/14/2024	0	29.96
Vendor Subtotal:					413.96
1000-25-1424-65210	CENTURYLINK	June Phones - Kent Stein	06/14/2024	0	74.13
Vendor Subtotal:					74.13
1000-25-1424-67400	PEARL CITY MAINTENANCE LLC	INSTALL AED BOX AT KENT STEIN	06/18/2024	0	300.00 00027326
Vendor Subtotal:					300.00
1000-25-1424-67400	CR LANDSCAPING	CONCRETE WORK - TRAIL AT KENT	06/18/2024	0	2,900.00 00027685
Vendor Subtotal:					2,900.00
1000-25-1424-69900	TCM BANK NA VISA	Iowa Agriculture - Pesticide Test	06/18/2024	0	25.00
1000-25-1424-69900	TCM BANK NA VISA	Epic Sports - Pitching Rubber	06/18/2024	0	69.19
Vendor Subtotal:					94.19
1000-25-1426-52250	D & K PRODUCTS	RESOLUTE 4FL	06/14/2024	0	687.50 00027516
Vendor Subtotal:					687.50
1000-25-1426-52250	RIVER CITY TURF & ORNAMENTAL	ROUND UP PRO	06/14/2024	0	466.00 00027515
Vendor Subtotal:					466.00
1000-25-1426-67140	A-1 QUALITY TIRE & CAR CARE	Tire Repairs	06/14/2024	0	84.50
Vendor Subtotal:					84.50
1000-25-1427-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	8.57

			Vendor Subtotal:		8.57
1000-25-1427-46600	RELIANCE STANDARD LIFE INS COLTD June 24		06/17/2024	0	8.08
1000-25-1427-46600	RELIANCE STANDARD LIFE INS COBW LTD June		06/17/2024	0	8.44
			Vendor Subtotal:		16.52
1000-25-1427-52250	SITEONE LANDSCAPE SUPPLY	QUALI-PRO T-NEX	06/14/2024	0	559.50 00026687
1000-25-1427-52250	SITEONE LANDSCAPE SUPPLY	CASE OF 12 - PS TANK CLEANER	06/14/2024	0	101.29 00026687
1000-25-1427-52250	SITEONE LANDSCAPE SUPPLY	QUALI-PRO T-NEX	06/14/2024	0	0.02
			Vendor Subtotal:		660.81
1000-25-1427-52840	TCM BANK NA VISA	Ebay - Rainsuit	06/18/2024	0	44.60
1000-25-1427-52840	TCM BANK NA VISA	Ebay - Rainsuit International Fee	06/18/2024	0	1.34
			Vendor Subtotal:		45.94
1000-25-1427-53210	CARQUEST OF MUSCATINE	Filters	06/14/2024	0	94.84
1000-25-1427-53210	CARQUEST OF MUSCATINE	Hydraulic Interchange/Filter	06/18/2024	0	98.82
			Vendor Subtotal:		193.66
1000-25-1427-53220	PLETCHER ENTERPRISES INC	Angle	06/14/2024	0	20.75
			Vendor Subtotal:		20.75
1000-25-1427-53220	MENARDS (MUSC)	Cement/Bedding Mulch/Hose	06/18/2024	0	99.16
			Vendor Subtotal:		99.16
1000-25-1427-53220	CR LANDSCAPING	Ez Reachers	06/14/2024	0	57.97
			Vendor Subtotal:		57.97
1000-25-1427-62210	PHELPS THE UNIFORM SPECIALIST	Laundry - Soccer	06/18/2024	0	24.00
1000-25-1427-62210	PHELPS THE UNIFORM SPECIALIST	Laundry - Soccer	06/14/2024	0	24.00

			Vendor Subtotal:		48.00
1000-25-1427-65210	MUSCATINE POWER & WATER	May Phones - Soccer	06/18/2024	0	64.83
			Vendor Subtotal:		64.83
1000-25-1427-67400	PEARL CITY MAINTENANCE LLC	Install AED Box at Soccer Complex	06/18/2024	0	300.00 00027306
			Vendor Subtotal:		300.00
1000-25-1428-38620	JOHN BIAH	Refund	06/18/2024	0	250.00
			Vendor Subtotal:		250.00
1000-25-1431-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	10.63
			Vendor Subtotal:		10.63
1000-25-1431-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	12.22
			Vendor Subtotal:		12.22
1000-25-1432-37220	LYNN STERNER	Refund	06/18/2024	0	250.00
			Vendor Subtotal:		250.00
1000-25-1432-52250	ACCO UNLIMITED CORP	Shipping	06/14/2024	0	80.00 00027607
1000-25-1432-52250	ACCO UNLIMITED CORP	Gallons of Acid	06/14/2024	0	426.40 00027607
1000-25-1432-52250	ACCO UNLIMITED CORP	Gallons of Liquid Chlorine	06/14/2024	0	1,872.00 00027607
1000-25-1432-52250	ACCO UNLIMITED CORP	100# Cyanuric Acid Stabilizer	06/14/2024	0	282.25 00027607
1000-25-1432-52250	ACCO UNLIMITED CORP	Gallons of Liquid Chlorine	06/14/2024	0	28.80
1000-25-1432-52250	ACCO UNLIMITED CORP	Gallons of Acid	06/14/2024	0	243.00
1000-25-1432-52250	ACCO UNLIMITED CORP	Gallons of Acid	06/14/2024	0	85.00
			Vendor Subtotal:		3,017.45
1000-25-1432-52300	BERLINS PRO SHOP	Cashier & Slide Attendent Shirts	06/14/2024	0	124.95 00027652
1000-25-1432-52300	BERLINS PRO SHOP	Aquatic Manager Shirts	06/14/2024	0	25.00 00027652

1000-25-1432-52300	BERLINS PRO SHOP	Cashier & Slide 2xl Shirt	06/14/2024	0	9.95 00027652
1000-25-1432-52300	BERLINS PRO SHOP	Lifeguard Tank Tops	06/14/2024	0	169.15 00027652
Vendor Subtotal:					329.05
1000-25-1432-53220	TCM BANK NA VISA	Lifeguard Lanyards	06/18/2024	0	42.75 00027514
1000-25-1432-53220	TCM BANK NA VISA	Lifeguard Whistles	06/18/2024	0	225.00 00027514
Vendor Subtotal:					267.75
1000-25-1432-65210	MUSCATINE POWER & WATER	May Phones - Aquatic Center	06/14/2024	0	71.27
Vendor Subtotal:					71.27
1000-30-1511-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	68.76
Vendor Subtotal:					68.76
1000-30-1511-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	97.11
Vendor Subtotal:					97.11
1000-30-1511-51300	CARRIAGE PAPER PRODUCTS	Thermal Receipt Paper	06/14/2024	0	89.95
Vendor Subtotal:					89.95
1000-30-1511-52890	AMAZON.COM	DVD Sleeves/Wall Mount TV Bracket	06/18/2024	0	67.88
1000-30-1511-52890	AMAZON.COM	Sleeves	06/14/2024	0	22.89
Vendor Subtotal:					90.77
1000-30-1511-52890	TCM BANK NA VISA	HB Sherman - Animal Traps	06/18/2024	0	75.62
1000-30-1511-52890	TCM BANK NA VISA	Demco - Holiday Lables/Tape	06/18/2024	0	96.83
Vendor Subtotal:					172.45
1000-30-1511-61340	TCM BANK NA VISA	Zoom - Monthly Fee	06/18/2024	0	55.99
1000-30-1511-61340	TCM BANK NA VISA	Wal-Mart - SRP Supplies	06/18/2024	0	86.38
1000-30-1511-61340	TCM BANK NA VISA	Canva - Refund	06/18/2024	0	-17.34

1000-30-1511-61340	TCM BANK NA VISA	Mailchimp - E-Newsletter Fee	06/18/2024	0	110.00
1000-30-1511-61340	TCM BANK NA VISA	Adobe - Creative Cloud	06/18/2024	0	49.99
1000-30-1511-61340	TCM BANK NA VISA	Big Imprint - Monthly Fee	06/18/2024	0	116.00
Vendor Subtotal:					401.02
1000-30-1511-61520	RIVER REHABILITATION INC	Worksteps - R Fillmore	06/18/2024	0	137.00
Vendor Subtotal:					137.00
1000-30-1511-61660	LUCAS COMMUNICATION INC	Troubleshoot Camera System	06/14/2024	0	60.19
Vendor Subtotal:					60.19
1000-30-1511-61660	UNIQUE MANAGEMENT SERVICES,	Collection Agency Fee May	06/14/2024	0	302.90
Vendor Subtotal:					302.90
1000-30-1511-62460	SYCAMORE PRINTING INC	Adult Summer Reading Bookmark	06/18/2024	0	41.00
1000-30-1511-62460	SYCAMORE PRINTING INC	Adult Summer Reading Log	06/18/2024	0	97.00
Vendor Subtotal:					138.00
1000-30-1511-62460	AMAZON.COM	Charm Pins/Wristbands/Fairy Lights	06/14/2024	0	70.69
Vendor Subtotal:					70.69
1000-30-1511-62460	TCM BANK NA VISA	VistaPrint - SRP Banners	06/18/2024	0	89.98
1000-30-1511-62460	TCM BANK NA VISA	Hy-Vee - Mother/Daughter Club	06/18/2024	0	14.99
Vendor Subtotal:					104.97
1000-30-1511-62460	M.L. JOHNSON WOODWORKS	Spoon Carving Program	06/14/2024	0	300.00
Vendor Subtotal:					300.00
1000-30-1511-65100	TCM BANK NA VISA	Facebook - Advertising	06/18/2024	0	12.00

			Vendor Subtotal:		12.00
1000-30-1511-65240	VERIZON WIRELESS	May 2024	06/14/2024	0	40.01
			Vendor Subtotal:		40.01
1000-30-1511-69200	TCM BANK NA VISA	USPS - Postage	06/18/2024	0	15.55
			Vendor Subtotal:		15.55
1000-30-1511-69300	SONIA BAARS	Refund Returned Item - Nightmare Island	06/18/2024	0	17.99
			Vendor Subtotal:		17.99
1000-30-1511-74500	LIBRARY SYSTEMS & SERVICES L	Library Books/Materials	06/18/2024	0	10,144.01
			Vendor Subtotal:		10,144.01
1000-30-1511-74500	TCM BANK NA VISA	Wal-Street - Newspaper Fee	06/18/2024	0	60.49
			Vendor Subtotal:		60.49
1000-35-1521-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	41.51
			Vendor Subtotal:		41.51
1000-35-1521-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	59.67
			Vendor Subtotal:		59.67
1000-35-1521-51100	MELANIE ALEXANDER	Reimb - Name Tags	06/18/2024	0	50.87
			Vendor Subtotal:		50.87
1000-35-1521-51400	AMAZON.COM	Scanner	06/18/2024	0	80.99
			Vendor Subtotal:		80.99

1000-35-1521-51400	TCM BANK NA VISA	Epson - EpiqVision Flex CO-FH02 Full F	06/18/2024	0	549.99 00027483
		Vendor Subtotal:			549.99
1000-35-1521-52100	VIRGINIA COOPER	Reimb Plants for Garden	06/18/2024	0	25.65
		Vendor Subtotal:			25.65
1000-35-1521-52600	LYNN BARTENHAGEN	Reimb - Snack for Movie Event	06/18/2024	0	11.56
1000-35-1521-52600	LYNN BARTENHAGEN	Reimb - Drinks for Movie Event	06/18/2024	0	39.36
		Vendor Subtotal:			50.92
1000-35-1521-52600	TCM BANK NA VISA	Aldi - Cookies & Croissants	06/18/2024	0	60.06
		Vendor Subtotal:			60.06
1000-35-1521-52820	AMAZON.COM	Gloss Glazes	06/18/2024	0	93.98
1000-35-1521-52820	AMAZON.COM	Picture Hanging Wires	06/18/2024	0	12.26
		Vendor Subtotal:			106.24
1000-35-1521-52890	MELANIE ALEXANDER	Reimb - Tablecloths	06/18/2024	0	6.00
		Vendor Subtotal:			6.00
1000-35-1521-52890	MENARDS (MUSC)	Shim/Lumber	06/18/2024	0	29.76
		Vendor Subtotal:			29.76
1000-35-1521-52890	AMAZON.COM	Touch Valve/Floral Foam	06/18/2024	0	76.34
		Vendor Subtotal:			76.34
1000-35-1521-52890	TCM BANK NA VISA	Wal-Mart - Class Supplies	06/18/2024	0	66.56
1000-35-1521-52890	TCM BANK NA VISA	Blaines - Shrub Rake	06/18/2024	0	12.99

			Vendor Subtotal:		79.55
1000-35-1521-61640	HEATHER MICHELE SEIBEL	Teaching Fee Class ID 7251	06/18/2024	0	75.00
			Vendor Subtotal:		75.00
1000-35-1521-62370	GORDON FLESCH COMPANY	Copier	06/18/2024	0	79.00
			Vendor Subtotal:		79.00
1000-35-1521-64500	MELANIE ALEXANDER	Reimb Mileage 6/6/24	06/18/2024	0	67.80
			Vendor Subtotal:		67.80
1000-35-1521-64500	LYNN BARTENHAGEN	Mileage 4/30/24 - 6/6/24	06/18/2024	0	35.70
			Vendor Subtotal:		35.70
1000-35-1521-65210	MUSCATINE POWER & WATER	May Phones - Art Center	06/18/2024	0	166.94
			Vendor Subtotal:		166.94
1000-35-1521-65240	MUSCATINE POWER & WATER	May Internet - Art Center	06/18/2024	0	82.97
			Vendor Subtotal:		82.97
1000-35-1521-69200	TCM BANK NA VISA	USPS - Postage	06/18/2024	0	81.60
			Vendor Subtotal:		81.60
1000-35-1521-69400	TCM BANK NA VISA	GMCCI - Women's Leadership Conferenc	06/18/2024	0	75.00
			Vendor Subtotal:		75.00
1000-35-1521-69900	TCM BANK NA VISA	State of Iowa - Certificate of Existence	06/18/2024	0	5.00
			Vendor Subtotal:		5.00

1000-35-1522-52820	AMAZON.COM	Fine Line Markers/Clothespins	06/18/2024	0	65.21
1000-35-1522-52820	AMAZON.COM	Sax True Flow Gloss Glaze Set, Assorted	06/18/2024	0	145.25 00027650
1000-35-1522-52820	AMAZON.COM	Paint Brushes/Glue Sticks	06/18/2024	0	71.61
1000-35-1522-52820	AMAZON.COM	Fire Clay	06/18/2024	0	29.97
1000-35-1522-52820	AMAZON.COM	Tissue Paper/Clay Slicer	06/18/2024	0	73.67
Vendor Subtotal:					385.71
1000-35-1522-52890	AMAZON.COM	Collapsible Folding Wagon, Beach Wago	06/18/2024	0	99.99 00027651
Vendor Subtotal:					99.99
1000-35-1522-61660	MUSCATINE CIVIC CHORALE	Performance at the Annual Ice Cream Soc	06/18/2024	0	100.00 00027662
Vendor Subtotal:					100.00
1000-35-1522-61660	MAX COLLINS	Cruisn' Performance at the Annual Ice Cr	06/18/2024	0	400.00 00027664
Vendor Subtotal:					400.00
1000-35-1522-61660	QUAD CITY ARTS	Kuniko Yamamoto Performance for Japa	06/18/2024	0	350.00 00027634
Vendor Subtotal:					350.00
1000-40-1151-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	22.71
Vendor Subtotal:					22.71
1000-40-1151-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	38.87
1000-40-1151-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	17.13
Vendor Subtotal:					56.00
1000-40-1151-52300	PHELPS CUSTOM IMAGE WEAR	Uniforms - W Mueller	06/18/2024	0	236.87
Vendor Subtotal:					236.87
1000-40-1151-52400	GREAT WESTERN SUPPLY CO	Item #909 - Liquid Hand soap, Spartan P	06/14/2024	0	306.88 00026972

1000-40-1151-52400	GREAT WESTERN SUPPLY CO	Item #302 - 2-ply standard roll, Bedford	06/14/2024	0	2,877.75 00026972
1000-40-1151-52400	GREAT WESTERN SUPPLY CO	Item #803 - Disinfectant Cleaner, Spartan	06/14/2024	0	698.69 00026972
1000-40-1151-52400	GREAT WESTERN SUPPLY CO	Item #816 - Liquid Deoderant, Spartan #3	06/14/2024	0	90.81 00026972
1000-40-1151-52400	GREAT WESTERN SUPPLY CO	Item #503 - Dispenser Napkin Natural Es	06/14/2024	0	46.27 00026972
1000-40-1151-52400	GREAT WESTERN SUPPLY CO	Item #112, Brown Perforated Roll Towel,	06/14/2024	0	299.80 00026972
1000-40-1151-52400	GREAT WESTERN SUPPLY CO	Item #101, Brown Singlefold Towel - Ess	06/14/2024	0	310.95 00026972
1000-40-1151-52400	GREAT WESTERN SUPPLY CO	Item #102 Brown Multifold Towel - Bedf	06/14/2024	0	2,250.00 00026972
Vendor Subtotal:					6,881.15
1000-40-1151-52400	MENARDS (MUSC)	Pine Cleaner/Laundry Detergent	06/14/2024	0	78.17
1000-40-1151-52400	MENARDS (MUSC)	Wipes/Wasp & Hornet	06/14/2024	0	95.91
1000-40-1151-52400	MENARDS (MUSC)	Mr Clean	06/14/2024	0	24.15
Vendor Subtotal:					198.23
1000-40-1151-52750	TCM BANK NA VISA	Loos - Fuel	06/18/2024	0	9.62
Vendor Subtotal:					9.62
1000-40-1151-52890	ARNOLD MOTOR SUPPLY	Hose Connector	06/14/2024	0	5.72
1000-40-1151-52890	ARNOLD MOTOR SUPPLY	Spark Plug	06/14/2024	0	3.03
Vendor Subtotal:					8.75
1000-40-1151-52890	MENARDS (MUSC)	Buggins	06/18/2024	0	67.32
1000-40-1151-52890	MENARDS (MUSC)	Chaps	06/14/2024	0	77.29
Vendor Subtotal:					144.61
1000-40-1151-52890	MUSCATINE LAWN & POWER	Fuel Filter/Grommet	06/14/2024	0	10.40
Vendor Subtotal:					10.40
1000-40-1151-52890	SMITH SALES & SERVICE	Chains	06/14/2024	0	63.00
Vendor Subtotal:					63.00
1000-40-1151-52890	AMAZON.COM	Time Clock Ribbon	06/18/2024	0	14.99

			Vendor Subtotal:		14.99
1000-40-1151-52890	THE HILLMAN GROUP INC	Keys	06/14/2024	0	63.45
1000-40-1151-52890	THE HILLMAN GROUP INC	Keys	06/14/2024	0	34.70
			Vendor Subtotal:		98.15
1000-40-1151-52890	TCM BANK NA VISA	Farm & Fleet - Trimmer	06/18/2024	0	44.98
			Vendor Subtotal:		44.98
1000-40-1151-53120	PLUMB SUPPLY COMPANY	Oval Run Cap	06/14/2024	0	5.15
			Vendor Subtotal:		5.15
1000-40-1151-53120	VAN METER INDUSTRIAL INC	Single Pole Locking Switch	06/14/2024	0	90.55
1000-40-1151-53120	VAN METER INDUSTRIAL INC	Socket	06/18/2024	0	77.80
			Vendor Subtotal:		168.35
1000-40-1151-53130	PLUMB SUPPLY COMPANY	Rubber Repair Kit	06/14/2024	0	96.22
			Vendor Subtotal:		96.22
1000-40-1151-61550	DSI Medical Services	Follow Up - Jacobs	06/18/2024	0	97.00
			Vendor Subtotal:		97.00
1000-40-1151-65310	ALLIANT ENERGY	May Gas - Library	06/14/2024	0	166.33
1000-40-1151-65310	ALLIANT ENERGY	May Gas - S Fire	06/14/2024	0	138.14
			Vendor Subtotal:		304.47
1000-40-1151-67330	RAYNOR DOOR CO INC OF THE QU.	Antenna Kit	06/14/2024	0	35.00 00027499
1000-40-1151-67330	RAYNOR DOOR CO INC OF THE QU.	Iowa Installation Labor & Equipment	06/14/2024	0	150.00 00027499
1000-40-1151-67330	RAYNOR DOOR CO INC OF THE QU.	86 LMT Coax Kit 25'	06/14/2024	0	60.00 00027499

			Vendor Subtotal:		245.00
1000-40-1151-67330	SCHUMACHER ELEVATOR COMP	Qtrly Maintenance	06/18/2024	0	2,703.75
			Vendor Subtotal:		2,703.75
1000-40-1151-67330	TCM BANK NA VISA	Falcon 4270902748 2090 Series Active H	06/18/2024	0	252.52 00027485
			Vendor Subtotal:		252.52
1000-40-1611-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	33.07
			Vendor Subtotal:		33.07
1000-40-1611-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	46.27
			Vendor Subtotal:		46.27
1000-40-1611-61420	BOLTON & MENK INC	General Engineering Service	06/18/2024	0	950.00
			Vendor Subtotal:		950.00
1000-40-1611-64400	TCM BANK NA VISA	Pizza Ranch - Utility Lunch	06/18/2024	0	16.04
1000-40-1611-64400	TCM BANK NA VISA	Pizza Ranch - Utility Lunch	06/18/2024	0	16.04
			Vendor Subtotal:		32.08
1000-40-1611-65260	US CELLULAR	Cell Phones	06/18/2024	0	136.77
			Vendor Subtotal:		136.77
1000-40-1611-65275	VERIZON WIRELESS	May 2024	06/14/2024	0	120.03
			Vendor Subtotal:		120.03
1000-40-1611-67340	IOWA DEPT OF TRANSPORTATION	Air Meter E-211 E 212	06/18/2024	0	322.00
1000-40-1611-67340	IOWA DEPT OF TRANSPORTATION	Air Meters	06/18/2024	0	50.00

			Vendor Subtotal:		372.00
1000-40-1621-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	50.78
			Vendor Subtotal:		50.78
1000-40-1621-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	157.42
1000-40-1621-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	19.68
			Vendor Subtotal:		177.10
1000-40-1621-51100	AMAZON.COM	Ink Cartridges	06/14/2024	0	35.98
			Vendor Subtotal:		35.98
1000-40-1621-52100	KELLOR & KELLOR LANDSCAPE IN	Straw	06/18/2024	0	8.00
			Vendor Subtotal:		8.00
1000-40-1621-52100	MENARDS (MUSC)	Batteries/Spreader	06/18/2024	0	79.94
			Vendor Subtotal:		79.94
1000-40-1621-52300	LOGEN CONKLIN	Shoe Reimb - L Conklin	06/14/2024	0	105.00
			Vendor Subtotal:		105.00
1000-40-1621-52300	MITCH GRAHAM	Reimb Uniforms - M Graham	06/14/2024	0	148.55
			Vendor Subtotal:		148.55
1000-40-1621-52720	CARQUEST OF MUSCATINE	Fuel for Saws	06/18/2024	0	67.60
			Vendor Subtotal:		67.60
1000-40-1621-52830	LOGAN CONTRACTORS SUPPLY IN	36" Asphalt Rake	06/14/2024	0	160.00 00027616
1000-40-1621-52830	LOGAN CONTRACTORS SUPPLY IN	36" Asphalt Lute	06/14/2024	0	160.00 00027616

1000-40-1621-52830	LOGAN CONTRACTORS SUPPLY IN Marshalltown Concrete Rake 19"	06/14/2024	0	150.00 00027616
	Vendor Subtotal:			470.00
1000-40-1621-52830	MENARDS (MUSC) Concrete Placers	06/14/2024	0	71.96
	Vendor Subtotal:			71.96
1000-40-1621-52890	MENARDS (MUSC) Paint Pen	06/14/2024	0	5.98
	Vendor Subtotal:			5.98
1000-40-1621-53130	DULTMEIER SALES PTOS4 4 in Pratt Wafer BF Valve, EPDM	06/18/2024	0	154.00 00027753
1000-40-1621-53130	DULTMEIER SALES US181-2-1 1/2x2 Black Malleable Bushir	06/18/2024	0	9.60 00027753
	Vendor Subtotal:			163.60
1000-40-1621-53140	DIAMOND VOGEL PAINTS 55 Gallon Drum White Traffic Paint	06/18/2024	0	2,369.40 00027347
	Vendor Subtotal:			2,369.40
1000-40-1621-53140	MENARDS (MUSC) Primer	06/14/2024	0	31.97
	Vendor Subtotal:			31.97
1000-40-1621-53310	RIVER STONE GROUP Hot Mix Asphalt	06/14/2024	0	1,524.39 00027502
1000-40-1621-53310	RIVER STONE GROUP UPM Cold Patch	06/14/2024	0	2,030.00 00027569
1000-40-1621-53310	RIVER STONE GROUP UPM Cold Patch	06/14/2024	0	62.35
	Vendor Subtotal:			3,616.74
1000-40-1621-53330	HAHN READY MIX INC 3yd C Mix WR15 Concrete	06/14/2024	0	579.06 00027658
	Vendor Subtotal:			579.06
1000-40-1621-62260	PS3 Enterprises Inc. Temp Sanitation	06/14/2024	0	100.00
	Vendor Subtotal:			100.00

1000-40-1621-65260	US CELLULAR	Cell Phones	06/18/2024	0	155.34
		Vendor Subtotal:			155.34
1000-40-1621-65275	VERIZON WIRELESS	May 2024	06/14/2024	0	120.03
		Vendor Subtotal:			120.03
1000-40-1621-65310	ALLIANT ENERGY	May Gas - Lower Lot	06/14/2024	0	45.50
1000-40-1621-65310	ALLIANT ENERGY	May Gas - PW	06/14/2024	0	73.40
1000-40-1621-65310	ALLIANT ENERGY	May Gas - Morgan Bldg	06/14/2024	0	37.84
1000-40-1621-65310	ALLIANT ENERGY	May Gas - PW	06/14/2024	0	58.02
1000-40-1621-65310	ALLIANT ENERGY	May Gas - PW	06/14/2024	0	28.50
		Vendor Subtotal:			243.26
1000-40-1623-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	5.94
		Vendor Subtotal:			5.94
1000-40-1623-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	29.32
		Vendor Subtotal:			29.32
1000-40-1624-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	3.13
		Vendor Subtotal:			3.13
1000-40-1624-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	16.38
		Vendor Subtotal:			16.38
1000-40-1624-65320	EASTERN IOWA LIGHT & POWER C	May Power - Hwy 61 & Univ	06/14/2024	0	123.48
1000-40-1624-65320	EASTERN IOWA LIGHT & POWER C	May Power - Hwy 61 & Mulberry	06/14/2024	0	73.63
1000-40-1624-65320	EASTERN IOWA LIGHT & POWER C	May Power - 38 & Bidwell	06/14/2024	0	47.27
1000-40-1624-65320	EASTERN IOWA LIGHT & POWER C	May Power - Bypass	06/14/2024	0	83.38
		Vendor Subtotal:			327.76

1000-40-1641-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	27.17
		Vendor Subtotal:			27.17
1000-40-1641-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	32.42
		Vendor Subtotal:			32.42
1000-40-1641-62370	GORDON FLESCH COMPANY	May Copier	06/14/2024	0	97.75
		Vendor Subtotal:			97.75
1000-40-1641-64400	TCM BANK NA VISA	Pizza Ranch - Utility Lunch	06/18/2024	0	16.04
		Vendor Subtotal:			16.04
		Subtotal for FUND: 1000			133,092.18
3981-30-3981-61340	RELIABLE NETWORK SOLUTIONS I	Monthly Fee	06/14/2024	0	49.00
		Vendor Subtotal:			49.00
3981-30-3981-62460	JUAN FOURNEAU	Children's Program 6/11/24	06/14/2024	0	200.00
		Vendor Subtotal:			200.00
3981-30-3981-62460	RAYGUN CUSTOM PRINTING	Summer Reading Program 2024 Shirts (Q	06/18/2024	0	279.00 00027576
		Vendor Subtotal:			279.00
3981-30-3983-61340	RELIABLE NETWORK SOLUTIONS I	Skycam Off Line Issue	06/18/2024	0	51.00
		Vendor Subtotal:			51.00
3981-30-3983-61340	TCM BANK NA VISA	Apple - I Cloud Storage Fee	06/18/2024	0	2.99
3981-30-3983-61340	TCM BANK NA VISA	Apple - Security Camera	06/18/2024	0	29.99
3981-30-3983-61340	TCM BANK NA VISA	Boxcast - Monthly Streaming	06/18/2024	0	219.00

3981-30-3983-61340	TCM BANK NA VISA	Boxcast - Archived Storage	06/18/2024	0	60.00
		Vendor Subtotal:			311.98
		Subtotal for FUND: 3981			890.98
3991-35-3991-63410	SWANK MOTION PICTURES	Licensing for a Screening of the Disney M	06/18/2024	0	325.00 00027320
		Vendor Subtotal:			325.00
3991-35-3991-65100	TCM BANK NA VISA	Gray TV - Advertising	06/18/2024	0	1,000.00
		Vendor Subtotal:			1,000.00
		Subtotal for FUND: 3991			1,325.00
4180-40-4180-61420	BOLTON & MENK INC	Fulliam Avenue Phase II	06/18/2024	0	3,421.50
		Vendor Subtotal:			3,421.50
4180-40-4180-73200	HEUER CONSTRUCTION	Fulliam Ave Reconstruction Phase #2 Pay	06/18/2024	0	31,846.85
		Vendor Subtotal:			31,846.85
		Subtotal for FUND: 4180			35,268.35
4195-40-4197-61420	BOLTON & MENK INC	Grandview Ave	06/18/2024	0	3,413.50
		Vendor Subtotal:			3,413.50
		Subtotal for FUND: 4195			3,413.50
4205-50-4205-73900	GENERAL CONSTRUCTORS INC OF	Final Retainage - Pay App #7	06/18/2024	0	27,748.17
		Vendor Subtotal:			27,748.17

Subtotal for FUND: 4205					27,748.17
4276-40-4276-61220	LAW OFFICES OF HOPKINS & HUBBARD	May Legal - Transfer Phase 5	06/18/2024	0	1,417.50
Vendor Subtotal:					1,417.50
4276-40-4276-61420	STANLEY CONSULTANTS INC	West Hill Phase 5	06/18/2024	0	1,300.00
4276-40-4276-61420	STANLEY CONSULTANTS INC	West Hill Phase 6	06/18/2024	0	139,950.00
Vendor Subtotal:					141,250.00
4276-40-4276-64400	TCM BANK NA VISA	Pizza Ranch - Utility Lunch	06/18/2024	0	16.04
Vendor Subtotal:					16.04
4276-40-4276-65310	ALLIANT ENERGY	May Gas - Juniper	06/18/2024	0	21.94
Vendor Subtotal:					21.94
4276-40-4276-73100	KE FLATWORK INC	Phase 6 a/b West Hill Pay App #20	06/18/2024	0	48,718.09
Vendor Subtotal:					48,718.09
Subtotal for FUND: 4276					191,423.57
4298-40-4298-61420	WATERSMITH ENGINEERING	Hawkeye Parcel Support Services	06/18/2024	0	1,139.00
Vendor Subtotal:					1,139.00
Subtotal for FUND: 4298					1,139.00
4491-00-4493-73900	CR LANDSCAPING	Sunset Trail Connector	06/18/2024	0	7,991.75
Vendor Subtotal:					7,991.75
Subtotal for FUND: 4491					7,991.75

4498-25-4498-61420	I & S GROUP, INC	Indoor Sports Complex	06/18/2024	0	22,148.25
		Vendor Subtotal:			22,148.25
4498-25-4498-65100	QUAD CITY TIMES & MUSC JOURN.	Public Hearing - Sports Dome	06/18/2024	0	12.58
		Vendor Subtotal:			12.58
		Subtotal for FUND: 4498			22,160.83
4639-40-4639-61420	LEGAT ARCHITECTS	Wash Bay	06/18/2024	0	795.00
		Vendor Subtotal:			795.00
		Subtotal for FUND: 4639			795.00
4664-40-4664-74200	VAN METER INDUSTRIAL INC	Cat 6 Wire for Fuel Island Project	06/14/2024	0	264.71 00027508
		Vendor Subtotal:			264.71
4664-40-4664-74200	IOWA DEPARTMENT OF NATURAL	3 Tags for Fuel Tags	06/18/2024	0	30.00
		Vendor Subtotal:			30.00
		Subtotal for FUND: 4664			294.71
4863-10-4863-61420	BOLTON & MENK INC	New AVGAS Fuel System	06/18/2024	0	10,648.90
		Vendor Subtotal:			10,648.90
		Subtotal for FUND: 4863			10,648.90
4900-01-4900-61220	DORSEY & WHITNEY LLP	Legal Merge Initial Dev Agreement	06/14/2024	0	2,825.00
		Vendor Subtotal:			2,825.00

Subtotal for FUND: 4900					2,825.00
4903-00-4903-61660	CORBIN DESIGN	Wayfinding Project	06/18/2024	0	1,623.75
Vendor Subtotal:					1,623.75
Subtotal for FUND: 4903					1,623.75
5211-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024	Optional Life	05/24/2024	0	3.29
5211-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00001.05.2024	Optional Life	05/10/2024	0	3.31
Vendor Subtotal:					6.60
5211-40-5211-46200	RELIANCE STANDARD LIFE INS COLife Ins June		06/17/2024	0	14.88
Vendor Subtotal:					14.88
5211-40-5211-46600	RELIANCE STANDARD LIFE INS COLTD June 24		06/17/2024	0	17.12
Vendor Subtotal:					17.12
5211-40-5211-52400	AMAZON.COM	Sanitizer Spray	06/14/2024	0	94.04
Vendor Subtotal:					94.04
5211-40-5211-61520	RIVER REHABILITATION INC	Worksteps - W Marquez	06/18/2024	0	157.00
Vendor Subtotal:					157.00
5211-40-5211-61550	DSI Medical Services	Pre-Employment - Whitley/Marquez	06/18/2024	0	75.00
5211-40-5211-61550	DSI Medical Services	Follow Up - Doyle	06/18/2024	0	49.50
Vendor Subtotal:					124.50
5211-40-5211-64120	AMY FORTENBACHER	Reimb Meals 5/31/2024	06/14/2024	0	11.42
5211-40-5211-64120	AMY FORTENBACHER	Reimb Travel 6/5/24 - 6/8/24	06/18/2024	0	90.85

		Vendor Subtotal:			102.27
5211-40-5211-64120	MAGALY HERNANDEZ	Reimb Travel 6/7/24	06/18/2024	0	118.80
		Vendor Subtotal:			118.80
5211-40-5211-64120	TONI HOLLINGSBED	Reimb Travel 6/7/24	06/18/2024	0	118.80
		Vendor Subtotal:			118.80
5211-40-5211-65100	ICAN	Advertising	06/14/2024	0	324.00
		Vendor Subtotal:			324.00
5211-40-5211-65275	VERIZON WIRELESS	Cell Phones	06/18/2024	0	54.50
		Vendor Subtotal:			54.50
5211-40-5211-65275	T-MOBILE	May 2024	06/18/2024	0	128.22
		Vendor Subtotal:			128.22
5211-40-5211-65310	ALLIANT ENERGY	May Gas - Transit	06/14/2024	0	31.46
5211-40-5211-65310	ALLIANT ENERGY	May Gas - Transit	06/14/2024	0	12.21
5211-40-5211-65310	ALLIANT ENERGY	May Gas - Transit	06/14/2024	0	24.86
		Vendor Subtotal:			68.53
5211-40-5212-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	0.63
		Vendor Subtotal:			0.63
5211-40-5212-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	3.19
		Vendor Subtotal:			3.19
		Subtotal for FUND: 5211			1,333.08

5311-00-0000-23550	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024 Life Insurance	05/24/2024	0	0.11
	Vendor Subtotal:			0.11
5311-05-5311-46200	RELIANCE STANDARD LIFE INS COLife Ins June	06/17/2024	0	6.23
	Vendor Subtotal:			6.23
5311-05-5311-46600	RELIANCE STANDARD LIFE INS COBW LTD June	06/17/2024	0	5.58
5311-05-5311-46600	RELIANCE STANDARD LIFE INS COLTD June 24	06/17/2024	0	8.09
	Vendor Subtotal:			13.67
5311-05-5311-51100	AMAZON.COM Pens	06/18/2024	0	7.46
	Vendor Subtotal:			7.46
	Subtotal for FUND: 5311			27.47
5451-25-5451-46200	RELIANCE STANDARD LIFE INS COLife Ins June	06/17/2024	0	18.13
	Vendor Subtotal:			18.13
5451-25-5451-46600	RELIANCE STANDARD LIFE INS COLTD June 24	06/17/2024	0	17.21
5451-25-5451-46600	RELIANCE STANDARD LIFE INS COBW LTD June	06/17/2024	0	15.95
	Vendor Subtotal:			33.16
5451-25-5451-52100	MENARDS (MUSC) Leveling Sand	06/18/2024	0	117.41
	Vendor Subtotal:			117.41
5451-25-5451-52720	SPRATT OIL SALES UNLEADED GAS	06/18/2024	0	1,877.26 00027731
	Vendor Subtotal:			1,877.26
5451-25-5451-52730	SPRATT OIL SALES DIESEL FUEL	06/18/2024	0	855.00 00027731

5451-25-5451-52730	SPRATT OIL SALES	DIESEL FUEL	06/18/2024	0	450.30
		Vendor Subtotal:			1,305.30
5451-25-5451-52860	SIGN PRO	Pesticide Application Disclosure Sign	06/18/2024	0	75.00
		Vendor Subtotal:			75.00
5451-25-5451-52890	ARNOLD MOTOR SUPPLY	Header Wrap	06/14/2024	0	45.00
		Vendor Subtotal:			45.00
5451-25-5451-52890	NAPA OF MUSCATINE	Muffler Sealer	06/14/2024	0	14.93
		Vendor Subtotal:			14.93
5451-25-5451-52890	TCM BANK NA VISA	Farm & Fleet - Supplies	06/18/2024	0	75.98
		Vendor Subtotal:			75.98
5451-25-5451-53220	DAVIS EQUIP CORPORATION	Belt	06/18/2024	0	115.40
		Vendor Subtotal:			115.40
5451-25-5451-53220	MENARDS (MUSC)	Hose Repair Kit/Masonry Grooving	06/14/2024	0	20.15
		Vendor Subtotal:			20.15
5451-25-5451-53220	VAN WALL GOLF	Screw	06/14/2024	0	9.12
		Vendor Subtotal:			9.12
5451-25-5451-53320	WENDLING QUARRIES INC	TOPDRESSING SAND	06/14/2024	0	450.00 00027570
5451-25-5451-53320	WENDLING QUARRIES INC	TOPDRESSING SAND	06/14/2024	0	96.40
		Vendor Subtotal:			546.40
5451-25-5451-62210	PHELPS THE UNIFORM SPECIALIST	Laundry - Golf	06/14/2024	0	90.81

			Vendor Subtotal:		90.81
5451-25-5451-63300	CULLIGAN INC	Solar Salt	06/18/2024	0	20.95
			Vendor Subtotal:		20.95
5451-25-5451-65210	MUSCATINE POWER & WATER	May Phones - Muni Shed	06/18/2024	0	27.99
			Vendor Subtotal:		27.99
5451-25-5451-65310	ALLIANT ENERGY	May Gas - Golf	06/14/2024	0	42.10
5451-25-5451-65310	ALLIANT ENERGY	May Gas - Golf	06/14/2024	0	66.83
			Vendor Subtotal:		108.93
5451-25-5451-65320	EASTERN IOWA LIGHT & POWER C	May Power - Golf	06/18/2024	0	494.30
5451-25-5451-65320	EASTERN IOWA LIGHT & POWER C	May Power - Golf	06/18/2024	0	802.48
			Vendor Subtotal:		1,296.78
5451-25-5451-67140	A-1 QUALITY TIRE & CAR CARE	Tire Repairs	06/14/2024	0	81.00
5451-25-5451-67140	A-1 QUALITY TIRE & CAR CARE	Tire Repairs	06/14/2024	0	13.50
			Vendor Subtotal:		94.50
5451-25-5451-67200	MENARDS (MUSC)	Coarse Salt	06/14/2024	0	27.96
			Vendor Subtotal:		27.96
5451-25-5452-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	16.25
			Vendor Subtotal:		16.25
5451-25-5452-46600	RELIANCE STANDARD LIFE INS CO	LD June 24	06/17/2024	0	18.67
			Vendor Subtotal:		18.67

5451-25-5452-52851	7G DISTRIBUTING LLC	Beer for Resale	06/14/2024	0	915.05
5451-25-5452-52851	7G DISTRIBUTING LLC	Beer for Resale	06/14/2024	0	233.60
5451-25-5452-52851	7G DISTRIBUTING LLC	Beer for Resale	06/18/2024	0	1,534.20
Vendor Subtotal:					2,682.85
5451-25-5452-52851	IOWA BEVERAGE	Beer for Resale	06/18/2024	0	1,165.00
Vendor Subtotal:					1,165.00
5451-25-5452-52852	COCA-COLA BOTTLING COMPANY	Soda for Resale	06/14/2024	0	540.05
5451-25-5452-52852	COCA-COLA BOTTLING COMPANY	Soda for Resale	06/18/2024	0	344.97
Vendor Subtotal:					885.02
5451-25-5452-52852	PERFORMANCE FOOD SERVICE	Food For Resale	06/14/2024	0	806.92
Vendor Subtotal:					806.92
5451-25-5452-52852	IOWA BEVERAGE	Beer for Resale	06/14/2024	0	232.25
Vendor Subtotal:					232.25
5451-25-5452-52852	TCM BANK NA VISA	Wal-Mart - Food for Resale	06/18/2024	0	24.28
5451-25-5452-52852	TCM BANK NA VISA	Wal-Mart - Food for Resale	06/18/2024	0	16.06
5451-25-5452-52852	TCM BANK NA VISA	Wal-Mart - Food for Resale	06/18/2024	0	73.45
5451-25-5452-52852	TCM BANK NA VISA	Wal-Mart - Food for Resale	06/18/2024	0	16.06
5451-25-5452-52852	TCM BANK NA VISA	Wal-Mart - Food for Resale	06/18/2024	0	46.10
5451-25-5452-52852	TCM BANK NA VISA	Wal-Mart - Food for Resale	06/18/2024	0	34.74
5451-25-5452-52852	TCM BANK NA VISA	Wal-Mart - Food for Resale	06/18/2024	0	41.34
5451-25-5452-52852	TCM BANK NA VISA	Wal-Mart - Food for Resale	06/18/2024	0	27.74
Vendor Subtotal:					279.77
5451-25-5452-52853	CALLAWAY GOLF COMPANY	Merch for Resale	06/14/2024	0	155.41
5451-25-5452-52853	CALLAWAY GOLF COMPANY	Return	06/14/2024	0	-155.41
5451-25-5452-52853	CALLAWAY GOLF COMPANY	Golf Balls	06/14/2024	0	371.52
5451-25-5452-52853	CALLAWAY GOLF COMPANY	Freight	06/14/2024	0	11.25
5451-25-5452-52853	CALLAWAY GOLF COMPANY	CALLAWAY PARADYM FAIRWAY W	06/14/2024	0	169.40 00027626

		Vendor Subtotal:			552.17
5451-25-5452-52853	TITLEIST	Resale Merch	06/14/2024	0	82.00
5451-25-5452-52853	TITLEIST	Golf Shoes	06/14/2024	0	82.00
		Vendor Subtotal:			164.00
5451-25-5452-52853	TCM BANK NA VISA	J & M Golf - Resale Merch	06/18/2024	0	85.79
5451-25-5452-52853	TCM BANK NA VISA	J & M Golf - Resale Merch	06/18/2024	0	224.64
5451-25-5452-52853	TCM BANK NA VISA	Simply Soothing - Resale Merch	06/18/2024	0	68.04
5451-25-5452-52853	TCM BANK NA VISA	Simply Soothing - Resale Merch	06/18/2024	0	68.04
5451-25-5452-52853	TCM BANK NA VISA	All Star Pro Golf - Resale Merch	06/18/2024	0	275.00
5451-25-5452-52853	TCM BANK NA VISA	All Star Pro Golf - Resale Merch	06/18/2024	0	2.43
5451-25-5452-52853	TCM BANK NA VISA	Simply Soothing - Resale Merch	06/18/2024	0	68.04
		Vendor Subtotal:			791.98
5451-25-5452-65510	MUSCATINE POWER & WATER	May Cable - Golf	06/18/2024	0	208.10
		Vendor Subtotal:			208.10
		Subtotal for FUND: 5451			13,724.14
5461-25-5461-65320	MUSCATINE POWER & WATER	April Electric - River Center	06/14/2024	0	8.43
5461-25-5461-65320	MUSCATINE POWER & WATER	April Electric - Maint Shed	06/14/2024	0	220.21
		Vendor Subtotal:			228.64
5461-25-5461-65410	MUSCATINE POWER & WATER	April Water - River Center	06/14/2024	0	8.72
5461-25-5461-65410	MUSCATINE POWER & WATER	April Water - Maint Shed	06/14/2024	0	18.48
		Vendor Subtotal:			27.20
		Subtotal for FUND: 5461			255.84
5466-25-5466-52720	SPRATT OIL SALES	GALLONS OF UNLEADED GASOLIN	06/18/2024	0	3,240.00 00027726
5466-25-5466-52720	SPRATT OIL SALES	GALLONS OF UNLEADED GASOLIN	06/18/2024	0	3.24

			Vendor Subtotal:		3,243.24
5466-25-5466-53110	MENARDS (MUSC)	Hooks	06/14/2024	0	6.23
			Vendor Subtotal:		6.23
5466-25-5466-53120	VAN METER INDUSTRIAL INC	Tape	06/14/2024	0	78.46
			Vendor Subtotal:		78.46
5466-25-5466-69900	TCM BANK NA VISA	Kelly - IA Fuel Pump Lic Renewal	06/18/2024	0	9.90
			Vendor Subtotal:		9.90
			Subtotal for FUND: 5466		3,337.83
5642-00-0000-23550	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024 Life Insurance		05/24/2024	0	0.70
			Vendor Subtotal:		0.70
5642-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00001.05.2024 Optional Life		05/10/2024	0	207.64
5642-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024 Optional Life		05/24/2024	0	207.64
			Vendor Subtotal:		415.28
5642-45-5642-35210	MUNICIPAL COLLECTIONS OF AME Agent Fee - May 2024		06/14/2024	0	121.68
			Vendor Subtotal:		121.68
5642-45-5642-46200	RELIANCE STANDARD LIFE INS COLife Ins June		06/17/2024	0	45.75
			Vendor Subtotal:		45.75
5642-45-5642-46600	RELIANCE STANDARD LIFE INS COBW LTD June		06/17/2024	0	104.11
5642-45-5642-46600	RELIANCE STANDARD LIFE INS COLTD June 24		06/17/2024	0	34.28
			Vendor Subtotal:		138.39

5642-45-5642-52300	PHELPS CUSTOM IMAGE WEAR	Uniforms - D Popp	06/18/2024	0	196.55
		Vendor Subtotal:			196.55
5642-45-5642-61520	UNITY HEALTHCARE - TRINITY MU	Upaw - H Kemper	06/18/2024	0	80.00
		Vendor Subtotal:			80.00
5642-45-5642-62245	REPUBLIC SERVICES #400	Recycling May	06/18/2024	0	33,708.01
		Vendor Subtotal:			33,708.01
5642-45-5642-65260	US CELLULAR	May Cell Phones	06/18/2024	0	67.31
		Vendor Subtotal:			67.31
5642-45-5642-65310	ALLIANT ENERGY	May Gas - Transfer Garage	06/18/2024	0	44.90
		Vendor Subtotal:			44.90
5642-45-5642-65410	MUSCATINE POWER & WATER	May Water - Recycle	06/18/2024	0	39.08
		Vendor Subtotal:			39.08
5642-45-5642-65420	MUSCATINE POWER & WATER	May Sewer - Recycle	06/18/2024	0	14.07
5642-45-5642-65420	MUSCATINE POWER & WATER	May Sewer - Recycle	06/18/2024	0	28.93
		Vendor Subtotal:			43.00
5642-45-5643-52300	PHELPS CUSTOM IMAGE WEAR	Uniforms - J Fry	06/18/2024	0	5.78
		Vendor Subtotal:			5.78
5642-45-5643-62260	PS3 Enterprises Inc.	Temp Sanitation	06/18/2024	0	100.00
		Vendor Subtotal:			100.00

Subtotal for FUND: 5642				35,006.43
5652-00-0000-23550	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024 Life Insurance	05/24/2024	0	0.10
Vendor Subtotal:				0.10
5652-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024 Optional Life	05/24/2024	0	41.12
5652-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00001.05.2024 Optional Life	05/10/2024	0	41.12
Vendor Subtotal:				82.24
5652-45-5652-46200	RELIANCE STANDARD LIFE INS COLife Ins June	06/17/2024	0	9.72
Vendor Subtotal:				9.72
5652-45-5652-46600	RELIANCE STANDARD LIFE INS COLTD June 24	06/17/2024	0	11.17
Vendor Subtotal:				11.17
5652-45-5652-53340	HARSCO METALS AMERICAS Slag for Landfill	06/18/2024	0	300.00 00027551
5652-45-5652-53340	HARSCO METALS AMERICAS Slag for Landfill	06/18/2024	0	6.00
Vendor Subtotal:				306.00
5652-45-5652-61220	LAW OFFICES OF HOPKINS & HUBBARD May Legal - Landfill	06/18/2024	0	607.50
Vendor Subtotal:				607.50
5652-45-5652-61420	SCS ENGINEERS FY 23/24 On Call Support	06/18/2024	0	2,175.00
5652-45-5652-61420	SCS ENGINEERS FY24 SCADA System Managment	06/18/2024	0	416.66
5652-45-5652-61420	SCS ENGINEERS Groundwater Corrective Action Requirem	06/18/2024	0	1,182.50
Vendor Subtotal:				3,774.16
5652-45-5652-62520	JON BRAUNS Slag Hauled to Landfill	06/18/2024	0	1,020.00
Vendor Subtotal:				1,020.00

5652-45-5652-62530	RITTMER INC	May Landfill	06/14/2024	0	40,150.00
		Vendor Subtotal:			40,150.00
5652-45-5652-63300	PS3 Enterprises Inc.	Temp Sanitation	06/18/2024	0	100.00
		Vendor Subtotal:			100.00
5652-45-5652-65320	EASTERN IOWA LIGHT & POWER C	May Power - Ward	06/18/2024	0	103.19
5652-45-5652-65320	EASTERN IOWA LIGHT & POWER C	May Power - Landfill	06/18/2024	0	623.21
		Vendor Subtotal:			726.40
5652-45-5652-69900	IA DEPT OF NATURAL RESOURCES	State Surcharge Jan - Mar 2024	06/18/2024	0	19,345.47
		Vendor Subtotal:			19,345.47
		Subtotal for FUND: 5652			66,132.76
5658-45-5658-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	19.07
		Vendor Subtotal:			19.07
5658-45-5658-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	16.28
5658-45-5658-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	39.31
		Vendor Subtotal:			55.59
5658-45-5658-51100	AMAZON.COM	Deskop Calculator	06/18/2024	0	6.59
		Vendor Subtotal:			6.59
5658-45-5658-52750	S.J. SMITH CO.	Propane	06/18/2024	0	87.80
		Vendor Subtotal:			87.80
5658-45-5658-52830	ARNOLD MOTOR SUPPLY	Socket	06/18/2024	0	13.99

			Vendor Subtotal:		13.99
5658-45-5658-52890	ARNOLD MOTOR SUPPLY	Fittings	06/18/2024	0	18.44
			Vendor Subtotal:		18.44
5658-45-5658-52890	MENARDS (MUSC)	Quick Snap	06/18/2024	0	15.98
			Vendor Subtotal:		15.98
5658-45-5658-52890	AMAZON.COM	Self Priming Pump	06/18/2024	0	24.00
			Vendor Subtotal:		24.00
5658-45-5658-62210	PHELPS THE UNIFORM SPECIALIST	Laundry - Transfer	06/18/2024	0	12.19
			Vendor Subtotal:		12.19
5658-45-5658-62410	TEAM STAFFING SOLUTIONS INC	Temp Employee Week Ending 5/12/24	06/18/2024	0	182.70
5658-45-5658-62410	TEAM STAFFING SOLUTIONS INC	Temp Employee Week Ending 5/26/24	06/18/2024	0	182.70
5658-45-5658-62410	TEAM STAFFING SOLUTIONS INC	Temp Employee Week Ending 6/2/24	06/18/2024	0	182.70
5658-45-5658-62410	TEAM STAFFING SOLUTIONS INC	Temp Employee Week Ending 6/9/24	06/18/2024	0	182.70
			Vendor Subtotal:		730.80
5658-45-5658-65210	MUSCATINE POWER & WATER	May Phones - Transfer	06/18/2024	0	128.77
			Vendor Subtotal:		128.77
5658-45-5658-65220	MUSCATINE POWER & WATER	May LD - Transfer	06/18/2024	0	0.09
			Vendor Subtotal:		0.09
5658-45-5658-65310	ALLIANT ENERGY	May Gas - Transfer	06/18/2024	0	122.48
			Vendor Subtotal:		122.48

5658-45-5658-65320	MUSCATINE POWER & WATER	May Power - Transfer	06/18/2024	0	2,447.09
		Vendor Subtotal:			2,447.09
5658-45-5658-65410	MUSCATINE POWER & WATER	May Water - Transfer	06/18/2024	0	100.65
		Vendor Subtotal:			100.65
5658-45-5658-65420	MUSCATINE POWER & WATER	May Sewer - Transfer	06/18/2024	0	14.07
5658-45-5658-65420	MUSCATINE POWER & WATER	May Sewer - Transfer	06/18/2024	0	233.05
		Vendor Subtotal:			247.12
5658-45-5658-67200	ANCHOR ELECTRIC LLC	Material and Truck to Replace LED Light	06/18/2024	0	917.00 00027728
		Vendor Subtotal:			917.00
		Subtotal for FUND: 5658			4,947.65
5660-00-0000-23550	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024 Life Insurance		05/24/2024	0	1.20
		Vendor Subtotal:			1.20
5660-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024 Optional Life		05/24/2024	0	201.00
5660-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00001.05.2024 Optional Life		05/10/2024	0	201.00
		Vendor Subtotal:			402.00
5660-50-5661-46200	RELIANCE STANDARD LIFE INS COLife Ins June		06/17/2024	0	30.26
		Vendor Subtotal:			30.26
5660-50-5661-46600	RELIANCE STANDARD LIFE INS COLTD June 24		06/17/2024	0	39.01
		Vendor Subtotal:			39.01
5660-50-5661-51100	AMAZON.COM	Office Supplies	06/18/2024	0	91.81 00027719

			Vendor Subtotal:		91.81
5660-50-5661-64200	TCM BANK NA VISA	WEF - Registration Koch	06/18/2024	0	270.00
			Vendor Subtotal:		270.00
5660-50-5661-69400	TCM BANK NA VISA	Membership	06/18/2024	0	290.00 00027420
			Vendor Subtotal:		290.00
5660-50-5661-69900	TCM BANK NA VISA	IA DNR - Construction Permit	06/18/2024	0	104.04
			Vendor Subtotal:		104.04
5660-50-5662-35230	MUNICIPAL COLLECTIONS OF AME	Agent Fee - May 2024	06/14/2024	0	323.88
			Vendor Subtotal:		323.88
5660-50-5662-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	48.69
			Vendor Subtotal:		48.69
5660-50-5662-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	93.28
5660-50-5662-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	34.43
			Vendor Subtotal:		127.71
5660-50-5662-52300	DAVID BOYSEN	Reimb Uniform - D Boysen	06/14/2024	0	50.00
			Vendor Subtotal:		50.00
5660-50-5662-52720	TCM BANK NA VISA	Casey's - Fuel	06/18/2024	0	103.35
			Vendor Subtotal:		103.35
5660-50-5662-53120	VAN METER INDUSTRIAL INC	Lugs	06/14/2024	0	15.56

			Vendor Subtotal:		15.56
5660-50-5662-53130	GRAINGER DEPT 802675066	Pipe	06/14/2024	0	40.78
			Vendor Subtotal:		40.78
5660-50-5662-53130	MENARDS (MUSC)	Adapter/Elbow/Ball Valve	06/14/2024	0	72.56
5660-50-5662-53130	MENARDS (MUSC)	Reducer	06/14/2024	0	4.19
			Vendor Subtotal:		76.75
5660-50-5662-53130	AMAZON.COM	Return	06/14/2024	0	-51.96
			Vendor Subtotal:		-51.96
5660-50-5662-53220	MOTION INDUSTRIES INC	E4 Element for Pumps in DCB	06/14/2024	0	318.46 00027633
5660-50-5662-53220	MOTION INDUSTRIES INC	E4 Element for Pumps in DCB	06/14/2024	0	9.95
			Vendor Subtotal:		328.41
5660-50-5662-53220	REPUBLIC	Wire for Digester Building	06/14/2024	0	3,889.76 00027660
			Vendor Subtotal:		3,889.76
5660-50-5662-53220	AMAZON.COM	Stencil	06/14/2024	0	35.96
			Vendor Subtotal:		35.96
5660-50-5662-62250	LAJEK PEST CONTROL SOLUTIONS	Pest Control	06/14/2024	0	45.00
			Vendor Subtotal:		45.00
5660-50-5662-62370	GORDON FLESCH COMPANY	May Copier	06/14/2024	0	20.91
			Vendor Subtotal:		20.91
5660-50-5662-62530	SJE RHOMBUS	Service Flex 4th Quarter Billing	06/14/2024	0	5,450.62 00027641

		Vendor Subtotal:			5,450.62
5660-50-5662-65210	MUSCATINE POWER & WATER	May Phones - WRRF Plant	06/14/2024	0	20.99
		Vendor Subtotal:			20.99
5660-50-5662-65210	CLEARFLY	May Phones	06/14/2024	0	192.17
		Vendor Subtotal:			192.17
5660-50-5662-65260	VERIZON WIRELESS	May 2024	06/14/2024	0	184.69
		Vendor Subtotal:			184.69
5660-50-5662-65320	MUSCATINE POWER & WATER	May Electric - W Bank	06/14/2024	0	12,669.14
5660-50-5662-65320	MUSCATINE POWER & WATER	May Electric - E Bank	06/14/2024	0	12,091.69
		Vendor Subtotal:			24,760.83
5660-50-5662-65410	MUSCATINE POWER & WATER	May Water - WRRF Plant	06/14/2024	0	237.90
		Vendor Subtotal:			237.90
5660-50-5662-65510	MUSCATINE POWER & WATER	May Internet - WRRF Plant	06/14/2024	0	62.97
		Vendor Subtotal:			62.97
5660-50-5662-67130	RIVO INC	Emergency Water Line Repair for DAF 2	06/18/2024	0	880.02 00027671
		Vendor Subtotal:			880.02
5660-50-5662-67140	A-1 QUALITY TIRE & CAR CARE	Tire Repair	06/14/2024	0	35.95
		Vendor Subtotal:			35.95
5660-50-5662-67140	TCM BANK NA VISA	325/70r18 Galazy Multi Tough Tire for L	06/18/2024	0	669.15 00027568

			Vendor Subtotal:		669.15
5660-50-5663-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	17.26
			Vendor Subtotal:		17.26
5660-50-5663-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	16.31
5660-50-5663-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	16.24
			Vendor Subtotal:		32.55
5660-50-5663-52830	AMAZON.COM	Screw Extractor/Drill Bit Set	06/14/2024	0	39.55
			Vendor Subtotal:		39.55
5660-50-5663-53120	TCM BANK NA	VISA Soft Start for Bond Lift Station	06/18/2024	0	326.01 00027424
			Vendor Subtotal:		326.01
5660-50-5663-53220	FASTENAL COMPANY	Hardware	06/14/2024	0	85.00
			Vendor Subtotal:		85.00
5660-50-5663-53220	GRAINGER DEPT 802675066	Straps	06/14/2024	0	92.60
			Vendor Subtotal:		92.60
5660-50-5663-53220	PLETCHER ENTERPRISES INC	Flat Steel	06/14/2024	0	59.52
			Vendor Subtotal:		59.52
5660-50-5663-62150	ZACK STUMBO	Lift Station Mowing	06/14/2024	0	833.33 00027642
			Vendor Subtotal:		833.33
5660-50-5663-65260	VERIZON WIRELESS	May 2024	06/14/2024	0	184.69

Vendor Subtotal:					184.69
5660-50-5663-65310	ALLIANT ENERGY	May Gas - Arbor	06/14/2024	0	42.85
Vendor Subtotal:					42.85
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Sampson	06/14/2024	0	87.68
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Papoose	06/14/2024	0	3,413.36
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Isett	06/14/2024	0	2,237.84
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Tipton	06/14/2024	0	213.52
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Mad Creek	06/14/2024	0	1,583.73
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Stewart Rd	06/14/2024	0	415.95
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Arbor	06/14/2024	0	57.06
5660-50-5663-65320	MUSCATINE POWER & WATER	May Power - 57th	06/14/2024	0	102.61
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Progress	06/14/2024	0	279.01
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Love's	06/14/2024	0	293.61
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Spinning Wheel Ct	06/14/2024	0	36.48
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Houser	06/14/2024	0	95.47
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Slough	06/14/2024	0	108.80
5660-50-5663-65320	MUSCATINE POWER & WATER	May Electric - Sunset	06/14/2024	0	198.28
Vendor Subtotal:					9,123.40
5660-50-5663-65410	MUSCATINE POWER & WATER	May Water - Sampson	06/14/2024	0	21.28
5660-50-5663-65410	MUSCATINE POWER & WATER	May Water - Papoose	06/14/2024	0	95.59
5660-50-5663-65410	MUSCATINE POWER & WATER	May Water - Isett	06/14/2024	0	132.46
5660-50-5663-65410	MUSCATINE POWER & WATER	May Water - Tipton	06/14/2024	0	22.12
5660-50-5663-65410	MUSCATINE POWER & WATER	May Water- Mad Creek	06/14/2024	0	95.50
5660-50-5663-65410	MUSCATINE POWER & WATER	May Water - Stewart Rd	06/14/2024	0	26.37
5660-50-5663-65410	MUSCATINE POWER & WATER	May Water - Arbor	06/14/2024	0	25.52
5660-50-5663-65410	MUSCATINE POWER & WATER	May Water - 57th	06/14/2024	0	21.28
5660-50-5663-65410	MUSCATINE POWER & WATER	May Water - Progress	06/14/2024	0	25.52
5660-50-5663-65410	MUSCATINE POWER & WATER	May Water - Love's	06/14/2024	0	34.03
5660-50-5663-65410	MUSCATINE POWER & WATER	May Water - Houser	06/14/2024	0	22.12
Vendor Subtotal:					521.79
5660-50-5665-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	25.89
Vendor Subtotal:					25.89

5660-50-5665-46600	RELIANCE STANDARD LIFE INS COBW LTD June		06/17/2024	0	31.20
5660-50-5665-46600	RELIANCE STANDARD LIFE INS COLTD June 24		06/17/2024	0	22.56
		Vendor Subtotal:			53.76
5660-50-5665-51300	AMAZON.COM	Toner	06/18/2024	0	102.80 00027719
		Vendor Subtotal:			102.80
5660-50-5665-52210	ACCUSTANDARD INC.	Lab Supplies	06/14/2024	0	306.00 00027625
5660-50-5665-52210	ACCUSTANDARD INC.	Shipping	06/14/2024	0	31.88
		Vendor Subtotal:			337.88
5660-50-5665-52210	FISHER SCIENTIFIC	XL Gloves	06/14/2024	0	375.83 00027613
		Vendor Subtotal:			375.83
5660-50-5665-52210	HACH COMPANY	ezCOD Recycling Service	06/18/2024	0	423.00 00027628
5660-50-5665-52210	HACH COMPANY	Shipping	06/18/2024	0	16.00
		Vendor Subtotal:			439.00
5660-50-5665-52210	MIDLAND SCIENTIFIC INC	Acetone	06/14/2024	0	90.53 00027612
5660-50-5665-52210	MIDLAND SCIENTIFIC INC	Evaporating Dishes	06/14/2024	0	212.76 00027612
5660-50-5665-52210	MIDLAND SCIENTIFIC INC	Cyanide	06/18/2024	0	30.82
		Vendor Subtotal:			334.11
5660-50-5665-52210	AQUA SOLUTIONS, INC	Resin Refill for 2635DI Module	06/14/2024	0	380.00 00027535
5660-50-5665-52210	AQUA SOLUTIONS, INC	Low TOC Rodi Purification Kit	06/14/2024	0	605.00 00027535
5660-50-5665-52210	AQUA SOLUTIONS, INC	Resin Refill for 2635DI Module	06/14/2024	0	185.00
5660-50-5665-52210	AQUA SOLUTIONS, INC	Shipping	06/14/2024	0	71.51
		Vendor Subtotal:			1,241.51
5660-50-5665-52210	TCM BANK NA VISA	Phenova - Supplies	06/18/2024	0	201.20

			Vendor Subtotal:		201.20
5660-50-5666-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	9.39
			Vendor Subtotal:		9.39
5660-50-5666-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	51.63
			Vendor Subtotal:		51.63
5660-50-5666-52830	AMAZON.COM	Anemometer	06/18/2024	0	29.99
			Vendor Subtotal:		29.99
5660-50-5666-53210	MENARDS (MUSC)	Charger/Starter	06/14/2024	0	94.99
			Vendor Subtotal:		94.99
5660-50-5666-53220	AMAZON.COM	Fuel Tank Steps/Gloves	06/14/2024	0	93.59
			Vendor Subtotal:		93.59
5660-50-5666-65320	EASTERN IOWA LIGHT & POWER C	May Power - Lagoon	06/14/2024	0	291.80
			Vendor Subtotal:		291.80
5660-50-5668-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	6.26
			Vendor Subtotal:		6.26
5660-50-5668-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	32.09
			Vendor Subtotal:		32.09
5660-50-5668-52750	BLUE FLAME PROPANE LLC	Propane	06/14/2024	0	259.50
			Vendor Subtotal:		259.50

5660-50-5668-52830	AMAZON.COM	Wrench Set	06/14/2024	0	48.99
		Vendor Subtotal:			48.99
5660-50-5668-52830	TCM BANK NA VISA	Compact Impact Wrench	06/18/2024	0	158.26 00027402
		Vendor Subtotal:			158.26
5660-50-5668-52890	MENARDS (MUSC)	Heavy Duty Hose Cart & 6' Studded Post	06/18/2024	0	179.83 00027733
		Vendor Subtotal:			179.83
5660-50-5668-52890	TCM BANK NA VISA	Farm & Fleet - Impact Driver	06/18/2024	0	99.00
		Vendor Subtotal:			99.00
5660-50-5668-53220	ARNOLD MOTOR SUPPLY	Radiator Genie/Wire Brush Set/Coil Clea	06/14/2024	0	68.04
5660-50-5668-53220	ARNOLD MOTOR SUPPLY	Freon/Light Kit	06/14/2024	0	93.17
		Vendor Subtotal:			161.21
5660-50-5668-53220	MENARDS (MUSC)	Adapters	06/14/2024	0	92.99
5660-50-5668-53220	MENARDS (MUSC)	Return	06/14/2024	0	-16.09
		Vendor Subtotal:			76.90
5660-50-5668-53220	TCM BANK NA VISA	Farm & Fleet - Weed Killer	06/18/2024	0	91.16
		Vendor Subtotal:			91.16
		Subtotal for FUND: 5660			54,933.53
5664-00-0000-23550	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024 Life Insurance		05/24/2024	0	0.10
		Vendor Subtotal:			0.10
5664-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024 Optional Life		05/24/2024	0	3.31

5664-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00001.05.2024 Optional Life		05/10/2024	0	3.31
	Vendor Subtotal:				6.62
5664-40-5664-46200	RELIANCE STANDARD LIFE INS COLife Ins June		06/17/2024	0	31.51
	Vendor Subtotal:				31.51
5664-40-5664-46600	RELIANCE STANDARD LIFE INS COBW LTD June		06/17/2024	0	67.41
5664-40-5664-46600	RELIANCE STANDARD LIFE INS COLTD June 24		06/17/2024	0	23.33
	Vendor Subtotal:				90.74
5664-40-5664-52300	CHIP CALCOTT	Reimb Shoes - C Calcott	06/18/2024	0	150.00
	Vendor Subtotal:				150.00
5664-40-5664-52830	MENARDS (MUSC)	Drill Bits	06/14/2024	0	8.09
	Vendor Subtotal:				8.09
5664-40-5664-64400	TCM BANK NA VISA	Pizza Ranch - Utility Lunch	06/18/2024	0	16.04
	Vendor Subtotal:				16.04
5664-40-5664-65260	US CELLULAR	Cell Phones	06/18/2024	0	52.17
	Vendor Subtotal:				52.17
5664-40-5664-65275	VERIZON WIRELESS	May 2024	06/14/2024	0	40.01
	Vendor Subtotal:				40.01
5664-40-5664-67400	MUSCATINE BRIDGE CO INC	Emergency Repair Parham	06/18/2024	0	2,605.00
5664-40-5664-67400	MUSCATINE BRIDGE CO INC	Emergency Repair Geneva	06/18/2024	0	3,830.00
	Vendor Subtotal:				6,435.00

5664-50-5667-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	7.31
	Vendor Subtotal:				7.31
5664-50-5667-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	10.01
	Vendor Subtotal:				10.01
	Subtotal for FUND: 5664				6,847.60
5711-10-5711-52710	CARVER AERO INC	Fuel for Mower	06/18/2024	0	37.79
	Vendor Subtotal:				37.79
5711-10-5711-52720	CARVER AERO INC	Mower Fuel	06/14/2024	0	36.87
5711-10-5711-52720	CARVER AERO INC	Mower Fuel	06/14/2024	0	37.39
5711-10-5711-52720	CARVER AERO INC	Mower Fuel	06/14/2024	0	75.19
	Vendor Subtotal:				149.45
5711-10-5711-65310	ALLIANT ENERGY	May Gas - Airport	06/14/2024	0	50.72
	Vendor Subtotal:				50.72
5711-10-5711-65320	MUSCATINE POWER & WATER	May Electric - Airport Comm	06/18/2024	0	54.51
5711-10-5711-65320	MUSCATINE POWER & WATER	May Electric - Airport Lights	06/18/2024	0	37.23
5711-10-5711-65320	MUSCATINE POWER & WATER	May Electric - Airport Comm	06/18/2024	0	63.25
5711-10-5711-65320	MUSCATINE POWER & WATER	May Electric - Runway	06/18/2024	0	43.10
5711-10-5711-65320	MUSCATINE POWER & WATER	May Electric - Airport Gate	06/18/2024	0	41.50
	Vendor Subtotal:				239.59
	Subtotal for FUND: 5711				477.55
5811-00-0000-11550	MUNICIPAL COLLECTIONS OF AME	Agent Fee - May 2024	06/14/2024	0	694.54
	Vendor Subtotal:				694.54

5811-00-0000-23550	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024 Life Insurance		05/24/2024	0	0.40
	Vendor Subtotal:				0.40
5811-20-5811-35160	LAMONT, HANLEY & ASSOCIATES Reimb Overpayment Ambulance DOS 1/		06/18/2024	0	91.04
5811-20-5811-35160	LAMONT, HANLEY & ASSOCIATES Reimb Overpayment Ambulance DOS 6/		06/18/2024	0	1,165.65
	Vendor Subtotal:				1,256.69
5811-20-5811-35160	JOHN FIEDLER	Reimb Overpayment Run 22-046858 DO	06/18/2024	0	359.55
5811-20-5811-35160	JOHN FIEDLER	Reimb Overpayment Run 22-046858 DO	06/18/2024	0	244.45
5811-20-5811-35160	JOHN FIEDLER	Reimb Overpayment Run 22-046858 DO	06/18/2024	0	240.41
	Vendor Subtotal:				844.41
5811-20-5811-35160	LORETTO ARMSTRONG	Refund Overpayment Run # 23-006612 D	06/18/2024	0	100.00
	Vendor Subtotal:				100.00
5811-20-5811-35160	DAVID COLLINS	Reimb Overpayment Run 23-006904 DO	06/18/2024	0	197.70
	Vendor Subtotal:				197.70
5811-20-5811-35160	ESTATE OF MICHAEL TOWNSLEY	Refund Overpayment Run# 23-019888 D	06/18/2024	0	25.00
	Vendor Subtotal:				25.00
5811-20-5811-35160	JIM LESNET	Reimb Overpayment Run #23-024441 DC	06/18/2024	0	100.00
	Vendor Subtotal:				100.00
5811-20-5811-35160	JOHN YEATER	Reimb Overpayment Run #23-030431 DC	06/18/2024	0	290.00
	Vendor Subtotal:				290.00
5811-20-5811-35160	RICKY ANDERS	Reimb Overpayment Run #23-041400 DC	06/18/2024	0	1,415.00
	Vendor Subtotal:				1,415.00

5811-20-5811-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	17.74
	Vendor Subtotal:				17.74
5811-20-5811-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	23.42
	Vendor Subtotal:				23.42
5811-20-5811-52840	BOUND TREE MEDICAL LLC	#298507SA SharpSafety Safety In-Room	06/14/2024	0	63.60 00027600
5811-20-5811-52840	BOUND TREE MEDICAL LLC	#US220L UltraSense Exam Gloves Blue	06/14/2024	0	94.90 00027600
5811-20-5811-52840	BOUND TREE MEDICAL LLC	#1071-10202 Curaplex Emesis Bag High	06/14/2024	0	54.90 00027600
5811-20-5811-52840	BOUND TREE MEDICAL LLC	#2114-44434 King LTS-D Supraglottic A	06/14/2024	0	157.20 00027600
5811-20-5811-52840	BOUND TREE MEDICAL LLC	#595410 Hi-Flow Suction Canister with .	06/14/2024	0	110.90 00027600
5811-20-5811-52840	BOUND TREE MEDICAL LLC	#12-001 First Aid Only Pac-Kit Triple A	06/14/2024	0	9.27 00027600
5811-20-5811-52840	BOUND TREE MEDICAL LLC	#1880-23315 Combat Application Tourn	06/14/2024	0	277.90 00027621
5811-20-5811-52840	BOUND TREE MEDICAL LLC	#560103 EVAC-U-SPLINT Vacuum Ext	06/14/2024	0	203.99 00027621
5811-20-5811-52840	BOUND TREE MEDICAL LLC	#1714-31081 Curaplex IV Extension Set	06/14/2024	0	94.04 00027621
5811-20-5811-52840	BOUND TREE MEDICAL LLC	#J2704 Israeli Emergency Bandage Gree	06/14/2024	0	133.90 00027621
5811-20-5811-52840	BOUND TREE MEDICAL LLC	#595410 Hi-Flow Suction Canister with .	06/14/2024	0	55.45 00027621
	Vendor Subtotal:				1,256.05
5811-20-5811-52840	WESTER DRUG	May Oxygen Tanks	06/14/2024	0	60.00
	Vendor Subtotal:				60.00
5811-20-5811-61140	PCC INC	April Ambulance Billing	06/14/2024	0	9,785.97
	Vendor Subtotal:				9,785.97
5811-20-5811-61220	LAW OFFICES OF HOPKINS & HUBB	May Legal - Paramedic Fees	06/18/2024	0	1,002.50
	Vendor Subtotal:				1,002.50
5811-20-5811-64110	TCM BANK NA VISA	Orleans Hotel & Casino - Ronzheimer	06/18/2024	0	177.39
5811-20-5811-64110	TCM BANK NA VISA	Orleans Hotel & Casino - Ronzheimer	06/18/2024	0	10.00
	Vendor Subtotal:				187.39

5811-20-5811-64400	TCM BANK NA VISA	Shell - Transfer Meal 24-020754	06/18/2024	0	17.09
5811-20-5811-64400	TCM BANK NA VISA	Shell - Transfer Meal 24-020754	06/18/2024	0	21.19
5811-20-5811-64400	TCM BANK NA VISA	Wendy's - Transfer Meal 24-021160	06/18/2024	0	10.96
5811-20-5811-64400	TCM BANK NA VISA	Wendy's - Transfer Meal 24-021160	06/18/2024	0	5.78
5811-20-5811-64400	TCM BANK NA VISA	McDonalds - Transfer Meal 24-018620	06/18/2024	0	19.84
5811-20-5811-64400	TCM BANK NA VISA	Portillos - Transfer Meal 24-019374	06/18/2024	0	44.26
Vendor Subtotal:					119.12
5811-20-5811-64600	TCM BANK NA VISA	U of Iowa - EMS Program Application Fee	06/18/2024	0	50.00
Vendor Subtotal:					50.00
5811-20-5811-66100	TCM BANK NA VISA	The Event Helper - General Liability Policy	06/18/2024	0	133.00
Vendor Subtotal:					133.00
5811-20-5811-67320	TCM BANK NA VISA	Station Automation - Monthly Lic Renew	06/18/2024	0	322.62
Vendor Subtotal:					322.62
5811-20-5811-69400	TCM BANK NA VISA	National Registry EMT - Application Fee	06/18/2024	0	160.00
5811-20-5811-69400	TCM BANK NA VISA	IDPH Regulatory - Paramedic Test Registration	06/18/2024	0	80.00
5811-20-5811-69400	TCM BANK NA VISA	National Registry EMT - Paramedic Application	06/18/2024	0	160.00
Vendor Subtotal:					400.00
Subtotal for FUND: 5811					18,281.55
7625-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00002.05.2024	Optional Life	05/24/2024	0	47.00
7625-00-0000-23630	RELIANCE STANDARD LIFE INS COPR Batch 00001.05.2024	Optional Life	05/10/2024	0	47.00
Vendor Subtotal:					94.00
7625-40-7625-46200	RELIANCE STANDARD LIFE INS COLife	Ins June	06/17/2024	0	23.77
Vendor Subtotal:					23.77
7625-40-7625-46600	RELIANCE STANDARD LIFE INS COBW LTD	June	06/17/2024	0	50.61

7625-40-7625-46600	RELIANCE STANDARD LIFE INS COLTD June 24		06/17/2024	0	16.56
		Vendor Subtotal:			67.17
7625-40-7625-52300	ERIC HUTMACHER	Reimb Shoes - E Hutmacher	06/18/2024	0	150.00
		Vendor Subtotal:			150.00
7625-40-7625-53210	ARNOLD MOTOR SUPPLY	Filter/Swinger	06/14/2024	0	34.02
		Vendor Subtotal:			34.02
7625-40-7625-53210	CARQUEST OF MUSCATINE	Filters	06/18/2024	0	49.89
7625-40-7625-53210	CARQUEST OF MUSCATINE	Wipers/Filters	06/14/2024	0	37.53
7625-40-7625-53210	CARQUEST OF MUSCATINE	Lubricant/Filters	06/14/2024	0	78.02
		Vendor Subtotal:			165.44
7625-40-7625-53220	ARNOLD MOTOR SUPPLY	Air Filters for #418	06/18/2024	0	148.40 00027618
7625-40-7625-53220	ARNOLD MOTOR SUPPLY	Air Filter	06/18/2024	0	28.61
7625-40-7625-53220	ARNOLD MOTOR SUPPLY	Light	06/18/2024	0	14.46
7625-40-7625-53220	ARNOLD MOTOR SUPPLY	Air Filter	06/18/2024	0	15.40
		Vendor Subtotal:			206.87
7625-40-7625-53220	GRAINGER DEPT 802675066	Valve for Shop Compressor	06/14/2024	0	265.33 00027679
		Vendor Subtotal:			265.33
7625-40-7625-53220	HENDERSON PRODUCTS INC.	Lid	06/18/2024	0	86.90
		Vendor Subtotal:			86.90
7625-40-7625-53220	MENARDS (MUSC)	Ball Valve	06/18/2024	0	13.99
		Vendor Subtotal:			13.99
7625-40-7625-53220	NAPA OF MUSCATINE	Air Compressor Manifold Sealing	06/14/2024	0	8.56
7625-40-7625-53220	NAPA OF MUSCATINE	Air Compressor Manifold Sealing	06/14/2024	0	7.96

7625-40-7625-53220	NAPA OF MUSCATINE	Deposit	06/14/2024	0	-47.08
7625-40-7625-53220	NAPA OF MUSCATINE	Alternator for 255	06/14/2024	0	192.58 00027675
7625-40-7625-53220	NAPA OF MUSCATINE	Air Filter	06/14/2024	0	24.64
		Vendor Subtotal:			186.66
7625-40-7625-53220	GTG PETERBILT - DAVENPORT	AC Parts for 439	06/14/2024	0	443.00 00027636
7625-40-7625-53220	GTG PETERBILT - DAVENPORT	AC Parts for 439	06/14/2024	0	0.26
		Vendor Subtotal:			443.26
7625-40-7625-53220	REEVES BATTERY SALES	Batteries for 127	06/14/2024	0	230.00 00027683
7625-40-7625-53220	REEVES BATTERY SALES	New Battery for Old Fire Truck -	06/18/2024	0	120.00 00027735
		Vendor Subtotal:			350.00
7625-40-7625-53220	THOMAS BUS SALES OF IOWA INC	Battery Door Latch	06/18/2024	0	138.63
		Vendor Subtotal:			138.63
7625-40-7625-53220	TITAN MACHINERY INC	Window for 149	06/14/2024	0	585.00 00027549
7625-40-7625-53220	TITAN MACHINERY INC	Retainer/Fastener	06/14/2024	0	28.80
		Vendor Subtotal:			613.80
7625-40-7625-53220	TRUCK COUNTRY OF IOWA	Park Brake Valve for 117	06/14/2024	0	209.20 00027666
		Vendor Subtotal:			209.20
7625-40-7625-53220	TRUCKS UNLIMITED INC	Low Pressure Switch	06/14/2024	0	31.66
		Vendor Subtotal:			31.66
7625-40-7625-53220	CARQUEST OF MUSCATINE	Brake Pads for 909	06/18/2024	0	39.52 00027738
7625-40-7625-53220	CARQUEST OF MUSCATINE	Rotars for 909	06/18/2024	0	247.66 00027738
		Vendor Subtotal:			287.18
7625-40-7625-53220	EMAG MUSCATINE FD LLC	Test Check Assembly	06/14/2024	0	39.01

7625-40-7625-53220	EMAG MUSCATINE FD LLC	AC Parts for 259	06/14/2024	0	364.80 00027629
7625-40-7625-53220	EMAG MUSCATINE FD LLC	Kit/O Ring	06/14/2024	0	11.76
7625-40-7625-53220	EMAG MUSCATINE FD LLC	Kit	06/14/2024	0	20.98
7625-40-7625-53220	EMAG MUSCATINE FD LLC	O Ring Kit	06/14/2024	0	6.30
7625-40-7625-53220	EMAG MUSCATINE FD LLC	AC Parts for 255	06/14/2024	0	388.32 00027667
7625-40-7625-53220	EMAG MUSCATINE FD LLC	Return	06/14/2024	0	-70.26
7625-40-7625-53220	EMAG MUSCATINE FD LLC	Return	06/14/2024	0	-20.98
Vendor Subtotal:					739.93
7625-40-7625-53220	EMAG MUSCATINE CBG LLC	Spord Switch	06/14/2024	0	22.88
7625-40-7625-53220	EMAG MUSCATINE CBG LLC	Sensor/Harness	06/14/2024	0	161.56 00027538
Vendor Subtotal:					184.44
7625-40-7625-67130	TRUCK AND AUTO REPAIR	April Inspections for RC13,14,15	06/14/2024	0	281.00 00027588
Vendor Subtotal:					281.00
7625-40-7625-67130	EMAG MUSCATINE CBG LLC	Scan 759 for Codes	06/18/2024	0	73.50
Vendor Subtotal:					73.50
7625-40-7625-67130	CHUCK'S AUTO REPAIR	Weld Up Sub Frame on 255	06/14/2024	0	4,176.00 00027663
7625-40-7625-67130	CHUCK'S AUTO REPAIR	Weld Up Sub Frame on 254	06/14/2024	0	5,000.00 00027661
Vendor Subtotal:					9,176.00
7625-40-7625-67140	A-1 QUALITY TIRE & CAR CARE	Tires for 401	06/14/2024	0	614.90 00027655
7625-40-7625-67140	A-1 QUALITY TIRE & CAR CARE	Tire Repair RC13	06/14/2024	0	88.50
7625-40-7625-67140	A-1 QUALITY TIRE & CAR CARE	Front Tires for 436	06/14/2024	0	592.00 00027623
7625-40-7625-67140	A-1 QUALITY TIRE & CAR CARE	Front Tires for 436	06/14/2024	0	135.00
7625-40-7625-67140	A-1 QUALITY TIRE & CAR CARE	Repairs for 48/439	06/14/2024	0	131.35 00027589
7625-40-7625-67140	A-1 QUALITY TIRE & CAR CARE	Tire for 145	06/14/2024	0	184.20 00027586
7625-40-7625-67140	A-1 QUALITY TIRE & CAR CARE	Tire for 145	06/14/2024	0	15.00
7625-40-7625-67140	A-1 QUALITY TIRE & CAR CARE	Repairs for RC13/RC14	06/14/2024	0	177.90 00027620
Vendor Subtotal:					1,938.85

Subtotal for FUND: 7625					15,761.60
7921-00-7921-69900	EMPLOYEE RECOGNITION COMMITTEE	Reimb ERC for Ad Paid thru ACH Payment	06/18/2024	0	50.00
Vendor Subtotal:					50.00
7921-00-7921-69900	SUNSET PARK	Offset Collections - C Keilman	06/14/2024	0	241.00
Vendor Subtotal:					241.00
7921-00-7921-69900	JODI ROYAL-GOODWIN	Overage	06/18/2024	0	-2.34
Vendor Subtotal:					-2.34
7921-00-7921-69900	TCM BANK NA VISA	Smart Sign - Tax Credit	06/18/2024	0	-17.37
7921-00-7921-69900	TCM BANK NA VISA	Apple - Tax Charged to be Reimb	06/18/2024	0	2.10
7921-00-7921-69900	TCM BANK NA VISA	Iowa Athletic Club - Meals (3) Overage	06/18/2024	0	20.92
7921-00-7921-69900	TCM BANK NA VISA	Apple - I Cloud Storage Fee Tax	06/18/2024	0	0.21
7921-00-7921-69900	TCM BANK NA VISA	Wal-Mart - Food for Event	06/18/2024	0	4.00
7921-00-7921-69900	TCM BANK NA VISA	Hy-Vee - Food for Event	06/18/2024	0	16.12
7921-00-7921-69900	TCM BANK NA VISA	Aldi - Food for Event	06/18/2024	0	53.89
Vendor Subtotal:					79.87
7921-00-7921-69900	MID-CONTINENT PUBLIC LIBRARY	Reimb for Library Loan Book - Slay the I	06/18/2024	0	18.00
Vendor Subtotal:					18.00
7921-00-7921-69900	JENNIFER RADER	Reimb for Check Overage	06/18/2024	0	5.00
Vendor Subtotal:					5.00
Subtotal for FUND: 7921					391.53
7940-00-7940-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	18.87
7940-00-7940-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	17.45
7940-00-7940-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	12.18
7940-00-7940-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	9.31

7940-00-7940-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	6.13
	Vendor Subtotal:				63.94
7940-00-7940-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	11.17
7940-00-7940-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	3.19
7940-00-7940-46600	RELIANCE STANDARD LIFE INS CO	BW LTD June	06/17/2024	0	1.60
7940-00-7940-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	13.02
7940-00-7940-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	10.46
7940-00-7940-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	10.32
7940-00-7940-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	27.59
7940-00-7940-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	24.44
	Vendor Subtotal:				101.79
	Subtotal for FUND: 7940				165.73
7942-00-7942-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	1.35
	Vendor Subtotal:				1.35
7942-00-7942-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	1.55
	Vendor Subtotal:				1.55
	Subtotal for FUND: 7942				2.90
8148-10-8148-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	9.58
	Vendor Subtotal:				9.58
8148-10-8148-46600	RELIANCE STANDARD LIFE INS CO	LTD June 24	06/17/2024	0	14.54
	Vendor Subtotal:				14.54
8148-10-8148-64200	TCM BANK NA VISA	Healthy Indoor Training - Registration Be	06/18/2024	0	649.00
	Vendor Subtotal:				649.00

8148-10-8148-65260	VERIZON WIRELESS	May 2024	06/14/2024	0	80.02
8148-10-8148-65260	VERIZON WIRELESS	April 2024	06/14/2024	0	123.92
		Vendor Subtotal:			203.94
		Subtotal for FUND: 8148			877.06
8180-90-8180-46200	RELIANCE STANDARD LIFE INS CO	Life Ins June	06/17/2024	0	3.13
		Vendor Subtotal:			3.13
8180-90-8180-46600	RELIANCE STANDARD LIFE INS CO	LT June 24	06/17/2024	0	5.34
		Vendor Subtotal:			5.34
8180-90-8180-65100	QUAD CITY TIMES & MUSC JOURN.	RFP for Home Inspector	06/18/2024	0	47.00
8180-90-8180-65100	QUAD CITY TIMES & MUSC JOURN.	RFP for Radon Inspector	06/18/2024	0	43.03
		Vendor Subtotal:			90.03
		Subtotal for FUND: 8180			98.50
8450-05-8450-74250	AMAZON.COM	TP-Link ER605 V2 Wired Gigabit Router	06/14/2024	0	119.98 00027632
		Vendor Subtotal:			119.98
		Subtotal for FUND: 8450			119.98
8711-01-8711-69300	Riverview Hotel Development	TIF Rebate FY24 Pmt #4	06/18/2024	0	160.71
		Vendor Subtotal:			160.71
		Subtotal for FUND: 8711			160.71
8714-01-8714-69300	NPSW ENTERPRISES, LLC	TIF Rebate FY24 Pmt #2	06/18/2024	0	6,046.26

			Vendor Subtotal:		6,046.26
			Subtotal for FUND: 8714		6,046.26
8803-10-8803-61610	MARTIN GARDNER ARCHITECTURE	Muscatine Downtown Facade Revitalization	06/18/2024	0	5,119.53
			Vendor Subtotal:		5,119.53
8803-10-8803-61660	COMMUNITY FOUNDATION	Build Bruhn Grant Application on Grant 1	06/14/2024	0	2,000.00 00027653
			Vendor Subtotal:		2,000.00
			Subtotal for FUND: 8803		7,119.53
9002-90-9020-41100	CITY OF MUSCATINE HOUSING RE	Admin Full-Time Wages 5/31/24	05/31/2024	0	2,876.49
9002-90-9020-41100	CITY OF MUSCATINE HOUSING RE	Admin Part-Time Wages 5/31/24	05/31/2024	0	93.09
9002-90-9020-41100	CITY OF MUSCATINE HOUSING RE	Admin Longevity 5/31/24	05/31/2024	0	2.28
			Vendor Subtotal:		2,971.86
9002-90-9020-41500	CITY OF MUSCATINE HOUSING RE	June Auto Allowance	06/14/2024	0	37.50
			Vendor Subtotal:		37.50
9002-90-9020-41902	AMAZON.COM	3 Black Toner Cartridges for Clark House	06/18/2024	0	197.67 00027673
			Vendor Subtotal:		197.67
9002-90-9020-41904	CITY OF MUSCATINE HOUSING RE	MPW - May Base PRI	06/14/2024	0	13.40
			Vendor Subtotal:		13.40
9002-90-9020-41904	MUSCATINE POWER & WATER	May Phones - Clark House	06/18/2024	0	92.03
			Vendor Subtotal:		92.03
9002-90-9020-41904	US CELLULAR	Cell Phones	06/18/2024	0	53.15

			Vendor Subtotal:		53.15
9002-90-9020-41905	CITY OF MUSCATINE HOUSING RE'	May Postage	06/14/2024	0	1.92
			Vendor Subtotal:		1.92
9002-90-9020-41909	CITY OF MUSCATINE HOUSING RE'	Phelps - Uniforms Awbrey/Watson	06/14/2024	0	176.12
			Vendor Subtotal:		176.12
9002-90-9020-41910	CROSSROADS INC.	Shredding	06/14/2024	0	11.00
			Vendor Subtotal:		11.00
9002-90-9020-41910	TCM BANK NA VISA	Smoke Testing Kits	06/18/2024	0	999.50 00027564
9002-90-9020-41910	TCM BANK NA VISA	Shipping - Smoke Testing Kits	06/18/2024	0	22.00 00027564
			Vendor Subtotal:		1,021.50
9002-90-9020-41914	CITY OF MUSCATINE HOUSING RE'	MPW - April/May Machlink	06/14/2024	0	23.55
			Vendor Subtotal:		23.55
9002-90-9020-41914	MUSCATINE POWER & WATER	May Internet - Clark House	06/18/2024	0	82.97
			Vendor Subtotal:		82.97
9002-90-9020-43100	MUSCATINE POWER & WATER	May Water - Clark House	06/18/2024	0	322.34
			Vendor Subtotal:		322.34
9002-90-9020-43200	MUSCATINE POWER & WATER	May Electric - Clark House	06/18/2024	0	4,536.27
			Vendor Subtotal:		4,536.27
9002-90-9020-43700	ALLIANT ENERGY	May Gas - Clark House	06/18/2024	0	570.15

			Vendor Subtotal:		570.15
9002-90-9020-43900	MUSCATINE POWER & WATER	May Sewer - Clark House	06/18/2024	0	976.12
			Vendor Subtotal:		976.12
9002-90-9020-44100	CITY OF MUSCATINE HOUSING RE'	Maint Part-Time Wages 5/31/24	05/31/2024	0	1,333.89
9002-90-9020-44100	CITY OF MUSCATINE HOUSING RE'	Maint Longevity 5/31/24	05/31/2024	0	7.80
9002-90-9020-44100	CITY OF MUSCATINE HOUSING RE'	Maint Full-Time Wages 5/31/24	05/31/2024	0	1,895.73
			Vendor Subtotal:		3,237.42
9002-90-9020-44201	MENARDS (MUSC)	Water/Tape	06/18/2024	0	59.73
			Vendor Subtotal:		59.73
9002-90-9020-44202	CITY OF MUSCATINE HOUSING RE'	May Fuel	06/14/2024	0	72.00
			Vendor Subtotal:		72.00
9002-90-9020-44204	MENARDS (MUSC)	Lumber	06/18/2024	0	60.78
			Vendor Subtotal:		60.78
9002-90-9020-44205	VAN METER INDUSTRIAL INC	CH Light Bulb Stock: 281899 PHIL F17	06/14/2024	0	129.39 00027444
9002-90-9020-44205	VAN METER INDUSTRIAL INC	CH light bulb stock: 479626 PHIL F32T8	06/14/2024	0	158.64 00027444
9002-90-9020-44205	VAN METER INDUSTRIAL INC	Ballast	06/14/2024	0	94.40
			Vendor Subtotal:		382.43
9002-90-9020-44206	PLUMB SUPPLY COMPANY	Faucet	06/14/2024	0	94.83
9002-90-9020-44206	PLUMB SUPPLY COMPANY	CH Kitchen Faucet Stock: Model # DE21	06/18/2024	0	284.48 00027723
			Vendor Subtotal:		379.31
9002-90-9020-44206	AMAZON.COM	Toilet Tank Repair Fill Valve	06/14/2024	0	17.96
9002-90-9020-44206	AMAZON.COM	Handheld Shower Head	06/14/2024	0	54.45

			Vendor Subtotal:		72.41
9002-90-9020-44301	CITY OF MUSCATINE HOUSING RE'	May Refuse	06/14/2024	0	17.80
			Vendor Subtotal:		17.80
9002-90-9020-44302	PHELPS CLEANING SERVICE INC	CH 309 Biowaste Clean Up	06/18/2024	0	600.00 00027721
			Vendor Subtotal:		600.00
9002-90-9020-44303	SPANN'S PEST CONTROL LLC	Pest Control Common Areas	06/18/2024	0	100.00
9002-90-9020-44303	SPANN'S PEST CONTROL LLC	Pest Control #204	06/18/2024	0	20.00
9002-90-9020-44303	SPANN'S PEST CONTROL LLC	Pest Control #408	06/18/2024	0	20.00
9002-90-9020-44303	SPANN'S PEST CONTROL LLC	Pest Control #604	06/18/2024	0	20.00
9002-90-9020-44303	SPANN'S PEST CONTROL LLC	Pest Control #602	06/18/2024	0	20.00
9002-90-9020-44303	SPANN'S PEST CONTROL LLC	DOS 6-13-24 CH 605 Bed Bug 1st Follo	06/18/2024	0	100.00 00027674
9002-90-9020-44303	SPANN'S PEST CONTROL LLC	Pest Control Monthly	06/18/2024	0	600.00
			Vendor Subtotal:		880.00
9002-90-9020-44306	CITY OF MUSCATINE HOUSING RE'	Verizon - May GPS	06/14/2024	0	17.45
			Vendor Subtotal:		17.45
9002-90-9020-44307	SCHUMACHER ELEVATOR COMPA	Elevator Maintenance	06/18/2024	0	1,127.94
			Vendor Subtotal:		1,127.94
9002-90-9020-44311	KELLY HEATING COOLING & PLBG	Kitchen Sink Backup #201	06/18/2024	0	160.00
			Vendor Subtotal:		160.00
9002-90-9020-44315	RIVERBEND MAINTENANCE LLC	CH 410 Paint Rehab	06/14/2024	0	500.00 00027393
			Vendor Subtotal:		500.00
9002-90-9020-45103	CITY OF MUSCATINE HOUSING RE'	Unemployment 5/31/24	05/31/2024	0	11.02

			Vendor Subtotal:	11.02
9002-90-9020-45401	CITY OF MUSCATINE HOUSING RE'FICA 5/31/24	05/31/2024	0	465.51
			Vendor Subtotal:	465.51
9002-90-9020-45402	CITY OF MUSCATINE HOUSING RE'IPERS 5/31/24	05/31/2024	0	586.16
			Vendor Subtotal:	586.16
9002-90-9020-75900	VALLEY CONSTRUCTION Elevators Pay App #1	06/18/2024	0	7,652.25
			Vendor Subtotal:	7,652.25
9002-90-9020-75900	IMEG CORP Clark House Elevators	06/18/2024	0	2,200.00
			Vendor Subtotal:	2,200.00
			Subtotal for FUND: 9002	29,569.76
9004-90-9040-41100	CITY OF MUSCATINE HOUSING RE'Admin Full-Time Wages 5/31/24	05/31/2024	0	1,100.10
9004-90-9040-41100	CITY OF MUSCATINE HOUSING RE'Admin Longevity 5/31/24	05/31/2024	0	5.20
			Vendor Subtotal:	1,105.30
9004-90-9040-41904	CITY OF MUSCATINE HOUSING RE'MPW - May Base PRI	06/14/2024	0	6.35
			Vendor Subtotal:	6.35
9004-90-9040-41904	MUSCATINE POWER & WATER May Phones - Hershey	06/18/2024	0	94.76
			Vendor Subtotal:	94.76
9004-90-9040-41904	US CELLULAR Cell Phones	06/18/2024	0	26.58
			Vendor Subtotal:	26.58

9004-90-9040-41910	CROSSROADS INC.	Shredding	06/14/2024	0	11.00
		Vendor Subtotal:			11.00
9004-90-9040-41910	TENANT REPORTS.COM LLC	Background Checks	06/18/2024	0	7.00
		Vendor Subtotal:			7.00
9004-90-9040-41914	CITY OF MUSCATINE HOUSING RE'MPW - April/May Machlink		06/14/2024	0	11.16
		Vendor Subtotal:			11.16
9004-90-9040-41914	MUSCATINE POWER & WATER	May Internet - Hershey	06/18/2024	0	83.18
		Vendor Subtotal:			83.18
9004-90-9040-43100	MUSCATINE POWER & WATER	May Water - Hershey	06/18/2024	0	152.26
		Vendor Subtotal:			152.26
9004-90-9040-43200	MUSCATINE POWER & WATER	May Electric - Hershey	06/18/2024	0	3,054.26
		Vendor Subtotal:			3,054.26
9004-90-9040-43700	ALLIANT ENERGY	May Gas - Hershey	06/18/2024	0	609.14
		Vendor Subtotal:			609.14
9004-90-9040-43900	MUSCATINE POWER & WATER	May Sewer - Hershey	06/18/2024	0	357.28
		Vendor Subtotal:			357.28
9004-90-9040-44100	CITY OF MUSCATINE HOUSING RE'Maint Full-Time Wages 5/31/24		05/31/2024	0	947.86
9004-90-9040-44100	CITY OF MUSCATINE HOUSING RE'Maint Part-Time Wages 5/31/24		05/31/2024	0	1,323.84
9004-90-9040-44100	CITY OF MUSCATINE HOUSING RE'Maint Longevity 5/31/24		05/31/2024	0	13.65
		Vendor Subtotal:			2,285.35

9004-90-9040-44202	CITY OF MUSCATINE HOUSING RE'	May Fuel	06/14/2024	0	36.00
		Vendor Subtotal:			36.00
9004-90-9040-44302	PHELPS CLEANING SERVICE INC	HM 208 Rehab Carpet Cleaning	06/18/2024	0	145.00 00027698
		Vendor Subtotal:			145.00
9004-90-9040-44303	SPANN'S PEST CONTROL LLC	Monthly Pest Control	06/18/2024	0	300.00
9004-90-9040-44303	SPANN'S PEST CONTROL LLC	Monthly Pest Control Common Area	06/18/2024	0	50.00
		Vendor Subtotal:			350.00
9004-90-9040-44306	CITY OF MUSCATINE HOUSING RE'	Verizon - May GPS	06/14/2024	0	8.73
		Vendor Subtotal:			8.73
9004-90-9040-44307	SCHUMACHER ELEVATOR COMPA	Elevator Maintenance	06/18/2024	0	348.33
		Vendor Subtotal:			348.33
9004-90-9040-45103	CITY OF MUSCATINE HOUSING RE'	Unemployment 5/31/24	05/31/2024	0	6.79
		Vendor Subtotal:			6.79
9004-90-9040-45401	CITY OF MUSCATINE HOUSING RE'	FICA 5/31/24	05/31/2024	0	253.86
		Vendor Subtotal:			253.86
9004-90-9040-45402	CITY OF MUSCATINE HOUSING RE'	IPERS 5/31/24	05/31/2024	0	320.08
		Vendor Subtotal:			320.08
9004-90-9040-75500	DESIGN ENGINEERS, P.C.	Hershey Manor HVAC Upgrade	06/18/2024	0	1,050.00
		Vendor Subtotal:			1,050.00
9004-90-9040-75500	HENLEY GROUP	Windows - Pay App #4	06/18/2024	0	70,200.00

9004-90-9040-75500	HENLEY GROUP	Windows - Retainage	06/18/2024	0	77,343.00
		Vendor Subtotal:			147,543.00
		Subtotal for FUND: 9004			157,865.41
9006-90-9060-31100	MUSCATINE POWER & WATER	June Utility Credit J Fisher 2708 C Bloon	06/14/2024	0	140.00
9006-90-9060-31100	MUSCATINE POWER & WATER	June Utility Credit A Carter 2800 A Bloon	06/14/2024	0	112.00
9006-90-9060-31100	MUSCATINE POWER & WATER	June Utility Credit A Titus 2808 B Bloon	06/14/2024	0	146.00
9006-90-9060-31100	MUSCATINE POWER & WATER	June Utility Credit R Piaga Howard 2808	06/14/2024	0	146.00
9006-90-9060-31100	MUSCATINE POWER & WATER	June Utility Credit G Perez 2812 B Bloon	06/14/2024	0	66.00
9006-90-9060-31100	MUSCATINE POWER & WATER	June Utility Credit A Garren 2812 C Bloon	06/14/2024	0	73.00
9006-90-9060-31100	MUSCATINE POWER & WATER	June Utility Credit A Huscko 2812 D Bloon	06/14/2024	0	1.00
9006-90-9060-31100	MUSCATINE POWER & WATER	June Utility Credit B Swanson 2812 E Bloon	06/14/2024	0	78.00
9006-90-9060-31100	MUSCATINE POWER & WATER	June Utility Credit M Yerington 2904 E Bloon	06/14/2024	0	24.00
9006-90-9060-31100	MUSCATINE POWER & WATER	June Utility Credit I Sherrill 2908 C Bloon	06/14/2024	0	75.00
		Vendor Subtotal:			861.00
9006-90-9060-36920	MUNICIPAL COLLECTIONS OF AME	Agent Fee - May 2024	06/14/2024	0	24.80
		Vendor Subtotal:			24.80
9006-90-9060-41100	CITY OF MUSCATINE HOUSING RE'	Admin Full-Tme Wages 5/31/24	05/31/2024	0	1,441.03
9006-90-9060-41100	CITY OF MUSCATINE HOUSING RE'	Admin Part-Tme Wages 5/31/24	05/31/2024	0	93.09
9006-90-9060-41100	CITY OF MUSCATINE HOUSING RE'	Admin Longevity 5/31/24	05/31/2024	0	1.95
		Vendor Subtotal:			1,536.07
9006-90-9060-41500	CITY OF MUSCATINE HOUSING RE'	June Auto Allowance	06/14/2024	0	25.00
		Vendor Subtotal:			25.00
9006-90-9060-41904	CITY OF MUSCATINE HOUSING RE'	MPW - May Base PRI	06/14/2024	0	6.35
		Vendor Subtotal:			6.35
9006-90-9060-41904	MUSCATINE POWER & WATER	May Phones - Sunset	06/18/2024	0	49.53

			Vendor Subtotal:		49.53
9006-90-9060-41904	US CELLULAR	Cell Phones	06/18/2024	0	26.57
			Vendor Subtotal:		26.57
9006-90-9060-41905	CITY OF MUSCATINE HOUSING RE'	May Postage	06/14/2024	0	21.24
			Vendor Subtotal:		21.24
9006-90-9060-41910	CROSSROADS INC.	Shredding	06/14/2024	0	11.00
			Vendor Subtotal:		11.00
9006-90-9060-41914	CITY OF MUSCATINE HOUSING RE'	MPW - April/May Machlink	06/14/2024	0	11.16
			Vendor Subtotal:		11.16
9006-90-9060-41914	MUSCATINE POWER & WATER	May Internet - Sunset	06/18/2024	0	82.97
			Vendor Subtotal:		82.97
9006-90-9060-43100	MUSCATINE POWER & WATER	May Water - 2806 Apt F	06/18/2024	0	23.64
9006-90-9060-43100	MUSCATINE POWER & WATER	May Water - 2800 Apt B	06/18/2024	0	4.27
9006-90-9060-43100	MUSCATINE POWER & WATER	May Water- 2700 Apt D	06/18/2024	0	18.56
			Vendor Subtotal:		46.47
9006-90-9060-43200	MUSCATINE POWER & WATER	May Electric - Sunset	06/18/2024	0	53.92
9006-90-9060-43200	MUSCATINE POWER & WATER	May Electric - 2806 Apt F	06/18/2024	0	95.46
9006-90-9060-43200	MUSCATINE POWER & WATER	May Electric - 2800 Apt B	06/18/2024	0	15.78
9006-90-9060-43200	MUSCATINE POWER & WATER	May Electric - 2700 Apt D	06/18/2024	0	27.90
			Vendor Subtotal:		193.06
9006-90-9060-43900	MUSCATINE POWER & WATER	May Sewer - 2806 Apt F	06/18/2024	0	33.28
9006-90-9060-43900	MUSCATINE POWER & WATER	May Sewer - 2800 Apt B	06/18/2024	0	8.87
9006-90-9060-43900	MUSCATINE POWER & WATER	May Sewer - 2700 Apt D	06/18/2024	0	33.28

			Vendor Subtotal:	75.43
9006-90-9060-44100	CITY OF MUSCATINE HOUSING RE'	Maint Full-Tme Wages 5/31/24	05/31/2024	0 2,247.23
9006-90-9060-44100	CITY OF MUSCATINE HOUSING RE'	Maint Part-Tme Wages 5/31/24	05/31/2024	0 82.74
9006-90-9060-44100	CITY OF MUSCATINE HOUSING RE'	Maint Longevity 5/31/24	05/31/2024	0 7.80
			Vendor Subtotal:	2,337.77
9006-90-9060-44202	CITY OF MUSCATINE HOUSING RE'	May Fuel	06/14/2024	0 36.00
			Vendor Subtotal:	36.00
9006-90-9060-44203	SINCLAIR	SS Chainsaw Replacement: Stihl MS 182	06/14/2024	0 239.99 00027640
			Vendor Subtotal:	239.99
9006-90-9060-44204	MARK A DIERCKS	Key/Lock	06/18/2024	0 15.00
			Vendor Subtotal:	15.00
9006-90-9060-44204	MENARDS (MUSC)	Door Hinge	06/18/2024	0 73.91
			Vendor Subtotal:	73.91
9006-90-9060-44204	PLUMB SUPPLY COMPANY	Diverter	06/18/2024	0 48.37
			Vendor Subtotal:	48.37
9006-90-9060-44206	PLUMB SUPPLY COMPANY	Faucet	06/18/2024	0 72.73
			Vendor Subtotal:	72.73
9006-90-9060-44206	TCM BANK NA VISA	Zoro - Faucet Part	06/18/2024	0 29.90
			Vendor Subtotal:	29.90
9006-90-9060-44207	MENARDS (MUSC)	Paint	06/14/2024	0 54.79

Vendor Subtotal:					54.79
9006-90-9060-44208	AMAZON.COM	Thermostat	06/14/2024	0	76.80
Vendor Subtotal:					76.80
9006-90-9060-44218	PDQ SUPPLY INC	SS 2804D Oven Glass Replacement Part	06/18/2024	0	345.98 00027342
Vendor Subtotal:					345.98
9006-90-9060-44218	AMAZON.COM	Refrigerator Evaporator	06/14/2024	0	49.25
Vendor Subtotal:					49.25
9006-90-9060-44301	CITY OF MUSCATINE HOUSING RE	May Refuse	06/14/2024	0	26.60
Vendor Subtotal:					26.60
9006-90-9060-44303	SPANN'S PEST CONTROL LLC	Pest Control Monthly	06/18/2024	0	500.00
9006-90-9060-44303	SPANN'S PEST CONTROL LLC	Pest Control Monthly Common Area	06/18/2024	0	50.00
9006-90-9060-44303	SPANN'S PEST CONTROL LLC	Pest Control 2812C	06/18/2024	0	20.00
Vendor Subtotal:					570.00
9006-90-9060-44306	CITY OF MUSCATINE HOUSING RE	Verizon - May GPS	06/14/2024	0	8.72
Vendor Subtotal:					8.72
9006-90-9060-44310	MICHAEL W SCHULTE	Screen Repair	06/18/2024	0	44.20
9006-90-9060-44310	MICHAEL W SCHULTE	Screen Repair	06/18/2024	0	59.80
Vendor Subtotal:					104.00
9006-90-9060-44311	KELLY HEATING COOLING & PLBG	Service Call Heater 2700D	06/14/2024	0	85.00
Vendor Subtotal:					85.00

9006-90-9060-45103	CITY OF MUSCATINE HOUSING RE'Unemployment 5/31/24	05/31/2024	0	6.78
	Vendor Subtotal:			6.78
9006-90-9060-45401	CITY OF MUSCATINE HOUSING RE'FICA 5/31/24	05/31/2024	0	291.42
	Vendor Subtotal:			291.42
9006-90-9060-45402	CITY OF MUSCATINE HOUSING RE'IPERS 5/31/24	05/31/2024	0	365.69
	Vendor Subtotal:			365.69
9006-90-9060-75200	CARRIAGE HOUSE CARPET ONE SS 2700D Cove Base per Linear ft. CB80	06/18/2024	0	240.00 00027603
9006-90-9060-75200	CARRIAGE HOUSE CARPET ONE SS 2700D Cove Base Installation Adhesiv	06/18/2024	0	39.98 00027603
9006-90-9060-75200	CARRIAGE HOUSE CARPET ONE SS 2700D Cove Base Installation per Lin	06/18/2024	0	192.00 00027603
	Vendor Subtotal:			471.98
9006-90-9060-75200	CITY OF MUSCATINE Sunset Playground Project	06/18/2024	0	50,000.00
	Vendor Subtotal:			50,000.00
	Subtotal for FUND: 9006			58,281.33
9007-90-9070-41100	CITY OF MUSCATINE HOUSING RE'Admin Full-Time Wages 5/31/24	05/31/2024	0	4,643.14
9007-90-9070-41100	CITY OF MUSCATINE HOUSING RE'Admin Part-Time Wages 5/31/24	05/31/2024	0	744.68
9007-90-9070-41100	CITY OF MUSCATINE HOUSING RE'Admin Longevity 5/31/24	05/31/2024	0	10.73
	Vendor Subtotal:			5,398.55
9007-90-9070-41500	CITY OF MUSCATINE HOUSING RE'June Auto Allowance	06/14/2024	0	12.50
	Vendor Subtotal:			12.50
9007-90-9070-41902	CITY OF MUSCATINE HOUSING RE'Xerox - May Copies	06/14/2024	0	10.14
	Vendor Subtotal:			10.14

9007-90-9070-41904	CITY OF MUSCATINE HOUSING RE'MPW - May Base PRI	06/14/2024	0	44.45
	Vendor Subtotal:			44.45
9007-90-9070-41904	TCM BANK NA VISA Google - Google Voice	06/18/2024	0	14.65
	Vendor Subtotal:			14.65
9007-90-9070-41905	CITY OF MUSCATINE HOUSING RE'May Postage	06/14/2024	0	212.36
	Vendor Subtotal:			212.36
9007-90-9070-41907	TCM BANK NA VISA Zoom - Subscription	06/18/2024	0	149.90
	Vendor Subtotal:			149.90
9007-90-9070-41910	CROSSROADS INC. Shredding	06/14/2024	0	22.00
	Vendor Subtotal:			22.00
9007-90-9070-41910	TENANT REPORTS.COM LLC Background Checks	06/18/2024	0	98.00
	Vendor Subtotal:			98.00
9007-90-9070-41914	CITY OF MUSCATINE HOUSING RE'MPW - April/May Machlink	06/14/2024	0	78.11
	Vendor Subtotal:			78.11
9007-90-9070-45103	CITY OF MUSCATINE HOUSING RE'Unemployment 5/31/24	05/31/2024	0	10.33
	Vendor Subtotal:			10.33
9007-90-9070-45401	CITY OF MUSCATINE HOUSING RE'FICA 5/31/24	05/31/2024	0	396.22
	Vendor Subtotal:			396.22
9007-90-9070-45402	CITY OF MUSCATINE HOUSING RE'IPERS 5/31/24	05/31/2024	0	509.61

			Vendor Subtotal:		509.61
9007-90-9070-47150	SAMUEL JUAREZ	Other - R Lynn Full May & June	06/18/2024	0	54.00
			Vendor Subtotal:		54.00
9007-90-9070-47150	STEPHANIE KELLY	Abate - R Kruse 25 of 30 Days June	06/18/2024	0	313.00
			Vendor Subtotal:		313.00
9007-90-9070-47150	RTI INVESTMENTS	Abatement - M Bender Full June	06/18/2024	0	731.00
			Vendor Subtotal:		731.00
9007-90-9070-47150	REAL ESTATE RESOURCE ASSOCIA	Other - M Garcia Full June	06/18/2024	0	164.00
			Vendor Subtotal:		164.00
9007-90-9070-47150	HARRISON LOFTS LLC	End Abatement D Walker Full June	06/18/2024	0	481.00
			Vendor Subtotal:		481.00
9007-90-9070-47150	WEST HILL PROPERTIES	New HAP K Harrison 17 of 30 Days June	06/18/2024	0	461.00
			Vendor Subtotal:		461.00
9007-90-9071-41100	CITY OF MUSCATINE HOUSING RE	Admin Full-Time Wages 5/31/24	05/31/2024	0	1,856.80
			Vendor Subtotal:		1,856.80
9007-90-9071-41904	TCM BANK NA VISA	Google - Google Voice	06/18/2024	0	29.30
			Vendor Subtotal:		29.30
9007-90-9071-45103	CITY OF MUSCATINE HOUSING RE	Unemployment 5/31/24	05/31/2024	0	3.71
			Vendor Subtotal:		3.71

9007-90-9071-45401	CITY OF MUSCATINE HOUSING RE'FICA 5/31/24	05/31/2024	0	134.75
	Vendor Subtotal:			134.75
9007-90-9071-45402	CITY OF MUSCATINE HOUSING RE'IPERS 5/31/24	05/31/2024	0	175.29
	Vendor Subtotal:			175.29
	Subtotal for FUND: 9007			11,360.67
	Report Total:			933,767.09

6/7/2024 PAYROLL CHECKS	MISSION SQUARE ICMA RETIRE	11,430.22
6/7/2024 PAYROLL CHECKS	MISSION SQUARE ICMA RC	1,364.53
6/7/2024 PAYROLL CHECKS	MUNICIPAL FIRE & POLICE	78,614.18
6/7/2024 PAYROLL CHECKS	NATIONWIDE	5,936.00
6/7/2024 ACH PAYROLL	AFA FLEX BILLING	5,224.21
6/7/2024 ACH PAYROLL	AFLAC	560.98
6/7/2024 ACH PAYROLL	ALLSTATE	14.94
6/7/2024 ACH PAYROLL	AMERICAN FIDELITY	3,256.69
6/7/2024 ACH PAYROLL	CITY OF MUSCATINE	7,513.90
6/7/2024 ACH PAYROLL	CLERK OF COURT	70.00
6/7/2024 ACH PAYROLL	POLICE & FIRE INS	194.94
6/7/2024 ACH PAYROLL	STATE OF ILLINOIS	198.40
6/7/2024 ACH PAYROLL	UNITED WAY	93.00
6/7/2024 SPECIAL CHECKS	BSN SPORTS	1,188.78
6/14/2024 SPECIAL CHECKS	JEREMY FOWLER	695.33
6/18/2024 SPECIAL CHECKS	SETH KOERNER	1,317.00
6/14/2024 SPECIAL CHECKS	GRANDBRIDGE - JUNE	20,232.34



City of Muscatine

ITEM NUMBER

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Richard Klimes, Parks and Recreation Director
Jeff Limburg, Athletic Facilities Supervisor
Andrew Fangman, Assistant Community Development Director
Kevin Coon, City Engineer

SUBJECT

Public Hearing for the Purpose of Hearing Community Comments Regarding the Muscatine Indoor Sports Complex.

EXECUTIVE SUMMARY

City staff, the project engineering firm and members of the Muscatine community have been working on the plans and specifications for the Muscatine Indoor Sports Complex, which will be located west of the Muscatine Soccer Complex. It is now time to hold a public hearing to hear public comments on the plans and specifications. During the June 20, 2024 meeting, there will be an additional request to approve the plans and specifications for the project with the anticipation of the project going out to bid on June 21st.

STAFF RECOMMENDATION

The City staff recommend that a public hearing is held for the Muscatine Indoor Sports Complex Project.

BACKGROUND/DISCUSSION

The City of Muscatine staff, the community design team and I & S Group, INC dab ISG engineering has developed the plans and specifications for the Muscatine Indoor Sorts Complex. The proposed new complex will be located at the Muscatine Soccer West site across from the Muscatine Soccer Complex. The project will include the construction of an indoor, temperature-controlled, multi-use facility that will consist of a synthetic turf field, an inflatable year-round dome structure, with restrooms and a concession area on site. The facility will be able to host regulation football, soccer, softball, baseball, pickleball and general group gatherings. It is anticipated that project substantial completion will take place in the Winter of 2024/25.

CITY FINANCIAL IMPACT

The City staff has worked in collaboration with Muscatine County, the State of Iowa, and local businesses and foundations to identify funding for this project. The estimated project cost before bidding is \$6,500,000.00. The actual project cost will not be realized until the project bids are officially received and filed. To date, \$5,400,000.00 has been secured for this project. Once bids are received they will be evaluated by City staff and the project engineer. A value engineering review will be applied to identify potential project savings. The potential project overage is due to the project scope change identified by the design committee for components needed to build a quality facility that the Muscatine community would be able to efficiently and effectively utilize. The areas identified needing change were the size of the playing surface and the convenience areas for guests and spectators.

ATTACHMENTS

1. 2024-0244 Resolution Setting a Public Hearing for the Purpose of Hearing Community Comments Regarding the Muscatine Indoor Sports Complex
2. Public Notice - Indoor Sports Complex Project
3. Muscatine Indoor Sports Complex Info

RESOLUTION NO. 2024-0244

**SETTING THE TIME AND PLACE FOR A PUBLIC HEARING ON THE
MUSCATINE INDOOR SPORTS COMPLEX PROJECT**

WHEREAS, the City Council of the City of Muscatine, Iowa has heretofore granted preliminary approval of the plans, specifications, form of contract, and cost estimates for the proposed Muscatine Indoor Sports Complex Project; and

WHEREAS, the proposed project is to be paid for out of funds legally available for that purpose;

NOW, THEREFORE, be it resolved by this Council that:

SECTION I: On June 20, 2024 at 6:00 p.m. in the City Council Chambers at City Hall, Muscatine, Iowa, this Council shall hold a public hearing of the plans, specifications, form of contract, and cost estimates for this proposed project.

SECTION II: The City Clerk shall give notice of such public hearing by publication of a notice in the Muscatine Journal not less than four (4) nor more than twenty (20) days prior to the date set for the hearing. The notice shall be in the following form:

(NOTICE OF PUBLIC HEARING ATTACHED)

PASSED, APPROVED, AND ADOPTED THIS 6th DAY OF JUNE, 2024.

CITY COUNCIL OF THE CITY OF MUSCATINE, IOWA



Brad Bark (Jun 11, 2024 16:11 MDT)

Dr. Brad Bark, Mayor

ATTEST:



Carol Webb (Jun 11, 2024 17:58 CDT)

Carol Webb, City Administrator



PUBLIC NOTICE

**NOTICE OF TIME AND PLACE OF PUBLIC HEARING ON THE
MUSCATINE INDOOR SPORTS COMPLEX PROJECT**

Public Notice is hereby given that the City Council of the City of Muscatine, Iowa will hold a Public Hearing to hear objections to the plans, specifications, form of contract, and cost estimate for the proposed MUSCATINE INDOOR SPORTS COMPLEX PROJECT on June 20, 2024 at 6:00 p.m. in the City Council Chambers at Muscatine City Hall.

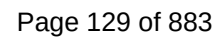
Carol Webb, City Administrator



Muscatine Indoor Sports Complex Information



// Perspective Rendering II









City of Muscatine

ITEM NUMBER 2024-0267

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Andrew Fangman, Assistant Community Development Director

SUBJECT

Resolution Setting a Public Hearing for July 18, 2024, at 6:00 pm, in City Council Chambers on an Amendment to Title 10, Chapter 3, Section 1 of City Code Establishing a Law Enforcement Training Facility and Range as a Permissive Use In Specific Locations Within the Agricultural Zoning District

EXECUTIVE SUMMARY

Presented for Council consideration is a resolution setting a public hearing on an amendment to City Code that is necessary to allow for the development of a law enforcement training facility and range at the Muscatine Municipal Airport.

STAFF RECOMMENDATION

Staff recommends adopting the resolution setting a public hearing on the proposed amendment for the July 18 regular City Council meeting.

BACKGROUND/DISCUSSION

The Muscatine Police Department and Muscatine County Sheriff's Office are proposing to collaboratively developed a joint law enforcement training facility and range at the Muscatine Municipal Airport.

The City of Muscatine and Muscatine County have agreed to a partnership with a 50/50 cost-sharing agreement. This facility will provide a dedicated space for officers to conduct a variety of training exercises, including:

- Firearms Training & Qualifications
- MSORT Training
- Defensive Tactics Training
- ASP Training
- Chemical Munitions Training
- Conduct trainings in Muscatine County at minimal cost as a host agency

The proposed shooting range will accommodate handguns using .40 and 9mm caliber rounds, and rifles using .308 and .223 calibers. It will feature two 220-foot handgun bays and a separate 370-foot rifle bay. Each bay will be enclosed on three sides by 20-foot-high berms, exceeding recommended heights to ensure safe projectile containment within the range. To minimize the risk of ricochet, the berms will have a 1:1 slope design. Additionally, they will be 10 feet thick at the top, exceeding the recommended minimum design standard. Construction will utilize only virgin fill free of debris to further eliminate ricochet hazards. These design specifications meet or exceed NRA Range Source Book criteria and comply with Iowa state qualification distances.

Within the proposed range site will be a 60' x 60' training building. It will be utilized for the classroom portion of firearms instruction as well as several other police department and sheriff's office in-service training needs. It will be equipped with bathrooms and running water.

It is anticipated that the range will be in use 3 to 5 times a month. This may be more during months when department qualifications are necessary. The training facility will be utilized anytime the range is live and several times a year for classroom training.

The Muscatine Police Department closed its original range location in early 2022. Since that time, Department personnel have been traveling to the West Liberty gun range to conduct training. MSORT training, which is conducted 1 to 2 times a month, is also traveling the 40-mile round trip for training. Since the West Liberty Gun Club is a public range, only minimal equipment can be stored there, the rest is required to be transported to and from. The police department and sheriff's office are in desperate need of a secure range and training facility to serve both agencies.

The proposed location for this facility is at the Muscatine Municipal Airport, south of Runway 12/30, roughly 3,000 feet northwest of the terminal building. Access would be through an extension to existing internal airport access roads.

The proposed shooting range and training facility have been evaluated for compatibility with airport operations. Both the Federal Aviation Administration (FAA) and the Muscatine Airport Advisory Commission have reviewed the project's proposed location on the airport property and determined it would not adversely impact airport operations.

Situated behind the airport fence, the proposed location was acquired to function as a protective buffer zone for the runways. Currently, the site is not used for any active airport operations, and there are no plans for future development related to airport operations at this location. The proposed shooting range would leverage an underutilized City property. Currently leased for agricultural purposes, this land can be repurposed to serve a critical function. By establishing a shooting range here, the City can take advantage of the area's continued role as a protective buffer zone for the airport runways, while simultaneously fulfilling a vital training need for law enforcement personnel.

The proposed location at the Muscatine Municipal Airport offers several advantages that make it an ideal location for a law enforcement shooting range. The proposed location offers the necessary isolation for safe range operations while remaining conveniently accessible for law enforcement personnel. The Public Safety Building is approximately a 15-minute drive away.

Substantial distance between the shooting range and residences and other non-agricultural and non-airport uses, minimizes potential noise disruptions for the surrounding community. The substantial distance also contributes to overall safety in the extremely unlikely event of a stray round or ricochet.

One of the most common concerns surrounding shooting ranges is noise complaints from nearby residents. According to NRA range design guidelines, these complaints typically originate from people living within a half-mile radius of the facility. The proposed shooting range location offers a significant advantage in this regard. There are:

- No residences or structures within a half-mile radius of the firing line.
- The nearest dwelling is located nearly two-thirds of a mile (3,387 feet) to the north.
- Only six homes within a three-quarter mile radius, and 17 homes within a one-mile radius.

The proposed shooting range site benefits from existing land uses that are inherently compatible with range operations. Additionally, the location offers greater assurance of continued land use compatibility in the future compared to any other potential site within Muscatine County.

Slightly more than half of the area within a half-mile radius of the proposed range lies behind the airport fence. Surrounding areas beyond the airport property are subject to long-standing land use restrictions specifically designed for areas situated near airport runways. These restrictions help ensure compatibility with continued aviation operations by limiting development.

Aircraft near runway ends pose potential safety risks (accidents) and noise disturbances for people on the ground due to takeoffs and landings. Similarly, a shooting range can create noise and safety concerns for nearby areas.

However, existing land use restrictions designed to mitigate the impact of airport runways can also effectively address potential disruptions from the shooting range. The proposed location leverages these existing restrictions, minimizing the need for additional measures to ensure compatibility with surrounding areas.

The firing line would be oriented towards the Muscatine Slough. The bank of the slough is approximately 1,500 feet beyond the backstop berm. Furthermore, the presence of the slough

and its associated floodplain significantly reduces the likelihood of future development occurring immediately downrange of the proposed site. The regulatory floodplain in this area stretches about 3,000 feet wide. Though the proposed range site is located well outside the floodplain.

Stringent land-use regulations adopted by both the City and Muscatine County severely restrict development within the floodplain. These regulations are in place to ensure property owners throughout the city and county can access flood insurance through the National Flood Insurance Program (NFIP), the primary flood insurance option available. Participation in the NFIP requires local communities to enact regulations that limit new development in regulatory floodplains. Therefore, the regulatory floodplain located downrange of the proposed shooting range is highly unlikely to see any development in the foreseeable future.

Shooting ranges are not established as permissive or conditional use in any zoning district, as such construction of the proposed law enforcement training facility and range at the Muscatine Municipal Airport will require an amendment to the Zoning Ordinance (Title 10 of City Code). The proposed amendment would accomplish this by adding the following as a permissive use in the AG zoning district (Section 10-12-1(O))

"Law enforcement training facilities that include a shooting range, provided that such a facility is located at the Muscatine Municipal Airport, and is only open to use by law enforcement personnel"

On June 11, the Planning and Zoning Commission unanimously recommended approval of the proposed amendment for the law enforcement training facility and range. At the public hearing, a non-adjoining property owner expressed a desire for the range to be open to the public. The Commission also conducted an onsite viewing of the proposed site on June 4, which several nearby property owners attended. These property owners inquired about the proposal but voiced no opposition.

Iowa Code Section 657.9(1) requires approval of shooting range locations by the Planning and Zoning Commission. The Commission voted 5 to 0 to give such an approval at its June 11 meeting.

All property owners within a half-mile radius of the proposed range were notified of and invited to both the site visit and the hearing. This extended notification radius, 200' is the normal practice, was considered prudent due to the potential wider impact of a shooting range compared to other developments.

City Council adopting a resolution setting a public hearing on the proposed amendment is the next step in the process. The attached resolution sets a public hearing for July 18, 2024, at 6:00 pm, in City Council Chambers.

CITY FINANCIAL IMPACT

None.

ATTACHMENTS

1. Public Notice on Amendent to the AG Zoning District for Police Range at Airport
2. Map of Proposed Location
3. Pictures of Proposed Location
4. Resolution Setting a Hearing on Amendent to the AG Zoning District

**PUBLIC NOTICE
NOTICE OF TIME AND PLACE OF PUBLIC HEARING
ON PROPOSED AMENDMENT TO SECTION 1, CHAPTER 3, TITLE 10 OF
CITY CODE ESTABLISHING A LAW ENFORCEMENT TRAINING FACILITY
AND RANGE AS A PERMISSIVE USE IN SPECIFIC LOCATIONS WITHIN
THE AGRICULTURAL ZONING DISTRICT**

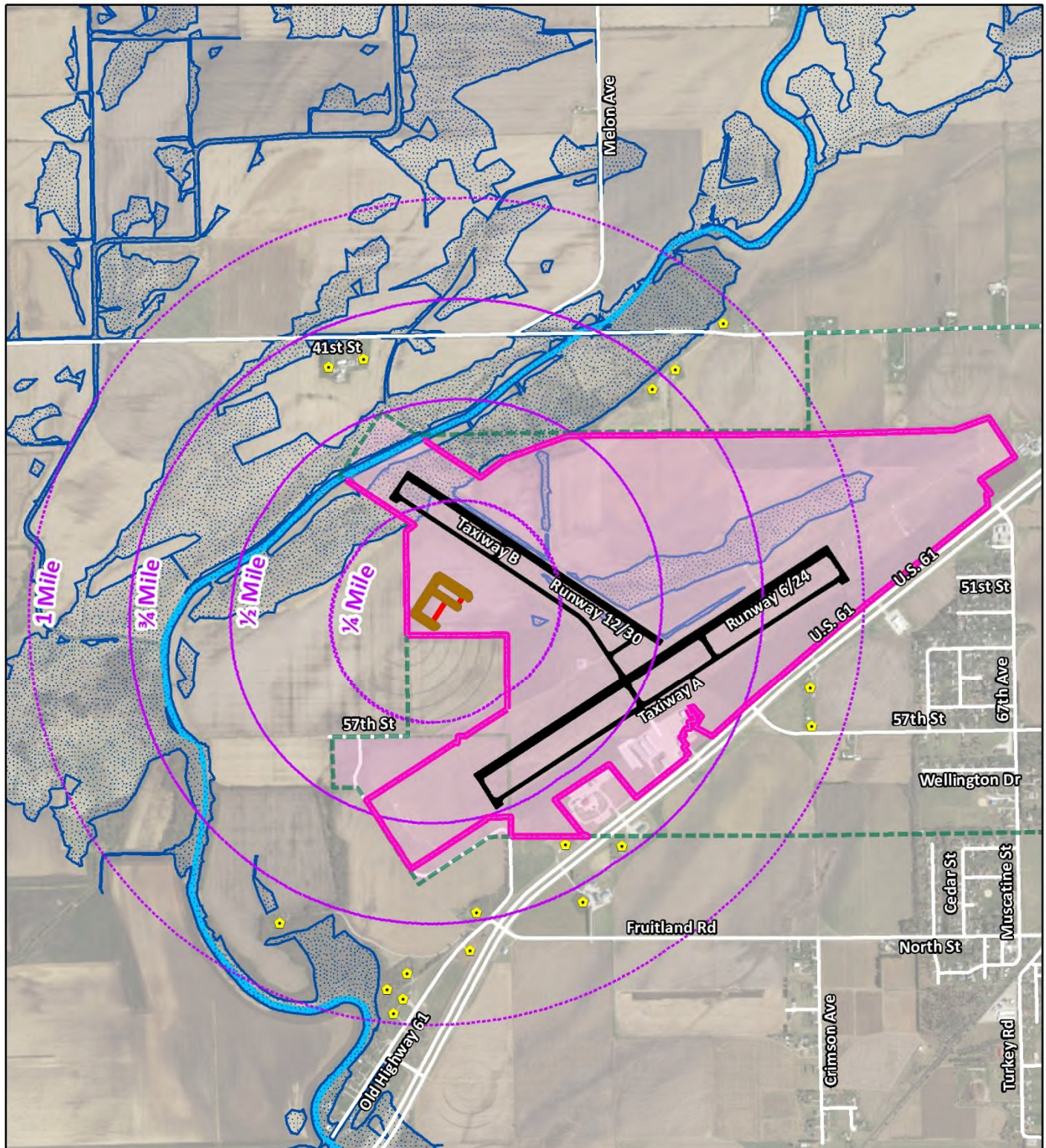
The Muscatine Police Department and Muscatine County Sheriff's Office are proposing to collaboratively developed a joint law enforcement training facility and range at the Muscatine Municipal Airport. This facility will provide a dedicated space for law enforcement officers to conduct a variety of training exercises, including firearms training and qualifications, MSORT training, and defensive tactics training. The proposed facility would not be open to the public and would be utilized only by law enforcement personnel. Access would be through an existing airport gate and extensions to existing internal airport access roads. Within the proposed range site will be a 60' x 60' training facility building. It will be utilized for the classroom portion of firearms instruction as well as several other police department and sheriff's office in-service training needs. The proposed shooting range will accommodate both handguns and rifles. It will feature two 220-foot handgun bays and a separate 370-foot rifle bay. Each bay will be enclosed on three sides by 20-foot-high berms that are 10 feet thick at the top. Shooting ranges are not established as permissive or conditional use in a zoning district, as such construction of the proposed law enforcement training facility and range at the Muscatine Municipal Airport will require an amendment to the Zoning Ordinance (Title 10 of City Code). This amendment would accomplish this by adding the following as a permissive use in the AG zoning district (Section 10-12-1(O))

"Law enforcement training facilities that include a shooting range, provided that such a facility is located at the Muscatine Municipal Airport, and is only open to use by law enforcement personnel."

Notice is further given that the City Council of the City of Muscatine, Iowa, will conduct a public hearing on said changes to City Code on Thursday, July 18, 2024, at 6:00 p.m. in the City Hall Council Chambers, at which time all interested parties are invited to comment. The hearing will be held during the regular Muscatine City Council meeting

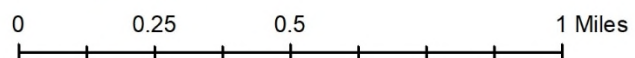
Following such hearing, the Muscatine City Council may take action on said proposal without further notice or opportunity for hearing. If you are a person requiring a special accommodation for a disability or language barrier, please contact the City at 563-262-4141 at least three (3) business days in advance of the meeting date.

Carol Webb, City Clerk



Legend

- | | | |
|--------------------|-------------------------------------|--------------------|
| Airport Fence | Quarter Mile Rings From Firing Line | Runways & Taxiways |
| 20 Feet High Berms | Homes Within 1 Mile | City Owned Parcels |
| Firing Line | City Limits | Floodplain |





Looking Northwest from Approximate Proposed Location of Firing Line



Looking North Along Airport Property Line Near the Proposed Range Site



Looking West Along Airport Property Line Near the Proposed Range Site

RESOLUTION NO.2024-0267

**RESOLUTION SETTING THE TIME AND PLACE OF PUBLIC HEARING ON AN
AMENDMENT TO SECTION 1, CHAPTER 3, TITLE 10 OF CITY CODE
ESTABLISHING A LAW ENFORCEMENT TRAINING FACILITY AND RANGE
AS A PERMISSIVE USE IN SPECIFIC LOCATIONS WITHIN THE
AGRICULTURAL ZONING DISTRICT**

WHEREAS, The Muscatine Police Department and Muscatine County Sheriff's Office are proposing to collaboratively developed a joint law enforcement training facility and range at the Muscatine Municipal Airport; and

WHEREAS, This facility will provide a dedicated space for law enforcement officers to conduct a variety of training exercises, including firearms training and qualifications, MSORT training, and defensive tactics training. The proposed facility would not be open to the public and would be utilized only by law enforcement personnel. Access would be through an existing airport gate and extensions to existing internal airport access roads; and

WHEREAS, Within the proposed range site will be a 60' x 60' training building facility. It will be utilized for the classroom portion of firearms instruction as well as several other police department and sheriff's office in-service training needs; and

WHEREAS, The proposed shooting range will accommodate both handguns and rifles. It will feature two 220-foot handgun bays and a separate 370-foot rifle bay. Each bay will be enclosed on three sides by 20-foot-high berms that are 10 feet thick at the top; and

WHEREAS, Shooting ranges are not established as permissive or conditional use in any zoning district, as such construction of the proposed law enforcement training facility and range at the Muscatine Municipal Airport will require an amendment to the Zoning Ordinance (Title 10 of City Code); and

WHEREAS, This amendment would accomplish this by adding the following as a permissive use in the AG zoning district (Section 10-12-1(O)) "*Law enforcement training facilities that include a shooting range, provided that such a facility is located at the Muscatine Municipal Airport, and is only open to use by law enforcement personnel*"; and

WHEREAS, a public hearing must be held prior any City Council action on such an amendment to City Code.

NOW, THEREFORE, BE IT RESOLVED, by the City Council for the City of Muscatine, that a Public Hearing is hereby established to review to allow the public to comment on the proposed ordinance amending Section 1, Chapter 3, Title 10 of the City Code of Muscatine. Said hearing to be conducted at 6:00 P.M. on Thursday, July 18, 2024, in the City Hall Council Chambers.

PASSED, APPROVED, AND ADOPTED by the City Council for the City of Muscatine, Iowa, on this, the 20th day of June 2024.

Dr. Brad Bark, Mayor

ATTEST:

Carol Webb, City Clerk



City of Muscatine

ITEM NUMBER 2024-0265

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Jodi Royal-Goodwin, Community Development Director

SUBJECT

Resolution Authorizing Special Assessments for Unpaid Abatement Service Fees and Rental Housing Fees to Private Properties

EXECUTIVE SUMMARY

Presented for City Council's consideration is a resolution authorizing the assessment of unpaid abatement service fees and rental housing fees to private properties. The abatement and rental housing costs total \$2,080.25, the administrative fees are \$575.00, and the assessment fees are \$800.00. The total amount being requested for assessment at this time totals \$3,455.25.

STAFF RECOMMENDATION

Staff recommends approval of the resolution to assess the unpaid abatement service fees and rental housing fees to their respective properties.

BACKGROUND/DISCUSSION

The City's contractor has provided abatement services for nuisance, snow/ice on sidewalks and vegetation violations at the properties listed on the attachment. Dates of service are from January 2024 to March 2024. The City was billed for these services and has subsequently paid the contractor. Assessing the outstanding bills to the property taxes will help the City recoup its costs.

Many of these properties are vacant and are routinely maintained by the City Contractor to avoid nuisance, vegetation and substandard building violations where applicable. Assessing the fees allows the City the opportunity to be reimbursed at the time the property is sold or a tax certificate is claimed. Other properties are occupied, in which case the owner was billed for the services provided. If the initial invoice to the property owner is not paid a late notice is sent prior to requesting assessment.

The City has provided rental housing services for properties listed on the attachment, including but not limited to, rental property inspections and Rental Facility License issuance as required

per the Muscatine Rental Housing Code. Dates of service are from November 2023 to April 2024. The City billed the owner for the services provided and sent multiple invoices prior to requesting assessment. In accordance with Title 16 of City Code, if the initial Rental Facility License invoice sent to the owner is not paid a second invoice is sent with a \$25 late payment penalty fee. Then if the second invoice is not paid, a third and fourth invoice are sent with 1.5% interest being accrued on each invoice. A final payment notice is sent with the fourth invoice notifying the owner of the deadline to avoid the outstanding balance being assessed to the property taxes. Assessing the outstanding bills to the property taxes will help the City recoup its costs.

A \$50.00 assessment fee has been added to each property for each abatement instance to cover processing costs. Adding an assessment fee for each abatement instance is a new process as the recently implemented program now used for violation abatements does not group all the abatement instances for a single property together, rather it records them separately. This is to allow a better means to track repeat offenders and as such this change only affects properties that the City is required to abate multiple times. Additional fees are charged by the County for each assessment.

CITY FINANCIAL IMPACT

Fees are to reimburse the City for expenses associated with the services provided to abate the nuisance, snow/ice on sidewalks and vegetation violations and the provided rental housing services. If assessments are not approved or are reduced, payments to the City's contractor without charge and providing rental housing services without charge will impact the general fund.

ATTACHMENTS

1. Council Special Assessments Report 06.20.2024
2. Council Resolution Special Assessments 06.20.2024

Special Assessments Report 6/20/2024 - Page 1

Parcel ID	Site Address	Owner Name	Date of Work	Service Type	Service Fee	Admin Fee	Assess Fee	Total Fee
1303180016	109 Grover St	RTI INVESTMENTS LLC	3/12/2024	Rental Failure to Show for Inspection	\$60.00	\$25.00	\$50.00	\$135.00
1303180016	109 Grover St	RTI INVESTMENTS LLC	4/19/2024	Rental Second Reinspection	\$60.00	\$25.00	\$50.00	\$135.00
0835181004	114 E Fulliam Ave	FEDERAL HOME LOAN MORTGAGE CORPORATION	1/24/2024	Snow/Ice on Sidewalks	\$44.10	\$75.00	\$50.00	\$169.10
0835181004	114 E Fulliam Ave	FEDERAL HOME LOAN MORTGAGE CORPORATION	2/21/2024	Nuisance	\$106.80	\$150.00	\$50.00	\$306.80
1303277002	1615 Hershey Ave	TICO INVESTMENTS LLC	12/1/2023	Rental Facility License	\$94.00	\$25.00	\$50.00	\$169.00
0825177031	1707 Lincoln Blvd	TREVINO JESSE P OR ELDA R	4/17/2024	Rental Failure to Show for Inspection	\$60.00	\$25.00	\$50.00	\$135.00
0835462012	205 W 3rd St	SISSEL D KENT	4/10/2024	Rental Second Reinspection	\$180.00	\$25.00	\$50.00	\$255.00
1303405004	2106 Schiller St	ASH PAMELA S OR HOWARD OR ASH KIMBERLY L	3/12/2024	Nuisance	\$148.70	\$25.00	\$50.00	\$223.70
1303426018	211 Taylor St	ENRIQUEZ JOSE TRUSTEE & JANNIE V TRUSTEE	3/1/2024	Vegetation - Trees/Shrubs	\$90.10	\$25.00	\$50.00	\$165.10
0835481038	222 Walnut St	MANJOINE JOSEPH P	11/28/2023	Rental Facility License	\$558.00	\$25.00	\$50.00	\$633.00
1302204006	306 W 3rd St	ANDERSON JOSIAH M OR STEPHANIE K	4/17/2024	Rental Inspection of Previously Inaccessible Area	\$60.00	\$25.00	\$50.00	\$135.00
0835457005	418 Iowa Ave	TICO INVESTMENTS LLC	4/12/2024	Rental Second Reinspection	\$60.00	\$25.00	\$50.00	\$135.00
0835409014	508 Walnut St	COSTAS BRIAN LEE	4/22/2024	Rental Failure to Show for Inspection	\$60.00	\$25.00	\$50.00	\$135.00
0835385003	608 W 7th St	APANTENCO ANTONIO	3/1/2024	Nuisance	\$223.80	\$25.00	\$50.00	\$298.80
0835430006	614 E 6th St	WHITLOCK HEATHER M	3/12/2024	Nuisance	\$237.00	\$25.00	\$50.00	\$312.00
0835405025	700 Cedar St	CASTEEL SABRINA M	3/11/2024	Nuisance	\$37.75	\$25.00	\$50.00	\$112.75

Grand Totals by Fee Type:	\$2,080.25	\$575.00	\$800.00	\$3,455.25
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Grand Totals by Service Type:	Nuisance Services	\$1,254.05
	Rental Services	\$1,867.00
	Snow/Ice on Sidewalks Services	\$169.10
	Vegetation Services	\$165.10

RESOLUTION NO. _____

RESOLUTION AUTHORIZING THE ASSESSMENT OF UNPAID ABATEMENT
SERVICE FEES AND RENTAL HOUSING FEES TO PRIVATE PROPERTIES

WHEREAS, the City of Muscatine has incurred costs for
Nuisance abatements according to City Code Section 9-3-9;
Rental housing fees according to City Code Section 16-4;
Snow and ice removal services according to City Code Section 3-1-4;
Vegetation abatements according to City Code Section 16-8-9; and

WHEREAS, proper notice was given before such action according to provisions of
City Code Section 9-3-5 for nuisance abatements;
City Code Section 16-4-3 for rental housing fees;
City Code Section 3-1-4 for snow and ice removal services;
City Code Section 16-8-10 for vegetation abatements; and

WHEREAS, the City Council of the City of Muscatine is allowed to assess such costs according to
City Code Section 9-3-11 for nuisance abatements;
City Code Section 16-4-3 for rental housing fees;
City Code Section 3-1-4 for snow and ice removal services;
City Code Section 16-8-12 for vegetation abatements;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL FOR THE CITY OF MUSCATINE, IOWA,
that the abatement service fees of the following property owner(s) be assessed to the
described properties in the amount(s) noted and reflected on the attached property tax bills.

PASSED AND APPROVED THIS _____ DAY OF _____.

Brad Bark, Mayor

ATTEST:

Carol Webb, City Administrator



City of Muscatine

ITEM NUMBER 2024-0270

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Melissa Baker, Parks Supervisor
Richard Klimes, Parks and Recreation Director

SUBJECT

Resolution Approving the Contract and Bond for the Weed Park Lagoon Project in the Amount of \$442,172.25 to SulzCo, LLC.

EXECUTIVE SUMMARY

The City of Muscatine Staff and Martin and Whitacre Surveyors and Engineers, Inc. developed the plans and specifications for the Weed Park Lagoon Project. The Muscatine City Council held a public hearing and approved the plans and specifications on April 18, 2024. Eight proposals were received by the due date of May 13, 2024. The contract was awarded to SulzCo, LLC on June 6, 2020.

STAFF RECOMMENDATION

City Staff and the project engineer evaluated the submitted contract and bond and found them to be in compliance with the project specifications and recommend Council to approve the contract and bond for the Weed Park Lagoon Project to SulzCo, LLC in the amount of \$442,172.25.

BACKGROUND/DISCUSSION

Weed Park is a 64 acre City of Muscatine Park that was donated to the Citizens of Muscatine by Dr. James and Mary Weed in 1899. There are two lagoons located on the north side of the park that are in need of repair. The project involves renovating the two lagoons and repairing and or replacing some of the existing amenities. This will include bank stabilization, observation deck replacement, lagoon dredging, trail development, bench pods, duck island stabilization, repairing lagoon leaks, and addressing the drainage flow into the lagoons.

CITY FINANCIAL IMPACT

The project budget, including engineering fees, is \$500,000.00. The expected total project cost is roughly \$548,122.25. The project expense overage will be covered by other available project funds, recent park donations or future bond proceeds.

ATTACHMENTS

1. Resolution Approving Contract & Bond - Weed Park Lagoon Project
2. Weed Park Lagoon Project Construction Payment Bond
3. Weed Park Lagoon Project Plan - Timeline
4. Weed Park Lagoon Project - SulzCo COI
5. Weed Park Lagoon Project Contract

RESOLUTION _____

**APPROVING CONTRACT AND BOND
WEED PARK LAGOON PROJECT**

WHEREAS, this Council has awarded the contract for the Weed Park Lagoon Project to SulzCo, LLC, dated the 20th day of June, 2024 in the amount of \$442,172.25; and

WHEREAS, this Council has authorized and directed the Mayor and City Clerk to enter into a written contract for this project with said contractor, subject to final approval by this Council; and

WHEREAS, the contract and bond has been examined by this Council;

NOW, THEREFORE, IT IS RESOLVED that:

1. The above contract between the City of Muscatine, Iowa, and SulzCo, LLC, dated the 20th day of June, 2024 in the amount of \$442,172.25, is approved.
2. The performance and payment bond accompanying such contract, wherein SulzCo, LLC appears as principal and Westfield Insurance Company appears as surety, is approved.

The original executed contract and performance bond shall be placed on file in the office of the City Clerk.

PASSED, APPROVED AND ADOPTED THIS 20th DAY OF JUNE, 2024.

Dr. Brad Bark, Mayor

ATTEST:

Carol Webb, City Administrator

CONSTRUCTION PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

SulzCo, LLC

(Name of Contractor)

2410 Imperial Oaks Drive, Muscatine, IA 52761

(Address of Contractor)

a Corporation, hereinafter called Principal, and
(Corporation, Partnership or Individual)

Westfield Insurance Company

(Name of Surety)

P. O. Box 5001, Westfield Center, OH 44251

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto City of Muscatine
(Name of Owner)

215 Sycamore Street, Muscatine, IA 52728

(Address of Owner)

hereinafter called Owner, in the penal sum of Four Hundred Forty-two Thousand One Hundred Seventy-two & 25/100

Dollars (\$ 442,172.25)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER dated the 28th day of May, 2024, a copy of which is hereto attached and made a part hereof for the construction of:

Weed Park Improvements

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in triplicate number 7th day of June, 2024.
counterparts, each one of which shall be deemed an original, this the

ATTEST:

SulzCo, LLC

(Principle)

BY

ZACK SULZBERGER

2410 Imperial Oaks Drive

(Address)

Muscataine, IA 52761

(Principal Secretary)

Sara Sulzberger
(Witness to Principal)

1110 musser St.
(Address)

Muscataine, IA 52761

Westfield Insurance Company

(Surety)

BY

Jamie Gifford
(Attorney-in-Fact)

BY Jamie Gifford, Attorney-in-Fact

(Attorney-in-Fact)

P. O. Box 5001

(Address)

Westfield Center, OH 44251

ATTEST:

Sara Huston
(Witness to Surety)

Sara Huston, Witness as to Surety

2727 Grand Prairie Parkway

(Address)

Waukee, IA 50263

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the PROJECT is located.

CONSTRUCTION PERFORMANCE BOND

Bond No.: 364022Y

KNOW ALL MEN BY THESE PRESENTS: that

SulzCo, LLC

(Name of Contractor)

2410 Imperial Oaks Drive, Muscatine, IA 52761

(Address of Contractor)

a Corporation, hereinafter called Principal, and
(Corporation, Partnership or Individual)

Westfield Insurance Company

(Name of Surety)

P. O. Box 5001, Westfield Center, OH 44251

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto City of Muscatine

(Name of Owner)

215 Sycamore Street, Muscatine, IA 52728

(Address of Owner)

hereinafter called Owner, in the penal sum of Four Hundred Forty-two Thousand One Hundred Seventy-two & 25/100
Dollars (\$ 442,172.25)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the 28th day of May, 2024, a copy of which is hereto attached and made a part hereof for the construction of:

Weed Park Improvements

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in triplicate (number)

counterparts, each one of which shall be deemed an original, this the 7th day of June 20, 2024.

ATTEST:

SulzCo, LLC

(Principle)

BY

ZACK SULZBERGER

2410 Imperial Oaks Drive

(Address)

Muscataine, IA 52761

(Principal Secretary)

Sara Huston

(Witness to Principal)

1110 Musser St.

(Address)

Muscataine, IA 52761

Westfield Insurance Company

(Surety)

BY

Jamie Gifford

(Attorney-in-Fact)

BY

Jamie Gifford, Attorney-in-Fact

(Attorney-in-Fact)

P. O. Box 5001

(Address)

Westfield Center, OH 44251

ATTEST:

Sara Huston

(Witness to Surety)

Sara Huston, Witness as to Surety

2727 Grand Prairie Parkway

(Address)

Wauke, IA 50263

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the PROJECT is located.

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General
Power
of Attorney

Westfield Insurance Co.
Westfield National Insurance Co.
Ohio Farmers Insurance Co.
Westfield Center, Ohio

CERTIFIED COPY

Know All Men by These Presents, That WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY, corporations, hereinafter referred to individually as a "Company" and collectively as "Companies," duly organized and existing under the laws of the State of Ohio, and having its principal office in Westfield Center, Medina County, Ohio, do by these presents make, constitute and appoint **CRAIG E. HANSEN, JAY D. FREIERMUTH, BRIAN M. DEIMERLY, CINDY BENNETT, ANNE CROWNER, TIM MCCULLOH, DIONE R. YOUNG, SETH ROOKER, SARA HUSTON, KATE ZANDERS, JOHN CORD, GRACE RASMUSSEN, JAMIE GIFFORD, LUKAS SCHRODER, JOINTLY OR SEVERALLY**

of **WAUKEE** and State of **IA** its true and lawful Attorney(s)-in-Fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings, or other instruments or contracts of suretyship in any penal limit.

LIMITATION: THIS POWER OF ATTORNEY CANNOT BE USED TO EXECUTE NOTE GUARANTEE, MORTGAGE DEFICIENCY, MORTGAGE GUARANTEE, OR BANK DEPOSITORY BONDS.

and to bind any of the Companies thereby as fully and to the same extent as if such bonds were signed by the President, sealed with the corporate seal of the applicable Company and duly attested by its Secretary, hereby ratifying and confirming all that the said Attorney(s)-in-Fact may do in the premises. Said appointment is made under and by authority of the following resolution adopted by the Board of Directors of each of the WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY:

"Be it Resolved, that the President, any Senior Executive, any Secretary or any Fidelity & Surety Operations Executive or other Executive shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

The Attorney-in-Fact may be given full power and authority for and in the name of and on behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements of indemnity and other conditional or obligatory undertakings and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed by the President and sealed and attested by the Corporate Secretary."

"Be it Further Resolved, that the signature of any such designated person and the seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signatures or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached." (Each adopted at a meeting held on February 8, 2000).

In Witness Whereof, WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY have caused these presents to be signed by their **National Surety Leader** and **Senior Executive** and their corporate seals to be hereto affixed this **14th** day of **FEBRUARY** A.D., 2024.



State of Ohio
County of Medina ss.:



WESTFIELD INSURANCE COMPANY
WESTFIELD NATIONAL INSURANCE COMPANY
OHIO FARMERS INSURANCE COMPANY

By:
Gary W. Stumper, National Surety Leader and Senior Executive

On this **14th** day of **FEBRUARY** A.D., 2024, before me personally came **Gary W. Stumper** to me known, who, being by me duly sworn, did depose and say, that he resides in **Medina, OH**; that he is **National Surety Leader and Senior Executive** of WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY, the companies described in and which executed the above instrument; that he knows the seals of said Companies; that the seals affixed to said instrument are such corporate seals; that they were so affixed by order of the Boards of Directors of said Companies; and that he signed his name thereto by like order.

Notarial
Seal
Affixed



State of Ohio
County of Medina ss.:

David A. Kotnik, Attorney at Law, Notary Public
My Commission Does Not Expire (Sec. 147.03 Ohio Revised Code)

I, **Frank A. Carrino**, Secretary of WESTFIELD INSURANCE COMPANY, WESTFIELD NATIONAL INSURANCE COMPANY and OHIO FARMERS INSURANCE COMPANY, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Companies, which is still in full force and effect; and furthermore, the resolutions of the Boards of Directors, set out in the Power of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the seals of said Companies at Westfield Center, Ohio, this **7th** day of **June** A.D., 2024.



Frank A. Carrino, Secretary

Project Plan

Document: 00000001

Descr: WEEDPARK
Start: 6/24/2024
Finish: 10/4/2024
Closed:
Owner: SULZB002
Priority: Normal
Status: Open

Project: TR2024 - Trucking T&M
 1110 Musser ST.
 Muscatine IA 52761
CMR: N/A

TASKS

Order	Task / Description / Notes	Start	Finish	%	Owner	Priority	Status	Closed
00100	Mobilize IN	6/24/2024	6/24/2024	0%	SULZB002	Normal	Open	
00200	Temp Rock Ditch Checks	6/25/2024	6/26/2024	0%	SULZB002	Normal	Open	
00300	Start De-Watering Upper Lagoon	6/27/2024	6/27/2024	0%	SULZB002	Normal	Open	
00400	Tree Clearing	6/28/2024	6/28/2024	0%	SULZB002	Normal	Open	
00500	Prep Spoils Area	7/1/2024	7/1/2024	0%	SULZB002	Normal	Open	
00600	Dredge Upper Lagoon	7/2/2024	7/16/2024	0%	SULZB002	Normal	Open	
00700	Removals on Island	7/17/2024	7/18/2024	0%	SULZB002	Normal	Open	
00800	Re-Shape Island	7/19/2024	7/19/2024	0%	SULZB002	Normal	Open	
00900	Re-Grade Side slopes on Upper Lagoon	7/22/2024	7/26/2024	0%	SULZB002	Normal	Open	
01000	RipRap Upper Lagoon	7/29/2024	8/12/2024	0%	SULZB002	Normal	Open	
01100	Remove Existing Tunnel Upper Lagoon	8/13/2024	8/14/2024	0%	SULZB002	Normal	Open	
01200	Work on PCC Headwall and Plug	8/15/2024	8/22/2024	0%	SULZB002	Normal	Open	
01300	Start De-Watering Lower Lagoon	8/23/2024	8/23/2024	0%	SULZB002	Normal	Open	
01400	Re-Grade Side slopes on Lower Lagoon	8/26/2024	8/30/2024	0%	SULZB002	Normal	Open	
01500	RipRap Lower Lagoon	9/2/2024	9/6/2024	0%	SULZB002	Normal	Open	

Project Plan

Document: 00000001

01600		9/9/2024	9/11/2024	0%	SULZB002	Normal	Open
	Remove Existing Tunnel Lower Lagoon						
01700		9/12/2024	9/18/2024	0%	SULZB002	Normal	Open
	Work on PCC Plug						
01800		9/19/2024	9/20/2024	0%	SULZB002	Normal	Open
	Sidewalk Grading						
01900		9/23/2024	9/30/2024	0%	SULZB002	Normal	Open
	Sidewalk PCC						
02000		10/1/2024	10/4/2024	0%	SULZB002	Normal	Open
	Seeding						

ACORD™

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

6/11/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer any rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Holmes Murphy - PC WKEE Select 2727 Grand Prairie Pkwy Property Casualty/Select-DM Waukegan, IA 50263		CONTACT NAME: PHONE (A/C, No, Ext): E-MAIL ADDRESS: selectcertificate@holmesmurphy.com FAX (A/C, No):															
INSURED SulzCo, LLC 1110 Musser Street Muscatine, IA 52761		<table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A : Selective Insurance Company of SC</td> <td>19259</td> </tr> <tr> <td>INSURER B : Selective Insurance Company of America</td> <td>12572</td> </tr> <tr> <td>INSURER C :</td> <td></td> </tr> <tr> <td>INSURER D :</td> <td></td> </tr> <tr> <td>INSURER E :</td> <td></td> </tr> <tr> <td>INSURER F :</td> <td></td> </tr> </tbody> </table>		INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A : Selective Insurance Company of SC	19259	INSURER B : Selective Insurance Company of America	12572	INSURER C :		INSURER D :		INSURER E :		INSURER F :	
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INSURER C :																	
INSURER D :																	
INSURER E :																	
INSURER F :																	

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PRO-JECT ☒ LOC OTHER:	X	X	S2167324	05/05/2024	05/05/2025	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$500,000 MED EXP (Any one person) \$15,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$3,000,000 PRODUCTS - COMP/OP AGG \$3,000,000 \$
A	AUTOMOBILE LIABILITY ☒ ANY AUTO OWNED AUTOS ONLY ☒ HIRED AUTOS ONLY ☐ SCHEDULED AUTOS NON-OWNED AUTOS ONLY	X	X	S2167324	05/05/2024	05/05/2025	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	☒ UMBRELLA LIAB ☒ EXCESS LIAB ☐ CLAIMS-MADE DED ☒ RETENTION \$0	X	X	S2167324	05/05/2024	05/05/2025	EACH OCCURRENCE \$5,000,000 AGGREGATE \$5,000,000 \$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		X	WC9022492	05/05/2024	05/05/2025	☒ PER STATUTE ☐ OTHER E.I. EACH ACCIDENT \$1,000,000 E.I. DISEASE - EA EMPLOYEE \$1,000,000 E.I. DISEASE - POLICY LIMIT \$1,000,000
A	Contractors Equi			S2167324	05/05/2024	05/05/2025	See Below
A	Leased/Rented Equi			S2167324	05/05/2024	05/05/2025	\$100,000

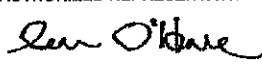
DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Weed Park Improvements - Muscatine, Iowa

The City of Muscatine, including their respective officers, directors, members, partners, employees, agents, consultants are an Additional Insured to the General Liability (including completed operations), on a primary and non-contributory basis, the Auto Liability and Umbrella Liability as required by written (See Attached Descriptions)

CERTIFICATE HOLDER

CANCELLATION

City of Muscatine 215 Sycamore St. Muscatine, IA 52761	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
--	---

DESCRIPTIONS (Continued from Page 1)

contract with the insured, per policy terms and conditions.

General Liability, Auto Liability, Umbrella Liability and Workers Comp include a Waiver of Subrogation in favor of The City of Muscatine, including their respective officers, directors, members, partners, employees, agents, consultants as required by written contract with the insured, per policy terms and conditions.

A 30-Day Notice of Cancellation applies.

STANDARD FORM OF AGREEMENT

THIS AGREEMENT, made this 28 day of May, 2024, by and between
City of Muscatine, hereinafter called "OWNER" and SulzCo LLC
doing business as (an individual,) or (a partnership,) or (a corporation) hereinafter called
"CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

- 1) The CONTRACTOR will commence and complete the construction of Weed Park Improvements.
- 2) The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the PROJECT described herein.
- 3) The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS as soon as possible after the date of the NOTICE TO PROCEED and will complete the same by September 30, 2024 unless the period for completion is adjusted otherwise by the CONTRACT DOCUMENTS.
- 4) The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of \$ \$442,172.25 or as shown in the BID schedule.
- 5) The term "CONTRACT DOCUMENTS" means and includes the following:
 - (a) INVITATION FOR BIDS
 - (b) INSTRUCTIONS TO BIDDERS
 - (c) BID
 - (d) BID BOND
 - (e) AGREEMENT
 - (f) GENERAL CONDITIONS
 - (g) SUPPLEMENTAL GENERAL CONDITIONS
 - (h) PAYMENT BOND
 - (i) PERFORMANCE BOND
 - (j) NOTICE OF AWARD
 - (k) NOTICE TO PROCEED
 - (l) CHANGE ORDER
 - (m) DRAWINGS prepared by Martin & Whitacre Surveyors & Engineers, Inc. numbered C.1 through S.4 and dated MARCH 2024.
 - (n) SPECIFICATIONS prepared or issued by Martin & Whitacre Surveyors & Engineers, Inc. dated March, 2024.
 - (o) ADDENDA:

No. 1, dated 5/1, 2024

No. , dated , 2024

No. , dated , 2024

No. , dated , 2024

No. , dated , 2024

No. , dated , 2024

- 6) The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.
- 7) This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in (Four (4) Copies), each of which shall be deemed an original on the date first above written.

OWNER:

BY _____

Name _____
(Please Type)

Title _____

(SEAL)

ATTEST:

NAME _____
(Please Type)

Title _____

CONTRACTOR:

SulzCo LLC

BY _____

Name Zack Sulzberger
(Please Type)

Title President

(SEAL)

ATTEST:

NAME Sara Sulzberger
(Please Type)

Title Office Assistant





City of Muscatine

ITEM NUMBER 2024-0271

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Melissa Baker, Parks Supervisor
Kevin Coon, City Engineer
Andrew Fangman, Assistant Community Development Director
Blake Allington, Program Supervisor
Jeff Limburg, Athletic Facilities Supervisor
Richard Klimes, Parks and Recreation Director

SUBJECT

Resolution to Approve Plans, Specifications, Form of Contract, and Cost Estimate for the Muscatine Indoor Sports Complex Project.

EXECUTIVE SUMMARY

Presented for City Council's consideration is a resolution approving the plans, specifications, form of contract, cost estimate and setting the bid opening date for July 23, 2024 at 2:00 p.m. in the City Hall Council Chambers for the Muscatine Indoor Sports Complex Project with a project cost estimate of \$6,500,000.00.

STAFF RECOMMENDATION

Staff recommends adopting the resolution in order to proceed with the project.

BACKGROUND/DISCUSSION

The City of Muscatine staff, the community design team and the I & S Group, INC dab ISG Engineering have developed the plans and specifications for the Muscatine Indoor Sports Complex Project. The proposed new complex will be located at the Muscatine Soccer West site across from the Muscatine Soccer Complex. The project will include the construction of an indoor, temperature-controlled, multi-use facility that will consist of a synthetic turf field, an inflatable year-round dome structure, with restrooms and a concession area on site. The facility will be able to host regulation football, soccer, softball, baseball, pickleball and general group gatherings. It is anticipated that substantial project completion will take place in the Winter/Spring 2025 time frame with a project cost estimate of \$6,500.000.00.

CITY FINANCIAL IMPACT

The City staff has worked in collaboration with Muscatine County, the State of Iowa, and local businesses and foundations to identify funding for this project. The estimated project cost before bidding is \$6,500,000.00. The actual project cost will not be realized until the project bids are officially received and filed. To date, \$5,400,000.00 has been secured for this project. Once bids are received they will be evaluated by City staff and the project engineering firm. A value engineering review will be applied to identify potential project savings. The potential project overage is due to the project scope change identified by the design committee for components needed to build a quality facility that the Muscatine community would be able to efficiently and effectively utilize. The areas identified needing change were the size of the playing surface and the convenience areas for guests and spectators.

ATTACHMENTS

1. Resolution Approving Plans - Muscatine Indoor Sports Complex Project
2. Muscatine Indoor Sports Complex Info
3. 00 29721 Muscatine Indoor Sports Complex - CDs 2024-06-13

RESOLUTION 2024-0271

A RESOLUTION APPROVING THE PLANS, SPECIFICATIONS, FORM OF CONTRACT,
COST ESTIMATIONS AND ESTABLISHING A BID OPENING DATE FOR THE
MUSCATINE INDOOR SPORTS COMPLEX PROJECT

WHEREAS, the City Council of the City of Muscatine, Iowa, has conducted a public hearing to receive comments related to the Plans, Specifications, Form of Contract and Cost Estimations for the Muscatine Indoor Sports Complex Project, and

WHEREAS, following comments received during the public hearing, the City Council must now approve the final plans, specifications, form of contract and establish a bid opening date for the Muscatine Indoor Sports Complex Project;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF MUSCATINE, IOWA, that the plans, specifications and form of contract for the Muscatine Indoor Sports Complex Project are approved, and

BE IT FURTHER RESOLVED, that a bid opening date is hereby established for July 23, 2024 at 2 pm at City Hall Council Chambers.

PASSED, APPROVED, AND ADOPTED this 20th Day of June, 2024

BY THE CITY COUNCIL OF THE
CITY OF MUSCATINE, IOWA

Dr. Brad Bark, Mayor

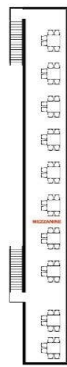
ATTEST:

Carol Webb, City Administrator

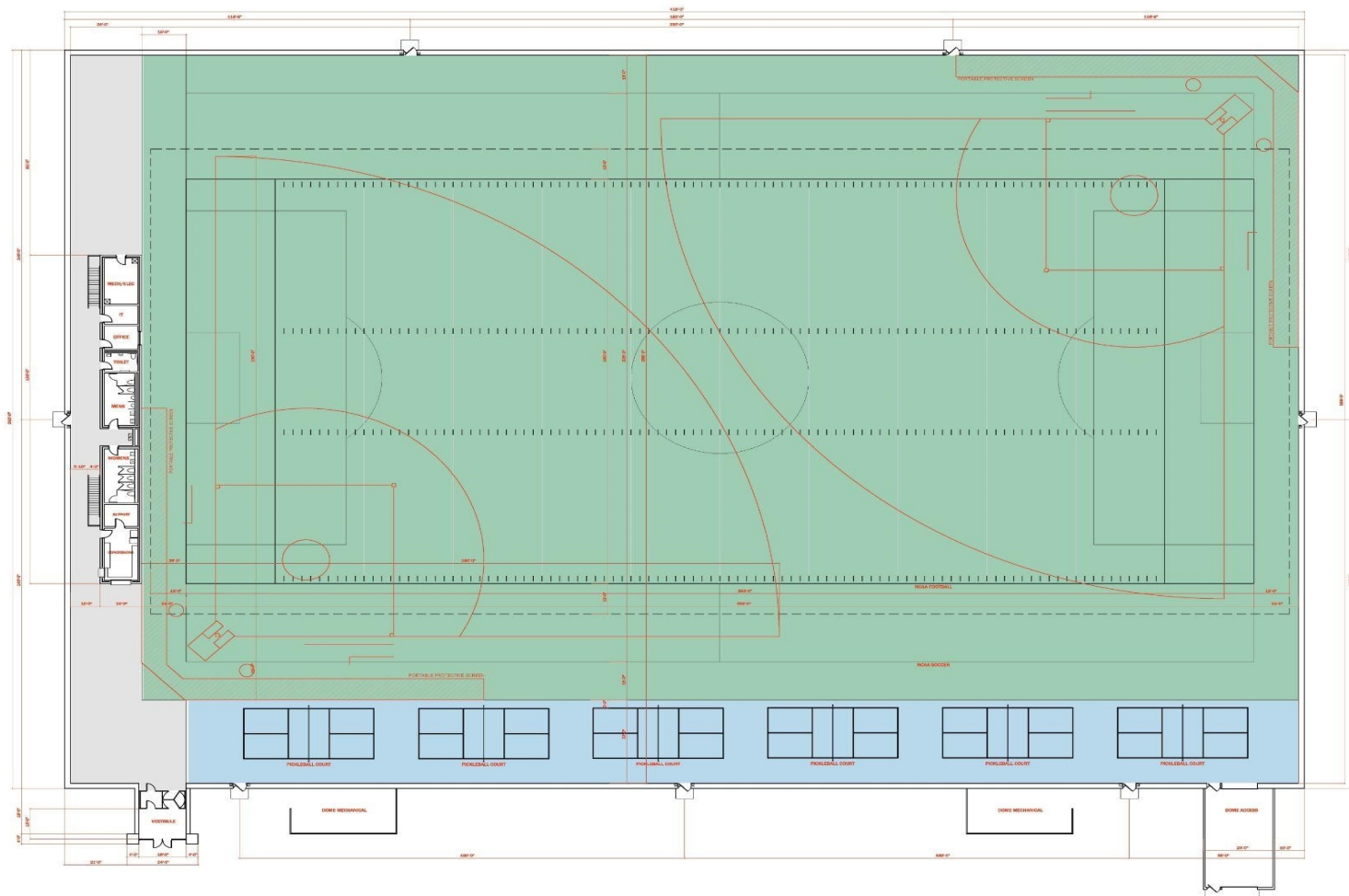


Muscatine Indoor Sports Complex Information





MEZZANINE PLAN









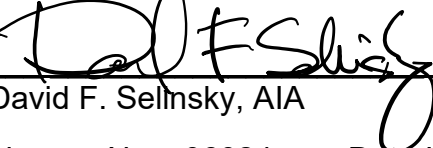
**STANDARD SPECIFICATIONS
FOR
Muscatine Indoor Sports Complex**

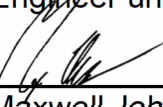
**THE CITY OF MUSCATINE, IOWA
MUSCATINE, IOWA**

**ISG PROJ. # 23-29721
JUNE 13, 2024**

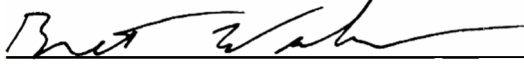
SECTION 00 0105
CERTIFICATIONS PAGE

MUSCATINE
INDOOR SPORTS COMPLEX
MUSCATINE, IOWA
ISG NO. 23-29721

	I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly Licensed Architect under the laws of the State of Iowa.  06-13-2024 _____ David F. Selinsky, AIA Date License No.: 06024 Date Issued: 08-16-2007 My License Renewal Date is June 30, 2025 <u>Sections covered by this seal:</u> Division 00, 01, 03 - 14.
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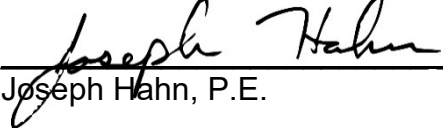
	I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly Licensed Engineer under the laws of the State of Iowa.  06-13-2024 _____ Maxwell John Eller Date License No.: 27626 Date Issued: 09-08-2022 My License Renewal Date is December 31, 2025 <u>Sections covered by this seal:</u> Division 00, 01, 31 - 33.
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ISSUE DATE - 06-13-2024

	I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly Licensed Engineer under the laws of the State of Iowa.  <u>06-13-2024</u> Brett C. Walker, P.E. Date License No.: 28162 Date Issued: 06-14-2023 My License Renewal Date is December 31, 2024 <u>Sections covered by this seal:</u> Division 00, 01, 03 - 06.
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	I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly Licensed Engineer under the laws of the State of Iowa.  <u>06-13-2024</u> Adam W. Puls, P.E. Date License No.: 23206 License Issued: 01-04-2016 My License Renewal Date is December 31, 2025 <u>Sections covered by this seal:</u> Division 00, 01, and 21 - 23.
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ISSUE DATE - 06-13-2024

	I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly Licensed Engineer under the laws of the State of Iowa.
	 06-13-2024 Joseph Hahn, P.E. Date
	License No.: 26928 Date Issued: 08-13-2021
	My License Renewal Date is December 31, 2024
	<u>Sections covered by this seal:</u> Division 00, 01, 26 - 28.

DATED THE 13TH DAY OF JUNE 2024
END OF SECTION

ISSUE DATE - 06-13-2024

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PROJECT.

- C. WHERE THERE MAY BE A VARIATION BETWEEN THE PLANS, THE BIDDING INFORMATION, CONTRACT PROVISIONS AND THE REFERENCED URBAN STANDARD SPECIFICATIONS, THE ORDER OF PRECEDENCE SHALL BE:
 - 1. RECOMMENDED STANDARDS FOR WATER WORKS (10 STATES STANDARDS), 2018 EDITION.
 - 2. RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES (10 STATES STANDARDS), 2014 EDITION.
 - 3. STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS), 2024 EDITION.
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END OF SECTION

ISSUE DATE - 06-13-2024

SECTION 00 1113
NOTICE TO BIDDERS

NOTICE OF BID LETTING FOR THE CONSTRUCTION OF THE MUSCATINE INDOOR
SPORTS COMPLEX FOR THE CITY OF MUSCATINE, IOWA, AND THE TAKING OF
BIDS FOR SUCH CONSTRUCTION.

The City of Muscatine will receive Bids for Muscatine Indoor Sports Complex until 2:00 p.m., on the 23rd day of July 2024 to the City's IonWave website (<http://muscatineiowa.ionwave.net>). Attachments and bid security shall be uploaded in a PDF format to the "Response Attachments" section of the project's page found on the City of Muscatine's IonWave website. Attachments may be completed electronically, or completed by hand and scanned into a PDF format, according to the bidder's preference. All Bids will be opened and bids tabulated at the time and date above in the office of the City Finance Director, City of Muscatine, 215 Sycamore Street, Muscatine, Iowa 52761.

The City Council will consider all bids received at its council meeting to be held at 6:00 p.m. on the 1st day of August 2024, at the City Hall, Muscatine, Iowa.

Project Scope: Construction of a new air-supported fabric structure and related Work indicated in the drawings and specifications. The estimated project cost for the work is \$6.5 million dollars.

A more detailed description of the kinds and approximate quantities of materials and types of construction for which bids will be received are set forth in the Bidding Documents prepared by ISG, of Des Moines, Iowa, which, together with the proposed form of contract, have heretofore been approved by the City Council, and are now on file for public examination in the office of the Director of Parks and Recreation, and are by this reference made part hereof as though fully set out and incorporated herein.

All sealed bids in connection therewith shall be submitted to the Director of Parks and Recreation on or before the time herein set for letting. All proposals shall be made to the City's IonWave website (<http://muscatineiowa.ionwave.net>) The Owner reserves the right to reject any or all bids and to waive informalities and to hold and consider the bids for 45 days after the date of the bid opening. The contract will be awarded to the lowest, responsive, responsible bidder.

Each proposal shall be accompanied by a bid bond, certified check, cashier's check or certified share draft in a separate sealed envelope, clearly marked "Bid Bond" or Bid Security", in an amount equal to five percent (5%) of the total amount of the proposal. The certified or cashier's check shall be drawn on a bank in Iowa or a bank chartered under the laws of the United States of America or the certified share draft shall be drawn on a credit union in Iowa or chartered under the laws of the United States and payable to the City of Muscatine. Said check or share draft may be cashed, or the bid bond forfeited as liquidated damages in the event the successful bidder fails or refuses to enter into a contract within ten (10) days of issuance of a Notice of Award and post bond satisfactory to the City of Muscatine insuring the faithful fulfillment of the contract and maintenance of said improvements as required by law. The bid bond should be executed by a corporation authorized to contract as a surety in the State of Iowa, and must not contain any conditions either in the body or as an endorsement thereon.

The successful bidder will be required to furnish a corporate surety bond in an amount equal to one-hundred percent (100%) of the contract price, said bond to be issued by a responsible surety approved by the City of Muscatine, and shall guarantee the faithful performance of the contract and the terms and conditions therein contained, the payment for materials used in the project and the maintenance of said improvements in good repair for not less than one (1) year from the time of acceptance of said improvements by the City of Muscatine.

The Contractor will be paid ninety-five per cent (95%) of the Architect's/Engineer's estimate of the value of acceptable work completed at the end of the preceding month. Final payment will be made not less than thirty-one (31) days after completion of the work and acceptance by the City of Muscatine, subject to the conditions and in accordance with the provisions of Chapter 573 of the Code of Iowa.

No such final payment will be due until the Contractor certifies to the City of Muscatine that the materials, labor, and services involved in the final estimate have been paid for in accordance with the requirements stated in the specifications.

The City of Muscatine is exempt from paying Sales and Use Tax and will supply Contractor with an "Iowa Sales Tax Exemption Certificate" and an authorization letter to allow the Contractor to buy equipment and material for the project without paying Sales and Use tax.

The work on this project shall commence within ten (10) days after receipt by the contractor of a written notice to proceed, and shall be substantially completed on or before the 28th day of February 2025, subject to any changes in the contract period as provided for in these specifications, and granted by the City Council. The Work on this project shall be finally completed by, and ready for final payment, on or before the 21st day of March 2025, subject to any changes in the contract period as provided for in these specifications, and granted by the City Council.

By virtue of statutory authority, a preference will be given to products and provisions grown and coal produced within the State of Iowa.

In accordance with Iowa statutes, a resident bidder shall be allowed a preference as against a nonresident bidder from a state or foreign country if that state or foreign country gives or requires any preference to bidders from that state or foreign country, including but not limited to any preference to bidders, the imposition of any type of labor force preference, or any other form of preferential treatment to bidders or laborers from that state or foreign country. The preference allowed shall be equal to the preference given or required by the state or foreign country in which the nonresident bidder is a resident. In the instance of a resident labor force preference, a nonresident bidder shall apply the same resident labor force preference to a public improvement in this state as would be required in the construction of a public improvement by the state or foreign country in which the nonresident bidder is a resident.

Failure to submit a fully completed Bidder Status Form with the bid may result in the bid being deemed nonresponsive and rejected.

Plans and specifications governing the construction of the proposed improvements have been prepared by the Architect/Engineer. These plans and specifications, and the proceedings of the City Council referring to and defining said improvements, are hereby made a part of this Notice and the proposed contract by reference, and the proposed contract shall be executed to comply therewith.

Copies of said plans and specifications and form of contract are now on file for examination by bidders. Paper copies may also be obtained from through Rapids Reproductions, 6201 Chancellor Dr., Cedar Falls, IA 50613, or calling 1-800-383-1223, upon deposit of one-hundred fifty dollars (\$150.00) which shall be refunded if plans and specifications are returned to Rapid Reproductions no later than fourteen (14) days following award of project. If the plans and specifications are not returned within the allotted time and in a reusable condition, the deposit shall be forfeited. Please call ahead to make sure that bidding documents are ready to pick up when you arrive.

Any bidder or equipment supplier whose firm or affiliate is listed in the GSA publication "List of Parties Excluded from Federal Procurement and Non-procurement Programs" will be prohibited from the bidding process. Anyone submitting a bid who is listed in this publication will be determined to be a non-responsive bidder in accordance with 40 CFR Part 31.

Published upon order of the City Council.

City of Muscatine

BY /s/ Richard Klimes
Parks & Recreation Director

ATTEST:

BY /s/ Carol Webb
City Administrator

NTB-2

**SECTION 00 2113
INSTRUCTIONS TO BIDDERS**

SUMMARY

1.01 DOCUMENT INCLUDES

- A. Iowa Preference Law
- B. Advertisement
 - 1. Bid Submission
 - 2. Contract Time
- C. Bid Documents and Contract Documents
 - 1. Definitions
 - 2. Contract Documents Identification
 - 3. Availability
 - 4. Examination
 - 5. Creating a level bidding environment
 - 6. Inquiries/Addenda
 - 7. Product/Assembly/System Substitutions
- D. Site Assessment
 - 1. Site Examination
- E. Qualifications
 - 1. Subcontractors/Suppliers/Others
- F. Bid Submission
 - 1. Submission Procedure
 - 2. Bid Ineligibility
- G. Bid Enclosures/Requirements
 - 1. Security Deposit
 - 2. Performance Assurance
 - 3. Bid Form Requirements
 - 4. Sales and Use Taxes
 - 5. Bid Form Signature
 - 6. Additional Bid Information
 - 7. Permits, Fees, and Utility Costs
- H. Offer Acceptance/Rejection
 - 1. Duration of Offer
 - 2. Acceptance of Offer

1.02 RELATED DOCUMENTS

- A. Document 00 7300 - Supplementary Conditions:

1.03 IOWA PREFERENCE LAW

- A. When a contract for a public improvement is to be awarded to the lowest responsible bidder, a resident bidder shall be allowed a preference as against a nonresident bidder from a state or foreign country if that state or foreign country gives or requires any preference to bidders from that state or foreign country, including but not limited to any preference to bidders, the imposition of any type of labor force preference, or any other form of preferential treatment to bidders or laborers from that state or foreign country. The preference allowed shall be equal to the preference given or required by the state or foreign country in which the nonresident bidder is a resident. In the instance of a resident labor force preference, a nonresident bidder shall apply the same resident labor force preference to a public improvement in this state as would be required in the construction of a public improvement by the state or foreign country in which the nonresident bidder is a resident.

ADVERTISEMENT

2.01 BID SUBMISSION

- A. Refer to Section 00 1113 for bid submission information.

- B. Offers submitted after the time indicated in Section 00 1113 shall be returned to the bidder unopened.
- C. Offers will be opened immediately after the time for receipt of bids as indicated in Section 00 1113.

2.02 CONTRACT TIME

- A. Perform the Work within the time stated in Document 00 7300 - Supplementary Conditions.

BID DOCUMENTS AND CONTRACT DOCUMENTS

3.01 DEFINITIONS

- A. Bid Documents: Contract Documents supplemented with Advertisement for Bids Instructions to Bidders, Information Available to Bidders, Bid Form Bid securities identified.
- B. Contract Documents: Defined in AIA A201 Article 1 including issued Addenda.
- C. Bid, Offer, or Bidding: Act of submitting an offer under seal.
- D. Bid Amount: Monetary sum identified by the Bidder in the Bid Form.

3.02 CONTRACT DOCUMENTS IDENTIFICATION

- A. The Contract Documents are identified as Project Number 23-29721 with contents as identified in the Table of Contents of the drawings and specifications.

3.03 AVAILABILITY

- A. Bid Documents are made available only for the purpose of obtaining offers for this project. Their use does not grant a license for other purposes.

3.04 EXAMINATION

- A. Upon receipt of Bid Documents verify that documents are complete. Notify Architect should the documents be incomplete.
- B. Immediately notify Architect upon finding discrepancies or omissions in the Bid Documents.

3.05 CREATING A LEVEL BIDDING ENVIRONMENT

- A. Drawings and specifications are complementary and do not create a hierarchy.
- B. By submitting a bid, bidders agree that they have reviewed, in detail, all documents issued for bidding purposes.
- C. The following will not entitle a contractor to a change order increasing the overall project cost after the project has been awarded:
 - 1. Selectively choosing less significant content from the drawings or specifications where conflicting information is evident.
 - 2. Disregarding content that only appears in one part of the Bidding Documents.
- D. A written request for clarification during the bidding process will result in an addendum being issued to resolve such errors, inconsistencies, or omissions in the Bidding Documents therefore creating a level bidding environment for all bidders.

3.06 INQUIRIES/ADDENDA

- A. Direct questions to the Architect's Representative:
 - 1. Lauren Corrow, telephone: 515.243.9143, e-mail: Laruen.Gray@ISGInc.com
- B. Addenda may be issued during the bidding period. All Addenda become part of Contract Documents. Include resultant costs in the Bid Amount.
- C. Verbal answers are not binding on any party.
- D. Clarifications requested by bidders must be in writing not less than 7 days before date set for receipt of bids. The reply will be in the form of an Addendum, a copy of which will be forwarded to known recipients.

3.07 PRODUCT/ASSEMBLY/SYSTEM SUBSTITUTIONS

- A. See Section 01 6000 - Product Requirements for additional requirements.

SITE ASSESSMENT

4.01 SITE EXAMINATION

- A. Examine the project site before submitting a bid.

QUALIFICATIONS**5.01 SUBCONTRACTORS/SUPPLIERS/OTHERS**

- A. Owner reserves the right to reject a proposed subcontractor for reasonable cause.
- B. Refer to General Conditions.

BID SUBMISSION**6.01 SUBMISSION PROCEDURE**

- A. Bidders shall be solely responsible for the delivery of their bids in the manner and time prescribed.
- B. Submit one copy of the executed offer on the Bid Forms provided, signed and sealed with the required security in a closed opaque envelope, clearly identified with bidder's name, project name and Owner's name on the outside.
- C. Improperly completed information, irregularities in bid bond, may be cause not to open the Bid Form envelope and declare the bid invalid or informal.
- D. An abstract summary of submitted bids will be made available to all bidders following bid opening.

6.02 BID INELIGIBILITY

- A. Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may at the discretion of the Owner, be declared unacceptable.
- B. Bid Forms, Appendices, and enclosures that are improperly prepared may, at the discretion of Owner, be declared unacceptable.
- C. Failure to provide security deposit, bonding or insurance requirements may, at the discretion of Owner, be waived.

BID ENCLOSURES/REQUIREMENTS**7.01 SECURITY DEPOSIT**

- A. Bids shall be accompanied by a security deposit as follows:
 - 1. Bid Bond of a sum no less than 5 percent of the Bid Amount on AIA A310 Bid Bond Form.
- B. Endorse the Bid Bond in the name of the Owner as obligee, signed and sealed by the principal (Contractor) and surety.
- C. The security deposit will be returned after delivery to the Owner of the required Performance and Payment Bond(s) by the accepted bidder.
- D. Include the cost of bid security in the Bid Amount.
- E. After a bid has been accepted, all securities will be returned to the respective bidders .
- F. If no contract is awarded, all security deposits will be returned.

7.02 PERFORMANCE ASSURANCE

- A. Accepted Bidder: Provide a Performance and Payment bond as described in Document 00 7300 - Supplementary Conditions.
- B. Include the cost of Performance and Payment Bonds in the Bid Amount.

7.03 BID FORM REQUIREMENTS

- A. Complete all requested information in the Bid Form.

7.04 SALES AND USE TAXES

- A. The Owner is exempt from sales and use tax and will work with the contractor on related documents and procedures after award.

7.05 BID FORM SIGNATURE

- A. The Bid Form shall be signed by the bidder, as follows:

1. Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.
2. Partnership: Signature of all partners in the presence of a witness who will also sign. Insert the word "Partner" under each signature. Affix seal to each signature.
3. Corporation: Signature of a duly authorized signing officer(s) in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. Affix the corporate seal. If the bid is signed by officials other than the president and secretary of the company, or the president/secretary/treasurer of the company, a copy of the by-law resolution of their board of directors authorizing them to do so, must also be submitted with the Bid Form in the bid envelope.
4. Joint Venture: Each party of the joint venture shall execute the Bid Form under their respective seals in a manner appropriate to such party as described above, similar to the requirements of a Partnership.

7.06 ADDITIONAL BID INFORMATION

- A. Submit the following Supplements 24 hours after bid submission if you are the apparent low bidder or as requested to do so by the Architect or the Owner:
 1. List of Subcontractors: Include the names of all Subcontractors and the portions of the Work they will perform.
 2. Proposed Schedule of Values: Identify the Bid Amount allotted to each portion of the Work.

7.07 PERMITS, FEES, AND UTILITY COSTS

- A. The General Contractor is responsible for contacting the city and state in which the project is to be constructed to obtain a building permit, other fees and permits, and coordinating with subcontractors who are to include fees and permits in their bid amount. Include the cost of building permit, and other fees and permits in the Base Bid amount. Other fees and permits may include but are not limited to:
 1. Plan Review.
 2. City Water and Sewer Access.
 3. Parkland Dedications.
 4. Inspection.
 5. Connection.
 6. All other similar types of permits and fees.
- B. The General Contractor is responsible for contacting, or requiring their subcontractors to contact, the local utility companies to design and install temporary and permanent utilities including service meters. Include the costs of design and installation in the Base Bid.

7.08 SELECTION AND AWARD OF ALTERNATES

- A. Bids will be evaluated based on the lowest proposed base bid or on the lowest proposed bid fee calculated by the combined sums of the base bid and selection of the alternates chosen by the Owner. The Owner reserves the right to choose either the lowest base bid alone, or the lowest base bid in combination with the alternates in the order listed.

OFFER ACCEPTANCE/REJECTION

8.01 DURATION OF OFFER

- A. Bids shall remain open to acceptance and shall be irrevocable for the number of days after the bid closing date as indicated in Section 00 1113.

8.02 ACCEPTANCE OF OFFER

- A. Owner reserves the right to accept or reject any or all offers.
- B. After acceptance by Owner, Architect on behalf of Owner, will issue to the successful bidder, a written Notice of Award.

END OF SECTION

**SECTION 00 3100
AVAILABLE PROJECT INFORMATION**

PART 1 GENERAL

1.01 SUBSURFACE INVESTIGATION REPORT

- A. A copy of the geotechnical evaluation report with respect to the building site is included with this document:
 - 1. Title: Geotechnical Evaluation Report for New Indoor Dome Sports Facility in Muscatine, Iowa.
 - 2. Date: January 09, 2024.
 - 3. Prepared by: TEAM Services, Inc..
- B. This report, by its nature, cannot reveal all conditions that exist on the site. Should subsurface conditions be found to vary substantially from this report, changes in the design and construction of foundations will be made, with resulting credits or expenditures to the Contract Price accruing to Owner.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

ISSUE DATE - 06-13-2024

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Geotechnical Engineering Report

January 9, 2024

New Indoor Dome Sports Facility
Muscatine, Iowa
TEAM Project No. 1-5404

Prepared for:

Muscatine Parks and Recreation
215 Sycamore Street
Muscatine, IA 52761

Prepared by:

TEAM Services, Inc.
260-C 33rd Avenue SW
Cedar Rapids, Iowa

ISSUE DATE - 06-13-2024



January 9, 2024

Muscatine Parks and Recreation
215 Sycamore Street
Muscatine, IA 52761

Attn: Richard Klimes

Re: Geotechnical Engineering Report
New Indoor Dome Sports Facility
Muscatine, Iowa
TEAM Project No. 1-5404

Dear Mr. Klimes:

We have completed the subsurface exploration for the proposed dome facility in Muscatine, Iowa. The accompanying geotechnical report presents the findings of the subsurface exploration and our recommendations concerning geotechnical design and construction for the project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service to you in any way, please do not hesitate to contact us.

Sincerely yours,
TEAM Services



Nicholas Gilles, P.E.
Sr. Project Engineer

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.	
		1-9-24
	Nicholas M. Gilles, P.E. License Number 21385 Date: 1/9/24 My license renewal date is December 31, 2023. Pages covered by this seal: <u> All Pages </u>	

ISSUE DATE - 06-13-2024

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PROJECT INFORMATION

Project information has been provided in an RFP letter prepared by ISG, Inc. We understand that the project will consist of construction of a new 81,000 square foot air-supported dome building with a 1,000 square foot accessory building attached. We understand that structural loads are anticipated to be in the range of 3-5 kips per lineal foot for the vertical tensile loading and in the range of 1-3 kip per lineal foot for the horizontal loading. Loads of 3 kips per lineal foot or less are anticipated for the accessory building. Based on the existing grades, it appears that cut and fill on the order of 2 to 3 feet may be required to achieve the desired final grades at this site.

SITE CONDITIONS

The project site is located at 401 South Houser Street in Muscatine, Iowa. The site currently consists of grass soccer fields. The site was gently sloping downhill to the south with an overall relief of about 5 feet across our borings. Our ATV-mounted drill rig was able to access the boring locations without difficulty.

FIELD EXPLORATION

A total of 10 borings were conducted at this site to depths of about 20 to 30 feet below existing grades between October 18 and 20, 2023. The boring locations were determined in the field by TEAM Services personnel using the provided site plan and measurements from existing site features. The approximate boring locations are indicated on the Boring Plan enclosed in the Appendix. Ground surface elevations at the boring locations were determined using a surveying rod and scope and by referencing the top of a nearby electrical pad at the northeast side of the soccer field as a benchmark with an assigned elevation of 100.0 feet. The ground surface elevations are provided on their respective Boring Logs. The approximate boring locations are indicated on the Boring Plan enclosed in the Appendix. The locations and elevations of the borings should be considered accurate only to the degree implied by the means and methods used to define them.

Our drilling equipment consisted of an ATV-mounted auger drill rig. The borings were made by mechanically twisting a continuous flight hollow stem steel auger into the soil. At assigned intervals, the center drive bit of the auger was removed and soil samples were obtained.

Representative samples were obtained using thin-walled tube and split-barrel sampling procedures in general accordance with ASTM Specifications D 1587 and D 1586, respectively. In the thin-walled tube sampling procedure, a thin-walled, seamless steel tube with a sharp cutting edge is pushed hydraulically into the ground to obtain relatively undisturbed samples of cohesive or moderately cohesive soils. In the split-barrel sampling procedure, a standard 2-inch O.D. split-barrel sampling spoon is driven into the ground with a 140-pound hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the standard penetration resistance value. These values are indicated on the Boring Logs at the depths of occurrence. The samples were tagged for identification, sealed and returned to the laboratory for testing and classification.

Field logs of the borings were prepared by the drill crew. These logs included visual classifications of the materials encountered during drilling, as well as the driller's interpretation of the subsurface conditions between samples. Final Boring Logs included with this report represent an interpretation of the field logs and include modifications based on laboratory observation and tests of the samples.

LABORATORY TESTING

Based on the driller's field records and examination of the samples in the laboratory, a soil testing program was developed to collect more information about the soil conditions at the site. The following is a brief description of the specific tasks completed for this project.

Natural Moisture Content -- The natural moisture content of selected samples was determined in general accordance with ASTM D 2216. The moisture content of the soil is the ratio, expressed as a percentage, of the weight of water in a given mass of soil to the weight of the soil particles. The results are presented on the Boring Logs at the depths from which the samples were obtained.

Unit Weight -- In the laboratory, selected undisturbed samples of the site soils were measured and weighed to determine gross weight and volume of the samples. Where possible, the samples are placed in a template and trimmed at each end to fit the template. The moisture content of each specimen was then determined, and the dry unit weight was calculated. The results of these tests are also presented on the Boring Logs at the appropriate sample depths.

Unconfined Compressive Strength -- A calibrated hand penetrometer was used to estimate the approximate unconfined compressive strength of select samples. The calibrated hand penetrometer has been correlated with unconfined compression tests and provides a better estimate of soil consistency than visual examination alone.

Standard Proctor -- Representative loose samples of potential borrow soils from the project site were collected, placed in plastic sacks or buckets, sealed, and transported to the laboratory for compaction testing. Standard Proctor compaction tests (ASTM D 698) were performed on selected samples to determine their compaction characteristics, including their maximum dry density and optimum moisture content. Test results are presented on the attached Moisture Density Relationship test sheet.

As part of the testing program, the samples were classified in the laboratory based on visual observation, texture and plasticity. The descriptions of the soils indicated on the Boring Logs are in accordance with the enclosed General Notes and the Unified Soil Classification System. Estimated group symbols according to the Unified Soil Classification System are given on the Boring Logs. A brief description of this classification system is attached to this report.

SUBSURFACE CONDITIONS

Subsurface conditions encountered during this exploration are indicated on the individual Boring Logs. Based on the results of the borings, subsurface conditions on the project site can be generalized as follows.

Existing fill and possible fill were encountered at the ground surface of our borings. These soils consisted of sandy lean clay. The fill and possible fill extended to depths of about 1 to 3.5 feet below existing grades.

Buried topsoil was encountered below the fill in Borings 7, 8, and 10. The topsoil consisted of sandy lean clay with trace amounts of organic matter and extended to depths of about 3.5 feet below existing grades.

Alluvial deposits were encountered below the fill, possible fill, and topsoil in our borings. The cohesive alluvium consisted of soft to stiff silt, lean clay, lean to fat clay, fat clay, and sandy lean

clay. The granular alluvium consisted of loose to medium dense silty sand, clayey sand, fine to medium sand, and fine to coarse sand. Borings were terminated in the alluvium at depths of 20 to 30 feet below existing grades.

The above descriptions provide a general summary of the subsurface conditions encountered. The attached Boring Logs contain detailed information recorded at each boring location. These Boring Logs represent our interpretation of the field logs based on engineering examination of the field samples. The lines designating the interfaces between various strata represent approximate boundaries, and the transition between strata may be gradual. It should be noted that the soil conditions will vary between the boring locations.

GROUNDWATER CONDITIONS

The borings were monitored during drilling for the presence and level of groundwater accumulation. Groundwater levels observed in the borings are noted on the Boring Logs.

During drilling operations, groundwater seepage was observed at depths of about 19 to 24 feet below existing grades. These groundwater level observations provide an approximate indication of the groundwater conditions existing on this site at the time of drilling operations. Due to the low permeability of many of the on-site cohesive soils, a relatively long period of time may be necessary for a groundwater level to develop and stabilize in the borehole. Longer-term monitoring in cased holes or piezometers would be required for a more accurate evaluation of the groundwater conditions at this site.

Fluctuation of groundwater levels can occur due to seasonal variations in the amount of rainfall, runoff, surface drainage, subsurface drainage, site topography, irrigation practices, ground cover (pavement or vegetation), and other factors not evident at the time the borings were conducted. Normally, the highest groundwater levels occur in late winter and spring time while the lowest levels occur in late summer and fall time. The fluctuation of the groundwater levels should be considered when developing the design and construction plans for this project.

CONCLUSIONS AND RECOMMENDATIONS

Existing Fill and Topsoil Considerations

Existing fill and possible fill were encountered at the ground surface of our borings. These soils consisted of sandy lean clay. The fill and possible fill extended to depths of about 1 to 3.5 feet below existing grades. Based on the limited amount of testing performed in our borings, the existing fill appears to be well-compacted and suitable for support of the proposed structural loads.

Man-made fills have an inherently high risk of variability and careful construction inspection will be necessary to assure adequate support performance. In areas where fill is encountered, we recommend that additional testing be conducted at the time of construction to further explore the suitability of the existing fill. Foundations and floor slabs may be placed on existing fill where testing confirms suitability. If unsuitable soils are encountered, these soils should be removed and replaced with engineered compacted and tested fill. It should be noted that the most conservative approach in dealing with unknowns within the existing fill would be to completely remove the fill and replace it with engineered compacted and tested fill.

Buried topsoil was encountered below the fill and possible fill in Borings 7, 8, and 10. Dependent on the organic content and density, organic soils may not be suitable for direct support of structures. Based on the samples obtained from our borings, it appears that the buried topsoil at this site has adequate density and organic content and may be suitable to remain in place. However, careful inspection will be required during construction to identify any areas of topsoil that have high organic content or low density.

For planning purposes, contract allowances should be made for some remedial work at the site related to subgrade preparation and foundation construction. This will likely include overexcavation and backfilling of unsuitable soils encountered at subgrade elevation or in the foundation excavations or lowering of the foundations to suitable bearing materials. The amount of such work cannot be defined at this time; therefore, the owner should be informed of these cost variables.

Expansive Soil Considerations

Moderately expansive lean to fat clay and fat clay alluvium was encountered across much of this site. These soils were generally present from depths of about 6.5 to 17 feet below existing grades. These expansive soils will experience volume changes with changes in soil moisture content.

Therefore, foundations, slabs, and pavements would be susceptible to swelling pressures that can cause movement, cracking, and structural distress when bearing just above or directly on these soils. To eliminate the risk associated with these expansive soils, it would be necessary to completely remove the expansive soils at the site and replace them with suitable, compacted and tested non-expansive engineered fill material. However, complete removal or treatment of these soils would be costly and it is our opinion that potentially expansive soils were encountered at depths that will not have significant effects on the structure.

The contractor should avoid excessive drying of subgrade soils during construction. If these soils experience drying then the dried soils should be removed, moisture conditioned, and properly compacted back into place or replaced with suitable new compacted fill material, prepared in accordance with the recommendations of this report. Measures to reduce drying of these soils include following excavation rapidly with foundation, floor slab and pavement construction, covering the site with moisture-proof plastic, and/or occasionally watering the subgrade soils during dry weather.

Site Preparation

Site preparation should begin with the removal of any organic-laden soils, vegetation and any loose, soft or otherwise unsuitable surficial materials. Unsuitable existing fill and expansive soils may be removed as this time, if encountered. For planning purposes, we expect average vegetation stripping depths of about 9 inches for undisturbed areas. The actual depths of stripping may vary and should be determined in the field in consultation with TEAM Services personnel. The site strippings and any near surface soils with organics could be used for landscaping purposes in non-critical areas where support for foundations, floor slabs and pavements is not required.

After stripping, the exposed grade should be proofrolled and inspected by TEAM Services personnel. Proofrolling should be conducted with a fully loaded tandem axle dump truck having a minimum gross weight of 25 tons. Where proofrolling is not possible due to excessive disturbance to the existing soils, these soils should be probed and visually inspected by TEAM Services to determine the suitability of the subgrade. Any unsuitable soils identified during proofrolling and/or probing should be removed and replaced with suitable engineered compacted and tested fill which meets or exceeds the Class 1 Construction Application requirement Table A in the following **Fill Placement** section.

It should be noted that initial subgrade preparation for some soil types, such as the moist cohesive soils, will likely not be suitable under repeated heavy construction vehicle loads particularly in deep cut areas or where earthwork is performed near the groundwater table. The areas will likely require stabilization to greater depths or stabilization with fly ash, cement or lime. The use of crushed rock with or without geogrid could also be considered in-lieu of the additional stabilization methods. Contract allowances should be made for some remedial work at the site related to subgrade preparation. The amount of such work cannot be defined at this time; therefore, the owner should be informed of these cost variables.

Fill Placement

Fill and backfill placed for support of the proposed building should consist of approved materials which are free of organic matter and debris. Brick, concrete, rocks or other solid pieces with a maximum dimension of 3 inches or larger should not be placed in the newly placed fill sections. We recommend that low-plasticity cohesive soil or granular soil be used for general fill placement. By our definition, low-plasticity cohesive soil would have a liquid limit of 45 or less and a plasticity index of 25 or less. In our opinion, the alluvial sands and sandy lean clay and lean clay alluvium and fill at this site appear to meet these criteria and may be reused as engineered compacted and tested fill. The lean to fat clay and fat clay alluvium do not meet the criteria above and should not be reused as engineered fill. Any off site potential borrow materials should be evaluated by TEAM Services prior to their use as engineered compacted fill.

The following Table A lists recommended minimum compaction requirements for cohesive and cohesionless fill materials for specific applications. For low-plasticity (CL and ML) cohesive soils, moisture contents within a range of 0 to +4 percent of the material's optimum moisture content (as determined by Standard Proctor ASTM D 698) are necessary to achieve the desired fill qualities for general grading and utility backfill. Sometimes, cohesive subgrade soils have difficulty passing proofroll or supporting construction traffic if significantly wet of optimum. For the upper 2 feet of subgrade soils, it can be permissible to place the cohesive soils up to 2 percent dry of optimum moisture content. Granular materials with sufficient fines content to be moisture-sensitive should be placed within 3 percent of the material's optimum moisture content. Clean granular materials are not moisture sensitive.

The on-site soils can be excavated utilizing conventional excavation equipment. Granular soils can generally be suitably compacted with vibratory compaction equipment. Proper compaction of

cohesive soils can be achieved with sheepsfoot or pneumatic type compactors within the above moisture content ranges. The soils should be placed in a maximum loose thickness of 12 inches and at a thickness compatible with the equipment being utilized. Where manually operated compaction equipment is used, a maximum lift thickness of 4 inches is typical. Sufficient density tests should be performed on each lift of engineered compacted fill placed to verify that adequate compaction is achieved.

TABLE A
RECOMMENDED DEGREE OF COMPACTION GUIDELINES

Construction Application		Standard Proctor (ASTM D698) Cohesive Soil	Standard Proctor (ASTM D698) Cohesionless Soil ²	Relative Density (ASTM D4253 & D4254) Cohesionless Soil ^{1,2}
Class 1	Subgrade preparation for structures, pavements, and other critical backfill areas	95%	98%	75%
Class 2	Backfill adjacent to structures not supporting other structures or pavements. Minor subsidence possible.	90%	93%	45%
Class 3	Backfill in non-critical areas. Moderate subsidence possible.	85%	88%	20%

1. Use Relative Density technique (ASTM D4253 & D4254) where Standard Proctor technique (ASTM D698) does not result in a definable maximum dry density and optimum moisture content.
2. Clean gravel should be inspected visually during compaction by a qualified engineering technician to confirm adequate compactive effort and appropriate lift thicknesses in lieu of density testing.

Upon completion of the filling operation, care should be taken to maintain the subgrade moisture content prior to construction of foundations. If the subgrade should become desiccated, frozen or otherwise disturbed, the affected material should be removed or these materials should be scarified, moistened, recompact and retested prior to concrete placement. As a general guideline, fills which dry to a moisture content less than 2/3 of their optimum moisture content as determined by the Standard Proctor Test (ASTM D 698) in their upper 2 inches are candidates for reconditioning as described above.

Shallow Foundation Design

It appears that conventional shallow foundations for proposed structures at this site will bear in the existing fill, natural soils, or on engineered compacted and tested fill required to achieve the desired

final grades or to replace unsuitable soils. In our opinion, foundations bearing on existing fill and topsoil that is verified as suitable in the field, undisturbed natural soils and newly placed engineered compacted and tested fill extending to suitable soils may be designed for a maximum net allowable bearing pressure of 1,500 pounds per square foot.

This bearing capacity may be increased by 33% for the total foundation load, which considers transient forces such as wind. We estimate maximum settlements due to the provided structural loads will be less than 1 inch and differential settlement may be on the order of 2/3 of the total settlement.

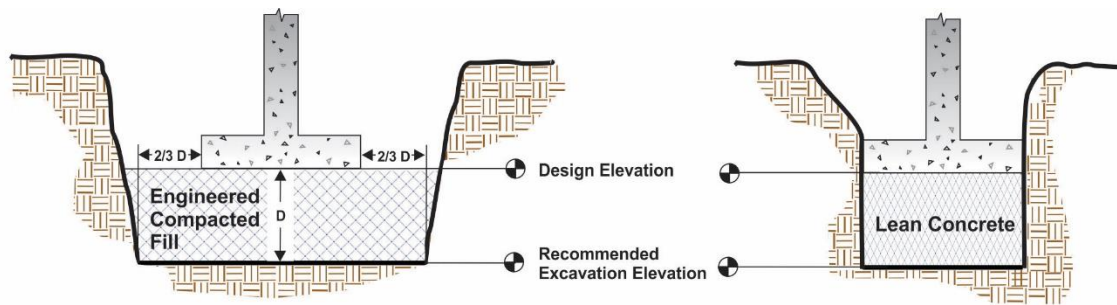
Continuous foundations should be adequately reinforced to limit deflections caused by non-uniform soil support characteristics. All perimeter foundations and foundations in unheated areas should extend at least 42 inches below the lowest adjacent finished grade for frost protection and reduce movements associated with changes in soil moisture content. Interior footings located in permanently frost-free environments should have at least 18 inches of protective embedment below lowest adjacent finished grade. We recommend that isolated spread footings should have a minimum width of 24 inches, continuous formed footings a minimum width of 16 inches and trench footings a minimum width of 12 inches.

Uplift resistance will be provided by the minimum dead weight of the structure and the foundation elements, plus the weight of the soil above the foundations. The weight of the soil above the foundations and extending outward at a 2 vertical to 1 horizontal slope may be considered as contributing to the uplift resistance of the foundations. This is based on the assumption that the backfill of the foundations will be compacted in accordance with the recommendations of this report for structural fill. The buoyant unit weight of concrete should be considered for the weight of buried concrete. The buoyant unit weight of the soils at the site of 60 pcf is recommended for uplift calculations. The maximum upward bearing pressure on horizontal elements of a pedestal type foundation should be checked against a maximum allowable pressure of 1,500 psf on these surfaces.

Shallow Foundation Construction

We recommend that the base of all foundation excavations be observed and tested by the geotechnical engineer prior to placement of concrete. During this process, if loose, soft, organic, or otherwise unsuitable materials are encountered at foundation elevations, we recommend that the foundations extend through the unsuitable soils and bear on undisturbed, suitable soils below or an overexcavation and replacement procedure be performed. The overexcavation and backfill

procedure would include removal of these unsuitable materials and replacement with suitable engineered compacted fill soils prepared in accordance with the recommendations in Table A in the **Fill Placement** section of this report. The following Figure 1 shows a typical cross-sectional view of this overexcavation and backfill procedure.



Overexcavation / Backfill

NOTE: Excavations should be sloped as necessary for safety.

Figure 1

In general, the overexcavation is widened $\frac{2}{3}$ of a foot laterally on each side of the foundation per each foot of excavation that is below the foundation bearing elevation. The depth of overexcavation (shown as “D” in Figure 1) should be determined in consultation with the geotechnical engineer. Backfill materials should be suitable cohesive or granular soil, prepared and compacted in accordance with the recommendations in Table A in the **Fill Placement** section of this report. Another option would be to remove the unsuitable soils down to suitable soils and replace the excavated area with lean concrete (minimum 50 psi compressive strength), in which case widening of the excavation would not be required.

Footing excavations should be kept free of water accumulation to prevent softening of subgrade soils and conducted in a manner which avoids disturbance of soils beneath existing foundations. It should be noted that the moist cohesive soils at these sites are highly susceptible to disturbance. Any disturbed soils may require additional removal or compaction prior to concrete placement. Concrete should be placed as soon as possible after excavating to minimize bearing soil disturbance. Should the soils at bearing level become excessively dry, saturated, or otherwise disturbed; the affected soil should be removed prior to placing concrete.

Intermediate Foundation System

A helical pier foundation system may be considered to support the proposed structures and to provide critical uplift resistance for the proposed dome structure. These foundation systems are typically

designed by licensed contractors who have a professional engineer on staff. We recommend that the consultant be provided a copy of this report to use for design and determine requirements for additional exploration, if any, to support their design work. The contractor should submit their proposed solution to TEAM Services for review.

Floor Slabs

Floor slabs can be adequately supported on a subgrade prepared in accordance with the **Existing Fill and Topsoil Considerations**, **Expansive Soil Considerations**, **Site Preparation**, and **Fill Placement** sections of this report.

During building construction, the surface of the completed building pad may have been disturbed by construction equipment, particularly in areas where the moist cohesive soils are present at the ground surface. Therefore, it is recommended that the building areas be proofrolled or probed and tested where proofrolling cannot be conducted to delineate zones of soft soils present near the surface which may require additional removal or compaction prior to construction of the floor slab. Proofrolling is also the desired method for evaluating the suitability of surficial existing fill soils. If the exposed subgrade has been disturbed since the original subgrade preparation, the subgrade should be scarified to a minimum depth of 9 inches, moisture conditioned (if needed), and recompacted to meet or exceed the Class 1 Construction Application requirement given in Table A in the **Fill Placement** section.

It should be noted that initial subgrade preparation for some soil types, such as the moist cohesive soils, may not be suitable under repeated heavy construction vehicle traffic. The areas will likely require stabilization to greater depths or stabilization with fly ash, cement or lime. The use of crushed rock with or without geogrid could also be considered in-lieu of the additional stabilization methods. Contract allowances should be made for some remedial work at the site related to subgrade preparation. The amount of such work cannot be defined at this time; therefore, the owner should be informed of these cost variables.

To avoid localized slab failures, it is important that interior backfill around foundations and in plumbing trenches be properly compacted. Therefore, all fill materials placed beneath the proposed floor slab are to meet or exceed the Class 1 Construction Application requirement given in Table A.

With the presence of existing fill and expansive soils at this site, we recommend that continuous wire mesh reinforcement or a regular rebar schedule be considered for the floor slab and that crack control joints be sawn with a regular spacing not greater than about 10 feet. Isolation joints should be considered between the floor slabs and perimeter or interior foundations so that they can move independently without damage. These measures are taken with the intent of allowing the floor slab to deflect somewhat without experiencing large differential movements across slab joints and to channel the cracking of the floor slabs to the crack control joints so that they are not perceived as structure distress.

In order to allow successful use of a variety of floor systems, measures to control vapor transmission through the floor slab are recommended where moisture sensitive floor coverings are a possibility. This would include use of a vapor barrier/retarder with a minimum thickness of 10 mils placed between the slab and an underlying capillary break material. The vapor barrier/retarder should be strong enough to resist puncturing by the capillary break materials.

We recommend that the capillary break consist of clean manufactured sand or crushed limestone (drainable material). The capillary break should be at least 4 inches thick and contain less than 6 percent material finer than the U.S. No. 200 sieve. Floor slabs in areas not subject to frost action may be designed with a modulus of subgrade reaction of 150 pci when subgrade soils are prepared in accordance with the recommendations of this report.

Lateral Earth Pressures

Below-grade walls or retaining walls must be capable of resisting the lateral earth pressures due to the unbalanced soil heights. Therefore, the walls should be designed to accommodate these unbalanced lateral soil pressures. The following Table B lists the estimated lateral earth pressures for cohesive and cohesionless (granular) backfill.

Cohesionless (granular) backfill lateral earth pressure parameters may be used where granular backfill is installed behind the subsurface wall. The granular backfill should have a minimum width of 2 feet and be wide enough to accommodate the back slope limit line of 1:2 (horizontal to vertical) or flatter. The area between the required minimum zone of granular material and the actual limits of excavation may be backfilled with either cohesive or granular soils. If wall drains are not provided, then the design groundwater elevation should be considered equal to the ground surface and hydrostatic pressures need to be considered in the design.

TABLE B
ESTIMATED LATERAL EARTH PRESSURE PARAMETERS ¹

	Cohesive Soil (non-expansive)	Cohesionless Soil (granular or sand)
Approximate Total Density	130 pcf	120 pcf
Approximate Friction Angle	15° - 20°	30° - 35°
Active Pressure Coefficient, K_a	0.5	0.3
At-Rest Pressure Coefficient, K_o	0.7	0.5
Passive Pressure Coefficient, K_p	2	3.3
Coefficient of Friction for Sliding at base of Concrete Footing	0.3	0.6
Active Earth Pressures – Design Equivalent Fluid Pressures – No Factor of Safety		
Drained	65 pcf	35 pcf
Undrained ²	95 pcf	80 pcf
At-Rest Earth Pressures – Design Equivalent Fluid Pressures – No Factor of Safety		
Drained	90 pcf	60 pcf
Undrained ²	110 pcf	90 pcf
Passive Earth Pressures ⁴ – Design Equivalent Fluid Pressures		
Drained	130 pcf	200 pcf
Undrained ³	70 pcf	100 pcf

1. Assumes negligible wall friction, a vertical wall, level backfill, and zero surcharge loads. Excludes cohesion shear strength and sliding friction effects.
2. Combined factored buoyant backfill unit weight and hydrostatic water head (62.4 pcf).
3. Excludes hydrostatic loading (62.4 pcf).
4. Passive pressure to be ignored in the upper 2 feet of finished grades due to frost and desiccation effects. Factor of safety 2.0 has been applied to limit the amount of lateral deformation required to mobilize the passive resistance.

If the top of the wall is able to deflect approximately 0.2% to 0.4% of the wall height, then active earth pressures can develop with granular backfill. However, if the wall is rigidly fixed or otherwise restricted from deflecting, then at-rest pressure parameters should be used for design.

Lateral pressure arising from surcharge loads, sloped backfill loads and earthquake loads should be added to the above values to determine the total lateral earth pressures. In addition, transient loads imposed on the walls by construction equipment during backfilling should be taken into consideration during design and construction. Excessively heavy grading equipment (that could impose temporary excessive pressures or long-term excessive residual pressures against the constructed walls) should not be allowed within about 5 feet horizontally of the walls. Increased earth pressures can also develop from restricted soil drainage and compaction of the adjacent backfill.

Temporary Excavation Support

All excavations should comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P, "Excavations and Trenches" and other applicable codes. This document states that excavation safety is the responsibility of the contractor. Reference to this OSHA requirement should be included in the job specifications.

Construction Dewatering

During construction activities, care should be taken to maintain positive drainage at the site to ensure that drainage is directed away from excavations. Based on the groundwater levels observed in our borings, it appears unlikely that groundwater seepage will be encountered in shallow excavations at this site. During times of wet weather or if seepage is expected, we recommend that construction groundwater control be established prior to excavating the final 2 feet of soils. Groundwater seepage in cohesive soils can be provided by digging a system of trenches leading to a gravity outfall or temporary construction sumps to be pumped outside the perimeter of the excavations. Groundwater seepage in sands can be controlled using a system of well points.

The cohesive soils at this site are highly susceptible to disturbance, especially when moist. Where seepage is encountered, it will likely be beneficial to place a lift of at least 6 inches of clean, crushed concrete or limestone gravel in excavations to provide a firm working surface for constructing foundations and floor slabs. The clean gravel can be well compacted in the presence of water, will drive through and reinforced shallow cohesive soils which have become softened by water exposure, and can accumulate water seepage to flow to a peripheral sump pit to be pumped out of the excavation area.

If groundwater control is lost during construction, disturbance of the upper few inches to few feet below grade is possible in the soils at the site. In these circumstances, it will be necessary to reestablish groundwater control and remove the disturbed soils. TEAM Services should be consulted regarding the extent of remedial action which is necessary.

Site Drainage

Positive site drainage should be maintained along the perimeter of structures. Final grades should be established to direct runoff away from building foundations. Down spouts, gutters, and roof

drains should discharge away from building perimeters. Site grading should direct surface water away from excavations or completed foundations during construction and after site development is completed.

Pavement Subgrade Preparation

We expect the soils which will be encountered to support the pavements will consist of existing fill and natural soils in cut areas and engineered compacted and tested fill required to achieve the desired final grades or to replace unsuitable materials. In order to provide satisfactory performance, it is important that the subgrade support be relatively uniform with no abrupt changes in the subgrade support. Therefore, we recommend that the prepared subgrade depth be at least 12 inches deep after fine grading or trimming and extend 2 feet beyond the edge of the pavements/slabs.

In cut areas, it is recommended that the subgrade area be cut to design subgrade level and that the exposed subgrade be scarified to a minimum depth of 12 inches, moisture conditioned (if needed), and compacted. In fill areas, the subgrade should be proof-rolled to delineate zones of soft or loose soils present near the surface which may require additional removal or compaction, prior to fill placement. We recommend that reworked existing soils and newly placed engineered compacted non-expansive cohesive soils be placed and compacted in accordance with the **Fill Placement** section of this report. Suitable engineered compacted cohesive subgrade would provide a design support capability equivalent to a CBR value of 2 or a modulus of subgrade reaction value of 70 pounds per cubic inch. A minimum of six inches of suitable engineered compacted granular subgrade placed on prepared cohesive soils would provide a design support capability equivalent to a CBR value of 3 or a modulus of subgrade reaction value of 100 pounds per cubic inch.

It should be noted that initial subgrade preparation for the moist cohesive soils at this site may not be suitable under repeated heavy construction vehicle loads and may require stabilization to greater depths or stabilization with fly ash, cement or lime. The use of crushed rock with or without geogrid could also be considered in-lieu of the additional stabilization methods. The subgrade preparation should be completed shortly before paving operations commence and is to be maintained in suitable condition until paved. Damage caused by construction traffic or deterioration due to adverse weather are to be repaired prior to paving. Subgrade compaction, moisture content and depth should be verified by a TEAM Services representative prior to pavement operations.

Where construction traffic is required on the proposed subgrade, the subgrade should be proofrolled immediately prior to pavement placement with a fully loaded, tandem axle dump truck. Areas that yield should be removed and replaced with engineered compacted and tested fill.

Surface drainage around the pavement sections is important to long-term pavement performance. Curbs should be backfilled as soon as possible, once adequate pavement strength is achieved. The backfill should be compacted and sloped to prevent water from ponding and infiltrating under the pavement. Water allowed to pond adjacent to the pavement could saturate the subgrade and contribute to premature pavement deterioration.

Pavement Thickness

Either flexible (hot mix asphalt, HMA) or rigid pavement (Portland cement concrete, PCC) types could be constructed on the prepared cohesive subgrade as recommended in the previous section. The following Table C summarizes alternate pavement thicknesses for typical lightly-loaded and heavily-loaded paved areas constructed directly on the cohesive subgrade and on a granular base placed on the prepared cohesive subgrade. We have assumed that the lightly-loaded pavement sections will be most applicable for this project. However, a more specific pavement evaluation can be provided if traffic volume and loading information is available.

The pavement thicknesses in Table C are considered to be typical and would require periodic maintenance. This maintenance would consist of sealing cracks and replacement of isolated distressed areas. Thicker pavement sections would reduce maintenance, provide additional protection from the existing fill materials, and increase the pavement service life. Likewise, thinner sections would be expected to have a shorter service life that still may satisfy particular project needs but may require more maintenance. Other criteria which influence pavement service life include surface drainage, subsurface drainage, paving material quality, and joint design. Construction procedures involving placement, finishing, curing, jointing and weather protection can significantly impact pavement performance.

TABLE C
TYPICAL PAVEMENT THICKNESSES

Traffic Volume	Rigid: Portland Cement Concrete ¹	Flexible: Full-Depth Hot Mix Asphalt ²			
		Full-Depth Type A HMA	Type A over Type B HMA		
			Type A	Type B Class I Base	Total HMA Thickness
Thicknesses below are based on the pavement directly on the prepared cohesive subgrade					
Lightly-Loaded ³	5"	6"	1.5"	5"	6.5"
Heavily-Loaded ⁴	7"	8"	1.5"	7"	8.5"
Thicknesses below are based on the pavement on 6” of crushed rock ⁵ base placed on prepared subgrade					
Lightly-Loaded ³	---	4.5”	1.5”	3.5”	5”
Heavily-Loaded ⁴	---	6.5”	1.5”	5.5”	7”

- 1) PCC - Flexural strength of 550 psi (compressive strength of 4000 psi).
 - Structural coefficient (SC) of 0.50/inch.
- 2) Type A HMA mix with a minimum of 60% crushed aggregate
 - Structural coefficient of 0.44/inch.
Type B Class I HMA mix with a minimum of 30% crushed aggregate
 - Structural coefficient of 0.40/inch.
- 3) Automobile and 1 to 2 trucks average daily traffic.
- 4) Entrances, delivery areas, dumpster areas or other areas of heavier truck traffic (25 trucks or less per day).
- 5) Crushed rock - Structural coefficient of 0.12/inch.

QUALIFICATION OF REPORT

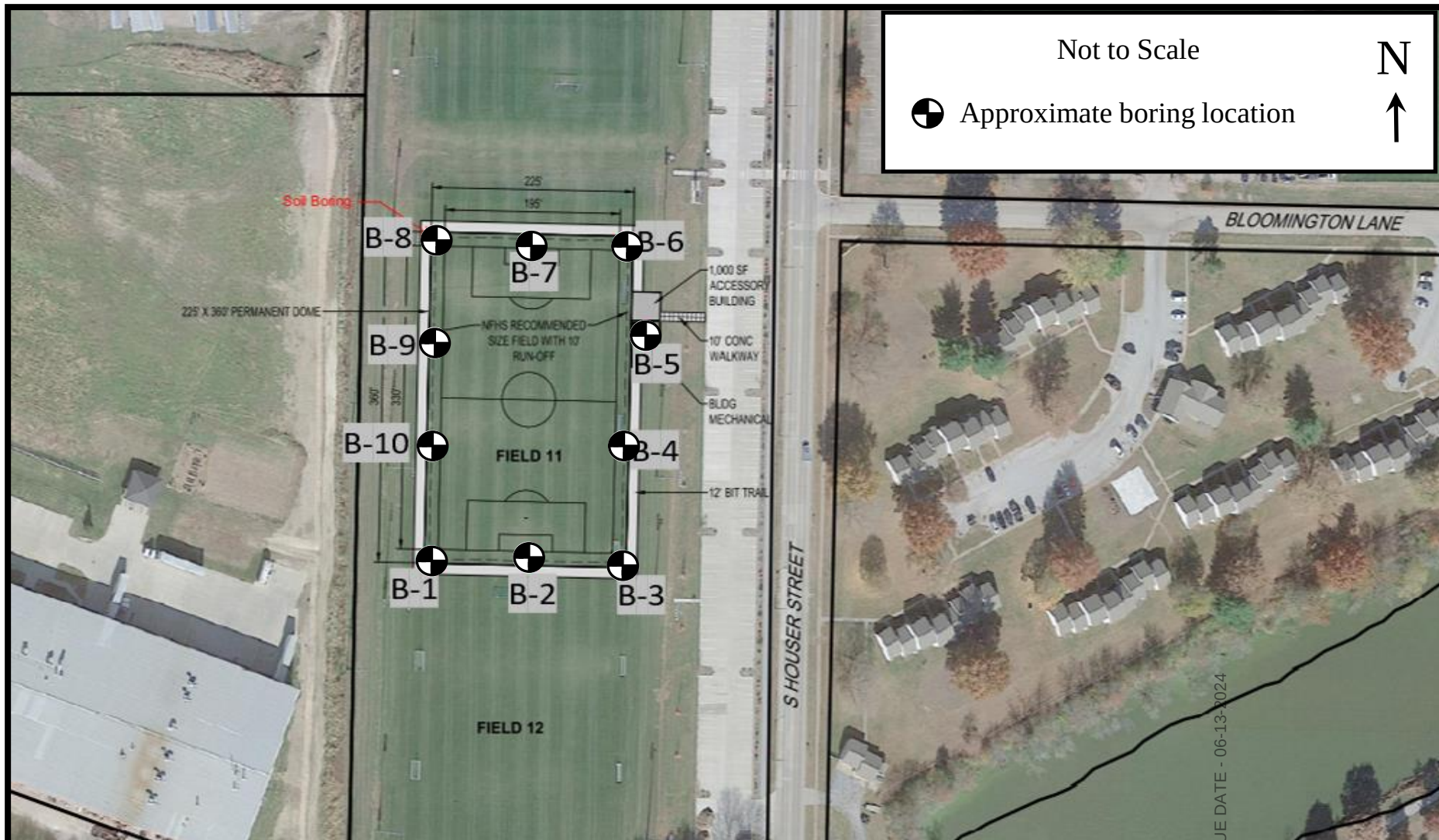
Our evaluation of foundation support conditions has been based on our understanding of the site and project information and the data obtained in our exploration. The general subsurface conditions utilized in our foundation evaluation have been based on interpolation of subsurface data between the borings. In evaluating the boring data, we have examined previous correlations between soil properties and foundation bearing pressures observed in soil conditions similar to those at your site. The discovery of any site or subsurface conditions during construction which deviate from the data outlined in this exploration should be reported to us for our evaluation. The assessment of site environmental conditions or the presence of pollutants in the soil, rock, and groundwater of the site was beyond the scope of this exploration.

Support of structures on existing fill is discussed in this report. Existing fills are potentially much more inconsistent than natural soil deposits. Support of structures and pavements upon existing fills carries with it a degree of risk that unsuitable materials may be buried within the fill and not be detected in the inspection and testing program recommended herein. Unsuitable materials in the fill may experience settlement and cause distress to structures and pavements supported on the fill. Elimination of this risk requires removal of the fill or supporting structures on suitable foundations such that the fill would not adversely affect the structures.

Potentially expansive soils were encountered at this site. These soils experience volume changes in response to soil moisture content changes. These volume changes can cause movement, cracking and other distress for structures and pavements supported above them. Measures to help reduce the degree of soil volume change have been discussed. These measures can reduce the risks associated with the potentially expansive soils, but they do not eliminate this risk. Elimination of the risks associated with expansive soils would require removal of the expansive soils and replacement with a more suitable soil type or structurally suspending the planned structures above the expansive soils. A degree of risk must be accepted to support the structures and pavements above expansive soils.

It is recommended that the geotechnical engineer be retained to review the plans and specifications so that comments can be provided regarding the interpretation and implementation of the geotechnical recommendations in the design and specifications. It is further recommended that the geotechnical engineer be retained for testing and observation during the foundation construction phase to help determine that the design requirements are fulfilled.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No other warranty is provided. In the event that any changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions of this report modified or verified in writing by the geotechnical engineer.



TEAM Services, Inc.

260-C 33rd Ave SW
Cedar Rapids, IA 52404

Indoor Sports Dome

Muscatine, IA

Boring Plan

Project No. 1-5404

January 8, 2024

BORING LOG No. 1

Page 1 of 1

PROJECT

Indoor Sports Dome

SITE

Muscatine, Iowa

GRAPHIC LOG	Approx. Surface Elevation (ft): 94.00 Site Datum: Existing Electrical Pad Drilling Method: HSA	USCS SYMBOL	DEPTH (ft.)	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY	SPT - N (BLOWS / FT.)	MOISTURE, %	DRY DENSITY (PCF)	UNCONFINED STRENGTH (PSF)	OTHER
DESCRIPTION											
	Fill -- Sandy lean CLAY, dark gray and very dark gray	CL	0	1	AS			21.3			
		CL									
				2	SS	16	15	23.7			
3.5	90.5										
	Alluvium -- Lean CLAY, trace sand, dark gray, stiff to very stiff	CL	5	3	SS	16	11	14.9			
6.0	88.0										
	Alluvium -- Sandy lean CLAY, gray and yellowish brown, medium stiff	CL		4	SS	16	5	17.1			
8.5	85.5										
	Alluvium -- Fine to medium SAND, trace silt, gray, loose	SM	10	5	SS	14	6	43.8			
12.0	82.0										
	Alluvium -- Fat CLAY, dark gray, soft	CH	15	6	SS	13	2	19.7			
17.0	77.0										
	Alluvium -- Fine to medium SAND, trace gravel, brown, medium dense	SM	20	7	SS	14	16	18.7			

Notes:

* Calibrated hand penetrometer

Hammer Type: Manual

Water Level:

 20' Ft. While Drilling Ft. After Drilling Ft.

Boring Started: 10-20-2023

Boring Completed: 10-20-2023

Rig: ATV

Foreman: DC

Approved: NG

Job #: 1-5404

1-5404.geo TSBORRE 16.fdt 4/25/2017

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

BORING LOG No. 2

Page 1 of 1

PROJECT

Indoor Sports Dome

SITE

Muscatine, Iowa

GRAPHIC LOG	Approx. Surface Elevation (ft): 94.57 Site Datum: Existing Electrical Pad Drilling Method: HSA	USCS SYMBOL	DEPTH (ft.)	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY	SPT - N (BLOWS / FT.)	MOISTURE, %	DRY DENSITY (PCF)	UNCONFINED STRENGTH (PSF)	OTHER
	Fill -- Sandy lean CLAY, very dark gray and dark brown 3.5 91.1	CL	0	1							
				1	SS	15	11	10.8			
	Alluvium -- Sandy lean CLAY, dark gray, stiff 6.0 88.6	CL	5	2	ST	12		23.6	100	2,000*	
				3	SS		6	15.8			
	Alluvium -- Sandy lean CLAY, gray and yellowish brown, medium stiff 8.5 86.1	CL	10	4	SS	16	12	45.7			
	Alluvium -- Fine to medium SAND, grayish brown, medium dense 12.0 82.6	SM	15	5	SS	16	3	15.6			
	Alluvium -- Fat CLAY, dark gray, soft 17.0 77.6	CH	20	6	SS	15	15	10			
	Alluvium -- Fine to medium SAND, gray, medium dense 20.0 74.6	SM									
	Bottom of boring										

Notes:

* Calibrated hand penetrometer

Hammer Type: Manual

Water Level:

 None Ft. While Drilling

 Ft. After Drilling

 Ft.

Boring Started: 10-20-2023

Boring Completed: 10-20-2023

Rig: ATV

Foreman: DC

Approved: NG

Job #: 1-5404

1-5404.geo TSBORRE 16.fdt 4/25/2017

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

BORING LOG No. 3

Page 1 of 1

PROJECT

Indoor Sports Dome

SITE

Muscatine, Iowa

GRAPHIC LOG	Approx. Surface Elevation (ft): 93.65 Site Datum: Existing Electrical Pad Drilling Method: HSA	USCS SYMBOL	DEPTH (ft.)	SAMPLES				TESTS			OTHER
				NUMBER	TYPE	RECOVERY	SPT - N (BLOWS / FT.)	MOISTURE, %	DRY DENSITY (PCF)	UNCONFINED STRENGTH (PSF)	
	Fill -- Sandy lean CLAY, very dark gray 3.5 90.2	CL	0	1	AS			17.4			
				2	SS	15	9	14.9			
	Alluvium -- Sandy lean CLAY, dark gray and dark brown, stiff 9.0 84.7	CL	5	3	ST	12		13.1	118	6,000*	
				4	SS	15	5	17.6			
	Alluvium -- Fat CLAY, dark gray, soft 17.0 76.7	CH	10	5	SS	16	4	36.3			
				6	SS	16	3	31.4			
	Alluvium -- Fine to coarse SAND, trace gravel, brown, medium stiff 25.0 68.7	SM	20	7	SS	14	8	18.3			
				8	SS	14	17	19.1			
	Bottom of boring		25								

Notes:

* Calibrated hand penetrometer

Hammer Type: Manual

Water Level:

 19' Ft. While Drilling Ft. After Drilling Ft.

Boring Started: 10-18-2023

Boring Completed: 10-18-2023

Rig: ATV

Foreman: DC

Approved: NG

Job #: 1-5404

1-5404.geo TSBORRE16.fdt 4/25/2017

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

BORING LOG No. 4

Page 1 of 1

PROJECT

Indoor Sports Dome

SITE

Muscatine, Iowa

GRAPHIC LOG	Approx. Surface Elevation (ft): 94.48 Site Datum: Existing Electrical Pad Drilling Method: HSA		USCS SYMBOL	DEPTH (ft.)	SAMPLES				TESTS			
					NUMBER	TYPE	RECOVERY	SPT - N (BLOWS / FT.)	MOISTURE, %	DRY DENSITY (PCF)	UNCONFINED STRENGTH (PSF)	OTHER
	1.0	Fill - Sandy lean CLAY, very dark brown	93.5	CL	0	1	AS		13			
		Fill -- Sandy lean CLAY, trace gravel, very dark brown		CL		2	SS	14	11	14.2		
	3.5		91.0									
		Alluvium -- Sandy lean CLAY, grayish brown, medium stiff		CL	5	3	SS	16	7	18.6		
						4	SS			15		
		-Color changes to dark gray at about 9'			10	5	SS	15	4	24.8		
	14.0		80.5									
		Alluvium -- Fat CLAY, gray, soft		CH	15	6	SS	15	3	42.7		
	19.0		75.5									
		Alluvium -- Fine to medium SAND, trace gravel, brown, medium dense		SM	20	7	SS	14	19	16		
					25	8	SS	14	9	11.9		
	30.0		64.5									
					30	9	SS	13	8	20.2		
		Bottom of boring										

Notes:

* Calibrated hand penetrometer

Hammer Type: Manual

Water Level:

 19' Ft. While Drilling

 Ft. After Drilling

 Ft.

Boring Started: 10-19-2023

Boring Completed: 10-19-2023

Rig: ATV

Foreman: DC

Approved: NG

Job #: 1-5404

1-5404_geo_TSBORERE16.fdr 4/25/2017

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

BORING LOG No. 5

Page 1 of 1

PROJECT

Indoor Sports Dome

SITE

Muscatine, Iowa

GRAPHIC LOG	Approx. Surface Elevation (ft): 94.00 Site Datum: Existing Electrical Pad Drilling Method: HSA	USCS SYMBOL	DEPTH (ft.)	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY	SPT - N (BLOWS / FT.)	MOISTURE, %	DRY DENSITY (PCF)	UNCONFINED STRENGTH (PSF)	OTHER
	Fill -- Sandy lean CLAY, trace organic matter, very dark brown -Color changes to brown at about 1'	CL	0	1	AS			14.7			
				2	SS	16	10	13.9			
3.5											
	Alluvium -- Sandy lean CLAY, brown, medium stiff	CL CL	5	3	SS	15	8	16.4			
				4	SS	16	4	16.1			
				5	SS	16	4	19.9			
				6	SS	16	3	24			
18.0											
	Alluvium -- Fine to coarse SAND, trace gravel, reddish brown, medium dense	SM	20	7	SS	14	15	2.7			
20.0											
	Bottom of boring										

Notes:

* Calibrated hand penetrometer

Hammer Type: Manual

Water Level:



None

Ft. While Drilling



Ft. After Drilling



Ft.

Boring Started: 10-19-2023

Boring Completed: 10-19-2023

Rig: ATV

Foreman: DC

Approved: NG

Job #: 1-5404

1-5404.geo TSBORRE16.fdt 4/25/2017

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

BORING LOG No. 6

Page 1 of 1

PROJECT					SITE							
Indoor Sports Dome					Muscatine, Iowa							
GRAPHIC LOG	Approx. Surface Elevation (ft): 96.99 Site Datum: Existing Electrical Pad Drilling Method: HSA	USCS SYMBOL	DEPTH (ft.)	SAMPLES				TESTS				
				NUMBER	TYPE	RECOVERY	SPT - N (BLOWS / FT.)	MOISTURE, %	DRY DENSITY (PCF)	UNCONFINED STRENGTH (PSF)	OTHER	
DESCRIPTION												
	1.0	Fill -- Sandy lean CLAY, very dark brown	96.0	CL	0	1	AS			14.9		
		Fill -- Sandy lean CLAY, trace gravel, brown		CL		2	SS	15	9	12.9		
	3.5		93.5									
		Alluvium -- Sandy lean CLAY, trace gravel, brown		CL	5	3	ST	18		22.1	110	3,000*
						4	SS	18	7	24		
	9.0		88.0									
		Alluvium -- Clayey SAND, trace gravel, brown		SC	10	5	SS	16	9	10.6		
	14.0		83.0									
	Alluvium -- Fine to coarse SAND, trace gravel, brown, medium dense		SM	15	6	SS	16	16	7.4			
					20	7	SS	14	11	3.3		
					25	8	SS	13	6	12.9		
					30	9	SS	15	7	13.8		
	Bottom of boring											

- Color changes to dark brown at about 24'

Notes: * Calibrated hand penetrometer
Hammer Type: Manual

Water Level: 24' Ft. While Drilling Ft. After Drilling Ft.		Boring Started: 10-19-2023	
		Boring Completed: 10-19-2023	
		Rig: ATV	Foreman: DC
		Approved: NG	Job #: 1-5404

1-5404.geo TSBORRE 16.fdt 4/25/2017

ISSUE DATE - 06-13-2024

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

BORING LOG No. 7

Page 1 of 1

PROJECT

Indoor Sports Dome

SITE

Muscatine, Iowa

GRAPHIC LOG	Approx. Surface Elevation (ft): 98.9 Site Datum: Existing Electrical Pad Drilling Method: HSA	USCS SYMBOL	DEPTH (ft.)	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY	SPT - N (BLOWS / FT.)	MOISTURE, %	DRY DENSITY (PCF)	UNCONFINED STRENGTH (PSF)	OTHER
	1.0 Fill -- Sandy lean CLAY, trace gravel and organic matter, very dark brown	97.9	CL	0	1	AS		14.8			
	Fill -- Sandy lean CLAY, very dark brown		CL		2	SS	16	8	14.2		
	3.5 Alluvium -- Sandy lean CLAY, brown	95.4	CL								
	- Becomes soft at about 6'			5	3	ST	13	18.4	111	3,000*	
					4	SS	10	4	20.7		
				10	5	SS	16	6	21.6		
	14.0 Alluvium -- Fine to coarse SAND, trace gravel, brown, medium dense	84.9	SM	15	6	SS	16	11	18.7		
	20.0	78.9		20	7	SS	14	10	2.9		
	Bottom of boring										

Notes:

* Calibrated hand penetrometer

Hammer Type: Manual

Water Level:



None

Ft. While Drilling



Ft. After Drilling



Ft.

Boring Started: 10-19-2023

Boring Completed: 10-19-2023

Rig: ATV

Foreman: DC

Approved: NG

Job #: 1-5404

1-5404.geo TSBORRE16.fdt 4/25/2017

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

BORING LOG No. 8

Page 1 of 1

PROJECT

Indoor Sports Dome

SITE

Muscatine, Iowa

GRAPHIC LOG	Approx. Surface Elevation (ft): 97.17 Site Datum: Existing Electrical Pad Drilling Method: HSA	USCS SYMBOL	DEPTH (ft.)	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY	SPT - N (BLOWS / FT.)	MOISTURE, %	DRY DENSITY (PCF)	UNCONFINED STRENGTH (PSF)	OTHER
	Fill -- Sandy lean CLAY, trace organic matter, very dark brown	CL	0	1	AS			14.1			
				2	SS	15	9	19.7			
	Alluvium -- Sandy lean CLAY, brown, medium stiff	CL	5	3	SS	16	7	17.6			
				4	ST	12		21.6			
	Alluvium -- Clayey SAND, brown, loose	SC	10	5	SS	16	10	9.2			
				6	SS	10	7	15.6			
	Alluvium -- Fine to coarse SAND, trace gravel, pale brown and brown, medium dense	SM	20	7	SS	14	17	2.2			
				8	SS	15	7	11.6			
	Alluvium -- Fine to coarse SAND, trace gravel, brown, loose	SM	25	9	SS	14	7	25.4			
	Bottom of boring		30								

Notes:

* Calibrated hand penetrometer

Hammer Type: Manual

Water Level:

 24' Ft. While Drilling

 Ft. After Drilling

 Ft.

Boring Started: 10-19-2023

Boring Completed: 10-19-2023

Rig: ATV

Foreman: DC

Approved: NG

Job #: 1-5404

1-5404_geo_TSBOR16.fdt 4/25/2017

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

BORING LOG No. 9

Page 1 of 1

PROJECT

Indoor Sports Dome

SITE

Muscatine, Iowa

GRAPHIC LOG	Approx. Surface Elevation (ft): 95.55 Site Datum: Existing Electrical Pad Drilling Method: HSA	USCS SYMBOL	DEPTH (ft.)	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY	SPT - N (BLOWS / FT.)	MOISTURE, %	DRY DENSITY (PCF)	UNCONFINED STRENGTH (PSF)	OTHER
	Fill -- Sandy lean CLAY, trace organic matter, very dark brown 3.5 92.1	CL	0	1	AS			17.5			
				2	SS	15	12	11			
	Alluvium -- Sandy lean CLAY, gray and brown, medium dense -Becomes soft and color changes to grayish brown at about 9' 14.0 81.6	CL	5	3	ST	19		16.9	102	2,000*	
				4	SS	16	6	16			
			10	5	SS	14	4	23.9			
	Alluvium -- Fat CLAY, pale gray, soft 18.0 77.6	CH	15	6	SS	16	4	30.9			
	Alluvium -- Fine to medium SAND, trace gravel, brown, medium dense 20.0 75.6	SM	20	7	SS	16	18	2.9			
	Bottom of boring										

Notes:

* Calibrated hand penetrometer

Hammer Type: Manual

Water Level:

 None Ft. While Drilling

 Ft. After Drilling

 Ft.

Boring Started: 10-19-2023

Boring Completed: 10-19-2023

Rig: ATV

Foreman: DC

Approved: NG

Job #: 1-5404

1-5404.geo TSBORRE 16.fdt 4/25/2017

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

BORING LOG No. 10

Page 1 of 1

PROJECT

Indoor Sports Dome

SITE

Muscatine, Iowa

GRAPHIC LOG	Approx. Surface Elevation (ft): 94.62 Site Datum: Existing Electrical Pad Drilling Method: HSA	USCS SYMBOL	DEPTH (ft.)	SAMPLES				TESTS			
				NUMBER	TYPE	RECOVERY	SPT - N (BLOWS / FT.)	MOISTURE, %	DRY DENSITY (PCF)	UNCONFINED STRENGTH (PSF)	OTHER
	Fill -- Sandy lean CLAY, trace organic matter, very dark brown 3.5 91.1	CI	0	1	AS			19.9			
				2	SS	16	17	14			
	Alluvium -- Sandy lean CLAY, trace gravel, very dark brown, medium stiff -Color changes to brown and oale gray at about 6' 9.0 85.6	CL	5	3	SS	16	6	16.7			
				4	SS	18	5	15.9			
	Alluvium -- Lean to fat CLAY, gray and brown, soft 14.0 80.6	CL/CH	10	5	ST	17		29.4	92	1,000*	
	Alluvium -- Fat CLAY, olive and dark gray 18.0 76.6	CH	15	6	SS	16	3	41.5			
	Alluvium -- Clayey SAND, gray and dark gray 20.0 74.6	SC	20	7	SS	15	5	30.9			
	Bottom of boring							36.5			

Notes:

* Calibrated hand penetrometer

Hammer Type: Manual

Water Level:



None

Ft. While Drilling



Ft. After Drilling



Ft.

Boring Started: 10-19-2023

Boring Completed: 10-19-2023

Rig: ATV

Foreman: DC

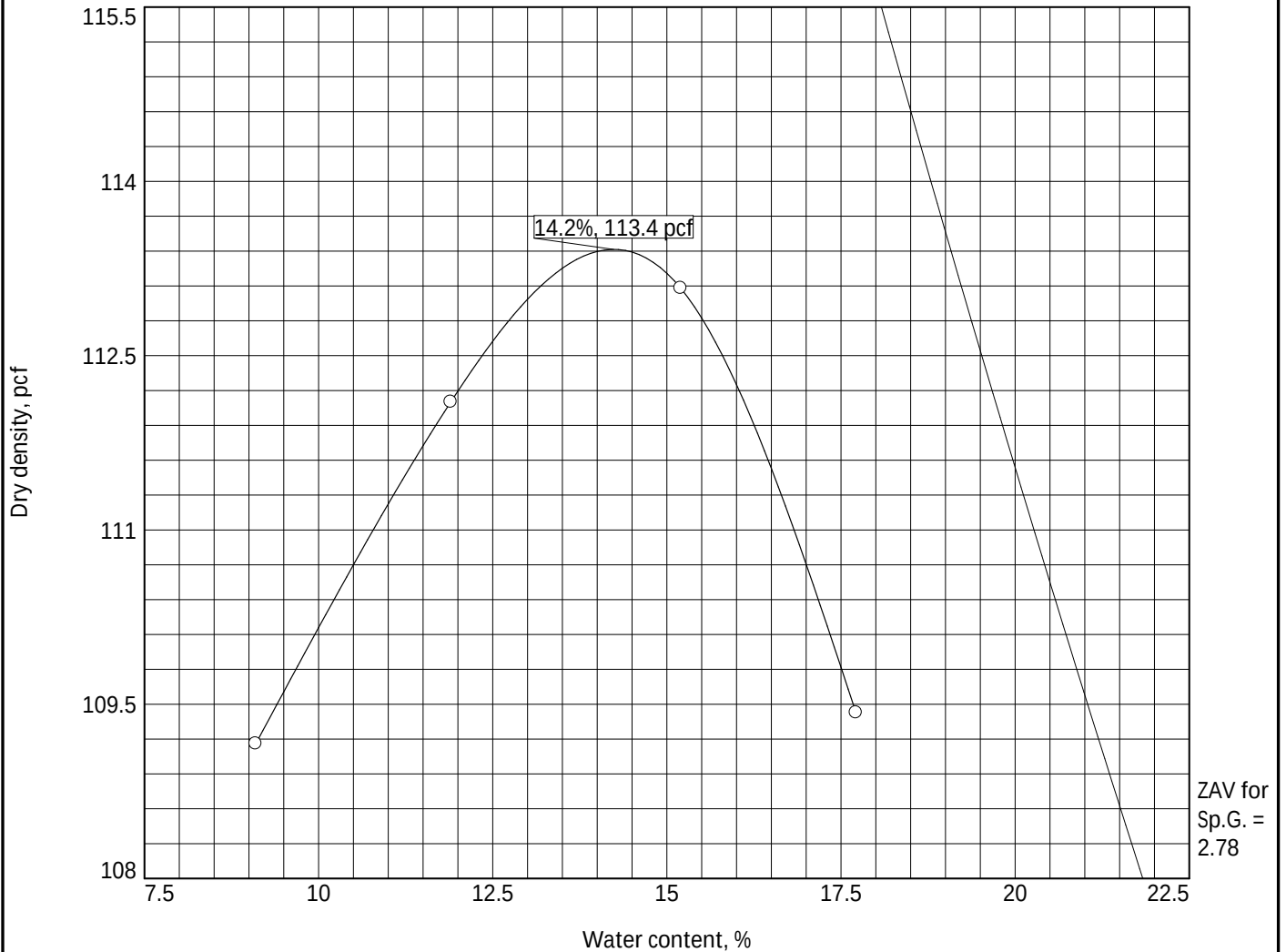
Approved: NG

Job #: 1-5404

1-5404.geo TSBORRE16.fdt 4/25/2017

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES; IN-SITU, THE TRANSITION MAY BE GRADUAL.

MOISTURE - DENSITY RELATIONSHIP REPORT



ISSUE DATE - 06-13-2024

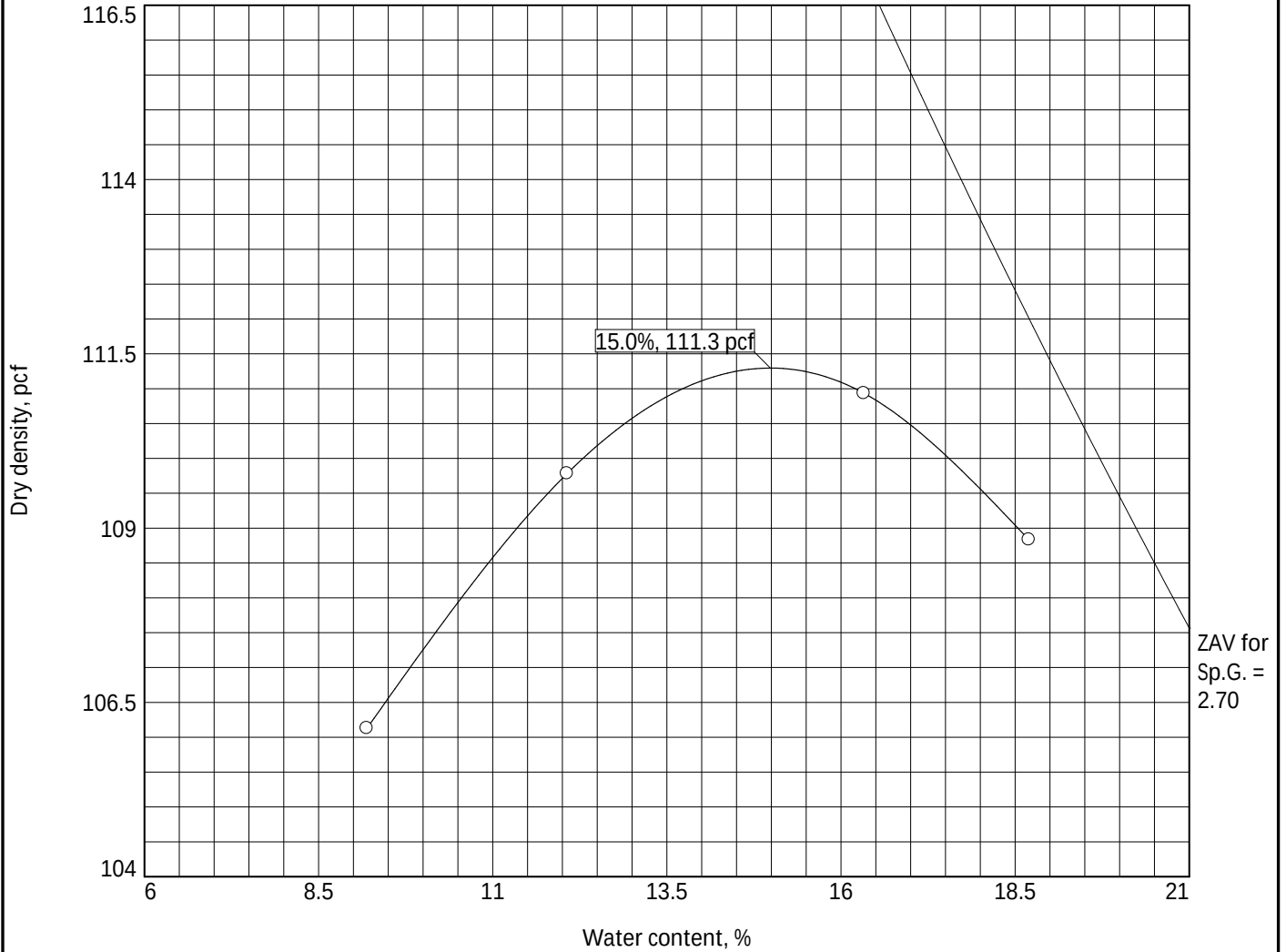
Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
1.5	CL		23.7	2.78			0	

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 113.4 pcf Optimum moisture = 14.2 %		Fill -- Sandy lean CLAY, dark gray and very dark gray
Project No. 1-5404 Client: Project: Indoor Sports Dome Date: ○ Source of Sample: 1 Sample Number: 2		Remarks: Boring 1 (0-3.5')
TEAM  Services Geotechnical and Construction Material Consultants		
		Figure

Tested By: NG Checked By: NG

MOISTURE - DENSITY RELATIONSHIP REPORT



ISSUE DATE - 06-13-2024

Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
4	CL		16.4	2.7			0	

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 111.3 pcf		Alluvium -- Sandy lean CLAY, brown
Optimum moisture = 15.0 %		
Project No. 1-5404 Client:		Remarks: Boring 5 (2-8')
Project: Indoor Sports Dome		
Date:		
Source of Sample: 5 Sample Number: 3		
 Geotechnical and Construction Material Consultants		Figure

Tested By: NG Checked By: NG

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A					Soil Classification	
					Group Symbol	Group Name ^B
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines ^C	Cu ≥ 4 and 1 ≤ Cc ≤ 3 ^E	GW	Well-graded gravel ^F	
			Cu < 4 and/or 1 > Cc > 3 ^E	GP	Poorly graded gravel ^F	
		Gravels with Fines More than 12% fines ^C	Fines classify as ML or MH	GM	Silty gravel ^{F, G, H}	
			Fines classify as CL or MH	GC	Clayey gravel ^{F, G, H}	
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines ^E	Cu ≤ 6 and 1 ≤ Cc ≤ 3 ^E	SW	Well-graded sand ^I	
			Cu < 6 and/or 1 > Cc > 3 ^E	SP	Poorly graded sand ^I	
		Sands with Fines More than 12% fines ^D	Fines classify as ML or MH	SM	Silty sand ^{G, H, I}	
			Fines classify as CL or CH	SC	Clayey sand ^{G, H, I}	
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays Liquid limit less than 50	Inorganic:	PI > 7 and plots on or above “A” line ^J	CL	Lean clay ^{K, L, M}	
			PI < 4 or plots below “A” line ^J	ML	Silt ^{K, L, M}	
		Organic:	Liquid limit – oven dried	< 0.75	OL	Organic clay ^{K, L, M, N}
			Liquid limit – not dried		Organic silt ^{K, L, M, O}	
	Silts and Clays Liquid limit 50 or more	Inorganic:	PI plots on or above “A” line	CH	Fat clay ^{K, L, M}	
			PI plots below “A” line	MH	Elastic silt ^{K, L, M}	
		Organic:	Liquid limit – oven dried	< 0.75	OH	Organic clay ^{K, L, M, P}
			Liquid limit – not dried		Organic silt ^{K, L, M, Q}	
Highly Organic Soils	Primarily organic matter, dark in color, and organic odor			PT	Peat	

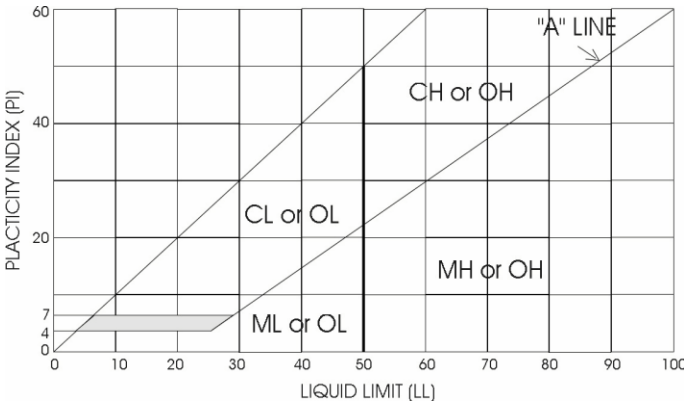
^A Based on the material passing the 3-in. (75-mm) sieve.
^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
^C Gravels with 5 to 12% fines require dual symbols:
GW-GM well-graded gravel with silt
GW-GC well-graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay
^D Sands with 5 to 12% fines require dual symbols:
SW-SM well-graded sand with silt
SW-SC well-graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay

^E
 $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.
^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
^H If fines are organic, add "with organic fines" to group name.
^I If soil contains $> 15\%$ gravel, add "with gravel" to group name.
^J If Atterberg limits plots in shaded area, soil is a CL-ML, silty clay.

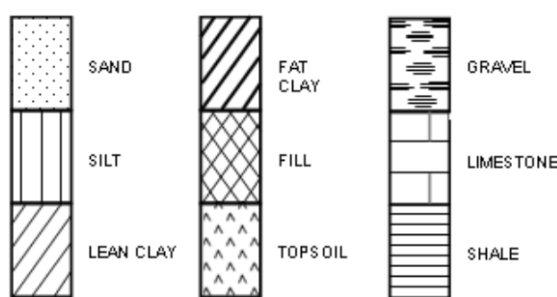
^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel", whichever is predominant.
^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.
^N $PI \geq 4$ and plots on or above "A" line.
^O $PI < 4$ or plots below "A" line.
^P PI plots on or above "A" line.
^Q PI plots below "A" line.

For classification of fine-grained soils and fine grained fraction of coarse-grained soils.

Equation of "A" Line:
Horizontal at $PI = 4$ to $LL + 25.5$.
then $PI = 0.73 (LL - 20)$



GENERAL NOTES

SOIL and ROCK TYPES	DRILLING & SAMPLING SYMBOLS
	SS Split Spoon - 1 1/2" I.D., 2" O.D., unless otherwise noted ST Thin-Walled Tube - 3" O.D., unless otherwise noted PA Power Auger HA Hand Auger DB Diamond Bit - 4", N, B AS Auger Sample HS Hollow Stem Auger WS Wash Sample RB Rock Bit BS Bulk Sample DC Dutch Cone WB Wash Bore AR Air Rotary

STRENGTH TERMS				
CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing No. 200 sieve)			RELATIVE DENSITY OF COARSE-GRAINED SOILS (50% or more retained No. 200 sieve)	
Consistency	Unconfined Compressive Strength, Qu, psf	N-Blows/ft* (Approx. Correlation)	Relative Density	N-Blows/ft. *
Very Soft	< 500	0 - 2	Very Loose	0 - 4
Soft	500 - 1,000	3 - 4	Loose	5 - 10
Medium	1,001 - 2,000	5 - 8	Medium Dense	10 - 29
Stiff	2,001 - 4,000	9 - 15	Dense	30 - 49
Very Stiff	4,001 - 8,000	16 - 30	Very Dense	50 - 80
Hard	8,001 - 16,000	31 - 50	Extremely Dense	80 +
Very Hard	> -16,000	50 +		

* Standard "N" Penetration Blows per foot of a 140 pound hammer falling 30 inches on a 2-inch OD split spoon, except where noted.

RELATIVE PROPORTIONS OF SAND AND GRAVEL		RELATIVE PROPORTIONS OF FINES		GRAIN SIZE TERMINOLOGY	
Descriptive Term(s) (of components also present in sample)	Percent of Dry Weight	Descriptive Term(s) (of components also present in sample)	Percent of Dry Weight	Major Component of Sample	Size Range
Trace	< 15	Trace	< 5	Boulders	Over 12 in. (300 mm)
With Modifier	15 - 29	With Modifier	5 - 12	Cobbles	12 in. to 3 in. (300 mm to 4.75 mm)
	> 30		> 12	Gravel	3 in. to #4 sieve (75 mm to 4.75 mm)
WATER LEVELS: WD = While Drilling AD = After Drilling				Sand	#4 to #200 sieve (4.75 mm to 0.075 mm)
	Depth groundwater first encountered during drilling			Silt or Clay	Passing #200 sieve (0.075 mm)
	Groundwater level after 24 hours (unless otherwise noted, i.e. "AD" -- after drilling)				

TERMS DESCRIBING SOIL STRUCTURE			
Parting:	paper thin in size	Fissured:	containing shrinkage cracks, frequently filled with fine sand or silt, usually more or less vertical.
Seam:	1/8" to 3" in thickness		
Layer:	greater than 3" in thickness	Interbedded:	composed of alternate layers of different soil types.
Ferrous:	containing appreciable quantities of iron	Laminated:	composed of thin layers of varying color and texture.
Well-Graded:	having wide range in grain size and substantial amounts of all intermediate sizes.	Slickensided:	having inclined planes of weakness that are slick and glossy in appearance.
Poorly-Graded:	predominately one grain size or having a range of sizes with some intermediate sizes missing.	NOTE:	Clays possessing slickensided or fissured structure may exhibit lower unconfined strength than indicated above. Consistency of such soil is interpreted using the unconfined strength along with pocket penetrometer results.

**SECTION 00 3113
BIDDING AND CONSTRUCTION SCHEDULE**

**MUSCATINE
INDOOR SPORTS COMPLEX
MUSCATINE, IOWA
ISG NO. 23-29721**

Friday, June 21, 2024	Send out Advertisement for Bids
Tuesday, July 23, 2024	Receive Bids before 2:00 p.m.
Thursday, August 1, 2024	Bid Approval at 6:00 p.m.
Thursday, August 15, 2024	Estimated date to execute contract and bond approval
Friday, August 16, 2024	Estimated preconstruction meeting date.
Friday, August 16, 2024, After Preconstruction Meeting	Estimated date to issue Notice to Proceed
Immediately following Notice to Proceed	Estimated commence construction date.
Friday, February 28, 2025	Substantial completion, perform final walk through and inspection with Owner and Architect. Owner can occupy.
Friday, March 21, 2025	Final Completion.

END OF SECTION

ISSUE DATE - 06-13-2024

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**SECTION 00 4100
BID FORM**

**MUSCATINE
INDOOR SPORTS COMPLEX
MUSCATINE, IOWA
ISG NO. 23-29721**

Submitted By (Company Name) _____

_____ Date

Ladies and Gentlemen:

The undersigned being familiar with the conditions; having made a field inspection and investigation I/we deem necessary; having studied the Plans and Specifications for the work, and being familiar with all factors and other conditions affecting the work and cost thereof, hereby propose to furnish all labor, tools, materials, skills, equipment, building permit, other fees and permits, and all else necessary to completely construct the project in accordance with the Plans and Specifications as prepared by ISG, 217 East 2nd Street, Suite 110, Des Moines, Iowa 50309 for the prices as entered on the following pages of this proposal.

I/We hereby certify that I am/we are the only person, persons, firm or corporation interested in this proposal as principals and that it is made without collusion with any person, firm or corporation.

It is understood that the following Bid/Bids shall include all necessary materials, labor, supervision, machinery, equipment, tools, bracing, false work and other means of construction, including all necessary tests incidental to such installation.

I/We guarantee all of the work performed under this contract shall be done in accordance with the drawings and specifications, in a good and workmanlike manner, and to redo or repair any work which may be rejected due to defective materials or workmanship, prior to the final acceptance of the project, by the Project Architect and the Owner.

I/We propose to begin work and to prosecute the work so as to complete the same as indicated.

BASE BID: Construction of a new air-supported fabric structure and related Work indicated in the drawings and specifications for the Sum of:

_____ Dollars
(_____)

UNIT PRICE NO. 1:

CONTRACT TIME: If this Bid is accepted, I/we will:

Commence work as soon as possible after Receipt of Notice to Proceed and shall complete the Work by the time indicated per Section 00 7300 - Supplementary Conditions.

BID SECURITY - CONTRACTS: A properly executed bid bond of a sum no less than five percent (5%) of the base bid amount or a certified check in the amount of \$ _____ equal to no less than five percent (5%) of the base bid amount accompanies this proposal.

It is understood that bids may not be withdrawn for a period of 30 days after the date and time set for the opening of bids. It is understood that the Owner reserves the right to retain the bid security of the bidders for a period not to exceed 30 days after the date set for the opening of bids.

Acknowledgement or Receipt of Addendum (if issued)

Received Addendum No. 1, dated _____

Received Addendum No. 2, dated _____

Received Addendum No. 3, dated _____

(A CORPORATION)

(A LIMITED PARTNERSHIP)

(A GENERAL PARTNERSHIP)

(A SOLE PROPRIETORSHIP)

(CIRCLE ONE OR INDICATE COMPANY OWNERSHIP STRUCTURE TYPE ABOVE)

COMPANY NAME: _____

ADDRESS: _____

SUBMITTED BY: _____

(PRINT OR TYPE NAME)

TITLE: _____

PHONE NUMBER: _1_(_____)_____-_____

FAX NUMBER: _1_(_____)_____-_____

E-MAIL ADDRESS: _____

SIGNATURE: _____

END OF SECTION

ISSUE DATE - 06-13-2024

Bidder Status Form

To be completed by all bidders

Part A

Please answer "Yes" or "No" for each of the following:

☐ Yes ☐ No

My company is authorized to transact business in Iowa.
(To help you determine if your company is authorized, please review the worksheet on the next page).

☐ Yes ☐ No

My company has an office to transact business in Iowa.

☐ Yes ☐ No

My company's office in Iowa is suitable for more than receiving mail, telephone calls, and e-mail.

☐ Yes ☐ No

My company has been conducting business in Iowa for at least 3 years prior to the first request for bids on this project.

☐ Yes ☐ No

My company is not a subsidiary of another business entity or my company is a subsidiary of another business entity that would qualify as a resident bidder in Iowa.

If you answered "Yes" for each question above, your company qualifies as a resident bidder. Please complete Parts B and D of this form.

If you answered "No" to one or more questions above, your company is a nonresident bidder. Please complete Parts C and D of this form.

To be completed by resident bidders

Part B

My company has maintained offices in Iowa during the past 3 years at the following addresses:

Dates: _____ / _____ / _____ to _____ / _____ / _____

Address: _____

City, State, Zip: _____

Dates: _____ / _____ / _____ to _____ / _____ / _____

Address: _____

City, State, Zip: _____

Dates: _____ / _____ / _____ to _____ / _____ / _____

Address: _____

City, State, Zip: _____

You may attach additional sheet(s) if needed.

To be completed by non-resident bidders

Part C

1. Name of home state or foreign country reported to the Iowa Secretary of State:

2. Does your company's home state or foreign country offer preferences to resident bidders, resident labor force preferences or any other type of preference to bidders or laborers?

☐ Yes ☐ No

3. If you answered "Yes" to question 2, identify each preference offered by your company's home state or foreign country and the appropriate legal citation.

You may attach additional sheet(s) if needed.

To be completed by all bidders

Part D

I certify that the statements made on this document are true and complete to the best of my knowledge and I know that my failure to provide accurate and truthful information may be a reason to reject my bid.

Firm Name: _____

Signature: _____ Date: _____

Worksheet: Authorization to Transact Business

This worksheet may be used to help complete Part A of the Resident Bidder Status form. If at least one of the following describes your business, you are authorized to transact business in Iowa.

- ☐ Yes ☐ No My business is currently registered as a contractor with the Iowa Division of Labor.
- ☐ Yes ☐ No My business is a sole proprietorship and I am an Iowa resident for Iowa income tax purposes.
- ☐ Yes ☐ No My business is a general partnership or joint venture. More than 50 percent of the general partners or joint venture parties are residents of Iowa for Iowa income tax purposes.
- ☐ Yes ☐ No My business is an active corporation with the Iowa Secretary of State and has paid all fees required by the Secretary of State, has filed its most recent biennial report, and has not filed articles of dissolution.
- ☐ Yes ☐ No My business is a corporation whose articles of incorporation are filed in a state other than Iowa, the corporation has received a certificate of authority from the Iowa secretary of state, has filed its most recent biennial report with the secretary of state, and has neither received a certificate of withdrawal from the secretary of state nor had its authority revoked.
- ☐ Yes ☐ No My business is a limited liability partnership which has filed a statement of qualification in this state and the statement has not been canceled.
- ☐ Yes ☐ No My business is a limited liability partnership which has filed a statement of qualification in a state other than Iowa, has filed a statement of foreign qualification in Iowa and a statement of cancellation has not been filed.
- ☐ Yes ☐ No My business is a limited partnership or limited liability limited partnership which has filed a certificate of limited partnership in this state, and has not filed a statement of termination.
- ☐ Yes ☐ No My business is a limited partnership or a limited liability limited partnership whose certificate of limited partnership is filed in a state other than Iowa, the limited partnership or limited liability limited partnership has received notification from the Iowa secretary of state that the application for certificate of authority has been approved and no notice of cancellation has been filed by the limited partnership or the limited liability limited partnership.
- ☐ Yes ☐ No My business is a limited liability company whose certificate of organization is filed in Iowa and has not filed a statement of termination.
- ☐ Yes ☐ No My business is a limited liability company whose certificate of organization is filed in a state other than Iowa, has received a certificate of authority to transact business in Iowa and the certificate has not been revoked or canceled.

**SECTION 00 7200
GENERAL CONDITIONS**

FORM OF GENERAL CONDITIONS

1.01 THE GENERAL CONDITIONS APPLICABLE TO THIS CONTRACT ARE AS FOLLOWS

- A. AIA Document A201, General Conditions of the Contract for Construction, 2017 Edition, is the General Conditions between the Owner and Contractor.
- B. The General Conditions applicable to this contract is attached following this page.

1.02 RELATED REQUIREMENTS

- A. SECTION 00 7300 - Supplementary Conditions.

1.03 SUPPLEMENTARY CONDITIONS

- A. Refer to document 00 7300 - Supplementary Conditions for amendments to these general conditions.

END OF SECTION

ISSUE DATE - 06-13-2024

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AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

THE OWNER:
(Name, legal status and address)

THE ARCHITECT:
(Name, legal status and address)

TABLE OF ARTICLES

1	GENERAL PROVISIONS
2	OWNER
3	CONTRACTOR
4	ARCHITECT
5	SUBCONTRACTORS
6	CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
7	CHANGES IN THE WORK
8	TIME
9	PAYMENTS AND COMPLETION
10	PROTECTION OF PERSONS AND PROPERTY
11	INSURANCE AND BONDS
12	UNCOVERING AND CORRECTION OF WORK
13	MISCELLANEOUS PROVISIONS
14	TERMINATION OR SUSPENSION OF THE CONTRACT
15	CLAIMS AND DISPUTES

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

ISSUE DATE - 06-13-2024

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User Notes:

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and

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delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will

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specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

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§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;

- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

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- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will

promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or

expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during

that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- 1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- 2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- 3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- 4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;

- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

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**SECTION 00 7300
SUPPLEMENTARY CONDITIONS**

PART 1 GENERAL

1.01 SUMMARY

- A. These Supplementary Conditions amend and supplement the General Conditions defined in Document 00 7200 - General Conditions and other provisions of Contract Documents as indicated below. Provisions that are not so amended or supplemented remain in full force and effect.
- B. The terms used in these Supplementary Conditions that are defined in the General Conditions have the meanings assigned to them in the General Conditions.

1.02 MODIFICATIONS TO GENERAL CONDITIONS

1.03 MODIFICATIONS TO AIA A201

1.04 ARTICLE 1.1 - BASIC DEFINITIONS

- A. 1.1.9 Workmanship:
 - 1. The degree of skill in which the Work is completed.
 - 2. All Work is to be completed in a professional manner by a skilled and experienced craftsman in accordance with the manufacturer's installations instructions.
 - 3. All pipes, conduits, ducts, and supports are to be installed parallel or perpendicular to the building lines while maintaining the integrity of the installation.

1.05 ARTICLE 1.2 - CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

- A. 1.2.1.1 Add Subparagraph:
 - 1. If there is an inconsistency in the quality and/or quantity of Work required by the Contract Documents, either the greater quality and/or quantity of Work indicated shall be provided in accordance with the engineer/architect's interpretation without change in the contract sum.

1.06 ARTICLE 3.6 - TAXES

- A. Add the following subparagraph:
 - 1. 3.6.1: Purchasers for material supplies will be given a sales and use tax exempt number to exempt the requirement of sales and use tax for materials supplied for this project, therefore bidders should not include sales and use tax in their bid amounts, as law would allow.

1.07 ARTICLE 7.2 - CHANGE ORDERS

- A. Add the following subparagraph:
 - 1. 7.2.2: The following fees apply to Changes in the Work:
 - a. A 10 percent maximum on overhead and profit for the direct cost of Work performed by a Contractor or Subcontractor;
 - b. A 5 percent maximum overhead and profit on indirect costs of a Contractor's Subcontractors;
 - c. The total mark-up shall not exceed 20 percent and all mark-ups are subject to the Architect approval.
 - d. On Work deleted from the Contract, credit to the Owner shall be the Architect approved net cost plus 1/2 of the overhead and profit percentage noted above.
 - 2. In the case of an increase or decrease in the contract sum, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data, showing adjustments on the basis of reasonable expenditures and savings of those performing the Work attributable to the change.

1.08 ARTICLE 7.3 - CONSTRUCTION CHANGE DIRECTIVES

- A. Add the following subparagraph:
 - 1. 7.3.11: The following fees apply to Changes in the Work in accordance with Subparagraph 7.3.6:
 - a. A 10 percent maximum on overhead and profit for the direct cost of Work performed by a Contractor or Subcontractor;

- b. A 5 percent maximum overhead and profit on indirect costs of a Contractor's Subcontractor;
 - c. The total mark-up shall not exceed 20 percent and all mark-ups are subject to the Architect approval.
 - d. On Work deleted from the Contract, credit to the Owner shall be the Architect approved net cost plus 1/2 of the overhead and profit percentage noted above.
2. In the case of an increase or decrease in the contract sum, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data, showing adjustments on the basis of reasonable expenditures and savings of those performing the Work attributable to the change.

1.09 ARTICLE 8 - TIME

- A. Add the following subparagraph:
 - 1. 8.2.4: Contract Time is identified in Section 00 3113 - Bidding and Construction Schedule.

1.10 ARTICLE 11.1 - CONTRACTOR'S LIABILITY INSURANCE

- A. Add the following Paragraph as follows:
- B. Insurance:
- C. The Contractor shall secure and maintain such insurance from an insurance company authorized to write casualty insurance in the State where the work is located as will protect himself, his subcontractors and which shall indemnify and save harmless the Owner and the Architect and their officers, agents, and employees from and against all claims for bodily injury, death or property damage which may arise from the Contractor's operations under this contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by the Contractor and Subcontractor.
- D. The Contractor shall not commence work under this Contract until he has obtained all insurance required under this section and shall have filed the certificate of insurance with the Owner and a copy with the Owner's attorney. Each insurance policy shall contain a clause assuring the insurance company will not cancel the insurance without thirty days written notice to the Owner, the Owner's attorney, and the Architect of intention to cancel. The amounts of such insurance shall be not less than the following, or greater if required by law:
 - 1. Commercial General Liability (Including Premises- Operations; Independent Contractors' Protective; Products and Completed Operations; Broad Form Property Damage):
 - a. Bodily Injury and Property Damage (Name Owner as additional insured):
 - 1) \$1,000,000 Each Occurrence
 - 2) \$50,000 Damage to Rented Premises (Each Occurrence)
 - 3) \$5,000 Med Exp (Any One Person)
 - 4) \$1,000,000 Personal & Advertising Injury
 - 5) \$2,000,000 General Aggregate
 - 6) \$2,000,000 Annual Aggregate
 - b. Products and Completed Operations to be maintained for two years after final payment.
 - c. Property Damage Liability Insurance shall provide X, C, or U coverage as applicable.
 - d. Contractual Liability to be included.
 - 2. Comprehensive Automobile Liability:
 - a. Bodily Injury:
 - 1) \$1,000,000 CSL Each Person
 - 2) \$(included) Each Occurrence
 - b. Property Damage:
 - 1) \$(included) Each Occurrence
 - 3. Umbrella Excess Liability: Name Owner as additional insured:
 - a. Excess Liability:
 - 1) \$3,000,000 Each Occurrence
 - 2) \$3,000,000 Aggregate
 - 4. Worker's Compensation:
 - a. State Statutory
 - b. Applicable Federal Statutory
 - 1) (e.g. Longshoremen's)

- c. Employer's Liability
 - 1) \$1,000,000 Each Accident
 - 2) \$1,000,000 Disease - EA Employee
 - 3) \$1,000,000 Disease - Policy Limit
- 5. Rented Equipment:
 - a. Special/Replacement Cost
 - 1) \$100,000 Rented Equipment
- 6. Per occurrence - 30 day notice of cancellation/non-renewal - no waiver of subrogation.

1.11 ARTICLE 11.1.2 - PERFORMANCE BOND AND PAYMENT BOND

- A. Add the following paragraphs:
 - 1. 11.1.2.1: The bond value requirements are as follows:
 - a. Provide bonds on a standard surety bond form.
 - b. Provide a 100 percent Performance Bond.
 - c. Provide a 100 percent Payment Bond.
 - d. Deliver bonds within 3 days after execution of the Contract.

1.12 ARTICLE 11.2 - PROPERTY INSURANCE

- A. The Owner will be responsible for purchasing and maintaining a "special form" or equivalent policy as described in the General Conditions of the Contract for Construction.
 - 1. The General Conditions refers to the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents.
- B. A copy of the General Conditions of the Contract for Construction can be obtained at the office of the Architect.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

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**SECTION 01 2000
PRICE AND PAYMENT PROCEDURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Correlation of Contractor submittals based on changes.
- E. Procedures for preparation and submittal of application for final payment.

1.02 RELATED REQUIREMENTS

- A. Section 00 7200 - General Conditions and Document 00 7300 - Supplementary Conditions: Additional requirements for progress payments, final payment, changes in the Work.

1.03 SCHEDULE OF VALUES

- A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.
- E. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification section. Identify site mobilization.
- F. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.
- G. Revise schedule to list approved Change Orders, with each Application For Payment.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Monthly.
- B. Progress Payments: For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due: Five Percent (5%).
- C. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.
- D. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- E. Forms filled out by hand will not be accepted.
- F. For each item, provide a column for listing each of the following:
 - 1. Item Number.
 - 2. Description of work.
 - 3. Scheduled Values.
 - 4. Previous Applications.
 - 5. Work in Place and Stored Materials under this Application.
 - 6. Authorized Change Orders.
 - 7. Total Completed and Stored to Date of Application.
 - 8. Percentage of Completion.
 - 9. Balance to Finish.
 - 10. Retainage.
- G. Execute certification by signature of authorized officer.
- H. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- I. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.

- J. Submit three copies of each Application for Payment when submitting paper copies.
- K. Include the following with the application:
 - 1. Transmittal letter as specified for submittals in Section 01 3000.
 - 2. Construction progress schedule, revised and current as specified in Section 01 3000.
 - 3. Project record documents as specified in Section 01 7800, for review by Owner which will be returned to the Contractor.
- L. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.05 MODIFICATION PROCEDURES

- A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to Contract Documents.
- B. For minor changes not involving an adjustment to the Contract Price or Contract Time, Architect will issue instructions directly to Contractor.
- C. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
 - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
 - 2. Promptly execute the change.
- D. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within seven days.
- E. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on work by separate or other contractors. Do come
- F. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on work by separate or other contractors. Document any requested substitutions in accordance with Section 01 6000.
- G. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
 - 1. For change requested by Architect for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
 - 2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect.
 - 3. For pre-determined unit prices and quantities, where applicable, the amount will be based on the fixed unit prices.
 - 4. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work.
- H. Substantiation of Costs: Provide full information required for evaluation.
 - 1. On request, provide the following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 - e. Credit for deletions from Contract, similarly documented.
 - 2. Support each claim for additional costs with additional information:
 - a. Origin and date of claim.

- b. Dates and times work was performed, and by whom.
 - c. Time records and wage rates paid.
 - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
- 3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
- I. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- J. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- K. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- L. Promptly enter changes in Project Record Documents.

1.06 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01 7000.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

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**SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General administrative requirements.
- B. Project Coordinator.
- C. Preconstruction meeting.
- D. Progress meetings.
- E. Construction progress schedule.
- F. Requests for Information (RFI) procedures.
- G. Submittals for review, information, and project closeout.
- H. Submittal procedures.

1.02 RELATED REQUIREMENTS

- A. Section 01 6000 - Product Requirements: General product requirements.
- B. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
- C. Section 01 7800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 REFERENCE STANDARDS

- A. AIA G716 - Request for Information; 2004.

1.04 GENERAL ADMINISTRATIVE REQUIREMENTS

- A. Comply with requirements of Section 01 7000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
- B. Make the following types of submittals to Architect:
 - 1. Requests for Information (RFI).
 - 2. Requests for substitution.
 - 3. Shop drawings, product data, and samples.
 - 4. Test and inspection reports.
 - 5. Design data.
 - 6. Manufacturer's instructions and field reports.
 - 7. Applications for payment and change order requests.
 - 8. Progress schedules.
 - 9. Coordination drawings.
 - 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
 - 11. Closeout submittals.

1.05 PROJECT COORDINATOR

- A. Project Coordinator: General Contractor.
- B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for employee access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Project Coordinator.
- D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- F. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- G. Make the following types of submittals to Architect through the Project Coordinator:
 - 1. Requests for Information.
 - 2. Requests for substitution.

3. Shop drawings, product data, and samples.
4. Test and inspection reports.
5. Design data.
6. Manufacturer's instructions and field reports.
7. Applications for payment and change order requests.
8. Progress schedules.
9. Coordination drawings.
10. Correction Punch List and Final Correction Punch List for Substantial Completion.
11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. Project Coordinator will schedule a meeting after Notice of Award.
- B. Attendance Required:
 1. Owner.
 2. Architect.
 3. Contractor.
- C. Note: The following agenda items are not intended to be the final or a complete list of the items that will be discussed. A complete agenda will be distributed at the preconstruction meeting.
- D. Agenda:
 1. Execution of Owner-Contractor Agreement.
 2. Submission of executed bonds and insurance certificates.
 3. Distribution of Contract Documents.
 4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
 5. Designation of personnel representing the parties to Contract, Owner and Architect.
 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, requests for information, Change Orders, and Contract closeout procedures.
 7. Scheduling.
 8. Shop drawings submittal, review times, and overall process.
 9. Electronically submitted file and formatting requirements and procedures.
 10. Open for comments; attendees are encouraged to bring other topics or concerns up for discussion at this time.
- E. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, other participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the work at maximum bi-weekly intervals.
- B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required:
 1. Contractor.
 2. Owner.
 3. Architect.
 4. Contractor's superintendent.
 5. Major subcontractors.
- D. Agenda:
 1. Review minutes of previous meetings.
 2. Review of work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems that impede, or will impede, planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Review of off-site fabrication and delivery schedules.

7. Maintenance of progress schedule.
 8. Corrective measures to regain projected schedules.
 9. Planned progress during succeeding work period.
 10. Maintenance of quality and work standards.
 11. Effect of proposed changes on progress schedule and coordination.
 12. Current compliance status of electronically submitted file and formatting requirements and procedures.
 13. Other business relating to work.
- E. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE

- A. Within 7 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 5 days.
- C. Within 7 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 5 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

3.04 REQUESTS FOR INFORMATION (RFI)

- A. Definition: A request seeking one of the following:
 1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
 2. A resolution to an issue which has arisen due to field conditions and affects design intent.
- B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit an RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
 1. Prepare a separate RFI for each specific item.
 - a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
 - b. Do not forward requests which solely require internal coordination between subcontractors.
 2. Prepare in a format and with content acceptable to Owner.
 - a. Use AIA G716 - Request for Information or equivalent form.
 3. Combine RFI and its attachments into a single electronic file. PDF format is preferred.
 - a. All pages of PDF shall be formatted to 8 1/2x11 or 11x17 whenever possible.
- D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
 1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
 2. Unacceptable Uses for RFIs: Do not use RFIs to request the following:
 - a. Approval of submittals (use procedures specified elsewhere in this section).
 - b. Approval of substitutions (see Section - 01 6000 - Product Requirements)
 - c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
 - d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
 3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be

- returned without a response, with an explanatory notation.
4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
 - a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.
- E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
1. Official Project name and number, and any additional required identifiers established in Contract Documents.
 2. Owner's, Architect's, and Contractor's names.
 3. Discrete and consecutive RFI number, and descriptive subject/title.
 4. Issue date, and requested reply date.
 5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
 6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
 7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.
- F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
- G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
1. Indicate current status of every RFI. Update log promptly and on a regular basis.
 2. Note dates of when each request is made, and when a response is received.
 3. Highlight items requiring priority or expedited response.
 4. Highlight items for which a timely response has not been received to date.
 5. Identify and include improper or frivolous RFIs.
- H. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.
- I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
 2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
 3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
 4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.05 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
1. Product data.
 2. Shop drawings.
 3. Samples for selection.

4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.06 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 1. Design data.
 2. Certificates.
 3. Test reports.
 4. Inspection reports.
 5. Manufacturer's instructions.
 6. Manufacturer's field reports.
 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner.

3.07 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 7800 - Closeout Submittals:
 1. Project record documents.
 2. Operation and maintenance data.
 3. Warranties.
 4. Bonds.
 5. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

3.08 SUBMITTAL PROCEDURES

- A. General Requirements:
 1. All submittals shall be submitted to the Architect through the Project Coordinator - No Exceptions.
 2. All shop drawings shall be submitted no later than 45 days after execution of the contract.
 3. All submittals shall be submitted with a cover page equivalent to the shop drawing submittal form attached to this section.
 4. PDFs by e-mail is the preferred method; coordinate with Architect/Engineers' representative.
 - a. Refer to "Requirements for Electronically Submitted Shop Drawings" attached to this section.
 - b. Where a construction management software program is used all submittals shall be submitted through that service.
 - 1) All submittals shall include an approved cover sheet as the documents need to be able to live outside those programs.
 5. By submitting submittals, the Project Coordinator represents to Architect that Project Coordinator has:
 - a. Reviewed and approved them.
 - b. Determined and verified materials, field measurements, and field construction criteria related thereto, or will do so.
 - c. Checked and coordinated the information contained within such submittals with the requirements of the Work of the Contract Documents.
 6. Submittals that do not appear to be reviewed and approved will be returned to the Project Coordinator without the Architect's review. Time delays for this breach in procedure will be at the sole expense of the Project Coordinator.

7. Sequentially identify each item. For revised submittals use original number and a sequential alphabetical suffix.
 8. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
 - a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
 9. Schedule submittals to expedite the Project, and coordinate submission of related items.
 - a. For each submittal for review, allow 15 calendar days excluding delivery time to and from the Contractor.
 - b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
 - c. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to Architect's approval, allow an additional 30 days.
 10. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
 11. Provide space for Contractor and Architect review stamps.
 12. When revised for resubmission, identify all changes made since previous submission.
 13. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
 14. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
 15. Submittals not requested will not be recognized or processed.
- B. Product Data Procedures:
1. Submit only information required by individual specification sections.
 2. Collect required information into a single submittal.
 3. Submit concurrently with related shop drawing submittal.
 4. Do not submit (Material) Safety Data Sheets for materials or products.
- C. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
 2. Do not reproduce Contract Documents to create shop drawings.
 3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.
- D. Samples Procedures:
1. Transmit related items together as single package.
 2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.
 3. Include with transmittal high-resolution image files of samples to facilitate electronic review and approval. Provide separate submittal page for each item image.

END OF SECTION

**SECTION 01 3000 -- ATTACHMENT
SHOP DRAWING SUBMITTAL FORM**

Architects Project No: 23-29721 Date: _____
Project Name: Muscatine Indoor Sports Complex
Specification Section Number: _____ Shop Drawing # _____
Specification Section Name: _____
Description: _____

Subcontractor or Supplier Approval:	General Contractor or Construction Manager Approval:
Architect / Engineer Review:	Other Reviews and Comments:

ISSUE DATE - 06-13-2024

Requirements for Electronically Submitted Shop Drawings

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Requirements for Electronically Submitted Shop Drawings

1. The Contractor shall fill out and include the submittal cover sheet included in the specification book. This is to be the first page of the submittal. If the Contractor elects to use transmittal sheets they shall be the last page of the submittal.
2. If construction management software (ProCore or similar type program) is used, the cover sheet shall also be used as the document needs to be able to live outside those programs with all notes present on the submittal.
3. Routing of all shop drawings shall be submitted to the Architect through the Project Coordinator.
4. **The shop drawings are to be reviewed by the Contractor before submitting.** All field required verifications and missing information shall be completed and duly noted on the drawings. The Contractor shall verify that the products submitted are acceptable per the specifications. The Contractor shall then affix their stamp on the submittal cover sheet. Contractor must review - **no pass through drawings are permitted.** Time delays for this breach in procedure will be at the sole expense of the Project Coordinator.
5. Shop drawing representation: By submitting shop drawings, the Project Coordinator represents to the Architect that the Project Coordinator has: (1) reviewed and approved them, (2) determined and verified materials types and use, obtained field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the work of the contract documents and other trades working on the project and their submittals.
6. The Contractor shall prepare a PDF document so that all sheets of the submittal are one document. Do not submit duplicate submittals for the sole reason to comply with required submittals. Note on the submittal if it is used for another section as well. (The only reason to include more than one section for a submittal).
7. Scans shall be in color. All pages shall be oriented correctly and legible. Actual sheet sizes for the submittal shall be 8 ½ x11 or 11x17 whenever possible. All print and details must be legible at those sizes.
8. Samples and color selections associated with the drawings shall be included when practical. Actual samples shall be photographed, converted to .pdf format and the sheet sized to letter size and any required notes provided on the page. If a separate color selection submittal is provided, provide a cover sheet and list names of all samples and colors on cover sheet and attach the photographs of the samples to document the approval. Actual samples, color selections shall be delivered to Architect / Engineer and the shop drawings will not be reviewed until actual samples are received. Architect / Engineer uses staff from various offices so confirm where the samples need to be sent to expedite the review.
9. Scanned color charts or web sites will not be used to review colors, only to indicate the color that was selected.
10. The PDF file shall be named as follows. Example: 2022-169 23 3700 - Air outlets & inlets.pdf.
11. The email subject line shall list the project number first followed by the project name. Then the section number and a brief description of the submittal contents shall follow the submittal number. Example: 2022-169 Decorah VA 23 3700 Air outlets & inlets
12. The Architect/Engineer will review the drawings, make notes as required on the drawings and stamp them. The PDF file shall then be renamed by adding the action required such as (R) REVIEWED, (FAC) FURNISH AS CORRECTED, (R&R) REVISE AND RESUBMIT or (REJECT) REJECTED. Example: 2022-169 23 3700-Air outlets & inlets R.pdf
13. The Architect/Engineer shall then use the original email and attach the reviewed drawings and forward back to the Project Coordinator. The email that they are attached to will be considered the transmittal.
14. No hard copies will be sent by the Architect/Engineer. Note: Hard copies will be required to be included in the O+M Manuals as part of the project close out submittals.
15. The Project Coordinator shall maintain a shop drawing log for all submittals. Project Coordinator to update on a regular basis and distribute to Architect, Owner and others as requested.

ISSUE DATE - 06-13-2024

**SECTION 01 3510
STRUCTURAL TESTING AND SPECIAL INSPECTION**

PART 1 GENERAL

1.01 INTENT AND CONDITIONS

- A. Intent
 - 1. Define and coordinate structural testing and special inspection services.
 - 2. Define and coordinate conventional testing and inspection services.
 - 3. Provide greater confidence that the specified work is constructed in compliance with the contract documents and Chapter 17 of the 2015 International Building Code.
 - 4. Testing and Inspection services are intended to assist in determining probable compliance of the work with requirements specified. These services do not relieve the Contractor of responsibility for compliance with the requirements of the contract documents.
- B. Conditions
 - 1. If inspection of fabricator's work is required, the Owner's representative may require testing and inspection of the work at the plant, before shipment. Owner, Architect and Structural Engineer of Record (SER) reserve the right to reject material not complying with the contract documents.
 - 2. Testing and inspection shall be performed in accordance with the industry standard used as the reference for the specific material or procedure unless other criteria are specified. In the absence of a referenced standard, tests shall be accomplished in accordance with generally accepted industry standards.
 - 3. Work shall be checked as it progresses, but failure to detect any defective work or materials shall in no way prevent later rejection if defective work or materials are discovered, nor shall it obligate Owner to accept such work.

1.02 RELATED REQUIREMENTS

- A. Refer to PART 3 for technical scope sections regarding specific qualifications, inspections, tests, frequency and standards required.

1.03 DEFINITIONS

- A. Testing – Evaluation of systems, primarily requiring physical manipulation and analysis of materials, in accordance with approved standards.
- B. Inspection – Evaluation of systems, primarily requiring observation and engineering judgment.
- C. Structural Testing and Special Inspection – Structural Testing and Special Inspection Services herein include items required by the 2015 International Building Code, and other items which in the professional judgment of the Structural Engineer of Record, are critical to the integrity of the building structure.
- D. Conventional Testing and Inspection – Conventional Testing and Inspection Services herein describe those items not specially required by Code but may be considered essential to the proper performance of the building systems.
- E. Architect of Record – The prime consultant in charge of overall design and coordination of the project.
- F. Structural Engineer of Record (SER) – The Licensed Engineer in responsible charge of the structural design for the project.
- G. Licensed Structural Engineer: – A professional engineer with education and experience in the design of structures similar to this project licensed to practice in the state in which the project is located.
- H. Testing Agency (TA) – The properly qualified firm performing testing services.
- I. Special Inspector (SI) – A properly qualified individual or firm performing special inspections.
- J. Building Official – The Officer or his duly authorized representative charged with the administration and enforcement of the 2015 International Building Code.
- K. Continuous – The full-time observation of work requiring special inspection by an approved special inspector who is present in the area where the work is being performed.
- L. Periodic – The part-time or intermittent observation of work requiring special inspection by an approved special inspector who is present in the area where the work is being performed.

1.04 REFERENCES

- A. ASTM E329-13 - Standard Specification for Agencies Engaged in Construction, Inspection, Testing, or Special Inspection.
- B. ASTM E543-15 - Standard Practice for Agencies Performing Nondestructive Testing.
- C. ASTM C1077-15 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation.
- D. ASTM C1093-15 - Standard Practice for Accreditation of Testing Agencies for Masonry.
- E. ASTM D3740-12 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- F. AISC Steel Construction Manual 14th Edition (2010)
- G. 2015 International Building Code.
- H. See technical sections of PART 3 for specific references.

1.05 QUALIFICATIONS

- A. Testing Agency (TA) – The testing agency shall be an approved independent testing agency acceptable to the Owner, Architect, SER and as noted below:
 - 1. Authorized to operate in the state in which the project is located and experienced with the requirements and testing methods specified in the technical scope sections of PART 2.
 - 2. Meeting applicable requirements of Section 1.04 "References".
 - 3. Testing equipment shall be calibrated at reasonable intervals by devices of accuracy traceable to either the National Bureau of Standards, or to accepted values of natural physical constants.
- B. Special Inspector (SI) – The special inspector shall be under the direct supervision of a registered civil/structural engineer, experienced with the type of work requiring structural testing and special inspection.
 - 1. The categories of special inspector are:
 - a. Special Inspector - Technical I, II, and III: Usually an employee of a testing agency.
 - b. Special Inspector - Structural I and II: Preferably an employee of the SER's firm.
 - 2. Unique special inspector requirements, for specific materials and system, are noted in related technical specification sections.

1.06 RESPONSIBILITIES

- A. Structural Testing and Special Inspection
 - 1. Special Inspectors:
 - a. Sign the Structural Testing and Special Inspection Summary Schedule in conjunction with other responsible parties prior to commencement of construction.
 - b. If requested, attend a pre-construction meeting to review the scope of structural testing and special inspection.
 - c. Test and/or inspect the work assigned for conformance with the building department approved design drawings, specifications and applicable material and workmanship provisions of the Code. Perform testing and inspection in a timely manner to avoid delay of work.
 - d. Bring discrepancies to the immediate attention of the contractor for correction, confirm that they are corrected and, if uncorrected after a reasonable period of time, bring to the attention of the Structural Engineer of Record, the Building Official, and to the Architect.
 - e. Submit test and/or inspection reports to the Building Official, Contractor, the Structural Engineer of Record, and other designated persons in accordance with the Structural Testing and Special Inspection Summary Schedule.
 - f. Submit a final signed report stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans, specifications and the applicable workmanship provisions of the Code.
 - 2. Testing Agency:
 - a. Sign the Structural Testing and Special Inspection Summary Schedule in conjunction with other responsible parties prior to commencement of construction.

- b. If requested, attend a pre-construction meeting to review the scope of structural testing and special inspection.
 - c. When engaged as a special inspector, provide structural testing and special inspection services as previously described.
- 3. Architect of Record (or other prime consultant):
 - a. Complete and sign the Structural Testing and Special Inspection Summary Schedule in conjunction with other responsible parties prior to commencement of construction. Provide a completed copy of the schedule to all signed parties including Building Official.
 - b. If appropriate, arrange and attend a pre-construction meeting to review the scope of structural testing and special inspection. Include Contractor, Building Official, SER, Testing Agency and other parties concerned.
 - c. Coordinate the flow of reports and related information to expedite resolution of construction issues.
- 4. Structural Engineer of Record (SER):
 - a. Identify items requiring structural testing and special inspection including special cases.
 - b. Define "type" of special inspector required for "description" of work indicated on the structural testing and special inspection schedule.
 - c. Complete and sign the Structural Testing and Special Inspection Summary Schedule prior to commencement of construction.
 - d. If requested, attend a pre-construction meeting to review the scope of structural testing and special inspection.
 - e. Review reports submitted by special inspectors.
 - f. If engaged as a special inspector, provide structural testing and special inspection services as previously described.
- 5. Contractor:
 - a. Sign the Structural Testing and Special Inspection Summary Schedule in conjunction with other responsible parties prior to commencement of construction.
 - b. Coordinate efforts to gain signatures of all signing parties other than the Architect and Structural Engineer of Record (SER).
 - c. If requested, attend a pre-construction meeting to review the scope of structural testing and special inspection.
 - d. Post or make available the Structural Testing and Special Inspection Summary Schedule within its office at the job site. Also, provide adequate notification to those parties designated on the schedule so they may properly prepare for and schedule their work.
 - e. Provide the special inspectors access to the approved drawings and specifications at the job site.
 - f. Review reports submitted by special inspectors.
 - g. Retain at the job site all reports submitted by the special inspectors for review by the building official upon request.
 - h. Correct in a timely manner, deficiencies identified in inspection and/or testing reports.
 - i. Provide the special inspector safe access to the work requiring inspection and/or testing.
 - j. Provide labor and facilities to provide access to the work and to obtain, handle and deliver samples, to facilitate testing and inspection and for storage and curing of test samples.
 - k. Verification of conformance of the work within specified construction tolerances is solely the Contractor's responsibility.
- 6. Fabricator:
 - a. Sign the Structural Testing and Special Inspection Summary Schedule in conjunction with other responsible parties prior to commencing construction.
 - b. Submit a Certificate of Compliance to the Building Official, Special Inspector, and Structural Engineer of Record that the work was performed in accordance with the approved plans and specifications.
- 7. Building Official (Typical responsibilities noted for information only):
 - a. Determine work, which in the Building Officials opinion, involves unusual hazards or conditions in accordance with the 2015 International Building Code.

- b. Review special inspector qualifications.
 - c. Accept and sign the completed Structural Testing and Special Inspection Summary Schedule.
 - d. Review all fabricators who perform work in their shop, which requires special inspection.
 - e. Review reports and recommendations submitted by the special inspectors.
 - f. Review the "final signed reports" submitted by the special inspector(s). These documents should be accepted and approved by the building department prior to issuance of a Certificate of Occupancy.
- 8. Owner:
 - a. Establish direct funding to provide for cost of structural testing and special inspection services.
 - b. Provide special inspector with approved design drawings, specifications and approved shop drawings.
 - c. Provide special inspectors and testing agencies with full access to site at all times.
 - d. Sign the Structural Testing and Special Inspection Summary Schedule in conjunction with other responsible parties prior to commencement of construction.
- B. Conventional Testing and Inspection
 - 1. Testing Agency:
 - a. Test or inspect the work assigned, for conformance with building department approved plans, specifications and applicable workmanship provisions of the 2015 International Building Code.
 - b. Bring non-conforming items to the immediate attention of the Contractor, and if uncorrected to the Architect of Record.
 - c. Submit test and/or inspection reports to the Architect of Record, the Contractor and other designated persons.
 - 2. Contractor:
 - a. Provide adequate notification to testing agency so they may properly prepare for and schedule their work.
 - b. Provide testing agency with access to the approved design drawings, approved shop drawings and specifications at the job site.
 - c. Correct in a timely manner, deficiencies identified in test and/or inspection reports.
 - d. Provide testing agency with safe access to the work requiring testing and inspection.
 - e. Provide labor and facilities to provide access to the work and to obtain and handle samples, to facilitate testing and inspection and for storage and curing of test samples.
 - f. Verification of conformance of the work within specified construction tolerances is solely the Contractor's responsibility.
 - 3. Architect of Record (or other prime consultant):
 - a. Coordinate the flow of reporting and related information to expedite resolution of construction issues.
- C. Inspections by Building Official
 - 1. Contractor shall provide adequate notice for inspections performed by the Building Official, as required by the 2015 International Building Code, and local ordinance.
- D. Periodic Site Observations by Design Consultant
 - 1. Special structural testing and inspection, conventional testing and inspection, and periodic inspections by the Building Official do not preclude the normal field involvement and site observations by Architect or Structural Engineer of Record, nor shall it relieve the Contractor of any responsibility to complete the work in accordance with the approved drawings and specifications.
- E. Limits of Authority
 - 1. Testing agents and/or special inspectors may not waive or alter contract requirements, or approve or accept any portion of the work unless specifically authorized by the Architect or Structural Engineer of Record. They may not assume any duties of the Contractor, and they have no authority to stop or reject "Work".

1.07 PAYMENT

- A. Owner shall directly employ and pay for services of the special inspectors to perform required Structural Testing and Special Inspection.
- B. Owner shall employ and pay for services of the testing agency to perform required Conventional Testing and Inspection.
- C. Unless noted otherwise, the Contractor shall provide and pay for all materials, samples, mock-ups, and assemblies required for testing and inspection and shall pay for all shipping costs related to delivery of this work. Testing agency will pay for shipping costs of samples transported from site to lab.
- D. If exploratory work is required to determine the cause of defects, the cost of such work shall be paid by the Contractor, if the work is found to be defective, in the judgment of the Architect/Engineer. Contractor shall reimburse the Owner for all costs incurred in this event.
- E. Any tests required to qualify the Contractor, or the workmen for any phase of the work, shall be performed at no additional cost to the Owner.

1.08 INSPECTION NOTICE

- A. Contractor shall provide minimum of 24 hours notice for all items requiring testing or inspection. Items requiring testing and inspection services prior to or during placement shall not be placed until testing and inspection services are available. Items requiring testing and inspection services after placement shall not be enclosed or obscured until testing and inspection services are performed.

1.09 REPORTS

- A. Testing agency and/or special inspectors shall submit reports in accordance with the Structural Testing and Special Inspection Summary Schedule and shall conduct and interpret tests and inspections and state in each report whether; (1) test specimens and observations comply with Contract Documents, and specifically state any deviations, (2) record types and locations of defects found in work, (3) record work required and performed, to correct deficiencies.
- B. Reports for structural testing and special inspection, shall be submitted in timely manner to the Contractor, Building Official, SER, and Architect of Record.
 - 1. Submit reports for ongoing work, to provide the information noted below:
 - a. Date issued.
 - b. Project title and number.
 - c. Firm name and address.
 - d. Name and signature of tester or inspector.
 - e. Date and time of sampling.
 - f. Date of test or inspection.
 - g. Identification of product and specification section.
 - h. Location in project, including elevations, grid location and detail.
 - i. Type of test or inspections.
 - j. Results of tests or inspections and interpretation of same.
 - k. Observations regarding compliance with Contract Documents or deviations there from.
 - 2. Submit a final signed report stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans, specifications and the applicable workmanship provisions of the code.
- C. Reports for conventional testing and inspection shall be submitted in a timely manner to the Contractor and the Architect of Record.

1.10 FREQUENCY OF TESTING AND INSPECTION

- A. For detailed requirements see technical sections of PART 3.

1.11 PROTECTION AND REPAIR

- A. Upon completion of testing, sample-taking, or inspection, the Contractor shall repair damaged work and restore substrates and finishes to eliminate deficiencies, including deficiencies in the visual qualities of exposed surfaces, as judged solely by the Architect/Engineer of Record. Protect work exposed by or for testing and/or inspection and protect repaired work. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for testing and/or inspection.

1.12 TESTS TO DEMONSTRATE QUALIFICATION

- A. If the Contractor proposes a product material, method, or other system that has not been pre-qualified, the Architect may require applicable tests, to establish a basis for acceptance or rejection. These tests will be paid for by the Contractor.
- B. The Architect/Engineer of Record reserves the right to require certification or other proof that the system proposed, is in compliance with any tests, criteria or standards called for. The certificate shall be signed by a representative of an independent testing agency.

PART 2 MATERIALS (NOT USED)

PART 3 SCOPE OF TESTING AND INSPECTION

3.01 STRUCTURAL TESTING AND SPECIAL INSPECTION PROGRAM SUMMARY

- A. The parties involved shall complete and sign the Structural Testing and Special Inspection Summary Schedule. The Program, including Summary Schedule, shall be submitted to the building official for approval prior to issuance of a building permit. The completed schedule includes the following:
 - 1. A specific listing of the items requiring inspection and testing.
 - 2. The associated technical scope sections that define the applicable standards by which to judge conformance with the approved plans and specifications in accordance with 2015 International Building Code. The technical scope sections should also include the degree or basis of inspection and testing; i.e., intermittent/will-call or full-time/continuous.
 - 3. The frequency of reporting, i.e., weekly, monthly, per test/inspection, per floor, etc.
 - 4. The parties responsible for performing the inspection and testing work.
 - 5. The required acknowledgments by each designated party.

3.02 CONVENTIONAL TESTING AND INSPECTION

- A. (Not Used)

3.03 STRUCTURAL TESTING AND SPECIAL INSPECTION STATEMENT OF SPECIAL INSPECTIONS

- A. Refer to attached Program Summary Schedule for this project. It includes a schedule of Special Inspection services applicable to this project and the identity of agencies to be retained for conducting these inspections and tests.
- B. The Special Inspector shall keep records of all inspections and shall furnish inspection reports to the Building Official, the Architect and Structural Engineer of Record. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official, the Architect and SER. The Special Inspection program does not relieve the Contractor of his or her responsibilities.
- C. Interim reports shall be submitted to the Building Official, Architect, and SER.
- D. A Final Report of Special Inspections documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

3.04 TECHNICAL SECTIONS

- A. **Section 31 2200 - Earthwork - Grading, Excavation Filling**
 - 1. (Not Used)
 - 2. Definitions
 - a. Refer to PART 1 for standard definitions.
 - b. Special Inspector – Technical
 - 1) Technical I: Technician shall be under the direct supervision of a Technical III. Work shall be performed in a qualified geotechnical/testing laboratory.
 - 2) Technical II: Technical with a minimum of 2 years experience, or a graduate engineer, and is an employee of a qualified and approved geotechnical/testing laboratory, under the direct supervision of a Technical III.
 - 3) Technical III: A civil/geotechnical engineer regularly engaged in this type of work with a minimum of 4 years experience, licensed in the State in which the project is located, and is an employee of a qualified and approved geotechnical/testing laboratory. This licensed engineer shall review and

approve all final field reports.

3. Structural Testing and Special Inspection Requirements (Item and Frequency and Qualifications)
 - a. Classification of materials used and encountered during construction per ASTM:D2488 and ASTM:D2487. Technical I
 - b. Performance of laboratory testing of materials, as needed (Proctor, Sieve Analysis, Atterberg Limits, Consolidation Test, etc.). Technical I
 - c. Field Density Tests: Technical I
 - d. Provide periodic results of field compaction and laboratory work for general compliance with Contract Documents and Geotechnical Reports. Technical I
 - e. Observe all subgrades/excavation bases below footings and slabs and verify design bearing capacity is achieved. Technical II
 - f. Document presence of groundwater within excavations. Technical I
 - g. Provide reports of subgrade observations for general compliance with Contract Documents and Geotechnical Report. Technical II
 - h. Verify cut and fill slopes as specified in the contract documents. Technical III
4. Conventional Testing and Inspections Requirements
 - a. Contractor shall verify that footings comply with frost depth requirements and shall report any variances to the SER in a timely manner.

B. Section 03 3000 - Cast-in-Place Concrete

1. General
 - a. Structural testing is required for all concrete. Thus, Special inspections as outlined below are not required for the following items:
 - 1) Isolated spread footings of buildings three stories or less in height that are fully supported on earth or rock.
 - 2) Strip footings of buildings three stories or less in height that are fully supported on earth or rock, where the footings support walls of light frame construction, the footings are designed in accordance with Table 1809.7, or the footing structural design is based on a $f'c$ no greater than 2500 psi.
 - 3) Non-structural slabs on grade, including prestressed slabs on grade when effective prestress in concrete is less than 150 pounds per square inch.
 - 4) Concrete foundation walls constructed in accordance with Table 1807.1.6.2.
2. Definitions
 - a. Refer to PART 1 for standard definitions.
 - b. Special Inspector – Technical
 - 1) Technical I: ACI Certified Grade I inspector. Inspector shall be employed by a testing laboratory, under the direct supervision of a Technical III.
 - 2) Technical II: ACI Certified Grade II inspector. Inspector shall be employed by a testing laboratory, under the direct supervision of a Technical III.
 - 3) Technical III: A civil/structural engineer regularly engaged in this type of work, with a minimum of 4 years experience and licensed in the State in which the project is located and is an employee of a qualified and approved testing laboratory. The licensed engineer shall review and approved all reports.
 - 4) Testing laboratory shall have C.C.R.L. certification at the National Bureau of Standards.
 - c. Special Inspector – Structural
 - 1) Structural I: Graduate civil/structural engineer, or other personnel acceptable to the SER, with experience in the design of structural systems of this type. Inspections shall be performed under the direct supervision of a Structural II.
 - 2) Structural II: Civil/structural engineer regularly engaged in the design of structural systems of this type, licensed in the State in which the project is located. The licensed engineer shall review and approve all inspection reports.
 - 3) Special Inspector - Structural may be an employee of the SER.
3. Structural Testing and Special Inspection Requirements (Item and Frequency and Qualifications)
 - a. Sample and test all cast in place concrete; Technical I.
 - 1) Prepare compression test specimens (ASTM C31), one set of four standard cylinders of concrete for each compressive strength test, mold and store

- cylinders for laboratory-cured specimens. Specimens shall be 4x8 cylinders except where an alternate size has been approved by the structural engineer.
- 2) Perform compressive strength tests (ASTM C39). One set of four cylinders for each day's pour between one and 25 cubic yards. If a day's pour exceeds 25 cubic yards, one set of four cylinders for each additional 150 cubic yards, or fraction thereof. One specimen at seven days, two at 28 days, and one specimen retained in reserve for later testing if required. For post tensioned concrete, make and test an additional cylinder at three days to verify strength prior to stressing. (When frequency of testing will provide less than five strength tests for a given class of concrete, conduct at least five strength tests from randomly selected batches. If fewer than five batches are used, conduct one test from each batch.)
 - 3) Slump (ASTM C143): One test at point of discharge for each set of compression test specimens; additional tests when concrete consistency appears to have changed.
 - 4) Air entrainment (ASTM C231): Test the first batch of air entrained concrete and one additional test for each set of compression test specimens.
 - 5) Concrete Temperature: Test concrete temperature hourly when air temperature is 40F and below and when 80F and above, and each time a set of compression test specimens is made.
- b. On a periodic basis, perform concrete mix verification; Technical I.
 - 1) Verify mixer truck trip ticket conforms to approved mix design.
 - 2) Verify that total water added to mix on site does not exceed that allowed by concrete mix design.
 - 3) Verify that concrete quality is indicative of adequate mixing time, consistency, and relevant time limits. Technical I
 - c. On a continuous basis, inspect preparation and placement of all concrete.
 - 1) Verify the following; Structural I:
 - (a) Verify acceptable general condition of concrete base prior to placement.
 - (b) Verify concrete has been sampled for required concrete tests.
 - (c) Verify that concrete conveyance and depositing avoids segregation and contamination.
 - (d) Verify that concrete is properly consolidated.
 - (e) Verify reinforcement remains at proper location.
 - (f) Unless noted, inspections shall be on a continuous basis. Inspections may be performed on a periodic basis for the following types of work:
 - d. On a periodic basis, observe protection and curing methods for all concrete requiring inspections as outlined above; Structural I:
 - 1) Verify specified curing procedures are followed.
 - 2) Verify specified hot and cold weather procedures are followed.
 - e. On a continuous basis, inspect all bolts installed in concrete prior to and during concrete placement; Structural I:
 - 1) Verify specified size, type, spacing, configuration, embedment, and quantity.
 - 2) Verify proper concrete placement and means have been taken to achieve consolidation around all bolts.
4. Conventional Testing and Inspection Requirements
 - a. (Not Used)

END OF SECTION

Structural Testing and Special Inspection Program Summary Schedule

Project Name: Muscatine Indoor Sports Complex

Project No. 23-29721

Location: Muscatine, Iowa

Permit No. _____ (1)

Technical (2)		Description (3)	Type of Inspector (4)	Specific Report Frequency (5)	Assigned Firm (6)
Section	Article				
31 2200	1705.6	Soils	TA	IBC Table 1705.6	
03 3000	1705.3	Cast-In-Place Concrete	TA	IBC Table 1705.3	
04 2000	1705.4	Masonry	TA	Per IBC 1705.4	

Note: This schedule shall be filled out and included in a Special Structural Testing and Inspection Program.

(If not otherwise specified, assumed program will be "Guidelines for Special Inspection & Testing".)

- (1) Permit No. to be provided by the Building Official
- (2) Referenced to the specific technical scope section in the program.
- (3) Use descriptions per IBC Chapter 17.
- (4) Special Inspector – Technical (SIT); Special Inspector – Structural (SIS)
- (5) Weekly, monthly, per test/inspection, per floor, etc. Per section 01 3510 of spec book.
- (6) Name of Firm contracted to perform services.

ACKNOWLEDGEMENTS (Each appropriate representative shall sign below)

Owner: _____	Firm: _____	Date: _____
Contractor: _____	Firm: _____	Date: _____
Architect: _____	Firm: _____	Date: _____
SER: _____	Firm: _____	Date: _____
SI-T: _____	Firm: _____	Date: _____
SI-S: _____	Firm: _____	Date: _____
TA: _____	Firm: _____	Date: _____
F: _____	Firm: _____	Date: _____

If requested by engineer/architect of record or building official, the individual names of all prospective special inspectors and the work they intend to observe shall be identified as an attachment.

Legend: SER = Structural Engineer of Record SI-T = Special Inspector - Technical TA = Testing Agency
 SI-S = Special Inspector - Structural F = Fabricator

Accepted for the Building Department By _____ Date _____

ISSUE DATE - 06-13-2024

**SECTION 01 4000
QUALITY REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Examination of Drawings and Specifications
- C. References and standards.
- D. Testing and inspection agencies and services.
- E. Control of installation.
- F. Tolerances.
- G. Manufacturers' field services.
- H. Defect Assessment.

1.02 RELATED REQUIREMENTS

- A. Document 00 7200 - General Conditions: Inspections and approvals required by public authorities.
- B. Section 01 3000 - Administrative Requirements: Submittal procedures.
- C. Section 01 6000 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

- A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008 (Reapproved 2019).
- B. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation; 2017.
- C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry; 2022.
- D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2019.
- E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2021.
- F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2021.
- G. ASTM E699 - Standard Specification for Agencies Involved in Testing, Quality Assurance, and Evaluating of Manufactured Building Components; 2016.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. General: As indicated in individual specification sections.
- C. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
- D. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test/inspection.
 - h. Date of test/inspection.
 - i. Results of test/inspection.
 - j. Compliance with Contract Documents.

- k. When requested by Architect, provide interpretation of results.
- 2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
- E. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
 - 1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 - 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
- F. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- G. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
 - 1. Submit report in duplicate within 30 days of observation to Architect for information.
 - 2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
- H. Erection Drawings: Submit drawings for Architect's benefit as contract administrator or for Owner.
 - 1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
 - 2. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or Owner.

1.05 EXAMINATION OF DRAWINGS AND SPECIFICATIONS

- A. Upon receipt of Drawings and Specifications verify that documents are complete. Notify Architect should the documents be incomplete.
- B. Immediately notify Architect upon finding discrepancies or omissions in the Drawings and Specifications.
- C. Drawings and specifications are complementary and do not create a hierarchy.
- D. By submitting a bid, bidders agree that they have reviewed, in detail, all Drawings and Specifications.
- E. The following will not entitle a contractor to a change order increasing the overall project cost after the project has been awarded:
 - 1. Selectively choosing less significant content from the drawings or specifications where conflicting information is evident.
 - 2. Disregarding content that only appears in one part of the Bidding Documents.
- F. A written request for clarification during the bidding process will result in an addendum being issued to resolve such errors, inconsistencies, or omissions in the Drawings and Specifications therefore creating a level bidding environment for all bidders.

1.06 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.07 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Owner will employ and pay for services of an independent testing agency to perform other specified testing and inspection.
 - 1. Where indicated in individual specification sections the Contractor shall employ and pay for services of an independent testing agency to perform specified testing and inspection.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- C. Contractor Employed Agency:
 - 1. Testing agency: Comply with requirements of ASTM E329, ASTM E543, ASTM E699, ASTM C1021, ASTM C1077, ASTM C1093, and ASTM D3740.
 - 2. Inspection agency: Comply with requirements of ASTM D3740 and ASTM E329.
 - 3. Laboratory: Authorized to operate in the State in which the Project is located.
 - 4. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
 - 5. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 TESTING AND INSPECTION

- A. See individual specification sections for testing and inspection required.
- B. Testing Agency Duties:
 - 1. Test samples of mixes submitted by Contractor.
 - 2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
 - 3. Perform specified sampling and testing of products in accordance with specified standards.
 - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 5. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.

6. Perform additional tests and inspections required by Architect.
 7. Submit reports of all tests/inspections specified.
- C. Limits on Testing/Inspection Agency Authority:
1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Agency may not approve or accept any portion of the Work.
 3. Agency may not assume any duties of Contractor.
 4. Agency has no authority to stop the Work.
- D. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- E. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
- F. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.04 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.05 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

**SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary sanitary facilities.
- C. Temporary Controls: Barriers, enclosures, and fencing.
- D. Waste removal facilities and services.

1.02 TEMPORARY UTILITIES

- A. Owner will provide the following:
 - 1. Electrical power, consisting of connection to existing facilities.
 - a. Contractor shall provide portable generator power as required when connection to existing facilities is not adequate to complete the Work.
 - 2. Water supply, consisting of connection to existing facilities.
- B. Provide and pay for all additional lighting, heating and cooling, and ventilation required to complete the Work.
- C. Provide and pay for all temporary heating shelters required to complete the work. The Owner will not consider any requests for extra charges related to weather.
- D. Provide and maintain a minimum light level of 5 foot-candles for a safe work environment throughout the project.
- E. Permanent convenience receptacles may be utilized during construction.
 - 1. Replace all damage and worn receptacles used during construction prior to substantial completion.
- F. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.03 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.
- C. At end of construction, return facilities to same or better condition as originally found.

1.04 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
 - 1. The term "non-owned" refers to insurance coverage for other vehicles not owned by the named insured's.

1.05 FENCING

- A. Construction: Commercial grade chain link fence.
- B. Provide 6 foot high fence, minimum; equip with vehicular and pedestrian gates with locks where applicable.
 - 1. Install fence around entire construction site.
- C. Installation: Install safety fencing according to manufacturer's instructions, and according to local governing authorities.

1.06 INTERIOR ENCLOSURES

- A. Provide temporary partitions as required to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.
 - 1. Dust and Airborne Particulates: Prevent deposition of dust and other particulates in HVAC ducts and equipment.
 - a. Cleaning of ductwork is not contemplated under this Contract.

- b. Contractor shall bear the cost of cleaning required due to failure to protect ducts and equipment from construction dust.
 - c. Establish condition of existing ducts and equipment prior to start of alterations.
 - d. If extremely dusty or dirty work must be conducted, shut down HVAC systems for the duration; remove dust and dirt completely before restarting systems.
- B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:

1.07 SECURITY

- A. Provide security and facilities to protect Work, and Owner's operations from unauthorized entry, vandalism, or theft.

1.08 VEHICULAR ACCESS AND PARKING

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Contractors are to park within the parameters of the construction area.
- C. Coordinate access and haul routes with governing authorities and Owner.
- D. Provide and maintain access to fire hydrants, free of obstructions.
- E. Provide means of removing mud from vehicle wheels before entering streets.
- F. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.09 WASTE REMOVAL

- A. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.
- B. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- C. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- D. Provide containers with lids. Remove trash from site periodically.
- E. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

1.10 FIELD OFFICES

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack and drawing display table.
- B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.

1.11 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition.
- E. Restore existing site damaged by construction to original condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 6000
PRODUCT REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Base specified/scheduled products and design intent.
- F. Inconsistencies.
- G. Substitutions in general.
- H. Substitution limitations.
- I. Procedures for Owner-supplied products.
- J. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittals.
- B. Section 01 4000 - Quality Requirements: Product quality monitoring.
- C. Section 22 0513 - Common Motor Requirements for Plumbing Equipment: Motors for plumbing equipment.

1.03 REFERENCE STANDARDS

- A. NEMA MG 1 - Motors and Generators; 2021.
- B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.
- B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. The Contractor shall assure the Owner that all new equipment and materials are asbestos free. The Contractor, subcontractors, and material suppliers are required to provide letters of non-asbestos confirmation with supporting documentation prior to material installations. The Owner may select materials to test for asbestos at any time including prior to and/or after installation. If suspect asbestos materials are tested and found to contain asbestos, the materials shall be abated in accordance with asbestos regulations by an Owner approved consultant and abatement contractor. New asbestos free products shall be re-installed by the Contractor supplying such material. The Contractor shall be responsible for any and all new materials. If asbestos is found in the new materials, the cost for asbestos design, on-site monitoring, abatement, and replacement shall be the responsibility of the Contractor. Owner will collect and pay for the testing of any random suspect asbestos samples.
- C. Use of products having any of the following characteristics is not permitted:
 - 1. Made using or containing CFC's or HCFC's.
- D. Where other criteria are met, Contractor shall give preference to products that:
 - 1. Are extracted, harvested, and/or manufactured closer to the location of the project.
 - 2. Have longer documented life span under normal use.
 - 3. Result in less construction waste.

- E. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Size terminal lugs to NFPA 70, include lugs for terminal box.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers with a Provision for No Substitutions: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with or without a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.
- D. Products Scheduled on the Drawings by Naming one Manufacturer, but not Indicating Other Approved Manufactures in the Specifications: Use any equivalent product complying with the specifications in general and equivalent to the "Basis of Design" identified in the drawing's schedules. Pre-bid requests for substitutions are not required.
- E. Products that do not meet project specifications may be rejected at any time during the project.
- F. Cost associated with replacement product and delay in project schedule due to rejection shall be at sole expense of Contractor.

2.04 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 BASE SPECIFIED/SCHEDULED PRODUCTS AND DESIGN INTENT

- A. Certain specification sections will indicate a base manufacturer and will then list other acceptable manufacturers. Similarly, certain specification sections will list multiple acceptable manufacturers but only one of the manufacturers will be scheduled on a plan sheet. In these scenarios, the designer has designed the system with considerations for the base manufacturer or the product scheduled on the plan sheet. It is the responsibility of all bidders, contractors, suppliers to ensure that when bidding using an acceptable manufacturer other than the base manufacturer or the scheduled manufacturer that the design intent is met. Providing a product by an acceptable manufacturer other than the base specified or scheduled manufacturer constitutes a representation that the submitter:
 - 1. Has investigated supplied product and determined that it meets or exceeds the quality level of the base specified/scheduled product.
 - 2. Will provide the same warranty for the supplied product as for the base specified/scheduled product.
 - 3. As a result of differences between the base specified/scheduled product and the other acceptable manufacturers will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
 - 5. Will reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
 - 6. Will maintain dimensions, locations, clearances, accesses and other design intent shown on the plan or otherwise provided by the base specified/scheduled product.

3.02 INCONSISTENCIES

- A. If there is an inconsistency in the quality and/or quantity of Work required by the Contract Documents, either the greater quality and/or quantity of Work indicated shall be provided in accordance with the Engineer/Architect's interpretation without change in the contract sum.

3.03 SUBSTITUTIONS IN GENERAL

- A. Proposed substitutions are required to be equivalent or better in all aspects to the specified products including but not limited to appearance, quality, and performance.

- B. When specified in individual sections actual samples shall be provided a minimum of 12 days prior to the bid due date for Architect's review and approval before products other than those scheduled or specified with be accepted; No Exceptions.

3.04 SUBSTITUTION LIMITATIONS

- A. Where the Bid Documents stipulate a particular product, substitutions will be considered up to 10 days before receipt of bids.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
 - 1. The substantiating data shall provide a side by side comparison consisting of sufficient information to determine acceptability of such products.
- C. A request for substitution constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
 - 5. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- D. Provide complete information on required changes to other Work to accommodate each proposed substitution.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. When a request to substitute a product is made, Architect may approve the substitution and will issue an Addendum to known bidders.
- G. Substitution Submittal Procedure
 - 1. Transmit each substitution request with the Substitution Request cover letter attached to this specification section.
 - 2. PDFs by e-mail is the preferred method; coordinate with Architect's representative. Only submit paper copies where necessary as follows:
 - a. Submit five copies of request for substitution for consideration.
 - 3. The submitter shall prepare a single PDF file when submitting by e-mail so that all sheets of a submittal are included in one document. Only ONE major product per submittal is permitted. Each PDF shall contain Bookmarks set to the destination of separate items contained within the file. If the submitter elects to use their own transmittal sheet it shall be a separate attachment.
 - a. Scans shall be in color, pages shall be oriented correctly, actual sheet sizes for the submittal shall be 11 by 17 inch or 8-1/2 by 11 inch whenever possible, and all content must be legible.
 - 4. Limit each request to one proposed substitution.
 - 5. Multiple proposed substitutions submitted on one form will only be considered when products are directly related. Major products and components should be listed first.
 - 6. Submit shop drawings, product data, certified test results, etc. attesting to the proposed product equivalence. Burden of proof is on proposer.
 - 7. The Architect will reply with a decision to accept or reject request in a timely manner.
- H. Substitution Submittal Procedure (after contract award):
 - 1. Requests for Substitutions received after Bid Opening will not be considered except in such cases where it is necessary to make a substitution due to strikes, lockouts, bankruptcy, discontinuance of a product, and similar circumstances. Such Requests for Substitution of materials after Contract Award shall be made in writing to the Architect and shall be made within ten (10) days of the date that the Contractor ascertains they cannot obtain the material or equipment specified.
 - 2. Requests for Substitution will not be considered when they are indicated or implied on Shop Drawings or Product Data submittals without a separate previously submitted

Request for Substitution Form, or when acceptance will require substantial revision of the Contract Documents.

3. The Architect with approval by the Owner will be the judge of the acceptability of all Requests for Substitution received after Bid Opening.

3.05 OWNER-SUPPLIED PRODUCTS

- A. Owner's Responsibilities:
 1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
 2. Arrange and pay for product delivery to site.
 3. On delivery, inspect products jointly with Contractor.
 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 5. Arrange for manufacturers' warranties, inspections, and service.
- B. Contractor's Responsibilities:
 1. Review Owner reviewed shop drawings, product data, and samples.
 2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
 3. Handle, store, install and finish products.
 4. Repair or replace items damaged after receipt.

3.06 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.07 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturer's warranty conditions, if any.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

- J. Prevent contact with material that may cause corrosion, discoloration, or staining.
- K. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- L. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

ISSUE DATE - 06-13-2024

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**SECTION 01 6000 -- ATTACHMENT
SUBSTITUTION REQUESTS**

Architects Project No: 23-29721 Date: _____
Project Name: Muscatine Indoor Sports Complex

Specification Section	Manufacturer Specified	Proposed Manufacturer

Indicate drawing sheet name in lieu of specification section where applicable.

Vendor/Supplier

Name: _____
Address: _____
Contact: _____ E-Mail: _____
Telephone: _____ Fax: _____

Reason for Substitution: _____

Does Specification Allow for Substitutions of Proposers Items? Yes: ☐ No: ☐
Will the Substitution Provide Cost Savings to the Owner? Yes: ☐ No: ☐
Are Proposed Substitutions Equivalent/Superior to those Specified? Yes: ☐ No: ☐
Did you provided marked-up product information showing side by side comparisons for both the specified products and proposed products? Yes: ☐ No: ☐

I, _____, accept responsibility for coordination of proposed substitution and accept all additional costs resulting from the incorporation of proposed substitution into the Project. (Proposers Signature Required)

For Architect's Use:.....**Comments:** _____

Accepted: ☐ Not Accepted: ☐ _____
No Action Required: ☐ _____
Submission: Incomplete: ☐ Too Late: ☐ _____
Reviewed By: _____
Date: _____

ISSUE DATE - 06-13-2024

**SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Access panels required by trade.
- C. Requirements for alterations work, including selective demolition.
- D. Construction documents and clash detection discovery.
- E. Pre-installation meetings.
- F. Cutting and patching.
- G. Surveying for laying out the work.
- H. Cleaning and protection.
- I. Starting of systems and equipment.
- J. Demonstration and instruction of Owner personnel.
- K. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- L. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittals procedures.
- B. Section 01 5000 - Temporary Facilities and Controls: Temporary exterior enclosures.
- C. Section 01 5000 - Temporary Facilities and Controls: Temporary interior partitions.
- D. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.
- E. Section 07 8400 - Firestopping.
- F. Individual Product Specification Sections:
 - 1. Advance notification to other sections of openings required in work of those sections.
 - 2. Limitations on cutting structural members.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.
 - 6. Include in request:
 - a. Identification of Project.
 - b. Location and description of affected work.
 - c. Necessity for cutting or alteration.
 - d. Description of proposed work and products to be used.
 - e. Alternatives to cutting and patching.
 - f. Effect on work of Owner or separate Contractor.
 - g. Written permission of affected separate Contractor.
 - h. Date and time work will be executed.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.04 QUALIFICATIONS

- A. For demolition work, employ a firm specializing in the type of work required.
 - 1. Minimum of five years of documented documented experience.

- B. For survey work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.
- C. For construction surveying and building layout at the option of the contractor, employ ISG; Contact Dan Stueber; Phone: 507.387.6651.
 - 1. Scope: Building Staking; Curb and Gutter/Edge of Bituminous Staking; Watermain and Sanitary Sewer Staking; Other Miscellaneous Staking; and additional Field Crew Coordination Requirements. Refer to proposal for additional information.
 - 2. Bidding: Obtain proposal from ISG and include the amount in base bid.
- D. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in the State in which the Project is located. Employ only individual(s) trained and experienced in establishing and maintaining horizontal and vertical control points necessary for laying out construction work on project of similar size, scope and/or complexity.

1.05 PROJECT CONDITIONS

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- C. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

1.06 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.07 CONSTRUCTION DOCUMENTS AND CLASH DETECTION DISCOVERY

- A. All building infrastructure is to comply with the design intent as indicated in the Construction Documents. All deviations to be reviewed and approved with the ISG design team prior to authorizing changes to determine any related or impacted Scopes of Work. The PDF Drawing set and Project Manual are the Construction Documents.
- B. Shared Revit/CAD documents may be used to build clash detection models, however, what is viewed in a Revit/CAD model provided by ISG should only be used as a guide. Do not make changes without prior approval which may then cause other design issue conflicts (e.g. - lowered ceilings, pipes not in walls, routing that has other consequences, et cetera).
- C. Furthermore, the Revit/CAD model provided representing the Construction Documents have not been processed in a manner that resolves all potential building clash detection items, and it is expected that minor adjustments will be made on-site to complete the Work based on the design intent without additional cost to the Owner. Refer to Coordination verbiage above about

utilizing spaces efficiently.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- F. Utilize recognized engineering survey practices.

- G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
- H. Periodically verify layouts by same means.
- I. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 ACCESS PANELS REQUIRED BY TRADE

- A. Trade requiring access shall provide and install access panels where not show or specified.
- B. The finished appearance and function will be subject to approval by the Architect/Owner.
- C. Provide panels that accommodate adjacent finishes in finished spaces.
- D. Access panels shall meet all code requirements for each location they are installed and shall be sized appropriately.

3.07 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 5000.
 - 2. Provide walk-off mats as required to separate demolition and construction from existing building.
- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
 - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
 - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
- D. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
 - 2. Remove items indicated on drawings.
 - 3. Relocate items indicated on drawings.
 - 4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- E. Services (Including but not limited to HVAC, Plumbing, and Electrical): Remove, relocate, and extend existing systems to accommodate new construction.

1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
 2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
 - b. Provide temporary connections as required to maintain existing systems in service.
 4. Verify that abandoned services serve only abandoned facilities.
 5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- F. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 3. Repair adjacent construction and finishes damaged during removal work.
- G. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- H. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- I. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- J. Remove demolition debris and abandoned items from alterations areas and dispose of off-site.
- K. Do not begin new construction in alterations areas before demolition is complete.
- L. Comply with all other applicable requirements of this section.

3.08 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
 1. Complete the work.
 2. Fit products together to integrate with other work.
 3. Provide openings for penetration of mechanical, electrical, and other services.
 4. Match work that has been cut to adjacent work.
 5. Repair areas adjacent to cuts to required condition.
 6. Repair new work damaged by subsequent work.
 7. Remove and replace defective and non-complying work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
 1. All other cutting and patching is to be performed by the responsible trade.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.

- H. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.
- J. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.09 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.10 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.11 SYSTEM STARTUP

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- D. Verify that wiring and support components for equipment are complete and tested.
- E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- F. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.12 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

- C. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.

3.13 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.14 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
 - 1. The intent of final cleaning is to provide the Owner with a product that is free of all dust, dirt, and debris related to the Work, and in a like new condition.
- B. Use cleaning materials that are nonhazardous.
- C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- E. Wipe clean wood and laminate surfaces including doors, countertops, cabinets, windows, sills and all other similar surfaces.
- F. Wipe clean all painted surfaces.
- G. Clean all hard finish floors including tile and sealed concrete and all others according to manufacturer's instructions.
- H. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- I. Clean filters of operating equipment.
- J. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner.

3.15 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
 - 1. Provide copies to Architect and Owner.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.16 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.

- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

ISSUE DATE - 06-13-2024

**SECTION 01 7800
CLOSEOUT SUBMITTALS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project record documents.
- B. Operation and maintenance data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Individual Product Sections: Specific requirements for operation and maintenance data.
- C. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Preliminary Operation and Maintenance Manual: Submit preliminary draft of proposed format and outline of contents in a PDF format before start of Work. Architect will review draft and return with comments.
- C. Final Operation and Maintenance Manual: Submit final manual and electronic copies with claim for final Application for Payment. Architect will retain one electronic copy. The original manual and one electronic copy will be provided to the Owner.
 - 1. At the option of the Owner provide only an electronic copy in PDF format.
- D. Operation and Maintenance Data:
 - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
 - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
 - 4. Submit two sets of revised final documents in final form within 10 days after final inspection.
- E. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.

- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish first floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 - 1. Product data, with catalog number, size, composition, and color and texture designations.
 - 2. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Additional information as specified in individual product specification sections.
- D. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 - 1. Description of unit or system, and component parts.
 - 2. Identify function, normal operating characteristics, and limiting conditions.
 - 3. Include performance curves, with engineering data and tests.
 - 4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- E. Provide servicing and lubrication schedule, and list of lubricants required.
- F. Include manufacturer's printed operation and maintenance instructions.

- G. Include sequence of operation by controls manufacturer.
- H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- I. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- J. Include test and balancing reports.
- K. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor, and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- J. Arrangement of Contents: Organize each volume in parts as follows:
 - 1. Project Directory.
 - 2. Table of Contents, of all volumes, and of this volume.
 - 3. Operation and Maintenance Data: Arranged by system, then by product category.
 - a. Source data.
 - b. Product data, shop drawings, and other submittals.
 - c. Operation and maintenance data.
 - d. Field quality control data.
 - e. Original warranties and bonds.
- K. Electronic Copy: Provide two copies of all operation and maintenance data in a PDF format on a flash drive. Locate storage devices in the front of the operation and maintenance manual. Label device with project name and substantial completion date.

3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION

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**SECTION 03 3000
CAST-IN-PLACE CONCRETE**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete formwork.
- B. Concrete topping over precast planks.
- C. Floors and slabs on grade.
- D. Concrete foundation walls.
- E. Concrete reinforcement.
 - 1. Including Structural Fiber Reinforcement.
- F. Joint devices associated with concrete work.
- G. Miscellaneous concrete elements, including bollards and stair pans.
- H. Concrete curing.
- I. Concrete finishing.
 - 1. Floor surfaces to be left exposed.

1.02 RELATED REQUIREMENTS

- A. Section 07 9200 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.
- B. Section Division 22 - Plumbing Piping Specialties: Mechanical items for casting into concrete.
- C. Section Division 26 - Grounding and Bonding for Electrical Systems: Electrical items for casting into concrete. Coordinate location with electrical contractor.
- D. Section Division 32 - Exterior Concrete Flatwork. Refer to concrete flatwork for all aspects of exterior concrete flatwork except stoops, aprons, and any other concrete element bearing on the building's foundation walls.

1.03 REFERENCE STANDARDS

- A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary; 2019 (Reapproved 2022).
- B. ACI PRC-207.1 - Mass Concrete - Guide; 2021.
- C. ACI PRC-211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.
- D. ACI PRC-302.1 - Guide to Concrete Floor and Slab Construction; 2015.
- E. ACI PRC-302.2 - Concrete Slabs that Receive Moisture-Sensitive Flooring Materials - Guide; 2022.
- F. ACI PRC-304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).
- G. ACI PRC-305 - Guide to Hot Weather Concreting; 2020.
- H. ACI PRC-306 - Guide to Cold Weather Concreting; 2016.
- I. ACI PRC-308 - Guide to External Curing of Concrete; 2016.
- J. ACI PRC-347 - Guide to Formwork for Concrete; 2014 (Reapproved 2021).
- K. ACI SPEC-301 - Specifications for Concrete Construction; 2020.
- L. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.
- M. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2022.
- N. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2023.
- O. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2023.

- P. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2024.
- Q. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens); 2023.
- R. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.
- S. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2020.
- T. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2023.
- U. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).
- V. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2019.
- W. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019, with Editorial Revision (2022).
- X. ASTM C595/C595M - Standard Specification for Blended Hydraulic Cements; 2021.
- Y. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2023, with Editorial Revision.
- Z. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2017.
- AA. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2021.
- BB. ASTM C1116/C1116M - Standard Specification for Fiber-Reinforced Concrete; 2023.
- CC. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures; 2020.
- DD. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2022.
- EE. ASTM E1155 - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers; 2020.
- FF. ASTM E1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2018a.
- GG. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017 (Reapproved 2023).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
- C. Mix designs: Submit mix design for each mix showing compliance with specified requirements.
- D. Test Reports: Submit report for each test or series of tests specified.
- E. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.
- F. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

1.05 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.
- B. Follow recommendations of ACI PRC-305 when concreting during hot weather.
- C. Follow recommendations of ACI PRC-306 when concreting during cold weather.

PART 2 PRODUCTS

2.01 FORMWORK

- A. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.

1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance.
2. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
3. Form Ties: Contractor's choice of standard product type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT MATERIALS

- A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
 1. Type: Deformed billet-steel bars.
 2. Finish: Unfinished, unless otherwise indicated.
- B. Synthetic Fiber Reinforcement: Refer to Concrete Materials Herein.
- C. Reinforcement Accessories:
 1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.
 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
 3. Do not use clay bricks or similar blocks/chunks of material as rebar chairs. Concrete dobies as rebar chairs are acceptable.

2.03 CONCRETE MATERIALS

- A. Cement: ASTM C150/C150M, Type I - Normal, Type II - Moderate, Portland type; or ASTM C595/C595M, Type IL - Portland-Limestone Cement Type.
 1. Acquire cement for entire project from same source.
- B. Fine and Coarse Aggregates: ASTM C33/C33M.
 1. Acquire aggregates for entire project from same source.
 2. Provide aggregate free of shale at all slab locations exposed to freeze/thaw action, visible locations, and locations exposed to water.
- C. Fly Ash: ASTM C618, Class C or F.
- D. Calcined Pozzolan: ASTM C618, Class N.
- E. Silica Fume: ASTM C1240, proportioned in accordance with ACI PRC-211.1.
- F. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.
- G. Structural Fiber Reinforcement: ASTM C1116/C1116M.
 1. Synthetic Macro-Fiber: Enduro 600 macro-synthetic fiber at 5.0 lb/cu yard (U.N.O) by Propex Concrete Systems Ltd; www.fibermesh.com or approved equivalent:
 - a. 3M; Scotchcast Polyolefin Fibers 2".
 - b. Euclid Chemical Company; Tuf-Strand SF.
 - c. Forta Corporation; FORTA-FERRO.
 - d. GCP Applied Technologies; Strux 90/40.
 - e. Nycon, Inc; XL.
 - f. Propex Operating Company, LLC; Fibermesh 650.
 - g. Sika Corporation; Sika Fiber MS 20.
 - h. Substitutions: See Section 01 6000 - Product Requirements.

2.04 ADMIXTURES

- A. Chemical Admixture:
 1. Manufacturers by concrete supplier:
 - a. Euclid Chemical Company: www.euclidchemical.com/#sle.
 - b. Fritz-Pak: www.fritzpak.com/#sle.
 - c. GCP Applied Technologies: www.gcpat.com/#sle.
 - d. Mapei Corporation: www.mapei.com/#sle.
 - e. Master Builders Solutions: www.master-builders-solutions.com/#sle.
 - f. Sika Corporation U.S.: www.usa.sika.com/#sle.
 - g. Substitutions: See Section 01 6000 - Product Requirements.
- B. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
- C. Admixtures shall comply with ASTM C494/C494M.

D. Air Entrainment Admixture: ASTM C260/C260M.

2.05 ACCESSORY MATERIALS

- A. Underslab Vapor Barrier: Polyethylene or equivalent, complying with ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. The use of single ply polyethylene is prohibited.
1. Acceptable Products:
 - a. Stego Wrap 15 mil, Class A by Stego Industries, LLC: www.stegoindustries.com.
 - b. Moistop Ultra 15 mil, Class A by Henry Company: www.henry.com.
 - c. Viper VaporCheck II 15 mil by ISI Building Products: www.isibp.com.
 - d. WR Meadows 15 mil Perminator HP: www.wrmeadows.com.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
 2. Vapor Barrier Accessories: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations in vapor barrier.
 3. Location: Use at and adjacent (96 inches) to locations with Moisture-Sensitive Flooring Materials; refer to ACI PRC-302.2.
- B. Non-Shrink Cementitious Grout: Premixed compound consisting of nonmetallic aggregate, cement, water reducing and plasticizing agents.
1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch.
 2. Minimum Compressive Strength at 28 Days: 7,000 pounds per square inch.
- C. Epoxy Grout Systems: Where indicated provide Hilti Hit-Hy 200 Epoxy System; other indicated systems; or approved equivalent system.
1. Hilti: www.hilti.com.
 2. Substitutions: See Section 01 6000 - Product Requirements.

2.06 BONDING AND JOINTING PRODUCTS

- A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.
1. Products:
 - a. SpecChem, LLC; Strong Bond Acrylic Bonder: www.specchemllc.com/#sle.
 - b. W. R. Meadows, Inc; ACRY-LOK: www.wrmeadows.com/#sle.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
- B. Expansion-Joint Filler: Polyethylene/polypropylene semi-rigid closed-cell backing complying with ASTM D 3575/ASTM D 8139/ASTM D 1751, 1/2 inch thick and full depth of slab less 1/2 inch with peel-off feature. Provide product by Master Builders Solutions, W.R. Meadows, Namaco, or equivalent.
1. Place peel-off feature at top of slab when sealants are specified. Remove peel-off portion of expansion-joint filler prior to application of sealants.
 2. Place peel off feature at bottom of slab when no sealants are specified.
- C. Plate Dowel System: Steel plate dowel and plastic dowel sleeve; with integral fasteners for attachment to formwork.

2.07 CURING MATERIALS

- A. Liquid Membrane Curing Compound: ASTM C309, Type 2, Class B, White Pigmented.
1. Product: L&M CURE R2 by Laticrete or approved equivalent.
 - a. Other Approved Products:
 - 1) SpecRez White by SpecChem.
 2. Application Locations: Exterior Concrete surfaces unless indicated otherwise. Finish surfaces to a light broom finish prior to applying curing compound.
- B. Moisture-Retaining Sheet: ASTM C171.
1. White-burlap-polyethylene sheet, weighing not less than 3.8 ounces per square yard.

2.08 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI PRC-211.1 recommendations.
- B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI SPEC-301.

1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.
- C. Admixtures: Add acceptable admixtures as recommended in ACI PRC-211.1 and at rates recommended or required by manufacturer.
- D. Materials In General: Do not use materials or combinations thereof that will result in a reaction that is detrimental to the structural integrity or visual appearance of concrete.
- E. Normal Weight Concrete: Refer to structural notes on the drawings.

2.09 MIXING

- A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685/C685M. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.
 1. Fiber Reinforcement: Batch and mix as recommended by manufacturer for specific project conditions.
- B. Transit Mixers: Comply with ASTM C94/C94M.
- C. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

- A. Formwork: Comply with requirements of ACI SPEC-301. Design and fabricate forms to support all applied loads until concrete is cured and for easy removal without damage to concrete.
- B. Verify that forms are clean and free of rust before applying release agent.
- C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
- D. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
 1. Use latex bonding agent only for non-load-bearing applications.
- E. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.
- F. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade according to ASTM E1643 and manufacturer's written instructions; place sheets in position with longest dimension parallel with direction of pour.
 1. Vapor Retarder Over Granular Fill: Install compactable granular fill before placing vapor retarder as shown on the drawings. Do not use sand unless indicated otherwise.
 2. Install vapor barrier in lieu of retarder at indicated locations. Refer to accessory materials of this section.
 3. Level and compact base material.
 4. Extend vapor barrier to the perimeter of the slab. If practicable, terminate it at the top of the slab, otherwise (a) at a point acceptable to the Architect or (b) where obstructed by impediments (such as dowels, waterstops, or any other site condition requiring early termination of the vapor barrier). At the point of termination, seal vapor barrier to the foundation wall, grade beam or slab itself.
 5. Lap joints minimum 6 inches and seal with manufacturer's recommended tape.
 6. Apply seam tape to a clean and dry vapor barrier.
 7. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions.
 8. Avoid the use of non-permanent stakes driven through vapor retarder.
 9. If non-permanent stakes are driven through vapor retarder, repair as recommended by vapor retarder manufacturer.
 10. Repair damaged vapor retarder before covering with vapor barrier material of similar (or better) permeance, puncture and tensile.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

- A. Comply with requirements of ACI SPEC-301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

3.04 PLACING CONCRETE

- A. Place concrete in accordance with ACI PRC-304.
- B. Place concrete for floor slabs in accordance with ACI PRC-302.1.
- C. Ensure reinforcement, inserts, and other similar items will not be disturbed during concrete placement.
- D. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.05 SLAB JOINTING

- A. Locate joints as indicated on drawings.
 - 1. If no pattern is shown, contractor shall provide for 15 by 15 feet saw cut areas and shall contact Engineer for exact locations of joints.
- B. Anchor joint fillers and devices to prevent movement during concrete placement.
- C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
 - 1. Install wherever necessary to separate slab from other building members, including columns, walls, equipment foundations, footings, stairs, manholes, sumps, and drains.
- D. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 24 hours after placing; use 3/16 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.
 - 1. Do not exceed 2 inches deep when/if slab thicknesses are greater than 8 inches.
- E. Construction Joints: Where not otherwise indicated, use materials compatible with plate dowel system steel plate dowel and plastic dowel sleeves with integral fasteners for attachment to formwork.

3.06 FLOOR FLATNESS AND LEVELNESS TOLERANCES

- A. Refer to structural notes on the drawings.

3.07 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.
 - 1. Where indicated install mechanical plugs for tie holes in accordance with manufacturers instructions.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
- C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide other finishes as follows:
 - 1. Grout-Cleaned Finish (Class A per ACI PRC-347): Wet concrete surfaces and apply grout of a consistency of thick paint to coat surface and fill small holes. Mix one part portland cement to one and one-half parts fine sand with 1:1 moisture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
 - a. Locations: Provide this finish only where indicated on the drawings and as follows:
 - 1) Exterior cast-in-place surfaces exposed to public view.
 - 2) Interior cast-in-place surfaces exposed to public view.
 - 3) Including interior and exterior side of cast-in-place dome parameter wall.
- D. Concrete Slabs: Finish to requirements of ACI PRC-302.1 and as follows:
 - 1. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI PRC-302.1; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
 - 2. Other Surfaces to Be Left Exposed: Trowel as described in ACI 302.1R, minimizing burnish marks and other appearance defects.

- a. Installation of sealant is recommended prior to installation of floor sealers to prevent the need for cleaning of saw cut joints for proper sealant adhesion.
- b. Chemical Curer/Sealer/Dustproofer/Hardener(When Applicable): Apply product per manufacturer's instructions after curing and protection procedures are complete.
 - 1) Acceptable Product:
 - (a) Laticrete International, Inc: www.laticrete.com/#sle.
 - (b) Product: L&M Seal Hard; Concrete Sealer, Densifier, Chemical Hardener.
 - 2) Other Acceptable Manufacturers:
 - (a) Dayton Superior Corporation: www.daytonsuperior.com/#sle.
 - (b) Master Builders Solutions: www.master-builders-solutions.com/#sle.
 - (c) Ashford Formula by Curecrete Distribution, Inc: www.ashfordformula.com/#sle.
 - (d) L.M. Scofield Company: www.scofield.com/#sle.
 - (e) Prosoco, Inc: www.prosoco.com/#sle.
 - (f) Euclid Chemical Company: www.euclidchemical.com/#sle.
 - 3) Substitutions: See Section 01 6000 - Product Requirements.
- 3. Fiber Reinforced Floor Slabs: At exposed floor slabs, or where exposed floor slabs are covered with a thin floor finish, remove fibers flush with the surface of the floor slab. Accomplish removal by any means necessary. Perform removal only where the exposed or popped fibers negatively affect the intended floor finish.
- E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains as indicated on drawings.
- F. At exterior slabs, aprons, and other horizontal locations provide a light broom finish and liquid membrane curing compound finish unless indicated otherwise.
- G. At interior slabs do not over trowel where concrete is to be left exposed to avoid slippery surfaces when wet. Review finishing with Architect's representative prior to completing the work.

3.08 CURING AND PROTECTION

- A. Comply with requirements of ACI PRC-308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Surfaces Not in Contact with Forms:
 - 1. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than 14 days by saturated burlap unless noted otherwise.
 - a. Saturated Burlap: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place.
 - 2. Final Curing: Begin after initial curing but before surface is dry.
 - 3. Where damp curing is not feasible due to location, and with written permission of SER, spray with an approved curing compound. In general, curing compound is not an acceptable substitute for damp curing.

3.09 MASS CONCRETE

- A. Unless otherwise noted, any concrete member with least dimension greater than 29 inches is defined as Mass Concrete; ACI PRC-207.1. Smaller elements utilizing high strength concrete may be identified as Mass Concrete in the drawings or specification.
- B. Mass Concrete is subject to the following temperature limitations:
 - 1. Maximum internal temperature is 150 degrees Fahrenheit.
 - 2. Maximum differential (gradient) between internal (core) and nearby surface temperatures is 35 degrees Fahrenheit. Maximum differential between core and surface temperatures more than 20 feet apart is 40 degrees Fahrenheit.
- C. Contractor shall submit a Thermal Control and Placement Plan containing:
 - 1. Calculations of maximum internal temperature and maximum gradient, based on the approved mix design or designs.
 - 2. Required concrete temperature at time of placement (Maximum Placement Temperature).

3. Estimated set time and finishing plan.
 4. Number and approximate location of temperature sensors, and measurement interval.
 5. Intended blanketing, with assumed likely range of external temperatures during and after placement. Note that blankets may be required in warm weather to control temperature gradient.
 6. Likely length of time that blankets are required to minimize gradient.
 7. If necessary, Plan shall also include cooling through internal piping.
 8. Through-thickness construction joints.
 9. Placement methodology (bucketing, pumps, conveyors, etc.) and intended placement rate.
 10. Placement intent for slabs (full thickness, or layers).
- D. On slabs, recheck surface elevations for changes due to subsidence or sloughing after initial screeding.
 - E. Typical wet curing requirements apply to Mass Concrete, but blanket requirements in other sections are superseded by requirement C.5 above. Blankets are required in warm weather to reduce thermal gradient. Maintain blankets until core and surface temperatures are and are expected to remain within 40 degrees of one another; but blankets need not be maintained for more than two weeks.
 - F. Typical cold weather temperature requirements apply to Mass Concrete unless superseded by the approved Thermal Control and Placement Plan.

3.10 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.
- C. Submit proposed mix design of each class of concrete to Architect for review prior to commencement of concrete operations.
- D. For testing requirements refer to structural notes on the drawings and, where applicable, as indicated below.
- E. Refer to Section 01 3510 - Structural Testing and Special Inspection Requirements for testing requirements.

3.11 DEFECTIVE CONCRETE

- A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.
- B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.
 1. Concrete damaged by the construction activities required to complete the Work of this section shall also be considered defective concrete.
- C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

3.12 PROTECTION

- A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

**SECTION 03 4113
PRECAST HOLLOW CORE PLANKS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Floor planks.

1.02 RELATED REQUIREMENTS

- A. Division 01 – General Requirements.
- B. Section 03 3000 – Cast-in-Place Concrete.
- C. Section 04 2000 – Unit Masonry.
- D. Section 05 5000 – Metal Fabrications.
- E. Section 07 9200 – Joint Sealants: Perimeter joints with sealant and backing.
- F. Section 09 9123 – Interior Painting: Preparation of concrete surfaces beyond specified level of concrete finish required prior to painting.

1.03 REFERENCE STANDARDS

- A. Reference the “Latest Edition” of all Standards unless noted otherwise.
- B. ACI – American Concrete Institute International.
- C. ACI 318 – Building Code Requirements for Structural Concrete.
- D. AWS – American Welding Society.
- E. IBC – 2015 International Building Code.
- F. PCI – Precast/Prestressed Concrete Institute.
- G. PCI MNL-116 – Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products.
- H. PCI MNL-135 – Tolerance Manual for Precast and Prestressed Concrete Construction.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate openings sizes and locations, attachment of related items, and other work related to the fabrication and installation of precast concrete units.
- B. Sequencing: Furnish loose connection hardware and anchorage items to be embedded in or attached to other construction without delaying the work. Provide setting diagrams, templates, instructions, and directions, as required, for installation.
- C. Preinstallation Meeting: Conduct a preinstallation meeting a minimum of two weeks prior to installation of precast concrete. Require attendance of related trades and the Architect.
Review the following items:
 - 1. Review shop drawings and installation details.
 - 2. Anchor and weld plate locations.
 - 3. Opening locations including those cut in the field.
 - 4. Limitations on field cutting and core drilling.
 - 5. Site access requirements and obstructions including but not limited:
 - a. Access roads and maintenance thereof.
 - b. Protection and repair of existing paving.
 - c. Dewatering of footing trenches.
 - d. Job site snow removal.
 - e. Job site debris removal.
 - f. Overhead obstructions including power lines.

6. Cold weather grouting requirements and expectations.
7. Cleaning responsibilities and expectations.

1.05 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide precast concrete units and connections capable of withstanding design loads within limits and under conditions indicated on Drawings.
 1. Loading Requirements: As indicated on the drawings.

1.06 SUBMITTALS

- A. See Section 01 3000 – Administrative Requirements for submittal procedures.
- B. Shop Drawings: Include layout plans with unit locations, bearing and top of unit elevations, overall dimensions, building cross sections, wall sections, details, and opening locations.
 1. Separately elevate and dimension each type of unit. Indicate location of each unit on overall layout by using the same identification mark placed on the actual unit.
 2. Indicate all cast-in openings 12 inches or larger in dimension. Label each opening as “cast-in”. Generally note all other non-cast-in openings are to be cut in the field by related trades after approval by precaster’s engineer.
 3. Indicate welded connections by AWS standard symbols and show size, length, and type of each weld.
 4. Indicate locations of and detail hardware and anchorage devices to be cast-in to precast units with relationship to structure.
 5. Indicate locations of and detail hardware and anchorage devices to be embedded into or attached to structure or other construction with relationship to structure.
 6. Schedule loose hardware and anchorage devices to be installed by others; include in schedule: identification marks, item descriptions, and total quantities.
 7. Indicate sections and details showing quantities and position of reinforcing steel and related items including special reinforcement.
 8. Indicate shim sizes and grouting sequence and cold weather grouting requirements.
 9. Handling procedures, sequence of erection, and bracing plan.
- C. Comprehensive Engineering: Signed and sealed by a professional engineer responsible for its preparation who is registered in the state in which the project is located. Include all dead, live, and other applicable loads used in the design. Indicate loading on shop drawings.
- D. Design Modifications: If design modifications are proposed to meet performance requirements and field conditions, notify the Architect immediately and submit design calculations and drawings. Do not adversely affect the appearance, durability or strength of units when modifying details or materials. Maintain the general design concept when altering size of units and alignment.
- E. Samples: Provide Owner/Architect with samples representing the finish color and texture of exposed surfaces when requested. Samples to be a minimum of 12 by 12 by 2 inches in size. Owner/Architect to verify finish meets or exceeds the expectation of the design intent.
- F. Test Reports: At the request of the Owner/Architect provide test reports for concrete and other structural materials tested during fabrication including cement mill reports, mix reports, cylinder break reports.

1.07 QUALITY ASSURANCE

- A. Single Source Requirement: Provide precast concrete of this section and the following sections by one manufacturer: (Provide precast concrete of this section by other approved manufacturers where products of this section are not available from a single source.)
 1. Section 03 4500 – Precast Architectural Wall Panels.
- B. Designer Qualifications: Precast concrete to be designed under the direct supervision of a Professional Structural Engineer licensed in the state where the project resides.

- C. Fabricator Qualifications: A firm that specializes in manufacturing the types of precast concrete specified in good standing in the PCI Plant Certification Program, and that complies with the following requirements: No Exceptions. No other plant certification will be accepted.
 - 1. Assumes responsibility for engineering precast concrete units to comply with performance requirements. This responsibility includes preparation of Shop Drawings and Comprehensive Engineering analysis by a qualified Professional Engineer.
 - 2. Participates in PCI's Plant Certification program at the time of bidding and through the construction process.
 - 3. Has sufficient production capacity to produce required units without delaying the Work.
 - 4. Is registered with and approved by authorities having jurisdiction.
 - D. **Erector Qualifications: PCI Certified, approved by the precast concrete manufacturer, and having a minimum of 5 years experience in the erection of precast concrete similar to the requirements of this project. Erector's workman shall be properly trained to handle and erect precast units.**
 - E. Design Standards: Comply with ACI 318 (ACI 318M) and the design recommendations of PCI MNL 120, "PCI Design Handbook – Precast and Prestressed Concrete," applicable to types of structural precast concrete units indicated.
 - F. Quality-Control Standard: For manufacturing procedures and testing requirements and quality control recommendations for types of units required, comply with PCI MNL 116, "Manual for Quality Control for Plants and Production of Structural Concrete Products."
 - 1. Comply with camber and dimensional tolerances of PCI MNL 135, "Tolerance Manual for Precast and Prestressed Concrete Construction."
 - G. Welder Qualifications: AWS Certified, approved by the precast concrete manufacturer, and having a minimum of 5 years experience in the erection of precast concrete similar to the requirements of this project. Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code – Steel"; and AWS D1.4, "Structural Welding Code – Reinforcing Steel."
 - H. Pollution Control Regulations: Comply with all pollution control regulations in fabricating and finishing of all products. Protection of underground water and water runoff is the utmost priority.
- 1.08 DELIVERY, STORAGE, AND HANDLING**
- A. General Requirement: All lifting and handling, transportation and delivery, storage and support, and erection of precast panels to be performed by qualified personnel using methods and equipment approved by manufacturer.
 - B. Identification: Label each unit with date of production and mark indicating unit location on the shop drawings.
 - C. Lifting and Handling: Lift and handle units at all times by lifting points indicated on the shop drawings. Lift with manufacturer approved lifting devices. Lifting devices to have a minimum safety factor of 5 to 1.
 - D. Transportation and Delivery: Transport units in accordance with manufacturer requirements.
 - E. Storage and Support: At all times store and support units off ground with identification marks clearly visible and so lifting devices are accessible and undamaged. Separate stacked units by batten across full width of each bearing point. Do not use stacked precast units for storage of other units or equipment.
- 1.09 FIELD CONDITIONS**
- A. General Contractor shall prepare and maintain site free of obstructions as required by precast erector for the work of this section.
 - B. Cold Weather Grouting: Provide written procedures to address cold weather grouting to Owner/Architect prior to the erection process.

1.10 WARRANTY

- A. Provide twelve-month guarantee for workmanship, materials, and satisfactory performance from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Precast Concrete:
 - 1. Wells Concrete Products: www.wellsconcrete.com.
 - 2. Gage Brothers: www.gagebrothers.com.
 - 3. Substitutions: See Section 01 6000 – Product Requirements; including the following requirements:
 - a. Manufacturer and plant must be PCI Certified. No Exceptions.
 - b. Manufacturer must submit product information including typical details, proposed product construction, handling information, etc. for approval by Architect.
 - c. Manufacturer must obtain written approval of project Architect prior to submitting bid.
 - d. Manufacturer must obtain written approval of General Contractor prior to submitting bid.

2.02 PRECAST UNITS

- A. Floor Planks.
 - 1. Size/Shape/Profile: As indicated on the drawings.
 - 2. Top: Suitable surface for application of concrete topping.
 - 3. Bottom and End/Edge: Manufacturer's standard. Visible surface are subject to approval by Owner/Architect.
 - 4. Concrete Color: Gray.

2.03 MATERIALS

- A. All materials shall comply with the specifications, standards and codes quoted herein. The Architect/Engineer upon request shall be furnished satisfactory certification that all material incorporated in the precast concrete products comply with the requirements herein specified.
- B. Forms and Forming: Material and equipment that will provide semi-smooth/anticipated finish with the understanding that common forming marks and bottom tearing will be evident. Review expectations with the Owner/Architect.
- C. Portland Cement: ASTM C150 - Type I or III: ASTM C150.
- D. Other Cementitious Materials: Ground granulated blast furnace slag: ASTM C 989.
- E. Admixtures:
 - 1. Air entraining admixtures: ASTM C260.
 - 2. Water reducing, retarding, accelerating admixtures: ASTM C494.
- F. Aggregates: ASTM C33 except that coarse aggregates for precast concrete surfaces exposed to damp conditions shall contain zero iron oxides.
 - 1. Light weight aggregate for structural components: ASTM C330.
- G. Water: Potable or free from foreign materials in amounts harmful to concrete and embedded steel.
- H. Reinforcing Steel: Reinforcing steel or mesh will be selected from the following materials to conform to precaster's design unless otherwise indicated on the drawings. Reinforcing bars shall not be welded without specific approval of Architect/Engineer.
 - 1. Bars:
 - a. Deformed billet steel: ASTM A615.
 - b. Deformed rail steel: ASTM A616.

- c. Deformed axle steel: ASTM A617.
 - d. Deformed low-alloy steel: ASTM A706.
- 2. Wire: Cold drawn steel: ASTM A82.
- I. Strand: Uncoated, 7-wire, Stress-Relieved Strand: ASTM A416-Grade 250K or 270K.
- J. Anchors and Inserts:
 - 1. Materials:
 - a. Structural Steel: ASTM A36.
 - 1) Shop Primer: Manufacturer's standards.
 - a) Location: Items protected by sealants or finish coatings.
 - 2) Hot Dipped Galvanized: ASTM A153.
 - a) Location: Items left exposed unless otherwise indicated. Cold galvanize field welds.
 - 3) Zinc-rich Coating: MIL-P-2135, self-curing, one component, sacrificial.
 - a) Location: As indicated.
 - 4) Cadmium Coating (Electroplated).
 - a) Location: As indicated.
 - b. Stainless Steel: ASTM A666, type 304.
 - 1) Location: As indicated.
- K. Other Items Cast-In to Precast Units:
 - 1. Other Items: As indicated on the drawings.
 - 2. Locations: As indicated on the drawings.

2.04 ACCESSORIES

- A. Cement Grout: Type I (ASTM C150 / C150M), "Dry Pack", portland cement, sand and water having a minimum of 3,000 psi compressive strength at 28 days. (Approximately 3 to 1 sand/cement ratio.)
- B. Bearing Pads:
 - 1. Unless noted otherwise on the plans, Elastomeric Bearing Pads conforming to Division 2, Section 25 of AASHTO Standard Specifications for Highway Bridges shall be used.
 - 2. The PCI Design Handbook, Second Edition, Part 5.1 through Part 5.5 shall be used for the design of bearing pads.
 - 3. Teraflouroethylene (TFE) reinforced with glass fibers and applied to stainless or structural steel plates.
- C. Sealants:
 - 1. Tremco; Dymeric 240 FC: www.tremcosealants.com.
 - 2. BASF Sonneborn; Sonolastic NP2: www.buildingsystems.basf.com.
 - 3. Backer Rod: Denver Foam or equivalent. www.backerrod.com.
 - 4. Provide products compatible with adjacent work.
- D. Welding Materials: Per AWS D1.1/D1.1M, "Structural Welding Code – Steel"; compatible with materials being welded.
- E. Welded Studs: Per AWS D1.1/D1.1M, "Structural Welding Code – Steel"; compatible with materials being welded.
- F. Anchor Bolts: As designed by precast manufacturer, cast-in place by others.
- G. Other Load Bearing Loose Steel Items: As designed by precast manufacturer.

2.05 FABRICATION

- A. Pre-stress all precast units.
- B. All reinforcing steel shall have minimum cover as required by code and shall be accurately located as indicated on the approved shop drawings. Metal chairs, with or without coatings, shall not be permitted in the finished face.
- C. All of the fabrication procedures shall be carried out under a fully protective overhead and sidewall covering, with a constant temperature of between 50 to 80 F being maintained except during the curing cycle.

2.06 FABRICATION TOLERANCES

- A. Fabricate units in accordance with MNL-116 and MNL-135 and as follows:
 - 1. Length: Plus or minus 1/8 inch for every 10 feet in length or 1/2 inch, whichever is greater.
 - 2. Width: Plus or minus 1/8 inch for items 48 inch or less; 1/4 inch for items 48 to 120 inches, and 1/2 inches maximum for items over 120 inches and more.
 - 3. Cross Sectional Dimensions: Plus or minus 1/8 inch for items 48 inch or less; 1/4 inch for items 48 to 120 inches, and 1/2 inches maximum for items over 120 inches and more.
 - 4. Cast-in Anchors and Inserts: Plus or minus 1 inch from centerline location indicated on shop drawings.
 - 5. Horizontal Alignment (Sweep): Plus or minus 1/3 inch for every 10 feet in length or 1/2 inch, whichever is greater.
 - 6. Vertical Alignment (End Squareness): Plus or minus 1/8 inch for every 12 inches in height or 1/4 inch, whichever is greater.
 - 7. Camber: Variation between units is plus or minus 1/4 inch for every 10 feet in length or 1/2 inch, whichever is greater.
 - 8. Blockouts: Plus or minus 1 (can this be less) inch from centerline location indicated on shop drawings.

2.07 CONCRETE MIXES

- A. 28-day compressive strength: Minimum of 5,000 psi.
- B. Use of calcium chloride, chloride ions or other salts is not permitted.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify site is free of obstructions and ready to receive the work. Obstructions include but are not limited to dewatering of footing trenches, jobsite snow removal, site debris, overhead obstructions, including power lines.
- B. Verify access roads have been prepared to handle all weather conditions and are acceptable to precast concrete installer.
- C. Do not begin the work of this section unless preparations by the site contractor are complete and the site contractor understands and agrees to maintain acceptable conditions until precast installation is complete. Beginning the work of this section is acceptance of existing conditions.

3.02 PREPARATION

- A. Preparation: General Contractor (Buyer) shall be responsible for the following items:
 - 1. Removal of all obstructions including but not limited to power lines and wires that may be hazardous to precaster's personnel and other items required for precast installation.
 - 2. All-weather access roads for precaster's trucks and cranes. Refer to precaster's proposal/quotation for more defined access requirements.
 - 3. Grid locations, building corners, finish floor elevations, top of door elevations and other survey points/lines/elevations for accurate installation of precast units.

4. True and level bearing surfaces on all field placed bearing walls and other field placed supporting units.
5. Placement and accurate alignment of anchor bolts, plates, or dowels in column footings, grade beams, and other field placed supporting units.
6. All shoring required for composite beams and slabs. Shoring shall have a minimum load factor of 1.5 x (dead load plus construction loads).
7. Repair all concrete and bituminous surfaces damaged during precast installation. Examine surfaces with precaster before and after precast installation and coordinate efforts to minimize damage.

3.03 ERECTION

- A. Precast Unit Curing Procedures: Contact precaster for other curing requirements.
- B. Erection Shall Be Defined As:
 1. Placing, aligning, and leveling the precast units in final positions in the structure on the designated supporting surfaces.
 2. Connection of precast units to each other, or to supporting structural units as indicated on the shop drawings.
 3. Removal of lifting hooks, if necessary.
 4. Cleaning and sealing of "Precast" to "Precast" joints. Joints include:
 - a. Precast to precast including joints between interior and exterior units.
 - b. Precast to bearing.
 5. Sealing of "Precast" to "Other Materials" and joints that require "Firestopping" are NOT considered part of erection unless indicated otherwise.
- C. Field Welding: Complete field welding using qualified personnel, equipment, and welding materials that are compatible to the base material.
- D. Grouting:
 1. Grout plank keyways and cores in accordance with precaster's shop drawings.
 2. General Contractor Responsibility: General Contractor shall be responsible for providing "shelters/tarps" and "temp heat" for grouting when temperatures are below 40 degrees for a 24 hour period.

3.04 TOLERANCES

- A. Erect precast units level, plumb, square, true, and in alignment without exceeding the non-cumulative erection tolerances of PCI MNL 135. Position units so that dimensional errors do not accumulate and so joints remain aligned and uniform as erection progresses. Level out variations between adjacent units by jacking, loading, or any other feasible method as recommended by the manufacturer and acceptable to the Architect/Engineer.
- B. In the event that precast units cannot be adjusted to conform to design or tolerance criteria, cease work and advise Architect. Execute modifications as directed by the Architect prior to resuming work.

3.05 SEALANT INSTALLATION

- A. General Contractor/Owner shall coordinate with the precast erector sealing of precast joints where required. The general contractor accepts responsibility if the precast joints above the roof deck and below grade are not sealed due to poor coordination/site conditions. The precast erector shall accept responsibility if precast joints are not sealed but were coordinated in a timely fashion by the General Contractor/Owner.
 1. Required locations shall include exposed precast hollow core planks in finished areas.
- B. Install backer rod and sealant according to product manufacturer's instructions.

3.06 FIELD REPAIR AND CLEANING OF PRECAST UNITS

- A. Repairs by Precast Erector: Repair chipping, spalling, cracking, and other damages to precast units after delivery to the jobsite. After installation and repairs are completed, all further damage is the responsibility of, and at the cost of, the General Contractor. Consult with precaster for repairs of structural precast units.
- B. Cleaning by General Contractor: Clean exposed surfaces that are soiled during shipping, installation, and remaining construction operations, prior to Substantial Completion. Clean in accordance with precast manufacturer's recommendations.

3.07 INSPECTION AND ACCEPTANCE

- A. Final inspection and acceptance of erected precast/prestressed concrete shall be made by Architect/Engineer to verify conformance with plans and specifications.

3.08 PROTECTION

- A. General Contractor to protect precast units from remaining construction operations.

END OF SECTION

ISSUE DATE - 06-13-2024

**SECTION 03 4500
PRECAST ARCHITECTURAL WALL PANELS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Insulated panels.
- B. Accessories.

1.02 RELATED REQUIREMENTS

- A. Division 01 – General Requirements.
- B. Section 03 3000 – Cast-in-Place Concrete.
- C. Section 05 5000 – Metal Fabrications.
- D. Section 07 6200 – Sheet Metal Flashing and Trim.
- E. Section 07 9200 – Joint Sealants: Perimeter joints with sealant and backing.
- F. Division 08 – Openings.
- G. Section 09 9123 – Interior Painting: Preparation of concrete surfaces beyond specified level of concrete finish required prior to painting.

1.03 REFERENCE STANDARDS

- A. Reference the “Latest Edition” of all Standards unless noted otherwise.
- B. ACI – American Concrete Institute International.
- C. ACI 318 – Building Code Requirements for Structural Concrete.
- D. AWS – American Welding Society.
- E. IBC – 2015 International Building Code.
- F. PCI – Precast/Prestressed Concrete Institute.
- G. PCI MNL-116 – Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products.
- H. PCI MNL-117 – Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products.
- I. PCI MNL-135 – Tolerance Manual for Precast and Prestressed Concrete Construction.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate openings sizes and locations, attachment of related items, and other work related to the fabrication and installation of precast concrete units including the following:
 - 1. Cast-in Electrical Devices: Coordinate the location of cast-in electrical conduit and junction boxes. Provide panel layout drawings and elevations to Electrical Contractor a minimum of one week prior to casting. Notify Electrical Contractor a minimum of 48 hours prior to casting so they can travel to site, provide, and install electrical items in casting forms. Refer to Electrical Drawings for proposed preliminary locations.
 - 2. Mechanical and Plumbing Penetrations.
- B. Sequencing: Furnish loose connection hardware and anchorage items to be embedded in or attached to other construction without delaying the work. Provide setting diagrams, templates, instructions, and directions, as required, for installation.
- C. Preinstallation Meeting: Conduct a preinstallation meeting a minimum of two weeks prior to installation of precast concrete. Require attendance of related trades and the Architect. Review the following items:
 - 1. Review shop drawings and installation details.
 - 2. Anchor and weld plate locations.
 - 3. Opening locations including those cut in the field.

4. Limitations on field cutting and core drilling.
5. Site access requirements and obstructions including but not limited:
 - a. Access roads and maintenance thereof.
 - b. Protection and repair of existing paving.
 - c. Dewatering of footing trenches.
 - d. Job site snow removal.
 - e. Job site debris removal.
 - f. Overhead obstructions including power lines.
6. Cold weather grouting requirements and expectations.
7. Cleaning responsibilities and expectations.

1.05 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide precast concrete units and connections capable of withstanding design loads within limits and under conditions indicated on Drawings.
1. Loading Requirements: As indicated on the drawings.

1.06 SUBMITTALS

- A. See Section 01 3000 – Administrative Requirements for submittal procedures.
- B. Shop Drawings: Include layout plans with unit locations, bearing and top of unit elevations, overall dimensions, building cross sections, wall sections, details, and opening locations.
 1. Separately elevate and dimension each type of unit. Indicate location of each unit on overall layout by using the same identification mark placed on the actual unit.
 2. Detail head/jamb/sill for each type of cast-in window and door opening including blocking and finish intentions.
 3. Indicate all cast-in openings 12 inches or larger in dimension. Label each opening as “cast-in”. Generally note all other non-cast-in openings are to be cut in the field by related trades after approval by precaster’s engineer.
 4. Indicate welded connections by AWS standard symbols and show size, length, and type of each weld.
 5. Indicate locations of and detail hardware and anchorage devices to be cast-in to precast units with relationship to structure.
 6. Indicate locations of and detail hardware and anchorage devices to be embedded into or attached to structure or other construction with relationship to structure.
 7. Schedule loose hardware and anchorage devices to be installed by others; Include in schedule: identification marks, item descriptions, and total quantities.
 8. **Indicate locations of and detail lifting and handling devices. Use side or edge devices at all locations to minimize unsightly patching at exposed faces. Any face locations must be preapproved by the Architect.**
 9. Indicate sections and details showing quantities and position of reinforcing steel and related items including special reinforcement.
 10. **Indicate locations of and detail solid concrete and reduced insulation zones. These types of zones are unacceptable unless absolutely necessary and must be preapproved by Owner and Architect prior to fabrication.**
 11. Indicate shim sizes and grouting sequence.
 12. Handling procedures, sequence of erection, and bracing plan.
- C. Comprehensive Engineering: Signed and sealed by a professional engineer responsible for its preparation who is registered in the state in which the project is located. Include all dead, live, and other applicable loads used in the design. Indicate loading on shop drawings.
- D. Design Modifications: If design modifications are proposed to meet performance requirements and field conditions, notify the Architect immediately and submit design calculations and

drawings. Do not adversely affect the appearance, durability or strength of units when modifying details or materials. Maintain the general design concept when altering size of units and alignment.

- E. Samples: Provide Owner/Architect with samples representing the range of finishes and textures when requested. Samples to be a minimum of 12 by 12 by 2 inches in size. Owner/Architect to verify finishes meets or exceeds the expectation of the design intent. Samples are not intended to replace mock-up panels.
- F. Test Reports: At the request of the Owner/Architect provide test reports for concrete and other structural materials tested during fabrication including cement mill reports, mix reports, cylinder break reports.

1.07 QUALITY ASSURANCE

- A. Single Source Requirement: Provide precast concrete of this section and the following sections by one manufacturer: (Provide precast concrete of this section by other approved manufacturers where products of this section are not available from a single source.)
 - 1. Section 03 4113 – Precast Hollow Core Planks.
- B. Designer Qualifications: Precast concrete to be designed under the direct supervision of a Professional Structural Engineer licensed in the state where the project resides.
- C. Fabricator Qualifications: A firm that specializes in manufacturing the types of precast concrete specified in good standing in the PCI Plant Certification Program, and that complies with the following requirements: No Exceptions. No other plant certification will be accepted.
 - 1. Assumes responsibility for engineering precast concrete units to comply with performance requirements. This responsibility includes preparation of Shop Drawings and Comprehensive Engineering analysis by a qualified Professional Engineer.
 - 2. Participates in PCI's Plant Certification program at the time of bidding and through the construction process.
 - 3. Has sufficient production capacity to produce required units without delaying the Work.
 - 4. Is registered with and approved by authorities having jurisdiction.
- D. **Erector Qualifications: PCI Certified, approved by the precast concrete manufacturer, and having a minimum of 5 years experience in the erection of precast concrete similar to the requirements of this project. Erector's workman shall be properly trained to handle and erect precast units.**
- E. Design Standards: Comply with ACI 318 (ACI 318M) and the design recommendations of PCI MNL 120, "PCI Design Handbook – Precast and Prestressed Concrete," applicable to types of structural precast concrete units indicated.
- F. Quality-Control Standard: For manufacturing procedures and testing requirements and quality control recommendations for types of units required, comply with PCI MNL 116, "Manual for Quality Control for Plants and Production of Structural Concrete Products."
 - 1. Comply with camber and dimensional tolerances of PCI MNL 135, "Tolerance Manual for Precast and Prestressed Concrete Construction."
- G. Welder Qualifications: AWS Certified, approved by the precast concrete manufacturer, and having a minimum of 5 years experience in the erection of precast concrete similar to the requirements of this project. Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code – Steel"; and AWS D1.4, "Structural Welding Code – Reinforcing Steel."
- H. Pollution Control Regulations: Comply with all pollution control regulations in fabricating and finishing of all products. Protection of underground water and water runoff is the utmost priority. Capture, treat, and reuse waste water in compliance with local, state, and federal pollution control agencies.

1.08 MOCK-UP

- A. Mock-Up: After samples are approved by Owner/Architect, provide mock-up panels including all interior and exterior finishes and textures, standard opening, insulation configuration, finish and texture transitions, actual scale architectural details, and follow the following procedures:

1. Invite Owner/Architect to plant at start of the production process.
 2. Locate mock-up panel at location determined by the Owner/Architect.
 3. Allow for a minimum of three mock-up panels (36 by 48 inches or as directed by Architect) to demonstrate acceptable color range in the final product.
 4. Damage a part of an exposed to view surface of each finish, color, and texture, Field repair to determine acceptable patch/repair techniques.
 5. Remove and dispose of mock up panel at time determined by the Owner/Architect.
- Mock-up panel may not remain as part of the Work.

1.09 DELIVERY, STORAGE, AND HANDLING

- A. General Requirement: All lifting and handling, transportation and delivery, storage and support, and erection of precast panels to be performed by qualified personnel using methods and equipment approved by manufacturer.
- B. Identification: Label each unit with date of production and mark indicating unit location on the shop drawings.
- C. Lifting and Handling: Lift and handle units at all times by lifting points indicated on the shop drawings. Lift with manufacturer approved lifting devices. Lifting devices to have a minimum safety factor of 5 to 1.
- D. Transportation and Delivery: Transport units in accordance with manufacturer requirements.
- E. Storage and Support: At all times store and support units off ground with identification marks clearly visible and so lifting devices are accessible and undamaged. Separate stacked units by batten across full width of each bearing point. Do not use stacked precast units for storage of other units or equipment.

1.10 FIELD CONDITIONS

- A. General Contractor shall prepare and maintain site free of obstructions as required by precast erector for the work of this section.
- B. Cold Weather Grouting: Provide written procedures to address cold weather grouting to Owner/Architect prior to the erection process.

1.11 WARRANTY

- A. Provide twelve-month guarantee for workmanship, materials, and satisfactory performance from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Precast Concrete:
 1. Wells Concrete Products: www.wellsconcrete.com.
 2. Gage Brothers: www.gagebrothers.com.
 3. Substitutions: See Section 01 6000 – Product Requirements; including the following requirements:
 - a. Manufacturer and plant must be PCI Certified. No Exceptions.
 - b. Manufacturer must submit product information including typical details, proposed product construction, handling information, solid concrete zone locations, reduced insulation zones, etc. for approval by Architect.
 - c. Manufacturer must obtain written approval of project Architect prior to submitting bid.
 - d. Manufacturer must obtain written approval of General Contractor prior to submitting bid.

2.02 PRECAST UNITS

- A. Insulated Wall Panels:
 1. Size/Shape/Profile: As indicated on the drawings.

2. Panel Width: 10'-0" unless noted otherwise.
 3. Overall Thickness: 12 inch thick unless noted otherwise; 3 inch exterior wythe, 3 inch insulation, and 6 inch Interior Wythe unless noted otherwise. Thickness may change per design requirements.
 4. Form Side Architectural Finish: As indicated/scheduled on the drawings, refer to finish description types below.
 5. Form Side Architectural Color: As indicated/scheduled on the drawings.
 6. Form Side Non-Architectural Finish: Paint Grade, Grade B (PCI) where exposed in a finished area, refer to description below.
 7. Screed Side Finish: Paint Grade, Paintable Finish where exposed in a finished area, refer to description below.
 8. Screed Side Color: Gray.
- B. Form Side "Architectural Finish Type" Descriptions:
1. Cast on Wood Forms:
 - a. Form oil or parting compound shall not impair future coating, sealing, or adhesives on the concrete surfaces. Wax emulsion or wax cutbacks will not be approved.
 - b. Wood forms with appropriate coating to impart a smooth finish in order to achieve required finishes.
 2. Cast on Steel Forms:
 - a. Smooth, Grade B (PCI).
 3. Exposed Aggregate Finish Types: (Pattern and finish locations as indicated on the drawings.)
 - a. Water Wash finish: Use chemical retarding agents applied to molds, and washing and brushing procedures to exposed aggregate and surrounding matrix surfaces after form removal to match accepted sample or mockup units.
 - b. Abrasive-Blast finish: Use abrasive grit, equipment, application techniques, and cleaning procedures to exposed aggregate and surrounding matrix surfaces to match accepted sample or mockup units.
 - c. Combination Water Wash finish and Abrasive-Blast finish.
 - d. Acid-Etched finish: Use acid and hot-water solution, equipment, application techniques, and cleaning procedures to expose aggregate and surrounding matrix surfaces to match accepted sample or mockup units. Protect hardware, connections, back side, edges, and insulation from acid attack.
 - e. Combination Abrasive-Blast finish and Acid-Etched finish.
- C. Form Side Non-Architectural Finishes "By PCI":
1. Grade B (PCI): All air holes over 1/4 inch in size should be filled. Air holes between 1/8 and 1/4 inch in width that occur in high concentration (more than one per 2 square inches) should be filled. Surface blemishes due to holes or dents in form should be repaired. Discoloration should be permitted at form joints.
- D. Screed Side Non-Architectural Finishes "By Description":
1. Paintable Finish: Surface prepared for a painted finish and intended to be in a finished space achieved by using a 3-step method in which the final step is achieved by a machine trowel to create a finish comparable to a machine troweled finished floor. Normal color variations are anticipated.

2.03 MATERIALS

- A. All materials shall comply with the specifications, standards and codes quoted herein. The Architect/Engineer upon request shall be furnished satisfactory certification that all material incorporated in the precast concrete products comply with the requirements herein specified.
- B. Forms: Material that will provide smooth/anticipated finish that meets the expectations of the Owner/Architect.

- C. Form Release Agent: Non-staining type that will not impair anticipated finishes of the Owner/Architect and that will not inhibit field installed coatings, sealants, and adhesives.
- D. Portland Cement: ASTM C150 - Type I or III: ASTM C150.
 - 1. Mix materials are as follows:
 - a. Gray cement.
 - b. White cement.
 - c. Combination of gray/white cement; Match sample at Architects office.
 - d. Integral Color; Match sample at Architects office.
- E. Admixtures:
 - 1. Air entraining admixtures: ASTM C260.
 - 2. Water reducing, retarding, accelerating admixtures: ASTM C494.
- F. Aggregates: ASTM C33 except that coarse aggregates for precast concrete surfaces exposed to damp conditions shall contain zero iron oxides.
 - 1. See approved samples for coarse and fine aggregates.
 - 2. Light weight aggregate structural components: ASTM C330.
- G. Water: Potable or free from foreign materials in amounts harmful to concrete and embedded steel.
- H. Reinforcing Steel: Reinforcing steel or mesh will be selected from the following materials to conform to precaster's design unless otherwise indicated on the drawings. Reinforcing bars shall not be welded without specific approval of Architect/Engineer.
 - 1. Bars:
 - a. Deformed billet steel: ASTM A615.
 - b. Deformed rail steel: ASTM A616.
 - c. Deformed axle steel: ASTM A617.
 - d. Deformed low-alloy steel: ASTM A706.
 - 2. Wire: Cold drawn steel: ASTM A82.
 - 3. Wire fabric:
 - a. Welded steel: ASTM A 185.
 - b. Welded deformed steel: ASTM A497.
- I. Strand: Uncoated, 7-wire, Stress-Relieved Strand: ASTM A416-Grade 250K or 270K.
- J. Anchors and Inserts:
 - 1. Materials:
 - a. Structural Steel: ASTM A36.
 - 1) Shop Primer: Manufacturer's standards.
 - a) Location: Items protected by sealants or finish coatings.
 - 2) Hot Dipped Galvanized: ASTM A153.
 - a) Location: Items left exposed unless otherwise indicated. Cold galvanize field welds.
 - 3) Zinc-rich Coating: MIL-P-2135, self curing, one component, sacrificial.
 - a) Location: As indicated.
 - 4) Cadmium Coating (Electroplated).
 - a) Location: As indicated.
 - b. Stainless Steel: ASTM A666, type 304.
 - 1) Location: As indicated.
- K. Sandwich Panel Insulation:

1. Expanded Polystyrene (Bead Board) Insulation:
 - a. 1.25 pound density board (R=4.25/in. at 40°).
2. All panels are to be insulated unless indicated otherwise on the drawings.
- L. Wythe connectors: Maximum connector size to be 12 gauge stainless steel pin to adequately tie the two wythe together. Consult precaster for thermal transfer analysis.
- M. Other Items Cast-In to Precast Units:
 1. Other Items: As indicated on the drawings.
 2. Locations: As indicated on the drawings.

2.04 ACCESSORIES

- A. Cement Grout: Type I (ASTM C150 / C150M), "Dry Pack", portland cement, sand and water having a minimum of 3,000 psi compressive strength at 28 days. (Approximately 3 to 1 sand/cement ratio.) Use "Cement Grout" unless "Non-Shrink Cement Grout" is specifically indicated by precast or structural engineer.
- B. Non-Shrink Cement Grout: Per ASTM C1107/C1107M, Type III (ASTM C150 / C150M), "Dry Pack", portland cement, sand, and water having a minimum of 10,000 psi compressive strength at 28 days.
- C. Bearing Pads:
 1. Unless noted otherwise on the plans, Elastomeric Bearing Pads conforming to Division 2, Section 25 of AASHTO Standard Specifications for Highway Bridges shall be used.
 2. The PCI Design Handbook, Second Edition, Part 5.1 through Part 5.5 shall be used for the design of bearing pads.
 3. Teraflouroethylene (TFE) reinforced with glass fibers and applied to stainless or structural steel plates.
- D. Sealants:
 1. Tremco; Dymeric 240 FC: www.tremcosealants.com.
 2. BASF Sonneborn; Sonolastic NP2: www.buildingsystems.basf.com.
 3. Backer Rod: Denver Foam or equivalent. www.backerrod.com.
 4. Provide products compatible with adjacent work.
 5. Color: Provide sealant color(s) to match adjacent panels. Submit actual samples for review with actual sample of precast concrete. Final color approval by Architect.
- E. Welding Materials: Per AWS D1.1/D1.1M, "Structural Welding Code – Steel"; compatible with materials being welded.
- F. Welded Studs: Per AWS D1.1/D1.1M, "Structural Welding Code – Steel"; compatible with materials being welded.
- G. Anchor Bolts: As designed by precast manufacturer, cast-in place by others.
- H. Attachment Plates: As designed by precast manufacturer, cast-in place by others.
- I. Other Load Bearing Loose Steel Items: As designed by precast manufacturer.

2.05 FABRICATION

- A. Cast all wall panels with architectural finish face down.
- B. Pre-stress each wythe of flat panel. No Exceptions.
- C. Achieve final architectural finishes only by techniques specified within this specifications section. (Form Side Architectural Finishes "By Description".)
- D. Do not damage non-architectural finishes while finishing the architectural finish side of panels; where damage occurs repair panels in the factory prior to delivering panels to job site.
- E. Cast-in preservative treated 2x wood blocking at perimeter of window and man door openings. Wood nailers shall provide adequate backing for installation of window and door units. Return face finish to edge of blocking/insulation.

- F. Cast solid concrete edges at the perimeter of sectional/overhead door type openings unless noted otherwise; 2 inch thick minimum. Return face finish to interior side of panel.
- G. Cast-in bent steel plates at perimeter of sectional/overhead door type openings for attachment of door hardware. Continuously weld splices and grind smooth to a point that they are capable of being concealed by field painting.
- H. All reinforcing steel shall have minimum cover as required by code and shall be accurately located as indicated on the approved shop drawings. Metal chairs, with or without coatings, shall not be permitted in the finished face.
- I. Composite design acceptable when approved by architect/engineer.
- J. All of the fabrication procedures shall be carried out under a fully protective overhead and sidewall covering, with a constant temperature of between 50 to 80 F being maintained except during the curing cycle.

2.06 FABRICATION TOLERANCES

- A. Fabricate units in accordance with MNL-116, MNL-117, MNL-135 and as follows:
 1. Length: Plus or minus 1/8 inch for every 10 feet in length or 1/2 inch, whichever is greater.
 2. Width: Plus or minus 1/8 inch for items 48 inch or less; 1/4 inch for items 48 to 120 inches, and 1/2 inches maximum for items over 120 inches and more.
 3. Cross Sectional Dimensions: Plus or minus 1/8 inch for items 48 inch or less; 1/4 inch for items 48 to 120 inches, and 1/2 inches maximum for items over 120 inches and more.
 4. Cast-in Anchors and Inserts: Plus or minus 1 inch from centerline location indicated on shop drawings.
 5. Horizontal Alignment (Sweep): Plus or minus 1/3 inch for every 10 feet in length or 1/2 inch, whichever is greater.
 6. Vertical Alignment (End Squareness): Plus or minus 1/8 inch for every 12 inches in height or 1/4 inch, whichever is greater.
 7. Bowing (Camber): Variation between units is plus or minus 1/4 inch for every 10 feet in length or 1/2 inch, whichever is greater.
 8. Blockouts: Plus or minus 1 inch from centerline location indicated on shop drawings.

2.07 CONCRETE MIXES

- A. 28-day compressive strength: Minimum of 5,000 psi.
- B. Use of calcium chloride, chloride ions or other salts is not permitted.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify site is free of obstructions and ready to receive the work. Obstructions include but are not limited to dewatering of footing trenches, jobsite snow removal, site debris, overhead obstructions, including power lines.
- B. Verify access roads have been prepared to handle all weather conditions and are acceptable to precast concrete installer.
- C. Do not begin the work of this section unless preparations by the site contractor are complete and the site contractor understands and agrees to maintain acceptable conditions until precast installation is complete. Beginning the work of this section is acceptance of existing conditions.

3.02 PREPARATION

- A. Preparation: General Contractor (Buyer) shall be responsible for the following items:
 1. Removal of all obstructions including but not limited to power lines and wires that may be hazardous to precaster's personnel and other items required for precast installation.
 2. All-weather access roads for precaster's trucks and cranes. Refer to precaster's proposal/quotation for more defined access requirements.

3. Grid locations, building corners, finish floor elevations, top of door elevations and other survey points/lines/elevations for accurate installation of precast units.
4. True and level bearing surfaces on all field placed bearing walls and other field placed supporting units.
5. Placement and accurate alignment of anchor bolts, plates, or dowels in column footings, grade beams, and other field placed supporting units.
6. All shoring required for composite beams and slabs. Shoring shall have a minimum load factor of 1.5 x (dead load plus construction loads).
7. Repair all concrete and bituminous surfaces damaged during precast installation. Examine surfaces with precaster before and after precast installation and coordinate efforts to minimize damage.

3.03 ERECTION

- A. Precast Unit Curing Procedures: Contact precaster for minimum curing requirements.
- B. Erection Shall Be Defined As:
 1. Placing, aligning, and leveling the precast units in final positions in the structure on the designated supporting surfaces.
 2. Connection of precast units to each other, or to supporting structural units as indicated on the shop drawings.
 3. Removal of lifting hooks, if necessary.
 4. Cleaning and sealing of "Precast" to "Precast" joints. Joints include:
 - a. Precast to precast including joints between interior and exterior units.
 - b. Precast to bearing.
 5. Sealing of "Precast" to "Other Materials" and joints that require "Firestopping" are NOT considered part of erection unless indicated otherwise.
 6. Field repair and cleaning of architecturally finished surfaces, refer to "Field Repair and Cleaning of Precast Units" at end of section.
- C. Field Welding: Complete field welding using qualified personnel, equipment, and welding materials that are compatible to the base material.
- D. Grouting:
 1. Pack grout between bottom of precast walls and their bearing surfaces filling the entire area free of voids. Rake joints back at locations where backer rod and sealant is to be installed.
 2. General Contractor Responsibility: General Contractor shall be responsible for providing "shelters/tarps" and "temp heat" for grouting when temperatures are below 40 degrees for a 24 hour period.

3.04 TOLERANCES

- A. Erect precast units level, plumb, square, true, and in alignment without exceeding the non-cumulative erection tolerances of PCI MNL 135. Position units so that dimensional errors do not accumulate and so joints remain aligned and uniform as erection progresses. Level out variations between adjacent units by jacking, loading, or any other feasible method as recommended by the manufacturer and acceptable to the Architect/Engineer.
- B. In the event that precast units cannot be adjusted to conform to design or tolerance criteria, cease work and advise Architect. Execute modifications as directed by the Architect prior to resuming work.

3.05 SEALANT INSTALLATION

- A. General Contractor/Owner shall coordinate with the precast erector sealing of precast joints where required. The general contractor accepts responsibility if the precast joints above the roof deck and below grade are not sealed due to poor coordination/site conditions. The precast erector shall accept responsibility if precast joints are not sealed but were coordinated in a timely fashion by the General Contractor/Owner.

1. Required locations shall include exposed wall panels in finished areas.
 - B. Install backer rod and sealant according to product manufacturer's instructions.
- 3.06 FIELD REPAIR AND CLEANING OF PRECAST UNITS**
- A. Repairs by Precast Erector: Repair chipping, spalling, cracking, and other damages to precast units after delivery to the jobsite in accordance with procedures of PCI Erectors Manual. After installation and repairs are completed, all additional damage is the responsibility of, and at the cost of, the General Contractor. Consult with precaster for repairs of structural precast units.
 - B. Cleaning by General Contractor: Clean exposed surfaces (not cleaned by precaster) that are soiled during shipping, installation, and remaining construction operations, prior to Substantial Completion. Clean in accordance with precast manufacturer's recommendations.
- 3.07 CLEANING BY PRECAST ERECTOR**
- A. Protect adjacent work, buildings, and landscaping from damage caused by cleaning.
 - B. Schedule washing and cleaning procedures accordingly to minimize the number of trips to site. Washing and cleaning shall be completed at "one time", unless other trips are required to complete the work. After cleaning is completed, all additional cleaning is the responsibility of, and at the cost of, the General Contractor.
 - C. Exterior Architectural Finishes: Wash and clean architectural finishes to remove road film, effloresces, and to even out color variations from panel to panel. Precast units shall be cleaned only after all installation procedures, including joint treatment, are completed. Perform cleaning and rinsing procedures in accordance with the precast manufacturer's recommendations.
 - D. Interior Face of Architecturally Finished Panels: Washing and cleaning is NOT part of the work covered by Precaster. "Color Streaking" will be evident on the backside/interior of architecturally finished panels.
- 3.08 INSPECTION AND ACCEPTANCE**
- A. Final inspection and acceptance of erected precast/prestressed concrete shall be made by Architect/Engineer to verify conformance with plans and specifications.
- 3.09 PROTECTION**
- A. General Contractor to protect precast units from remaining construction operations.

END OF SECTION

**SECTION 04 0511
MASONRY MORTARING AND GROUTING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Mortar for masonry.
- B. Grout for masonry.

1.02 RELATED REQUIREMENTS

- A. Section 04 2000 - Unit Masonry: Installation of mortar and grout.

1.03 REFERENCE STANDARDS

- A. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2024.
- B. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019a, with Editorial Revision.
- C. ASTM C476 - Standard Specification for Grout for Masonry; 2023.
- D. ASTM C1714/C1714M - Standard Specification for Preblended Dry Mortar Mix for Unit Masonry; 2019a.
- E. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022, with Errata (2024).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Include design mix and indicate whether the Proportion or Property specification of ASTM C270 is to be used. Also include required environmental conditions and admixture limitations.
- C. Samples: Submit two samples of mortar, illustrating mortar color and color range.

1.05 QUALITY ASSURANCE

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.07 FIELD CONDITIONS

- A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 MORTAR AND GROUT APPLICATIONS

- A. Use only factory premixed packaged dry materials for mortar and grout, with addition of water only at project site.
- B. Mortar Mix Designs: ASTM C270, Property Specification.
- C. Grout Mix Designs:
 - 1. Bond Beams and Lintels: 2000 psi strength at 28 days; 8-11 inches slump; mix in accordance with ASTM C476.

2.02 MATERIALS

- A. Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C1714/C1714M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
 - 1. Color: Standard gray.
- B. Preblended and prepackaged Dry Mortar and Grout: ASTM C 270, Type Indicated.
 - 1. Masonry below grade and in contact with earth: Type M.
 - 2. Masonry above grade: Type S.

- 3. Product: Provide packaged dry pre-blended mortar and grout products by Spec Mix or approved equivalent.
- 4. Color: Natural gray except as follows:
 - a. Match existing color where existing masonry is present.
 - b. Exposed locations in finished areas, interior and exterior, as selected by the Architect from the manufactures full range of color where not otherwise indicated.
- C. Water: Clean and potable.
- D. Bonding Agent: Latex type.

2.03 MORTAR MIXING

- A. Thoroughly mix mortar ingredients using mechanical batch mixer, in accordance with ASTM C270 and in quantities needed for immediate use.
- B. Do not use anti-freeze compounds to lower the freezing point of mortar.
- C. If water is lost by evaporation, re-temper only within two hours of mixing.
- D. Use mortar within two hours after mixing at temperatures of 90 degrees F, or two-and-one-half hours at temperatures under 40 degrees F.

2.04 GROUT MIXING

- A. Mix grout in accordance with ASTM C94/C94M.
- B. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476 for fine and coarse grout.

PART 3 EXECUTION

3.01 PREPARATION

- A. Apply bonding agent to existing cementitious surfaces.
- B. Plug clean-out holes for grouted masonry with block masonry units. Brace masonry to resist wet grout pressure.

3.02 INSTALLATION

- A. Install mortar and grout to requirements of section(s) in which masonry is specified.
- B. Work grout into masonry cores and cavities to eliminate voids.
- C. Do not install grout in lifts greater than 16 inches without consolidating grout by rodding.
- D. Do not displace reinforcement while placing grout.
- E. Remove excess mortar from grout spaces.

3.03 GROUTING

- A. Use either high-lift or low-lift grouting techniques, at Contractor's option, subject to other limitations of Contract Documents.
- B. Low-Lift Grouting:
 - 1. Limit height of pours to 4 feet 8 inches.
 - 2. Limit height of masonry to 16 inches above each pour.
 - 3. Pour grout only after vertical reinforcing is in place; place horizontal reinforcing as grout is poured. Prevent displacement of bars as grout is poured.
 - 4. Place grout for each pour continuously and consolidate immediately; do not interrupt pours for more than 1-1/2 hours.
- C. High-Lift Grouting:
 - 1. Verify that horizontal and vertical reinforcement is in proper position and adequately secured before beginning pours.
 - 2. Hollow Masonry: Limit lifts to maximum 4 feet 8 inches and pours to maximum height of 8 feet.
 - 3. Place grout for spanning elements in single, continuous pour.

END OF SECTION

**SECTION 04 2000
UNIT MASONRY**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete block.
- B. Reinforcement and anchorage.
- C. Flashings.
- D. Lintels.
- E. Accessories.
 - 1. Multicomponent Cavity Wall Drainage System.

1.02 RELATED REQUIREMENTS

- A. Section 04 0511 - Masonry Mortaring and Grouting.
- B. Section 05 5000 - Metal Fabrications: Loose steel lintels.
- C. Section 07 1900 - Water Repellents: Water repellents applied to exterior masonry surfaces.
- D. Section 07 2100 - Thermal Insulation: Insulation for cavity spaces.
- E. Section 07 9200 - Joint Sealants: Sealing control and expansion joints.

1.03 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- B. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2023.
- C. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units; 2023.
- D. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing; 2017.
- E. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls; 2005.
- F. BIA Technical Notes No. 46 - Maintenance of Brick Masonry; 2017.
- G. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022, with Errata (2024).
- H. IMIABC (CW) - Recommended Practices & Guide Specifications for Cold Weather Masonry Construction; International Masonry Industry All-Weather Council; 1993.
- I. IMIABC (HW) - Recommended Practices & Guide Specifications for Hot Weather Masonry Construction; International Masonry Industry All-Weather Council; current edition.
- J. UL (FRD) - Fire Resistance Directory; Current Edition.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, masonry accessories, and flashing and related components.
- C. Joint Plans: Provide layout plans and elevations showing control and expansion joint locations.
- D. Samples: Submit four samples of decorative block units to illustrate color, texture, and extremes of color range.
- E. Samples: Submit one sample of each accessory related to masonry and grout.

1.05 QUALITY ASSURANCE

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
 - 2. Load-Bearing Units: ASTM C90, normal weight.
 - a. Hollow block.
 - 3. Nonloadbearing Units: ASTM C129.
 - a. Hollow block.
 - 4. Standard Face Units: Manufacturer's standard color and texture unless noted otherwise; suitable for specified finish where applicable.
 - 5. Rockface Units: As defined by Anchor Block Company.
 - a. Color: As scheduled on the drawings.

2.02 MORTAR AND GROUT MATERIALS

- A. Mortar and Grout: As specified in Section 04 0511.

2.03 REINFORCEMENT AND ANCHORAGE

- A. Manufacturers:
 - 1. Blok-Lok Limited: www.blok-lok.com/#sle.
 - 2. Hohmann & Barnard, Inc: www.h-b.com/#sle.
 - 3. Heckmann Building Products, Inc: www.heckmannbuildingprods.com.
 - 4. WIRE-BOND: www.wirebond.com/#sle.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi), deformed billet bars; uncoated.
- C. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
 - 1. Anchor plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners.
 - 2. Wire ties: Manufacturer's standard shape, 0.1875 inch thick.
 - 3. Vertical adjustment: Not less than 3-1/2 inches.

2.04 FLASHINGS

- A. Pre-Coated Galvanized Steel Flashing: ASTM A653/A653M, with G90/Z275 coating, 24 gauge, 0.0239 inch base metal thickness, shop precoated with fluoropolymer coating in color matching masonry.
 - 1. Termination Bar: Stainless steel termination Bars, 1 inch wide, 0.075 inch thick, 8 feet long with holes at 8 inch on center.
- B. Flashing Sealant/Adhesive: Polyurethane type as specified in Section 07 9200.

2.05 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
 - 1. Manufacturers:
 - a. Blok-Lok Limited: www.blok-lok.com/#sle.
 - b. Hohmann & Barnard, Inc: www.h-b.com/sle.
 - c. WIRE-BOND: www.wirebond.com/#sle.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- B. Multicomponent Cavity Wall Drainage System: Combination mortar diverter, flashing and weep system.
 - 1. Membrane Type: Thermoplastic vinyl.
 - 2. Drip Edge: Galvanized steel with factory applied, high-performance organic coating.
 - 3. Drip Edge Color: Selected by Architect from manufacturer's full custom range.
 - 4. Termination Bar: Polyvinyl chloride (PVC).
 - 5. System Unit Length: 5 feet, 6 inches.
 - 6. Corners: Preformed.
 - 7. Manufacturers:
 - a. Mortar Net Solutions; TotalFlash Panel: www.mortarnet.com/#sle.

- b. Substitutions: See Section 01 6000 - Product Requirements.
- 8. Single or separate component cavity wall drainage/venting/mortar diverter products by the following manufacturers are also approved in addition to the specified multicomponent product:
 - a. Advanced Building Products, Inc
 - b. CavClear/Archovations, Inc
 - c. Mortar Net Solutions
 - d. York Manufacturing, Inc
 - e. Hohmann & Barnard, Inc
 - f. Masonry Technology Incorporated
- 9. Where non-multicomponent products are used all components of the specified multicomponent system shall be accounted for in final detailing/construction of the masonry walls.
- C. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

- A. Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

3.04 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
 - 1. Bond: Running.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches.
 - 3. Mortar Joints: Concave.

3.05 PLACING AND BONDING

- A. Lay hollow masonry units with face shell bedding on head and bed joints.
- B. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- C. Remove excess mortar and mortar smears as work progresses.
- D. Interlock intersections and external corners.
- E. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- F. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- G. Isolate masonry partitions from vertical structural framing members with a control joint.

3.06 REINFORCEMENT AND ANCHORAGE - GENERAL

- A. Place masonry joint reinforcement as indicated on the drawings.

3.07 MASONRY FLASHINGS

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.

1. Extend flashings full width at such interruptions and at least 6 inches, minimum, into adjacent masonry or turn up flashing ends at least 8 inches, minimum, to form watertight pan at non-masonry construction.
 2. Remove or cover protrusions or sharp edges that could puncture flashings.
 3. Seal lapped ends and penetrations of flashing before covering with mortar.
- B. Extend metal flashings through exterior face of masonry and turn down 1/4 inch to form drip. Install joint sealer below drip edge to prevent moisture migration under flashing.
- C. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.
- D. Install Multicomponent Cavity Wall Drainage System and Flashings in accordance with manufacturers instructions.

3.08 LINTELS

- A. Install loose steel lintels over openings.
- B. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.
1. Openings to 42 inches: Place two, No. 4 reinforcing bars 1 inch from bottom web.
 2. Openings from 42 inches to 78 inches: Place two, No. 5 reinforcing bars 1 inch from bottom web.
 3. Openings over 48 inches: Reinforce openings as detailed.
 4. Do not splice reinforcing bars.
 5. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
 6. Place and consolidate grout fill without displacing reinforcing.
 7. Allow masonry lintels to attain specified strength before removing temporary supports.
- C. Maintain minimum 8 inch bearing on each side of opening.

3.09 GROUTED COMPONENTS

- A. At bearing locations, fill masonry cores with grout for a minimum 8 inches either side of opening.

3.10 CONTROL AND EXPANSION JOINTS

- A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form control joints in concrete masonry as follow:
1. Fit bond-breaker strips into hollow contour in ends of concrete masonry units on one side of control joint. Fill resultant core with grout and rake out joints in exposed faces for application of sealant.
 2. Locate joints as indicated on drawings.
 - a. If no joints are indicated, contractor shall provide for, at a minimum, joints as recommended in the referenced document. Refer to joint plan submittals for final location approval.
 3. Space joints at no more than twice the height of the wall, but no more than 40' on center.
 4. Refer to *Tek Note 10-02D Control Joints for Concrete Masonry Walls – Empirical Method* by the National Concrete Masonry Association (NCMA).
 5. Final location of joints subject to approval by the Architect/Engineer.
- C. Form expansion/control joints in brick made from clay as follows:
1. Build in compressible joint fillers where indicated.
 2. Locate joints as indicated on drawings.
 - a. If no joints are indicated, contractor shall provide for, at a minimum, joints as recommended in the referenced document. Refer to joint plan submittals for final location approval.
 3. Space joints at no more than twice the height of the wall, but no more than 25' on center.
 4. Refer to *Technical Notes on Brick Construction 18AAccommodation Expansion of Brickwork* by The Brick Industry Association (BIA).
 5. Final location of joints subject to approval by the Architect/Engineer.

- D. Do not continue horizontal joint reinforcement through control or expansion joints.
- E. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- F. Size control joints as indicated on drawings; if not indicated, 3/4 inch wide and deep.
- G. Size control joint in accordance with Section 07 9200 for sealant performance.
- H. Form expansion joint as detailed on drawings.

3.11 BUILT-IN WORK

- A. As work progresses, install built-in items shown on the drawings and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.
- C. Bed anchors of door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
 - 1. Fill adjacent masonry cores with grout minimum 8 inches from framed openings.
- D. Do not build into masonry construction organic materials that are subject to deterioration.

3.12 TOLERANCES

- A. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
- B. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- C. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- D. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- E. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.
- F. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.13 CUTTING AND FITTING

- A. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.14 CLEANING

- A. Remove excess mortar and mortar droppings.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with cleaning solution.
 - 1. Soiled surfaces shall include all surfaces left exposed to view.
- D. Use non-metallic tools in cleaning operations.

3.15 PROTECTION

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

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**SECTION 05 2100
STEEL JOIST FRAMING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Open web steel joists and shear stud connectors, with bridging, attached seats and anchors.
- B. Loose bearing members, such as plates or angles, and anchor bolts for site placement.
- C. Supplementary framing for roof openings greater than 18 inches.

1.02 RELATED REQUIREMENTS

- A. Section 04 2000 - Unit Masonry
- B. Section 05 3100 - Steel Decking: Support framing for openings less than 18 inches in decking.
- C. Section 05 5000 - Metal Fabrications: Non-framing steel fabrications attached to joists.

1.03 REFERENCE STANDARDS

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- C. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.
- D. ASTM A563/A563M - Standard Specification for Carbon and Alloy Steel Nuts (Inch and Metric); 2021a.
- E. ASTM E94/E94M - Standard Guide for Radiographic Examination Using Industrial Radiographic Film; 2017.
- F. ASTM E165/E165M - Standard Practice for Liquid Penetrant Testing for General Industry; 2023.
- G. ASTM E709 - Standard Guide for Magnetic Particle Testing; 2021.
- H. ASTM F436/F436M - Standard Specification for Hardened Steel Washers Inch and Metric Dimensions; 2019.
- I. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2023.
- J. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).
- K. RCSC (HSBOLT) - Specification for Structural Joints Using High-Strength Bolts; Research Council on Structural Connections; 2020.
- L. SJI 100 - Standard Specifications for K-Series, LH-Series, and DLH-Series Open Web Steel Joists, and for Joist Girders; 2020.
- M. SJI Technical Digest No. 9 - Handling and Erection of Steel Joists and Joist Girders; 2008.
- N. SSPC-SP 2 - Hand Tool Cleaning; 2018.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate standard designations, joist coding, configurations, sizes, spacings, cambers, locations of joists, joist leg extensions, bridging, connections, and attachments.

1.05 QUALITY ASSURANCE

- A. Design connections not detailed on the drawings under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located; include engineer's stamp for connections.
- B. Perform Work, including that for headers and other supplementary framing, in accordance with SJI 100 Standard Specifications Load Tables and SJI Technical Digest No. 9.

- C. Manufacturer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience.
- D. Erector Qualifications: Company specializing in performing the work of this section with minimum five years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Transport, handle, store, and protect products to SJI requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Steel Joists:
 - 1. Canam Group Inc: www.canam-steeljoists.ws
 - 2. New Millennium Building Systems: www.newmill.com/#sle.
 - 3. Nucor-Vulcraft Group: www.vulcraft.com/#sle.
 - 4. Super Stud Building Products, Inc: www.buysuperstud.com.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.

2.02 MATERIALS

- A. Open Web Joists: Types as indicated on drawings:
 - 1. Minimum End Bearing on Steel Supports: Comply with referenced SJI standard.
 - 2. Minimum End Bearing on Concrete or Masonry Supports: Comply with referenced SJI standard.
 - 3. Finish: Shop primed.
- B. Anchor Bolts, Nuts and Washers: ASTM A307 hot-dip galvanized per ASTM A153/A153M Class C.
- C. High-Strength Structural Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, with matching compatible ASTM A563/A563M nuts and ASTM F436/F436M washers.
 - 1. Provide these bolts only at locations if and where indicated on the drawings.
- D. Structural Steel For Supplementary Framing and Joist Leg Extensions: ASTM A 36/A 36M.
- E. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- F. Shop and Touch-Up Primer: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.
 - 1. Color: Manufacturer's Standard.

2.03 FABRICATION

- A. Shop drill holes in chords for attachment to and attachment of related components.

2.04 FINISH

- A. Shop prime joists .
- B. Prepare surfaces to be finished in accordance with SSPC-SP 2.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions prior to beginning work.

3.02 ERECTION

- A. Erect joists with correct bearing on supports.
- B. Allow for erection loads. Provide sufficient temporary bracing to maintain framing safe, plumb, and in true alignment.
- C. Coordinate the placement of anchors for securing loose bearing members furnished as part of the work of this section.
- D. After joist alignment and installation of framing, field weld joist seats to steel bearing surfaces.
- E. Coordinate placement of anchors in concrete construction for securing bearing plates and angles.
- F. After joist alignment and installation of framing, field weld joist seats to bearing plates.

- G. Install supplementary framing for any openings greater than 18 inches.
- H. Do not permit erection of decking until joists are braced, bridged, and secured or until completion of erection and installation of permanent bridging and bracing.
- I. Do not field cut or alter structural members without approval of joist manufacturer.
- J. After erection, prime welds, damaged shop primer, and surfaces not shop primed .

3.03 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch.
- B. Maximum Offset From True Alignment: 1/4 inch.

3.04 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.
- B. High-Strength Bolts: Provide testing and verification of field-bolted connections in accordance with RCSC (HSBOLT) "Specification for Structural Joints Using High-Strength Bolts", testing at least 50 percent of bolts at each connection.
- C. Welded Connections: Visually inspect all field-welded connections and test at least 100 percent of welds using one of the following:
 - 1. Radiographic testing performed in accordance with ASTM E94/E94M.
 - 2. Ultrasonic testing performed in accordance with ASTM E164.
 - 3. Liquid penetrant inspection performed in accordance with ASTM E165/E165M.
 - 4. Magnetic particle inspection performed in accordance with ASTM E709.

END OF SECTION

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SECTION 05 3100 STEEL DECKING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Roof deck.
- B. Supplementary framing for openings up to and including 18 inches.
- C. Bearing plates and angles.
- D. Acoustical insulation in roof deck flutes.

1.02 RELATED REQUIREMENTS

- A. Section 05 2100 - Steel Joist Framing: Support framing for openings larger than 18 inches .
- B. Section 05 5000 - Metal Fabrications: Steel angle concrete stops at deck edges.

1.03 REFERENCE STANDARDS

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- B. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2023, with Editorial Revision.
- C. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).
- D. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel; 2018, with Errata (2022).
- E. SDI (DM) - Publication No.30, Design Manual for Composite Decks, Form Decks, and Roof Decks; 2007.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittals procedures.
- B. Product Data: Provide deck profile characteristics, dimensions, structural properties, and finishes.
- C. Shop Drawings: Indicate deck plan, support locations, projections, openings, reinforcement, pertinent details, and accessories.
- D. Product Data: Provide deck profile characteristics, dimensions, structural properties, and finishes.

1.05 QUALITY ASSURANCE

- A. Design deck layout, spans, fastening, and joints under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located; include engineer's stamp for connections.
- B. Installer Qualifications: Company specializing in performing the work of this Section with minimum five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Cut plastic wrap to encourage ventilation.
- B. Separate sheets and store deck on dry wood sleepers; slope for positive drainage.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Steel Deck:
 - 1. Canam Steel Corporation: www.cscsteelusa.com/#sle.
 - 2. New Millennium Building Systems: www.newmill.com/#sle.
 - 3. Nucor-Vulcraft Group: www.vulcraft.com/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 STEEL DECK

- A. All Deck Types: Select and design metal deck in accordance with SDI Design Manual.
 - 1. Calculate to structural working stress design and structural properties specified.
 - 2. Maximum Vertical Deflection of Roof Deck: 1/240 of span.

- B. Roof Deck: Non-composite type, fluted steel sheet:
 - 1. Ungalvanized Steel Sheet: ASTM A1008/A1008M, Designation SS.
 - a. Grade as required to meet performance criteria.
 - 2. Primer: Shop coat of manufacturer's standard primer paint over cleaned and phosphatized substrate.
 - 3. Minimum Base Metal Thickness: As indicated on the drawings.
 - 4. Nominal Height: As indicated on the drawings.
 - 5. Profile: As indicated on the drawings.
 - 6. Formed Sheet Width: 36 inch.
 - 7. Side Joints: Lapped welded or mechanically fastened.
 - 8. End Joints: Lapped welded or mechanically fastened.

2.03 ACCESSORY MATERIALS

- A. Bearing Plates and Angles: ASTM A36/A36M steel unfinished.
- B. Welding Materials: AWS D1.1/D1.1M.
- C. Fasteners: Galvanized hardened steel, self tapping.
- D. Weld Washers: Mild steel, uncoated, 3/4 inch outside diameter, 1/8 inch thick.
- E. Shop and Touch-Up Primer: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.
 - 1. Color: Manufacturer's Standard.
- F. Acoustical Insulation: Glass fiber type, minimum 0.75 lb/cu ft density; profiled to suit deck.

2.04 FABRICATED DECK ACCESSORIES

- A. Sheet Metal Deck Accessories: Metal closure strips, wet concrete stops, and cover plates, 22 gauge, 0.0299 inch thick sheet steel; of profile and size as indicated; finished same as deck.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions prior to beginning work.

3.02 INSTALLATION

- A. Erect metal deck in accordance with SDI Design Manual and manufacturer's instructions. Align and level.
- B. On steel supports provide minimum 1-1/2 inch bearing.
- C. Fasten deck to steel support members at ends and intermediate supports at 12 inches on center maximum (unless where indicated on the drawings), parallel with the deck flute and at each transverse flute using methods specified.
 - 1. Welding: Use fusion welds through weld washers.
- D. At mechanically fastened male/female side laps fasten at 24 inches on center maximum.
- E. At welded male/female side laps weld at 18 inches on center maximum.
- F. Weld deck in accordance with AWS D1.3/D1.3M.
- G. At deck openings from 6 inches to 18 inches in size, provide 2 by 2 by 1/4 inch steel angle reinforcement. Place angles perpendicular to flutes; extend minimum two flutes beyond each side of opening and fusion weld to deck at each flute.
- H. Where deck (other than cellular deck electrical raceway) changes direction, install 6 inch minimum wide sheet steel cover plates, of same thickness as deck. Fusion weld 12 inches on center maximum.
- I. Immediately after welding deck and other metal components in position, coat welds, burned areas, and damaged surface coating, with touch-up primer.

END OF SECTION

**SECTION 05 4000
COLD-FORMED METAL FRAMING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Formed steel stud exterior wall and interior ceiling framing.
- B. Exterior wall sheathing.
- C. Formed steel joist framing and bridging.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood blocking and miscellaneous framing.
- B. Section 07 2100 - Thermal Insulation: Insulation within framing members.
- C. Section 07 9200 - Joint Sealants.

1.03 REFERENCE STANDARDS

- A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members; 2016, with Supplement (2020).
- B. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing; 2015, with Errata (2020).
- C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- D. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- E. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings; 2020.
- F. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members; 2015.
- G. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2020.
- H. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. PS 1 - Structural Plywood; 2023.
- J. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: For lateral-force resisting systems, provide product data sheets on hold-down, showing compliance with requirements.
- C. Shop Drawings: Indicate component details, framed openings, bearing, anchorage, loading, welds, and type and location of fasteners, and accessories or items required of related work.

1.05 QUALITY ASSURANCE

- A. Designer Qualifications: Design framing system under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State in which the Project is located; include engineer's stamp.
- B. Calculate structural properties of framing members in accordance with requirements of AISI North American Specification for the Design of Cold-Formed Steel Structural Members.

1.06 PROJECT CONDITIONS

- A. Verify that field measurements are as indicated on shop drawings.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Structural Framing:
 - 1. ClarkDietrich: www.clarkdietrich.com/#sle.

2. MarinoWARE: www.marinoware.com/#sle.
3. Phillips Manufacturing Company: www.phillipsmfg.com.
4. The Steel Network, Inc: www.SteelNetwork.com/#sle.
5. Custom Stud, Inc: www.customstud.com.
6. Telling Industries: www.tellingindustries.com.
7. Super Stud Building Products, Inc: www.buysuperstud.com/#sle.
8. MRI Steel Framing LLC: www.mristeel framing.com.
9. Substitutions: See Section 01 6000 - Product Requirements.

B. Connectors:

1. Same manufacturer as metal framing.
2. Simpson Strong-Tie: www.strongtie.com/#sle.
3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Design Requirements: Design cold-formed framing systems, components and connectors to withstand specified design loads in compliance with ICC (IBC), ASCE 7, AISI S100, and AISI S240.

2.03 MATERIALS

- A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S240.
1. Structural Grade: As required to meet design criteria.
 2. Corrosion Protection Coating Designation: CP 90 in accordance with AISI S240.

2.04 STRUCTURAL FRAMING COMPONENTS

- A. Wall Studs and Track Sections: AISI S240; c-shaped studs and u-shaped track sections in stud-matching nominal width and compatible height.
1. Corrosion Protection Coating Designation: CP 90 in accordance with AISI S240.
- B. Joists: AISI S240; manufactured, engineered open-web steel joists.
1. Thickness and Depth: As indicated on drawings.

2.05 MISCELLANEOUS CONNECTIONS

- A. Self-Drilling, Self-Tapping Screws, Bolts, Nuts and Washers: Hot-dip galvanized per ASTM A153/A153M.
- B. Anchorage Devices: Tapcon or equivalent type fasteners.

2.06 SHEATHING

- A. Plywood; PS 1, Grade C-D, Exposure I.

2.07 ACCESSORIES

- A. Bracing, Furring, Bridging: Formed sheet steel, thickness determined for conditions encountered; finish to match framing components.
- B. Galvanizing Repair: Touch up bare steel with zinc-rich paint in compliance with ASTM A780/A780M.
- C. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20 Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION - GENERAL

- A. Install structural members and connections in compliance with ASTM C1007.

3.03 INSTALLATION OF STUDS

- A. Construct corners using minimum of three studs. Install double studs at wall openings, door and window jambs.
- B. Install load-bearing studs full length in one piece. Splicing of studs is not permitted.
- C. Coordinate placement of insulation in multiple stud spaces made inaccessible after erection.

- D. Install intermediate studs above and below openings to align with wall stud spacing.
- E. Provide deflection allowance in stud track, directly below horizontal building framing at non-loadbearing framing.
- F. Attach cross studs to studs for attachment of fixtures anchored to walls.
- G. Install framing between studs for attachment of mechanical and electrical items, and to prevent stud rotation.

3.04 INSTALLATION OF JOISTS

- A. Install framing components in accordance with manufacturer's instructions.
- B. Make provisions for erection stresses. Provide temporary alignment and bracing.
- C. Locate joist end bearing directly over load-bearing studs or provide load distribution on top of stud track.
- D. Provide web stiffeners at reaction points.
- E. Touch-up field welds and damaged galvanized surfaces with primer.

3.05 INSTALLATION OF WALL SHEATHING

- A. Install wall sheathing with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using self-tapping screws.

3.06 TOLERANCES

- A. Maximum Variation from True Position: 1/4 inch.
- B. Maximum Variation of any Member from Plane: 1/4 inch.

END OF SECTION

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**SECTION 05 5000
METAL FABRICATIONS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Shop fabricated steel items.

1.02 RELATED REQUIREMENTS

- A. Section 04 2000 - Unit Masonry: Placement of metal fabrications in masonry.
- B. Section 05 2100 - Steel Joist Framing: Structural joist bearing plates, including anchorage.
- C. Section 05 3100 - Steel Decking: Bearing plates for metal deck bearing, including anchorage.
- D. Section 09 9113 - Exterior Painting: Paint finish.
- E. Section 09 9123 - Interior Painting: Paint finish.

1.03 REFERENCE STANDARDS

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.
- C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- D. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.
- E. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2023.
- F. ASTM A992/A992M - Standard Specification for Structural Steel Shapes; 2022.
- G. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.
- H. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).
- I. SSPC-SP 2 - Hand Tool Cleaning; 2018.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on all finishing products, including VOC content.
- C. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
 - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
 - 2. Indicate unit identification mark and location for each unique item.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

- A. Steel W Shapes and Tees: ASTM A992/A992M.
- B. Steel Sections, Angles, and Plates: ASTM A 36/A 36M.
- C. Steel Tubing: ASTM A500/A500M Grade B cold-formed structural tubing.
- D. Pipe: ASTM A 53/A 53M Grade B Schedule 40, black finish.
- E. Bolts, Nuts, and Washers: ASTM A307, Grade A, galvanized to ASTM A153/A153M where connecting galvanized components.
- F. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- G. Shop and Touch-Up Primer: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.
 - 1. Color: Manufacturer's Standard.

2.02 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Mark each item with its identification mark. Use a non-permanent method at units that will remain exposed; welding is not acceptable, it shall be ground smooth, filled, and primed by the supplier at no additional cost to the Owner.
- C. Fabricate items with joints tightly fitted and secured.
- D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- E. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FABRICATED ITEMS

- A. Bollards: Steel pipe, concrete filled, crowned cap, as detailed; prime paint finish.
- B. Lintels: As detailed; prime paint finish.
- C. Other items indicated on the drawings.

2.04 FINISHES - STEEL

- A. Prime paint steel items.
- B. Prepare surfaces to be primed in accordance with SSPC-SP2 minimum.
 - 1. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
 - 2. Prime Painting: One coat.
 - a. Provide primer products indicated for surfaces to be primed and painted, Refer to Section 09 9113 - Exterior Painting and Section 09 9123 - Interior Painting.

2.05 FABRICATION TOLERANCES

- A. Squareness: 1/8 inch maximum difference in diagonal measurements.
- B. Maximum Offset Between Faces: 1/16 inch.
- C. Maximum Misalignment of Adjacent Members: 1/16 inch.
- D. Maximum Bow: 1/8 inch in 48 inches.
- E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

2.06 CONCRETE ANCHORING SYSTEMS

- A. Approved Manufacturers/Products:
 - 1. HILTI: www.us.hilti.com.
 - 2. MiTek: www.mitek-us.com.
 - 3. DeWALT: www.anchors.dewalt.com.
 - 4. Red Head: www.itwredhead.com.
 - 5. Simpson Strong-Tie: www.strongtie.com.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Furnish setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Perform field welding in accordance with AWS D1.1/D1.1M.
- D. Obtain approval prior to site cutting or making adjustments not scheduled.

- E. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

3.04 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

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SECTION 05 5100 METAL STAIRS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Stairs with concrete treads.
- B. Structural steel stair framing and supports.
- C. Handrails and guards.

1.02 REFERENCE STANDARDS

- A. ASTM A6/A6M - Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling; 2023.
- B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- C. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.
- D. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- E. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2018.
- F. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2023.
- G. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2021.
- H. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2023.
- I. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.
- J. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).
- K. SSPC-SP 2 - Hand Tool Cleaning; 2018.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.
 - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
 - 2. Include the design engineer's seal and signature on each sheet of shop drawings.

1.04 QUALITY ASSURANCE

- A. Structural Designer Qualifications: Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located, or personnel under direct supervision of such an engineer; include engineer's stamp.

PART 2 PRODUCTS

2.01 METAL STAIRS - GENERAL

- A. Metal Stairs: Provide stairs of the design specified, complete with landing platforms, vertical and horizontal supports, railings, and guards, fabricated accurately for anchorage to each other and to building structure.
 - 1. Regulatory Requirements: Provide stairs and railings that comply with most stringent requirements of local, state, and federal regulations; where requirements of Contract Documents exceed those of regulations, comply with Contract Documents.
 - 2. Structural Design: Provide complete stair and railing assemblies that comply with the applicable local code.
 - 3. Dimensions: As indicated on drawings.

4. Shop assemble components; disassemble into largest practical sections suitable for transport and access to site.
 5. No sharp or rough areas on exposed travel surfaces and surfaces accessible to touch.
 6. Separate dissimilar metals using paint or permanent tape.
- B. Metal Jointing and Finish Quality Levels:
1. Architectural: All joints as inconspicuous as possible, whether welded or mechanical.
 - a. Welded Joints: Continuously welded and ground smooth and flush.
 - b. Mechanical Joints: Butted tight, flush, and hairline; concealed fastenings only.
 - c. Exposed Edges and Corners: Eased to small uniform radius.
 - d. Metal Surfaces to be Painted: Sanded or ground smooth, suitable for highest quality gloss finish.
- C. Fasteners: Same material or compatible with materials being fastened; type consistent with design and specified quality level.
- D. Anchors and Related Components: Same material and finish as item to be anchored, except where specifically indicated otherwise; provide all anchors and fasteners required.

2.02 METAL STAIRS WITH CONCRETE TREADS

- A. Jointing and Finish Quality Level: Architectural, as defined above.
- B. Risers: Closed.
- C. Treads: Metal pan with field-installed concrete fill.
 1. Concrete Depth: 1-1/2 inches, minimum.
 2. Tread Pan Material: Steel sheet.
 3. Tread Pan Thickness: As required by design; 14 gauge, 0.075 inch minimum.
 4. Concrete Reinforcement: Welded wire mesh.
 5. Concrete Finish: Steel troweled.
- D. Risers: Same material and thickness as tread pans.
 1. Nosing Depth: Not more than 1-1/2 inch overhang.
 2. Nosing Return: Flush with top of concrete fill, not more than 1/2 inch wide.
- E. Stringers: Rolled steel channels.
 1. Stringer Depth: As indicated on drawings.
 2. End Closure: Sheet steel of same thickness as risers welded across ends.
- F. Railings: Steel mesh railings.
 1. Wire Mesh Size and Spacing: As indicated on the drawings.

2.03 HANDRAILS AND GUARDS

- A. Wall-Mounted Rails: Round pipe or tube rails unless otherwise indicated.
 1. Outside Diameter: 1-1/2 inch, minimum, to 1-1/2 inches, maximum.
- B. Guards:
 1. Rails: Round pipe or tube rails unless otherwise indicated.
 - a. Outside Diameter: 1-1/2 inch, minimum, to 1-1/2 inches, maximum.
 2. Infill at Mesh Railings: Woven wire mesh panels.
 - a. Material and Finish: Same as stair.
 - b. Wire Mesh Size and Spacing: As indicated on the drawings.
 - c. Mounting: Mesh welded to steel bar frame, frame welded to posts.
 3. End and Intermediate Posts: Same material and size as top rails.
 - a. Horizontal Spacing: As indicated on drawings.
 - b. Mounting: Welded to top surface of stringer.

2.04 MATERIALS

- A. Steel Sections: ASTM A 36/A 36M.
- B. Steel Tubing: ASTM A500/A500M or ASTM A501/A501M structural tubing, round and shapes as indicated.
- C. Steel Plates: ASTM A6/A6M or ASTM A283/A283M.
- D. Pipe: ASTM A 53/A 53M Grade B Schedule 40, black finish.
- E. Concrete Reinforcement: Mesh type as detailed, galvanized.

2.05 ACCESSORIES

- A. Steel Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, and galvanized to ASTM A153/A153M where connecting galvanized components.
- B. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- C. Shop and Touch-Up Primer: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.
 - 1. Color: Manufacturer's Standard.

2.06 SHOP FINISHING

- A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- B. Do not prime surfaces in direct contact with concrete or where field welding is required.
- C. Prime Painting: Use specified shop- and touch-up primer.
 - 1. Preparation of Steel: In accordance with SSPC-SP 2 Hand Tool Cleaning.
 - 2. Number of Coats: One.
 - a. Provide primer products indicated for surfaces to be primed and painted, Refer to Section 09 9113 - Exterior Painting and Section 09 9123 - Interior Painting.

2.07 EXPANSION ANCHORS

- A. Approved Products: Red Head Concrete Anchoring Solutions: www.itwredhead.com.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

- A. When field welding is required, clean and strip primed steel items to bare metal.

3.03 INSTALLATION

- A. Install components plumb and level, accurately fitted, free from distortion or defects.
- B. Provide anchors, plates, angles, and hangers required for connecting stairs to structure.
- C. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- D. Provide welded field joints where specifically indicated on drawings. Perform field welding in accordance with AWS D1.1/D1.1M.
- E. Other field joints may be either welded or bolted provided the result complies with the limitations specified for jointing quality levels.
- F. Obtain approval prior to site cutting or creating adjustments not scheduled.
- G. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

3.04 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.

END OF SECTION

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**SECTION 06 1053
MISCELLANEOUS ROUGH CARPENTRY**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Roof-mounted curbs.
- B. Roofing nailers.
- C. Preservative treated wood materials.
- D. Fire retardant treated wood materials.
- E. Communications and electrical room mounting boards.
- F. Concealed wood blocking, nailers, and supports.
- G. Miscellaneous wood nailers, furring, and grounds.

1.02 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- B. ASTM D2898 - Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing; 2010 (Reapproved 2017).
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- D. AWPA U1 - Use Category System: User Specification for Treated Wood; 2024.
- E. PS 1 - Structural Plywood; 2023.
- F. PS 20 - American Softwood Lumber Standard; 2021.
- G. WWPA G-5 - Western Lumber Grading Rules; 2021.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
 - 2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Grading Agency: Western Wood Products Association; WWPA G-5.
- B. Sizes: Nominal sizes as indicated on drawings, S4S.
- C. Moisture Content: S-dry or MC19.
- D. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Lumber: S4S, No.2 or Standard Grade.
 - 2. Boards: Standard or No.3.

2.03 CONSTRUCTION PANELS

- A. Communications and Electrical Room Mounting Boards: PS 1, A-D plywood, or medium density fiberboard; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

- B. Other Applications:
 1. Plywood Concealed From View But Located Within Exterior Enclosure: PS 1, C-C Plugged or better, Exterior grade.
 2. Plywood Exposed to View But Not Exposed to Weather: PS 1, A-D, or better.
 3. Other Locations: PS 1, C-D Plugged or better.

2.04 ACCESSORIES

- A. Fasteners and Anchors:
 1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
- B. Prefabricated Blocking Systems: DANBACK 3/4 inch standard/treated plywood or approved equivalent: www.danback.com.
- C. Dissimilar Material Separation Products:
 1. Separate Treated Lumber from other metal products and flashings with Self-Adhering Flashing as follows:
 - a. Provide Grace Vycor Plus or approved equal rubberized asphalt. Install according to manufacturers Instructions. Provide accessories for a complete installation.
- D. Self-Adhering Membrane: Provide Grace Ice & Water Shield or approved equal rubberized asphalt. Install according to manufacturers Instructions. Provide accessories for a complete installation.

2.05 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWWA standards.
- B. Fire Retardant Treatment:
 1. Exterior Type: AWWA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Do not use treated wood in direct contact with ground.
 2. Interior Type A: AWWA U1, Use Category UCFA, Commodity Specification H, low temperature, low hygroscopic type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Treat rough carpentry items as indicated.
 - c. Do not use treated wood in applications exposed to weather or where the wood may become wet.
- C. Preservative Treatment:
 1. Preservative Pressure Treatment of Lumber Above Grade: AWWA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
 - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 2. Preservative Pressure Treatment of Plywood Above Grade: AWWA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative.
 - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.

- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.
- D. All wood exposed to or in contact with masonry or concrete shall be Preservative Treated Wood.
- E. All wood within 12 inches of weather exposed masonry or concrete shall be separated with a dissimilar material separation products where a fluid applied or sheet product is not already specified or detailed.
- F. All wood exposed to or in contact with masonry or concrete shall be Preservative Treated Wood unless wood; wood associated with roofing installation shall be non-treated except where in contact with masonry or concrete located within 12 inches of weather exposed masonry or concrete; an alternate to using treated blocking at these locations is to separate blocking from masonry or concrete with the use of a dissimilar material Separation Products.
- G. Install dissimilar material separation products between all preservative treated lumber and metals and flashings.
- H. Securely install blocking, size within 1/16 inch of required dimension, and install plumb and level.

3.02 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.
- C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
- D. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- E. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- F. Provide the following specific nonstructural framing and blocking:
 - 1. All items indicated on the drawings and in the specifications.

3.03 ROOF-RELATED CARPENTRY

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.
- B. Provide wood curb at roof openings except where prefabricated curbs are specified and where specifically indicated otherwise. Form corners by alternating lapping side members.

3.04 INSTALLATION OF CONSTRUCTION PANELS

- A. Construction Panels: Secure with screws to structure over firm bearing; space fasteners at maximum 24 inches on center each way. Install adjacent boards without gaps. Size and Location: As indicated on drawings.
- B. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on edges and into studs in field of board.
 - 1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
 - 2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
 - 3. Install adjacent boards without gaps.

3.05 CLEANING

- A. Waste Disposal: See Section 01 7419 - Construction Waste Management and Disposal.
 - 1. Comply with applicable regulations.
 - 2. Do not burn scrap on project site.
 - 3. Do not burn scraps that have been pressure treated.
 - 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

ISSUE DATE - 06-13-2024

**SECTION 06 4100
ARCHITECTURAL WOOD CASEWORK**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Specially fabricated cabinet units.
- B. Hardware.
- C. Preparation for installing utilities.

1.02 RELATED REQUIREMENTS

- A. Section 12 3600 - Countertops.

1.03 REFERENCE STANDARDS

- A. ANSI A208.1 - American National Standard for Particleboard; 2022.
- B. ANSI A208.2 - Medium Density Fiberboard (MDF) for Interior Applications; 2022.
- C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- D. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021, with Errata.
- E. BHMA A156.9 - Cabinet Hardware; 2020.
- F. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
- G. PS 1 - Structural Plywood; 2023.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
 - 1. Scale of Drawings: 1-1/2 inch to 1 foot, minimum.
 - 2. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
- C. Product Data: Provide data for hardware accessories.
- D. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, texture, and patterns.

1.05 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect units from moisture damage.

1.07 FIELD CONDITIONS

- A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 CABINETS

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

2.02 WOOD-BASED COMPONENTS

- A. Hardwood Lumber: NHLA; Graded in accordance with, Grade II/Custom; average moisture content of 5-10 percent; species as recommended by manufacturer.

2.03 PANEL MATERIALS

- A. Particleboard: ANSI A208.1; medium density industrial type as specified in AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, composed of wood chips bonded with interior grade adhesive under heat and pressure; sanded faces; thickness as required; use for concealed components.

- B. Medium Density Fiberboard (MDF): ANSI A208.2; type as specified in AWI/AWMAC Architectural Woodwork Quality Standards Illustrated; composed of wood fibers pressure bonded with interior grade adhesive to suit application; sanded faces; thickness as required.
 - 1. Use as backing for plastic laminate unless otherwise indicated.
- C. Plywood for Non-Decorative Purposes: NIST PS 1, Interior rated adhesives, core of wood plies from listed species unless otherwise indicated, thickness as indicated or as required by application.
- D. Hardboard: AHA A135.4; Pressed wood fiber with resin binder, Class 1 - Tempered, 1/4 inch thick, smooth two sides (S2S); use for drawer bottoms, dust panels, and other components indicated on drawings.

2.04 LAMINATE MATERIALS

- A. Manufacturers:
 - 1. Arborite: www.arborite.com/#sle.
 - 2. Formica Corporation: www.formica.com/#sle.
 - 3. Lamin-Art, Inc: www.laminart.com.
 - 4. Panolam Industries International, Inc: www.panolam.com/#sle.
 - 5. Wilsonart LLC: www.wilsonart.com/#sle.
 - 6. Substitutions: See Section 01 6000 - Product Requirements.
- B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.
- C. Provide specific types as indicated.
 - 1. Horizontal Surfaces: HGS, 0.048 inch nominal thickness, color and finish as selected by Architect from manufacturers full range of colors.
 - 2. Vertical Surfaces: VGS, 0.028 inch nominal thickness, color and finish as selected by Architect from manufacturers full range of colors.
 - 3. Cabinet Liner: CLS, 0.020 inch nominal thickness, color and finish as selected by Architect from manufacturers full range of colors.

2.05 COUNTERTOPS

- A. Countertops: See Section 12 3600.

2.06 ACCESSORIES

- A. Adhesive: Type recommended by fabricator to suit application.
- B. Plastic Edge Banding: Extruded PVC, flat shaped; smooth finish; with or without self-locking serrated tongue; of width to match component thickness.
 - 1. Color: Match adjacent plastic laminate.
 - 2. Materials Thickness:
 - a. Door and Drawer Edges: 0.118 inches.
 - b. Other Edges: 0.018 inches.
 - 3. Use at exposed sheet material edges and perimeter of all doors and drawers.
 - 4. Products:
 - a. WoodTape by Doellken-Woodtape: www.na.doellken.com.
 - b. Canplast: www.canplast.com.
 - c. Rehau: www.rehau.com.
 - d. PVC Bumper Molding by Patwin Plastics: www.patwin.com.
- C. Fasteners: Size and type to suit application.
- D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.
- E. Concealed Joint Fasteners: Threaded steel.

2.07 HARDWARE

- A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
- B. Additional Hardware Items: As detailed and noted on the casework sections and elevations.

- C. Locking Shelf Supports: Standard side-mounted system using multiple holes for pin supports with locking clips, clear finish, for nominal 1 inch spacing adjustments.
 - 1. Product: 8705CL 1/4" Pin Shelf Lock for 3/4" Shelf, Finish Clear manufactured by www.hardwareresources.com.
- D. Drawer and Door Pulls: "U" shaped wire pull, steel with satin finish, 4 inch centers.
- E. Keyed Cabinet Locks: Keyed cylinder, two keys per lock, master keyed, steel with chrome finish.
- F. Drawer Slides:
 - 1. Type: Full extension.
 - 2. Static Load Capacity: 100 lbs minimum.
 - 3. Mounting: Side mounted.
 - 4. Stops: Integral type.
 - 5. Features: Provide soft-close/stay closed type.
 - 6. Manufacturers:
 - a. Accuride International, Inc; Light-Duty Drawer Slides: www accuride.com/#sle.
 - b. Blum, Inc: www.blum.com/#sle.
 - c. Grass America Inc: www.grassusa.com/#sle.
 - d. Hettich America, LP: www.hettich.com/sle.
 - e. Knap & Vogt Manufacturing Company: www.knapeandvogt.com/#sle.
 - f. Substitutions: See Section 01 6000 - Product Requirements.
- G. Hinges: European style concealed self-closing type, steel with nickel-plated finish.
 - 1. Function: Standard grade, 110 degrees swing minimum, side and depth cam adjustable, screw or cam height adjustment.
 - 2. Basis of design: 500 Series Standard Duty by Hardware Resources, arm style and mounting plates to suite cabinet construction and door style.
 - 3. Manufacturers:
 - a. Blum, Inc: www.blum.com/#sle.
 - b. Grass America Inc: www.grassusa.com/#sle.
 - c. Hardware Resources: www.hardwareresources.com/#sle.
 - d. Hettich America, LP: www.hettich.com/sle.
 - e. Titus Cabinet Hardware: www.titusplus.com/us/en/#sle.
 - f. Substitutions: See Section 01 6000 - Product Requirements.

2.08 FABRICATION

- A. Cabinet Style: Flush overlay.
- B. Cabinet Doors and Drawer Fronts: Flush style.
- C. Drawer Fronts and Boxes Construction Technique: Wood, laminate, and hardboard, unless indicated otherwise, in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated.
- D. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
 - 1. Provide separate base to be installed and leveled prior to cabinet installation.
- E. Finished Ends: Finish ends of all casework not hidden by permanent construction; including locations adjacent to appliances and removable lowers cabinets.
- F. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- G. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- H. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
- I. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Seal cut edges.

2.09 SHOP FINISHING

- A. Sand work smooth and set exposed nails and screws.
- B. For opaque finishes, apply wood filler in exposed nail and screw indentations and sand smooth.
- C. On items to receive transparent finishes, use wood filler matching or blending with surrounding surfaces and of types recommended for applied finishes.
- D. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
- E. Finish work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Section 1500, use systems preferred by manufacturers based usage type, or equivalent.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

- A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
- B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
 - 1. Set separate base, plumb, level, and secure rigidly in-place prior to setting cabinets.
- C. Use fixture attachments in concealed locations for wall mounted components.
- D. Use concealed joint fasteners to align and secure adjoining cabinet units.
- E. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
- F. Secure cabinets to floor using appropriate angles and anchorages.
- G. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.03 ADJUSTING

- A. Adjust installed work.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

**SECTION 07 1900
WATER REPELLENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Water repellents applied to exterior and exterior masonry and masonry surfaces.

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a meeting at least one week prior to starting work; require attendance of affected installers; invite Architect and Owner.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide product description, details of tests performed, limitations, and chemical composition.
- C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention; cautionary procedures required during application.
- D. Manufacturer's Qualification Statement.
- E. Installer's Qualification Statement.
- F. Manufacturer's Field Reports: Report whether manufacturer's "best practices" are being followed; if not, state corrective recommendations.
- G. Manufacturer shall stand behind installed system for period of 10 years from Date of Substantial Completion against all the conditions indicated below. When notified in writing from Owner, Manufacturer shall, promptly and without inconvenience and cost to Owner correct said deficiencies.
 - 1. Loss of water repellency: As stated by product below.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least five years of documented experience
- C. Obtain approval to perform installation from specified product's sales manager 5 days prior to start of the Work of this section. Obtain approval of test patch. Pay required registration fees.

1.05 FIELD CONDITIONS

- A. Protect liquid materials from freezing.
- B. Do not apply water repellent when ambient temperature is lower than 50 degrees F or higher than 100 degrees F.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Water Repellent: Non-glossy, colorless, penetrating, water-vapor-permeable, non-yellowing sealer, that dries invisibly leaving appearance of substrate unchanged.
 - 1. Applications: Vertical surfaces.
 - 2. Number of Coats: One.
 - 3. Maintains dry appearance when wetted.
 - 4. Products: Silane, siloxane, silane-siloxane blend, or siliconate that reacts chemically with concrete and masonry; minimum 40 percent nonvolatile content by weight.
 - a. Evonik Industries; Protectosil Chem-Trete PB VOC
 - 1) Application Type: Use at **CMU block** where applicable.
 - 2) Warranty: Concrete Masonry: 1.0 ml/20 minutes or greater (60 mph wind driven rain equivalent).

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify joint sealants are installed and cured.

- B. Verify surfaces to be coated are dry, clean, and free of efflorescence, oil, or other matter detrimental to application of water repellent.

3.02 PREPARATION

- A. Protection of Adjacent Work:
 - 1. Protect adjacent landscaping, property, and vehicles from drips and overspray.
 - 2. Protect adjacent surfaces not intended to receive water repellent.
- B. Prepare surfaces to be coated as recommended by water repellent manufacturer for best results.
- C. Do not start work until masonry mortar substrate is cured a minimum of product manufacturers recommended number of days.

3.03 APPLICATION

- A. Apply water repellent in accordance with manufacturer's instructions, using procedures and application methods recommended as producing the best results.
- B. Remove water repellent from unintended surfaces immediately by a method instructed by water repellent manufacturer.
- C. Provide manufacturer's field service representative to inspect preparation and application work continuously during entire application period to ensure that manufacturer's "best practices" for preparation and application are being followed.

END OF SECTION

SECTION 07 2100 THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Board insulation at cavity wall construction, perimeter foundation wall, and exterior wall behind _____ wall finish.
- B. Batt insulation and vapor retarder in exterior wall, ceiling, and roof construction.
- C. Foam-In-Place Expanding Foam Insulation.

1.02 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2023.
- B. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.
- C. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2023a.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- E. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C; 2024.
- F. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components; 2023.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

1.04 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 FOAM BOARD INSULATION MATERIALS

- A. Extruded Polystyrene (XPS) Board Insulation: Comply with ASTM C578 with either natural skin or cut cell surfaces.
 - 1. Type and Compressive Resistance: Type IV, 25 psi (173 kPa), minimum.
 - 2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
 - 3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 - 4. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88), minimum, per 1 inch thickness at 75 degrees F mean temperature.
 - 5. Board Size: 48 x 96 inch.
 - 6. Board Thickness: As indicated on the drawings.
 - 7. Board Edges: Square.
 - 8. Installation Locations:
 - a. Natural Skin Surfaces: All locations unless indicated otherwise.
 - b. Cut Cell Surfaces: Locations at grade where parging is indicated.
 - 9. Manufacturers:
 - a. DuPont de Nemours, Inc: building.dupont.com/#sle.
 - b. Kingspan Insulation LLC: www.kingspan.com/#sle.
 - c. Owens Corning Corporation: www.ocbuildingspec.com/#sle.
 - d. Diversifoam Products: www.diversifoam.com.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
- B. Rigid Cellular Polyisocyanurate (ISO) Thermal Insulation Board with Facers Both Sides: Complying with ASTM C1289.
 - 1. Classifications:

- a. Type II: Faced with either cellulosic facers or glass fiber mat facers on both major surfaces of the core foam.
 - 1) Class 1 - Faced with glass fiber reinforced cellulosic facers on both major surfaces of core foam.
 - 2) Compressive Strength: Classes 1-2-3, Grade 2 - 20 psi (138 kPa), minimum.
 - 3) Thermal Resistance, R-value: At 1-1/2 inch thick; Class 1, Grades 1-2-3 - 8.4 (1.48), minimum, at 75 degrees F.
2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
4. Comply with fire resistance requirements indicated on drawings as part of an exterior non-load-bearing exterior wall assembly when tested in accordance with NFPA 285.
5. Board Size: 48 inch by 96 inch.
6. Board Thickness: As indicated on the drawings.
7. Board Edges: Square.
8. Products:
 - a. Atlas Roofing Corporation: www.atlasroofing.com/#sle.
 - b. Carlisle Coatings & Waterproofing, Inc: www.carlisleccw.com/sle.
 - c. DuPont de Nemours, Inc: building.dupont.com/#sle.
 - d. Elevate: www.holcimelevate.com/#sle.
 - e. GAF: www.gaf.com/sle.
 - f. GenFlex Roofing Systems, LLC: www.genflex.com.
 - g. Hunter Panels: www.hunterpanels.com/#sle.
 - h. Johns Manville: www.jm.com/sle.
 - i. Rmax Inc: www.rmax.com.
 - j. Versico, a division of Carlisle Construction Materials Inc: www.versico.com.
9. Substitutions: See Section 01 6000 - Product Requirements.

2.02 MINERAL FIBER BLANKET INSULATION MATERIALS

- A. Flexible Glass Fiber Blanket Thermal Insulation: Preformed insulation, complying with ASTM C665; friction fit.
 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
 4. Formaldehyde Content: Zero.
 5. Facing: Unfaced.
 6. Products:
 - a. CertainTeed Corporation: www.certainteed.com/#sle.
 - b. Johns Manville: www.jm.com/#sle.
 - c. Owens Corning Corporation: www.ocbuildingspec.com/#sle.
 7. Substitutions: See Section 01 6000 - Product Requirements.
- B. Mineral Wool Blanket Thermal Insulation: Flexible or semi-rigid preformed insulation, complying with ASTM C665.
 1. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 2. Products:
 - a. Johns Manville: www.jm.com/#sle.
 - b. Knauf Insulation: www.knaufinsulation.com/#sle.
 - c. ROCKWOOL: www.rockwool.com/#sle.
 - d. Thermafiber, Inc: www.thermafiber.com/#sle.
 - e. Substitutions: See Section 01 6000 - Product Requirements.

2.03 FOAM-IN-PLACE EXPANDING FOAM INSULATION:

- A. Product: Great Stuff Pro window and door by Dupont or approved equivalent.

2.04 ACCESSORIES

- A. Sheet Vapor Retarder: Clear polyethylene film for above grade application, 6 mil thick.
- B. Tape: Polyethylene self-adhering type, 2 inch wide.
- C. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

- A. Apply adhesive to back of boards:
 - 1. By methods approved by board and adhesive manufacturers.
- B. Install boards horizontally on foundation perimeter.
- C. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BOARD INSTALLATION AT EXTERIOR WALLS

- A. Install boards vertically or horizontally on walls.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.04 BOARD INSTALLATION AT CAVITY WALLS

- A. Apply adhesive to back of boards:
 - 1. Four spots 4 inches in diameter by 1/4 inch thick.
 - 2. Or other methods approved by board and adhesive manufacturers.
- B. Install boards to fit snugly between wall ties.
 - 1. Place membrane surface facing out, and install foam board manufacturer's recommended expanding foam product at all board joints.
 - a. Remove excess expanding foam from intended air space behind brick.
- C. Install boards horizontally on walls.
- D. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.05 BATT INSTALLATION

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall, roof, and ceiling spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over face of member
- F. Tape seal tears or cuts in vapor retarder.
- G. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane; tape seal in place.

3.06 FOAM-IN-PLACE INSTALLATION

- A. Install foam-in-place expanding spray foam insulation in accordance with manufacturer's instructions.
 - 1. Install at miscellaneous locations as indicated on the drawings.
- B. Remove excess materials once product is cured to provide a clean finish look at all locations.

3.07 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

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**SECTION 07 2500
WEATHER BARRIERS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Air Barriers: Materials that form a system to stop passage of air through exterior walls.

1.02 RELATED REQUIREMENTS

- A. Section 05 4000 - Cold-Formed Metal Framing: Water-resistive barrier under exterior cladding.
- B. Section 07 9200 - Joint Sealants: Sealing building expansion joints.

1.03 REFERENCE STANDARDS

- A. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.
- B. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.
- C. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on material characteristics, system components, and system components.
- C. Manufacturer's Installation Instructions: Indicate preparation and installation methods.

1.05 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the materials manufacturers before, during and after installation.

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

- A. Air Barrier:
 - 1. On outside surface of sheathing of exterior walls use air barrier coating, fluid applied type.

2.02 AIR BARRIER MATERIALS (WATER VAPOR PERMEABLE AND WATER-RESISTIVE)

- A. Air Barrier, Fluid Applied: Vapor permeable, elastomeric waterproofing.
 - 1. Air Barrier Coating:
 - a. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
 - b. Water Vapor Permeance: 5 perms, minimum, when tested in accordance with ASTM E96/E96M Procedure B (Water Method) at 73.4 degrees F.
 - c. Manufacturers:
 - 1) Dow Chemical Company; DOWSIL DefendAir 200: consumer.dow.com/en-us/industry/ind-building-construction.html/#sle.
 - 2) Carlisle Coatings and Waterproofing, Inc.; Barritech-VP: www.carlisle-ccw.com.
 - 3) DuPont de Nemours, Inc; Tyvek Fluid Applied WB+ with Tyvek Fluid Applied Flashing and Joint Compound, Sealant for Tyvek Fluid Applied System and StraightFlash: www.dupont.com/#sle.
 - 4) Master Wall, Inc; Rollershield LAB System: www.masterwall.com/#sle.
 - (a) NaturaSeal; Air Barrier NS-A250-HP: www.naturaseal.com/#sle.
 - 5) Epro Services, Inc.; ECOFLEX-PS: www.eproserv.com.
 - 6) Hohmann and Barnard, Inc.; Textroflash Liquid VP: www.h-b.com.
 - 7) Mar-flex Waterproofing & Building Products; Air Barrier 1200VP: www.mar-flex.com.
 - 8) Parex USA, Inc; Parex USA WeatherSeal Spray & Roll-on: www.parexusa.com/#sle.
 - 9) W.R. Meadows, Inc; Air-Shield TMP: www.wrmeadows.com/#sle.
 - 10) W.R. Meadows, Inc.; Air-Shield LMP: www.wrmeadows.com.

- 11) Tremco; ExoAir 220R (roller grade): www.tremcosealants.com.
- 12) Polyguard; AirLok Flex VP: www.polyguard.com.
- 13) Henry; Air-Bloc 17: www.henry.com.
- 14) TK Products; TK-AIRMAX 2104/2105: www.tkproducts.com.
- 15) Polyglass USA; Vertiwrap VPL: www.polyglass.us.
- 16) Substitutions: See Section 01 6000 - Product Requirements.

2.03 ACCESSORIES

- A. Flexible Flashing: Self-adhesive sheet flashing complying with ASTM D1970/D1970M, except slip resistance requirement is waived if not installed on a roof.
- B. Seam Tape: As recommended by the weather barrier manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and conditions are ready to accept the work of this section.
- B. Verify that all openings and penetrations are in place and ready for the work of this section. It is the responsibility of the contractor of this section to repair new penetrations at the cost of the contractor who created new penetrations after the work of this section was completed.

3.02 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. Air Barriers: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- C. Coatings:
 1. Prepare substrate in manner recommended by coating manufacturer; treat joints in substrate and between dissimilar materials as recommended by manufacturer.
 2. Use flashing to seal to adjacent construction and to bridge joints.
- D. Openings and Penetrations in Exterior Weather Barriers:
 1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto weather barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
 2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.
 3. At openings to be filled with non-flanged frames, seal weather barrier to each side of opening framing, using flashing at least 9 inches wide, covering entire depth of framing.
 4. At head of openings, install flashing under weather barrier extending at least 2 inches beyond face of jambs; seal weather barrier to flashing.
 5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
 6. Service and Other Penetrations: Form flashing around penetrating item and seal to weather barrier surface.

3.03 PROTECTION

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

SECTION 07 4213.23
METAL COMPOSITE MATERIAL WALL PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Exterior cladding consisting of formed metal composite material (MCM) sheet, secondary supports, and anchors to structure, attached to solid backup.
- B. Matching flashing and trim.

1.02 RELATED REQUIREMENTS

- A. Section 05 4000 - Cold-Formed Metal Framing: Panel support framing.
- B. Section 07 2500 - Weather Barriers: Water-resistive barrier behind wall panel system.
- C. Section 07 6200 - Sheet Metal Flashing and Trim: Metal flashing components integrated with this wall system.
- D. Section 07 9200 - Joint Sealants: Sealing joints between siding and adjacent construction and fixtures.

1.03 REFERENCE STANDARDS

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
- C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- D. ASTM A276/A276M - Standard Specification for Stainless Steel Bars and Shapes; 2024.
- E. ASTM A480/A480M - Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip; 2023b.
- F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- G. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.
- H. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.
- I. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.
- J. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- K. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
- L. ASTM D523 - Standard Test Method for Specular Gloss; 2014 (Reapproved 2018).
- M. ASTM D1781 - Standard Test Method for Climbing Drum Peel for Adhesives; 1998 (Reapproved 2021).
- N. ASTM D1929 - Standard Test Method for Determining Ignition Temperature of Plastics; 2023.
- O. ASTM D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates; 2023.
- P. ASTM D4145 - Standard Test Method for Coating Flexibility of Prepainted Sheet; 2010 (Reapproved 2022).
- Q. ASTM D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films; 2023.
- R. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- S. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components; 2023.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Pre-Installation Meeting: Convene one week before starting work of this section to verify project requirements, coordinate with installers of other work, establish condition and completeness of building substrate, and review manufacturers' installation instructions and warranty requirements.
 - 1. Require attendance by the installer and relevant sub-contractors.
 - 2. Include MCM sheet manufacturer's representative and wall system manufacturer's representative to review storage and handling procedures.
 - 3. Review in detail truck transportation, parking, vertical transportation, schedule, personnel, installation of adjacent materials and substrate.
 - 4. Review procedures for protection of work and other construction.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data - MCM Sheets: Manufacturer's data sheets on each product to be used, including thickness, physical characteristics, and finish, and:
 - 1. Finish manufacturer's data sheet showing physical and performance characteristics.
 - 2. Storage and handling requirements and recommendations.
 - 3. Fabrication instructions and recommendations.
 - 4. Specimen warranty for finish, as specified herein.
- C. Product Data - Wall System: Manufacturer's data sheets on each product to be used, including:
 - 1. Physical characteristics of components shown on shop drawings.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation instructions and recommendations.
 - 4. Specimen warranty for wall system, as specified herein.
- D. Shop Drawings: Show layout and elevations, dimensions and thickness of panels, connections, details and location of joints, sealants and gaskets, method of anchorage, support clips, exposed fasteners, number of anchors, supports, reinforcement, trim, flashings, and accessories.
 - 1. Indicate panel numbering system.
 - 2. Differentiate between shop and field fabrication.
 - 3. Indicate substrates and adjacent work with which the wall system must be coordinated.
 - 4. Include large-scale details of anchorages and connecting elements.
 - 5. Include large-scale details or schematic, exploded or isometric diagrams to fully explain flashing at a scale of not less than 1-1/2 inches per 12 inches.
 - 6. Include design engineer's stamp or seal on shop drawings for attachments and anchors.
- E. Verification Samples: For each finish product specified, submit at least three samples, minimum size 12 inch square, and representing actual product in color and texture.
- F. Manufacturer's Field Reports: Provide within 48 hours of field review. State what was observed and what changes, if any, were requested or required.
- G. Maintenance Data: Care of finishes and warranty requirements.
- H. Executed Warranty: Submit warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact.
 - 1. Protect finishes by applying heavy-duty removable plastic film during production.
 - 2. Package for protection against transportation damage.
 - 3. Provide markings to identify components consistently with drawings.
 - 4. Exercise care in unloading, storing, and installing panels to prevent bending, warping, twisting, and surface damage.
- B. Store products protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
 - 1. Store in well-ventilated space out of direct sunlight.

2. Protect from moisture and condensation with tarpaulins or other suitable weathertight covering installed to provide ventilation.
3. Store at a slope to ensure positive drainage of accumulated water.
4. Do not store in enclosed space where ambient temperature can exceed 120 degrees F.
5. Avoid contact with other materials that might cause staining, denting, or other surface damage.

1.07 WARRANTY

- A. MCM Sheet Manufacturer's Finish Warranty: Provide manufacturer's written warranty stating that the finish will perform as follows for minimum of 20 years:
 1. Chalking: No more than that represented by a No. 8 rating based on ASTM D4214.
 2. Color Retention: No fading or color change in excess of 5 Hunter color difference units, calculated in accordance with ASTM D2244.
 3. Gloss Retention: Minimum of 30 percent gloss retention, when tested in accordance with ASTM D523.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: ALPOLIC Materials Composite Wall Panel System.
- B. Metal Composite Material (MCM) Sheet Manufacturers:
 1. ALUCOBOND by 3A Composites USA; ALUCOBOND PLUS: www.alucobondusa.com/#sle.
 2. Alfrex, LLC; Alfrex fr: www.alfrexusa.com/#sle.
 3. ALPOLIC Materials; ALPOLIC/fr (Fire Retardant core): www.alpolic-americas.com/#sle.
 4. Alucoil North America LLC; larson by Alucoil, FR Core (fire resistant): www.alucoilnorthamerica.com/#sle.
 5. Arconic Architectural Products, Inc; Reynobond: www.arconic.com.com/#sle.
 6. Citadel Architectural Products, Inc; Envelope 2000: www.citadelap.com/#sle.
 7. Fairview Architectural LLC; VitraBond (Fire Rated): www.fairview-na.com/#sle.
 8. Metal Construction Association: www.metalconstruction.org.
 9. Substitutions: See Section 01 6000 - Product Requirements.
- C. Wall Panel System Manufacturers:
 1. Listed Material Sheet Manufacturers.
 2. Americlاد: www.americlاد.com.
 3. Kanalco Ltd: www.kanalco.com/#sle.
 4. Laminators Inc: www.laminators.com.
 5. Metal Construction Association: www.metalconstruction.org.
 6. Metal Design Systems, Inc: www.metaldesignsystems.com.
 7. Petersen Aluminum Corporation: www.pac-clad.com/#sle.
 8. Progressive Building Systems: www.pbsmetals.com.
 9. Protean: www.protean.com.
 10. SGH Concepts: sghconcepts.com.
 11. Specialty Systems, Inc: www.specialtysystemsinc.com.
 12. TFC Canopy: www.tfccanopy.com.
 13. Substitutions: See Section 01 6000 - Product Requirements.

2.02 WALL PANEL SYSTEM

- A. Wall Panel System: Metal panels, fasteners, and anchors designed to be supported by framing or other substrate provided by others; provide installed panel system capable of maintaining specified performance without defects, damage, or failure.
 1. Provide structural design by or under direct supervision of a Structural Engineer licensed in the State in which the Project is located.
 2. Provide panel jointing using a reveal joint without gaskets or sealant.
 3. Anchor panels to supporting framing without exposed fasteners.
- B. Performance Requirements
 1. Thermal Movement: Provide for free and noiseless vertical and horizontal thermal movement due to expansion and contraction under material temperature range of minus 20 degrees F to 180 degrees F without buckling, opening of joints, undue stress on

fasteners, or other detrimental effects; allow for ambient temperature at time of fabrication, assembly, and erection procedures.

- C. Panels: 1 inch deep pans formed of metal composite material sheet by routing back edges of sheet, removing corners, and folding edges.
 - 1. Reinforce corners with riveted aluminum angles.
 - 2. Provide concealed attachment to supporting structure by adhering attachment members to back of panel; attachment members may also function as stiffeners.
 - 3. Maintain maximum panel bow of 0.8 percent of panel dimension in width and length; provide stiffeners of sufficient size and strength to maintain panel flatness without showing local stresses or read-through on panel face.
 - 4. Secure members to back face of panels using structural silicone sealant approved by MCM sheet manufacturer.
 - 5. Fabricate panels under controlled shop conditions.
 - 6. Where final dimensions cannot be established by field measurement before commencement of manufacturing, make allowance for field adjustments without requiring field fabrication of panels.
 - 7. Fabricate as indicated on drawings and as recommended by MCM sheet manufacturer.
 - a. Make panel lines, breaks, curves, and angles sharp and true.
 - b. Keep plane surfaces free from warp or buckle.
 - c. Keep panel surfaces free of scratches or marks caused during fabrication.
 - 8. Provide joint details providing a watertight and structurally sound wall panel system that allows no uncontrolled water penetration on inside face of panel system.

2.03 MATERIALS

- A. Metal Composite Material (MCM) Sheet: Two sheets of aluminum sandwiching a core of extruded thermoplastic material; no foamed insulation material content.
 - 1. Alternate Metal Composite Material (MCM) Sheet: Citadel Architectural Products, Inc; Envelope 2000 is considered equivalent to other MCM product materials specified.
 - 2. Overall Sheet Thickness: 4 mm, minimum.
 - 3. Face Sheet Thickness: 0.019 inch, minimum.
 - 4. Bond and Peel Strength: No adhesive failure of the bond between the core and the skin nor cohesive failure of the core itself below 22.4 inch-pound/inch with no degradation in bond performance, when tested in accordance with ASTM D1781, simulating resistance to panel delamination, after 8 hours of submersion in boiling water and after 21 days of immersion in water at 70 degrees F.
 - 5. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450 maximum; when tested in accordance with ASTM E84.
 - 6. Flammability: Self-ignition temperature of 650 degrees F or greater when tested in accordance with ASTM D1929.
 - 7. Factory Finish: One coat fluoropolymer resin coating, approved by the coating manufacturer for the length of warranty specified for the project, and applied by coil manufacturing facility that specializes in coil applied finishes.
 - a. Coating Flexibility: Pass ASTM D4145 minimum 1T-bend, at time of manufacturing.
 - b. Long-Term Performance: Not less than that specified under WARRANTY in PART 1.
 - 8. Colors: As scheduled on the drawings.
- B. Metal Framing Members: Include sub-girts, zee-clips, base and sill angles and channels, hat-shaped and rigid channels, and furring channels required for complete installation.
 - 1. Provide material strength, dimensions, configuration as required to meet applied loads and in compliance with applicable building code.
 - 2. Sheet Steel Components: ASTM A653/A653M galvanized to G90/Z275 or zinc-iron alloy-coated to A60/ZF180; or ASTM A792/A792M aluminum-zinc coated to AZ60/AZM180.
 - 3. Stainless Steel Sheet Components: ASTM A480/A480M.
 - 4. Aluminum Components: ASTM B209/B209M; or ASTM B221 (ASTM B221M).
 - 5. Panel Support Framing: See Section 05 4000.

2.04 FINISHES

- A. Factory Finish: Two coat fluoropolymer resin coating, approved by coating manufacturer for length of warranty specified for project, and applied by coil manufacturing facility that specializes in coil applied finishes.

1. Coating Flexibility: Pass ASTM D4145 minimum 1T Bend at time of manufacturing.
2. Long-Term Performance: Not less than that specified under WARRANTY in PART 1.

2.05 ACCESSORIES

- A. Flashing: Sheet aluminum; 0.040 inch thick, minimum; finish and color to match MCM sheet; see Section 07 6200 for additional requirements.
- B. Support for Cladding and Continuous Insulation: Thermal clips.
 1. Thermally-broken clips that provide attachment support for girts, angles, channels, and other cladding support framing.
 2. Galvanized Steel Support Clip: 14 gauge, 0.0747 inch, G90/Z275 galvanized support clip complying with ASTM A653/A653M, with integral glass fiber reinforced polyamide thermal isolator pad.
 3. Fasteners: As recommended by clip manufacturer.
- C. Anchors, Clips, and Accessories: Use one of the following:
 1. Stainless steel complying with ASTM A276/A276M, ASTM A480/A480M, or ASTM A666.
 2. Steel complying with ASTM A36/A36M and hot-dip zinc coating to ASTM A153/A153M.
 3. Steel complying with ASTM A36/A36M and hot-dip galvanized to ASTM A123/A123M, with Coating Thickness Grade of 100.
- D. Fasteners:
 1. Exposed Fasteners: Stainless steel; permitted only where absolutely unavoidable and subject to prior approval of the Architect.
 2. Screws: Self-drilling or self-tapping Type 410 stainless steel or zinc-alloy steel hex washer head, with EPDM or PVC washer under heads of fasteners bearing on weather side of metal wall panels.
 3. Bolts: Stainless steel.
 4. Fasteners for Flashing and Trim: Blind fasteners of high-strength aluminum or stainless steel.
- E. Provide panel system manufacturer's and installer's standard corrosion resistant accessories, including fasteners, clips, anchorage devices, and attachments.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine dimensions, tolerances, and interfaces with other work.
 1. Verify that weather barrier system is properly installed; see Section 07 2500 for requirements.
- B. Examine substrate on-site to determine that conditions are acceptable for product installation in accordance with manufacturer's written instructions.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- D. Notify Architect in writing of conditions detrimental to proper and timely completion of work, and do not proceed with erection until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Protect adjacent work areas and finish surfaces from damage during installation.

3.03 INSTALLATION

- A. Do not install products that are defective, including warped, bowed, dented, and broken members, and members with damaged finishes.
- B. Comply with instructions and recommendations of MCM sheet manufacturer and wall system manufacturer, as well as with approved shop drawings.
- C. Install wall system securely allowing for necessary thermal and structural movement; comply with wall system manufacturer's instructions for installation of concealed fasteners.
- D. Do not handle or tool products during erection in manner that damages finish, decreases strength, or results in visual imperfection or failure in performance. Return component parts that require alteration to shop for refabrication, if possible, or for replacement with new parts.

- E. Do not form panels in field unless required by wall system manufacturer and approved by the Architect; comply with MCM sheet manufacturer's instructions and recommendations for field forming.
- F. Separate dissimilar metals; use gasket fasteners, isolation shims, or isolation tape where needed to eliminate possibility of electrolytic action between metals.
- G. Install flashings as indicated on shop drawings. At flashing butt joints, provide a lap strap under flashing and seal lapped surfaces with a full bed of non-hardening sealant.
- H. Install square, plumb, straight, and true, accurately fitted, with tight joints and intersections maintaining the following installation tolerances:
 - 1. Variation From Plane or Location: 1/2 inch in 30 feet of length and up to 3/4 inch in 300 feet, maximum.
 - 2. Deviation of Vertical Member From True Line: 0.1 inch in 25 feet run, maximum.
 - 3. Deviation of Horizontal Member From True Line: 0.1 inch in 25 feet run, maximum.
 - 4. Offset From True Alignment Between Two Adjacent Members Abutting End To End, In Line: 0.03 inch, maximum.
- I. Replace damaged products.
 - 1. Exception: Field repairs of minor damage to finishes are permitted only when approved in writing by Architect, panel manufacturer, and fabricator.
 - 2. Field Repairs to Finishes: Using materials and methods sufficient that repairs are not discernible when viewed at distance of 10 feet under all typical light conditions experienced at the project.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Wall System Manufacturer's Field Services: Provide field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with instructions.
- C. Site Visits: Schedule two site visits during execution of installation.

3.05 CLEANING

- A. Ensure weep holes and drainage channels are unobstructed and free of dirt and sealants.
- B. Remove protective film after installation of joint sealers, after cleaning of adjacent materials, and immediately prior to completion of work.
- C. Remove temporary coverings and protection of adjacent work areas.
- D. Clean installed products in accordance with manufacturer's instructions.

3.06 PROTECTION

- A. Protect installed panel system from damage until Date of Substantial Completion.

END OF SECTION

**SECTION 07 5400
THERMOPLASTIC MEMBRANE ROOFING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Thermoplastic roofing membrane.
- B. Insulation, flat and tapered, mechanically attached.
- C. Vapor retarder, self-adhered.
- D. Flashings.
- E. Roofing stack boots and walkways.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood nailers and curbs.
- B. Section 07 6200 - Sheet Metal Flashing and Trim: Counterflashings, reglets and related accessories.

1.03 REFERENCE STANDARDS

- A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2023a.
- B. ASTM D6878/D6878M - Standard Specification for Thermoplastic Polyolefin-Based Sheet Roofing; 2021.
- C. NRCA (RM) - The NRCA Roofing Manual; 2024.
- D. NRCA (WM) - The NRCA Waterproofing Manual; 2021.
- E. UL (FRD) - Fire Resistance Directory; Current Edition.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.
 - 1. Review preparation and installation procedures and coordinating and scheduling required with related work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, surfacing, fasteners, and spacing of fasteners.
- C. Shop Drawings: Submit drawings that indicate joint or termination detail conditions, conditions of interface with other materials, setting plan for tapered insulation, mechanical fastener layout, and walkway layout.
- D. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during application, and supplementary instructions given.
- E. Warranty Documentation:
 - 1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
 - 2. Submit installer's certification that installation complies with warranty conditions for waterproof membrane.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this section with at least 5 years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact.
- B. Store materials in weather protected environment, clear of ground and moisture.
- C. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.

- D. Protect foam insulation from direct exposure to sunlight.

1.08 FIELD CONDITIONS

- A. Do not apply roofing membrane during unsuitable weather.
- B. Do not apply roofing membrane when ambient temperature is below 40 degrees F or above 90 degrees F.
- C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.
- E. Schedule applications so that no partially completed sections of roof are left exposed at end of workday.

1.09 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a two year period after Date of Substantial Completion.
- C. System Warranty: Provide manufacturer's system warranty agreeing to repair or replace roofing that leaks or is damaged due to wind or other natural causes.
 - 1. Warranty Term: 20 years.
 - 2. For repair and replacement include costs of both material and labor in warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Thermoplastic Polyolefin (TPO) Membrane Roofing Materials:
 - 1. Carlisle Roofing Systems, Inc: www.carlisle-syntec.com/#sle.
 - 2. Elevate; UltraPly TPO Membrane: www.holcimelevate.com/#sle.
 - 3. Flex Membrane International Corporation: www.flexroofingsystems.com/#sle.
 - 4. GAF: www.gaf.com/sle.
 - 5. GenFlex Roofing Systems, LLC: www.genflex.com.
 - 6. Johns Manville: www.jm.com/sle.
 - 7. Mule-Hide Products: www.mulehide.com.
 - 8. Versico, a division of Carlisle Construction Materials Inc: www.versico.com/#sle.
 - 9. Substitutions: See Section 01 6000 - Product Requirements.
- B. Insulation:
 - 1. Atlas Roofing Corporation: www.atlasroofing.com.
 - 2. Hunter Panels: www.hunterpanels.com/#sle.
 - 3. Listed membrane manufacturers approved products.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ROOFING - UNBALLASTED APPLICATIONS

- A. Thermoplastic Membrane Roofing: One ply membrane, fully adhered over vapor retarder, coverboard, and insulation.
- B. Roofing Assembly Requirements:
 - 1. Roof Covering External Fire Resistance Classification: UL (FRD) Class A.
- C. Acceptable Insulation Types - Constant Thickness Application:
 - 1. Minimum 2 layers of polyisocyanurate board.
- D. Acceptable Insulation Types - Tapered Application:
 - 1. Tapered polyisocyanurate board.

2.03 MEMBRANE ROOFING AND ASSOCIATED MATERIALS

- A. Membrane Roofing Materials:
 - 1. TPO: Thermoplastic polyolefin (TPO) complying with ASTM D6878/D6878M, sheet contains reinforcing fabrics or scrim.
 - a. Thickness: 60 mil, 0.060 inch, minimum.
 - 2. Sheet Width: Factory fabricated into largest sheets possible.
 - 3. Color: White.

- B. Seaming Materials: As recommended by membrane manufacturer.
- C. Vapor Retarder: Self-adhered, complying with requirements of fire rating classification; compatible with roofing and insulation materials.
 - 1. Product: 30 mil V-Force Vapor Barrier Membrane manufactured by Elevate or equivalent.
 - 2. Other Approved Product: 40 mil VapAir Seal 725TR Vapor Barrier Membrane manufactured by Carlisle or equivalent.
- D. Flexible Flashing Material: Same material as membrane.

2.04 INSULATION

- A. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.
 - 1. Classifications:
 - a. Type II:
 - 1) Class 1 - Faced with glass fiber reinforced cellulosic felt facers on both major surfaces of core foam.
 - 2) Compressive Strength: Classes 1-2-3, Grade 2 - 20 psi (138 kPa), minimum.
 - 3) Thermal Resistance, R-value: At 1-1/2 inch thick; Class 1, Grades 1-2-3 - 8.4 (1.48) at 75 degrees F.
 - 2. Board Size: 48 by 96 inch.
 - 3. Board Thickness: As detailed.
 - 4. Board Edges: Square.

2.05 ACCESSORIES

- A. Stack Boots: Prefabricated flexible boot and collar for pipe stacks through membrane; same material as membrane. Approved products as follows:
 - 1. Square Tube Flashing by SBC Industries of Elevate.
 - 2. UltraPly TPO Custom Pipe Boots by Elevate.
 - 3. Equivalent products by other roofing manufacturers are acceptable; products must be compatible with membrane and system warranty.
- B. Sheathing Joint Tape: Paper type, ____ inch wide, self-adhering.
- C. Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer.
- D. Membrane Adhesive: As recommended by membrane manufacturer.
- E. Sealants: As recommended by membrane manufacturer.
- F. Walkways: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
 - 1. Composition: Roofing membrane manufacturer's standard.
 - 2. Size: Manufacturer's standard size(s).
 - 3. Surface Color: Match roofing color.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secure.
- C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
- D. Verify deck surfaces are dry and free of snow or ice.
- E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

3.02 PREPARATION - METAL DECK

- A. Install deck sheathing on metal deck:
 - 1. Lay with long side at right angle to flutes; stagger end joints; provide support at ends.
 - 2. Cut sheathing cleanly and accurately at roof breaks and protrusions to provide smooth surface.
 - 3. Tape joints.

4. Mechanically fasten sheathing to roof deck, in accordance with roofing manufacturer's instructions.
 - a. Over entire roof area, fasten sheathing using 6 fasteners with washers per sheathing board.

3.03 INSTALLATION - GENERAL

- A. Perform work in accordance with manufacturer's instructions, NRCA (RM), and NRCA (WM) applicable requirements.
- B. Do not apply roofing membrane during unsuitable weather.
- C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.
- D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

3.04 VAPOR RETARDER AND INSULATION - UNDER MEMBRANE

- A. Vapor retarder application: Comply with requirements of fire rating classification. Lap and tape joints per vapor retarder manufacturers recommendations.
 1. Vapor retarder and insulation to be continuous under rooftop equipment unless noted otherwise. Fill voids inside roof curb with fiberglass insulation.
 2. Seal all vapor retarder penetrations with compatible products.
- B. Attachment of Insulation:
 1. Mechanically fasten insulation to deck in accordance with roofing manufacturer's instructions.
- C. Lay subsequent layers of insulation with joints staggered minimum 6 inch from joints of preceding layer.
 1. When installing over standing seam and infill insulation lay subsequent layers of insulation, long dimension, perpendicular to standing seams in addition to 6 inch staggering of joints.
- D. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.
- E. On metal deck, place boards perpendicular to flutes with insulation board edges bearing on deck flutes.
- F. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
- G. At roof drains, use factory-tapered boards to slope down to roof drains over a distance of 18 inches.
- H. Do not apply more insulation than can be covered with membrane in same day.
- I. Provide additional tapered insulation as required around mechanical equipment to avoid water ponding regardless of types and locations indicated on the drawings.
- J. Roof crickets or saddles shall have a 1/4 inch per foot of back slope minimum.

3.05 MEMBRANE APPLICATION

- A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
- B. Shingle joints on sloped substrate in direction of drainage.
- C. Overlap edges and ends and seal seams by method recommended by membrane manufacturer, minimum 1.5 inches unless greater overlap is required for system warranty. Seal permanently waterproof.
- D. At intersections with vertical surfaces:
 1. Extend membrane up a minimum of 8 inches onto vertical surfaces.
 2. Fully adhere flexible flashing over membrane and up to nailing strips.
- E. Around roof penetrations, seal flanges and flashings with flexible flashing.
- F. Coordinate installation of roof drains and related flashings.

- G. Coordinate the top edge of all boots and curbs to be a minimum of 8 inches above adjacent finished roofing surface.

3.06 CLEANING

- A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.
- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.
- C. Repair or replace defaced or damaged finishes caused by work of this section.

3.07 PROTECTION

- A. Protect installed roofing and flashings from construction operations.
- B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION

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**SECTION 07 6200
SHEET METAL FLASHING AND TRIM**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fabricated sheet metal items, including flashings, counterflashings, and other items indicated on the drawings.
- B. Sealants for joints within sheet metal fabrications.

1.02 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- B. ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems; 2022.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- D. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2018).
- E. CDA A4050 - Copper in Architecture - Handbook; current edition.
- F. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Samples: Submit two samples 8 by 8 inch in size illustrating metal finish color.

1.04 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with five years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

1.06 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion. Provide certified form of warranty on form furnished by the Owner.
- C. Provide ten year manufacturer's material and labor warranty to cover failure to prevent penetration of water.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

- A. Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch thick base metal.
 - 1. Do not use unfinished galvanized steel flashings in finished locations, interior or exterior, unless specifically indicated.
- B. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch thick base metal, shop pre-coated with PVDF coating.
 - 1. Polyvinylidene Fluoride (PVDF) Coating: Superior performing organic powder coating, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.

2. Color: As selected by Architect from manufacturer's full colors.
3. Face Heights: Flashings 8 inch or less shall be a minimum of 24 gauge, over 8 inches shall be 22 gauge, or as indicated on the drawings. Continuously supported flashing over 8 inches may be 24 gauge unless noted otherwise.

2.02 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Fabrication of copings to comply with ANSI/SPRI/FM 4435/ES-1.
- C. Form pieces in longest possible lengths.
- D. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- E. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- F. Fabricate corners from one piece with minimum 18-inch long legs; seam for rigidity, seal with sealant.

2.03 ACCESSORIES

- A. Fasteners: Galvanized steel, with soft neoprene washers.
- B. Primer Type: Zinc chromate.
- C. Sealant: Type specified in Section 07 9200.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 INSTALLATION

- A. Install manufactured products according to manufacturers instructions including all accessory components to create a complete system.
- B. Secure flashings in place using concealed fasteners.
- C. Apply sealant between metal flashings and felt flashings.
- D. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- E. Seal metal joints watertight.

END OF SECTION

SECTION 07 9200 JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- B. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).
- C. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2023.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
- C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
- E. Samples for Verification: Where custom sealant color is specified, obtain directions from Architect and submit at least two physical samples for verification of color of each required sealant.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section and with at least five years of documented experience.

1.05 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer Warranty: Provide five year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.
- C. Extended Correction Period: Correct defective work within five year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Base Manufacturer: Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com.
- B. Other Acceptable Manufacturers:
 - 1. Master Builders Solutions: www.master-builders-solutions.com/en-us.
 - 2. Bostik Inc: www.bostik-us.com.
 - 3. Dow Chemical Company: www.dow.com.
 - 4. Manus Products, Inc.: www.manus.net.
 - 5. Pecora Corporation: www.pecora.com.

6. Red Devil: www.reddevil.com.
7. Sherwin-Williams Company: www.sherwin-williams.com.
8. Sika Corporation: www.usa.sika.com.
9. W.R.Meadows, Inc: www.wrmeadows.com.
10. Hilti: www.hilti.com.
11. Substitutions: See Section 01 6000 - Product Requirements.

2.02 JOINT SEALANT APPLICATIONS

- A. Scope:
 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to:
 - a. Wall expansion and control joints.
 - b. Joints between door, window, and other frames and adjacent construction.
 - c. Joints and penetrations of pipes, tubes, conduit, ductwork, and structural framing through walls, ceilings, and floors in finished and unfinished spaces.
 - d. Joints between different exposed materials.
 - e. Openings below ledge angles in masonry.
 - f. Exterior Joints shall include those between non-conditioned spaces and conditioned spaces.
 - g. Other joints indicated below.
 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. Joints and penetrations of pipes, tubes, conduit, ductwork, and structural framing through walls, ceilings, and floors in finished and unfinished spaces.
 - c. Joints indicated on the drawings.
 - d. Interior joints to be sealed shall include those between non-conditioned spaces and conditioned spaces.
 - e. Other joints indicated below.
 3. Do not seal the following types of joints:
 - a. Intentional weep holes in masonry.
 - b. Joints indicated to be treated with manufactured expansion joint cover, or some other type of sealing device.
 - c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - d. Joints where installation of sealant is specified in another section.
 - e. Joints between suspended panel ceilings/grid and walls.
- B. Exterior Joints: Use nonsag polyurethane sealant, unless otherwise indicated.
 1. Control and Expansion Joints in Concrete Paving: Self-leveling polyurethane traffic-grade sealant.
- C. Interior Joints: Use nonsag polyurethane sealant, unless otherwise indicated.
 1. Wall and Ceiling Joints in Non-Wet Areas: Polyurethane sealant.
 2. Wall and Ceiling Joints in Wet Areas: Nonsag polyurethane sealant for continuous liquid immersion.
 3. Floor Joints in Wet Areas: Nonsag polyurethane non-traffic-grade sealant suitable for continuous liquid immersion.
 4. Joints between Fixtures in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; Refer to colors below.
 5. Other Floor Joints: Self-leveling polyurethane traffic-grade sealant.
- D. Interior Wet Areas: Bathrooms, restrooms, kitchens, food service areas, and food processing areas; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, cabinets, and other similar items.

2.03 JOINT SEALANTS - GENERAL

- A. Colors: Color shall be selected by the Architect from manufacturer's full range unless specifically indicated to be a specific color.

2.04 NONSAG JOINT SEALANTS

- A. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
 - 1. Products:
 - a. Tremsil 200 manufactured by Tremco Commercial Sealants.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Color: To be selected by Architect from manufacturer's standard range.
 - 3. Products:
 - a. Master Builders Solutions; MasterSeal NP1 or NP2: www.master-builders-solutions.com/en-us/#sle.
 - b. Tremco Commercial Sealants & Waterproofing; Dymeric 240 FC or Dymonic FC: www.tremcosealants.com/#sle.
 - c. Substitutions: See Section 01 6000 - Product Requirements.

2.05 SELF-LEVELING JOINT SEALANTS

- A. Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single or multicomponent; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion.
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Color: To be selected by Architect from manufacturer's full range.
 - 3. Products:
 - a. THC-901, Vulkem 445SSL (also Dymonic FC, or Dymeric 240 FC) manufactured by Tremco Commercial Sealants & Waterproofing.
 - b. MasterSeal SL 1, SL 2 (also NP 1, or NP 2 manufactured by Master Builders Solutions.
 - c. Substitutions: See Section 01 6000 - Product Requirements.

2.06 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
 - 1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type B - Bi-Cellular Polyethylene.
 - 2. Type for Joints Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type C - Closed Cell Polyethylene.
 - 3. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

- A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Provide joint sealant installations complying with ASTM C1193.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- D. Install bond breaker backing tape where backer rod cannot be used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
- H. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.04 CLEANING

- A. Clean adjacent soiled surfaces.

3.05 PROTECTION

- A. Protect sealants until cured.

END OF SECTION

ISSUE DATE - 06-13-2024

**SECTION 08 1113
HOLLOW METAL DOORS AND FRAMES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated hollow metal doors and frames.
- B. Thermally insulated hollow metal doors with frames.
- C. Hollow metal borrowed lites glazing frames.
- D. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 08 7100 - Door Hardware.
- B. Section 08 8000 - Glazing: Glass for doors and borrowed lites.
- C. Section 09 9123 - Interior Painting: Field painting.

1.03 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2022.
- C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2023.
- D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2020.
- E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2023, with Editorial Revision.
- G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2023.
- H. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.
- I. ASTM C476 - Standard Specification for Grout for Masonry; 2023.
- J. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- K. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.
- L. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- M. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
- N. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
- O. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames; 2017.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.

- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hollow Metal Doors and Frames:
 - 1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 2. Curries, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 3. Fleming Door Products, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 4. Mesker, dormakaba Group: www.meskeropeningsgroup.com/#sle.
 - 5. Republic Doors, an Allegion brand: www.republicdoor.com/#sle.
 - 6. Steelcraft, an Allegion brand: www.allegion.com/#sle.
 - 7. Technical Glass Products: www.tgpamerica.com/#sle.
 - 8. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Requirements for Hollow Metal Doors and Frames:
 - 1. Steel Sheet: Comply with one or more of the following requirements; galvanized steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
 - 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
 - 3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
 - 4. Door Edge Profile: Manufacturers standard for application indicated.
 - 5. Typical Door Face Sheets: Flush.
 - 6. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Flush.
 - 7. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
 - 8. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvanized) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
 - a. Based on NAAMM HMMA Custom Guidelines: Provide at least A25/ZF75 (galvanized) for interior applications, and at least A60/ZF180 (galvanized) or G60/Z180 (galvanized) for corrosive locations.
- B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

- A. Exterior Doors: Thermally insulated.
 - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 3 - Extra Heavy-duty.
 - b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 2 - Seamless.
 - d. Door Face Metal Thickness: 16 gauge, 0.053 inch, minimum.
 - e. Zinc Coating: A60/ZF180 galvanized coating; ASTM A653/A653M.
 - 2. Door Core Material: Polystyrene, 1 lbs/cu ft minimum density.

- a. Foam Plastic Insulation: Manufacturer's standard board insulation with maximum flame spread index (FSI) of 75, and maximum smoke developed index (SDI) of 450 in accordance with ASTM E84, and completely enclosed within interior of door.
- 3. Door Thickness: 1-3/4 inches, nominal.
- 4. Door Finish: Factory primed and field finished.
- B. Interior Doors, Non-Fire-Rated:
 - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 2 - Heavy-duty.
 - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 18 gauge, 0.042 inch, minimum.
 - 2. Door Core Material: Polystyrene, 1 lbs/cu ft minimum density.
 - a. Foam Plastic Insulation: Manufacturer's standard board insulation with maximum flame spread index (FSI) of 75, and maximum smoke developed index (SDI) of 450 in accordance with ASTM E84, and completely enclosed within interior of door.
 - 3. Door Thickness: 1-3/4 inches, nominal.
 - 4. Door Finish: Factory primed and field finished.

2.04 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Exterior Door Frames: Full profile/continuously welded type.
 - 1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A60/ZF180 coating.
 - 2. Frame Metal Thickness: 14 gauge, 0.067 inch, minimum.
 - 3. Frame Finish: Factory primed and field finished.
 - 4. Weatherstripping: Separate, see Section 08 7100.
- C. Interior Door Frames, Non-Fire Rated: Face welded type.
 - 1. Frame Metal Thickness: 16 gauge, 0.053 inch, minimum.
 - 2. Frame Finish: Factory primed and field finished.
- D. Borrowed Lites Glazing Frames: Construction and face dimensions to match door frames, and as indicated on drawings.
- E. Frames Depth: Size frame depth to accommodate wall assembly thickness and to allow proper attachment to assembly components.

2.05 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Finish: Paint in field. Color as selected by the Architect.

2.06 ACCESSORIES

- A. Glazing: As specified in Section 08 8000, factory installed.
- B. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.
- C. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.
- D. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

- A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.
- B. Fill frames at exterior doors and doors between heated and unconditioned space with foam-in-place insulation. Product: Great Stuff Pro window and door by Dupont or approved equivalent.

3.03 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Coordinate frame anchor placement with wall construction.
- C. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- D. Install door hardware as specified in Section 08 7100.

3.04 TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.05 ADJUSTING

- A. Adjust for smooth and balanced door movement.

3.06 SCHEDULE

- A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION

**SECTION 08 3313
COILING COUNTER DOORS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated coiling counter doors and operating hardware.

1.02 RELATED REQUIREMENTS

- A. Section 04 2000 - Unit Masonry.

1.03 REFERENCE STANDARDS

- A. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- B. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturer's standard literature showing materials and details of construction and finish.
- C. Shop Drawings: Indicate rough and actual opening dimensions, anchorage methods, hardware locations, and installation details.
- D. Samples: Two slats, 4 inches long, illustrating shape, color, and finish texture.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: Overhead Door Corporation; Counter Door - Model 652: www.overheaddoor.com/#sle.
- B. Coiling Counter Doors:
 - 1. C.H.I. Overhead Doors: www.chiohd.com/#sle.
 - 2. Cornell Iron Works; ESC10: www.cornelliron.com.
 - 3. McKeon Door Company: www.mckeondoor.com.
 - 4. Overhead Door Corporation; Counter Door - Model 652: www.overheaddoor.com/#sle.
 - 5. Raynor Garage Doors; DuraShutter, Model CA: www.raynor.com/#sle.
 - 6. The Cookson Company[<>]: www.cooksondoor.com.
 - 7. Wayne-Dalton, a Division of Overhead Door Corporation: www.wayne-dalton.com/#sle.
 - 8. Substitutions: See Section 01 6000 - Product Requirements.

2.02 COILING COUNTER DOORS

- A. Coiling Counter Metal Doors, Non-Fire-Rated: Aluminum slat curtain.
 - 1. Mounting: Interior face mounted.
 - 2. Nominal Slat Size: 1-1/4 inches wide.
 - 3. Slat Profile: Flat.
 - 4. Finish, Aluminum: Anodized.
 - 5. Guides: Formed track; same material and finish unless otherwise indicated.
 - 6. Manual hand crank lift operation.
 - 7. Locking Devices: Slide bolt on inside.

2.03 COMPONENTS

- A. Metal Curtain Construction: Interlocking, single-thickness slats.
 - 1. Slat Ends: Alternate slats fitted with end locks to act as wearing surface in guides and to prevent lateral movement.
 - 2. Curtain Bottom: Fitted with angles to provide reinforcement and positive contact in closed position.
 - 3. Aluminum Slats: ASTM B221 (ASTM B221M), aluminum alloy Type 6063; minimum thickness 0.05 inch.
- B. Guide Construction: Continuous, of profile to retain door in place, with mounting brackets of same metal.

1. Aluminum Guides: Extruded aluminum channel, with wool pile runners along inside.
- C. Hood Enclosure: Internally reinforced to maintain rigidity and shape.
- D. Lock Hardware:
 1. Latching Mechanism: Inside mounted, adjustable keeper, spring activated latch bar feature to keep in locked or retracted position.
 2. Slide Bolt: Provide on single-jamb side, extending into slot in guides.
- E. Roller Shaft Counterbalance: Steel pipe and torsion steel spring system, capable of producing torque sufficient to ensure smooth operation of curtain from any position and capable of holding position at mid-travel; with adjustable spring tension; requiring 25 lb nominal force to operate.
- F. Countertops: Refer to Section 12 3600 - Countertops for counter top construction requirements at exterior locations.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that adjacent construction is suitable for door installation.
- B. Verify that door opening is plumb, header is level, and dimensions are correct.
- C. Notify Architect of any unacceptable conditions or varying dimensions.
- D. Commencement of installation indicates acceptance of substrate and door opening conditions.
- E. Verify that exterior opening location countertops have either a slope to the exterior side, or a dropped counter to prevent water leakage where applicable. Notify architect immediately upon unsatisfactory conditions before installation of exterior door units.

3.02 INSTALLATION

- A. Install units in accordance with manufacturer's instructions.
- B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
- C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.
- D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.
- E. Install perimeter trim as indicated.
- F. Install weatherstripping and seals at exterior locations for a weathertight seal where applicable.

3.03 TOLERANCES

- A. Maintain dimensional tolerances and alignment with adjacent work.
- B. Maximum Variation From Plumb: 1/16 inch.
- C. Maximum Variation From Level: 1/16 inch.
- D. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch per 10 ft straight edge.

3.04 ADJUSTING

- A. Adjust operating assemblies for smooth and noiseless operation.

3.05 CLEANING

- A. Clean installed components.
- B. Remove labels and visible markings.

END OF SECTION

**SECTION 08 4413
GLAZED ALUMINUM CURTAIN WALLS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aluminum-framed curtain wall, with vision glazing and infill panels.

1.02 RELATED REQUIREMENTS

- A. Section 08 4313 - Aluminum-Framed Storefronts: Entrance framing and doors.
- B. Section 08 8000 - Glazing.

1.03 REFERENCE STANDARDS

- A. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site; 2015.
- B. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.
- C. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2020.
- D. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.
- E. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- F. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
- G. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.
- H. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2023).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of other components that comprise the exterior enclosure.
- B. Preinstallation Meeting: Conduct a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, internal drainage details, glazing, and infill.
- C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related Work, expansion and contraction joint location and details, and field welding required.
- D. Shop Drawings: Provide details of proposed structural sealant glazing (SSG) and weather sealant joints indicating dimensions, materials, bite, thicknesses, profile, and support framing.
- E. Design Data: Provide framing member structural and physical characteristics and engineering calculations, and identify dimensional limitations; include load calculations at points of attachment to building structure.
- F. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

- A. Designer Qualifications: Design curtain wall and its structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed at the State in which the Project is located.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with not less than five years of documented experience.

- C. Installer Qualifications: Company specializing in performing work of type specified and with at least five years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Provide five year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units.
- C. Finish Warranty: Provide 5-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design:
 - 1. Tubelite, Inc., 400T Series Curtain Wall: www.tubeliteinc.com/#sle.
- B. Glazed Aluminum Curtain Walls Manufacturers:
 - 1. Arcadia, Inc: www.arcadiainc.com/#sle.
 - 2. Boyd Aluminum: www.boydaluminum.com/#sle.
 - 3. CMI Architectural Products, Inc: www.cmiarch.com/#sle.
 - 4. EFCO, LLC: www.efcocorp.com/#sle.
 - 5. FreMarq Innovations: www.fremarqinnovations.com/#sle.
 - 6. Kawneer North America: www.kawneer.com/#sle.
 - 7. Manko Window Systems, Inc: www.mankowindows.com/#sle.
 - 8. Oldcastle Building Envelope: www.oldcastlebe.com/#sle.
 - 9. Pittco Architectural Metals Inc: www.pittcometals.com/#sle.
 - 10. Tubelite, Inc: www.tubeliteinc.com/#sle.
 - 11. Wausau Window and Wall Systems: www.wausauwindow.com/#sle.
 - 12. YKK AP America, Inc: www.ykkap.com/commercial/#sle.
 - 13. Substitutions: See Section 01 6000 - Product Requirements.

2.02 CURTAIN WALL

- A. Aluminum-Framed Curtain Wall: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
 - 1. Outside glazed, with pressure plate and mullion cover.
 - 2. Vertical Mullion Face Width: 2-1/2 inches.
 - 3. Vertical Mullion Depth From Face of Glazing to Back of Frame: 6-1/4 inches.
 - 4. Overall System Depth: 8-1/4 inches.
 - 5. Finish: Class I natural anodized.
 - a. Factory finish surfaces that will be exposed in completed assemblies.
 - b. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
 - 6. Provide flush joints and corners, weathersealed, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for imposed loads.
 - 7. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
 - 8. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
- B. Structural Performance Requirements: Design and size components to withstand the following load requirements without damage or permanent set.

1. Design Wind Loads: Comply with applicable codes and refer to structural notes on the drawings.
2. Movement: Accommodate the following movement without damage to components or deterioration of seals:
 - a. Expansion and contraction caused by 180 degrees F surface temperature.
 - b. Expansion and contraction caused by cycling temperature range of 170 degrees F over a 12 hour period.
 - c. Movement of curtain wall relative to perimeter framing.
 - d. Deflection of structural support framing, under permanent and dynamic loads.
- C. Water Penetration Resistance on Manufactured Assembly: No uncontrolled water on indoor face when tested as follows:
 1. Test Pressure Differential: 10 psf.
 2. Test Method: ASTM E331.
- D. Air Leakage: 0.06 cfm/sq ft maximum leakage of wall area when tested in accordance with ASTM E283/E283M at 6.24 psf pressure difference across assembly.

2.03 COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
- B. Glazing: See Section 08 8000.
- C. Swing Doors: Same manufacturer; products: Standard Wide Style by Tubelite or an approved equivalent.
 1. Thickness: 1-3/4 inches.
 2. Top Rail: 5 inches wide.
 3. Vertical Stiles: 5 inches wide.
 4. Bottom Rail: 10 inches wide.
 5. Glazing Stops: Square.
 6. Door Framing Members: Tubular aluminum sections, non-thermally broken.
- D. Break Metal Covers: Aluminum, 0.040 inch thick, finish to match curtain wall framing members.

2.04 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M).
- B. Sheet Aluminum: ASTM B209/B209M.
- C. Fasteners: Stainless steel; type as required or recommended by curtain wall manufacturer.
- D. Exposed Flashings: Aluminum sheet, 20-gauge, 0.032-inch minimum thickness; finish to match framing members.
- E. Concealed Flashings: Stainless steel, 26-gauge, 0.0187-inch minimum thickness.
- F. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- G. Glazing Accessories: See Section 08 8000.

2.05 FINISHES

- A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.

2.06 ACCESSORIES

- A. Shims: Plastic shims.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify dimensions, tolerances, and method of attachment with other related work.
- B. Verify that curtain wall openings and adjoining water-resistive and air barrier seal materials are ready to receive work of this section.
- C. Verify that anchorage devices have been properly installed and located.

3.02 INSTALLATION

- A. Install curtain wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- G. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- H. Pressure Plate Framing: Install glazing and infill panels using exterior dry glazing method; see Section 08 8000.
- I. Coordinate attachment and seal of perimeter air and vapor barrier materials.
- J. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet noncumulative or 0.5 inches per 100 feet, whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.
- C. Sealant Space Between Curtain Wall Mullions and Adjacent Construction: Maximum of 3/4 inch and minimum of 1/4 inch.

3.04 ADJUSTING

- A. Adjust operating sash for smooth operation.

3.05 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, take care to remove dirt from corners, and wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

3.06 PROTECTION

- A. Protect installed products from damage until date of Substantial Completion.

END OF SECTION

**SECTION 08 7100
DOOR HARDWARE**

PART 1 GENERAL

1.01 SECTION INCLUDES -- (DOOR HARDWARE TO BE PROVIDED AT A LATER DATE)

- A. Hardware for doors.

PART 2 PRODUCTS

2.01 PRODUCTS

- A. Products.

PART 3 EXECUTION

3.01 EXECUTION

- A. Execution.

END OF SECTION

ISSUE DATE - 06-13-2024

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**SECTION 08 7913
KEY STORAGE EQUIPMENT**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Key Lock Box.

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate the installation of exterior finishes, weather barrier, flashings and sealants.
 - 1. Ensure a flat smooth surface from rough opening of vault equipment to a minimum of 1 beyond the vault equipment flange is provided.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide installation instructions and product data covering all components of the specified products.

1.04 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a one year period after Date of Substantial Completion.
- C. Provide manufacturers standard product warranty.

PART 2 PRODUCTS

2.01 KEY BOX

- A. Manufacturers
 - 1. KNOX Company: www.knoxbox.com.
 - a. Verify with the city in which the project is located if box must be purchased from that city prior to bidding on the project.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Key Box - High Security Industrial/Government Key Box.
 - 1. Exterior Dimension: 4 inch high, 5 inch wide, 3.25 inch deep.
 - 2. Color: As selected by Architect.
 - 3. Mounting: Recessed.
 - 4. Product: Knox-Box 3200 Series Hinged Door Model.

2.02 ACCESSORIES

- A. Fasteners: Manufacturer standard for mounting type indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify recess in precast panel is according to manufacturer recommendation for width, depth, and height.
- B. Verify the recess location is plumb.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Take care to make sure that the front of the shell housing, including the cover plate and screw heads, are flush with the finish face of wall.

3.03 TOLERANCES:

- A. Maximum Variation From True Position: 1/16 inch.
- B. Maximum Offset From True Alignment: 1/16 inch.

3.04 CLEANING

- A. Clean box inside and out of any dust and debris.

3.05 PROTECTION

- A. Protect installed box from subsequent construction operations.

END OF SECTION

ISSUE DATE - 06-13-2024

SECTION 08 8000 GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Insulating glass units.
- B. Glazing units.
- C. Glazing compounds.

1.02 RELATED REQUIREMENTS

- A. Section 08 1113 - Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.
- B. Section 08 4413 - Glazed Aluminum Curtain Walls: Glazing provided as part of wall assembly.

1.03 REFERENCE STANDARDS

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.
- B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).
- C. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).
- D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- E. ASTM C1036 - Standard Specification for Flat Glass; 2021.
- F. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.
- G. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).
- H. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.
- I. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.
- J. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.
- K. GANA (SM) - GANA Sealant Manual; 2008.
- L. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2023.
- M. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2023.
- N. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2023.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.
- C. Samples: Submit two samples 12 by 12 inch in size of glass units.
- D. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

1.06 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 40 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Float Glass Manufacturers:
 - 1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
 - 2. Guardian Glass, LLC: www.guardianglass.com/#sle.
 - 3. Pilkington North America Inc: www.pilkington.com/na/#sle.
 - 4. Saint Gobain North America: www.saint-gobain.com/#sle.
 - 5. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.
 - 6. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

- A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
 - 1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
 - 2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
 - 3. Glass thicknesses listed are minimum.
- B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
 - 1. In conjunction with weather barrier related materials described in other sections.
- C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
 - 1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 - 2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 - 3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

- A. Float Glass: Provide float glass based glazing unless otherwise indicated.
 - 1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
 - 2. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
 - 3. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.

2.04 INSULATING GLASS UNITS

- A. Basis of Design: Products listed by Viracon are considered the "basis of design" and not considered proprietary. Submit two 12 inch by 12 inch samples of insulated glass units to Architect for acceptance for all other products.
- B. Do not provide coatings on tinted glass that change the appearance from the intended color. Alternate combination of tinted glass and coatings will be considered and will only be approved based on actual sample.
- C. Manufacturers:
 - 1. Glass: Any of the manufacturers specified for float glass.
 - 2. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
 - 3. Guardian Glass, LLC: www.guardianglass.com/#sle.
 - 4. Pilkington North America Inc: www.pilkington.com/na/#sle.
 - 5. Viracon, Apogee Enterprises, Inc: www.viracon.com/#sle.
 - 6. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.

7. Oldcastle Building Envelope: www.obe.com.
 8. Substitutions: See Section 01 6000 - Product Requirements.
- D. Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
 2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
 3. Spacer Color: Black.
 4. Edge Seal:
 - a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
 - b. Color: Black.
 5. Purge interpane space with dry air, hermetically sealed.
- E. Type IG-1 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
 2. Space between lites filled with argon.
 3. Outboard Lite: Annealed float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - b. Coating: Low-E (passive type), on #2 surface.
 4. Inboard Lite: Annealed float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 5. Total Thickness: 1 inch.
 6. Performance Values: Based on Viracon's VE1-2M Clear.
- F. Type IG-2 - Insulating Glass Units: Safety glazing.
1. Applications:
 - a. Glazed lites in exterior doors.
 - b. Glazed sidelights and panels next to doors.
 - c. Other locations required by applicable federal, state, and local codes and regulations.
 - d. Other locations indicated on drawings.
 2. Space between lites filled with argon.
 3. Glass Type: Same as other vision glazing except use fully tempered float glass for both outboard and inboard lites.
 4. Total Thickness: 1 inch.

2.05 GLAZING UNITS

- A. Type G-1 - Monolithic Safety Glazing: Non-fire-rated.
1. Applications:
 - a. Glazed lites in doors, except fire doors.
 - b. Glazed sidelights to doors, except in fire-rated walls and partitions.
 - c. Other locations required by applicable federal, state, and local codes and regulations.
 - d. Other locations indicated on drawings.
 2. Glass Type: Fully tempered safety glass as specified.
 3. Tint: Clear.
 4. Thickness: 1/4 inch, nominal.

2.06 GLAZING COMPOUNDS

- A. Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; nonbleeding, nonstaining; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

2.07 ACCESSORIES

- A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.
- B. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.

- C. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

- A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

3.02 PREPARATION

- A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

- A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.
- B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

- A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - DRY GLAZING METHOD (TAPE AND TAPE)

- A. Application - Interior Glazed: Set glazing infills from the interior of the building.
- B. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.
- C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- D. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
- E. Place glazing tape on free perimeter of glazing in same manner described above.
- F. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
- G. Carefully trim protruding tape with knife.

3.06 CLEANING

- A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
- B. Remove nonpermanent labels immediately after glazing installation is complete.
- C. Clean glass and adjacent surfaces after sealants are fully cured.
- D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.07 PROTECTION

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.
- B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION

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**SECTION 09 2116
GYPSUM BOARD ASSEMBLIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Acoustic insulation.
- D. Gypsum wallboard.
- E. Backing Board For Non-Wet Areas, Gypsum-Based Board Tile Backer.
- F. Joint treatment and accessories.
- G. Prefabricated Wood Blocking System.
- H. Drywall Grid Suspension System.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.

1.03 REFERENCE STANDARDS

- A. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing; 2020.
- B. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing; 2015, with Errata (2020).
- C. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members; 2015.
- D. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2020.
- E. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017 (Reapproved 2022).
- F. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.
- G. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.
- H. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2020.
- I. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2023.
- J. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2022.
- K. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2022.
- L. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2019.
- M. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.
- N. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- O. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
- P. ASTM E413 - Classification for Rating Sound Insulation; 2022.
- Q. GA-214 - Levels of Finish for Gypsum Panel Products; 2021.
- R. GA-216 - Application and Finishing of Gypsum Panel Products; 2021.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.

- B. Shop Drawings: Indicate the location of all expansion joints in plan and elevation view. Include details at intersections of walls, floors, ceilings, and other construction.
- C. Product Data:
 - 1. Provide data on metal framing, gypsum board, accessories, and joint finishing system.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified and with at least five years of documented experience.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
- B. Interior Partitions, Indicated as Acoustic: Provide completed assemblies with the following characteristics:
 - 1. Acoustic Attenuation: STC as indicated calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
 - 2. Walls indicated to received sound insulation that are not indicated to meet an STC rating are not intended to be constructed as an acoustic assembly.

2.02 METAL FRAMING MATERIALS

- A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S220 or equivalent.
- B. Manufacturers - Metal Framing, Connectors, and Accessories:
 - 1. ClarkDietrich: www.clarkdietrich.com/#sle.
 - 2. MarinoWARE: www.marinoware.com/#sle.
 - 3. Phillips Manufacturing Co: www.phillipsmfg.com/#sle.
 - 4. Telling Industries: www.tellingindustries.com/#sle.
 - 5. The Steel Network, Inc: www.steelnetwork.com.
 - 6. Custom Stud, Inc: www.customstud.com.
 - 7. Super Stud Building Products, Inc: www.buysuperstud.com.
 - 8. MRI Steel Framing, LLC: www.mristeel framing.com.
 - 9. Substitutions: See Section 01 6000 - Product Requirements.
- C. Nonstructural Framing System Components: AISI S220; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.
 - 1. Shapes and Sizes: As indicated on the drawings and as follows.
 - a. Studs: "C" shaped with flat or formed webs.
 - b. Runners: "U" shaped, sized to match studs.
- D. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and screwed to secondary deflection channel set inside but unattached to top track.
- E. Grid Suspension Systems: Steel grid system of main tees and support bars connected to structure using hanging wire.
 - 1. Main runners with double stitched web for added strength and knurled face for easier screw installation.
 - 2. Cross tees feature staked-on end tabs for optimal tightness and ease of installation; Stepped-end design featured on cross tees
 - 3. Material: Classified Heavy Duty per ASTM C635/C635M; Utilizes G40 hot-dipped galvanized construction for superior corrosion resistance.
 - 4. Products:
 - a. Armstrong; Drywall Grid System: www.armstrongceilings.com.
 - b. CertainTeed Corporation: www.certainteed.com/ceilings-and-walls/#sle.
 - c. Rockfon; Chicago Metallic Drywall Grid: www.rockfon.com.
 - d. USG Corporation; Drywall Suspension System: www.usg.com/#sle.
 - e. Substitutions: See Section 01 6000 - Product Requirements.

2.03 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
 - 1. American Gypsum Company: www.americangypsum.com/#sle.
 - 2. CertainTeed Corporation: www.certainteed.com/#sle.
 - 3. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.
 - 4. Gold Bond Building Products, LLC provided by National Gypsum Company: www.goldbondbuilding.com/#sle.
 - 5. PABCO Gypsum: www.pabco gypsum.com/#sle.
 - 6. USG Corporation: www.usg.com/#sle.
 - 7. Substitutions: See Section 01 6000 - Product Requirements.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
 - 2. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL, or WH listed.
 - 3. Thickness:
 - a. Vertical Surfaces: 5/8 inch.
 - b. Ceilings: 5/8 inch.

2.04 GYPSUM BOARD ACCESSORIES

- A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: 3 or more inches as required to fill wall depth.
 - 1. ASTM E84 surface burning characteristics: Flame Spread Index 25 or less; Smoke Developed Index 450 or less.
- B. Sheet Vapor Retarder: Clear polyethylene film for above grade application, 6 mil thick.
- C. Finishing Accessories: ASTM C1047, extruded aluminum alloy (6063 T5), galvanized steel sheet ASTM A924/A924M G90, rolled zinc, or rigid plastic, unless noted otherwise.
 - 1. Types: As detailed or required for finished appearance.
 - a. Products for specific applications:
 - 1) Expansion Joints (V-Groove Joint): Trim-Tex #093V Expansion joint or approved equal shall be used at expansion joints in flat wall or ceiling applications.
 - 2) Angled Joints: Trim-Tex Magic Corner or approved equal shall be used at angular walls and ceilings.
 - 3) Wall Termination: Trim-Tex Tear Away XT Extra Tall Masking or approved equal shall be used at all locations where new construction terminates into existing construction or non-gypsum construction.
 - 2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.
 - 3. Products:
 - a. Same manufacturer as framing materials.
 - b. Fry Reglet Corporation: www.fryreglet.com/#sle.
 - c. Phillips Manufacturing Co: www.phillipsmfg.com/#sle.
 - d. Trim-tex, Inc: www.trim-tex.com/#sle.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
- D. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 - 1. Paper Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
 - 2. Joint Compound: Drying type, vinyl-based, ready or field-mixed.
 - 3. Joint Compound (Optional): Setting type, field-mixed.
- E. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.
- F. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.
- G. Prefabricated Blocking Systems: DANBACK 3/4 inch standard/treated plywood or approved equal: www.danback.com.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

- A. Metal Framing: Install in accordance with ASTM C1007/AISI S220 and manufacturer's instructions.
- B. Drywall Grid Suspension System Ceilings: Install suspension system in accordance with manufacturers instructions.
- C. Studs: Space studs at 16 inches on center.
 - 1. Extend partition framing to structure where indicated and to ceiling in other locations.
 - 2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
 - 3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.
- D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
- E. Blocking: Install wood blocking for support of:
 - 1. Items indicated on the drawings and in the specifications.

3.03 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Provide solid continuous shims under first layer of gypsum board as necessary to minimize variations in plane. Tolerance of surface shall be as indicated.
- C. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
 - 1. Exception: Tapered edges to receive joint treatment at right angles to framing.
- D. Installation on framing: Use screws for attachment of boards.

3.04 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as follows:
 - 1. Not more than 30 feet apart on walls, soffits, and ceilings in any direction.
 - 2. At intersections of soffits and intersecting walls.
 - 3. At intersection of half height wall and intersecting walls.
 - 4. At locations indicated on the drawings.
 - 5. Other locations where cracking may occur due to changes in height and structure.
 - 6. All jointing locations shall be indicated on shop drawings.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.05 JOINT TREATMENT

- A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying or setting joint compound and finish with drying or setting joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C 840 (additional reference guideline; GA-214 - Recommended Levels of Gypsum Board Finish), as follows:
 - 1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas including the following: (Level 5 shall be a thin skim coat of joint compound trowel applied; no spray or roller applied products will be accepted.)
 - a. Walls that are perpendicular to large glazed openings where glazed openings are 50% or more of the area of the wall, within the room, in which they are located.
 - b. Tall wall 16'-0" and taller.
 - c. Long walls and ceilings 30'-0" and longer.
 - d. Large wall and ceilings area of 500 square feet and larger.
 - e. Walls with glass-mat-faced wallboard products.

- f. Walls, ceilings, and areas specifically indicated on the drawings.
- 2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 - a. No visible defects should be apparent under normal lighting conditions. Provide Level 5 finish where defects become apparent at no additional cost to the Owner.
 - b. Contractors that cannot guarantee their Level 4 finish will be free of visible defects under normal lighting conditions should provide a Level 5 finish.
 - c. If the Architect or Owner is unsatisfied with a Level 4 finish due to visible defects under normal lighting conditions then a Level 5 finish shall be installed at no additional cost to the Owner. No exceptions.
- 3. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
- 4. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
 - 2. Tapered edges of gypsum board that are not located at taped and filled joints shall also be filled and sanded smooth to match the plane of the wall.

3.06 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

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SECTION 09 5100 ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

1.02 REFERENCE STANDARDS

- A. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.
- B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- D. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2023.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate grid layout and related dimensioning, junctions with other ceiling finishes, and changes in elevation. Detail each type of junction and elevation change at no less than 1-1/2 inch per 12 inches annotating all related materials.
- C. Product Data: Provide data on suspension system components and acoustical units.
- D. Samples: Submit two samples 4 by 4 inch in size illustrating material and finish of acoustical units.
- E. Samples: Submit two samples each, 12 inches long, of suspension system main runner.
- F. 'Manufacturer's Installation Instructions: Indicate special procedures, special procedures, perimeter conditions requiring special attention, and perimeter conditions requiring special attention.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.05 QUALITY ASSURANCE

- A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.
- B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.

1.06 FIELD CONDITIONS

- A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acoustic Tiles/Panels:
 - 1. Armstrong World Industries, Inc: www.armstrongceilings.com/#sle.
 - 2. Certainteed Architectural: www.certainteed.com/ceilings-and-walls/#sle.
 - 3. USG Corporation: www.usg.com/ceilings/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

- B. Suspension Systems:
 - 1. Same as for acoustical units.

2.02 ACOUSTICAL UNITS

- A. Acoustical Panels: Painted mineral fiber, with the following characteristics:
 - 1. Classification: ASTM E1264 Type III.
 - 2. Size: 24 by 24 inches.
 - 3. Thickness: 3/4 inch.
 - 4. Color: White.
 - 5. Suspension System: Exposed grid.
 - 6. Product: Armstrong Cirrus Angled Tegal 15/16".

2.03 SUSPENSION SYSTEM(S)

- A. Manufacturers:
 - 1. Same as for acoustical units.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
- C. Exposed Suspension System: Hot-dip galvanized steel grid and cap.
 - 1. Application(s): Exposed Grid Unless Indicated Otherwise.
 - 2. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
 - 3. Profile: Tee; 15/16 inch face width.
 - 4. Construction: Double web.
 - 5. Finish: Baked enamel.
 - 6. Color: White.

2.04 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.
- B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.
- C. Hold-Down Clips: Manufacturer's standard clips to suit application.
- D. Perimeter Moldings: Same metal and finish as grid.
 - 1. At Non-concealed Grid and Elevation Changes in Grid: Provide extruded aluminum pieces by same manufacturer as grid in height and profile indicated.
 - a. Manufactured by same grid manufacturer.
 - b. Edge height: As indicated.
 - 2. At Concealed Grid: Provide exposed L-shaped molding.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C 636/C 636M and ASTM C 636/C 636M and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Locate system on room axis according to reflected plan.
- D. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Use longest practical lengths.
- E. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.

- F. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- G. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- H. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- I. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- J. Do not eccentrically load system or induce rotation of runners.
- K. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Use longest practical lengths.
 - 2. Overlap and rivet corners.

3.03 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Lay directional patterned units with pattern parallel to longest room axis.
- D. Fit border trim neatly against abutting surfaces.
- E. Install units after above-ceiling work is complete.
- F. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- G. Cutting Acoustical Units:
 - 1. Cut to fit irregular grid and perimeter edge trim.
 - 2. Make field cut edges of same profile as factory edges.
- H. Install hold-down clips on panels within 10 ft of an exterior door.

3.04 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

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**SECTION 09 6500
RESILIENT FLOORING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient base.

1.02 REFERENCE STANDARDS

- A. ASTM F1861 - Standard Specification for Resilient Wall Base; 2021.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Wall Base: 20 linear feet of each type and color.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum five years documented experience.
- B. Installer Qualifications: Company specializing in installing specified flooring with minimum five years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.

1.06 FIELD CONDITIONS

- A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- B. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 RESILIENT BASE

- A. Resilient Base: ASTM F1861, Type TV, vinyl, thermoplastic; top set Style B, Cove.
 - 1. Manufacturers:
 - a. Allstate: www.allstaterubber.com/#sle.
 - b. Flexco Corporation: www.flexcofloors.com/#sle.
 - c. Johnsonite, a Tarkett Company: www.johnsonite.com.
 - d. Mannington Commercial: www.manningtoncommercial.com#sle.
 - e. nora: www.norarubber.com/#sle.
 - f. Roppe Corporation: www.roppe.com/#sle.
 - g. Substitutions: See Section 01 6000 - Product Requirements.
 - 2. Height: 4 inches.
 - 3. Thickness: 0.125 inch.
 - 4. Finish: Satin.
 - 5. Length: Roll.
 - 6. Color: To be selected by Architect from manufacturer's full range.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

1. Fill all voids with approved products to create a solid and continuous surface at all resilient base locations.

3.02 PREPARATION

- A. Clean substrate.

3.03 INSTALLATION - RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 48 inches between joints.
- B. Miter internal corners. At external corners, 'V' cut back of base strip to 2/3 of its thickness and fold. At exposed ends, use premolded units.
- C. Minimum 24 inches to splice from any outside corner.
- D. Install base on solid backing. Bond tightly to wall and floor surfaces.
- E. Scribe and fit to door frames and other interruptions.

3.04 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.

3.05 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

**SECTION 09 9113
EXTERIOR PAINTING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
 - 1. Exposed surfaces of primed and unprimed metal items unless specifically indicated to not be painted.
 - 2. Mechanical and Electrical:
 - a. Shop-primed items.
 - b. Paint metals that are not resistant to corrosion.
- C. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
 - 5. Floors, unless specifically indicated.
 - 6. Glass.
 - 7. Concealed pipes, ducts, and conduits.

1.02 DEFINITIONS

- A. Comply with ASTM D16 for interpretation of terms used in this section.

1.03 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; Current Edition.
- B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2024.
- C. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.
- D. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).
- E. SSPC-SP 2 - Hand Tool Cleaning; 2018.
- F. SSPC-SP 3 - Power Tool Cleaning; 2018.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - 2. MPI product number (e.g. MPI #47).
 - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
 - 4. Manufacturer's installation instructions.
 - 5. If proposal of substitutions is allowed under submittal procedures, explanation of substitutions proposed.
- C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is specified, submit samples in only that sheen.
 - 2. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens not required.
 - 3. Allow 15 days for approval process, after receipt of complete samples by Architect.

4. Paint color submittals will not be considered until color submittals for major materials not to be painted, such as factory finished items, have been approved.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 1. See Section 01 6000 - Product Requirements, for additional provisions.
 2. Do not provide or leave extra paint materials for the Owner.
 3. Do provide product info, color names, and installation locations for all products and colors. Information shall be included in the Operation and Maintenance Manual.

1.05 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
 1. If a single manufacturer cannot provide specified products, minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.
- B. Paints:
 1. Base Manufacturer: Sherwin Williams: www.sherwin-williams.com.
 2. Other Manufacturers: Approved products shall meet performance and physical characteristics of base manufacturer (basis of design) product including published ratio of solids by volume, plus or minus two percent.
- C. Other Acceptable Manufacturers: Submit product information for each line of paint for Architect's approval. Substitutions of Base Manufacturer's products may not be accepted during the shop drawing process.
 1. Behr Paint Company: www.behr.com/#sle.
 2. Benjamin Moore & Co: www.benjaminmoore.com.
 3. Carboline: www.carboline.com.
 4. Diamond Vogel Paints: www.diamondvogel.com/#sle.
 5. Hallman Lindsay Paint of Wisconsin: www.hallmanlindsay.com.
 6. PPG Paints: www.ppgpaints.com/#sle.
 7. Pratt & Lambert Paints: www.prattandlambert.com/#sle.
 8. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
 9. Tnemec: www.tnemec.com.
 10. Valspar Corporation: www.valsparpaint.com/#sle.
- D. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.
 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties,

- and capable of drying or curing free of streaks or sags.
 - a. Spayed finish; is preferred on all metal surfaces; is required on the following surfaces:
 - 1) Metal doors and frames; prior to hardware installation.
- 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- 3. Provide commercial grade paint systems by approved paint manufacturer for substrates not specifically covered under paint systems.
 - a. Consult with Architect/Engineer/Designer for approval of additional products and systems. Provide quantifiable product information.
- 4. Supply each paint material in quantity required to complete entire project's work from a single production run.
- 5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Volatile Organic Compound (VOC) Content:
 - 1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
- E. Colors: As indicated on drawings.
 - 1. Where indicated or scheduled colors do not match the paint product lines indicated below it is anticipated that colors will be color matched; product lines below are intended to set a level of standard for the product lines used for each application.
 - 2. Locations Not Indicated: Selection to be made by Architect after award of contract.
 - 3. Extend colors to surface edges; colors may change at any edge as directed by Architect.
- F. Coats: The number of coats specified, are based on manufacturer's recommendations. Provide for additional coats, as necessary, for complete coverage and true color. Additional coats due to a lack of coverage shall be provided at no additional cost to the Owner. No exceptions.
- G. Coverage: Do not stretch products beyond their recommended coverage rate nor install fewer coats than specified regardless of appearance after previous coats are applied. Thin product application may show surface imperfections or inconsistencies that would otherwise not be visible. Additional coats due to a lack of proper coverage shall be provided at no additional cost to the Owner. No exceptions.

2.03 PAINT SYSTEMS - EXTERIOR

- A. Paint Product: **Pro Industrial Acrylic**
 - 1. Primer: Prime and/or touch up as per Manufacturers recommended Specifications in accordance with specified Product.
 - 2. Number of Paint Coats Over Primer: Two.
 - 3. Types of Substrates:
 - a. Steel.
 - 4. Sheen: Semi-Gloss
 - 5. Location Types:
 - a. Hollow metal doors and frames.
 - b. Bollards.
 - c. Steel lintels and structural steel unless noted otherwise.
 - d. Other metals unless noted otherwise.

2.04 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- D. Test shop-applied primer for compatibility with subsequent cover materials.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask and/or protect all surfaces, appurtenances not affiliated with coating process, including but not limited to electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Ferrous Metal:
 - 1. Solvent clean according to SSPC-SP 1.
 - 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
 - 3. Painted Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.

3.03 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- E. Painting shall be free from paint runs; no exceptions.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

**SECTION 09 9123
INTERIOR PAINTING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
 - 1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
 - 2. Exposed surfaces of primed and unprimed metal items in finished areas unless specifically indicated to not be painted.
 - 3. Mechanical and Electrical:
 - a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, electrical equipment, and pipes, unless otherwise indicated.
 - b. In finished areas, paint shop-primed items.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
 - 5. Floors, unless specifically indicated.
 - 6. Glass.
 - 7. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

- A. Section 09 2116 - Gypsum Board Assemblies: Joint and surface treatment prior to painting.

1.03 DEFINITIONS

- A. Comply with ASTM D16 for interpretation of terms used in this section.

1.04 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; Current Edition.
- B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2024.
- C. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.
- D. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
 - 2. MPI product number (e.g., MPI #47).
 - 3. Cross-reference to specified paint system products to be used in project; include description of each system.
 - 4. Manufacturer's installation instructions.
 - 5. If proposal of substitutions is allowed under submittal procedures, explanation of substitutions proposed.

- C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is specified, submit samples in only that sheen.
 - 2. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens not required.
 - 3. Allow 15 days for approval process, after receipt of complete samples by Architect.
 - 4. Paint color submittals will not be considered until color submittals for major materials not to be painted, such as factory finished items, have been approved.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Do not provide or leave extra paint materials for the Owner.
 - 3. Do provide product info, color names, and installation locations for all products and colors. Information shall be included in the Operation and Maintenance Manual.

1.06 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.08 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Provide lighting level of 80 fc measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
 - 1. If a single manufacturer cannot provide specified products; minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.
- B. Paints:
 - 1. Base Manufacturer: Sherwin Williams: www.sherwin-williams.com.
 - 2. Other Manufacturers: Approved products shall meet performance and physical characteristics of base manufacturer (basis of design) product including published ratio of solids by volume, plus or minus two percent.
- C. Other Acceptable Manufacturers: Submit product information for each line of paint for Architect's approval. Substitutions of Base Manufacturer's products may not be accepted during the shop drawing process.
 - 1. Behr Paint Company: www.behr.com/#sle.
 - 2. Benjamin Moore & Co: www.benjaminmoore.com.
 - 3. Carboline: www.carboline.com.
 - 4. Diamond Vogel Paints: www.diamondvogel.com/#sle.
 - 5. Hallman Lindsay Paint of Wisconsin: www.hallmanlindsay.com.
 - 6. IdeaPaint: www.ideapaint.com.
 - 7. ICP Group: www.icpgroup.com.
 - 8. PPG Paints: www.ppgpaints.com/#sle.
 - 9. Pratt & Lambert Paints: www.prattandlambert.com/#sle.
 - 10. Sherwin-Williams Company: www.sherwin-williams.com/#sle.

11. Tnemec: www.tnemec.com.
12. Valspar Corporation: www.valsparpaint.com/#sle.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - a. Spayed finish; is preferred on all metal surfaces; is required on the following surfaces:
 - 1) Metal doors and frames; prior to hardware installation.
 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
 3. Provide commercial grade paint systems by approved paint manufacturer for substrates not specifically covered under paint systems.
 - a. Consult with Architect/Engineer/Designer for approval of additional products and systems. Provide quantifiable product information.
 4. Supply each paint material in quantity required to complete entire project's work from a single production run.
 5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Volatile Organic Compound (VOC) Content:
 1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
- E. Colors: As indicated on drawings.
 1. Where indicated or scheduled colors do not match the paint product lines indicated below it is anticipated that colors will be color matched; product lines below are intended to set a level of standard for the product lines used for each application.
 2. Locations Not Indicated: Selection to be made by Architect after award of contract.
 3. Extend colors to surface edges; colors may change at any edge as directed by Architect.
 4. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling under which they are mounted.
- F. Coats: The number of coats specified, are based on manufacturer's recommendations. Provide for additional coats, as necessary, for complete coverage and true color. Additional coats due to a lack of coverage shall be provided at no additional cost to the Owner. No exceptions.
- G. Coverage: Do not stretch products beyond their recommended coverage rate nor install fewer coats than specified regardless of appearance after previous coats are applied. Thin product application may show surface imperfections or inconsistencies that would otherwise not be visible. Additional coats due to a lack of proper coverage shall be provided at no additional cost to the Owner. No exceptions.

2.03 PAINT SYSTEMS - INTERIOR

- A. Paint Product: **Pro Industrial Pre-Catalyzed Waterbased Epoxy (Single-Component)**
 1. Primer: Prime and/or touch up as per Manufacturers recommended Specifications in accordance with specified Product.
 2. Number of Paint Coats Over Primer: Two.
 3. Types of Substrates:
 - a. Steel.

- b. Concrete.
 - c. Masonry.
 - d. Gypsum board.
- 4. Sheen: Semi-Gloss
- 5. Location Types:
 - a. Hollow metal doors and frames.
 - b. Steel lintels and structural steel unless noted otherwise.
 - c. Stair components.
 - d. Concrete/masonry walls unless noted otherwise.
 - e. Other metals unless noted otherwise.
- B. Paint Product: **ProMar 200 Zero VOC Interior Latex**
 - 1. Primer: One coat primer sealer in all locations; primer shall be installed under paint products even if product is considered self-priming.
 - 2. Number of Paint Coats Over Primer: Two.
 - 3. Types of Substrates:
 - a. Concrete.
 - b. Masonry.
 - 4. Sheen: As follows:
 - a. Concrete - Semi-Gloss
 - b. Masonry - Semi-Gloss
 - 5. Locations Types:
 - a. As indicated on the drawings.

2.04 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been adequately prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- D. Test shop-applied primer for compatibility with subsequent cover materials.
- E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
 - 1. Gypsum Wallboard: 12 percent.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask and/or protect all surfaces, appurtenances not affiliated with coating process, including but not limited to electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
- F. Ferrous Metal:
 - 1. Solvent clean according to SSPC-SP 1.
 - 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

3.03 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- E. Painting shall be free from paint runs; no exceptions.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

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SECTION 10 1400 SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Room and door signs.

1.02 REFERENCE STANDARDS

- A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.
- B. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- C. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.
- C. Signage Schedule: Provide information sufficient to completely define each sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.
 - 1. When room numbers to appear on signs differ from those on drawings, include the drawing room number on schedule.
 - 2. When content of signs is indicated to be determined later, request such information from Owner through Architect at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
 - 3. Submit for approval by Owner through Architect prior to fabrication.
- D. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.
- E. Manufacturer's Qualification Statement.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Package signs as required to prevent damage before installation.
- B. Store tape adhesive at normal room temperature.

1.06 FIELD CONDITIONS

- A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.
- B. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Sign Manufacturers/Suppliers:
 - 1. Accent Signage Systems, Inc: www.accentssignage.com.
 - 2. ADASigns: www.adasigns.com.
 - 3. American Marking, Inc: www.americanmarkinginc.com.
 - 4. Architectural Graphics, Inc.: www.agisign.com.
 - 5. ASI Sign Systems: www.asisignage.com.
 - 6. Best Sign Systems, Inc: www.bestsigns.com.
 - 7. Compliancesigns: www.compliancesigns.com.
 - 8. Cosco Industries (ADA signs): www.coscoarchitecturalsigns.com/#sle.
 - 9. Cosco Industries (non-ADA signs): www.coscoarchitecturalsigns.com/#sle.
 - 10. Indigo Signworks: www.indigosignworks.com.
 - 11. Inpro: www.inprocorp.com/#sle.

12. Latitude Signage and Design: www.latitudesignage.com.
13. Mankato Sign Service.
14. Mohawk Sign Systems, Inc: www.mohawksign.com.
15. M&M Signs.
16. Schwaab, Inc: www.schwaab.com.
17. Seton Identification Products: www.seton.com/aec.
18. Sign Pro.
19. Substitutions: See Section 01 6000 - Product Requirements.

2.02 SIGNAGE APPLICATIONS

- A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.
- B. Room and Doors Signs; Accessibility, Service Rooms, and Other Signs Where Indicated:
 1. Sign Type: Flat signs with engraved or applied panel media as specified.
 2. Provide "tactile" signage, with letters raised minimum 1/32 inch and Grade II braille.
 3. Character Height: 1 inch unless otherwise indicated or required by code.
 4. Sign Height: 2 inches unless otherwise indicated or required by code.
 5. Service Rooms: Identify with room names and numbers to be determined later, not those shown on the drawings.
 - a. Service Rooms Shall Include:
 - 1) Mechanical and Electrical Rooms.
 6. Rest Rooms: Identify with pictograms, the names "RESTROOM", "MEN", and "WOMEN", room numbers to be determined later, and braille.
 7. Other Signs: Identify with room names and numbers to be determined later, not those shown on the drawings.
 - a. Other Signs Shall Include:
 - 1) Stairwell Signage.

2.03 SIGN TYPES

- A. Flat Signs: Signage media without frame.
 1. Edges: Square.
 2. Corners: Square.
 3. Wall Mounting of One-Sided Signs: Tape adhesive.
- B. Color and Font: Unless otherwise indicated or required by code:
 1. Character Font: Helvetica, Arial, or other sans serif font.
 2. Character Case: Upper case only.
 3. Background Color: As selected by Architect from the manufacturers standard colors.
 4. Character Color: Contrasting color.

2.04 TACTILE SIGNAGE MEDIA

- A. Engraved Panels: Laminated colored plastic; engraved through face to expose core as background color:
 1. Total Thickness: 1/8 inch.
- B. Applied Character Panels: Acrylic plastic base, with applied acrylic plastic letters and braille.
 1. Total Thickness: 1/8 inch.
 2. Letter Thickness: 1/8 inch.
 3. Letter Edges: Square.

2.05 ACCESSORIES

- A. Concealed Screws: Stainless steel, galvanized steel, chrome plated, or other non-corroding metal.
- B. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install neatly, with horizontal edges level.
- C. Protect from damage until Date of Substantial Completion; repair or replace damaged items.

END OF SECTION

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**SECTION 10 2113.19
PLASTIC TOILET COMPARTMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Solid plastic toilet compartments.
- B. Urinal screens.

1.02 REFERENCE STANDARDS

- A. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth; 2024.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on panel construction, hardware, and accessories.
- C. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall and floor supports, door swings.
- D. Samples: Submit two samples of partition panels, 4 by 4 inch in size illustrating panel finish, color, and sheen.
- E. Manufacturer's Installation Instructions: Indicate special procedures.

1.04 WARRANTIES

- A. Provide manufacturer's 25 year warranty against breakage, corrosion, and delamination under normal conditions.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: Scranton Products, Hiny Hiders: www.scrantonproducts.com.
 - 1. All American Metal Corp - AAMCO: www.allamericanmetal.com/#sle.
 - 2. ASI Accurate Partitions: www.asi-accuratepartitions.com/#sle.
 - 3. ASI Global Partitions: www.asi-globalpartitions.com/#sle.
 - 4. General Partitions Mfg. Corp: www.generalpartitions.com/#sle.
 - 5. Hadrian: www.hadrian-inc.com/#sle.
 - 6. Metpar Corp: www.metpar.com/#sle.
 - 7. Partition Systems International of South Carolina: www.psisc.com/#sle.
 - 8. Scranton Products: www.scrantonproducts.com/#sle.
 - 9. Substitutions: Not permitted.

2.02 PLASTIC TOILET COMPARTMENTS

- A. Solid Plastic Toilet Compartments: Factory fabricated doors, pilasters, and divider panels made of solid molded high density polyethylene (HDPE), tested in accordance with NFPA 286; floor-mounted headrail-braced.
 - 1. Color: Single color as selected from the manufacturers full range of colors, available color options shall be equivalent to those provided by manufacturer indicated as Basis of Design.
- B. Doors:
 - 1. Thickness: 1 inch.
 - 2. Width: 24 inch.
 - 3. Width for Ambulatory Use: 32 inch, out-swinging and self-closing.
 - 4. Width for Handicapped Use: 36 inch, out-swinging.
 - 5. Height: 55 inch.
- C. Panels:
 - 1. Thickness: 1 inch.
 - 2. Height: 55 inch.
- D. Pilasters:
 - 1. Thickness: 1 inch.
 - 2. Width: As required to fit space; minimum 3 inch.

- E. Screens: Without doors; to match compartments; mounted to wall with two panel brackets.
- F. Urinal Screens: Wall mounted with continuous satin stainless steel or aluminum angle brackets each side; through bolt with tamper proof type fasteners.
- G. Crossbracing for ceiling-hung partitions: Provide crossbracing of the same materials as other panel components, minimum 4 inch tall, fastened at interior side of partitions. Install crossbracing.

2.03 ACCESSORIES

- A. Pilaster Shoes: Stainless steel, satin finish, 3 inches high; concealing floor fastenings.
- B. Head Rails: Extruded aluminum, anti-grip profile.
 - 1. In addition to above partition doors and pilasters provide head rails above partition end walls and any open perimeter edge of the partitions.
- C. Wall and Pilaster Brackets: Satin stainless steel or aluminum; continuous type.
- D. Strikes: Continuous type, aluminum.
- E. Latches: Aluminum or stainless steel.
- F. Attachments, Screws, and Bolts: Stainless steel, tamper proof type.
 - 1. For attaching panels and pilasters to brackets: Through-bolts and nuts; tamper proof.
 - 2. Attach all components to solid blocking or structural substrate.
- G. Hardware: Satin stainless steel:
 - 1. Pivot hinges, gravity type, adjustable for door close positioning; two per door.
 - a. Wrap-Around Hinges: 8 inches and fabricated from heavy-duty extruded aluminum. Hinges are through-bolted to pilasters and doors with stainless steel tamper resistant Torx head sex bolts. Hinges operate with field adjustable nylon cams. Cams can be field set in 30, 60 or 90 degree increments.
 - 2. Door Latch: Slide type .
 - 3. Door strike and keeper with rubber bumper; mounted on pilaster in alignment with door latch.
 - 4. Coat hook with rubber bumper; one per compartment, mounted on door.
 - 5. Provide door pull for outswinging doors.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify correct spacing of and between plumbing fixtures.
- C. Verify correct location of built-in framing, anchorage, and bracing.

3.02 INSTALLATION

- A. Install partitions rigid, straight, plumb, and level manor, with plastic laid out as shown on shop drawings and manufacturer's installation instructions.
- B. Maintain 3/8 inch to 1/2 inch space between wall and panels and between wall and end pilasters.
- C. Attach panel brackets securely to walls using anchor devices.
- D. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.
- E. Field touch-up of scratches or damaged finish will not be permitted. Replace damaged or scratched materials with new materials.

3.03 TOLERANCES

- A. Maximum Variation From True Position: 1/4 inch.
- B. Maximum Variation From Plumb: 1/8 inch.

3.04 ADJUSTING

- A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch.

- B. Adjust hinges to position doors in partial opening position when unlatched. Return out-swinging doors to closed position.
- C. Adjust adjacent components for consistency of line or plane.

END OF SECTION

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**SECTION 10 2800
TOILET, BATH, AND LAUNDRY ACCESSORIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Commercial toilet accessories.
- B. Diaper changing stations.

1.02 REFERENCE STANDARDS

- A. ASTM B456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium; 2017 (Reapproved 2022).
- B. ASTM C1036 - Standard Specification for Flat Glass; 2021.
- C. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2024.
- D. ASTM F2285 - Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use; 2022.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: Products listed are made by Bobrick: www.bobrick.com.
- B. Commercial Toilet, Shower, and Bath Accessories:
 - 1. AJW Architectural Products: www.ajw.com.
 - 2. ASI - American Specialties, Inc: www.americanspecialties.com.
 - 3. Bradley Corporation: www.bradleycorp.com.
 - 4. Bobrick Washroom Equipment, Inc: www.bobrick.com.
 - 5. Gamco USA: www.gamcousa.com.
 - 6. Basco Incorporated: www.bascoinc.com.
 - 7. Substitutions: Section 01 6000 - Product Requirements.
- C. Provide products of each category type by single manufacturer.

2.02 MATERIALS

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
- B. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

2.03 FINISHES

- A. Stainless Steel: Satin finish, unless otherwise noted.
- B. Chrome/Nickel Plating: ASTM B456, SC 2, polished finish, unless otherwise noted.

2.04 COMMERCIAL TOILET ACCESSORIES

- A. Provided by Owner and Installed by Contractor:
 - 1. Paper Towel Dispenser / Waste Receptacle.
- B. Toilet Paper Dispenser: Double roll, surface mounted bracket type, satin finished cast aluminum brackets, eccentric-shaped plastic spindle for 1/2 revolution delivery designed to prevent theft of tissue roll.
 - 1. Products:
 - a. B-2740 manufactured by Bobrick.
 - b. Substitutions: Section 01 6000 - Product Requirements.

- C. Soap Dispenser: Liquid soap dispenser, wall-mounted, surface, with stainless steel cover and horizontal/vertical stainless steel tank and working parts; push type soap valve, check valve, and window gauge refill indicator, tumbler lock.
 - 1. Minimum Capacity: 40 ounces.
 - 2. Products:
 - a. B-2111 manufactured by Bobrick (vertical rectangular shape).
 - b. Substitutions: Section 01 6000 - Product Requirements.
- D. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass; ASTM C1036.
 - 1. Size: 24 by 36 inches, and as indicated on the drawings.
 - 2. Frame: 0.05 inch angle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.
 - 3. Products:
 - a. B-290 2436 manufactured by Bobrick (welded-frame mirror).
 - b. Substitutions: Section 01 6000 - Product Requirements.
- E. Grab Bars: Stainless steel, nonslip grasping surface.
 - 1. Standard Duty Grab Bars:
 - a. Push/Pull Point Load: 250 pound-force, minimum.
 - b. Dimensions: 1-1/2 inch outside diameter, minimum 0.05 inch 0.05 inch wall thickness, concealed flange mounting, 1-1/2 inch 1-1/2 inch clearance between wall and inside of grab bar.
 - c. Length and Configuration: As indicated on drawings.
 - d. Products:
 - 1) B-6806 Series manufactured by Bobrick.
 - 2) Substitutions: Section 01 6000 - Product Requirements.
- F. Sanitary Napkin Disposal Unit: Stainless steel, surface-mounted, self-closing door, locking panel with full-length stainless steel piano-type hinge, removable receptacle.
 - 1. Products:
 - a. B-254 manufactured by Bobrick.
 - b. Substitutions: Section 01 6000 - Product Requirements.

2.05 DIAPER CHANGING STATIONS

- A. Diaper Changing Station: Wall-mounted folding diaper changing station for use in commercial toilet facilities, meeting or exceeding ASTM F2285.
 - 1. Basis of Design: Koala Kare Products; Product KB300.
 - 2. Material: Polypropylene.
 - 3. Mounting: Surface.
 - 4. Color: As selected by the Architect.
 - 5. Minimum Rated Load: 200 pounds.
 - 6. Manufacturers:
 - a. American Specialties, Inc: www.americanspecialties.com.
 - b. AJW Architectural Products[<>]: www.ajw.com.
 - c. Diaper Deck & Company: www.diaperdeck.com.
 - d. Koala Kare Products: www.koalabear.com.
 - e. Safe-Strap Company, Inc: www.diaperdepot.com.
 - f. Substitutions: 01 6000 - Product Requirements.

2.06 OTHER MISCELLANEOUS ROOM ACCESSORIES

- A. Door Mounted Coat Hook:
 - 1. Product: B-6717 manufactured by Bobrick.
 - 2. Location: Provide one hook at single use restroom doors, office door, concessions door, and support door.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.

- C. Verify that field measurements are as indicated on drawings.

3.02 INSTALLATION

- A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.
- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

3.03 PROTECTION

- A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

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**SECTION 10 4400
FIRE PROTECTION SPECIALTIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fire extinguishers.
 - 1. Type A:B:C - Dry Chemical.
- B. Accessories.

1.02 REFERENCE STANDARDS

- A. FM (AG) - FM Approval Guide; Current Edition.
- B. NFPA 10 - Standard for Portable Fire Extinguishers; 2022.
- C. UL (DIR) - Online Certifications Directory; Current Edition.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide extinguisher operational features, extinguisher ratings and classifications, color and finish, anchorage details, and installation instructions.
- C. Manufacturer's Installation Instructions: Indicate special criteria and wall opening coordination requirements.
- D. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

1.04 FIELD CONDITIONS

- A. Do not install extinguishers when ambient temperature may cause freezing of extinguisher ingredients.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fire Extinguishers:
 - 1. Activar Construction Products Group, Inc. - JL Industries; Cosmic Extinguisher - Multipurpose Chemical: www.activarcpg.com/#sle.
 - 2. Ansul, a Tyco Business; Sentry: www.ansul.com/#sle.
 - 3. Nystrom, Inc; ABC Dry Chemical: www.nystrom.com/#sle.
 - 4. Potter-Roemer; 3000 Series: www.potterroemer.com/#sle.
 - 5. Larsen's Manufacturing Co; Multi-Purpose Dry Chemical Extinguishers: www.larsensmfg.com.
 - 6. Substitutions: See Section 01 6000 - Product Requirements.

2.02 FIRE EXTINGUISHERS

- A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
 - 1. Provide extinguishers labeled by UL (DIR) or FM (AG) for purpose specified and as indicated.
- B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gauge.
 - 1. Class: A:B:C type.
 - 2. Sizes by Location Type:
 - a. For office type areas; 4A:80BC: 10 pound; travel 75 foot max.
 - b. For garage/shop/gym type areas; 20A:120BC: 20 pound; travel 50 foot max.
 - 3. Finish: Baked polyester powder coat red color.
 - 4. Temperature range: Minus 40 degrees F to 120 degrees F.

2.03 ACCESSORIES

- A. Extinguisher Bracket and Strap: Steel, with powder-coat paint, sized to fit extinguisher; finish to match extinguisher. J-Hooks are not acceptable, no exceptions.
- B. Non-Cabinet Signage: Fire Extinguisher, 3-way; size and mounting in accordance with applicable codes.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Secure rigidly in place.
- C. Place extinguishers and accessories on wall brackets.

END OF SECTION

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SECTION 12 3600 COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Countertops for architectural cabinet work.

1.02 RELATED REQUIREMENTS

- A. Section 06 4100 - Architectural Wood Casework.

1.03 REFERENCE STANDARDS

- A. ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position; 2022.
- B. ISFA 2-01 - Classification and Standards for Solid Surfacing Material; 2013.
- C. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Specimen warranty.
- C. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.
 - 1. Indicate layout of countertop supports brackets at all locations. Include attachment details to walls and counters. Final bracket layout shall be subject to Architect approval.
 - 2. For bracket layout unsupported spans of countertops shall not exceed 48 inches. Wall hung or cantilever spans shall resist a 50 lbs per square foot load and not deflect in excess of 1/4 inch in any span or portion thereof.
- D. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.
- E. Test Reports: Chemical resistance testing, showing compliance with specified requirements.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 FIELD CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOPS

- A. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting self-supporting over structural members.
 - 1. Flat Sheet Thickness: 3/4 inch, minimum.
 - 2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
 - a. Manufacturers:
 - 1) Avonite Surfaces: www.avonitesurfaces.com/#sle.

- 2) Dupont: www.corian.com/#sle.
- 3) Formica Corporation: www.formica.com/#sle.
- 4) LG Hausys America, Inc: www.lghausysusa.com/#sle.
- 5) Wilsonart: www.wilsonart.com/#sle.
- 6) InPro Corporation: www.inprocorp.com.
- 7) Maxstone International, LLC: www.maxstoneusa.com.
- 8) Substitutions: See Section 01 6000 - Product Requirements.
- b. Finish on Exposed Surfaces: Semi-gloss, gloss rating of 25 to 50.
- c. Color and Pattern: To be selected from manufacturer's full line.
3. Other Components Thickness: 1/2 inch, minimum.
4. Exposed Edge Treatment: Built up to minimum 1-1/4 inch thick; square edge; use marine edge at sinks.
5. Back and End Splashes: Same sheet material, radiused top; minimum 4 inches high.

2.02 MATERIALS

- A. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
- B. Joint Sealant: Mildew-resistant silicone sealant, clear.

2.03 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 1. Join lengths of tops using best method recommended by manufacturer.
 2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
 1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
 2. Height: 4 inches, unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Attach wood countertops using screws with minimum penetration into substrate board of 5/8 inch.
- C. Seal the exposed front underside edge of plastic laminate countertops with clear solvent based polyurethane at all locations; or wrap with plastic laminate back to face of casework below.
- D. Seal joint between back/end splashes and vertical surfaces.

3.04 TOLERANCES

- A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.
- B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.

- C. Field Joints: 1/8 inch wide, maximum.

3.05 CLEANING

- A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

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**SECTION 13 3113
AIR-SUPPORTED FABRIC STRUCTURES**

PART 1 GENERAL

1.01 SUMMARY

- A. Furnish and Install an Air-Supported Structure and Components as specified in this Section.

1.02 WORK INCLUDED

- A. Air-supported structure, dimensions as shown on the drawings and specified herein, including but not necessarily limited to the following:
1. Aluminum channel anchorage system.
 2. Radial Stress relief system including anchors. Full-biased cable systems are not allowed.
 3. Inner liner membrane liner colors to be determined later.
 4. Dual 3.25 MBTU Inflation/heating systems and automation controls.
 5. 80 Kw Emergency backup generator connected to one inflation unit and to LED fixtures for emergency egress lighting.
 6. 3 leaf revolving door built into hard structure.
 7. Personnel Air-Lock door attached to revolving door.
 8. Exit Doors with handicap exit doors, sleeved only, attached to the dome. Angle-braced doors are not allowed.
 9. Automatic openers, tracks and interlocks. Overhead door must be rated to 31 PSF load or greater. Doors to be installed with interlocks an automatic opener in a hard structure provided by others.
 10. Tension cable system around all openings including cable anchors Membrane will attach to hard structure as per drawings.
 11. Automation System with remote PC/Smart Phone app access.
 12. Lights, suspended LED fixtures providing 50 fc average indirect light, with individual protection net rings surrounding fixture
 13. Netting to be supplied and installed by dome manufacturer.
- B. Work shall include all design, structural engineering, drawings, specifications and documentation necessary for all required permits and construction of dome. Full drawings shall be provided by dome manufacturer for all details and components of the dome construction. Drawings are required to be signed and sealed by a licensed structural engineer in the State of Minnesota provided by the dome manufacturers. The Engineer or Record will NOT sign or certify the dome manufacturers drawings or calculations.
- C. It is expected that all materials, equipment and services necessary for a complete dome facility for the use intended shall be included. This facility shall cover a multi-sport facility.

1.03 RELATED WORK

- A. The work in this section shall be carefully coordinated with other Sections as noted below:
1. Section 03 3000 - Cast-in-Place Concrete.
 2. Section 05 1200 - Structural Steel Framing.
 3. Section 32 1813 - Synthetic Grass Surfacing.
 4. Divisions 21 to 25 Mechanical for fuel connections.
 5. Division 26 Electrical.
 6. Divisions 31-33 Earthwork, Exterior Improvements, Utilities.
- B. The manufacturer shall provide the labor, tools and supervision necessary to install the dome and components for the initial installation and takedown. This includes freight and off-loading of the dome and components. The Manufacturer shall coordinate all electrical and natural gas connections with the Construction Manager.
- C. The manufacturer will supply recommended light locations for the suspended fixtures to optimize the 50-fc average light level within the dome. Wiring to the base of the dome must be included and in place when dome is delivered.
- D. The air structure must be designed for a 110 mph, Exposure C rating greater than 300 occupancy. Airlock doors designed to 31 psf load.
- E. A representative of the manufacturer must attend a minimum of 6 pre-installation and construction site meetings. This person must be directly involved in the manufacturing process

and be able to make design and fabrication decisions in the meetings. Hired installation contractors are not acceptable., the manufacturer must attend at no additional cost to the project.

1.04 QUALITY ASSURANCES

- A. All work shall conform to the following standards:
- B. ASTM D751 - Standard Test Methods for Coated Fabrics; 2019.
- C. ASTM D2136 - Standard Test Method for Coated Fabrics—Low-Temperature Bend Test; 2019, with Editorial Revision (2021).
- D. ASTM D4533/D4533M - Standard Test Method for Trapezoid Tearing Strength of Geotextiles; 2015 (Reapproved 2023).
- E. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films; 2023, with Errata.
 - 1. Air Structures Design and Standards Manual ASI-77 and ASCE 55-16, most recent editions.
 - 2. International Building Code
 - 3. N.E.C.
 - 4. Qualifications of Manufacturer
 - a. Manufacturer shall have a minimum of 15 consecutive years' experience in manufacturing, furnishing and installing air-supported structures.
 - b. Manufacturer shall directly own and operate the manufacturing facility to assure quality control, accountability and expedient delivery.
 - c. Manufacturer needs to be able to provide Seaman Corporation manufactured PVDF coated fabric for the outer membrane and shall supply a certificate of compliance and tag ends from the fabric manufacturer that all material used in the outer membrane fabrication was Grade 'A'.
 - d. Manufacturer shall have completed at least ten (10) similar sized structures within the last five (5) years.
 - e. Manufacturer shall have completed aluminum channel installations projects in the past.
 - f. Manufacturer must use only the specified radial cable stress relief system, variations will not be approved. Manufacturer to provide proof of experience in radial cable design by providing sites where they used radial cable design in similar size structures.
 - g. Manufacturer must have means of deploying a full-time service crew to the site no later than the next calendar day for repairs to the structure.
- F. Manufacturers Approved to Respond to the Request for Proposal and bid review process.
 - 1. The bidder shall include with its bid form, thorough and adequate information as required to allow the Owner to review the qualifications and specifications of the manufacturer.
- G. Warranty
 - 1. Manufacturer's warranty on the membrane material shall be a minimum of 20 years prorated and quality of work warranty shall be a minimum of 3 years on fabric envelope and a minimum of 2 year parts for all the mechanical equipment. Manufacturer shall provide local service representative during warranty period.

1.05 SUBMITTALS

- A. Submit the following in accordance with specifications:
 - 1. Construction drawings for review including layout dimensions and details for all equipment and accessories within fifteen (15) business days of contract award.
 - a. Door details and anchorage details.
 - b. Anchorage details for channel and cable anchors.
 - c. Air structure elevations (side and end).
 - d. Mechanical equipment details and drawings.
 - e. Wind loads and fabric stresses, foundation loads and uplift calculations. Any additional drawings required for building permit application.
 - 2. Manufacturer's Literature:
 - a. Sample warranty, materials description, maintenance manuals including maintenance program.

3. Engineering Data:
 - a. Successful contractor must supply within ten (10) days after official notice of award of bids. Air structure manufacturer shall submit engineering calculations and plans for the following:
 - 1) Wind loads and fabric stresses.
 - 2) Foundation loads.
 - 3) Mechanical equipment details and data.
 - 4) Wiring diagram of power and control systems.
 - 5) Wind sensor/automation details.
 - b. All structural and mechanical calculations and plan submissions required under the above requirements shall be certified by a Minnesota registered Structural Engineer. Such structural certifications will be provided by the air structure manufacturer as part of its work under this section.

1.06 JOB CONDITIONS

- A. Designated Project Supervisor shall be notified in writing of any discrepancies in the contract documents governing the installation of the air structure from those standard installation details recommended and used by the air structure manufacturer or the placement of any concrete foundations for the work specified under this section.
- B. The Manufacturer shall verify all job site conditions prior to the start of work.
- C. This Section shall coordinate with Section 03 3000 - Cast-in-Place Concrete, and 05 1200 - Structural Steel Framing and any other Section that requires interfacing with the fabrication of the air supported structure. Prior to any construction or fabrication of any portion of the air-supported structure or supporting construction all Trade Contractors will attend a coordination meeting covered by the Construction Manager. The coordination meeting will confirm dimensions, connections, materials and any related item that is part of or connected to the air supported structure. All modifications or clarifications will be shown on shop drawings prepared by the various Trade Contractors.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Outer Membrane:
 1. Outer membrane shall be fabricated out of 28 oz./sq.yd. and 32 oz./sq.yd. Vinyl coated polyester, white, opaque, PVDF coated high tensile fabric, #8028 and #9032 by Seaman Co. (Shelter-Rite®). No substitutions.
 2. #8028 SPECIFICATIONS
 - a. Base Type: Polyester Fabric Weight 7.5 oz./sq. yd.
 - b. Finished Coat Weight ASTM D751: 28.0 oz./sq. yd.
 - c. Tongue Tear ASTM D751: 275/275 lbs.
 - d. Trapezoid Tear ASTM D4533/D4533M: 85/85 lbs.
 - e. Grab Tensile ASTM D751: 700/700 lbs.
 - f. Strip Tensile ASTM D751: 515/515 lbs.
 - g. Adhesion (minimum) ASTM D751: 10 lbs/in.
 - h. Hydrostatic (resistance) ASTM D751: 500 psi.
 - i. Dead Load: Tested @ 2" overlap seam; Room Temperature-266 lbs; 160 F-133 lbs.
 - j. Flame Resistance: Pass 2 second flame out when tested in accordance with NFPA 701.
 - k. PVDF Meets NFPA 701.
 3. #9032 SPECIFICATION
 - a. Base Type: Polyester Fabric Weight - 10.0 oz./sq.yd.
 - b. Finished Coated Weight ASTM D751: 32 oz./sq.yd.
 - c. Tongue Tear ASTM D751: 300/300 lbs.
 - d. Trapezoid Tear ASTM D4533/D4533M: 100/100 lbs.
 - e. Grab Tensile ASTM D751: 840/840 lbs.
 - f. Strip Tensile ASTM D751: 650/650 lbs.
 - g. Adhesion (minimum) ASTM D751: 10 lbs/in.
 - h. Hydrostatic (Resistance) ASTM D751: 500 psi.
 - i. Dead Load: Tested at 2" overlap seam; Room Temperature-266 lbs; 160 F-133 lbs.

- j. Cold Crack ASTM D2136: Pass -40 F.
 - k. Flame Resistance: Pass 2 second flameout.
 - l. PVDF coated.
 - m. Meets - NFPA 701.
- 4. The successful bidder shall provide written compliance certificates from Seaman's that all # 8028 and/or # 9032 fabric provided is Grade "A" material with corresponding roll end numbers and test passed to the client.
- B. Inner Thermal Membrane:
 - 1. Vintex Vinagard #3001, 14 oz/sq. yd. vinyl coated polyester, white with a background color to be determined, white with satin acrylic finish. Color approval by Architect. Background color to 15' high, balance of dome shall be white. No substitutions allowed.
 - 2. #3001 SPECIFICATIONS
 - a. Polyester Base Fabric: 2.7 oz/sq. yd.
 - b. Denier: 1000 X 1000.
 - c. Count: 9x9.
 - d. Total Coated Fabric Weight: 14.0 oz/sq. yd.
 - e. Coating Distribution: 50/50.
 - f. Coating Type: Polyvinyl Chloride.
 - g. Tensile (grab): 200 X 190 lbs.
 - h. Trapezoid Tear: 80 X 50 lbs.
 - i. Adhesion: 25 lbs/in.
 - j. Flame Resistance: NFPA 701.
 - k. Low Temperature: -35 C.
- C. Concrete components:
 - 1. Dome perimeter anchor/support systems, ducts, slab shall be as per approved manufacturer's design drawings. Materials shall be per Section 03 3000 - Cast-in-Place Concrete. Concrete components supplied and installed by other Trade Contractors. The channel and cable anchors are supplied by the air structure manufacturer.
- D. Asymmetrical End Design:
 - 1. The dome must have endcaps designed to allow maximum play space in the ends and corners. No bias corner cable systems are allowed.
- E. Revolving doors:
 - 1. Fikeco or equal to, 3- leaf, heavy-duty revolving door with aluminum door panels Plexiglas viewing windows, aluminum frame and drum, door locks with 2 keys attaching hardware, and components.
- F. Personnel Airlock:
 - 1. Fikeco or equal to, personnel airlock passageway with 2 - 40" minimum balanced doors, rigid frame with aluminum panels for weatherproof construction designed to attach to the revolving door. Airlock to include all door locks with 2 keys, hardware and components. All locks on doors provided by this section shall accept Best Cores. Personnel Airlock shall be provided with light fixture at its ceiling.
- G. Emergency Doors:
 - 1. Pedestrian doors as indicated on the Drawings by Fikeco or equal, handicap accessible, aluminum balanced emergency exit doors complete with steel frames, sleeved braces, emergency interior/exterior exit lights battery pack emergency lighting, outward swinging 40" clear minimum opening self-closing door with panic hardware, and center pivot design of use in air supported structures. Ramps on each side must be included. Knee braces are not acceptable. Door sleeves are to be designed and supplied by the dome manufacturer. Surface mounting door braces are not allowed. Interior doors in the hard structure do not have bracing but must be designed to attach to masonry wall. Doors to have 1/4" Lexan protection panels on the inside face to protect door face. All locks on doors provided by this section shall accept Best Cores.
- H. Aluminum Channel:
 - 1. Anodized aluminum anchoring channel to be cast in the continuous concrete grade beam with 2"x4" wood as locking device for the dome fabric. Vinyl channel, angle iron clamping or catenary loop systems are not acceptable. Channel must be recessed into beam as

shown in drawings. Sides must be ribbed to ensure adhesion in the concrete. Smooth sided and non-recessed channel is not allowed

- I. Inflation/Furnace/Standby Systems:
 - 1. System shall consist of two (2) gas fired units. Each industrial indirect, gas-fired unit shall be designed to supply 3.25 million BTU/hr of heat output, supply/pressurization air volume of 28,000 to 34,000 cfm against 2.5" w.c. Each unit shall have dual VFD controlling 15 to 20hp main inflation motors. Each unit must have full inflation and heating capabilities. Each unit must be designed for automatic controls by the wind sensor and automation system.
 - 2. An automated control system shall provide operator capability of heat and pressure control through a remote access such as a PC and smart phone app. The Automation System shall be designed for wind sensor pressure control, snow sensor temperature and pressure control, remote programing and adjustments through the Internet. An alarm system for pressure and optional points must be provided. Controls must interface and be able to be remotely monitored and controlled by the Owner.
- J. Generator Backup:
 - 1. Furnish a natural gas-powered generator for one of the two units that includes an 80 Kw generator with transfer panel. The natural gas driven generator will be capable of providing power for the inflation unit and up to 14 emergency egress lights, and the permanent buildings IT equipment, security equipment and emergency lights in permanent building.
- K. Stress Relief Cables:
 - 1. Stress relief cables shall consist of vinyl coated galvanized cables complete with thimble eyes at each end. Attaching hardware is to be supplied by manufacturer. Only radial cable systems are acceptable. High or low bias cable harness systems or smaller diameter cables are not acceptable. Cable anchors are to be supplied by the manufacturer.
- L. Automation System and Sensors:
 - 1. A complete energy efficient automation system that will include a wind sensor to adjust the domes internal pressure base on outside wind speeds, a snow sensor that will detect snow and ice conditions and lock the dome into a safe pressure and heating mode, a programmable timer for all hours of occupied and non-occupied hours, remote PC and smart phone access for the owner to view and change current settings and alarm notification ability to alert owner of predetermined issues with the dome. The system must be capable of being integrated with the Owner's BAS, no exceptions.
- M. Section Plates:
 - 1. The dome sections will be factory punched and designed to use aluminum clamping plates that are 8" long to field connect the sections together. The manufacturer will provide these plates as well as a fabric flap to conceal and weatherize the field connection.
- N. Lights:
 - 1. Lighting shall be designed to maintain an average of 50-foot candle average using LED fixtures in a wattage required to provide the required foot candle illumination with suspended attachment hardware to provide the most even light distribution possible. Lighting to be indirect suspended approximately 45' high around the perimeter. No direct lighting allowed.
 - 2. The manufacturer shall provide wiring from the light location to the base of the dome. Each fixture must be attached to the dome at 3 points to prevent swaying.
 - 3. A photometric layout and proof of 50-foot candle average will be required.
- O. Emergency Lights:
 - 1. Manufacturer to supply LED lights capable of providing an average of 1 fc illumination on the turf surface. These lights are wired to the generator by others.
 - 2. Wiring to the base of the dome and a cord end to plug into the emergency light circuit are required. These lights must be capable of 90 minutes of run time.
 - 3. A photometric layout and proof of 1 fc light level will be required.
- P. Walkway and Divider Nets:

1. The dome will have a walkway around the perimeter as shown on the drawings; one (1) divider net that will allow the field to be divided into 2 fields. Air structure manufacturer must supply 1 complete divider net system. Manufacturer will provide a netting layout for approval prior to installation.
 - a. Divider Net - will consist of 2 sections of net, each spanning the full length as shown on the drawings. All sides hemmed. Upper section to be 9 oz/sq yd vinyl mesh fabric, in a color selected by Architect. Lower section to be 9'-0" tall, 18 oz/sq yd of solid vinyl coated polyester in a color selected by Architect. One (1) cable with connecting and tensioning hardware spanning the width of the dome shall be mounted at 11' with a minimum of 3 cables dropped from the ceiling to 11' above playing surface to assist in keeping cable from excessive drooping. Metal clips approximately every 18" must be supplied to allow nets to be easily pulled to both sides of the dome. Divider nets shall be mounted at top to cable system with clip and wheel pulley system. Include additional anchor points on dome structure to move the divider net to the end of the full field soccer, if the owner wishes to relocate it in the future.

Q. Light Cages:

1. Light cages are not to be included. Light fixtures shall be set up so that light cages can be installed at a future date.

R. Vehicle Airlock Doors:

1. Heavy duty insulated panel airlock doors. The doors must be rated for 31 psf loads. Doors to include tracks, hardware, automatic openers, push button controllers and interlocks. Installation of the overhead doors to be coordinated with the Air-Supported Fabric manufacturer. Electrical connections by others.

PART 3 EXECUTION

3.01 EXAMINATION

- A. The air-supported structure supplier will verify the acceptability of the preparation work to receive the air-supported structure and will notify the Owner's representative of any discrepancies in writing.
- B. Fabric Envelope Construction
 1. All seams shall be properly constructed so that the seams will develop the full strength of the envelope fabric. All seams shall be 100% dialectically welded. All seams shall run vertical to the ground.
 2. Thermal Liner shall be incorporated as an integral part of the main structure envelope by dielectric welding method only. The thermal liner must be designed to cover all of the exterior envelope and seam joints. The base of the air structure must be fabricated to accommodate the anchorage system as shown in the drawings.
 - a. A white and colored liner shall be used throughout the interior. Interior finish shall be satin acrylic and finished surface smooth. The Architect will select a color for the interior liner from the manufacturer's standard line of colors.
 3. Seams shall have a fabric flap with Velcro edge to conceal and weatherproof seam connections.
 4. Stress concentrations at openings in the main envelope walls, such as the building connection, doors, shall be minimized by isolating these areas with a cable catenary hoop around the openings. A transition boot with fullness and slack between the envelope and fixed attachments shall be provided to eliminate high stress. Design of transition boots shall be so that snow should not accumulate and cause the fabric to be vulnerable to tearing when ice and snow slides down from the air structure roof.
 5. The liner's heat-sealed seam which attaches the liner to the exterior envelope must be continuously heat sealed over the exterior envelope seams to increase the rip stop strength of those envelope seams. No exterior envelope seams are to be visible from the interior of the structure.
- C. Anchorage System
 1. The extruded anodized aluminum channel used for anchoring the system shall be provided by the air structure manufacturer and shall be installed per the manufacturer's specifications and structural engineer's drawings and details. Vinyl channel, angle iron clamping or catenary loop systems are not acceptable.

2. The air-supported structure supplier, in submitting the shop drawings required under this section, shall warrant that the foundations required for anchorage of the air structure as documented in supplier's shop drawing submission has been prepared by a structural engineer experienced in the design of air supported structures and is licensed as a structural engineer.
 3. Main and stress relief cable anchors shall be supplied and installed per manufacturer's approved drawings and as per structural engineer's design shown in the drawing set.
- D. Emergency Exit Doors
1. All emergency exit doors supplied by the air structure manufacturer shall be designed specifically for air-supported structures, shall be single and doublewide handicap accessible and installed per the manufacturer's specifications. The doors must come complete with sleeves, posts and exit lights. Only steel framed doors are acceptable. Two of the doors supplied will not have transoms for use in the hard structure.
- E. Revolving Doors, Personnel Airlock and Vehicle Airlock (doors only)
1. Revolving door and P.A.L. shall be completely assembled and ready for installation with bolt down channels around the face of the door for attachment to the air-supported structure. Doors shall be installed per the manufacturers specifications.
 2. Two vehicle airlock doors, capable of withstanding 31 psf pressure each, must be supplied and installed by the dome manufacturer. Each door, tracks, automatic openers, push button controllers and interlocks are to be included.
- F. Inflation/Furnace/Standby Systems:
1. The inflation/furnace/standby systems, which shall include the blowers, automatic controls, dampers, burners, heat exchangers, electric motors, natural gas generator, natural gas furnace, standby fan, ducting, wind/snow sensor capabilities, and miscellaneous accessories, shall be installed per the manufacturers specifications. All power and control wiring shall be per manufacturer's specifications and per Division 26.
 2. Manufacturer shall supply all necessary natural gas and electrical stub locations to the mechanical units per manufacturer's specification. Connection of all gas and electric is by others as per mechanical divisions.
- G. Lights:
1. The dome manufacturer will supply and hang LED fixtures. Lights must provide an average 50 FC light level. 3 point cabled/chain connections are required to prevent swaying of each fixture. Trimming wire, attaching cord ends and electrical connections by others.

3.02 RELATED SPECIFICATION SECTIONS

- A. All concrete foundations provided for the work under this section shall be as detailed on the structural drawings and approved manufacturer's drawings and shall conform to specifications noted.
- B. All heating and ventilation work provided as part of the special construction specified under this section shall comply as applicable and shall further be provided to be in full compliance to all applicable local building codes and regulations.
- C. All electrical work provided, as part of the special construction specified under this section shall comply as applicable local electrical codes and regulations.

3.03 INSTALLATION AND FIRST TIME TAKEDOWN REQUIREMENTS - GENERAL

- A. Although this dome is intended for permanent installation, the following requirements must be adhered to if it is ever dismantled in the future.
- B. Installation and takedown of the dome and components must be done by the manufacturer direct. The manufacturer must be available and present for pre-construction meetings. Only an employee from the manufacturer with ability to make fabrication decisions must be present. Manufacturer must provide supervision labor, lifts and tools that are required to safely perform this work.
- C. The installation of the dome must include but is not limited to the following components:
 1. Verification of the grade beam and cable anchor locations
 2. Shipping, off-loading and setting of the dome and components

3. Assembling the inflation equipment and making it ready for gas and electrical connection by others.
 4. Spreading, assembling and anchoring of the dome membrane
 5. Layout and connection of the cable system
 6. Inflation of the dome
 7. Installation of doors, including VAL and handicap airlock.
 8. Installation of the lights: suspended, emergency & net cages.
 9. Installation of the divider and walkway net.
 10. Dome training and instructional walk through of the operation, maintenance and care of the dome and components.
- D. The Construction Manager shall coordinate the provision of the required electrical distribution and power from the utility company primary service to the inflation/furnace systems including hook up and all control wiring between mechanical system and wind sensor, if any.
1. Electrical distribution and receptacles for the lights will be provided by the Division 26 Electrical Trade Contractor. The manufacturer will supply suggested locations.
 2. A receptacle will be installed at each exit door location. The manufacturer must provide cord ends for the exit light receptacles. Installation, power distribution wiring and control wiring shall be as per manufacturer's recommendations and the Division 26 Electrical Trade Contractor
- E. The Construction Manager shall coordinate provision for supplying natural gas service from the utility company primary service meter to the various inflation/furnace systems. This includes the connection of the gas line and first cut regulator to the furnace system. The manufacturer must supply the Contractor with correct input requirements and gas line piping within each system.
1. The manufacturer is responsible for the initial startup of each system and a representative to do the startup work. This work must be done to comply with all local codes.
- F. The manufacturer must include complete engineered drawings of the concrete dome perimeter anchor/support with channel anchoring, (cable anchor locations), mechanical equipment pads and vaults, door and airlock pads light locations for the proper construction of the dome to the owner for obtaining permits. These drawings must be signed and stamped by a Minnesota Registered Engineer with previous experience of at least 2 similar projects.

END OF SECTION

**SECTION 21 0500
COMMON WORK RESULTS FOR FIRE SUPPRESSION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Above ground piping.
- B. Buried piping.
- C. Escutcheons.
- D. Mechanical couplings.
- E. Pipe hangers and supports.
- F. Pipe sleeves.
- G. Pipe sleeve-seal systems.
- H. Piping specialties.
- I. Pressure relief valves.

1.02 REFERENCE STANDARDS

- A. ASME A112.18.1 - Plumbing Supply Fittings; 2018, with Errata.
- B. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Qualification Standard for Welding, Brazing, and Fusing Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators; 2023.
- C. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250; 2020.
- D. ASME B16.4 - Gray Iron Threaded Fittings: Classes 125 and 250; 2021.
- E. ASME B16.5 - Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24 Metric/Inch Standard; 2020.
- F. ASME B16.9 - Factory-Made Wrought Buttwelding Fittings; 2018.
- G. ASME B16.11 - Forged Fittings, Socket-Welding and Threaded; 2021.
- H. ASME B16.25 - Buttwelding Ends; 2022.
- I. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.
- J. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2023a.
- K. ASTM A536 - Standard Specification for Ductile Iron Castings; 1984, with Editorial Revision (2019).
- L. ASTM A795/A795M - Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use; 2021.
- M. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2023a.
- N. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).
- O. AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Pipe Systems; 2018.
- P. AWWA C110/A21.10 - Ductile-Iron and Gray-Iron Fittings; 2021.
- Q. AWWA C111/A21.11 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings; 2023.
- R. AWWA C151/A21.51 - Ductile-Iron Pipe, Centrifugally Cast; 2023.
- S. AWWA C606 - Grooved and Shouldered Joints; 2022.
- T. FM (AG) - FM Approval Guide; Current Edition.
- U. NFPA 13 - Standard for the Installation of Sprinkler Systems; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- V. NFPA 14 - Standard for the Installation of Standpipe and Hose Systems; 2024.
- W. UL (DIR) - Online Certifications Directory; Current Edition.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide manufacturer's catalog information. Indicate piping, valve data and ratings.

1.04 QUALITY ASSURANCE

- A. Comply with FM (AG) and UL (DIR) requirements.
- B. Valves: Bear FM (AG) and UL (DIR) product listing label or marking. Provide manufacturer's name and pressure rating marked on valve body.
- C. Products Requiring Electrical Connection: Listed and classified as suitable for the purpose specified and indicated.
- D. Clean equipment, pipes, valves, and fittings of grease, metal cuttings, and sludge that may have accumulated from the installation and testing of the system.

1.05 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Sprinkler-based System:
 - 1. Comply with NFPA 13.
 - 2. See Section 21 1300.
- B. Standpipe and Hose System:
 - 1. Comply with NFPA 14.
 - 2. See Section 21 1200.
- C. Welding Materials and Procedures: Comply with ASME BPVC-IX.
- D. Provide system pipes, fittings, sleeves, escutcheons, seals, and other related accessories.

2.02 BURIED PIPING

- A. Steel Pipe: ASTM A53/A53M Schedule 40 or ASTM A795/A795M Standard Weight, black, with AWWA C105/A21.5 polyethylene jacket, or double layer, half-lapped polyethylene tape.
 - 1. Steel Fittings: ASME B16.9, wrought steel, butt welded, ASME B16.25, butt weld ends, ASTM A234/A234M, wrought carbon steel or alloy steel, ASME B16.5, steel flanges and fittings, or ASME B16.11, forged steel socket welded and threaded; with double layer, half-lapped polyethylene tape.
 - 2. Joints: Welded in accordance with AWS D1.1/D1.1M.
- B. Ductile Iron Pipe: AWWA C151/A21.51.
 - 1. Fittings: AWWA C110/A21.10, standard thickness.
 - 2. Joints: AWWA C111/A21.11, styrene-butadiene rubber (SBR) or vulcanized SBR gasket.
 - 3. Mechanical Couplings: Shaped composition sealing gasket, steel bolts, nuts, and washers.

2.03 ABOVE GROUND PIPING

- A. Steel Pipe: ASTM A795 Schedule 10 or ASTM A795 Schedule 40, black.
 - 1. Steel Fittings: ASME B16.5 steel flanges and fittings.
 - 2. Cast Iron Fittings: ASME B16.1, flanges and flanged fittings and ASME B16.4, threaded fittings.
 - 3. Mechanical Grooved Couplings: Malleable iron housing clamps to engage and lock, "C" shaped elastomeric sealing gasket, steel bolts, nuts, and washers; galvanized for galvanized pipe.
 - 4. Mechanical Formed Fittings: Carbon steel housing with integral pipe stop and O-ring pocked and O-ring, uniformly compressed into permanent mechanical engagement onto pipe.

2.04 PIPE SLEEVES

- A. Vertical Piping:
 - 1. Sleeve Length: 1 inch above finished floor.
 - 2. Provide sealant for watertight joint.

- B. Plastic, Sheet Metal, or Moisture-Resistant Fiber: Pipe passing through interior walls, partitions, and floors, unless steel or brass sleeves are specified below.
- C. Pipe Passing Through Below Grade Exterior Walls:
 - 1. Zinc-coated or cast-iron pipe.
 - 2. Provide watertight space with link rubber or modular seal between sleeve and pipe on both pipe ends.
- D. Clearances:
 - 1. Provide allowance for insulated piping.
 - 2. Wall, Floor, Floor, Partitions, and Beam Flanges: 1 inch greater than external; pipe diameter.
 - 3. Rated Openings: Caulked tight with firestopping material complying with ASTM E814 in accordance with Section 07 8400 to prevent the spread of fire, smoke, and gases.

2.05 PIPE SLEEVE-SEAL SYSTEMS

- A. Modular Mechanical Seals:
 - 1. Elastomer-based interlocking links to continuously fill annular space between pipe and wall-sleeve, wall or casing opening.
 - 2. Watertight seal between pipe and wall-sleeve, wall or casing opening.
 - 3. Size and select seal component materials in accordance with service requirements.
 - 4. Service Requirements:
 - a. Underground, buried, and wet conditions.
 - 5. Glass-reinforced plastic pressure end plates.
- B. Wall Sleeve: PVC material with waterstop collar, and nailer end caps.
- C. Sleeve-Forming Disk: Nonconductive plastic-based material, 3 inch thick.
- D. Pipeline-Casing Seals:
 - 1. Coated-metallic boltless modular seal for 6 inch carrier pipe.
 - 2. End Seals: 1/8 inch, pull-on type, rubber or synthetic rubber based.

2.06 ESCUTCHEONS

- A. Material:
 - 1. Chrome-plated.
 - 2. Metals and Finish: Comply with ASME A112.18.1.
- B. Construction:
 - 1. One-piece for mounting on chrome-plated tubing or pipe and one-piece or split-pattern type elsewhere.
 - 2. Internal spring tension devices or setscrews to maintain a fixed position against a surface.

2.07 PIPE HANGERS AND SUPPORTS

- A. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron, adjustable swivel, split ring.
- B. Hangers for Pipe Sizes 2 inches and Over: Carbon steel, adjustable, clevis.
- C. Wall Support for Pipe Sizes 4 inches and Over: Welded steel bracket and wrought steel clamp.

2.08 MECHANICAL COUPLINGS

- A. Rigid Mechanical Couplings for Grooved Joints:
 - 1. Dimensions and Testing: Comply with AWWA C606.
 - 2. Minimum Working Pressure: 300 psig.
 - 3. Housing Material: Fabricate of ductile iron complying with ASTM A536.
 - 4. Housing Coating: Factory applied orange enamel.
 - 5. Gasket Material: EPDM suitable for operating temperature range from minus 30 degrees F to 230 degrees F.
 - 6. Bolts and Nuts: Hot-dipped-galvanized or zinc-electroplated steel.

END OF SECTION

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SECTION 21 0523
GENERAL-DUTY VALVES FOR WATER-BASED FIRE-SUPPRESSION PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Iron butterfly valves with indicators.
- B. Check valves.
- C. Iron OS&Y gate valves.
- D. NRS gate valves.
- E. Trim and drain valves.

1.02 RELATED REQUIREMENTS

- A. Section 21 0553 - Identification for Fire Suppression Piping and Equipment.

1.03 REFERENCE STANDARDS

- A. FM (AG) - FM Approval Guide; Current Edition.
- B. NFPA 13 - Standard for the Installation of Sprinkler Systems; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. NFPA 13R - Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies; 2022, with Errata.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on valves including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Prepare valves for shipping as follows:
 - 1. Protect internal parts against rust and corrosion.
 - 2. Set valves open to minimize exposure of functional surfaces.
- B. Use the following precautions during storage:
 - 1. Maintain valve end protection and protect flanges and specialties from dirt.
 - a. Provide temporary inlet and outlet caps.
 - b. Maintain caps in place until installation.
 - 2. Store valves in shipping containers and maintain in place until installation.
 - a. Store valves indoors and maintain at higher than ambient dew point temperature.
 - b. If outdoor storage is unavoidable, store valves off the ground in watertight enclosures.
- C. Use the following precautions for handling:
 - 1. Do not use operating handles or stems as lifting or rigging points.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. FM Global Approved: Provide valves listed in FM (AG) Approval Guide under the following headings:
 - 1. Automated Sprinkler Systems:
 - a. Indicator posts.
- B. Comply with NFPA 13 and NFPA 13R for valves.
- C. Valve Pressure Ratings: Not less than minimum pressure rating indicated or higher as required.
- D. Valve Sizes: Same as upstream piping unless otherwise indicated.

2.02 IRON BUTTERFLY VALVES WITH INDICATORS

- A. Minimum Pressure Rating: 175 psig.
- B. Body Material: Cast or ductile iron with nylon, EPDM, epoxy, polyamide, or _____ coating.

- C. Seat: EPDM.
- D. Stem: Stainless steel.
- E. Disc: Ductile iron, nickel plated.
- F. Actuator: Worm gear or traveling nut.
- G. Supervisory Switch: Internal or external.
- H. Body Design: Grooved-end connections.

2.03 CHECK VALVES

- A. Minimum Pressure Rating: 175 psig.
- B. Type: Center guided check valve.
- C. Body Material: Cast iron, ductile iron.
- D. Center guided check with elastomeric seal.
- E. Hinge Spring: Stainless steel.
- F. End Connections: Flanged, grooved, or threaded.

2.04 IRON OS&Y GATE VALVES

- A. Maximum Working Pressure: 175 psi.
- B. Body and Bonnet Material: Cast or ductile iron.
- C. Wedge: Cast or ductile iron, or bronze with elastomeric coating.
- D. Stem: Brass, bronze, or stainless steel.
- E. Packing: Non-asbestos PTFE.
- F. Supervisory Switch: External.

2.05 NRS GATE VALVES

- A. Minimum Pressure Rating: 175 psig.
- B. Body and Bonnet Material: Cast or ductile iron.
- C. Wedge: Cast or ductile iron with elastomeric coating.
- D. Stem: Brass or bronze.
- E. Packing: Non-asbestos PTFE.
- F. Supervisory Switch: External.
- G. End Connections: Flanged.

2.06 TRIM AND DRAIN VALVES

- A. Ball Valves:
 - 1. Description:
 - a. Pressure Rating: 175 psig.
 - b. Body Design: Two piece.
 - c. Body Material: Forged brass or bronze.
 - d. Port Size: Full or standard.
 - e. Seat: PTFE.
 - f. Stem: Bronze or stainless steel.
 - g. Ball: Chrome-plated brass.
 - h. Actuator: Hand-lever.
- B. Angle Valves:
 - 1. Description:
 - a. Pressure Rating: 175 psig.
 - b. Body Material: Brass or bronze.
 - c. Ends: Threaded.
 - d. Stem: Bronze.
 - e. Disc: Bronze.
 - f. Packing: Asbestos free.
 - g. Handwheel: Malleable iron, bronze, or aluminum.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Confirm valve interior to be free of foreign matter and corrosion.
- B. Remove packing materials.
- C. Examine guides and seats by operating valves from the fully open position to the fully closed position.
- D. Examine valve threads and mating pipe for form and cleanliness.

3.02 INSTALLATION

- A. Install listed fire protection shutoff valves supervised-open, located to control sources of water supply except from fire department connections.
- B. Install check valve in water supply connections and backflow preventer at potable water supply connections.
- C. Valves with threaded connections to have unions at equipment arranged for easy access, service, maintenance, and equipment removal without system shutdown.
- D. Valves in horizontal piping installed with stem at or above the pipe center.
- E. Position valves to allow full stem movement.
- F. Install valve tags. Comply with Section 21 0553 requirements for valve tags, schedules, and signs on surfaces concealing valves; and the appropriate NFPA standard applying to the piping system in which valves are installed.

END OF SECTION

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SECTION 21 0553
IDENTIFICATION FOR FIRE SUPPRESSION PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nameplates.
- B. Tags.
- C. Pipe markers.

1.02 REFERENCE STANDARDS

- A. ASME A13.1 - Scheme for the Identification of Piping Systems; 2023.
- B. ASTM D709 - Standard Specification for Laminated Thermosetting Materials; 2017.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Manufacturer's Installation Instructions: Indicate special procedures, and installation instructions.

PART 2 PRODUCTS

2.01 IDENTIFICATION APPLICATIONS

- A. Major Control Components: Nameplates.
- B. Piping: Pipe markers.
- C. Relays: Tags.
- D. Valves: Tags.

2.02 NAMEPLATES

- A. Description: Laminated three-layer plastic with engraved letters.
 - 1. Letter Color: White.
 - 2. Letter Height: 1/4 inch.
 - 3. Background Color: Black.
 - 4. Thickness: 1/8 inch.
 - 5. Plastic: Comply with ASTM D709.

2.03 TAGS

- A. Plastic Tags: Laminated three-layer plastic with engraved black letters on light contrasting background color. Tag size minimum 1-1/2 inch diameter.

2.04 PIPE MARKERS

- A. Color: Comply with ASME A13.1.
- B. Plastic Pipe Markers: Factory fabricated, flexible, semi- rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.
- C. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure-sensitive adhesive backing and printed markings.
- D. Underground Plastic Pipe Markers: Bright-colored continuously printed plastic ribbon tape, minimum 6 inches wide by 4 mil, 0.004 inch thick, manufactured for direct burial service.

PART 3 EXECUTION

3.01 PREPARATION

- A. Degrease and clean surfaces to receive adhesive for identification materials.

3.02 INSTALLATION

- A. Install nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B. Install tags with corrosion resistant chain.
- C. Install plastic pipe markers in accordance with manufacturer's instructions.

- D. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.
- E. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.

END OF SECTION

ISSUE DATE - 06-13-2024

**SECTION 21 1200
FIRE-SUPPRESSION STANDPIPES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Valves.
- B. Fire department connections.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittal procedures, project meetings, progress schedules and documentation, reports, coordination.
- B. Section 01 4100 - Regulatory Requirements.
- C. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance (O&M) data, warranties and bonds.
- D. Section 21 0500 - Common Work Results for Fire Suppression: Fire protection piping.
- E. Section 21 0523 - General-Duty Valves for Water-Based Fire-Suppression Piping.

1.03 REFERENCE STANDARDS

- A. NFPA 14 - Standard for the Installation of Standpipe and Hose Systems; 2024.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide manufacturer's catalog sheet for equipment indicating rough-in size, finish, and accessories.
- C. Shop Drawings: Indicate supports, components, accessories, and sizes.

1.05 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 VALVES

- A. General Duty Valves: See Section 21 0523.
- B. Specialty Valves:
 - 1. Hose Connection Valve:
 - a. Angle type; brass finish; 2-1/2 inch NPS, thread to match fire department hardware, 300 psi working pressure, with threaded cap and chain of same material and finish.
 - 2. In-line or Angle Hose Valves:
 - a. Cast bronze, 2-1/2 inch, NPS handwheel operated globe valve with grooved or threaded end connections, rated for 400 psi inlet pressure with outlet discharge field-set to hose inlet pressure. Provide cap and chain.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NFPA 14.
- C. Connect standpipe system to water source ahead of domestic water connection.
- D. Flush entire system of foreign matter.

3.02 FIELD QUALITY CONTROL

- A. Perform field inspection and testing (Field Acceptance Test) in accordance with Section 01 4000.
- B. Test entire system in accordance with NFPA 14.
- C. Test shall be witnessed by Fire Marshal.

END OF SECTION

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**SECTION 21 1300
FIRE-SUPPRESSION SPRINKLER SYSTEMS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wet-pipe sprinkler system.
- B. System design, installation, and certification.
- C. Fire department connections.

1.02 REFERENCE STANDARDS

- A. NFPA 13 - Standard for the Installation of Sprinkler Systems; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- B. NFPA 1963 - Standard for Fire Hose Connections; 2019.
- C. UL 405 - Standard for Safety Fire Department Connection Devices; Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on sprinklers, valves, and specialties, including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections.
- C. Shop Drawings:
 - 1. Indicate hydraulic calculations, detailed pipe layout, hangers and supports, sprinklers, components, and accessories. Indicate system controls.
 - 2. Submit shop drawings to Authorities Having Jurisdiction for approval. Submit proof of approval to Architect.
- D. Designer's qualification statement.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements for additional provisions.
 - 2. Extra Sprinklers: Type and size matching those installed in quantity required by referenced NFPA design and installation standard.
 - 3. Sprinkler Wrenches: For each sprinkler type.
- F. Project Record Documents: Record actual locations of sprinklers and deviations of piping from drawings. Indicate drain and test locations.

1.04 QUALITY ASSURANCE

- A. Comply with FM (AG) requirements.
- B. Designer Qualifications: Design system under direct supervision of a Professional Fire Protection Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store products in shipping containers and maintain in place until installation. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

PART 2 PRODUCTS

2.01 SPRINKLER SYSTEM

- A. Sprinkler System: Provide coverage for building areas noted.
- B. Occupancy: Light hazard; comply with NFPA 13.
- C. Water Supply: Determine volume and pressure from water flow test data.
- D. Provide fire department connections where indicated.
- E. Storage Cabinet for Spare Sprinklers and Tools: Steel, located adjacent to alarm valve.

2.02 SPRINKLERS

- A. Suspended Ceiling Type: Semi-recessed pendant type with matching push on escutcheon plate.
 - 1. Response Type: Quick.
 - 2. Coverage Type: Extended.
 - 3. Finish: Chrome plated.
 - 4. Escutcheon Plate Finish: Chrome plated.
 - 5. Fusible Link: Fusible solder link type temperature rated for specific area hazard.
- B. Exposed Area Type: Pendant type with guard.
 - 1. Response Type: Quick.
 - 2. Coverage Type: Extended.
 - 3. Finish: Brass.
 - 4. Fusible Link: Fusible solder link type temperature rated for specific area hazard.
- C. Sidewall Type: Semi-recessed horizontal sidewall type with matching push on escutcheon plate.
 - 1. Response Type: Quick.
 - 2. Coverage Type: Extended.
 - 3. Finish: Chrome plated.
 - 4. Escutcheon Plate Finish: Chrome plated.
 - 5. Fusible Link: Fusible solder link type temperature rated for specific area hazard.
- D. Flexible Drop System: Stainless steel, multiple use, open gate type.
 - 1. Application: Use to properly locate sprinkler heads.
 - 2. Include all supports and bracing.
 - 3. Provide braided type tube as required for the application.
 - 4. Manufacturers:

2.03 PIPING SPECIALTIES

- A. Wet Pipe Sprinkler Alarm Valve: Check type valve with divided seat ring, rubber-faced clapper to automatically actuate water motor alarm, pressure retard chamber and variable pressure trim with the following additional capabilities and features:
 - 1. Activate electric alarm.
 - 2. Test and drain valve.
 - 3. Replaceable internal components without removing valve from installed position.
- B. Backflow Preventer: Double check valve assembly backflow preventer with drain and OS & Y gate valve on each end.
- C. Test Connections:
 - 1. Inspector's Test Connection for Preaction Systems:
 - a. Provide test connections approximately 6 ft above floor for each or portion of each sprinkler system equipped with an alarm device, located at the most remote part of each system.
 - b. Route test connection to an open-site drain location, excluding janitor sinks, accepting full flow without negative consequences.
 - c. Supply discharge orifice with same size as corresponding sprinkler orifice.
 - 2. Backflow Preventer Test Connection:
 - a. Provide downstream of the backflow prevention assembly, listed hose valves with 2.5 inch National Standard male hose threads with cap and chain.
- D. Water Motor Alarm: Hydraulically operated impeller type alarm with aluminum alloy red enameled gong and motor housing, nylon bearings, and inlet strainer.
- E. Electric Alarm: Electrically operated red enameled gong with pressure alarm switch.
- F. Water Flow Switch: Vane type switch for mounting horizontal or vertical, with two contacts; rated 10 amp at 125 volt AC and 2.5 amp at 24 volt DC.
- G. Fire Department Connections:
 - 1. Type: Free standing made of corrosion resistant metal complying with UL 405.
 - a. Inlets: Two way, 2-1/2 inch swivel fittings, internal threaded. Thread size and inlets according to NFPA 1963 or Authority Having Jurisdiction. Brass caps with gaskets, chains, and lugs.

- b. Rated Working Pressure: 175 psi.
 - c. Finish: Chrome.
- H. Supervisory Switches:
 - 1. Nema 4x and 6P rated, tamper resistant mounting screws, two single pole double throw switches, rated 10A, 125/250VAC and 2A, 30VDC.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with referenced NFPA design and installation standard.
- B. Install equipment in accordance with manufacturer's instructions.
- C. Provide approved double check valve assembly at sprinkler system water source connection.
- D. Locate fire department connection with sufficient clearance from walls, obstructions, or adjacent siamese connectors to allow full swing of fire department wrench handle.
- E. Locate outside alarm gong on building wall as indicated.
- F. Place pipe runs to minimize obstruction to other work.
- G. Place piping in concealed spaces above finished ceilings.
- H. Center sprinklers in two directions in ceiling tile and provide piping offsets as required.
- I. Apply masking tape or paper cover to ensure concealed sprinklers, cover plates, and sprinkler escutcheons do not receive field paint finish. Remove after painting. Replace painted sprinklers.
- J. Flush entire piping system of foreign matter.
- K. Hydrostatically test entire system.
- L. Require test be witnessed by Fire Marshal.

END OF SECTION

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SECTION 22 0010
BASIC MECHANICAL PLUMBING REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Basic Mechanical Plumbing Requirements specifically applicable to Division 22 in addition to Division 1 - General Requirements.

1.02 SCOPE OF WORK

- A. The Mechanical Plumbing Contract shall also include furnishing and installing a complete plumbing system for the building and all other related work as called for under the specifications and shown on plans.

1.03 WORK INCLUDED

- A. The Mechanical Plumbing Contract shall include all work under the listed Division 22 of the Specifications Index and all related Mechanical work as shown on the Drawings for the project.
- B. A Complete table of Mechanical Reference Symbols is shown on the plans.
- C. Under this Contract the Mechanical Contractor shall furnish the Owner with a PDF of all pertinent systems related documents stored on a solid state external hard drive or a single flash stick. Submit a single PDF to the Engineer for review. The Engineer will then turn information provided over to the Owner. The PDF shall contain the following items:
 - 1. Shop drawings on all major equipment.
 - 2. Operating Instructions for all major equipment.
 - 3. Maintenance Instructions for all major equipment.
 - 4. Wiring diagrams for all equipment.
 - 5. Test and Balance Reports.
 - 6. The Mechanical installation to be made under Division 23 is set up for contract bidding as follows:
 - a. Mechanical HVAC Contractor is a sub-contractor to the General Contractor.
 - 1) The Mechanical contractor is responsible for furnishing equipment, such as cranes, lifts, etc. in order to provide a complete installation of mechanical systems.
 - 2) The Mechanical contractor shall be a sub-contractor to the General Contractor and shall include in the bid, prices from sub-contractors for control wiring, and other trades necessary to complete the entire job.
- D. Under this Contract the Mechanical Contractor shall furnish the Owner with two 3-ring binders and a PDF of all pertinent systems' related documents stored on a solid state external hard drive or a single flash drive. Submit a single, organized PDF to the Engineer for review. After review is complete, contractor shall turn information provided over to the Owner. The binders and PDF shall contain the following items:
 - 1. Shop drawings on all major equipment.
 - 2. Operating Instructions for all major equipment.
 - 3. Maintenance Instructions for all major equipment.
 - 4. Wiring diagrams for all equipment.
 - 5. Test and Balance Reports.
- E. The Mechanical Contractor is responsible for contacting the utility companies and coordinating the water, sewer, storm and natural gas connections for the building service. Include all costs in bid.
- F. The Mechanical installation to be made under Divisions 22 is set up for contract bidding as follows:
 - 1. Mechanical Plumbing Contractor is a sub-contractor to the General Contractor.
 - a. The Mechanical contractor is responsible for furnishing equipment, such as cranes, lifts, etc. in order to provide a complete installation of mechanical systems.
 - b. The Mechanical contractor shall be a sub-contractor to the General Contractor and shall include in the bid, prices from sub-contractors for control wiring, and other trades necessary to complete the entire job.

1.04 SPECIFICATIONS COMPLIANCE

- A. The requirements of these specifications shall be complied with in every respect. Therefore, it shall be absolutely mandatory that the job foreman, all lead mechanics, subcontractors and their foreman have completely studied these specifications, be completely knowledgeable as to their entire contents, and maintain a copy at the job-site. Failure to comply with this requirement will be reason to presume the mechanic or subcontractor is not in responsible charge of their work due to ignorance of job requirements, and will be reason for the owner to require dismissal and replacement with approved personnel. Every foreman and lead mechanic shall be provided with a complete copy of this specification.

1.05 INCONSISTENCIES

- A. If there is an inconsistency in the quality and/or quantity of Work required by the Contract Documents, either the greater quality and/or quantity of Work indicated shall be provided in accordance with the Engineer/Architect's interpretation without change in the contract sum.

1.06 WORK NOT INCLUDED

- A. The following work is not included as part of the Contract.
 - 1. The removal and storage of any equipment in the building required to be moved or relocated during the construction process.

1.07 CODES, FEES AND LATERAL COSTS

- A. The Plumbing Installation shall meet all applicable local, state and federal codes and standards.
- B. All permits necessary for a complete plumbing installation shall be paid for by this Contractor.
- C. This contractor shall contact the local utilities for gas, water, sanitary and storm sewers, and include in their bid the any costs associated with service installation charges of the utility(s).
- D. Except in those municipalities which provide state approved electrical inspection, all installation of electrical equipment wiring shall be inspected by the State Board of Electricity. Allowance shall be made in the bid and contract for the cost of such inspection.
 - 1. Fees for such inspection will be charged in accordance with the rules and regulations of the State Board of Electricity. Evidence of payment of fees shall be provided by the Contractor with the Request for Payment.

1.08 REFERENCES

- A. All equipment, piping, etc., shall be new and shall be installed to meet the approval of the following additional ordinances: ASME Rules for Pressure Tanks, National Board of Fire Underwriter's Rules, American Waterworks and the American Gas Association.

1.09 SUBMITTALS

- A. Submit under provisions of Division 01 3000.
- B. Products Scheduled on the Drawings by Naming one Manufacturer, but not Indicating Other Approved Manufactures in the Specifications: Use any equivalent product complying with the specifications in general and equivalent to the "Basis of Design" identified in the drawing's schedules. Pre-bid substitutions are not required in this situation.
- C. Submit shop drawings and product data grouped to include complete submittals of related systems, products, and accessories in a single submittal.
- D. All documents shall be submitted in .pdf format unless pre-approved by Engineer.
- E. The contractor shall not use any equipment or materials that does not have the engineer's stamped approval.
- F. Shop drawing shall identify the product/equipment unit that is being provided. Generic shop drawings not indicating specific product/equipment will be rejected.
- G. Shop drawing shall indicated dimensions and values in units to match those specified.

1.10 PROJECT/SITE CONDITIONS

- A. Install Work in locations shown on Drawings, unless prevented by Project conditions.

1.11 SEQUENCING AND SCHEDULING

1.12 PRE-CONSTRUCTION COORDINATION AND VERIFICATION

- A. This Contractor shall coordinate their work with other Contractors on this job. Any conflict which cannot be resolved shall be settled by the Architect/Engineer.
- B. Field verification of scale dimensions on plans is directed since actual locations, distances and levels will be governed by actual field conditions.
- C. The Contractors shall check architectural, structural, plumbing, heating, ventilating and electrical plans to avert possible installation conflicts. Should drastic changes from original plans be necessary to resolve such conflicts this Contractor shall notify the Architect/Engineer and secure written approval and agreement on necessary adjustments before the installation is started.
- D. Discrepancies shown on different plans or between plans and actual field conditions or between plans and specifications shall promptly be brought to the attention of the Architect/Engineer for a decision.
- E. The Contractor shall consider and review the complete set of documents, etc., Architectural, Structural, Mechanical, Electrical, etc., (Drawings and Specifications) as a complete set. They will be responsible for any and all mechanical work shown or stated (to be by the contractor), to include this work in the bid and install such items even though they are not specifically shown or stated on the Mechanical section of the plans and specifications.

1.13 COORDINATION

- A. Contractor shall be responsible for continual coordination of the mechanical work with other trades so as to avoid conflicts in installation. Contractor shall cooperate with other trades to assure that construction proceeds in an orderly and timely manner.
- B. Study the civil, structural, electrical, shop and any specialty drawings and specifications to determine required coordination.
 - 1. Anchor bolts, sleeves, inserts and supports that may be required for the mechanical work shall be furnished and installed under the same division of the specifications as the respective items to be supported. Excluded from this requirement are cast in place anchor bolts.
 - 2. Slots, chases, openings and recesses through floors and walls as specified will be provided by the various trades in their respective materials, but the trade requiring them shall see that they are properly located in zones provided or otherwise approved by the Engineer or Architect and/or Owner.
 - 3. Locations of pipes, panels, equipment, fixtures, etc., shall be adjusted to accommodate interferences encountered. The Project Coordinator shall determine the exact rerouting and location of each pipe and/or duct encountered prior to fabrication.
 - a. Right-of-Way: Lines which pitch shall have the right of way over those which do not pitch. Lines whose elevations cannot be changed shall have the right of way over lines whose elevations can be changed.
 - b. Offsets, transitions and changes in direction in pipes shall be made as required to maintain proper head room and pitch of sloping lines whether or not indicated on the drawings.
 - 4. Installation of Arrangement: The contractor shall install all mechanical work to permit removal of, and access to, (without damage to other parts) all parts requiring periodic replacement or maintenance.
- C. Contractor to expose and verify location and elevation of existing sewer prior to laying any pipe to or from connection points when connecting to existing or proposed sewer. If location or elevation of existing sewer does not match location and elevation indicated on drawings, notify engineer immediately, at which time the engineer may adjust proposed alignments and elevations. Allow reasonable amount of time for engineer to make assessment of conditions and determine alternate means of construction if necessary. As a minimum, engineer shall be allowed one working day from the time of notification to make assessment and determination of alternate work without submittal of Change Proposal for adjustment to Contract Price or Contract Times.
- D. Layout Priority:
 - 1. All trades shall understand that other trades will need to work in the same areas during the project. All final decisions as to the right-of-way and runs of utility lines (pipes, ducts, etc.) shall be made by Owner and/or Architect. In general, priority shall be given as follows:

- a. Process/Fire Protection piping which must be drainable
- b. Sheet metal ductwork
- c. Light Fixtures
- d. Plumbing sanitary, storm, and vent lines
- e. Sprinkler piping
- f. Gravity water lines
- g. Hydronic or steam lines
- h. Refrigerant lines
- i. Gas and air lines
- j. Plumbing water
- k. Electrical conduit
- l. Control air lines

- E. PREPARE DETAILED SHOP DRAWINGS WHERE NECESSARY TO ASSURE PROPER FIT AND NECESSARY CLEARANCE.

1.14 CUTTING, PATCHING AND FIRESTOPPING

- A. The Plumbing Contractor shall set all sleeves in construction for their Work.
- B. Where cutting is required, it shall be done by the Plumbing Contractor.
- C. All patching shall be done by Plumbing Contractor.
- D. All cutting of any kind must be done with great care so as not to leave unsightly surfaces which may not be entirely concealed by plates, escutcheons, or their normal concealing construction, if such unsightly conditions occur, Plumbing Contractor will be required, at their own expense, to replace the damaged construction.
- E. This Plumbing Contractor shall provide and install firestopping materials per Section 07 8400 - Firestopping.

1.15 ACCESS PANELS REQUIRED BY TRADE

- A. Trade requiring access shall provide and install access panels where not shown or specified.
- B. The finished appearance and function will be subject to approval by the Architect/Owner.
- C. Provide panels that accommodate adjacent finishes in finished spaces.
- D. Access panels shall meet all code requirements for each location they are installed and shall be sized appropriately.

1.16 ELECTRICAL

- A. Electrical Contractor shall furnish all motor starters and motor controls and provide all wiring for motor control operation, except if specified otherwise.

1.17 ADDITIONAL ELECTRICAL COSTS

- A. If the Mechanical Contractor substitutes equipment for specified units, the mechanical contractor shall be responsible for any additional electrical installation costs for this substitution whether the other equipment was listed as equal in the specification or was approved equal after the project was in the bidding process.

1.18 GUARANTEE

- A. This Contractor shall be responsible for the proper installation and working of everything in this contract and shall guarantee to remedy free of charge any defects in workmanship and materials that may appear to give or give rise to trouble of any kind for a period of one year from date of final substantial completion.

1.19 PRODUCT MANUFACTURERS

- A. If a specification section does not include a list of approved Manufacturers, that section is open to all Manufacturers that meet the section's specified requirements. Substitution requests are not required for any Manufacturers.
- B. If a specification section does include a list of Manufacturers, that list encompasses all pre-approved manufacturers for that section. Substitution requests will be required for any non-specified Manufacturers during bidding.

PART 2 PRODUCTS

2.01 NOT USED
PART 3 EXECUTION
3.01 NOT USED

END OF SECTION

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**SECTION 22 0519
METERS AND GAUGES FOR PLUMBING PIPING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Pressure gauges.
- B. Thermometers.

1.02 REFERENCE STANDARDS

- A. ASME B40.100 - Pressure Gauges and Gauge Attachments; 2022.
- B. ASTM E1 - Standard Specification for ASTM Liquid-in-Glass Thermometers; 2014 (Reapproved 2020).
- C. ASTM E77 - Standard Test Method for Inspection and Verification of Thermometers; 2014 (Reapproved 2021).

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Utility Service Metering: Coordinate and apply Utility Service Provider requirements in terms of meter type, size, physical location, pipe size, upstream/downstream pipe lengths required, and other installation details.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide red-marked product data sheets for each furnished item with associated components and accessories.

PART 2 PRODUCTS

2.01 PRESSURE GAUGES

- A. Bourdon Tube for Liquids and Gases:
 - 1. Dial Size and Cover: Stainless Steel 4-1/2 inch diameter scale with glass window.
 - 2. Dial Text and Markings: Black color on white background with scaled psi units.
 - 3. Accuracy: ASME B40.100, adjustable industrial grade (A) with 1 percent at mid-range of span.
 - 4. Process Connection: Lower-back, 1/4 inch NPT male except where noted.
- B. Accessories:
 - 1. Gauge Cock: Brass with tee or lever handle for maximum 150 psi.

2.02 THERMOMETERS

- A. General:
 - 1. Product Compliance: ASTM E1.
 - 2. Lens: Clear glass, except where stated.
 - 3. Accuracy: One percent, when tested in accordance with ASTM E77, except where stated.
 - 4. Scale: Black markings depicting single scale in degrees F where expected process value falls half-span of standard temperature range.
- B. Thermometers
 - 1. Adjustable Angle: 9 inch v-shape molded polyester case with clear polycarbonate window scale, 3-1/2 inch NPT stem, red or blue organic non-toxic liquid filled glass tube, and adjustable joint with positive locking device allowing 360 degrees in horizontal plane or 180 degrees in vertical plane adjustments.
- C. Thermometers - Dial Type:
 - 1. Adjustable Angle: 5 inch diameter dial with black pointer, stainless steel case, silicone damping bimetal element, hermetically sealed shatterproof-lens, recalibrating screw, and 2-1/2 inch stainless steel NPT stem.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not install instrumentation when areas are under construction, except for required rough-in, taps, supports, and test plugs.

3.02 INSTALLATION

- A. Install pressure gauges as follows:
 - 1. At water meter.
 - 2. Include gauge cock to isolate each gauge and extend nipples for insulation clearance.
 - 3. Adjust gauges to selected viewing angle, clean thoroughly, and calibrate to zero.
- B. Install thermometers as follows:
 - 1. Hot Water Heaters: Place upstream and downstream of heater. Add one on the inlet end when using steam as the water heating medium.

3.03 SCHEDULES

- A. Pressure Gauges, Location and Scale Range:
 - 1. Booster Pumps, 0 to 100 psi.
 - 2. Expansion tanks, 0 to 100 psi.
 - 3. Pressure reducing valves, 0 to 100 psi.
 - 4. Backflow preventers, 0 to 100 psi.
- B. Stem Type Thermometers, Location and Scale Range:
 - 1. Domestic hot water supply and recirculation, 30 to 180 degrees F.

END OF SECTION

SECTION 22 0553
IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nameplates.
- B. Tags.
- C. Pipe markers.

1.02 REFERENCE STANDARDS

- A. ASME A13.1 - Scheme for the Identification of Piping Systems; 2023.
- B. ASTM D709 - Standard Specification for Laminated Thermosetting Materials; 2017.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Schedules:
 - 1. Submit plumbing component identification schedule listing equipment, piping, and valves.
 - 2. Detail proposed component identification data in terms of wording, symbols, letter size, and color coding to be applied to corresponding product.
 - 3. Valve Data Format: Include id-number, location, function, and model number.
- C. Product Data: Provide manufacturers catalog literature for each product required.
- D. Project Record Documents: Record actual locations of tagged valves.

PART 2 PRODUCTS

2.01 PLUMBING COMPONENT IDENTIFICATION GUIDELINE

- A. Nameplates:
 - 1. Heat exchangers, water heaters, and other heat transfer products.
 - 2. Control panels, transducers, and other related control equipment products.
 - 3. Pumps, tanks, filters, water treatment devices, and other plumbing equipment products.
- B. Tags:
 - 1. Piping: 3/4 inch diameter and smaller.
 - 2. Manual operated and automated control valves.
- C. Pipe Markers: 3/4 inch diameter and higher.

2.02 NAMEPLATES

- A. Description: Laminated piece with up to three lines of text.
 - 1. Letter Color: White.
 - 2. Letter Height: 1/4 inch.
 - 3. Background Color: Black.
 - 4. Nameplate Height: 3/4 inch.
 - 5. Nameplate Material:
 - a. Flexible: Vinyl with adhesive backing per ASTM D709.

2.03 TAGS

- A. Metal: Brass, 19 gauge 1-1/2 inch in diameter with smooth edges, engraved, smooth edges, and corrosion-resistant chain. Up to three lines of text.
- B. Valve Tag Chart: Typewritten 12-point letter size list in anodized aluminum frame.

2.04 PIPE MARKERS

- A. Comply with ASME A13.1.
- B. Flexible Marker: Factory fabricated, semi-rigid, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid conveyed.
- C. Flexible Tape Marker: Flexible, vinyl film tape with pressure-sensitive adhesive backing and printed markings.
- D. Underground Flexible Marker: Bright-colored continuously printed ribbon tape, minimum 6 inches wide by 4 mil, 0.004 inch thick, manufactured for direct burial service.

- E. Identification Scheme, ASME A13.1:
 - 1. Primary: External Pipe Diameter, Uninsulated or Insulated.
 - a. 3/4 to 1-1/4 inches: Use 8 inch field-length with 1/2 inch text height.
 - b. 1-1/2 to 2 inches: Use 8 inch field-length with 3/4 inch text height.
 - c. 2-1/2 to 6 inches: Use 12 inch field-length with 1-1/4 inch text height.
 - d. 8 to 10 inches: Use 24 inch field-length with 2-1/2 inch text height.
 - e. Over 10 inches: Use 32 inch field-length with 3-1/2 inch text height.
 - 2. Secondary: Color scheme per fluid service.
 - a. Water; Potable, Storm, Sanitary, Vent, Boiler Feed, and Other: White text on green background.

PART 3 EXECUTION

3.01 PREPARATION

- A. Degrease and clean surfaces to receive identification products.

3.02 INSTALLATION

- A. Install flexible nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B. Install tags in clear view and align with axis of piping
- C. Install plastic pipe markers in accordance with manufacturer's instructions.
- D. Install plastic tape pipe marker around pipe in accordance with manufacturer's instructions.
- E. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.
- F. Apply ASME A13.1 Pipe Marking Rules:
 - 1. Place pipe marker adjacent to changes in direction.
 - 2. Place pipe marker adjacent each valve port and flange end.
 - 3. Place pipe marker at both sides of floor and wall penetrations.
 - 4. Place pipe marker every 25 to 50 feet interval of straight run.

3.03 SCHEDULE

- A. Equipment Type:
 - 1. Equipment Nameplates:
 - a. Hot Water Heater
 - b. Hot Water Recirculating pump
 - c. Domestic Booster Pump
 - 2. Tags:
 - a. Plumbing valves
 - 3. Piping Markers:
 - a. Domestic Water Piping Systems

END OF SECTION

**SECTION 22 0719
PLUMBING PIPING INSULATION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cellular glass insulation.
- B. Flexible elastomeric cellular insulation.
- C. Glass fiber insulation.
- D. Hydrous calcium silicate insulation.
- E. Jacketing and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2019, with Editorial Revision (2023).
- B. ASTM C449 - Standard Specification for Mineral Fiber Hydraulic-Setting Thermal Insulating and Finishing Cement; 2007 (Reapproved 2019).
- C. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2021.
- D. ASTM C533 - Standard Specification for Calcium Silicate Block and Pipe Thermal Insulation; 2017 (Reapproved 2023).
- E. ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form; 2023.
- F. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation; 2022a.
- G. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation; 2022.
- H. ASTM C795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel; 2008 (Reapproved 2023).
- I. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- J. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.
- K. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years of documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified in this section with minimum three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.
- B. Protect insulation from weather and sunlight, construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

1.06 FIELD CONDITIONS

- A. Maintain ambient conditions required by manufacturers of each product.
- B. Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

- A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.02 GLASS FIBER INSULATION

- A. Manufacturers:
 - 1. Johns Manville Corporation: www.jm.com/#sle.
 - 2. Knauf Insulation: www.knaufinsulation.com/#sle.
 - 3. Owens Corning Corporation: www.ocbuildingspec.com/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible.
 - 1. K Value: ASTM C177, 0.24 at 75 degrees F.
 - 2. Maximum Service Temperature: 850 degrees F.
 - 3. Maximum Moisture Absorption: 0.2 percent by volume.
- C. Insulation: ASTM C547 and ASTM C795; semi-rigid, noncombustible, end grain adhered to jacket.
 - 1. K Value: ASTM C177, 0.24 at 75 degrees F.
 - 2. Maximum Service Temperature: 650 degrees F.
 - 3. Maximum Moisture Absorption: 0.2 percent by volume.
- D. Vapor Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm.
- E. Vapor Barrier Lap Adhesive: Compatible with insulation.

2.03 CELLULAR GLASS INSULATION

- A. Manufacturers:
 - 1. Owens Corning Corporation: www.ocbuildingspec.com/#sle.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Insulation: ASTM C552, Type II, Grade 6.
 - 1. K Value: 0.35 at 100 degrees F.
 - 2. Service Temperature Range: From 250 degrees F to 800 degrees F.
 - 3. Water Vapor Permeability: 0.005 perm inch maximum per inch.
 - 4. Water Absorption: 0.5 percent by volume, maximum.

2.04 HYDROUS CALCIUM SILICATE INSULATION

- A. Insulation: ASTM C533 and ASTM C795; rigid molded, asbestos free, gold color.
 - 1. K Value: 0.40 at 300 degrees F when tested in accordance with ASTM C177 or ASTM C518.
 - 2. Maximum Service Temperature: 1,200 degrees F.
 - 3. Density: 15 pcf.
- B. Tie Wire: 0.048 inch stainless steel with twisted ends on maximum 12 inch centers.
- C. Insulating Cement: ASTM C449.

2.05 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

- A. Manufacturers:
 - 1. Aeroflex USA, Inc: www.aeroflexusa.com/#sle.
 - 2. Armacell LLC: www.armacell.us/#sle.
 - 3. K-Flex USA LLC: www.kflexusa.com/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.
 - 1. Minimum Service Temperature: Minus 40 degrees F.
 - 2. Maximum Service Temperature: 220 degrees F.
 - 3. Connection: Waterproof vapor barrier adhesive.
- C. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation.

- D. Weather Barrier: Air dried, contact adhesive, compatible with insulation and ASTM E84 compliant.

2.06 JACKETING AND ACCESSORIES

- A. PVC Plastic Jacket:
 - 1. Manufacturers:
 - a. Johns Manville Corporation: www.jm.com/#sle.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
 - 2. Jacket: One piece molded type fitting covers and sheet material, off-white color.
 - a. Minimum Service Temperature: 0 degrees F.
 - b. Maximum Service Temperature: 150 degrees F.
 - c. Moisture Vapor Permeability: 0.002 perm inch, maximum, when tested in accordance with ASTM E96/E96M.
 - d. Thickness: 10 mil, 0.010 inch.
 - e. Connections: Brush on welding adhesive.
 - 3. Covering Adhesive Mastic: Compatible with insulation.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean and dry, with foreign material removed.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with North American Insulation Manufacturers Association (NAIMA) National Insulation Standards.
- C. Exposed Piping: Locate insulation and cover seams in least visible locations.
- D. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.
- E. Flexible elastomeric cellular insulated pipes conveying fluids below ambient temperature:
 - 1. Manufacturer Fabricated Fittings: Pre-fabricated insulation elbows, tees, and fabricated covers for grooved fittings and couplings to reduce complex cutting and assembly of insulation in the field. Provides complete system integrity for thermal performance and controlling condensation drip from below-ambient systems when used as part of a pipe insulation system. UL GREENGUARD Gold Certified for low VOC's and includes antimicrobial protection from the growth of mold and mildew in the system.
- F. For hot piping conveying fluids 140 degrees F or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.
- G. Glass fiber insulated pipes conveying fluids above ambient temperature:
 - 1. Provide standard jackets, with or without vapor barrier, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure-sensitive adhesive. Secure with outward clinch expanding staples.
 - 2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.
- H. Inserts and Shields:
 - 1. Application: Piping 1-1/2 inches diameter or larger.
 - 2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.
 - 3. Insert Location: Between support shield and piping and under the finish jacket.
 - 4. Insert Configuration: Minimum 6 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated.
 - 5. Insert Material: Hydrous calcium silicate insulation or other heavy density insulating material suitable for the planned temperature range.
 - 6. Flexible elastomeric cellular pipe supports: Pipe supports with a load-bearing PET core to support and protect the insulation from crushing or damage while maintaining the thermal integrity of the system and preventing thermal bridging. Flexible elastomeric cellular

insulation is located on the outer part of the support for connection to adjacent insulation. Matches all wall thickness and internal diameter dimensions of insulation.

- I. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At fire separations, see Section 07 8400.
- J. Pipe Exposed in Mechanical Equipment Rooms or Finished Spaces (less than 10 feet above finished floor): Finish with PVC jacket and fitting covers.

3.03 SCHEDULES

- A. Plumbing Systems:
 - 1. Domestic Hot Water Supply:
 - a. Glass Fiber Insulation:
 - 1) Pipe Size Range: 0 - 1 1/2 inch.
 - 2) Thickness: Match pipe diameter.
 - 3) Pipe Size Range: 2 inch & Up.
 - 4) Thickness: 1 2 inch.
 - b. Cellular Glass Insulation:
 - 1) Pipe Size Range: 0-1 1/4 inch.
 - 2) Thickness: 1 inch.
 - 3) Pipe Size Range: 1 1/2 inch & Up.
 - 4) Thickness: 1 1/2 inch.
 - 2. Domestic Hot Water Recirculation:
 - a. Glass Fiber Insulation:
 - 1) Pipe Size Range: All sizes.
 - 2) Thickness: 1 inch.
 - 3. Domestic Cold Water:
 - a. Glass Fiber Insulation:
 - 1) Pipe Size Range: All sizes.
 - 2) Thickness: 1 inch.
 - b. Expanded Polystyrene Insulation:
 - 1) Pipe Size Range: All inch.
 - 2) Thickness: 1 inch.
 - c. Polyethylene Insulation:
 - 1) Pipe Size Range: All inch.
 - 2) Thickness: 1 inch.
 - d. Flexible Elastomeric Insulation:
 - 1) Pipe Size Range: All inch.
 - 2) Thickness: 1 inch.

END OF SECTION

ISSUE DATE - 06-13-2024

**SECTION 22 1005
PLUMBING PIPING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sanitary waste piping, buried within 5 feet of building.
- B. Sanitary waste piping, above grade.
- C. Chemical-resistant sanitary waste piping.
- D. Domestic water piping, buried within 5 feet of building.
- E. Domestic water piping, above grade.
- F. Natural gas piping, buried within 5 feet of building.
- G. Natural gas piping, above grade.
- H. Pipe flanges, unions, and couplings.
- I. Pipe hangers and supports.
- J. Pipe sleeve-seal systems.
- K. Ball valves.
- L. Thermostatic balancing valves.
- M. Pressure-temperature valves.
- N. Strainers.
- O. Line Pressure Regulators and Appliance Regulators Indicators

1.02 REFERENCE STANDARDS

- A. ANSI Z21.18/CSA 6.3 - Gas Appliance Pressure Regulators; 2019.
- B. ANSI Z21.22 - American National Standard for Relief Valves for Hot Water Supply Systems; 2015 (Reaffirmed 2020).
- C. ANSI Z21.80/CSA 6.22 - Line Pressure Regulators; 2019.
- D. ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300; 2021.
- E. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; 2021.
- F. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2021.
- G. ASME B16.23 - Cast Copper Alloy Solder Joint Drainage Fittings: DWV; 2021.
- H. ASME B16.29 - Wrought Copper and Wrought Copper Alloy Solder-Joint Drainage Fittings—DWV; 2022.
- I. ASME B31.1 - Power Piping; 2022.
- J. ASME B31.9 - Building Services Piping; 2020.
- K. ASME BPVC-IV - Boiler and Pressure Vessel Code, Section IV - Rules for Construction of Heating Boilers; 2023.
- L. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.
- M. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2023a.
- N. ASTM B32 - Standard Specification for Solder Metal; 2020.
- O. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2022.
- P. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2020.
- Q. ASTM B306 - Standard Specification for Copper Drainage Tube (DWV); 2020.
- R. ASTM B813 - Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube; 2016.
- S. ASTM B828 - Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings; 2023.

- T. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems; 2020.
- U. ASTM D2665 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings; 2020.
- V. ASTM D2855 - Standard Practice for the Two-Step (Primer and Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets; 2020.
- W. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2023.
- X. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- Y. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2023a.
- Z. AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Pipe Systems; 2018.
- AA. AWWA C111/A21.11 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings; 2023.
- BB. AWWA C151/A21.51 - Ductile-Iron Pipe, Centrifugally Cast; 2023.
- CC. AWWA C651 - Disinfecting Water Mains; 2023.
- DD. CISPI 301 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications; 2021.
- EE. CISPI 310 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications; 2020.
- FF. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2018, with Amendment (2019).
- GG. MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends; 2010, with Errata .
- HH. NSF 61 - Drinking Water System Components - Health Effects; 2023, with Errata.
- II. NSF 372 - Drinking Water System Components - Lead Content; 2022.
- JJ. NSF/ANSI 61 - Drinking Water System Components – Health Effects; 2022.
- KK. UL (DIR) - Online Certifications Directory; Current Edition.
- LL. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.
- C. Project Record Documents: Record actual locations of valves.

1.04 QUALITY ASSURANCE

- A. Perform work in accordance with applicable codes.
- B. All cast iron soil pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute (CISPI) and be listed by NSF international.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.
- B. Provide temporary protective coating on cast iron and steel valves.
- C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
- D. Protect piping systems and valves from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

1.06 FIELD CONDITIONS

- A. Do not install underground piping when bedding is wet or frozen.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.
- B. Plenum-Installed Piping: Flame-spread index equal or below 25 and smoke-spread index equal or below 50 according to ASTM E84 or UL 723 tests.

2.02 SANITARY WASTE PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. Cast Iron Pipe: CISPI 301, hubless.
 - 1. Fittings: Cast iron.
 - 2. Joints: CISPI 310, neoprene gasket and stainless steel clamp and shield assemblies.
- B. PVC Pipe: ASTM D2665 or ASTM D3034.
 - 1. Fittings: PVC.
 - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.03 SANITARY WASTE PIPING, ABOVE GRADE

- A. Cast Iron Pipe: CISPI 301, hubless, service weight.
 - 1. Fittings: Cast iron.
 - 2. Joints: CISPI 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.
- B. Copper Tube: ASTM B306, DWV.
 - 1. Fittings: ASME B16.29, wrought copper, or ASME B16.23, solvent.
 - 2. Joints: ASTM B32, alloy Sn50 solder.
- C. PVC Pipe: ASTM D2665.
 - 1. Fittings: PVC.
 - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.
 - 3. Not Allowed in Supply and Return Air Plenums.

2.04 DOMESTIC WATER PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. Copper Pipe: ASTM B88 (ASTM B88M), Type K (A), Drawn (H).
 - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
 - 2. Joints: ASTM B32, alloy Sn95 solder.
- B. Ductile Iron Pipe: AWWA C151/A21.51.
 - 1. Fittings: Ductile or gray iron, standard thickness.
 - 2. Joints: AWWA C111/A21.11, styrene butadiene rubber (SBR) or vulcanized SBR gasket with 3/4 inch diameter rods.

2.05 DOMESTIC WATER PIPING, ABOVE GRADE

- A. Copper Pipe: ASTM B88 (ASTM B88M), Type L (B), Drawn (H).
 - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
 - 2. Joints: ASTM B32, alloy Sn95 solder.
 - 3. Mechanical Press Sealed Fittings: Double-pressed type, NSF 61 and NSF 372 approved or certified, utilizing EPDM, nontoxic, synthetic rubber sealing elements.
- B. PPR

2.06 NATURAL GAS PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. Steel Pipe: ASTM A53/A53M, Grade B, Type F, Schedule 40 black.
 - 1. Fittings: ASTM A234/A234M, wrought steel welding type.
 - 2. Joints: ASME B31.1, welded.
 - 3. Jacket: AWWA C105/A21.5 polyethylene jacket or double layer, half-lapped 10 mil polyethylene tape.
- B. Bonding
 - 1. The piping system is to be bonded in accordance with the National Electrical Code NFPA 70 Article 250.104, and any local requirements which may be in excess of the manufacturers requirements.
 - 2. Tubing runs shall be installed with a bend radius not exceeding those established by the manufacturer.

3. Where required by the AHD the bonding clamp must be attached to the brass fitting adapter (adjacent to the pipe thread area –see illustration below) or to a black pipe component (pipe or fitting) located in the same electrically continuous gas piping system. The corrugated stainless steel portion of the gas piping system SHALL NOT be used as the bonding attachment point under any circumstances.

2.07 NATURAL GAS PIPING, ABOVE GRADE

- A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
 1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
 2. Joints: Threaded or welded to ASME B31.1.

2.08 PIPE FLANGES, UNIONS, AND COUPLINGS

- A. Unions for Pipe Sizes 3 inch and Under:
 1. Ferrous Pipe: Class 150 malleable iron threaded unions.
 2. Copper Tube and Pipe: Class 150 bronze unions with soldered joints.
- B. Flanges for Pipe Sizes Over 1 inch:
 1. Ferrous Pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.
 2. Copper Tube and Pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.
- C. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.09 PIPE HANGERS AND SUPPORTS

- A. Provide hangers and supports that comply with MSS SP-58.
 1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
- B. Conform to ASME B31.9.
- C. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
- D. Trapeze Hangers: Welded steel channel frames attached to structure.
- E. Vertical Pipe Support: Steel riser clamp.
- F. Floor Supports: Concrete pier or steel pedestal with floor flange; fixture attachment.
- G. Plumbing Piping - Drain, Waste, and Vent:
 1. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron, adjustable swivel, split ring.
 2. Hangers for Pipe Sizes 2 inch and Over: Carbon steel, adjustable, clevis.
 3. Wall Support for Pipe Sizes to 3 inch: Cast iron hook.
 4. Wall Support for Pipe Sizes 4 inch and Over: Welded steel bracket and wrought steel clamp.
 5. Vertical Support: Steel riser clamp.
 6. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
 7. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- H. Plumbing Piping - Water:
 1. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron, adjustable swivel, split ring.
 2. Hangers for Cold Pipe Sizes 2 inch and Over: Carbon steel, adjustable, clevis.
 3. Hangers for Hot Pipe Sizes 2 to 4 inch: Carbon steel, adjustable, clevis.
 4. Hangers for Hot Pipe Sizes 6 inch and Larger: Adjustable steel yoke, cast iron pipe roll, double hanger.
 5. Multiple or Trapeze Hangers: Steel channels with welded supports or spacers and hanger rods.
 6. Multiple or Trapeze Hangers for Hot Pipe Sizes 6 Inches and Over: Steel channels with welded supports or spacers and hanger rods, cast iron roll.
 7. Wall Support for Pipe Sizes Up to 3 inch: Cast iron hook.
 8. Wall Support for Pipe Sizes 4 inch and Larger: Welded steel bracket and wrought steel clamp.
 9. Wall Support for Hot Pipe Sizes 6 inch and Larger: Welded steel bracket and wrought steel clamp with adjustable steel yoke and cast iron pipe roll.

10. Vertical Support: Steel riser clamp.
11. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
12. Floor Support for Hot Pipe Sizes to 4 inch: Cast iron adjustable pipe saddle, locknut, nipple, floor flange, and concrete pier or steel support.
13. Floor Support for Hot Pipe Sizes 6 inch and Larger: Adjustable cast iron pipe roll and stand, steel screws, and concrete pier or steel support.
14. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.

2.10 PIPE SLEEVES

- A. Vertical Piping:
 1. Sleeve Length: 1 inch above finished floor.
 2. Provide sealant for watertight joint.
 3. Blocked Out Floor Openings: Provide 1-1/2 inch angle set in silicon adhesive around opening.
 4. Drilled Penetrations: Provide 1-1/2 inch angle ring or square set in silicone adhesive around penetration.
- B. Sheet Metal: Pipe passing through interior walls, partitions, and floors, unless steel or brass sleeves are specified below.
- C. Pipe Passing Through Below Grade Exterior Walls:
 1. Zinc coated or cast iron pipe.
 2. Provide watertight space with link rubber or modular seal between sleeve and pipe on both pipe ends.
- D. Pipe Passing Through Mechanical, Laundry, and Animal Room Floors above Basement:
 1. Galvanized steel pipe or black iron pipe with asphalt coating.
 2. Connect sleeve with floor plate except in mechanical rooms.
- E. Clearances:
 1. Provide allowance for insulated piping.
 2. Wall, Floor, Partitions, and Beam Flanges: 1 inch greater than external pipe diameter.
 3. All Rated Openings: Caulked tight with fire stopping material complying with ASTM E814 in accordance with Section 07 8400 to prevent the spread of fire, smoke, and gases.

2.11 PIPE SLEEVE-SEAL SYSTEMS

- A. Manufacturers:
 1. The Metraflex Company; MetraSeal: www.metraflex.com/#sle.
 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Modular Mechanical Seals:
 1. Elastomer-based interlocking links continuously fill annular space between pipe and wall-sleeve, wall or casing opening.
 2. Watertight seal between pipe and wall-sleeve, wall or casing opening.
 3. Size and select seal component materials in accordance to service requirements.
 4. Service Requirements:
 - a. Underground, buried, and wet conditions.
 - b. Fire Resistant: 1 hour, UL (DIR) approved.
 5. Glass reinforced plastic pressure end plates.
- C. Sealing Compounds:
- D. Pipe Sleeve Material:
 1. Bearing Walls: Steel or cast iron.
- E. Wall Sleeve: PVC material with water-stop collar, and nailer end-caps.
- F. Sleeve-Forming Disk: Non-conductive plastic-based material, 3 inch thick.

2.12 BALL VALVES

- A. Manufacturers:
 1. Anvil International: www.anvilintl.com/#sle.
 2. Apollo Valves: www.apollovalves.com/#sle.
 3. Grinnell Products: www.grinnell.com/#sle.

4. Nibco, Inc: www.nibco.com/#sle.
5. Uponor, Inc: www.uponorengineering.com/#sle.
6. Milwaukee Valve Company: www.milwaukeevalve.com.
7. Substitutions: See Section 01 6000 - Product Requirements.

- B. Construction, 4 inch and Smaller: MSS SP-110, Class 150, 400 psi CWP, two piece bronze body, chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle, threaded or grooved ends with union.

2.13 THERMOSTATIC BALANCING VALVE

- A. Manufacturers:
 1. Circuit Solver: <https://circuitsolver.com/>.
 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Construction: NSF/ANSI 61 lead free, stainless steel body, wax thermostatic element, maximum 200 psig, maximum 250 degree F.
- C. Operation: Fixed, non-adjustable (tamper proof) temperature setpoint ranging from 80 degrees F (27 degrees C) to 170 degrees F (27 degrees C) in 5 degrees F (2.8 degrees C) increments.
 1. The valve shall have a temperature accuracy of ± 3.0 degrees F (± 1.7 degrees C).
- D. Accessories:
 1. Integrated union.
 2. Shutoff valves

2.14 PRESSURE-TEMPERATURE VALVES

- A. Manufacturers:
 1. Cla-Val Co: www.cla-val.com/#sle.
 2. Watts Regulator Company: www.wattsregulator.com/#sle.
 3. Henry Technologies: www.henrytech.com.
 4. Bell & Gossett: www.xylem.com.
 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. ANSI Z21.22, AGA certified, bronze body, teflon seat, stainless steel stem and springs, automatic, direct pressure actuated, temperature relief maximum 210 degrees F, capacity ASME BPVC-IV certified and labelled.

2.15 STRAINERS

- A. Manufacturers:
 1. Armstrong International, Inc: www.armstronginternational.com/#sle.
 2. Green Country Filter Manufacturing: www.greencountryfilter.com/#sle.
 3. WEAMCO: www.weamco.com/#sle.
 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Size 2 inch and Smaller:
 1. Threaded brass body for 175 psi CWP, Y pattern with 1/32 inch stainless steel perforated screen.
 2. Class 150, threaded bronze body 300 psi CWP, Y pattern with 1/32 inch stainless steel perforated screen.
- C. Size 1-1/2 inch to 4 inch:
 1. Class 125, flanged iron body, Y pattern with 1/16 inch stainless steel perforated screen.

2.16 LINE PRESSURE REGULATORS AND APPLIANCE REGULATORS INDICATORS

- A. Manufacturers:
 1. Actaris Metering Systems (A brand of ITT Controls): www.actaris-metering-systems.com/#sle.
 2. Dungs Combustion Controls: www.dungs.com/#sle.
 3. Maxitrol Company: www.maxitrol.com/#sle.
 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Compliance Requirements:
 1. Appliance Regulator: ANSI Z21.18/CSA 6.3.
 2. Line Pressure Regulator: ANSI Z21.80/CSA 6.22.

- C. Materials in Contact With Gas:
 - 1. Housing: Aluminum, steel (free of non-ferrous metals).
 - 2. Seals and Diaphragms: NBR-based rubber.
- D. Maximum Inlet Operating Pressure: 10 psi.
 - 1. Appliance Regulator: 10 psi.
 - 2. Line Pressure Regulator: 10 psi.
- E. Maximum Body Pressure: 10 psi.
- F. Output Pressure Range: 1 inch wc to 80 inch wc.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- D. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- E. Group piping whenever practical at common elevations.
- F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. See Section 22 0516.
- G. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- H. Provide access where valves and fittings are not exposed.
 - 1. Coordinate size and location of access doors with Section 08 3100.
- I. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc-rich primer to welding.
- J. Provide support for utility meters in accordance with requirements of utility companies.
- K. Prepare exposed, unfinished pipe, fittings, supports, and accessories for finish painting.
 - 1. See Section 09 9123 for painting of interior plumbing systems and components.
 - 2. See Section 09 9113 for painting of exterior plumbing systems and components.
 - 3. All metals that are not resistant to corrosion shall be painted.
- L. This contractor shall be responsible for removing all spoils from excavation and trenching from the site.
- M. All below grade plumbing piping shall be installed on a 3" minimum pea-rock base.
- N. All below grade plumbing piping shall be buried in pea-rock with a 4" minimum cover.
- O. All trenches above the pea-rock shall be backfilled with select granular fill up to the sand base. Select granular fill shall have a maximum aggregate size of 2", with a maximum of 10% on a 200 sieve. Trenches shall be compacted to 98% proctor density. General Contractor shall finish final grade.
- P. Pipe vents from gas pressure reducing valves to outdoors.
- Q. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.
- R. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.

- S. Sleeve pipes passing through partitions, walls, and floors.
- T. Inserts:
 - 1. Provide inserts for placement in concrete formwork.
 - 2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
 - 3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
 - 4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
 - 5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.
- U. Pipe Hangers and Supports:
 - 1. Install in accordance with ASME B31.9.
 - 2. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
 - 3. Place hangers within 12 inches of each horizontal elbow.
 - 4. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
 - 5. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
 - 6. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
 - 7. Provide copper plated hangers and supports for copper piping.
 - 8. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.
 - 9. Support cast iron drainage piping at every joint.
- V. Pipe Sleeve-Seal Systems:
 - 1. Install manufactured sleeve-seal systems in sleeves located in grade slabs and exterior concrete walls at piping entrances into building.
 - 2. Provide sealing elements of the size, quantity, and type required for the piping and sleeve inner diameter or penetration diameter.
 - 3. Locate piping in center of sleeve or penetration.
 - 4. Install field assembled sleeve-seal system components in annular space between sleeve and piping.
 - 5. Tighten bolting for a watertight seal.
 - 6. Install in accordance with manufacturer's recommendations.
- W. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
- X. Install thermostatic balancing valve in each domestic hot water return piping branch beyond last hot water device in that branch as shown on plans.
 - 1. Provide suitable access panel as required in non-accessible ceilings and walls.

3.04 APPLICATION

- A. Use grooved mechanical couplings and fasteners only in accessible locations.
- B. Install unions downstream of valves and at equipment or apparatus connections.
- C. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.
- D. Install ball valves for shut-off and to isolate equipment, part of systems, or vertical risers.
- E. Provide flow controls in water recirculating systems where indicated.

3.05 TOLERANCES

- A. Drainage Piping: Establish invert elevations within 1/2 inch vertically of location indicated and slope to drain at minimum of 1/4 inch per foot slope.
- B. Water Piping: Slope at minimum of 1/32 inch per foot and arrange to drain at low points.

3.06 FIELD TESTS AND INSPECTIONS

- A. Verify and inspect systems according to requirements by the Authority Having Jurisdiction. In the absence of specific test and inspection procedures proceed as indicated below.
- B. Domestic Water Systems:
 - 1. Perform hydrostatic testing for leakage prior to system disinfection.
 - 2. Test Preparation: Close each fixture valve or disconnect and cap each connected fixture.
 - 3. General:
 - a. Fill the system with water and raise static head to 10 psi above service pressure. Minimum static head of 50 to 150 psi. As an exception, certain codes allow a maximum static pressure of 80 psi.
 - 4. Metal Piping Systems Subject to Freezing Conditions:
 - a. Inject 40 psi of compressed air into piping to spot check for leaks with liquid soap. Document and repair leaks as necessary.
 - b. Raise injected compressed air pressure to 1.5 times rated service pressure or minimum pressure of 100 psi for a duration of 2 hours and verify with a gauge that no perceptible pressure drop is measured.
- C. Gas Distribution Systems:
 - 1. Test Preparation: Close each appliance valve or disconnect and cap each connected appliance.
 - 2. General Systems:
 - a. Inject a minimum of 10 psi of compressed air into the piping system for a duration of 15 minutes and verify with a gauge that no perceptible pressure drop is measured.
 - b. Ensure test pressure gauge has a range of twice the specific pressure rate selected with an accuracy of 1/10 of 1 pound.
- D. Test Results: Document and certify successful results, otherwise repair, document, and retest.

3.07 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

- A. Disinfect water distribution system in accordance with Section 33 0110.58.
- B. Prior to starting work, verify system is complete, flushed, and clean.
- C. Ensure acidity (pH) of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
- D. Inject disinfectant, free chlorine in liquid, powder, tablet, or gas form throughout system to obtain 50 to 80 mg/L residual.
- E. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
- F. Maintain disinfectant in system for 24 hours.
- G. If final disinfectant residual tests less than 25 mg/L, repeat treatment.
- H. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.
- I. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.

3.08 SERVICE CONNECTIONS

- A. Provide new sanitary sewer services. Before commencing work, check invert elevations required for sewer connections, confirm inverts and ensure that these can be properly connected with slope for drainage and cover to avoid freezing.
- B. Provide new water service complete with approved reduced pressure backflow preventer and water meter with by-pass valves, pressure reducing valve, and sand strainer.
 - 1. Provide sleeve in wall for service main and support at wall with reinforced concrete bridge. Calk enlarged sleeve and make watertight with pliable material. Anchor service main inside to concrete wall.
 - 2. Provide 18 gauge, 0.0478-inch galvanized sheet metal sleeve around service main to 6 inch above floor and 6 feet minimum below grade. Size for minimum of 2 inches of loose batt insulation stuffing.
- C. Provide new gas service complete with gas meter and regulators. Gas service distribution piping to have initial minimum pressure of 2 psi. Provide regulators on each line serving gravity type appliances, sized in accordance with equipment.

END OF SECTION

ISSUE DATE - 06-13-2024

**SECTION 22 1006
PLUMBING PIPING SPECIALTIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Drains.
- B. Cleanouts.
- C. Hose bibbs.
- D. Hydrants.
- E. Backflow preventers.
- F. Double check valve assemblies.
- G. Water hammer arrestors.
- H. Sanitary waste interceptors.
- I. Mixing valves.

1.02 REFERENCE STANDARDS

- A. ASME A112.6.3 - Floor Drains; 2022.
- B. ASME A112.14.3 - Hydromechanical Grease Interceptors; 2018.
- C. ASSE 1011 - Performance Requirements for Hose Connection Vacuum Breakers; 2023.
- D. ASSE 1013 - Performance Requirements for Reduced Pressure Principle Backflow Prevention Assemblies; 2021.
- E. ASSE 1071 - Performance Requirements for Temperature Actuated Mixing Valves for Plumbed Emergency Equipment; 2012.
- F. NSF 61 - Drinking Water System Components - Health Effects; 2023, with Errata.
- G. NSF 372 - Drinking Water System Components - Lead Content; 2022.
- H. PDI-WH 201 - Water Hammer Arresters; 2017.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.
- C. Manufacturer's Instructions: Indicate Manufacturer's Installation Instructions: Indicate assembly and support requirements.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements for additional provisions.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Accept specialties on site in original factory packaging. Inspect for damage.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Specialties in Potable Water Supply Systems: Provide products that comply with NSF 61 and NSF 372 for maximum lead content.

2.02 DRAINS

- A. Manufacturers:
 - 1. Jay R. Smith Manufacturing Company: www.jrsmith.com/#sle.
 - 2. Josam Company: www.josam.com/#sle.
 - 3. Wade: <https://www.wadedrains.com>
 - 4. Watts Regulator Company: www.watts.com
 - 5. Zurn Industries, LLC: www.zurn.com/#sle.

6. Substitutions: See Section 01 6000 - Product Requirements.
- B. Floor Drain:
 1. ASME A112.6.3; lacquered cast iron or stainless steel, two piece body with double drainage flange, weep holes, reversible clamping collar, and round, adjustable nickel-bronze strainer.
- C. Floor Drain:
 1. ASME A112.6.3; lacquered cast iron or stainless steel, two piece body with double drainage flange, weep holes, reversible clamping collar, and square, adjustable nickel bronze strainer .
- D. Floor Sink:
 1. 12x12x8 deep, Lacquered cast iron body with stainless steel dome strainer, 1/2 grate covering and seepage flange.

2.03 CLEANOUTS

- A. Manufacturers:
 1. Jay R. Smith Manufacturing Company: www.jrsmith.com/#sle.
 2. Josam Company: www.josam.com/#sle.
 3. Zurn Industries, LLC: www.zurn.com/#sle.
 4. Wade: <https://www.wadedrains.com>
 5. Watts Regulator Company: www.watts.com
 6. Substitutions: See Section 01 6000 - Product Requirements.
- B. Cleanouts at Exterior Unsurfaced Areas:
 1. Line type with lacquered cast iron body and round epoxy coated gasketed cover.
- C. Cleanouts at Interior Finished Floor Areas:
 1. Lacquered cast iron body with anchor flange, reversible clamping collar, threaded top assembly, and round gasketed scored cover in service areas and round gasketed depressed cover to accept floor finish in finished floor areas.
- D. Cleanouts at Interior Finished Wall Areas:
 1. Line type with lacquered cast iron body and round epoxy coated gasketed cover, and round stainless steel access cover secured with machine screw.
 2. PVC cleanout that fits flush inside Schedule 40 DWV PVC pipe with brass threaded insert. Provide with stainless steel round access cover.
- E. Cleanouts at Interior Unfinished Accessible Areas: Calked or threaded type. Provide bolted stack cleanouts on vertical rainwater leaders.

2.04 HOSE BIBBS

- A. Manufacturers:
 1. Woodford: www.woodfordmfg.com
 2. Arrowhead Brass & Plumbing, LLC: www.arrowheadbrass.com/#sle.
 3. Jay R. Smith Manufacturing Company: www.jrsmith.com/#sle.
 4. Zurn Industries, LLC: www.zurn.com/#sle.
 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Interior Hose Bibbs:
 1. Bronze or brass with integral mounting flange, replaceable hexagonal disc, hose thread spout, with polycarbonate handwheel, integral vacuum breaker in compliance with ASSE 1011. Wall thickness to be as corresponds to associated wall thickness.

2.05 BACKFLOW PREVENTERS

- A. Manufacturers:
 1. Watts Regulator Company, a part of Watts Water Technologies: www.wattsregulator.com/#sle.
 2. Zurn Industries, LLC: www.zurn.com/#sle.
 3. Conbraco Industries, Inc[<>]: www.apollovalves.com.
 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Reduced Pressure Backflow Preventer Assembly:

1. ASSE 1013; cast bronze body and stainless steel springs; two independently operating, spring loaded check valves; diaphragm type differential pressure relief valve located between check valves; third check valve that opens under back pressure in case of diaphragm failure, and non-threaded vent outlet.
2. Size: 3/4 to 2 inch assembly with threaded gate valves.
3. Maximum Working Parameters: 175 psi at 180 degrees F.
4. Accessories: Provide air gap fitting, lead-free Y-strainer, and test cocks.

2.06 WATER HAMMER ARRESTORS

- A. Manufacturers:
 1. Jay R. Smith Manufacturing Company: www.jrsmith.com/#sle.
 2. Watts Regulator Company, a part of Watts Water Technologies: www.wattsregulator.com/#sle.
 3. Zurn Industries, LLC: www.zurn.com/#sle.
 4. Sioux Chief: www.siouxchief.com.
 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Water Hammer Arrestors:
 1. Copper construction, piston type sized in accordance with PDI-WH 201, precharged suitable for operation in temperature range minus 100 to 300 degrees F and maximum 250 psi working pressure.

2.07 SANITARY WASTE INTERCEPTORS

- A. Grease Interceptors:
 1. Construction:
 - a. Rating: ASME A112.14.3
 - b. Material: Epoxy-coated fabricated steel.
 - c. Rough-in: Fully recessed flush with floor (deep rough-in) with anchor flange.
 - d. Accessories: Multi-weir baffle assembly, integral deep seal trap, removable integral flow control, adjustable cover adapters, access restrictor built into each cover adapter, sediment bucket.
 - e. Cover: Heavy duty load capacity, steel, epoxy coated, non-skid with gasket, gas/water tight, securing handle, and enzyme injection port, recessed for floor finish.

2.08 MIXING VALVES

- A. Thermostatic Mixing Valves:
 1. Manufacturers:
 - a. Leonard Valve Company: www.leonardvalve.com/#sle.
 - b. Bradley: www.bradleycorp.com/industrial.
 - c. Lawler Manufacturing Co.: www.temperedwater.com.
 - d. Haws: www.hawesco.com.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
 2. Ratings: ASSE 1071 and NSF 372
 3. Valve: Chrome-plated cast brass body, stainless steel or copper alloy bellows, integral temperature adjustment.
 4. Accessories:
 - a. Check valve on inlets.
 - b. Volume control shut-off valve on outlet.
 - c. Strainer stop checks on inlets.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.
- C. Encase exterior cleanouts in concrete flush with grade.
- D. Install floor cleanouts at elevation to accommodate finished floor.

- E. Install approved potable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, janitor rooms, fire sprinkler systems, premise isolation, irrigation systems, flush valves, interior and exterior hose bibbs.
- F. Pipe relief from backflow preventer to nearest drain.
- G. Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to lavatory sinks or before final fixture connection in restroom group.

END OF SECTION

ISSUE DATE - 06-13-2024

**SECTION 22 3000
PLUMBING EQUIPMENT**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Commercial electric water heaters.
- B. Diaphragm-type compression tanks.
- C. In-line circulator pumps.

1.02 REFERENCE STANDARDS

- A. ASHRAE Std 90.1 I-P - Energy Standard for Buildings Except Low-Rise Residential Buildings; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- B. ASME BPVC-VIII-1 - Boiler and Pressure Vessel Code, Section VIII, Division 1: Rules for Construction of Pressure Vessels; 2023.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittals procedures.
- B. Product Data:
 - 1. Provide dimension drawings of water heaters indicating components and connections to other equipment and piping.
 - 2. Indicate pump type, capacity, power requirements.
 - 3. Provide certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable.
 - 4. Provide electrical characteristics and connection requirements.
- C. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.
- B. Identification: Provide pumps with manufacturer's name, model number, and rating/capacity identified by permanently attached label.
- C. Performance: Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, operate within 25 percent of midpoint of published maximum efficiency curve.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

1.06 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 WATER HEATERS

- A. Manufacturers:
 - 1. A.O. Smith Water Products Co: www.hotwater.com/#sle.
 - 2. Bock Water Heaters, Inc: www.bockwaterheaters.com/#sle.
 - 3. Rheem Manufacturing Company: www.rheem.com/#sle.
 - 4. State Water Heaters : www.statewaterheaters.com
 - 5. Lochinvar : www.lochinvar.com
 - 6. Bradford White Corporation: www.bradfordwhite.com/#sle.
 - 7. Substitutions: See Section 01 6000 - Product Requirements.
- B. Commercial Electric Water Heaters:
 - 1. Type: Factory-assembled and wired, electric, vertical storage.
 - 2. Minimum Efficiency Required: ASHRAE Std 90.1 I-P.
 - 3. Performance: See schedule on plans.

4. Tank: Glass lined welded steel; 4 inch diameter inspection port, thermally insulated with minimum 2 inches glass fiber encased in corrosion-resistant steel jacket; baked-on enamel finish.
5. Controls: Automatic immersion water thermostat; externally adjustable temperature range from 60 to 180 degrees F, flanged or screw-in nichrome elements, high temperature limit thermostat.
6. Accessories:
 - a. Water Connections: Brass.
 - b. Dip Tube: Brass.
 - c. Drain valve.
 - d. Anode: Magnesium.
 - e. Temperature and Pressure Relief Valve: ASME labeled.
7. Heating Elements: Flange-mounted immersion elements; individual elements sheathed with Incoloy corrosion-resistant metal alloy, rated less than 75 W/sq in.

2.02 EXPANSION TANKS

- A. Manufacturers:
 1. Amtrol Inc: www.amtrol.com/#sle.
 2. Bell & Gossett, a brand of Xylem, Inc: www.bellgossett.com/#sle.
 3. Taco, Inc: www.taco-hvac.com/#sle.
 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Construction: Welded steel, tested and stamped in accordance with ASME BPVC-VIII-1; supplied with National Board Form U-1, rated for working pressure of 125 psig, with flexible EPDM diaphragm sealed into tank, and steel legs or saddles. Threaded water connection.
- C. Accessories: Pressure gauge and air-charging fitting, tank drain; precharge to 12 psig.

2.03 IN-LINE CIRCULATOR PUMPS

- A. Manufacturers:
 1. Armstrong Fluid Technology: www.armstrongfluidtechnology.com/#sle.
 2. Bell & Gossett, a brand of Xylem, Inc: www.bellgossett.com/#sle.
 3. Sterling SIHI GmbH: www.sterlingsihi.com/#sle.
 4. Grundfos: <https://www.grundfos.com/us>.
 5. Taco: <https://www.tacomfort.com/>.
 6. Substitutions: See Section 01 6000 - Product Requirements.
- B. Casing: Bronze, rated for 125 psig working pressure, with stainless steel rotor assembly.
- C. Impeller: Stainless steel or bronze.
- D. Shaft: Alloy steel with integral thrust collar and two oil lubricated bronze sleeve bearings.
- E. Seal: Carbon rotating against a stationary ceramic seat.
- F. Drive: Flexible coupling.
- G. Accessories:
 1. Combination check valve, flow control valve, and companion flange for circulator.
 2. Automatic timer and aquastat.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install plumbing equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions required for applicable certifications.
- B. Coordinate system, equipment, and piping work with applicable electrical, fuel, gas, vent, drain, and waste support interconnections as included or provided by other trades.
- C. Domestic Water Storage Tanks:
 1. Provide steel pipe support, independent of building structural framing members.
 2. Clean and flush. Seal until pipe connections are made.
- D. Pumps:
 1. Provide air cock and drain connection on horizontal pump casings.

2. Provide line sized isolating valve, strainer on suction, and line sized soft seated check valve.
3. Decrease from line size with long radius reducing elbows or reducers. Support piping adjacent to pump such that no weight is carried on pump casings. Provide supports under elbows on pump suction and discharge line sizes 4 inches and over.
4. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.

END OF SECTION

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**SECTION 22 4000
PLUMBING FIXTURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Flush valve water closets.
- B. Wall hung urinals.
- C. Lavatories.
- D. Sinks.
- E. Under-lavatory pipe supply covers.
- F. Bi-level, electric water coolers.
- G. Mop sinks.

1.02 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ASHRAE Std 18 - Methods of Testing for Rating Drinking-Water Coolers with Self-Contained Mechanical Refrigeration; 2008 (Reaffirmed 2013).
- C. ASME A112.6.1M - Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use; 1997 (Reaffirmed 2017).
- D. ASME A112.18.1 - Plumbing Supply Fittings; 2018, with Errata.
- E. ASME A112.18.9 - Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures; 2011 (Reaffirmed 2022).
- F. ASME A112.19.2 - Ceramic Plumbing Fixtures; 2018, with Errata.
- G. ASME A112.19.5 - Flush Valves and Spuds for Water Closets, Urinals, and Tanks; 2022.
- H. ASSE 1070 - Performance Requirements for Water Temperature Limiting Devices; 2020.
- I. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- J. NSF 61 - Drinking Water System Components - Health Effects; 2023, with Errata.
- K. NSF 372 - Drinking Water System Components - Lead Content; 2022.
- L. UL (DIR) - Online Certifications Directory; Current Edition.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.
- C. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Accept fixtures on-site in factory packaging. Inspect for damage.
- B. Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

1.05 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Provide five year manufacturer warranty for electric water cooler.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Potable Water Systems: Provide plumbing fittings and faucets that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

2.02 REGULATORY REQUIREMENTS

- A. Comply with applicable codes for installation of plumbing systems.

- B. Comply with UL (DIR) requirements.
- C. Perform work in accordance with local health department regulations.
- D. Provide certificate of compliance from Authority Having Jurisdiction indicating approval of installation.

2.03 FLUSH VALVE WATER CLOSETS

- A. Water Closets:
 - 1. Vitreous china, ASME A112.19.2, floor mounted, siphon jet flush action, china bolt caps 12" rough-in connection.
 - 2. Bowl: ASME A112.19.2; see architectural details for mounting heights with elongated rim.
 - 3. Flush Valve: Exposed (top spud).
 - 4. Flush Operation: Sensor operated, hardwired.
 - 5. Handle Height: 44 inches or less.
 - 6. Manufacturers:
 - a. American Standard, Inc: www.americanstandard-us.com/#sle.
 - b. Kohler Company: www.kohler.com/#sle.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
- B. Flush Valves:
 - 1. Flush valve shall be diaphragm type.
 - 2. Valve Supply Size: 1 inch.
 - 3. Manufacturers:
 - a. Sloan Valve Company: www.sloanvalve.com/#sle.
 - b. Zurn Industries, LLC: www.zurn.com/#sle.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
 - 4. Sensor-Operated:
 - a. Type: ASME A112.19.5; chloramine-resistant clog-resistant dual-seat diaphragm valve complete with vacuum breaker, stops and accessories.
 - b. Mechanism: Solenoid-operated piston or electronic motor-actuated operator with low-voltage powered infrared sensor, and mechanical override or override push button.
 - c. Supplied Volume Capacity: 1.2 gal per flush.
 - 5. Exposed Type: Chrome-plated, escutcheon, integral screwdriver stop. Concealed wall infrared sensor.
- C. Toilet Seats:
 - 1. Plastic: White finish, open front, elongated shape, extended back, self-sustaining hinge, stainless steel bolts, without cover.

2.04 WALL HUNG URINALS

- A. Manufacturers:
 - 1. Kohler Company; _____: www.kohler.com/#sle.
 - 2. Zurn Industries, LLC; _____: www.zurn.com/#sle.
- B. Vitreous china, ASME A112.19.2, wall hung with side shields and concealed carrier.
 - 1. Consumption Volume: 0.125 gal per flush, maximum.
 - 2. Flush Style: Siphon jet.
 - 3. Flush Valve: Exposed (top spud).
 - 4. Flush Operation: Concealed Sensor operated.
 - 5. Trapway Outlet: Integral.
 - 6. Supply Size: 3/4 inch.
- C. Flush Valves:
 - 1. Sensor-Operated:
 - a. Type: ASME A112.19.5; chloramine-resistant, clog-resistant dual-seat diaphragm valve with vacuum breaker, stops and accessories.
 - b. Mechanism: Solenoid-operated piston or electronic motor-actuated operator with low-voltage powered infrared sensor, and mechanical override or override push button.
 - c. Supplied Volume Capacity: 0.125 gal per flush.

2. Exposed Type: Chrome-plated, escutcheon, integral screwdriver stop. Concealed wall infrared sensor.
- D. Urinal Carriers:
1. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded fixture studs for fixture hanger, bearing studs.

2.05 LAVATORIES

- A. Wall-Hung Basin:
1. Vitreous China: ASME A112.19.2; white, rectangular basin with splash lip, front overflow, soap depression, and hanger. Size as indicated on drawings with 4-inch centerset spacing.
 2. Carrier:
 - a. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded studs for fixture hanger, bearing plate and studs.
- B. Supply Faucet:
1. ASME A112.18.1; chrome plated combination supply fitting with pop-up waste, water economy aerator with maximum flow of 2.2 gpm, indexed handles.
- C. Sensor Operated Faucet:
1. Cast brass, chrome plated, deck mounted with sensor located on neck of spout.
 2. Spout Style: Standard.
 3. Power Supply:
 - a. Wired: 120 VAC wired into line voltage.
 4. Mixing Valve: None, single line for tempered water.
 5. Water Supply: 3/8 inch compression connections.
 6. Aerator: Vandal resistant, 0.5 gpm, laminar flow device.
 7. Automatic Shut-off: 20 seconds, adjustable.
 8. Finish: Polished chrome.
- D. Thermostatic Mixing Valve:
1. ASSE 1070 listed with combination stop, strainer, and check valves, and flexible stainless steel connectors.
- E. Lavatory Carrier:
1. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded studs for fixture hanger, bearing plate and studs.
- F. Accessories:
1. Offset waste with perforated open strainer.
 2. Chrome Plated 17 gauge brass P-trap with cleanout plug and arm with escutcheon.
 3. 1/4 turn screwdriver stops.
 4. Flexible supplies.
 5. Under Lavatory Pipe Supply Cover - accessible lavatories

2.06 SINKS

- A. Tripple Compartment Sink
1. ASME A112.19.3, three compartments each 24x24x12 inch, 18 gauge stainless steel self standing with stainless steel legs. Each basin with center drain.
- B. Commercial Kitchen, Double Wheel Handle Faucet:
1. Type: Wall-mount faucet.
 2. ASME A112.18.1, ADA Standards, and NSF 61 compliant assembly.
 3. Materials: Stainless steel disc valve on brass body with polished chrome finish.
 4. Furnish two faucets for three compartment sink. 8" on center with 14" swivel spout.
- C. Accessories:
1. Individual flow control drain valve for each basin piped to floor sink.
 2. 1/4 turn stops
 3. Flexible supplies

2.07 UNDER-LAVATORY PIPE SUPPLY COVERS

- A. General:

1. Insulate exposed drainage piping including hot, cold and tempered water supplies under lavatories or sinks per ADA Standards.
2. Construction: 1/8 inch PVC with antimicrobial, antifungal and UV resistant properties.
 - a. Comply with ASME A112.18.9 for covers on accessible lavatory piping.
 - b. Comply with ICC A117.1.
3. Color: High gloss white.
4. Fasteners: Reusable, snap-locking fasteners with no sharp or abrasive external surfaces. No cable ties allowed.

2.08 BI-LEVEL, ELECTRIC WATER COOLERS

- A. Water Cooler: Bi-level, electric, mechanically refrigerated; surface mounted, ADA compliant; stainless steel top, stainless steel body, elevated anti-squirt bubbler with stream guard, automatic stream regulator, push button, bottle fill on one station, mounting bracket; integral air cooled condenser and stainless steel grille.
 1. Capacity: 8 gph of 50 degrees F water with inlet at 80 degrees F and room temperature of 90 degrees F, when tested in accordance with ASHRAE Std 18.
 2. Electrical: 115 VAC, 60 Hertz compressor, 6 foot cord and plug for connection to electric wiring system including grounding connector.
- B. Bottle Filler: Materials to match fountain.

2.09 MOP SINKS

- A. Bowl: 24 by 24 by 10 inches high, white molded stone, floor mounted, with 1-inch wide shoulders, stainless steel bumper guard , 3" stainless steel strainer.
- B. Faucet
 1. Two handle, wall mounted faucet, chrome plated brass, pail hook with all support bracket, vacuum breaker, hot and cold water check valve, hose connection outlet.
- C. Accessories
 1. 5 foot hose with clamp hanger
 2. Stainless steel wall guard
 3. Mop hanging bracket

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install components level and plumb.

END OF SECTION

**SECTION 23 0010
BASIC MECHANICAL HVAC REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Basic Mechanical HVAC Requirements specifically applicable to Division 23 in addition to Division 1 - General Requirements.

1.02 SCOPE OF WORK

- A. The Mechanical HVAC Contract shall also include furnishing and installing a complete heating, ventilating and air conditioning system for the building and all other related work as called for under the specifications and shown on plans.

1.03 WORK INCLUDED

- A. The Mechanical HVAC Contract shall include all work under the listed Division 23 of the Specifications Index and all related Mechanical work as shown on the Drawings for the project.
- B. A Complete table of Mechanical Reference Symbols is shown on the plans.
- C. Under this Contract the Mechanical Contractor shall furnish the Owner with two 3-ring binders and a PDF of all pertinent systems' related documents stored on a solid state external hard drive or a single flash drive. Submit a single, organized PDF to the Engineer for review. After review is complete, contractor shall turn information provided over to the Owner. The binders and PDF shall contain the following items:
 - 1. Shop drawings on all major equipment.
 - 2. Operating Instructions for all major equipment.
 - 3. Maintenance Instructions for all major equipment.
 - 4. Wiring diagrams for all equipment.
 - 5. Test and Balance Reports.
- D. The Mechanical installation to be made under Division 23 is set up for contract bidding as follows:
 - 1. Mechanical HVAC Contractor is a sub-contractor to the General Contractor.
 - a. The Mechanical contractor is responsible for own equipment, such as cranes, lifts, etc. in order to provide a complete installation of mechanical systems.
 - b. The Mechanical contractor shall be a sub-contractor to the General Contractor and shall include in his bid, prices from sub-contractors for control wiring, and other trades necessary to complete the entire job.

1.04 SPECIFICATIONS COMPLIANCE

- A. The requirements of these specifications shall be complied with in every respect. Therefore, it shall be absolutely mandatory that the job foreman, all lead mechanics, subcontractors and their foreman have completely studied these specifications, be completely knowledgeable as to their entire contents, and maintain a copy at the job-site. Failure to comply with this requirement will be reason to presume the mechanic or subcontractor is not in responsible charge of his work due to ignorance of job requirements, and will be reason for the owner to require dismissal and replacement with approved personnel. Every foreman and lead mechanic shall be provided with a complete copy of this specification.

1.05 INCONSISTENCIES

- A. If there is an inconsistency in the quality and/or quantity of Work required by the Contract Documents, either the greater quality and/or quantity of Work indicated shall be provided in accordance with the Engineer/Architect's interpretation without change in the contract sum.

1.06 WORK NOT INCLUDED

- A. The following work is not included as part of the Contract.
 - 1. The removal and storage of any equipment in the building required to be moved or relocated during the construction process.

1.07 CODES, FEES AND LATERAL COSTS

- A. The Heating, Ventilation and Air Conditioning Installation shall meet all applicable local, state and federal codes and standards.

- B. All permits necessary for a complete heating and ventilation installation shall be paid for by this Contractor.
- C. Except in those municipalities which provide state- approved electrical inspection, all installation of electrical equipment wiring shall be inspected by the State Board of Electricity. Allowance shall be made in the bid and contract for the cost of such inspection.
 - 1. Fees for such inspection will be charged in accordance with the rules and regulations of the State Board of Electricity. Evidence of payment of fees shall be provided by the Contractor with his Request for Payment.

1.08 REFERENCES

- A. All equipment, piping, etc., shall be new and shall be installed to meet the approval of the following additional ordinances: ASME Rules for Pressure Tanks, National Board of Fire Underwriter's Rules, American Waterworks and the American Gas Association.

1.09 SUBMITTALS

- A. Submit under provisions of Division 01 3000.
- B. Products Scheduled on the Drawings by Naming one Manufacturer, but not Indicating Other Approved Manufactures in the Specifications: Use any equivalent product complying with the specifications in general and equivalent to the "Basis of Design" identified in the drawing's schedules. Pre-bid substitutions are not required in this situation.
- C. Submit shop drawings and product data grouped to include complete submittals of related systems, products, and accessories in a single submittal.
- D. All documents shall be submitted in .pdf format unless pre-approved by Engineer. The contractor shall not use any equipment or materials that does not have the engineer's stamped approval.
- E. Mark dimensions and values in units to match those specified.

1.10 PROJECT/SITE CONDITIONS

- A. Install Work in locations shown on Drawings, unless prevented by Project conditions.

1.11 SEQUENCING AND SCHEDULING

- A. Construct Work in sequence under provisions of Division 1.

1.12 PRE-CONSTRUCTION COORDINATION AND VERIFICATION

- A. This Contractor shall coordinate his work with other Contractors on this job. Any conflict which cannot be resolved shall be settled by the Architect/Engineer.
- B. Field verification of scale dimensions on plans is directed since actual locations, distances and levels will be governed by actual field conditions.
- C. The Contractors shall check architectural, structural, plumbing, heating, ventilating and electrical plans to avert possible installation conflicts. Should drastic changes from original plans be necessary to resolve such conflicts this Contractor shall notify the Architect/Engineer and secure written approval and agreement on necessary adjustments before the installation is started.
- D. Discrepancies shown on different plans or between plans and actual field conditions or between plans and specifications shall promptly be brought to the attention of the Architect/Engineer for a decision.
- E. The Contractor shall consider and review the complete set of documents, etc., Architectural, Structural, Mechanical, Electrical, etc., (Drawings and Specifications) as his complete set. He will be responsible for any and all mechanical work shown or stated (to be by him), to include this work in his bid and install such items even though they are not specifically shown or stated on the Mechanical section of the plans and specifications.

1.13 COORDINATION

- A. Contractor shall be responsible for continual coordination of the mechanical work with other trades so as to avoid conflicts in installation. Contractor shall cooperate with other trades to assure that construction proceeds in an orderly and timely manner.
- B. Study the civil, structural, electrical, shop and any specialty drawings and specifications to determine required coordination.

1. Anchor bolts, sleeves, inserts and supports that may be required for the mechanical work shall be furnished and installed under the same division of the specifications as the respective items to be supported. Excluded from this requirement are cast in place anchor bolts.
 2. Slots, chases, openings and recesses through floors and walls as specified will be provided by the various trades in their respective materials, but the trade requiring them shall see that they are properly located in zones provided or otherwise approved by the Engineer or Architect and/or Owner.
 3. Locations of pipes, panels, equipment, fixtures, etc., shall be adjusted to accommodate interferences encountered. The Project Coordinator shall determine the exact rerouting and location of each pipe and/or duct encountered prior to fabrication.
 - a. Right-of-Way: Lines which pitch shall have the right of way over those which do not pitch. Lines whose elevations cannot be changed shall have the right of way over lines whose elevations can be changed.
 - b. Offsets, transitions and changes in direction in pipes shall be made as required to maintain proper head room and pitch of sloping lines whether or not indicated on the drawings.
 4. Installation of Arrangement: The contractor shall install all mechanical work to permit removal of, and access to, (without damage to other parts) all parts requiring periodic replacement or maintenance.
- C. Layout Priority:
1. All trades shall understand that other trades will need to work in the same areas during the project. All final decisions as to the right-of-way and runs of utility lines (pipes, ducts, etc.) shall be made by Owner and/or Architect. In general, priority shall be given as follows:
 - a. Process piping which must be drainable
 - b. Sheet metal ductwork
 - c. Light Fixtures
 - d. Plumbing sanitary, storm, and vent lines
 - e. Sprinkler piping
 - f. Gravity water lines
 - g. Hydronic or steam lines
 - h. Refrigerant lines
 - i. Gas and air lines
 - j. Plumbing water
 - k. Electrical conduit
- D. PREPARE DETAILED SHOP DRAWINGS WHERE NECESSARY TO ASSURE PROPER FIT AND NECESSARY CLEARANCE.

1.14 CUTTING, PATCHING, AND FIRESTOPPING

- A. The Mechanical Contractor shall set all sleeves in construction for their Work.
- B. Where cutting is required, it shall be done by the Mechanical Contractor.
- C. All patching shall be done by Mechanical Contractor.
- D. All cutting of any kind must be done with great care so as not to leave unsightly surfaces which may not be entirely concealed by plates, escutcheons, or their normal concealing construction, if such unsightly conditions occur, Mechanical Contractor will be required, at their own expense, to replace the damaged construction.
- E. This Mechanical Contractor shall provide and install firestopping materials per Section 07 8400 - Firestopping.

1.15 ACCESS PANELS REQUIRED BY TRADE

- A. Trade requiring access shall provide and install access panels where not shown or specified.
- B. The finished appearance and function will be subject to approval by the Architect/Owner.
- C. Provide panels that accommodate adjacent finishes in finished spaces.
- D. Access panels shall meet all code requirements for each location they are installed and shall be sized appropriately.

1.16 ELECTRICAL

- A. Electrical Contractor shall furnish all motor starters and motor controls and provide all wiring for motor control operation, except if specified otherwise.

1.17 ADDITIONAL ELECTRICAL COSTS

- A. If the Mechanical Contractor substitutes equipment for specified units, the mechanical contractor shall be responsible for any additional electrical installation costs for this substitution whether the other equipment was listed as equal in the specification or was approved equal after the project was in the bidding process.

1.18 GUARANTEE

- A. This Contractor shall be responsible for the proper installation and working of everything in this contract and shall guarantee to remedy free of charge any defects in workmanship and materials that may appear to give or gives rise to trouble of any kind for a period of one year from date of final substantial completion.

1.19 PRODUCT MANUFACTURERS

- A. If a specification section does not include a list of approved manufacturers, that section is open to all manufacturers who meet the section's specified requirements. Substitution requests are not required for any manufacturers.
- B. If a specification section does include a list of manufacturers, that list is all pre-approved manufacturers for that section. Substitution requests will be required for any alternative manufacturers.

PART 2 PRODUCTS

2.01 NOT USED

PART 3 EXECUTION

3.01 NOT USED

END OF SECTION

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**SECTION 23 3100
HVAC DUCTS AND CASINGS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonmetal ducts.

1.02 REFERENCE STANDARDS

- A. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; 2024.
- B. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible; 2020.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Provide UL Class 1 ductwork, fittings, hangers, supports, and appurtenances in accordance with NFPA 90A and SMACNA (DCS) guidelines unless stated otherwise.
- B. Duct Shape and Material in accordance with Allowed Static Pressure Range:
 - 1. Round: Plus or minus 2 in-wc of Plastic.
- C. Duct Sealing and Leakage in accordance with Static Pressure Class:
 - 1. Duct Pressure Class and Material for Common Mechanical Ventilation Applications:
 - a. General Exhaust Air: 1 in-wc pressure class, Plastic.

2.02 NON-METAL DUCTS

- A. Plastic Ductwork
 - 1. Ductwork: Closed cell plastic material conforming to ASTM D2412 operate with + 10 inches of WC to -2 inches of WC. Ductwork shall be compatible for above ground and underground applications.
 - 2. Fittings: Elbow, fittings and plenum shall be from the ductwork manufacturer.
 - 3. Joints: Gasket and clamp seal with stainless steel bolts or flanged with stainless steel bolts

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install products following the manufacturer's instructions.
- B. During construction, provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering the ductwork system.
- C. Duct sizes indicated are precise inside dimensions. For lined ducts, maintain sizes inside lining.
- D. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.

3.02 CLEANING

- A. Clean thoroughly each duct system. See Section 23 0130.51.
- B. Clean duct system by forcing air at high velocity through duct to remove accumulated dust. Clean half the system at a time to obtain sufficient air. Protect equipment that could be harmed by excessive dirt with temporary filters or bypass during cleaning.

END OF SECTION

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**SECTION 23 3700
AIR OUTLETS AND INLETS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Registers/grilles:
 - 1. Wall-mounted, grid core exhaust and return register/grilles.
- B. Louvers:
- C. Goosenecks.

1.02 REFERENCE STANDARDS

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.

PART 2 PRODUCTS

2.01 WALL GRID AND CORE EXHAUST AND RETURN REGISTERS/GRILLES

- A. Type: Fixed grilles of 1/2 by 1/2 by 1/2 inch louvers.
- B. Fabrication: Aluminum with factory clear lacquer finish.
- C. Color: As indicated.
- D. Frame: Grille shall be mouted in wall without frame.
- E. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face.

2.02 LOUVERS

- A. Type: 4 inch deep frame with blades on 45 degree slope with center baffle and return bend, heavy channel frame, 1/2 inch square mesh screen over intake or exhaust end.
- B. Fabrication: 16 gauge, 0.0598 inch (1.52 mm) thick galvanized steel thick galvanized steel welded assembly, with factory prime coat finish.
- C. Mounting: Furnish with interior flat flange for installation.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Check location of outlets and inlets and make necessary adjustments in position to comply with architectural features, symmetry, and lighting arrangement.
- C. Provide balancing dampers at registers.
- D. Paint ductwork visible behind air outlets and inlets matte black.

END OF SECTION

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**SECTION 23 8200
CONVECTION HEATING AND COOLING UNITS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electric baseboard.
- B. Electric unit heaters.

1.02 REFERENCE STANDARDS

- A. AHRI Directory of Certified Product Performance - Air-Conditioning, Heating, and Refrigeration Institute (AHRI); Current Edition.
- B. AHRI 350 - Sound Performance Rating of Non-Ducted Indoor Air-Conditioning and Heat Pump Equipment; 2015 (Reaffirmed 2021).
- C. AHRI 840 - Unit Ventilators; 1998.
- D. ASHRAE (HVAC) - ASHRAE Handbook - HVAC Applications; Most Recent Edition Cited by Referring Code or Reference Standard.
- E. ASHRAE Std 62.1 - Ventilation for Acceptable Indoor Air Quality; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2021.
- G. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2022.
- H. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2020.
- I. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- J. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; 2024.
- K. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible; 2020.
- L. UL 674 - Electrical Motors and Generators for Use in Hazardous (Classified) Locations; Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide typical catalog of information including arrangements.
- C. Shop Drawings:
 - 1. Indicate cross sections of cabinets, grilles, bracing and reinforcing, and typical elevations.
 - 2. Indicate air coil and frame configurations, dimensions, materials, rows, connections, and rough-in dimensions.
 - 3. Submit schedules of equipment and enclosures typically indicating length and number of pieces of element and enclosure, corner pieces, end caps, cap strips, access doors, pilaster covers, and comparison of specified heat required to actual heat output provided.
- D. Manufacturer's Instructions: Indicate installation instructions and recommendations.
- E. Project Record Documents: Record actual locations of components and locations of access doors in radiation cabinets required for access or valving.
- F. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listings.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Filters: One set of each type and size.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.01 ELECTRIC BASEBOARD

- A. Manufacturers:
 - 1. Heatrex: www.heatrex.com.
 - 2. Marley Engineered Products: www.marleymep.com.
 - 3. Vulcan Radiator, a Mestek Company: www.vulcanrad.com.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Assembly: Suitable for flush mounting on any floor surface with built-in controls, wire raceway, thermal safety cut-out, and electric terminal box.
- C. Heating Elements:
 - 1. Enclosed nickel chromium wire in aluminum sheathing or tubing.
 - 2. Mechanically bonded, aluminum finned, heating elements.
 - 3. Heating element securely anchored and free-floating for noise free operation.
- D. Enclosure:
 - 1. Minimum 24 gage, 0.0239 inch thick back panel and 20 gage, 0.0359 inch thick sheet steel, exposed front panels, end caps, corners, and joiner pieces.
 - 2. All joints to snap together without fasteners.
 - 3. Provide easily removable front panel.
- E. Finish:
 - 1. Factory applied, baked enamel finish.
 - 2. Color: Factory standard color.
- F. Controls: Built-in bi-metal heating thermostat, factory wired.

2.02 ELECTRIC UNIT HEATERS

- A. Provide products listed, classified, and labeled by Underwriters Laboratories Inc. (UL) or testing firm acceptable to Authority Having Jurisdiction as suitable for the purpose indicated.
- B. Assembly: Suitable for mounting from ceiling or structure above with built-in controls, thermal safety cut-out, and electric terminal box.
- C. Acceptable Heating Element Assemblies:
 - 1. Horizontal Projection Units:
 - a. Nickel chromium resistance wire surrounded with magnesium oxide and sheathed in steel, spiral-finned tubes.
- D. Housing:
 - 1. Horizontal Projection Units:
 - a. Construction materials to consist of heavy gage steel with high gloss baked enamel finish.
 - b. Provide with threaded holes for threaded rod suspension.
 - c. Provisions for access to internal components for maintenance, adjustments, and repair.
- E. Air Inlets and Outlets:
 - 1. Inlets: Provide protective grilles with fan blade guard.
 - 2. Outlets: Provide directional louvers.
- F. Fan: Factory balanced, direct drive, axial type with fan guard.
- G. Motor: Totally enclosed, thermally protected, and provided with permanently lubricated bearings.
- H. Controls:
 - 1. Disconnect.
 - 2. 24-volt relay.
 - 3. Control transformer.
 - 4. Fan speed switch.
 - 5. Remotethermostat with locking cover

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are suitable for installation.

- B. Verify that field measurements are as indicated on drawings.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's recommendations.
- B. Baseboard Radiation:
 - 1. Locate on outside walls and run cover continuously wall-to-wall unless otherwise indicated.
 - 2. Center elements under window with elements of equal length centered under each window for multiple windows.
 - 3. Install end caps where units butt against walls.
- C. Unit Heaters:
 - 1. Hang from building structure, with pipe hangers anchored to building, not from piping or electrical conduit.
 - 2. Mount as high as possible to maintain greatest headroom unless otherwise indicated.
- D. Units with Electric Heating Elements:
 - 1. Install as indicated including electrical devices furnished by manufacturer but not factory installed.
 - 2. Install wiring in accordance with the manufacturer's wiring diagram submittal and Section 26 0583.

3.03 CLEANING

- A. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.
- B. After construction and painting is completed, clean exposed surfaces of units.

END OF SECTION

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**SECTION 23 8300
RADIANT HEATING AND COOLING UNITS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electric infrared radiant heaters.

1.02 REFERENCE STANDARDS

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for electric infrared radiant heaters.

PART 2 PRODUCTS

2.01 ELECTRIC INFRARED RADIANT HEATERS

- A. Provide products listed, classified, and labeled by Underwriters Laboratories Inc. (UL), Intertek (ETL), or testing firm acceptable to authority having jurisdiction as suitable for the purpose indicated.
- B. Factory assembled including heating element, reflector, heater housing, mounting brackets, element holders, wire guards, and high temperature internal wiring for non-residential, indoor use only.
- C. Heating Element:
 - 1. Minimum 3/8 inch diameter quartz tube with coiled resistor wire.
 - 2. Element operating temperature range: 1200 to 1800 degrees F.
- D. Heater Housing:
 - 1. Factory fabricated from stainless steel or aluminum for indoor use as indicated.
 - 2. Furnish stainless steel wire guard designed to protect heating elements from damage.
 - 3. Supply mounting chains to position heater in any horizontal angle.
- E. Reflector: Polished aluminum.
- F. Wiring:
 - 1. Fully enclosed internal wiring.
 - 2. Provide minimum 6 inch slack fixture (heater) wire for connection to branch circuit wiring.
- G. Accessories:
 - 1. External indicating knob for controller with manual adjustment from 0 to 100 percent with locking cover.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Electric Infrared Radiant Heaters: Verify and maintain minimum distances from combustibles. Verify heater installation is not in a hazardous location.

3.02 PREPARATION

- A. Clean all surfaces prior to installation.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's recommendations.
- B. Electric Infrared Radiant Heaters:
 - 1. Install in accordance with manufacturer's instructions.
 - 2. Comply with applicable codes.
 - 3. Maintain minimum distances from all combustibles in accordance with manufacturer's instructions and applicable codes.
 - 4. Suspend heater with chains, so that quartz tubes are horizontal, preventing sagging and premature burnout.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Electric Infrared Radiant Heaters:

1. Perform the following field tests and inspections and prepare test reports:
 - a. Operate electric heating elements to verify proper operation and electrical connections.
 - b. Test and adjust controls and safeties.
2. Remove and replace malfunctioning units and retest as specified above.

3.05 CLEANING

- A. Radiant Ceiling Panel Heaters: Remove paint splatters, other spots, dirt, and debris.

END OF SECTION

**SECTION 26 0010
BASIC ELECTRICAL REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES:

- A. Basic Electrical Requirements specifically applicable to Division 26 Sections, in addition to Division 01 - General Requirements.

1.02 SCOPE OF WORK:

- A. The Electrical Contract Installation shall include a complete Electrical Installation for the project. All conduit, fixtures and equipment herein specified, mentioned or shown on Drawings, shall be furnished and installed in place, connected up and ready for normal operation except for such items as are specifically mentioned to be furnished by others.

1.03 WORK INCLUDED:

- A. The Electrical Contract shall include all work under the listed Sections of the Specifications Index and all related Electrical work as shown on the Drawings for the project.
- B. A Complete table of Electrical Reference Symbols is shown on the plans.
- C. Under this Contract the Electrical Contractor shall furnish the Owner with a USB flash drive and PDF set of all pertinent systems related documents. The documents shall contain the following items:
 - 1. Shop drawings on all major equipment.
 - 2. Operating Instructions for all major equipment.
 - 3. Maintenance Instructions for all major equipment.
 - 4. Wiring diagrams for all equipment.
 - 5. Control drawings for any systems not furnished under other contracts.
- D. The Electrical Contractor is responsible for own equipment, such as cranes, lifts, etc. in order to provide a complete installation of Electrical systems.
- E. The Electrical Contractor is responsible for contacting the utility company and coordinating the power connection for the building service. Include all costs in bid.
- F. Coordinate utility service outages and reconnections with Utility Company and Owner.
- G. Branch feeders, branch wiring, receptacles, special outlets, switches, light fixtures, dimmers, contactors, starters, timers, etc., as shown on the plans or required for operation of the electrical system.
- H. A telephone service conduit, where shown on the plans and a plywood mounting board in the equipment room painted white.
- I. A television service conduit, conduit from corridor to room outlet box, and a plywood mounting board in the equipment room.
- J. A fire alarm system, including all conduit and wiring, manual pull stations, audio/visual warning alarms, smoke detectors, and fire alarm panel with annunciator.
- K. Smoke detectors with integral alarms and auxiliary contact in each of the rooms as shown on the plans, with additional devices in handicap and hearing impaired rooms.
- L. Repair of all damage done to the premises as a result of the installation and removal of all debris or surplus material left by those engaged in the work.
- M. All new outside building lighting and sign lighting, including wiring, timers, photocells, switches and circuit breakers.

1.04 SPECIFICATIONS COMPLIANCE

- A. The requirements of these specifications shall be complied with in every respect. Therefore, it shall be absolutely mandatory that the job foreman, all lead electricians, subcontractors and their foreman have completely studied these specifications, be completely knowledgeable as to their entire contents, and maintain a copy at the job-site. Failure to comply with this requirement will be reason to presume the electrician or subcontractor is not in responsible charge of their work due to ignorance of job requirements, and will be reason for the Owner to require dismissal and replacement with approved personnel. Every foreman and lead mechanic shall be provided with a complete copy of this specification.

1.05 INCONSISTENCIES

- A. If there is an inconsistency in the quality and/or quantity of Work required by the Contract Documents, either the greater quality and/or quantity of Work indicated shall be provided in accordance with the Engineer/Architect's interpretation without change in the contract sum.

1.06 CODES, FEES AND LATERAL COSTS:

- A. The Electrical Installation shall meet all applicable local, state and federal codes and standards. All permits necessary for a complete electrical installation shall be paid for by this Contractor.
- B. Except in those municipalities which provide state-approved electrical inspection, all installation of electrical equipment wiring shall be inspected by the State Board of Electricity. Allowance shall be made in the bid and contract for the cost of such inspection.
- C. Fees for such inspection will be charged in accordance with the rules and regulations of the State Board of Electricity. Evidence of payment of fees shall be provided by the Contractor with the Request for Payment.

1.07 REGULATORY REQUIREMENTS:

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed by Underwriters Laboratories, Inc. or other testing firm acceptable to authority having jurisdiction.

1.08 SUBMITTALS:

- A. Submit under provisions of Division 01.
- B. Submit shop drawings and product data of related systems, products, and accessories.
- C. Mark dimensions and values in units to match those specified.

1.09 PROJECT/SITE CONDITIONS:

- A. Install Work in locations shown on Drawings, unless prevented by Project conditions.

1.10 SEQUENCING AND SCHEDULING:

- A. Construct Work in sequence under provisions of Division 1.

1.11 PRE-CONSTRUCTION COORDINATION AND VERIFICATION:

- A. This Contractor shall coordinate their work with other Contractors on this job. Any conflict which cannot be resolved shall be settled by the Architect/Engineer.
- B. Field verification of scale dimensions on plans is directed since actual locations, distances and levels will be governed by actual field conditions.
- C. The Contractors shall check architectural, structural, plumbing, heating, ventilating and electrical plans to avert possible installation conflicts. Should drastic changes from original plans be necessary to resolve such conflicts this Contractor shall notify the Architect/Engineer and secure written approval and agreement on necessary adjustments before the installation is started.
- D. Discrepancies shown on different plans or between plans and actual field conditions or between plans and specifications shall promptly be brought to the attention of the Architect/Engineer for a decision.
- E. The Contractor shall consider and review the complete set of documents, etc., Architectural, Structural, Mechanical, Electrical, etc., (Drawings and Specifications) as a complete set. They will be responsible for any and all electrical work shown or stated (to be by the Contractor), to include this work in their bid and install such items even though they are not specifically shown or stated on the Electrical section of the plans and specifications.
- F. The drawings are indicative of the work to be installed, but do not show all bends, fittings, boxes and specialties required to complete the installation.
- G. All conduits, wires, outlets boxes, switches, receptacles, devices and fixtures shall be included in the work.
- H. Where it is stated that the Contractor shall "provide" a device or piece of equipment, it shall mean that such a device or equipments are finished and installed.

1.12 CUTTING, PATCHING, AND FIRESTOPPING:

- A. The Electrical Contractor shall set all sleeves in construction for their Work.
- B. Where cutting is required, it shall be done by the Electrical Contractor.
- C. All patching shall be done by Electrical Contractor.
- D. All conduit and outlet installations and cutting of any kind must be done with great care so as not to leave unsightly surfaces which may not be entirely concealed by plates, escutcheons, or their normal concealing construction, if such unsightly conditions occur, Electrical Contractor will be required, at their own expense, to replace the damaged construction.
- E. This Electrical Contractor shall provide and install firestopping materials per Section 07 8400 - Firestopping.

1.13 SCAFFOLDING:

- A. Furnish and erect all scaffolding, ladders, etc., required in the installation of wiring, equipment and fixtures.

1.14 ADDITIONAL ELECTRICAL COSTS:

- A. If the Mechanical Contractor substitutes equipment for specified units, the mechanical contractor shall be responsible for any additional electrical installation costs for this substitution whether the other equipment was listed as equal in the specification or was approved equal after the project was in the bidding process.

1.15 GUARANTEE:

- A. This Contractor shall be responsible for the proper installation and working of everything in this contract and shall guarantee to remedy free of charge any defects in workmanship and materials that may appear to give or gives rise to trouble of any kind for a period of one year from date of final substantial completion.

PART 2 NOT USED

PART 3 EXECUTION

3.01 EQUIPMENT CONNECTIONS:

- A. Provide necessary power wiring for equipment furnished by others. Verify requirements with the Contractors responsible to supply each piece of equipment. Provide heavy duty disconnect switches as indicated.

3.02 AS-BUILT DRAWINGS:

- A. Contractor shall keep an accurate record of all deviations from contract drawings and specifications. Edits shall neatly and correctly enter in colored crayon any deviations on drawings affected, and shall keep drawings available for inspection. Extra set of drawings will be furnished for this purpose.
- B. At the completion of the job, and before final acceptance, the Contractor shall provide a complete set of as-built drawings. The Contractor shall show locations for all major electrical devices, including panelboards and all major runs of conduit, the circuiting of each fixture, outlet, etc., shall be shown. Certify to the accuracy of each print, by signature thereon, and deliver same to Architect.

END OF SECTION

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**SECTION 26 0505
SELECTIVE DEMOLITION FOR ELECTRICAL**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical demolition.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. Materials and equipment for patching and extending work: As specified in individual sections.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify field measurements and circuiting arrangements are as indicated.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Demolition drawings are based on casual field observation and existing record documents.
- D. Report discrepancies to Architect before disturbing existing installation.
- E. Beginning of demolition means installer accepts existing conditions.

3.02 PREPARATION

- A. Disconnect electrical systems in walls, floors, and ceilings to be removed.
- B. Coordinate utility service outages with utility company.
- C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- D. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Minimize outage duration.
 - 1. Obtain permission from Owner at least 24 hours before partially or completely disabling system.
 - 2. Make temporary connections to maintain service in areas adjacent to work area.

3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Remove, relocate, and extend existing installations to accommodate new construction.
- B. Remove abandoned wiring to source of supply.
- C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces. Use materials to match fire rating of wall.
- D. Remove exposed abandoned conduit installed in outdoor locations. Where conduit emerges from grade, remove vertical conduit to underground horizontal conduit or direct buried conductors.
- E. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.
- F. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
- G. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories.
- H. Disconnect and remove abandoned exterior light poles. Remove fixture, pole, pole base, and other accessories.
- I. Repair adjacent construction and finishes damaged during demolition and extension work.
- J. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.

- K. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

3.04 CLEANING AND REPAIR

- A. See Section 01 7419 - Construction Waste Management and Disposal for additional requirements.
- B. Clean and repair existing materials and equipment that remain or that are to be reused.
- C. Panelboards: Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.

END OF SECTION

SECTION 26 0519
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Single conductor building wire.
- B. Metal-clad cable.
- C. Wiring connectors.
- D. Electrical tape.
- E. Heat shrink tubing.
- F. Wire pulling lubricant.
- G. Cable ties.

1.02 RELATED REQUIREMENTS

- A. Section 07 8400 - Firestopping.
- B. Section 26 0526 - Grounding and Bonding for Electrical Systems: Additional requirements for grounding conductors and grounding connectors.
- C. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire; 2013 (Reapproved 2018).
- B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft; 2023.
- C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes; 2010, with Editorial Revision (2020).
- D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation; 2004 (Reapproved 2020).
- E. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape; 2017.
- F. ASTM D4388 - Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes; 2020.
- G. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- H. NECA 120 - Standard for Installing Armored Cable (AC) and Type Metal-Clad (MC) Cable; 2018.
- I. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy; 2021.
- J. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems; 2021.
- K. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- L. UL 44 - Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.
- M. UL 83 - Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.
- N. UL 267 - Outline of Investigation for Wire-Pulling Compounds; Current Edition, Including All Revisions.
- O. UL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.
- P. UL 486C - Splicing Wire Connectors; Current Edition, Including All Revisions.
- Q. UL 486D - Sealed Wire Connector Systems; Current Edition, Including All Revisions.
- R. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape; Current Edition, Including All Revisions.
- S. UL 1569 - Metal-Clad Cables; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 - 2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
 - 3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

1.07 FIELD CONDITIONS

- A. Do not install or otherwise handle thermoplastic-insulated conductors at temperatures lower than 14 degrees F, unless otherwise permitted by manufacturer's instructions. When installation below this temperature is unavoidable, notify Architect and obtain direction before proceeding with work.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE APPLICATIONS

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
- B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.
- C. Nonmetallic-sheathed cable is not permitted.
- D. Underground feeder and branch-circuit cable is not permitted.
- E. Service entrance cable is not permitted.
- F. Armored cable is not permitted.
- G. Metal-clad cable is permitted only as follows:
 - 1. In addition to other applicable restrictions, may not be used:
 - a. Where exposed to damage.
 - b. For damp, wet, or corrosive locations, unless provided with a PVC jacket listed as suitable for those locations.
 - c. For isolated ground circuits, _____.
 - d. For patient care areas of health care facilities requiring redundant grounding.

2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- D. Comply with NEMA WC 70.
- E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- G. Conductor Material:
 - 1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.

2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
 3. Tinned Copper Conductors: Comply with ASTM B33.
- H. Minimum Conductor Size:
1. Branch Circuits: 12 AWG.
 - a. Exceptions:
 - 1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
 - 2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
 - 3) 20 A, 277 V circuits longer than 150 feet: 10 AWG, for voltage drop.
 2. Control Circuits: 14 AWG.
- I. Conductor Color Coding:
1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
 2. Color Coding Method: Integrally colored insulation.
 - a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
 3. Color Code:
 - a. 480Y/277 V, 3 Phase, 4 Wire System:
 - 1) Phase A: Brown.
 - 2) Phase B: Orange.
 - 3) Phase C: Yellow.
 - 4) Neutral/Grounded: Gray.
 - b. 208Y/120 V, 3 Phase, 4 Wire System:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - 4) Neutral/Grounded: White.
 - c. Equipment Ground, All Systems: Green.
 - d. For modifications or additions to existing wiring systems, comply with existing color code when existing code complies with NFPA 70 and is approved by the authority having jurisdiction.

2.03 SINGLE CONDUCTOR BUILDING WIRE

- A. Description: Single conductor insulated wire.
- B. Conductor Stranding:
 1. Feeders and Branch Circuits:
 - a. Size 10 AWG and Smaller: Stranded.
 - b. Size 8 AWG and Larger: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation:
 1. Copper Building Wire: Type THHN/THWN-2, except as indicated below.
 - a. Size 4 AWG and Larger: Type XHHW-2.
 - b. Installed Underground: Type XHHW-2.

2.04 METAL-CLAD CABLE

- A. Description: NFPA 70, Type MC cable listed and labeled as complying with UL 1569, and listed for use in classified firestop systems to be used.
- B. Conductor Stranding:
 1. Size 10 AWG and Smaller: Solid.
 2. Size 8 AWG and Larger: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation: Type THHN, THHN/THWN, or THHN/THWN-2.
- E. Grounding: Full-size integral equipment grounding conductor.
- F. Armor: Steel, interlocked tape.

- G. Provide PVC jacket applied over cable armor.

2.05 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
- B. Wiring Connectors for Splices and Taps:
 - 1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
 - a. Push-in wire connectors are not permitted.
 - 2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors.
- C. Wiring Connectors for Terminations:
 - 1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
 - 2. Where over-sized conductors are larger than the equipment terminations can accommodate, provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the overcurrent protective device.
 - 3. Provide motor pigtail connectors for connecting motor leads in order to facilitate disconnection.
 - 4. Copper Conductors Size 8 AWG and Larger: Use mechanical connectors where connectors are required.
- D. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F for standard applications and 302 degrees F for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
- E. Mechanical Connectors: Provide bolted type.

2.06 ACCESSORIES

- A. Electrical Tape:
 - 1. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F.
 - 2. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F and suitable for continuous temperature environment up to 221 degrees F.
 - 3. Rubber Splicing Electrical Tape: Ethylene Propylene Rubber (EPR) tape, complying with ASTM D4388; minimum thickness of 30 mil; suitable for continuous temperature environment up to 194 degrees F and short-term 266 degrees F overload service.
 - 4. Electrical Filler Tape: Rubber-based insulating moldable putty, minimum thickness of 125 mil; suitable for continuous temperature environment up to 176 degrees F.
 - 5. Moisture Sealing Electrical Tape: Insulating mastic compound laminated to flexible, all-weather vinyl backing; minimum thickness of 90 mil.
- B. Heat Shrink Tubing: Heavy-wall, split-resistant, with factory-applied adhesive; rated 600 V; suitable for direct burial applications; listed as complying with UL 486D.
- C. Wire Pulling Lubricant:
 - 1. Listed and labeled as complying with UL 267.
 - 2. Suitable for use with conductors/cables and associated insulation/jackets to be installed.
 - 3. Suitable for use at installation temperature.
- D. Cable Ties: Material and tensile strength rating suitable for application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that work likely to damage wire and cable has been completed.
- C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- D. Verify that field measurements are as indicated.

- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.03 INSTALLATION

- A. Circuiting Requirements:
 - 1. Unless dimensioned, circuit routing indicated is diagrammatic.
 - 2. When circuit destination is indicated without specific routing, determine exact routing required.
 - 3. Arrange circuiting to minimize splices.
 - 4. Include circuit lengths required to install connected devices within 10 ft of location indicated.
 - 5. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits in accordance with NFPA 70.
 - 6. Circuiting Adjustments: Unless otherwise indicated, when branch circuits are indicated as separate, combining them together in a single raceway is permitted, under the following conditions:
 - a. Provide no more than six current-carrying conductors in a single raceway. Dedicated neutral conductors are considered current-carrying conductors.
 - b. Increase size of conductors as required to account for ampacity derating.
 - c. Size raceways, boxes, etc. to accommodate conductors.
 - 7. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.
- B. Install products in accordance with manufacturer's instructions.
- C. Perform work in accordance with NECA 1 (general workmanship).
- D. Installation in Raceway:
 - 1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
 - 2. Pull all conductors and cables together into raceway at same time.
 - 3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
 - 4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- E. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
- F. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
- G. Terminate cables using suitable fittings.
 - 1. Metal-Clad Cable (Type MC):
 - a. Use listed fittings.
 - b. Cut cable armor only using specialized tools to prevent damaging conductors or insulation. Do not use hacksaw or wire cutters to cut armor.
- H. Install conductors with a minimum of 12 inches of slack at each outlet.
- I. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- J. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.
- K. Make wiring connections using specified wiring connectors.
 - 1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.

2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
 3. Do not remove conductor strands to facilitate insertion into connector.
 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
 5. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
- L. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
1. Dry Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
 - a. For taped connections, first apply adequate amount of rubber splicing electrical tape or electrical filler tape, followed by outer covering of vinyl insulating electrical tape.
 2. Damp Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
 - a. For connections with insulating covers, apply outer covering of moisture sealing electrical tape.
 - b. For taped connections, follow same procedure as for dry locations but apply outer covering of moisture sealing electrical tape.
 3. Wet Locations: Use heat shrink tubing.
- M. Insulate ends of spare conductors using vinyl insulating electrical tape.
- N. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.
- O. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- P. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Correct deficiencies and replace damaged or defective conductors and cables.

END OF SECTION

SECTION 26 0526
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.
- D. Ground bars.
- E. Ground rod electrodes.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
- B. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- B. NEMA GR 1 - Grounding Rod Electrodes and Grounding Rod Electrode Couplings; 2022.
- C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. UL 467 - Grounding and Bonding Equipment; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Verify exact locations of underground metal water service pipe entrances to building.
 - 2. Coordinate the work with other trades to provide steel reinforcement complying with specified requirements for concrete-encased electrode.
 - 3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Do not install ground rod electrodes until final backfill and compaction is complete.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

- A. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- B. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- C. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- D. Grounding Electrode System:
 - 1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
 - a. Provide continuous grounding electrode conductors without splice or joint.
 - b. Install grounding electrode conductors in raceway where exposed to physical damage. Bond grounding electrode conductor to metallic raceways at each end with bonding jumper.

2. Metal Underground Water Pipe(s):
 - a. Provide connection to underground metal domestic and fire protection (where present) water service pipe(s) that are in direct contact with earth for at least 10 feet at an accessible location not more than 5 feet from the point of entrance to the building.
 - b. Provide bonding jumper(s) around insulating joints/pipes as required to make pipe electrically continuous.
 - c. Provide bonding jumper around water meter of sufficient length to permit removal of meter without disconnecting jumper.
3. Metal In-Ground Support Structure:
 - a. Provide connection to metal in-ground support structure that is in direct contact with earth in accordance with NFPA 70.
4. Concrete-Encased Electrode:
 - a. Provide connection to concrete-encased electrode consisting of not less than 20 feet of either steel reinforcing bars or bare copper conductor not smaller than 4 AWG embedded within concrete foundation or footing that is in direct contact with earth in accordance with NFPA 70.
5. Ground Rod Electrode(s):
 - a. Provide two electrodes unless otherwise indicated or required.
 - b. Space electrodes not less than 10 feet from each other and any other ground electrode.
 - c. Where location is not indicated, locate electrode(s) at least 5 feet outside building perimeter foundation as near as possible to electrical service entrance; where possible, locate in softscape (uncovered) area.
6. Provide additional ground electrode(s) as required to achieve specified grounding electrode system resistance.
7. Ground Bar: Provide ground bar, separate from service equipment enclosure, for common connection point of grounding electrode system bonding jumpers as permitted in NFPA 70. Connect grounding electrode conductor provided for service-supplied system grounding to this ground bar.
 - a. Ground Bar Size: 1/4 by 2 by 12 inches unless otherwise indicated or required.
 - b. Where ground bar location is not indicated, locate in accessible location as near as possible to service disconnect enclosure.
 - c. Ground Bar Mounting Height: 18 inches above finished floor unless otherwise indicated.
8. Ground Riser: Provide common grounding electrode conductor not less than 3/0 AWG for tap connections to multiple separately derived systems as permitted in NFPA 70.
- E. Service-Supplied System Grounding:
 1. For each service disconnect, provide grounding electrode conductor to connect neutral (grounded) service conductor to grounding electrode system. Unless otherwise indicated, make connection at neutral (grounded) bus in service disconnect enclosure.
 2. For each service disconnect, provide main bonding jumper to connect neutral (grounded) bus to equipment ground bus where not factory-installed. Do not make any other connections between neutral (grounded) conductors and ground on load side of service disconnect.
- F. Bonding and Equipment Grounding:
 1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
 2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
 3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
 4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.

5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
 6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.
 7. Provide bonding for interior metal piping systems in accordance with NFPA 70. This includes, but is not limited to:
 - a. Metal water piping where not already effectively bonded to metal underground water pipe used as grounding electrode.
 - b. Metal gas piping.
- G. Communications Systems Grounding and Bonding:
1. Provide bonding jumper in raceway from intersystem bonding termination to each communications room or backboard and provide ground bar for termination.
 - a. Bonding Jumper Size: 6 AWG, unless otherwise indicated or required.
 - b. Raceway Size: 3/4 inch trade size unless otherwise indicated or required.
 - c. Ground Bar Size: 1/4 by 2 by 12 inches unless otherwise indicated or required.

2.02 GROUNDING AND BONDING COMPONENTS

- A. General Requirements:
1. Provide products listed, classified, and labeled as suitable for the purpose intended.
 2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 0526:
1. Use insulated copper conductors unless otherwise indicated.
 - a. Exceptions:
 - 1) Use bare copper conductors where installed underground in direct contact with earth.
 - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- C. Connectors for Grounding and Bonding:
1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
 2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
 3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.
- D. Ground Bars:
1. Description: Copper rectangular ground bars with mounting brackets and insulators.
 2. Holes for Connections: As indicated or as required for connections to be made.
- E. Ground Rod Electrodes:
1. Comply with NEMA GR 1.
 2. Material: Copper-bonded (copper-clad) steel.
 3. Size: 3/4 inch diameter by 10 feet length, unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as indicated.
- C. Verify that conditions are satisfactory for installation prior to starting work.
- D. Verify that final backfill and compaction has been completed before driving rod electrodes.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Ground Rod Electrodes: Unless otherwise indicated, install ground rod electrodes vertically. Where encountered rock prohibits vertical installation, install at 45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70 or install at

45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70.

1. Outdoor Installations: Unless otherwise indicated, install with top of rod 6 inches below finished grade.
- D. Make grounding and bonding connections using specified connectors.
 1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
 2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
 3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
 4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
 5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- E. Identify grounding and bonding system components in accordance with Section 26 0553.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Perform ground electrode resistance tests under normally dry conditions. Precipitation within the previous 48 hours does not constitute normally dry conditions.
- C. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

END OF SECTION

ISSUE DATE - 06-13-2024

**SECTION 26 0529
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete equipment pads.
- B. Section 26 0533.13 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.
- C. Section 26 0533.16 - Boxes for Electrical Systems: Additional support and attachment requirements for boxes.

1.03 REFERENCE STANDARDS

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2023.
- D. MFMA-4 - Metal Framing Standards Publication; 2004.
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate sizes and arrangement of supports and bases with actual equipment and components to be installed.
 - 2. Coordinate work to provide additional framing and materials required for installation.
 - 3. Coordinate compatibility of support and attachment components with mounting surfaces at installed locations.
 - 4. Coordinate arrangement of supports with ductwork, piping, equipment and other potential conflicts.
 - 5. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Do not install products on or provide attachment to concrete surfaces until concrete has cured; see Section 03 3000.

1.05 QUALITY ASSURANCE

- A. Product Listing Organization Qualifications: Organization recognized by OSHA as Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

- A. General Requirements:
 - 1. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of electrical work.
 - 2. Provide products listed, classified, and labeled as suitable for purpose intended, where applicable.
 - 3. Do not use products for applications other than as permitted by NFPA 70 and product listing.
 - 4. Steel Components: Use corrosion-resistant materials suitable for environment where installed.

- a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
 - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
 - c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
 - d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Conduit and Cable Supports: Straps and clamps suitable for conduit or cable to be supported.
 - 1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
 - 2. Conduit Clamps: Bolted type unless otherwise indicated.
- C. Outlet Box Supports: Hangers and brackets suitable for boxes to be supported.
- D. Metal Channel/Strut Framing Systems:
 - 1. Description: Factory-fabricated, continuous-slot, metal channel/strut and associated fittings, accessories, and hardware required for field assembly of supports.
 - 2. Comply with MFMA-4.
- E. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.
- F. Anchors and Fasteners:
 - 1. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.
 - 2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
 - 3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
 - 4. Hollow Masonry: Use toggle bolts.
 - 5. Hollow Stud Walls: Use toggle bolts.
 - 6. Steel: Use beam clamps, machine bolts, or welded threaded studs.
 - 7. Sheet Metal: Use sheet metal screws.
 - 8. Wood: Use wood screws.
 - 9. Plastic and lead anchors are not permitted.
 - 10. Preset Concrete Inserts: Continuous metal channel/strut and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.
 - a. Manufacturer: Same as manufacturer of metal channel/strut framing system.
 - b. Comply with MFMA-4.
 - c. Channel Material: Use galvanized steel.
 - 11. Post-Installed Concrete and Masonry Anchors: Evaluated and recognized by ICC Evaluation Service, LLC (ICC-ES) for compliance with applicable building code.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that mounting surfaces are ready to receive support and attachment components.
- B. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install hangers and supports in accordance with NECA 1.
- C. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.
- D. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- E. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.
- F. Unless specifically indicated or approved by Architect, do not provide support from roof deck.
- G. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- H. Equipment Support and Attachment:

1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
 2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
 3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
 4. Unless otherwise indicated, mount floor-mounted equipment on properly sized concrete pad 4 inches in height; see Section 03 3000.
 5. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
- I. Preset Concrete Inserts: Use manufacturer provided closure strips to inhibit concrete seepage during concrete pour.
 - J. Secure fasteners in accordance with manufacturer's recommended torque settings.
 - K. Remove temporary supports.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Inspect support and attachment components for damage and defects.
- C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- D. Correct deficiencies and replace damaged or defective support and attachment components.
- E. Install hangers and supports as required to adequately and securely support electrical system components, in a neat and workmanlike manner, as specified in NECA 1.
 1. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
 2. Obtain permission from Architect before drilling or cutting structural members.
- F. Rigidly weld support members or use hexagon-head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.
- G. Install surface-mounted cabinets and panelboards with minimum of four anchors.
- H. In wet and damp locations use steel channel supports to stand cabinets and panelboards 1 inch off wall.
- I. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

END OF SECTION

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**SECTION 26 0533.13
CONDUIT FOR ELECTRICAL SYSTEMS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Galvanized steel rigid metal conduit (RMC).
- B. Galvanized steel intermediate metal conduit (IMC).
- C. PVC-coated galvanized steel rigid metal conduit (RMC).
- D. Flexible metal conduit (FMC).
- E. Liquidtight flexible metal conduit (LFMC).
- F. Galvanized steel electrical metallic tubing (EMT).
- G. Rigid polyvinyl chloride (PVC) conduit.
- H. Reinforced thermosetting resin conduit (RTRC).
- I. High-density polyethylene (HDPE) conduit.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete encasement of conduits.
- B. Section 07 8400 - Firestopping.
- C. Section 26 0526 - Grounding and Bonding for Electrical Systems.
 - 1. Includes additional requirements for fittings for grounding and bonding.
- D. Section 26 0529 - Hangers and Supports for Electrical Systems.
- E. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC); 2020.
- B. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S); 2020.
- C. ANSI C80.6 - American National Standard for Electrical Intermediate Metal Conduit; 2018.
- D. ASTM F2160 - Standard Specification for Solid Wall High Density Polyethylene (HDPE) Conduit Based on Controlled Outside Diameter (OD); 2016.
- E. ASTM F2176 - Standard Specification for Mechanical Couplings Used on Polyethylene Conduit, Duct and Innerduct; 2017.
- F. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- G. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT); 2020.
- H. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC); 2017.
- I. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.
- J. NEMA RN 1 - Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Metal Conduit and Intermediate Metal Conduit; 2018.
- K. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit; 2020.
- L. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; 2021.
- M. NEMA TC 7 - Solid-Wall Coilable and Straight Electrical Polyethylene Conduit; 2021.
- N. NEMA TC 14 (SERIES) - Reinforced Thermosetting Resin Conduit and Fittings Series; 2015.
- O. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- P. UL 1 - Flexible Metal Conduit; Current Edition, Including All Revisions.
- Q. UL 6 - Electrical Rigid Metal Conduit-Steel; Current Edition, Including All Revisions.
- R. UL 360 - Liquid-Tight Flexible Metal Conduit; Current Edition, Including All Revisions.

- S. UL 514A - Metallic Outlet Boxes; Current Edition, Including All Revisions.
- T. UL 514B - Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.
- U. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.
- V. UL 651A - Schedule 40 and 80 High Density Polyethylene (HDPE) Conduit; Current Edition, Including All Revisions.
- W. UL 797 - Electrical Metallic Tubing-Steel; Current Edition, Including All Revisions.
- X. UL 1242 - Electrical Intermediate Metal Conduit-Steel; Current Edition, Including All Revisions.
- Y. UL 2419 - Outline of Investigation for Electrically Conductive Corrosion Resistant Compounds; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate minimum sizes of conduits with actual type and quantity of conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 - 2. Coordinate arrangement of conduits with structural members, ductwork, piping, equipment, and other potential conflicts.
 - 3. Verify exact conduit termination locations required for boxes, enclosures, and equipment.
 - 4. Coordinate work to provide roof penetrations that preserve integrity of roofing system and do not void roof warranty.
 - 5. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Do not begin installation of conductors and cables until installation of conduit between termination points is complete.

1.05 QUALITY ASSURANCE

- A. Product Listing Organization Qualifications: Organization recognized by OSHA as Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 CONDUIT APPLICATIONS

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70, manufacturer's instructions, and product listing.
- B. Unless otherwise indicated and where not otherwise restricted, use conduit types indicated for specified applications. Where more than one listed application applies, comply with most restrictive requirements. Where conduit type for particular application is not specified, use galvanized steel rigid metal conduit.
- C. Underground:
 - 1. Under Slab on Grade: Use galvanized steel rigid metal conduit, rigid PVC conduit, or high-density polyethylene (HDPE) conduit.
 - 2. Exterior, Direct-Buried: Use galvanized steel rigid metal conduit, rigid PVC conduit, or high-density polyethylene (HDPE) conduit.
 - 3. Where rigid polyvinyl chloride (PVC) conduit is provided, transition to galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or schedule 80 rigid PVC conduit where emerging from underground.
 - 4. Where rigid polyvinyl (PVC) conduit larger than 2-inch (53 mm) trade size is provided, use galvanized steel rigid metal conduit (RMC) elbows, galvanized steel intermediate metal conduit (IMC) elbows, PVC-coated galvanized steel rigid metal conduit (RMC) elbows, or concrete-encased PVC elbows for bends.
- D. Embedded Within Concrete:
 - 1. Within Slab on Grade: Not permitted.

2. Within Slab Above Ground: Not permitted.
3. Within Concrete Walls Above Ground: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), PVC-coated galvanized steel rigid metal conduit (RMC), galvanized steel electrical metallic tubing (EMT), rigid PVC conduit, or reinforced thermosetting resin conduit (RTRC).
4. Where rigid polyvinyl (PVC) conduit is provided, transition to galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT) where emerging from concrete.
- E. Concealed Within Masonry Walls: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- F. Concealed Within Hollow Stud Walls: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- G. Concealed Above Accessible Ceilings: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- H. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or aluminum rigid metal conduit.
- I. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- J. Exposed, Interior, Subject to Physical Damage: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
 1. Locations subject to physical damage include, but are not limited to:
 - a. Where exposed below 12 feet, except within electrical and communication rooms or closets.
 - b. Where exposed below 20 feet in warehouse areas.
- K. Exposed, Exterior, Not Subject to Severe Physical Damage: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- L. Concealed, Exterior, Not Embedded in Concrete or in Contact With Earth: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or Schedule 40 PVC.
- M. Corrosive Locations Above Ground: Use aluminum rigid metal conduit.
- N. Flexible Connections to Luminaires Above Accessible Ceilings: Use flexible metal conduit (FMC).
 1. Maximum Length: 6 feet.
- O. Flexible Connections to Vibrating Equipment:
 1. Dry Locations: Use flexible metal conduit (FMC).
 2. Damp, Wet, or Corrosive Locations: Use liquidtight flexible metal conduit (LFMC).
 3. Maximum Length: 6 feet unless otherwise indicated.

2.02 CONDUIT - GENERAL REQUIREMENTS

- A. Comply with NFPA 70.
- B. Provide conduit, fittings, supports, and accessories required for complete raceway system.
- C. Provide products listed, classified, and labeled as suitable for purpose intended.
- D. Minimum Conduit Size, Unless Otherwise Indicated:
 1. Branch Circuits: 3/4 inch (21 mm) trade size.
 2. Branch Circuit Homeruns: 3/4 inch (21 mm) trade size.
 3. Control Circuits: 3/4 inch (21 mm) trade size.
 4. Flexible Connections to Luminaires: 1/2 inch (16 mm) trade size.
 5. Underground, Interior: 1 inch (27 mm) trade size.
 6. Underground, Exterior: 1 inch (27 mm) trade size.

- E. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

- A. Manufacturers:
 - 1. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.com/#sle.
 - 2. Nucor Tubular Products: www.nucortubular.com/#sle.
 - 3. Wheatland Tube, a division of Zekelman Industries: www.wheatland.com/#sle.
- B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.
- C. Fittings:
 - 1. Manufacturers:
 - a. Bridgeport Fittings Inc: www.bptfittings.com/#sle.
 - b. Emerson Electric Co; O-Z/Gedney: www.emerson.com/#sle.
 - 2. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 6.
 - 3. Material: Use steel or malleable iron.
 - 4. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

2.04 GALVANIZED STEEL INTERMEDIATE METAL CONDUIT (IMC)

- A. Manufacturers:
 - 1. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.com/#sle.
 - 2. Nucor Tubular Products: www.nucortubular.com/#sle.
 - 3. Wheatland Tube, a division of Zekelman Industries: www.wheatland.com/#sle.
- B. Description: NFPA 70, Type IMC galvanized steel intermediate metal conduit complying with ANSI C80.6 and listed and labeled as complying with UL 1242.
- C. Fittings:
 - 1. Manufacturers:
 - a. Bridgeport Fittings, LLC: www.bptfittings.com/#sle.
 - b. Emerson Electric Co; O-Z/Gedney: www.emerson.com/#sle.
 - 2. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 1242.
 - 3. Material: Use steel or malleable iron.
 - 4. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

2.05 PVC-COATED GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

- A. Manufacturers:
 - 1. Robroy Industries: www.robroy.com/#sle.
- B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit with external polyvinyl chloride (PVC) coating complying with NEMA RN 1 and listed and labeled as complying with UL 6.
- C. Exterior Coating: Polyvinyl chloride (PVC), nominal thickness of 40 mil, 0.040 inch.
- D. PVC-Coated Boxes and Fittings:
 - 1. Manufacturer: Same as manufacturer of PVC-coated conduit to be installed.
 - 2. Nonhazardous Locations: Use boxes and fittings listed and labeled as complying with UL 514A, UL 514B, or UL 6.
 - 3. Material: Use steel or malleable iron.
 - 4. Exterior Coating: Polyvinyl chloride (PVC), minimum thickness of 40 mil, 0.040 inch.
- E. PVC-Coated Supports: Furnish with exterior coating of polyvinyl chloride (PVC), minimum thickness of 15 mil, 0.015 inch.

2.06 FLEXIBLE METAL CONDUIT (FMC)

- A. Manufacturers:
 - 1. AFC Cable Systems, a division of Atkore International: www.afcweb.com/#sle.
 - 2. Electri-Flex Company: www.electriflex.com/#sle.

3. International Metal Hose: www.metalhose.com/#sle.
 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Description: NFPA 70, Type FMC standard-wall steel flexible metal conduit listed and labeled as complying with UL 1, and listed for use in classified firestop systems.
- C. Fittings:
1. Manufacturers:
 - a. Bridgeport Fittings, LLC: www.bptfittings.com/#sle.
 - b. Emerson Electric Co; O-Z/Gedney: www.emerson.com/#sle.
 2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 3. Material: Use steel or malleable iron.

2.07 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

- A. Manufacturers:
1. AFC Cable Systems, a division of Atkore International: www.afcweb.com/#sle.
 2. Electri-Flex Company: www.electriflex.com/#sle.
 3. International Metal Hose: www.metalhose.com/#sle.
 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Description: NFPA 70, Type LFMC polyvinyl chloride (PVC) jacketed steel flexible metal conduit listed and labeled as complying with UL 360.
- C. Fittings:
1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 2. Material: Use steel or malleable iron.

2.08 GALVANIZED STEEL ELECTRICAL METALLIC TUBING (EMT)

- A. Manufacturers:
1. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.com/#sle.
 2. Wheatland Tube, a Division of Zekelman Industries: www.wheatland.com/#sle.
- B. Description: NFPA 70, Type EMT galvanized steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.
- C. Fittings:
1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 2. Material: Use steel or malleable iron.
 3. Connectors and Couplings: Use compression/gland or set-screw type.
 - a. Do not use indenter type connectors and couplings.
 4. Embedded Within Concrete, Where Permitted: Use fittings listed as concrete-tight. Fittings that require taping to be concrete-tight are acceptable.

2.09 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

- A. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.
- B. Fittings:
1. Manufacturer: Same as manufacturer of conduit to be connected.
 2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

2.10 REINFORCED THERMOSETTING RESIN CONDUIT (RTRC)

- A. Description: NFPA 70, Type RTRC reinforced thermosetting resin conduit complying with NEMA TC 14 (SERIES).
- B. Supports: As recommended by manufacturer.
- C. Fittings: Same type and manufacturer as conduit to be connected.

2.11 HIGH-DENSITY POLYETHYLENE (HDPE) CONDUIT

- A. Description: NFPA 70, Type HDPE high-density polyethylene solid-wall conduit complying with ASTM F2160 and NEMA TC 7; list and label as complying with UL 651A; Schedule 40 unless otherwise indicated.
- B. Joining Methods: Approved by HDPE conduit manufacturer.
- C. Mechanical Fittings: Comply with ASTM F2176; list and label as complying with UL 651A.

2.12 ACCESSORIES

- A. Conduit Joint Compound: Corrosion-resistant, electrically conductive compound listed as complying with UL 2419; suitable for use with conduit to be installed.
- B. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.
- C. Epoxy Adhesive for RTRC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.
- D. Sealing Compound for Hazardous/Classified Location Sealing Fittings: Listed for use with particular fittings to be installed.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive conduits.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install conduit in accordance with NECA 1.
- C. Galvanized Steel Rigid Metal Conduit (RMC): Install in accordance with NECA 101.
- D. Intermediate Metal Conduit (IMC): Install in accordance with NECA 101.
- E. PVC-Coated Galvanized Steel Rigid Metal Conduit (RMC): Install using only tools approved by manufacturer.
- F. Rigid Polyvinyl Chloride (PVC) Conduit: Install in accordance with NECA 111.
- G. Conduit Routing:
 - 1. Unless dimensioned, conduit routing indicated is diagrammatic.
 - 2. When conduit destination is indicated without specific routing, determine exact routing required.
 - 3. Conceal conduits unless specifically indicated to be exposed.
 - 4. Conduits in the following areas may be exposed, unless otherwise indicated:
 - a. Electrical rooms.
 - b. Mechanical equipment rooms.
 - c. Within joists in areas with no ceiling.
 - 5. Conduits installed underground or embedded in concrete may be routed in shortest possible manner unless otherwise indicated. Route other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
 - 6. Arrange conduit to maintain adequate headroom, clearances, and access.
 - 7. Arrange conduit to provide no more than equivalent of four 90-degree bends between pull points.
 - 8. Route conduits above water and drain piping where possible.
 - 9. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
 - 10. Maintain minimum clearance of 6 inches between conduits and piping for other systems.
 - 11. Maintain minimum clearance of 12 inches between conduits and hot surfaces. This includes, but is not limited to:
 - a. Heaters.
 - b. Hot water piping.
 - c. Flues.

12. Group parallel conduits in same area on common rack.
- H. Conduit Support:
1. Secure and support conduits in accordance with NFPA 70 using suitable supports and methods approved by authorities having jurisdiction; see Section 26 0529.
 2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
 3. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.
 4. Use conduit strap to support single surface-mounted conduit.
 - a. Use clamp back spacer with conduit strap for damp and wet locations to provide space between conduit and mounting surface.
 5. Use metal channel/strut with accessory conduit clamps to support multiple parallel surface-mounted conduits.
 6. Use conduit clamp to support single conduit from beam clamp or threaded rod.
 7. Use trapeze hangers assembled from threaded rods and metal channel/strut with accessory conduit clamps to support multiple parallel suspended conduits.
 8. Use of wire for support of conduits is not permitted.
- I. Connections and Terminations:
1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
 2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
 3. Use suitable adapters where required to transition from one type of conduit to another.
 4. Provide drip loops for liquidtight flexible conduit connections to prevent drainage of liquid into connectors.
 5. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
 6. Provide insulating bushings, insulated throats, or listed metal fittings with smooth, rounded edges at conduit terminations to protect conductors.
 7. Secure joints and connections to provide mechanical strength and electrical continuity.
- J. Penetrations:
1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
 2. Make penetrations perpendicular to surfaces unless otherwise indicated.
 3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
 4. Conceal bends for conduit risers emerging above ground.
 5. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
 6. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty.
 7. Install firestopping to preserve fire resistance rating of partitions and other elements; see Section 07 8400.
- K. Underground Installation:
1. Minimum Cover, Unless Otherwise Indicated or Required:
 - a. Underground, Exterior: 24 inches.
 - b. Under Slab on Grade: 12 inches to bottom of slab.
 2. Provide underground warning tape along entire conduit length for service entrance where not concrete-encased; see Section 26 0553.
- L. Telecommunications Conduit:
1. Provide 1" empty conduit with proper mud ring or box stubbed up into corridor ceiling space for all voice, data, and television locations.
- M. Concrete Encasement: Where conduits not otherwise embedded within concrete are indicated to be concrete-encased, provide minimum concrete cover of 3 inches on all sides unless otherwise indicated; see Section 03 3000.

- N. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
 2. Where calculated in accordance with NFPA 70 for rigid polyvinyl chloride (PVC) conduit installed above ground to compensate for thermal expansion and contraction.
 3. Where calculated in accordance with NFPA 70 for reinforced thermosetting resin conduit (RTRC) conduit installed above ground to compensate for thermal expansion and contraction.
 4. Where conduits are subject to earth movement by settlement or frost.
- O. Conduit Sealing:
1. Use foam conduit sealant to prevent entry of moisture and gases. This includes, but is not limited to:
 - a. Where conduits enter building from outside.
 - b. Where service conduits enter building from underground distribution system.
 - c. Where conduits enter building from underground.
 - d. Where conduits may transport moisture to contact live parts.
 2. Where conduits cross barriers between areas of potential substantial temperature differential, use foam conduit sealant at accessible point near penetration to prevent condensation. This includes, but is not limited to:
 - a. Where conduits pass from outdoors into conditioned interior spaces.
 - b. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
 3. Where conduits cross boundaries of hazardous/classified locations, provide identified/listed sealing fittings or conduit mechanical seals as approved by authorities having jurisdiction; locate as indicated or in accordance with NFPA 70.
- P. Provide grounding and bonding; see Section 26 0526.

3.03 CLEANING

- A. Clean interior of conduits to remove moisture and foreign matter.

END OF SECTION

SECTION 26 0533.16
BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.

1.02 RELATED REQUIREMENTS

- A. Section 07 8400 - Firestopping.
- B. Section 08 3100 - Access Doors and Panels: Panels for maintaining access to concealed boxes.
- C. Section 26 0529 - Hangers and Supports for Electrical Systems.
- D. Section 26 2726 - Wiring Devices:
 - 1. Wall plates.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2016.
- C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.
- D. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.
- E. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; 2013 (Reaffirmed 2020).
- F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- H. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- I. UL 508A - Industrial Control Panels; Current Edition, Including All Revisions.
- J. UL 514A - Metallic Outlet Boxes; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
 - 4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
 - 5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
 - 6. Coordinate the work with other trades to preserve insulation integrity.
 - 7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
 - 8. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.
- B. Products: Provide products listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.01 BOXES

- A. General Requirements:
 - 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
 - 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
 - 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
 - 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
 - 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
 - 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
 - 2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
 - 3. Use suitable concrete type boxes where flush-mounted in concrete.
 - 4. Use suitable masonry type boxes where flush-mounted in masonry walls.
 - 5. Use raised covers suitable for the type of wall construction and device configuration where required.
 - 6. Use shallow boxes where required by the type of wall construction.
 - 7. Do not use "through-wall" boxes designed for access from both sides of wall.
 - 8. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
 - 9. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
 - 10. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
 - 11. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
 - 12. Wall Plates: Comply with Section 26 2726.
- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
 - 1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
 - 2. NEMA 250 Environment Type, Unless Otherwise Indicated:
 - 3. Junction and Pull Boxes Larger Than 100 cubic inches:
 - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
 - 4. Finish for Painted Steel Enclosures: Manufacturer's standard grey unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

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- A. Install products in accordance with manufacturer's instructions.
- B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.
- E. Flush-mount boxes in finished areas unless specifically indicated to be surface-mounted.
- F. Unless otherwise indicated, boxes may be surface-mounted where exposed conduits are indicated or permitted.
- G. Box Locations:
 - 1. Locate boxes to be accessible. Provide access panels in accordance with Section 08 3100 as required where approved by the Architect.
 - 2. Unless dimensioned, box locations indicated are approximate.
 - 3. Locate boxes so that wall plates do not span different building finishes.
 - 4. Locate boxes so that wall plates do not cross masonry joints.
 - 5. Unless otherwise indicated, where multiple outlet boxes are installed at the same location at different mounting heights, install along a common vertical center line.
 - 6. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 6 inches horizontal separation unless otherwise indicated.
- H. Box Supports:
 - 1. Secure and support boxes in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
 - 2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
 - 3. Installation Above Suspended Ceilings: Do not provide support from ceiling grid or ceiling support system.
- I. Install boxes plumb and level.
- J. Flush-Mounted Boxes:
 - 1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch or does not project beyond finished surface.
 - 2. Install boxes in combustible materials such as wood so that front edge of box or associated raised cover is flush with finished surface.
 - 3. Repair rough openings around boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that there are no gaps or open spaces greater than 1/8 inch at the edge of the box.
- K. Install boxes as required to preserve insulation integrity.
- L. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- M. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- N. Close unused box openings.
- O. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- P. Provide grounding and bonding in accordance with Section 26 0526.
- Q. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.

3.03 CLEANING

- A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

END OF SECTION

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**SECTION 26 0553
IDENTIFICATION FOR ELECTRICAL SYSTEMS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Wire and cable markers.
- D. Underground warning tape.
- E. Warning signs and labels.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.

1.03 REFERENCE STANDARDS

- A. ANSI Z535.2 - American National Standard for Environmental and Facility Safety Signs; 2023.
- B. ANSI Z535.4 - American National Standard for Product Safety Signs and Labels; 2023.
- C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. UL 969 - Marking and Labeling Systems; Current Edition, Including All Revisions.

1.04 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.01 IDENTIFICATION REQUIREMENTS

- A. Identification for Equipment:
 - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
 - a. Panelboards:
 - 1) Use typewritten circuit directory to identify load(s) served for panelboards with a door. Identify spares and spaces using pencil.
 - 2) For power panelboards without a door, use identification nameplate to identify load(s) served for each branch device. Identify spares and spaces.
 - b. Enclosed switches, circuit breakers, and motor controllers:
 - 1) Identify voltage power source and circuit number. Include location when not within sight of equipment.
 - 2) Identify load(s) served. Include location.
 - 2. Service Equipment:
 - a. Use identification nameplate to identify each service disconnecting means.
 - 3. Use identification nameplate to identify equipment utilizing series ratings, where permitted, in accordance with NFPA 70.
 - 4. Use identification label or handwritten text using indelible marker on inside of door at each fused switch to identify required NEMA fuse class and size.
 - 5. Use identification label to identify overcurrent protective devices for branch circuits serving fire alarm circuits. Identify with text "FIRE ALARM CIRCUIT".
 - 6. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70 including but not limited to the following.
 - a. Service equipment.
 - b. Industrial control panels.
 - c. Motor control centers.
 - d. Elevator control panels.
 - e. Industrial machinery.
 - 7. Use warning signs to identify electrical hazards for entrances to all rooms and other guarded locations that contain exposed live parts operating at 600 V nominal or less with

the word message "DANGER; Electrical hazard; Authorized personnel only" or approved equivalent.

- B. Identification for Conductors and Cables:
 - 1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.
 - 2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
- C. Identification for Boxes:
 - 1. Use identification labels or handwritten text using indelible marker to identify circuits enclosed.
 - a. For exposed boxes in public areas, use only identification labels.
- D. Identification for Devices:
 - 1. Use identification label to identify fire alarm system devices.
 - 2. Use identification label or engraved wallplate to identify serving branch circuit for all receptacles.
 - 3. Use identification label to identify receptacles protected by upstream GFI protection, where permitted.

2.02 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
 - 1. Materials:
 - a. Indoor Clean, Dry Locations: Use plastic nameplates.
 - b. Outdoor Locations: Use plastic, stainless steel, or aluminum nameplates suitable for exterior use.
 - 2. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch; engraved text.
 - 3. Stainless Steel Nameplates: Minimum thickness of 1/32 inch; engraved or laser-etched text.
 - 4. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch; engraved or laser-etched text.
 - 5. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.
- B. Identification Labels:
 - 1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
 - 2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.
- C. Format for Equipment Identification:
 - 1. Minimum Size: 1 inch by 2.5 inches.
 - 2. Legend:
 - a. Equipment designation or other approved description.
 - 3. Text: All capitalized unless otherwise indicated.
 - 4. Minimum Text Height:
 - a. Equipment Designation: 1/2 inch.
 - 5. Color:
 - a. Normal Power System: White text on black background.
 - b. Emergency Power System: White text on red background.

2.03 WIRE AND CABLE MARKERS

- A. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.
- B. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.
- C. Legend: Power source and circuit number or other designation indicated.

- D. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.
- E. Minimum Text Height: 1/8 inch.
- F. Color: Black text on white background unless otherwise indicated.

2.04 UNDERGROUND WARNING TAPE

- A. Materials: Use non-detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.
- B. Non-detectable Type Tape: 6 inches wide, with minimum thickness of 4 mil.
- C. Legend: Type of service, continuously repeated over full length of tape.
- D. Color:
 - 1. Tape for Buried Power Lines: Black text on red background.

2.05 WARNING SIGNS AND LABELS

- A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
- B. Warning Signs:
 - 1. Materials:
 - a. Indoor Dry, Clean Locations: Use factory pre-printed rigid plastic or self-adhesive vinyl signs.
 - 2. Rigid Signs: Provide four mounting holes at corners for mechanical fasteners.
 - 3. Minimum Size: 7 by 10 inches unless otherwise indicated.
- C. Warning Labels:
 - 1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
 - 2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
 - 3. Minimum Size: 2 by 4 inches unless otherwise indicated.

PART 3 EXECUTION

3.01 PREPARATION

- A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
 - 1. Surface-Mounted Equipment: Enclosure front.
 - 2. Flush-Mounted Equipment: Inside of equipment door.
 - 3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
 - 4. Elevated Equipment: Legible from the floor or working platform.
 - 5. Branch Devices: Adjacent to device.
 - 6. Interior Components: Legible from the point of access.
 - 7. Boxes: Outside face of cover.
 - 8. Conductors and Cables: Legible from the point of access.
 - 9. Devices: Outside face of cover.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
- F. Install underground warning tape above buried lines with one tape per trench at 3 inches below finished grade.
- G. Secure rigid signs using stainless steel screws.

H. Mark all handwritten text, where permitted, to be neat and legible.

END OF SECTION

ISSUE DATE - 06-13-2024

**SECTION 26 0573
POWER SYSTEM STUDIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Short-circuit study.
- B. Arc flash and shock risk assessment.
- C. Criteria for the selection and adjustment of equipment and associated protective devices not specified in this section, as determined by studies to be performed.

1.02 RELATED REQUIREMENTS

- A. Section 26 0553 - Identification for Electrical Systems: Additional requirements for arc flash hazard warning labels.

1.03 REFERENCE STANDARDS

- A. IEEE 141 - IEEE Recommended Practice for Electric Power Distribution for Industrial Plants; 1993 (Reaffirmed 1999).
- B. IEEE 242 - IEEE Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems; 2001, with Errata (2003).
- C. IEEE 399 - IEEE Recommended Practice for Industrial and Commercial Power Systems Analysis; 1997.
- D. IEEE 551 - IEEE Recommended Practice for Calculating Short-Circuit Currents in Industrial and Commercial Power Systems; 2006.
- E. IEEE 1584 - IEEE Guide for Performing Arc-Flash Hazard Calculations; 2018, with Errata (2019).
- F. NEMA MG 1 - Motors and Generators; 2021.
- G. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems; 2021.
- H. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. NFPA 70E - Standard for Electrical Safety in the Workplace; 2024.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work to provide equipment and associated protective devices complying with criteria for selection and adjustment, as determined by studies to be performed.
 - 2. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Submit study reports prior to or concurrent with product submittals.
 - 2. Do not order equipment until matching study reports and product submittals have both been evaluated by Architect.
 - 3. Verify naming convention for equipment identification prior to creation of final drawings, reports, and arc flash hazard warning labels (where applicable).

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Study reports, stamped or sealed and signed by study preparer.
- C. Certification that field adjustable protective devices have been set in accordance with requirements of studies.
- D. Project Record Documents: Revise studies as required to reflect as-built conditions.
 - 1. Include hard copies with operation and maintenance data submittals.
 - 2. Include computer software files used to prepare studies with file name(s) cross-referenced to specific pieces of equipment and systems.

1.06 POWER SYSTEM STUDIES

- A. Scope of Studies:
 - 1. Except where study descriptions below indicate exclusions, analyze system at each bus from primary protective devices of utility source down to each piece of equipment involved, including parts of system affecting calculations being performed (e.g. fault current contribution from motors).
 - 2. Include in analysis alternate sources and operating modes (including known future configurations) to determine worst case conditions.
- B. General Study Requirements:
 - 1. Comply with NFPA 70.
 - 2. Perform studies utilizing computer software complying with specified requirements; manual calculations are not permitted.
- C. Data Collection:
 - 1. Compile information on project-specific characteristics of actual installed equipment, protective devices, feeders, etc. as necessary to develop single-line diagram of electrical distribution system and associated input data for use in system modeling.
 - a. Utility Source Data: Include primary voltage, maximum and minimum three-phase and line-to-ground fault currents, impedance, X/R ratio, and primary protective device information.
 - 1) Obtain up-to-date information from Utility Company.
 - b. Generators: Include manufacturer/model, kW and voltage ratings, and impedance.
 - c. Motors: Include manufacturer/model, type (e.g. induction, synchronous), horsepower rating, voltage rating, full load amps, and locked rotor current or NEMA MG 1 code letter designation.
 - d. Transformers: Include primary and secondary voltage ratings, kVA rating, winding configuration, percent impedance, and X/R ratio.
 - e. Protective Devices:
 - 1) Circuit Breakers: Include manufacturer/model, type (e.g. thermal magnetic, electronic trip), frame size, trip rating, voltage rating, interrupting rating, available field-adjustable trip response settings, and features (e.g. zone selective interlocking).
 - 2) Fuses: Include manufacturer/model, type/class (e.g. Class J), size/rating, and speed (e.g. time delay, fast acting).
 - f. Protective Relays: Include manufacturer/model, type, settings, current/potential transformer ratio, and associated protective device.
 - g. Conductors: Include feeder size, material (e.g. copper, aluminum), insulation type, voltage rating, number per phase, raceway type, and actual length.
 - 2. Existing Installations:
 - a. Collect data on existing electrical distribution system necessary for completion of studies, including field verification of available existing data (e.g. construction documents, previous studies). Include actual settings for field-adjustable devices.
- D. Short-Circuit Study:
 - 1. Comply with IEEE 551 and applicable portions of IEEE 141, IEEE 242, and IEEE 399.
 - 2. For purposes of determining equipment short circuit current ratings, consider conditions that may result in maximum available fault current, including but not limited to:
 - a. Maximum utility fault currents.
 - b. Maximum motor contribution.
 - c. Known operating modes (e.g. utility as source, generator as source, utility/generator in parallel, bus tie breaker open/close positions).
 - 3. For each bus location, calculate the maximum available three-phase bolted symmetrical and asymmetrical fault currents. For grounded systems, also calculate the maximum available line-to-ground bolted fault currents.
- E. Arc Flash and Shock Risk Assessment:
 - 1. Comply with NFPA 70E.
 - 2. Perform incident energy and arc flash boundary calculations in accordance with IEEE 1584 (as referenced in NFPA 70E Annex D), where applicable.
 - 3. Analyze alternate scenarios considering conditions that may result in maximum incident energy, including but not limited to:

- a. Maximum and minimum utility fault currents.
 - b. Maximum and minimum motor contribution.
 - c. Known operating modes (e.g. utility as source, generator as source, utility/generator in parallel, bus tie breaker open/close positions).
- F. Study Reports:
- 1. General Requirements:
 - a. Identify date of study and study preparer.
 - b. Identify study methodology and software product(s) used.
 - c. Identify scope of studies, assumptions made, implications of possible alternate scenarios, and any exclusions from studies.
 - d. Identify base used for per unit values.
 - e. Include single-line diagram and associated input data used for studies; identify buses on single-line diagram as referenced in reports, and indicate bus voltage.
 - f. Include conclusions and recommendations.
 - 2. Short-Circuit Study:
 - a. For each scenario, identify at each bus location:
 - 1) Calculated maximum available symmetrical and asymmetrical fault currents (both three-phase and line-to-ground where applicable).
 - 2) Fault point X/R ratio.
 - 3) Associated equipment short circuit current ratings.
 - b. Identify locations where the available fault current exceeds the equipment short circuit current rating, along with recommendations.
 - 3. Arc Flash and Shock Risk Assessment:
 - a. For the worst case for each scenario, identify at each bus location:
 - 1) Calculated incident energy and associated working distance.
 - 2) Calculated arc flash boundary.
 - 3) Bolted fault current.
 - 4) Arcing fault current.
 - 5) Clearing time.
 - 6) Arc gap distance.
 - b. For purposes of producing arc flash hazard warning labels, summarize the maximum incident energy and associated data reflecting the worst case condition of all scenarios at each bus location.

1.07 QUALITY ASSURANCE

- A. Study Preparer Qualifications: Professional electrical engineer licensed in the State in which the Project is located and with minimum five years experience in preparation of studies of similar type and complexity using specified computer software.
- B. Computer Software for Study Preparation: Use the latest edition of commercially available software utilizing specified methodologies.

PART 3 EXECUTION

2.01 INSTALLATION

- A. Install arc flash warning labels in accordance with Section 26 0553.

2.02 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Adjust equipment and protective devices for compliance with studies and recommended settings.
- D. Notify Architect of any conflicts with or deviations from studies. Obtain direction before proceeding.

2.03 CLOSEOUT ACTIVITIES

- A. Training: Include as an alternate to the base bid training for Owner's personnel on electrical safety pertaining to arc flash and shock hazards.
 - 1. Use site-specific arc flash and shock risk assessment report as training reference, supplemented with additional training materials as required.

2. Provide minimum of four hours of training.
3. Instructor: Representative of entity performing study.
4. Location: At project site.

END OF SECTION

ISSUE DATE - 06-13-2024

**SECTION 26 0583
WIRING CONNECTIONS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical connections to equipment.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables.
- B. Section 26 0533.13 - Conduit for Electrical Systems.
- C. Section 26 0533.16 - Boxes for Electrical Systems.
- D. Section 26 2726 - Wiring Devices.

1.03 REFERENCE STANDARDS

- A. NEMA WD 1 - General Color Requirements for Wiring Devices; 1999 (Reaffirmed 2020).
- B. NEMA WD 6 - Wiring Devices - Dimensional Specifications; 2021.
- C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
 - 1. Colors: Comply with NEMA WD 1.
 - 2. Cord Construction: NFPA 70, Type SO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
 - 3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Wiring Devices: As specified in Section 26 2726.
- C. Flexible Conduit: As specified in Section 26 0533.13.
- D. Wire and Cable: As specified in Section 26 0519.
- E. Boxes: As specified in Section 26 0533.16.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that equipment is ready for electrical connection, wiring, and energization.

3.02 ELECTRICAL CONNECTIONS

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.

- C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Provide receptacle outlet to accommodate connection with attachment plug.
- E. Provide cord and cap where field-supplied attachment plug is required.
- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

END OF SECTION

**SECTION 26 0923
LIGHTING CONTROL DEVICES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Occupancy sensors.
- B. Outdoor photo controls.

1.02 RELATED REQUIREMENTS

- A. Section 25 3626 - Integrated Automation Lighting Relays.
- B. Section 26 0529 - Hangers and Supports for Electrical Systems
- C. Section 26 0533.16 - Boxes for Electrical Systems.
- D. Section 26 2726 - Wiring Devices: Devices for manual control of lighting, including wall switches, wall dimmers, and fan speed controllers.
 - 1. Includes finish requirements for wall controls specified in this section.
- E. Section 26 5600 - Exterior Lighting.

1.03 REFERENCE STANDARDS

- A. ANSI C136.10 - American National Standard for Roadway and Area Lighting Equipment - Locking-Type Photocontrol Devices and Mating Receptacles - Physical and Electrical Interchangeability and Testing; 2023.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- C. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2016.
- D. NEMA 410 - Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts; 2023.
- E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 773 - Plug-in, Locking Type Photocontrols for Use with Area Lighting; Current Edition, Including All Revisions.
- G. UL 1472 - Solid-State Dimming Controls; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of lighting control devices with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate the placement of wall switch occupancy sensors with actual installed door swings.
 - 3. Coordinate the placement of occupancy sensors with millwork, furniture, equipment or other potential obstructions to motion detection coverage installed under other sections or by others.
 - 4. Coordinate the placement of photo sensors for daylighting controls with windows, skylights, and luminaires to achieve optimum operation. Coordinate placement with ductwork, piping, equipment, or other potential obstructions to light level measurement installed under other sections or by others.
 - 5. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
- C. Shop Drawings:
 - 1. Occupancy Sensors: Provide lighting plan indicating location, model number, and orientation of each occupancy sensor and associated system component.
 - 2. Daylighting Controls: Provide lighting plan indicating location, model number, and orientation of each photo sensor and associated system component.

D. Field Quality Control Reports.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.07 DELIVERY, STORAGE, AND PROTECTION

- A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

1.08 FIELD CONDITIONS

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.

PART 2 PRODUCTS

2.01 LIGHTING CONTROL DEVICES - GENERAL REQUIREMENTS

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless specifically indicated to be excluded, provide all required conduit, wiring, connectors, hardware, components, accessories, etc. as required for a complete operating system.

2.02 OCCUPANCY SENSORS

- A. Manufacturers:
 - 1. Hubbell Incorporated; _____: www.hubbell.com/#sle.
 - 2. Legrand North America, Inc; _____: www.legrand.us/#sle.
 - 3. Lutron Electronics Company, Inc; _____: www.lutron.com/#sle.
 - 4. Sensor Switch Inc; _____: www.sensorswitch.com/#sle.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.
 - 6. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.
- B. All Occupancy Sensors:
 - 1. Description: Factory-assembled commercial specification grade devices for indoor use capable of sensing both major motion, such as walking, and minor motion, such as small desktop level movements, according to published coverage areas, for automatic control of load indicated.
 - 2. Sensor Technology:
 - a. Passive Infrared (PIR) Occupancy Sensors: Designed to detect occupancy by sensing movement of thermal energy between zones.
 - b. Passive Infrared/Ultrasonic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and ultrasonic technologies.
 - 3. Provide LED to visually indicate motion detection with separate color LEDs for each sensor type in dual technology units.
 - 4. Operation: Unless otherwise indicated, occupancy sensor to turn load on when occupant presence is detected and to turn load off when no occupant presence is detected during an adjustable turn-off delay time interval.
 - 5. Turn-Off Delay: Field adjustable, with time delay settings up to 30 minutes.
- C. Wall Switch Occupancy Sensors:
 - 1. All Wall Switch Occupancy Sensors:
 - a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated manual control capability, and no leakage current to load in off mode.
 - b. Operation: Field selectable to operate either as occupancy sensor (automatic on/off) or as vacancy sensor (manual-on/automatic off).

- c. Manual-Off Override Control: When used to turn off load while in automatic-on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed-off time interval.
 - d. Finish: Match finishes specified for wiring devices in Section 26 2726, unless otherwise indicated.
- D. Wall Dimmer Occupancy Sensors:
 - 1. General Requirements:
 - a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated dimming control capability, and no leakage current to load in off mode.
 - b. Manual-Off Override Control Capability: When used to turn off load while in automatic-on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed-off time interval.
 - c. Dimmer: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, and listed as complying with UL 1472; type and rating suitable for load controlled.
 - d. Finish: Match finishes specified for wiring devices in Section 26 2726, unless otherwise indicated.
- E. Ceiling Mounted Occupancy Sensors:
 - 1. All Ceiling Mounted Occupancy Sensors:
 - a. Description: Low profile occupancy sensors designed for ceiling installation.
 - b. Unless otherwise indicated or required to control the load indicated on drawings, provide low voltage units, for use with separate compatible accessory power packs.
 - c. Occupancy sensor to be field selectable as either manual-on/automatic-off or automatic on/off.
 - d. Finish: White unless otherwise indicated.
- F. Power Packs for Low Voltage Occupancy Sensors:
 - 1. Description: Plenum rated, self-contained low voltage class 2 transformer and relay compatible with specified low voltage occupancy sensors for switching of line voltage loads.
 - 2. Provide quantity and configuration of power and slave packs with all associated wiring and accessories as required to control the load indicated on drawings.
 - 3. Input Supply Voltage: Dual rated for 120/277 V ac.

2.03 OUTDOOR PHOTO CONTROLS

- A. Manufacturers:
 - 1. Intermatic, Inc; _____: www.intermatic.com/#sle.
 - 2. NSI Industries LLC; _____: www.nsiindustries.com/#sle.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.
 - 4. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.
- B. Locking Receptacle-Mounted Outdoor Photo Controls
 - 1. Description: Plug-in locking type photo control unit complying with ANSI C136.10 for mounting on a compatible receptacle, listed and labeled as complying with UL 773.
 - 2. Housing: Weatherproof, impact resistant UV stabilized polypropylene, color to be selected.
 - 3. Photo Sensor: Cadmium sulfide.
 - 4. Light Level Activation: 1 to 3 footcandles turn-on and 1.5 to 1 turn-off to turn-on ratio with instant turn-on and delayed turn-off.
 - 5. Voltage: As required to control the load indicated on the drawings.
 - 6. Failure Mode: Fails to the on position.
 - 7. Load Rating: As required to control the load indicated on the drawings.
 - 8. Surge Protection: 160 joule metal oxide varistor.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.

- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that openings for outlet boxes are neatly cut and will be completely covered by devices or wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to lighting control devices.
- F. Verify that the service voltage and ratings of lighting control devices are appropriate for the service voltage and load requirements at the location to be installed.
- G. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Install lighting control devices in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of lighting control devices provided under this section.
- C. Install lighting control devices in accordance with manufacturer's instructions.
- D. Unless otherwise indicated, connect lighting control device grounding terminal or conductor to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- E. Install lighting control devices plumb and level, and held securely in place.
- F. Where required and not furnished with lighting control device, provide wall plate in accordance with Section 26 2726.
- G. Provide required supports in accordance with Section 26 0529.
- H. Where applicable, install lighting control devices and associated wall plates to fit completely flush to mounting surface with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- I. Occupancy Sensor Locations:
 - 1. Location Adjustments: Locations indicated are diagrammatic and only intended to indicate which rooms or areas require devices. Provide quantity and locations as required for complete coverage of respective room or area based on manufacturer's recommendations for installed devices.
- J. Outdoor Photo Control Locations:
 - 1. Where possible, locate outdoor photo controls with photo sensor facing north. If north facing photo sensor is not possible, install with photo sensor facing east, west, or down.
 - 2. Locate outdoor photo controls so that photo sensors do not face artificial light sources, including light sources controlled by the photo control itself.
- K. Install outdoor photo controls so that connections are weatherproof. Do not install photo controls with conduit stem facing up in order to prevent infiltration of water into the photo control.
- L. Unless otherwise indicated, install power packs for lighting control devices above accessible ceiling or above access panel in inaccessible ceiling near the sensor location.
- M. Unless otherwise indicated, install switches on load side of power packs so that switch does not turn off power pack.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each lighting control device for damage and defects.

- C. Test occupancy sensors to verify proper operation, including time delays and ambient light thresholds where applicable. Verify optimal coverage for entire room or area. Record test results in written report to be included with submittals.
- D. Test outdoor photo controls to verify proper operation, including time delays where applicable.
- E. Correct wiring deficiencies and replace damaged or defective lighting control devices.

3.05 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.
- B. Adjust occupancy sensor settings to minimize undesired activations while optimizing energy savings, and to achieve desired function as indicated or as directed by Architect.

3.06 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.07 COMMISSIONING

- A. See Section 01 9113 - General Commissioning Requirements for commissioning requirements.

3.08 CLOSEOUT ACTIVITIES

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
- B. Demonstration: Demonstrate proper operation of lighting control devices to Architect, and correct deficiencies or make adjustments as directed.

END OF SECTION

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**SECTION 26 0943
LIGHTING CONTROL SYSTEM**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Low voltage lighting control system and associated components:
 - 1. Main units.
 - 2. Control stations.
 - 3. Wired sensors.
 - 4. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.
- B. Section 26 2726 - Wiring Devices:
 - 1. Finish requirements for wall controls specified in this section.
- C. Section 26 5100 - Interior Lighting: Luminaires and associated components, for interface with lighting control system.

1.03 REFERENCE STANDARDS

- A. ISO 9001 - Quality Management Systems-Requirements.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- C. NECA 130 - Standard for Installing and Maintaining Wiring Devices; National Electrical Contractors Association.
- D. NFPA 70 - National Electrical Code; National Fire Protection Association.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of sensors and wall controls with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate the placement of wall controls with actual installed door swings.
 - 3. Coordinate the work to provide luminaires and lamps compatible with the lighting controls to be installed.
 - 4. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.
- B. Sequencing:
 - 1. Do not install sensors and wall controls until final surface finishes and painting are complete.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
 - 1. Occupancy/Vacancy Sensors: Include detailed basic motion detection coverage range diagrams.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications:
 - 1. Company with not less than three years of experience manufacturing lighting control systems of similar complexity to specified system.
 - 2. Registered to ISO 9001
<http://global.ihs.com/doc_detail.cfm?rid=BSD&document_name=ISO 9001>, including in-house engineering for product design activities.

3. Qualified to supply specified products and to honor claims against product presented in accordance with warranty.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

1.08 FIELD CONDITIONS

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.
 1. System Requirements , Unless Otherwise Indicated:
 - a. Ambient Temperature:
 - 1) Lighting Control System Components, Except Those Listed Below: Between 32 and 104 degrees F.
 - b. Relative Humidity: Less than 90 percent, non-condensing.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design Manufacturer: Intelligent Lighting Controls, Inc.
- B. Substitutions: See Section 01 6000 - Product Requirements.
 1. All proposed substitutions (clearly delineated as such) must be submitted in writing for approval by Architect a minimum of 10 working days prior to the bid date and must be made available to all bidders. Proposed substitutes must be accompanied by a review of the specification noting compliance on a line-by-line basis.
 2. By using pre-approved substitutions, Contractor accepts responsibility and associated costs for all required modifications to related equipment and wiring. Provide complete engineered shop drawings (including power wiring) with deviations from the original design highlighted in an alternate color for review and approval by Architect prior to rough-in.
- C. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.

2.02 LIGHTING CONTROL SYSTEM - GENERAL REQUIREMENTS

- A. Provide products listed, classified, and labeled by Underwriter's Laboratories Inc. (UL) as suitable for the purpose indicated.
- B. Unless specifically indicated to be excluded, provide all required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, software, system programming, etc. as necessary for a complete operating system that provides the control intent indicated.
- C. Device Finishes:
 1. Wall Controls: Match finishes specified for Wiring Devices in Section 26 2726, unless otherwise indicated.

2.03 PROGRAMMABLE LIGHTING CONTROL PANELS

- A. Hardware Features:
 1. Controller Back-Box: Each programmable lighting controller shall be provided with a factory furnished; UL listed NEMA 1 enclosure designed for wall mounting. Back-box must be capable of being shipped ahead of controller chassis insert to allow for rough-in of all electrical connections prior to receipt of the controller chassis insert.
 2. Controller Chassis Insert: Each programmable lighting controller shall be provided with a factory or field installable controller chassis insert. Controller chassis insert shall contain all controller electronics, power supplies, relays, contactors and other required components. Controller chassis inserts shall arrive at the project site completely pre-wired and requiring only the connection of lighting circuits and control devices.
 3. Line Voltage / Control Voltage Separation: Each programmable lighting controller shall be provided with a mechanical barrier that separates all line voltage components and wiring from all control voltage components and wiring. An additional barrier may be installed within the line voltage section that shall provide isolation between normal and emergency circuits where required.

4. Controller Covers: Each programmable lighting controller shall be provided with a dead front screw-held or hinged locking cover that is designed for either surface or flush mounting. If a hinge locking door is provided, it shall be provided with a slam-latch with 2 keys and door hooks to assist in mounting.
- B. Electrical
1. Controller Power Supply: Each programmable lighting controller shall be provided with a dual-rated, UL listed Class 2 transformer capable of either 120/277 VAC or 120/347 VAC primary (50 to 60 Hz). It shall contain an internal self-resetting fuse.
 2. Connections: All connections shall be made to clearly and permanently labeled termination points.
- C. Controller Electronics:
1. Controller CPU: Each programmable controller shall be provided with a CPU (Central Processing Unit) that shall provide all the programming and control functions for the entire controller.
 2. Real-Time Clock: Each controller shall be provided with a Real-Time Clock used to perform all time-controlled functions. It shall use a high voltage line-sync circuit for timing and a crystal for backup. Clock accuracy shall be held +/- 2 minutes per year and displayed to the second with the line-sync setting. Real-Time Clock functions shall include time of day, day of week, date and automatic daylight saving time and leap year adjustments. Time clock shall be protected against loss of time during a power outage for a period of up to 45 days without power of any type. Daylight Saving Time shall be adjustable with an enable/disable feature. Systems relying on a single clock device shall not be acceptable.
 3. Relay Driver Module: Relay output cards shall be provided to expand the controller capability from 8 to 64 relay outputs in increments of 8. Electronics shall feature surge protection and optic-isolation. It shall also provide an interface for mounting input boards.
 4. Relay Control Switches: Controller shall contain push-button switches to turn all relays ON or OFF without the presents of any programming.
 5. Back-up and Restore: The controller shall be equipped with an internal memory backup and restore capability. It shall have the ability to backup all internal programming into additional onboard memory, verify present programming with backup, and restore programming.
 6. Runtime Logging: The controller shall be equipped with memory to log the runtime of each relay. It shall be capable of storing up to 30 days or 1092 hours of data and be able to be exported in a delimitative format.
 7. Non-Volatile Memory: Controller shall contain a minimum of 4 Mb of non-volatile EEPROM memory with a data retention of >200 years and electrostatic discharge protection of >4000V.
 8. Power Input Surge Suppression: The controller's 24VAC power input shall be equipped with double surge suppression to protect the electronics from transient over-voltages. Protection shall clamp over-voltages up to 123 volts.
 9. Data Line Surge Suppression: The controller data line communications shall be equipped with transient voltage suppression protection that will protect the electronics from electrostatic discharge and other transient over-voltages. Protection shall clamp transients up to 8kv direct discharges and 15kv air discharges.
 10. Data Line Communications: The controller shall be equipped with serial communications through RJ45 connectors for communicating on CAT-5 cable with other panels and LightSync devices. It shall also be equipped with a separate local port for communicating with LightSync devices. The communications shall consist of 2-RS485 data lines.
 11. USB Serial Communications: A USB port shall be provided for programming and interfacing the system with the use of a personal computer.
 12. TCP/IP Communications: A TCP/IP port shall be provided for programming and interfacing the system with a personal computer over a network (LAN) or the internet (WAN).
 13. Optional Module Interface: The controller shall contain 4 ports for interfacing optional modules which includes communications and power. Optional modules shall be able to be mixed on each controller.
- D. Switching and Control Devices:

1. **Device Node Capacity:** The lighting controller shall support switch input control of up to 64 data line LightSync devices locally per panel and 254 per network for up to 16,510 devices. The first 8 device nodes shall be powered by the lighting controller. The addition of a power supply or power supply/repeater shall be required for each additional 20 device nodes. Each LightSync device shall have a unique address and shall be capable of being programmed to the applicable functions described in the Switched Input Types heading in this specification.
 2. **Data Line Media:** The data line shall consist of RS485 communications protocol transmitted over CAT-5, CAT-5E, or CAT-6 Cable. The cable shall have male RJ45 connectors installed on each end for interfacing controllers and LightSync devices. Both daisy chain and "T" (3 direction branching) of cable runs shall be permitted. "T" branching shall be accomplished by the addition of power supply/repeaters. It shall be able to be wired in a home run configuration for LightSync devices by the addition of a LightSync Hub.
 3. **LightSync Switch Stations:** LightSync data line switch stations shall be available in momentary push button (1-6 switches and pilots) and each switch shall have an associated pilot light. Each button shall control any or all of the relays in the lighting controllers or the dimmer outputs on the network. There shall be an option to program each pilot LED to indicate the state of any relay, group, preset, and static on or off. It shall also have the capability to reverse the status: LED is ON if the relay is OFF etc.
 4. **LightSync Photocell Controllers:** The photo controller shall be provided with 256 light to dark levels (0-1800fc). It shall allow selection of 8 individual set points for OFF and ON and includes a selectable range of dead-band. It shall be programmable for 2 or 30 seconds delay. Each set point shall control any or all of the relays in the lighting controllers or the dimmer outputs on the network.
 5. **LightSync Input Modules:** The input module shall provide 4 inputs that accepts momentary, momentary PB and maintained switch closures. Each input shall be optically isolated and have the ability to accept dry contact closures or 12-24VDC signals. Each input shall control any or all of the relays in the lighting controllers or the dimmer outputs on the network. It shall provide four pilot outputs that provide true status of relays, groups and presets. It shall be installed in the control panel or remote mounted.
 6. **LightSync Disable Key Switch:** The disable switch shall provide a RJ45 connector that shall disable all LightSync devices down line with the closure of a key switch. It shall also provide two RJ45 connectors to pass data through. It shall indicate with an LED when the disable switch is active.
 7. **LightSync Occupancy Sensor Input Module:** The occupancy sensor input module shall provide power and inputs for motion sensors. It shall have 4 or 8 independent inputs that shall be able to interface multiple sensors. Each input shall control any or all of the relays in the lighting controllers or the dimmer outputs on the network. It shall be installed in the control panel or remote mounted.
 8. **LightSync 0-10V Dimmer Output Module:** The 0-10VDC dimmer output module shall be designed to control dimmable ballasts or other 0-10VDC devices. Each module shall have 4 independent output channels that can control up to 200 devices per output at .5mA per device. It shall have the capability to vary its level 256 steps between 0 and 10VDC. It shall be able to respond to photo controllers, switch inputs, DMX512 signals, and timers. It shall be installed in the control panel or remote mounted.
 9. **LightSync Motor Control Output Module:** The motor control output module shall be designed to control shade motors, louver motors, blind motors, skylights, or any other class 2 DC motors. Each module shall have 4 independent outputs that can be controlled by a switch input, photocell, or timer. The control time shall be selectable from .1 to 300 seconds. Each lighting controller shall handle up to 8 modules with 4 outputs on each. Each output shall be equipped with a limit switch input for each direction of the motor.
 10. **Graphical Touch Screen Control Station:** The Touch screen control station shall display the status and control the lighting control panel relay outputs via preprogrammed control objects on standard or custom bitmap screens.
- E. **Special Purpose Modules:** The following special purpose controller nodes shall be available. Multiple modules shall be permitted per controller.
1. **DTMF Telephone Control:** This module shall support Input Status, Relay Status and Control, Preset Control and Group Control in the lighting panel via voice prompted commands and DTMF signals from a touch-tone telephone.

2. **DMX Control:** This module shall support the control of relays using standard USITT DMX512 protocol used by theatrical lighting systems. Each relay in the lighting panel shall be configured to be controlled by any DMX channel. It shall contain a frame filter that can be set from 1 - 16 frames. It shall have a priority setting for switch inputs or DMX signals. It shall have the capability to control any 0 - 10V dimming output throughout the network. It shall display current DMX levels from the keypad.
 3. **Modbus Control:** This module shall communicate directly to the lighting controller through RS485, RS232, or TCP serial communications from the BAS system using Modicon Modbus RTU or ASCII protocol. It shall be able to read status of inputs and relays and control single or multiple relays in the lighting controller. It shall also be able to disable/enable inputs and shall be able to force timer options.
 4. **N2 Control:** This module shall communicate directly to the lighting controller through serial communications from the BAS system using Metasys-N2 protocol. It shall be able to read status of inputs and relays and control single or multiple relays in the lighting controller. It shall also be able to disable/enable inputs and shall be able to force timer options.
 5. **BACnet Control:** This module shall communicate directly to the lighting controller through serial communications from the BAS system using BACnet MSTP or BACnet IP protocol. It shall be able to read status of inputs and relays and control single or multiple relays in the lighting controller. It shall also be able to disable/enable inputs and shall be able to force timer options.
 6. **LonWorks Control:** This module shall communicate directly to the lighting controller through serial communications from the LonWorks network. It shall be able to read status of inputs and relays, and control single or multiple relays in the lighting controller. It shall also be able to disable/enable inputs, and shall be able to force timer options.
 7. **Modem Control:** This module shall allow communications over an analog telephone line to provide programming and status of the lighting control panel.
 8. **Protocol Input Control:** This module shall allow serial communications from a Modbus, N2, BACnet, or LonWorks network. It shall be capable of emulating LightSync switches or photocells for direct control and status of relays, dimmers or motor controls.
- F. **Programming:** Programmable controllers shall be capable of being programmed, monitored, backed-up, or controlled through any of the below methods. All programming changes shall take effect immediately as they are programmed and shall not suspend or disable switches or other system functions. The same functions shall be available for any of the connection types.
1. **Local Keypad and Display:** The system user shall be able to program, monitor and control any of the controller features and functions through the use of simple menu-driven self-prompting user interface consisting of a 4-line 20-character backlit LCD display and 8 selection keys that change function based on the current operating mode.
 2. **USB Serial Direct Connect:** The system user shall be able to program, monitor or control any of the controller features and functions utilizing LightLEEDer Pro Windows-based graphical user interface software using a USB port from a PC.
 3. **Modem Connect:** The system user shall be able to remotely program, monitor or control any of the controller features and functions utilizing LightLEEDer Pro Windows-based graphical user interface software using a PC/modem on an analog phone line.
 4. **TCP/IP Connect:** The system user shall be able to remotely program, monitor or control any of the controller features and functions utilizing LightLEEDer Pro Windows-based graphical user interface software using a PC with TCP/IP on a LAN or WAN.
- G. **Diagnostics:** Programmable controllers shall have the ability to do the following diagnostics.
1. **Power Status:** Each programmable lighting controller shall be provided with an LED on the controller and each output board that shall indicate that power is present.
 2. **Keypad:** System users shall be able to view thru the keypad the current status of any relay, input, group, or preset and force any ON or OFF.
 3. **Software:** System users shall be able to view thru the LightLEEDer Pro software the current status of any relay, input, group, or preset and force any ON or OFF. It shall also have the ability to scan the network for devices and controllers and then poll them to verify network quality.
 4. **Relay Cycle Test:** The controller shall have a cycle test for relays to turn them off/on/off and then return them to the original state to verify proper operation. It shall display the results for each relay for turning the relay ON and OFF.

5. Device Finder: It shall have the capability through the keypad to find LightSync devices, dimmer devices, and motor devices on the network.
 6. Switch Test Mode: It shall be able to enter a switch test mode, where a switch input status LED will light when switch inputs are activated. It shall disable normal control when in this mode.
 7. Demo Clock: It shall have the ability to speed the clock's time by 10, 30, or 60 times for testing timer functions.
- H. Power Failure and Power-Up: Each programmable lighting controller shall be provided with circuitry that shall automatically shut down the controller whenever the incoming power fails to be delivered to the controller within required limits. When power is returned to the controller, one of the following power-up modes will be implemented for each controlled relay output in the system.
1. No Action: Upon restoration of incoming control power, the controller electronics shall be restarted and resume normal operations and all circuits will be maintained in the condition they were last in.
 2. Turn ON: Controller shall turn the selected relay output to the ON state after power-up.
 3. Turn ON if Input Closed: Controller shall turn the selected relay output to the ON state after power-up if local input selected is closed. It shall be able to select any input to monitor.
 4. Turn OFF: Controller shall turn the selected relay output to the OFF state after power-up.
 5. Turn OFF if Input Closed: Controller shall turn the selected relay output to the OFF state after power-up if local input selected is closed. It shall be able to select any input to monitor.
 6. On if Open Time, OFF if Closed Time: Controller shall turn the selected relay output to the ON state during Open hours and shall turn selected relay outputs to the OFF state during Closed hours. This shall be used in conjunction with OPEN/CLOSED timers.
 7. OFF if Open Time, ON if Closed Time: Controller shall turn the selected relay output to the OFF state during Open hours and shall turn selected relay outputs to the ON state during Closed hours. This shall be used in conjunction with OPEN/CLOSED timers.
 8. Time of Day: Controller shall turn the selected relay output to the ON or OFF state based on the time of day in 30 minute increments for every day of the week.
- I. True Relay Status Feedback: Each controller shall be provided with circuitry that shall monitor the actual current status of each relay via a set of pilot contacts mechanically linked to the relay main contacts.
- J. Switch Input Details: All switch inputs shall have the following options:
1. Input Flexibility: Each switch input shall accept a 2 or 3 wire maintained or momentary switch. It shall be capable of accepting a dry contact, open collector closure, or a 12-24VDC signal. Each switch shall be able to have 2 switch types associated with it in an A/B form.
 2. Input to Output Programmability: Any switch input shall be programmed to control any or all of the controllers relay outputs without limitations in the network.
 3. Input Logic Conditionals: All switch inputs shall have 2 conditionals that add a logic "AND" or "OR" dependent on a relay on, a relay off, an "on" input opened or closed, and an "off" input opened or closed. It shall also have a priority level setting.
 4. Input Active Times: All switch inputs shall have a time-of-day or open/close time of action. This shall change the switch type on the time-of day for every 30 minutes or change per open/closed times.
 5. Input Types:
 - a. Momentary ON/OFF: When momentary contact is made between the ON and COM, relay outputs controlled by this input shall be turned ON. When momentary contact is made between OFF and COM, relay outputs controlled by this input shall be turned OFF.
 - b. Momentary ON/OFF w/Blink: When momentary contact is made between the ON and COM, relay outputs controlled by this input shall be turned ON. When momentary contact is made between OFF and COM, relay outputs controlled by this input shall blink and postpone being turned OFF. The alert time shall be programmable from 2 to 99 minutes. The blink alert function shall blink each relay twice prior to turning OFF. If an ON command is received during the blink alert time, relay output shall be

- overridden and left ON for the override time. Override times shall be adjustable from 5 to 999 minutes in 1-minute increments.
 - c. Momentary Push-Button ON/OFF: When momentary contact is made between the ON and COM, relay outputs controlled by this input are turned ON and OFF alternately, based on current state, each time contact is made.
 - d. Momentary Push-Button ON: When momentary contact is made between the ON and COM, relay outputs controlled by this input shall be turned ON.
 - e. Momentary Push-Button OFF: When momentary contact is made between ON and COM, relay outputs controlled by this input shall be turned OFF.
 - f. Momentary Push-Button Toggle: When momentary contact is made between ON and COM, relay outputs controlled by this input shall toggle from the present state.
 - g. Maintained ON/OFF: When contact is made between the ON and COM, relay outputs controlled by this input are turned ON. When contact is broken between ON and COM, relay outputs controlled by this input are turned OFF.
 - h. Maintained Multi-way: When contact is either made or broken between the ON and COM, relay outputs controlled by this input will be toggled between ON and OFF conditions. This function shall be similar to that of standard 3 and 4 way switches.
 - i. Maintained ON/OFF w/Blink: When contact is made between the ON and COM, relay outputs controlled by this input are turned ON. When contact is broken between ON and COM, relay outputs controlled by this input shall blink and postpone being turned OFF. The alert time shall be programmable from 2 to 99 minutes. The blink alert function shall blink each relay twice prior to turning OFF. If an ON command is received during the blink alert time, relay output shall be overridden and left ON for the override time. Override times shall be adjustable from 5 to 999 minutes in 1-minute increments.
 - j. Timed ON: The timed ON input shall operate either from the input closure or open. If programmed to operate from the closure, the relays turn ON when the input closes and turn OFF after the timed duration. The relays do nothing when the input opens. If programmed to operate from the open, the relays turn ON when the input closes and remain ON. When the input opens, the relays turn OFF after the timed ON duration.
 - k. HID Bi-Level: This feature requires the configuration of ON/OFF relay outputs and HI/LOW relay outputs. The first momentary contact between ON and COM sets the ON relay outputs to ON and the HI/LOW outputs to HI (for at least 15 Minutes). The second contact switches the HI/LOW outputs to LOW. Additional contact closures will toggle the HI/LOW relay outputs. The cycle then repeats until momentary contact is made between switch input OFF and COM. Then the ON/OFF outputs and HI/LOW outputs are turned OFF.
 - l. Two-Step Alternating Sequence: The first time the switch is activated, relay outputs programmed as "Group A" are turned ON and relay outputs programmed as "Group B" are turned OFF. The second time the switch is activated, "Group A" relay outputs are turned OFF and "Group B" relay outputs are turned ON. The third time the switch is activated, the pattern begins again at step one.
 - m. Four-Step Alternating Sequence: The first time the switch is activated, relay outputs programmed as "Group A" are turned ON and relay outputs programmed as "Group B" are turned OFF. The second time the switch is activated, "Group A" relay outputs are turned OFF and "Group B" relay outputs are turned ON. The third time the switch is activated; both "Group A" and "Group B" relay outputs are turned ON. The fourth time the switch is activated; both "Group A" and "Group B" relays are turned OFF. The fifth time the switch is activated, the process begins again at step one.
 - n. Set Preset: When momentary contact is made between the ON and COM, the selected preset scene will be activated.
 - o. Force Timer: When momentary contact is made between the ON and COM, the selected timer will be activated.
- K. Timer Functions: Each of the programmable lighting controllers shall have the described timer options listed below for the relay outputs.
1. Time of Day Timers: Each programmable lighting controller shall be provided with a minimum of 128 available timers (scheduled events) for use in developing time-of-day automated schedules. Each timer shall have the ability to turn any or all relay outputs ON or OFF at any time in 1-minute increments. Timers shall be day-of-week selectable and

- may be programmed to activate on any combination of days of the week. Each shall be capable of being programmed to be enabled or disabled for any day of the calendar year.
 2. Astronomical Scheduling: Each controller shall contain an astronomical time clock that shall calculate sunrise and sunset times based on the geographical latitude and longitude positioning. Sunrise and sunset times may be used as activation times for any system timer. In addition to sunrise and sunset time activation, the control shall be capable of programming activation time before and after these times based on an offset of 1-999 minutes.
 3. Open/Closed Time Control: The user shall also have the option of controlling relay outputs in relation to the Open/Closed times of the facility. The Open/Closed times may vary for different days of the week and may be programmed for each day of the year. In addition to Open/Closed time activation, the control shall be capable of programming activation time before and after these Open/Closed times based on an offset of 1-999.
 4. OFF Hour Sweeps: The system shall also support after hours OFF sweeps of selected relay or groups of relays at user defined one, two, or three hour intervals.
- L. Relay Output OFF Options: Each relay shall have the option to control the relay OFF in a certain way other than the default OFF.
1. Single Blink Alert: Each relay output within the programmable lighting controller shall be individually programmable to blink and postponed prior to being turned OFF. The alert time shall be programmable from 2 to 99 minutes. The blink alert function shall blink each relay twice prior to turning OFF with a timer OFF sweep to warn occupants of the upcoming OFF event. If an ON command is received during the blink alert time, the relay output shall be overridden and left ON for the override time. Override times shall be adjustable from 5 to 999 minutes in 1-minute increments.
 2. Double Blink Alert: Each relay output within the programmable lighting controller shall be individually programmable to blink and postponed prior to being turned OFF and then blinked 1 minute before turning OFF. The alert time shall be programmable from 2 to 99 minutes. The blink alert function shall blink each relay twice for each alert to warn occupants of the upcoming OFF event. If an ON command is received during the blink alert time, the relay output shall be overridden and left ON for the override time. Override times shall be adjustable from 5 to 999 minutes in 1-minute increments.
 3. HID Delay: Each relay output within the programmable lighting controller shall have the ability to be controlled like a Single Blink Alert as described above but without the blink alert to prevent damage to HID lamps.
 4. Alarm ON: Relays shall be capable of performing a momentary ON function. The ON function shall be programmable from 1 to 99 seconds.
 5. Alarm OFF: Relays shall be capable of performing a momentary OFF function. The OFF function shall be programmable from 1 to 99 seconds.
 6. Alarm Pulsed ON: Relays shall be capable of being cycled ON and OFF at 1 second intervals and returning to the OFF state. It shall be programmable from 1 to 90 seconds.
 7. Alarm Pulsed OFF: Relays shall be capable of being cycled OFF and ON at 1 second intervals and returning to the ON state. It shall be programmable from 1 to 90 seconds.
 8. Automatic Control Switch-OFF: Relays shall be capable of being cycled OFF for 5 seconds and then returned to the ON state for controlling Sentry or AS110 switches.
 9. Automatic Control Switch-Blink: Relays shall be capable of being cycled OFF for 1.5 seconds and then returned to the ON state for controlling Delay-OFF mode on AS110 switches.
- M. Presets: The lighting controller shall support up to 256 user-defined presets of ON/OFF relay patterns. The presets shall be invoked by switch or timer actuation.
- N. Descriptive Names: The system shall support the optional assignment of descriptive names (up to 10 characters) to the lighting controller, relay outputs, relay groups, inputs, timers, and presets. These names shall be able to switch from custom names to default names.
- O. Password Protection: Each Programmable controller shall have user definable 6 digit alphanumeric passwords with 2 levels of access. It shall have control and edit for level 1 and control only access for level 2.
- P. Networking:
1. Network Capacities: In addition to the data line devices mentioned in Section D, LightLEEDer Controllers shall be linked together on the data line to form a Local Area

- Network (LAN) of up to 254 controller nodes.
 2. Network Features: The basic network manager shall allow connection of up to 254 controllers and 254 data line devices (on top of the 64 devices per panel) and provide USB communications. The advanced network manager shall have a high speed LightSync scanner, 4 gateway device ports, power for LightSync devices, and TCP/IP along with the items in the basic network manager.
 3. Network Universe: The network of panels shall be capable to connect to other networks over a network (LAN) or over the internet (WAN) to interconnect multiple systems.
 4. Network Gateway: The following special purpose gateways shall be available and provides network wide control from a single point for its specialized function:
 - a. DTMF Telephone Control: The telephone gateway shall support the control of relays, presets and groups on the network via voice prompted commands and DTMF signals from a touch-tone telephone.
 - b. DMX Control: The DMX gateway shall support the control of relays on the network from a single point connection using standard USITT DMX512 protocol used by theatrical lighting systems.
 - c. Modbus Control: The Modbus gateway shall support communications from the BAS system using Modicon Modbus protocol from a single point connection. All network input status, relay status and control shall be supported.
 - d. N2 Control: The N2 gateway shall support communications from the BAS system using Metasys-N2 protocol from a single point connection. Network wide group status and control shall be supported.
 - e. BACnet Control: The BACnet gateway shall support communications from the BAS system using BACnet MSTP or BACnet IP protocol from a single point connection. It shall allow up to 500 single relay, 100 multiple relays, 48 groups, and 48 presets.
 - f. LonWorks Control: The LonWorks gateway shall support communications from the BAS systems using LonWorks protocol from a single point connection. It shall allow up to 200 single relay, 100 multiple relays, 48 groups, and 48 presets.
 5. BAS System / Lighting Control System: Programmable lighting controllers integrated/interfaced to other building control and alarm systems must remain completely functional and continue to process all programmed commands, including time schedules and local switching.
- Q. Runtime Logging and Trending: Each lighting control panel shall be capable of logging Runtime and Trending data for each relay. This data shall be able to be harvested and exported from the entire system.
1. Runtime Logging: The controller shall be able to internally log the runtime of each relay for up to 30 days. This data shall be able to be harvested with a personal computer at 1 minute intervals.
 2. Logging and Trending Software: Runtime Logging and Trending software shall be available for harvesting data from the lighting control panels. It shall have a dedicated personal computer connected to the system through a LAN or USB cable to the panel or network controller.
 - a. Load Configuration: Each relay in the system shall be able to have a wattage load assigned to it to represent the actual load on the relay. Loads shall be able to be named, or names shall be exported directly from the system programming software.
 - b. Combined Loads: Up to 254 combined relay loads shall be allowed, for total wattage recording of areas in the facility. The combined loads shall allow relays from any panel in the network. Combined loads shall be able to be named for identification in reports and graphs.
 - c. Daily or Monthly Usage Report: The software shall be capable of generating spreadsheet reports in a daily or monthly format for each relay or combined relays in the system.
 - d. Export Data: The compiled reports shall be able to be exported to a .csv (comma separated value) file. These files when exported shall be coded for the year, month, and date.
 - e. Daily or Monthly Usage Graphs: The software shall be capable of generating usage graphs in a daily or monthly format for each relay or combined relays in the system.
 - f. Printing: Daily or monthly usage graphs shall have the capability to be directly printed from the software.

- g. Live Usage Graphs: The software shall have 1 to 9 live usage meter dials to display the present wattage of combined loads.

R. R.

2.04 ROOM CONTROLLERS

A. Hardware:

1. 2-Load Room Controller: Each controller shall be designed to be remotely installed and provide 2 load control relays, 4 independent Occupancy Sensor/Hardwire inputs, 2 independent 0-10V dimming outputs, 2 photocell head inputs, and a local port for 2 data line push-button switches. The room controllers shall be able to be stand-alone or networked from an Expansion Processor or lighting control panel.
 - a. Enclosure: Each room controller shall be provided with a NEMA 1 enclosure with a removable screw cover. It shall also be provided with a 3/4" nipple for mounting directly onto a junction box.
 - b. Control Voltage: The room controller shall be available with 120/277VAC, or 120/347VAC control voltages.
 - c. Relays: Each controller shall be provided with 2 single pole Reliant40 relays de-rated to 30 Amp tungsten or ballast loads at up to 347VAC.
 - d. Connections: Each controller shall be provided with 6" color coded wire leads for terminating the high voltage connections. It shall also be provided with RJ45 connectors for the data line connections and push-to connect connectors for occupancy sensors, dimming, and photocells.
 - e. Occupancy Sensor Inputs: Each room controller shall provide 4 hardwire inputs that can directly interface occupancy sensors or hardwired switches. Each room controller shall provide up to 200mA @ 24VDC total power for the occupancy sensors.
 - f. Photocell Inputs: It shall provide interface for up to 2 photocell heads.
 - g. Local Data Line Port: Shall provide a RJ45 data line port for up to (2) 6 push-button switches.
 - h. Dimming: Room controllers shall be provided with 2 independent 0-10V dimming ballast control outputs that shall sink a maximum of 100mA per output.
2. 4-Load Room Controller: Each controller shall be designed to be remotely installed and provide up to 4 load control relays, 4 independent Occupancy Sensor/Hardwire inputs, 4 independent 0-10V dimming outputs, 2 photocell head inputs, and a local port for 2 data line push-button switches. The room controllers shall be able to be stand-alone or networked from an Expansion Processor or lighting control panel.
 - a. Enclosure: Each room controller shall be provided with a NEMA 1 enclosure with a removable screw cover.
 - b. Control Voltage: The room controller shall be available with 120/277VAC, or 120/347VAC control voltages.
 - c. Relays: Each controller shall be provided with up to 4 single pole Reliant40 relays rated for 40 Amp tungsten or ballast loads at up to 347VAC.
 - d. Connections: Each relay shall be provided with terminals for 2 line and 2 load wires. It shall also be provided with RJ45 connectors for the data line connections and push-to connect connectors for occupancy sensors, dimming, and photocells.
 - e. Occupancy Sensor Inputs: Each room controller shall provide 4 hardwire inputs that can directly interface occupancy sensors or hardwired switches. Each room controller shall provide up to 200mA @ 24VDC total power for the occupancy sensors.
 - f. Photocell Inputs: It shall provide interface for up to 2 photocell heads.
 - g. Local Data Line Port: Shall provide an RJ45 data line port for up to (2) 6 push-button switches.

B. Room Controller Capabilities:

1. Subnet Capability: Each Room Controller subnet shall be able to support up to 16 Room Controllers of any type.
2. Network Wide Capability: With the addition of a Network Controller, Room Controller subnets shall reside with the Programmable Lighting Control Panels 254 panel capabilities. It shall support up to 254 Room Controller subnets for a total of 4064 panels or 16,256 control relays.
3. Room Controllers W/Relay Panels: Room Controllers shall be allowed to be connected to a Programmable Control Panel with Relay Driver Modules and relays. For every Relay

Driver Module connected to the controller, the subnet capability for the Room Controllers shall decrease by 2 panels.

C. Room Controller Programming:

1. Stand-alone: 2 and 4 load Room Controllers shall be programmable as a stand-alone lighting controller. Room Controllers shall be capable of being programmed, monitored, or backed-up using Windows-based graphical software.
2. Networked: Room Controllers and Programmable Control Panels shall be capable of being programmed, monitored, backed-up, or controlled through any of the below methods. All programming changes shall take effect immediately as they are programmed and shall not suspend or disable switches or other system functions. The same functions shall be available for any of the connection types.
 - a. Local Keypad and Display: The system user shall be able to program, monitor and control any of the controller features and functions through the use of simple menu-driven self-prompting user interface consisting of a 4-line 20-character backlit LCD display and 8 selection keys that change function based on the current operating mode.
 - b. USB Serial Direct Connect: The system user shall be able to program, monitor or control any of the controller features and functions utilizing LightLEEDer Pro Windows-based graphical user interface software using a USB port from a PC.
 - c. Modem Connect: The system user shall be able to remotely program, monitor or control any of the controller features and functions utilizing LightLEEDer Pro Windows-based graphical user interface software using a PC/modem on an analog phone line.
 - d. TCP/IP Connect: The system user shall be able to remotely program, monitor or control any of the controller features and functions utilizing LightLEEDer Pro Windows-based graphical user interface software using a PC with TCP/IP on a LAN or WAN.

2.05 LIGHTING CONTROL RELAYS:

A. Reliant40-1 Single Pole Relay

1. Listing: Lighting control relays shall be individually UL and CUL listed and shall bear labels indicating compliance.
2. Labeling: Lighting control relays shall bear labels for relay current and SCCR ratings.
3. Endurance: Lighting control relays shall be designed and tested to have a minimum cycle life of 200,000 ON/OFF cycles @ FULL LOAD and 2,000,000 ON/OFF cycles at no load.
4. SCCR: Lighting relays shall have a SCCR rating of 18,000 amps up to 347 VAC.
5. Loads: Lighting control relays shall be designed for control of 120, 277 or 347 VAC lighting control circuits at a full 40 AMPS for Tungsten or Ballast loads, 16 AMPS for Electronic Ballasts (UL limit), and motor loads of 1.5 Hp @ 120 VAC.
6. Latching: Lighting control relays shall be designed with a latching mechanism that shall hold the relay in its last activated state indefinitely, with no change of state during an interruption of power. Solid state or electrically held relays are not acceptable.
7. Auxiliary Contacts: Each Lighting control relay shall contain an auxiliary set of contacts rated at 1 AMP 30 VAC/VDC electrically isolated but mechanically linked to the main contacts for the purpose of true status monitoring and pilot light activation.
8. Mounting: Relays shall be capable of panel mounting.
9. Lock-Out: Relays shall be equipped with an Enable/Disable switch to lock out On/Off control from the controller.
10. Actuator: Relays shall be equipped with a manual actuator switch for turning the relay ON or OFF along with status indication.

B. Reliant40-2 and 3 Pole Relay:

1. Multi-pole: Electrical contractor shall provide quantities of 40 AMP 2 or 3 pole relays as indicated on the drawings and schedules as specified herein.
2. Labeling: 40 AMP 2 or 3 pole relays shall be individually UL and CUL listed and shall bear labels indicating compliance.
3. Voltages: 40 AMP 2 or 3 pole contactors shall be designed for the control of 208, 240 and 480 VAC lighting loads at a full 40 Amps.
4. Mechanical Link: Poles within the contactor shall be electrically isolated but mechanically linked so as to open and close together without the possibility of one pole being closed

while the other remains open. Systems that utilize two single-pole relays to accomplish this function are not acceptable.

2.06 SWITCH STATIONS AND COVER PLATES

- A. Hardwired Switches and Cover Plates: Electrical contractor shall provide and install switch plates and switches of the quantities and types shown on the drawings and specified herein.
1. NFP Momentary Switch
 - a. Switch: It shall consist of a single-pole double-throw center OFF momentary switch rated at 6 Amps @ 125 VAC. They shall be available in black, white, gray, or red colors
 - b. Cover Plates: Plates shall be available in stainless steel, brushed aluminum, or painted cold rolled steel. They shall be available with 1-3 switches per single gang plate and 4-8 in a 2 gang plate.
 - c. Status: LED status indicators shall be optional for each switch provided.
 - d. Nomenclature: Engraving shall be available on phenolic labels or directly on the plate.
 2. Heavy Duty Switch
 - a. Switch: It shall consist of a single-pole double-throw center OFF momentary heavy duty toggle or Decora® paddle switch rated at 15-20 Amps @ 120/277 VAC. They shall be available in ivory or white colors.
 - b. Cover Plates: Plates shall be available for Decora® switches in ivory, white, or stainless steel with or without visible screws and come in 1-4 gangs.
 - c. Nomenclature: Engraving shall be available on phenolic labels or directly on the plate.
 3. Key Switch
 - a. Key Switch: Key switch shall consist of a single-pole double-throw momentary or maintained switch. They shall be available to allow the key to be removed in the ON position or the OFF position.
 - b. Cover plates: Plates shall be available in stainless steel, brushed aluminum, or painted cold rolled steel. They shall be available with 1-2 switches per gang plate and up to 4 gangs.
 - c. Status: LED status indicators shall be optional for each switch provided.
 - d. Nomenclature: Engraving shall be available on phenolic labels or directly on the plate.
 4. Touch Activated Switch
 - a. Switch: Touch activated switch shall be a momentary output solid-state piezo type push button.
 - b. Cover plates: Plates shall be available in stainless steel, brushed aluminum, or painted cold rolled steel. They shall be available with 1-3 switches per gang plate and up to 4 gangs.
 - c. Gasket: Cover plate neoprene gaskets shall be available for weatherproof applications.
 - d. Status: LED status indicators rings shall be optional for each switch provided.
 - e. Nomenclature: Engraving shall be available on phenolic labels or directly on the plate.
- B. Custom Switch Plates and Graphic Switch Stations: Electrical contractor shall provide and install custom switch plates and graphical switching stations of the quantities and types shown on the drawings and specified herein.
1. Switch Plates: Switch plates shall consist of a control panel faceplate, switches and other control devices as required, LED pilot lights and all mounting hardware.
 2. Material: Switch plates shall be manufactured from a single piece of stainless steel, aluminum, brass or bronze, finished and labeled as per the plans and specifications or as indicated on approved drawings.
 3. Mounting: Switch plates shall be designed to mount either to a standard electrical gang box supplied by the electrical contractor for either flush or surface mounting or to a custom back-box supplied by the manufacturer.
 4. Nomenclature: Switch plate graphics and labeling shall be accomplished through the use of one or a combination of multi-color anodized, engraving or phenolic labels; laser etched, or painted graphics.

5. Graphics: Each switch station shall contain a graphic representation of the controlled space with switches and other control devices graphically located on the station so as to indicate their associated areas of control.
- C. Dimming: Room controllers shall be provided with 4 independent 0-10V dimming ballast control outputs that shall sink a maximum of 100mA per output.

2.07 CONTROL STATIONS

- A. Provide control stations with configuration as indicated or as required to control the loads as indicated.
- B. Wired Control Stations:
 1. General Requirements:
 - a. Power: Class 2 (low voltage).
 - b. UL listed.
 - c. Provide faceplates with concealed mounting hardware.
 - d. Borders, logos, and graduations to use laser engraving or silk-screened graphic process that chemically bonds graphics to faceplate, resistant to removal by scratching and cleaning.
 - e. Finish: As specified for wall controls in "Device Finishes" under DIGITAL NETWORK LIGHTING CONTROL SYSTEM - GENERAL REQUIREMENTS article above.
 2. Multi-Scene Wired Control:
 - a. General Requirements:
 - 1) Allows control of any devices part of the lighting control system.
 - 2) Allows for easy reprogramming without replacing unit.
 - 3) Replacement of units does not require reprogramming.
 - 4) Communications: Utilize RS485 wiring for low-voltage communications link.
 - 5) Engrave keypads with button, zone, and scene descriptions as indicated on the drawings.
 - 6) Software Configuration:
 - (a) Customizable control station device button functionality:
 - (1) Buttons can be programmed to perform single defined action.
 - (2) Buttons can be programmed to perform defined action on press and defined action on release.
 - (3) Buttons can be programmed using conditional logic off of a state variable such as time of day or partition status.
 - (4) Buttons can be programmed to perform automatic sequence of defined actions.
 - (5) Capable of deactivating select keypads to prevent accidental changes to light levels.
 - (6) Buttons can be programmed for raise/lower of defined loads.
 - (7) Buttons can be programmed to toggle defined set of loads on/off.
 - 7) Status LEDs:
 - (a) Upon button press, LEDs to immediately illuminate.
 - (b) LEDs to reflect the true system status. LEDs to remain illuminated if the button press was properly processed or LEDs to turn off if the button press was not processed.
 - (c) Support logic that defines when LED is illuminated:
 - (1) Scene logic (logic is true when all zones are at defined levels).
 - (2) Room logic (logic is true when at least one zone is on).
 - (3) Pathway logic (logic is true when at least one zone is on).
 - (4) Last scene (logic is true when spaces are in defined scenes).
 - b. Wired Keypads ; Lutron seeTouch QS Wallstations:
 - 1) Style: Architectural Non-Insert Style.
 - 2) Mounting: Wallbox or low-voltage mounting bracket; provide wall plates with concealed mounting hardware.
 - 3) Button/Engraving Backlighting:
 - (a) Utilize backlighting for buttons and associated engraving to provide readability under all light conditions.
 - (b) Backlight intensity adjustable via programming software.

- 4) Design keypads to allow field-customization of button color, configuration, and engraving using field-changeable replacement kits.
- 5) Contact Closure Interface: Provide two contact closure inputs on back of unit which provide independent functions from front buttons; accepts both momentary and maintained contact closures.
- 6) Terminal block inputs to be over-voltage and miswire-protected against reversals and shorts.
- 7) Provide integral infrared receiver for personal control where indicated.
- c. Wired Keypads ; Lutron Architrave QS Keypads:
 - 1) Mounting: Wallbox ; Lutron Architrave Wallbox; provide wall plates with concealed mounting hardware.
 - 2) Design keypads to allow field-customization of button color, configuration, and engraving using field-changeable replacement kits.
 - 3) Contact Closure Interface: Provide two contact closure inputs on back of unit which provide independent functions from front buttons; accepts both momentary and maintained contact closures.
 - 4) Terminal block inputs to be over-voltage and miswire-protected against reversals and shorts.
- d. Wired Keypads ; Lutron Signature Series QS Keypads:
 - 1) Mounting: Wallbox ; Lutron Signature Series Wallbox; provide wall plates with concealed mounting hardware.
 - 2) Button/Engraving Backlighting:
 - (a) Utilize backlighting for buttons and associated engraving to provide readability under all light conditions.
 - (b) Backlight intensity adjustable via programming software.
 - 3) Design keypads to allow field-customization of button color, configuration, and engraving using field-changeable replacement kits.
 - 4) Contact Closure Interface: Provide two contact closure inputs on back of unit which provide independent functions from front buttons; accepts both momentary and maintained contact closures.
 - 5) Terminal block inputs to be over-voltage and miswire-protected against reversals and shorts.
- e. Wired Keypads ; Lutron QS Wired Palladiom Wallstations:
 - 1) Style: Architectural Style.
 - 2) Mounting: Wallbox; provide wall plates with concealed mounting hardware.
 - 3) Buttons and Faceplate:
 - (a) Buttons to be greater than 0.65 inch in height to provide large target area for ease of use and actuation.
 - (b) Front of buttons to be flush with faceplate.
 - (c) Buttons and faceplate to be of the same material and finish (e.g. plastic/plastic, glass/glass, metal/metal).
 - (d) Buttons to depress and provide tactile feedback of a successful button push. Controls utilizing capacitive or resistive touch technology are not acceptable.
 - (e) Gaps to be less than 0.007 inch between buttons and less than 0.15 inch between buttons and faceplate.
 - 4) Button/Engraving Backlighting:
 - (a) Backlighting to be visible through engraved text to provide clear readability in a variety of lighting conditions.
 - (b) Indicate active scene through the intensity of the backlighting (brighter backlit text indicates the active state).
 - (c) Backlight intensity adjustable via programming software; capable of dynamic adjustment during usage based on conditional logic (time of day, button press, etc.).
 - (d) Backlight intensity automatically adjusts based on room ambient light level.
 - 5) Keypads to allow field-customization of button color and engraving using field-changeable replacement kits.
 - 6) Terminal block inputs to be over-voltage and miswire-protected against reversals and shorts.

3. Single-Scene or Zoned Wired Control:
 - a. Product: Lutron Pico Wired Control.
 - b. Turn an individual fixture or group of fixtures on and off.
 - c. Raise and lower light levels.
 - d. Recall favorite light levels.
4. Four-Button Preset Wallstation:
 - a. Product: Lutron EcoSystem CC-4BRL Four-Button Control.
 - b. Recall four scenes plus all on or all off for one group of fixtures.
 - c. Master raise/lower control for entire group of fixtures.
 - d. Integral IR receiver for personal control.
 - e. Immediate local LED response upon button activation to indicate that a system command has been requested.
5. Wired Keyswitch:
 - a. Product: Lutron QS Keyswitch.
 - b. Configuration:
 - c. Allows control of any devices part of the lighting control system.
 - d. Communications: Utilize RS485 wiring for low-voltage communications link.
 - e. Functionality:
 - 1) Allows for easy reprogramming without replacing unit.
 - 2) Requires key insertion to activate actions.
 - f. Engrave keypads with button, zone, and scene descriptions as indicated on the drawings.
 - g. Software Configuration:
 - 1) Customizable control station device button functionality:
 - (a) Key positions can be programmed to perform single defined action.
 - (b) Key positions can be programmed using conditional logic off of a state variable such as time of day or partition status.
6. Single Touch Slider Control:
 - a. Product: Lutron GrafikT QS Slider.
 - b. Allows control of any single lighting zone in the system.
 - c. Communications: Utilize RS485 wiring for low-voltage communications link.
 - d. Switch Control: Single touch LED bar for on/off operation.
 - e. Dimmer Control: Single touch LED bar with one portion of bar for on/off operation and one portion for dimmer adjustment.
 - 1) Single touch of light level adjustment control portion of LED bar raises/lowers lights, with new level becoming the current preset level.
 - 2) When off, single touch of on/off control portion of LED bar raises lights to preset level.
 - 3) Provides audible feedback for touch control confirmation.
 - 4) LED bar indicates on/off status and current light level, and functions as locator light when dimmer is off.
 - 5) Provides for customized adjustment of dimmer functions via programming software:
 - (a) High/low end trims.
 - (b) LED brightness.
 - (c) Sound on/off.
 - (d) Off fade time.
 - (e) On fade time.
 - (f) Preset lock capability.
 - f. Slider zones can be chained in partitioned spaces.
7. Analog Slider Control:
 - a. Product: Lutron QS Slider Control.
 - b. Allows control of any lighting zone in the system via intuitive analog slider control.
 - c. Communications: Utilize RS485 wiring for low-voltage communications link.
 - d. Available in 1 to 16 zone configurations.
 - e. Available with or without a take command switch to activate the slider scene.
 - f. Optional keypad ganging.
 - g. Slider zones can be chained in partitioned spaces.

- h. Engrave keypads with button, zone, and scene descriptions as indicated on the drawings.
- i. Functionality:
 - 1) Full range dimming of individual zones or groups of zones.
 - 2) Zone levels indicated by slider position.
 - 3) Integrates with multi-scene wired control.
- C. Wireless (Radio Frequency) Controls:
 - 1. Product(s):
 - 2. Communicates via radio frequency to compatible dimmers, switches, and plug-in modules.
 - 3. Does not require external power packs, power or communication wiring.
 - 4. Allows for easy reprogramming without replacing unit.
 - 5. Button Programming:
 - a. Single action.
 - b. Toggle action.
 - c. Defined action on press and defined action on release.
 - 6. Includes LED to indicate button press or programming mode status.
 - 7. Mounting:
 - a. Capable of being mounted with a table stand or directly to a wall under a faceplate.
 - b. Faceplates: Provide concealed mounting hardware.
 - 8. Power: Battery-operated with minimum ten-year battery life.
 - 9. Finish: As specified for wall controls in "Device Finishes" under DIGITAL-NETWORK LIGHTING CONTROL SYSTEM - GENERAL REQUIREMENTS article above.
- D. Infrared Handheld Controls:
 - 1. Product(s):
 - a. Four-Scene Wireless Infrared Transmitter ; Lutron Model GRX-IT-WH: Operates up to 50 feet line-of-sight to receiver.
 - b. Single-Scene Wireless Infrared Transmitter ; Lutron Model C-FLRC-WH: Operates up to 12 feet line-of-sight to receiver.
 - 2. Quantity: As indicated on the drawings.
 - 3. Designed for use in conjunction with compatible infrared receiver and lighting control; compatibility dependent on that receiver, not transmitter.
 - 4. Learnable by other variable frequency remote controls.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that ratings and configurations of system components are consistent with the indicated requirements.
- C. Verify that mounting surfaces are ready to receive system components.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Perform work in a neat and workmanlike manner in accordance with NECA 1 <http://global.ihs.com/doc_detail.cfm?rid=BSD&document_name=NECA NEIS 1> and, where applicable, NECA 130 <<http://www.necanet.org/store/products/index.cfm/NECA 130-10>> , except for mounting heights specified in those standards.
- B. Install products in accordance with manufacturer's instructions.
- C. Define each dimmer/relay load type, assign each load to a zone, and set control functions.
- D. Installation: Where shown on the drawings, the contractor shall furnish and install programmable lighting controllers of the quantities, sizes and types shown on the drawings or specified herein.
- E. Requirements: All equipment shall be installed in accordance with manufacturer requirements and in compliance with all applicable local and national codes and requirements.
- F. Identify system components in accordance with Section 26 0553.

3.03 MANUFACTURES SERVICES

- A. Factory Programming: All controllers shall be factory programmed upon request in accordance with the project specifications prior to shipment.
- B. Installation Assistance: During the installation process, the manufacturer shall provide, at no cost, technical support via a toll-free telephone line to the installing contractor or owner's representative to answer questions and supply additional information when required.
- C. System Start-Up: The system manufacturer shall provide a factory authorized field technician to the project site after installation has been completed and prior to system being energized for the purpose of testing and adjustment of the system. Factory field technician shall test and verify all system functions and ensure proper operation of the system components in accordance with the specifications and on-site conditions. The installing contractor shall notify the system manufacturer in writing that the system is completely wired and ready to be energized and tested 4 weeks prior to scheduling a field technician for start-up of the system. Should the field technician arrive on the job site and find the installation incomplete, the installing contractor shall pay the cost of any future visits by the field technician required to complete the system start-up.
- D. On-Site Programming: During the start-up procedure, the factory field technician shall provide programming assistance and guidance to the building operating personnel in order to program the systems for initial operation.
- E. Instruction: During the start-up procedure, the factory field technician shall provide training to the building operating personnel in the operation, programming and maintenance of the lighting control system.
- F. As-Built Drawings: After completion of the system installation and testing, the manufacturer shall provide 3 sets of "as-built" drawings.
- G. Operation and Maintenance Manuals: After completion of the system installation and testing, the manufacturer shall provide 3 sets of Operations and Maintenance Manuals.
- H. Lifetime Toll-Free Telephone Support: The system manufacturer shall provide a toll-free telephone number to the system user and shall allow access to free telephone support for the life of the system.

END OF SECTION

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**SECTION 26 2100
LOW-VOLTAGE ELECTRICAL SERVICE ENTRANCE**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical service requirements.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- B. Section 26 0529 - Hangers and Supports for Electrical Systems.
- C. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 DEFINITIONS

- A. Service Point: The point of connection between the facilities of the serving utility and the premises wiring as defined in NFPA 70, and as designated by the Utility Company.

1.04 REFERENCE STANDARDS

- A. IEEE C2 - National Electrical Safety Code(R) (NESC(R)); 2023.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.05 ADMINISTRATIVE REQUIREMENTS

- A. No later than two weeks following date of the Agreement, notify Utility Company of anticipated date of service.
- B. Coordination:
 - 1. Verify the following with Utility Company representative:
 - a. Utility Company requirements, including division of responsibility.
 - b. Exact location and details of utility point of connection.
 - c. Utility easement requirements.
 - d. Utility Company charges associated with providing service.
 - 2. Coordinate the work with other trades to avoid placement of other utilities or obstructions within the spaces dedicated for electrical service and associated equipment.
 - 3. Coordinate arrangement of service entrance equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- C. Arrange for Utility Company to provide permanent electrical service. Prepare and submit documentation required by Utility Company.
- D. Utility Company charges associated with providing permanent service to be paid by Contractor.
- E. Preinstallation Meeting: Convene one week prior to commencing work of this section to review service requirements and details with Utility Company representative.
- F. Scheduling:
 - 1. Where work of this section involves interruption of existing electrical service, arrange service interruption with Owner.
 - 2. Arrange for inspections necessary to obtain Utility Company approval of installation.

1.06 QUALITY ASSURANCE

- A. Comply with the following:
 - 1. IEEE C2 (National Electrical Safety Code).
 - 2. NFPA 70 (National Electrical Code).
 - 3. The requirements of the Utility Company.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.
- B. Store products indoors in a clean, dry space having a uniform temperature to prevent condensation (including outdoor rated products which are not weatherproof until completely and properly installed). Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- C. Handle products carefully to avoid damage to internal components, enclosure, and finish.

PART 2 PRODUCTS

2.01 ELECTRICAL SERVICE REQUIREMENTS

- A. Provide new electrical service consisting of all required conduits, conductors, equipment, metering provisions, supports, accessories, etc. as necessary for connection between Utility Company point of supply and service entrance equipment.
- B. Electrical Service Characteristics: As indicated on drawings.
- C. Division of Responsibility:
 - 1. Pad-Mounted Utility Transformers:
 - a. Secondary:
 - 1) Trenching and Backfilling: Provided by Contractor.
 - 2) Conduits: Furnished and installed by Contractor.
 - 3) Conductors: Furnished and installed by Contractor (Service Point at transformer).
 - 2. Terminations at Service Point: Provided by Utility Company.
 - 3. Metering Provisions:
 - a. Meter Bases: Furnished and installed by Contractor per Utility Company requirements.
 - b. Metering Transformer Cabinets: Furnished and installed by Contractor per Utility Company requirements.
- D. Products Furnished by Contractor: Comply with Utility Company requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that ratings and configurations of service entrance equipment are consistent with the indicated requirements.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Verify and mark locations of existing underground utilities.

3.03 INSTALLATION

- A. Install products in accordance with manufacturer's instructions and Utility Company requirements.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Arrange equipment to provide minimum clearances and required maintenance access.
- D. Provide required support and attachment components in accordance with Section 26 0529.
- E. Provide grounding and bonding for service entrance equipment in accordance with Section 26 0526.
- F. Identify service entrance equipment, including main service disconnect(s) in accordance with Section 26 0553.

END OF SECTION

**SECTION 26 2200
LOW-VOLTAGE TRANSFORMERS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General purpose transformers.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete equipment pads.
- B. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- C. Section 26 0529 - Hangers and Supports for Electrical Systems.
- D. Section 26 0533.13 - Conduit for Electrical Systems: Flexible conduit connections.

1.03 REFERENCE STANDARDS

- A. 10 CFR 431, Subpart K - Energy Efficiency Program for Certain Commercial and Industrial Equipment - Distribution Transformers; Current Edition.
- B. IEEE C57.94 - IEEE Recommended Practice for Installation, Application, Operation, and Maintenance of Dry-Type Distribution and Power Transformers; 2015.
- C. IEEE C57.96 - IEEE Standard Guide for Loading Dry-Type Distribution and Power Transformers; 2013.
- D. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- E. NECA 409 - Standard for Installing and Maintaining Dry-Type Transformers; 2015.
- F. NEMA ST 20 - Dry Type Transformers for General Applications; 2021.
- G. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.
- H. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. UL 506 - Standard for Specialty Transformers; Current Edition, Including All Revisions.
- J. UL 1561 - Standard for Dry-Type General Purpose and Power Transformers; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Include voltage, kVA, impedance, tap configurations, insulation system class and rated temperature rise, efficiency, sound level, enclosure ratings, outline and support point dimensions, weight, required clearances, service condition requirements, and installed features.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- B. Handle in accordance with manufacturer's written instructions. Lift only with lugs provided for the purpose. Handle carefully to avoid damage to transformer internal components, enclosure, and finish.

1.07 FIELD CONDITIONS

- A. Ambient Temperature: Do not exceed the following maximum temperatures during and after installation of transformers.
 - 1. Greater than 10 kVA: 104 degrees F maximum.
 - 2. Less than 10 kVA: 77 degrees F maximum.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Source Limitations: Provide transformers produced by same manufacturer as other electrical distribution equipment used for project and obtained from single supplier.

2.02 TRANSFORMERS - GENERAL REQUIREMENTS

- A. Description: Factory-assembled, dry type transformers for 60 Hz operation designed and manufactured in accordance with NEMA ST 20 and listed, classified, and labeled as suitable for the purpose intended.
- B. Unless noted otherwise, transformer ratings indicated are for continuous loading according to IEEE C57.96 under the following service conditions:
 - 1. Altitude: Less than 3,300 feet.
 - 2. Ambient Temperature:
 - a. Greater than 10 kVA: Not exceeding 104 degrees F.
 - b. Less than 10 kVA: Not exceeding 77 degrees F.
- C. Core: High grade, non-aging silicon steel with high magnetic permeability and low hysteresis and eddy current losses. Keep magnetic flux densities substantially below saturation point, even at 10 percent primary overvoltage. Tightly clamp core laminations to prevent plate movement and maintain consistent pressure throughout core length.
- D. Impregnate core and coil assembly with non-hydroscopic thermo-setting varnish to effectively seal out moisture and other contaminants.
- E. Basic Impulse Level: 10 kV.
- F. Ground core and coil assembly to enclosure by means of a visible flexible copper grounding strap.
- G. Isolate core and coil from enclosure using vibration-absorbing mounts.
- H. Nameplate: Include transformer connection data, ratings, wiring diagrams, and overload capacity based on rated winding temperature rise.

2.03 GENERAL PURPOSE TRANSFORMERS

- A. Description: Self-cooled, two winding transformers listed and labeled as complying with UL 506 or UL 1561; ratings as indicated on the drawings.
- B. Insulation System and Allowable Average Winding Temperature Rise:
 - 1. Less than 15 kVA: Class 180 degrees C insulation system with 115 degrees C average winding temperature rise.
 - 2. 15 kVA and Larger: Class 220 degrees C insulation system with 150 degrees C average winding temperature rise.
- C. Coil Conductors: Continuous aluminum windings with terminations brazed or welded.
- D. Winding Taps:
 - 1. Less than 3 kVA: None.
 - 2. 3 kVA through 15 kVA: Two 5 percent full capacity primary taps below rated voltage.
 - 3. 15 kVA through 300 kVA: Two 2.5 percent full capacity primary taps above and four 2.5 percent full capacity primary taps below rated voltage.
 - 4. 500 kVA and Larger: Two 2.5 percent full capacity primary taps above and two 2.5 percent full capacity primary taps below rated voltage.
- E. Energy Efficiency: Comply with 10 CFR 431, Subpart K.
- F. Sound Levels: Standard sound levels complying with NEMA ST 20
- G. Mounting Provisions:
 - 1. Less than 15 kVA: Suitable for wall mounting.
 - 2. 15 kVA through 75 kVA: Suitable for wall, floor, or trapeze mounting.
 - 3. Larger than 75 kVA: Suitable for floor mounting.
- H. Transformer Enclosure: Comply with NEMA ST 20.
 - 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
 - a. Indoor clean, dry locations: Type 2.
 - b. Outdoor locations: Type 3R.
 - 2. Construction: Steel.

- a. Less than 15 kVA: Totally enclosed, non-ventilated.
 - b. 15 kVA and Larger: Ventilated.
- 3. Finish: Manufacturer's standard grey, suitable for outdoor installations.
- 4. Provide lifting eyes or brackets.
- I. Accessories:
 - 1. Mounting Brackets: Provide manufacturer's standard brackets.
 - 2. Weathershield Kits: Provide for ventilated transformers installed outdoors to provide a listed NEMA 250, type 3R assembly.
 - 3. Lug Kits: Sized as required for termination of conductors as indicated on the drawings.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that suitable support frames and anchors are installed where required and that mounting surfaces are ready to receive transformers.
- C. Perform pre-installation tests and inspections on transformers per manufacturer's instructions and as specified in NECA 409. Correct deficiencies prior to installation.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship).
- B. Install products in accordance with manufacturer's instructions.
- C. Install transformers in accordance with NECA 409 and IEEE C57.94.
- D. Use flexible conduit, under the provisions of Section 26 0533.13, 2 feet minimum length, for connections to transformer case. Make conduit connections to side panel of enclosure.
- E. Arrange equipment to provide minimum clearances as specified on transformer nameplate and in accordance with manufacturer's instructions and NFPA 70.
- F. Install transformers plumb and level.
- G. Transformer Support:
 - 1. Provide required support and attachment in accordance with Section 26 0529, where not furnished by transformer manufacturer.
 - 2. Use integral transformer flanges, accessory brackets furnished by manufacturer, or field-fabricated supports to support wall-mounted transformers.
 - 3. Unless otherwise indicated, mount floor-mounted transformers on properly sized 3 inch high concrete pad constructed in accordance with Section 03 3000.
 - 4. Use trapeze hangers assembled from threaded rods and metal channel (strut) to support suspended transformers. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- H. Provide grounding and bonding in accordance with Section 26 0526.
- I. Remove shipping braces and adjust bolts that attach the core and coil mounting bracket to the enclosure according to manufacturer's recommendations in order to reduce audible noise transmission.
- J. Where not factory-installed, install lugs sized as required for termination of conductors as indicated.
- K. Where furnished as a separate accessory, install transformer weathershield per manufacturer's instructions.

3.03 ADJUSTING

- A. Measure primary and secondary voltages and make appropriate tap adjustments.
- B. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

3.04 CLEANING

- A. Clean dirt and debris from transformer components according to manufacturer's instructions.

B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

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**SECTION 26 2416
PANELBOARDS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Power distribution panelboards.
- B. Lighting and appliance panelboards.
- C. Overcurrent protective devices for panelboards.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- B. Section 26 0529 - Hangers and Supports for Electrical Systems.
- C. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. FS W-C-375 - Circuit Breakers, Molded Case; Branch Circuit and Service; 2013e, with Amendments (2022).
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- C. NECA 407 - Standard for Installing and Maintaining Panelboards; 2015.
- D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.
- E. NEMA PB 1 - Panelboards; 2011.
- F. NEMA PB 1.1 - General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 1000 Volts or Less; 2023.
- G. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems; 2021.
- H. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- J. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- K. UL 67 - Panelboards; Current Edition, Including All Revisions.
- L. UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures; Current Edition, Including All Revisions.
- M. UL 869A - Reference Standard for Service Equipment; Current Edition, Including All Revisions.
- N. UL 943 - Ground-Fault Circuit-Interrupters; Current Edition, Including All Revisions.
- O. UL 1699 - Arc-Fault Circuit-Interrupters; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 3. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted panelboards where indicated.
 - 4. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
 - 5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for panelboards, enclosures, overcurrent protective devices, and other installed components and accessories.
 - 1. Include characteristic trip curves for each type and rating of overcurrent protective device upon request.
- C. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, overcurrent protective device arrangement and sizes, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.
 - 1. Include dimensioned plan and elevation views of panelboards and adjacent equipment with all required clearances indicated.
 - 2. Include wiring diagrams showing all factory and field connections.
- D. Project Record Documents: Record actual installed locations of panelboards and actual installed circuiting arrangements.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Panelboard Keys: Two of each different key.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store panelboards in accordance with manufacturer's instructions and NECA 407.
- B. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- C. Handle carefully in accordance with manufacturer's written instructions to avoid damage to panelboard internal components, enclosure, and finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Eaton Corporation: www.eaton.com/#sle.
- B. Schneider Electric: www.se.com/#sle.
- C. Siemens Industry, Inc: www.usa.siemens.com.
- D. Source Limitations: Provide panelboards and associated components produced by same manufacturer as other electrical distribution equipment used for project and obtained from a single supplier.

2.02 PANELBOARDS - GENERAL REQUIREMENTS

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
 - 1. Altitude: Less than 6,600 feet.
 - 2. Ambient Temperature:
 - a. Panelboards Containing Circuit Breakers: Between 23 degrees F and 104 degrees F.
- C. Short Circuit Current Rating:
 - 1. Provide panelboards with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
 - 2. Listed series ratings are not acceptable.

- D. Panelboards Used for Service Entrance: Listed and labeled as suitable for use as service equipment according to UL 869A.
- E. Mains: Configure for top or bottom incoming feed as indicated or as required for the installation.
- F. Branch Overcurrent Protective Devices: Replaceable without disturbing adjacent devices.
- G. Bussing: Sized in accordance with UL 67 temperature rise requirements.
 - 1. Provide fully rated neutral bus unless otherwise indicated, with a suitable lug for each feeder or branch circuit requiring a neutral connection.
 - 2. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
- H. Conductor Terminations: Suitable for use with the conductors to be installed.
- I. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
 - 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
 - a. Indoor Clean, Dry Locations: Type 1.
 - b. Outdoor Locations: Type 3R.
 - 2. Boxes: Galvanized steel unless otherwise indicated.
 - a. Provide wiring gutters sized to accommodate the conductors to be installed.
 - 3. Fronts:
 - a. Fronts for Surface-Mounted Enclosures: Same dimensions as boxes.
 - b. Fronts for Flush-Mounted Enclosures: Overlap boxes on all sides to conceal rough opening.
 - 4. Lockable Doors: All locks keyed alike unless otherwise indicated.
- J. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.
- K. Load centers are not acceptable.

2.03 POWER DISTRIBUTION PANELBOARDS

- A. Description: Panelboards complying with NEMA PB 1, power and feeder distribution type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.
- B. Conductor Terminations:
 - 1. Main and Neutral Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
 - 2. Main and Neutral Lug Type: Mechanical.
- C. Bussing:
 - 1. Phase and Neutral Bus Material: Aluminum.
 - 2. Ground Bus Material: Aluminum.
- D. Circuit Breakers:
 - 1. Provide bolt-on type or plug-in type secured with locking mechanical restraints.
- E. Enclosures:
 - 1. Provide surface-mounted enclosures unless otherwise indicated.

2.04 LIGHTING AND APPLIANCE PANELBOARDS

- A. Description: Panelboards complying with NEMA PB 1, lighting and appliance branch circuit type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.
- B. Conductor Terminations:
 - 1. Main and Neutral Lug Material: Copper suitable for terminating copper conductors only.
 - 2. Main and Neutral Lug Type: Mechanical.
- C. Bussing:
 - 1. Phase Bus Connections: Arranged for sequential phasing of overcurrent protective devices.
 - 2. Phase and Neutral Bus Material: Copper.

3. Ground Bus Material: Copper.
- D. Circuit Breakers: Thermal magnetic bolt-on type unless otherwise indicated.
- E. Enclosures:
 1. Provide surface-mounted or flush-mounted enclosures as indicated.
 2. Fronts: Provide door-in-door trim with hinged cover for access to load terminals and wiring gutters, and separate lockable hinged door with concealed hinges for access to overcurrent protective device handles without exposing live parts.
 3. Provide clear plastic circuit directory holder mounted on inside of door.

2.05 OVERCURRENT PROTECTIVE DEVICES

- A. Molded Case Circuit Breakers:
 1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
 2. Interrupting Capacity:
 - a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated, but not less than:
 - 1) 10,000 rms symmetrical amperes at 240 VAC or 208 VAC.
 - 2) 14,000 rms symmetrical amperes at 480 VAC.
 - b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
 3. Conductor Terminations:
 - a. Lug Material: Copper suitable for terminating copper conductors only.
 4. Thermal Magnetic Circuit Breakers: For each pole, furnish thermal inverse time tripping element for overload protection and magnetic instantaneous tripping element for short circuit protection.
 5. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.
 6. Provide the following circuit breaker types where indicated:
 - a. Ground Fault Circuit Interrupter (GFCI) Circuit Breakers: Listed as complying with UL 943, class A for protection of personnel.
 - b. Arc-Fault Circuit Interrupter (AFCI) Circuit Breakers: Combination type listed as complying with UL 1699.
 7. Do not use tandem circuit breakers.
 8. Do not use handle ties in lieu of multi-pole circuit breakers.

2.06 SOURCE QUALITY CONTROL

- A. Factory test panelboards according to NEMA PB 1.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that the ratings and configurations of the panelboards and associated components are consistent with the indicated requirements.
- C. Verify that mounting surfaces are ready to receive panelboards.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship).
- B. Install products in accordance with manufacturer's instructions.
- C. Install panelboards in accordance with NECA 407 and NEMA PB 1.1.
- D. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- E. Provide required support and attachment in accordance with Section 26 0529.
- F. Install panelboards plumb.
- G. Install flush-mounted panelboards so that trims fit completely flush to wall with no gaps and rough opening completely covered.

- H. Mount panelboards such that the highest position of any operating handle for circuit breakers or switches does not exceed 79 inches above the floor or working platform.
- I. Provide minimum of three spare 1 inch trade size conduits out of each flush-mounted panelboard stubbed into accessible space above ceiling and below floor.
- J. Provide grounding and bonding in accordance with Section 26 0526.
- K. Install all field-installed branch devices, components, and accessories.
- L. Provide filler plates to cover unused spaces in panelboards.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Molded Case Circuit Breakers: Perform inspections and tests listed in NETA ATS, Section 7.6.1.1 for all main circuit breakers. Tests listed as optional are not required.
- D. Test GFCI circuit breakers to verify proper operation.
- E. Test AFCI circuit breakers to verify proper operation.
- F. Correct deficiencies and replace damaged or defective panelboards or associated components.

3.04 ADJUSTING

- A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.
- B. Adjust alignment of panelboard fronts.
- C. Load Balancing: For each panelboard, rearrange circuits such that the difference between each measured steady state phase load does not exceed 20 percent and adjust circuit directories accordingly. Maintain proper phasing for multi-wire branch circuits.

3.05 CLEANING

- A. Clean dirt and debris from panelboard enclosures and components according to manufacturer's instructions.
- B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

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**SECTION 26 2550
GENERATOR DOCKING STATION**

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittal procedures, project meetings, progress schedules and documentation, reports, coordination.
- B. Section 01 4000 - Quality Requirements: Procedures for testing, inspection, mock-ups, reports, certificates; use of reference standards.
- C. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance (O&M) data, warranties and bonds.

1.02 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of documented experience.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. The equipment installed under this contract shall be left in proper working order.
- D. New materials and equipment shall be guaranteed against defects in composition, design or workmanship. Guarantee certificates shall be furnished.

1.05 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 GENERATOR DOCKING STATION

- A. New Products: TRYSTAR: Generator Docking Station.

2.02 MANUFACTURER

- A. TRYSTAR Model TMTS-1. <https://www.trystar.com/contact/> or info@trystar.com

2.03 GENERAL REQUIREMENTS

- A. Docking station shall include 16 Series Camlok Panel Mounts for use as connection to Portable Generator.
- B. Entire package must be listed to ETL or UL 1008 Standards. UL listing of individual components is not acceptable.
- C. Enclosures:
 - 1. NEMA 3R rain-tight, 304 GA aluminum enclosure
 - a. Pad-lockable front door shall include a hinged access plate at the bottom for entry of cables from portable generator or portable load bank. NEMA 3R integrity shall be maintained with access plate open for cable entry.
 - b. Front and side through a front access panel shall be accessible for maintenance.
 - c. Top, side, and bottom through a front access panel shall be accessible for permanent cabling.
 - 2. Finishes:
 - a. Paint after fabrication. Powder coated Hammertone Gray.
- D. Phase, Neutral, and Ground Buses:
 - 1. Material: Silver-plated Copper

2. Equipment Ground Bus: bonded to box.
 3. Isolated Ground Bus: insulated from box.
 4. Ground Bus: 50% of phase size.
 5. Neutral Bus: Neutral bus rated 100 percent of phase bus.
 6. Round edges on bus.
- E. Temporary generator connectors shall be Camlok style mounted on gland plate.
1. Camlok shall be color coded according to system voltage
 - a. A phase – Black or Brown
 - b. B phase – Red or Orange
 - c. C phase – Blue or Yellow
 - d. N Neutral – White
 - e. G Ground – Green
- F. Temporary connectors shall include protective flip lids to prevent accidental contact.
- G. Permanent connectors shall be broad range set-screw type, located behind an aluminum barrier.
- H. Short Circuit & Withstand Rating
1. Shall be minimum 65KAIC unless otherwise indicated on drawings.
- I. Voltage & Amperage:
1. 100 Amp & 480/277 Volt
- J. Phase Rotation Monitor Device:
1. Phase monitoring relay to be Siemens 3U4512-1AR20 or equal.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine elements and surfaces to receive Generator Docking Station for compliance with installation tolerances and other conditions affecting performance of the Work.

3.02 INSTALLATION

- A. Surface, Flush or Base Mounted: Determined by Application
1. Install anchor bolts to elevations required for proper attachment to Generator Docking Station.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Third Party Tests and Inspections to include the following:
1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
- C. Prepare test and inspection reports, including a certified report that identifies Generator Docking Station and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

END OF SECTION

**SECTION 26 2726
WIRING DEVICES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wall switches.
- B. Wall dimmers.
- C. Receptacles.
- D. Wall plates and covers.

1.02 RELATED REQUIREMENTS

- A. Section 26 0533.16 - Boxes for Electrical Systems.
- B. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. FS W-C-596 - Connector, Electrical, Power, General Specification for; 2014h, with Amendments (2017).
- B. FS W-S-896 - Switches, Toggle (Toggle and Lock), Flush Mounted (General Specification); 2014g, with Amendment (2017).
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- D. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2016.
- E. NEMA WD 1 - General Color Requirements for Wiring Devices; 1999 (Reaffirmed 2020).
- F. NEMA WD 6 - Wiring Devices - Dimensional Specifications; 2021.
- G. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- H. UL 20 - General-Use Snap Switches; Current Edition, Including All Revisions.
- I. UL 498 - Attachment Plugs and Receptacles; Current Edition, Including All Revisions.
- J. UL 514D - Cover Plates for Flush-Mounted Wiring Devices; Current Edition, Including All Revisions.
- K. UL 943 - Ground-Fault Circuit-Interrupters; Current Edition, Including All Revisions.
- L. UL 1472 - Solid-State Dimming Controls; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
 - 3. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
 - 4. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.
- B. Sequencing:
 - 1. Do not install wiring devices until final surface finishes and painting are complete.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Products: Listed, classified, and labeled as suitable for the purpose intended.
- D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having

jurisdiction.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Store in a clean, dry space in original manufacturer's packaging until ready for installation.

PART 2 PRODUCTS

2.01 WIRING DEVICES - GENERAL REQUIREMENTS

- A. Provide wiring devices suitable for intended use with ratings adequate for load served.
- B. Except where explicitly permitted, substitution of combination switch-and-receptacle devices for separate switches and receptacles is not permitted.
- C. Wiring Device Applications:
 - 1. Receptacles Installed Outdoors or in Damp or Wet Locations: Use weather-resistant GFCI receptacles with weatherproof covers.
 - 2. Receptacles Installed in Dwelling Units: Use tamper-resistant receptacles.
 - 3. Provide GFCI protection for:
 - a. Receptacles installed within 6 feet of sinks.
 - b. Receptacles installed in kitchens.
 - c. Receptacles serving electric drinking fountains.
 - 4. Single Receptacles Installed on Individual Branch Circuits: Provide receptacle ampere rating equal to branch circuit rating.
- D. Wiring Device Finishes:
 - 1. Provide wiring device finishes as described below, unless otherwise indicated.
 - 2. Wiring Devices Installed in Finished Spaces: Gray with white stainless steel wall plate.
 - 3. Wiring Devices Installed in Unfinished Spaces: Gray with galvanized steel wall plate.
 - 4. Wiring Devices Installed in Wet or Damp Locations: White with weatherproof cover.

2.02 WALL SWITCHES

- A. Manufacturers:
 - 1. Leviton Manufacturing Company, Inc: www.leviton.com/#sle.
 - 2. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us/#sle.
- B. Wall Switches - General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable FS W-S-896; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.
- C. Standard Wall Switches: Industrial specification grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

2.03 WALL DIMMERS

- A. Manufacturers:
 - 1. Leviton Manufacturing Company, Inc; _____: www.leviton.com/#sle.
 - 2. Lutron Electronics Company, Inc; Maestro Series: www.lutron.com/#sle.
- B. Wall Dimmers - General Requirements: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 1472; types and ratings suitable for load controlled as indicated on the drawings.
- C. Power Rating, Unless Otherwise Indicated or Required to Control the Load Indicated on the Drawings:

2.04 RECEPTACLES

- A. Manufacturers:
 - 1. Leviton Manufacturing Company, Inc: www.leviton.com/#sle.
 - 2. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us/#sle.
- B. Receptacles - General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498 and where applicable FS W-C-596; types as

indicated on the drawings.

1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
 2. NEMA configurations specified are according to NEMA WD 6.
- C. Convenience Receptacles:
1. Standard Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
 2. Tamper Resistant Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R, listed and labeled as tamper resistant type; single or duplex as indicated on the drawings.
- D. GFCI Receptacles:
1. GFCI Receptacles - General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.
 - a. Provide test and reset buttons of same color as device.
 2. Standard GFCI Receptacles: Commercial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.
 3. Weather Resistant GFCI Receptacles: Commercial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations.
 4. Tamper Resistant GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as tamper resistant type.

2.05 WALL PLATES AND COVERS

- A. Manufacturers:
1. Hubbell Incorporated: www.hubbell-wiring.com/#sle.
 2. Leviton Manufacturing Company, Inc: www.leviton.com/#sle.
 3. Lutron Electronics Company, Inc: www.lutron.com.
 4. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us/#sle.
- B. Wall Plates: Comply with UL 514D.
1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
 2. Size: Standard.
 3. Screws: Metal with slotted heads finished to match wall plate finish.
- C. Nylon Wall Plates: Smooth finish, high-impact thermoplastic.
- D. Stainless Steel Wall Plates: Brushed satin finish, Type 302 stainless steel.
- E. Weatherproof Receptacle Covers for Damp Locations: Gasketed, cast aluminum, with self-closing hinged cover and corrosion-resistant screws; listed as suitable for use in wet locations with cover closed.
- F. Weatherproof Receptacle Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- F. Verify that openings in access floor are in proper locations.
- G. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of wiring devices provided under this section.
 - 1. Mounting Heights: Unless otherwise indicated, as follows:
 - a. Wall Switches: 48 inches above finished floor to top of box.
 - b. Wall Dimmers: 48 inches above finished floor to top of box.
 - c. Fan Speed Controllers: 48 inches above finished floor to top of box.
 - d. Receptacles: 20 inches above finished floor to top of box or 6 inches above counter.
 - 2. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
 - 3. Where multiple receptacles or wall switches are installed at the same location and at the same mounting height, gang devices together under a common wall plate.
 - 4. Locate wall switches on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.
 - 5. Locate receptacles for electric drinking fountains concealed behind drinking fountain according to manufacturer's instructions.
- C. Install wiring devices in accordance with manufacturer's instructions.
- D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- E. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.
- F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- H. Unless otherwise indicated, GFCI receptacles may be connected to provide feed-through protection to downstream devices. Label such devices to indicate they are protected by upstream GFCI protection.
- I. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- J. Install wall switches with OFF position down.
- K. Install wall dimmers to achieve full rating specified and indicated after derating for ganging as instructed by manufacturer.
- L. Do not share neutral conductor on branch circuits utilizing wall dimmers.
- M. Install vertically mounted receptacles with grounding pole on bottom and horizontally mounted receptacles with grounding pole on left.
- N. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- O. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.
- P. Identify wiring devices in accordance with Section 26 0553.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each wiring device for damage and defects.

- C. Operate each wall switch with circuit energized to verify proper operation.
- D. Test each receptacle to verify operation and proper polarity.
- E. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.
- F. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.05 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.

3.06 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

END OF SECTION

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SECTION 26 2813 FUSES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fuses.

1.02 RELATED REQUIREMENTS

- A. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.
- B. Section 26 2816.16 - Enclosed Switches: Fusible switches.

1.03 REFERENCE STANDARDS

- A. NEMA FU 1 - Low Voltage Cartridge Fuses; 2012.
- B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. UL 248-1 - Low-Voltage Fuses - Part 1: General Requirements; Current Edition, Including All Revisions.
- D. UL 248-12 - Low-Voltage Fuses - Part 12: Class R Fuses; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate fuse clips furnished in equipment provided under other sections for compatibility with indicated fuses.
 - 2. Coordinate fuse requirements according to manufacturer's recommendations and nameplate data for actual equipment to be installed.
 - 3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard data sheets including voltage and current ratings, interrupting ratings, time-current curves, and current limitation curves.
- C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Fuses: One set(s) of three for each type and size installed.
 - 3. Fuse Pullers: One set(s) compatible with each type and size installed.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Bussmann, a division of Eaton Corporation: www.cooperindustries.com/#sle.
- B. Littelfuse, Inc: www.littelfuse.com/#sle.

2.02 APPLICATIONS

- A. Individual Motor Branch Circuits: Class RK5 time-delay.

2.03 FUSES

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.

- B. Unless specifically indicated to be excluded, provide fuses for all fusible equipment as required for a complete operating system.
- C. Provide fuses of the same type, rating, and manufacturer within the same switch.
- D. Comply with UL 248-1.
- E. Unless otherwise indicated, provide cartridge type fuses complying with NEMA FU 1, Class and ratings as indicated.
- F. Voltage Rating: Suitable for circuit voltage.
- G. Class R Fuses: Comply with UL 248-12.
- H. Selectivity: Where the requirement for selectivity is indicated, furnish products as required to achieve selective coordination.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that fuse ratings are consistent with circuit voltage and manufacturer's recommendations and nameplate data for equipment.
- B. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Do not install fuses until circuits are ready to be energized.
- B. Install fuses with label oriented such that manufacturer, type, and size are easily read.

END OF SECTION

**SECTION 26 2816.13
ENCLOSED CIRCUIT BREAKERS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Enclosed circuit breakers.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- B. Section 26 0529 - Hangers and Supports for Electrical Systems.
- C. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. FS W-C-375 - Circuit Breakers, Molded Case; Branch Circuit and Service; 2013e, with Amendments (2022).
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.
- D. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems; 2021.
- E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- G. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- H. UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for circuit breakers, enclosures, and other installed components and accessories.
- C. Shop Drawings: Indicate outline and support point dimensions, voltage and current ratings, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Maintain one copy of each document on site.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- B. Handle carefully in accordance with manufacturer's written instructions to avoid damage to enclosed circuit breaker internal components, enclosure, and finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Eaton Corporation: www.eaton.com/#sle.
- B. Schneider Electric: www.se.com/#sle.
- C. Siemens Industry, Inc: www.usa.siemens.com.

2.02 ENCLOSED CIRCUIT BREAKERS

- A. Description: Units consisting of molded case circuit breakers individually mounted in enclosures.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
 - 1. Altitude: Less than 6,600 feet.
 - 2. Ambient Temperature: Between 23 degrees F and 104 degrees F.
- D. Short Circuit Current Rating:
- E. Conductor Terminations: Suitable for use with the conductors to be installed.
- F. Provide solidly bonded equipment ground bus in each enclosed circuit breaker, with a suitable lug for terminating each equipment grounding conductor.
- G. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
 - 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
- H. Provide externally operable handle with means for locking in the OFF position.
 - 1. Provide means for locking handle in the ON position where installed in locations that are unsecured or are accessible to the public.

2.03 MOLDED CASE CIRCUIT BREAKERS

- A. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489 and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
- B. Interrupting Capacity:
 - 1. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated, but not less than:
 - 2. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
- C. Conductor Terminations:
 - 1. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
- D. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Provide required support and attachment in accordance with Section 26 0529.
- E. Install enclosed circuit breakers plumb.
- F. Except where indicated to be mounted adjacent to the equipment they supply, mount enclosed circuit breakers such that the highest position of the operating handle does not exceed 79 inches above the floor or working platform.
- G. Provide grounding and bonding in accordance with Section 26 0526.

3.02 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with manufacturer's instructions and NETA ATS, except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.6.1.1 for circuit breakers used for service entrance and for circuit breakers larger than 800 amperes. Tests listed as optional are not required.

- D. Correct deficiencies and replace damaged or defective enclosed circuit breakers.

3.03 ADJUSTING

- A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

3.04 CLEANING

- A. Clean dirt and debris from circuit breaker enclosures and components according to manufacturer's instructions.
- B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

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**SECTION 26 2816.16
ENCLOSED SWITCHES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Enclosed safety switches.
- B. General use snap switches.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- B. Section 26 0529 - Hangers and Supports for Electrical Systems.
- C. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.
- D. Section 26 2813 - Fuses.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- B. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.
- C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- E. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- F. UL 98 - Enclosed and Dead-Front Switches; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades. Avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and within working clearances for electrical equipment required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 3. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
 - 4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for enclosed switches and other installed components and accessories.
- C. Shop Drawings: Indicate outline and support point dimensions, voltage and current ratings, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.
- D. Project Record Documents: Record actual locations of enclosed switches.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having

jurisdiction.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- B. Handle carefully in accordance with manufacturer's written instructions to avoid damage to enclosed switch internal components, enclosure, and finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. ABB/GE: www.geindustrial.com/#sle.
- B. Eaton Corporation: www.eaton.com/#sle.
- C. Schneider Electric: www.se.com/#sle.
- D. Siemens Industry, Inc: www.usa.siemens.com.
- E. Source Limitations: Provide enclosed switches and associated components produced by same manufacturer as other electrical distribution equipment used for project and obtained from single supplier.

2.02 ENCLOSED SAFETY SWITCHES

- A. Description: Quick-make, quick-break enclosed safety switches listed and labeled as complying with UL 98; heavy duty; ratings, configurations, and features as indicated on the drawings.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
 - 1. Altitude: Less than 6,600 feet.
 - 2. Ambient Temperature: Between -22 degrees F and 104 degrees F.
- D. Horsepower Rating: Suitable for connected load.
- E. Voltage Rating: Suitable for circuit voltage.
- F. Short Circuit Current Rating:
 - 1. Provide enclosed safety switches, when protected by the fuses or supply side overcurrent protective devices to be installed, with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
- G. Provide with switch blade contact position that is visible when the cover is open.
- H. Fuse Clips for Fusible Switches: As required to accept fuses indicated.
 - 1. Where NEMA Class R fuses are installed, provide rejection feature to prevent installation of fuses other than Class R.
- I. Conductor Terminations: Suitable for use with the conductors to be installed.
- J. Provide solidly bonded equipment ground bus in each enclosed safety switch, with a suitable lug for terminating each equipment grounding conductor.
- K. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
 - 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
 - a. Indoor Clean, Dry Locations: Type 1.
 - b. Outdoor Locations: Type 3R.
 - 2. Finish for Painted Steel Enclosures: Manufacturer's standard, factory applied grey unless otherwise indicated.
- L. Provide safety interlock to prevent opening the cover with the switch in the ON position with capability of overriding interlock for testing purposes.
- M. Heavy Duty Switches:
 - 1. Provide externally operable handle with means for locking in the OFF position, capable of accepting three padlocks.
 - a. Provide means for locking handle in the ON position where installed in locations that are unsecured or are accessible to the public.

2.03 GENERAL USE SNAP SWITCHES

- A. For use on stationary motors 2HP or less and 300 volts or less.
- B. General use snap switch with ampere rating not less than twice the full-load current rating of the motor or on AC circuits a general use snap switch suitable for use on AC only where motor full-load current rating is not more than 80 percent of the ampere rating of the switch.
- C. Switch handle shall be lockable in the OFF position, capable of accepting at least one padlock.
- D. Provide means for locking switch handle in the ON position where installed in locations that are unsecured or are accessible to the public.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that the ratings of the enclosed switches are consistent with the indicated requirements.
- C. Verify that mounting surfaces are ready to receive enclosed safety switches.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Provide required support and attachment in accordance with Section 26 0529.
- E. Install enclosed switches plumb.
- F. Except where indicated to be mounted adjacent to the equipment they supply, mount enclosed switches such that the highest position of the operating handle does not exceed 79 inches above the floor or working platform.
- G. Provide grounding and bonding in accordance with Section 26 0526.
- H. Provide fuses complying with Section 26 2813 for fusible switches as indicated or as required by equipment manufacturer's recommendations.

3.03 ADJUSTING

- A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

3.04 CLEANING

- A. Clean dirt and debris from switch enclosures and components according to manufacturer's instructions.
- B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

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**SECTION 26 4300
SURGE PROTECTIVE DEVICES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surge protective devices for service entrance locations.
- B. Surge protective devices for branch panelboard locations.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems.

1.03 ABBREVIATIONS AND ACRONYMS

- A. SPD: Surge Protective Device.

1.04 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- B. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.
- C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. UL 1449 - Standard for Surge Protective Devices; Current Edition, Including All Revisions.

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate size and location of overcurrent device compatible with the actual surge protective device and location to be installed. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to ordering equipment.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Include detailed component information, voltage, surge current ratings, repetitive surge current capacity, voltage protection rating (VPR) for all protection modes, maximum continuous operating voltage (MCOV), nominal discharge current (I-n), short circuit current rating (SCCR), connection means including any required external overcurrent protection, enclosure ratings, outline and support point dimensions, weight, service condition requirements, and installed features.
- C. Shop Drawings: Include wiring diagrams showing all factory and field connections with wire and circuit breaker/fuse sizes.

1.07 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.08 DELIVERY, STORAGE, AND PROTECTION

- A. Store in a clean, dry space in accordance with manufacturer's written instructions.

1.09 FIELD CONDITIONS

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.10 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Manufacturer's Warranty: Provide minimum five year warranty covering repair or replacement of surge protective devices showing evidence of failure due to defective materials or workmanship.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: Current Technology, a company of ABB; SL3 Series. For use at service entrance locations and main panel locations supplied from a service disconnect.
- B. Basis of Design: Current Technology, a company of ABB; CG Series. For branch panel locations and for equipment or systems requiring surge protection per NFPA 70.

2.02 SURGE PROTECTIVE DEVICES - GENERAL REQUIREMENTS

- A. Description: Factory-assembled surge protective devices (SPDs) for 60 Hz service; listed, classified, and labeled as suitable for the purpose intended; system voltage as indicated on the drawings.
- B. Unless otherwise indicated, provide field-installed, externally-mounted SPDs.
- C. List and label as complying with UL 1449, Type 1 when connected on line side of service disconnect overcurrent device and Type 1 or 2 when connected on load side of service disconnect overcurrent device.
- D. Protected Modes:
 - 1. Wye Systems: L-N, L-G, N-G, L-L.
 - 2. Delta Systems: L-G, L-L.
 - 3. Single Split Phase Systems: L-N, L-G, N-G, L-L.
 - 4. High Leg Delta Systems: L-N, L-G, N-G, L-L.
- E. UL 1449 Voltage Protection Ratings (VPRs):
 - 1. Equivalent to basis of design.
- F. UL 1449 Maximum Continuous Operating Voltage (MCOV): Not less than 115% of nominal system voltage.
- G. Enclosure Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
 - 1. Indoor clean, dry locations: Type 12.
 - 2. Outdoor locations: Type 3R.
- H. Provide integral disconnect switch where installed at service entrance locations.
 - 1. Shall have optional NEMA compliant safety interlocked integral disconnect switch with an externally mounted metal manual operator.
 - 2. The switch shall disconnect all ungrounded conductors from the distribution system to enable testing and maintenance without interruption to the facilities distribution system.
 - 3. The switch shall be rated for 600 VAC.
 - 4. The disconnect switch shall be capable of withstanding, without failure, the published maximum surge current magnitude without failure or damage to the switch.
 - 5. The line side of the disconnect switch shall be blocked off so that when the SPD is opened there is no direct access to the voltage present on the line side of the disconnect.
- I. Furnish and install conductors recommended by manufacturer.
- J. Where overcurrent protection device is noted or required, size overcurrent device as recommended by the manufacturer.
- K. Short Circuit Current Rating (SCCR): Not less than the available fault current at the installed location as indicated on the drawings.

2.03 SURGE PROTECTIVE DEVICES FOR SERVICE ENTRANCE LOCATIONS

- A. Basis of Design: Current Technology, a company of ABB; SL3 Series.
- B. For use at service entrance locations or main panel locations supplied from a service entrance disconnect.
- C. Voltage and phase: Refer to plans.
- D. Monitoring:
 - 1. LED/Phase, audible alarm, dry relay contacts, surge counter.
 - 2. Advanced monitoring, character display, and Modbus RTU communication.
- E. Filter.
 - 1. EMI/RFI Filtering: Provide EMI/RFI filter to attenuate electrical noise; listed as complying with UL 1283 for Type 2 SPDs (UL 1283 listing not available for Type 1 SPDs).

- a. Noise Attenuation: Not less than 40 dB at 100 kHz using MIL-STD-220 insertion loss test method.

F. Test Port.

2.04 SURGE PROTECTIVE DEVICES FOR BRANCH PANEL LOCATIONS

- A. Basis of Design: Current Technology, a company of ABB; CG Series.
- B. For branch panel locations and for equipment or systems requiring surge protection per NFPA 70.
- C. Voltage and phase: Refer to plans.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that the service voltage and configuration marked on the SPD are consistent with the service voltage and configuration at the location to be installed.
- C. Verify system grounding and bonding is in accordance with Section 26 0526, including bonding of neutral and ground for service entrance and separately derived systems where applicable. Do not energize SPD until deficiencies have been corrected.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship).
- B. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- C. Install conductors between SPD and equipment terminations as short and straight as possible, not exceeding manufacturer's recommended maximum conductor length. Breaker locations may be reasonably rearranged in order to provide leads as short and straight as possible. Twist conductors together to reduce inductance.
- D. Do not energize SPD until bonding of neutral and ground for service entrance and separately derived systems is complete in accordance with Section 26 0526 where applicable. Replace SPDs damaged by improper or missing neutral-ground bond.

3.03 CLEANING

- A. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

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**SECTION 26 5100
INTERIOR LIGHTING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Interior luminaires.
- B. Emergency lighting units.
- C. Exit signs.
- D. Ballasts and drivers.

1.02 RELATED REQUIREMENTS

- A. Section 26 0529 - Hangers and Supports for Electrical Systems.
- B. Section 26 0533.16 - Boxes for Electrical Systems.
- C. Section 26 0923 - Lighting Control Devices.

1.03 REFERENCE STANDARDS

- A. ANSI C82.11 - American National Standard for Lamp Ballasts - High Frequency Fluorescent Lamp Ballasts; 2023.
- B. IES LM-63 - Approved Method: IES Standard File Format for the Electronic Transfer of Photometric Data and Related Information; 2019.
- C. IES LM-79 - Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products; 2019.
- D. IES LM-80 - Approved Method: Measuring Maintenance of Light Output Characteristics of Solid-State Light Sources; 2021.
- E. NECA/IESNA 500 - Standard for Installing Indoor Lighting Systems; 2006.
- F. NECA/IESNA 502 - Standard for Installing Industrial Lighting Systems; 2006.
- G. NEMA LE 4 - Recessed Luminaires, Ceiling Compatibility; 2023.
- H. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- J. UL 924 - Emergency Lighting and Power Equipment; Current Edition, Including All Revisions.
- K. UL 1598 - Luminaires; Current Edition, Including All Revisions.
- L. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the installation of luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.
 - 2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
 - 3. Coordinate the placement of exit signs with furniture, equipment, signage or other potential obstructions to visibility installed under other sections or by others.
 - 4. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate dimensions and components for each fixture that is not a standard product of the manufacturer.

- C. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.
 - 1. LED Luminaires:
 - a. Include estimated useful life, calculated based on IES LM-80 test data.
 - 2. Provide electronic files of photometric data certified by a National Voluntary Laboratory Accreditation Program (NVLAP) lab or independent testing agency in IES LM-63 standard format upon request.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 LUMINAIRE TYPES

- A. Furnish products as indicated in luminaire schedule included on the drawings. Alternate light fixture data sheet shall be submitted to the Engineer for approval prior to bid. No exceptions.

2.02 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- G. Recessed Luminaires:
 - 1. Ceiling Compatibility: Comply with NEMA LE 4.
 - 2. Luminaires Recessed in Insulated Ceilings: Listed and labeled as IC-rated, suitable for direct contact with insulation and combustible materials.
 - 3. Luminaires Recessed in Sloped Ceilings: Provide suitable sloped ceiling adapters.
- H. LED Luminaires:
 - 1. Components: UL 8750 recognized or listed as applicable.
 - 2. Tested in accordance with IES LM-79 and IES LM-80.
 - 3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

2.03 EXIT SIGNS

- A. Description: Exit signs complying with NFPA 101 and applicable state and local codes, and listed and labeled as complying with UL 924.
 - 1. Number of Faces: Single- or double-face as indicated or as required for installed location.
 - 2. Directional Arrows: As indicated or as required for installed location.
- B. Self-Powered Exit Signs:
 - 1. Operation: Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes of rated emergency

- illumination, and automatically recharges battery upon restoration of normal power source.
- 2. Diagnostics: Provide power status indicator light and accessible integral test switch to manually activate emergency operation.
- 3. Provide low-voltage disconnect to prevent battery damage from deep discharge.

2.04 BALLASTS AND DRIVERS

- A. Ballasts/Drivers - General Requirements:
 - 1. Provide ballasts containing no polychlorinated biphenyls (PCBs).
 - 2. Minimum Efficiency/Efficacy: Provide ballasts complying with all current applicable federal and state ballast efficiency/efficacy standards.
- B. Dimmable LED Drivers:
 - 1. Dimming Range: Continuous dimming from 100 percent to five percent relative light output unless dimming capability to lower level is indicated, without flicker.
 - 2. Control Compatibility: Fully compatible with the dimming controls to be installed.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of luminaires provided under this section.
- B. Install products in accordance with manufacturer's instructions.
- C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) and NECA 502 (industrial lighting).
- D. Provide required support and attachment in accordance with Section 26 0529.
- E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- F. Suspended Ceiling Mounted Luminaires:
 - 1. Do not use ceiling tiles to bear weight of luminaires.
 - 2. Do not use ceiling support system to bear weight of luminaires unless ceiling support system is certified as suitable to do so.
 - 3. Secure lay-in luminaires to ceiling support channels using listed safety clips at four corners.
 - 4. See appropriate Division 9 section where suspended grid ceiling is specified for additional requirements.
- G. Recessed Luminaires:
 - 1. Install trims tight to mounting surface with no visible light leakage.
- H. Suspended Luminaires:
 - 1. Unless otherwise indicated, specified mounting heights are to bottom of luminaire.
 - 2. Install using the suspension method indicated, with support lengths and accessories as required for specified mounting height.
- I. Install accessories furnished with each luminaire.
- J. Bond products and metal accessories to branch circuit equipment grounding conductor.
- K. Install lamps in each luminaire.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.

- B. Inspect each product for damage and defects.
- C. Operate each luminaire after installation and connection to verify proper operation.
- D. Test self-powered exit signs, emergency lighting units, and fluorescent emergency power supply units to verify proper operation upon loss of normal power supply.
- E. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.

3.04 ADJUSTING

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.
- B. Exit Signs with Field-Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Architect or authority having jurisdiction.

3.05 CLEANING

- A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.06 CLOSEOUT ACTIVITIES

- A. Just prior to Substantial Completion, replace all lamps that have failed.

3.07 SCHEDULE - SEE DRAWINGS

END OF SECTION

**SECTION 26 5600
EXTERIOR LIGHTING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Exterior luminaires.
- B. Ballasts.
- C. Poles and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete: Materials and installation requirements for concrete bases for poles.
- B. Section 26 0529 - Hangers and Supports for Electrical Systems.
- C. Section 26 0533.16 - Boxes for Electrical Systems.

1.03 REFERENCE STANDARDS

- A. AASHTO LTS - Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals; 2013, with Editorial Revision (2022).
- B. ANSI C78.379 - American National Standard for Electric Lamps -- Reflector Lamps -- Classification of Beam Patterns; 2006.
- C. ANSI C82.1 - American National Standard for Lamp Ballast - Line Frequency Fluorescent Lamp Ballast; 2004.
- D. ANSI C82.4 - American National Standard for Lamp Ballasts - Ballasts for High-Intensity-Discharge and Low-Pressure Sodium Lamps; 2017, with Editorial Revision (2022).
- E. ANSI C82.11 - American National Standard for Lamp Ballasts - High Frequency Fluorescent Lamp Ballasts; 2023.
- F. IES LM-79 - Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products; 2019.
- G. IES LM-80 - Approved Method: Measuring Maintenance of Light Output Characteristics of Solid-State Light Sources; 2021.
- H. IES RP-8 - Recommended Practice: Lighting Roadway and Parking Facilities; 2022.
- I. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- J. NECA/IESNA 501 - Standard for Installing Exterior Lighting Systems; 2000 (Reaffirmed 2006).
- K. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- L. UL 1598 - Luminaires; Current Edition, Including All Revisions.
- M. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate placement of poles and associated foundations with utilities, curbs, sidewalks, trees, walls, fences, striping, etc. installed under other sections or by others. Coordinate elevation to obtain specified foundation height.
 - 2. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.
- B. Coordination: Furnish bolt templates and pole mounting accessories to installer of pole foundations.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.

- C. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, weight, effective projected area (EPA), and installed accessories; include model number nomenclature clearly marked with all proposed features.
 - 1. LED Luminaires:
 - a. Include estimated useful life, calculated based on IES LM-80 test data.
- D. Operation and Maintenance Data: Instructions for each product including information on replacement parts.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Electrical Components: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, handle, and store products according to NECA/IESNA 501 and manufacturer's written instructions.
- B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

PART 2 PRODUCTS

2.01 LUMINAIRE TYPES

- A. Furnish products as indicated in luminaire schedule included on the drawings.
- B. Any deviation from what is called out in the Light Fixture Schedule requires prior approval from the Engineer.
 - 1. Provide Cut Sheets and Photometrics.
- C. Substitutions: See Section 01 6000 - Product Requirements.

2.02 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, poles, foundations, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- G. LED Luminaires:
 - 1. Components: UL 8750 recognized or listed as applicable.
 - 2. Tested in accordance with IES LM-79 and IES LM-80.
 - 3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

2.03 BALLASTS AND DRIVERS

- A. Ballasts/Drivers - General Requirements:
 - 1. Provide ballasts containing no polychlorinated biphenyls (PCBs).
 - 2. Minimum Efficiency/Efficacy: Provide ballasts complying with all current applicable federal and state ballast efficiency/efficacy standards.
- B. Dimmable LED Drivers:

1. Dimming Range: Continuous dimming from 100 percent to five percent relative light output unless dimming capability to lower level is indicated, without flicker.
2. Control Compatibility: Fully compatible with the dimming controls to be installed.

2.04 POLES

- A. All Poles:
 1. Provide poles and associated support components suitable for the luminaire(s) and associated supports and accessories to be installed.
 2. Structural Design Criteria:
 - a. Wind Load: Include effective projected area (EPA) of luminaire(s) and associated supports and accessories to be installed.
 - b. Dead Load: Include weight of proposed luminaire(s) and associated supports and accessories.
 3. Mounting: Install on concrete foundation, height as indicated on the drawings, unless otherwise indicated.
 4. Unless otherwise indicated, provide with the following features/accessories:
 - a. Top cap.
 - b. Handhole.
 - c. Anchor bolts with leveling nuts or leveling shims.
 - d. Anchor base cover.
- B. Metal Poles: Provide ground lug, accessible from handhole.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of luminaires provided under this section.
- B. Install products in accordance with manufacturer's instructions.
- C. Install luminaires in accordance with NECA/IESNA 501.
- D. Provide required support and attachment in accordance with Section 26 0529.
- E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- F. Wall-Mounted Luminaires: Unless otherwise indicated, specified mounting heights are to center of luminaire.
- G. Pole-Mounted Luminaires:
 1. Foundation-Mounted Poles:
 - a. Provide cast-in-place concrete foundations for poles as indicated, in accordance with Section 03 3000.
 - 1) Install anchor bolts plumb per template furnished by pole manufacturer.
 - 2) Position conduits to enter pole shaft.
 - b. Install foundations plumb.
 - c. Install poles plumb, using leveling nuts as required to adjust to plumb.
 - d. Tighten anchor bolt nuts to manufacturer's recommended torque.
 - e. Install anchor base covers or anchor bolt covers as indicated.
 2. Grounding:
 - a. Bond luminaires, metal accessories, metal poles, and foundation reinforcement to branch circuit equipment grounding conductor.

- 3. Install separate service conductors, 12 AWG copper, from each luminaire down to handhole for connection to branch circuit conductors.
- H. Install accessories furnished with each luminaire.
- I. Bond products and metal accessories to branch circuit equipment grounding conductor.
- J. Install lamps in each luminaire.
- K. Bond luminaires, metal accessories, and metal poles to branch circuit equipment grounding conductor. Provide supplementary grounding electrode at each pole.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each product for damage and defects.
- C. Perform field inspection, testing, and adjusting in accordance with Section 01 4000.
- D. Operate each luminaire after installation and connection to verify proper operation.
- E. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.
- F. Measure illumination levels to verify conformance with performance requirements. Take measurements during night sky, without moon or with heavy overcast clouds effectively obscuring moon.

3.04 ADJUSTING

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.
- B. Aim and adjust luminaires to provide illumination levels and distribution indicated on Drawings.

3.05 CLEANING

- A. Clean surfaces according to NECA/IESNA 501 and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.
- B. Clean electrical parts to remove conductive and deleterious materials.
- C. Remove dirt and debris from enclosure.
- D. Clean photometric control surfaces as recommended by manufacturer.
- E. Clean finishes and touch up damage.

3.06 CLOSEOUT ACTIVITIES

3.07 PROTECTION

- A. Protect installed luminaires from subsequent construction operations.

3.08 SCHEDULE - SEE DRAWINGS

END OF SECTION

**SECTION 28 4600
FIRE DETECTION AND ALARM**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fire alarm system design and installation, including all components, wiring, and conduit.
- B. Transmitters for communication with supervising station.
- C. Circuits from protected premises to supervising station, including conduit.
- D. Maintenance of fire alarm system under contract for specified warranty period.

1.02 RELATED REQUIREMENTS

- A. Section 10 1400 - Signage: Service Room Signs for "Fire Alarm Control Panel" or "FACP".
- B. Section 21 1300 - Fire-Suppression Sprinkler Systems: Supervisory, alarm, and actuating devices installed in sprinkler system.
- C. Section 23 3300 - Air Duct Accessories: Smoke dampers monitored and controlled by fire alarm system.

1.03 REFERENCE STANDARDS

- A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.
- B. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- C. IEEE C62.41.2 - IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits; 2002 (Corrigendum 2012).
- D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- E. NFPA 72 - National Fire Alarm and Signaling Code; Most Recent Edition Cited by Referring Code or Reference Standard.
- F. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Evidence of designer qualifications.
- C. Design Documents: Submit all information required for plan review and permitting by authorities having jurisdiction, including but not limited to floor plans, riser diagrams, and description of operation:
 - 1. Copy (if any) of list of data required by authority having jurisdiction.
 - 2. NFPA 72 "Record of Completion", filled out to the extent known at the time.
 - 3. Clear and concise description of operation, with input/output matrix similar to that shown in NFPA 72 Appendix A-7-5-2.2(9), and complete listing of software required.
 - 4. System zone boundaries and interfaces to fire safety systems.
 - 5. Location of all components, circuits, and raceways; mark components with identifiers used in control unit programming.
 - 6. Circuit layouts; number, size, and type of raceways and conductors; conduit fill calculations; spare capacity calculations; notification appliance circuit voltage drop calculations.
 - 7. List of all devices on each signaling line circuit, with spare capacity indicated.
 - 8. Manufacturer's detailed data sheet for each component, including wiring diagrams, installation instructions, and circuit length limitations.
 - 9. Description of power supplies; if secondary power is by battery include calculations demonstrating adequate battery power.
 - 10. Certification by either the manufacturer of the control unit or by the manufacturer of each other component that the components are compatible with the control unit.
 - 11. Certification by the manufacturer of the control unit that the system design complies with Contract Documents.

12. Certification by Contractor that the system design complies with Contract Documents.
- D. Evidence of installer qualifications.
- E. Evidence of instructor qualifications; training lesson plan outline.
- F. Inspection and Test Reports:
 1. Submit inspection and test plan prior to closeout demonstration.
 2. Submit documentation of satisfactory inspections and tests.
 3. Submit NFPA 72 "Inspection and Test Form," filled out.
- G. Operating and Maintenance Data: See Section 01 7800 for add; have one set available during closeout demonstration:
 1. Complete set of specified design documents, as approved by authority having jurisdiction.
 2. Additional printed set of project record documents and closeout documents, bound or filed in same manuals.
 3. Contact information for firm that will be providing contract maintenance and trouble call-back service.
 4. List of recommended spare parts, tools, and instruments for testing.
 5. Replacement parts list with current prices, and source of supply.
 6. Detailed troubleshooting guide and large scale input/output matrix.
 7. Preventive maintenance, inspection, and testing schedule complying with NFPA 72; provide printed copy and computer format acceptable to Owner.
 8. Detailed but easy to read explanation of procedures to be taken by non-technical administrative personnel in the event of system trouble, when routine testing is being conducted, for fire drills, and when entering into contracts for remodeling.
- H. Project Record Documents: See Section 01 7800 for add:
 1. Complete set of floor plans showing actual installed locations of components, conduit, and zones.
 2. "As installed" wiring and schematic diagrams, with final terminal identifications.
 3. "As programmed" operating sequences, including control events by device, updated input/output chart, and voice messages by event.
- I. Closeout Documents:
 1. Certification by manufacturer that the system has been installed in compliance with manufacturer's installation requirements, is complete, and is in satisfactory operating condition.
 2. NFPA 72 "Record of Completion", filled out completely and signed by installer and authorized representative of authority having jurisdiction.

1.05 QUALITY ASSURANCE

- A. Designer Qualifications: NICET Level III or IV (3 or 4) certified fire alarm technician or registered fire protection engineer, employed by fire alarm control panel manufacturer, Contractor, or installer, with experience designing fire alarm systems in the jurisdictional area of the authorities having jurisdiction.
- B. Installer Qualifications: Firm with minimum 3 years documented experience installing fire alarm systems of the specified type and providing contract maintenance service as a regular part of their business.
 1. Authorized representative of control unit manufacturer; submit manufacturer's certification that installer is authorized; include name and title of manufacturer's representative making certification.
 2. Installer Personnel: At least 2 years of experience installing fire alarm systems.
 3. Supervisor: NICET level III or IV (3 or 4) certified fire alarm technician; furnish name and address.
- C. Instructor Qualifications: Experienced in technical instruction, understanding fire alarm theory, and able to provide the required training; trained by fire alarm control unit manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fire Alarm Control Units and Accessories:
 1. Honeywell Security & Fire Solutions/Notifier; _____: www.notifier.com/#sle.

2. Honeywell Security & Fire Solutions/Silent Knight; _____: www.silentknight.com/#sle.
 3. Siemens Building Technologies, Inc; _____: www.usa.siemens.com/#sle.
 4. Simplex, a brand of Johnson Controls; _____: www.simplex-fire.com/#sle.
 5. Provide control units made by the same manufacturer.
- B. Initiating Devices and Notification Appliances:
1. Provide initiating devices and notification appliances made by the same manufacturer, where possible.
- C. Substitutions: See Section 01 6000 - Product Requirements.
1. For other acceptable manufacturers of control units specified, submit product data showing equivalent features and compliance with Contract Documents.
 2. For substitution of products by manufacturers not listed, submit product data showing features and certification by Contractor that the design will comply with Contract Documents.

2.02 FIRE ALARM SYSTEM

- A. Fire Alarm System: Provide a new automatic fire detection and alarm system:
1. Provide all components necessary, regardless of whether shown in Contract Documents or not.
 2. Protected Premises: Entire building shown on drawings.
 3. Comply with the following; where requirements conflict, order of precedence of requirements is as listed:
 - a. ADA Standards.
 - b. The requirements of the State Fire Marshal.
 - c. The requirements of the local authority having jurisdiction.
 - d. Applicable local codes.
 - e. Contract Documents (drawings and specifications).
 - f. NFPA 101.
 - g. NFPA 72; where the word "should" is used consider that provision mandatory; where conflicts between requirements require deviation from NFPA 72, identify deviations clearly on design documents.
 4. Evacuation Alarm: Multiple smoke zones; allow for evacuation notification of any individual zone or combination of zones, in addition to general evacuation of entire premises.
 5. Voice Notification: Provide emergency voice/alarm communications with multichannel capability; digital.
 6. General Evacuation Zones: Each smoke zone is considered a general evacuation zone unless otherwise indicated, with alarm notification in all zones on the same floor, on the floor above, and the floor below.
 7. Program notification zones and voice messages as directed by Owner.
 8. Fire Command Center: Location indicated on drawings.
 9. Fire Alarm Control Unit: New, located at fire command center.
- B. Supervising Stations and Fire Department Connections:
1. Public Fire Department Notification: By remote supervising station.
 2. Remote Supervising Station: UL-listed central station under contract to facility.
 3. Means of Transmission to Remote Supervising Station: Digital alarm communicator transmitter (DACT), Cellular.
- C. Circuits:
1. Initiating Device Circuits (IDC): Class B, Style A.
 2. Signaling Line Circuits (SLC) Within Single Building: Class B, Style 0.5.
 3. Notification Appliance Circuits (NAC): Class B, Style W.
- D. Power Sources:
1. Primary: Dedicated branch circuits of the facility power distribution system.
 2. Secondary: Storage batteries.
 3. Capacity: Sufficient to operate entire system for period specified by NFPA 72.
 4. Each Computer System: Provide uninterruptible power supply (UPS).

2.03 FIRE SAFETY SYSTEMS INTERFACES

- A. Supervision: Provide supervisory signals in accordance with NFPA 72 for the following:
 - 1. Sprinkler water control valves.
- B. Alarm: Provide alarm initiation in accordance with NFPA 72 for the following:
 - 1. Sprinkler water flow.
 - 2. Duct smoke detectors.
- C. HVAC:
 - 1. Duct Smoke Detectors: Close dampers indicated; shut down air handlers indicated.

2.04 COMPONENTS

- A. General:
 - 1. Provide flush mounted units where installed in finish areas; in unfinished areas, surface mounted unit are acceptable.
 - 2. Provide legible, permanent labels for each control device, using identification used in operation and maintenance data.
- B. Fire Alarm Control Units: Analog, addressable type; listed, classified, and labeled as suitable for the purpose intended.
- C. Master Control Unit: _____.
- D. Remote Annunciators: _____.
- E. Initiating Devices:
 - 1. Addressable Systems:
 - a. Addressable Devices: Individually identifiable by addressable fire alarm control unit.
 - b. Provide suitable addressable interface modules as indicated or as required for connection to conventional (non-addressable) devices and other components that provide a dry closure output.
- F. Notification Appliances:
- G. Circuit Conductors:
 - 1. All cabling to be plenum rated.
 - 2. Copper or optical fiber; provide 200 feet extra; color code and label.
- H. Surge Protection: In accordance with IEEE C62.41.2 category B combination waveform and NFPA 70; except for optical fiber conductors.
- I. Locks and Keys: Deliver keys to Owner.
- J. Instruction Charts: Printed instruction chart for operators, showing steps to be taken when a signal is received (normal, alarm, supervisory, and trouble); easily readable from normal operator's station.
 - 1. Frame: Stainless steel or aluminum with polycarbonate or glass cover.
 - 2. Provide one for each control unit where operations are to be performed.
 - 3. Obtain approval of Owner prior to mounting; mount in location acceptable to Owner.
 - 4. Provide extra copy with operation and maintenance data submittal.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with applicable codes, NFPA 72, NFPA 70, and Contract Documents.
- B. All wiring, conduit, boxes, and supports where installed in finished areas.
 - 1. All wiring installed above ceilings to be free aired.
 - 2. Exposed ceilings, wiring to be installed in conduit.
- C. All wiring, conduit, boxes, and supports where installed in unfinished areas
 - 1. All wiring installed above ceilings to be free aired.
- D. See section 26 0533.13 Conduit for Electrical Systems.
- E. Obtain Owner's approval of locations of devices, before installation.
- F. Install instruction cards and labels.

3.02 INSPECTION AND TESTING FOR COMPLETION

- A. Notify Owner 7 days prior to beginning completion inspections and tests.

- B. Notify authorities having jurisdiction and comply with their requirements for scheduling inspections and tests and for observation by their personnel.
- C. Provide the services of the installer's supervisor or person with equivalent qualifications to supervise inspection and testing, correction, and adjustments.
- D. Prepare for testing by ensuring that all work is complete and correct; perform preliminary tests as required.
- E. Provide all tools, software, and supplies required to accomplish inspection and testing.
- F. Perform inspection and testing in accordance with NFPA 72 and requirements of local authorities; document each inspection and test.
- G. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.
- H. Diagnostic Period: After successful completion of inspections and tests, Operate system in normal mode for at least 14 days without any system or equipment malfunctions.
 - 1. Record all system operations and malfunctions.
 - 2. If a malfunction occurs, start diagnostic period over after correction of malfunction.
 - 3. Owner will provide attendant operator personnel during diagnostic period; schedule training to allow Owner personnel to perform normal duties.
 - 4. At end of successful diagnostic period, fill out and submit NFPA 72 "Inspection and Testing Form."

3.03 OWNER PERSONNEL INSTRUCTION

- A. Provide the following instruction to designated Owner personnel:
 - 1. Classroom Instruction: Owner furnished classroom, on-site or at other local facility.
- B. Administrative: One-hour session(s) covering issues necessary for non-technical administrative staff; classroom:
 - 1. Initial Training: 1 session pre-closeout.
- C. Furnish the services of instructors and teaching aids; have copies of operation and maintenance data available during instruction.

3.04 CLOSEOUT

- A. Closeout Demonstration: Demonstrate proper operation of all functions to Owner.
 - 1. Be prepared to conduct any of the required tests.
 - 2. Have at least one copy of operation and maintenance data, preliminary copy of project record drawings, input/output matrix, and operator instruction chart(s) available during demonstration.
 - 3. Have authorized technical representative of control unit manufacturer present during demonstration.
 - 4. Demonstration may be combined with inspection and testing required by authority having jurisdiction; notify authority having jurisdiction in time to schedule demonstration.
 - 5. Repeat demonstration until successful.

END OF SECTION

SECTION 32 3115

ARCHITECTURAL LOUVERED ALUMINUM POSTS & VINYL INFILL COMPONENT SCREENING AND GATES

The specifier will need to edit this product specification for a specific project to reflect the options and applications being used. This guide section has been written to show items to be determined reflected in italic red. PalmSHIELD does not warrant that these specifications are complete and applicable to all applications. It is the specifier's responsibility to assure that use of PalmSHIELD is an appropriate fit for the site and conditions.

PART 1 – GENERAL

1.1. DESCRIPTION

This section describes the following fence system:

Louvered panels fabricated with extruded aluminum planks and structural aluminum profiles including extruded aluminum fence posts and aluminum panel gates. Louvered panel security screening and gates shall be furnished and installed as shown on the plans and specified herein, overall height of semi - private screening shall be (*state height here*) tall.

1.2. REQUIREMENTS

- A. Furnish materials, labor, expertise and equipment necessary to complete all work specified in this section and as shown on the drawings.
- B. Structural Performance: Provide product and installation capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated.
 - i. Uniform pressure of 30 lbf/sq. ft. acting inward or outward.
 - ii. Thermal Movements resulting from a temperature change (range) of 120 degrees Fahrenheit ambient and 180 degrees Fahrenheit material surfaces.

1.3. SUBMITTALS

- A. Shop drawings and manufacturer's literature: Provide specifications and construction detail drawings to substantiate quality of materials and provide details of fabrication and installation.
- B. Submittals shall be in accordance with standard construction practices to include complete detailed layout of all panels, posts, gates. Submittals shall include plan

layout, elevations and section views of panels, posts and gates.

- C. Certificate: manufacturer's certification that materials meet specification requirements.

1.4. REFERENCES

- A. ASTM B 209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- B. ASTM B 221 – Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
- C. ASTM D3363 – Standard Test Method for Film Hardness by Pencil Test.
- D. ASTM D2794 – Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation.
- E. ASTM B117 – Standard Practice for Operating Salt Spray Apparatus.
- F. ASTM D822 – Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
- G. AWS D1.2 Structural Welding Code – Aluminum. ASTM D-7032-04: Standard Specification for Establishing Performance Ratings
- H. ASTM D256 Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
- I. ASTM D638 Standard Test Method for Tensile Properties of Plastics.
- J. ASTM D648 Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.
- K. ASTM D792 Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.
- L. ASTM D790 Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- M. ASTM D4216 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) and Related PVC and Chlorinated Poly (Vinyl Chloride) (CPVC) Building Products Compounds.

- N. ASTM F964 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Exterior Profiles Used for Fencing.

1.5. QUALITY ASSURANCE

- A. Installation of fence and materials shall conform to the requirements of the fence manufacturer.
- B. The fence shall be warranted from any defects in materials and workmanship for a period as specified in the relevant section of the contract documents.

PART 2 – PRODUCTS

2.1. MATERIALS

- A. Semi - private panel security fence:
 - 1. Approved Architectural Semi private Screening System, Manufacturer:
 - a. PalmSHIELD Manufacturing
 - b. Mercury Series
 - 2. Material Descriptions:
 - a. Extruded Aluminum: ASTM B 221, Alloy 6063 – Temper T-6.
 - b. Sheet Aluminum: ASTM B211, Alloy 6063 – Temper T6.
 - c. Powder Coating Material Hardness: ASTM 3363 2H.
 - 2. Panel Description:
 - a. Panel Height: *(state height here)*
 - b. Panel Width: Not to exceed 60” o.c.
 - c. Semi - private system consisting of horizontal supported by extruded aluminum fence posts.
 - d. Infill. 7/8” x 6” (22.2 x 152 mm) polyvinyl chloride tubular coextrusion plank. PlyGem Woodland Select Series tubular planks per manufacturers standard colors.

- e. Planks to be held into posts with spring clips provided.
- f. Planks be installed at a 20 degree angle with a 1/4" overlap to create louvered pattern.

3. Fence Posts:

- a. Panel posts shall be 4" square x 1/8" inch minimum extruded tubular aluminum sections with solid aluminum caps. Length as specified on the contract drawings.
- b. Posts shall be routed to receive planks.
- c. On center post spacing shall be as specified by manufacturer but not to exceed 60" o.c.
- d. All fence posts to be plated with 8" x 8" x 5/8" aluminum plates with four 3/4" hole for anchors. OR extended 24" into footing as shown.

4. Fittings and accessories: All fittings and accessories shall be stainless steel and sized as specified by the fence manufacturer. Fence panels to be attached to posts with 1/4" x 1" stainless steel screws. Panels and posts are predrilled to support level installation.

5. Anchor Bolts: Anchor bolts shall be *(state means of anchoring posts to adjoining surface)* and adequate to support loads based on screening height, exposures and loading.

6. Gates: Swing to exterior of enclosure, size as shown on contract drawings.

- a. Panel spacing, style and appearance shall be identical to fence panels.
- b. Gate hinges to be Gorilla barrel hinge with 3/4" rod, ball bearing, and grease zert. Hinge plate to be 1/2" thick plates offset to create a 5/8" gap. Standard hardware as required by the gate manufacturer for complete functional operation. Hinges to be bolted to gate frame and field welded to steel gate posts.
- c. Gate latch to be internal lock with exterior grab handles. Lock may be keyed and rekeyed. Lock is accessible from both sides of gate.
- d. Welded frame, 4" x 4" x 1/8" vertical uprights and 2" x 2" x 1/8"

horizontal extruded tubular T-6063 aluminum with infill to match fence infill.

- e. Drop rods to be 1" schedule 40 pipe and through bolted to gate frame.
 - f. Hardware: Size and type as determined by the manufacturer. Provide two hinges per leaf.
 - 1. Provide 1 inch diameter center cane bolt assembly and strike, each door.
 - g. Gate shall have welded frame fabricated from extruded aluminum tubing with aluminum panels to match fencing material. Frame configurations shall be as indicated on the contract drawings.
 - h. Gate posts shall be as determined by manufacture. Gate posts to be specified to support gates.
6. Factory Finish: Aluminum fence panels, posts and gates shall receive polyester powder coating.
- a. Polyester powder coating: Electrostatically applied colored polyester powder coating heat cured to chemically bond finish to metal substrate.
 - b. Color shall be as selected by Owner.
 - c. Minimum hardness measured in accordance with ASTM D3363 2H.
 - d. Direct impact resistance tested in accordance with ASTM D2794. Withstand 160 inch-pounds.
 - e. Salt spray resistance tested in accordance with ASTM B117: No undercutting, rusting, or blistering after 500 hours in 5 percent salt spray at 95° F and 95% relative humidity after 1,000 hours, less than 3/16 inches undercutting.
 - f. Weatherability tested in accordance with ASTM D822: No film failure and 88 percent gloss retention after 1 year exposure in South Florida with test panels tilted 45°.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Verify that final grading in fence location is completed and without irregularities which will interfere with fence installation. PalmShield is designed to be installed on a level surface. Variations in height, slopes, stairs steeping shall be shown on contract drawings and on submittal drawings.
- B. Field verify all fence dimensions and layout prior to commencing installation.
- C. Do not commence work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install fence in accordance with manufacturer's installation instructions.
- B. Install fence plumb and level. Posts are plated and mounted to top of surface.
- C. Do not install bent, bowed or otherwise damaged panels. Remove damaged components from site and replace.
- D. Secure fence panels with stainless with ¼" x 1" stainless steel screws to fence posts.
All posts and panels will be predrilled to support level installation.
- E. Gates
 - a. Install gates and adjust hardware for smooth operation

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE, IOWA

ISG PROJECT # 23-29721



PROJECT GENERAL NOTES	
A.	ALL WORK SHALL CONFORM TO THE CONTRACT DOCUMENTS, WHICH INCLUDE, BUT ARE NOT LIMITED TO, THE OWNER - CONTRACTOR AGREEMENT, THE PROJECT MANUAL (WHICH INCLUDES GENERAL AND SUPPLEMENTARY CONDITIONS AND SPECIFICATIONS), DRAWINGS OF ALL DISCIPLINES AND ALL ADDENDA, MODIFICATIONS AND CLARIFICATIONS ISSUED BY THE ARCHITECT / ENGINEER.
B.	CONTRACT DOCUMENTS SHALL BE ISSUED TO ALL SUBCONTRACTORS BY THE GENERAL CONTRACTOR IN COMPLETE SETS IN ORDER TO ACHIEVE THE FULL EXTENT AND COMPLETE COORDINATION OF ALL WORK. CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND CORRELATING QUANTITIES AND DIMENSIONS.
C.	WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
D.	FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT / ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
E.	DETAILS SHOWN ARE INTENDED TO BE INDICATIVE OF THE PROFILES AND TYPE OF DETAILING REQUIRED THROUGHOUT THE WORK. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO DETAILS SHOWN, WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, NOTIFY ARCHITECT / ENGINEER BEFORE PROCEEDING WITH THE WORK.
F.	ALL MANUFACTURED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED AND CONDITIONED ACCORDINGS TO MANUFACTURERS' INSTRUCTIONS. IN CASE OF DISCREPANCIES BETWEEN MANUFACTURERS' INSTRUCTIONS AND THE CONTRACT DOCUMENTS, NOTIFY ARCHITECT / ENGINEER BEFORE PROCEEDING WITH THE WORK.
G.	LARGE-SCALE, MORE SPECIFIC DETAILS TAKE PRECEDENCE OVER SMALLER-SCALE, LESS SPECIFIC DETAILS AND INFORMATION. MORE STRINGENT REQUIREMENTS FOR CODE, PRODUCTS AND INSTALLATION TAKE PRECEDENCE OVER LESS STRINGENT REQUIREMENTS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
H.	PROVIDE CONTINUOUS SEALANT AROUND ALL MATERIALS AT ALL INTERIOR AND EXTERIOR WALL PENETRATIONS. REFER TO SPECIFICATIONS FOR APPROPRIATE SEALANT.
I.	ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
J.	SEAL ALL OPENINGS IN WALLS, FLOORS, CEILINGS, AND ROOFS, AROUND DUCTS, PIPES, VENTS, TRAPS, CONDUIT AND ALL OTHER PENETRATIONS WITH FIRE STOPPING AS SPECIFIED AND REQUIRED BY CODES. IF FIRE STOPPING IS NOT REQUIRED AT PENETRATIONS PER CODE, SEAL WITH CONTINUOUS SEALANT.
K.	PROVIDE TEMPORARY WALLS, ENCLOSURES, DUST SHIELDS AND WALK-OFF MATS AS REQUIRED TO SEPARATE DEMOLITION AND CONSTRUCTION FROM EXISTING BUILDING.
L.	PROVIDE BRACING AND SHORING AS REQUIRED TO PROTECT EXISTING STRUCTURE TO REMAIN. PROVIDE SECURE AND WEATHERPROOF ENCLOSURE OF TEMPORARY OPENINGS IN EXTERIOR WALLS. PROTECT ALL BUILDING COMPONENTS FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION.
M.	RESTORE ALL EXISTING AREAS AFFECTED BY DEMOLITION AND RELATED NEW CONSTRUCTION TO THEIR ORIGINAL CONDITION, INCLUDING BUT NOT LIMITED TO WALLS, FLOORS, AND CEILINGS AND THEIR ASSOCIATED FINISHES.
N.	PROVIDE SOLID WALL BACKING WITH METAL OR FIRE-RETARDANT WOOD BLOCKING BEHIND DOOR HARDWARE SUCH AS WALL STOPS, BUMPERS, HOLD OPENS, ETC. AND AT ALL ITEMS REQUIRING FASTENING THROUGH GYP BD. TO BLOCKING.
O.	RENDERED IMAGES MAY NOT BE AN ACCURATE REPRESENTATION OF BUILDING CONDITIONS. REFER TO PLANS AND DETAILS CONTAINED WITHIN FOR SCOPE OF WORK.

SHEET INDEX	
SHEET #	SHEET TITLE
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G1-21	CODE DATA AND CODE DATA PLANS
G1-22	CODE DATA AND CODE DATA PLAN - ENLARGED
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C0-20	SITE DETAILS
C0-21	SITE DETAILS
C1-10	SWPPP NARRATIVE
C1-20	SWPPP DETAILS
C1-30	PRE-CONSTRUCTION SWPPP
C1-40	SWPPP
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C3-11	FIRE ACCESS ROUTE
C3-20	UTILITY PLAN
C3-30	HYDRANT COVERAGE PLAN
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S1-32	ENLARGED SLAB PLANS
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E3-11	ENLARGED ELECTRICAL PLANS
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E4-12	ELECTRICAL DETAILS
E5-11	ELECTRICAL SCHEDULES
E5-12	ELECTRICAL SCHEDULES

SEAL

DAVID F. SELINSKY
06024
IOWA

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND RESPONSIBLE CHARGE. I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF IOWA.

06/13/2024
DATE

David F. Selinsky
PRINTED SIGNATURE

06024
LICENSE NUMBER

06/30/2025
LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL: G1-10, G1-11, G1-21, G1-22, A1-01, A1-21, A1-31, A1-41, A3-11, A3-21, A3-22, A3-31, A3-41, A4-11, A5-11, A5-12, A7-11

SEAL

JOSEPH M. HAHN
P26928
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

06/13/2024
DATE

Joseph M. Hahn
PRINTED SIGNATURE

P26928
LICENSE NUMBER

12/31/2024
LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL: E2-00, E2-11, E3-11, E4-11, E4-12, E5-11, E5-12

SEAL

MAX ELLER
P27626
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

06/13/2024
DATE

Max Eller
PRINTED SIGNATURE

P27626
LICENSE NUMBER

12/31/2025
LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL: C0-10, C0-20, C0-21, C1-10, C1-20, C1-30, C1-40, C2-10, C3-10, C3-11, C3-20, C3-30, C4-10, C5-10

SEAL

BRETT WALKER
P28162
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

06/13/2024
DATE

Brett Walker
PRINTED SIGNATURE

P28162
LICENSE NUMBER

12/31/2024
LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL: S1-00, S1-01, S1-11, S1-12, S1-31, S1-32, S2-11, S2-12, S2-13, S3-21, S3-22

SEAL

ADAM W. PULS
P23206
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

06/13/2024
DATE

Adam W. Puls
PRINTED SIGNATURE

P23206
LICENSE NUMBER

12/31/2025
LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL: PFM0-01, P2-10, P2-12, P3-11, P5-11, P6-11, M2-11, FP2-11

PROJECT INDEX:

OWNER:	PROJECT ADDRESS:	MANAGING OFFICE:
CITY OF MUSCATINE RICHARD KLIMES 215 SYCAMORE STREET MUSCATINE, IOWA 52761 (563)-263-0241	MUSCATINE INDOOR SPORTS COMPLEX MUSCATINE, IOWA 52761	ISG DES MOINES OFFICE 217 EAST 2ND STREET SUITE 110 DES MOINES, IOWA 50309 PHONE: 515.243.9143 PROJECT MANAGER: LAUREN CORROW EMAIL: LAUREN.GRAY@ISGINC.COM

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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	TNT
DESIGNED BY	DFS
REVIEWED BY	DFS
ORIGINAL ISSUE DATE	06/13/2024

CLIENT PROJECT NO.

TITLE

TITLE SHEET, SHEET INDEX, PROJECT GENERAL NOTES

SHEET

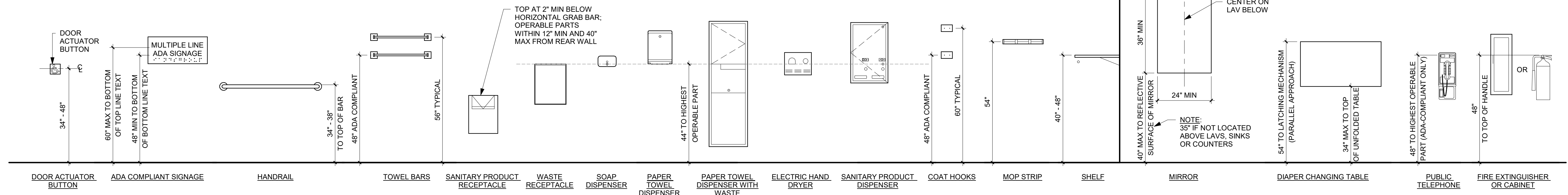
G1-10

REFERENCE SCALE
0 1/4" 1/2" 1" 2"

6/13/2024 8:31:56 PM

Page 665 of 883

FIXTURE CLEARANCES			
	DESCRIPTION	A ACCESSIBLE	S STANDARD
"WCC	WATER CLOSET CENTER LINE	16" - 18"	16" - 18"
"WCS	WATER CLOSET SEAT HEIGHT	17" - 19"	17" - 19"
"TPH	TOILET TISSUE DISPENSER HEIGHT	18" - 48"	18" - 48"
"GBH	GRAB BAR HEIGHT	33" - 36"	NA
"VBH	VERTICAL GRAB BAR HEIGHT	39" - 41"	NA
"VBC	VERTICAL GRAB BAR CENTERLINE	39" - 41"	NA
"URH	URINAL RIM HEIGHT	17"	24"
"TSH	TOP OF SINK OR COUNTER HEIGHT	34"	34"
"KCH	KNEE CLEARANCE HEIGHT	27"	27"
"HCH	HIGH DRINKING FOUNTAIN SPOUT HEIGHT	38" - 43"	38" - 43"
"LDH	LOW DRINKING FOUNTAIN SPOUT HEIGHT	36"	36"
"DSH	DRINKING FOUNTAIN SPOUT DEPTH	5"	5"

[illegible]

	BATT INSULATION
	BRICK
	CONCRETE (SECTION)
	CMU (SECTION)
	EARTH
	GRANULAR FILL
	GRAVEL
	GYPSUM BOARD OR SHEATHING
	RIGID INSULATION
	PLYWOOD
	SAND
	STEEL
	SYNTHETIC STUCCO
	WOOD
	SPRAY IN PLACE INSULATION



PROJECT

**MUSCATINE
INDOOR SPORTS
COMPLEX**

MUSCATINE IOWA

[illegible]

PROJECT NO. 23-29721

FILE NAME	29721 Arch R22
-----------	----------------

DRAWN BY	INT
DESIGNED BY	DES

REVIEWED BY	DFS
-------------	-----

ORIGINAL ISSUE DATE 06/13/2024

CLIENT PROJECT NO.

TITLE

MOUNTING HEIGHTS, ABBREVIATIONS AND SYMBOLS

SHEE

G1-11

CODE SUMMARY KEY			
CONSTRUCTION TYPE	II-B	A-4	OCCUPANCY GROUP
SPRINKLED SP OR NON-SPRINKLED NS	NS	Y	ALARM SYSTEM Y OR NO ALARM SYSTEM N
SPACE SQUARE FOOTAGE	171,776 SF		OCCUPANTS
OCCUPANT LOAD FACTOR	50	229"	EXIT WIDTH PROVIDED (INCHES)
EXIT WIDTH REQUIRED (INCHES)	59.8	544	
NOTES	NOTES: NUMBER OF PEOPLE		

CODE DATA PLAN KEY	
	EXIT SIGN
	FIRE EXTINGUISHER
	FIRE DEPARTMENT CONNECTION
	KNOX BOX
	EXIT WIDTH IN INCHES / EXIT CAPACITY NUMBER OF OCCUPANTS EXITING
	EXIT LIGHT
	BUILDING ADDRESS
	45' - 0" COMMON PATH OF TRAVEL OR 194' - 4" MAXIMUM EXIT TRAVEL DISTANCE
	30' x 48" CLEAR SPACE
	5' - 0" DIA. TURNING RADIUS
	HYDRANT
	STAND PIPE
	ACCESSIBLE ROUTE
	PANIC DEVICE HARDWARE
	FIRE ALARM PANEL
	MANUAL PULL
	HORN-STROBE
	HI-LO DRINKING FOUNTAIN



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PROJECT

MUSCATINE
INDOOR SPORTS
COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

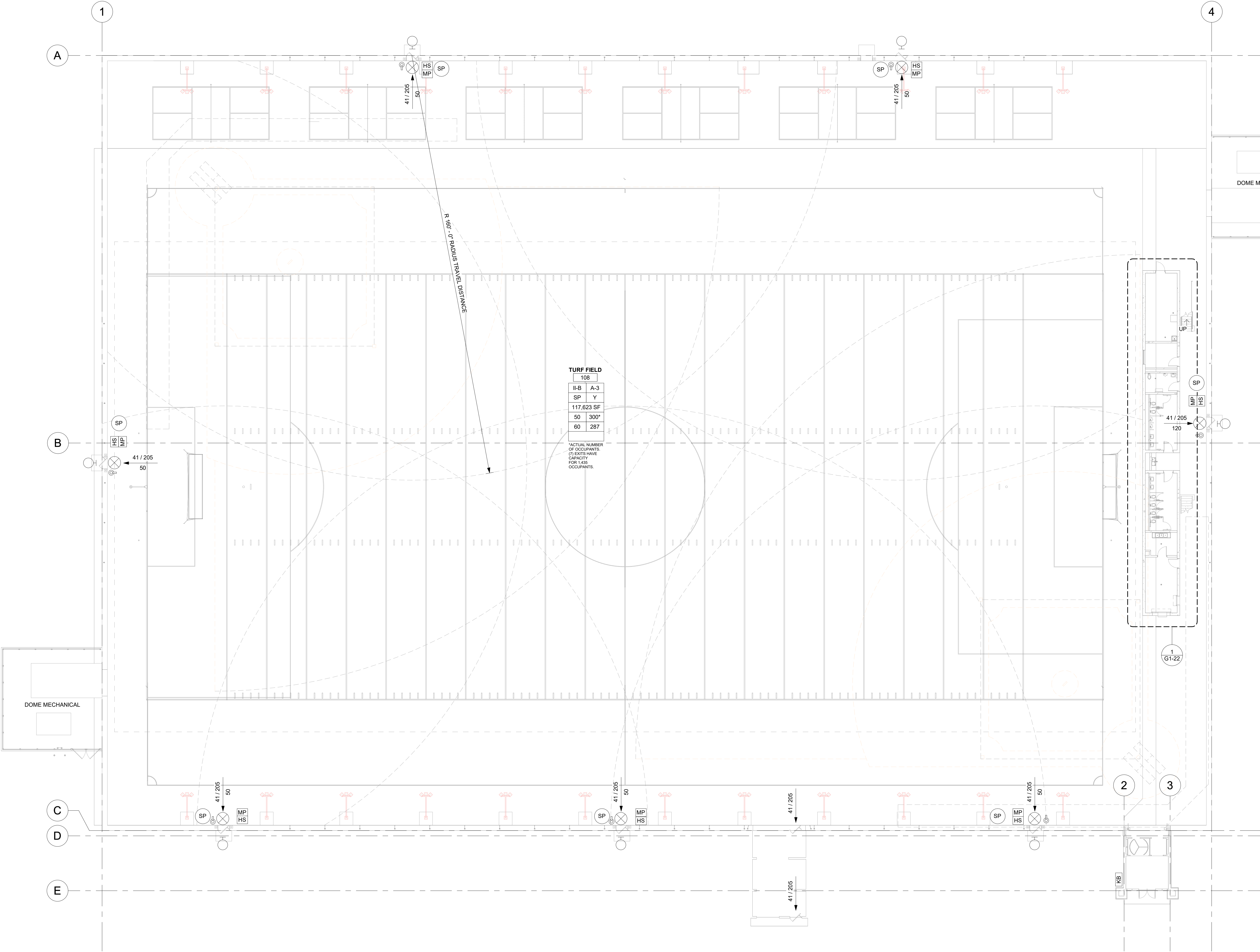
PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	TNT
DESIGNED BY	DFS
REVIEWED BY	DFS
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	

TITLE

CODE DATA AND
CODE DATA
PLANS

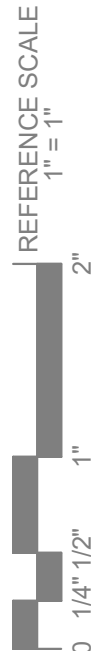
SHEET

G1-21



1 FIRST FLOOR CODE PLAN
1/16" = 1'-0"

REFERENCE SCALE
1" = 1'-0"
0 1/4" 1/2" 1" 2"





LOCATION MAP

CIVIL PLAN ABBREVIATIONS:

AC	ACRE	CF	CUBIC FOOT	C&G	CURB AND GUTTER	FDC	FIRE DEPARTMENT CONNECTION	GFE	GARAGE FLOOR ELEVATION	I	INVERT	LSD	LOWEST STRUCTURAL OPENING	OH	OVERHEAD	RAD	RADIUS	STA	STATION	VCP	VITRIFIED CLAY PIPE
ADA	AMERICANS WITH DISABILITIES ACT	CI	CAST IRON	DEM	DEMOLITION	FEN	FOUNDATION	GL	GUTTER LINE	ID	INSIDE DIAMETER	MAX	MAXIMUM	OND	OVERHEAD DOOR	RCP	REINFORCED CONCRETE PIPE	SY	SQUARE YARD	W/O	WITHOUT
ADD	ADDENDUM	CIP	CAST IN PLACE CONCRETE	DIA	DIAMETER	FES	FLARED END SECTION	IN	INCH	IN	INCH	MB	MAIL BOX	OZ	OUNCE	RD	ROOF DRAIN	T/C	TOP OF CURB	W/	WITH
AFB	ABOVE FINISHED FLOOR	CIPC	CONTROL JOINT	DIM	DIMENSION	FFE	FINISHED FLOOR ELEVATION	GV	GATE VALVE	INV	INVERT	MECH	MECHANICAL	PE	PEDESTAL, PEDESTRIAN	REB	REINFORCING BAR	TEL	TELEPHONE	YD	YARD
AGG	AGGREGATE	CL	CONTROL JOINT	DS	DOWNSPOUT	HPM	FEET PER MINUTE	HOPE	HIGH DENSITY POLYETHYLENE	IP	IRON PIPE	MH	MANHOLE	PERF	PERFORATED	REB	REMOVE	TEMP	TEMPORARY	YR	YEAR
APPROX	APPROXIMATE	CL	CENTERLINE	EA	EACH	FPM	FEET PER SECOND	HDPE	HEAVY DUTY	IR	IRON PIPE	MIN	MINIMUM	PL	PROPERTY LINE	ROW	RIGHT OF WAY	THRU	THROUGH		
ARCH	ARCHITECT, ARCHITECTURAL	CMP	CORRUGATED METAL PIPE	ELEC	ELECTRICAL	FT	FOOT, FEET	HH	HANDHOLE	J-B	JOINT	MSC	MISCELLANEOUS	PP	POLYPROPYLENE	TWH	TRANSFORMER	TW	TOP W/UT OF FIRE HYDRANT		
BFE	BASEMENT FLOOR ELEVATION	CO	CLEANOUT	FTG	ELEVATION	FT	FOOTING	HORIZ	HORIZONTAL	JT	JOINT	NO	NUMBER	PSI	POUNDS PER SQUARE INCH	R/W	RIGHT OF WAY	TRANS	TRANSFORMER		
BIT	BITUMINOUS	CONC	CONCRETE	EQ	EMERGENCY OVERFLOW	GA	GAUGE	HR	HOUR	LF	LINEAR FEET	NTS	NOT TO SCALE	PVC	POLYVINYL CHLORIDE	SCH	SCHEDULE	TV	TELEVISION		
CAD	COMPUTER-AIDED DESIGN	CONC	CONCRETE	EQ	EQUAL	GAL	GALLON	HWL	HIGH WATER LEVEL	LN	LINEAR	NWL	NORMAL WATER LEVEL	PVMT	PAVEMENT	SF	SQUARE FOOT	T/W	TOP OF WALL		
CB	CATCH BASIN	CONT	CONTINUOUS	EN	EXISTING	GALV	GALVANIZED	HWY	HIGHWAY	UN	UNDER	OC	ON CENTER	QTY	QUANTITY	SPC	SPECIFICATION	TV	TELEVISION		
CFS	CUBIC FEET PER SECOND	CY	CUBIC YARD	FIG	FORM GRADE	GC	GENERAL CONTRACTOR	HYD	HYDRANT	LS	LUMP SUM	OCEW	ON CENTER EACH WAY	R	RIM	SQ	SQUARE	UT	UTILITY, UNDERGROUND TELEPHONE		

PROJECT GENERAL NOTES

- ALL WORK SHALL CONFORM TO THE CONTRACT DOCUMENTS, WHICH INCLUDE, BUT ARE NOT LIMITED TO, THE OWNER - CONTRACTOR AGREEMENT, THE PROJECT MANUAL (WHICH INCLUDES GENERAL SUPPLEMENTARY CONDITIONS AND SPECIFICATIONS), DRAWINGS OF ALL DISCIPLINES AND ALL ADDENDA, MODIFICATIONS, AND CLARIFICATIONS ISSUED BY ARCHITECT/ENGINEER.
- CONTRACT DOCUMENTS SHALL BE ISSUED TO ALL SUBCONTRACTORS BY THE GENERAL CONTRACTOR IN COMPLETE SETS IN ORDER TO ACHIEVE THE FULL EXTENT AND COMPLETE COORDINATION OF ALL WORK.
- WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
- FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
- DETAILS SHOWN ARE INTENDED TO BE INDICATIVE OF THE PROFILES AND TYPE OF DETAILING REQUIRED THROUGHOUT THE WORK. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO DETAILS SHOWN, WHERE SPECIFIC DIMENSIONS, DETAILS, OR DESIGN INTENT CANNOT BE DETERMINED, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
- ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED, AND CONDITIONED ACCORDING TO MANUFACTURERS' INSTRUCTIONS. IN CASE OF DISCREPANCIES BETWEEN MANUFACTURERS' INSTRUCTIONS AND THE CONTRACT DOCUMENTS, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
- ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
- THE LOCATION AND TYPE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY AND ARE ACQUAITE AND COMPLETE TO THE BEST OF THE KNOWLEDGE OF I & S GROUP, INC. (ISG). NO WARRANTY OR GUARANTEE IS IMPLIED. THE CONTRACTOR SHALL VERIFY THE SIZES, LOCATIONS, AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM PLAN.
- THE CONTRACTOR IS TO CONTACT "IOWA ONE CALL" FOR UTILITY LOCATIONS A MINIMUM OF 2 BUSINESS DAYS PRIOR TO ANY EXCAVATION / CONSTRUCTION (1-800-292-8989).

SPECIFICATIONS REFERENCE

ALL CONSTRUCTION SHALL COMPLY WITH THE CITY OF MUSCATINE REQUIREMENTS AND WITH THE 2023 EDITION OF THE STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) FOR PUBLIC IMPROVEMENTS, UNLESS DIRECTED OTHERWISE.

PROJECT DATUM

HORIZONTAL COORDINATES HAVE BEEN REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83)(2011), IARCS, ON THE IOWA ZONE 14 (BURLINGTON) COORDINATE SYSTEM, IN U.S. SURVEY FEET.

ELEVATIONS HAVE BEEN REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

RTK GPS METHODS WERE USED TO ESTABLISH HORIZONTAL AND VERTICAL COORDINATES FOR THIS PROJECT.

TOPOGRAPHIC SURVEY

THIS PROJECT'S TOPOGRAPHIC SURVEY CONSISTS OF DATA COLLECTED IN SEPTEMBER 2023 BY ISG.

B.M. ELEVATION=550.61

TRIANGLE CUT NEAR EXISTING TRANSFORMER IN THE NE CORNER OF THE PROJECT AREA

LEGEND

EXISTING		
---	---	CITY LIMITS
---	---	SECTION LINE
---	---	QUARTER SECTION LINE
---	---	RIGHT OF WAY LINE
---	---	PROPERTY / LOTLINE
---	---	EASEMENT LINE
---	---	ACCESS CONTROL
---	---	WATER EDGE
---	---	WETLAND BOUNDARY
---	---	WETLAND / MARSH
---	---	FENCE LINE
---	---	CULVERT
---	---	STORM SEWER
---	---	SANITARY SEWER
---	---	SANITARY SEWER FORCEMAIN
---	---	WATER
---	---	GAS
---	---	OVERHEAD ELECTRIC
---	---	UNDERGROUND ELECTRIC
---	---	UNDERGROUND TELEPHONE
---	---	UNDERGROUND TV
---	---	OVERHEAD UTILITY
---	---	UNDERGROUND UTILITY
---	---	UNDERGROUND FIBER OPTIC
---	---	CONTOUR (MAJOR)
---	---	CONTOUR (MINOR)
---	---	DECIDUOUS TREE
---	---	CONIFEROUS TREE
---	---	TREE LINE
---	---	MANHOLE/STRUCTURE
---	---	CATCH BASIN
---	---	HYDRANT
---	---	VALVE
---	---	CURB STOP
---	---	POWER POLE
---	---	UTILITY PEDESTAL / CABINET
PROPOSED		
---	---	LOT LINE
---	---	RIGHT OF WAY
---	---	EASEMENT
---	---	CULVERT
---	---	STORM SEWER
---	---	STORM SEWER (PIPE WIDTH)
---	---	SANITARY SEWER
---	---	SANITARY SEWER (PIPE WIDTH)
---	---	WATER
---	---	GAS
---	---	OVERHEAD ELECTRIC
---	---	UNDERGROUND ELECTRIC
---	---	UNDERGROUND TV
---	---	CONTOUR
---	---	MANHOLE (STORM, SANITARY)
---	---	CATCH BASIN
---	---	HYDRANT
---	---	VALVE

CIVIL SHEET INDEX

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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

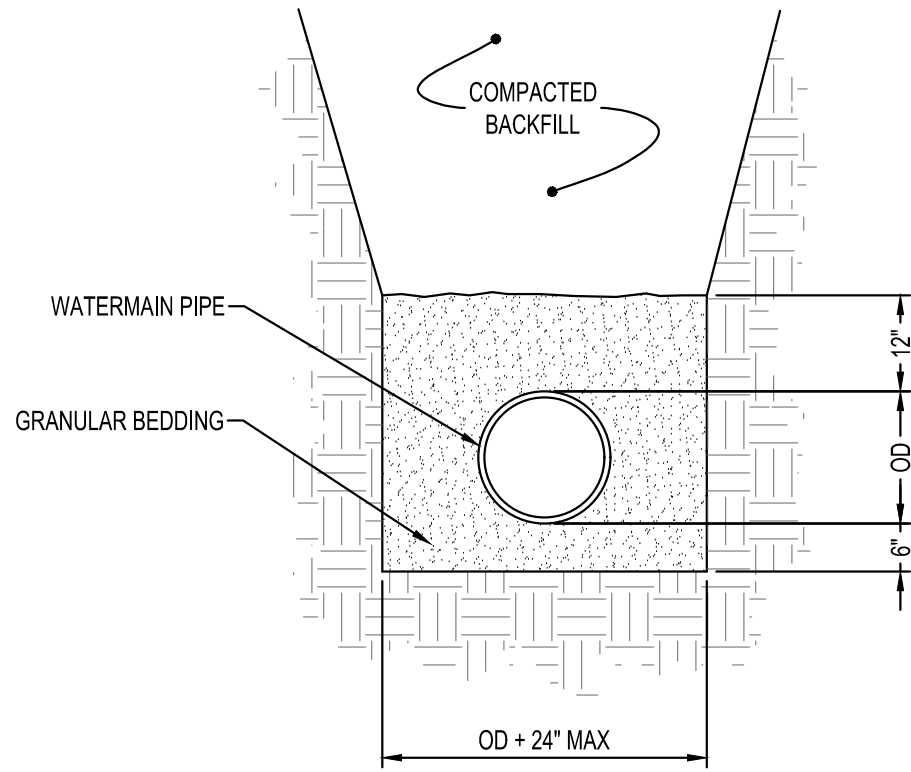
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FILE NAME	29721 C0-DATA
DRAWN BY	MNA
DESIGNED BY	ART
REVIEWED BY	MJE
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	-

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SITE DATA

SHEET

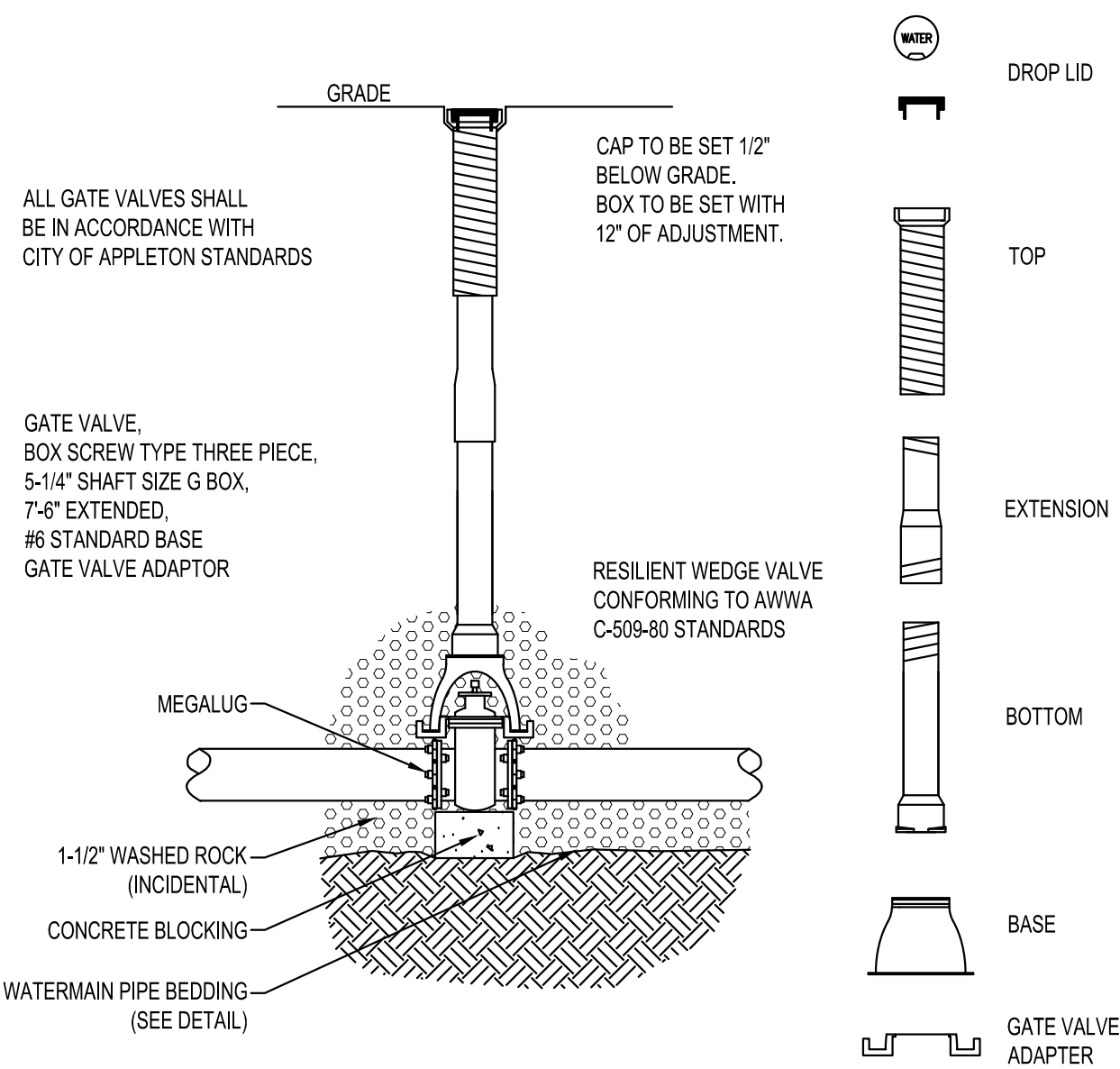
C0-10



NOTES:
GRANULAR BEDDING AND ENCASMENT FOR WATERMAIN PIPES SHALL BE INCIDENTAL TO CONSTRUCTION.

PIPE BEDDING WATERMAIN

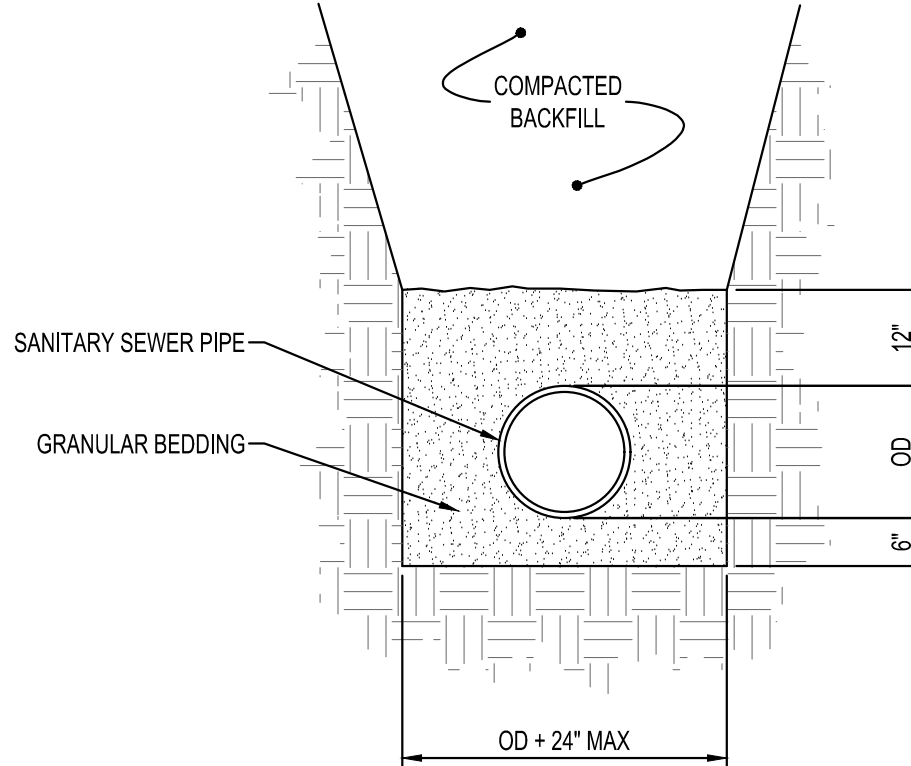
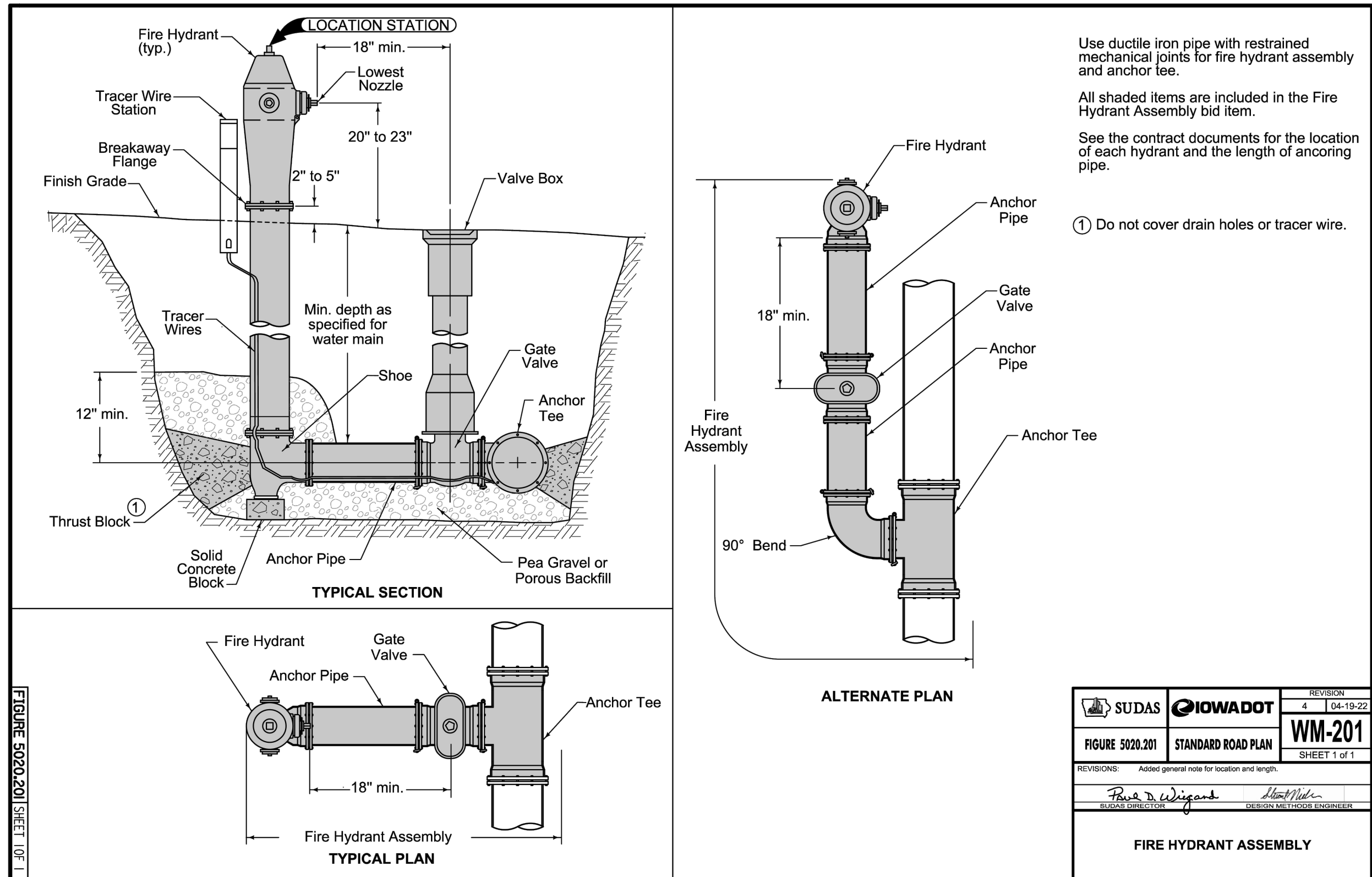
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NOTES:
INSTALL TOP NUT EXTENDER TO 7" DEPTH ON ALL VALVES WITH OVERDEPTH.

GATE VALVE AND BOX INSTALLATION

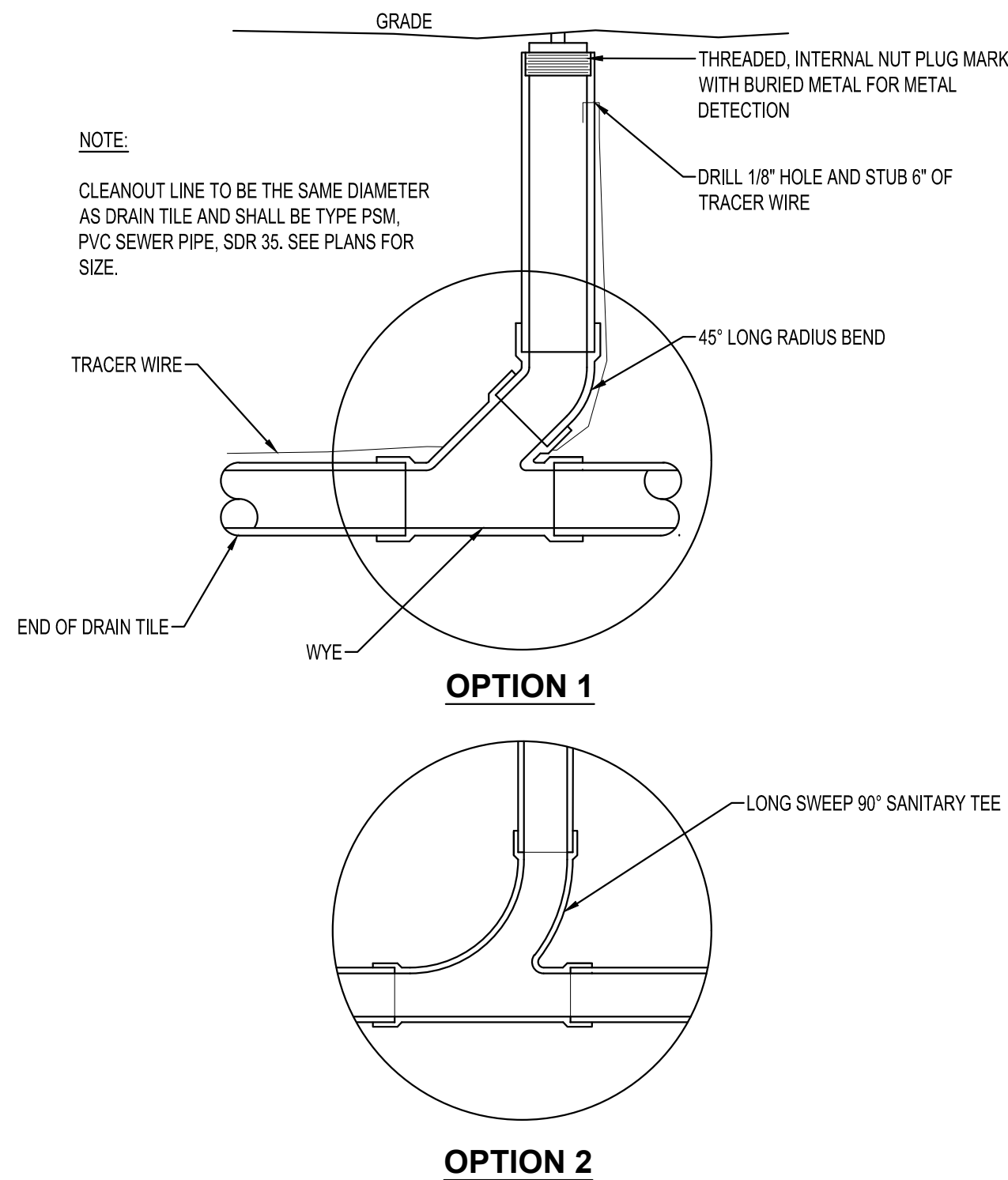
NTS



NOTES:
GRANULAR BEDDING AND ENCASMENT FOR SANITARY SEWER PIPES SHALL BE INCIDENTAL TO CONSTRUCTION.

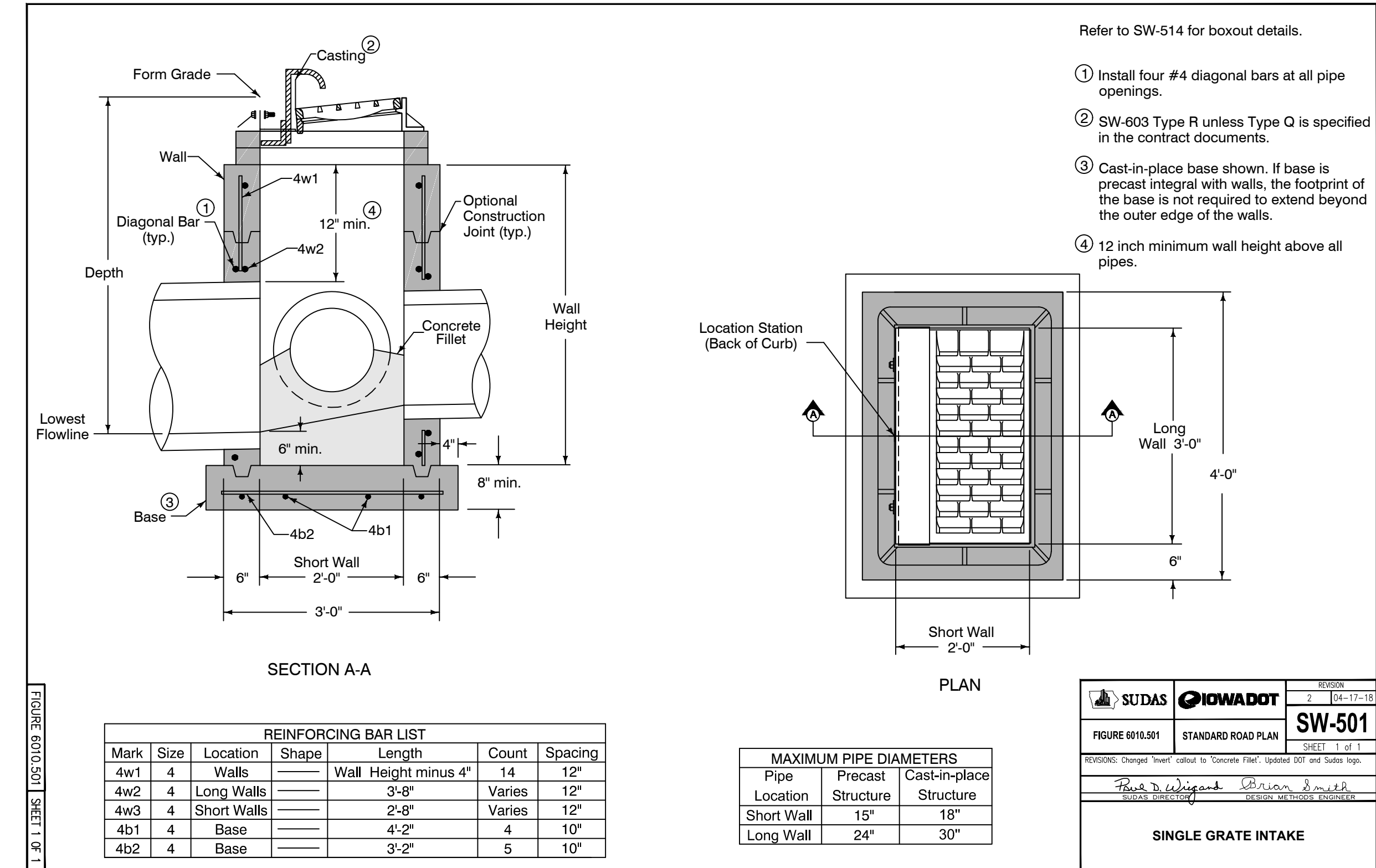
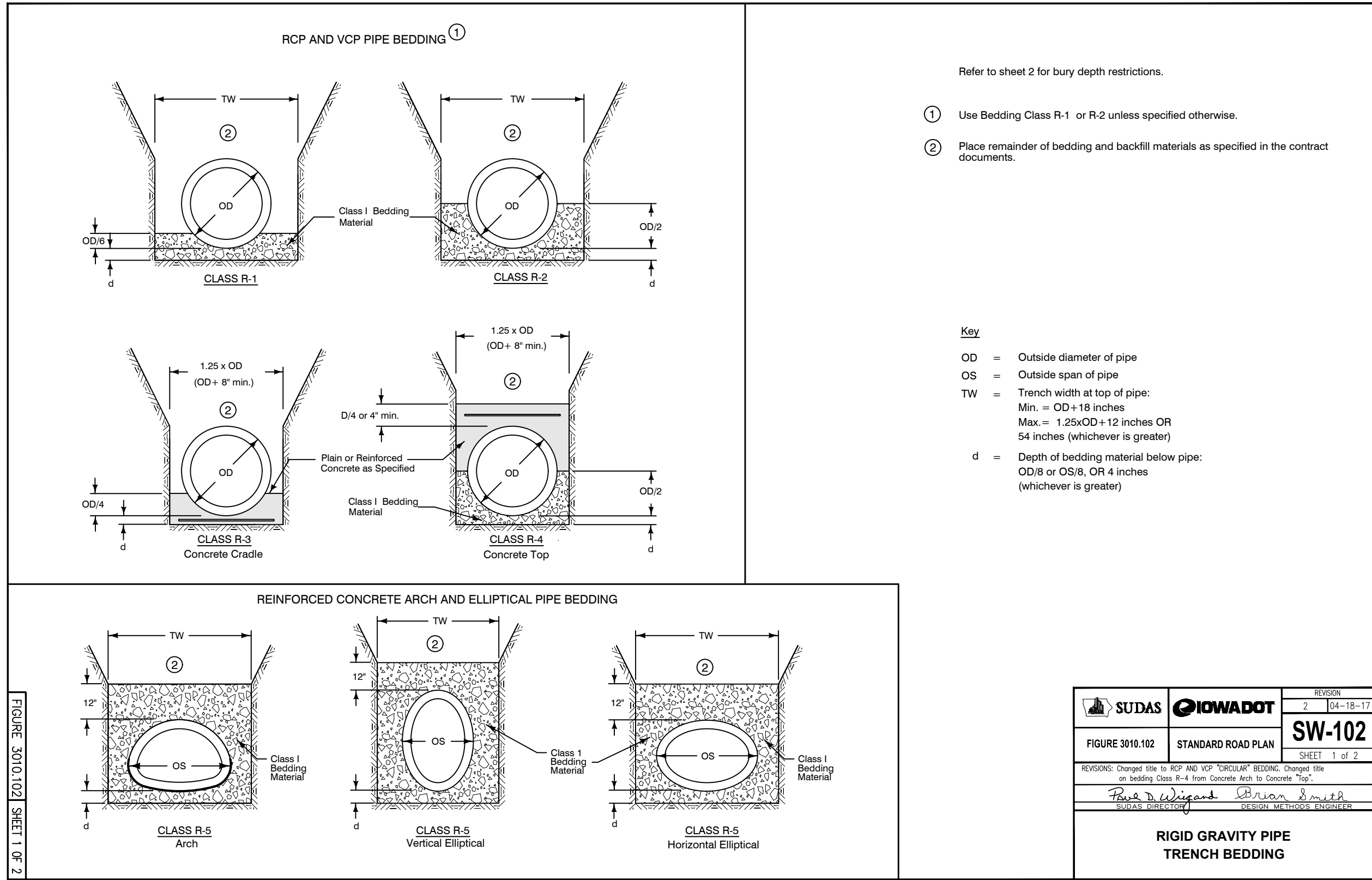
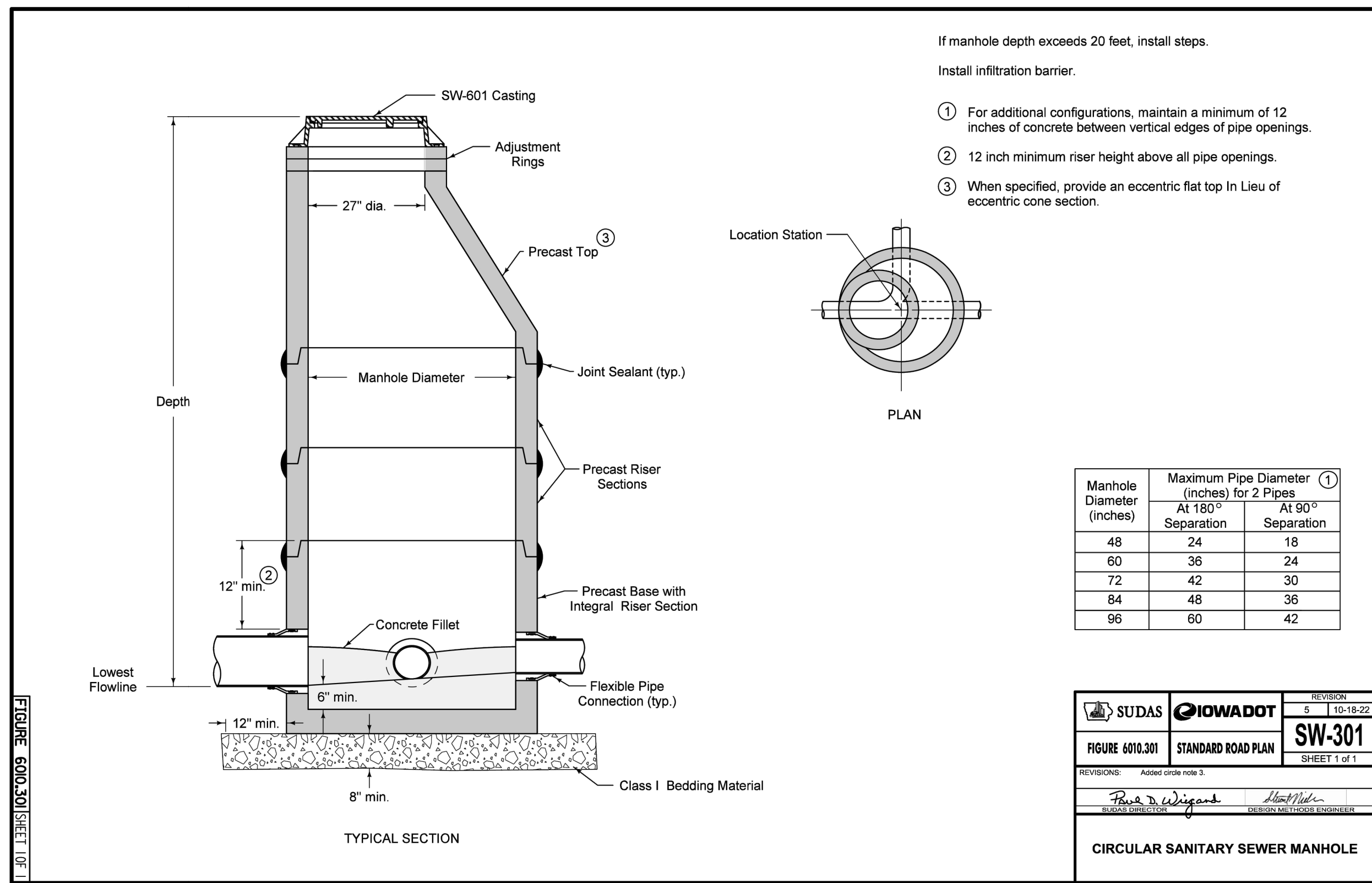
PIPE BEDDING SANITARY SEWER

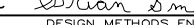
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SANITARY CLEANOUT

NTS



 SUDAS	 IOWA DOT	REVISION
		2 04-17-18
FIGURE 6010.501	STANDARD ROAD PLAN	SW-501
		SHEET 1 of 1
REVISIONS: Changes "Invert" column to "Concrete Finish", updated 501 and Sudas logs.		
 PAUL DELIGANT		
 BRIAN SMITH, P.E. DESIGN, WATKINS, & ASSOCIATES		
SINGLE GRATE INTAKE		



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

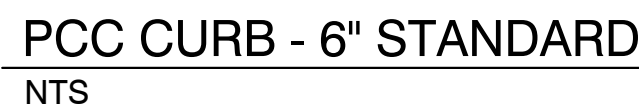
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DATE	DESCRIPTION	BY

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SITE DETAILS

SHEET
C0-20



MUSCATINE

IOWA

CLIENT PROJECT NO.

TITLE

SITE DETAILS

SHEET

C0-21

EROSION CONTROL PLAN NARRATIVE

CONSTRUCTION ACTIVITY NOTES:

EROSION PREVENTION:
CONSTRUCTION OF SILT FENCE AND ALL OTHER EROSION CONTROL MEASURES SHALL BE COMPLETE BEFORE OTHER CONSTRUCTION ACTIVITY OCCURS.
USE PHASED CONSTRUCTION WHEREVER PRACTICAL AND ESTABLISH TURF AS SOON AS POSSIBLE TO MINIMIZE SEDIMENT TRANSPORT.
TURF ESTABLISHMENT OR TEMPORARY SEEDING OR MULCHING OF ALL EXPOSED SOIL NOT BEING ACTIVELY WORKED SHOULD BE PRACTICED FOLLOWING THE TABLE BELOW:

TYPE OF SLOPE OR DISTURBANCE AREA	TIME AREA CAN REMAIN OPEN WITHOUT BEING ACTIVELY WORKED:
STEEPER THAN 3:1	14 DAYS
10:1 TO 3:1	14 DAYS
FLATTER 10:1	14 DAYS
DITCHES	1 DAY
PIPE ENDS	1 DAY
WITHIN 200' OF SURFACE WATER	1 DAY
LAST 200' OF THE WETTED DITCH PERIMETER FROM THE DITCH OUTLET	1 DAY

ALL EXPOSED SOILS SHALL BE SEEDED OR SODDED AT THE EARLIEST POSSIBLE TIME TO PREVENT/REDUCE EROSION.
TEMPORARY COVER DURING CONSTRUCTION IS INCIDENTAL.
PIPE OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER.

SEDIMENT CONTROL PRACTICES:
CONSTRUCTION OF SILT FENCE AND ALL OTHER EROSION CONTROL MEASURES SHALL BE COMPLETE PRIOR TO LAND DISTURBING ACTIVITIES OCCUR.
INLET EROSION PROTECTION SHALL BE INSTALLED AND MAINTAINED UNTIL TURF HAS BEEN ESTABLISHED.
THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL EROSION FROM LEAVING THE CONSTRUCTION ZONE. ALL ERODED MATERIAL THAT LEAVES THE CONSTRUCTION ZONE SHALL BE COLLECTED BY THE CONTRACTOR AND RETURNED TO THE SITE AT THE CONTRACTOR'S EXPENSE.
ALL STREETS MUST BE SWEEPED WITHIN 24 HOURS WHEN ANY TRACKING OCCURS.
SILT FENCE OR OTHER EFFECTIVE EROSION CONTROL MEASURES MUST BE INSTALLED AROUND THE PERIMETER OF ANY SOIL STOCKPILES, INCLUDING TEMPORARY STOCKPILES. STOCKPILES CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORM WATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES.
PERIMETER CONTROL SHALL BE INSTALLED ALONG THE BACK OF CURB IMMEDIATELY FOLLOWING CURB INSTALLATION AT ALL LOCATIONS WITH POSITIVE DRAINAGE TO PARKING LOT AND/OR STREETS, AND SHALL REMAIN UNTIL STABILIZATION IS ACHIEVED. THIS SHALL BE ACCOMPLISHED THROUGH THE USE OF SILT FENCE, BIOROLLS, ROCK LOGS, OR OTHER METHODS APPROVED BY THE ENGINEER.

DEWATERING AND BASIN DRAINING:
DEWATER SEDIMENT-LADEN WATER TO SEDIMENTATION BASINS IF POSSIBLE OR USE OTHER BMP'S TO PREVENT EROSION AND REMOVE SEDIMENT WHEN DISCHARGING TO SURFACE WATERS.
USE APPROPRIATE ENERGY DISSIPATION MEASURES ON ALL DISCHARGES.
DEWATERING PRACTICES CANNOT CAUSE NUISANCE CONDITIONS, EROSION OR IN RECEIVING CHANNELS OR INUNDATION OF WETLANDS RESULTING IN ADVERSE IMPACTS.

POLLUTION PREVENTION:
ALL SOLID WASTE COLLECTED FROM THE CONSTRUCTION SITE MUST BE DISPOSED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
ALL HAZARDOUS MATERIALS (OIL, GASOLINE, FUEL, PAINT, ETC) MUST BE PROPERLY STORED TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. STORAGE AREAS SHALL PROVIDE SECONDARY CONTAINMENT AND A HAZARDOUS MATERIALS SPILL KIT. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS.
EQUIPMENT MAINTENANCE AREAS MUST BE LIMITED TO A DEFINED AREA OF THE SITE. ALL RUNOFF CONTAINING ANY HAZARDOUS MATERIAL MUST BE PROPERLY COLLECTED AND DISPOSED.
NO ENGINE DEGREASING SHALL BE ALLOWED ON SITE.
THE CONTRACTOR IS RESPONSIBLE FOR MONITORING AIR POLLUTION AND ENSURING IT DOES NOT EXCEED LEVELS SET BY LOCAL, STATE, OR FEDERAL REGULATIONS. THIS INCLUDES DUST CREATED BY WORK BEING PERFORMED ON THE SITE. AIR POLLUTION AND DUST CONTROL CORRECTION IS CONSIDERED INCIDENTAL TO THE UNIT BID PRICES FOR WHICH WORK IS BEING PERFORMED. ADDITIONAL DUST CONTROL MEASURES MAY BE REQUIRED BY THE ENGINEER.
CONCRETE WASHOUT ONSITE: ALL LIQUID WASTE GENERATED BY CONCRETE WASHOUT OPERATIONS MUST BE CONTAINED IN A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER. A COMPACTED CLAY LINER THAT DOES NOT ALLOW WASHOUT LIQUIDS TO ENTER GROUND WATER IS CONSIDERED AN IMPERMEABLE LINER. THE LIQUID WASTE MUST NOT CONTACT THE GROUND, AND THERE MUST NOT BE RUNOFF FROM THE CONCRETE WASHOUT OPERATIONS OR AREAS. LIQUID WASTE MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH CITY OF MUSCATINE, IOWA REGULATIONS. A SIGN MUST BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.

INSPECTION AND MAINTENANCE:
THE PERMITTEES MUST ROUTINELY INSPECT THE CONSTRUCTION SITE ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION.
ALL INSPECTIONS PERFORMED DURING CONSTRUCTION MUST BE RECORDED AND RECORDS RETAINED WITH THE EROSION CONTROL PLAN.
CONTRACTOR IS RESPONSIBLE FOR KEEPING A RECORD OF ALL RAINFALL INFORMATION & EROSION CONTROL MAINTENANCE UNTIL FINAL ESTABLISHMENT OF TURF.
ALL SILT FENCES MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE FENCE.
EROSION CONTROL, AND OTHER BMP'S MUST BE REPLACED, REPAIRED, OR SUPPLEMENTED WHEN THEY REACH 50% DESIGN LOAD.

FINAL STABILIZATION:
THE PERMITTEES MUST ENSURE FINAL STABILIZATION OF THE SITE. THE PERMITTEES MUST SUBMIT A NOTICE OF TERMINATION WITHIN 30 DAYS AFTER FINAL STABILIZATION IS COMPLETE OR CONTROL HAS BEEN PASSED TO ANOTHER OWNER.
ALL TEMPORARY EROSION CONTROL MEASURES AND BMP'S MUST BE REMOVED AS PART OF THE FINAL SITE STABILIZATION.
THE STORM WATER PERMIT FURTHER DEFINES FINAL STABILIZATION AND ITS REQUIREMENTS.

MAINTENANCE SCHEDULE:

THE FOLLOWING MAINTENANCE SCHEDULE HAS BEEN PROVIDED. THE INSPECTOR MUST PERFORM THE INSPECTIONS. THE OPERATOR/CONTRACTOR MUST PERFORM ALL NEEDED MAINTENANCE. FURTHERMORE, ALL EROSION CONTROL FEATURE REQUIRING MAINTENANCE MAY NOT BE LISTED BELOW. THE OPERATOR/CONTRACTOR AND INSPECTOR MUST PERFORM THEIR RESPECTIVE DUTIES ON ALL BMP'S THAT ARE NOT LISTED BELOW AS WELL.

- CONSTRUCTION ENTRANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR MATERIALS DROPPED, WASHED OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.
- FILTER SOCKS – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (2.1) FILTER SOCKS SHALL BE INSPECTED WEEKLY; (2.2) CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES; (2.3) NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF FILTER SOCKS SHALL BE ACCOMPLISHED PROMPTLY; (2.4) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH RAINFALL, THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE FILTER SOCK; AND (2.5) ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE FILTER SOCK IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
- SILT FENCE – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (3.1) SILT FENCES SHALL BE INSPECTED WEEKLY. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY; (3.2) CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING; (3.3) SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY; (3.4) SEDIMENT DEPOSITS MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER; AND (3.5) ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
- STORM DRAIN INLET PROTECTION – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (4.1) STRUCTURES SHALL BE INSPECTED WEEKLY AND REPAIRS MADE AS NECESSARY AND (4.2) STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
- TEMPORARY DIVERSION DIKE – THE MEASURE SHALL BE INSPECTED WEEKLY AND REPAIRS MADE TO THE DIKE, FLOW CHANNEL, OUTLET OR SEDIMENT TRAPPING FACILITY, AS NECESSARY. ONCE EVERY WEEK, WHETHER A STORM EVENT HAS OCCURRED OR NOT, THE MEASURE SHALL BE INSPECTED AND REPAIRS MADE IF NEEDED. DAMAGES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY MUST BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
- TEMPORARY FILL DIVERSION – SINCE THE PRACTICE IS TEMPORARY AND UNDER MOST SITUATIONS WILL BE COVERED THE NEXT WORKING DAY, THE MAINTENANCE REQUIRED SHOULD BE LOW. IF THE PRACTICE IS TO REMAIN IN USE FOR MORE THAN ONE DAY, AN INSPECTION SHALL BE MADE AT THE END OF EACH WORKDAY AND REPAIRS MADE TO THE MEASURE IF NEEDED. THE OPERATOR/CONTRACTOR SHOULD AVOID THE PLACEMENT OF ANY MATERIAL OVER THE STRUCTURE WHILE IT IS IN USE. CONSTRUCTION TRAFFIC SHOULD NOT BE PERMITTED TO CROSS THE DIVERSION.
- TEMPORARY SEDIMENT TRAP – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (7.1) SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN VOLUME OF THE WET STORAGE. SEDIMENT REMOVAL FROM THE BASIN SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS; (7.2) FILTER STONE SHALL BE REGULARLY CHECKED TO ENSURE THAT FILTRATION PERFORMANCE IS MAINTAINED. STONE CHOKED WITH SEDIMENT SHALL BE REMOVED AND CLEANED OR REPLACED; AND (7.3) THE STRUCTURE SHOULD BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT, THE HEIGHT OF THE STONE OUTLET SHOULD BE CHECKED TO ENSURE THAT ITS CENTER IS AT LEAST 1 FOOT BELOW THE TOP OF THE EMBANKMENT.
- TEMPORARY SEDIMENT BASIN – THE BASIN EMBANKMENT SHOULD BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. THE EMERGENCY SPILLWAY SHOULD BE CHECKED REGULARLY TO ENSURE THAT ITS LINING IS WELL ESTABLISHED AND EROSION-RESISTANT. THE BASIN SHOULD BE CHECKED AFTER EACH RUNOFF PRODUCING RAINFALL FOR SEDIMENT CLEANOUT AND TRASH REMOVAL. WHEN THE SEDIMENT REACHES THE CLEANOUT LEVEL, IT SHALL BE REMOVED AND PROPERLY DISPOSED OF.
- TEMPORARY SEEDING – AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RE-SEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.
- PERMANENT SEEDING – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (10.1) IN GENERAL, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL IT HAS BEEN MAINTAINED FOR ONE FULL YEAR AFTER PLANNING; (10.2) NEW SEEDLINGS SHALL BE SUPPLIED WITH ADEQUATE MOISTURE, SUPPLY WATER AS NEEDED, ESPECIALLY LATE IN THE SEASON, IN ABNORMALLY HOT OR DRY CONDITIONS, OR ON ADVERSE SITES, WATER APPLICATIONS SHALL BE CONTROLLED TO PREVENT EXCESSIVE RUNOFF; (10.3) INSPECT ALL SEEDED AREAS FOR FAILURES AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE; [10.3.A] IF STAND IS INADEQUATE FOR EROSION CONTROL, OVER SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED; [10.3.B] IF STAND IS 60% DAMAGED, RE-ESTABLISH FOLLOWING SEEDBED AND SEEDING RECOMMENDATIONS; [10.3.C] IF STAND HAS LESS THAN 40% COVER, RE-EVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER, THE SOIL MUST BE TESTED TO DETERMINE IF ACIDITY OR NUTRIENT IMBALANCES ARE RESPONSIBLE, RE-ESTABLISH THE STAND FOLLOWING SEEDBED AND SEEDING RECOMMENDATIONS.
- MULCHING – ALL MULCHES AND SOIL COVERINGS SHOULD BE INSPECTED PERIODICALLY (PARTICULARLY AFTER RAINSTORMS) TO CHECK FOR EROSION. WHERE EROSION IS OBSERVED IN MULCHED AREAS, ADDITIONAL MULCH SHOULD BE APPLIED. NETS AND MATS SHOULD BE INSPECTED AFTER RAINSTORMS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, REINSTALL NETTING OR MATTING AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH. INSPECTIONS SHOULD TAKE PLACE UNTIL GRASSES ARE FIRMLY ESTABLISHED. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE; REPAIR AS NEEDED.
- SOIL STABILIZATION BLANKETS & MATTING – ALL SOIL STABILIZATION BLANKETS AND MATTING SHOULD BE INSPECTED PERIODICALLY FOLLOWING INSTALLATION, PARTICULARLY AFTER RAINSTORMS TO CHECK FOR EROSION AND UNDERMINING. ANY DISLOCATION OR FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUTS OR BREAKAGE OCCURS, REINSTALL THE MATERIAL AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH. CONTINUE TO MONITOR THESE AREAS UNTIL WHICH TIME THEY BECOME PERMANENTLY STABILIZED; AT THAT TIME AN ANNUAL INSPECTIONS SHOULD BE ADEQUATE.
- STREET CLEANINGS / SWEEPING – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (13.1) EVALUATE ACCESS POINTS DAILY FOR SEDIMENT TRACKING; (13.2) WHEN TRACKED OR SPILLED SEDIMENT IS FOUND ON PAVED SURFACES, IT WILL BE REMOVED DAILY, DURING TIMES OF HEAVY TRACK-OUT, SUCH AS DURING RAINS. CLEANING MAY BE DONE SEVERAL TIMES THROUGHOUT THE DAY; (13.3) UNKNOWN SPILLS OR OBJECTS WILL NOT BE MIXED WITH THE SEDIMENT; AND (13.4) IF SEDIMENT IS MIXED WITH OTHER POLLUTANTS, IT WILL BE DISPOSED OF PROPERLY AT AN AUTHORIZED LANDFILL.



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
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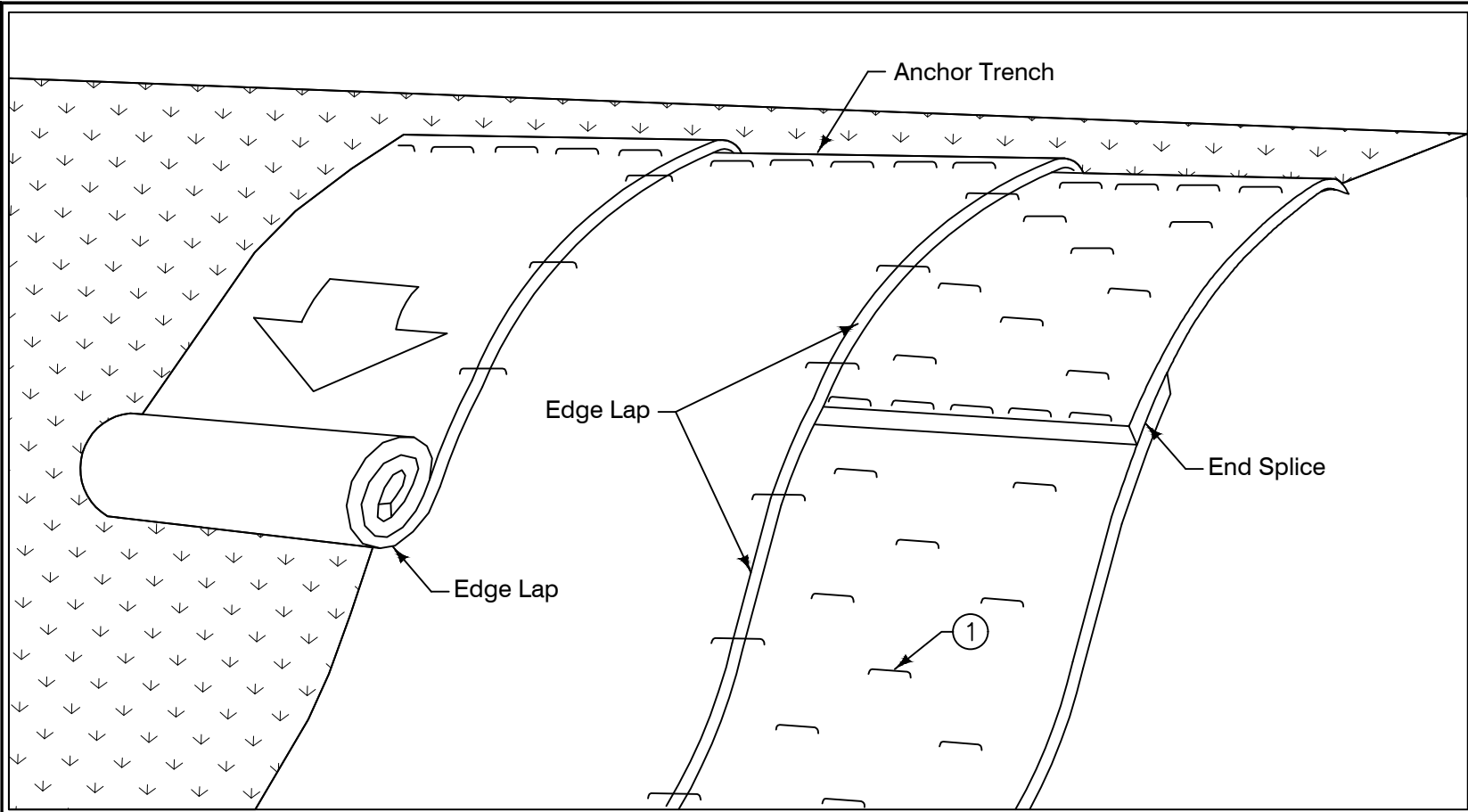
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DRAWN BY	MNA
DESIGNED BY	ART
REVIEWED BY	MJE
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TITLE

SWPPP NARRATIVE

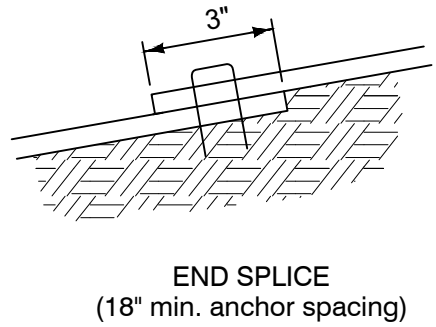
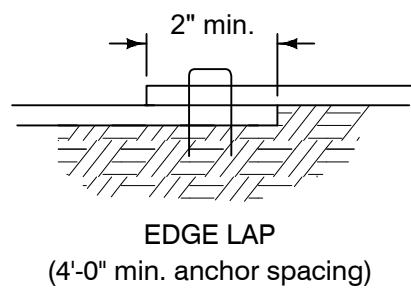
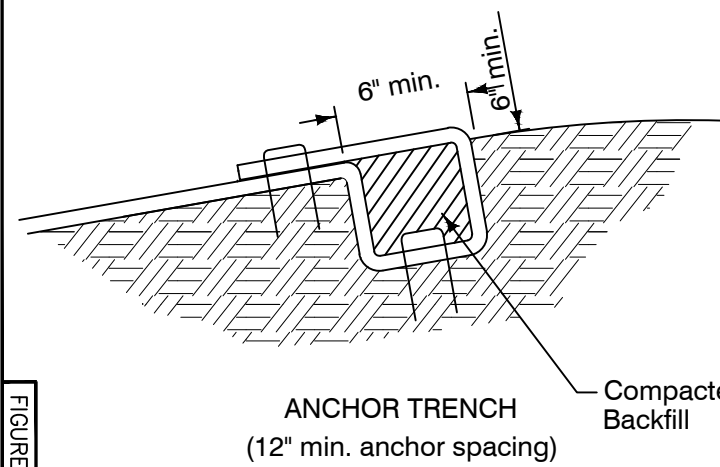
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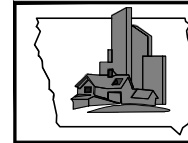
C1-10



① Secure blanket to ground according to manufacturer's recommended anchoring pattern and minimum shown in Table 1.

TABLE 1	
Max. slope	Min. anchors
≤ 3:1	1.5/yd ²
2:1	2/yd ²
1:1	2.5/yd ²



**SUDAS**

9040.103

REGION 2 10-21-14

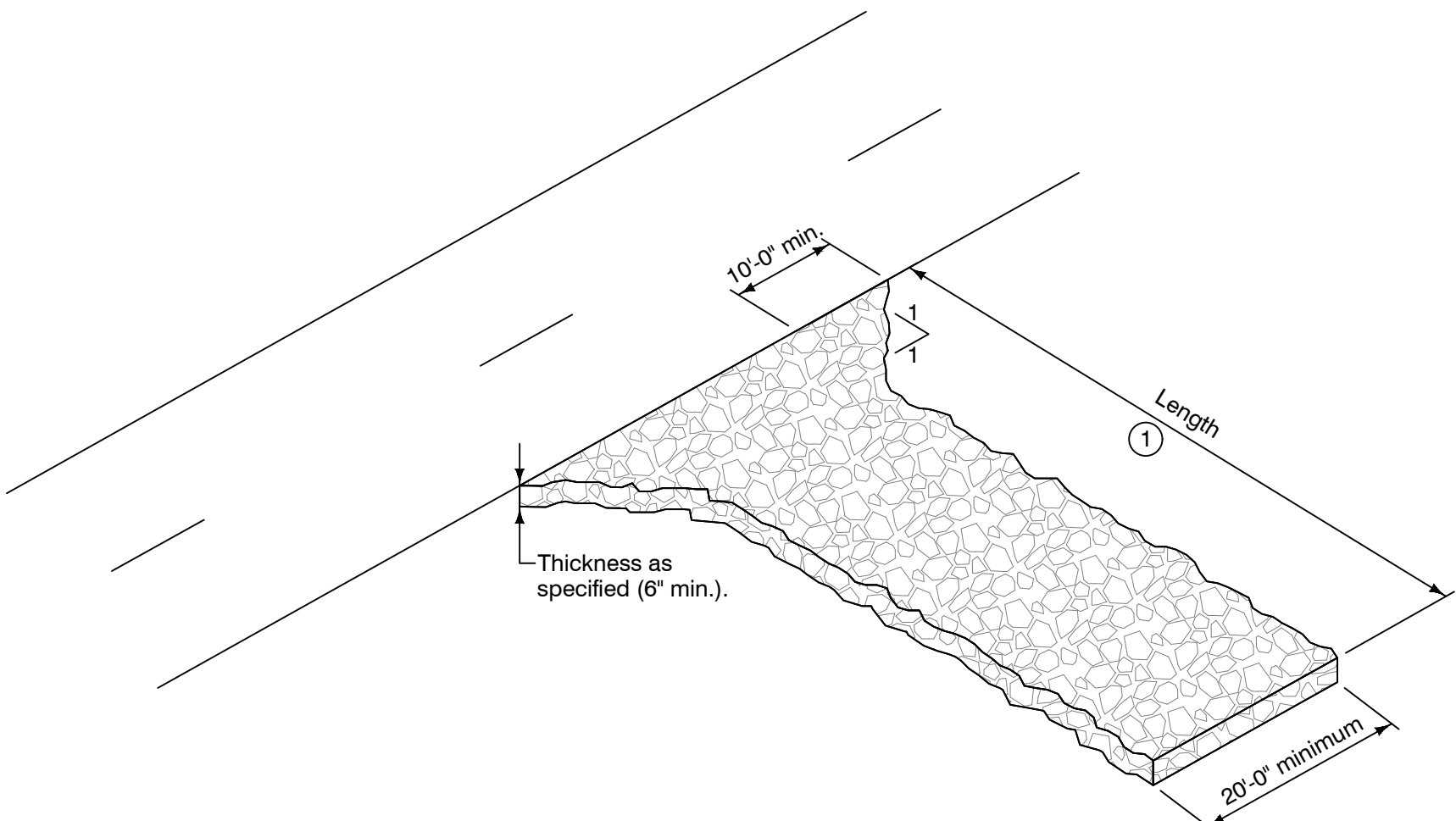
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SUDAS Standard Specifications

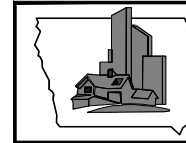
ROLLED EROSION CONTROL PRODUCT (RECP)

INSTALLATION ON SLOPES

FIGURE 9040.103 SHEET 1 of 1



① Entrance length: 50 foot minimum (30 foot for single family residential), or as specified in the contract documents. Length of entrance may be increased if sediment track-out occurs.

**SUDAS**

9040.120

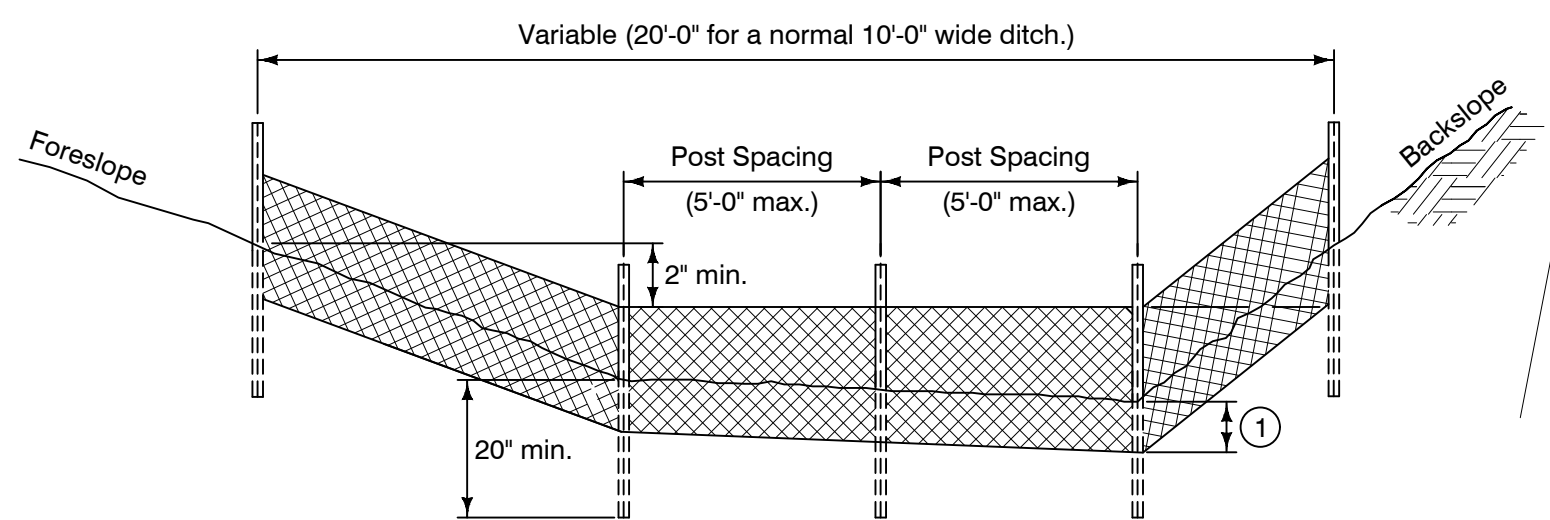
REGION 2 10-21-14

SHEET 1 of 1

SUDAS Standard Specifications

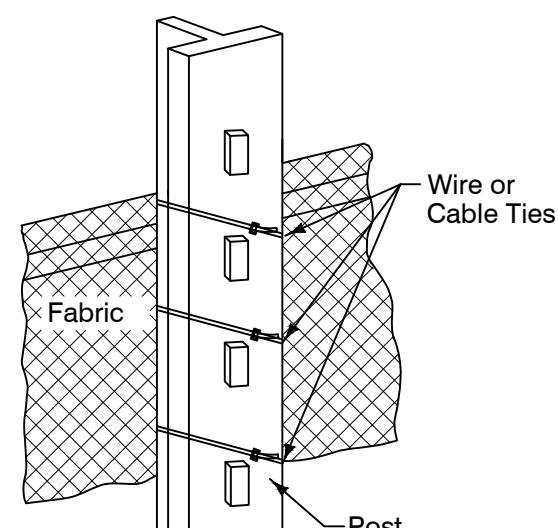
STABILIZED CONSTRUCTION ENTRANCE

FIGURE 9040.120 SHEET 1 of 1

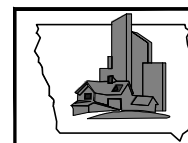


① Insert 12 inches of fabric a minimum of 6 inches deep (fabric may be folded below the ground line).

TYPICAL SILT FENCE DITCH CHECK



ATTACHMENT TO POST

**SUDAS**

9040.119

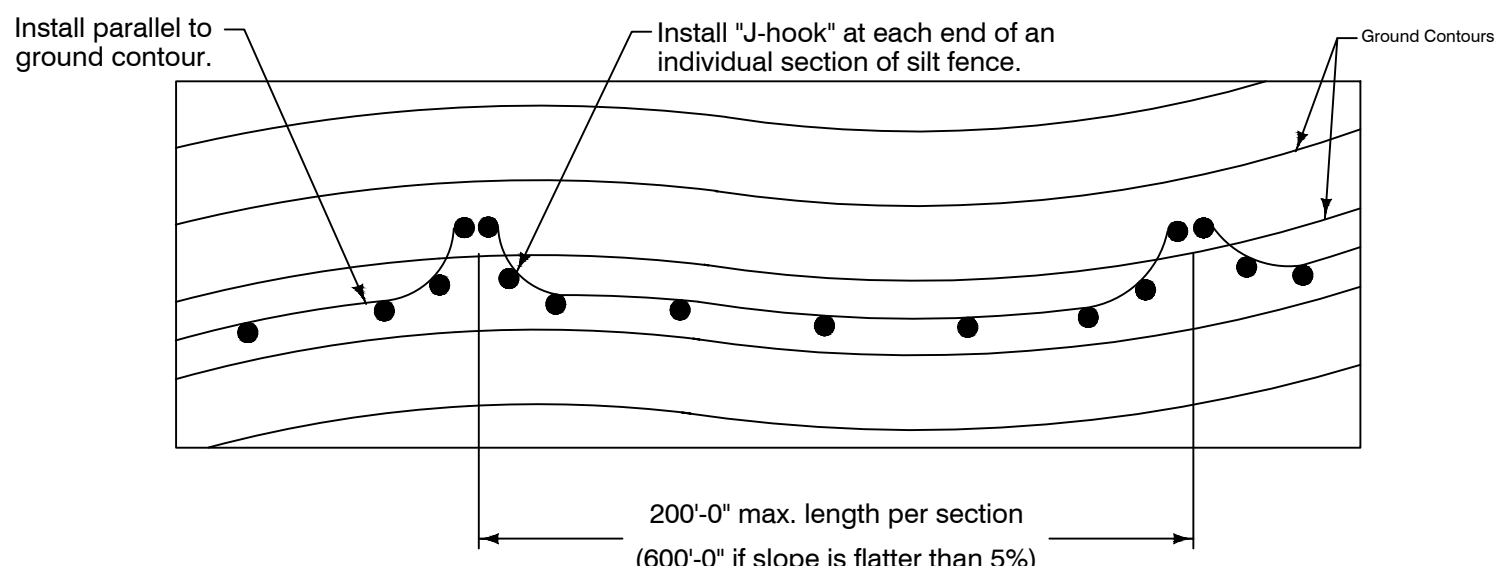
REGION 2 10-21-14

SHEET 1 of 2

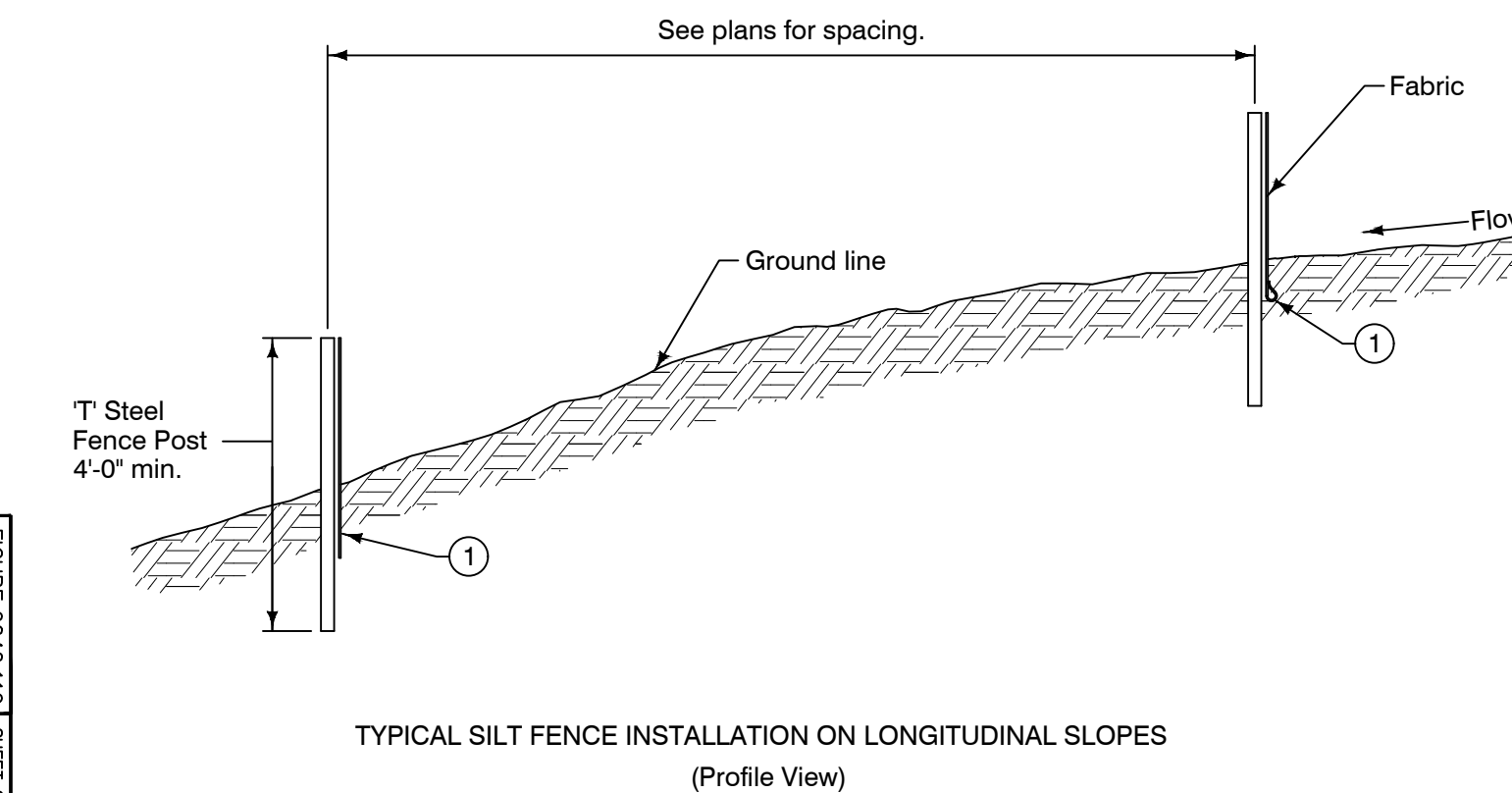
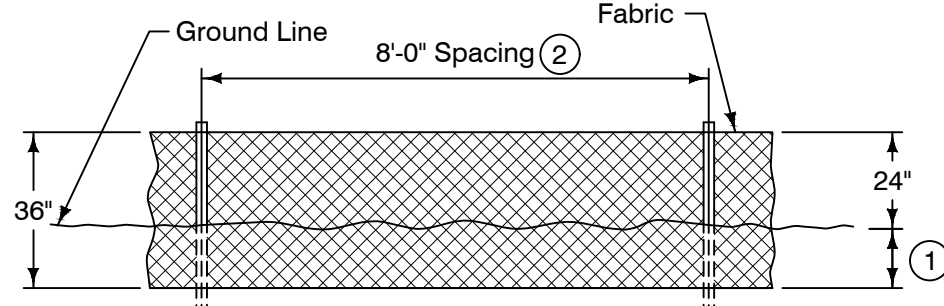
SUDAS Standard Specifications

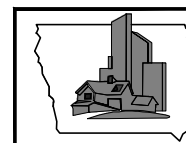
SILT FENCE

FIGURE 9040.119 SHEET 1 of 2



① Insert 12 inches of fabric a minimum of 6 inches deep (fabric may be folded below the ground line).
② Reduce post spacing to 5'-0" at water concentration areas, or as required to adequately support fence.



**SUDAS**

9040.119

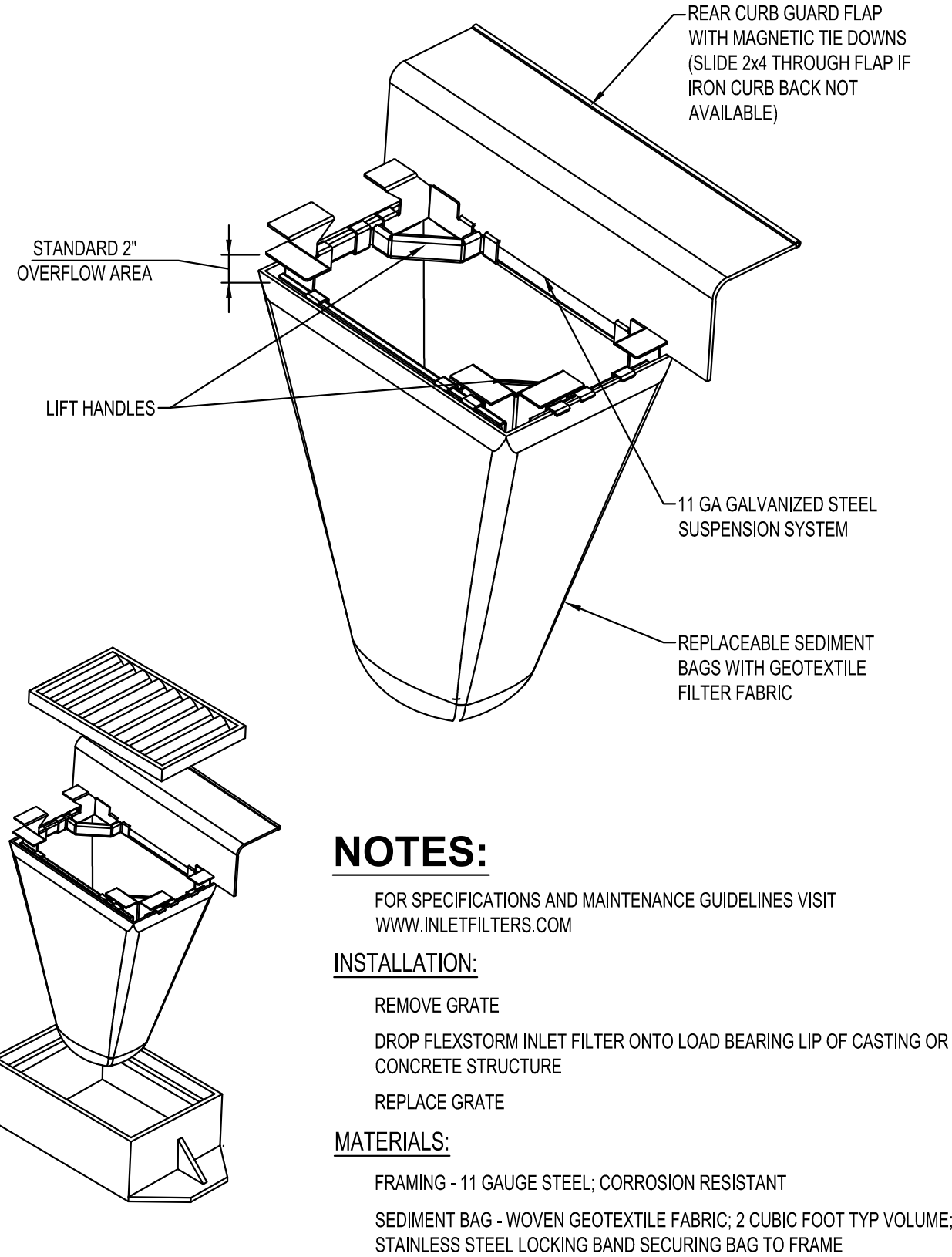
REGION 2 10-21-14

SHEET 2 of 2

SUDAS Standard Specifications

SILT FENCE

FIGURE 9040.119 SHEET 2 of 2



NOTES:

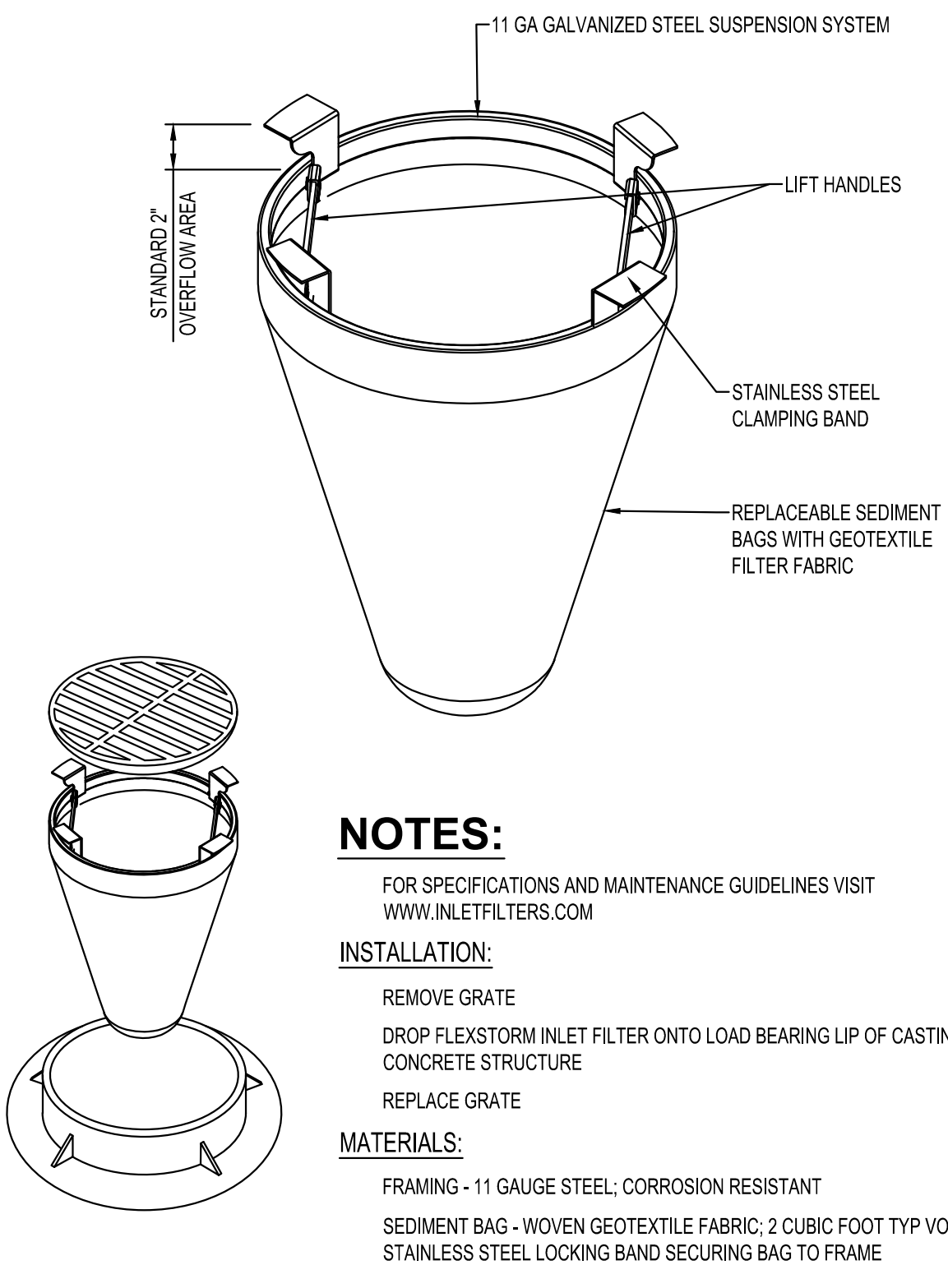
FOR SPECIFICATIONS AND MAINTENANCE GUIDELINES VISIT WWW.INLETFILTERS.COM

INSTALLATION:

- REMOVE GRATE
- DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
- REPLACE GRATE

MATERIALS:

- FRAMING - 11 GAUGE STEEL, CORROSION RESISTANT
- SEDIMENT BAG - WOVEN GEOTEXTILE FABRIC; 2 CUBIC FOOT TYP VOLUME;
- STAINLESS STEEL LOCKING BAND SECURING BAG TO FRAME



NOTES:

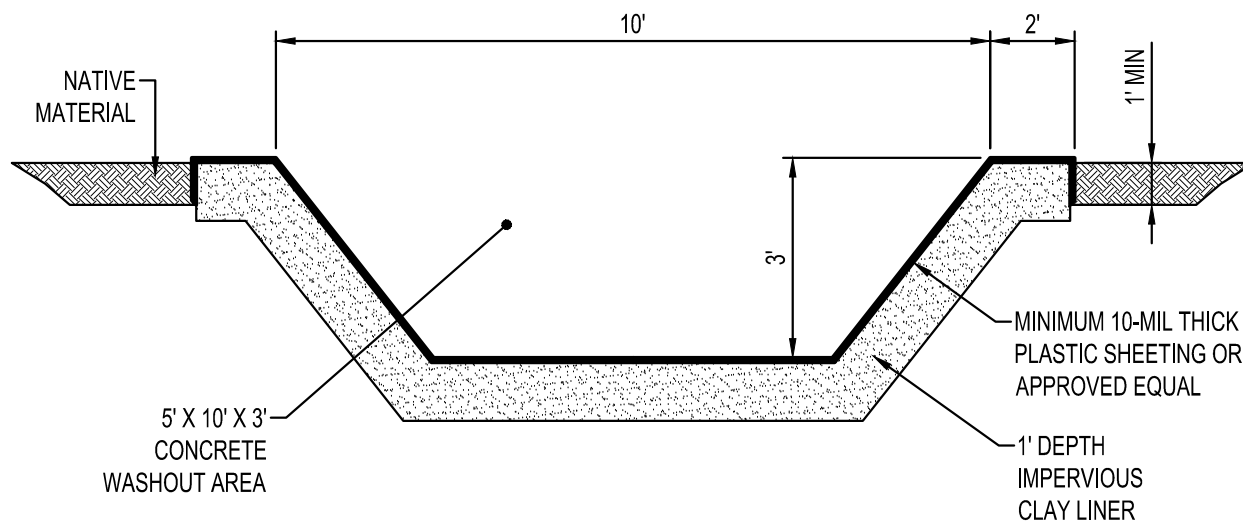
FOR SPECIFICATIONS AND MAINTENANCE GUIDELINES VISIT WWW.INLETFILTERS.COM

INSTALLATION:

- REMOVE GRATE
- DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
- REPLACE GRATE

MATERIALS:

- FRAMING - 11 GAUGE STEEL, CORROSION RESISTANT
- SEDIMENT BAG - WOVEN GEOTEXTILE FABRIC; 2 CUBIC FOOT TYP VOLUME;
- STAINLESS STEEL LOCKING BAND SECURING BAG TO FRAME



NOTES:

CONTRACTOR SHALL INSTALL A SIGN INDICATING THE CONCRETE WASHOUT AREA.

CONTRACTOR SHALL MAINTAIN WASHOUT AREA TO REMOVE MATERIALS BEYOND 75% CAPACITY.

WASHOUT AREA SHALL NOT BE PLACED WITHIN 50' OF STORM DRAINS, OPEN DITCHES OR BODIES OF WATER.

CONTRACTOR SHALL INSPECT WASHOUT AREA AS NECESSARY TO PREVENT LEAKS AND OVER-TOPPING.

WASHOUT AREA SHALL BE REMOVED AFTER CONSTRUCTION IS COMPLETE.

CONCRETE WASHOUT
NTS

CURB BOX FILTER INLET PROTECTION
NTS

ROUND FILTER INLET PROTECTION
NTS



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PROJECT

MUSCATINE
INDOOR SPORTS
COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

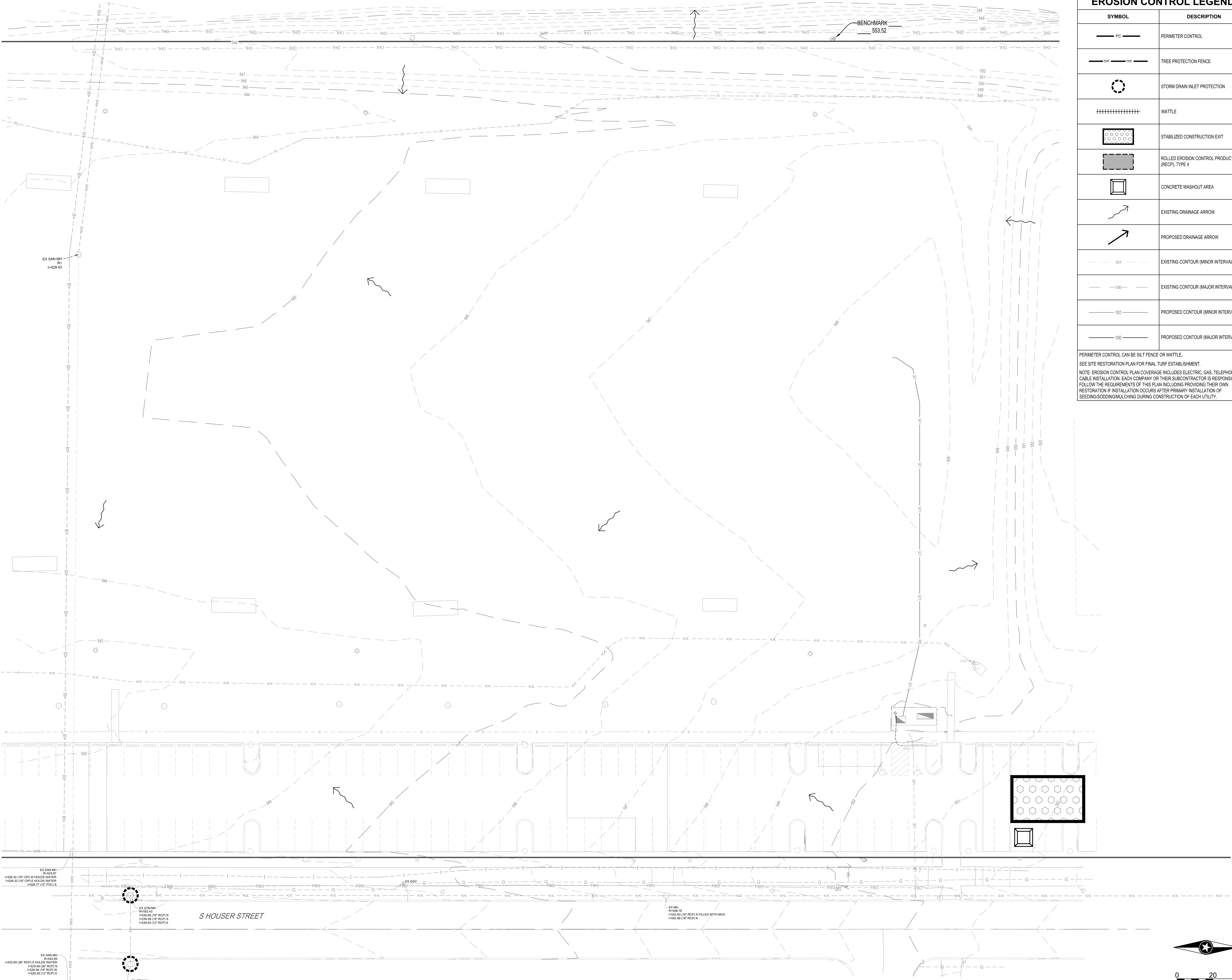
PROJECT NO.	23-29721
FILE NAME	29721 C1-EROSION
DRAWN BY	MNA
DESIGNED BY	ART
REVIEWED BY	MJE
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	-

TITLE

SWPPP DETAILS

SHEET

C1-20



EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION
PC	PERIMETER CONTROL
TPF	TREE PROTECTION FENCE
Storm Drain Inlet Protection Symbol	STORM DRAIN INLET PROTECTION
Wattle Symbol	WATTLE
Stabilized Construction Exit Symbol	STABILIZED CONSTRUCTION EXIT
RECP Symbol	ROLLED EROSION CONTROL PRODUCT (RECP), TYPE 4
Concrete Washout Area Symbol	CONCRETE WASHOUT AREA
Existing Drainage Arrow Symbol	EXISTING DRAINAGE ARROW
Proposed Drainage Arrow Symbol	PROPOSED DRAINAGE ARROW
101 Contour Symbol	EXISTING CONTOUR (MINOR INTERVAL)
100 Contour Symbol	EXISTING CONTOUR (MAJOR INTERVAL)
101 Contour Symbol	PROPOSED CONTOUR (MINOR INTERVAL)
100 Contour Symbol	PROPOSED CONTOUR (MAJOR INTERVAL)

PERMETER CONTROL CAN BE SILT FENCE OR WATTLE.
SEE SITE RESTORATION PLAN FOR FINAL TURF ESTABLISHMENT.
NOTE: EROSION CONTROL PLAN COVERAGE INCLUDES ELECTRIC, GAS, TELEPHONE, AND CABLE INSTALLATION. EACH COMPANY OR THEIR SUBCONTRACTOR IS RESPONSIBLE TO FOLLOW THE REQUIREMENTS OF THIS PLAN INCLUDING PROVIDING THEIR OWN RESTORATION IF INSTALLATION OCCURS AFTER PRIMARY INSTALLATION OF SEEDING/SODDING/MULCHING DURING CONSTRUCTION OF EACH UTILITY.



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PROJECT

**MUSCATINE
INDOOR SPORTS
COMPLEX**

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

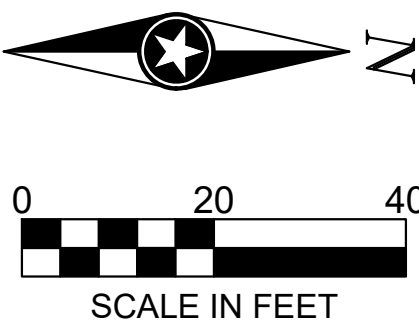
PROJECT NO.	23-29721
FILE NAME	29721 C1-EROSION
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CLIENT PROJECT NO.	-

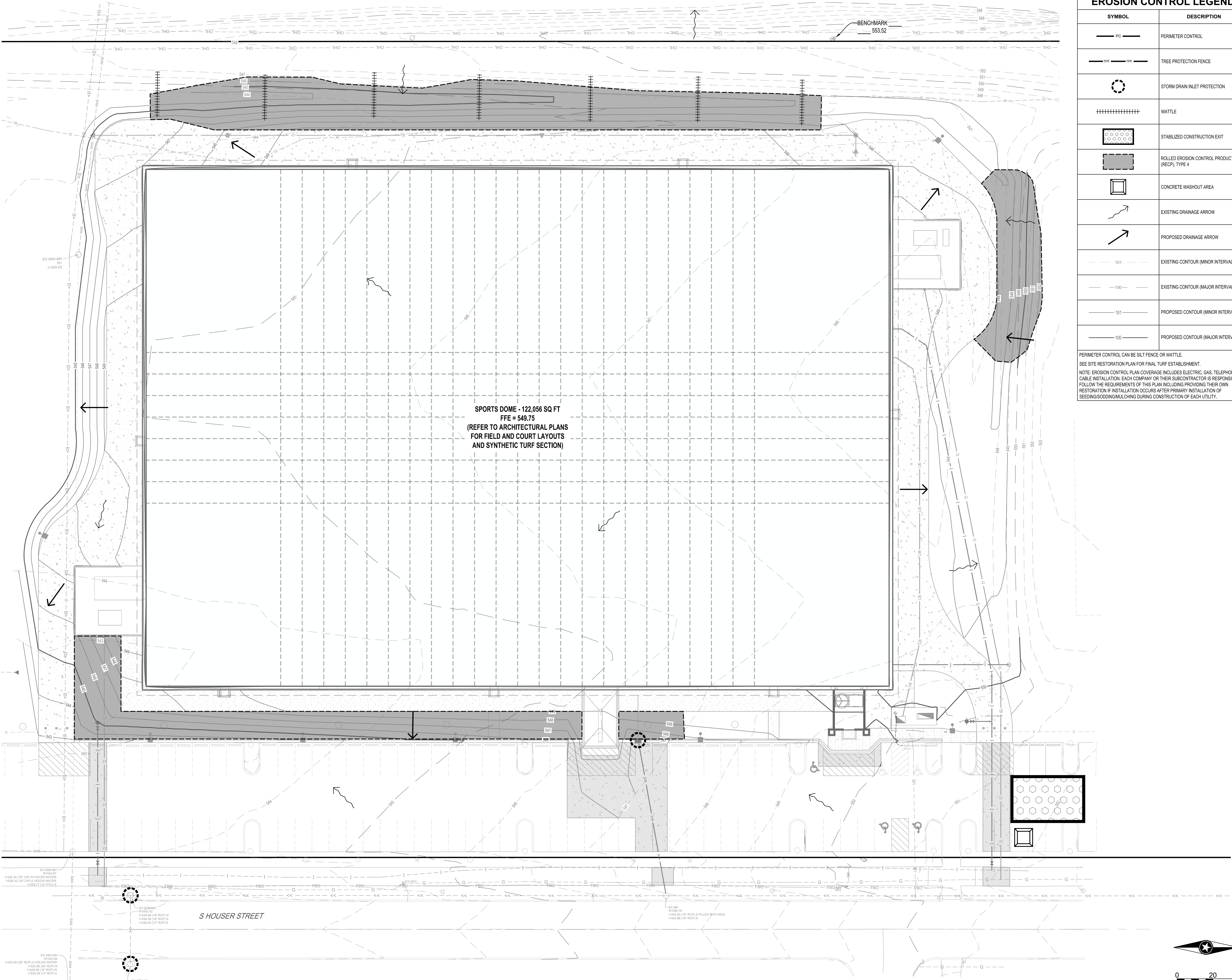
TITLE

**PRE-CONSTRUCTION
SWPPP**

SHEET

C1-30





EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION
PC	PERIMETER CONTROL
TPF	TREE PROTECTION FENCE
Storm Drain Inlet Protection Symbol	STORM DRAIN INLET PROTECTION
Wattle Symbol	WATTLE
Stabilized Construction Exit Symbol	STABILIZED CONSTRUCTION EXIT
Rolled Erosion Control Product (Recp), Type 4 Symbol	ROLLED EROSION CONTROL PRODUCT (RECP), TYPE 4
Concrete Washout Area Symbol	CONCRETE WASHOUT AREA
Existing Drainage Arrow Symbol	EXISTING DRAINAGE ARROW
Proposed Drainage Arrow Symbol	PROPOSED DRAINAGE ARROW
101	EXISTING CONTOUR (MINOR INTERVAL)
100	EXISTING CONTOUR (MAJOR INTERVAL)
101	PROPOSED CONTOUR (MINOR INTERVAL)
100	PROPOSED CONTOUR (MAJOR INTERVAL)

PERMETER CONTROL CAN BE SILT FENCE OR WATTLE.
SEE SITE RESTORATION PLAN FOR FINAL TURF ESTABLISHMENT.
NOTE: EROSION CONTROL PLAN COVERAGE INCLUDES ELECTRIC, GAS, TELEPHONE, AND CABLE INSTALLATION. EACH COMPANY OR THEIR SUBCONTRACTOR IS RESPONSIBLE TO FOLLOW THE REQUIREMENTS OF THIS PLAN INCLUDING PROVIDING THEIR OWN RESTORATION IF INSTALLATION OCCURS AFTER PRIMARY INSTALLATION OF SEEDING/SODDING/MULCHING DURING CONSTRUCTION OF EACH UTILITY.



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PROJECT

MUSCATINE
INDOOR SPORTS
COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-29721
FILE NAME	29721 C1-EROSION
DRAWN BY	MNA
DESIGNED BY	ART
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CLIENT PROJECT NO.	-

TITLE

SWPPP

SHEET

C1-40





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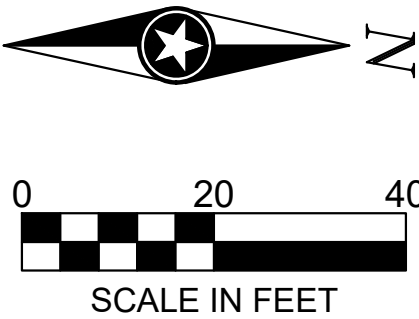
**MUSCATINE
INDOOR SPORTS
COMPLEX**

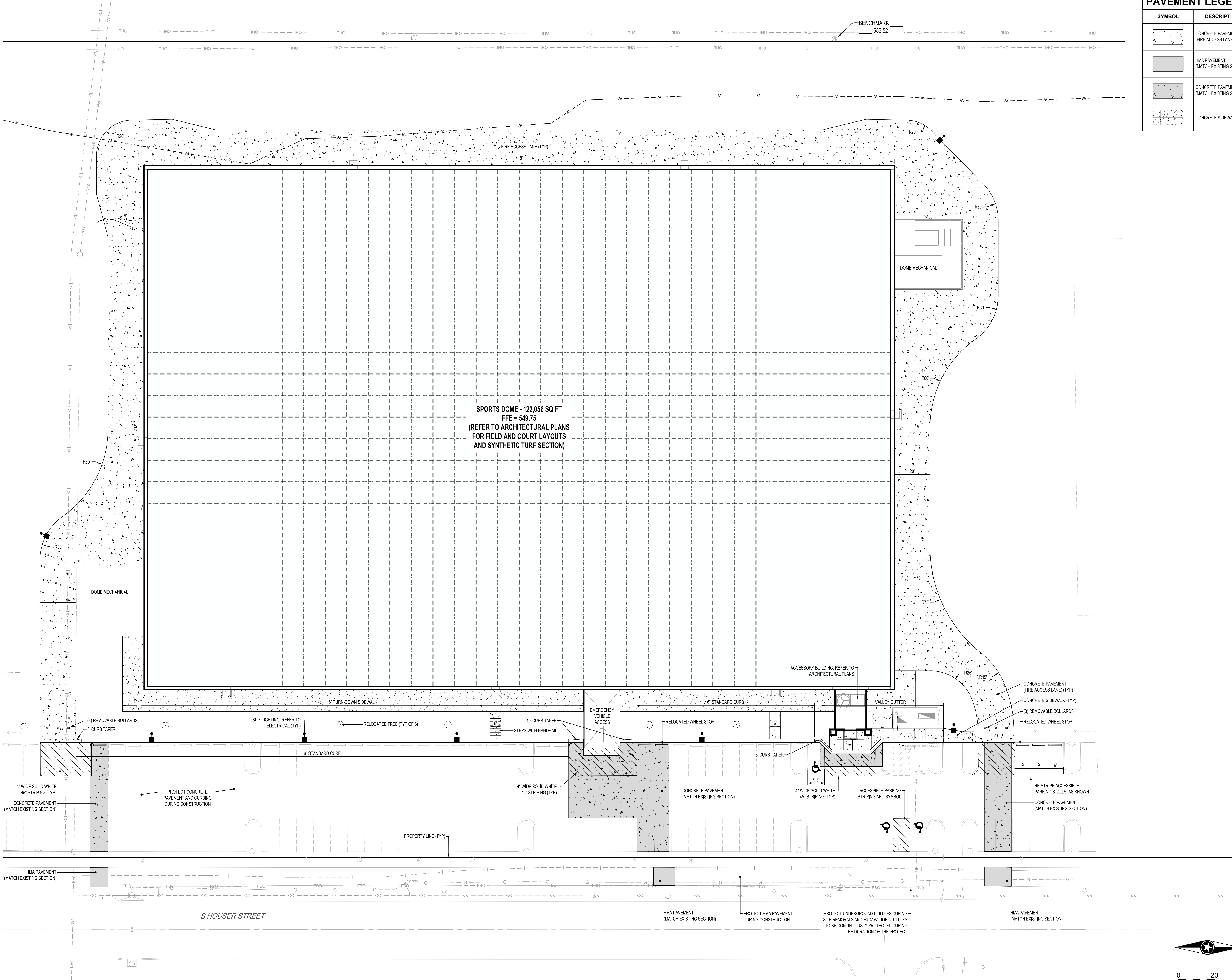
MUSCATINE IOWA

PROJECT NO.	23-29721
FILE NAME	29721 C2-EXISTING
DRAWN BY	MNA
DESIGNED BY	ART
REVIEWED BY	MJE
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	-

EXISTING SITE AND REMOVAL PLAN

C2-10





PAVEMENT LEGEND	
SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT (FIRE ACCESS LANE)
	HMA PAVEMENT (MATCH EXISTING SECTION)
	CONCRETE PAVEMENT (MATCH EXISTING SECTION)
	CONCRETE SIDEWALK



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PROJECT

**MUSCATINE
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COMPLEX**

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

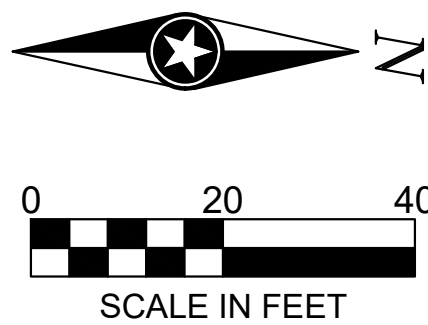
PROJECT NO.	23-29721
FILE NAME	29721 C3-SITE
DRAWN BY	MNA
DESIGNED BY	ART
REVIEWED BY	MJE
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	-

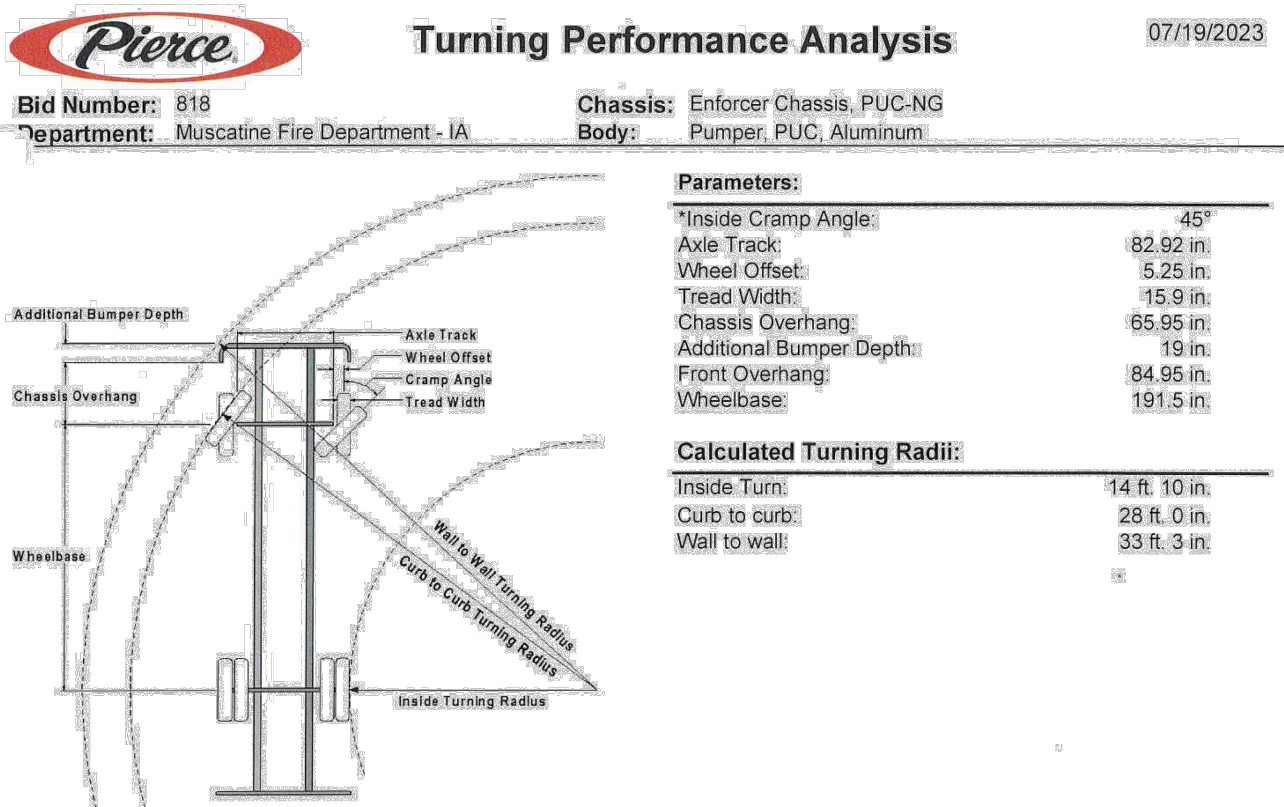
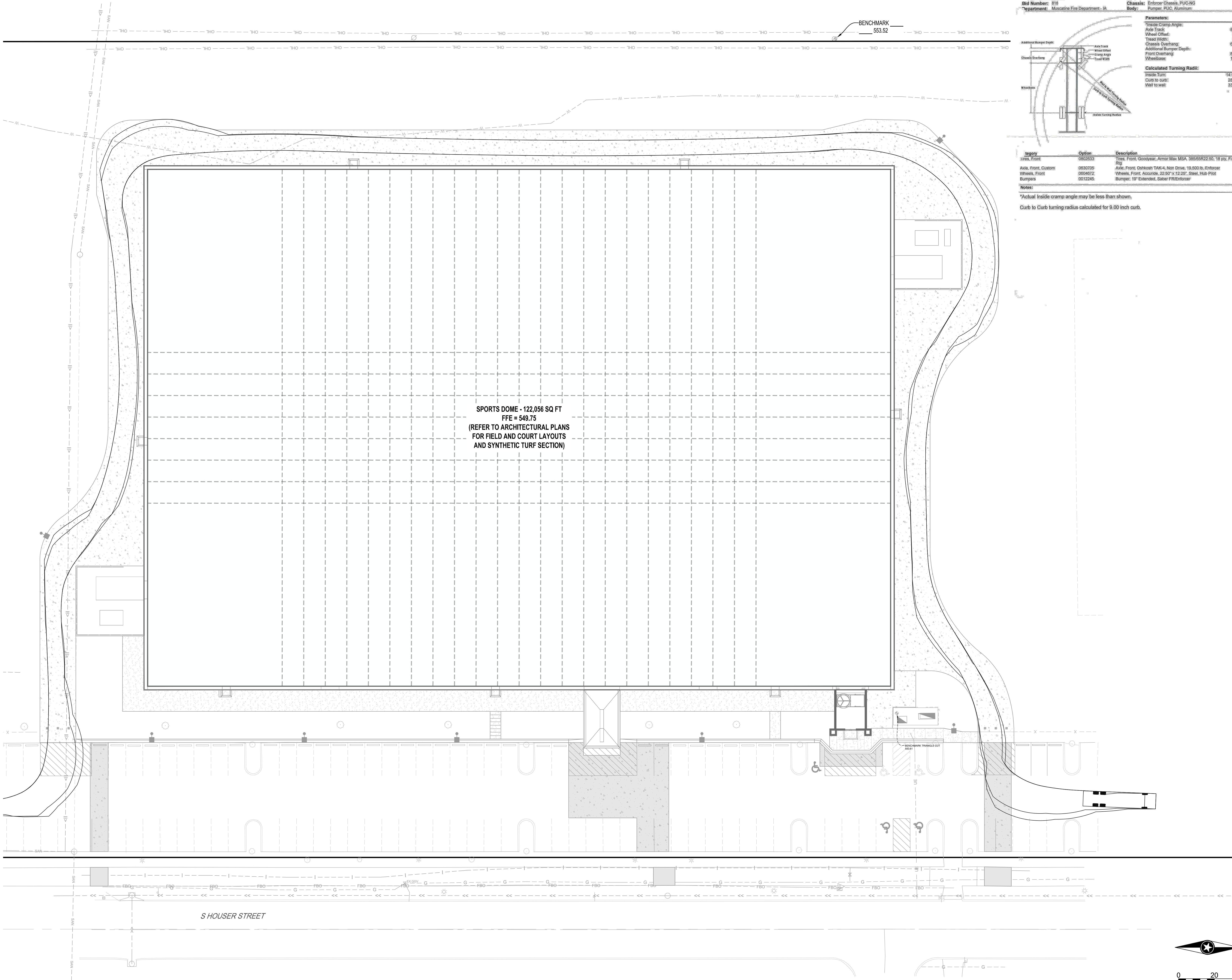
TITLE

SITE PLAN

SHEET

C3-10





Category	Option	Description
Tires, Front	0602033	Tires, Front, Goodyear, Armor Max MSA, 385/65R22.5, 18 ply, Fire Ser. Load Rtg.
Axis, Front, Custom	0630709	Axis, Front, Outreach TANK4, Non Drive, 19,500 lb, Enforcer
Wheelbase, Front	0004072	Wheelbase, Front, Accuride, 22.50" x 12.25", Steel, Hub Pilot
Bumpers	0012245	Bumper, 19" Extended, Saber FR/Enforcer

Notes:
*Actual inside cramp angle may be less than shown.
Curb to Curb turning radius calculated for 9.00 inch curb.



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-29721
FILE NAME	29721 C3-SITE
DRAWN BY	MNA
DESIGNED BY	ART
REVIEWED BY	MJE
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	-

TITLE

FIRE ACCESS ROUTE

SHEET

C3-11



STORM DRAIN STRUCTURE SCHEDULE								
STRUCTURE NO.	STRUCTURE TYPE	STRUCTURE SIZE (IN)	STRUCTURE MATERIAL	CASTING	PAY HEIGHT (LN FT)	* TOP OF CASTING ELEVATION	OUTLET INVERT	OUTLET PIPE
ST-1	SW-501	36 x 24	RC	SW-603 TYPE R	3.04	545.56	543.52	P-1

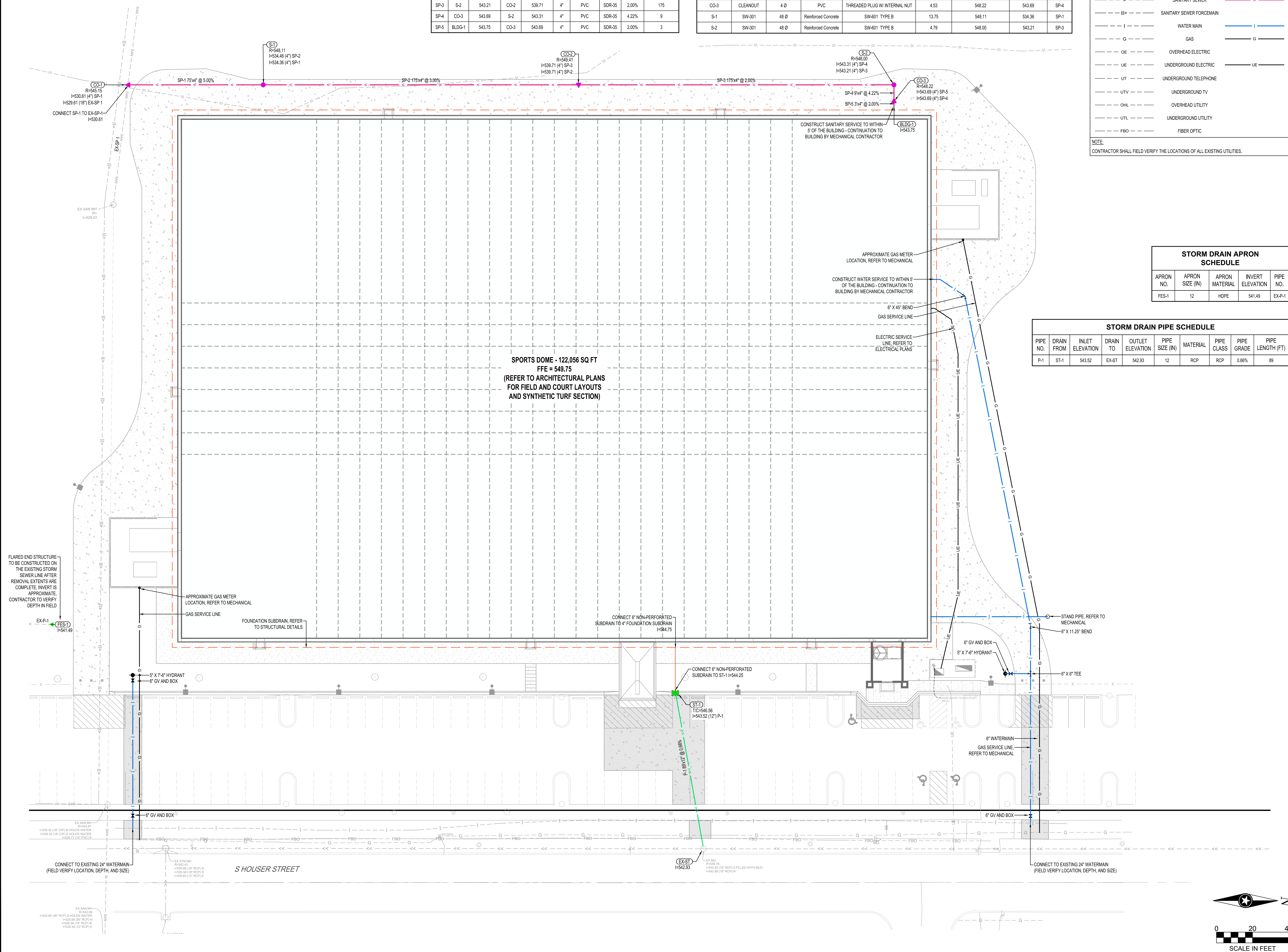
SANITARY SEWER PIPE SCHEDULE									
PIPE NO.	DRAIN FROM	INLET ELEVATION	DRAIN TO	OUTLET ELEVATION	PIPE SIZE	MATERIAL	PIPE CLASS	PIPE GRADE	PIPE LENGTH (FT)
SP-1	S-1	534.36	CO-1	530.61	4"	PVC	SDR-35	5.00%	75
SP-2	CO-2	539.71	S-1	534.46	4"	PVC	SDR-35	3.00%	175
SP-3	S-2	543.21	CO-2	539.71	4"	PVC	SDR-35	2.00%	175
SP-4	CO-3	543.69	S-2	543.31	4"	PVC	SDR-35	4.22%	9
SP-5	BLDG-1	543.75	CO-3	543.69	4"	PVC	SDR-35	2.00%	3

SANITARY SEWER STRUCTURE SCHEDULE								
STRUCTURE NO.	STRUCTURE TYPE	STRUCTURE SIZE (IN)	STRUCTURE MATERIAL	CASTING	PAY HEIGHT (LN FT)	TOP OF CASTING ELEVATION	INVERT ELEVATION	OUTLET PIPE
CO-1	CLEANOUT	4 Ø	PVC	THREADED PLUG W/ INTERNAL NUT	15.54	545.15	529.61	EX-SP-1
CO-2	CLEANOUT	4 Ø	PVC	THREADED PLUG W/ INTERNAL NUT	9.70	549.41	539.71	SP-2
CO-3	CLEANOUT	4 Ø	PVC	THREADED PLUG W/ INTERNAL NUT	4.53	548.22	543.69	SP-4
S-1	SW-301	48 Ø	Reinforced Concrete	SW-601 TYPE B	13.75	548.11	534.36	SP-1
S-2	SW-301	48 Ø	Reinforced Concrete	SW-601 TYPE B	4.79	548.00	543.21	SP-3

UTILITY LEGEND	
EXISTING	PROPOSED
--- >> ---	STORM DRAIN
--- > ---	PERFORATED DRAIN TILE
--- > ---	SANITARY SEWER
--- II> ---	SANITARY SEWER FORCEMAIN
--- I ---	WATER MAIN
--- G ---	GAS
--- OE ---	OVERHEAD ELECTRIC
--- UE ---	UNDERGROUND ELECTRIC
--- UT ---	UNDERGROUND TELEPHONE
--- UTV ---	UNDERGROUND TV
--- OHL ---	OVERHEAD UTILITY
--- UTL ---	UNDERGROUND UTILITY
--- FBO ---	FIBER OPTIC
NOTE: CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES.	

STORM DRAIN APRON SCHEDULE				
APRON NO.	APRON SIZE (IN)	APRON MATERIAL	INVERT ELEVATION	PIPE NO.
FES-1	12	HDPE	541.49	EX-P-1

STORM DRAIN PIPE SCHEDULE									
PIPE NO.	DRAIN FROM	INLET ELEVATION	DRAIN TO	OUTLET ELEVATION	PIPE SIZE (IN)	MATERIAL	PIPE CLASS	PIPE GRADE	PIPE LENGTH (FT)
P-1	ST-1	543.52	EX-ST	542.93	12	RCP	RCP	0.66%	89



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

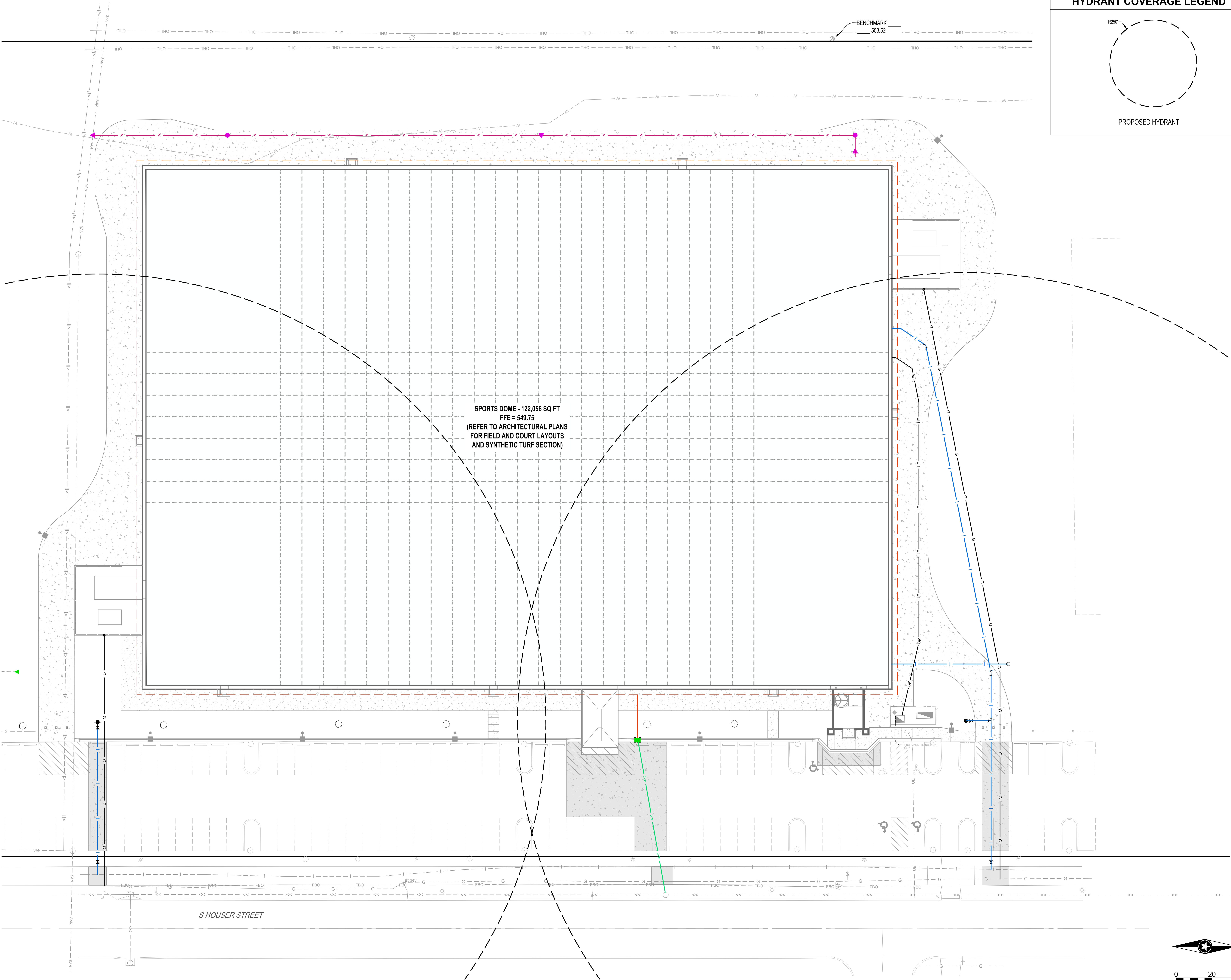
PROJECT NO.	23-29721
FILE NAME	29721 C3-UTILITY
DRAWN BY	MNA
DESIGNED BY	ART
REVIEWED BY	MJE
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	-

TITLE

UTILITY PLAN

SHEET

C3-20



HYDRANT COVERAGE LEGEND

R250'

PROPOSED HYDRANT



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PROJECT

MUSCATINE
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COMPLEX

MUSCATINE IOWA

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DATE	DESCRIPTION	BY

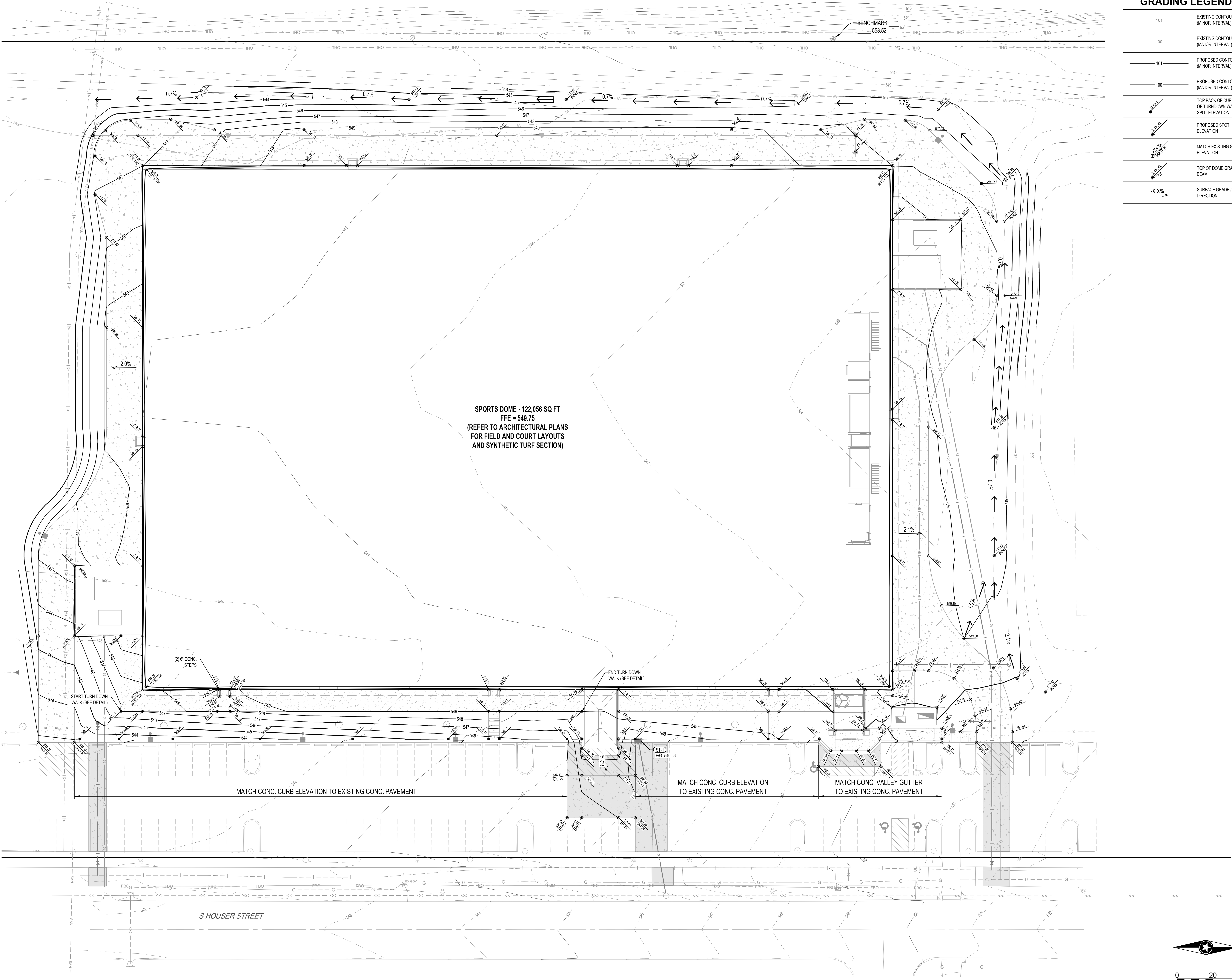
PROJECT NO.	23-29721
FILE NAME	29721 C3-UTILITY
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DESIGNED BY	ART
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ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	-

TITLE

HYDRANT
COVERAGE PLAN

SHEET

C3-30



GRADING LEGEND	
	EXISTING CONTOUR (MINOR INTERVAL)
	EXISTING CONTOUR (MAJOR INTERVAL)
	PROPOSED CONTOUR (MINOR INTERVAL)
	PROPOSED CONTOUR (MAJOR INTERVAL)
	TOP BACK OF CURB / TOP OF TURN DOWN WALK SPOT ELEVATION
	PROPOSED SPOT ELEVATION
	MATCH EXISTING GRADE ELEVATION
	TOP OF DOME GRADE BEAM
	SURFACE GRADE / DIRECTION



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PROJECT

**MUSCATINE
INDOOR SPORTS
COMPLEX**

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

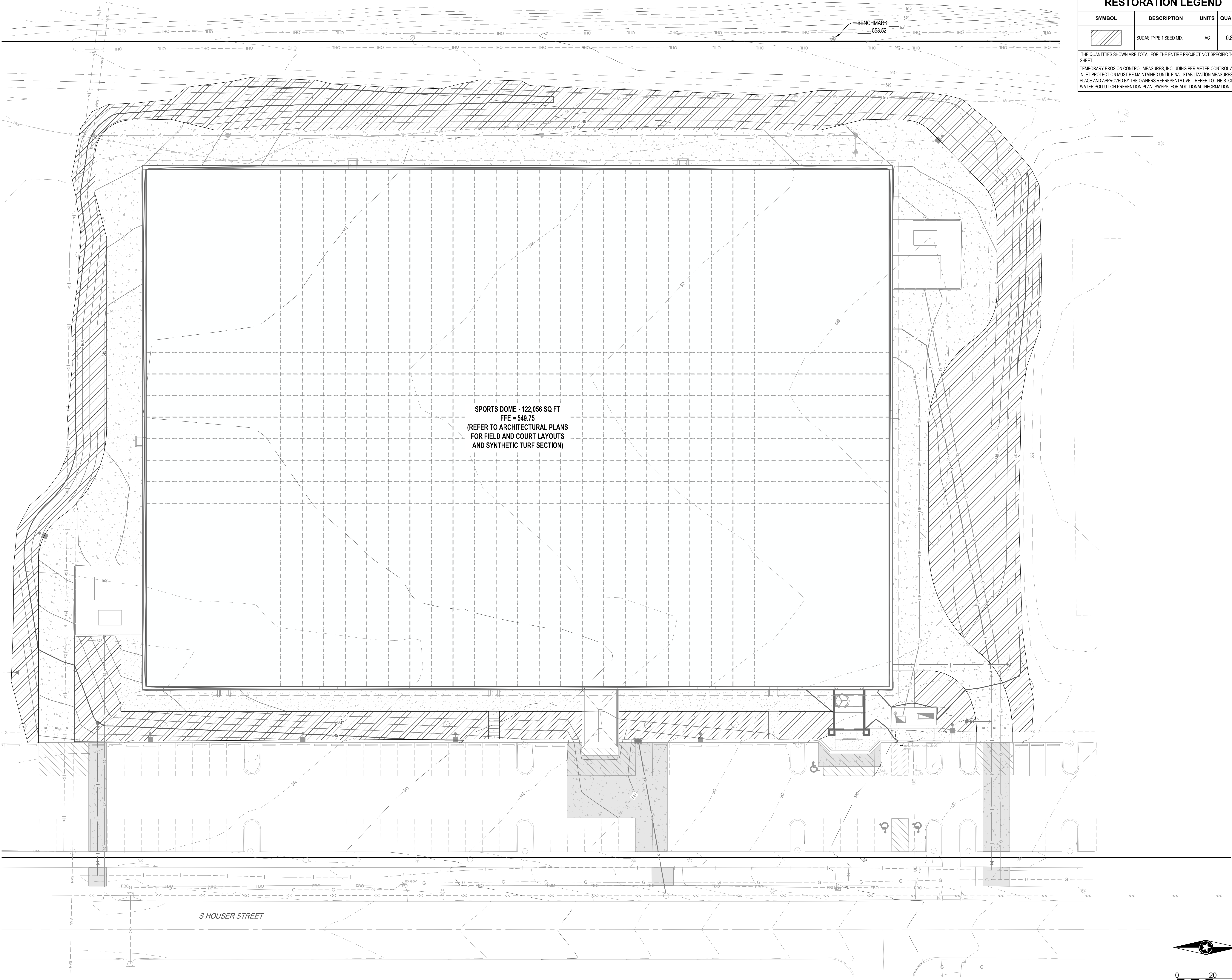
PROJECT NO.	23-29721
FILE NAME	29721 C4-GRADING
DRAWN BY	MNA
DESIGNED BY	ART
REVIEWED BY	MJE
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	-

TITLE

GRADING PLAN

SHEET

C4-10



RESTORATION LEGEND

SYMBOL	DESCRIPTION	UNITS	QUANTITY
	SUDAS TYPE 1 SEED MIX	AC	0.8400

THE QUANTITIES SHOWN ARE TOTAL FOR THE ENTIRE PROJECT NOT SPECIFIC TO THIS SHEET.
TEMPORARY EROSION CONTROL MEASURES, INCLUDING PERIMETER CONTROL AND INLET PROTECTION MUST BE MAINTAINED UNTIL FINAL STABILIZATION MEASURES ARE IN PLACE AND APPROVED BY THE OWNERS REPRESENTATIVE. REFER TO THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR ADDITIONAL INFORMATION.



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PROJECT

MUSCATINE
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COMPLEX

MUSCATINE IOWA

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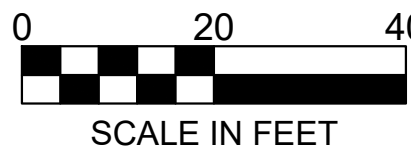
PROJECT NO.	23-29721
FILE NAME	29721 C5-LAND
DRAWN BY	MNA
DESIGNED BY	ART
REVIEWED BY	MJE
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	-

TITLE

RESTORATION
PLAN

SHEET

C5-10



SOUND INSULATION (IF NOTED)

METAL STUDS

5/8" TYPE X GYPSUM BOARD

PLAN

WALL TYPE	STUD DESIGNATION	SPACING	MAX. HEIGHT (R-PSF, L/240)	SOUND TRANSMISSION (STC)	FIRE RATING / UL DESIGN
<A2>	330S125-30	16"	15'-0"		
<A3>	362S125-30	16"	15'-6"		
<A6>	600S125-30	16"	22'-11"		

NOTES:
1. REFER TO STRUCTURAL DOCUMENTS FOR REINFORCEMENT

WALL TYPE A (METAL STUD PARTITION)
NOT TO SCALE

HORIZONTAL WALL REINFORCING

CORE-FILL WITH VERTICAL WALL REINFORCING

PLAN

WALL TYPE	NOMINAL BLOCK SIZE	FIRE RATING / UL DESIGN
<M6>	6"	
<M8>	8"	
<M12>	12"	

NOTES:
1. REFER TO STRUCTURAL DOCUMENTS FOR REINFORCEMENT

WALL TYPE M (NON-RATED MASONRY)
NOT TO SCALE

MEMBRANE FLASHING, REFER TO SECTIONS

FLUID APPLIED WEATHER BARRIER

1/2" PLYWOOD

1 1/2" RIGID INSULATION

8" CMU, REFER TO STRUCTURAL DOCUMENTS FOR REINFORCEMENT

EXTERIOR

1 1/2" RIGID INSULATION

Z-FURRING CHANNEL @ 16" OC WITHIN SAME PLANE AS RIGID INSULATION.

PLAN

WALL TYPE	MASONRY WIDTH (NOM.)	FIRE RATING / UL DESIGN
<X4>	8"	

NOTES:
1.

EXTERIOR WALL TYPE
NOT TO SCALE

GENERAL ASSEMBLY NOTES:

A. NOT ALL ASSEMBLY TYPES LISTED APPLY TO THIS PROJECT. REFER TO FLOOR PLANS FOR LOCATIONS AND ADDITIONAL NOTES.

B. LIGHT GAUGE STEEL FRAMING MEMBER DESIGNATION SYSTEM: (REFER TO STRUCTURAL NOTES)

600S125-54 (EQUIVALENT TO 6" x 16 GAUGE STUD OR JOIST WITH 1 1/4" FLANGES)

MINIMUM BASE METAL THICKNESS IN MILS. EXAMPLE - .054 = 54 MILS)

19 = 25 GAUGE 43 = 18 GAUGE
27 = 22 GAUGE 54 = 16 GAUGE
30 = 20 GAUGE (DRYWALL) 68 = 14 GAUGE
33 = 20 GAUGE (STRUCTURAL) 97 = 12 GAUGE

FLANGE WIDTH (1/100 INCHES): EXAMPLE - 125 = 1.25"

STYLE: S = STUD OR JOIST SECTION (WITH FLANGE STIFFENERS) =
T = TRACK SECTION =
U = CHANNEL SECTION (STUDS WITHOUT FLANGE STIFFENERS) =
F = FURRING CHANNEL =
Z = ZEE SECTION =

MEMBER DEPTH (1/100 INCHES): EXAMPLE - 600 = 6"

C. IN ALL WET AREAS SUCH AS SHOWERS AND TUBS, INSTALL CEMENT-BASED BACKER BEHIND AREAS SCHEDULED TO RECEIVE TILE FINISH.

D. PROVIDE A MINIMUM OF MOISTURE-RESISTANT GYPSUM BOARD ON ALL RESTROOM WALLS AND OTHER AREAS SCHEDULED TO RECEIVE FRP OR TILE FINISH.

E. ALL PARTITIONS CONTAINING PLUMBING OR HAVING AN EXTERIOR FACE SHALL BE INSULATED.

F. REFERENCE FINISH PLANS FOR ADDITIONAL FINISHES NOT INDICATED ON PARTITION TYPES.

G. INCLUDE PAINTABLE ACOUSTIC SEALANT AT ALL TERMINATIONS AND PENETRATIONS FOR ALL NON RATED ASSEMBLIES. TYPICAL BOTH SIDES OF ASSEMBLY.

H. PROVIDE FIRE-TREATED WOOD OR STEEL BACKING FOR ALL WALL-MOUNTED FINISH CARPENTRY, ARCHITECTURAL WOODWORK, TOILET PARTITIONS, ACCESSORIES AND OTHER SIMILAR ITEMS.

I. WOOD FRAMING MEMBERS IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.

J. REFER TO STRUCTURAL DOCUMENTS FOR SHEAR WALL CRITERIA.

K. ALL NON-RATED WALLS TO BE CONSTRUCTED FULL HEIGHT TO THE UNDERSIDE OF FLOOR OR ROOF STRUCTURE ABOVE UNLESS NOTED OTHERWISE.

L. PROVIDE DOUBLE TOP PLATES AT ALL WOOD LOAD BEARING WALLS.

M. NON LOAD BEARING METAL STUD WALLS SHALL HAVE A SLOTTED TOP TRACK FOR DEFLECTION. FINISHES / SUBSTRATES SHALL NOT BE FASTENED TO THE TOP TRACK.

N. PROVIDE 1" GAP FOR DEFLECTION ALLOWANCE BETWEEN WALL FINISH, SUBSTRATE, AND STRUCTURE ABOVE. TYPICAL UNLESS NOTED OTHERWISE ON STRUCTURAL DOCUMENTS.

O. COLD FORMED FRAMING DESIGNED BY FRAMING CONTRACTOR. REFER TO STRUCTURAL NOTES FOR COMPONENTS AND CLADDING DESIGN REQUIREMENTS.

ADDITIONAL NOTES FOR FIRE-RATED ASSEMBLIES:

P. ALL ASSEMBLIES NOTED TO BE FIRE-RESISTANCE RATED SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE REFERENCE FIRE RESISTANCE TEST. ANY PROPRIETARY PRODUCTS REQUIRED BY FIRE RATED ASSEMBLIES AS INDICATED ON THE DRAWINGS ARE APPROVED.

Q. ALTERNATE MATERIALS AND ASSEMBLIES MUST BE APPROVED BY THE ARCHITECT PRIOR TO COMMENCING WORK.

R. HIGHER FIRE-RATED ASSEMBLIES SHALL BE CONSTRUCTED BEFORE LOWER (OR NON-RATED) ASSEMBLIES.

S. ALL FIRE-RATED WALLS TO BE CONSTRUCTED FULL HEIGHT FROM TOP OF UNFINISHED FLOOR TO UNDERSIDE OF STRUCTURE ABOVE.

T. INCLUDE SEALANT, MATERIALS, AND/OR ASSEMBLIES AT ALL TERMINATIONS AND PENETRATIONS WHICH MAINTAIN THE FIRE-RESISTANCE RATING. TYPICAL BOTH SIDES OF ASSEMBLY.

U. REFER TO IBC CHAPTER 7, TABLE "MINIMUM EQUIVALENT THICKNESS OF BEARING OR NONBEARING CONCRETE MASONRY WALLS" FOR CALCULATED FIRE-RESISTANCE RATING.

8" CMU, REFER TO STRUCTURAL DOCUMENTS FOR GROUT AND REINFORCEMENT

FLUID APPLIED WEATHER BARRIER

3" RIGID INSULATION (MIN. R-13.3 @)

AIR SPACE

BRICK TIES @ 16" OC

4" ROCK FACE CMU, REFER TO STRUCTURAL DOCUMENTS FOR GROUT AND REINFORCEMENT

PLAN

*NOTE: REFER TO SECTION DETAILS FOR TOP & BASE CONDITIONS.

WALL TYPE	MASONRY WIDTH (NOM.)	FIRE RATING / UL DESIGN
<M4>		

NOTES:
1.

EXTERIOR WALL TYPE
NOT TO SCALE

FINISH, REFER TO EXTERIOR ELEVATIONS

PRECAST WALL PANEL, R-13.3 MIN

INSULATION

EXTERIOR

PLAN

WALL TYPE	FIRE RATING / UL DESIGN
<X1>	

NOTES:
1.

EXTERIOR WALL TYPE
NOT TO SCALE

8" CMU, REFER TO STRUCTURAL DOCUMENTS FOR REINFORCEMENT

Z-FURRING CHANNEL @ 16" OC WITHIN SAME PLANE AS RIGID INSULATION.

1/2" PLYWOOD

FLUID APPLIED WEATHER BARRIER

2" MTL PANEL, REFER TO EXTERIOR ELEVATIONS (X2 2 TO HAVE 1" MTL PANEL IN LIEU OF 2")

EXTERIOR

PLAN

WALL TYPE	MASONRY WIDTH (NOM.)	FIRE RATING / UL DESIGN
<X2.1>	8"	
<X2.2>	8"	

NOTES:
1.

EXTERIOR WALL TYPE
NOT TO SCALE

FINISH, REFER TO EXTERIOR ELEVATIONS

AIR BARRIER

1/2" PLYWOOD

4" STEEL STUDS

EXTERIOR

PLAN

WALL TYPE	STUD DESIGNATION	SPACING	FIRE RATING / UL DESIGN
<X3>	4" STEEL STUD	16"	

EXTERIOR WALL TYPE
NOT TO SCALE

CONCRETE TOPPING, REFER TO STRUCTURAL DOCUMENTS

4" RIGID INSULATION

HOLLOW CORE PLANK, REFER TO STRUCTURAL DOCUMENTS

SECTION

FLOOR/CEILING ASSEMBLY SL4
NOT TO SCALE

TPO ROOF MEMBRANE

POLYISOCYANURATE INSULATION, R-30 MIN

VAPOR BARRIER

METAL ROOF DECK AND STRUCTURE BELOW, REFER TO STRUCTURAL DOCUMENTS

SECTION

NOTE:
FASTENERS NOT TO EXCEED 1 1/4" BELOW TOP OF METAL DECK

ROOF/CEILING ASSEMBLY R3
NOT TO SCALE

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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	TNT
DESIGNED BY	DFS
REVIEWED BY	DFS
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	

TITLE

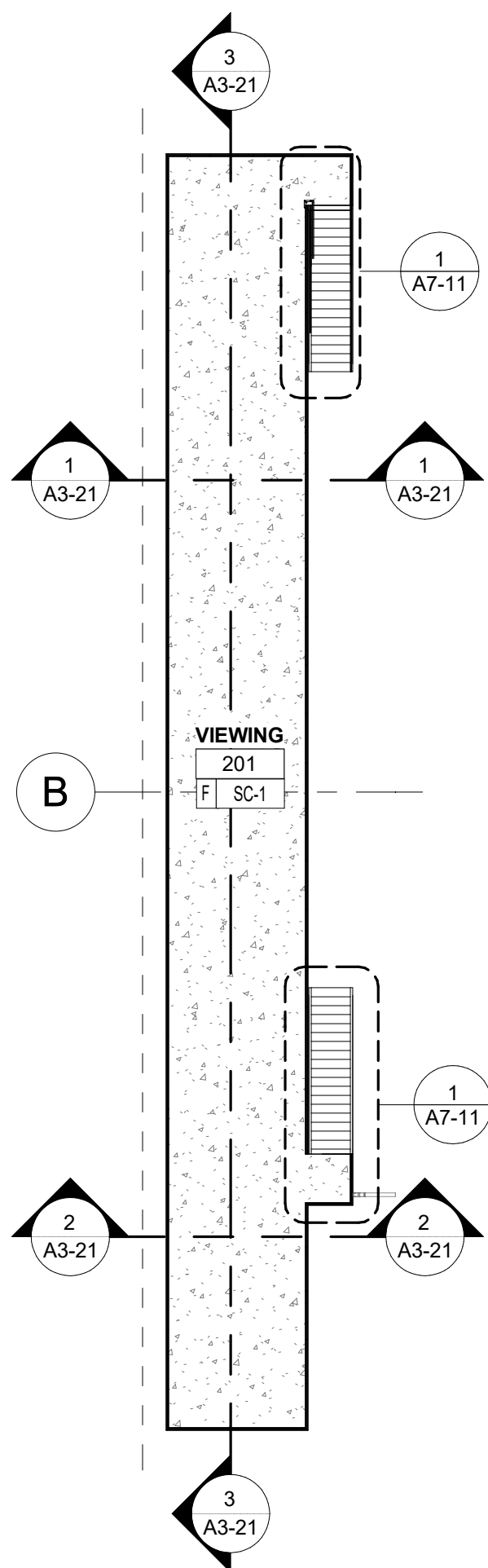
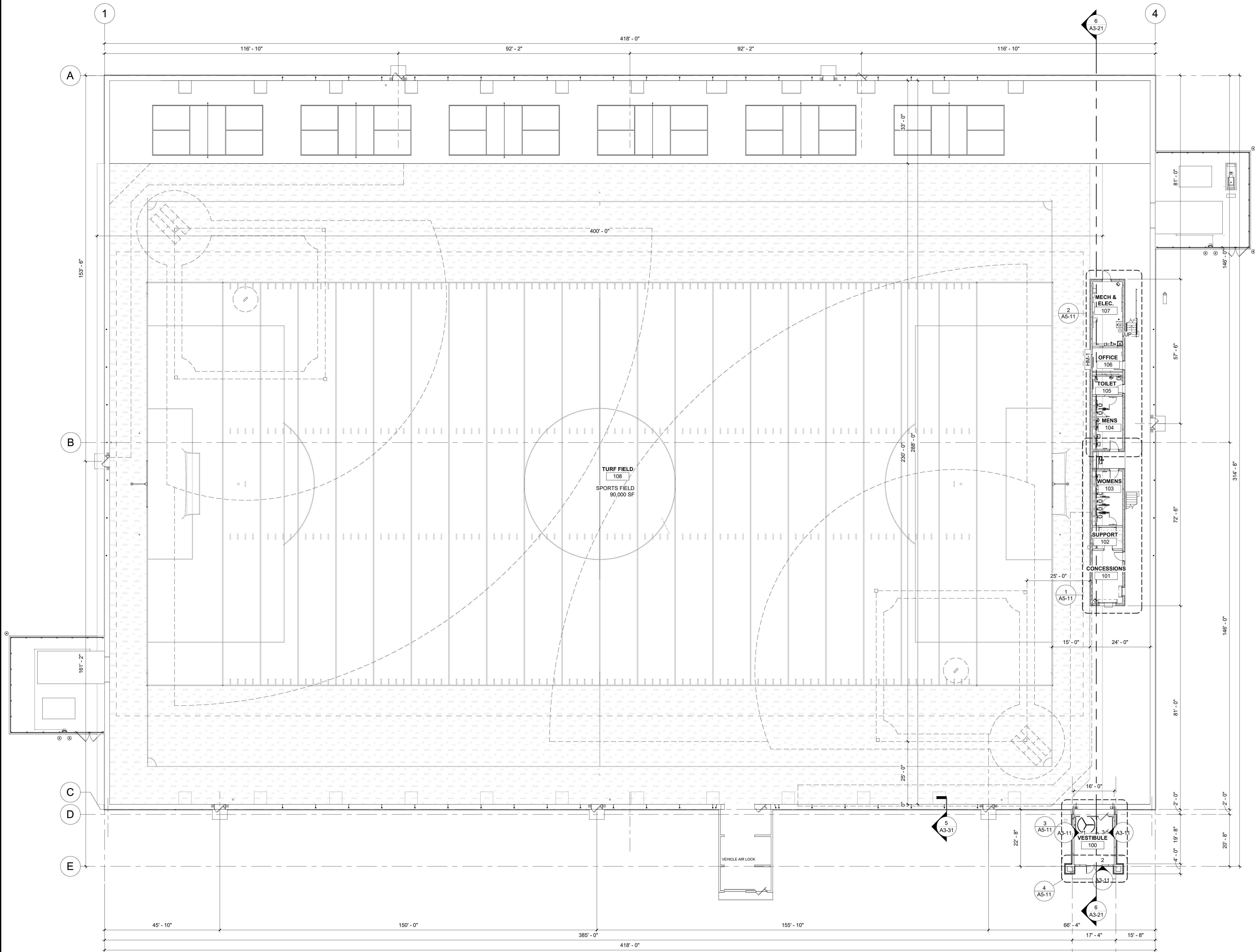
WALL TYPES, HORIZONTAL ASSEMBLIES, & NOTES

SHEET

A1-01



INTERIOR FINISH SCHEDULE						
MARK	MATERIAL TYPE	MANUFACTURER	MODEL / SIZE	COLOR	ADDITIONAL INFORMATION	COMMENTS
FLOOR						
SC-1	SEALED CONCRETE	LATICRETE	SEALHARD	NATURAL, SATIN	SEALER	REFER TO FINISH FLOOR PLAN
WALL						
PNT-1	PAINT	SHERWIN WILLIAMS		AS SELECTED		
PNT-1E	EPOXY PAINT	SHERWIN WILLIAMS		AS SELECTED		



2 MEZZANINE FLOOR PLAN
1/16" = 1'-0"

1 FIRST FLOOR PLAN
1/16" = 1'-0"

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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-29721

FILE NAME 29721 Arch R22

DRAWN BY TNT

DESIGNED BY DFS

REVIEWED BY DFS

ORIGINAL ISSUE DATE 06/13/2024

CLIENT PROJECT NO.

TITLE

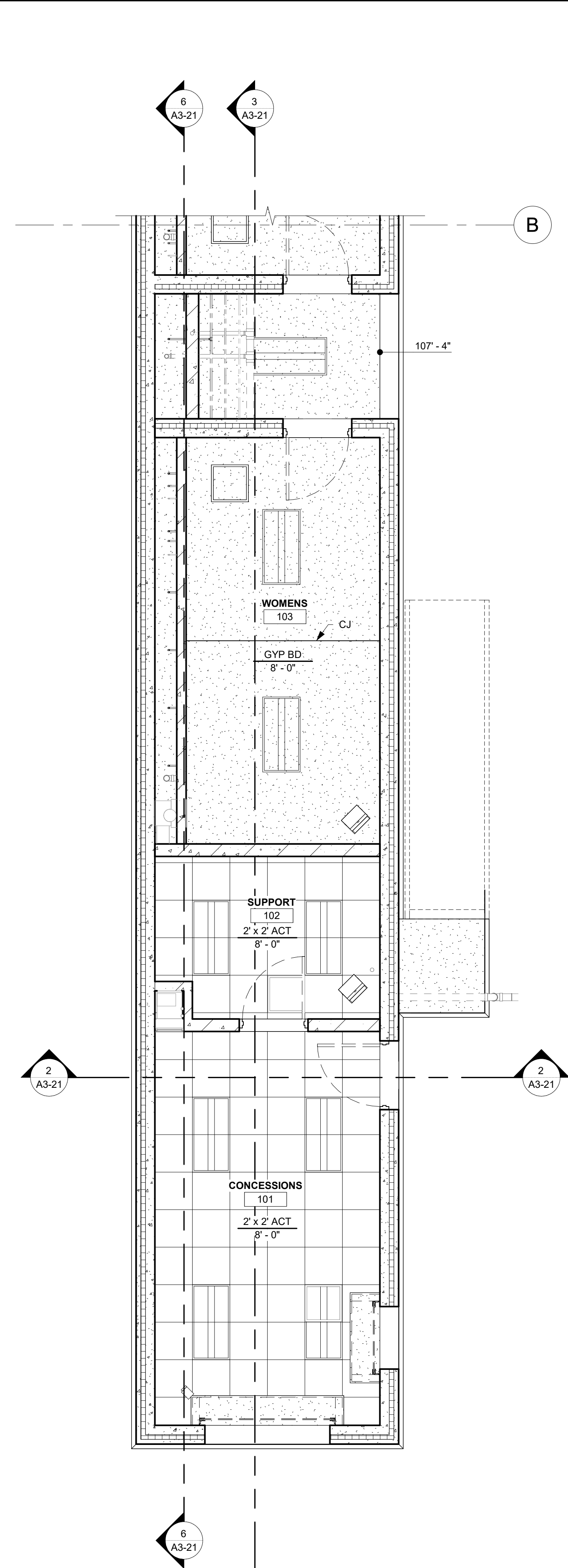
FIRST & SECOND FLOOR PLANS - OVERALL

SHEET

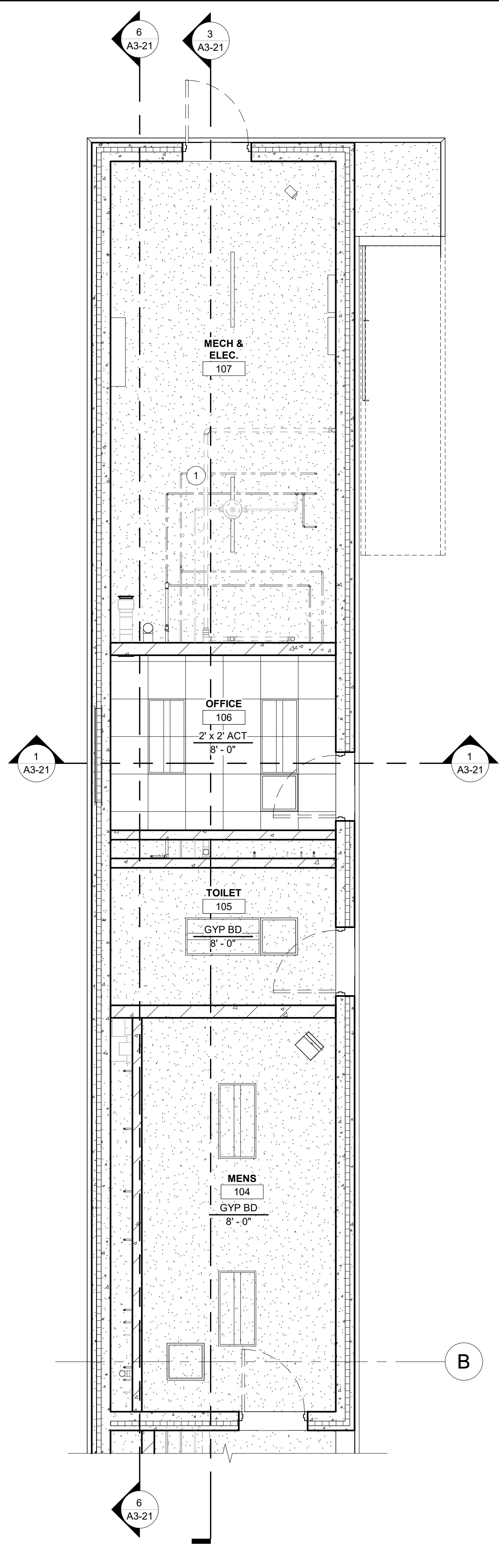
A1-21

REFERENCE SCALE
1" = 1'-0"
0 1/4" 1/2" 1" 2"

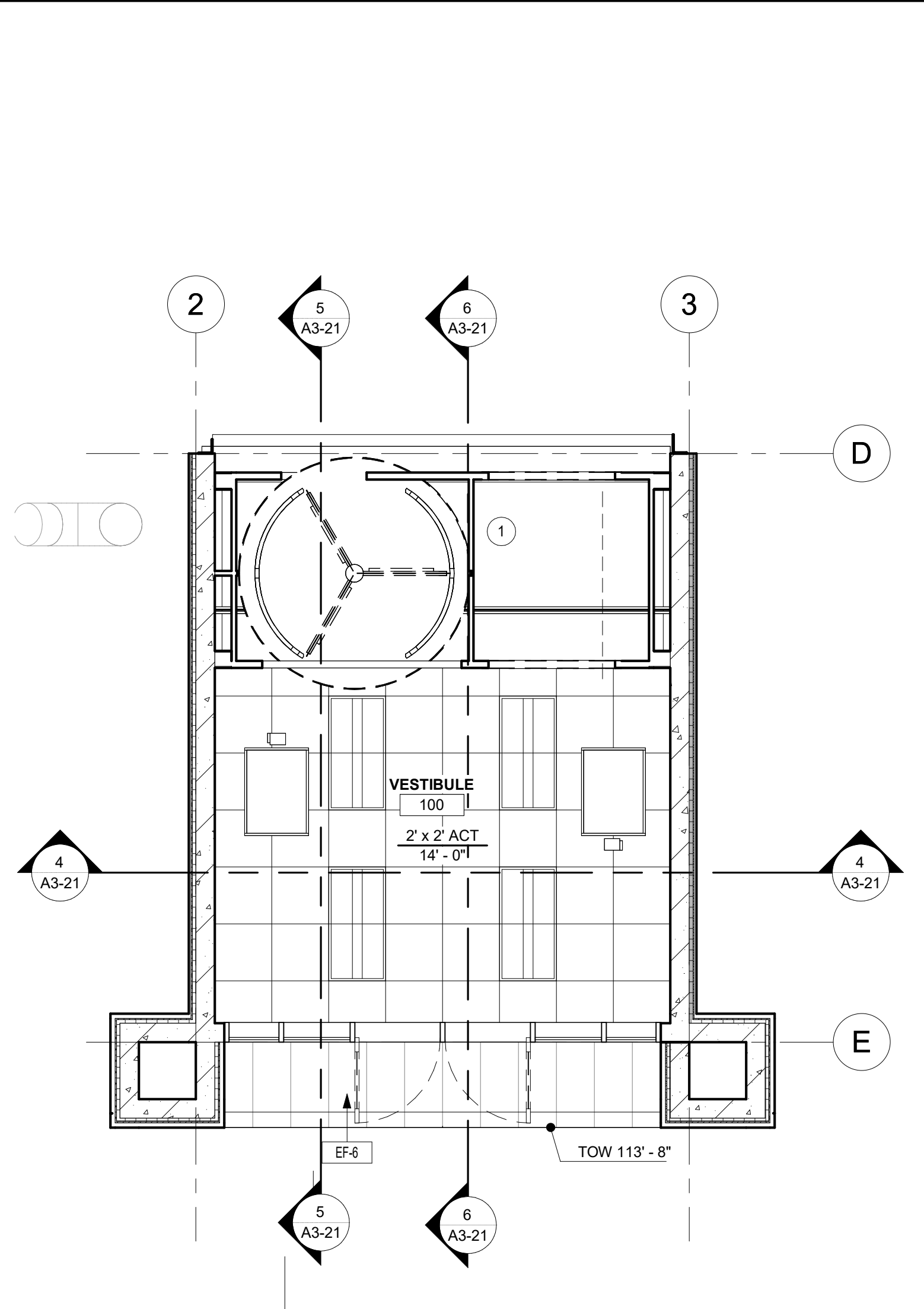
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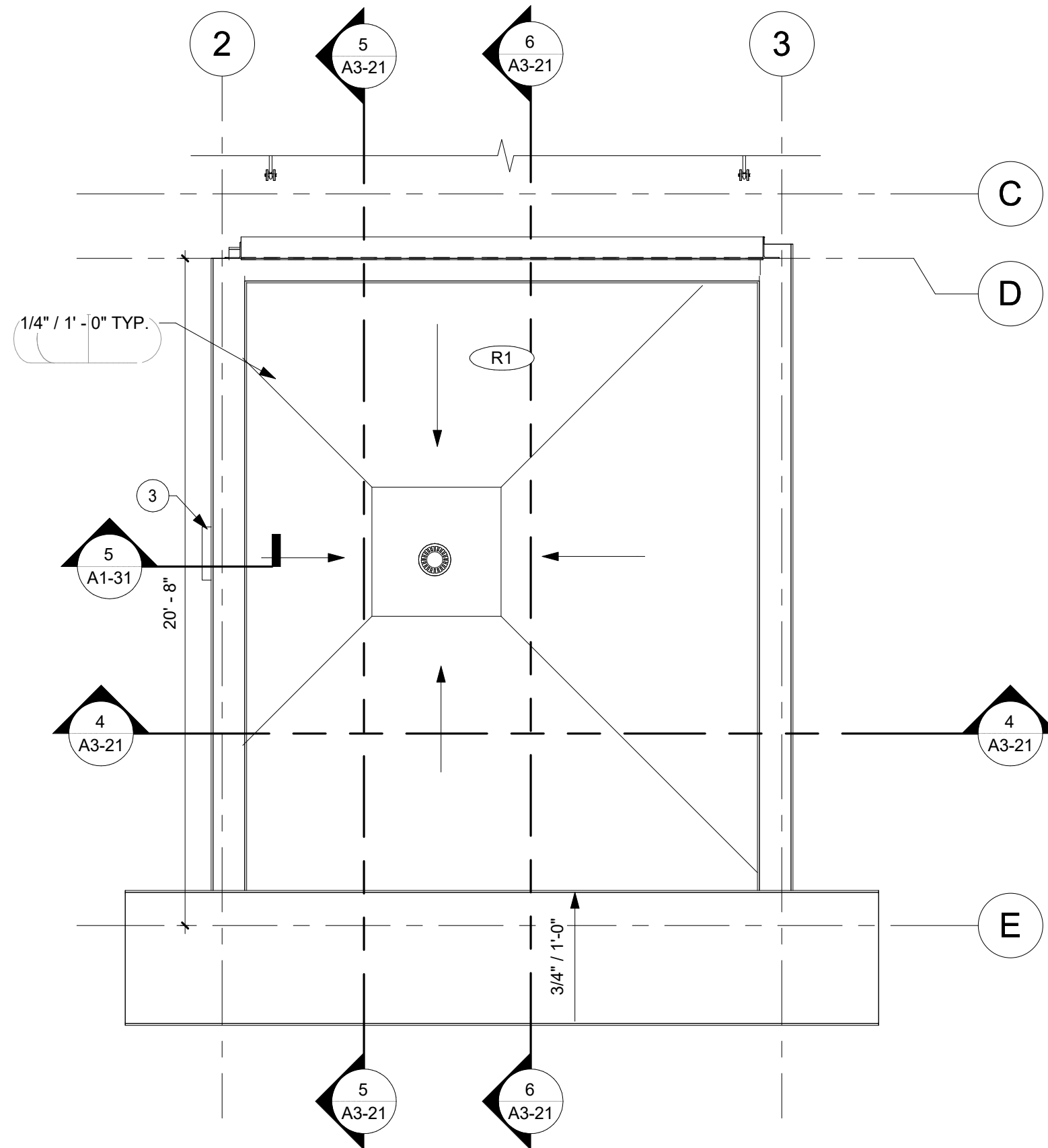
1 FIRST FLOOR REFLECTED CEILING
PLAN - SUPPORT BUILDING EAST
1/4" = 1'-0"



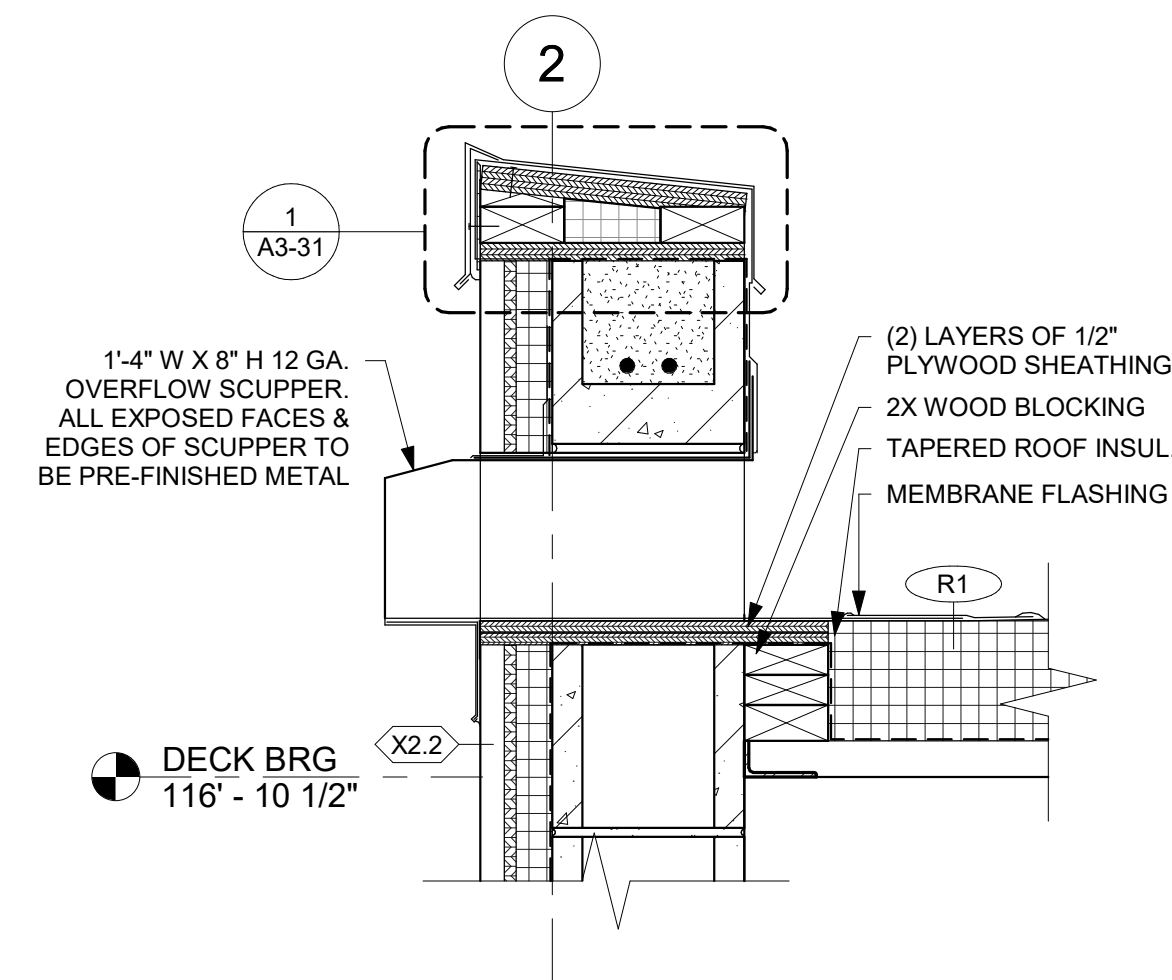
2 FIRST FLOOR REFLECTED CEILING
PLAN - SUPPORT BUILDING WEST
1/4" = 1'-0"



3 FIRST FLOOR REFLECTED CEILING
PLAN - ENTRY
1/4" = 1'-0"



4 ROOF PLAN
1/4" = 1'-0"



5 TYP. SCUPPER DETAIL
1 1/2" = 1'-0"

KEYNOTE LEGEND		
1	PAINT EXPOSED CEILING, STRUCTURE, MEP ITEMS, AND ALL OTHER ASSOCIATED ITEMS.	
3	OVERFLOW SCUPPER, REFER TO DETAIL.	



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PROJECT

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MUSCATINE IOWA

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DATE	DESCRIPTION	BY

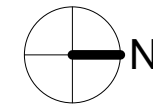
PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	TNT
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CLIENT PROJECT NO.	

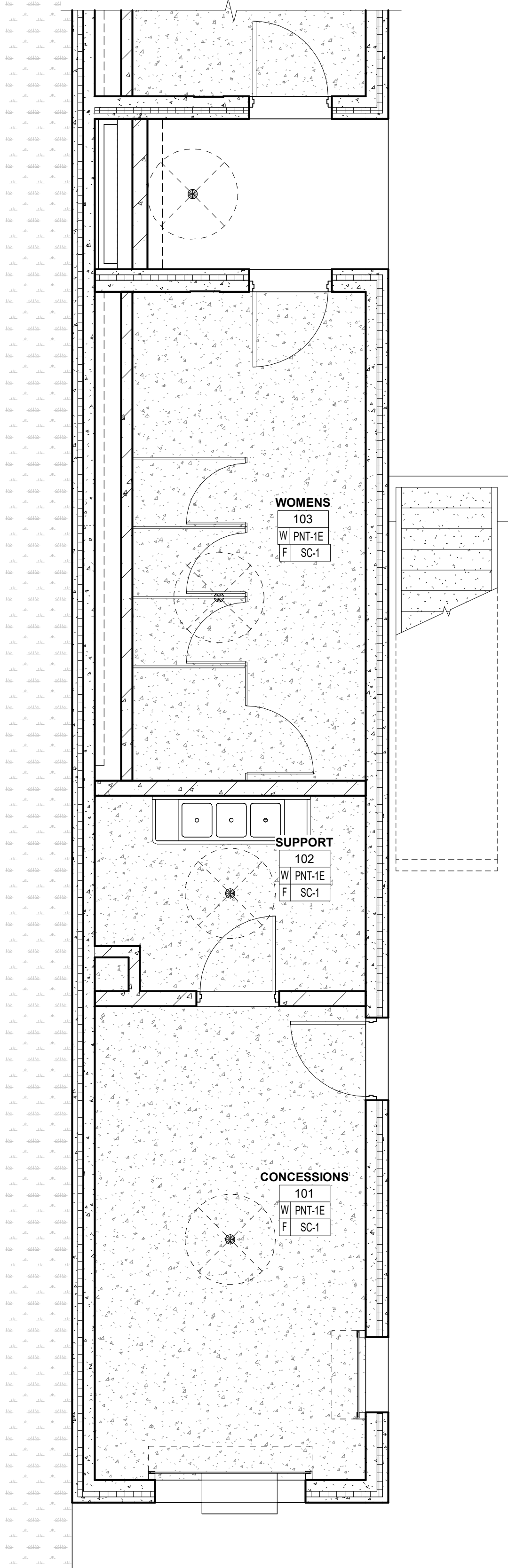
TITLE

REFLECTED CEILING PLAN & ROOF PLAN

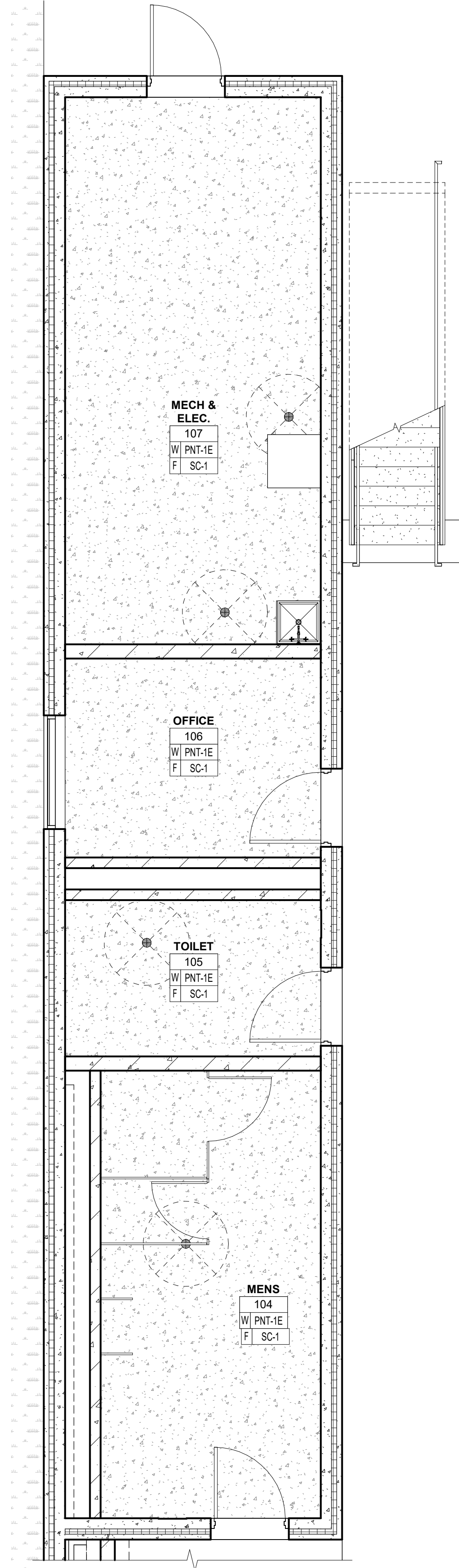
SHEET

A1-31

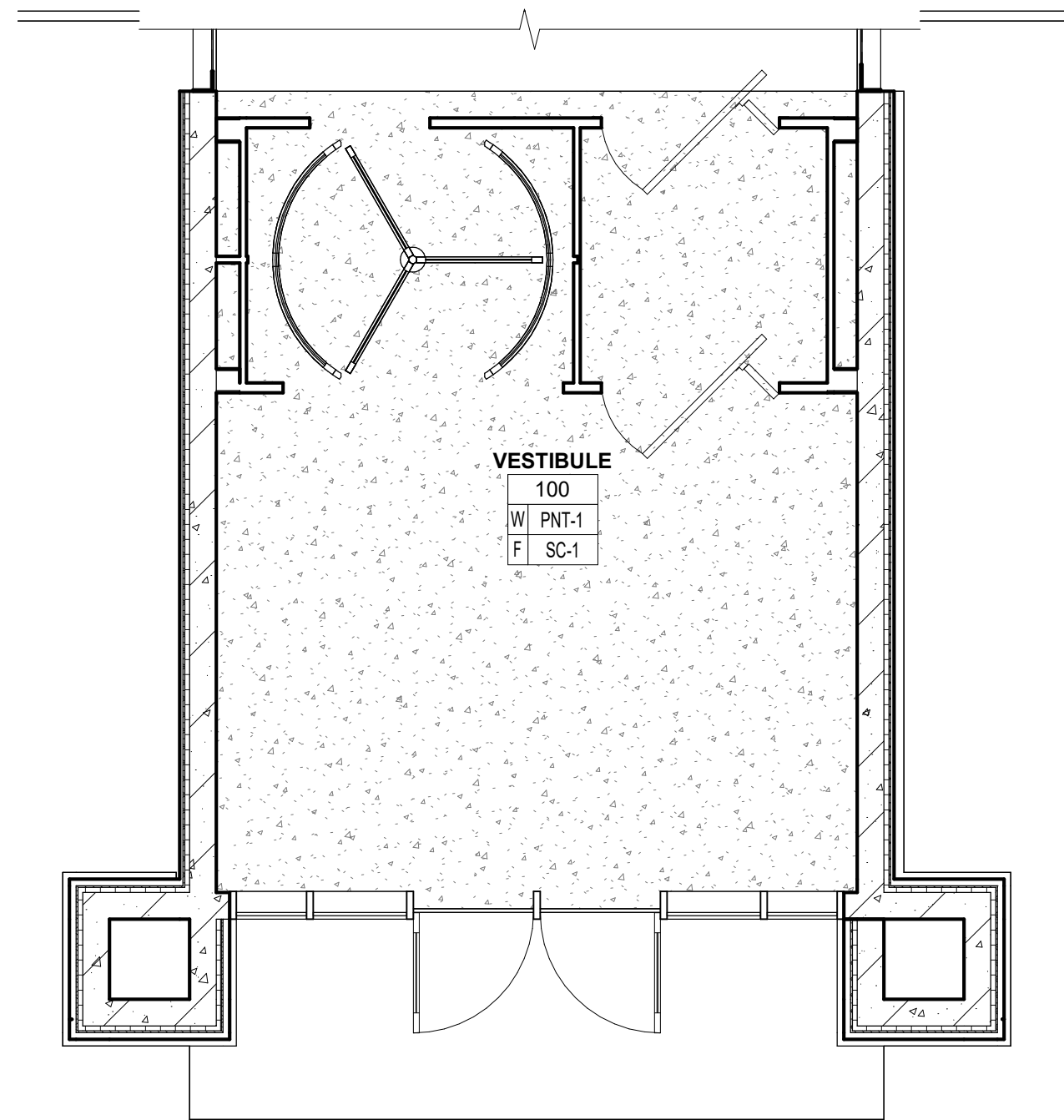




1 FINISHES - ENLARGED FLOOR PLAN -
SUPPORT BUILDING EAST
1/4" = 1'-0"



2 FINISHES - ENLARGED FLOOR PLAN -
SUPPORT BUILDING WEST
1/4" = 1'-0"



3 FINISHES - ENLARGED FLOOR PLAN -
ENTRY
1/4" = 1'-0"

ROOM / FINISH TAG	
ROOM NAME	
ROOM #	
W	WALL
P	PAINT
F	FLOOR
FINISHES LISTED IN ROOM TAG APPLY TO ALL ELEMENTS IN ROOM, UNLESS NOTED OTHERWISE	
THE FOLLOWING SYMBOL APPLIES TO FINISHES DIFFERENT FROM THOSE NOTED IN ROOM TAG:	
FINISH	
THE FOLLOWING SYMBOL INDICATES "REFER TO ELEVATIONS" FOR ADDITIONAL FINISH INFORMATION	
RTE	

SIGNAGE GENERAL NOTES	
A. CONFIRM FINAL SELECTIONS AND SPECIFICATIONS WITH SIGNAGE CONTRACTOR PRIOR TO ORDER/INSTALL.	
B. SIGN BACKERS REQUIRED ON ALL SIGNS MOUNTED TO GLASS.	
C. DIMENSIONAL LETTERS TO BE STUD MOUNT INSTALLATION UNLESS NOTED OTHERWISE.	

FINISH NOTES	
A. SOME SPECIFIED PRODUCTS AND FINISHES MAY HAVE SUBSTANTIAL LEAD TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING ORDERS IN A MANNER TO ENSURE THEIR TIMELY ARRIVAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXPENSES, INCLUDING DESIGN FEES, RELATED TO ANY RESELECTION REQUIRED DUE TO FAILURE TO ORDER PRODUCTS IN A TIMELY MANNER.	
B. ALL FINISH WORK SHALL BE PERFORMED IN COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS. SHOP DRAWINGS, SAMPLES, AND PRODUCT DATA SHALL BE SUBMITTED TO THE ARCHITECT FOR THEIR REVIEW & APPROVAL PRIOR TO BEGINNING WORK.	
C. ALL WALLS TO RECEIVE PNT-1 & B-1, UNLESS NOTED OTHERWISE.	
D. BULKHEADS AND SOFFITS: ALL SIDES AND UNDERSIDES TO BE PAINTED AS INDICATED ON REFLECTED CEILING PLANS, UNLESS NOTED OTHERWISE.	
E. REFER TO REFLECTED CEILING PLANS FOR CEILING/SOFT FINISHES AND LOCATIONS.	
F. PAINT ALL EXPOSED DUCTWORK, CONDUIT, ELECTRICAL EQUIPMENT, ETC. TO MATCH ADJACENT SURFACES, UNLESS NOTED OTHERWISE.	
G. EXTEND ALL FLOORING UNDER FURNITURE, DESKS AND COUNTERS, UNLESS NOTED OTHERWISE.	
H. ALL FLOORING TRANSITIONS TO BE CENTERED UNDER DOOR IN CLOSED POSITION, UNLESS NOTED OTHERWISE.	
I. INSTALL FLOORING PER PATTERNS REFLECTED ON FINISH PLANS. REFER TO FINISH SCHEDULE FOR ADDITIONAL NOTES.	
J. INSTALL DIFFERENT FLOORING TYPES PER MANUFACTURER'S RECOMMENDED METHODS, UNLESS NOTED OTHERWISE.	
K. FLOOR TILE AT FLOOR DRAINS TO BE INSTALLED WITH MINIMAL CUTS.	
L. INSTALL FIRE TREATED BLOCKING AS REQUIRED IN ALL PARTITIONS TO RECEIVE COUNTERS, SHELVING, MARKER BOARDS, TV'S, ETC.	
M. ALL EXPOSED ENDS OF CASEWORK TO HAVE FINISHED END PANELS.	
N. GROMMETS TO BE INCLUDED AT EVERY COUNTER WITH OUTLETS UNDERNEATH. VERIFY GROMMET LOCATIONS WITH DESIGNER.	
O. IN-WALL OR WALL SUPPORT BRACKETS TO BE PAINTED TO MATCH WALL FINISH, UNLESS NOTED OTHERWISE.	
P. PLUMBING FIXTURES HAVE BEEN REMOVED FROM FINISH PLAN FOR VIEWING CLARITY. REFER TO THE RESPECTIVE PLANS AND DOCUMENTS FOR PLUMBING CRITERIA.	
Q. WOOD DOORS, FRAMES, BASE MOLDING TO BE FILLED, STAINED, SEALED AND SHOP FINISHED TO MATCH ARCHITECT'S SAMPLE. WORK SHOULD BE PERFORMED IN A DUST FREE ENVIRONMENT.	
R. UNLESS OTHERWISE INDICATED, PROVIDE PRODUCTS OF QUALITY SPECIFIED BY AIA/AAW/MACWI ARCHITECTURAL WOODWORK STANDARDS FOR CUSTOM GRADE.	
S. RTE: REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL FINISH INFORMATION.	
T. HOLLOW METAL DOORS, FRAMES, AND HANDRAILS TO BE PAINTED PNT-X.	
U. "E" AT END OF PAINT TAG DESIGNATES TO USE EPOXY PAINT AT THIS LOCATION.	
V. COORDINATE ALL BRACKETS WITH OUTLET LOCATIONS UNDER COUNTER.	
W. LOCKING CASEWORK TO BE KEYED ALIKE PER ROOM UNLESS NOTED. PROVIDE ONE KEY FOR USER AND ONE MASTER KEY.	
X. WINDOW TREATMENTS ARE INDICATED ON REFLECTED CEILING PLANS.	
Y. ALL CONCRETE COLUMNS TO REMAIN UNPAINTED UNLESS NOTED OTHERWISE.	
Z. IN THE CASE OF NO FULL HEIGHT CASEWORK, INSTALL UPPER CASEWORK WITH THE TOP AT 84" AFF.	

INTERIOR FINISH SCHEDULE						
MARK	MATERIAL TYPE	MANUFACTURER	MODEL / SIZE	COLOR	ADDITIONAL INFORMATION	COMMENTS
FLOOR						
SC-1	SEALED CONCRETE	LATICRETE	SEALHARD	NATURAL SATIN	SEALER	REFER TO FINISH FLOOR PLAN
WALL						
PNT-1	PAINT	SHERWIN WILLIAMS		AS SELECTED		
PNT-1E	EPOXY PAINT	SHERWIN WILLIAMS		AS SELECTED		

MISCELLANEOUS SCHEDULE						
MARK	MATERIAL TYPE	MANUFACTURER	MODEL / SIZE	COLOR	ADDITIONAL INFORMATION	COMMENTS
TOILET PARTITIONS	SOLID PLASTIC HDPE	SCRANTON	HINY HIDERS	AS SELECTED BY ARCHITECT		

REGULATORY SIGNAGE



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

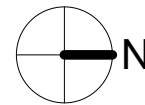
PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	TNT
DESIGNED BY	DFS
REVIEWED BY	DFS
ORIGINAL ISSUE DATE	06/13/2024
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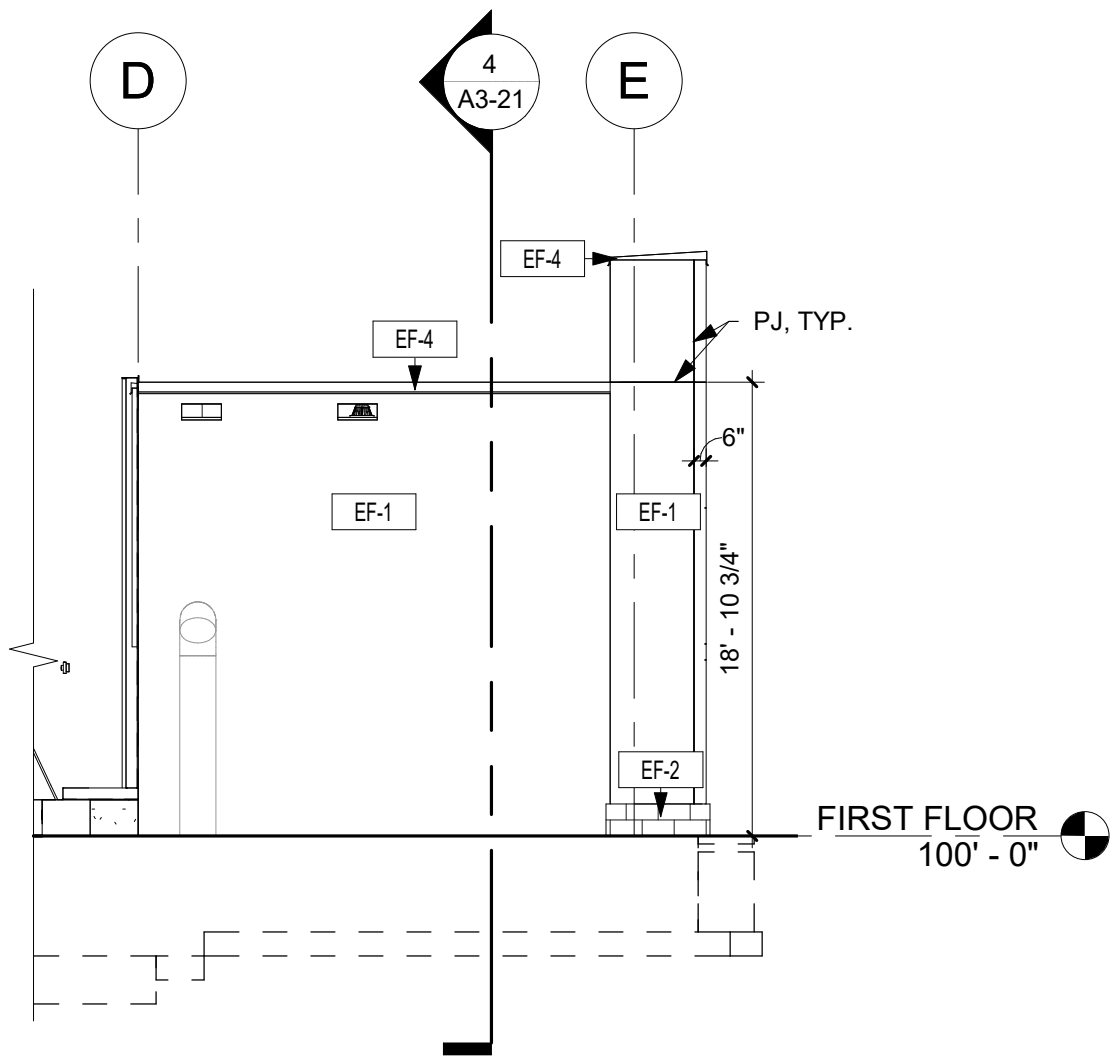
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FINISH PLANS

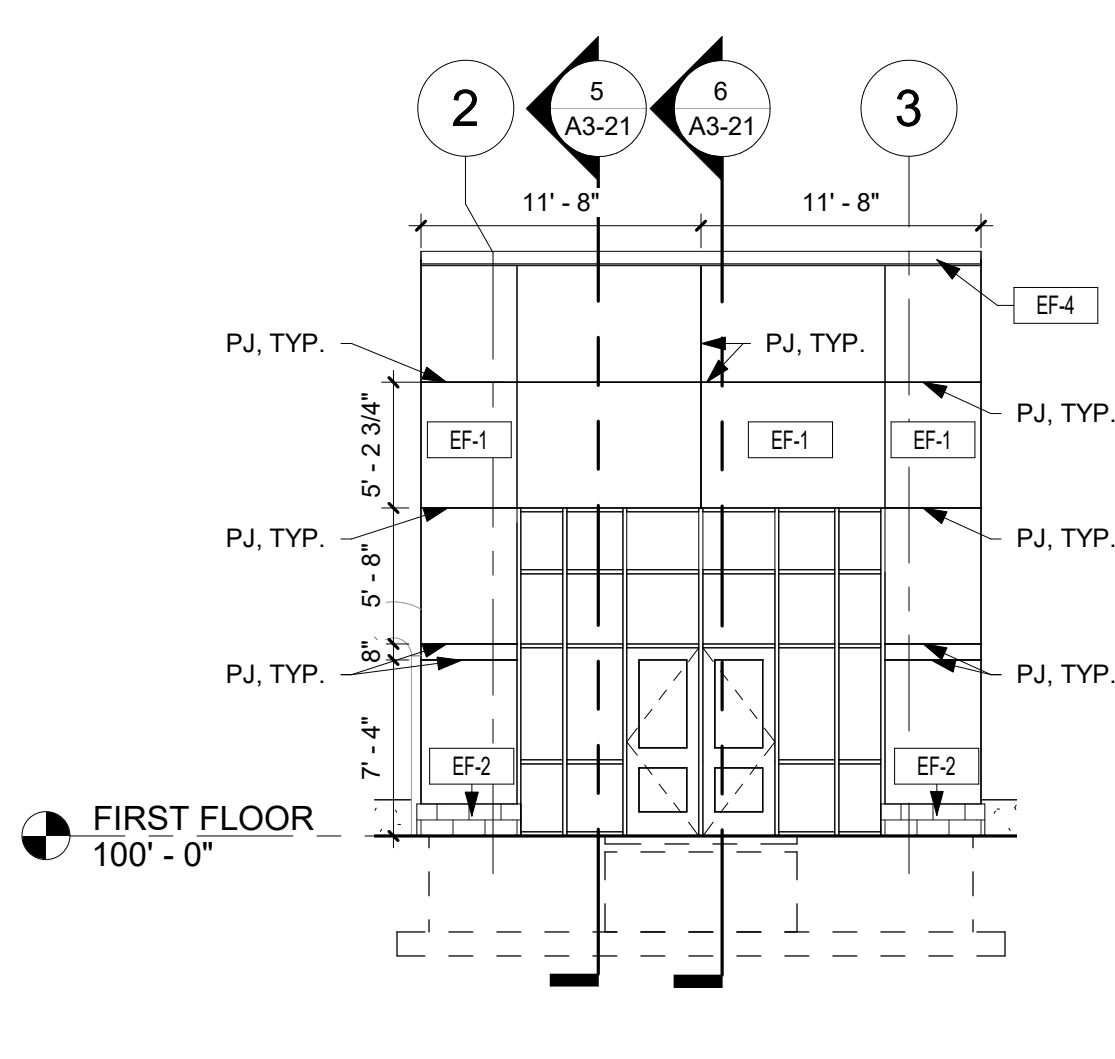
SHEET

A1-41

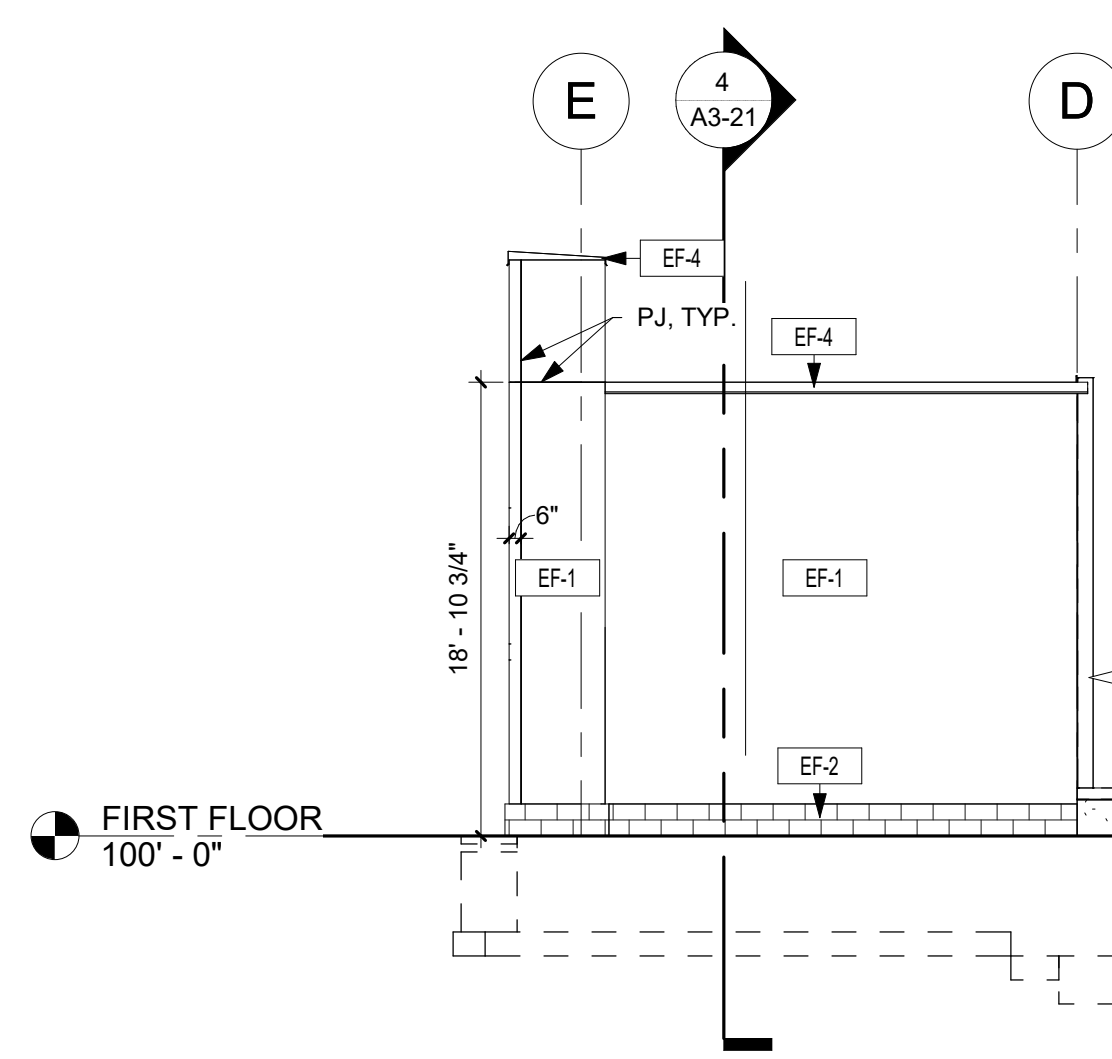




1 SOUTH EXTERIOR ELEVATION
1/8" = 1'-0"

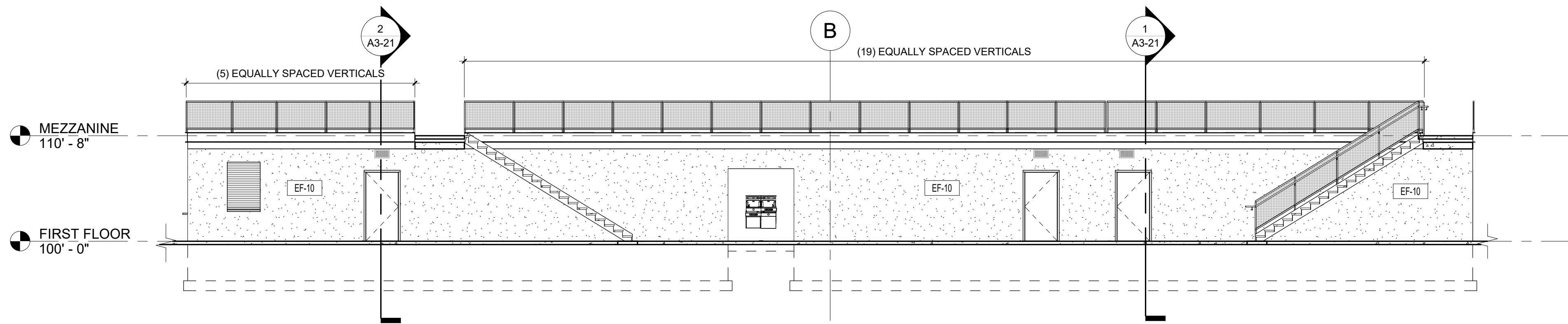


2 EAST EXTERIOR ELEVATION
1/8" = 1'-0"

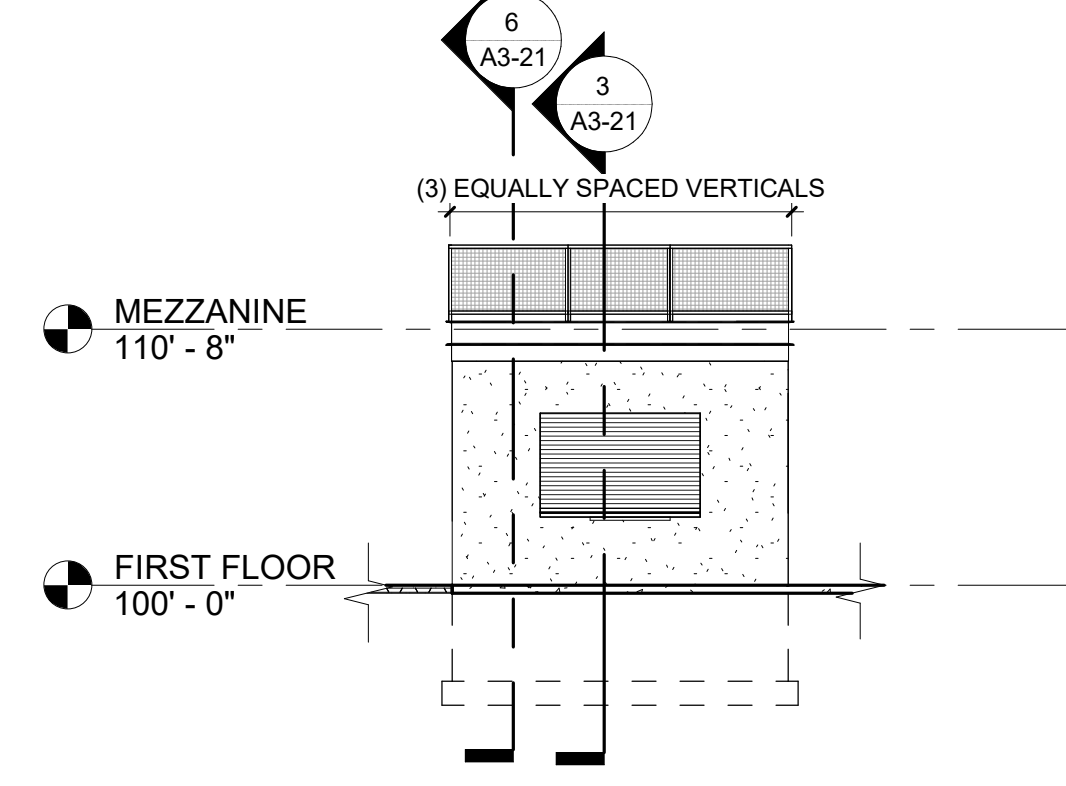


3 NORTH EXTERIOR ELEVATION
1/8" = 1'-0"

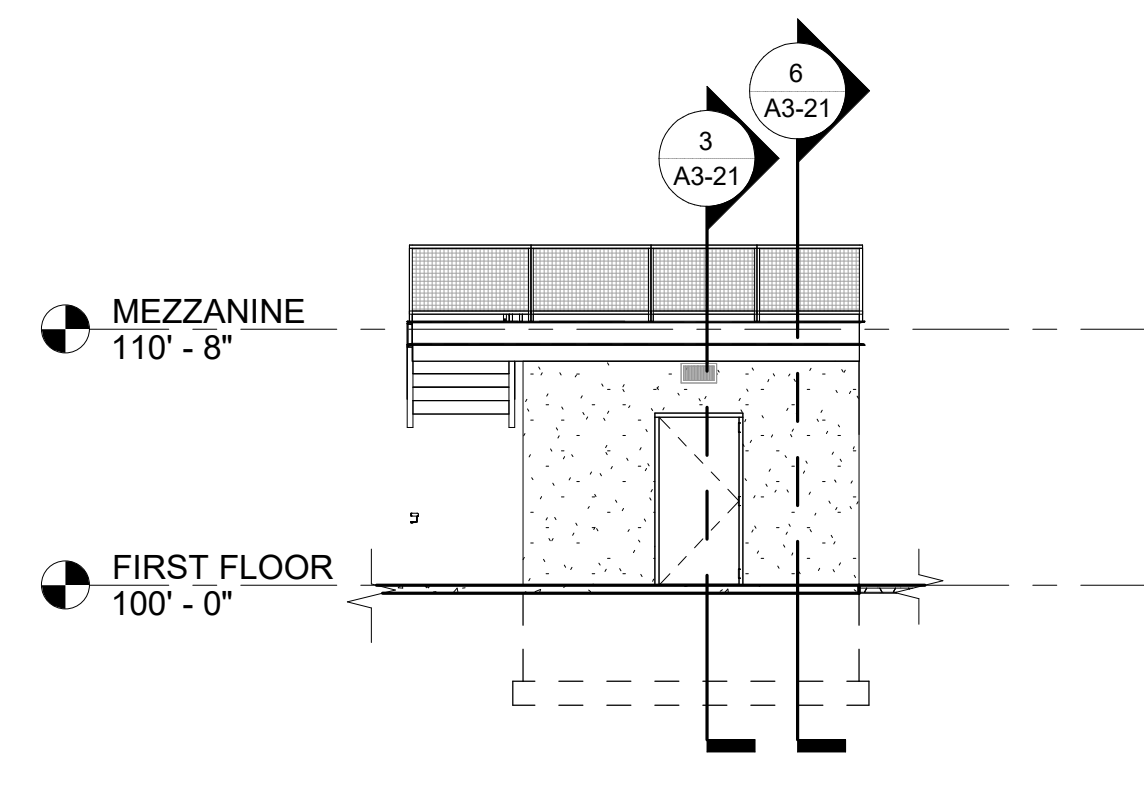
EXTERIOR FINISH SCHEDULE						
MARK	MATERIAL TYPE	MANUFACTURER	MODEL / SIZE	COLOR	ADDITIONAL INFORMATION	COMMENTS
EF-1	METAL COMPOSITE MATERIAL PANELS	ALPOLIC		COLOR AS SELECTED FROM STOCK COLOR CHART	RAIN SCREEN SYSTEM	
EF-2	CMU	ANCHOR BLOCK COMPANY	STANDARD	AS SELECTED	ROCK FACED	
EF-4	PREFIN. MTL PARAPET CAP	PAC-CLAD	-	COLOR AS SELECTED FROM STANDARD COLORS		
EF-6	PREFIN. MTL SOFFIT PANEL	ALPOLIC	FLUSH SOLID SOFFIT / 12" WIDE	COLOR AS SELECTED FROM STOCK COLOR CHART		CANOPY SOFFIT, REFER TO RCP FOR ORIENTATION
EF-09	LOUVERED SCREEN	PALM SHIELD ARCHITECTURAL LOUVERS	MERCURY LOUVERS, REFER TO PLAN	COLOR AS SELECTED FROM STANDARD COLORS		4" X 4" ALUMINUM POSTS, ALUMINUM PLANKS, PROVIDE GATES AND LATCH AS SHOWN ON PLAN
EF-10	PRECAST CONCRETE					



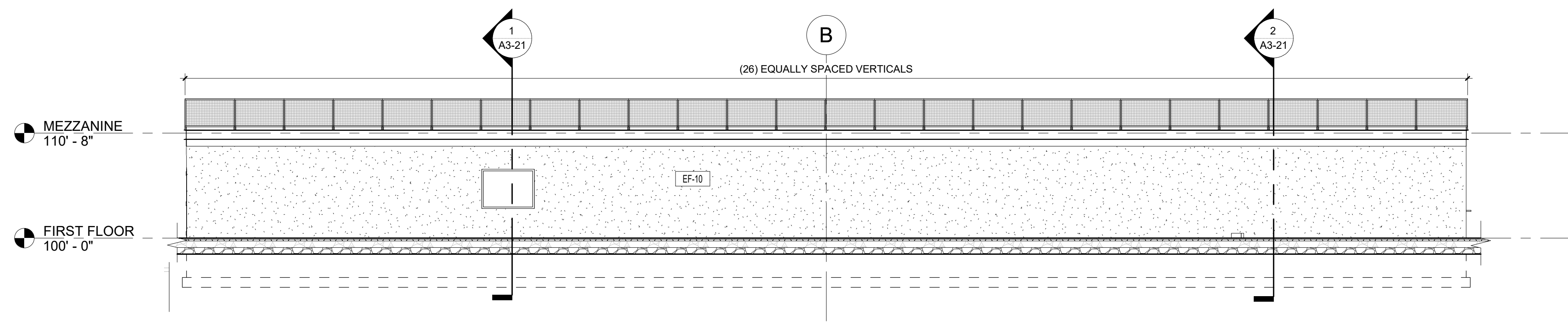
4 NORTH ELEVATION - SUPPORT BUILDING
1/8" = 1'-0"



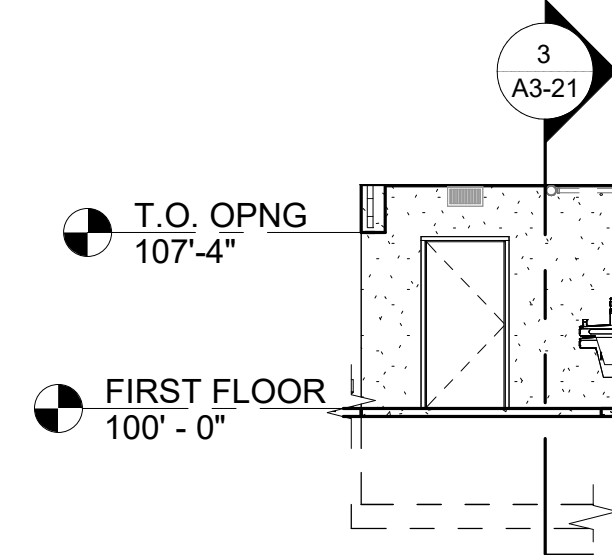
6 EAST ELEVATION - SUPPORT BUILDING
1/8" = 1'-0"



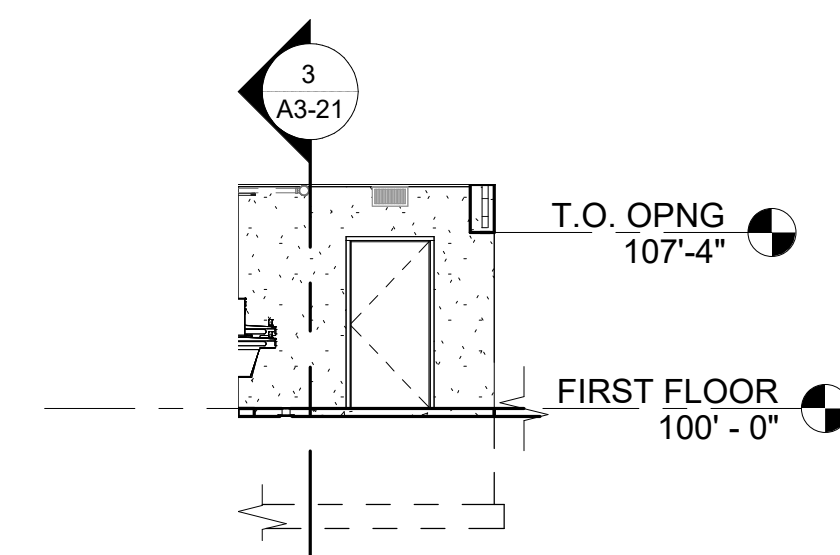
7 WEST ELEVATION - SUPPORT BUILDING
1/8" = 1'-0"



5 SOUTH ELEVATION - SUPPORT BUILDING
1/8" = 1'-0"



8 EAST ELEVATION - SUPPORT BUILDING ALCOVE
1/8" = 1'-0"



9 WEST ELEVATION - SUPPORT BUILDING ALCOVE
1/8" = 1'-0"



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

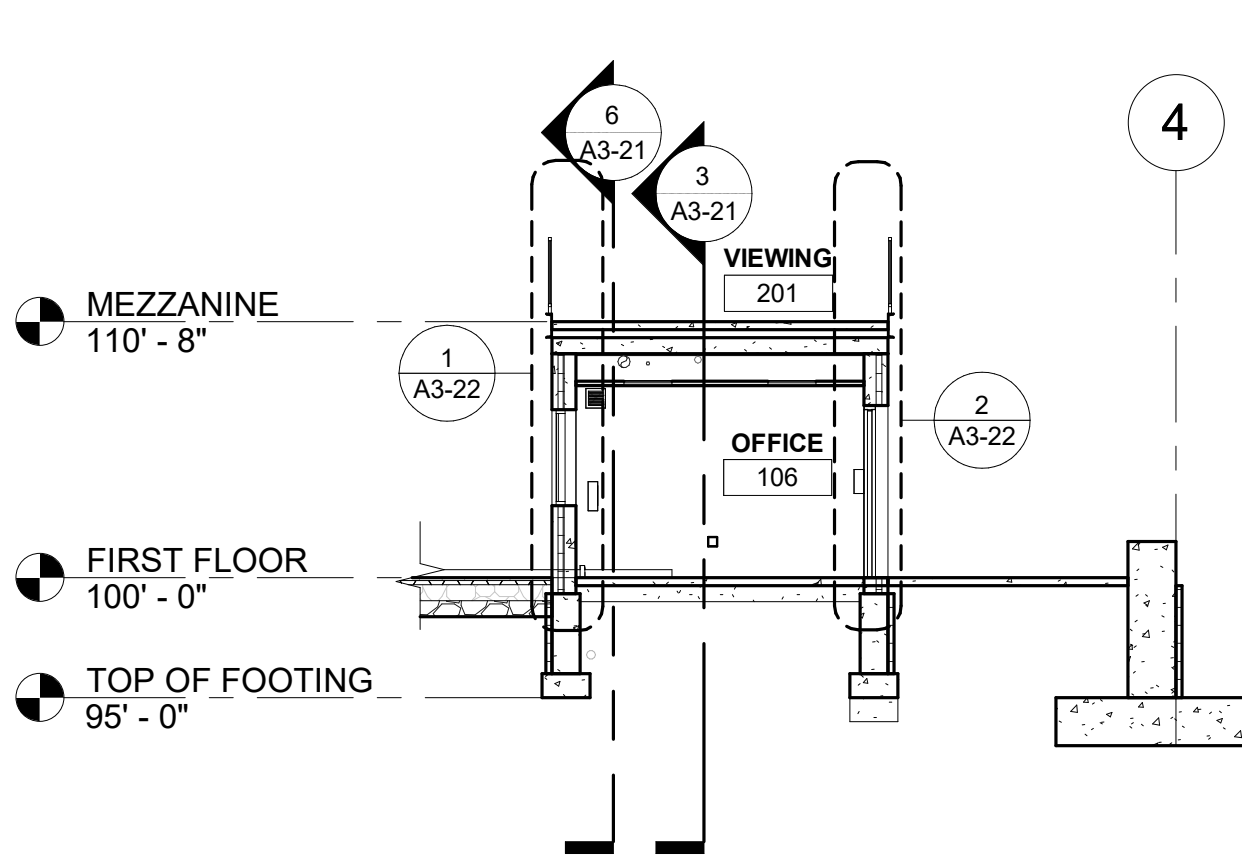
PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	TNT
DESIGNED BY	DFS
REVIEWED BY	DFS
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	

TITLE

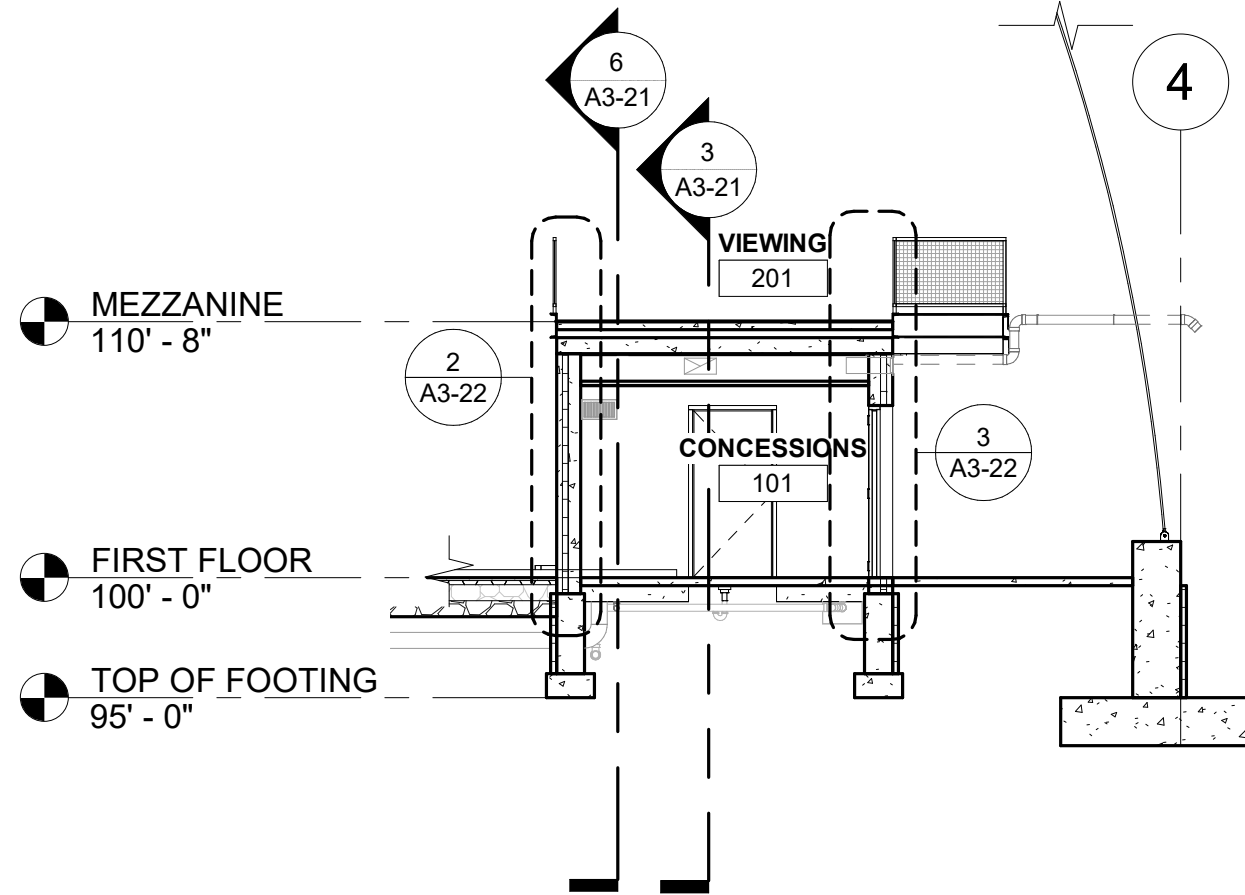
BUILDING ELEVATIONS

SHEET

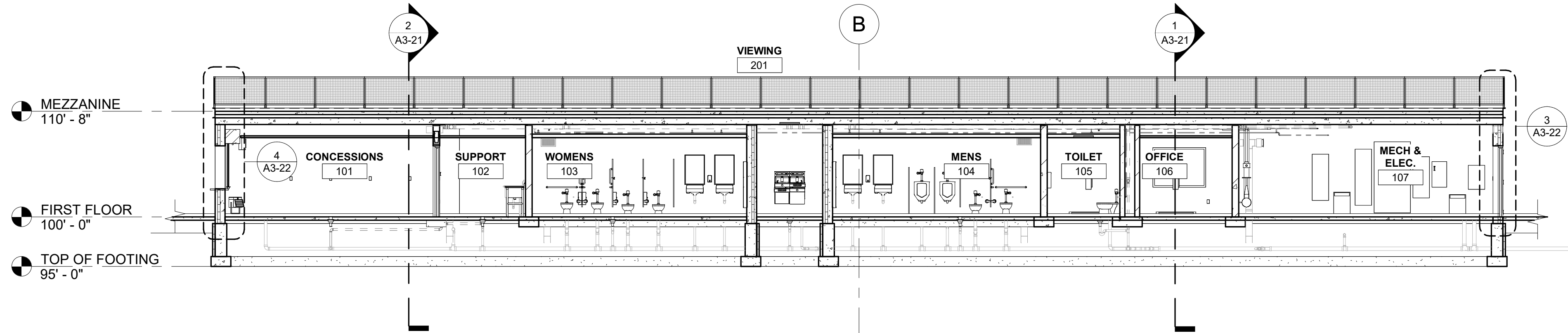
A3-11



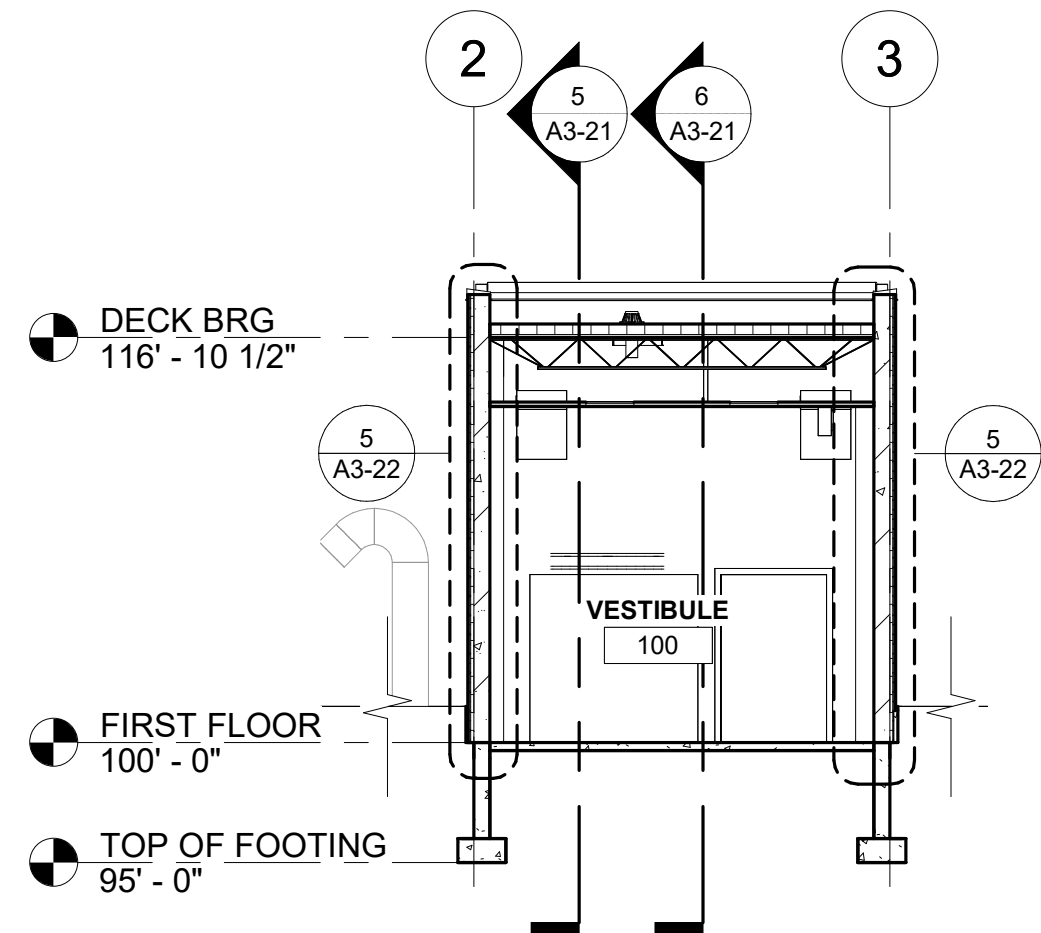
1 BUILDING SECTION 1
1/8" = 1'-0"



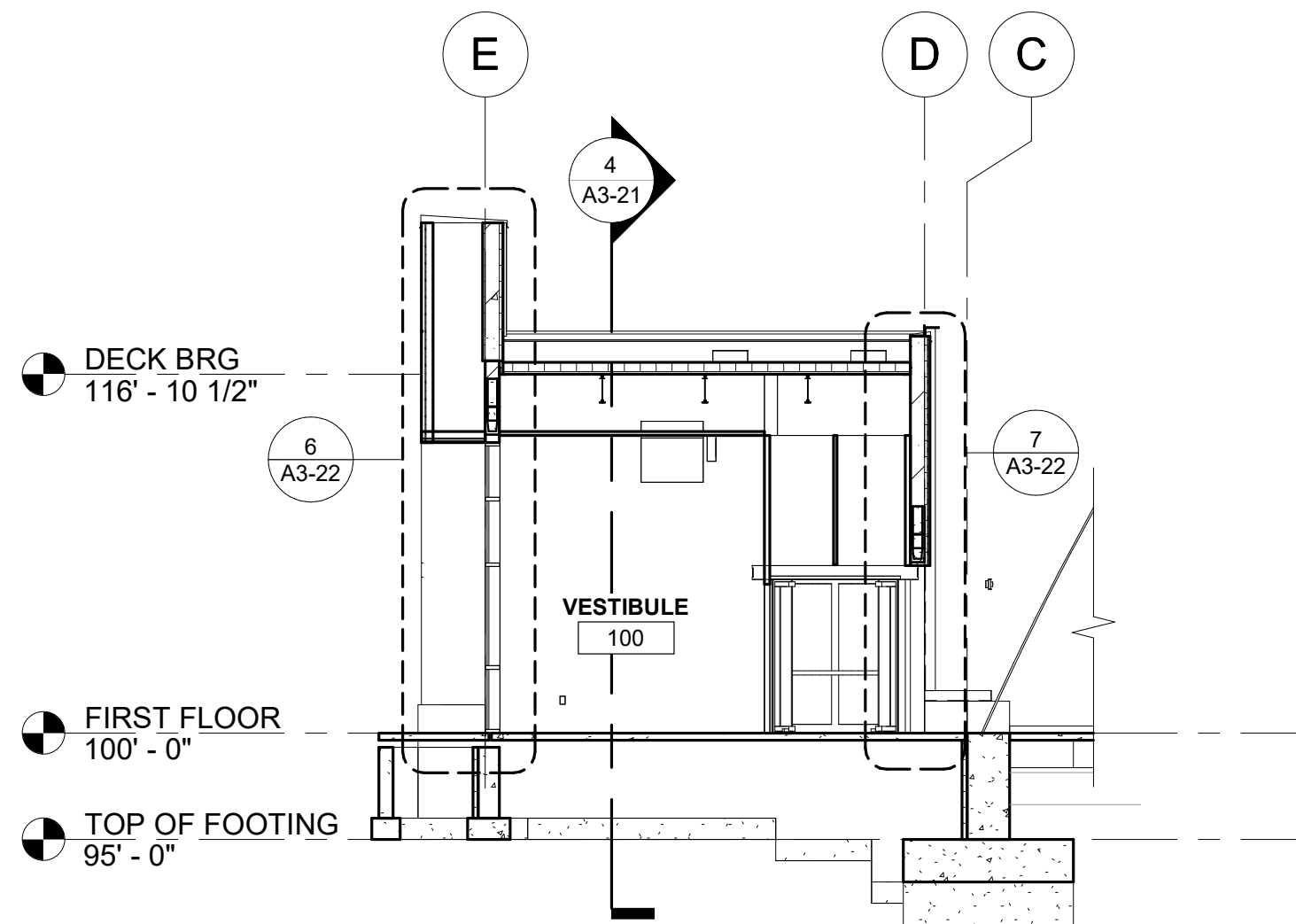
2 BUILDING SECTION 2
1/8" = 1'-0"



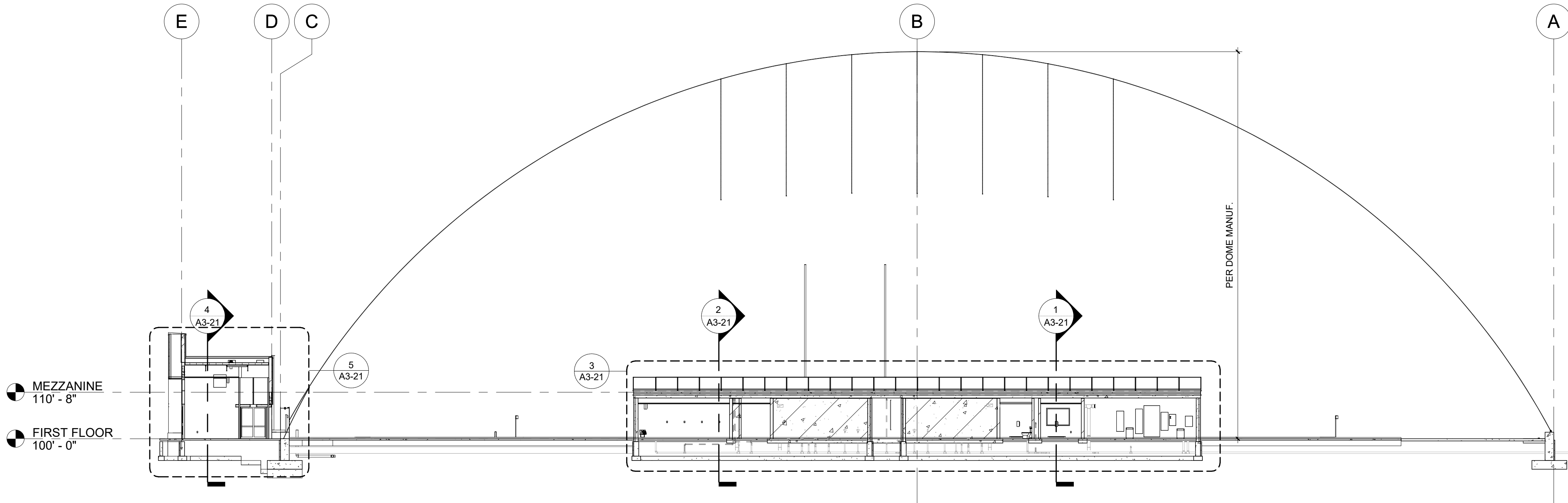
3 BUILDING SECTION 3
1/8" = 1'-0"



4 BUILDING SECTION 4
1/8" = 1'-0"



5 BUILDING SECTION 5
1/8" = 1'-0"



6 OVERALL BUILDING SECTION
1/16" = 1'-0"

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PROJECT

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MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-29721
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DRAWN BY	TNT
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ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	

TITLE

BUILDING SECTIONS

SHEET

A3-21



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	TNT
DESIGNED BY	DFS
REVIEWED BY	DFS
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	

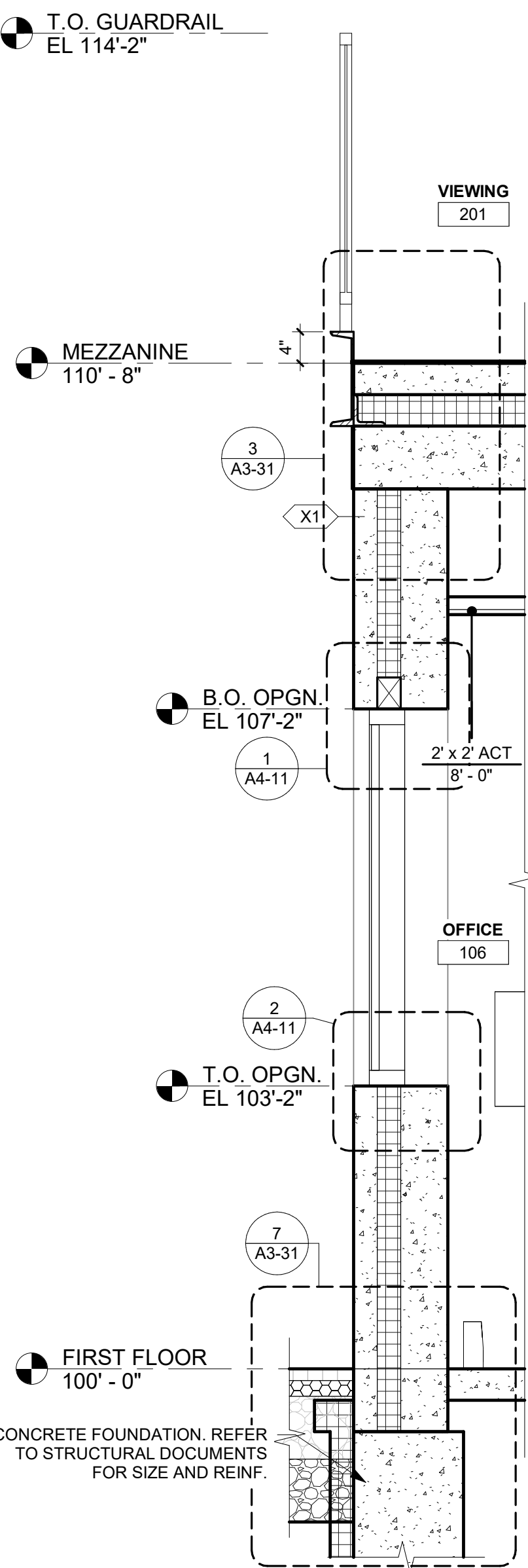
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WALL SECTIONS

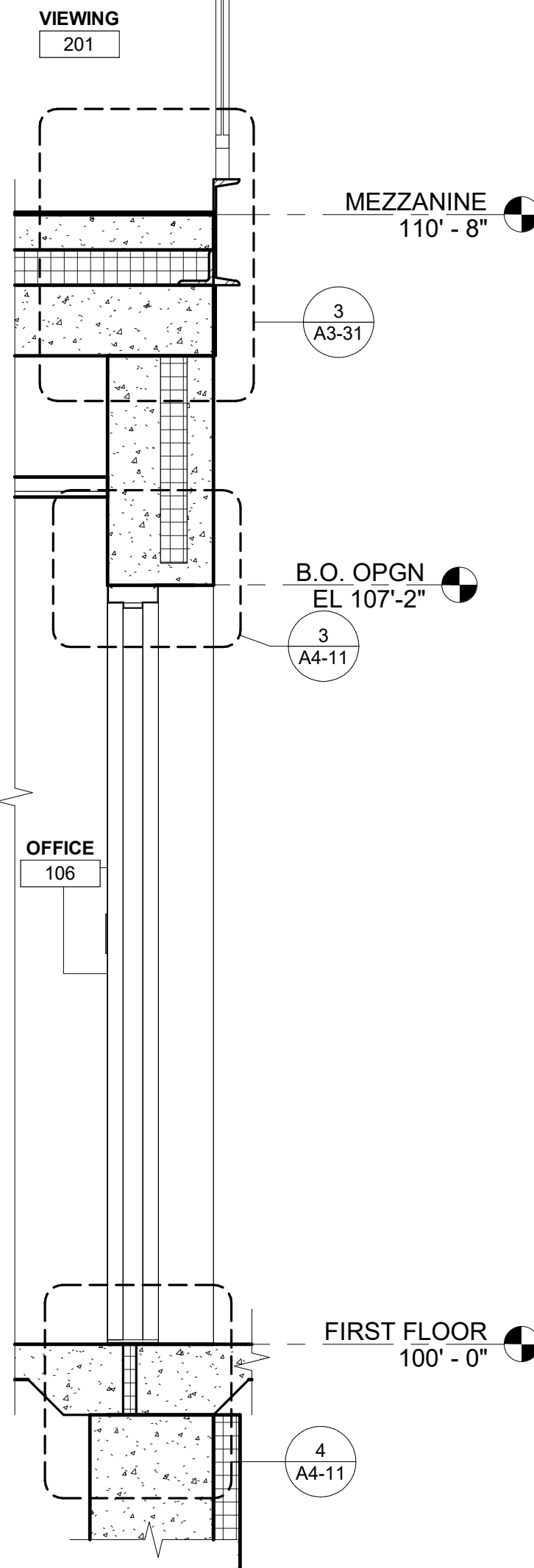
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A3-22

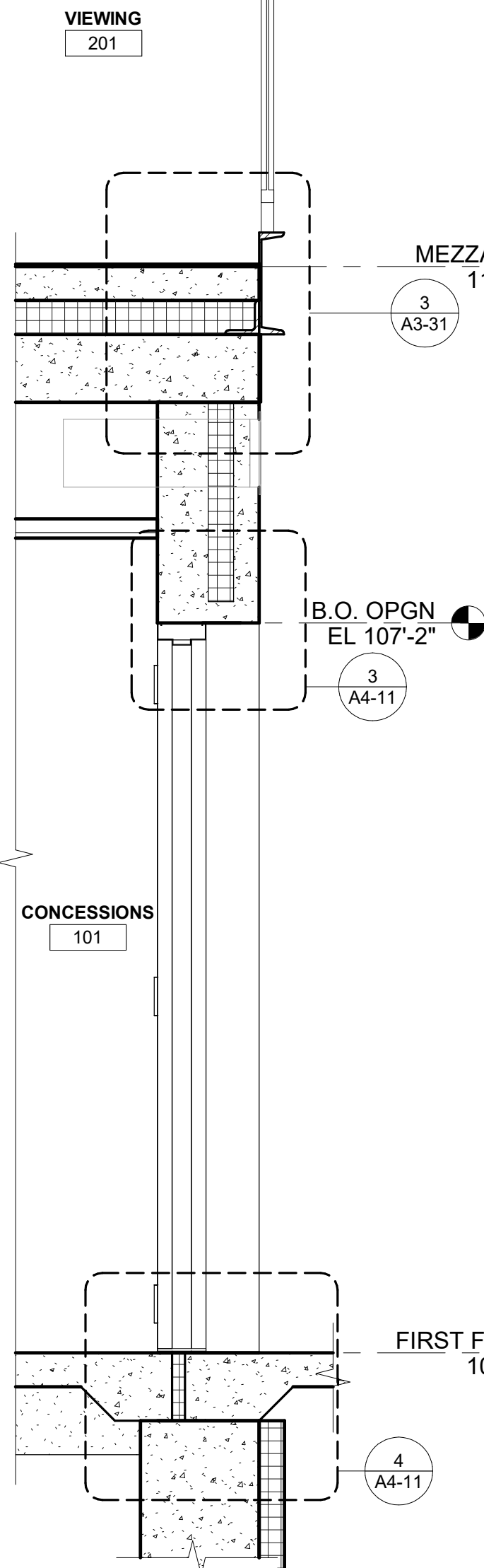
REFERENCE SCALE
1" = 1'-0"
0 1/4" 1/2" 1" 2" 3" 4" 5" 6" 7" 8" 9" 10" 11" 12"



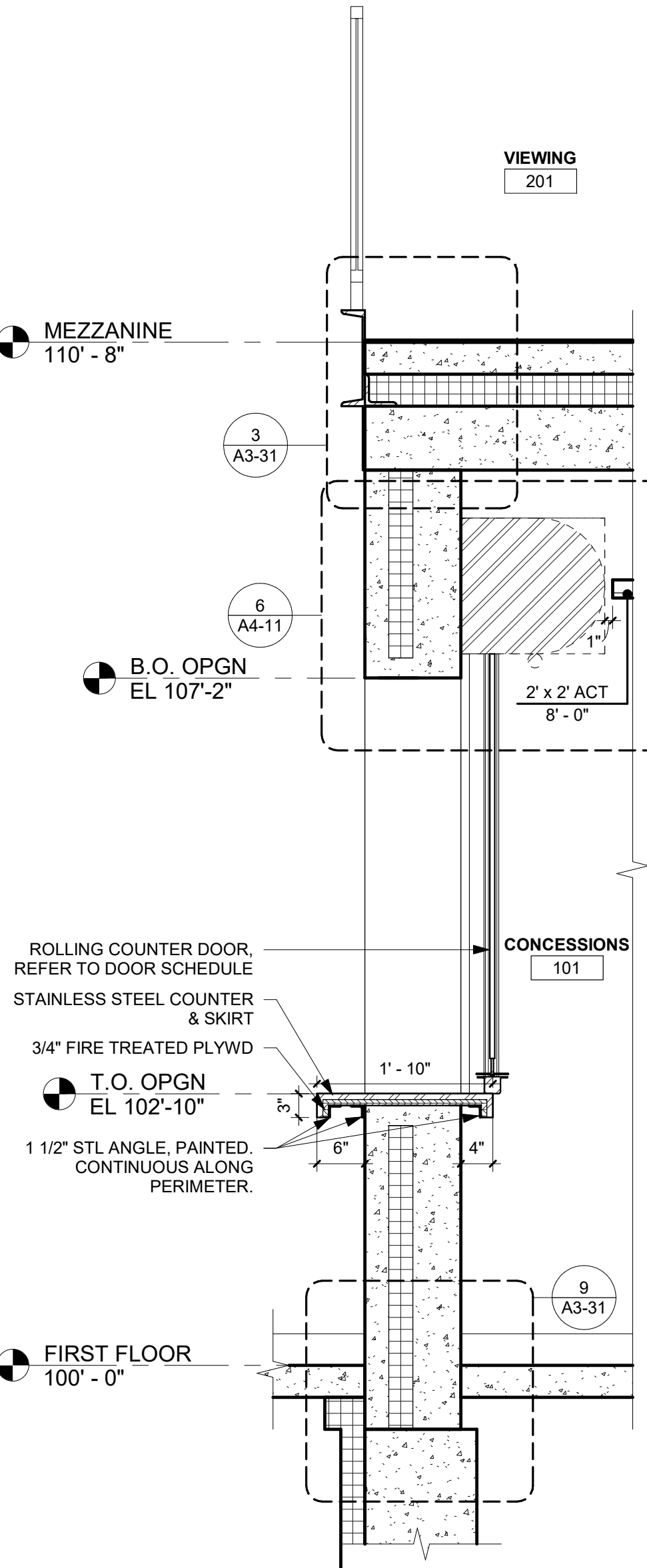
1 WALL SECTION 1 - SECTION @ OFFICE
3/4" = 1'-0"



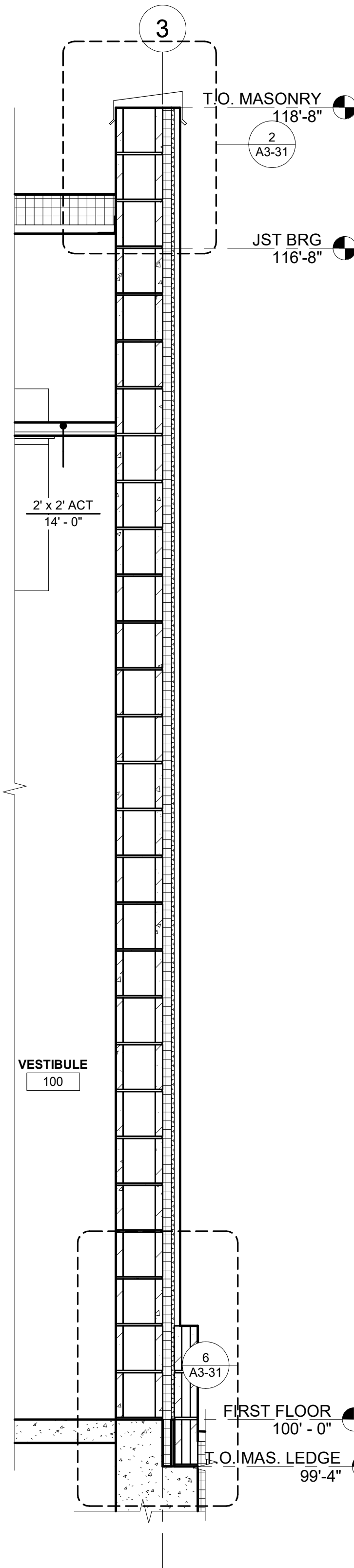
2 WALL SECTION 2 - SECTION @ OFFICE
3/4" = 1'-0"



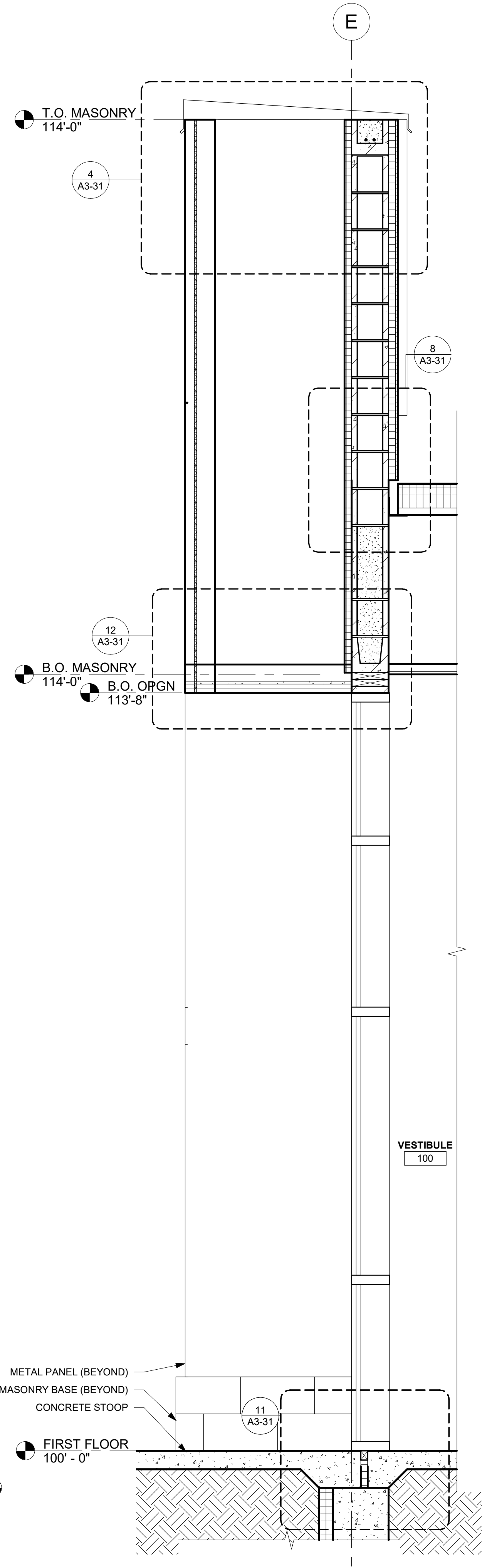
3 WALL SECTION 3 - SECTION @ CONCESSION
3/4" = 1'-0"



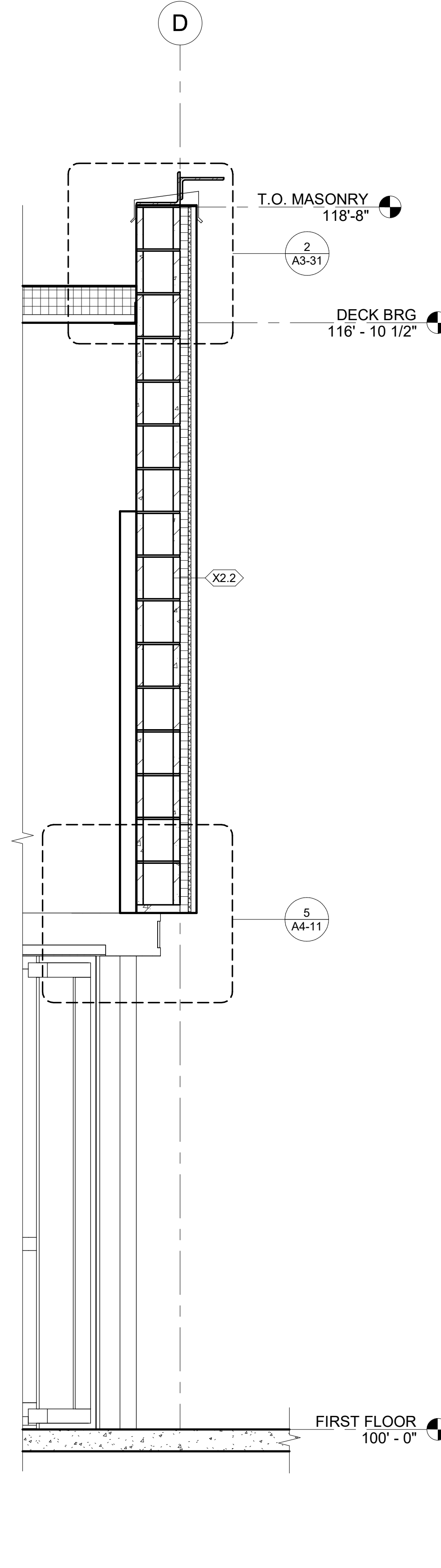
4 WALL SECTION 4 - SECTION @ CONCESSION COUNTER
3/4" = 1'-0"



5 WALL SECTION 5
3/4" = 1'-0"



6 WALL SECTION 6 - SECTION @ ENTRY
3/4" = 1'-0"



7 WALL SECTION 7
3/4" = 1'-0"



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE

IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 23-29721
FILE NAME 29721 Arch R22
DRAWN BY TNT
DESIGNED BY DFS
REVIEWED BY DFS
ORIGINAL ISSUE DATE 06/13/2024

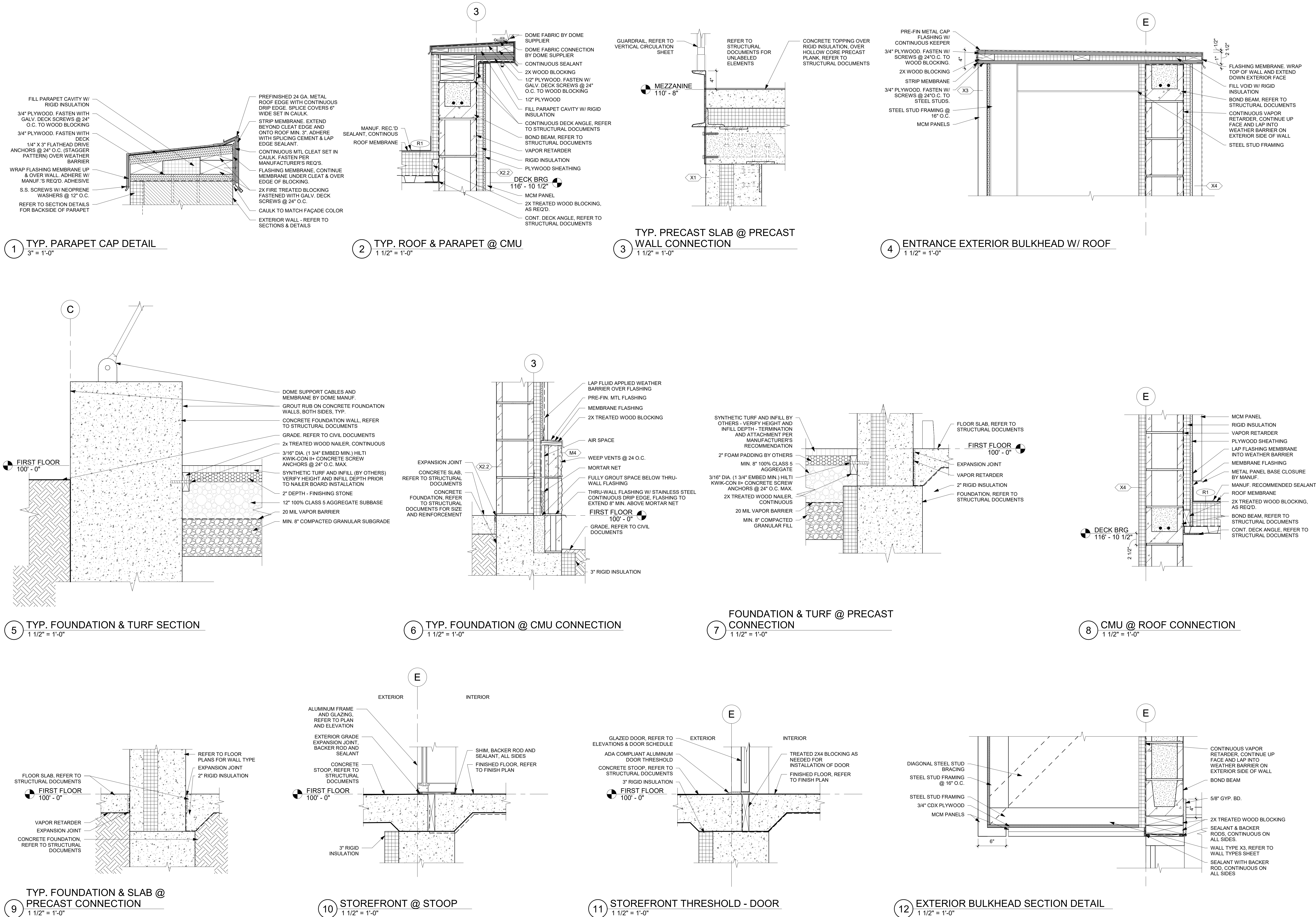
CLIENT PROJECT NO.

TITLE

SECTION DETAILS

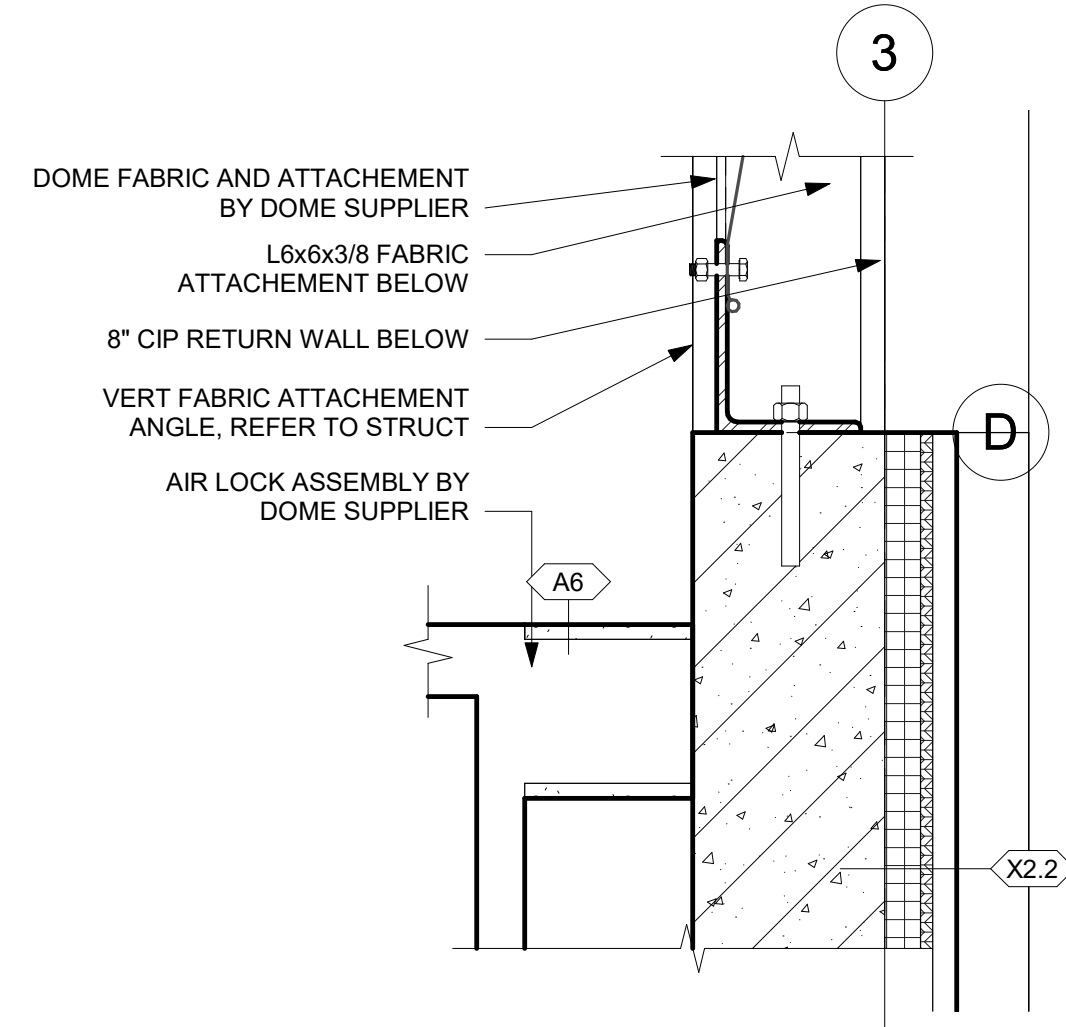
SHEET

A3-31

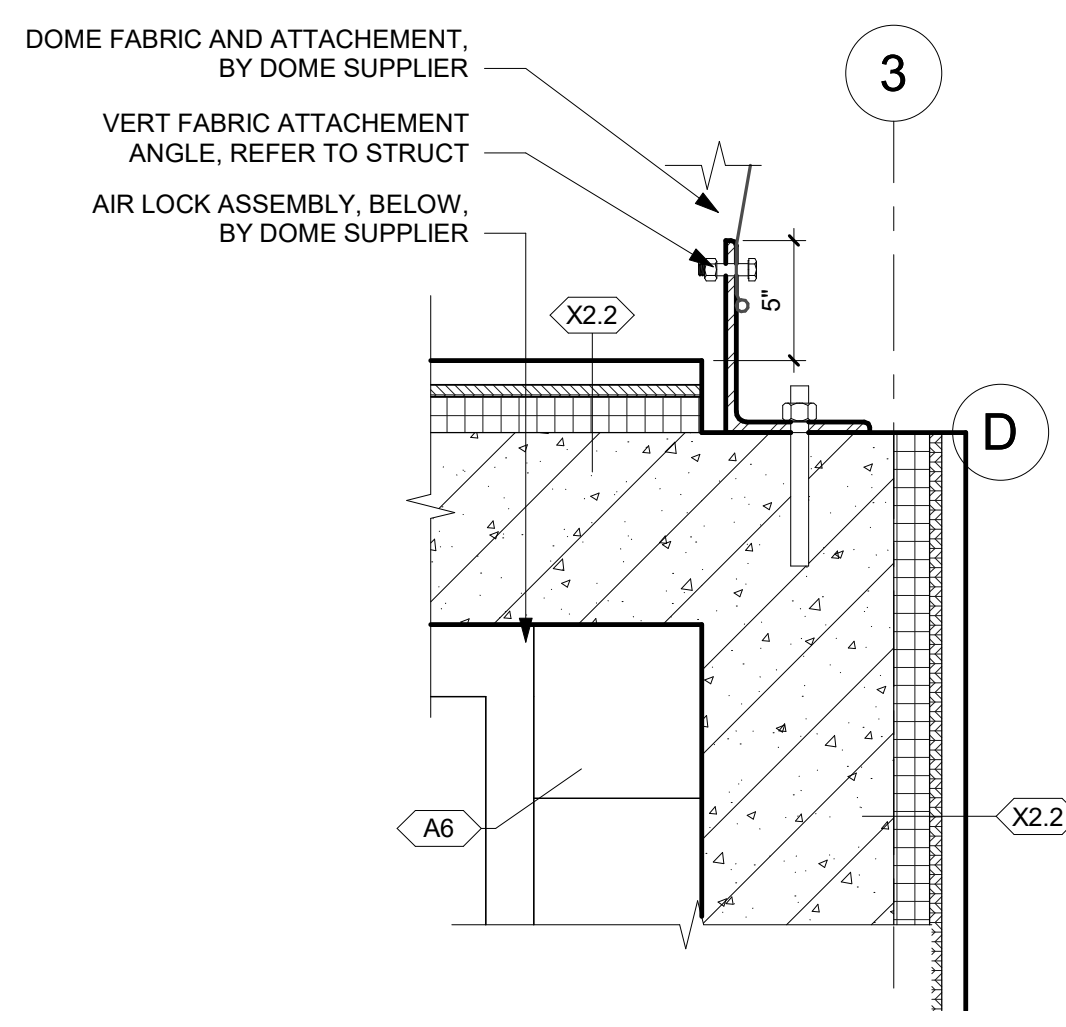


REFERENCE SCALE
0 1/4" 1/2" 1" 2"

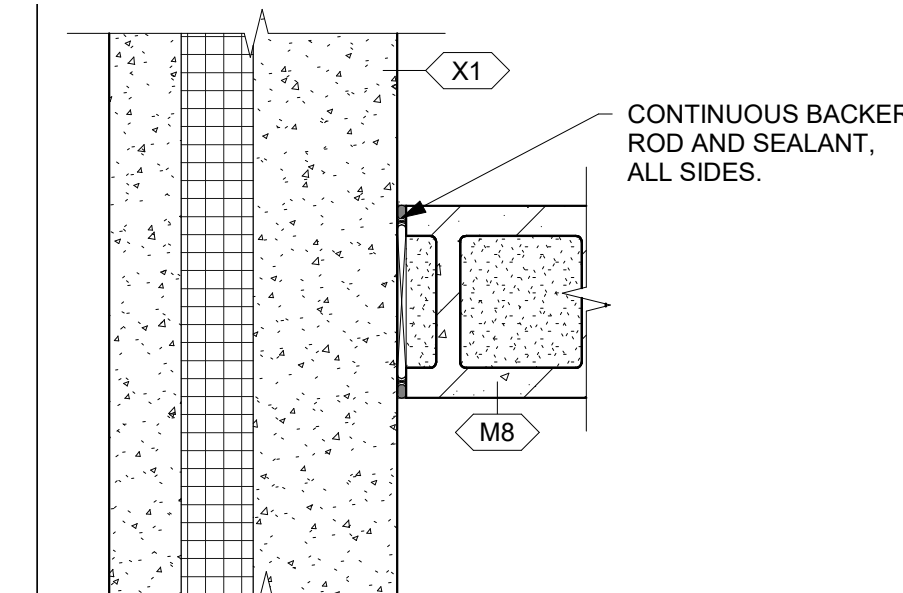
6/13/2024 4:40:44 PM



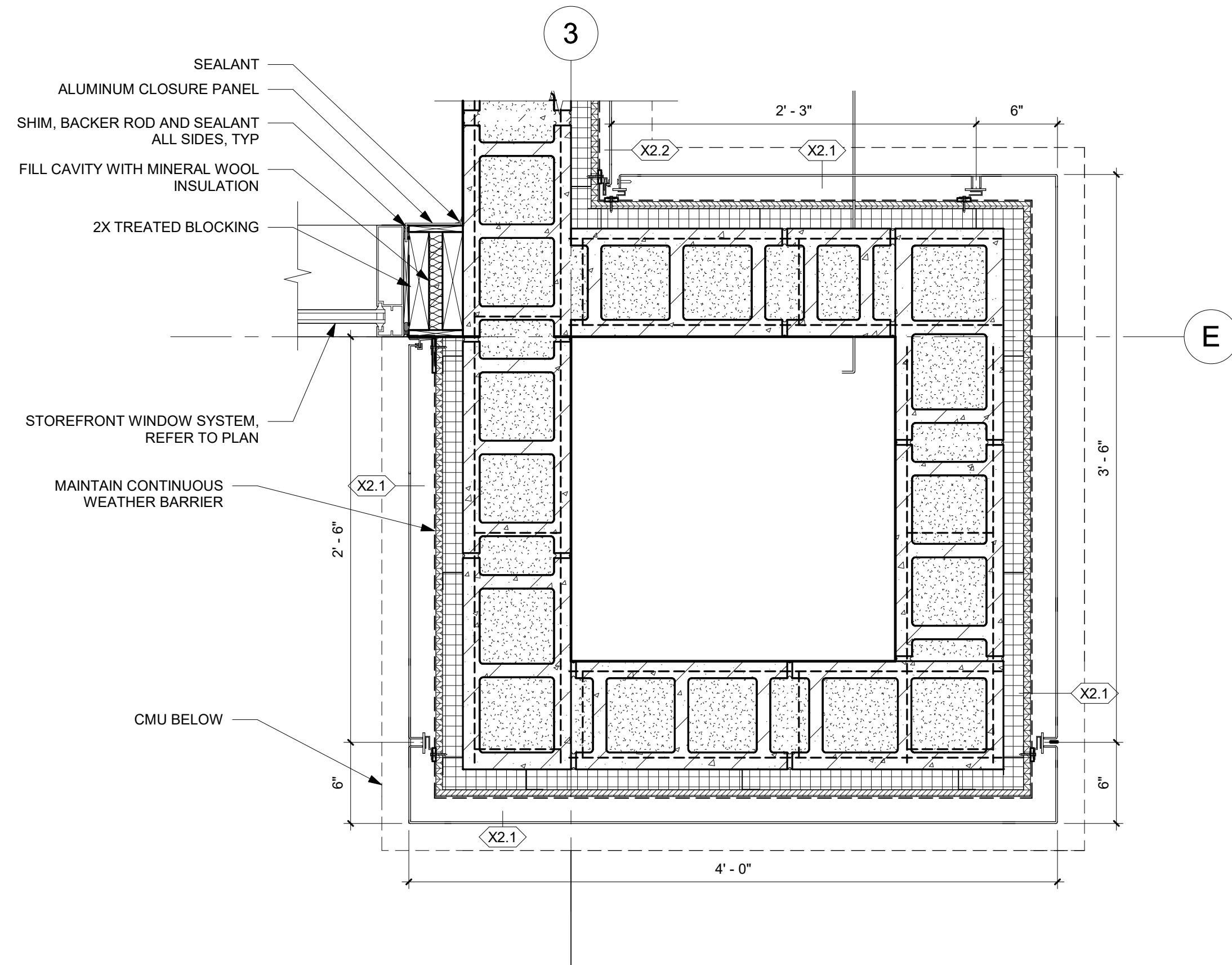
1 PLAN DETAIL - ENTRY TO DOME CONNECTION - LOW
1 1/2" = 1'-0"



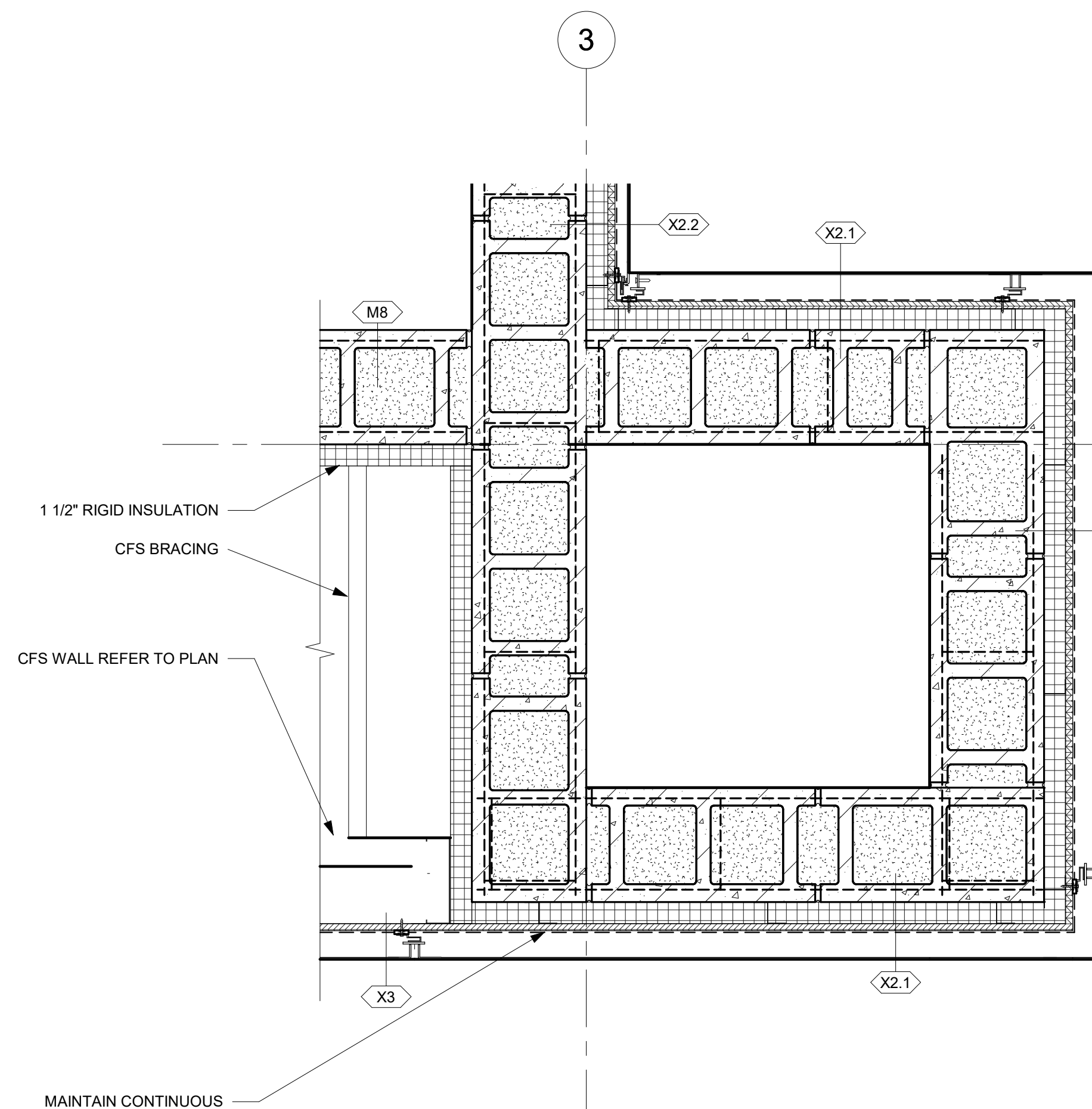
2 PLAN DETAIL - ENTRY TO DOME CONNECTION - HIGH
1 1/2" = 1'-0"



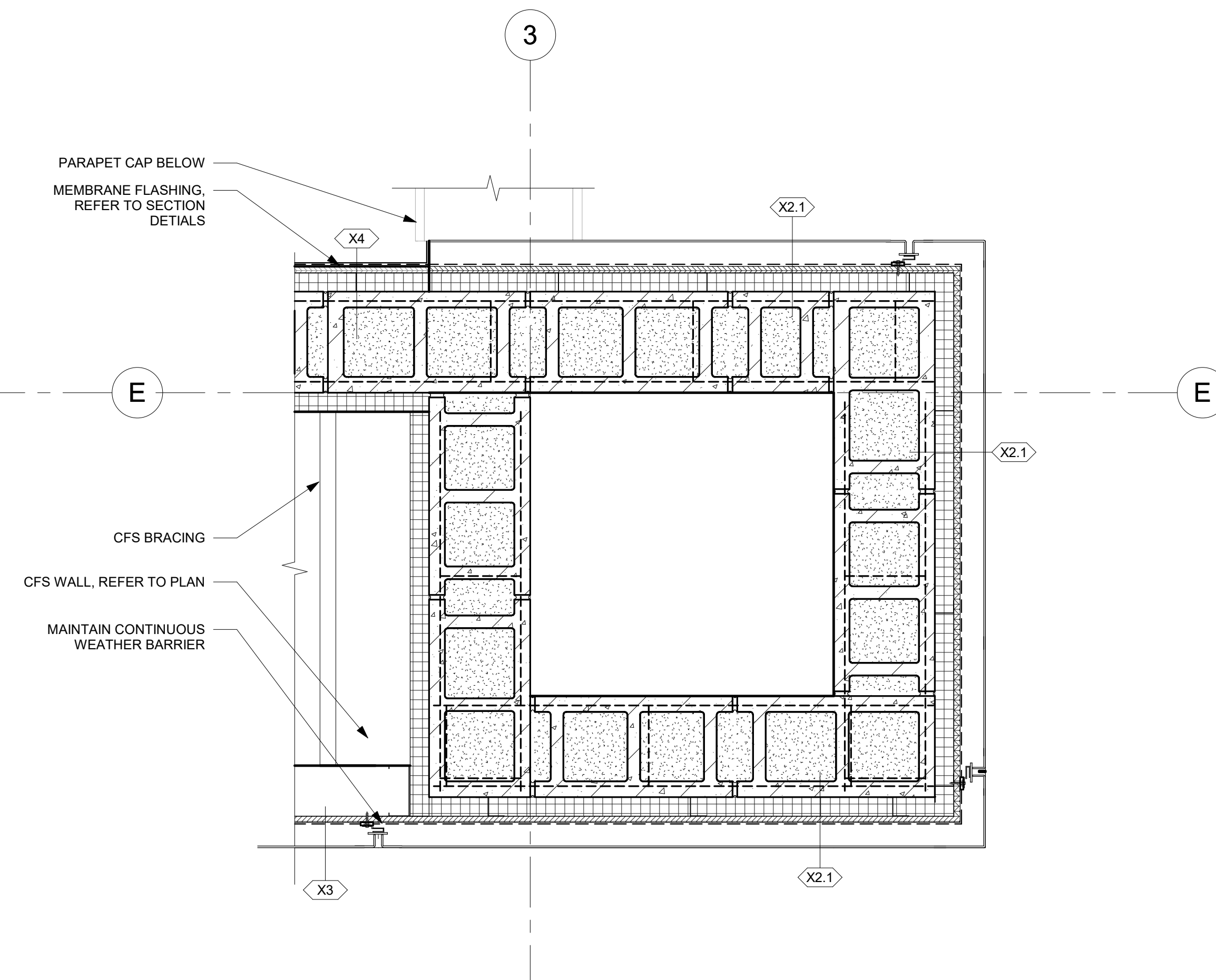
3 PLAN DETAIL - CMU TO PRECAST CONNECTION
1 1/2" = 1'-0"



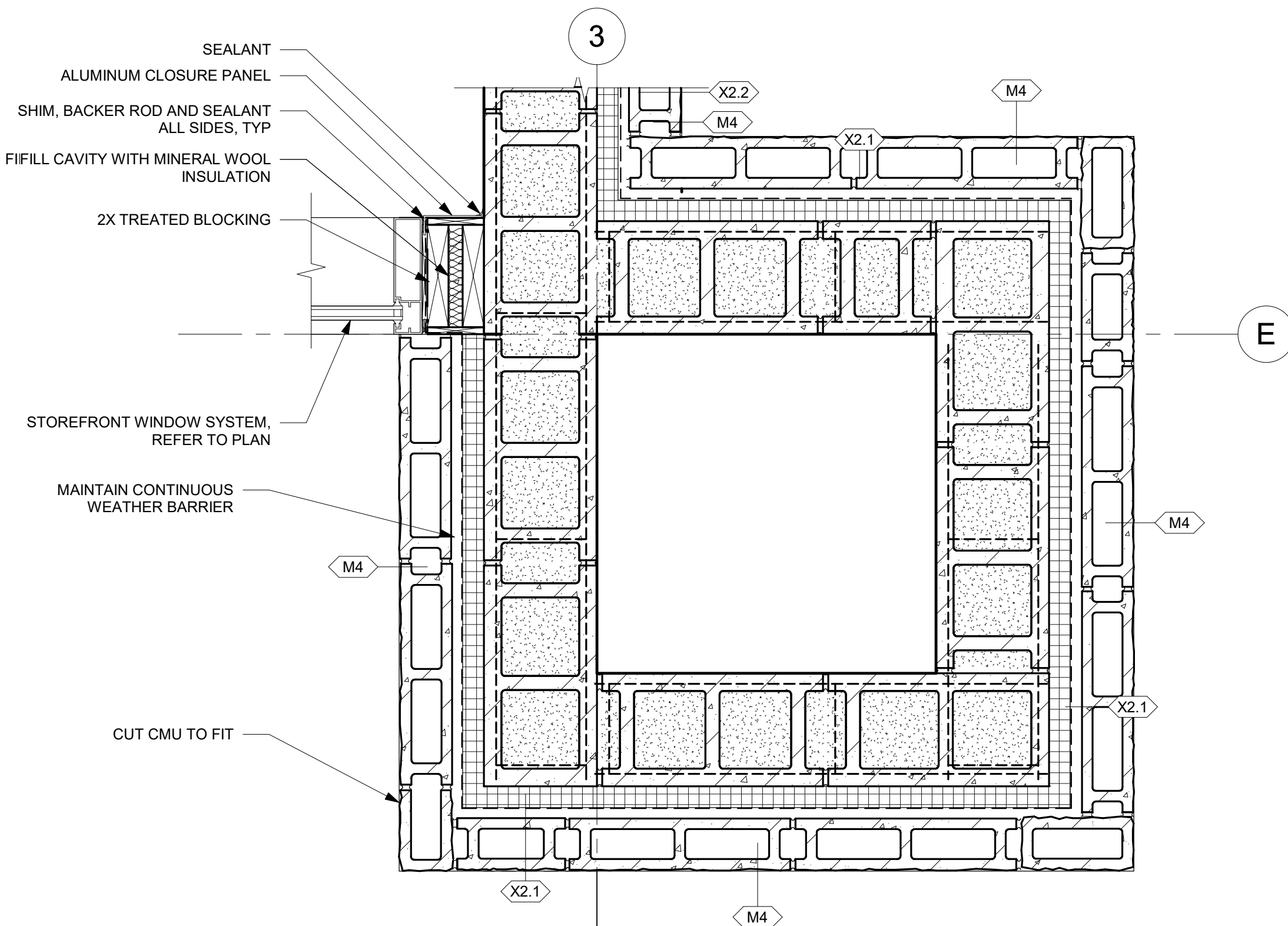
4 PLAN DETAIL - ENTRY COLUMN @ STOREFRONT CONNECTION
1 1/2" = 1'-0"



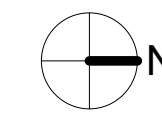
5 PLAN DETAIL - ENTRY COLUMN @ CEILING CONNECTION
1 1/2" = 1'-0"



6 PLAN DETAIL - ENTRY COLUMN @ ROOF CONNECTION
1 1/2" = 1'-0"



7 PLAN DETAIL - ENTRY COLUMN @ STOREFRONT CONNECTION
1 1/2" = 1'-0"



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PROJECT

**MUSCATINE
INDOOR SPORTS
COMPLEX**

MUSCATINE

IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

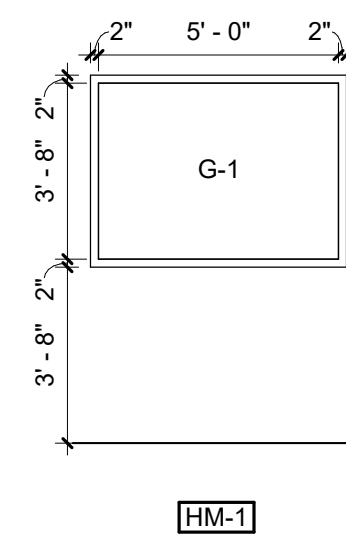
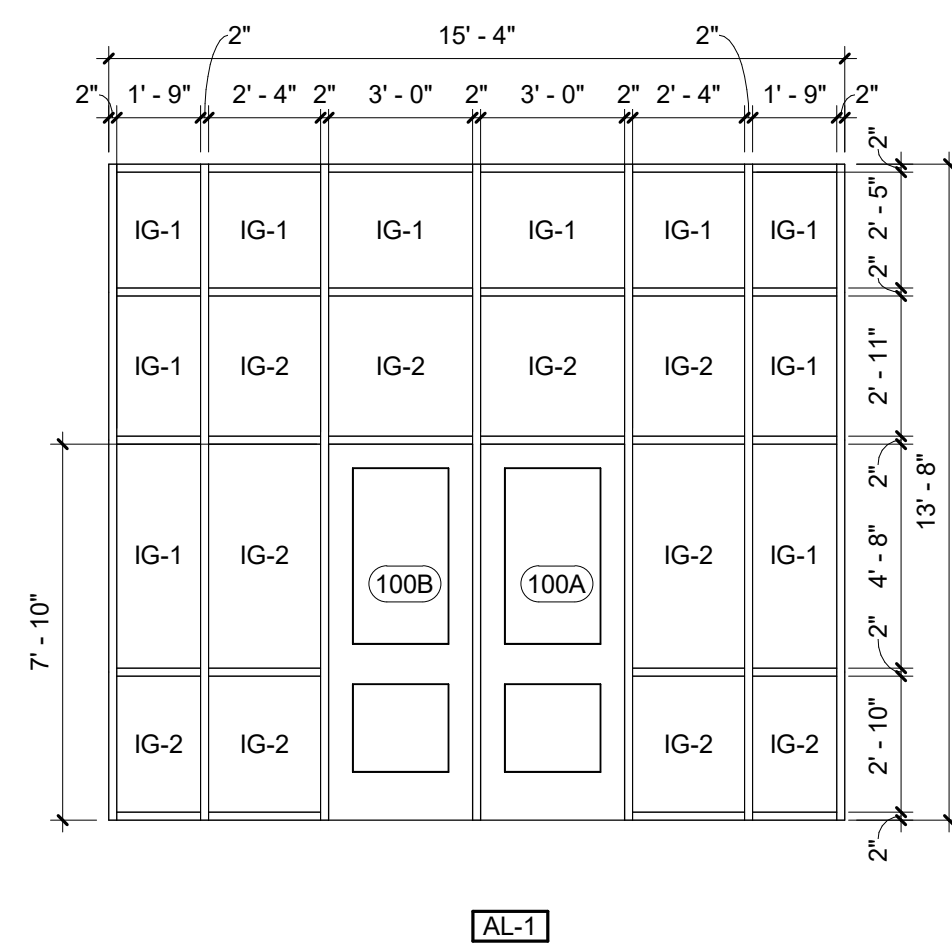
PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	TNT
DESIGNED BY	DFS
REVIEWED BY	DFS
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	

TITLE

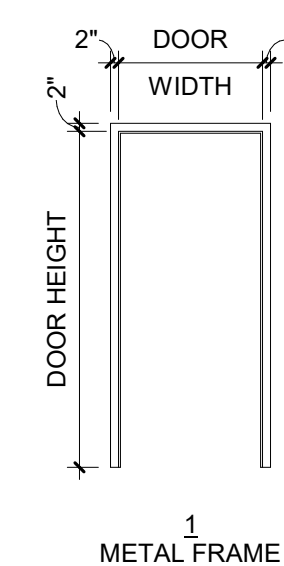
PLAN DETAILS

SHEET

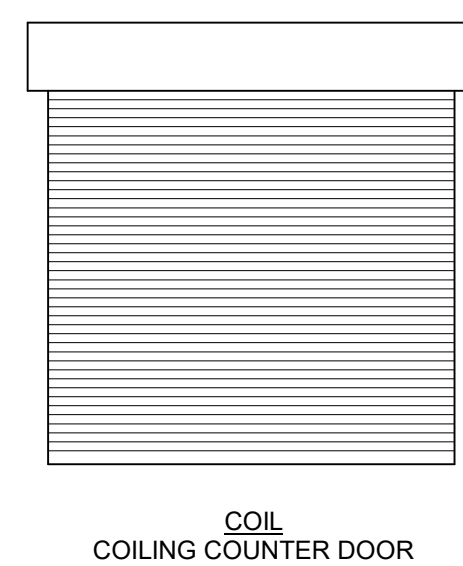
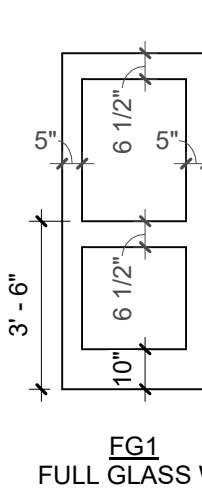
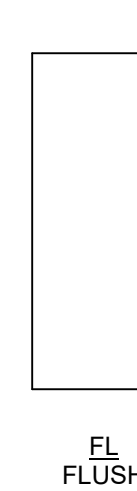
A3-41



FRAME TYPES

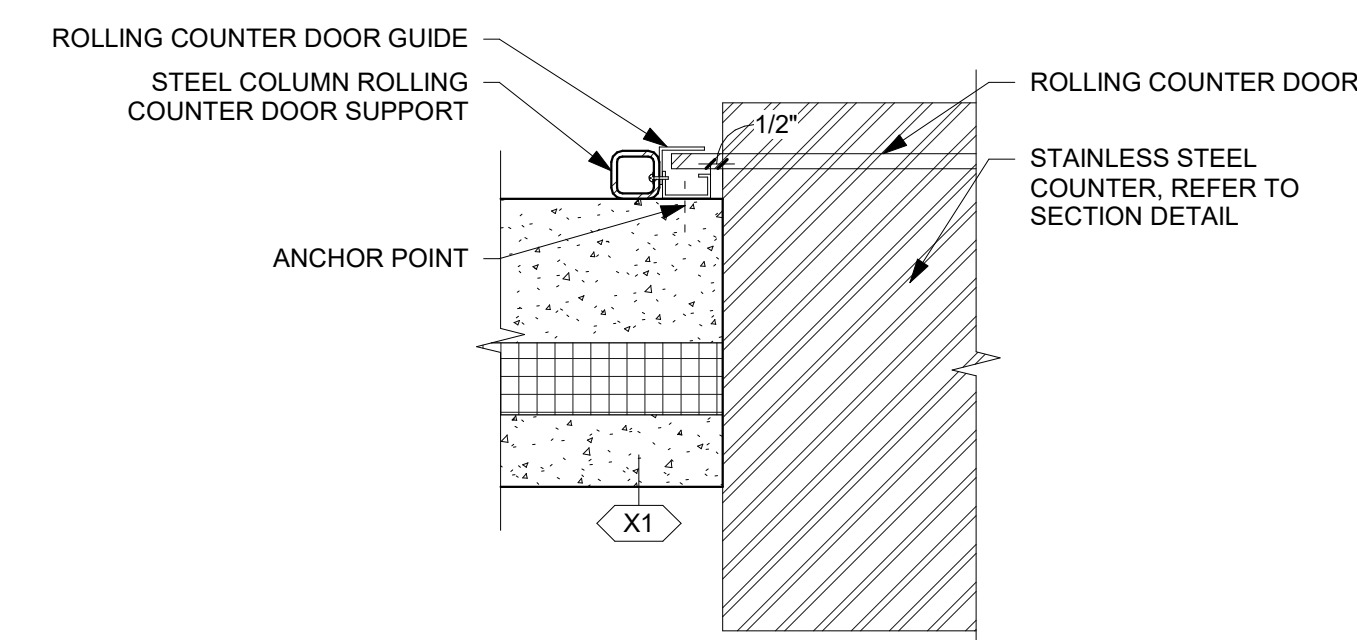
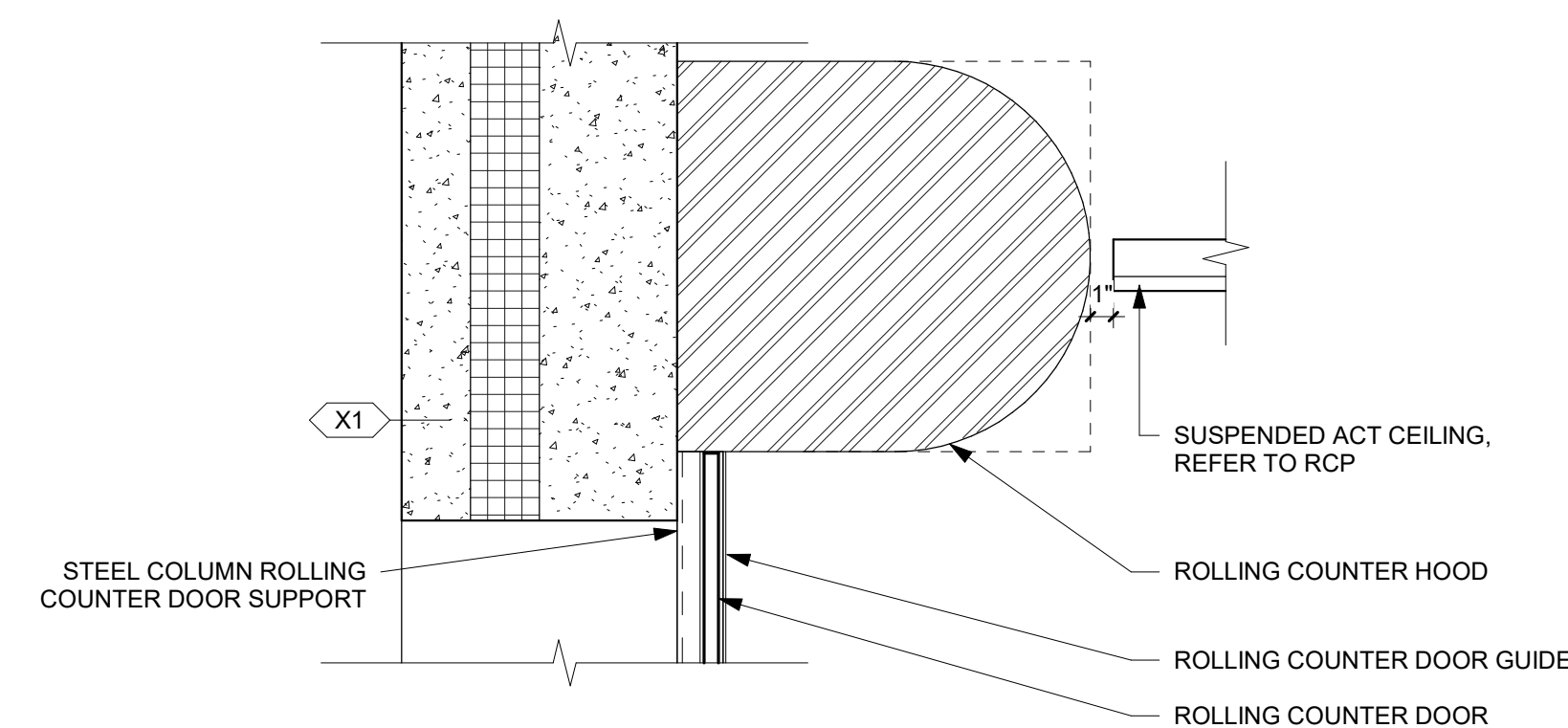
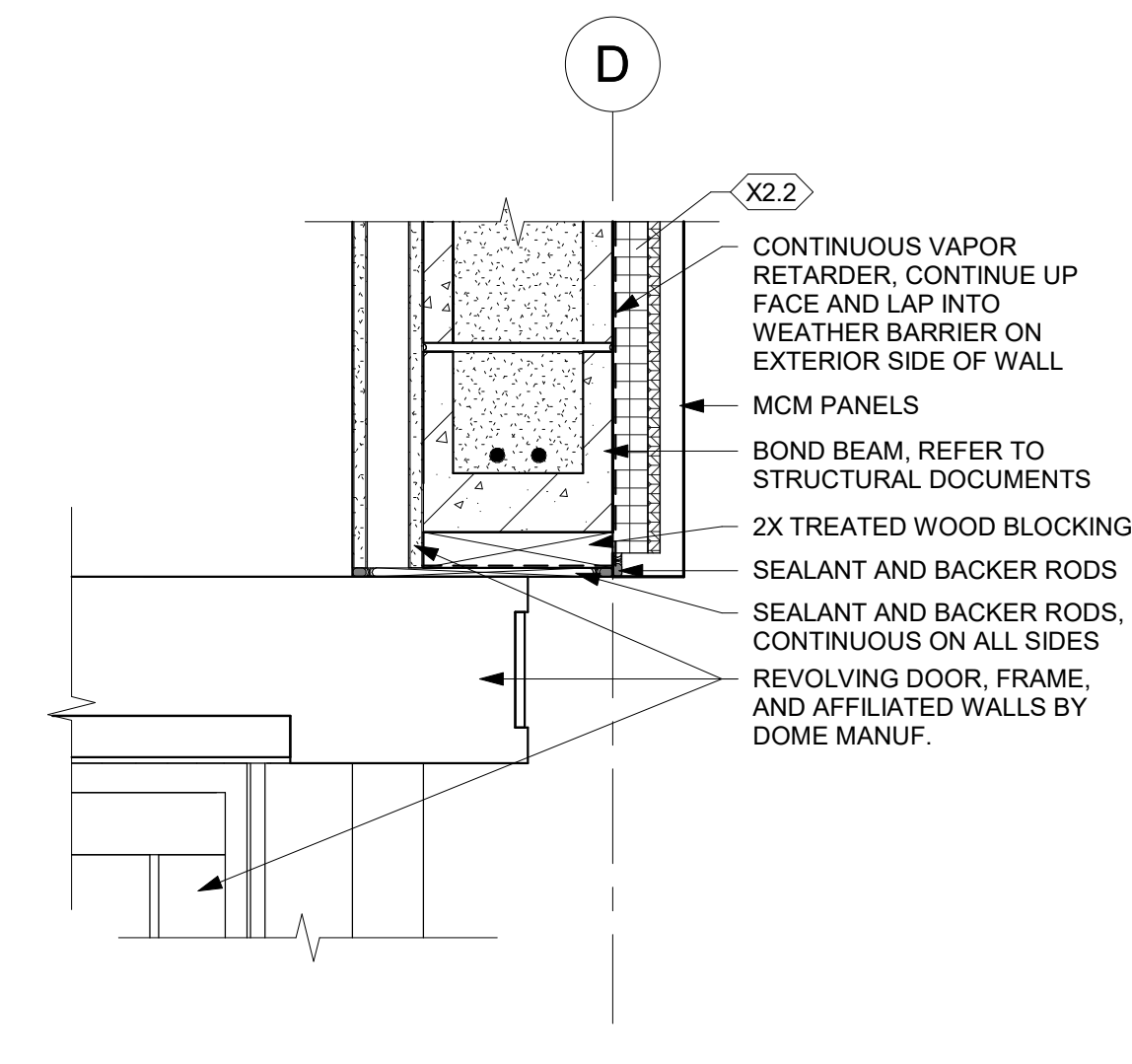
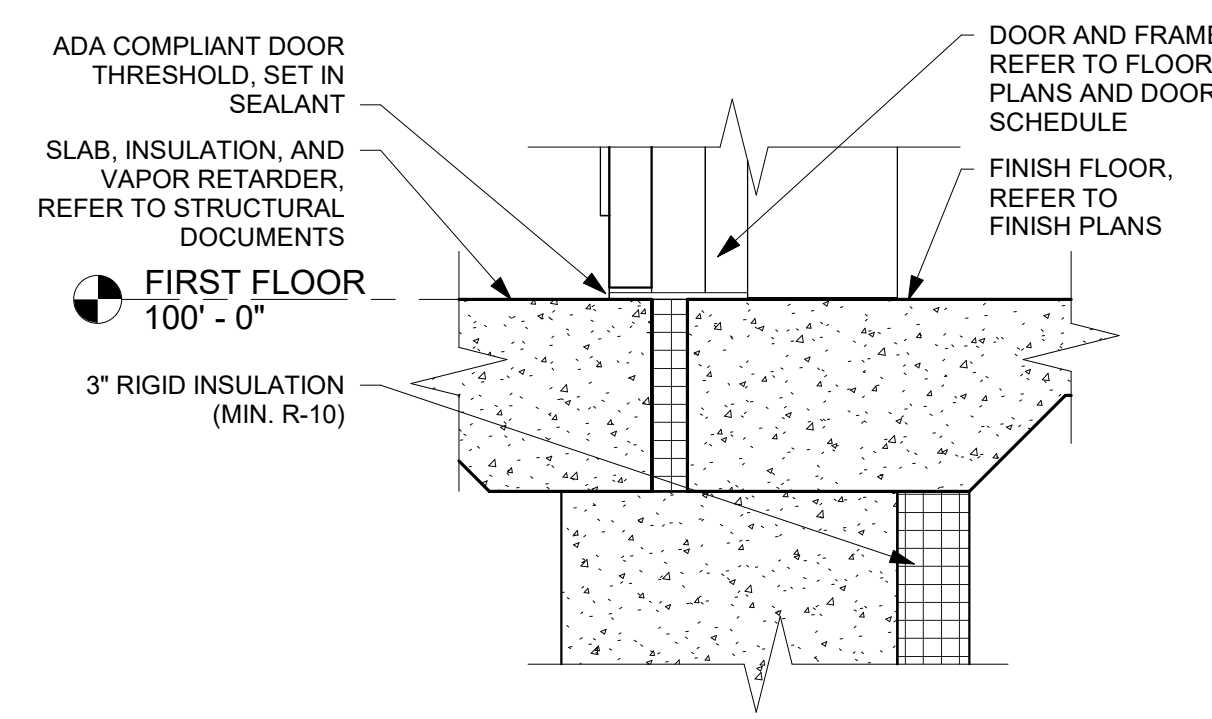
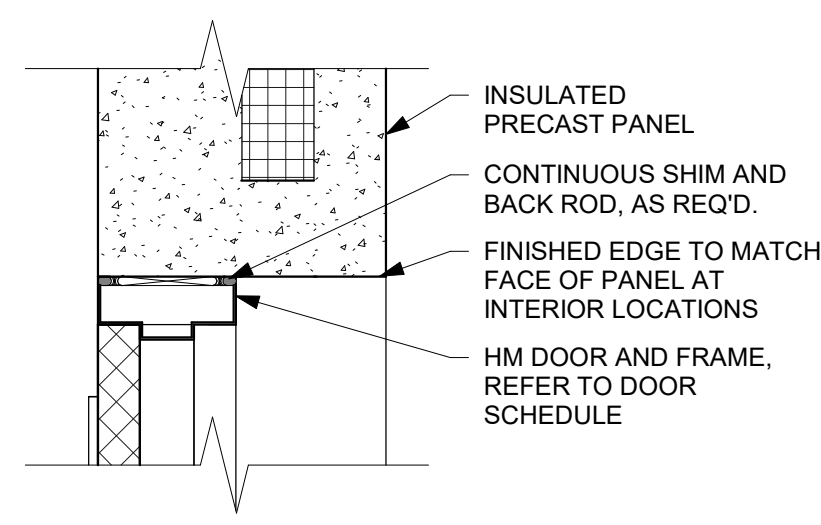
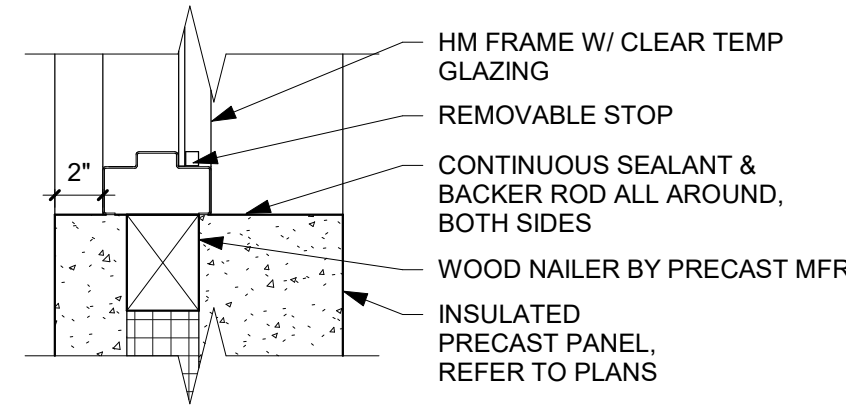
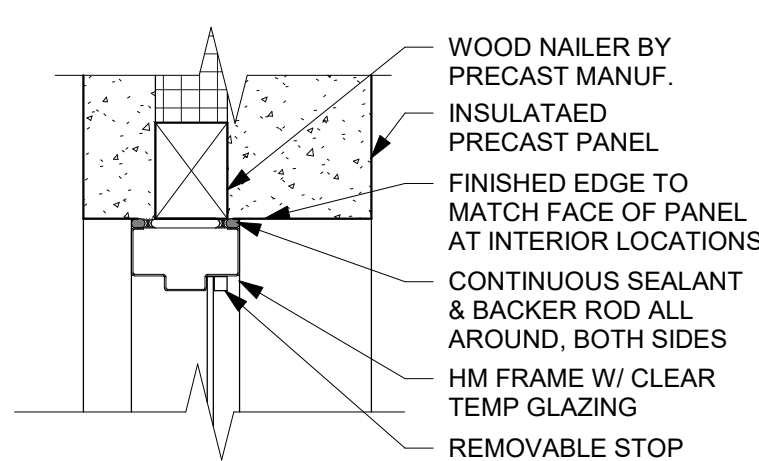


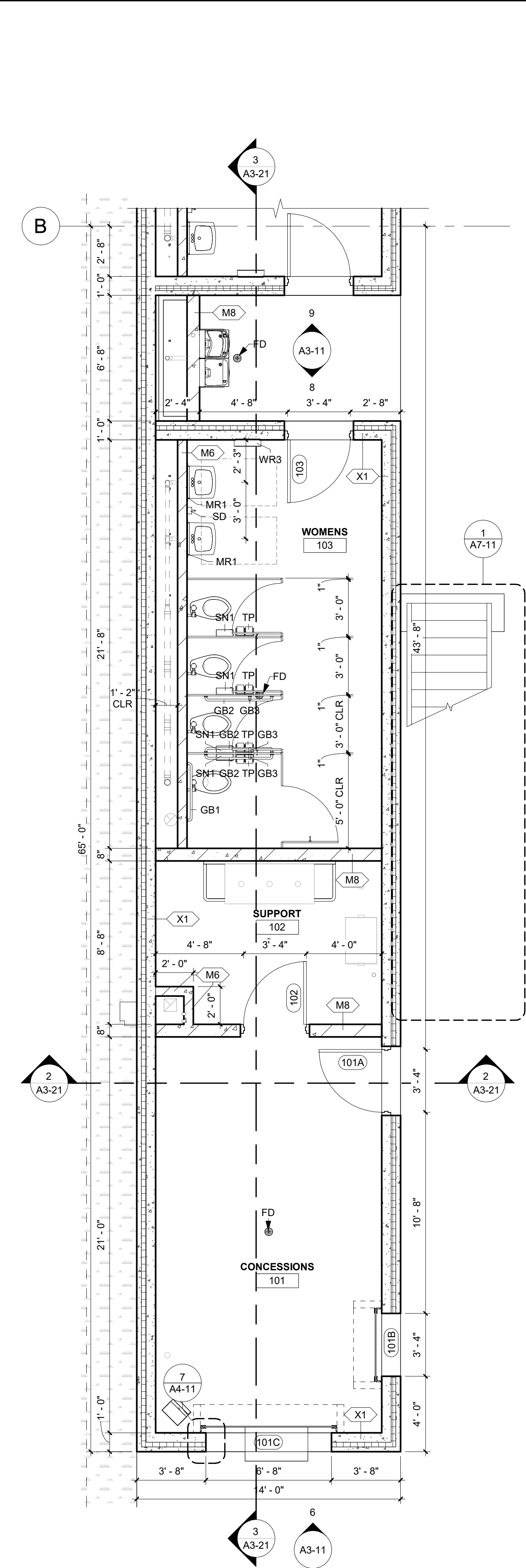
DOOR TYPES



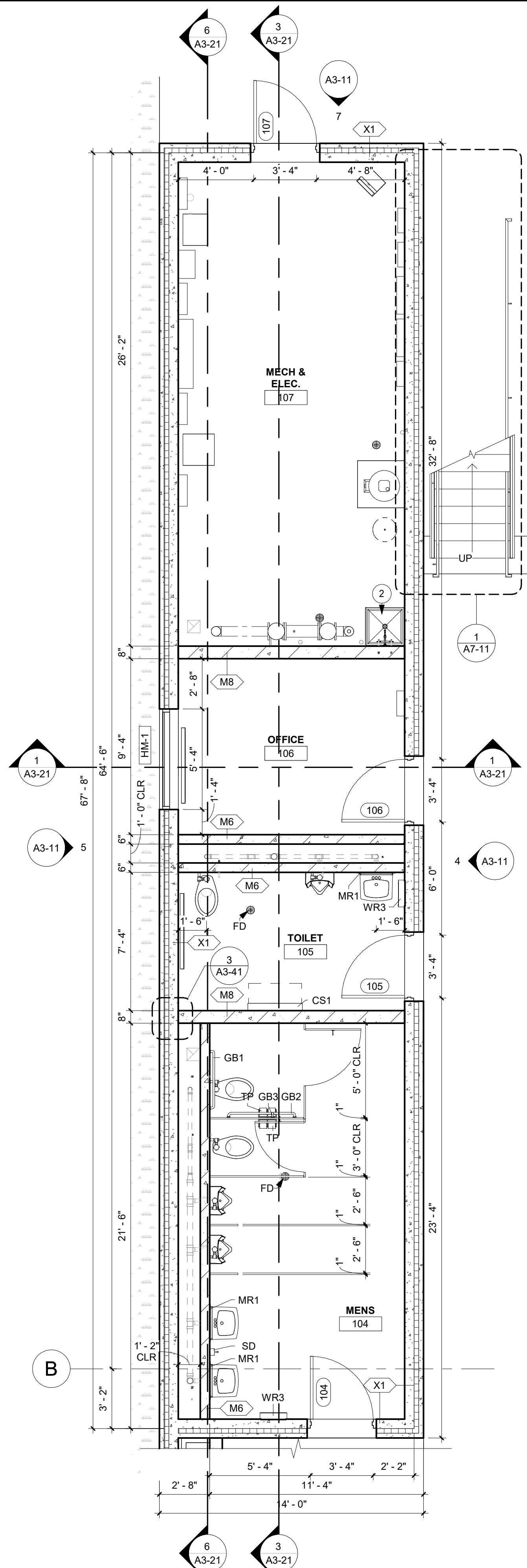
GLAZING SCHEDULE			
MARK	MATERIAL	THICKNESS	COMMENTS
INSULATED			
IG-1	INSULATED GLAZING UNIT	1"	VIRACON #: VE1-2M (CLEAR)
IG-2	INSULATED GLAZING UNIT, TEMPERED	1"	VIRACON #: VE1-2M (CLEAR)
NON-INSULATED			
G-1	GLAZING UNIT, TEMPERED	1/4"	OFFICE WINDOW TO FIELD

DOOR SCHEDULE										
MARK	ROOM NAME	WIDTH	HEIGHT	DOOR TYPE	DOOR MATERIAL	FRAME TYPE	FRAME MATERIAL	FIRE RATING	HARDWARE GROUP	COMMENTS
100A	VESTIBULE	3'-0"	7'-10"	FG	ALUMINUM & GLASS	AL-4	ALUMINUM	06		
100B	VESTIBULE	3'-0"	7'-10"	FG	ALUMINUM & GLASS	AL-4	ALUMINUM	07		
100C		4'-4 7/8"	7'-0"							PRESSURE SEALED DOOR BY DOME MANUF. SIZE MAY VARY FROM DIMENSTIONS SHOWN IN SCHEDULE. VERIFY WITH DOME MANUF.
100D		4'-4 7/8"	7'-0"							PRESSURE SEALED DOOR BY DOME MANUF. SIZE MAY VARY FROM DIMENSTIONS SHOWN IN SCHEDULE. VERIFY WITH DOME MANUF.
101A	CONCESSIONS	3'-4"	7'-0"	FL	HOLLOW METAL	1	HOLLOW METAL	05		
101B	CONCESSIONS	8'-0"	8'-0"	COIL	STEEL	N/A	N/A			MANUAL FACTORY FINISH.
101C		6'-8"	4'-4"	COIL	STEEL	N/A	N/A			MANUAL FACTORY FINISH.
102	SUPPORT	3'-4"	7'-0"	FL	HOLLOW METAL	1	HOLLOW METAL	05		
103	WOMENS	3'-4"	7'-0"	FL	HOLLOW METAL	1	HOLLOW METAL	02		
104	MENS	3'-4"	7'-0"	FL	HOLLOW METAL	1	HOLLOW METAL	02		
105	TOILET	3'-4"	7'-0"	FL	HOLLOW METAL	1	HOLLOW METAL	03		
106	OFFICE	3'-4"	7'-0"	FL	HOLLOW METAL	1	HOLLOW METAL	04		
107	MECH & ELEC.	3'-4"	7'-0"	FL	HOLLOW METAL	1	HOLLOW METAL	05		
108A		4'-4 7/8"	7'-0"					01		PRESSURE SEALED DOOR BY DOME MANUF. SIZE MAY VARY FROM DIMENSTIONS SHOWN IN SCHEDULE. VERIFY WITH DOME MANUF.
108B		4'-4 7/8"	7'-0"					01		PRESSURE SEALED DOOR BY DOME MANUF. SIZE MAY VARY FROM DIMENSTIONS SHOWN IN SCHEDULE. VERIFY WITH DOME MANUF.
108C		4'-4 7/8"	7'-0"					01		PRESSURE SEALED DOOR BY DOME MANUF. SIZE MAY VARY FROM DIMENSTIONS SHOWN IN SCHEDULE. VERIFY WITH DOME MANUF.
108D		4'-4 7/8"	7'-0"					01		PRESSURE SEALED DOOR BY DOME MANUF. SIZE MAY VARY FROM DIMENSTIONS SHOWN IN SCHEDULE. VERIFY WITH DOME MANUF.
108E		4'-4 7/8"	7'-0"					01		PRESSURE SEALED DOOR BY DOME MANUF. SIZE MAY VARY FROM DIMENSTIONS SHOWN IN SCHEDULE. VERIFY WITH DOME MANUF.
108F		4'-4 7/8"	7'-0"					01		PRESSURE SEALED DOOR BY DOME MANUF. SIZE MAY VARY FROM DIMENSTIONS SHOWN IN SCHEDULE. VERIFY WITH DOME MANUF.
108G		4'-4 7/8"	7'-0"					01		PRESSURE SEALED DOOR BY DOME MANUF. SIZE MAY VARY FROM DIMENSTIONS SHOWN IN SCHEDULE. VERIFY WITH DOME MANUF.

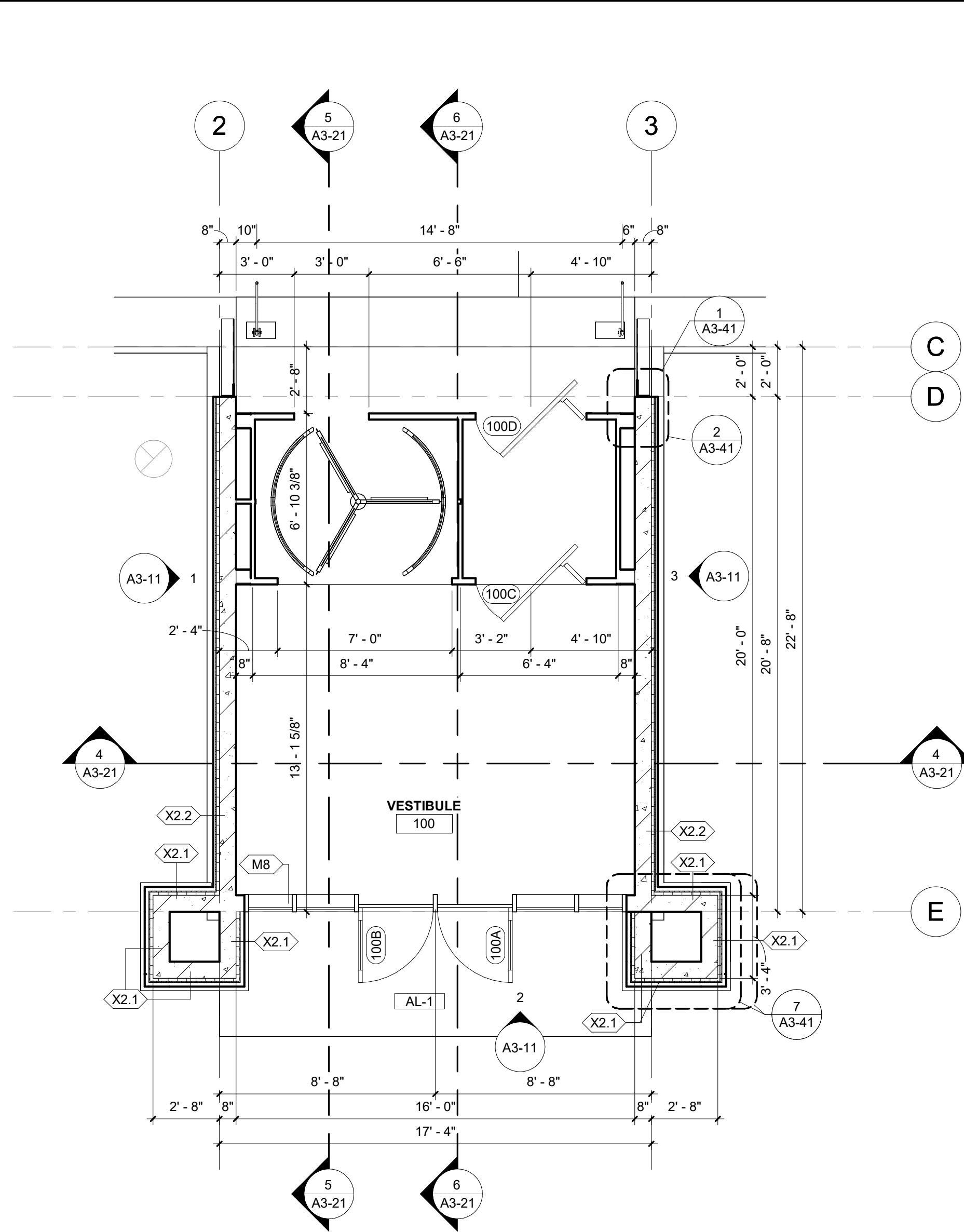




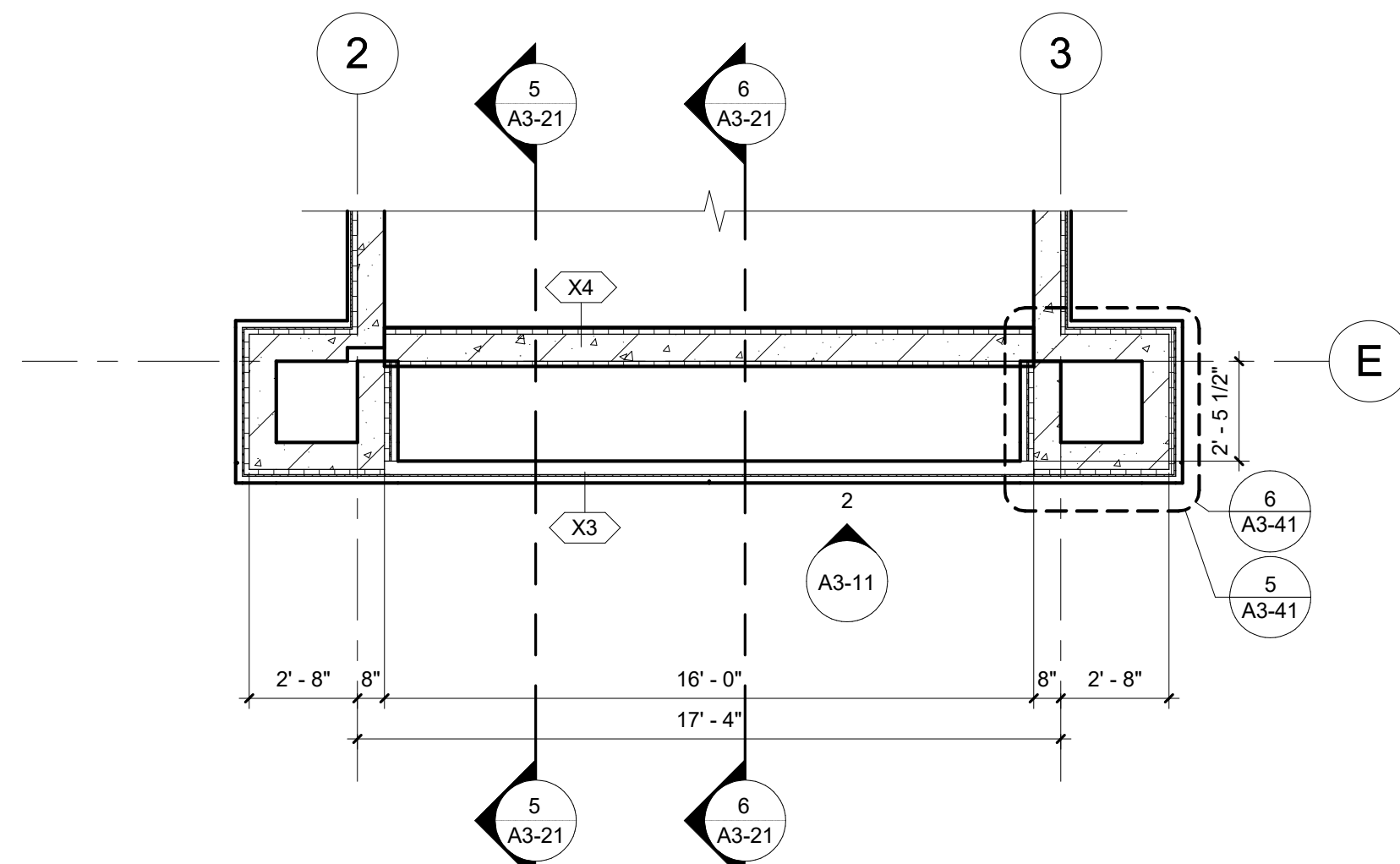
1 ENLARGED FLOOR PLAN - SUPPORT BUILDING EAST
1/4" = 1'-0"



2 ENLARGED FLOOR PLAN - SUPPORT BUILDING WEST
1/4" = 1'-0"



3 ENLARGED FLOOR PLAN - ENTRY @ STOREFRONT
1/4" = 1'-0"



4 ENLARGED FLOOR PLAN - ENTRY @ 18'-0" ELEVATION
1/4" = 1'-0"

KEYNOTE LEGEND	
2	MOP SINK, REFER TO PLUMBING DOCUMENTS.

RESTROOM ACCESSORY SCHEDULE				
MARK	DESCRIPTION	COMMENTS	PROVIDED BY	INSTALLED BY
CH	COAT HOOK		CONTRACTOR	CONTRACTOR
CS1	BABY CHANGING STATION - SURFACE MOUNTED	ADA	CONTRACTOR	CONTRACTOR
GB1	36" HORIZONTAL GRAB BAR		CONTRACTOR	CONTRACTOR
GB2	VARIES		CONTRACTOR	CONTRACTOR
GB3	VARIES		CONTRACTOR	CONTRACTOR
MR1	MIRROR		CONTRACTOR	CONTRACTOR
SD	SOAP DISPENSER		CONTRACTOR	CONTRACTOR
SN1	SANITARY NAPKIN DISPOSAL - SURFACE MOUNTED		CONTRACTOR	CONTRACTOR
TP	TOILET TISSUE DISPENSER - DOUBLE		CONTRACTOR	CONTRACTOR
WR3	PAPER TOWEL / WASTE - SURFACE MOUNTED		OWNER	CONTRACTOR



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

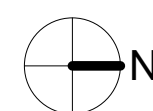
PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	TNT
DESIGNED BY	DFS
REVIEWED BY	DFS
ORIGINAL ISSUE DATE	06/13/2024
CLIENT PROJECT NO.	

TITLE

ENLARGED FLOOR PLANS & INTERIOR ELEVATIONS

SHEET

A5-11





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PROJECT

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MUSCATINE IOWA

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DATE	DESCRIPTION	BY

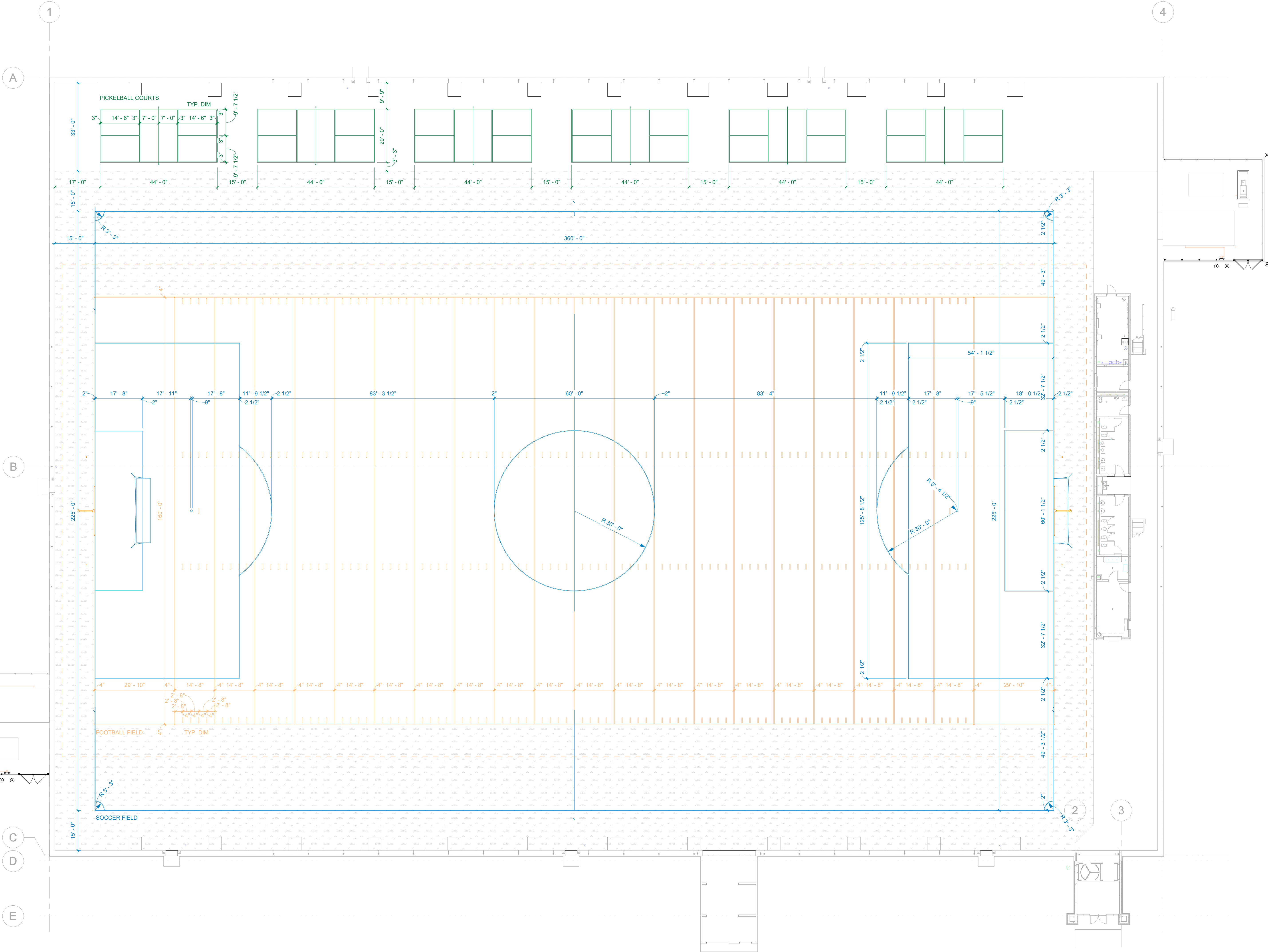
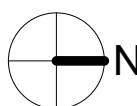
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TITLE

**ENLARGED
FLOOR PLANS -
COURT
DIMENSIONS**

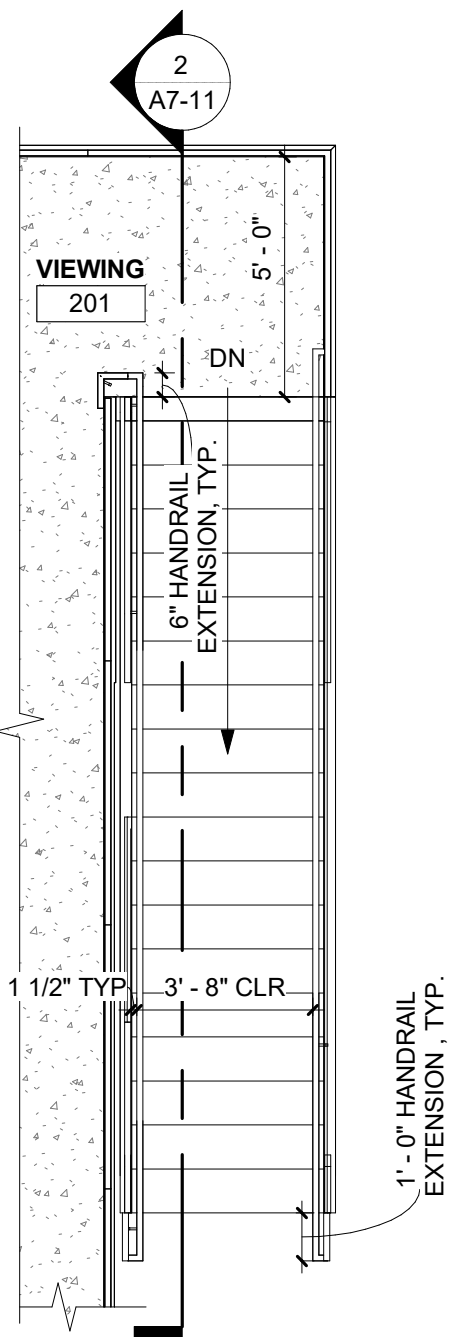
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A5-12

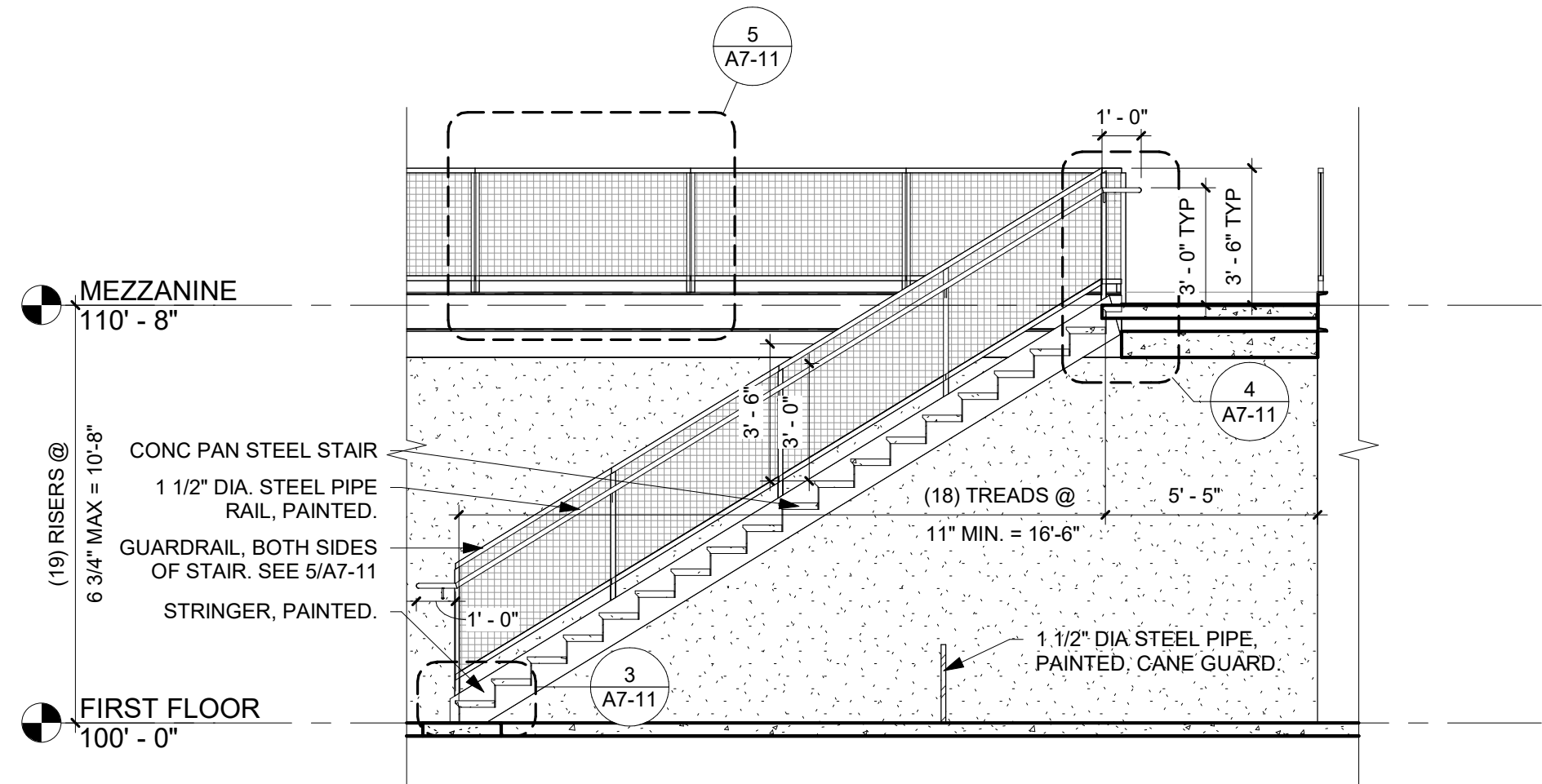


1 TYP. COURT DIMENSIONS
1/16" = 1'-0"

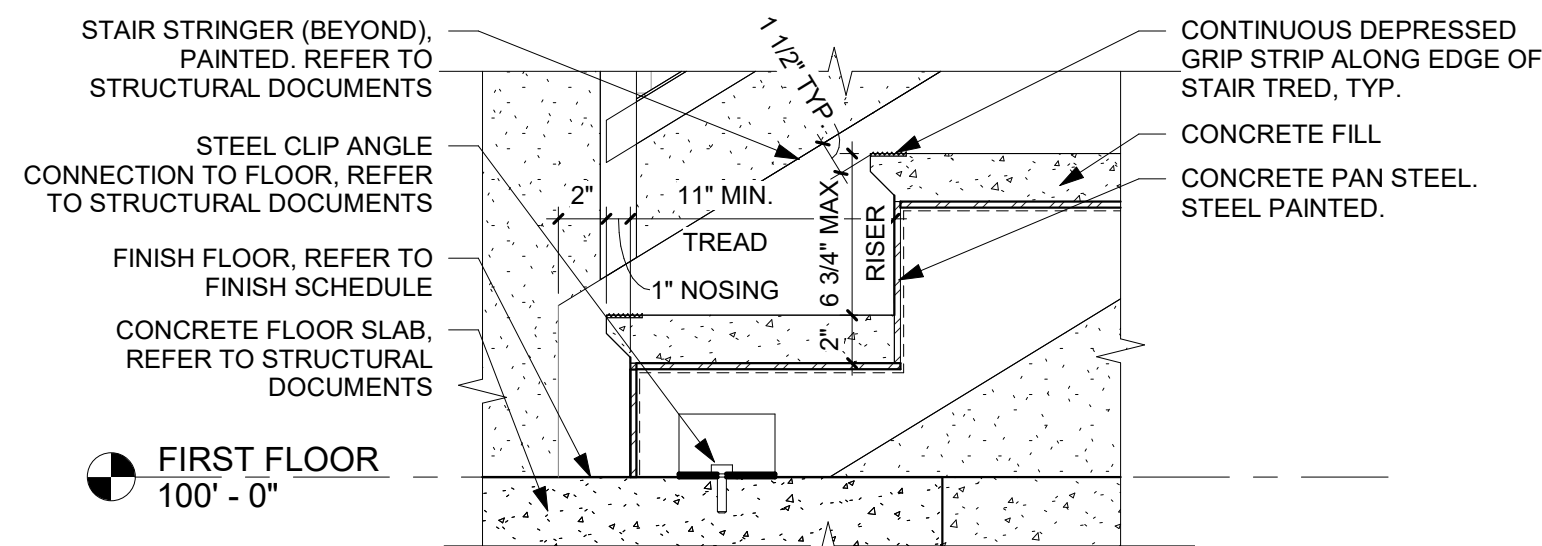
REFERENCE SCALE
1" = 1'-0"
0 1/4" 1/2" 1" 2"



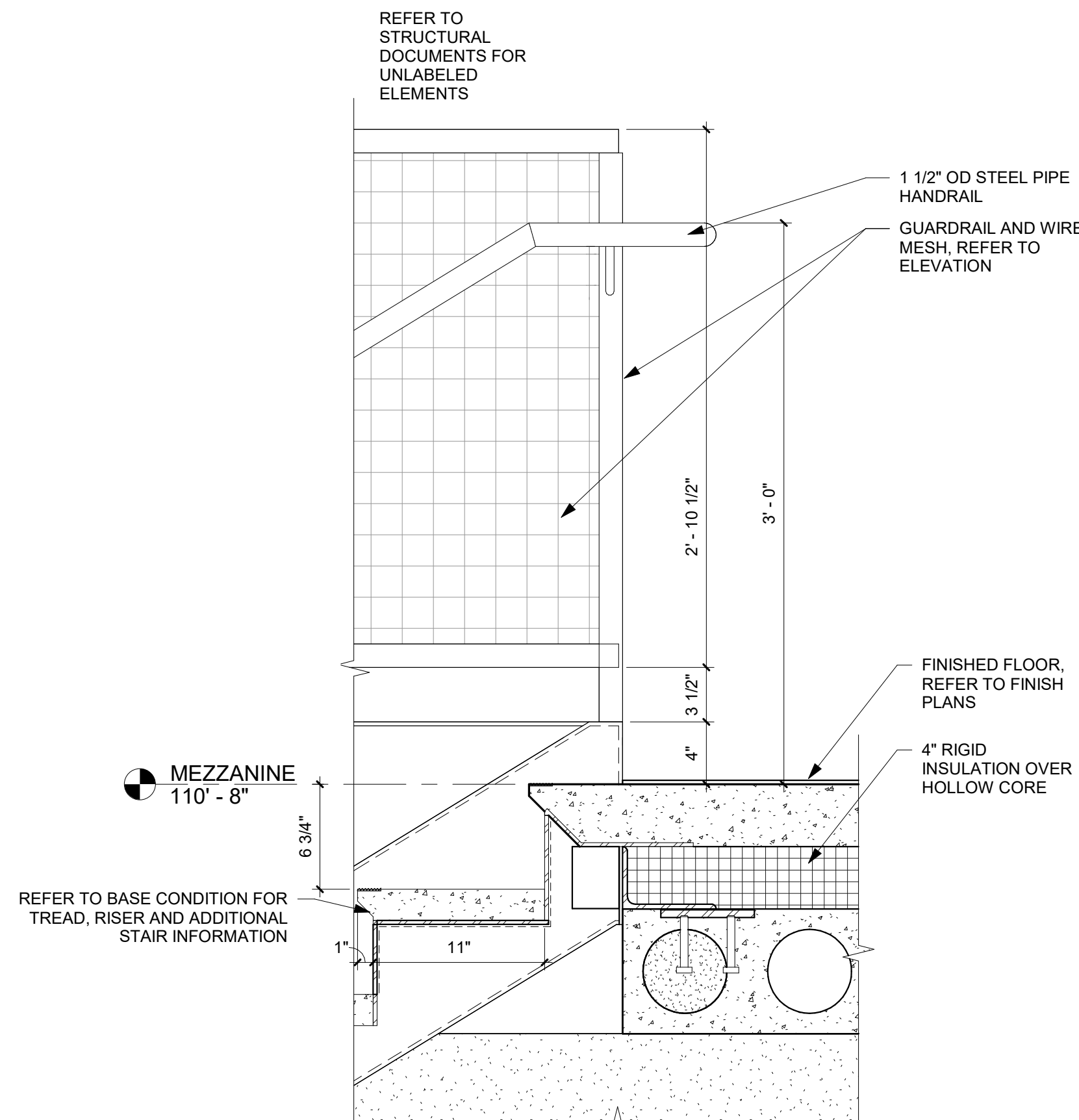
1 STAIRS - ENLARGED PLAN
1/4" = 1'-0"



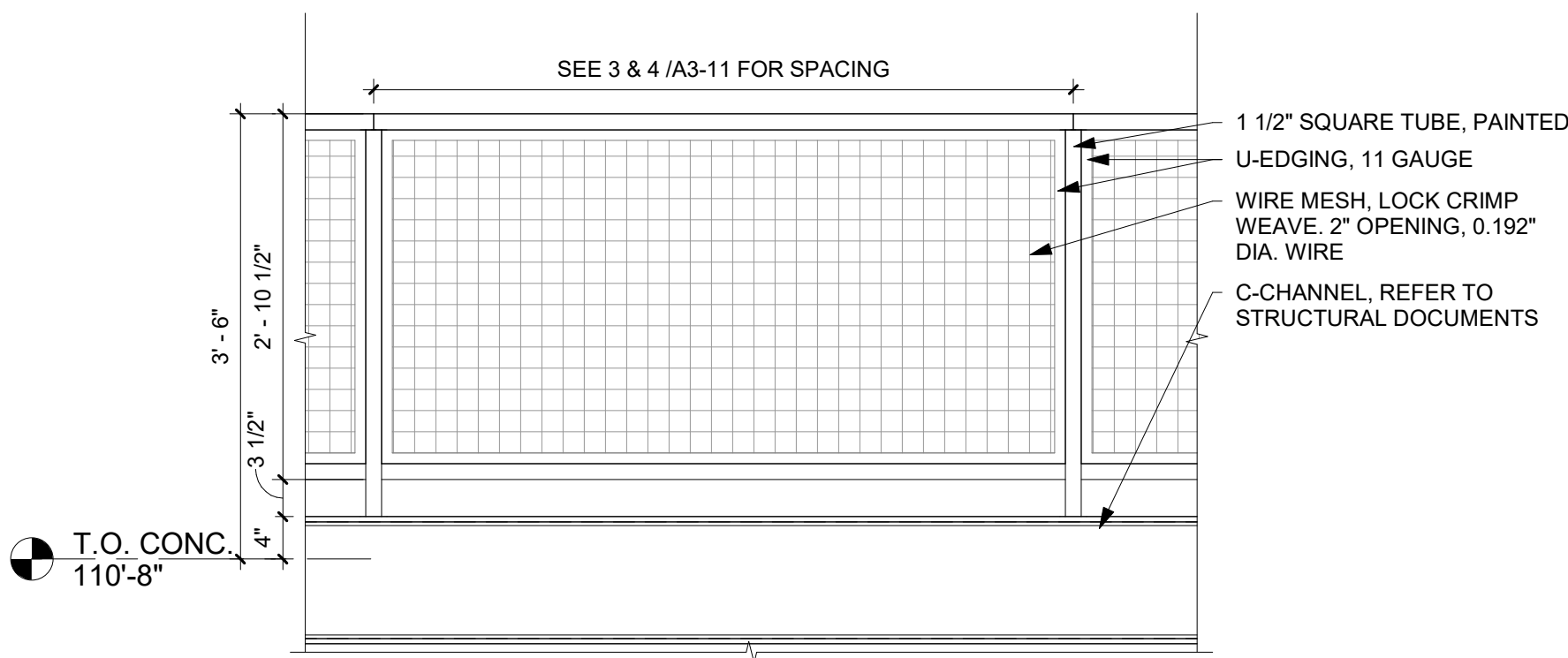
2 STAIRS - E/W SECTION
1/4" = 1'-0"



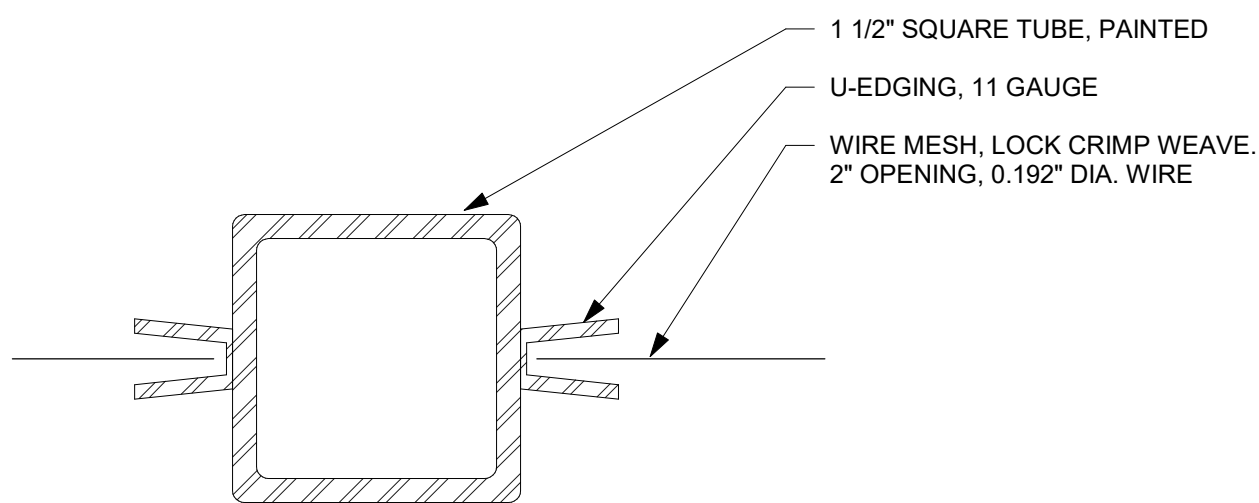
3 STAIRS - BASE CONDITION
1 1/2" = 1'-0"



4 STAIRS - TOP CONDITION
1 1/2" = 1'-0"



5 GUARDRAIL ELEVATION
3/4" = 1'-0"



6 GUARDRAIL POST IN PLAN
12" = 1'-0"



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

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CLIENT PROJECT NO.	

TITLE

VERTICAL CIRCULATION

SHEET

A7-11

- GENERAL NOTES**
- A. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER THESE STANDARD STRUCTURAL NOTES. TYPICAL DETAILS SHALL BE USED WHENEVER APPLICABLE.
- B. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK, AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED, IN WRITING, OF ANY DISCREPANCIES.
- C. IN NO CASE SHALL DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THE STRUCTURAL DRAWINGS.
- D. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF UTILITY SERVICES IN THE AREA TO BE EXCAVATED BEFORE BEGINNING EXCAVATION.
- E. NO PIPES, DUCTS, SLEEVES, CHASES, ETC., SHALL BE PLACED IN SLABS OR WALLS, NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES, DUCTS, ETC.
- F. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TEMPORARY SHORING AND BRACING OF EXISTING STRUCTURAL ELEMENTS DURING CONSTRUCTION. ALL SHORING SHALL BE ADEQUATE TO SUPPORT ALL STRUCTURAL LOADS DURING THE REMOVAL OF THE EXISTING STRUCTURE. TEMPORARY SHORING MUST REMAIN IN PLACE UNTIL ALL NEW STRUCTURAL ELEMENTS ARE SECURED INTO PLACE PER CONSTRUCTION DOCUMENTS.
- G. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR REQUIREMENTS, DIMENSIONS AND EXACT LOCATIONS OF FLOOR DRAINS, TRENCHES, DRAIN TILE, PUMPS AND EQUIPMENT INCLUDING ANCHORING SYSTEMS AND HOUSEKEEPING PADS. GENERAL CONTRACTOR TO COORDINATE ALL OF THESE ITEMS WITH ALL DISCIPLINES INVOLVED.
- H. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND MANUALS (LATEST ADOPTED EDITION):
1. STATE BUILDING CODE, WHEN APPLICABLE.
 2. INTERNATIONAL BUILDING CODE (IBC).
 3. AMERICAN CONCRETE INSTITUTE (ACI).
 4. CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE (FOR PLACING AND DETAILING OF ALL REINFORCING).
 5. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).
 6. AMERICAN WELDING SOCIETY (AWS) STANDARDS FOR WELDING AS MODIFIED BY AISC SPECIFICATION.
 7. MASONRY STANDARDS JOINT COMMITTEE (MSJC).
 8. AMERICAN FOREST & PAPER ASSOCIATION NATIONAL DESIGN SPECIFICATION (AF & PA NDS)

DESIGN LOADS CRITERIA

- A. CODES USED:
1. 2015 INTERNATIONAL BUILDING CODE.
 2. 2010 AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD 7 (ASCE 7-10)
- B. RISK CATEGORY: III
- C. WIND LOAD CRITERIA:
1. ULTIMATE WIND SPEED, $V = 120$ MPH (3 SECOND GUST)
 2. NOMINAL WIND SPEED, $V = 90$ MPH (3 SECOND GUST)
 3. WIND LOAD EXPOSURE: C
 4. INTERNAL PRESSURE COEFFICIENT (MAIN ENTRANCE): $+/- 0.18$ (ENCLOSED BUILDING)
 5. WIND TOPOGRAPHIC FACTOR: $K_{zt} = 1.0$
 6. C & C WIND WALL PRESSURE: REFER TO COMPONENT AND CLADDING WIND PRESSURE TABLE
 7. WIND NET UP LIFT, 15 PSF (NOMINAL)
 8. CABLE LOADING TO BE PROVIDED BY DOME SUPPLIER
- D. SNOW LOAD CRITERIA:
1. GROUND SNOW LOAD, $P_g = 20$ PSF
 2. FLAT-ROOF SNOW LOAD (BALANCED), $P_f = 22$ PSF
 3. SNOW LOAD IMPORTANCE FACTOR, $I_s = 1.1$
 4. SLOPE FACTOR, $C_d = 1.0$
 5. THERMAL FACTOR, $C_t = 1.0$
 6. SNOW EXPOSURE FACTOR, $C_e = 1.0$
 7. UNBALANCED SNOW LOAD, ON PLAN IF APPLICABLE
- E. EARTHQUAKE LOAD CRITERIA
1. SEISMIC IMPORTANCE FACTOR: $I_e = 1.25$
 2. MAPPED SPECTRAL RESPONSE ACCELERATIONS:
 - $S_s = 0.85g$
 - $S_1 = 0.19g$
 3. SOIL SITE CLASS: D
 4. SPECTRAL RESPONSE COEFFICIENT:
 - $S_{DS} = 0.105$
 - $S_{D1} = 0.097$
 5. SEISMIC DESIGN CATEGORY: B
 6. SEISMIC FORCE RESISTING SYSTEM:
 - A. MAIN ENTRANCE: INTERMEDIATE MASONRY SHEAR WALLS
 - B. SUPPORT BUILDING: ORDINARY PRECAST SHEAR WALLS
 7. SEISMIC RESPONSE COEFFICIENT
 - A. MAIN ENTRANCE: $C_s = 0.038$
 - B. SUPPORT BUILDING: $C_s = 0.044$
 8. RESPONSE MODIFICATION FACTOR
 - A. MAIN ENTRANCE: $R = 3.5$
 - B. SUPPORT BUILDING: $R = 3$
 9. OVER-STRENGTH FACTOR: $\Omega = 2.5$
 10. ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL-FORCE ANALYSIS
- F. LIVE LOADS
1. ROOF: 20 PSF
 2. SECOND FLOOR: 100 PSF
 3. STAIR ASSEMBLIES: 100 PSF
 4. RAILING: 200 LBS AT ANY POINT OR 50 PLF, WHICHEVER PRODUCES MAXIMUM LOAD EFFECT
- G. DEAD LOADS
1. ROOF: 15 PSF
 2. FRAMING: ACTUAL
 3. MECHANICAL: SEE PLAN
- H. RAIN LOAD DATA
1. RAIN INTENSITY: 3.84 IN/H

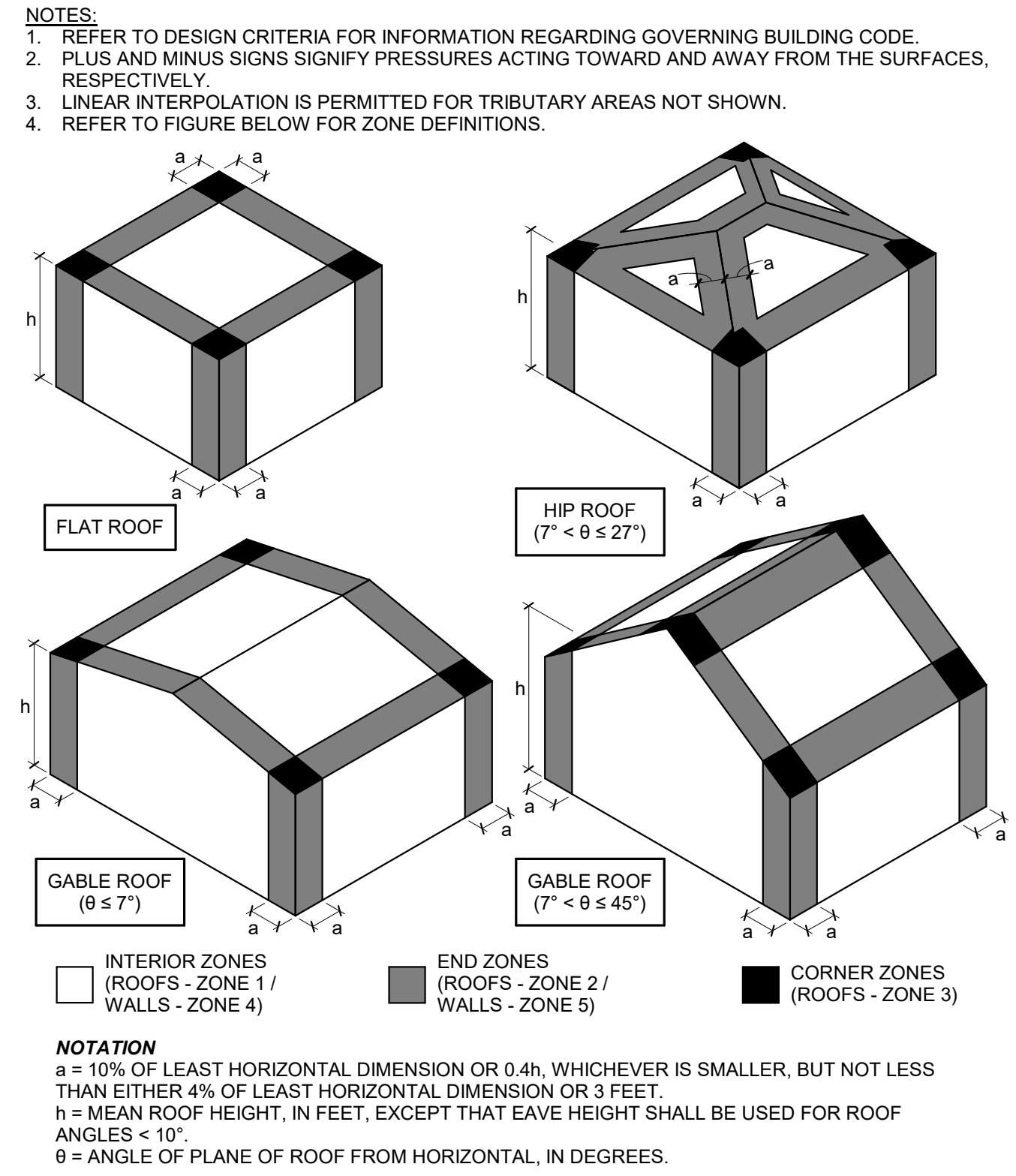
SHOP DRAWINGS

- A. SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR APPROVAL, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER RESPONSIBLE FOR ITS PREPARATION, WHO IS REGISTERED IN THE STATE WHICH THE PROJECT IS LOCATED.
- B. PRIOR TO SUBMITTAL, THE CONTRACTOR SHALL REVIEW THE SHOP DRAWINGS AND MAKE ANY CORRECTIONS REQUIRED. THE CONTRACTOR SHALL STAMP AND SIGN THE SHOP DRAWINGS PRIOR TO SUBMITTAL TO THE ENGINEER.
- C. THE ENGINEER'S REVIEW OF SHOP DRAWINGS IS FOR GENERAL CONFORMANCE OF THE DESIGN CONCEPT. CONTRACTOR SHALL SUBMIT A SCHEDULE OF SHOP DRAWING SUBMITTALS THAT IS ACCEPTABLE TO BOTH CONTRACTOR AND ENGINEER. AFTER THE CONTRACTOR HAS REVIEWED THE SHOP DRAWINGS, PROMPT REVIEW BY THE ENGINEER WILL BE MADE OF ALL SUBMITTALS.
- D. FOR LARGE SUBMITTALS, REASONABLE REVIEW TIME SHALL BE ALLOWED AND MAY EXCEED TWO WEEKS. THE CONTRACTOR SHALL SUBMIT NECESSARY REQUEST FOR INFORMATION (RFIs) DURING THE DETAILING PROCESS TO AVOID SUBMITTALS THAT ARE INCOMPLETE OR NEED SIGNIFICANT VERIFICATIONS. THE CONCURRENT SUBMITTAL OF MULTIPLE SHOP DRAWINGS ("BUMPING") WILL FURTHER EXTEND THE REVIEW PROCESS AND TIME FRAME NECESSARY TO PROPERLY REVIEW EACH SUBMITTAL.
- E. UNLESS INDICATED OTHERWISE, THE GENERAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE FOLLOWING ITEMS FOR STRUCTURAL REVIEW. REFER TO SPECIFIC SECTION OF STRUCTURAL NOTES FOR ANY ADDITIONAL CRITERIA:
1. AIR-SUPPORTED STRUCTURES
 2. CONCRETE MIX DESIGNS
 3. PRESTRESSED CONCRETE
 4. STRUCTURAL STEEL
 5. OPEN-WEB BAR JOISTS
 6. STEEL ROOF DECK
 7. ADDITIONAL STRUCTURAL SHOP DRAWINGS REQUESTED IN THE SPECIFICATIONS
- F. A COPY OF ALL SHOP DRAWINGS SHALL BE MAINTAINED ON SITE AT ALL TIMES.
- G. SHOP DRAWINGS SHALL INCLUDE COMPLETE DETAIL SCHEDULES, PROCEDURES, AND DIAGRAMS FOR FABRICATION AND ASSEMBLY OF STRUCTURAL MEMBERS AND SUBMIT PRIOR TO FABRICATION.
- H. ERECTION PLANS ARE THE RESPONSIBILITY OF THE FABRICATOR.

DEFERRED SUBMITTAL DOCUMENTS

- A. FABRICATION DRAWINGS AND CALCULATIONS (SIGNED AND SEALED BY A PROFESSIONAL ENGINEER IN THE STATE WHERE THE PROJECT IS CONSTRUCTED, AS NOTED BELOW) SHALL BE SUBMITTED FIRST TO THE ENGINEER OF RECORD FOR REVIEW PRIOR TO FABRICATIONS FOR THE FOLLOWING ITEMS:
1. AIR-SUPPORTED STRUCTURES (SIGNED AND SEALED CALCULATIONS)
 2. STEEL STAIR FRAMING (SIGNED AND SEALED CALCULATIONS)
 3. PRESTRESSED CONCRETE (SIGNED AND SEALED CALCULATIONS)

COMPONENTS AND CLADDING WIND PRESSURES (PSF)					
ZONE	TRIBUTARY AREA				
	10 sf or smaller	20 sf	50 sf	100 sf	150 sf or greater
WALL INTERIOR	+29.5 / -32.0	+28.2 / -30.6	+26.5 / -28.9	+25.2 / -27.6	+24.4 / -26.8
WALL END	+29.5 / -39.3	+28.2 / -36.7	+26.5 / -33.3	+25.2 / -30.6	+24.4 / -29.1
ROOF INTERIOR	+16.0 / -32.2	+16.0 / -31.4	+16.0 / -30.3	+16.0 / -29.5	+16.0 / -29.5
ROOF END	+16.0 / -54.1	+16.0 / -48.3	+16.0 / -40.7	+16.0 / -35.0	+16.0 / -35.0
ROOF CORNER	+16.0 / -81.4	+16.0 / -67.4	+16.0 / -48.9	+16.0 / -35.0	+16.0 / -35.0
PARAPET END	+84.6 / -62.2	+77.4 / -59.5	+68.0 / -56.0	+60.8 / -53.4	+60.1 / -51.9
PARAPET CORNER	+112.2 / -69.7	+96.8 / -65.7	+76.3 / -60.4	+60.8 / -56.5	+60.1 / -54.2
OVERHANG INTERIOR	-46.4	-45.6	-44.5	-43.7	-40.3
OVERHANG END	-46.4	-45.6	-44.5	-43.7	-40.3
OVERHANG CORNER	-76.5	-60.0	-38.3	-21.8	-21.8



FOOTINGS AND FOUNDATIONS

- A. SOIL BEARING DESIGN VALUE:
1. 1500 PSF (GEO TECHNICAL ENGINEERING REPORT BY TEAM SERVICES PROJECT NO. 1-5404).
 2. 33% INCREASE FOR TRANSIENT FORCES (2000 PSF).
 3. BEARING VALUE TO BE VERIFIED IN FIELD BY GEOTECHNICAL ENGINEER.
- B. PROTECT FOUNDATION EXCAVATIONS FROM FROST; DO NOT PLACE CONCRETE ON FROZEN GROUND.
- C. REMOVE ANY ORGANIC-LOADED SOILS, VEGETATION AND ANY LOOSE, SOFT OR OTHERWISE UNSUITABLE SURFICIAL MATERIALS WHERE SUPPORT OF FOUNDATIONS, FLOOR SLABS, OR PAVEMENTS ARE REQUIRED. AVERAGE STRIPPING DEPTHS OF 6" ANTICIPATED. REFER TO GEOTECHNICAL REPORT.
- D. FOUNDATION EXCAVATIONS SHALL BE KEPT FREE OF LOOSE MATERIAL AND STANDING WATER AND SHALL BE CHECKED AND APPROVED BY THE ENGINEER BEFORE THE PLACEMENT OF ANY CONCRETE.
- E. DESIGN FROST PENETRATION DEPTH: 42 INCHES
- F. MINIMUM OF 6" COMPACTED GRANULAR BASE (LESS THAN 6 PERCENT PASSING A NO. 200 SIEVE) BELOW SLABS.
- G. EXCESSIVELY HEAVY GRADING EQUIPMENT SHOULD NOT BE ALLOWED WITHIN 5 FEET HORIZONTALLY OF WALLS. REFER TO GEOTECHNICAL REPORT.

MATERIAL COMPACTION CRITERIA			
LOCATION	MINIMUM RELATIVE COMPACTION PERCENTAGE (ASTM D698 STANDARD PROCTOR DENSITY (SPD))		
		COHESIVE SOIL	COHESIONLESS SOIL
SUBGRADE PREPARATION FOR STRUCTURES, PAVEMENTS, AND OTHER CRITICAL BACKFILL AREAS	95%	98%	
BACKFILL ADJACENT TO STRUCTURES NOT SUPPORTING OTHER STRUCTURES OR PAVEMENTS. MINOR SUBSIDENCE POSSIBLE.	90%	93%	
BACKFILL IN NON-CRITICAL AREAS. MODERATE SUBSIDENCE POSSIBLE.	85%	88%	

CONCRETE

- A. CONCRETE SHALL BE STANDARD WEIGHT MIX UNLESS NOTED OTHERWISE AND MEET THE FOLLOWING CRITERIA:
- | LOCATIONS | f_c @ 28 DAYS | AIR ENTRAINMENT | MAX. WATER/CEMENT RATIO |
|-------------------------|-----------------|-----------------|-------------------------|
| FOOTINGS / FOUNDATIONS | 4500 PSI | 6% $\pm$ 1.5% | 0.45 |
| FLOORS ON GRADE | 4000 PSI | | 0.55 |
| EXTERIOR SLABS ON GRADE | 4500 PSI | 6% $\pm$ 1.5% | 0.45 |
| PICKLEBALL COURT SLAB | 4000 PSI | | 0.45 |
- B. CEMENT SHALL CONFORM TO ASTM C150, TYPE I / II OR ASTM C595 TYPE II.
- C. READY-MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94.
- D. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 (LATEST EDITION) "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", EXCEPT AS MODIFIED BY THESE NOTES.
- E. ADMIXTURES MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER. ADMIXTURES SHALL COMPLY WITH ASTM C494 AND BE OF A TYPE THAT INCREASES THE WORKABILITY OF THE CONCRETE, BUT SHALL NOT BE CONSIDERED TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT (CALCIUM CHLORIDE SHALL NOT BE USED).
- F. CONTRACTOR SHALL SUBMIT MIX DESIGNS FOR APPROVAL 10 DAYS PRIOR TO FABRICATION AND INSTALLATION. ALL CONCRETE MIXES SHALL BE DESIGNED AND CERTIFIED BY A MATERIALS TESTING COMPANY.
- G. PROJECTING CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC. SHALL BE FORMED WITH A 3/4" CHAMFER UNLESS DETAILED OR NOTED OTHERWISE.
- H. PLACE 15 MIL VAPOR BARRIER DIRECTLY BELOW FLOOR SLAB.
- I. CONCRETE FLOOR SHALL BE CURED IN ACCORDANCE WITH ASTM C309. CONCRETE FLOOR SHALL BE PROTECTED FROM MOISTURE LOSS FOR A MINIMUM OF 14 DAYS, USING AN APPROVED SHEET MEMBRANE IN ACCORDANCE WITH C171.
- J. FLOOR FLATNESS AND LEVELNESS TOLERANCES:
1. UNLESS NOTED OTHERWISE, FLOORS SHALL CONFORM TO THE FOLLOWING SURFACE PROFILE TOLERANCES:
 - a. FLOOR FLATNESS NUMBER (F_n)
 - SPECIFIED OVERALL VALUE = 20
 - MINIMUM LOCAL VALUE = 15
 - b. FLOOR LEVELNESS NUMBER (F_l)
 - SPECIFIED OVERALL VALUE = 20
 - MINIMUM LOCAL VALUE = 15
 2. FLOOR TOLERANCE (F_n AND F_l) MEASUREMENTS SHALL BE TESTED IN ACCORDANCE WITH ASTM E 1155. ACTUAL OVERALL F-numbers SHALL BE CALCULATED USING THE INFERIOR / SUPERIOR AREA METHOD.
 3. CORRECT DEFECTIVE SLABS BY GRINDING OR REMOVING AND REPLACING DEFECTIVE WORK. RE-MEASURE CORRECTED AREAS BY THE SAME PROCESS.
- K. FIBER REINFORCEMENT: HOLLOW CORE TOPPING
- a. SHALL CONFORM TO ASTM C1116, TYPE III CONTAINING SYNTHETIC MACROFIBERS MEETING THE CRITERIA OF ASTM D7508 FOR MACRO-CHOPPED STRANDS OR HYBRID CHOPPED STRANDS WHERE INDICATED.
 - b. DOSAGE SHALL BE DESIGNED BY THE MANUFACTURER FOR REPLACEMENT OF REINFORCEMENT RATIO OF 0.22%, BUT NOT LESS THAN 4LB/CY.

REINFORCING STEEL

- A. BAR REINFORCEMENT SHALL BE ASTM A615, GRADE 60.
- B. MINIMUM DEVELOPMENT LENGTH OF REINFORCING BARS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE
- | MINIMUM LENGTH FOR STANDARD UN-COATED BARS IN NORMAL WEIGHT CONCRETE | | | | | | |
|--|--|-----------|-----------------|-----------|-----------------------------|--|
| CONCRETE STRENGTH f_c IN PSI | DEVELOPMENT LENGTH (L _d) FOR STRAIGHT BARS (MIN. OF 12 INCHES) | | TENSION CLASS A | | TENSION CLASS B | |
| | #6 AND SMALLER | #7 TO #11 | #6 & SMALLER | #7 TO #11 | #18, #14, & #11 AND SMALLER | FOR 90 DEGREE HOOKED BARS, HOOK DEVELOPMENT LENGTH |
| 3000 | 44 Db | 55 Db | 57 Db | 71 Db | 30 Db | 22 Db |
| 3500 | 41 Db | 51 Db | 53 Db | 66 Db | 30 Db | 20 Db |
| 4000 | 38 Db | 47 Db | 49 Db | 62 Db | 30 Db | 19 Db |
| 4500 | 36 Db | 45 Db | 47 Db | 58 Db | 30 Db | 18 Db |
| 5000 | 34 Db | 42 Db | 44 Db | 55 Db | 30 Db | 17 Db |
- NOTE: Db = DIAMETER OF REINFORCEMENT. L_d = DEVELOPMENT LENGTH
- C. TYPICAL SPLICES: CLASS B AS DEFINED IN ACI 318, UNLESS NOTED OTHERWISE
- D. ADJUSTMENT FACTORS FOR STRAIGHT BARS IN TENSION
1. LIGHTWEIGHT CONCRETE = 1.3.
 2. EPOXY COATED WITH COVER LESS THAN 3DB OR CLEAR SPACING LESS THAN 6 DB = 1.5.
 3. HORIZONTAL "TOP" BARS WITH 12" OF CONCRETE CAST BELOW = 1.3
 5. EPOXY COATED HORIZONTAL "TOP" BARS WITH 12" OF CONCRETE CAST BELOW = NOT GREATER THAN 1.7
- E. ADJUSTMENT FACTORS FOR STRAIGHT HOOKS IN TENSION
1. LIGHTWEIGHT CONCRETE = 1.3.
 2. EPOXY COATED = 1.2
- F. REINFORCING STEEL SHALL BE PROVIDED WITH THE FOLLOWING AMOUNTS OF COVER FOR CAST-IN-PLACE CONCRETE UNLESS NOTED OTHERWISE:

MINIMUM CLEAR CONCRETE COVER FOR REINFORCING STEEL	
CONCRETE ON SOIL (DIRECT CONTACT)	3"
SLAB ON GRADE	CENTERED
WALLS, STRUCTURAL SLABS EXPOSED TO SOIL OR WEATHER	2"
#6 TO #18 REBAR	1 1/2"
#5 AND SMALLER REBAR	
WALLS, STRUCTURAL SLABS NOT EXPOSED TO EARTH OR WEATHER	3/4"
#11 AND SMALLER REBAR	1 1/2"
COLUMNS AND PIERS (COVER TO STIRRUPS AND TIES)	

- G. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS, AND INSERTS SHALL BE SECURED IN POSITION WITH WIRE POSITIONERS, OR EQUAL, BEFORE PLACING CONCRETE OR GROUT.
- H. DOWELS BETWEEN FOOTINGS AND WALLS SHALL BE THE SAME GRADE, SIZE, AND SPACING AS VERTICAL WALL REINFORCEMENT.
- I. CONTRACTOR SHALL SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL. A MINIMUM OF 10 DAYS PRIOR TO FABRICATION AND INSTALLATION.
- J. BARS TO BE WELDED SHALL BE ASTM A706, GRADE 60. WELDING OF REINFORCING BARS SHALL CONFORM TO AWS D14.

CONCRETE MASONRY

- A. FURNISH AND CONSTRUCT MASONRY IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES AND COMMENTARY AS REPORTED BY MSJC (TMS 402 & 602 / ACI 530 & 530.1 / ASCE 5 & 6).
- | LOCATIONS | TYPE | MINIMUM STRENGTH |
|---|--------------------------|--------------------|
| HOLLOW CONCRETE MASONRY | NORMAL WEIGHT ASTM C90 | $f_c = 2,650$ PSI |
| MASONRY CORE AND BOND BEAMS | GROUT FILL, ASTM C476 | $f_g = 2,000$ PSI |
| EXTERIOR AND LOAD-BEARING WALLS, WALLS EXPOSED TO EARTH BELOW GRADE | TYPE M MORTAR, ASTM C270 | $f_m = 2,500$ PSI |
| LOAD-BEARING WALLS ABOVE GRADE | TYPE S MORTAR, ASTM C270 | $f_m = 1,800$ PSI |
| INTERIOR NON-LOAD-BEARING WALLS | TYPE N MORTAR, ASTM C270 | $f_m = 750$ PSI |
| STEEL DEFORMED REINFORCEMENT | ASTM A615, GRADE 60 | $F_y = 60,000$ PSI |
| STEEL DEFORMED REINFORCEMENT FOR WELDING | ASTM A706 | $F_y = 60,000$ PSI |
| LADDER TYPE, HOT-DIPPED GALVANIZED, ASTM A951/A153 | | $F_y = 70,000$ PSI |
| HOT-DIPPED GALVANIZED, ASTM A624/A625 | | $F_y = 75,000$ PSI |
- WIRE TIES AND ANCHORS
- B. CONCRETE MASONRY WALLS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF $f_m = 2,000$ PSI.
- C. SEE PLANS FOR LOCATION OF REINFORCED WALLS.
- D. MINIMUM VERTICAL REINFORCEMENT SHALL CONSIST OF (1) #5 BAR PROVIDED AT CORNERS, WITHIN 16" OF EACH SIDE OF OPENINGS, WITHIN 8" OF EACH SIDE OF MOVEMENT JOINTS, WITHIN 8" OF THE ENDS OF WALLS, AND AT A MAXIMUM SPACING OF 48" ON-CENTER, UNLESS NOTED OTHERWISE.
- E. A CONTINUOUS BOND BEAM W/ (1) #5 BAR CONTINUOUS SHALL BE PROVIDED AT THE FIRST COURSE ABOVE FINISHED FLOOR ELEVATION.
- F. A HORIZONTAL BOND BEAM W/ (2) #5 BARS SHALL BE PROVIDED AT THE BOTTOM AND TOP OF WALL OPENINGS AND SHALL EXTEND NOT LESS THAN 48 BAR DIAMETERS PAST THE OPENINGS, CONTINUOUSLY AT STRUCTURALLY CONNECTED ROOF AND FLOOR LEVELS, AND AT THE TOPS OF WALLS.
- G. CLEAR DISTANCE BETWEEN PARALLEL REINFORCEMENT SHALL NOT BE LESS THAN 1 INCH OR THE NOMINAL DIAMETER OF THE BAR.
- H. CONNECTION OF INTERSECTING WALLS SHALL CONSIST OF REINFORCED BOND BEAMS WITH (2) #5 HORIZONTAL REINFORCEMENT AT 48" ON-CENTER MAXIMUM, AND (1) #5 VERTICAL REINFORCEMENT WITHIN 12" OF INTERSECTING WALLS, UNLESS NOTED OTHERWISE.
- I. VERTICAL STEEL SHALL BE CONTINUOUS WITH 24" LAP AT SPLICES, UNLESS NOTED OTHERWISE.
- J. IN COLUMNS, PIERS, AND PILASTERS, THE CLEAR DISTANCE BETWEEN VERTICAL BARS SHALL NOT BE LESS THAN 1.5 BAR DIAMETERS, NOR LESS THAN 1 1/2".
- K. HORIZONTAL JOINT REINFORCEMENT SHALL BE CONTINUOUS WITH 8" LAP SLICES, WHERE USED.

- L. CONCRETE BLOCK WALL LINTELS:
1. EXTEND ALL LINTELS A MINIMUM OF 8" BEYOND EACH EDGE OF OPENING, WHERE LINTEL BEARS ON CONCRETE BLOCK. FILL TWO COURSES OF BLOCK MINIMUM WITH CONCRETE.
 2. IF THE OPENING OCCURS NEXT TO CONCRETE WALL OR COLUMN, BOLT ANGLE TO COLUMN AND REST LINTEL ON ANGLE. OBTAIN ANGLE SIZE AND BOLT REQUIREMENTS FROM ENGINEER.
 3. IF OPENING OCCURS NEXT TO STEEL COLUMN, WELD ANGLE TO COLUMN AND REST LINTEL ON ANGLE. OBTAIN ANGLE SIZE AND WELD REQUIREMENTS FROM ENGINEER.
- M. WALL CLEANOUT SHALL NOT EXCEED HEIGHTS OF 4'-8" BEFORE PLACEMENT OF CORE GROUT UNLESS CLEANOUT HOLES ARE PROVIDED AT THE BOTTOM OF EACH GROUT LIFT, THEN A MAXIMUM HEIGHT OF 8'-0" BEFORE PLACEMENT OF CORE GROUT.
- N. FOLLOW COLD WEATHER CONSTRUCTION WHEN AMBIENT AIR TEMPERATURE IS BELOW 40° F.
- O. FOLLOW HOT WEATHER CONSTRUCTION PROCEDURES WHEN AMBIENT AIR TEMPERATURE EXCEEDS 90° F WITH WIND VELOCITY GREATER THAN 8 MPH.
- P. ALL VISIBLE, NON-VISIBLE, ABOVE-GRADE AND BELOW-GRADE JOINTS SHALL BE TOOLED IN A CONCAVE CONFIGURATION UNLESS SPECIFIED OTHERWISE BY ARCHITECT.

STRUCTURAL STEEL

- A. SPECIFICATIONS:
1. DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE "STEEL CONSTRUCTION MANUAL", 14TH EDITION, BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, UNLESS NOTED OTHERWISE.
 2. STEEL MATERIALS SHALL MEET THE REQUIREMENTS OF THE FOLLOWING SPECIFICATIONS, UNLESS NOTED OTHERWISE:
- | STRUCTURAL TYPE/SHAPE | ASTM DESIGNATION | MATERIAL STRENGTH |
|--|----------------------------------|--|
| ANCHOR BOLTS | F1554 GRADE 36 | $F_y = 36$ KSI |
| W-SHAPE | A992 | $F_y = 50$ KSI |
| M, S, C, MC, AND L-SHAPES, PLATES AND BARS | A36 | $F_y = 36$ KSI |
| STAIR STEEL PLATE | A283 GRADE C | $F_y = 30$ KSI |
| STAIR SHEET STEEL | A653 GRADE C | $F_y = 36$ KSI |
| HP-SHAPE | A572 GRADE 50 | $F_y = 50$ KSI |
| PIPER | A53 GRADE B | $F_y = 36$ KSI |
| HSS RECTANGULAR | A500 GRADE B | $F_y = 46$ KSI |
| HSS ROUND | A500 GRADE B | $F_y = 42$ KSI |
| FASTENERS | A325N
A325X
A490N
A490X | $F_{nv} = 48$ KSI, $F_{nt} = 90$ KSI
$F_{nv} = 60$ KSI, $F_{nt} = 90$ KSI
$F_{nv} = 60$ KSI, $F_{nt} = 113$ KSI
$F_{nv} = 75$ KSI, $F_{nt} = 113$ KSI |
| CONNECTION NUTS | A563 | |
| WASHERS | F436 | |
| WELDS | | |
| ET0XX ELECTRODES | A233 | $F_U = 70$ KSI |
| COLD ROLLED E60XX ELECTRODES | A233 | $F_U = 60$ KSI |
| STUD ANCHORS | A108 | $F_U = 65$ KSI |
3. ALL STAINLESS STEEL SHALL BE TYPE S30400/S30403 DUAL CERTIFIED OR S30403 (S304L), UNLESS NOTED OTHERWISE.
 4. ALL ASTM A325 BOLTS EXPOSED TO EXTERIOR CONDITIONS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123. ASTM 490 BOLTS SHALL NOT BE GALVANIZED.
 5. CLEAN ALL EXTERIOR FIELD WELDS AND MEMBERS PER SSPC-SP3 AND PRIME PAINT WITH GRAY INORGANIC ZINC TO A 3-5 MIL THICKNESS.
- B. DESIGN STRESS:
1. MINIMUM BEAM CONNECTIONS SHALL NOT BE SMALLER THAN THOSE LISTED IN PART 10 OF THE AISC MANUAL.
 2. UNLESS DETAILED OTHERWISE, MAKE CONNECTIONS WITH ET0XX ELECTRODES OR BOLTED WITH 3/4" A325 BOLTS IN BEARING-TYPE CONNECTIONS WITH THREADS IN THE SHEAR PLANE (A325N).
- C. WELDING:
1. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1 STRUCTURAL WELDING CODE.
 2. WELDER CERTIFICATION PROCEDURES SHALL BE AS FOLLOWS:
 - a. ALL WELDERS SHALL BE CURRENTLY CERTIFIED AND REGISTERED BY THE LOCAL OFFICIALS AND/OR THE AMERICAN WELDING SOCIETY AND, IF REQUIRED, ALL WELDERS SHALL HAVE THEIR CERTIFICATION AVAILABLE TO THE ENGINEER.
 3. ALL WELD FILLER METAL SHALL BE AWS E70XX WITH A MINIMUM CHARPY V-NOTCH (CVN) TOUGHNESS OF 20FT-LB AT 0 DEG F, AS DETERMINED BY THE APPROPRIATE AWS AS CLASSIFICATION TEST METHOD OR MANUFACTURER CERTIFICATION, UNLESS NOTED OTHERWISE. WELDS DESIGNATED AS DEMAND CRITICAL (DC) SHALL BE MADE WITH A FILLER METAL CAPABLE OF PROVIDING A MINIMUM CVN TOUGHNESS OF 20 FT-LB AT -20 DEG F AND 40 FT-LB AT A TEMPERATURE OF 70DEG F AS DETERMINED BY THE MANUFACTURER'S CERTIFICATION, AISC 341-05 APPENDIX X, OR OTHER APPROVED METHOD. WELD FILLER METALS SHALL NOT BE USED FROM PACKAGING THAT HAS BEEN PUNCTURED OR TORN, OR IF THE MANUFACTURER'S RECOMMENDATIONS FOR EXPOSURE TIME OR DRYING PROCEDURES HAVE NOT BEEN FOLLOWED.
 4. ALL BUTT WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP) WELDS, UNLESS NOTED OTHERWISE.
 5. ALL GROOVE WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP) WELDS, UNLESS NOTED OTHERWISE.
 6. FIELD WELDING WILL BE ALLOWED ONLY WHERE SHOWN ON THE DRAWINGS.
 7. EXISTING AND NEW STEEL SURFACES TO BE WELDED SHALL BE CLEANED OR PAINT, GREASE, SCALE, OR OTHER FOREIGN MATERIAL REMOVED.
 10. ALL FIELD WELDS SHALL BE WIRE BRUSHED AND CLEANED, THEN TOUCHED-UP PAINTED.
- D. MISCELLANEOUS METAL
1. WORK INCLUDES LINTELS, STAIRS, PANS, HANDRAILS, GUARDRAILS, POSTS, ETC.
 2. FABRICATION:
 - a. FABRICATE STAIRS WITH CLOSED RISERS AND TREADS OF METAL PAN CONSTRUCTION READY TO RECEIVE CONCRETE, UNLESS NOTED OR DETAILED OTHERWISE IN THE CONSTRUCTION DOCUMENTS.
 - b. FORM LANDINGS WITH SHEET STEEL STOCK.
 - c. FORM STRINGERS WITH STEEL PLATE OR CHANNELS.
 - d. FIT AND SHOP ASSEMBLE HANDRAIL COMPONENTS WHERE POSSIBLE. GRIND EXPOSED JOINTS FLUSH AND SMOOTH.
 - e. SHOP PRIME WITH TWO COATS.
- E. STRUCTURAL STEEL SHOP DRAWINGS SHALL INCLUDE CALCULATIONS THAT SUMMARIZE ANY CONNECTION REQUIREMENTS.

OPEN-WEB STEEL JOISTS WITH BRIDGING, ATTACHED SEATS, AND ANCHORS

- A. SHOP DRAWINGS: INDICATE CONFIGURATION, SIZES, SPACING, LOCATIONS OF JOISTS, BRIDGING, AND CONNECTIONS.
- B. QUALITY ASSURANCE:
1. PERFORM WORK IN ACCORDANCE WITH SJI (OPEN WEB STEEL JOISTS, K SERIES.)
 2. PERFORM DESIGN UNDER DIRECT SUPERVISION OF AND CERTIFIED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT LOCATION.
- C. MATERIALS:
1. OPEN WEB JOISTS: SEE DRAWINGS.
 2. ANCHOR BOLTS, NUTS, AND WASHERS: ASTM A307 GRADE A, ASTM A563 FOR ATTACHMENT TO WOOD BEARING PLATES.
 3. PRIMER
 4. BRIDGING: ASTM A36.
- D. EXECUTION:
1. VERIFY THAT FIELD CONNECTIONS ARE ACCEPTABLE AND ARE READY TO RECEIVE WORK.
 2. ERECT AND BEAR JOISTS ON SUPPORTS.
 3. ALLOW FOR ERECTION LOADS. PROVIDE TEMPORARY BRACING TO MAINTAIN FRAMING IN ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRIDGING AND BRACING.
 4. AFTER JOIST ALIGNMENT, SECURE JOISTS TO BEARING SURFACES.
 5. FRAME ROOF OPENINGS GREATER THAN 18 INCHES WITH SUPPLEMENTARY FRAMING.
 6. AFTER ERECTION, PRIME WELDS, ABRASIONS, AND SURFACES NOT SHOP PRIMED.
 7. PROVIDE ADEQUATE BEARING LENGTH OF BAR JOIST SEAT, PER JOIST SUPPLIER.
 8. UNLESS NOTED OTHERWISE, JOIST CONNECTIONS SHALL BE MADE PER JOIST SUPPLIER STANDARD RECOMMENDATIONS.
 9. LIVE LOAD DEFLECTIONS SHALL NOT EXCEED L/360 FOR FLOORS, L/360 FOR ROOFS WITH DIRECTLY APPLIED PLASTER CEILING FINISHES, OR L/240 FOR ROOFS WITH ALL OTHER CEILING FINISHES.

STEEL DECKING AND ACCESSORIES

- A. QUALITY ASSURANCE AND SHOP DRAWINGS:
1. DESIGN METAL DECKING IN ACCORDANCE WITH SDI DESIGN MANUAL FOR ROOF DECKS.
 2. DESIGN DECK LAYOUT, SPANS, FASTENINGS, AND JOINTS UNDER DIRECT SUPERVISION OF A PROFESSIONAL ENGINEER.
 3. SUBMIT SHOP DRAWINGS.
- B. MATERIALS:
1. METAL DECK SHALL BE AS INDICATED ON THE CONSTRUCTION DOCUMENT DETAILS.
 2. FASTENERS: MILD STEEL WELD WASHERS, HARDENED SELF-TAPPING SCREWS OR POWDER ACTUATED FASTENERS.
 3. STEEL DECK MATERIAL SHALL CONFORM TO ASTM A653 FOR GALVANIZED DECK AND ASTM A1008 FOR PAINTED DECK.
- C. INSTALLATION:
1. ERECT METAL DECKING IN ACCORDANCE WITH STEEL DECK INSTITUTE (SDI) FOR ROOF DECKS.
 2. BEAR DECKING ON WOOD SUPPORT SURFACES WITH A 4" MINIMUM BEARING AND ON STEEL SUPPORTS WITH A MINIMUM OF 1-1/2" BEARING.
 3. FASTEN RIBBED DECK TO STEEL SUPPORT MEMBERS AT ENDS AND INTERMEDIATE SUPPORTS WITH FUSION WELDS THROUGH WASHERS OR MECHANICAL FASTENERS AT 12 INCHES O.C. AND AT EVERY OTHER TRANSVERSE FLUTE, UNLESS NOTED OTHERWISE.
 4. REINFORCE STEEL DECK OPENINGS FROM 6" TO 18" IN SIZE WITH 2"x2"x1/4" STEEL ANGLES. LARGER OPENINGS SEE DRAWINGS OR CONSULT ENGINEER.
 5. UNLESS INDICATED OTHERWISE, PROVIDE 3" x 3" x 3/16" DECK SUPPORT ANGLES AROUND PERIMETER OF ROOF DECK.

COLD-FORMED STEEL - LIGHT FRAME CONSTRUCTION

- A. QUALITY ASSURANCE AND SHOP DRAWINGS:
1. DESIGN COLD FORMED STEEL FRAMING ACCORDING TO AISI'S "STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS".
 2. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING:
- B. MATERIALS:
1. ALL MEMBERS SHALL BE COLD-FORMED FROM STRUCTURAL QUALITY SHEET STEEL MEETING THE REQUIREMENTS OF ASTM A-446 GRADE A, MINIMUM YIELD OF 33,000 PSI FOR 18 GAGE AND LIGHTER AND MEETING THE REQUIREMENTS OF ASTM A-44

SPECIAL INSPECTIONS

1. SPECIAL INSPECTION PROGRAM SHALL CONFORM TO CHAPTER 17 OF THE IBC.
2. THE OWNER SHALL EMPLOY A SPECIAL INSPECTOR TO PERFORM THE REQUIRED TESTS AND SPECIAL INSPECTIONS WITH QUALIFICATIONS DESCRIBED PER IBC CHAPTER 17 AND THE PROJECT SPECIFICATIONS.
3. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING INSPECTIONS AND TESTS. SUFFICIENT NOTICE AND LEAD TIME MUST BE ALLOWED FOR THE INSPECTION AND TESTING TO BE PERFORMED WITHOUT IMPEDING CONSTRUCTION OPERATIONS.
4. SPECIAL INSPECTION REPORTS SHALL BE FURNISHED TO BUILDING OFFICIAL, OWNER, ARCHITECT, STRUCTURAL ENGINEER, AND CONTRACTOR.
5. WHEN DEFICIENCIES ARE IDENTIFIED, THE CONTRACTOR MUST TAKE CORRECTIVE ACTIONS TO COMPLY WITH THE CONTRACT DOCUMENTS OR REMEDY THE DEFICIENCIES AS DIRECTED BY THE REGISTERED DESIGN PROFESSIONAL.
6. THE SPECIAL INSPECTION AND QUALITY ASSURANCE PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF HIS OR HER RESPONSIBILITY TO PERFORM QUALITY CONTROL.
7. THE CONTRACTOR IS RESPONSIBLE FOR TESTING SERVICES THAT ARE REQUIRED FOR MATERIAL SUBMITTALS AND THAT ARE NOT PART OF THE SPECIAL INSPECTION PROGRAM (E.G. AGGREGATE TESTS, CONCRETE MIX DESIGNS, TESTING OF CONTROLLED FILL MATERIALS, ETC.).
8. SPECIAL INSPECTOR SHALL SUBMIT A FINAL REPORT STATING THAT THE STRUCTURAL WORK WAS, TO THE BEST OF THE SPECIAL INSPECTOR'S KNOWLEDGE, PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.

FABRICATED ITEMS (IBC 1704.2)

SPECIAL INSPECTION TYPE: FABRICATOR APPROVAL
SPECIAL INSPECTION IS NOT REQUIRED WHERE THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM WORK WITHOUT SPECIAL INSPECTION PROVIDED THE FABRICATOR COMPLIES WITH IBC.

STRUCTURAL STEEL (IBC 1705.2)

SPECIAL INSPECTION TYPE	FREQUENCY
FABRICATOR CERTIFICATION/QUALITY CONTROL PROCEDURES: REVIEW SHOP FABRICATION AND QUALITY CONTROL PROCEDURES.	FABRICATOR EXEMPT
AISC CERTIFICATION (TYPE BU) OF STEEL FABRICATOR REQUIRED	
MATERIAL VERIFICATION OF STRUCTURAL STEEL. REVIEW CERTIFIED MILL TEST REPORTS AND IDENTIFICATION MARKING ON WIDE FLANGE SHAPES, HIGH STRENGTH BOLTS, NUTS AND WELDING ELECTRODES.	PERIODIC
SHOP AND FIELD WELDING: WELDING INSPECTION TO BE IN COMPLIANCE WITH AWS D11.1. ALL WELDS SHALL BE VISUALLY INSPECTED. ALL MATERIALS, WELDING PROCEDURES, AND QUALIFICATIONS OF WELDERS SHALL BE VERIFIED PRIOR TO THE START OF WORK.	
SINGLE PASS FIELD WELD LESS THAN OR EQUAL TO 5/16"	PERIODIC
FIELD WELDS GREATER THAN 5/16"	CONTINUOUS
MULTI-PASS FILLET WELDS	CONTINUOUS
PARTIAL/COMPLETE PENETRATION WELDS TESTED ULTRASONICALLY OR BY ANOTHER APPROVED METHOD	CONTINUOUS
LIGHT GAUGE METAL FRAMING WELDING	PERIODIC
FLOOR AND ROOF DECK WELDING	PERIODIC
INSPECT MECHANICAL FASTENERS AT FLOOR AND ROOF DECK, INSPECT FLOOR AND ROOF DECK SIDE SEAM CONNECTIONS AND/OR BUTTON PUNCHES.	PERIODIC
INSPECT INSTALLATION AND TIGHTENING OF HIGH-STRENGTH BOLTS. VERIFY THAT SPLINES HAVE SEPARATED FROM TENSION CONTROL BOLTS. VERIFY PROPER TIGHTENING SEQUENCE. (NOTE THAT CONTINUOUS INSPECTION OF BOLTS IN SLIP- CRITICAL CONNECTIONS IS REQUIRED UNLESS USING TURN-OF-THE-NUT METHOD WITH MATCH MARKING TECHNIQUES)	PERIODIC
INSPECT STEEL FRAME FOR COMPLIANCE WITH STRUCTURAL DRAWINGS, INCLUDING BRACING, MEMBER CONFIGURATION, AND CONNECTION DETAILS.	PERIODIC

OPEN-WEB STEEL JOISTS (IBC 1705.2.3)

SPECIAL INSPECTION TYPE	FREQUENCY
INSPECT INSTALLATION OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS.	
END CONNECTIONS - WELDING OR BOLTED.	PERIODIC
BRIDGING - HORIZONTAL OR DIAGONAL	
1. STANDARD BRIDGING.	PERIODIC
2. BRIDGING THAT DIFFERS FROM SJI SPECIFICATIONS.	PERIODIC

CAST-IN-PLACE CONCRETE (IBC 1705.3)

SPECIAL INSPECTION TYPE	FREQUENCY
INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	PERIODIC
REINFORCING BAR WELDING:	
VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706.	PERIODIC
INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16".	PERIODIC
INSPECT ALL OTHER WELDS.	CONTINUOUS
INSPECT ANCHORS CAST IN CONCRETE.	PERIODIC
INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.	
ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	CONTINUOUS
MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE.	PERIODIC
VERIFY USE OF REQUIRED DESIGN MIX.	PERIODIC
INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	CONTINUOUS
VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	PERIODIC
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	PERIODIC
FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	CONTINUOUS AT TIME OF TESTING
SAMPLE FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 150 CUBIC YARDS OF CONCRETE, NOR LESS THAN ONCE FOR EACH 5,000 SQUARE FEET OF SURFACE AREA FOR SLABS OR WALLS. A MINIMUM OF FIVE STRENGTH TESTS SHOULD BE MADE FOR A GIVEN PROJECT.	

PRECAST CONCRETE (IBC 1705.3)

SPECIAL INSPECTION TYPE	FREQUENCY
PLANT CERTIFICATION/QUALITY CONTROL PROCEDURES: REVIEW PLANT OPERATIONS AND QUALITY CONTROL PROCEDURES.	PLANT EXEMPT
PCI CERTIFICATION OF PRECAST PLANT REQUIRED	
INSPECT ERECTION OF PRECAST CONCRETE MEMBERS INCLUDING MEMBER CONFIGURATION, CONNECTIONS, WELDING, AND GROUTING.	PERIODIC

MASONRY (IBC 1705.4)

REQUIRED INSPECTION LEVEL: LEVEL 2	
SPECIAL INSPECTION TYPE	FREQUENCY
PRIOR TO CONSTRUCTION, VERIFICATION OF COMPLIANCE OF SUBMITTALS AND VERIFICATION OF f _m .	REQUIRED
AT BEGINNING OF CONSTRUCTION, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:	
PROPORTIONS OF SITE PREPARED MORTAR.	PERIODIC
GRADE, TYPE, AND SIZE OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS.	PERIODIC
SAMPLE PANEL CONSTRUCTION.	PERIODIC
PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:	
GROUT SPACE.	PERIODIC
PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS.	PERIODIC
PROPORTIONS OF SITE PREPARED GROUT.	PERIODIC
VERIFY COMPLIANCE OF THE FOLLOWING DURING CONSTRUCTION:	
MATERIALS AND PROCEDURES WITH THE APPROVED SUBMITTALS.	PERIODIC
PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION.	PERIODIC
SIZE AND LOCATION OF STRUCTURAL MEMBERS.	PERIODIC
TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION.	PERIODIC
WELDING OF REINFORCEMENT.	CONTINUOUS
PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER OR HOT WEATHER.	PERIODIC
PLACEMENT OF GROUT.	CONTINUOUS

SOILS (IBC 1705.6)

SPECIAL INSPECTION TYPE	FREQUENCY
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	PERIODIC
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	PERIODIC
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	PERIODIC
VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	CONTINUOUS
• SUBGRADE SOILS - MINIMUM OF TWO TESTS PER LIFT OR ONE TEST EVERY 2,500 SQUARE FEET PER LIFT IN BUILDING AREAS, AND ONE TEST FOR EVERY 5,000 SQUARE FEET PER LIFT IN PAVEMENT AREAS.	
• UTILITY TRENCH BACKFILL - ONE TEST FOR EVERY 50 LINEAR FEET OF UTILITY TRENCH LENGTH PER LIFT.	
PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	PERIODIC

SPECIAL INSPECTIONS FOR WIND RESISTANCE (IBC 1705.11)

SPECIAL INSPECTION TYPE	FREQUENCY
WIND-RESISTING COMPONENTS:	
INSPECT FASTENING OF THE ROOF COVERING, ROOF DECK, AND ROOF FRAMING CONNECTIONS.	PERIODIC
INSPECT FASTENING OF THE EXTERIOR WALL COVERING AND WALL CONNECTIONS TO ROOF AND FLOOR DIAPHRAGMS AND FRAMING.	PERIODIC

EXTERIOR INSULATION AND FINISH SYSTEMS (IBC 1705.16)

SPECIAL INSPECTION TYPE	FREQUENCY
INSPECT ALL EIFS APPLICATIONS EXCEPT WHERE INSTALLED OVER A WATER-RESISTIVE BARRIER WITH A MEANS OF DRAINING MOISTURE TO THE EXTERIOR OR WHERE INSTALLED OVER MASONRY OR CONCRETE WALLS.	PERIODIC
WATER-RESISTIVE BARRIER COATING: INSPECT WATER-RESISTIVE BARRIER COATING COMPLYING WITH ASTM E2570 WHERE INSTALLED OVER A SHEATHING SUBSTRATE.	PERIODIC



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	MJT
DESIGNED BY	BCW
REVIEWED BY	BCW
ORIGINAL ISSUE DATE	06/13/24
CLIENT PROJECT NO.	

TITLE

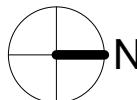
SPECIAL INSPECTIONS (PER IBC 2015)

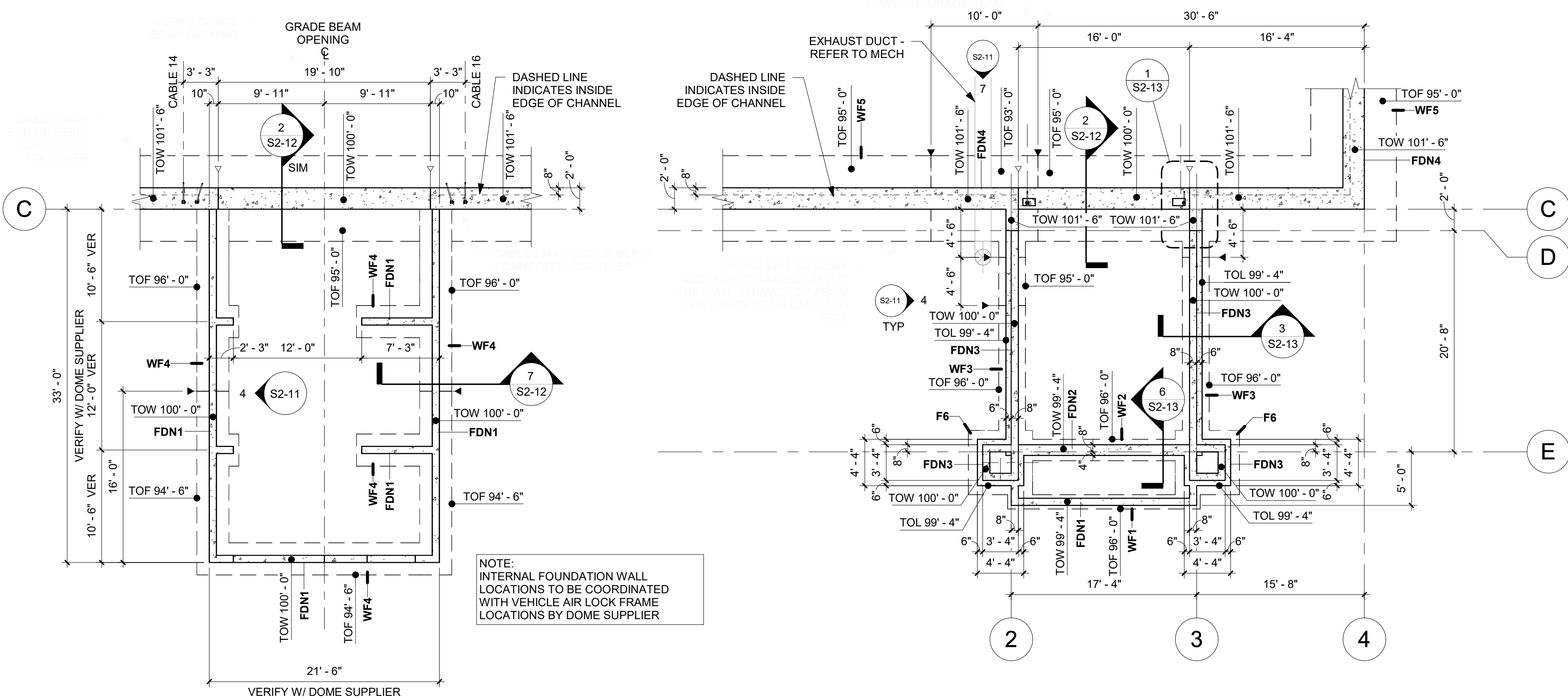
SHEET

S1-01



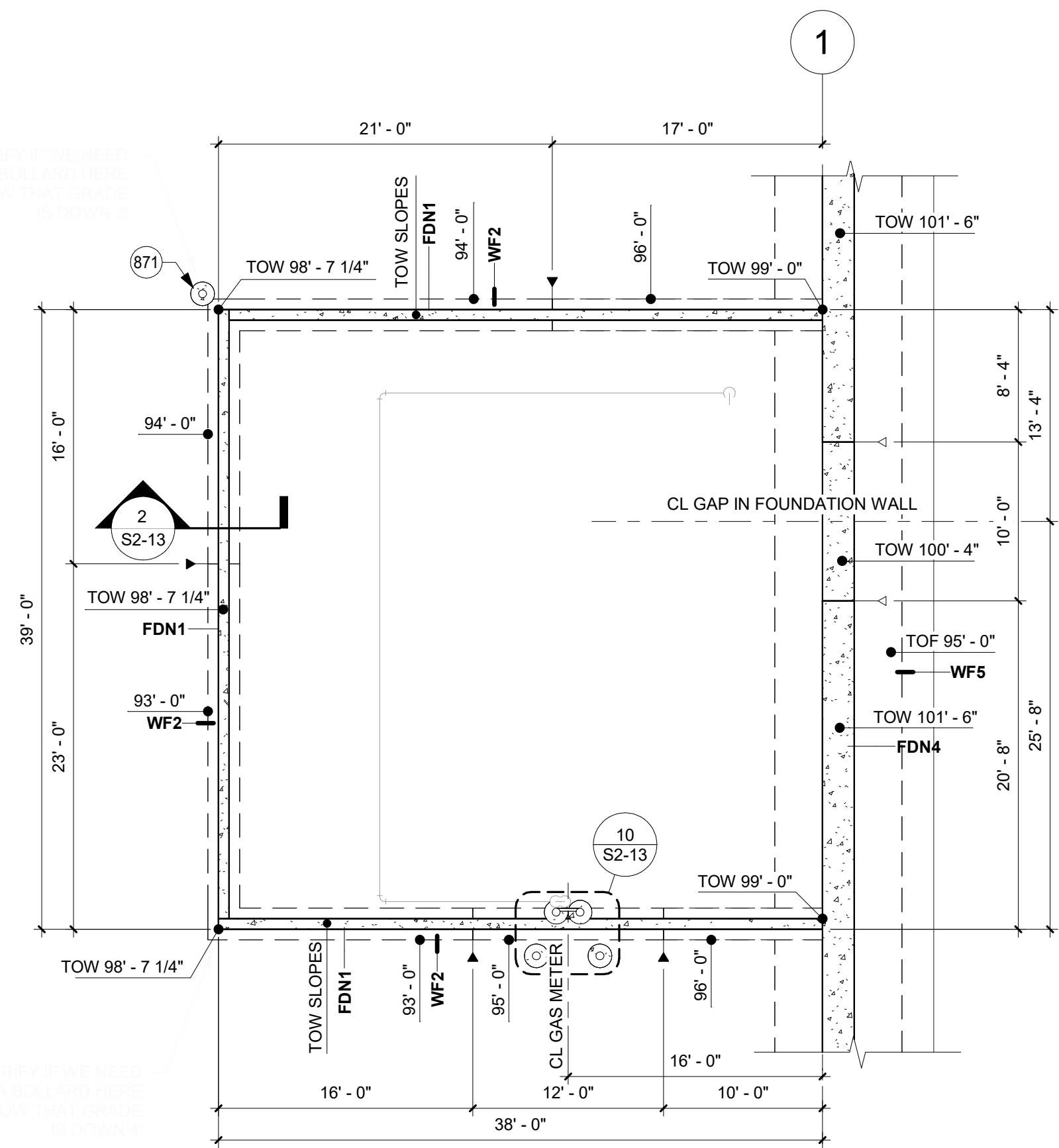
S1-11



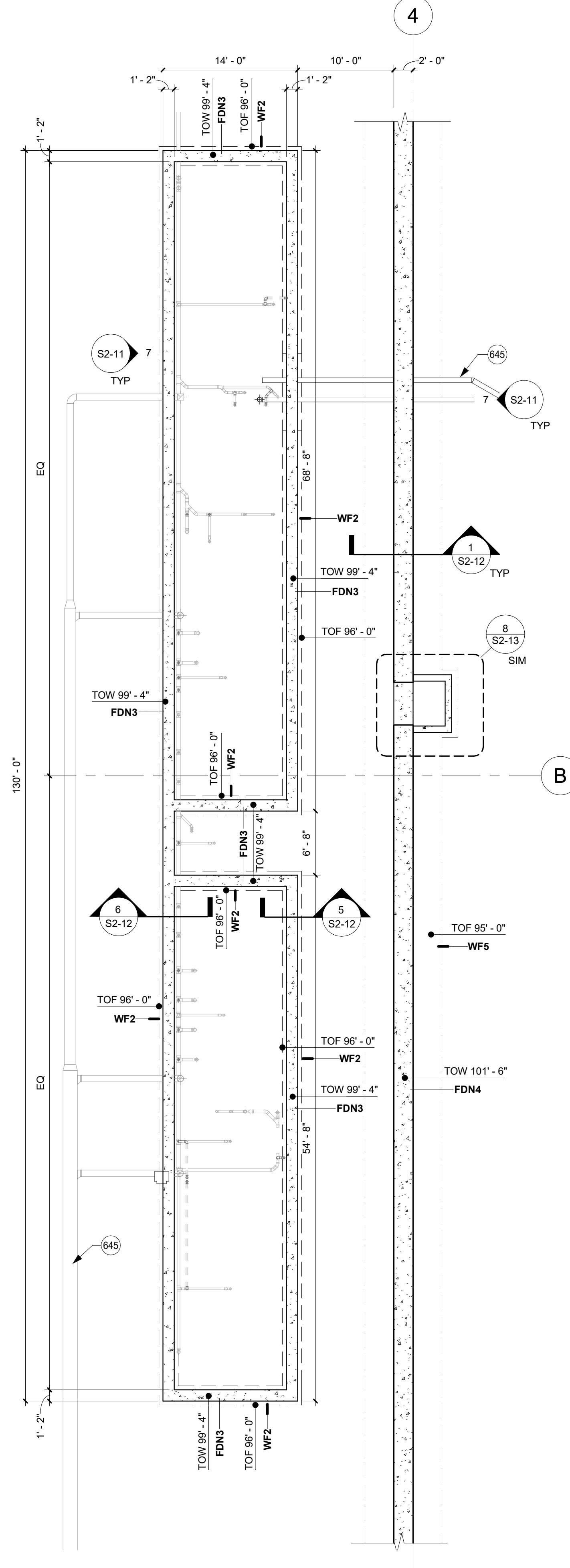


1 FOUNDATION PLAN AT VEHICLE AIR LOCK
1/8" = 1'-0"

2 FOUNDATION PLAN AT MAIN ENTRY
1/8" = 1'-0"



3 FOUNDATION PLAN AT MECH ENCLOSURE SOUTH
1/8" = 1'-0"



4 FOUNDATION PLAN - SUPPORT BUILDING
1/8" = 1'-0"

SHEET NOTES

- REFER TO SHEET S1-12 FOR FOOTING & FOUNDATION WALL SCHEDULES.
- COORDINATE ALL CABLE LOCATIONS WITH DOME SUPPLIER.
- COORDINATE DOME SUPPLIED DOOR LOCATIONS WITH DOME SUPPLIER.
- THE CONTRACTOR SHALL ENSURE THAT ANCHOR BOLTS FIT AND ARE PLACED WITHIN PIER TIE BARS.
- WALL REINFORCING SHALL CARRY THROUGH PIER REINFORCEMENT.

KEYNOTE LEGEND

- 645 MECHANICAL AND PLUMBING PIPES, DUCTWORK AND EQUIPMENT SHOWN FOR REFERENCE ONLY - REFER TO MECHANICAL
- 871 6" DIA STD PIPE BOLLARD - GALVANIZED - CONCRETE FILLED WITH DOMED TOP - SET IN CONCRETE FOOTING - REFER TO DETAIL

FOOTING SCHEDULE

MARK	LENGTH	WIDTH	THICKNESS	REINFORCEMENT	COMMENTS
F6	6'-0"	6'-0"	1'-0"	#5 BARS @ 12" OC EW BOTTOM	
WF1	1'-4"	1'-0"	1'-0"	(2) #5 BARS CONTINUOUS	
WF2	2'-0"	1'-0"	1'-0"	(2) #5 BARS CONTINUOUS	
WF3	2'-6"	1'-0"	1'-0"	(2) #5 BARS CONTINUOUS	
WF4	3'-0"	1'-0"	1'-0"	(3) #5 BARS CONTINUOUS & #5 BARS TRANSVERSE @ 12" OC	
WF5	8'-0"	2'-0"	2'-0"		REFER TO TYP FOUNDATION WALL SECTION 1/S2-12

FOUNDATION WALL SCHEDULE

MARK	WIDTH	REINFORCEMENT	COMMENTS
FDN1	0'-8"	#5 BARS @ 18" OC VERT AND 10" OC HORIZ CENTERED IN WALL	
FDN2	1'-0"	#5 BARS VERT @ 18" OC EACH FACE AND #5 BARS HORIZ @ 12" OC EACH FACE	
FDN3	1'-2"	#5 BARS VERT @ 18" OC EACH FACE AND #5 BARS HORIZ @ 12" OC EACH FACE	
FDN4	2'-0"		REFER TO TYP FOUNDATION WALL SECTION 1/S2-12



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

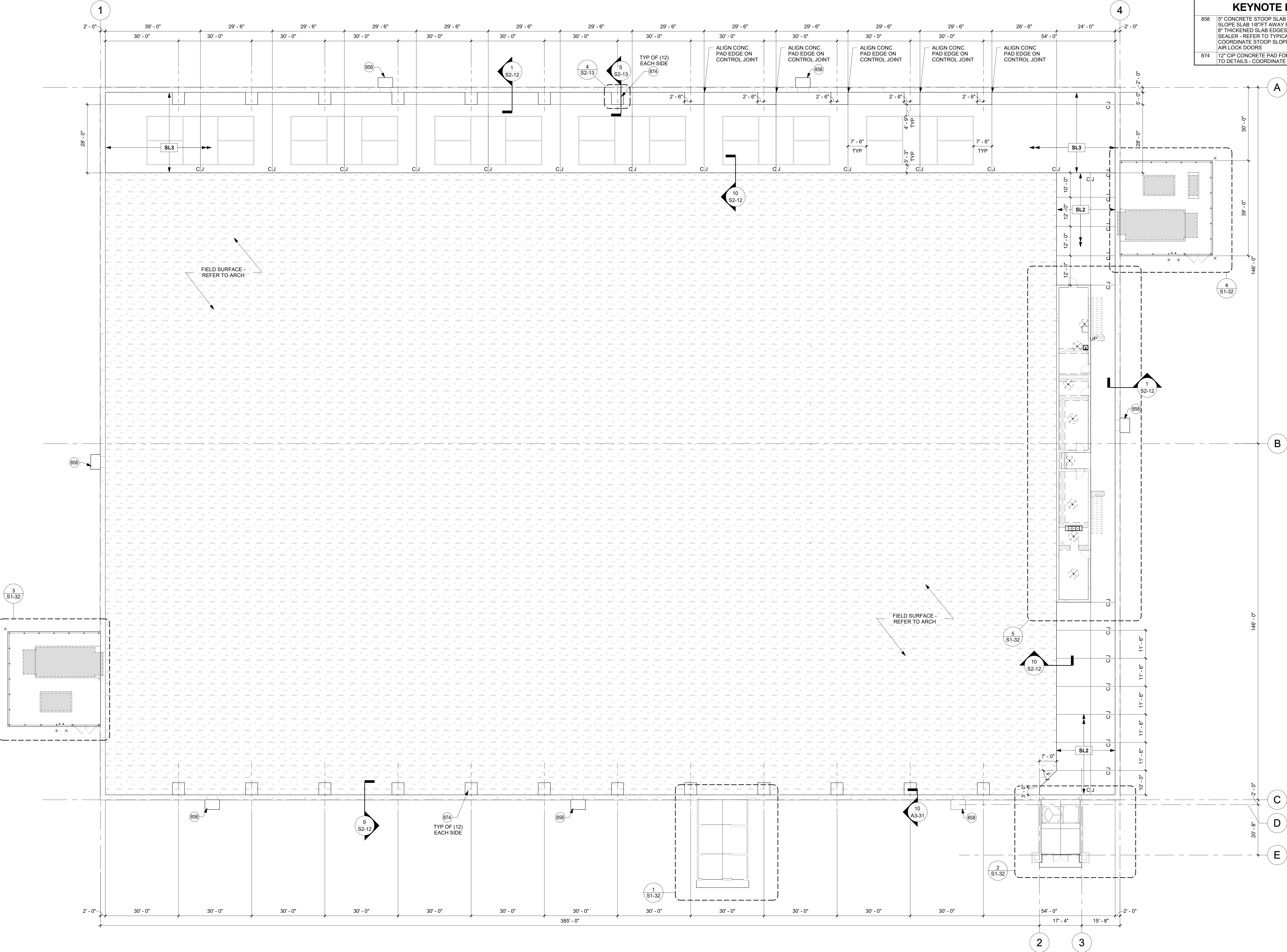
PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	MJT
DESIGNED BY	BCW
REVIEWED BY	BCW
ORIGINAL ISSUE DATE	06/13/24
CLIENT PROJECT NO.	

TITLE

ENLARGED FOUNDATION PLANS

SHEET

S1-12



1 FIRST FLOOR SLAB PLAN - OVERALL
1/16" = 1'-0"

SLAB SCHEDULE			
MARK	THICKNESS	REINFORCEMENT	COMMENTS
SL1	4"	FIBER REINFORCED	REFER TO STRUCTURAL NOTES FOR FIBER REINFORCING DOSAGE - SEALER, REFER TO ARCH
SL2	4"	#4 BARS @ 18" OCEW	REFER TO DETAILS
SL3	6"	5 LB/CY MINIMUM MACROFIBER FOR EXTENDED JOINT SYSTEM	LIMIT TO 0.035% SHRINKAGE W/ SHRINKAGE REDUCING ADMIXTURE. 7 DAY MINIMUM WET CURE REQUIRED. DOUBLE SLIP SHEET BELOW SLAB, REFER TO SECTION DETAILS. 2" DEEP SAWCUT JOINTS
SL4	6"	#5 BARS @ 18" OCEW	THICKENED EDGE, TYP - LIGHT BROOM FINISH, TYP - REFER TO DETAILS
SL5	6"	#5 BARS @ 18" OCEW	REFER TO DETAILS

SHEET NOTES	
A.	REFER TO SHEET S1-31 FOR SLAB SCHEDULE
B.	REFER TO FOUNDATION AND SLAB DETAILS FOR TYPICAL CONSTRUCTION AND CONTROL JOINT DETAILS.
C.	COORDINATE DOME SUPPLIED DOOR LOCATIONS WITH DOME SUPPLIER.
D.	AT EVENT COURTS, PLACE CONSTRUCTION JOINTS AT NET LINE AND CENTERED BETWEEN EVENT COURTS - REFER TO ARCH FOR COURT LAYOUT.
E.	REFER TO SHEET 31-32 FOR CONTROL JOINT PLACEMENT GUIDELINES.

KEYNOTE LEGEND	
858	5" CONCRETE STOOP SLAB W/ #4 BARS @ 12" OCEW, SLOPE SLAB 1/8" FT AWAY FROM BUILDING MAX. PROVIDE 8" THICKENED SLAB EDGES - LIGHT BROOM FINISH W/ SEALER - REFER TO TYPICAL STOOP DETAIL - COORDINATE STOOP SLOPE WITH DOME SUPPLIER AT AIR LOCK DOORS
874	12" CIP CONCRETE PAD FOR UP-LIGHT FIXTURE - REFER TO DETAILS - COORDINATE LOCATIONS WITH ELECTRICAL



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PROJECT

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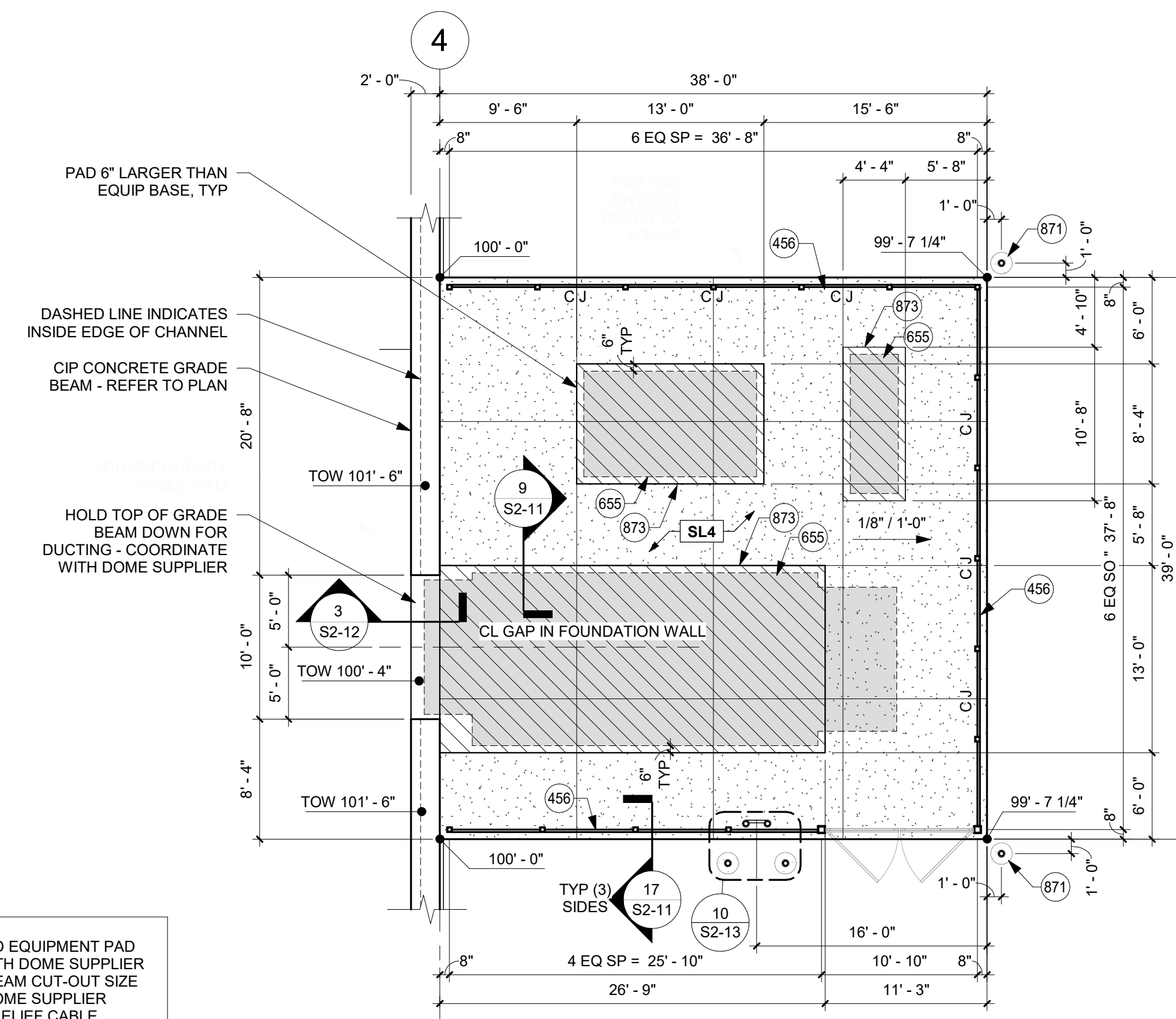
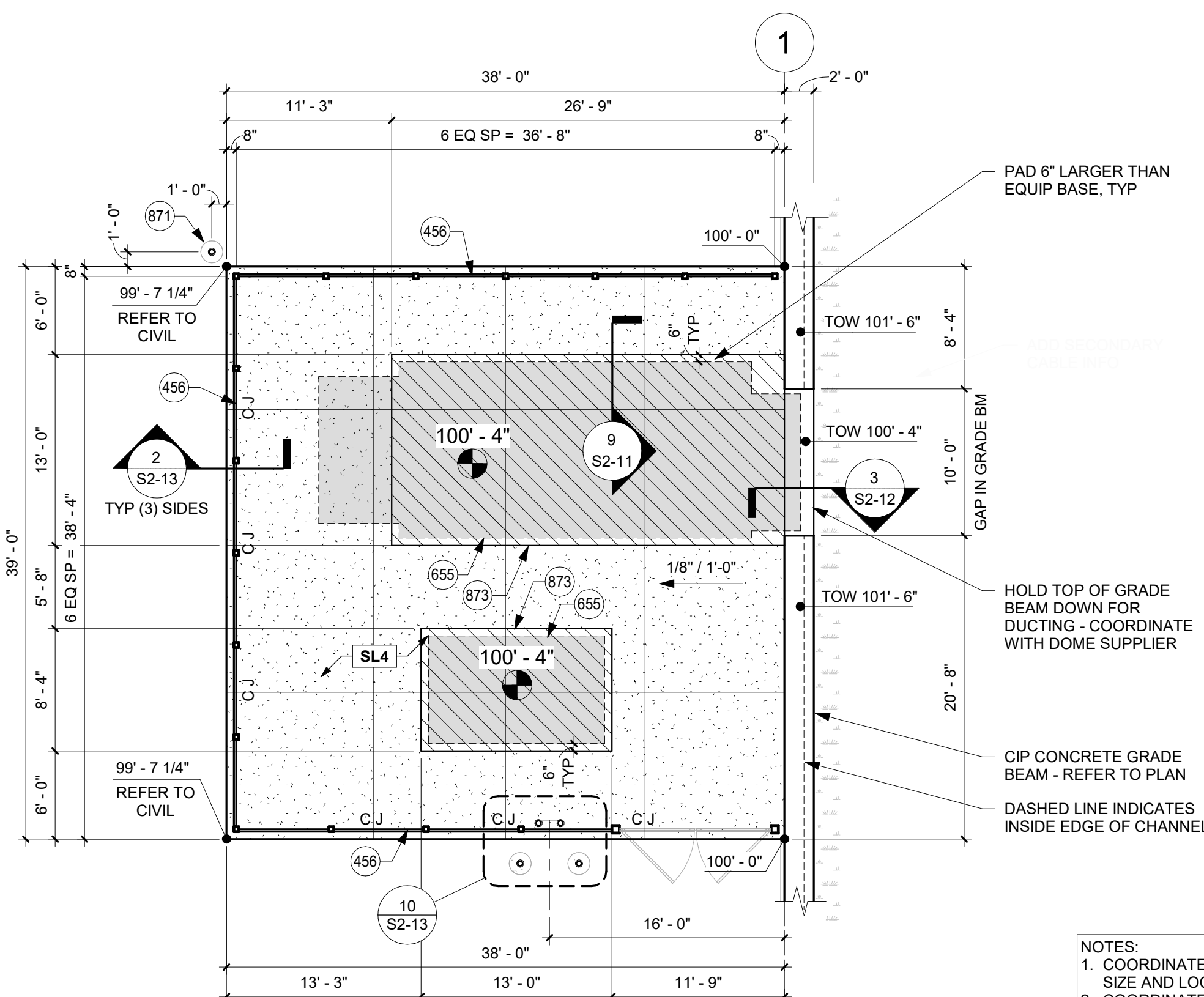
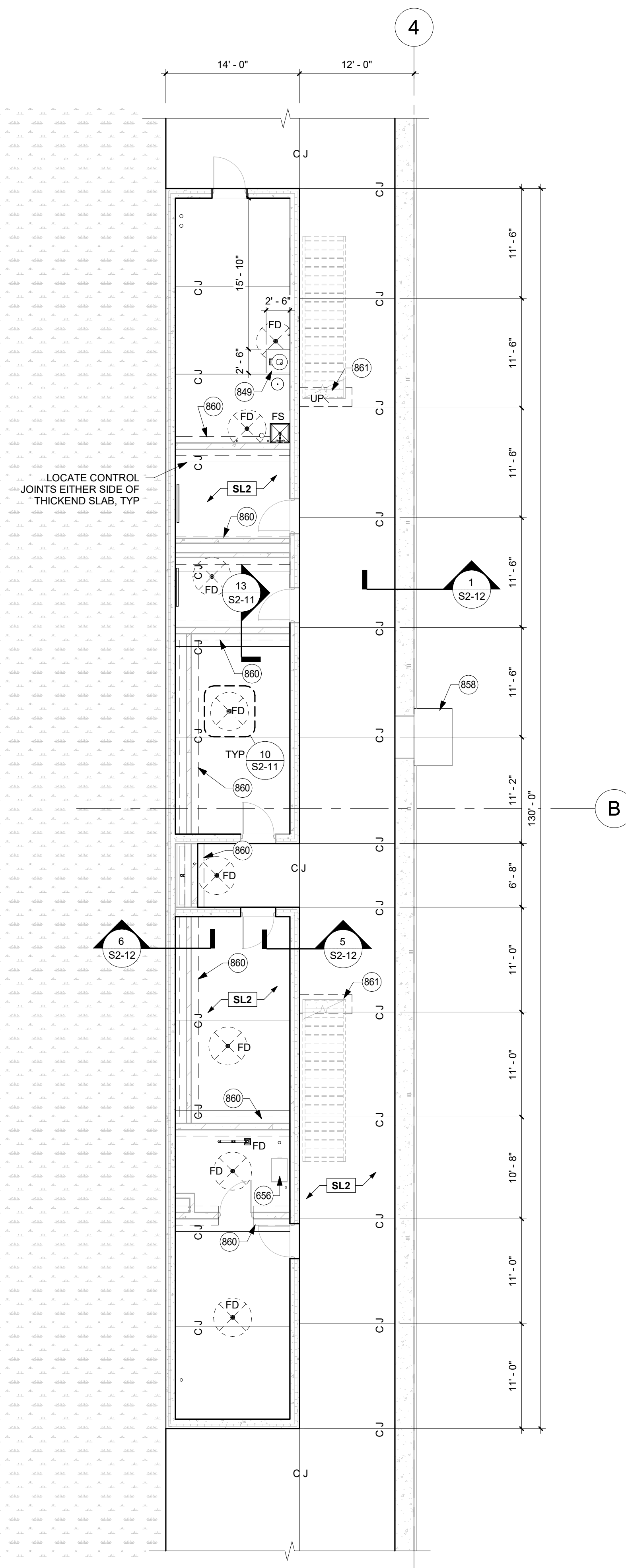
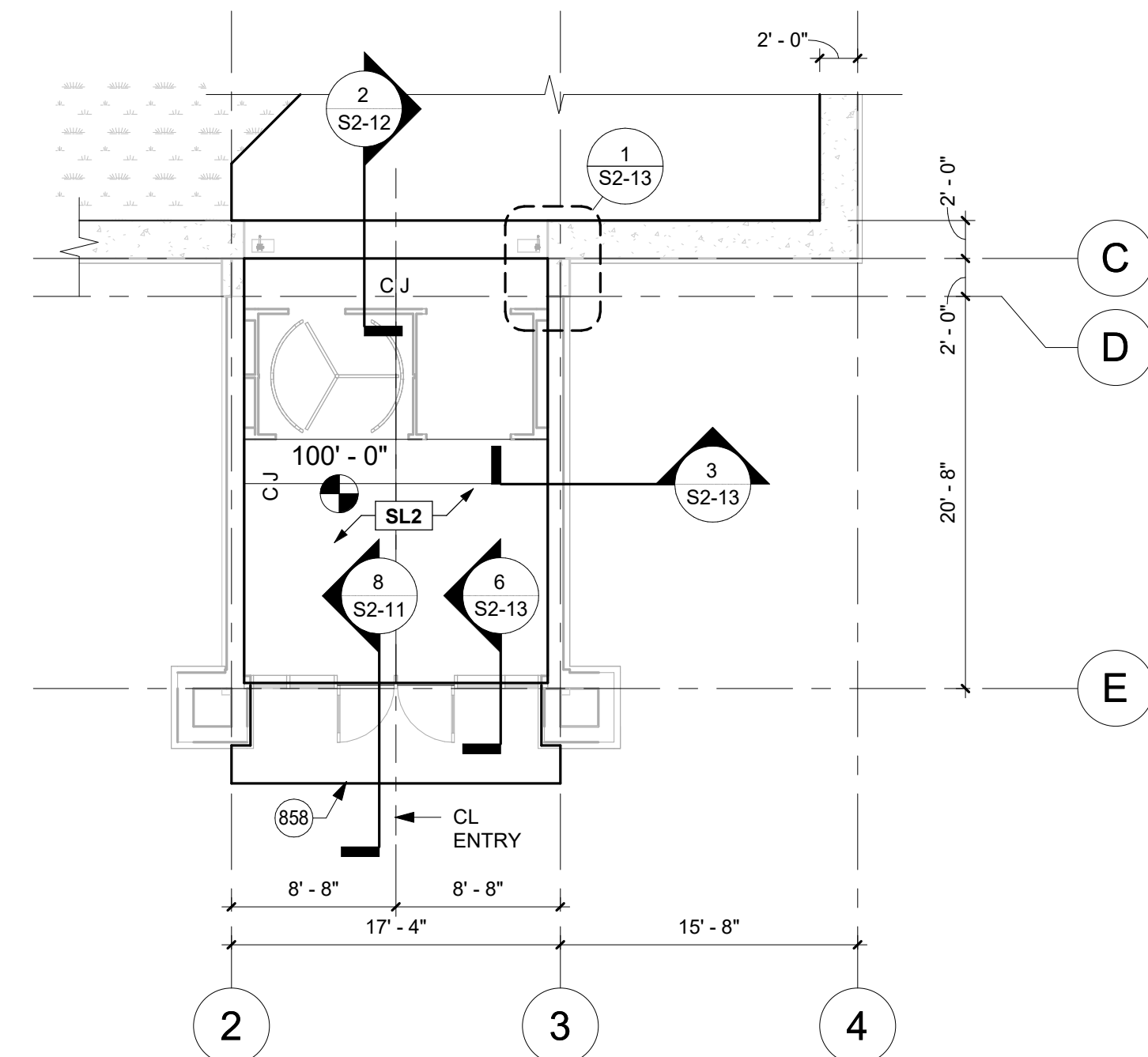
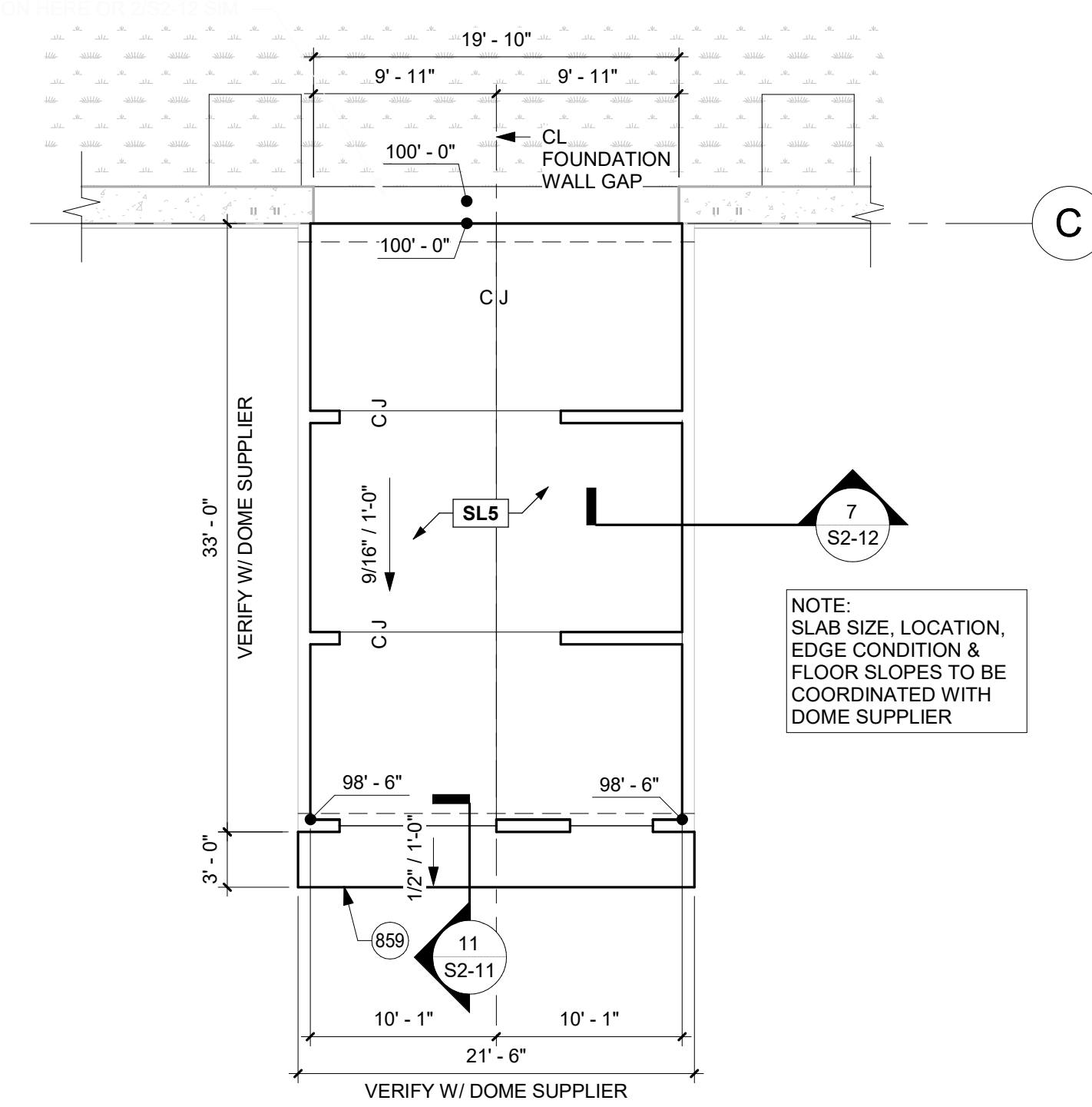
PROJECT NO.	23-29721
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TITLE

SLAB PLAN - OVERALL

SHEET

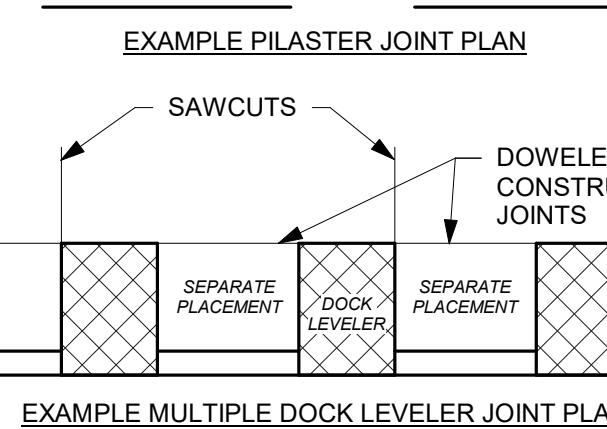
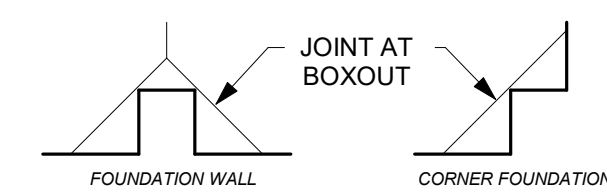
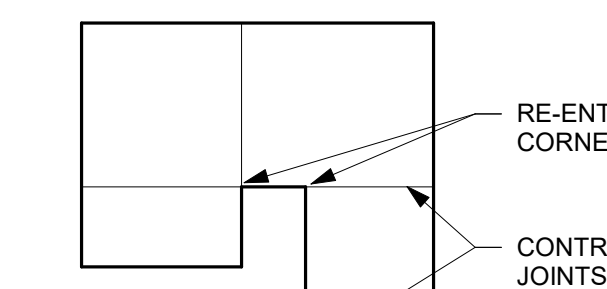
S1-31



- ## SHEET NOTES
- A. REFER TO SHEET S1-31 FOR SLAB SCHEDULE
 - B. REFER TO FOUNDATION AND SLAB DETAILS FOR TYPICAL CONSTRUCTION AND CONTROL JOINT DETAILS.
 - C. COORDINATE DOME SUPPLIED DOOR LOCATIONS WITH DOME SUPPLIER.
 - D. AT EVENT COURTS, PLACE CONSTRUCTION JOINTS AT NET LINE AND CENTERED BETWEEN EVENT COURTS - REFER TO ARCH FOR COURT LAYOUT.
 - E. REFER TO SHEET S1-32 FOR CONTROL JOINT PLACEMENT GUIDELINES.

- ## KEYNOTE LEGEND
- | | |
|-----|--|
| 456 | LEATHERED SCREEN WALL - REFER TO ARCH |
| 655 | MUNICIPAL EQUIPMENT BY DOME SUPPLIER |
| 656 | SEALANT INTERFERENCE BY DOME SUPPLIER |
| 849 | 4" CONCRETE HOUSEKEEPING PAD - REFER TO DETAIL 2/92/13 |
| 858 | 15" CONCRETE STOOP SLAB W/ #4 BARS @ 12" OCW, SURFACE 18" TYPICAL AWAY FROM BUILDING MASS, PROVIDE 8" THICKENED SLAB EDGES - LIGHT BROOM FINISH W/ SEALER - REFER TO TYPICAL APRON DETAIL |
| 859 | 16" CONCRETE APRON SLAB W/ #4 BARS @ 12" OCW, SURFACE 18" TYPICAL AWAY FROM BUILDING MASS, PROVIDE THICKENED SLAB EDGE AT PERIMETER - LIGHT BROOM FINISH W/ SEALER - REFER TO TYPICAL APRON DETAIL |
| 860 | THICKENED SLAB EDGE CENTERED BELOW WALL - REFER TO THICKENED SLAB DETAIL |
| 871 | DIAMETER SLAB, CENTERED BELOW STAIR |
| 872 | STRINGER WALL - CONCRETE, LOCATED WITH CORNER SECTION |
| 873 | 12" DIA STD PIPE BOLLARD - GALVANIZED - CONCRETE FILLED WITH DOMPED TOP - SET IN CONCRETE FOOTING - REFER TO DETAIL |
| 874 | 12" DIA CONCRETE HOUSEKEEPING EQUIPMENT SLAB W/ #5 BARS @ 12" OCW, CENTERED IN SLAB - TYP THICKENED EDGE - LIGHT BROOM FINISH W/ SEALER - REFER TO DETAIL |

- ## CONTROL JOINT PLACEMENT GUIDELINES
1. SPACE JOINTS (IN FEET) NO MORE THAN 2-3 TIMES THE SLAB THICKNESS (IN INCHES). FOR EXAMPLE, A 4" SLAB SHOULD HAVE JOINTS NO MORE THAN 8-12 FEET APART.
 2. CUT JOINTS 25% OF THE DEPTH OF SLAB, MIN.
 3. CUT JOINTS USING GROOVING TOOLS IN FRESH CONCRETE IN SMOOTH CUTTING. JOINTS IN SLAB AS THE CONCRETE IS HARD ENOUGH THAT THE EDGES ABUTTING THE CUT DON'T CHIP FROM THE SAW BLADE.
 4. IN HOT WEATHER, JOINTS MIGHT CRACK IF JOINTS ARE NOT CUT WITHIN 6-12 HOURS AFTER FINISHING CONCRETE. PLACE PLANTERATE JOINT CUTTING EQUIPMENT ACCORDINGLY.
 5. WHERE POSSIBLE, PLACE JOINTS UNDER PROPOSED NON-LOADING WALL LOCATIONS OR UNDER CARPET AREAS.
 6. MINIMIZE RE-ENTRANT CORNERS AND AVOID WHERE



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PROJECT

**MUSCATINE
INDOOR SPORTS
COMPLEX**

MUSCATINE IOWA

[illegible]

PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	MJT
DESIGNED BY	BCW
REVIEWED BY	BCW
ORIGINAL ISSUE DATE	06/13/24

CLIENT PROJECT NO

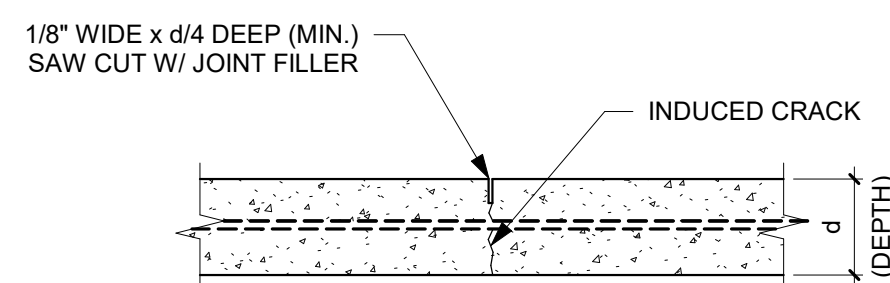
TITLE

ENLARGED SLAB PLANS

SHEE

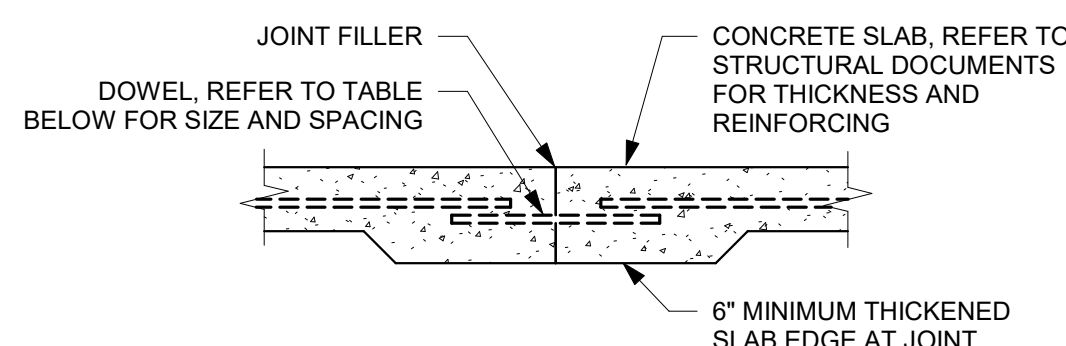
S1-32





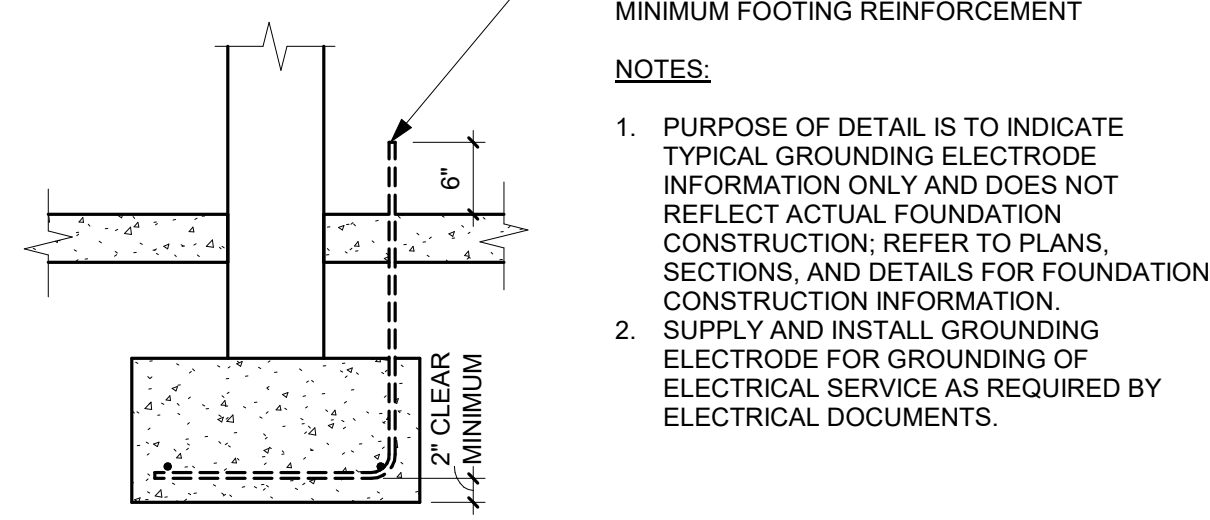
TYPICAL CONTROL JOINT SPACING AND JOINT DEPTH		
REINFORCED SLAB DEPTH	PREFERRED SPACING	CONTROL JOINT DEPTH (MIN.)
4"	8' TO 12'	1"
5"	10' TO 15'	1.25"
6"	12' TO 18'	1.5"
7"	14' TO 21'	1.75"
≥ 8"	16' TO 24'	2"
REFER TO CONTROL JOINT PLACEMENT GUIDE FOR ADDITIONAL CONTROL JOINT INFORMATION.		

1 TYPICAL CONTROL JOINT DETAIL
1" = 1'-0"

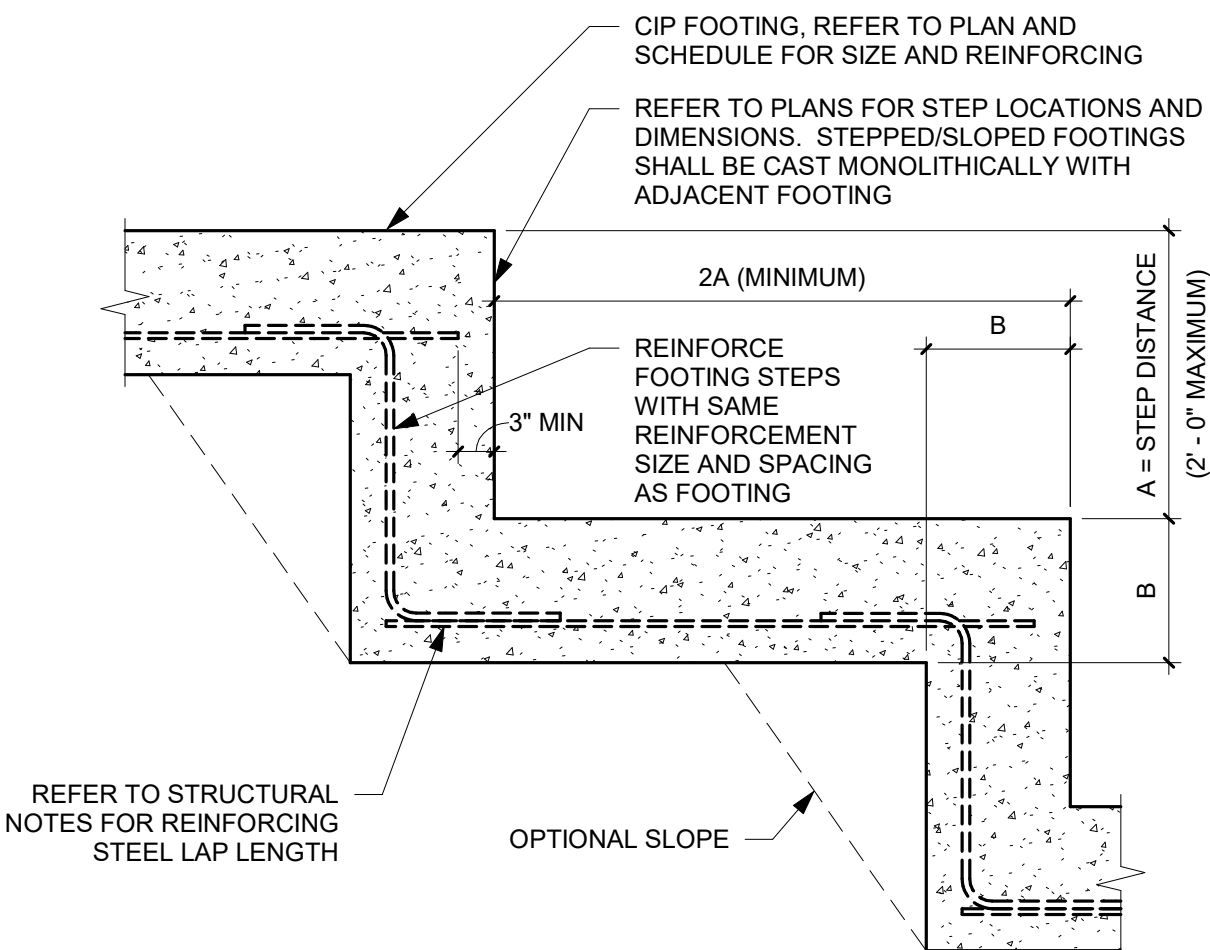


DOWEL SIZE AND SPACING FOR CONSTRUCTION JOINTS			
DOWEL DIMENSIONS		DOWEL SPACING (CENTER-TO-CENTER)	
SLAB DEPTH	PLATE DOWEL	MIR*	PLATE DOWEL
5" TO 6"		MIR*	18"
7" TO 8"		MIR*	18"
9" TO 11"		MIR*	18"
*MIR = MANUFACTURER'S RECOMMENDATIONS. BECAUSE OF THE VARIOUS PLATE DOWEL GEOMETRIES AND INSTALLATION DEVICES AVAILABLE FROM DIFFERENT MANUFACTURERS, THE MANUFACTURERS SHOULD BE CONSULTED FOR THEIR RECOMMENDED PLATE DOWEL SIZE.			

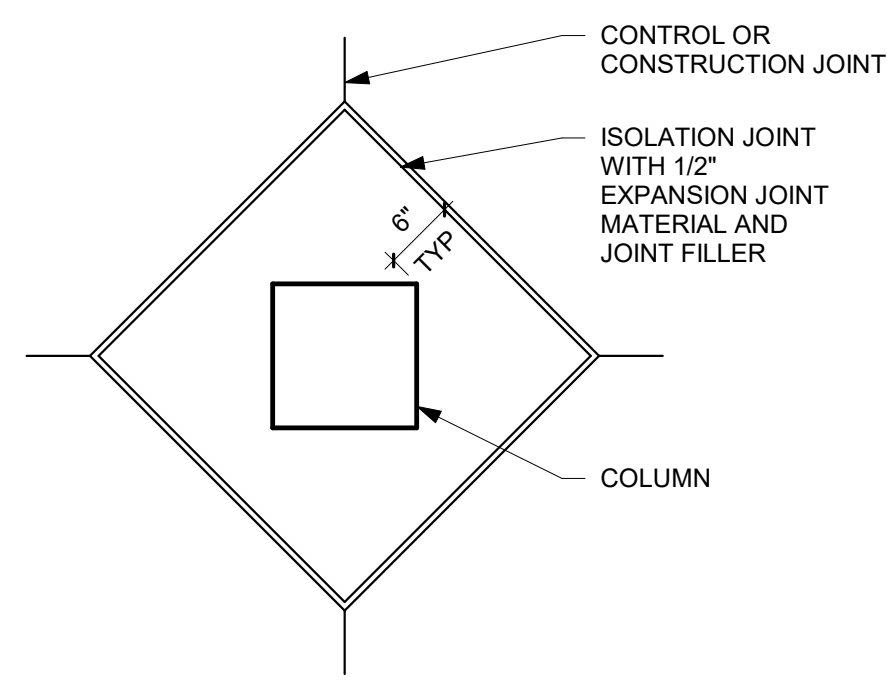
2 TYPICAL CONSTRUCTION JOINT DETAIL
1" = 1'-0"



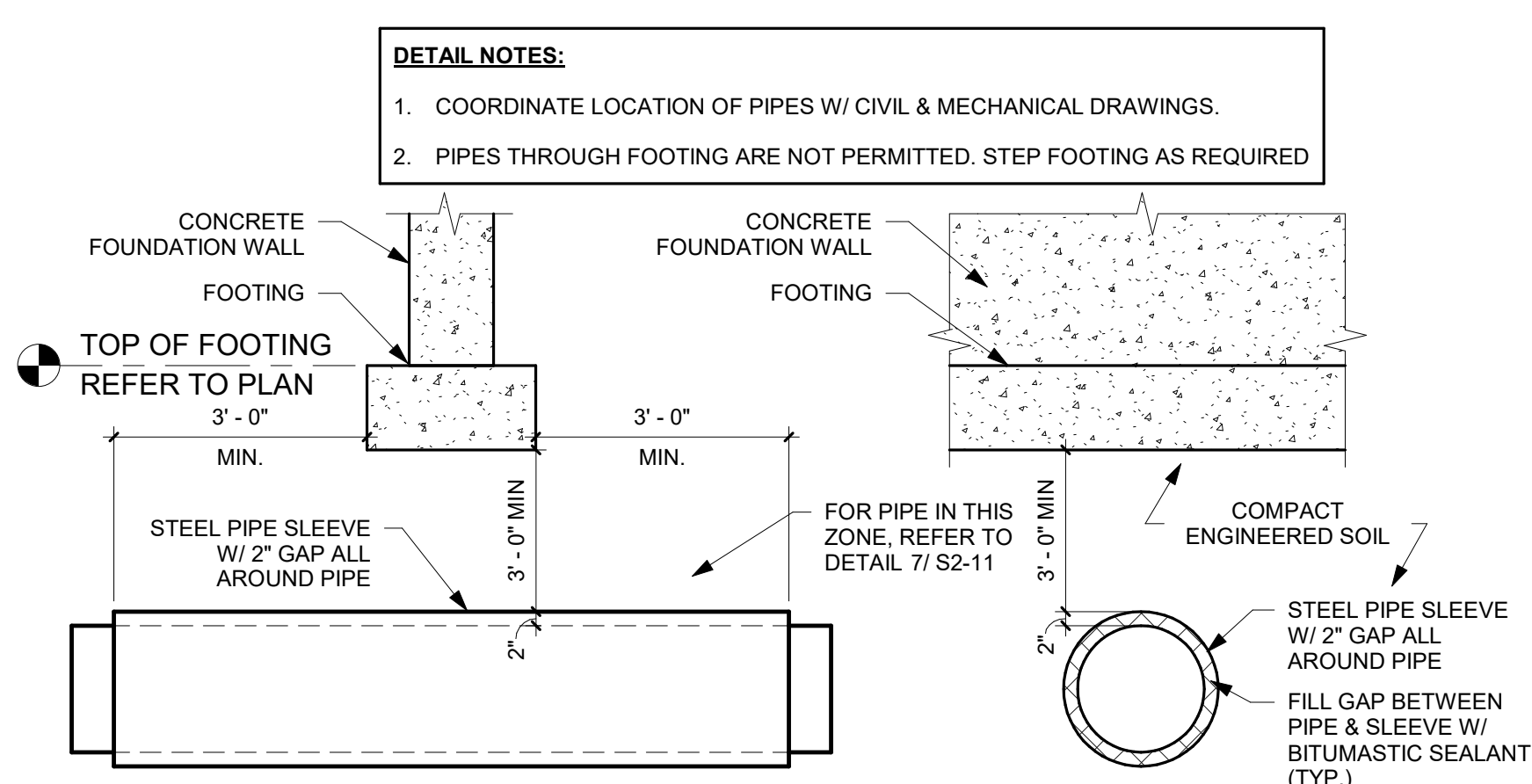
3 GROUNDING ELECTRODE DETAIL
3/4" = 1'-0"



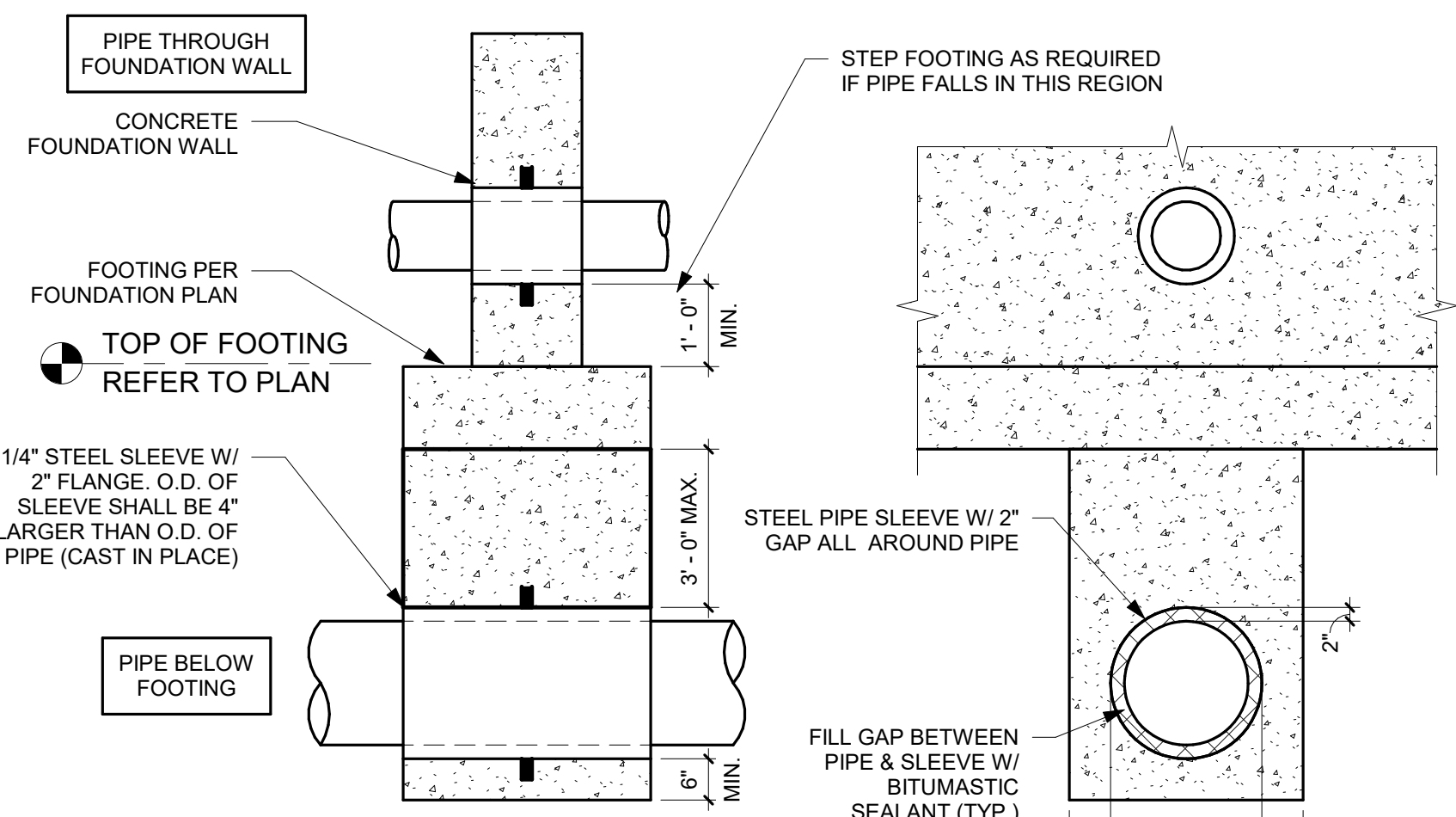
4 STEPPED FOOTING DETAIL
3/4" = 1'-0"



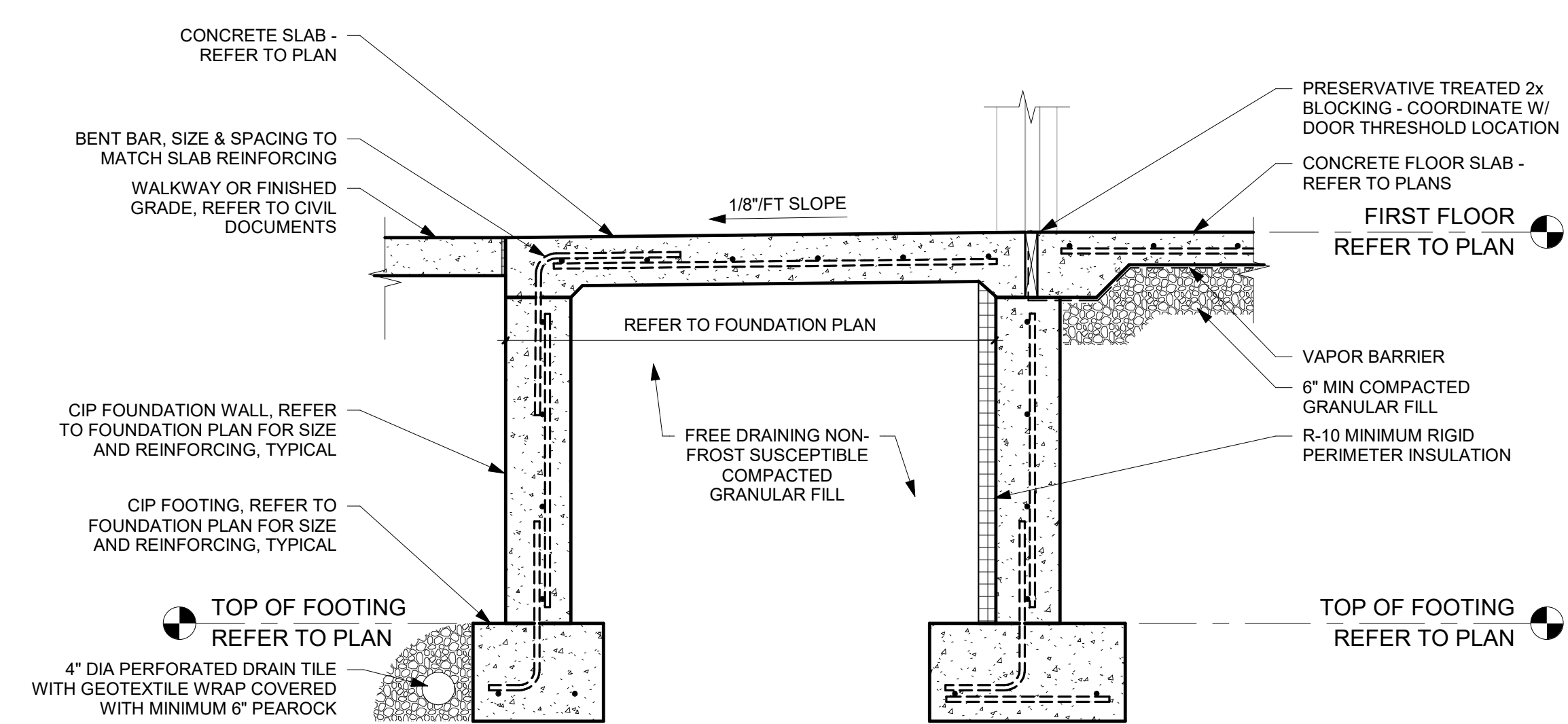
5 FLOOR/COLUMN ISOLATION JOINT
3/4" = 1'-0"



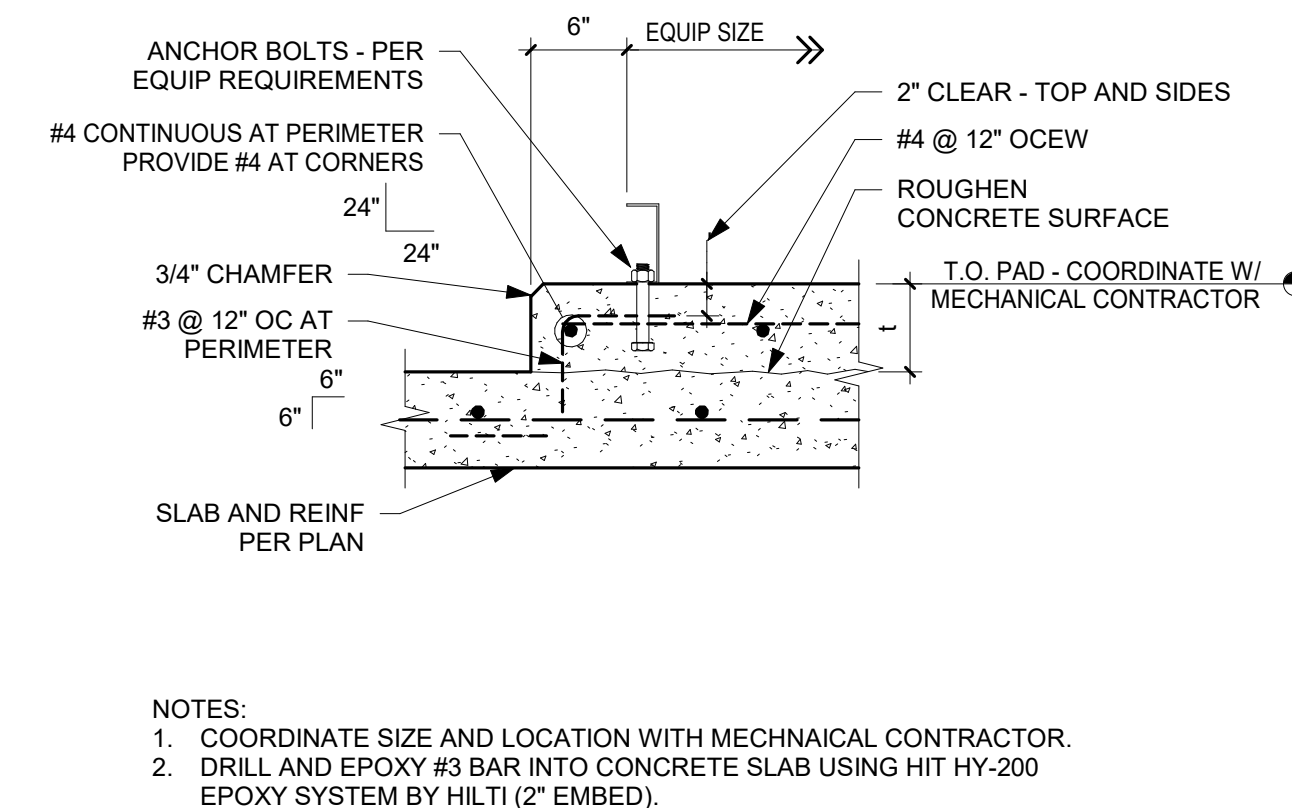
6 MECHANICAL LINE AT OR GREATER THAN 3' - 0" BENEATH FOOTING DETAIL
1/2" = 1'-0"



7 MECHANICAL LINE LESS THAN 3' - 0" BENEATH FOOTING DETAIL
1/2" = 1'-0"



8 TYPICAL CIP STOOP DETAIL
3/4" = 1'-0"

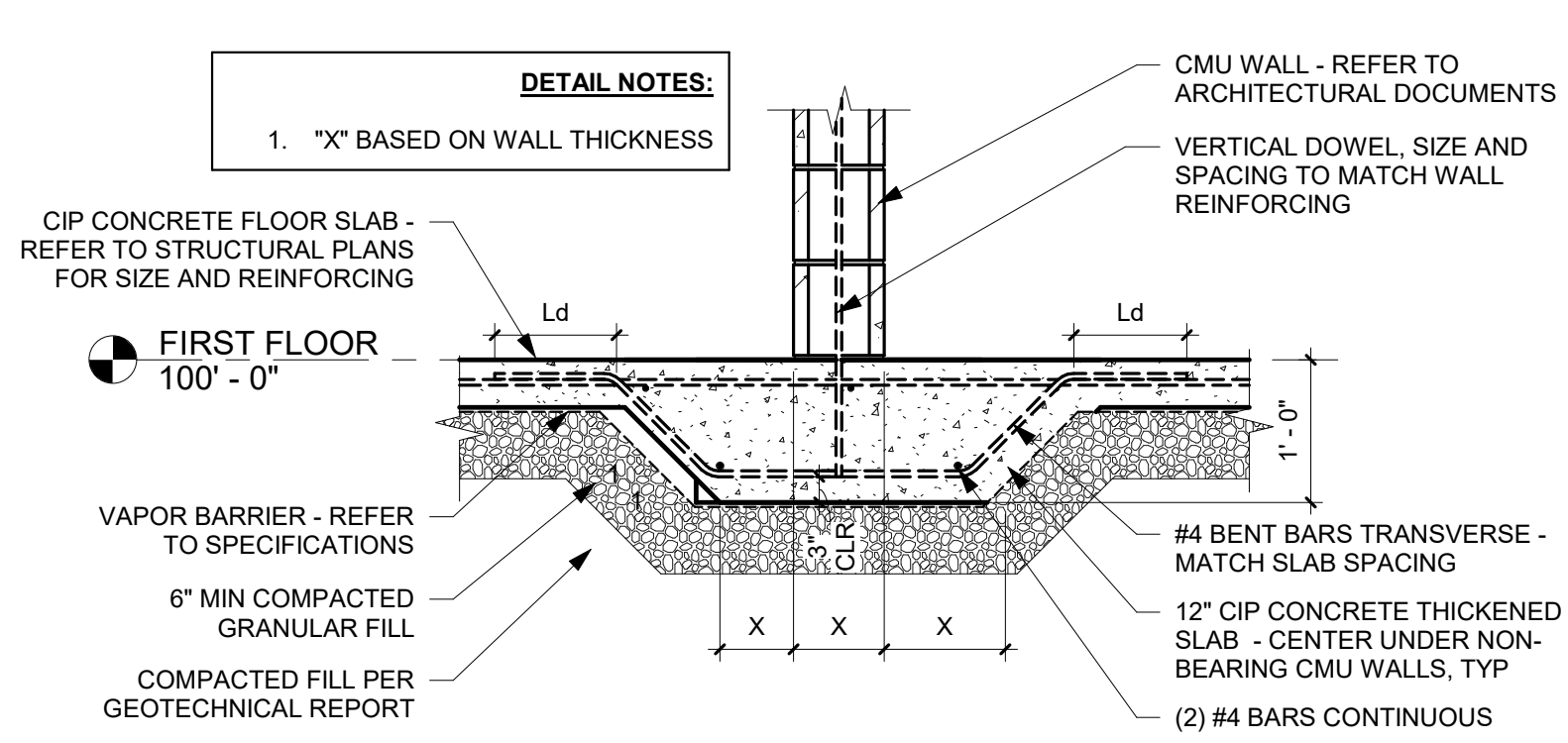


9 HOUSEKEEPING EQUIPMENT PAD
1" = 1'-0"

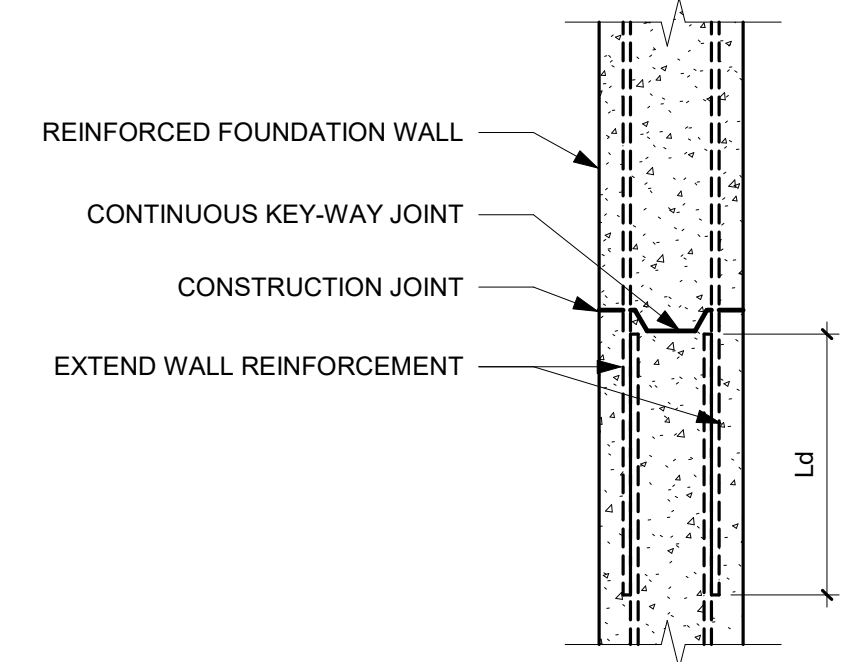
10 TYPICAL SLAB DEPRESSION AT FLOOR DRAIN
3/4" = 1'-0"

11 TYPICAL CIP APRON DETAIL
3/4" = 1'-0"

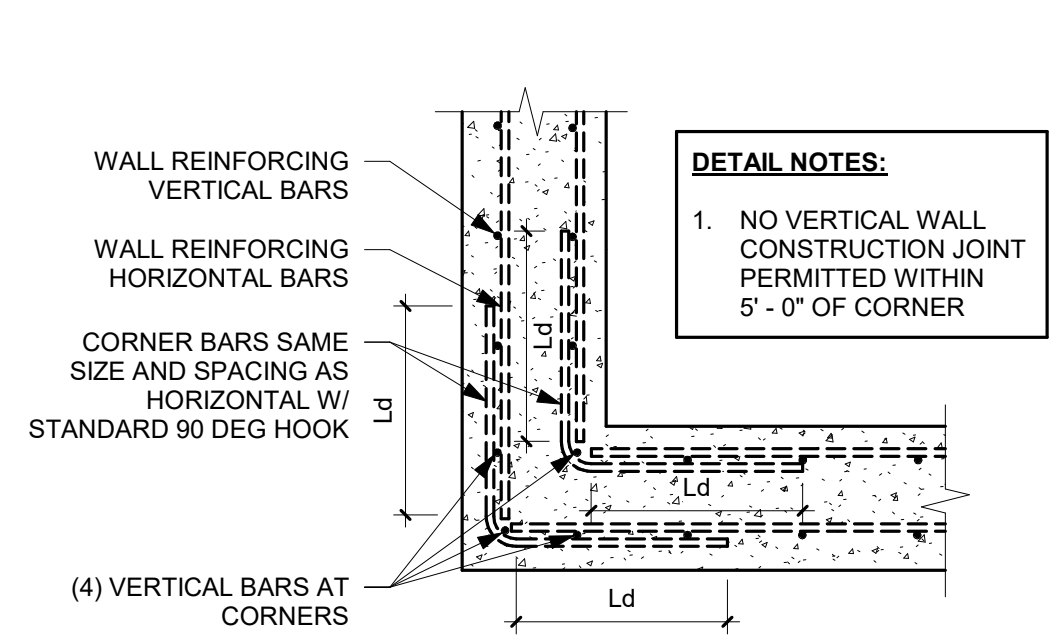
12 TYPICAL PIPE BOLLARD DETAIL
1/2" = 1'-0"



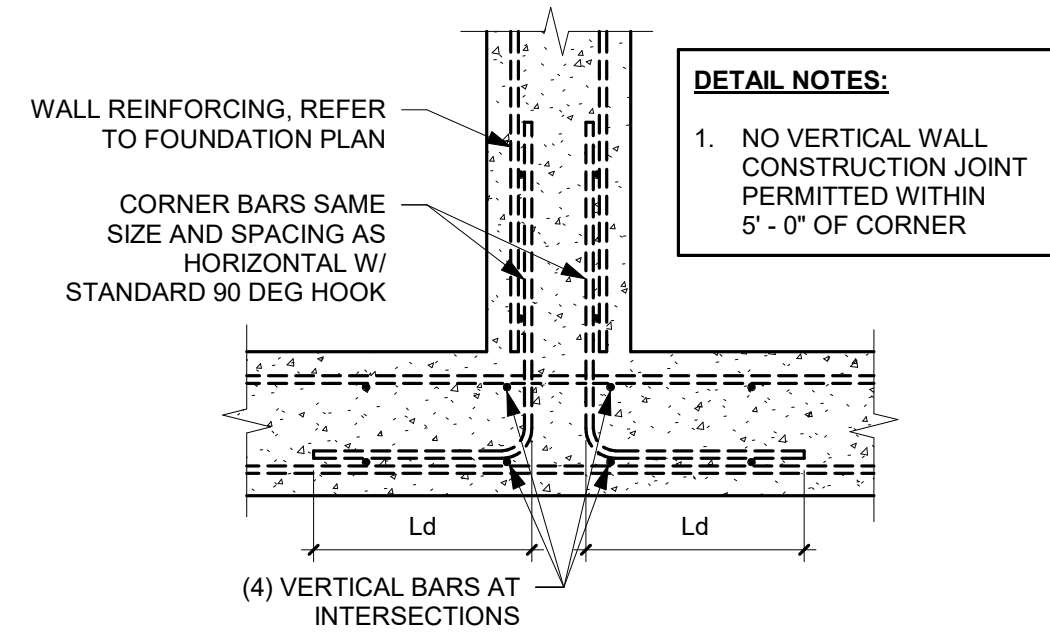
13 THICKENED SLAB AT NON-BEARING CMU WALL
3/4" = 1'-0"



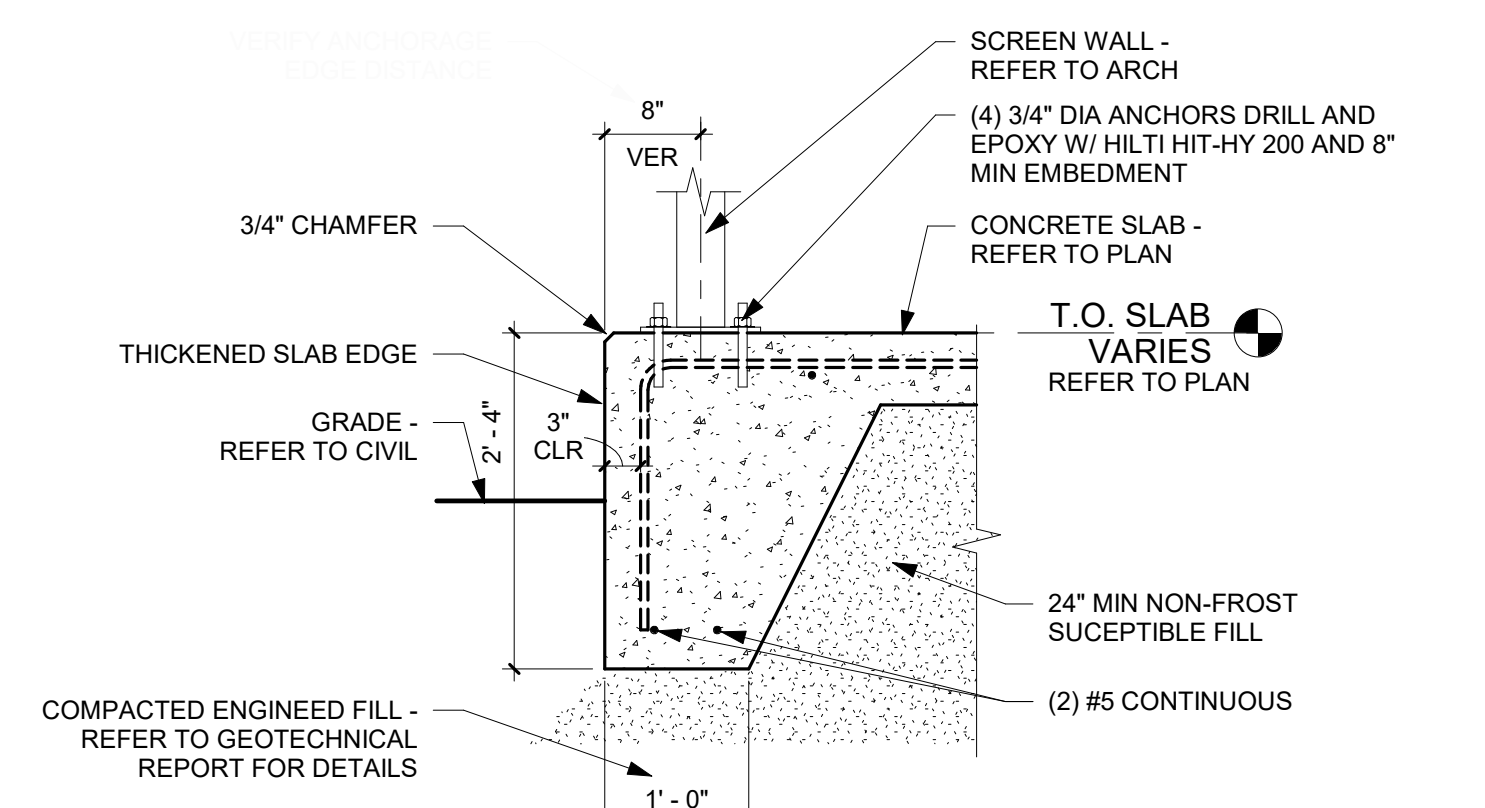
14 CIP CONCRETE CONSTRUCTION JOINT DETAIL
3/4" = 1'-0"



15 CIP CONCRETE CORNER REINFORCING DETAIL
3/4" = 1'-0"



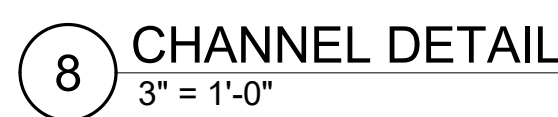
16 CIP CONCRETE INTERSECTING WALL REINFORCING DETAIL
3/4" = 1'-0"

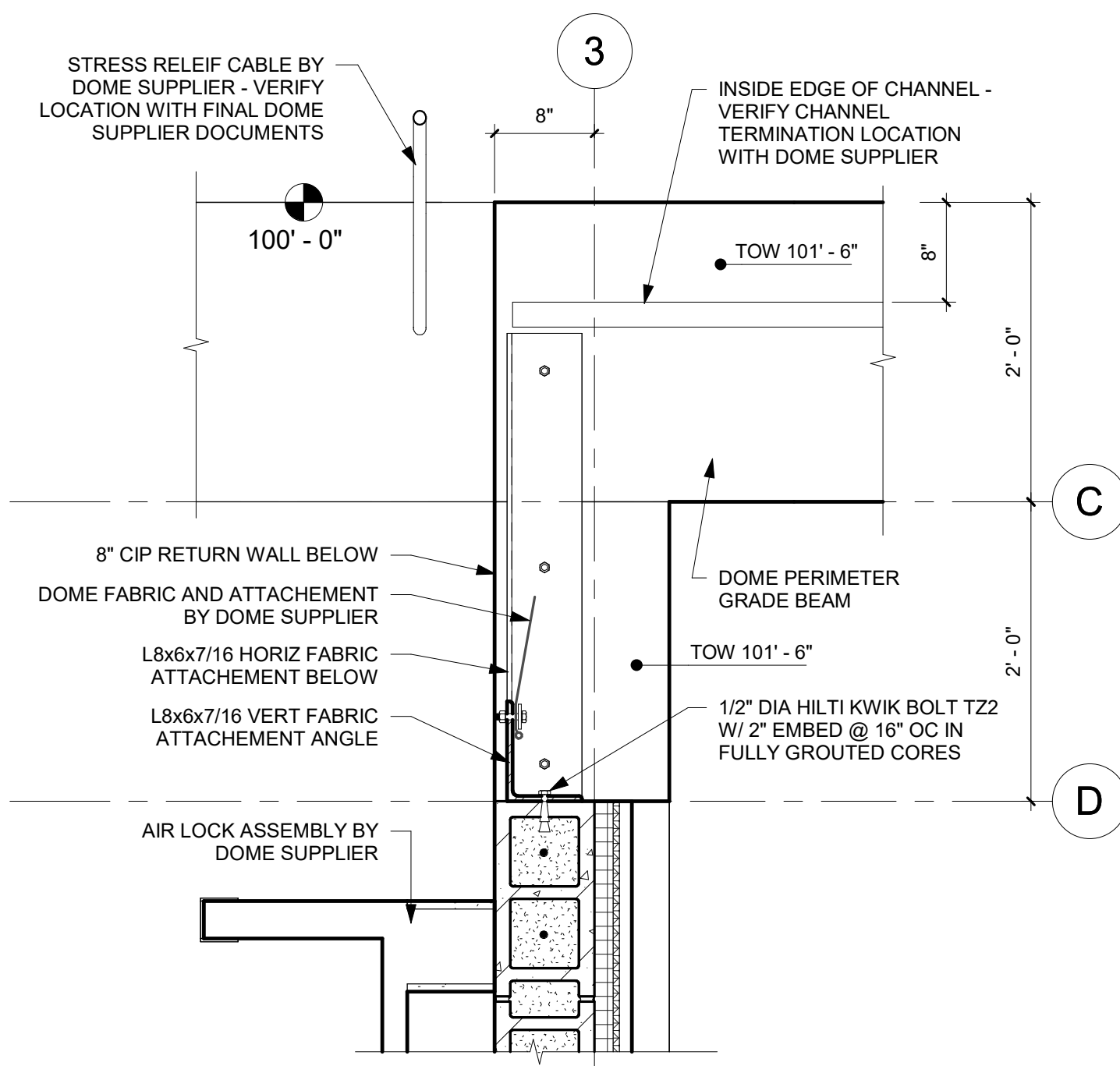


17 SLAB EDGE AT MECH EQUIPMENT ENCLOSURE
3/4" = 1'-0"

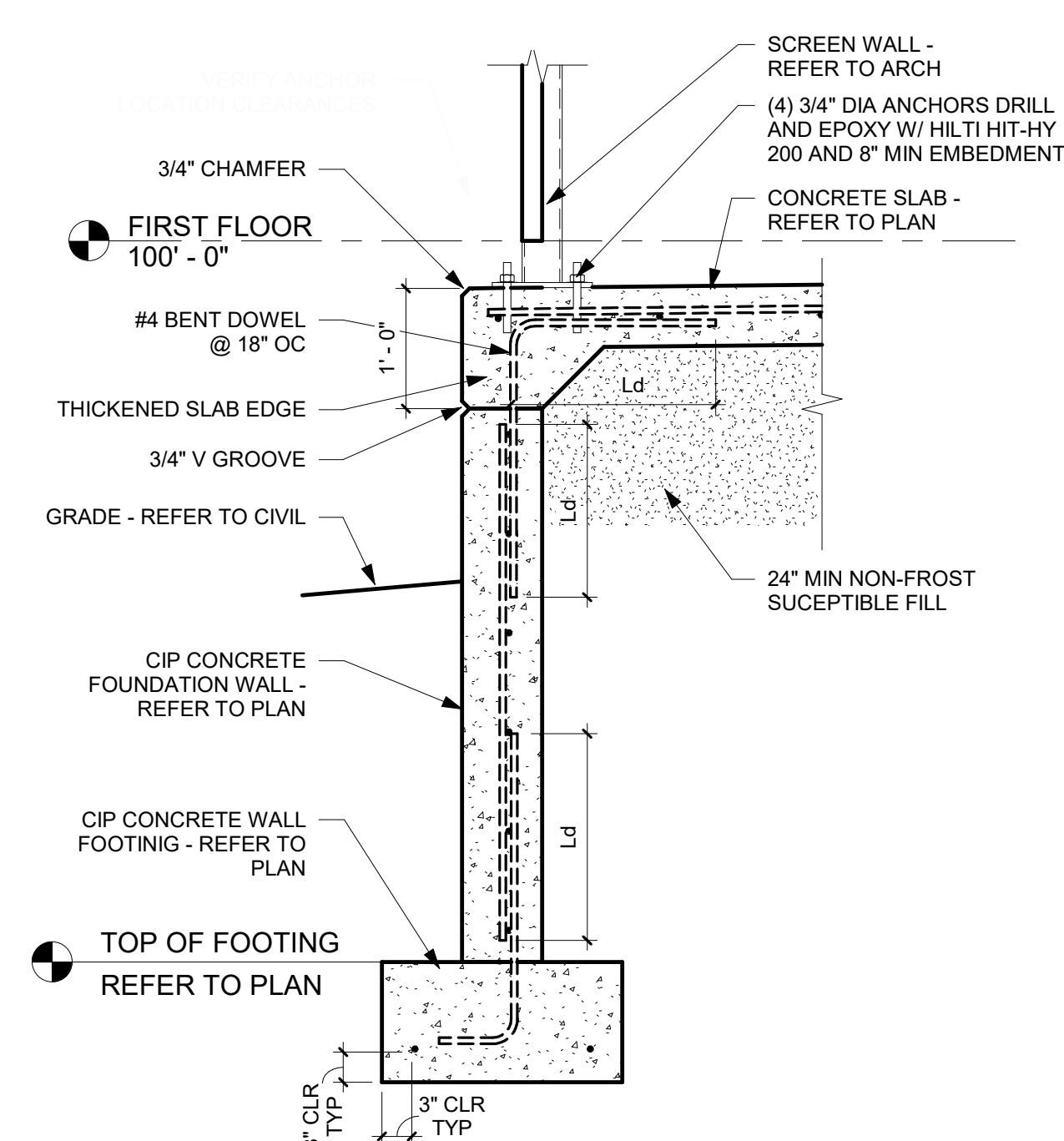
REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	MJT
DESIGNED BY	BCW
REVIEWED BY	BCW
ORIGINAL ISSUE DATE	06/13/24
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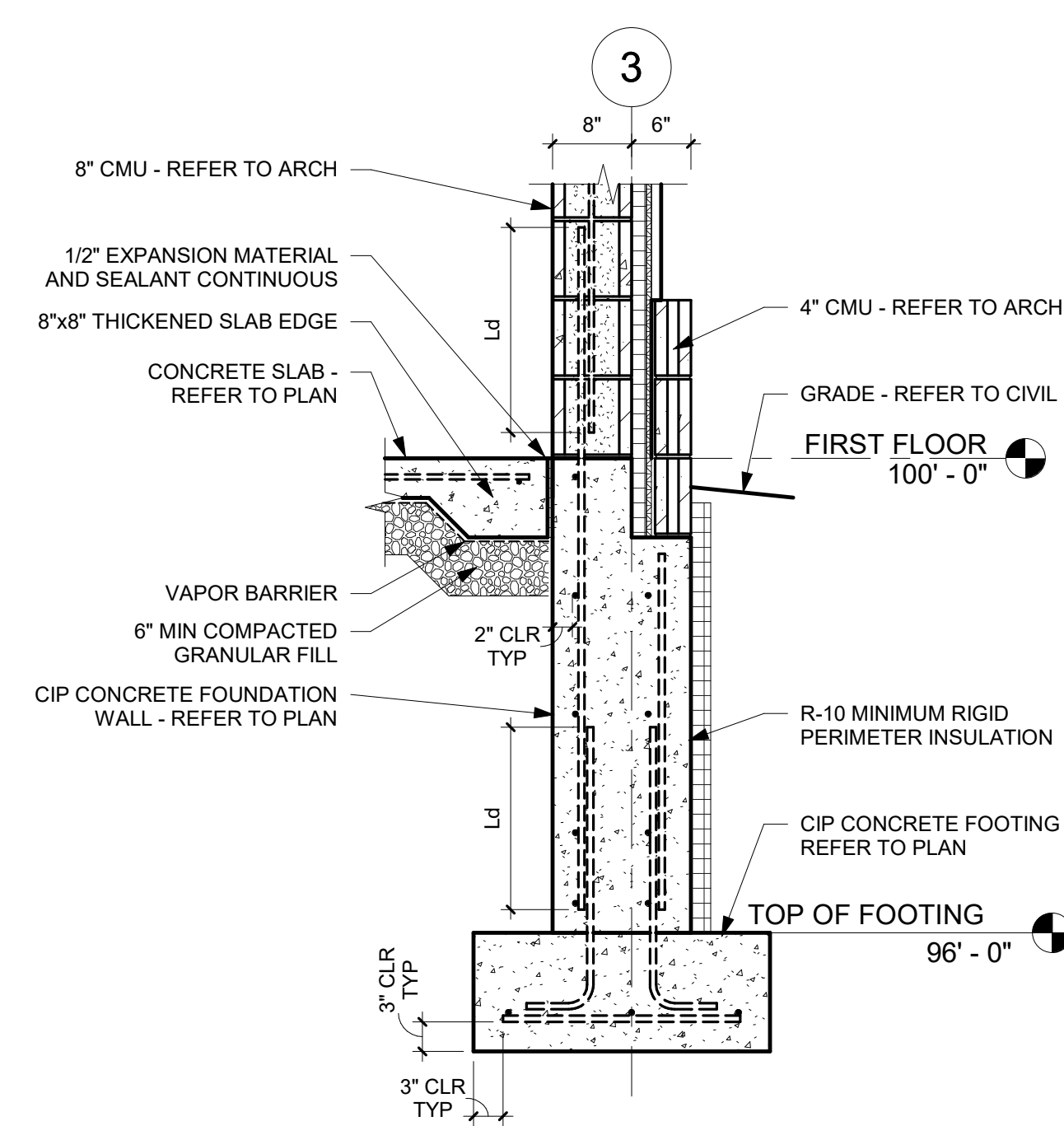




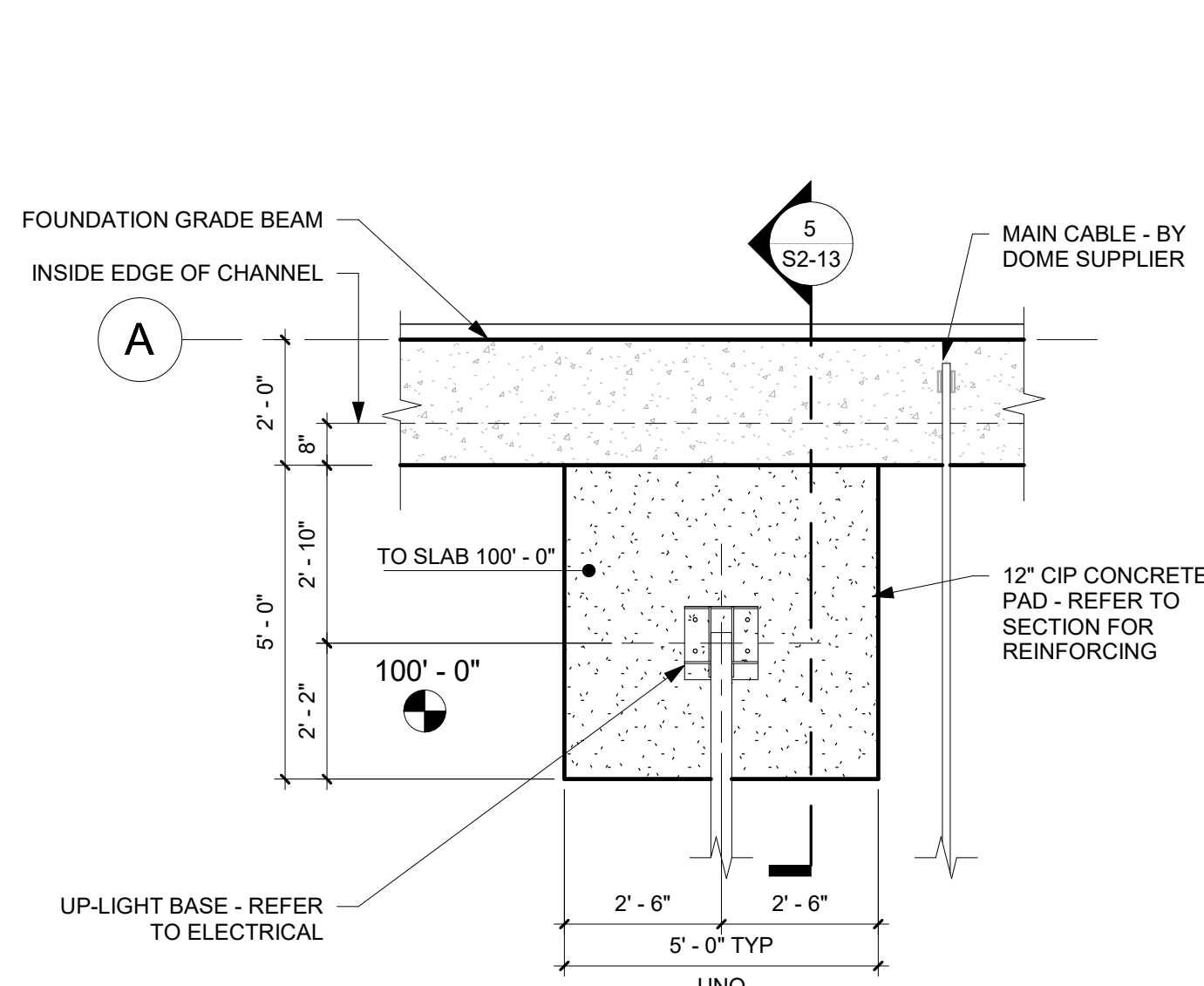
1 ENTRY BLDG CONN TO DOME - LOW
1" = 1'-0"



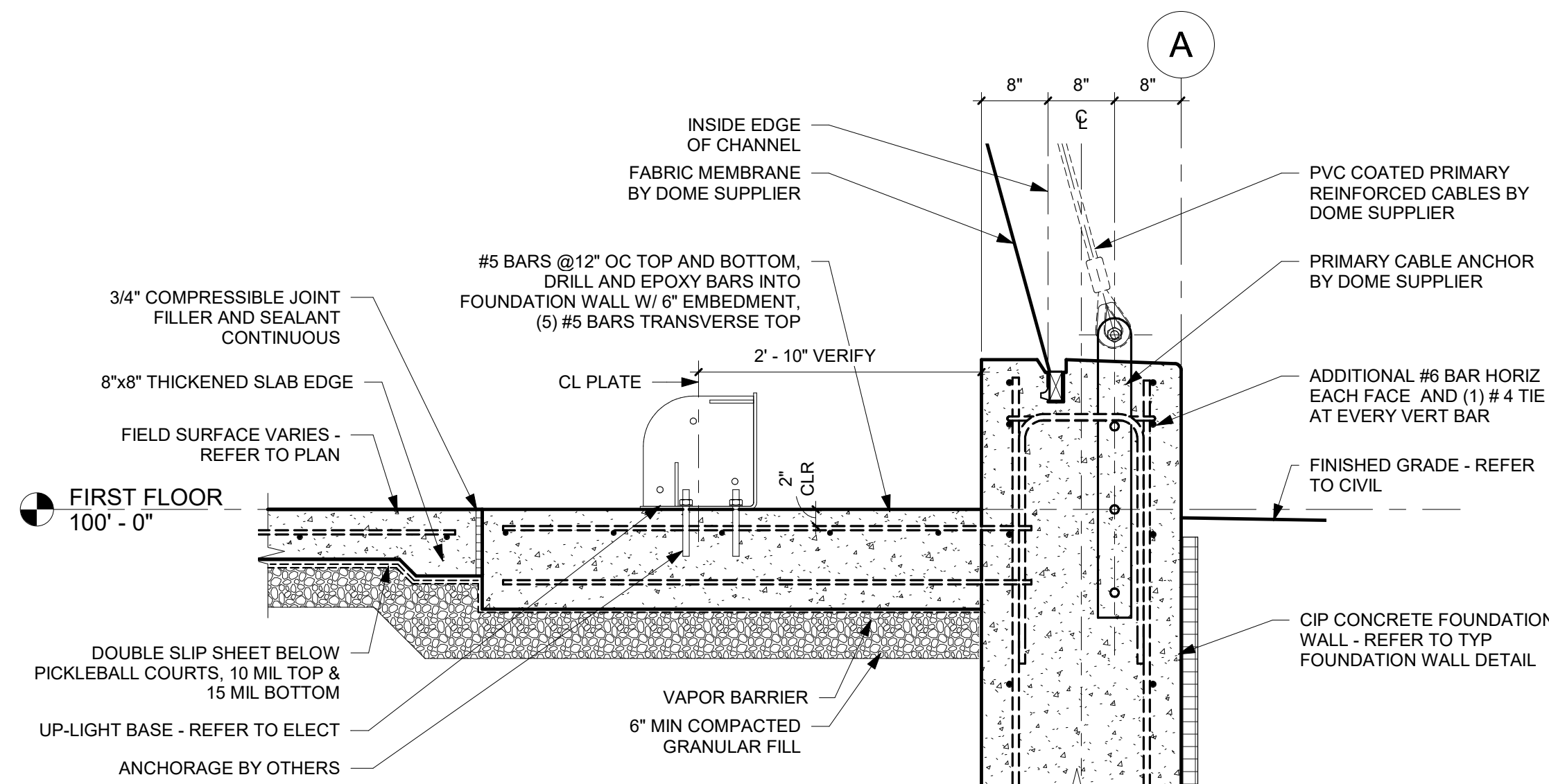
2 TYPICAL MECH PAD FOUNDATION WALL
3/4" = 1'-0"



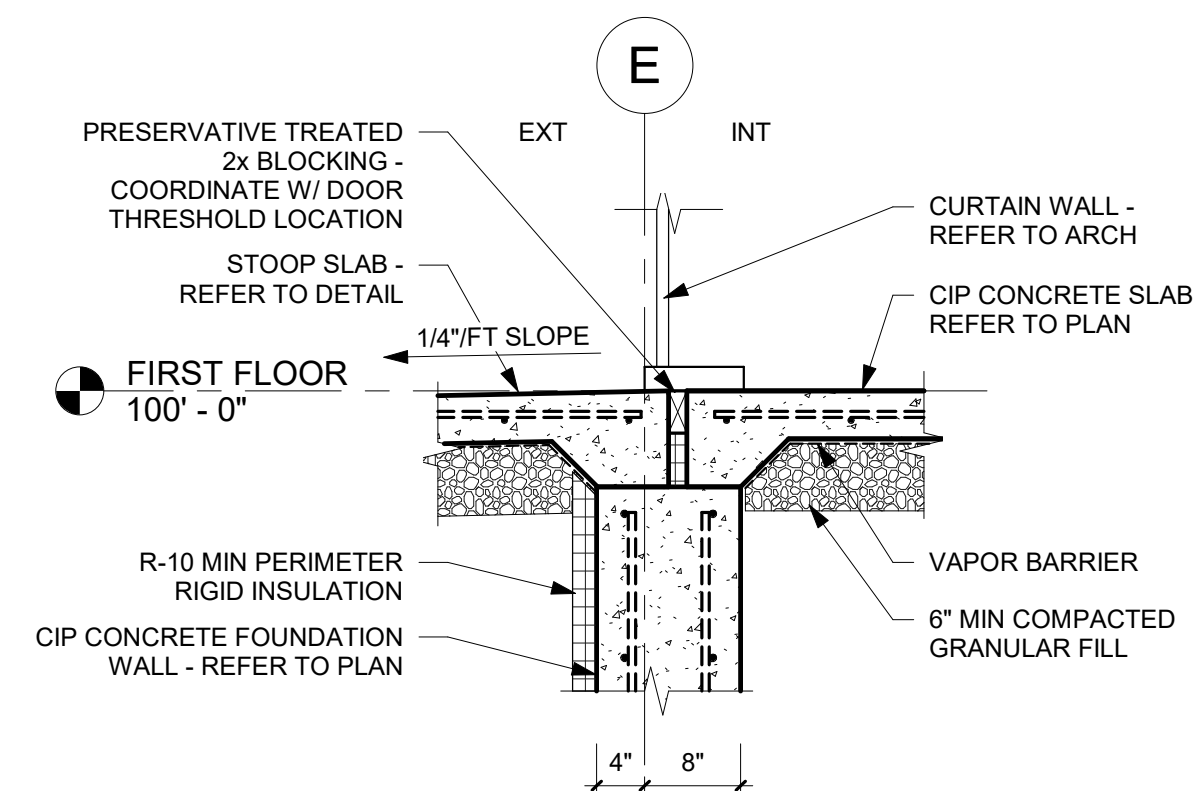
3 FOUNDATION WALL AT ENTRY BUILDING
3/4" = 1'-0"



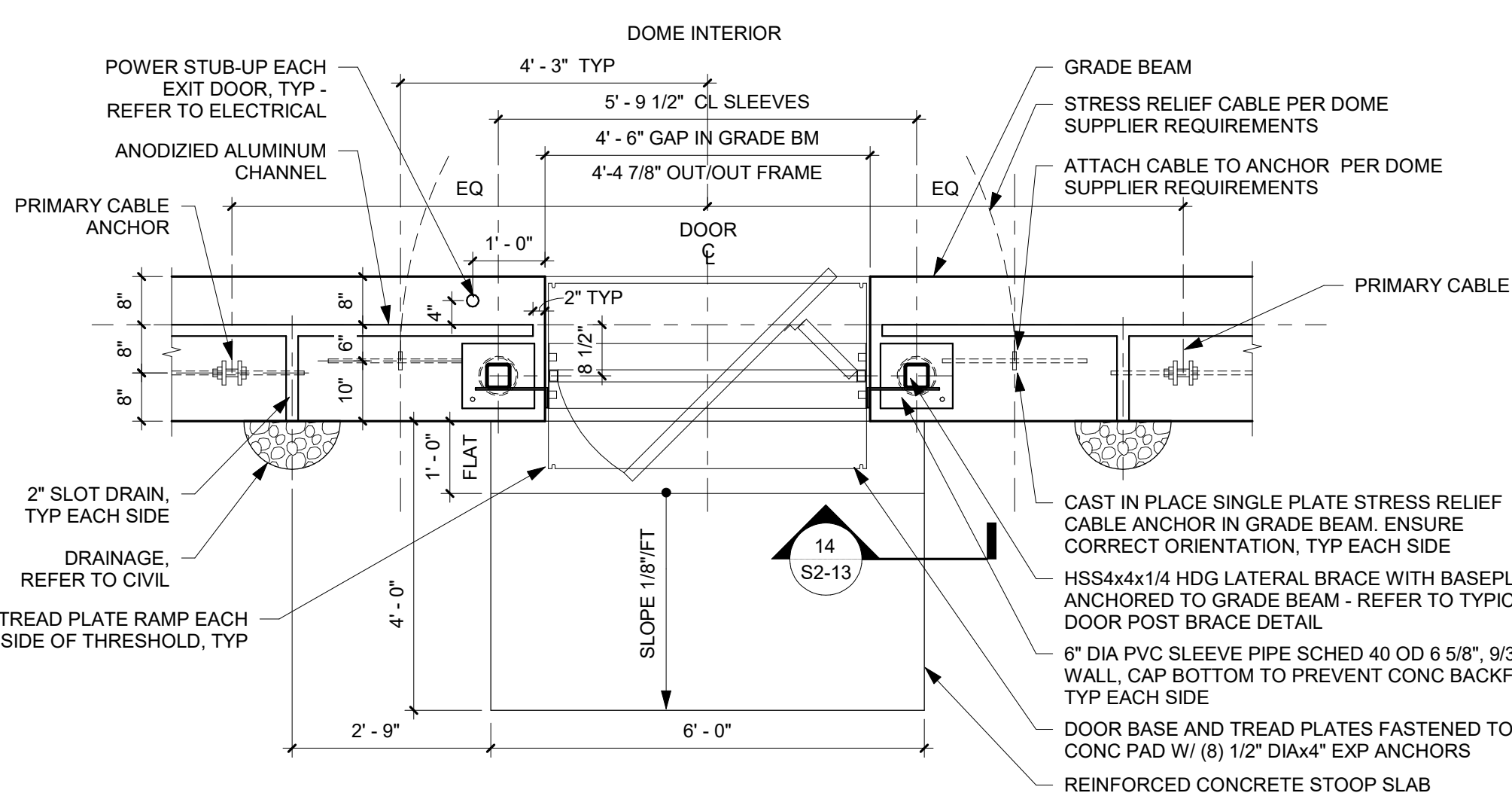
4 TYP CIP CONCRETE UP-LIGHT PAD
3/8" = 1'-0"



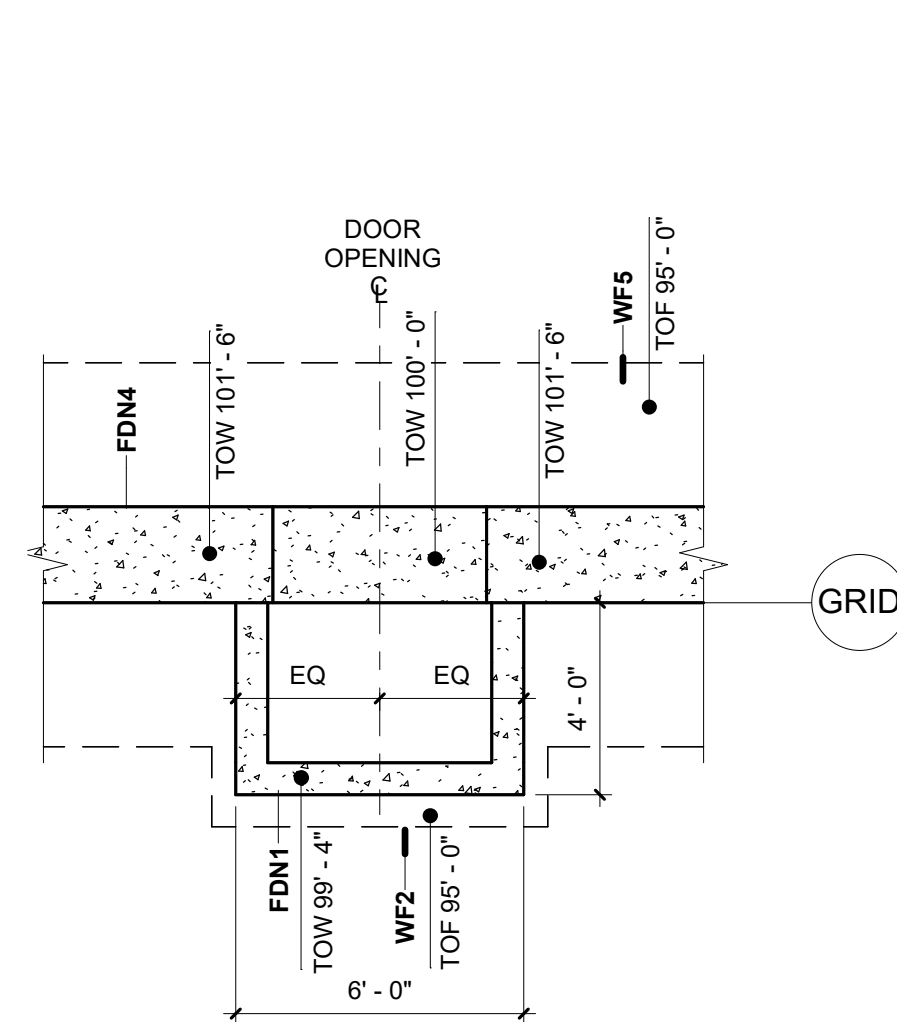
5 TYP CIP CONCRETE UP-LIGHT PAD SECTION
3/4" = 1'-0"



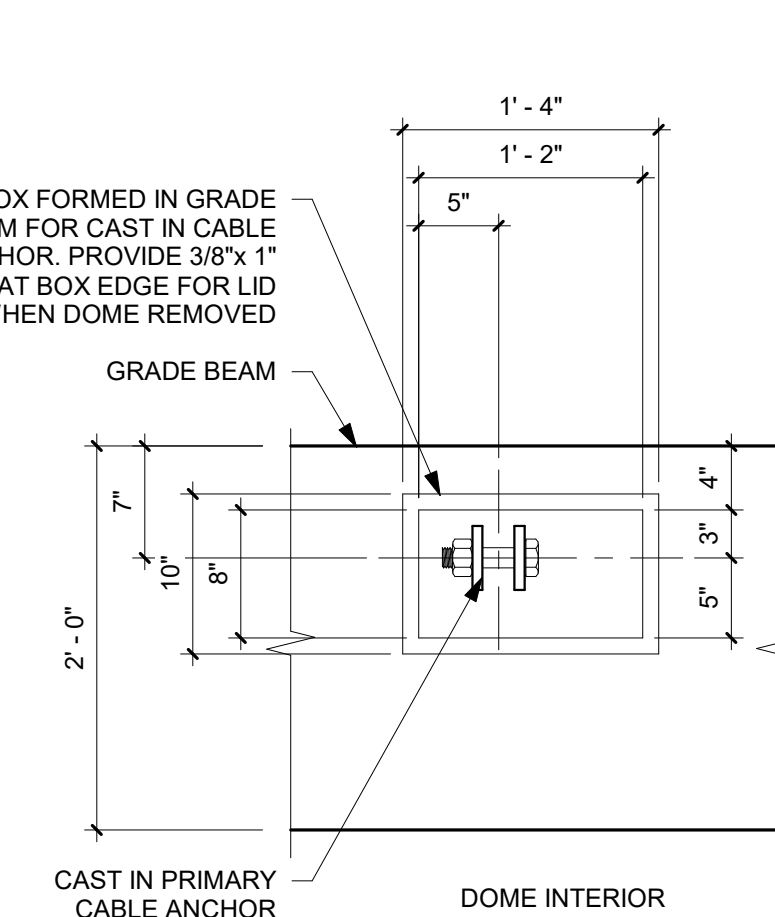
6 SECTION AT ENTRY CURTAIN WALL
3/4" = 1'-0"



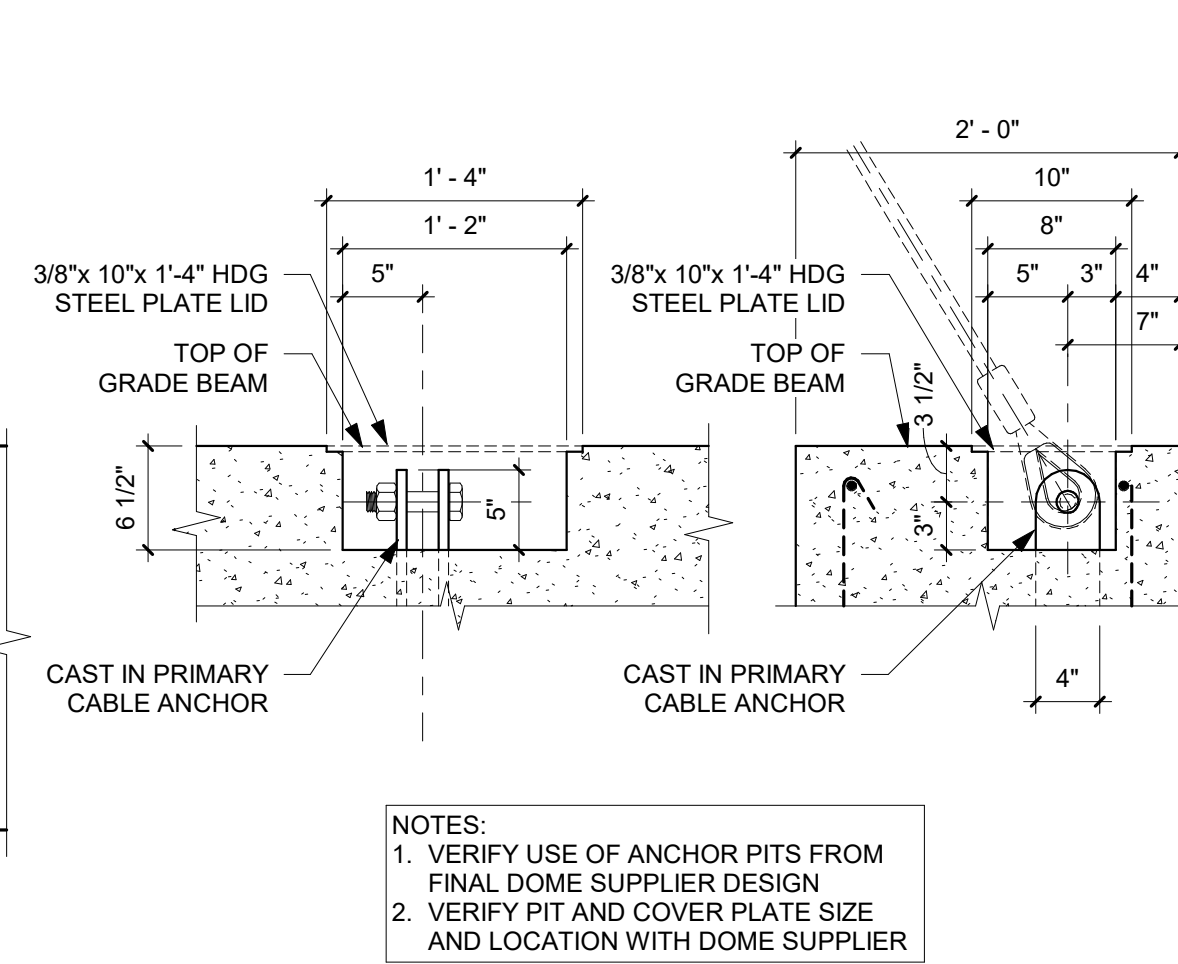
7 SINGLE EXIT PLAN VIEW
1/2" = 1'-0"



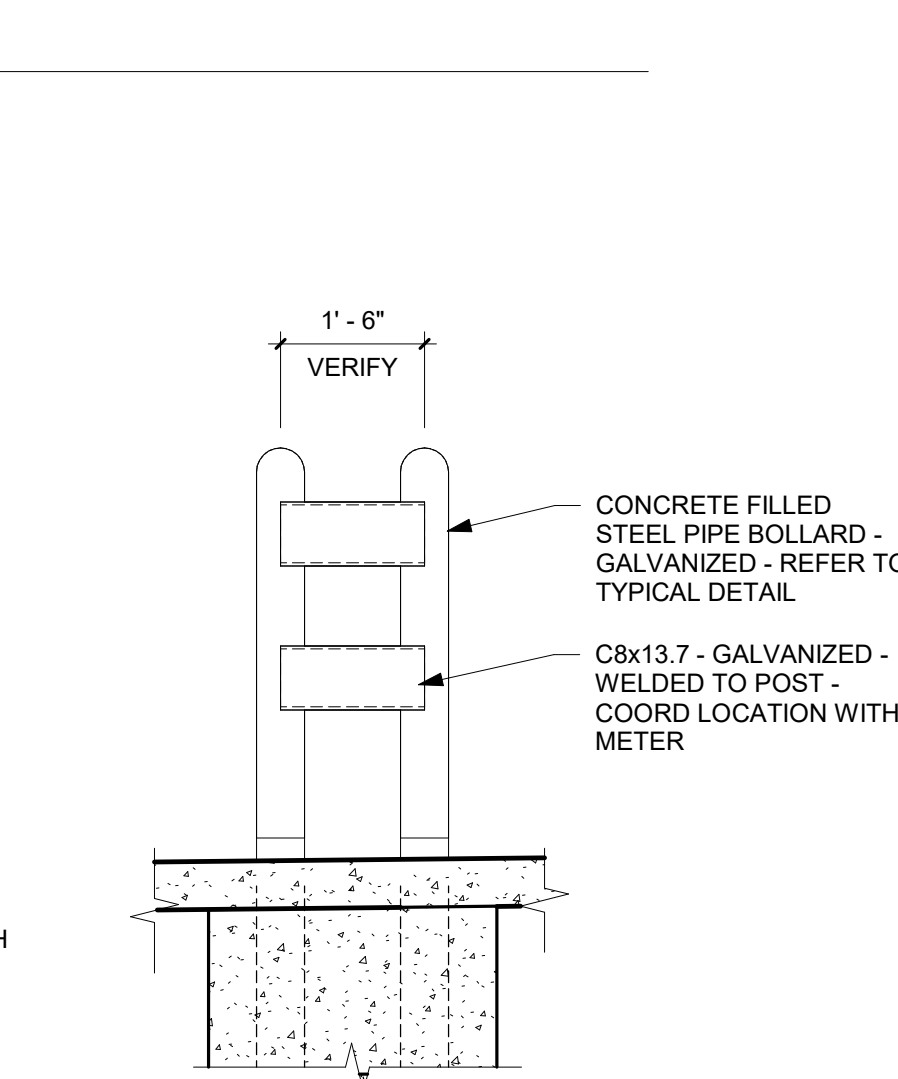
8 ENLARGED STOOP FOUNDATION
1/4" = 1'-0"



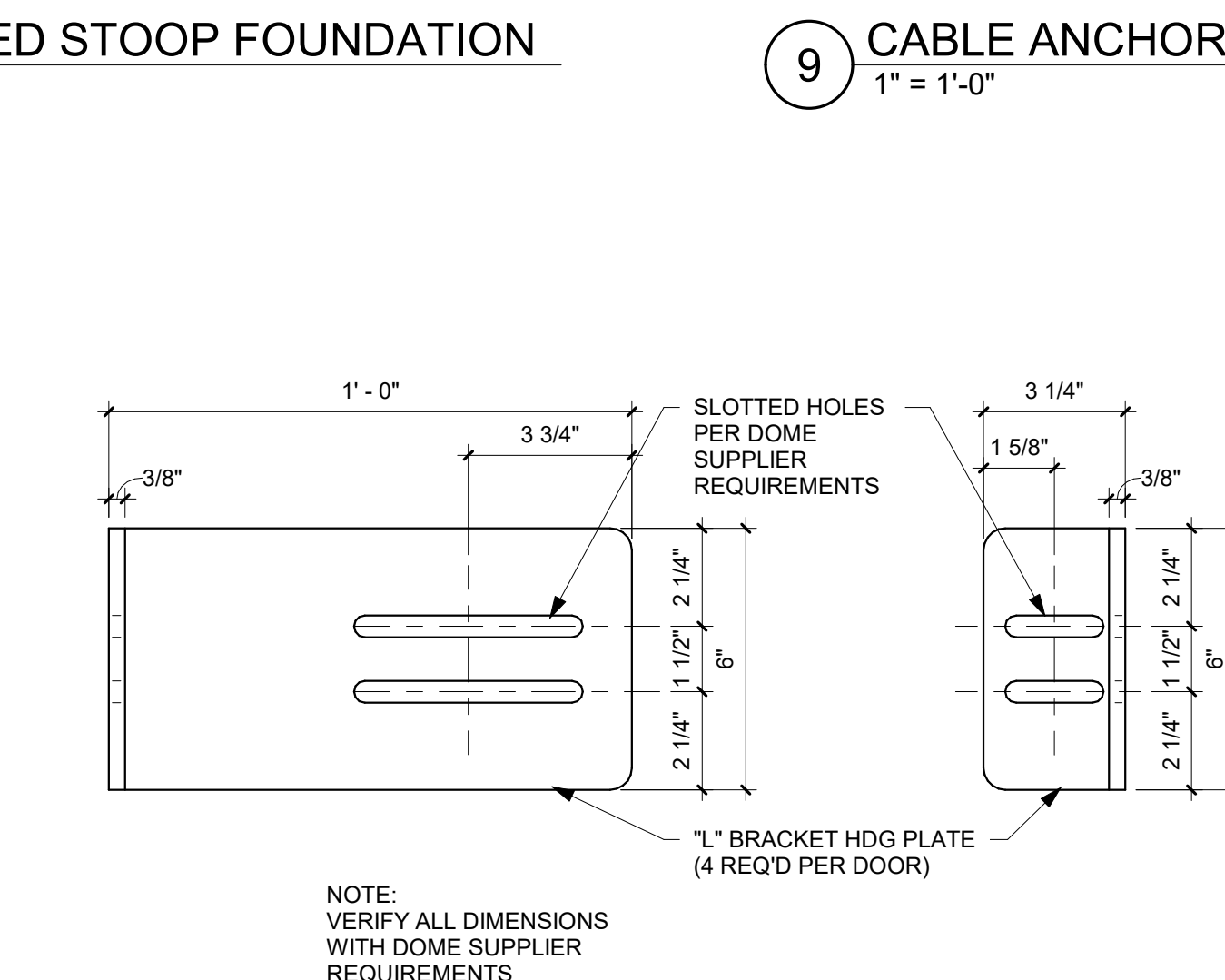
9 CABLE ANCHOR PIT DETAIL
1" = 1'-0"



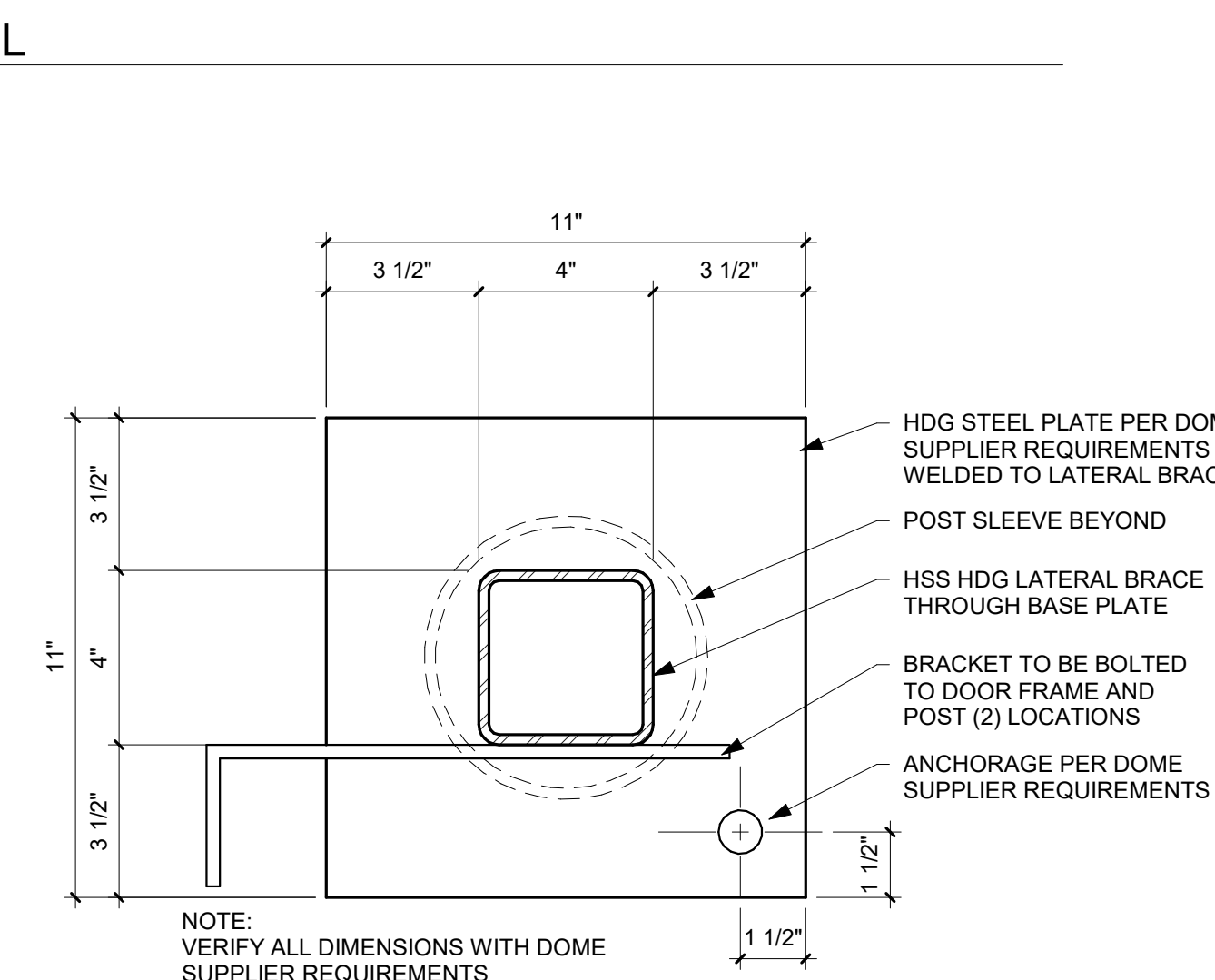
10 TYPICAL GAS METER BARRICADE
1/2" = 1'-0"



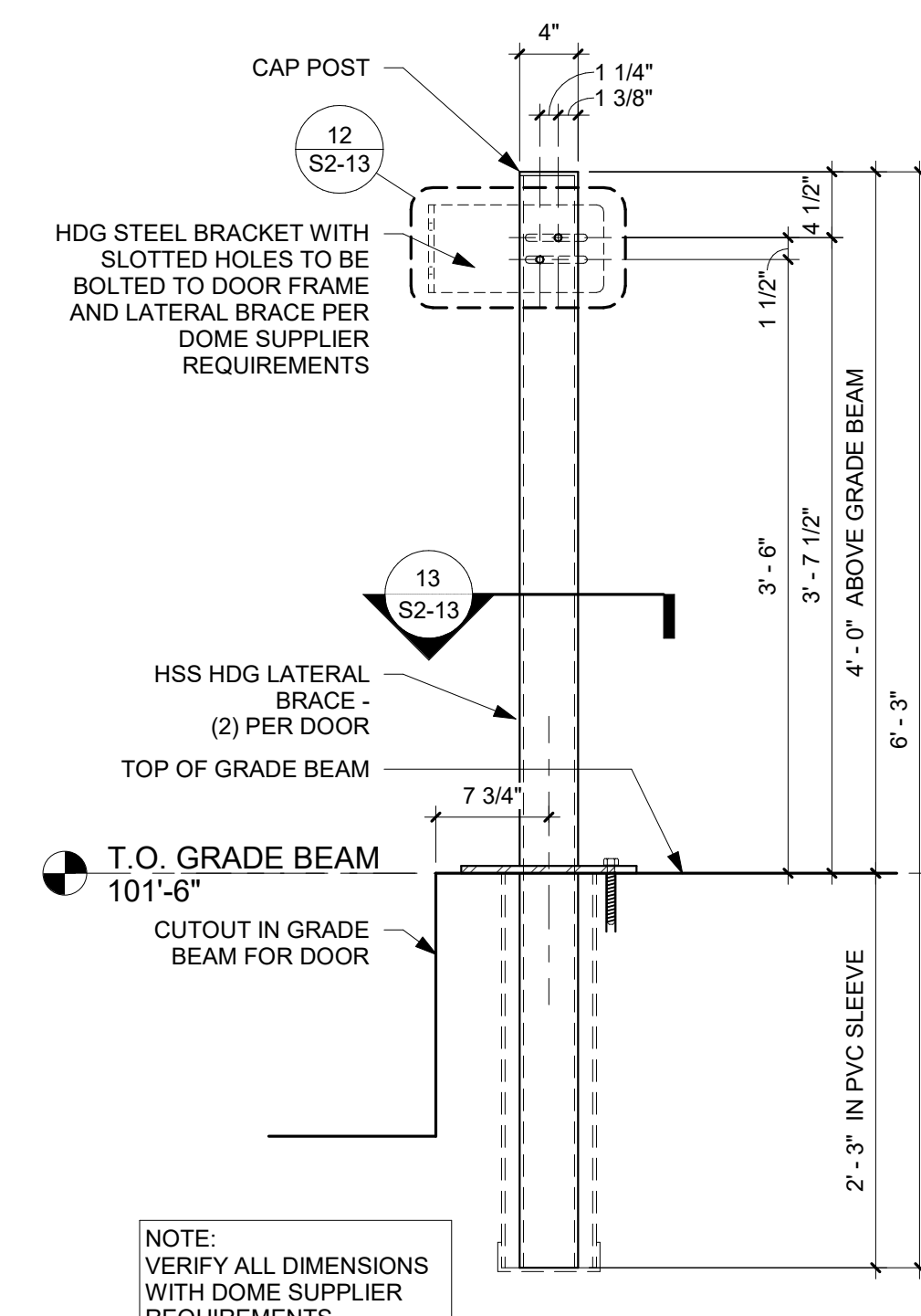
11 GAS METER MOUNTING POST
1/2" = 1'-0"



12 BRACE POST BRACKET
3" = 1'-0"



13 BRACE POST MOUNTING PLATE
3" = 1'-0"



14 TYPICAL EXIT DOOR POST BRACE
1" = 1'-0"



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	MJT
DESIGNED BY	BCW
REVIEWED BY	BCW
ORIGINAL ISSUE DATE	06/13/24
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TITLE

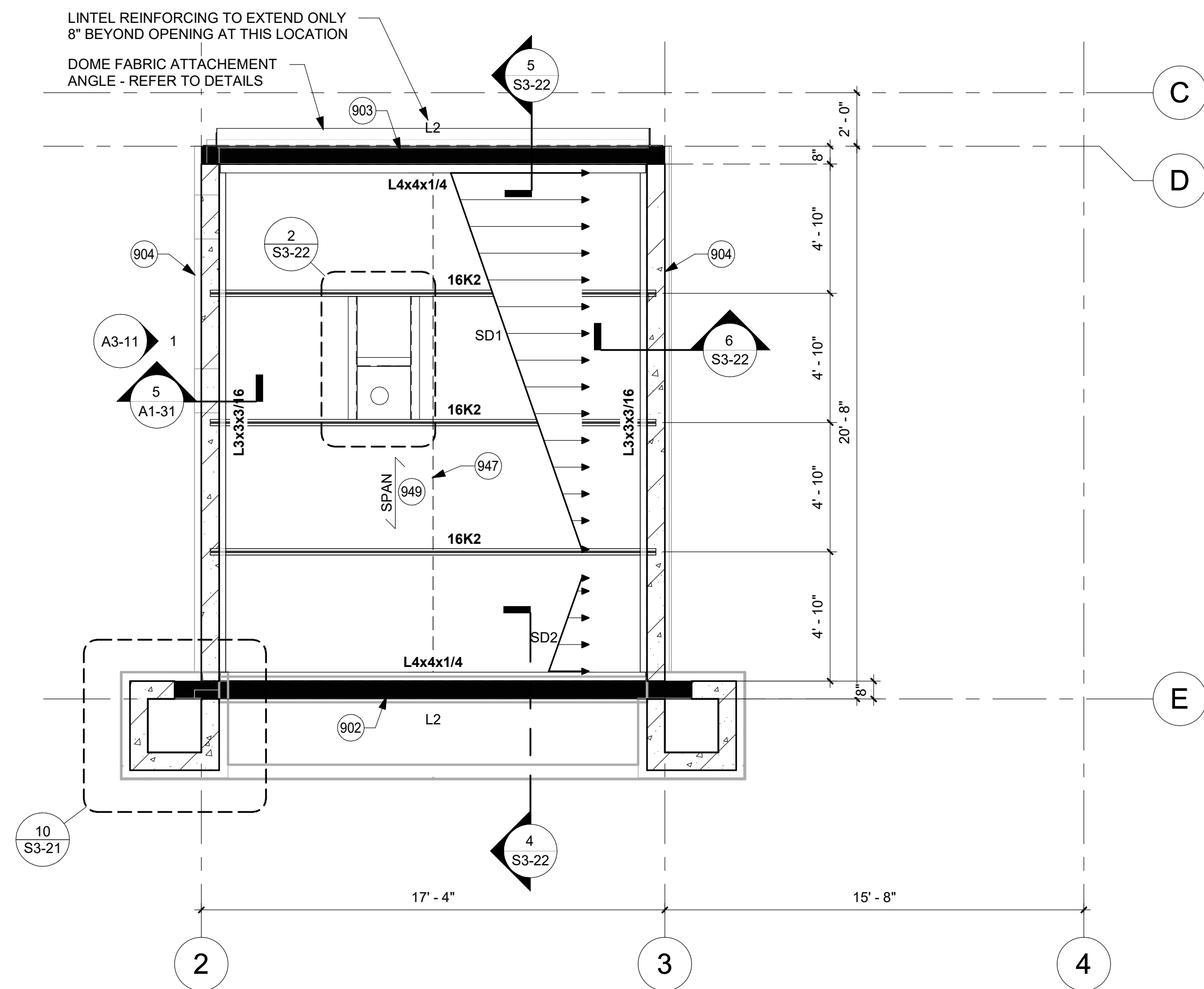
FOUNDATION & SLAB DETAILS

SHEET

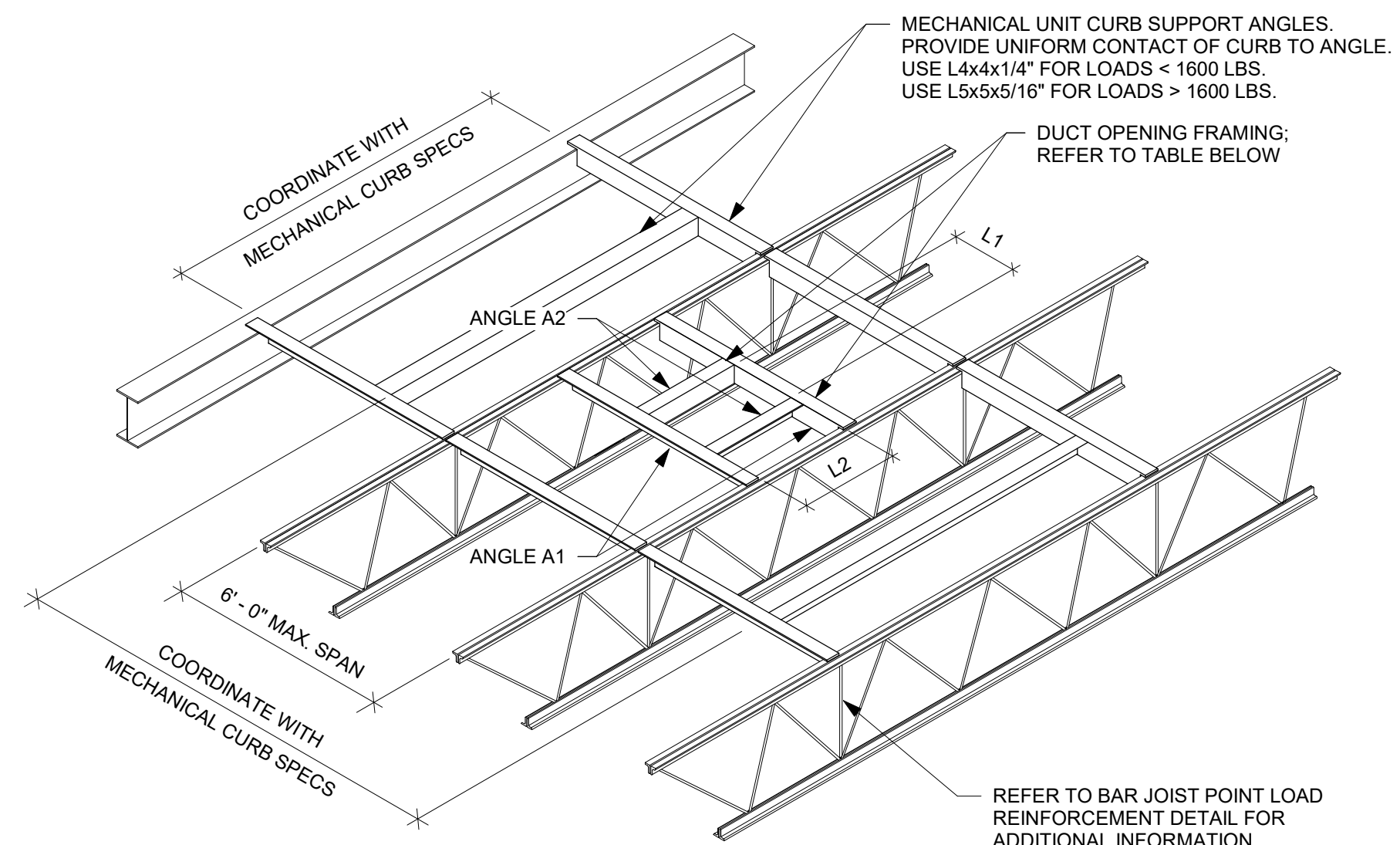
S2-13



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1 ROOF FRAMING PLAN - MAIN ENTRY
1/4" = 1'-0"



ROOF OPENING FRAMING LEGEND		
L1 OR L2 (WHICHEVER IS LARGER)	ANGLE A1	ANGLE A2
≤ 1' - 0"	NONE REQUIRED	NONE REQUIRED
≤ 2' - 0"	L3x3x3/16	L2x2x3/16
≤ 3' - 0"	L3 1/2x3x1/4 (LLV)	L3x3x3/16
≤ 4' - 0"	L4x3x1/4 (LLV)	L3x3x1/4
≤ 5' - 0"	L5x3x1/4 (LLV)	L3 1/2x3 1/2x1/4
≤ 6' - 0"	L6x4x5/16 (LLV)	L4x4x1/4

1. FRAMING LEGEND SHALL BE USED AT ALL NEW ROOF OPENINGS THAT EXCEED 1' - 0" IN EITHER DIRECTION. TYPICAL UNO.
2. REFER TO MECHANICAL DOCUMENTS FOR SIZE AND LOCATION OF ALL DUCT PENETRATIONS THROUGH ROOF.
3. REFER TO STRUCTURAL DOCUMENTS FOR ADDITIONAL OR ALTERNATE FRAMING METHODS.

2 MECHANICAL CURB AND ROOF OPENING SUPPORT DETAIL
3/8" = 1'-0"

LINTEL SCHEDULE			
TYPE	MATERIAL	CONFIGURATION	REMARKS
L1	a. 8" WIDE x 1'-4" DEEP BOND BEAM W/ (2) #5 CONT.		- GROUT FULL (1) COURSE ABOVE BOND BEAM. EXTEND REINFORCING 8" BEYOND SPAN - TYPICAL AT OPENINGS IN 8" CMU WALLS LESS THAN 4'-0" IN WIDTH, UNLESS NOTED OTHERWISE.
L2	a. 8" WIDE x 2'-8" DEEP BOND BEAM W/ (2) #6 CONT.		GROUT FULL (3) COURSES ABOVE BOND BEAM. EXTEND REINFORCING 24" BEYOND SPAN, UNO

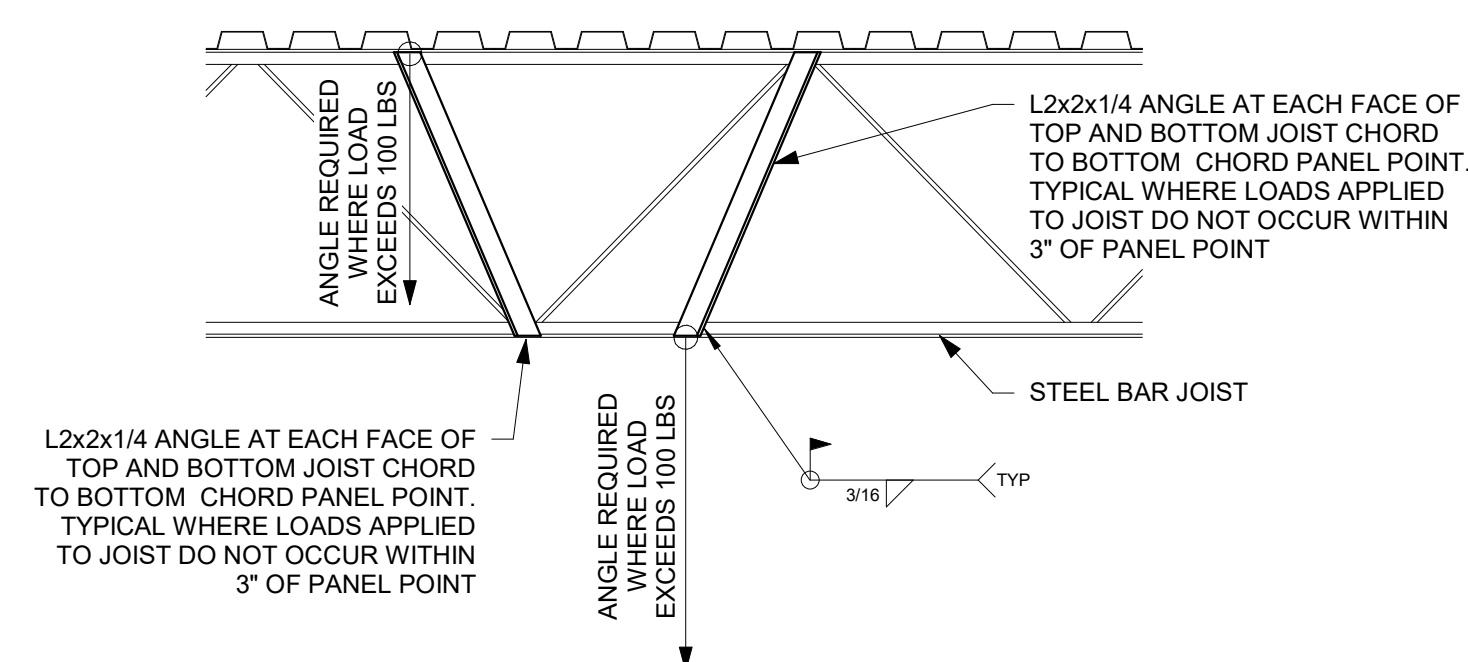
NOTES:

- MINIMUM BEARING FOR ALL LINTELS SHALL BE 8" EACH END UNLESS OTHERWISE NOTED.
- CMU WALLS SHALL BE GROUTED SOLID THREE COURSES BELOW LINTEL BEARING POINT AS MINIMUM.
- REFER TO ARCHITECTURAL & MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF WALL OPENINGS.
- GALVANIZE ALL STEEL LINTELS AT EXTERIOR WALLS.
- FOR MASONRY LINTELS GROUT ALL CORES SOLID. CONTINUE VERTICAL WALL REINFORCEMENTS (AND SPACING) AT ALL LINTELS.
- SOLID MASONRY "BOND BEAM" LINTELS AND ITS GROUTED COURSES SHALL NOT BE PENETRATED UNLESS APPROVED BY ENGINEER.
- BRICK SHALL NOT OVERHANG THE EDGE OF LINTELS GREATER THAN 1/3 THE WIDTH OF BRICK (1 3/16" FOR STANDARD 3 5/8" WIDTH BRICK).
- FOR LINTELS REQUIRED AT OPENINGS DIFFERENT THAN ABOVE, CONTACT STRUCTURAL ENGINEER.
- FOR ALL LINTELS IN EXISTING WALLS, REMOVE EXISTING CMU/BRICK AS REQUIRED FOR LINTEL INSTALLATION. SHORE EXISTING CMU/BRICK PATCH CMU/BRICK AS REQUIRED.

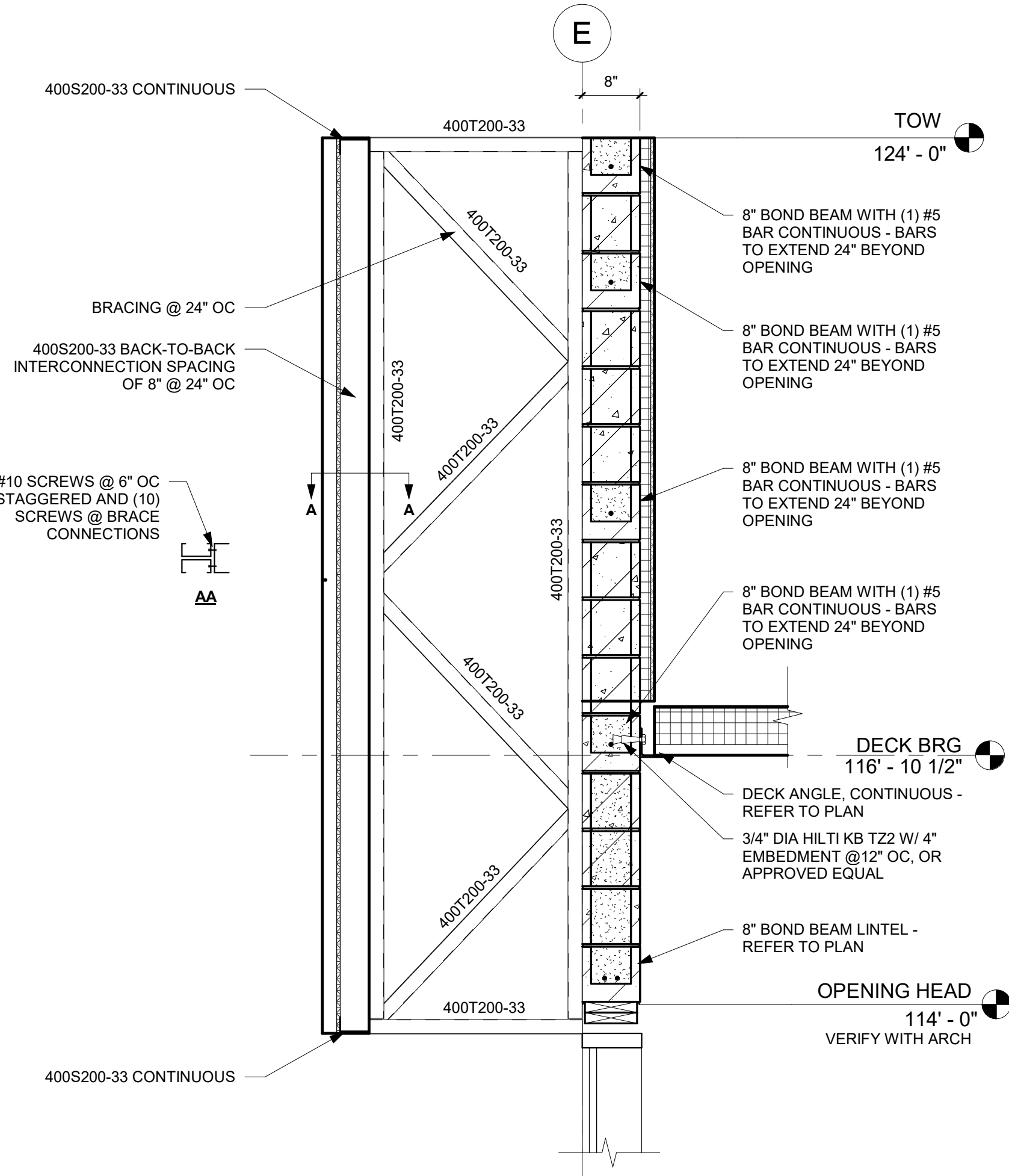
SNOW DRIFT SCHEDULE				
MARK	DRIFT LOAD Sd (PSF)	DRIFT LOAD Sd (PSF) - MINOR	TAPERED TO ZERO AT Ld (FT)	BALANCED SNOW LOAD
SD1	59	0	14' - 1"	22
SD2	15	0	3' - 6"	22

SNOW DRIFT LEGEND

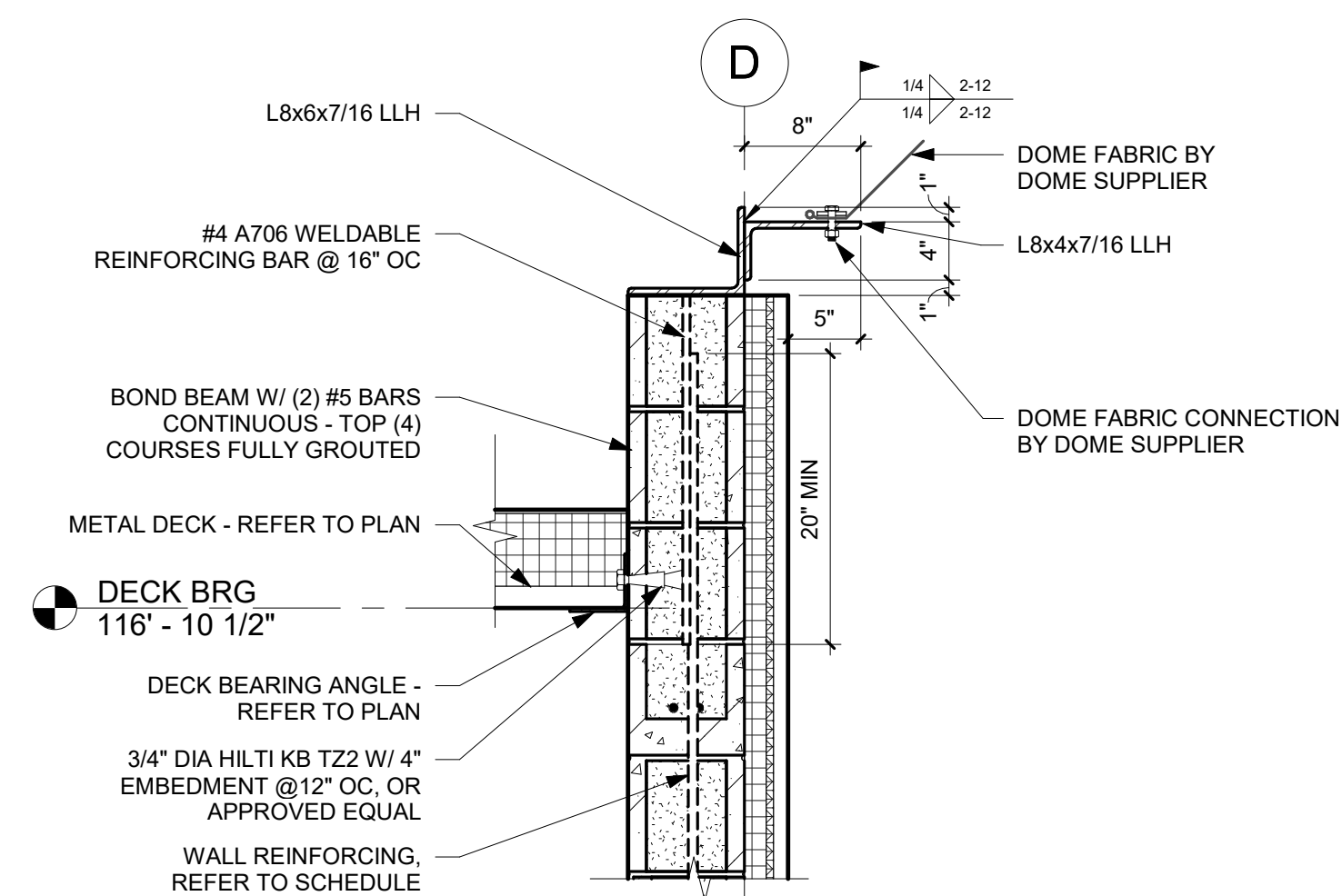
KEYNOTE LEGEND	
902	8" MASONRY WALL WITH #5 BARS VERTICAL @ 16" OC - (1) #5 BAR SHALL BE PROVIDED IN THE LAST TWO CELLS OF EACH WALL
903	8" MASONRY WALL WITH #5 BARS VERTICAL @ 16" OC - (1) #5 BAR SHALL BE PROVIDED IN THE LAST TWO CELLS OF EACH WALL - 9 GAGE LADDER TYPE HORIZONTAL JOINT REINFORCEMENT @ 16" OC
904	8" MASONRY WALL WITH #5 BARS VERTICAL @ 32" OC - (1) #6 BAR SHALL BE PROVIDED IN THE LAST TWO CELLS OF EACH WALL - 9 GAGE LADDER TYPE HORIZONTAL JOINT REINFORCEMENT @ 16" OC
947	CONTINUOUS DIAGONAL BRIDGING - EACH BAY - FULL LENGTH OF BUILDING - DESIGNED AND SUPPLIED BY JOIST SUPPLIER
949	1.5620 METAL DECK, GALVANIZED - REFER TO STRUCTURAL NOTES FOR FASTENING REQUIREMENTS



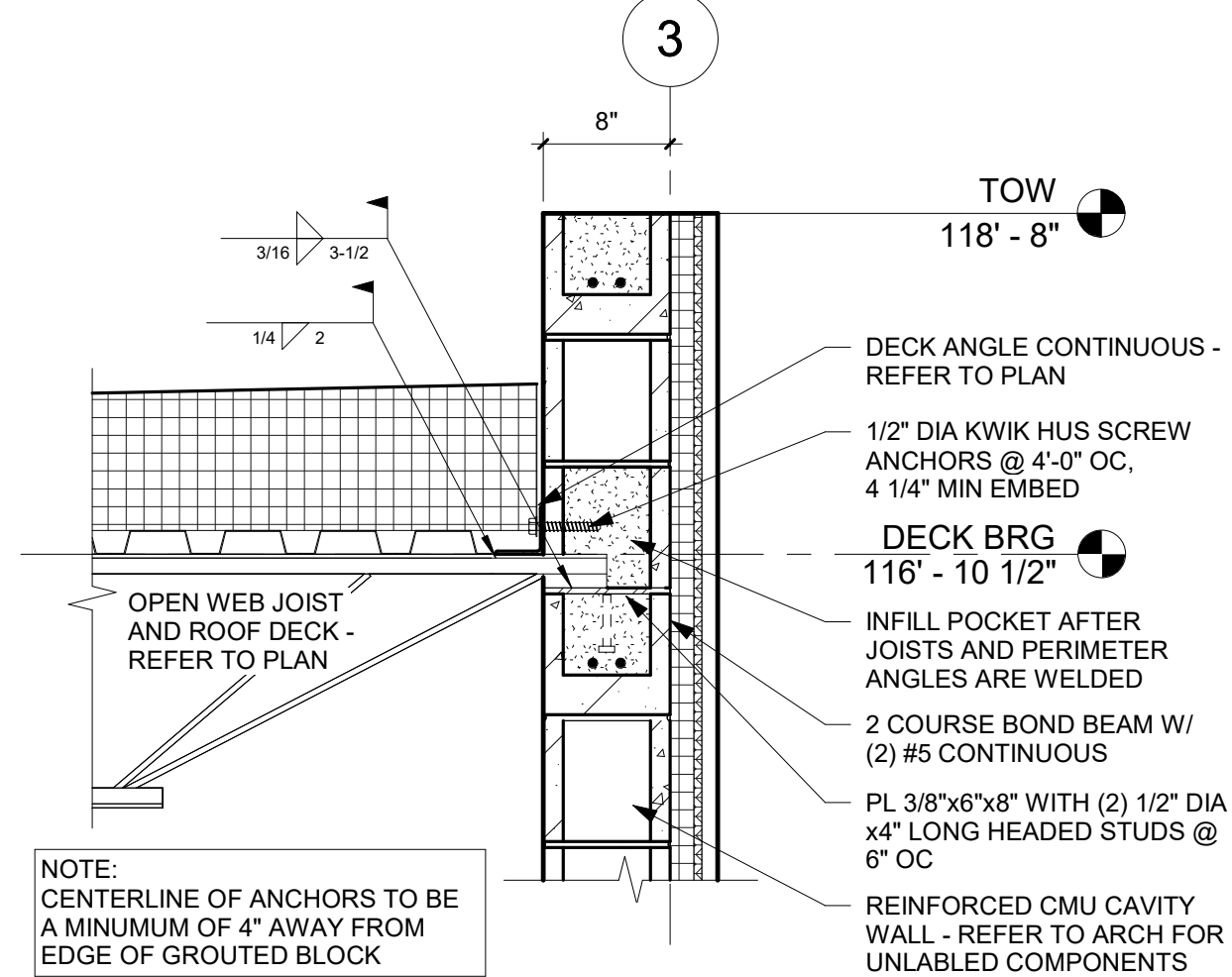
3 BAR JOIST POINT LOAD REINFORCEMENT DETAIL
3/4" = 1'-0"



4 WALL SECTION AT ENTRY
3/4" = 1'-0"



5 DOME CONNECTION AT PARAPET
1" = 1'-0"



6 JOIST BEARING AT CMU
1" = 1'-0"

REFERENCE SCALE
0 1/4" 1/2" 1" 2"

6/13/2024 2:54:10 PM



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	MJT
DESIGNED BY	BCW
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CLIENT PROJECT NO.	

TITLE

ROOF FRAMING PLAN & DETAILS

SHEET

S3-22

TYPICAL ANNOTATIONS

A	- AMPS
ACH	- AIR CHANGES PER HOUR
A.F.F.	- ABOVE FINISH FLOOR
BMS	- BUILDING MANAGEMENT SYSTEM
BOB	- BOTTOM OF BEAM
BOD	- BOTTOM OF DUCT
BOJ	- BOTTOM OF JOIST
BOP	- BOTTOM OF PIPE
BOS	- BOTTOM OF STEEL
BTUH	- BRITISH THERMAL UNITS PER HOUR
CFM	- CUBIC FEET PER MINUTE
CL	- CENTERLINE
DIA	- DIAMETER
DB	- DECIBELS
DDC	- DIRECT DIGITAL CONTROL
DN	- DOWN
EA	- EXHAUST AIR
EAT	- ENTERING AIR TEMPERATURE (°F)
ESP	- EXTERNAL STATIC PRESSURE
EWT	- ENTERING WATER TEMPERATURE (°F)
FDC	- FIRE DEPARTMENT CONNECTION
FLA	- FULL LOAD AMPS
FFM	- FEET PER MINUTE
FT	- FEET
GC	- GENERAL CONTRACTOR
GPM	- GALLONS PER MINUTE
HD	- HEAD
HP	- HORSEPOWER
KW	- KILOWATT
LAT	- LEAVING AIR TEMPERATURE (°F)
LWT	- LEAVING WATER TEMPERATURE (°F)
MBH	- THOUSANDS OF BTUs PER HOUR
MC	- MECHANICAL CONTRACTOR
MCA	- MINIMUM CIRCUIT AMPACITY
MFR	- MANUFACTURER
MOCP	- MAXIMUM OVER CURRENT PROTECTION
N.I.C.	- NOT IN CONTRACT
NC	- NORMALLY CLOSED
NC	- NOISE CRITERIA
NO	- NORMALLY OPEN
OA	- OUTSIDE AIR (UNCONDITIONED)
OCFI	- OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	- OWNER FURNISHED, OWNER INSTALLED
PC	- PLUMBING CONTRACTOR
PD	- PRESSURE DROP (FEET)
PH	- PHASE
PSIA	- POUNDS PER SQUARE INCH, ATMOSPHERIC
PSIG	- POUNDS PER SQUARE INCH, GAUGE
RA	- RETURN AIR
RH	- RELATIVE HUMIDITY
RPM	- REVOLUTIONS PER MINUTE
SA	- SUPPLY AIR
TOB	- TOP OF BEAM
TOD	- TOP OF DUCT
TON	- TON OF COOLING (12,000 BTUH)
TOP	- TOP OF PIPE
TOS	- TOP OF STEEL
TSP	- TOTAL STATIC PRESSURE
TYP.	- TYPICAL
UP	- UP
V/VOLT.	- VOLTAGE
VFD	- VARIABLE FREQUENCY DRIVE
VTR	- VENT THROUGH ROOF

HVAC PIPING LEGEND

-----	HWS	- HYDRONIC WATER SUPPLY
-----	HWR	- HYDRONIC WATER RETURN
-----	STM-L#	- LOW PRESSURE STEAM
-----	CD-L#	- LOW PRESSURE CONDENSATE RETURN
-----	CWS	- CHILLED WATER SUPPLY
-----	CWR	- CHILLED WATER RETURN
-----	CNDS	- CONDENSER WATER SUPPLY
-----	CNDR	- CONDENSER WATER RETURN
-----	IFS	- IN FLOOR HEATING SUPPLY
-----	IFR	- IN FLOOR HEATING RETURN
-----	RS	- REFRIGERATION SUCTION
-----	RL	- REFRIGERATION LIQUID

PLUMBING PIPING LEGEND

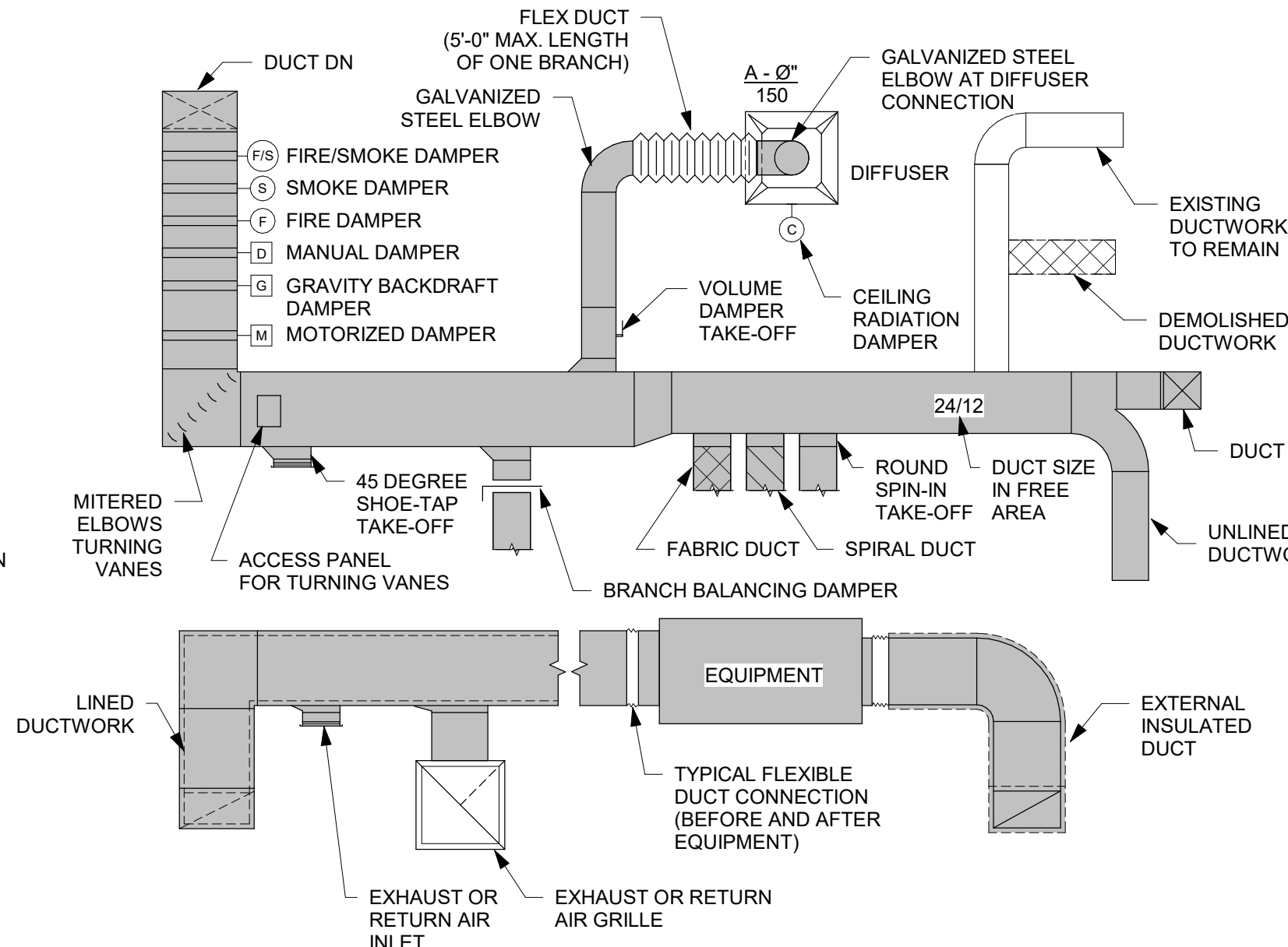
-----	AW	SANITARY ACID WASTE
-----	AV	SANITARY ACID VENT
-----	CA	COMPRESSED AIR
-----	CD	CONDENSATE DRAIN
-----	FP-D	FIRE PROTECTION - DRY
-----	FP-PA	FIRE PROTECTION - PRE-ACTION
-----	FP-W	FIRE PROTECTION - WET
-----	DCW	DOMESTIC COLD WATER
-----	DHW	DOMESTIC HOT WATER
-----	DHWR	DOMESTIC HOT WATER RECIRCULATION
-----	GW	GREASE WASTE
-----	GV	GREASE VENT
-----	FOS	FUEL OIL SUPPLY
-----	FOR	FUEL OIL RETURN
-----	LP	LIQUID PROPANE
-----	NG	NATURAL GAS
-----	ST-O	STORM OVERFLOW
-----	ST-P	STORM PRIMARY
-----	V	VENT
-----	W	SANITARY WASTE

DUCTWORK SYMBOLS

☒	- SUPPLY AIR DUCT UP / DOWN
☒	- RETURN AIR DUCT UP / DOWN
☒	- EXHAUST AIR DUCT UP / DOWN

DUCTWORK LEGEND

XXXX	- RECTANGULAR DUCT SIZE
X"Ø	- ROUND DUCT SIZE
XXXX"Ø	- FLAT OVAL DUCT SIZE



PIPING SYMBOLS

☒	- ISOLATION VALVE
☒	- BALANCING VALVE
☒	- BALL VALVE
☒	- BUTTERFLY VALVE
☒	- CHECK VALVE
☒	- GAS COCK
☒	- GATE VALVE
☒	- GATE VALVE (NORMALLY CLOSED)
☒	- GLOBE VALVE
☒	- GLOBE VALVE (NORMALLY CLOSED)
☒	- NEEDLE VALVE
☒	- NEEDLE VALVE (NORMALLY CLOSED)
☒	- 2 WAY CONTROL VALVE
☒	- 3 WAY CONTROL VALVE
☒	- CLEAN OUT
☒	- FLOOR DRAIN
☒	- FLOOR SINK
☒	- WALL HYDRANT/ HOSE BIBB
☒	- REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
	- UNION
→	- PIPING DROP
→	- INLINE PIPING DROP
→	- PIPING RISE
→	- INLINE PIPING RISE
→	- PIPE CAP
→	- PIPE BREAK
→	- FLEXIBLE CONNECTOR
→	- RELIEF VALVE
☒	- METER
☒	- WALL / END CLEANOUT
☒	- THERMOMETER
☒	- STRAINER
☒	- IN LINE PUMP
☒	- PIPE ANCHOR
☒	- PIPE GUIDE
☒	- STEAM TRAP

SHEET ANNOTATION SYMBOLS

01	- KEYNOTE
01	- REVISION NUMBER
01	- DETAIL NUMBER ON SHEET
01	- SHEET NUMBER
01	- SPOT ELEVATION (BOTTOM OF ELEMENT)

NOTES:

- THIS DRAWING IS FOR INFORMATIONAL PURPOSES ONLY. ITEMS SHOWN ARE NOT NECESSARILY USED ON THIS PROJECT.
- DUCT SIZE: FIRST NUMBER INDICATES DIMENSION OF SIDE SHOWN. THE SECOND NUMBER INDICATES SIDE NOT SHOWN.

PIPING / EQUIPMENT LINE STYLES

---	EXISTING
---	DEMOLISHED
---	NEW

SYMBOL LEGEND

☒	- CONNECT TO EXISTING
☒	- THERMOSTAT
☒	- TEMPERATURE SENSOR (DDC)
☒	- HUMIDITY SENSOR
☒	- DUCT SMOKE DETECTOR
☒	- CARBON MONOXIDE SENSOR
☒	- CARBON DIOXIDE SENSOR
☒	- NITROGEN DIOXIDE SENSOR
☒	- PRESSURE SENSOR

GRILLE, REGISTER, DIFFUSER TAG

☒	- GRILLE, REGISTER, DIFFUSER TYPE
A-XX/XX	- DUCT INLET SIZE
CFM	- DESIGN CFM

PIPING TAGS

---	- NOMINAL PIPE SIZE
##"-XXX	- PIPE SYSTEM ABBREVIATION
##"-XXX (##)	- FIXTURE UNITS / FLOW

GENERAL MECHANICAL / PLUMBING NOTES:

- CONTRACT DOCUMENTS SHALL BE ISSUED TO ALL SUBCONTRACTORS BY THE GENERAL CONTRACTOR IN COMPLETE SETS IN ORDER TO ACHIEVE THE FULL EXTENT AND COMPLETE COORDINATION OF ALL WORK.
- DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONS. WRITTEN DIMENSIONS GOVERN. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE LOCAL, STATE, AND NATIONAL LAWS, CODES, ORDINANCES, AND REGULATIONS, AS WELL AS LOCAL UTILITY REQUIREMENTS. PROVIDE ALL ADDITIONAL ACCESSORIES EQUIPMENT AND OTHER WORK NECESSARY FOR A PROPER AND OPERATIONAL INSTALLATION. TO SATISFY WARRANTY REQUIREMENTS, CODES OR STANDARDS. VERIFY THAT ALL EQUIPMENT PROVIDED IS SUITABLE FOR INTENDED USE. INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- MECHANICAL/PLUMBING DRAWINGS ARE DIAGRAMMATIC IN NATURE. ADDITIONAL OFFSETS, FITTINGS, AND ACCESSORIES MAY BE NEEDED FOR INSTALLATION OF NEW MECHANICAL ELEMENTS. FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH OTHER TRADES, ARCHITECTURAL DRAWINGS, AND STRUCTURAL DRAWINGS.
- WORK NOT SPECIFICALLY SHOWN IN DETAIL, INDICATED BY REFERENCE, OR OTHERWISE IMPLIED, SHALL BE PROVIDED IN ACCORDANCE WITH THE TRADE OR INDUSTRY BEST STANDARD PRACTICE TO PROVIDE A COMPLETE INSTALLATION.
- COORDINATE CLOSELY BETWEEN MECHANICAL AND PLUMBING CONTRACTORS TO UTILIZE THE SAME SUPPORTS WHERE POSSIBLE.
- ALL EQUIPMENT, PIPING, AND DUCTWORK SHALL BE ROUTED TO AVOID CONFLICTS WITH STRUCTURE, OTHER PIPING, ETC. UNLESS SPECIFICALLY DIMENSIONED, THE PIPE AND DUCTWORK SHOWN INDICATES GENERAL LOCATION ONLY. CONTRACTOR SHALL COORDINATE.
- EXISTING CONDITIONS:
 - ALL ITEMS SHOWN ON THE DRAWINGS ARE AS ACCURATE AS COULD BE DETERMINED. THE CONTRACTOR SHALL OBTAIN EXACT LOCATIONS, SIZES, ELEVATIONS, ETC. AND SHALL SATISFACTORILY ADAPT THE NEW WORK TO THE EXISTING SITE CONDITIONS AS REQUIRED.
 - SINGLE LINE (LIGHT GRAY) LINEWORK AS SHOWN REPRESENTS EXISTING FROM PREVIOUS CONSTRUCTION PROJECTS.
 - REPAIR AND RESTORE EXISTING MECHANICAL ELEMENTS WHICH ARE AFFECTED AS PART OF THIS PROJECT. THIS INCLUDES BUT IS NOT LIMITED TOO, PIPING AND DUCTWORK INSULATION, CONTROLS OF EQUIPMENT TO REMAIN IN OPERATION, ETC.
 - ANY EXISTING CONSTRUCTION OR UTILITIES THAT ARE DAMAGED BY THE CONTRACTOR OR SUBCONTRACTORS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST. PATCH AND REPAIR CEILINGS, WALLS AND FLOORS TO MATCH EXISTING ADJACENT SURFACES AFFECTED BY THE NEW WORK. UNLESS OTHERWISE INDICATED, ALL EXISTING UTILITIES TO REMAIN IN PLACE.
 - COORDINATE ALL FLOOR DRAIN LOCATIONS, ELEVATIONS AND FLOOR SLOPES WITH GENERAL CONTRACTOR BEFORE BEGINNING WORK.
 - ALL EQUIPMENT AND MATERIALS MUST BE REMOVED FROM THE JOB SITE UNLESS WANTED FOR SALVAGE BY THE OWNER. OWNER RETAINS THE RIGHT TO KEEP ANY EQUIPMENT/MATERIALS UNTIL REMOVED FROM SITE WITH OWNER'S PERMISSION.
- ANY PAINTED SURFACES AFFECTED BY NEW WORK THAT REQUIRES PATCHING OR REPAIR SHALL BE REPAINTED WITH A MINIMUM OF TWO COATS OF PAINT TO MATCH EXISTING ADJACENT COLOR. THIS WORK BY GENERAL CONTRACTOR.
- OPENINGS:
 - PATCH ALL WALL AND FLOOR OPENINGS LEFT BY ANY REMOVAL OF MECHANICAL ELEMENTS, INCLUDING PIPING AND DUCTWORK. FINISH TO MATCH ADJACENT OR EXISTING.
 - ANY HOLES OR OPENINGS CREATED IN THE ROOFING STRUCTURE AS A RESULT OF DEMOLITION OR NEW WORK SHALL BE PATCHED AND REPAIRED TO PROVIDE A PERMANENT WATERPROOF SEAL USING MATERIALS THAT MATCH ADJACENT EXISTING ROOFING MATERIALS. ALL WORK SHALL COMPLY WITH ANY CURRENT ROOF WARRANTIES.
 - PROVIDE CONTINUOUS SEALANT AROUND ALL MATERIALS AT EXTERIOR WALL PENETRATIONS. SEAL ALL OPENINGS IN WALLS, FLOORS, CEILINGS AND ROOFS AROUND DUCTS, PIPES, VENTS, TRAPS, CONDUIT AND ALL OTHER PENETRATIONS WITH FIRESTOPPING AS SPECIFIED AND REQUIRED BY ALL APPLICABLE CODES.
 - MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL SLEEVES AND/OR OPENINGS WHERE REQUIRED TO RUN NEW PIPING, DUCTWORK, OR OTHER MECHANICAL ELEMENTS. EXCEPT WHERE OTHERWISE INDICATED, PENETRATION SEALANT RATING SHALL MATCH STRUCTURE RATING. COORDINATE WITH GENERAL CONTRACTOR TO REPAIR/RESTORE AFFECTED OCCUPIED SPACE WALLS, FLOORS, AND CEILINGS TO MATCH EXISTING.
 - OPENINGS FOR DUCTWORK THROUGH WALLS AND FLOORS SHALL BE NEATLY SAW-CUT WITH A MAXIMUM OVER CUT OF 1" AROUND REQUIRED DUCT OPENINGS. REPAIR ALL AREAS AROUND PENETRATIONS WITH BACK-UP WALL AND FINISH TO MATCH EXISTING. DO NOT REDUCE INSULATION THICKNESS WHERE DUCT PASSES THROUGH OPENINGS.
 - WHERE OPENINGS ARE CUT THRU WALL PROVIDE STEEL ANGLE REINFORCING TO STABILIZE THE STRUCTURE.
 - OPENINGS FOR PIPING AND ROUND DUCT THROUGH WALLS AND FLOORS SHALL BE NEATLY CORE-DRILLED LARGE ENOUGH FOR INSULATION TO PASS THROUGH. SLEEVED AND GROUTED. PROVIDE FIRE CAULKING AND/OR F.S. DAMPERS AT RATED FLOORS AND WALLS.
- AREAS WITH EXPOSED MECHANICAL SYSTEMS SHALL BE PAINTED TO MATCH SURROUNDING CEILING, JOIST, AND DUCTWORK PAINT. CLEAN SURFACES THOROUGHLY AND CORRECT DEFECTS PRIOR TO COATING APPLICATION. REMOVE UNFINISHED LOUVERS, GRILLES, COVERS, AND ACCESS PANELS ON MECHANICAL AND ELECTRICAL COMPONENTS AND PAINT SEPARATELY. APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REINSTALL ELECTRICAL COVER PLATES, HARDWARE, LIGHT FIXTURE TRIM, ESCUTCHEONS, AND FITTINGS REMOVED PRIOR TO FINISHING.
- PIPING:
 - ROUTE PIPING IN ORDERLY MANNER AND MAINTAIN GRADIENT. ROUTE PARALLEL AND PERPENDICULAR TO WALLS. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE. JOINTS, OR CONNECTED EQUIPMENT. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED. INSULATE PIPES CONVEYING FLUIDS BELOW AMBIENT TEMPERATURE. INSULATE ENTIRE SYSTEM INCLUDING FITTINGS, VALVES, UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, PUMP BODIES, AND EXPANSION JOINTS. CONTINUE INSULATION THROUGH WALLS, SLEEVES, PIPE HANGERS, AND OTHER PIPE PENETRATIONS.
 - PIPING ABOVE SUSPENDED CEILINGS SHALL BE INSTALLED A MINIMUM OF 6" ABOVE THE CEILING LEVEL.
 - PIPING SIZES TO EQUIPMENT, AND EQUIPMENT SUPPORTS SHALL BE VERIFIED AND ADJUSTED TO MATCH THE ACTUAL EQUIPMENT PROVIDED.
 - ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
- DUCTWORK:
 - INSTALL SUPPORT, AND SEAL DUCTS IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. FLEXIBLE DUCTS: CONNECT TO METAL DUCTS WITH LIQUID ADHESIVE PLUS TAPE. VERIFY THAT DUCTS HAVE BEEN TESTED BEFORE APPLYING INSULATION MATERIALS.
 - PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AT FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS, AND ELSEWHERE AS INDICATED.
 - AT FANS AND MOTORIZED EQUIPMENT ASSOCIATED WITH DUCTS, PROVIDE FLEXIBLE DUCT CONNECTIONS IMMEDIATELY ADJACENT TO THE EQUIPMENT.
 - PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFF TO DIFFUSERS, GRILLES, AND REGISTERS. REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE, OR REGISTER ASSEMBLY. PROVIDE ADDITIONAL BALANCING DAMPERS WHERE NECESSARY TO BALANCE DIFFUSER AIR FLOWS.
 - PROVIDE PHASING SCHEDULE TO OWNERS SHOWING AREAS OF WORK AND HVAC INTERRUPTIONS TO MINIMIZE DOWNTIME.
- SEAL AND FIRE CAULK ALL PENETRATIONS AS NECESSARY TO MAINTAIN FIRE RATING.
- ALL FIELD CHANGES ARE TO BE PRE-APPROVED.
- ALL TRADES SHALL HAVE PRE-WORK CONFERENCE AND COORDINATION TO SCHEDULE WORK, PLAN WORK, DETAIL WORK TO PROVIDE CLEAN, COMPACT, AND THOUGHTFUL CONSIDERED LAYOUT OF EQUIPMENT, DUCT, CONDUIT, PIPE, ETC.



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PROJECT

MUSCATINE
INDOOR SPORTS
COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	CCH
DESIGNED BY	MGC
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	06/13/24

CLIENT PROJECT NO.

TITLE

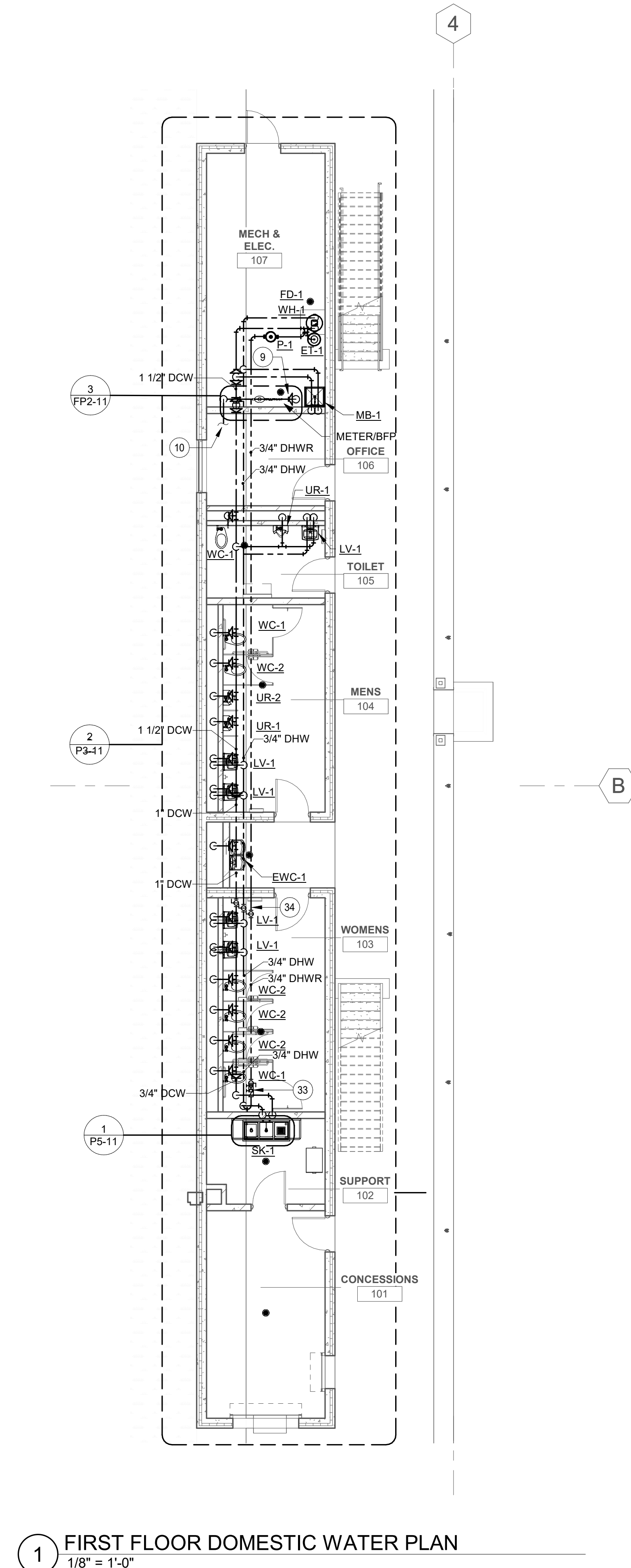
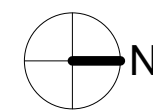
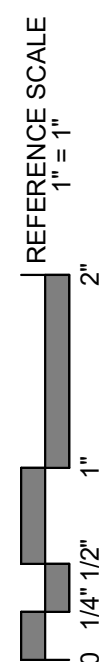
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SYMBOLS /
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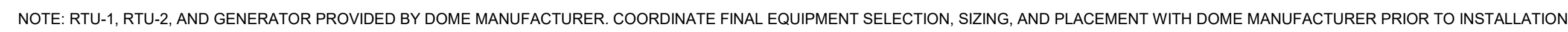
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P2-10

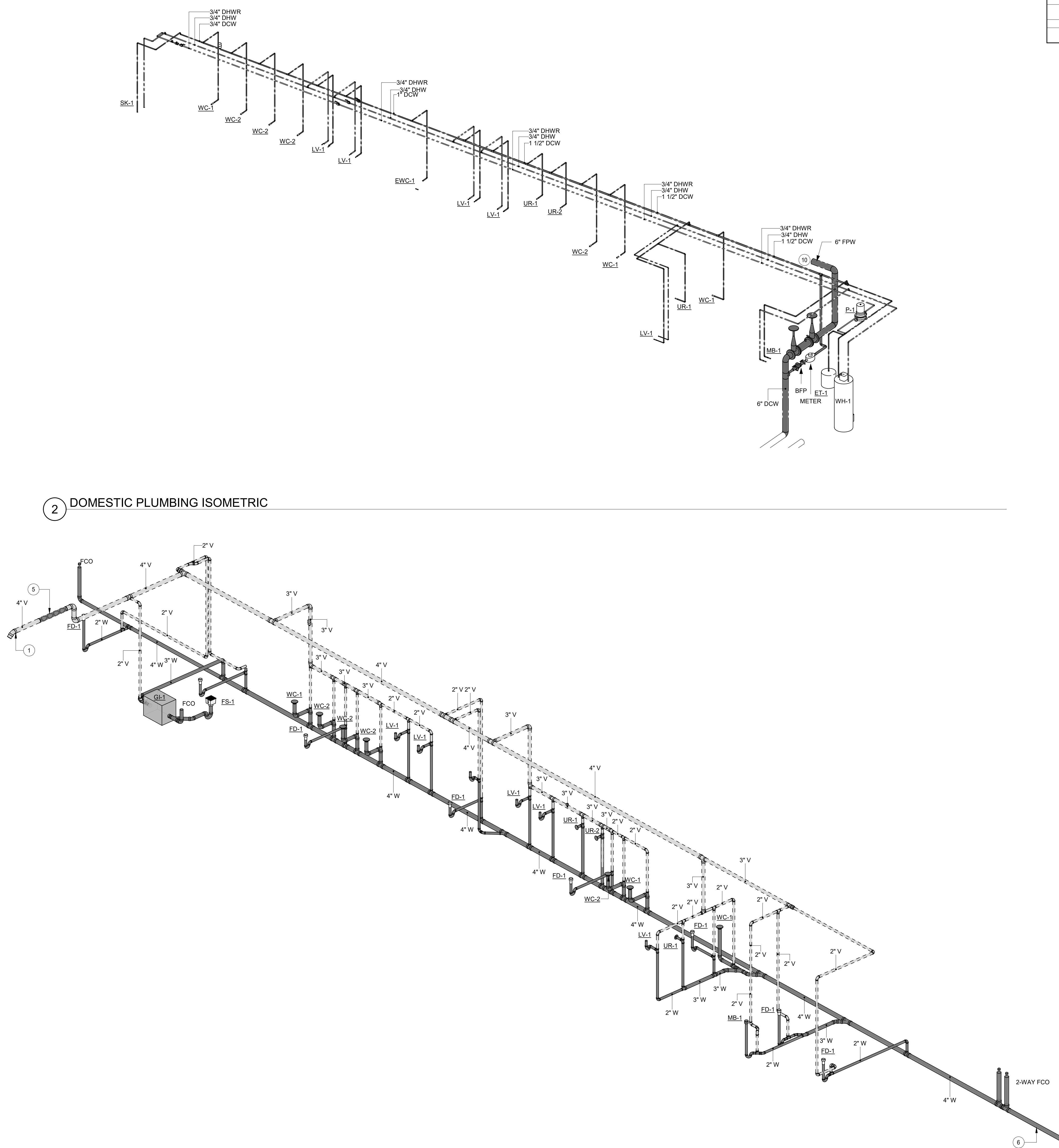




4



P2-12



1 SANITARY AND VENT ISOMETRIC

2 DOMESTIC PLUMBING ISOMETRIC

KEYNOTE LEGEND

1	4" SANITARY VENT. COORDINATE WITH DOME MFG. FOR FINAL VENT TERMINATION LOCATION AND DETAILS FOR PENETRATION. TERMINATE A MIN. 10'-0" ABOVE FINISHED GRADE.
5	4" FLEXIBLE VENT PIPING. REFER TO MFG. FOR FLEX PIPING REQUIREMENTS, SIZING AND ROUTING.
6	4" SANITARY WASTE. SEE FLOOR PLAN FOR CONTINUATION.
10	REFER TO FIRE SUPPRESSION CONTRACTOR FOR FINAL FIRE SUPPRESSION DESIGN AND LAYOUT.



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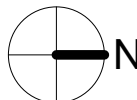
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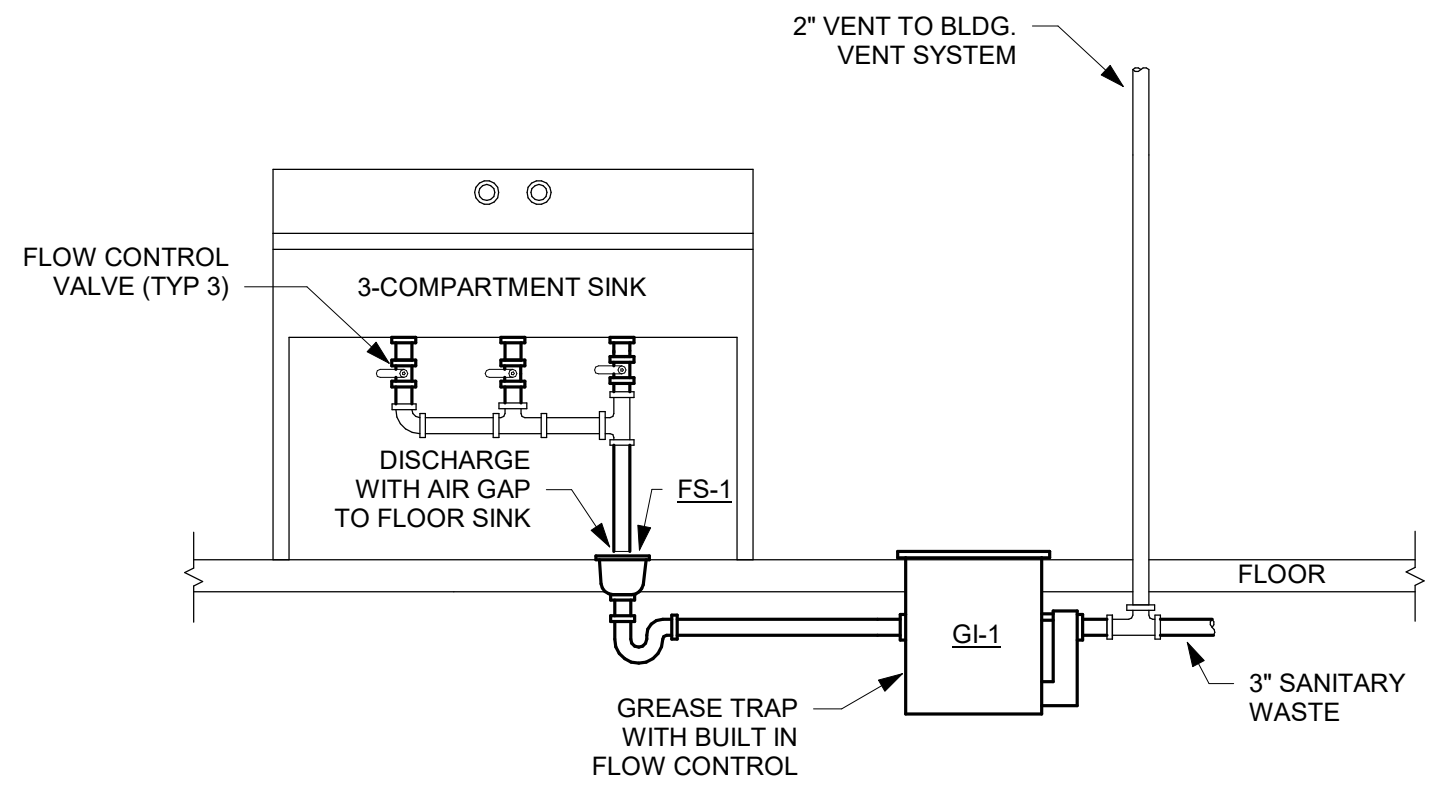
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SUPPORT
BUILDING
PLUMBING
ISOMETRICS

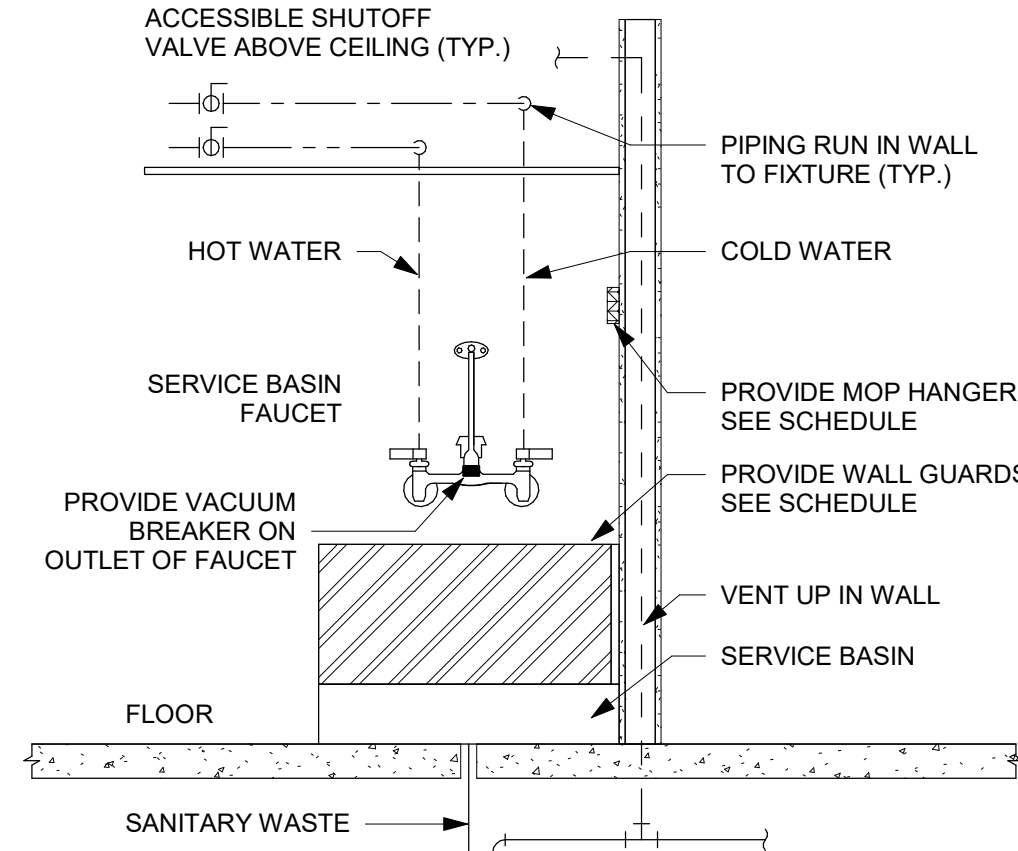
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P3-11

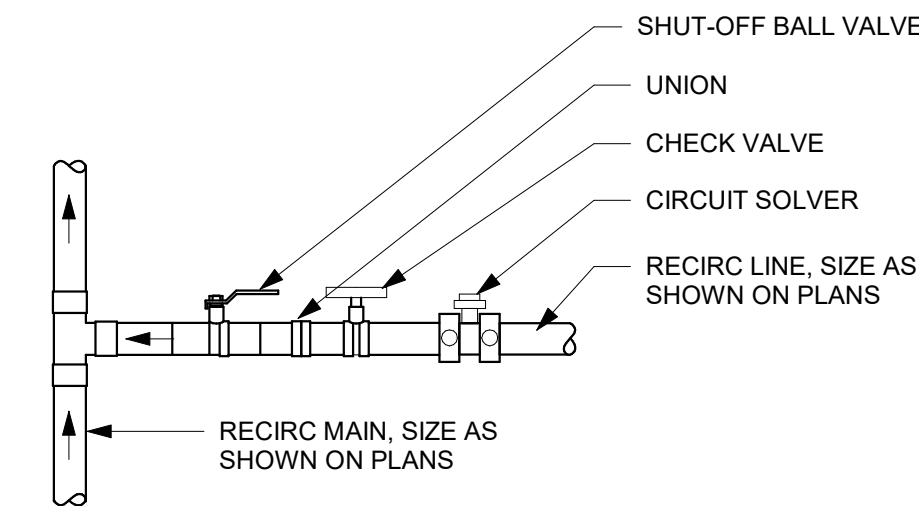




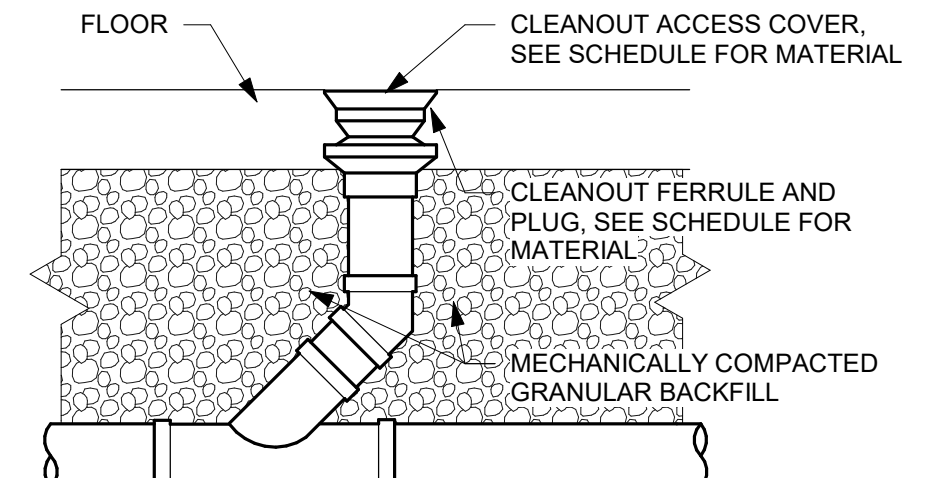
1 THREE COMPARTMENT SINK DETAIL
NOT TO SCALE



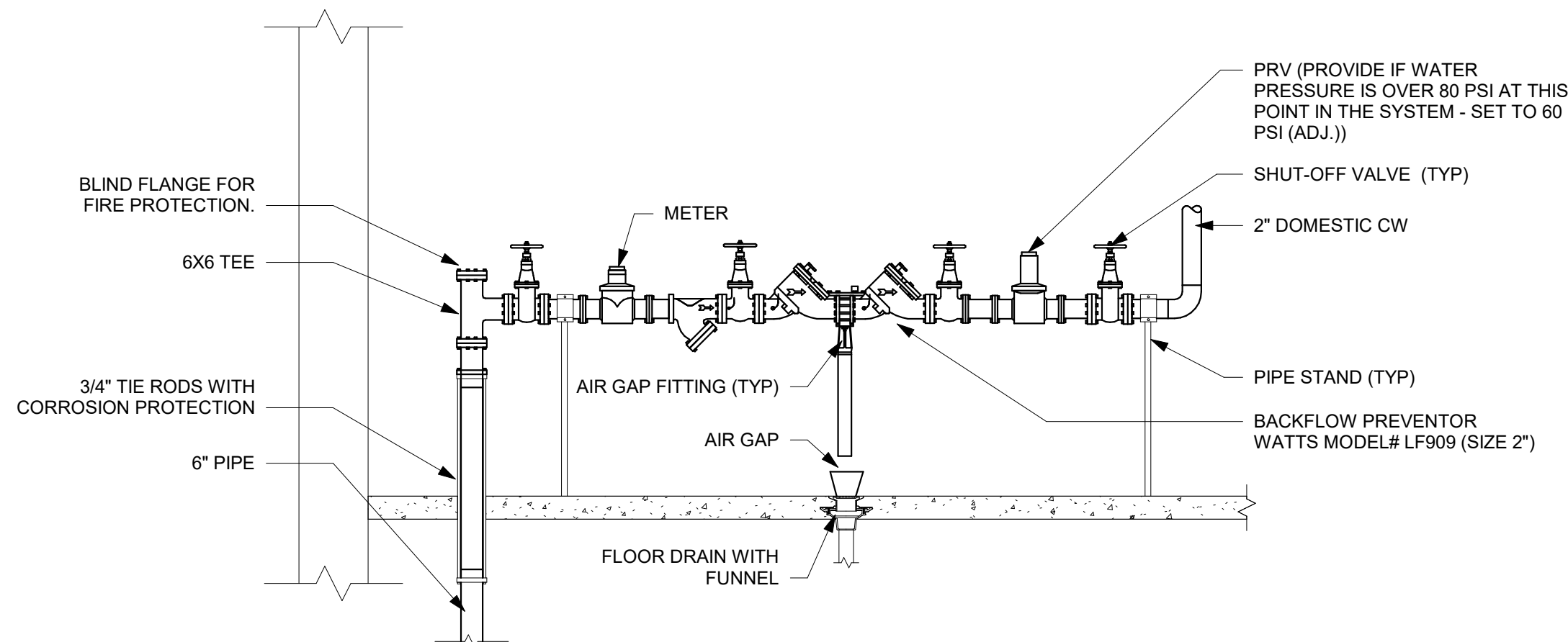
2 SERVICE BASIN PIPING DETAIL
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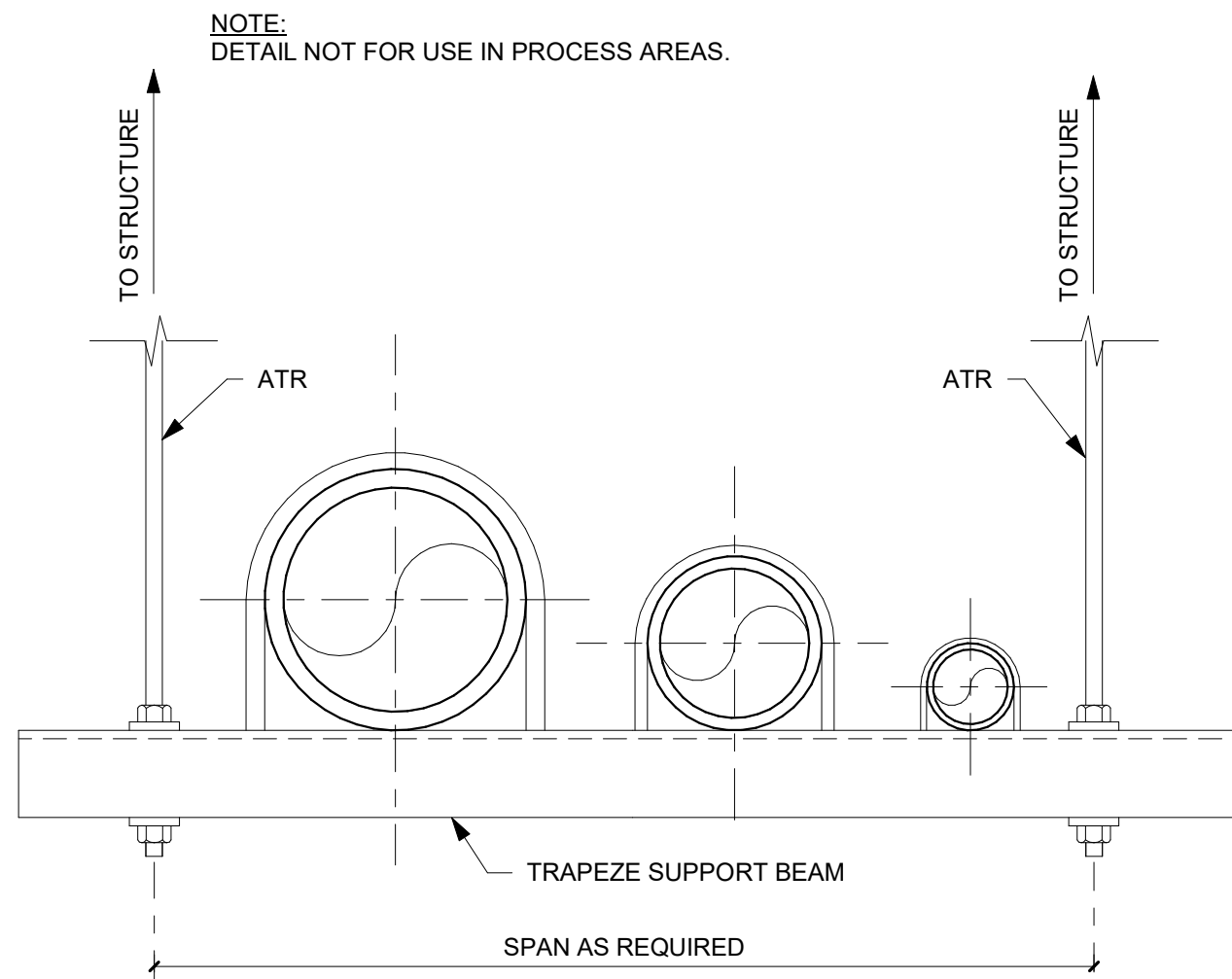
3 RECIRC VALVE DETAIL
NOT TO SCALE



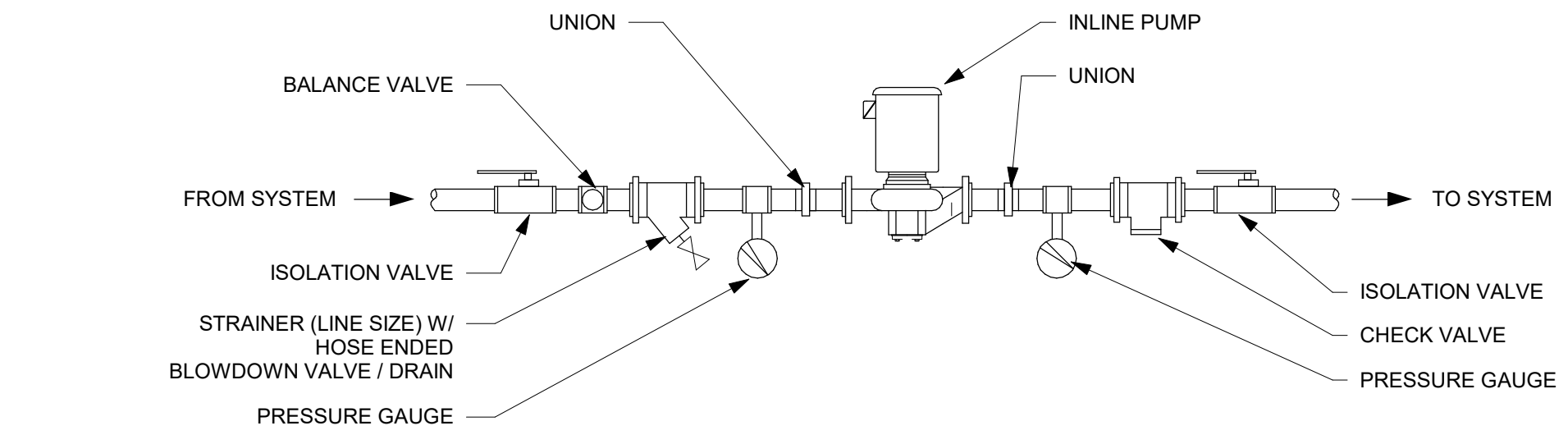
4 CLEANOUT DETAIL
NOT TO SCALE



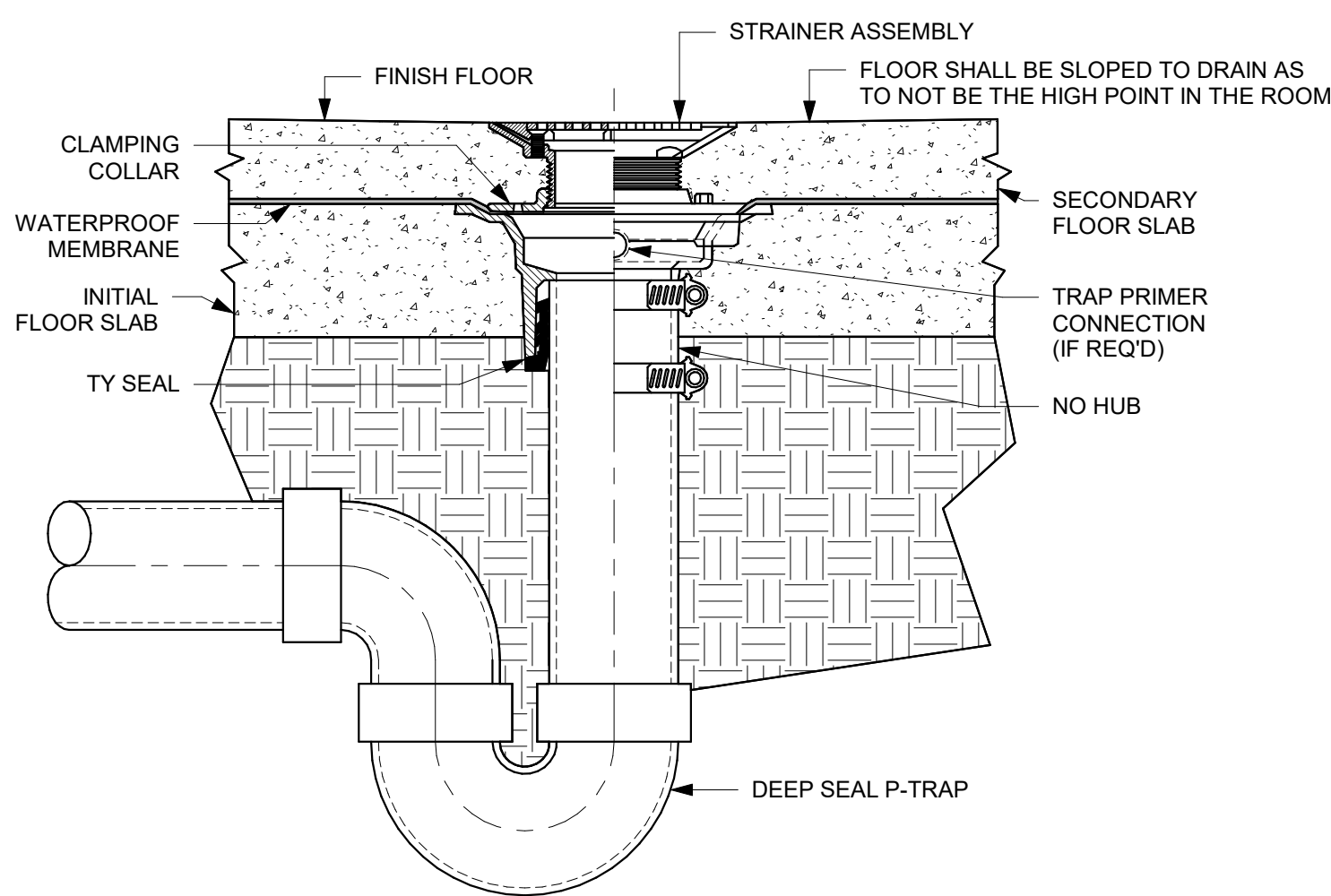
5 DOMESTIC WATER SERVICE ENTRANCE DETAIL
NOT TO SCALE



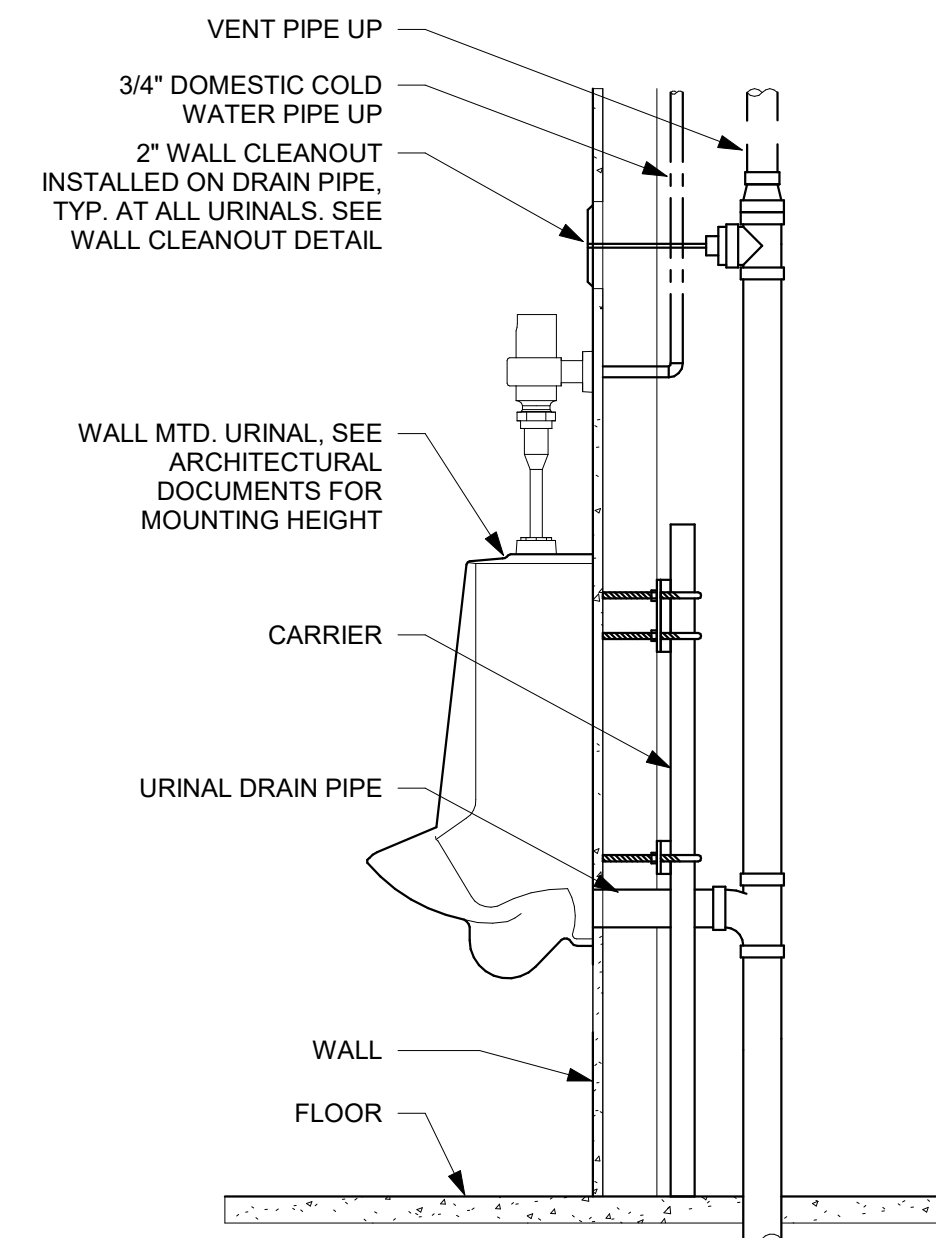
6 TYPICAL TRAPEZE HANGER
NOT TO SCALE



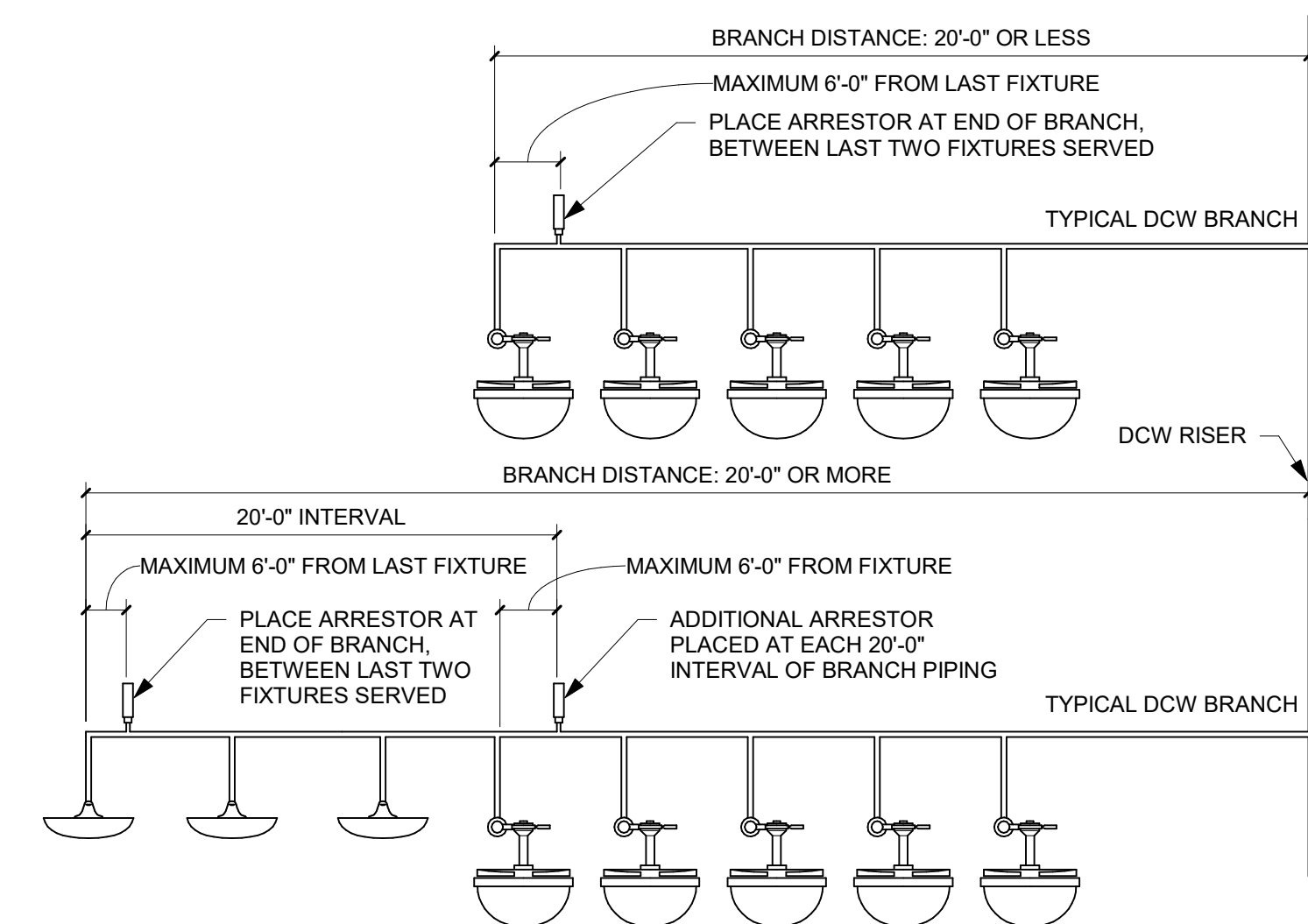
7 RECIRCULATOR PUMP DETAIL
NOT TO SCALE



8 TYPICAL FLOOR DRAIN DETAIL
NOT TO SCALE



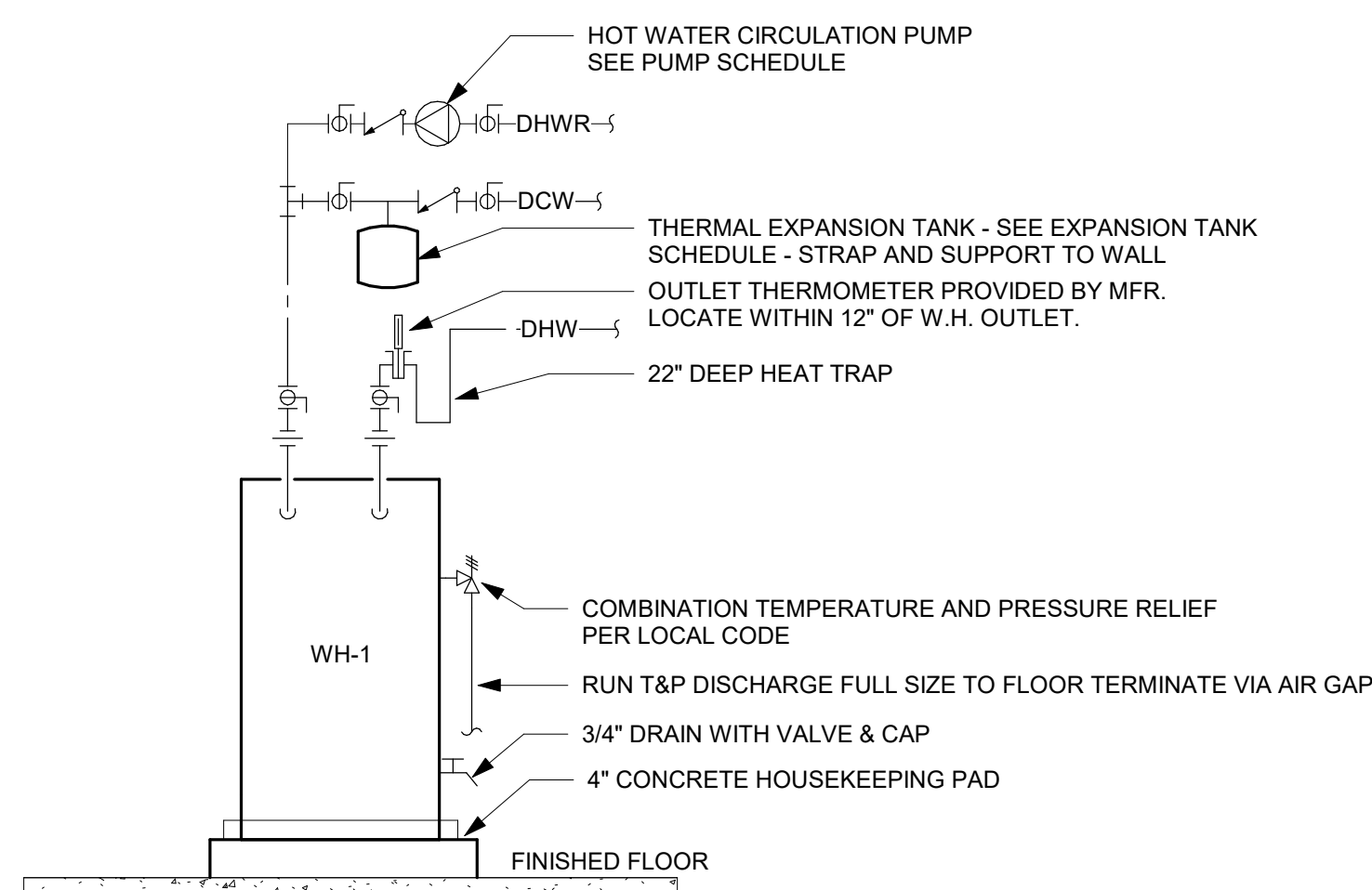
9 URINAL INSTALLATION DETAIL - TYPICAL
NOT TO SCALE



WATER HAMMER ARRESTOR CAPACITIES						
ARRESTOR SIZE	AA	A	B	C	D	E
FIXTURE UNITS	1-4	5-11	12-32	33-60	61-113	114-154
						155-330

NOTE: ARRESTOR CAPACITIES BASED ON SIOUX CHIEF MODELS. VERIFY EQUIVALENT ARRESTOR'S FIXTURE UNIT CAPACITY IF USING DIFFERENT MANUFACTURER.

10 WATER HAMMER ARRESTOR PLACEMENT DETAIL
NOT TO SCALE



11 FLOOR MOUNT WATER HEATER DETAIL
NOT TO SCALE

REFERENCE SCALE
1" = 1'-0"
0 1/4" 1/2" 1" 2"

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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	23-29721
FILE NAME	29721 Arch R22
DRAWN BY	CCH
DESIGNED BY	MGC
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	06/13/24

CLIENT PROJECT NO.

TITLE

PLUMBING DETAILS

SHEET

P5-11

PLUMBING FIXTURE SCHEDULE												
FIXTURE	MFG	MODEL	FINISH / COLOR	TRIM			WASTE	VENT	COLD WATER	HOT WATER	NOTES	
				MFG	MODEL	TYPE						
EW-C-1	ELKAY	LZSTL8WSLK	LIGHT GREY				2"	2"	1/2"		FIXTURE: TWO STATION, LIGHT GREY GRANITE FINISH HI-LO DRINKING FOUNTAIN WITH INTEGRAL SENSOR OPERATED BOTTLE FILLER, MECHANICALLY ACTIVATED FLEXIBLE SAFETY BUBBLER, INTEGRAL 8 GPH, R-134a HERMETICALLY SEALED COMPRESSOR WITH FAN COOLED CONDENSER, ACCESS PANEL, MOUNT TO MEET ADA ACCESS REQUIREMENTS. FILTER: 3000 GAL NSF 42 AND NSF 53 CERTIFIED FILTER WITH VISUAL FILTER MONITOR. WASTE: 1 1/4" PVC ADJUSTABLE P-TRAP	
FCO	WADE	6000 SERIES					2"				FIXTURE: CAST IRON, ADJUSTABLE, THREADED ABS PLUG, SECURED NICKEL BRONZE TOP, FURNISH DIMENSIONED RECORD DRAWING TO OWNER FOR FINAL LOCATIONS. PROVIDE EXTRA HEAVY-DUTY FLOOR CLEANOUT COVER FOR CLEANOUTS LOCATED IN MECHANICAL SPACES. FLOOR CLEANOUTS SHALL BE SIZED PER PLANS.	
FD-1	WADE	1100 SERIES	NICKEL BRONZE	WADE	TYPE 'A'	ROUND GRID TOP	2"				FIXTURE: 5" ROUND NICKEL BRONZE STRAINER, VANDAL PROOF SCREWS, CAST IRON BODY, AND DEEP SEAL P-TRAP. INSTALL UNIT FLUSH WITH FINISHED FLOOR. FLOOR DRAIN PIPE SIZES SHALL BE SIZED PER PLANS.	
FS-1	ZURN	Z1910									FIXTURE: 12"x12"x8" DEEP, CAST IRON BODY, WHITE ACID RESISTING PORCELAIN ENAMEL INTERIOR AND TOP, ABS ANTI-SPLASH INTERIOR BOTTOM DOME STRAINER, 1/2 GRATE, AND DEEP SEAL P-TRAP. FLOOR SINK PIPE SIZES SHALL BE SIZED PER PLANS.	
GI-1	ZURN	Z-1170-600									INTERCEPTOR: ACID RESISTANT COATED INTERIOR AND EXTERIOR FABRICATED STEEL GREASE INTERCEPTOR, PDI, RATED AT 25 GPM AND 50 LBS. GREASE CAPACITY, WITH INTERNAL AIR RELIEF BY-PASS, BRONZE CLEANOUT PLUG, REMOVABLE PRESSURE EQUALIZING FLOW DIFFUSING INLET BAFFLE, FIXED BOTTOM OUTLET BAFFLE, AND VISIBLE DOUBLE WALL TRAP SEAL, GASKETED NON-SKID SECURED COVER COMPLETE WITH CENTER TIE DOWN ASSEMBLY, WITH Z1108 FLOW CONTROL FITTING, REGULARLY FURNISHED WITH A HIGH INLET AND OUTLET CONNECTION. NOTE: LOCATION OF OUTLET FROM BOTTOM OF INTERCEPTOR CANNOT BE CHANGED.	
LV-1	KOHLER	K-2032	WHITE	SLOAN	ETF-600	HARDWIRED SENSOR FAUCET	2"	2"	1/2"	1/2"	FIXTURE: WALL HUNG LAVATORY, WHITE VITREOUS CHINA, FAUCET LEDGE, BACK OVERFLOW, 3 FAUCET HOLES ON 2" CENTERS, NOMINAL 20"x18", SOAP DEPRESSION, CONCEALED ARM SUPPORT, MOUNT TOP OF BASIN AT 34" AFF FAUCET: INFRARED SENSOR OPERATED FAUCET, 0.5 GPM, LAMINAR FLOW, 3 HOLE ON 4" CENTERS, CHROME PLATED, PLUG ADAPTER POWER SUPPLY, PROVIDE 1/2" CHROME PLATED ANGLE STOPS WITH WHEEL HANDLE AND FLEXIBLE RISERS. COORDINATE GFCI OUTLET WITH ELECTRICAL CONTRACTOR FOR FAUCET PLUG PER MANUFACTURER'S RECOMMENDATIONS. ELECTRICAL REQUIREMENTS SHALL BE 120V/1P AND 12 AMPS. WASTE: CHROME PLATED WHEELCHAIR LAVATORY GRID DRAIN FOR 1 1/2" HOLE SIZE, 17 GAUGE - 1 1/4" CHROME PLATED BRASS ADJUSTABLE P-TRAP AND WASTE-TO-WALL, OFFSET DRAIN PIPING ASSEMBLY FOR WHEELCHAIR ACCESS. PROVIDE WHITE PREFABRICATED VINYL COVER FOR WATER SUPPLY LINES AND WASTE (TRUEBRO OR EQUIVALENT). MIXING VALVE: POWERS, HYDROGUARD LFLM495 SERIES LEAD FREE THERMOSTATIC MIXING VALVE, ASSE 1070 COMPLIANT, MOUNT UNDER THE FIXTURE, 1/2" INLETS AND OUTLET, SET VALVE TO DELIVER 105 DEG WATER TO SOLENOID VALVE FOR ELECTRONIC FAUCET. CARRIER: CONCEALED ARM / THIN PLATE SYSTEM, CAST IRON.	
MB-1	MUSTEE	63M	WHITE	CHICAGO	897-CP	WALL MOUNT FAUCET	2"	1 1/2"	3/4"	3/4"	FIXTURE: MOLDED STONE MOP SERVICE BASIN, 24"x24"x10" HIGH, CORNER INSTALLATION, VINYL BUMPER GUARDS, STAINLESS STEEL WALL GUARDS ON TWO SIDES. FAUCET: WALL MOUNTED SERVICE SINK FAUCET, CERAMIC CARTRIDGES, 4" WRISTBLADE HANDLES, 1/2" INLETS ON 8" CENTERS, CONCEALED PIPING, STATIONARY SPOUT WITH VACUUM BREAKER AND 3/4" HOSE THREAD OUTLET, WALL BRACE, BUCKET HOOK, CHROME PLATED, MOUNT SPOUT AT 36" AFF ACCESSORIES: 30' LONG RUBBER HOSE WITH HOSE BRACKET AND RUBBER GRIP, STAINLESS STEEL MOP HANGER AND THREE RUBBER TOOL GRIPS WASTE: DRAIN BODY SHALL BE FACTORY INSTALLED, STAINLESS STEEL FLAT STRAINER, NEOPRENE CONNECTING GASKET FOR 3" WASTE CONNECTION, DEEP SEAL CAST IRON P-TRAP.	
SK-1	Elkay	E3C16X20-0X									FIXTURE: THREE COMPARTMENT SINK WITH 18" LEFT AND RIGHT DRAINBOARDS ON STAINLESS STEEL LEGS, 16 GAUGE, 300 STAINLESS STEEL, NOMINAL 88"x25-13/16" OVERALL WITH 16"x20"x14" DEEP BOWLS, 3 1/2" CENTER DRAIN OPENING, 2 FAUCET HOLES ON 8" CENTERS, SATIN FINISH. FAUCET: WALL MOUNTED SINK FAUCET, 2.2 GPM, CERAMIC CARTRIDGES, 4" WRISTBLADE HANDLES, 1/2" INLETS ON 8" CENTERS, CONCEALED PIPING, 12" L-TYPE SWING SPOUT, CHROME PLATED. WASTE: CHROME PLATED STRAINER, TWIST DRAIN CONTROL VALVE, ONE TWIST DRAIN PER COMPARTMENT, PIPE TOGETHER EACH COMPARTMENT AND DISCHARGE TO FLOOR SINK VIA AIR GAP. MIXING VALVE: POWERS, HYDROGUARD LFLM495 SERIES LEAD FREE THERMOSTATIC MIXING VALVE, MOUNT UNDER THE FIXTURE, 1/2" INLETS AND OUTLET, SET VALVE TO DELIVER 110 DEG (ADJ.) WATER TO HOT WATER SIDE OF MANUAL FAUCET.	
UR-1	KOHLER	K-4991-ETSS-0	WHITE	SLOAN	186 ESS	AUTOFLUSH VALVE	2"	1 1/2"	3/4"		FIXTURE: ADA, WALL MOUNT VITREOUS CHINA URINAL, 0.125 GPF, 3/4" TOP SPUD, WASHOUT. SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS. FLUSH VALVE: EXPOSED, DIAPHRAGM VALVE, POLISHED CHROME FINISH, 11 1/2" ROUGH-IN, 3/4" VANDAL RESISTANT ANGLE STOP, VACUUM BREAKER, TRUE MECHANICAL OVERRIDE, CONNECT TO ADJACENT WATER CLOSET TRANSFORMER, PROVIDE ESCUTCHEONS WHERE POWER SUPPLY AND PIPE EXITS WALL. WASTE: URINAL CARRIER JAY R. SMITH MODEL #0636, PROVIDE WALL CLEANOUT ABOVE FIXTURE WASTE CONNECTION.	
UR-2	KOHLER	K-4991-ETSS-0	WHITE	SLOAN	186 ESS	AUTOFLUSH VALVE	2"	1 1/2"	3/4"		FIXTURE: WALL MOUNT VITREOUS CHINA URINAL, 0.125 GPF, 3/4" TOP SPUD, WASHOUT. SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS. FLUSH VALVE: EXPOSED, DIAPHRAGM VALVE, POLISHED CHROME FINISH, 11 1/2" ROUGH-IN, 3/4" VANDAL RESISTANT ANGLE STOP, VACUUM BREAKER, TRUE MECHANICAL OVERRIDE, CONNECT TO ADJACENT WATER CLOSET TRANSFORMER, PROVIDE ESCUTCHEONS WHERE POWER SUPPLY AND PIPE EXITS WALL. WASTE: URINAL CARRIER JAY R. SMITH MODEL #0636, PROVIDE WALL CLEANOUT ABOVE FIXTURE WASTE CONNECTION.	
WC-1	KOHLER	K-96057	WHITE	SLOAN	111	AUTOFLUSH VALVE	3"	2"	1"		FIXTURE: ADA, 16 1/2" HIGH FLOOR MOUNT, BOTTOM OUTLET EVERCLEAN VITREOUS CHINA, ELONGATED BOWL WATER CLOSET, SIPHON JET, 1.28 GPF, 1 1/2" TOP SPUD, 10" ROUGH-IN FROM WALL. FLUSH VALVE: EXPOSED, DIAPHRAGM VALVE, POLISHED CHROME FINISH, 11 1/2" ROUGH-IN, 1" VANDAL RESISTANT ANGLE STOP, VACUUM BREAKER, TRUE MECHANICAL OVERRIDE, PROVIDE COMPATIBLE SLOAN TRANSFORMER (120V TO 24VAC, 48 VA) WITH MOUNTING PLATE (SERVES UP TO 10 URINAL/CLOSET UNITS), MOUNT TRANSFORMER IN ACCESSIBLE LOCATION. PROVIDE ESCUTCHEONS WHERE POWER SUPPLY AND PIPE EXITS WALL. SEAT: HEAVY DUTY ELONGATED WHITE OPEN FRONT PLASTIC SEAT WITH STAINLESS-STEEL SELF-SUSTAINING CHECK HINGES, CHURCH 9500C OR EQUIVALENT.	
WC-2	KOHLER	K-96053	WHITE	SLOAN	111	AUTOFLUSH VALVE	3"	2"	1"		FIXTURE: 15" HIGH FLOOR MOUNT, BOTTOM OUTLET EVERCLEAN VITREOUS CHINA, ELONGATED BOWL WATER CLOSET, SIPHON JET, 1.28 GPF, 1 1/2" TOP SPUD, 10" ROUGH-IN FROM WALL. FLUSH VALVE: EXPOSED, DIAPHRAGM VALVE, POLISHED CHROME FINISH, 11 1/2" ROUGH-IN, 1" VANDAL RESISTANT ANGLE STOP, VACUUM BREAKER, TRUE MECHANICAL OVERRIDE, PROVIDE COMPATIBLE SLOAN TRANSFORMER (120V TO 24VAC, 48 VA) WITH MOUNTING PLATE (SERVES UP TO 10 URINAL/CLOSET UNITS), MOUNT TRANSFORMER IN ACCESSIBLE LOCATION. PROVIDE ESCUTCHEONS WHERE POWER SUPPLY AND PIPE EXITS WALL. SEAT: HEAVY DUTY ELONGATED WHITE OPEN FRONT PLASTIC SEAT WITH STAINLESS-STEEL SELF-SUSTAINING CHECK HINGES, CHURCH 9500C OR EQUIVALENT.	
WCO	ZURN	6000 SERIES					2"				FIXTURE: ROUND STAINLESS-STEEL WALL COVER WITH CENTER SCREW, CAST IRON HUB AND SPIGOT CLEANOUT TEE, RECESSED BRONZE TAPPED PLUG	
WHA	SIOUX CHIEF	HYDRARESTER									FIXTURE: PISTON TYPE ARRESTER, TYPE L COPPER CHAMBER WITH PERMANENT 60 PSI AIR CHARGE ABOVE A TWO ORING PISTON, CERTIFIED TO FUNCTION IN ACCORDANCE WITH STANDARDS, PDI-WH201 AND ASSE-1010	

ELECTRIC WATER HEATER SCHEDULE												
NOTES: 1. INSTALL UNIT PER MANUFACTURER'S INSTRUCTIONS ON 4" HOUSEKEEPING PAD. 2. ELECTRICAL DISCONNECT PROVIDED BY ELECTRICAL CONTRACTOR. COORDINATE WITH ELECTRICAL CONTRACTOR. 3. PROVIDE ASME RATED TEMPERATURE AND RELIEF VALVE. ROUTE VALVE DISCHARGE TO FLOOR DRAIN AND TERMINATE WITH AIR GAP. 4. SET STORAGE WATER TEMP TO 140°F (ADJ.).												
MARK	MFG	MODEL	TEMPERAT URE RISE (°F)	STORAGE VOLUME (GAL)	RECOVERY RATE (GPH)	# OF ELEMENTS	ELECTRICAL ELEMENT SIZE (KW)	SIMULTANE OUS OPERATION	PIPING CONNECTIONS		ELECTRICAL VOLTAGE / PH.	NOTES
WH-1	AO SMITH	DEN-80	100	76	24	2	3	YES	3/4"	3/4"	277 / 1	1,2,3,4

HOT WATER RECIRCULATING PUMP SCHEDULE													
NOTES: 1. PUMP SHALL CONTAIN NO LEAD AND BE RATED FOR POTABLE WATER APPLICATIONS. 2. PROVIDE AQUASTAT AND PROGRAMMABLE TIMER, CONTROL PUMP VIA SETPOINT TEMPERATURE CONTROL STRATEGY TO MAINTAIN A 110°F (ADJ.) RETURN TEMPERATURE IN THE HOT WATER RECIRCULATION LOOP DURING OCCUPIED HOURS. 3. DISCONNECT BY ELECTRICAL CONTRACTOR, COORDINATE WITH ELECTRICAL CONTRACTOR.													
MARK	MFG	MODEL	LOCATION	PUMP CONSTRUCTION	CONNECTION SIZE	FLOW (GPM)		HEAD LOSS (ft H2O)		ELECTRICAL DATA			NOTES
P-1	TACO	006	MECH/ELEC 107	STAINLESS STEEL	3/4"	MAX	DESIGN	MAX	DESIGN	HP	VOLT / PH.	AMPS	
						11	2.8	9.5	5.6	1/40	120/1	0.52	1,2,3

EXPANSION TANK SCHEDULE									
NOTES: 1. PROVIDE SUPPORT FOR EXPANSION TANK TO ATTACH TO WALL. SEE PLANS FOR LOCATION.									
MARK	MFG	MODEL	LOCATION	TANK VOL.	WEIGHT (LBS)	FITTING SIZE	DIAMETER	HEIGHT	NOTES
ET-1	AMTROL	ST-12C-DD	MECH/ELEC 107	6.4	26	3/4	12"	18"	1



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

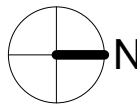
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FILE NAME	29721 Arch R22
DRAWN BY	CCH
DESIGNED BY	MGC
REVIEWED BY	AWP
ORIGINAL ISSUE DATE	06/13/24
CLIENT PROJECT NO.	

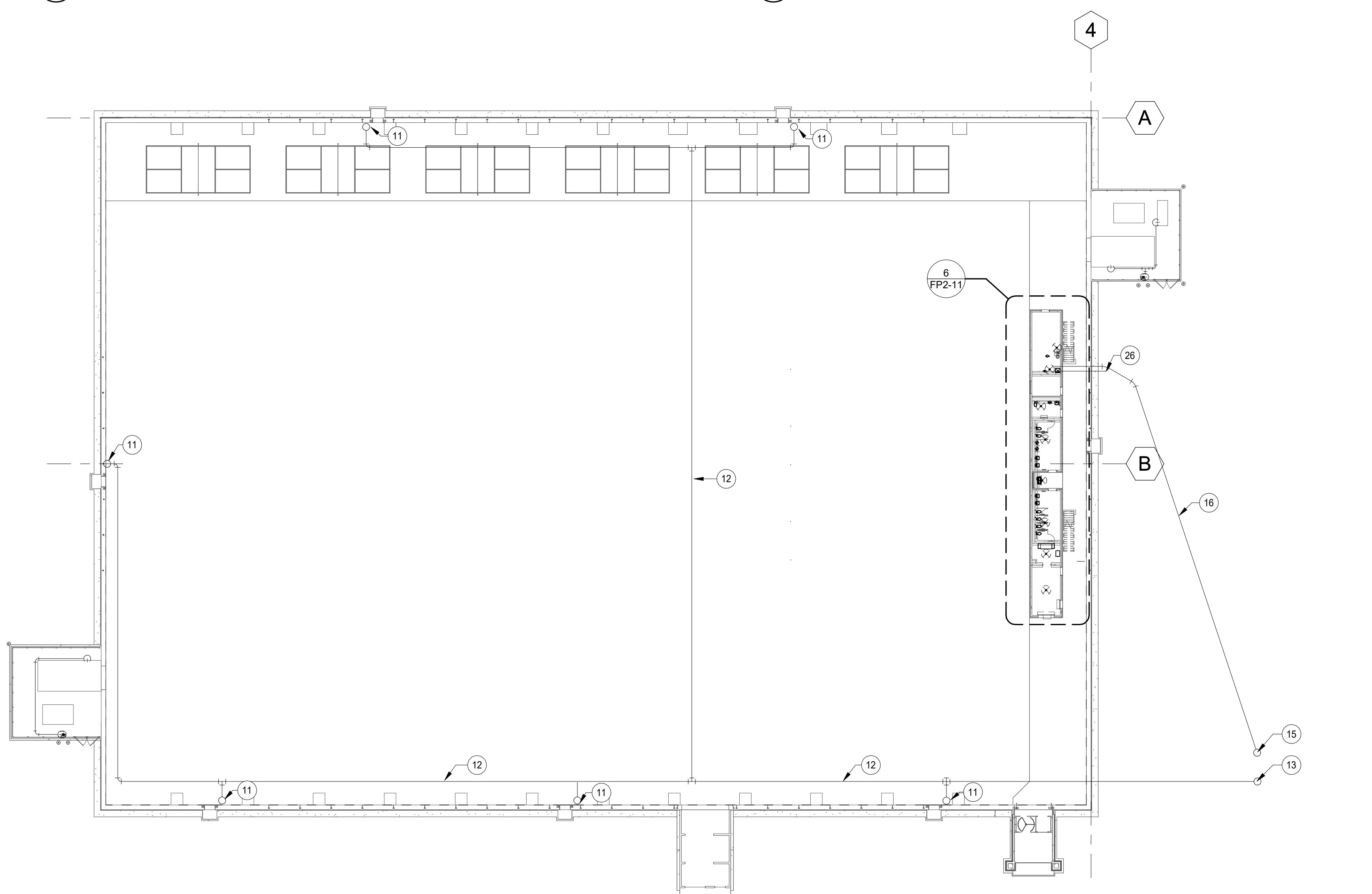
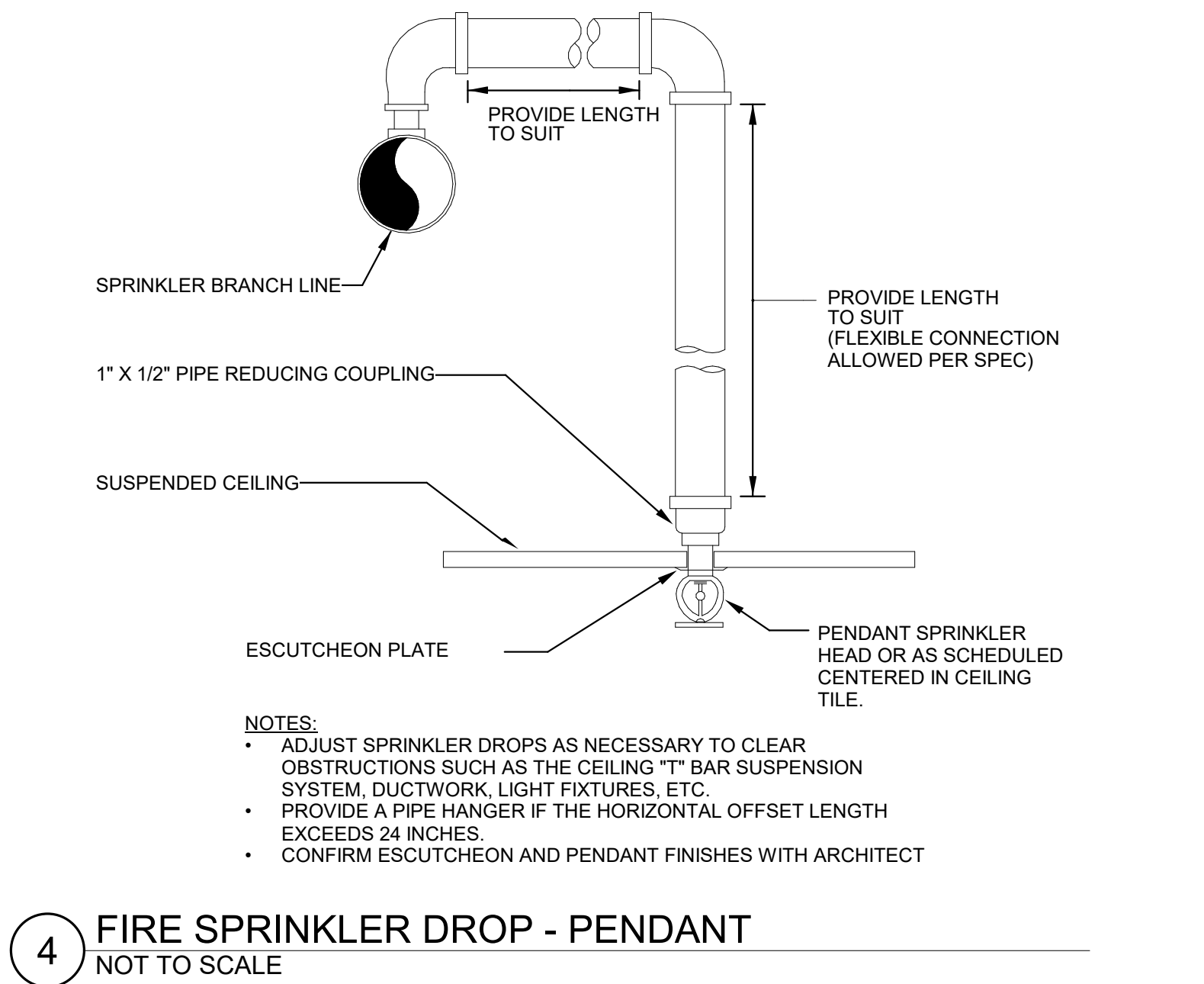
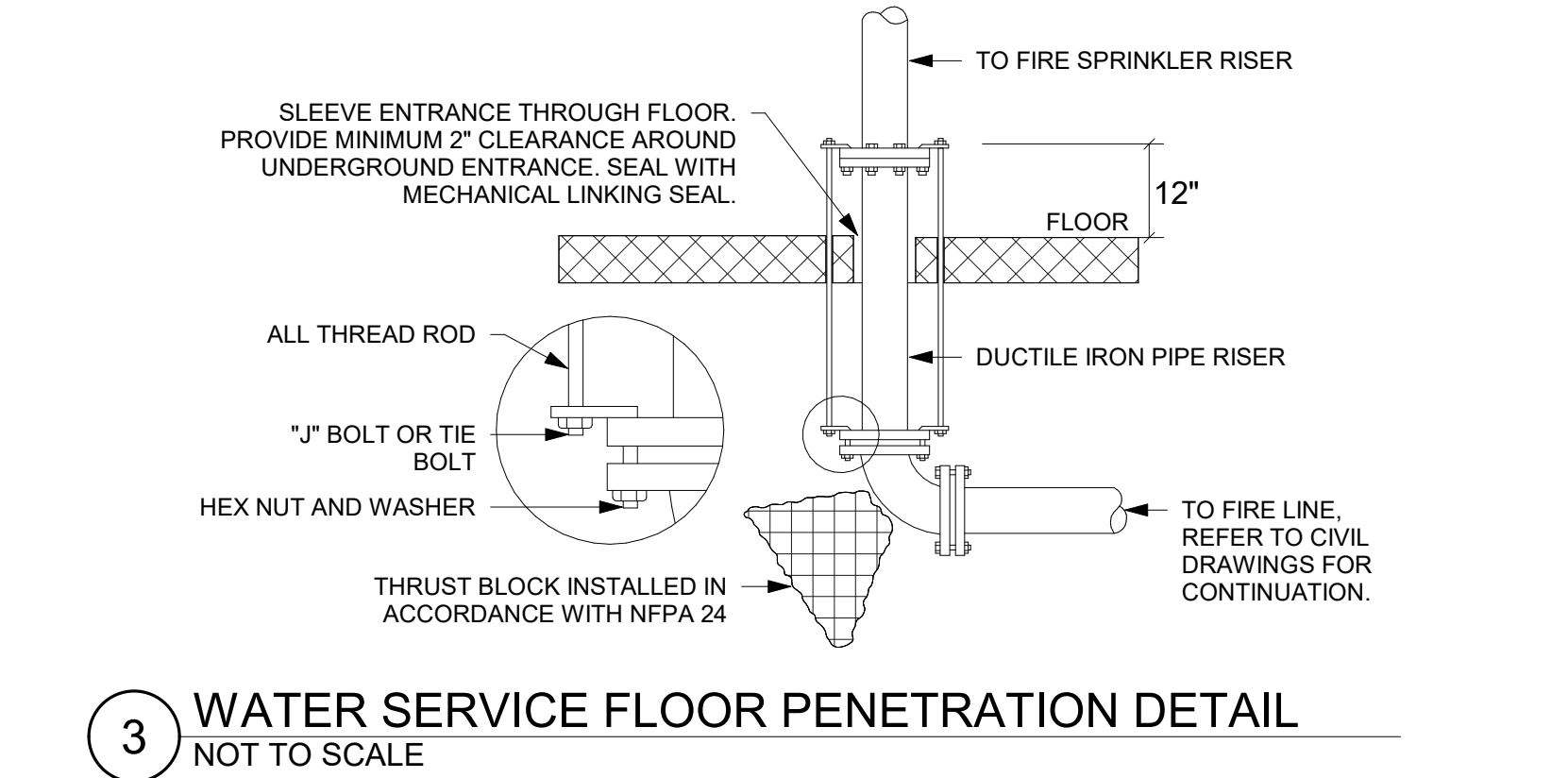
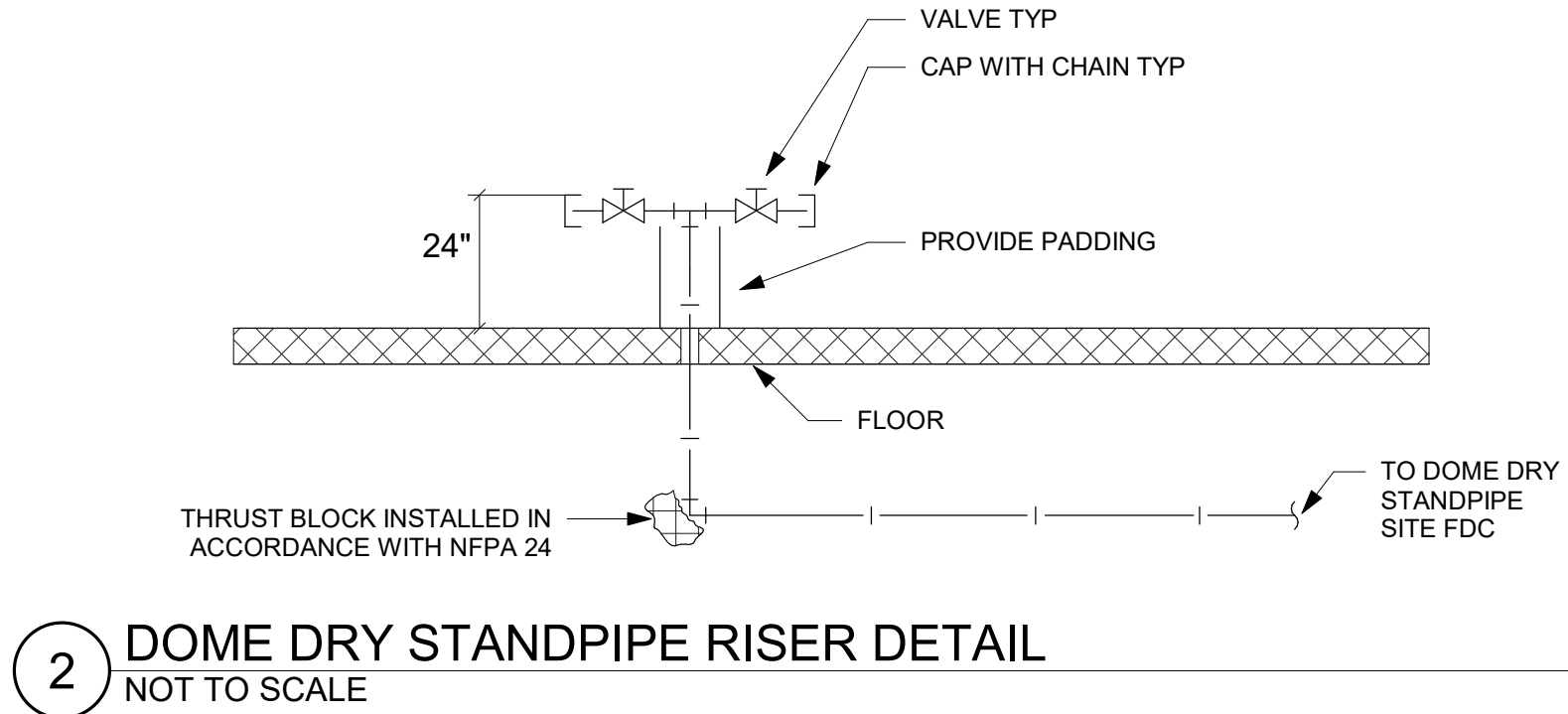
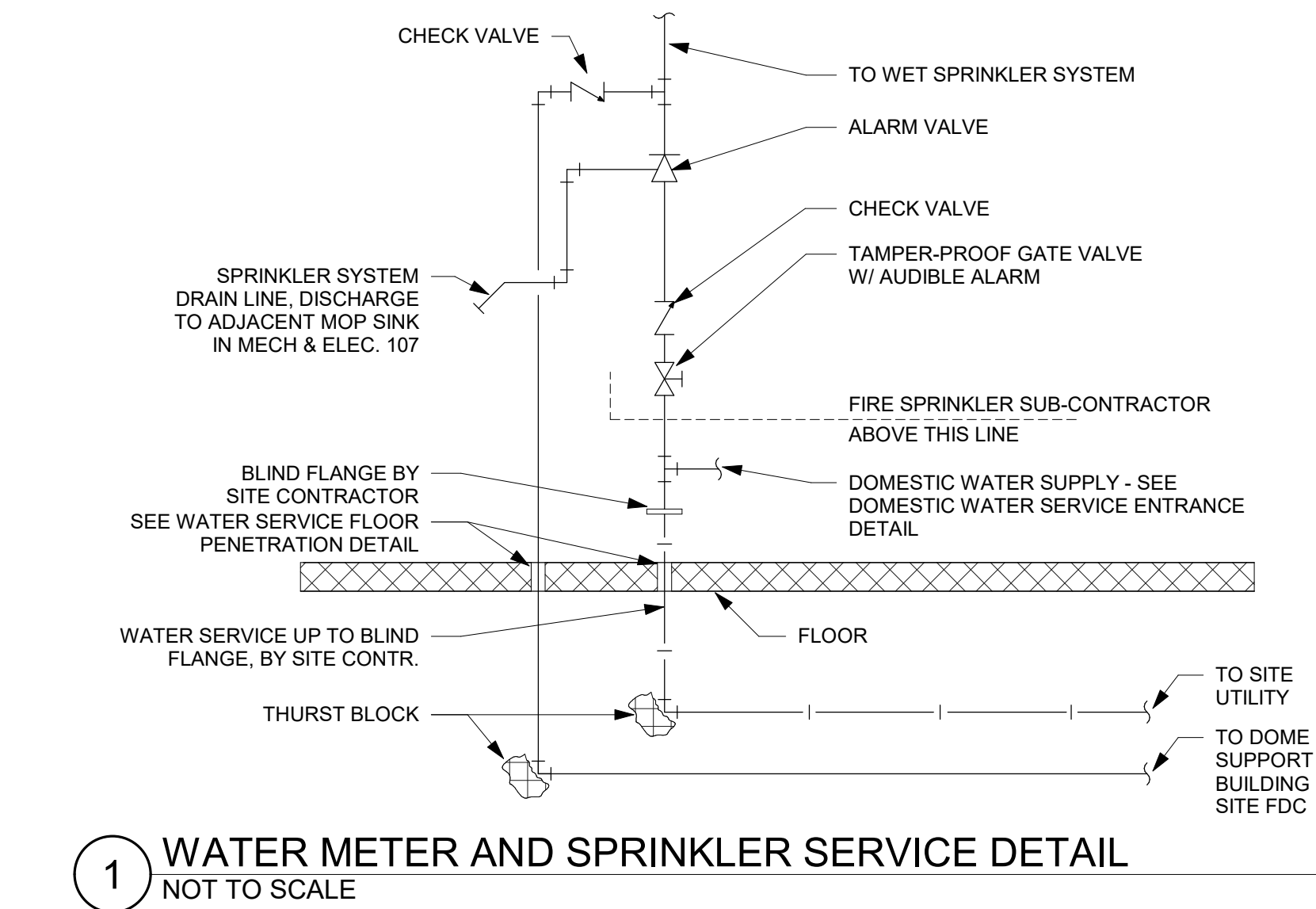
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PLUMBING SCHEDULES AND SPECIFICATIONS

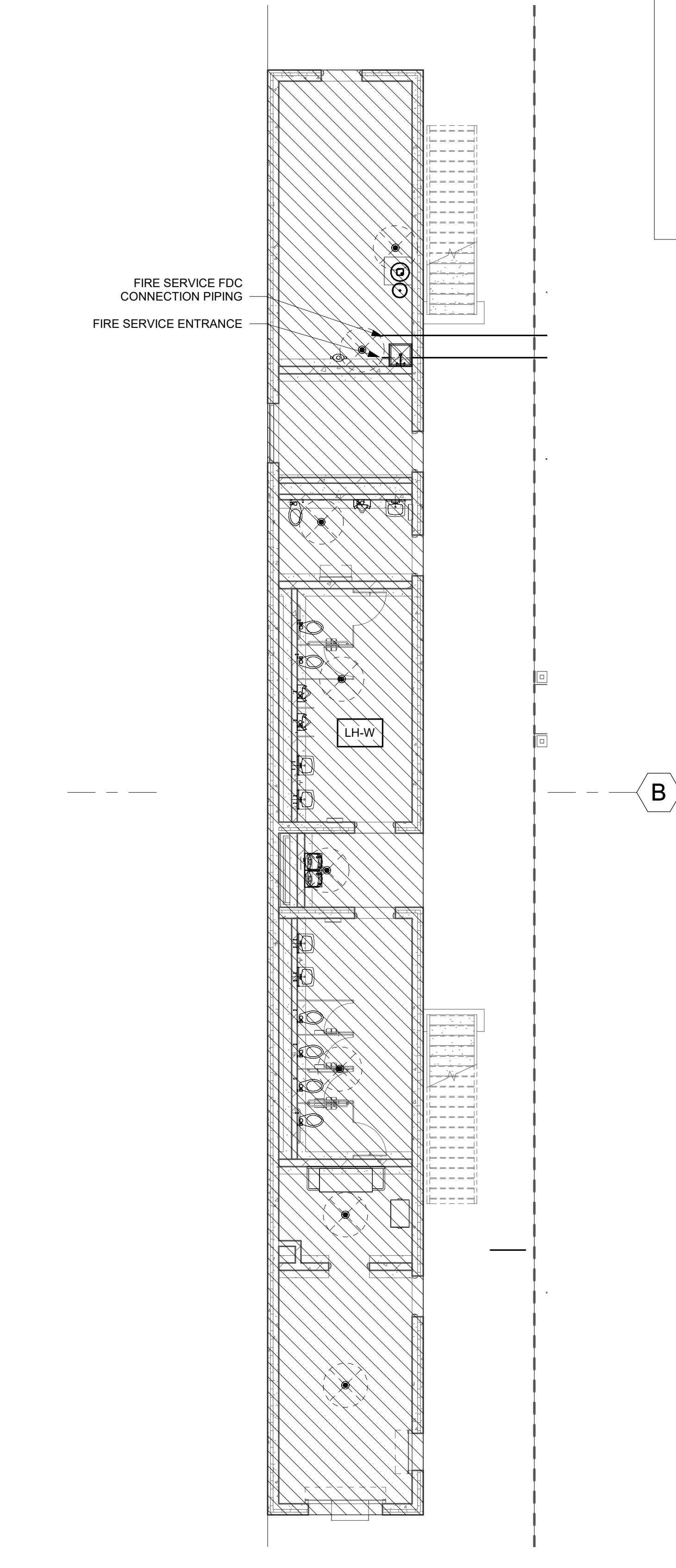
SHEET

P6-11





5 DOME FIRE PROTECTION PLAN
1/32" = 1'-0"



6 DOME SUPPORT BUILDING FIRE PROTECTION PLAN
1/8" = 1'-0"

KEYNOTE LEGEND	
11	PROVIDE DRY STANDPIPE ADJACENT TO EXIT DOOR. PROVIDE TWO VALVED AND CAPPED HOSE CONNECTIONS 24" A.F.F. HOSE CONNECTIONS SHALL BE IN ACCORDANCE TO THE REQUIREMENTS OF THE LOCAL FIRE DEPARTMENT. PROVIDE PADDING TO PROTECT DOME USERS FROM COLLISIONS WITH STANDPIPE - SEE ARCHITECTURAL SPECIFICATIONS FOR REQUIREMENTS.
12	BELOW GRADE DRY STAND PIPE SUGGESTED ROUTING.
13	PROVIDE FREESTANDING TWO-WAY FIRE DEPARTMENT CONNECTION ADJACENT TO ACCESS ROAD AND FIRE HYDRANT. LABEL FDC FOR DOME DRY STANDPIPE SERVICE. COORDINATE LABELING, FINAL LOCATION, AND HOSE CONNECTION REQUIREMENTS WITH LOCAL FIRE DEPARTMENT PRIOR TO INSTALLATION.
15	PROVIDE FREESTANDING TWO-WAY FIRE DEPARTMENT CONNECTION ADJACENT TO ACCESS ROAD AND FIRE HYDRANT. LABEL FDC FOR DOME SUPPORT BUILDING SPRINKLER SYSTEM SERVICE. COORDINATE LABELING, FINAL LOCATION, AND HOSE CONNECTION REQUIREMENTS WITH LOCAL FIRE DEPARTMENT PRIOR TO INSTALLATION.
16	ROUTE FDC SERVICE FOR DOME SUPPORT BUILDING BELOW GRADE ADJACENT AND PARALLEL TO SITE WATER UTILITY PIPING.
26	6" WATER. EXTEND 5' PAST EXTENTS OF DOME FOUNDATION. SLEEVE THROUGH FOUNDATION. SEE CIVIL PLANS FOR CONTINUATION.

FIRE PROTECTION KEY	
LH-W	PROVIDE WET PIPE SPRINKLER SYSTEM PER NFPA 13, LIGHT HAZARD. DENSITY SHALL BE 0.10 GPM/SQ. FT. OVER THE MOST REMOTE 1,500 SQ. FT.
OH1-W	PROVIDE WET PIPE SPRINKLER SYSTEM PER NFPA 13, ORDINARY HAZARD GROUP 1. DENSITY SHALL BE 0.15 GPM/SQ. FT. OVER THE MOST REMOTE 1,500 SQ. FT.
OH2-W	PROVIDE WET PIPE SPRINKLER SYSTEM PER NFPA 13, ORDINARY HAZARD GROUP 2. DENSITY SHALL BE 0.2 GPM/SQ. FT. OVER THE MOST REMOTE 1,500 SQ. FT.
LH-D	PROVIDE DRY PIPE SPRINKLER SYSTEM PER NFPA 13, LIGHT HAZARD. DENSITY SHALL BE 0.10 GPM/SQ. FT. OVER THE MOST REMOTE 1,500 SQ. FT.
OH1-D	PROVIDE DRY PIPE SPRINKLER SYSTEM PER NFPA 13, ORDINARY HAZARD GROUP 1. DENSITY SHALL BE 0.15 GPM/SQ. FT. OVER THE MOST REMOTE 1,500 SQ. FT.
OH2-D	PROVIDE DRY PIPE SPRINKLER SYSTEM PER NFPA 13, ORDINARY HAZARD GROUP 2. DENSITY SHALL BE 0.2 GPM/SQ. FT. OVER THE MOST REMOTE 1,500 SQ. FT.
FIRE PROTECTION PLAN NOTES:	
1. ALL PIPING LOCATIONS TO BE APPROVED BY ARCHITECT BEFORE THE BIM COORDINATION SIGN-OFF AND/OR INSTALLATION.	
2. SPRINKLER PIPING AND HEADS TO BE CONCEALED IN AREAS WITH CEILING AND SOFFITS.	
3. FIRE PROTECTION PIPING TO BE PAINTED TO MATCH ADJACENT STRUCTURE IN EXPOSED AREAS - NOT REQUIRED IN MECHANICAL ROOMS.	

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PROJECT

**MUSCATINE
INDOOR SPORTS
COMPLEX**

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

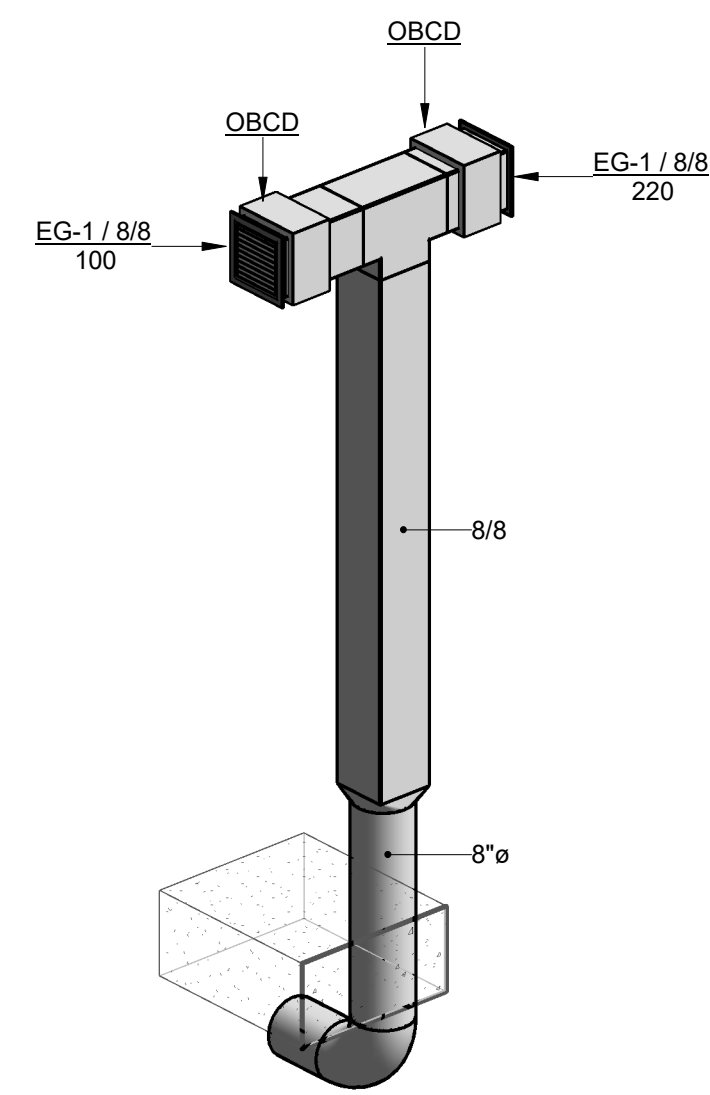
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FILE NAME 29721 Arch R22
DRAWN BY CCH
DESIGNED BY MGC
REVIEWED BY AWP
ORIGINAL ISSUE DATE 06/13/24
CLIENT PROJECT NO.

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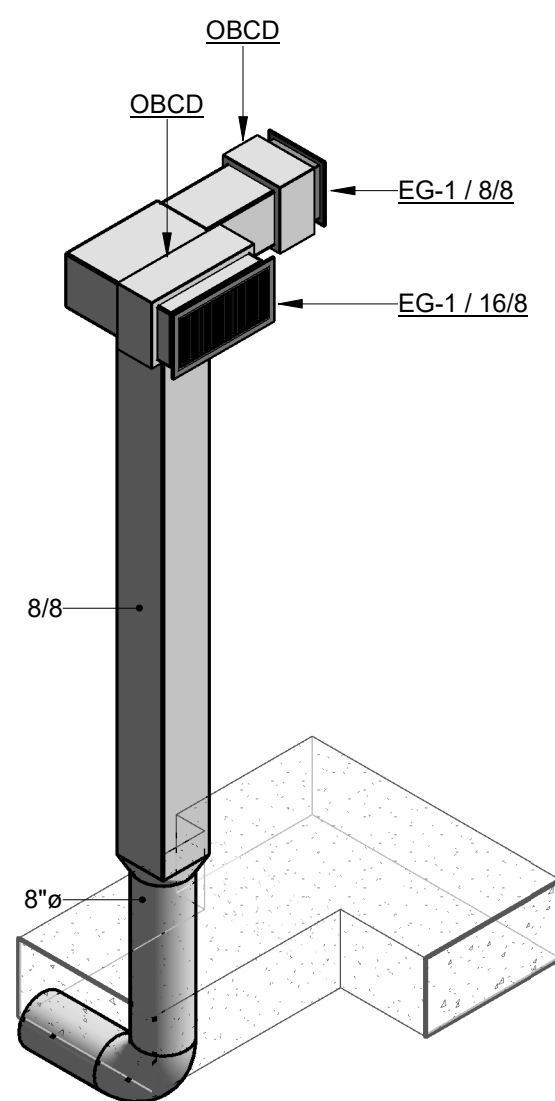
**FIRST FLOOR
FIRE
PROTECTION
PLAN**

SHEET

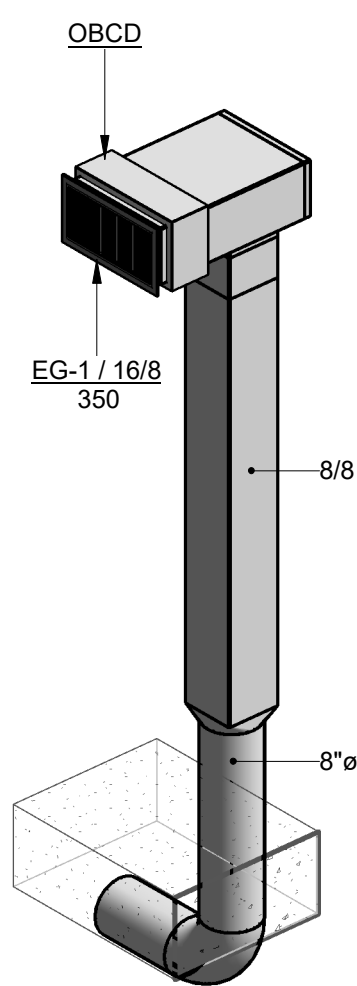
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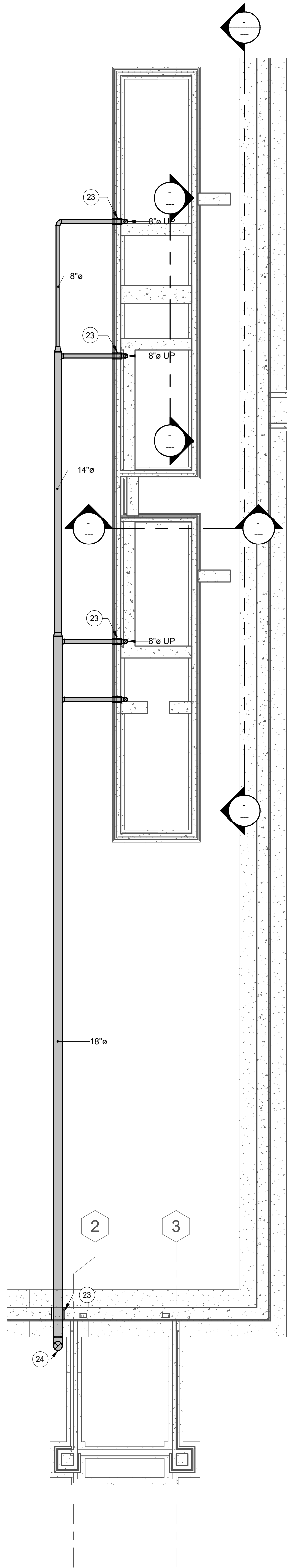
5 EA DUCT ISOMETRIC



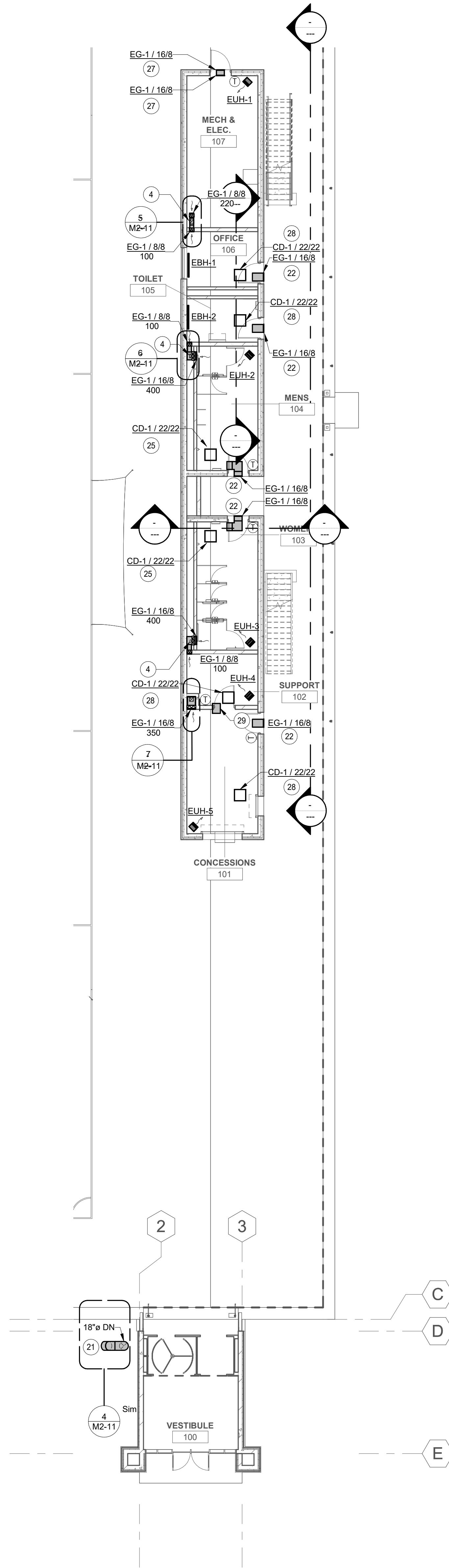
6 EA DUCT ISOMETRIC - B



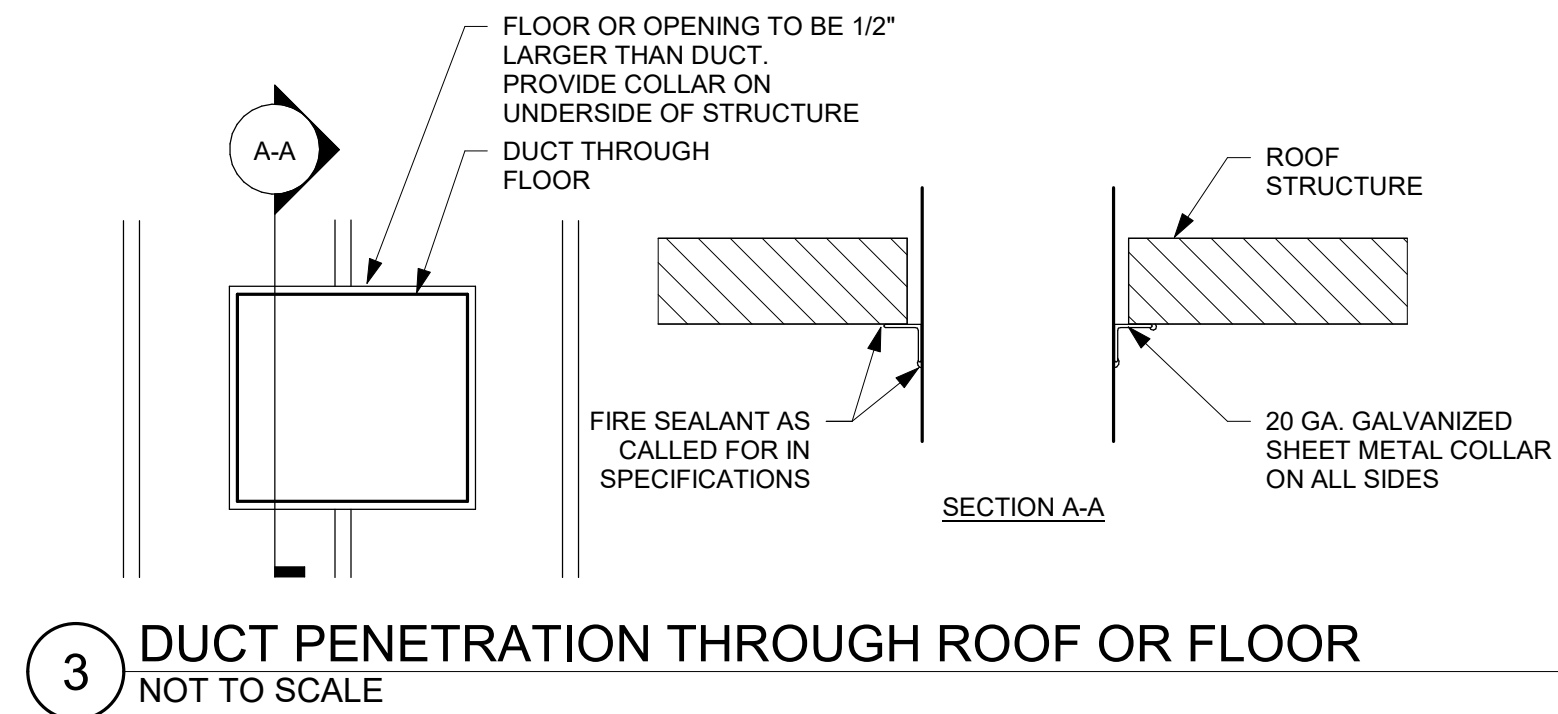
7 EA DUCT ISOMETRIC - C



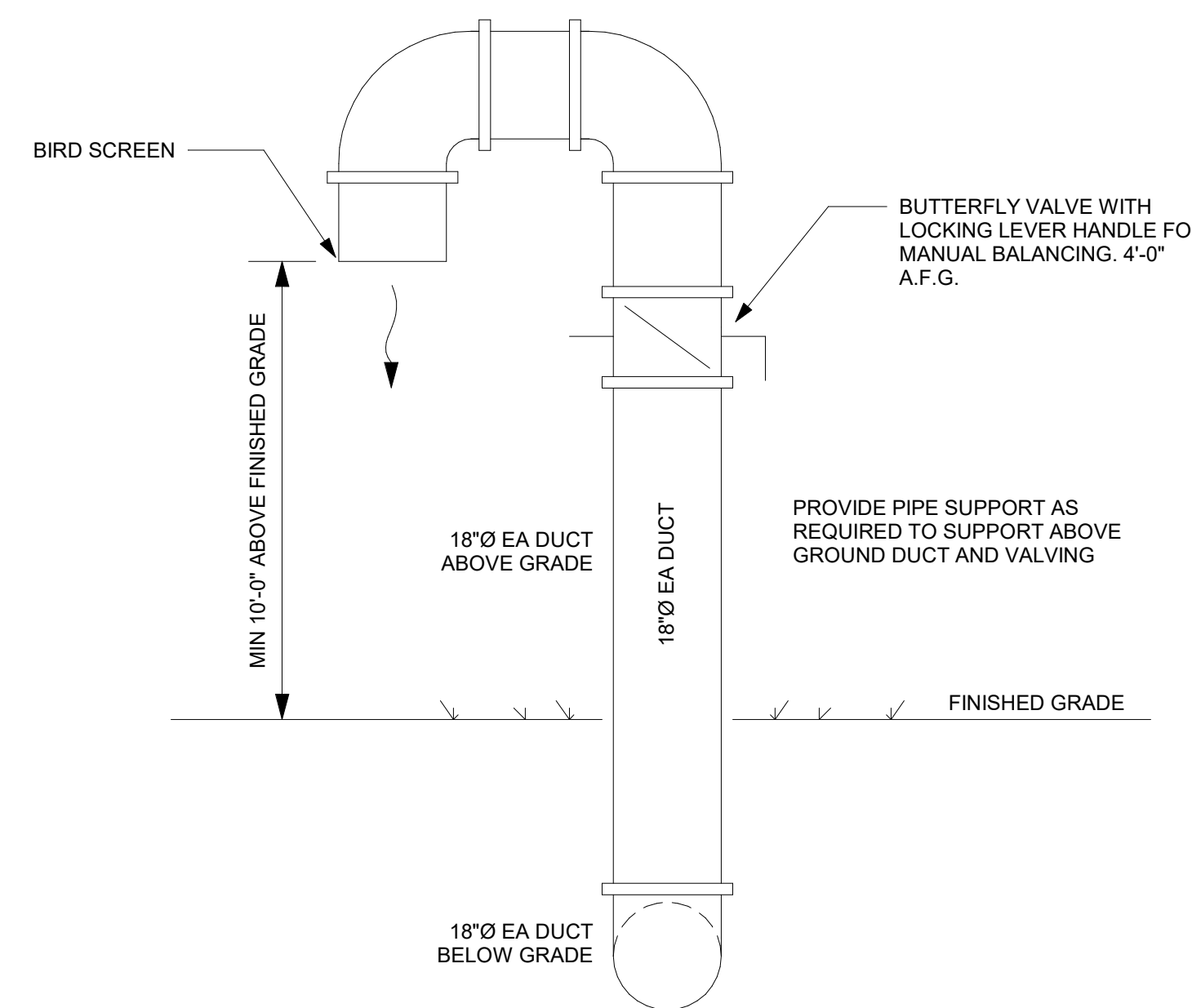
1 BELOW GRADE MECHANICAL PLAN
3/32" = 1'-0"



2 FIRST FLOOR MECHANICAL PLAN
3/32" = 1'-0"



3 DUCT PENETRATION THROUGH ROOF OR FLOOR
NOT TO SCALE



4 EXHAUST DUCT ABOVE GRADE TERMINATION
NOT TO SCALE

KEYNOTE LEGEND

4	8" EA DOWN TO BELOW GRADE
21	TERMINATE 18" EA DUCT WITH GOOSE NECK AND BIRD SCREEN. OUTLET OF GOOSENECK SHALL BE A MINIMUM 10'-0" ABOVE ADJACENT GRADE. SUPPORT DUCT OFF OF ADJACENT WALL.
22	INSTALL GRILLE AND DUCT AS HIGH AS POSSIBLE ABOVE DOOR. DISCHARGE DUCT INTO ADJACENT PLENUM SPACE. MATCH HEIGHT WITH OTHER GRILLES OVER DOORS.
23	SLEEVE DUCT THROUGH FOUNDATION WALL.
24	ROUTE 18" DUCT BELOW GRADE UP TO GOOSE NECK TERMINATION. SEE DETAIL.
25	INSTALL GRILLE OPEN TO PLENUM TO ALLOW FOR AIR TRANSFER INTO ROOM. LOCATE TRANSFER GRILLE TO ALLOW ACCESS TO DOMESTIC WATER PIPE ISOLATION VALVES.
27	INSTALL GRILLE AND DUCT AS HIGH AS POSSIBLE ABOVE DOOR. MATCH HEIGHT WITH OTHER GRILLES OVER DOORS.
28	INSTALL GRILLE OPEN TO PLENUM TO ALLOW FOR AIR TRANSFER INTO ROOM.
29	PROVIDE 16"x8" TRANSFER OPENING BETWEEN ROOMS' PLENUMS.

ELECTRIC BASEBOARD SCHEDULE

NOTES:
1. PROVIDE WITH INTEGRAL NON-FUSED DISCONNECT AND INTEGRAL TAMPER RESISTANT SINGLE POLE THERMOSTAT. SET THERMOSTAT TO 68°F (ADJ.).
2. WALL MOUNT BASEBOARD WITH THE BOTTOM OF THE HEATER AT 6" A.F.F.
3. COLOR BY ARCHITECT.

MARK	MFG	MODEL	LOCATION	LENGTH	WATTS	VOLTAGE / PH.	DISCONNECT SWITCH	THERMOSTAT	NOTES
EBH-1	QMARK	6853600060569	OFFICE 106	48	1000 W	120/1	Yes	Y	1,2,3
EBH-2	QMARK	6853600060569	TOILET 105	48	1000 W	120/1	Yes	Y	1,2,3

ELECTRIC RADIANT HEATER SCHEDULE

NOTES:
1. DISCONNECT BY ELECTRICAL CONTRACTOR. COORDINATE WITH ELECTRICAL CONTRACTOR.
2. UNIT TO BE CONTROLLED THROUGH REMOTE MOUNTED SINGLE POLE THERMOSTAT LOCATED ON PLANS. PROVIDE LOCKABLE COVER. SET THERMOSTAT TO 68°F (ADJ.).
3. PROVIDE WITH RECESSED TRIM KIT AND INSTALL RECESSED IN CEILING ADJACENT TO LIGHT FIXTURE.
4. PROVIDE WIRE GUARD.
5. COLOR BY ARCHITECT.

TYPE	MFG	MODEL	LENGTH	WIDTH	ELEMENT TYPE	WATTS	HEATING # OF BULBS	REFLECTION ANGLE	VOLTAGE / PH.	NOTES
ERH-1	QMARK	FRP43S32MS04081DQT3W00C	46"	15"	METAL SHEATH	4000	2	30° SYM.	208/1	1,2,3,4,5
ERH-2	QMARK	FRP43S32MS04081DQT3W00C	46"	15"	METAL SHEATH	4000	2	30° SYM.	208/1	1,2,3,4,5

ELECTRIC UNIT HEATER SCHEDULE

NOTES:
1. PROVIDE HANGING KIT.
2. PROVIDE WITH NON-FUSED DISCONNECT.
3. UNIT TO BE CONTROLLED THROUGH REMOTE MOUNTED SINGLE POLE THERMOSTAT LOCATED ON PLANS. PROVIDE LOCKABLE COVER. SET THERMOSTAT TO 68°F (ADJ.).
4. COLOR BY ARCHITECT.

MARK	MFG	MODEL	CFM	WATTS	BTU/HR	VOLTAGE / PH.	HANGING KIT	DISCONNECT SWITCH	NOTES
EUH-1	QMARK	MUH03-21	350	2200 W	7.5	208/1	Yes	Yes	1,2,3,4
EUH-2	QMARK	MUH03-21	350	2200 W	7.5	208/1	Yes	Yes	1,2,3,4
EUH-3	QMARK	MUH03-21	350	2200 W	7.5	208/1	Yes	Yes	1,2,3,4
EUH-4	QMARK	MUH03-21	350	2200 W	7.5	208/1	Yes	Yes	1,2,3,4
EUH-5	QMARK	MUH03-21	350	2200 W	7.5	208/1	Yes	Yes	1,2,3,4

DIFFUSER, REGISTER AND GRILLE SCHEDULE

NOTES:
1. SEE PLANS FOR CONNECTION SIZES.
2. SEE PLANS TO CONFIRM MOUNTING TYPES PRIOR TO ORDERING.
3. ALL DRG SHALL BE FINISHED IN WHITE UNLESS OTHERWISE NOTED.

MARK	MFG	MODEL #	SYSTEM TYPE	DESCRIPTION
CD-1	TITUS	PAR-AA	TRANSFER	ALUMINUM, PERFORATED CEILING DIFFUSER WITH 3/16" DIAMETER HOLES ON 1/4" STAGGERED CENTERS. 22x22 NECK.
EG-1	TITUS	300FL	EXHAUST	ALUMINUM, 35 DEGREE SINGLE DEFLECTION, 3/4" BLADE SPACING, BLADES PARALLEL TO LONG DIMENSION. OPPOSED BLADE DAMPER. SEE SIZE ON FLOOR PLAN.

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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

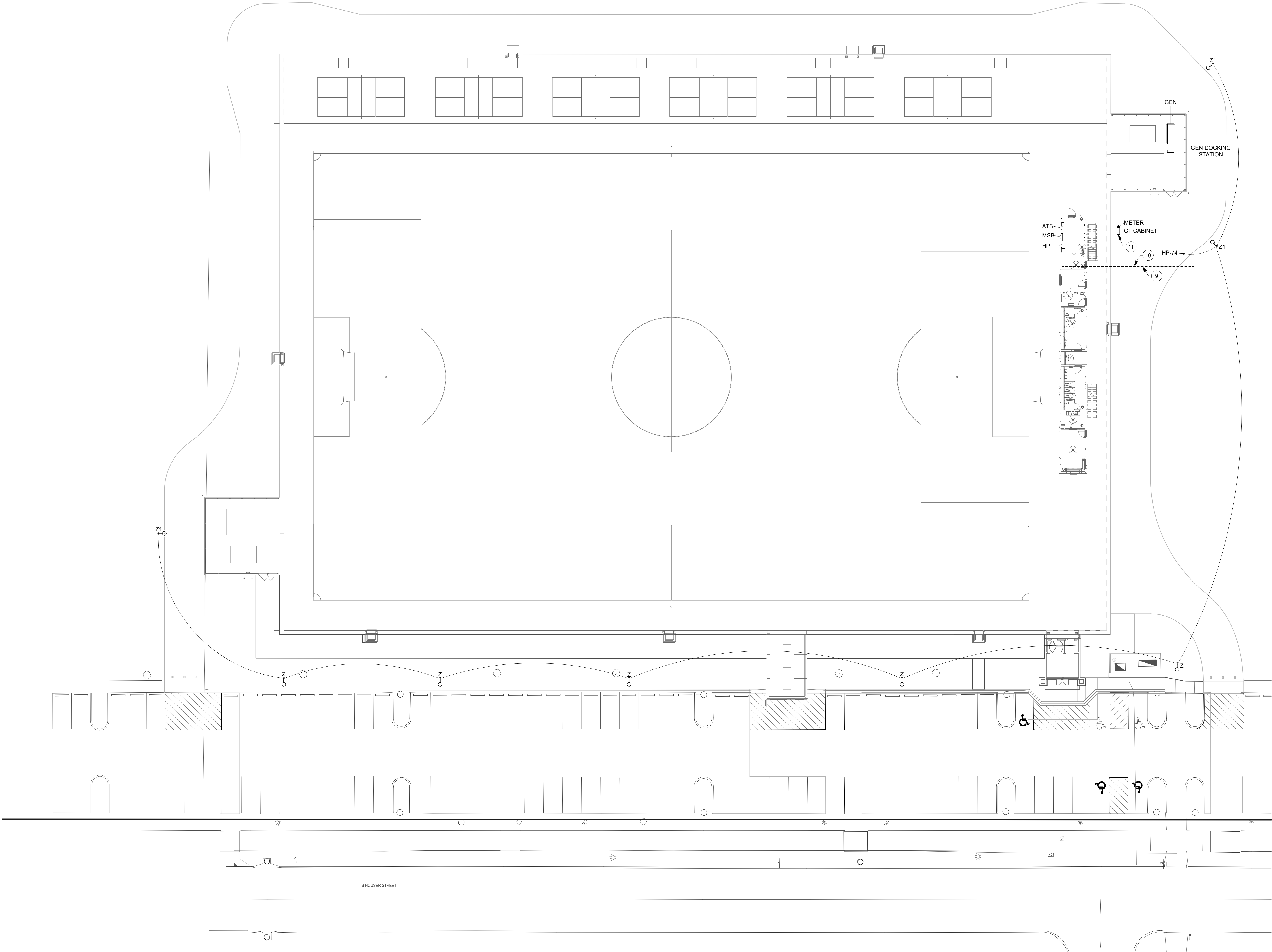
PROJECT NO. 23-29721
FILE NAME 29721 Arch R22
DRAWN BY CCH
DESIGNED BY MGC
REVIEWED BY AWP
ORIGINAL ISSUE DATE 06/13/24
CLIENT PROJECT NO.

TITLE

HVAC PLANS

SHEET

M2-11



1 ELECTRICAL SITE PLAN
3/64" = 1'-0"

SHEET NOTES

1. MAINTAIN POSITIVE PRESSURE SEAL FROM DOME TO BUILDING.
2. MAINTAIN FIRE RATING OF ALL WALLS AND FLOORS. PROVIDE FIRE PROOFING FOR ALL WALL AND FLOOR PENETRATIONS PER CODE.
3. COORDINATE WORK WITH OTHER TRADES.
4. ALL DOME FUTURE DATA CONDUIT TO BE RAN AROUND THE EXTERIOR OF DOME STEM WALL.
5. CONDUITS FOR DOME TO BE ROUTED WITHIN STEM WALL AND BOXES RECESSED.
6. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE COMPATIBLE LIGHTING CONTROL DEVICES ARE SUPPLIED WITH LIGHTING PACKAGE.
7. SWITCHES AND RECEPTACLES SHALL BE FLUSH MOUNTED IN MASONRY BLOCK AND PRECAST WALLS. COORDINATE WITH ALL TRADES.
8. ALL LIGHTING SHALL COMPLY WITH LOCAL AND STATE ENERGY CODES.
9. PROVIDE UNSWITCHED HOT TO ALL EXIT AND EMERGENCY LIGHT FIXTURES.
10. PROVIDE SEPARATE BOXES AND CONDUIT FOR EMERGENCY AND NORMAL LIGHTING CIRCUITS.

ELECTRICAL KEYNOTE LEGEND

KEY	KEYNOTE TEXT
9	F&I (2) 2" CONDUITS FROM FUTURE NETWORK LOCATION TO UTILITY RIGHT OF WAY. COORDINATE LOCATION WITH OWNER PRIOR TO INSTALL.
10	F&I (4) 1" CONDUITS FROM MECH & ELEC 107 OUT TO GREEN SPACE FOR FUTURE CIRCUITS. COORDINATE LOCATION WITH OWNER PRIOR TO INSTALL.
11	WALL MOUNTED CT CABINET AND METER LOCATION. SEE DETAIL FOR BACKBOARD INSTALLATION.



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PROJECT

MUSCATINE
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COMPLEX

MUSCATINE IOWA

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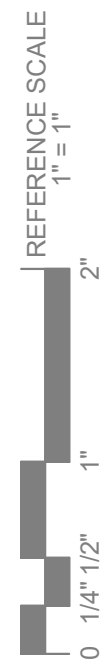
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FILE NAME	29721 Elec R22
DRAWN BY	ALB
DESIGNED BY	ALB
REVIEWED BY	JMH
ORIGINAL ISSUE DATE	06/13/24
CLIENT PROJECT NO.	

TITLE

ELECTRICAL SITE
PLAN

SHEET

E2-00

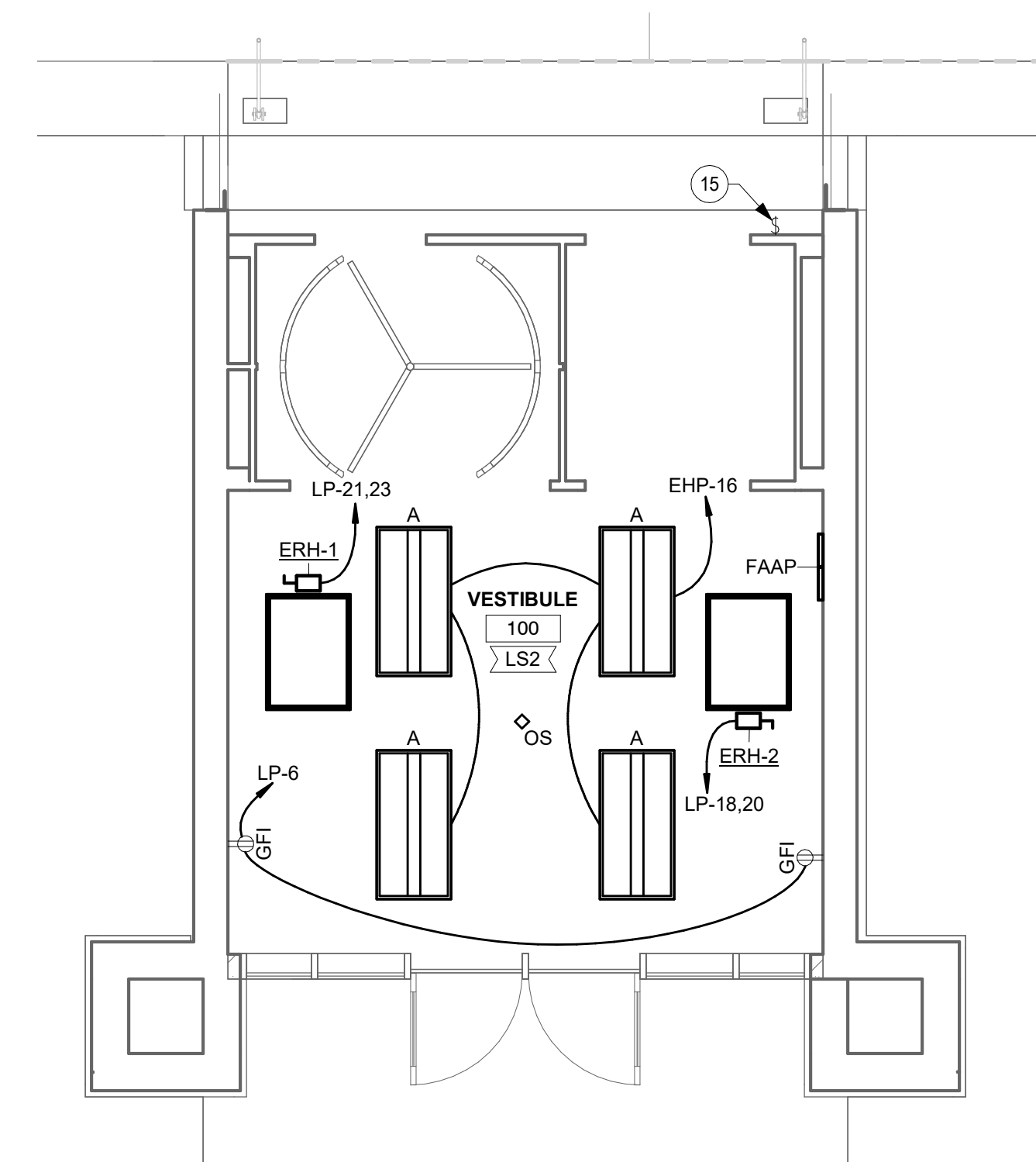
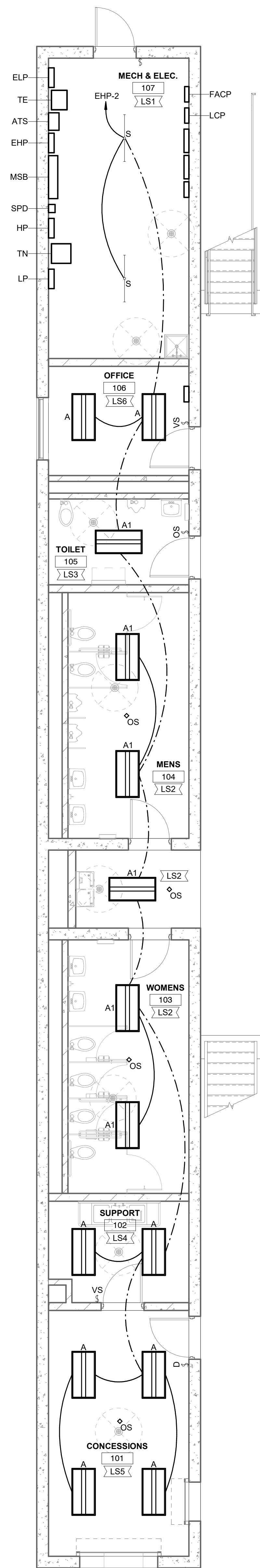
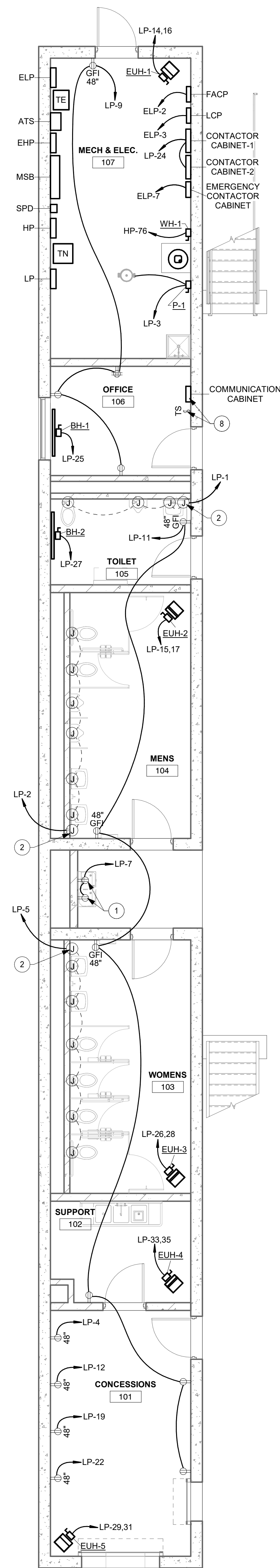


SHEET NOTES

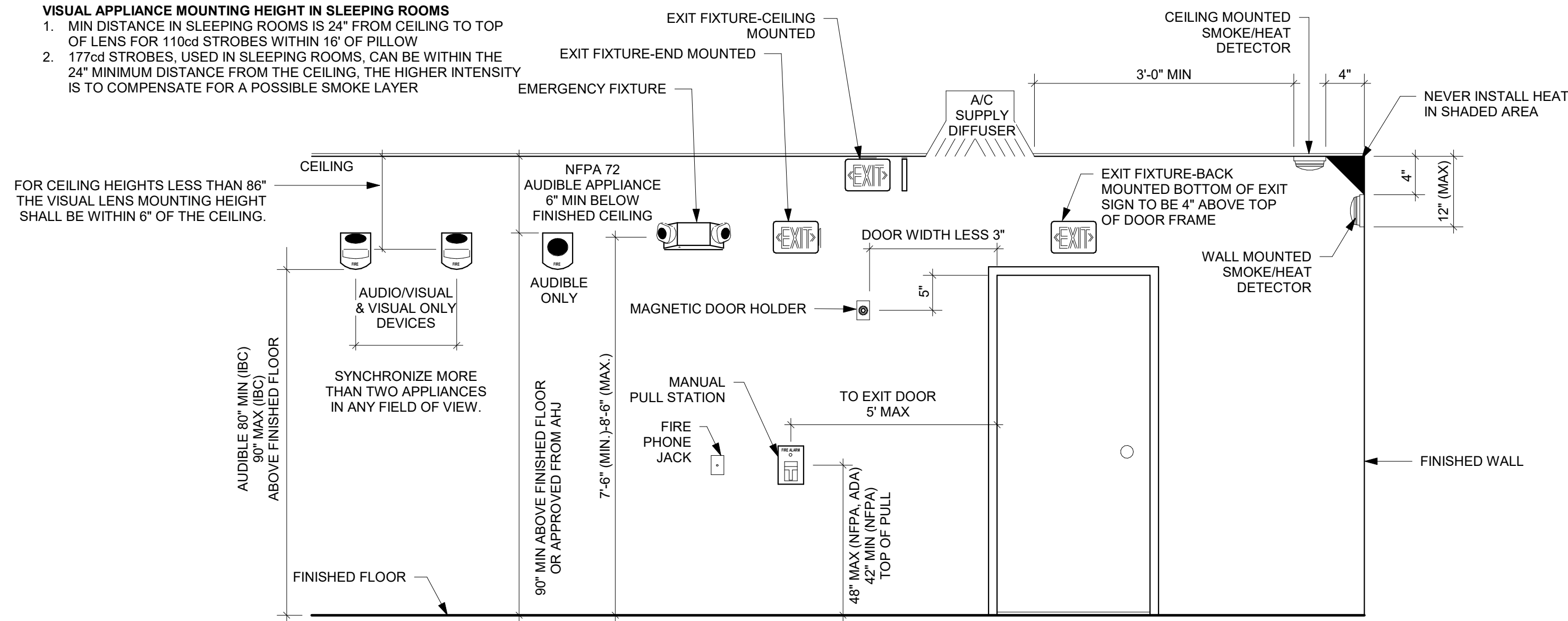
1. MAINTAIN POSITIVE PRESSURE SEAL FROM DOME TO BUILDING.
2. MAINTAIN FIRE RATING OF ALL WALLS AND FLOORS. PROVIDE FIRE PROOFING FOR ALL WALL AND FLOOR PENETRATIONS PER CODE.
3. COORDINATE WORK WITH OTHER TRADES.
4. ALL DOME FUTURE DATA CONDUIT TO BE RAN AROUND THE EXTERIOR OF DOME STEM WALL.
5. CONDUITS FOR DOME TO BE ROUTED WITHIN STEM WALL AND BOXES RECESSED.
6. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE COMPATIBLE LIGHTING CONTROL DEVICES ARE SUPPLIED WITH LIGHTING PACKAGE.
7. SWITCHES AND RECEPTACLES SHALL BE FLUSH MOUNTED IN MASONRY BLOCK AND PRECAST WALLS. COORDINATE WITH ALL TRADES.
8. ALL LIGHTING SHALL COMPLY WITH LOCAL AND STATE ENERGY CODES.
9. PROVIDE UNSWITCHED HOT TO ALL EXIT AND EMERGENCY LIGHT FIXTURES.
10. PROVIDE SEPARATE BOXES AND CONDUIT FOR EMERGENCY AND NORMAL LIGHTING CIRCUITS.



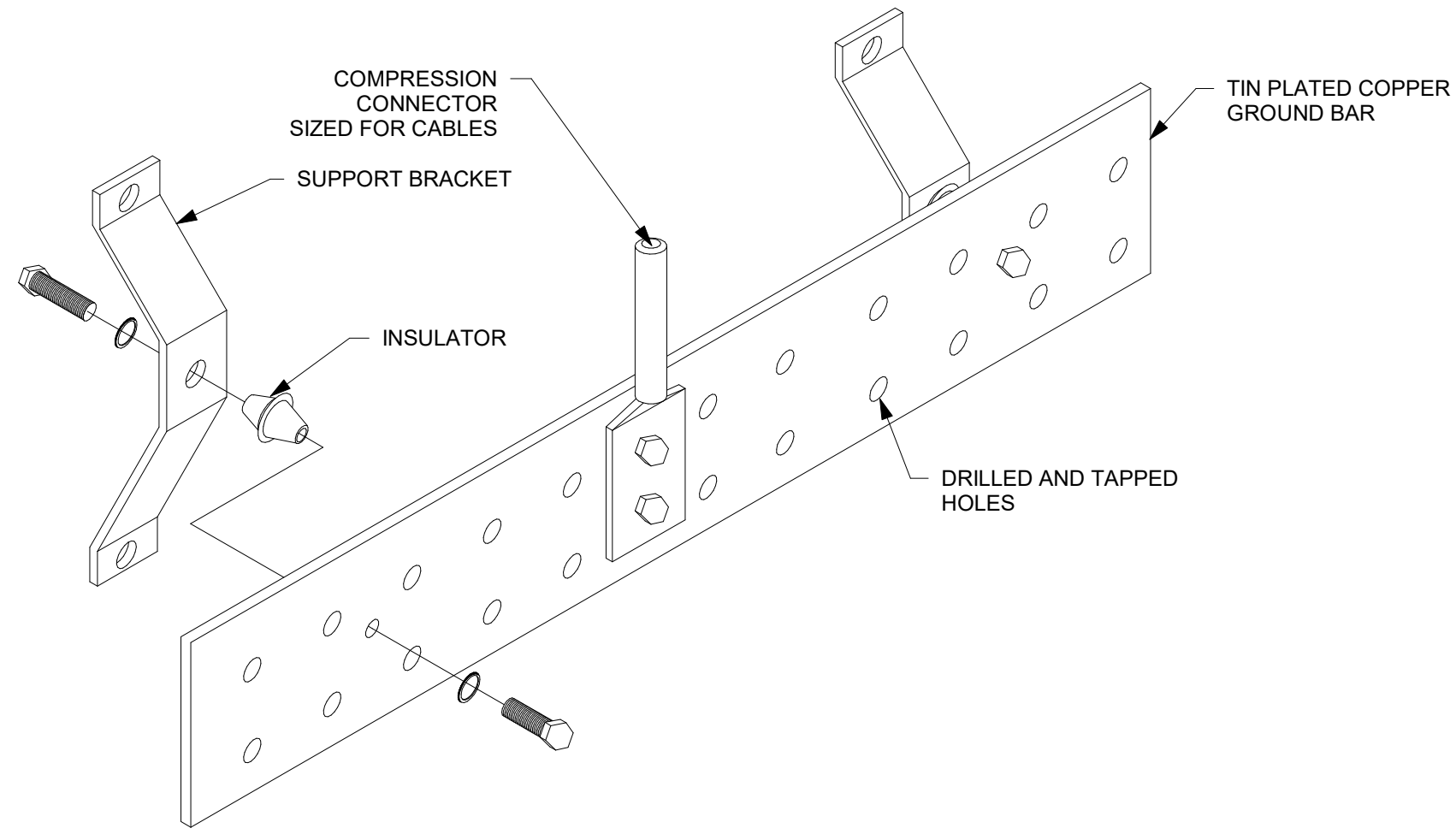
E2-11



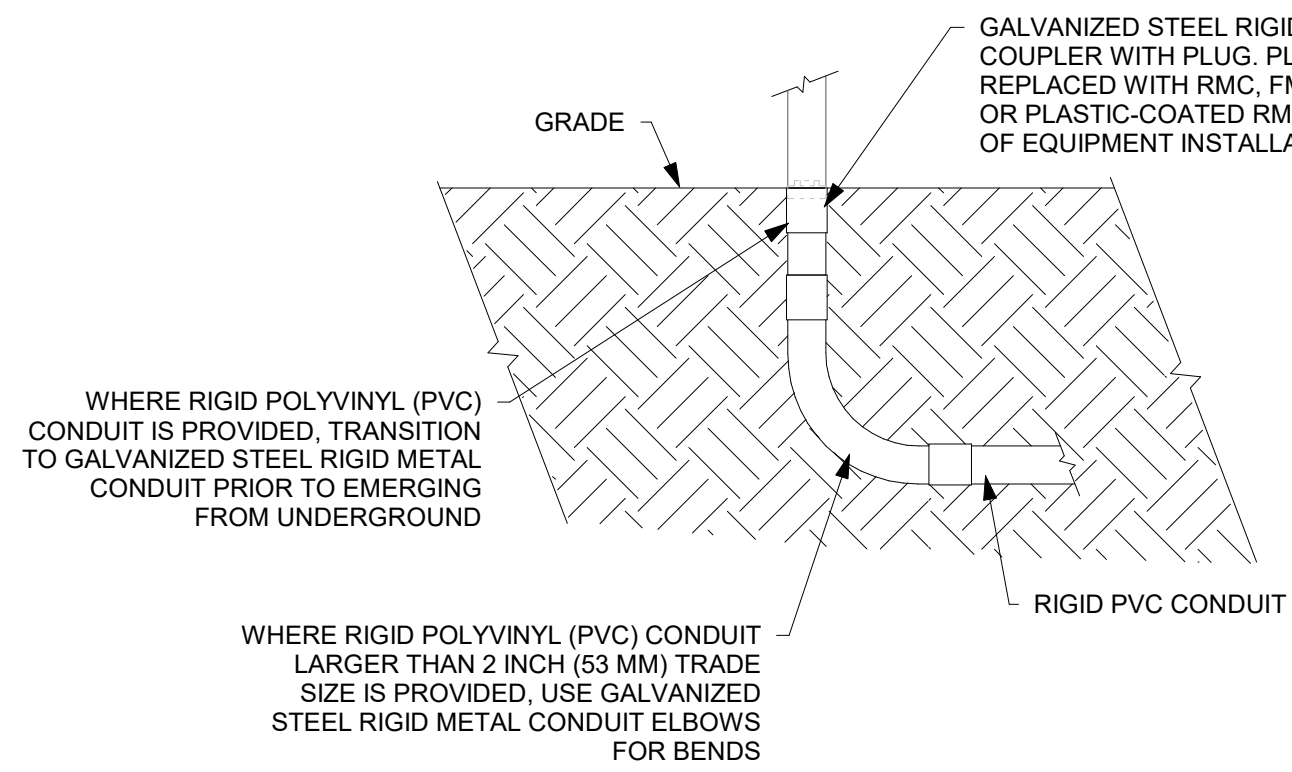
VISUAL APPLIANCE MOUNTING HEIGHT IN SLEEPING ROOMS
1. MIN DISTANCE IN SLEEPING ROOMS IS 24" FROM CEILING TO TOP OF LENS FOR 110cd STROBES WITHIN 10' OF PILLOW
2. 177cd STROBES USED IN SLEEPING ROOMS, CAN BE WITHIN THE 24" MINIMUM DISTANCE FROM THE CEILING. THE HIGHER INTENSITY IS TO COMPENSATE FOR A POSSIBLE SMOKE LAYER



1 TYPICAL MOUNTING HEIGHTS
NOT TO SCALE

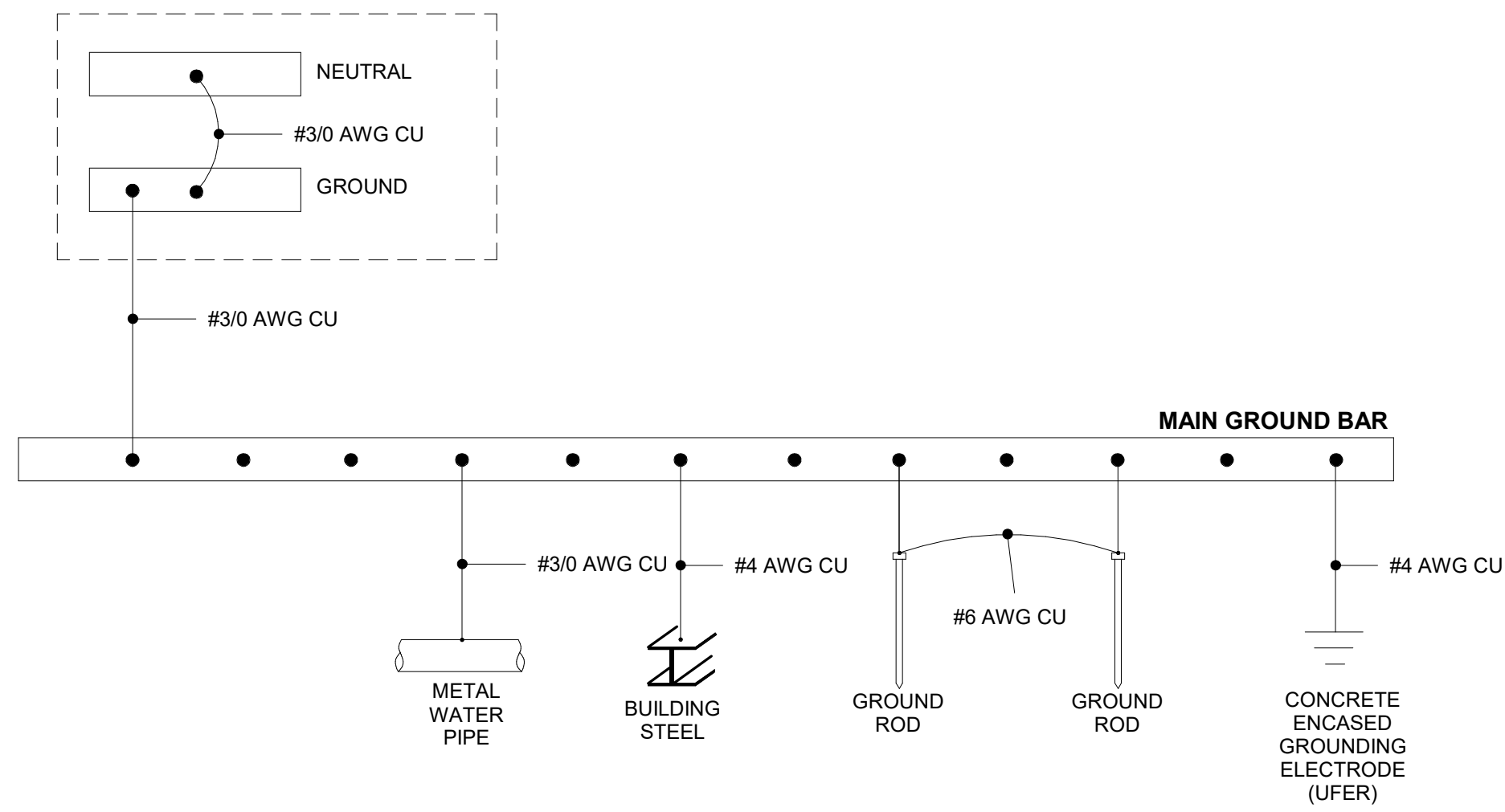


2 GROUND BAR
NOT TO SCALE



3 BELOW GRADE PVC CONDUIT DETAIL
NOT TO SCALE

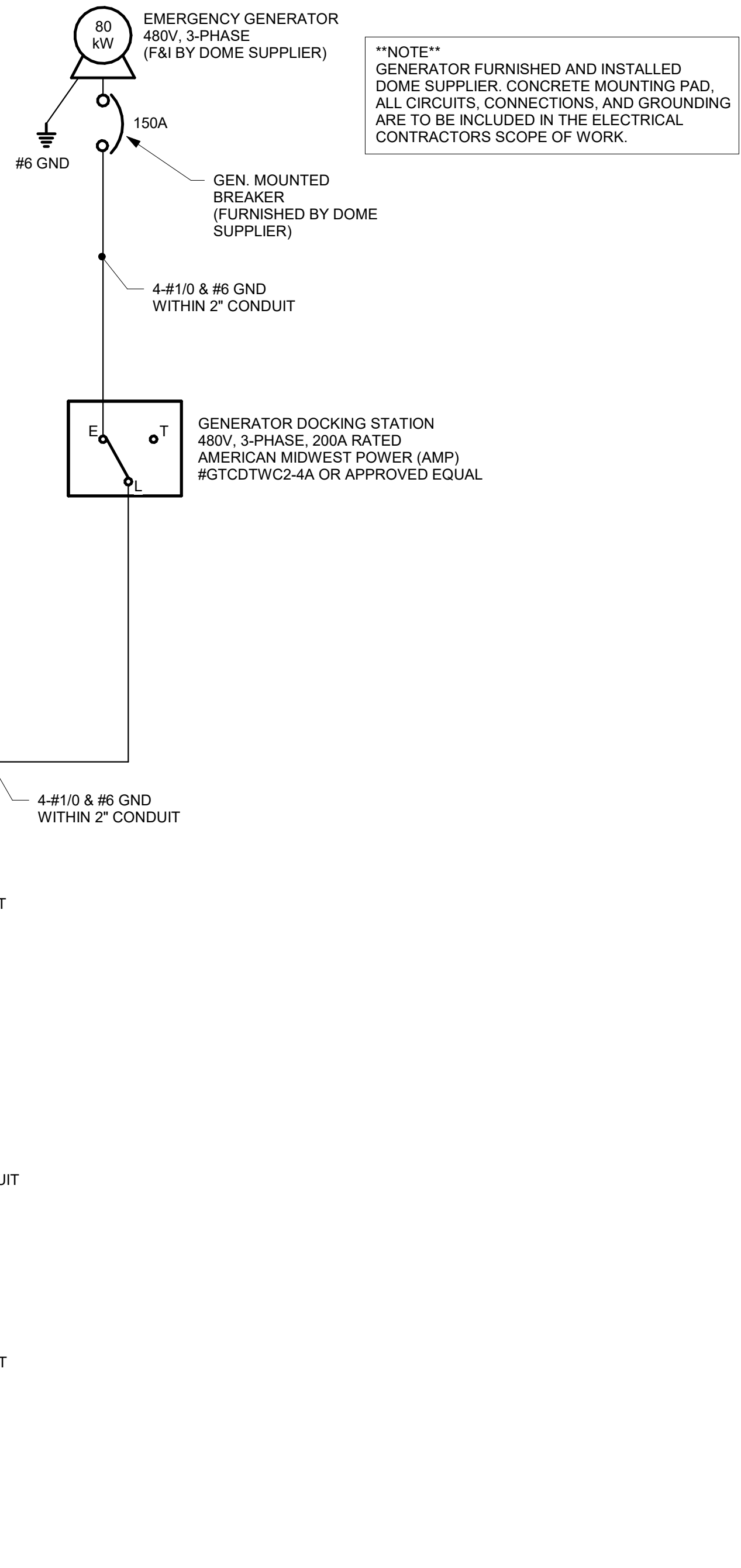
**SERVICE ENTRANCE EQUIPMENT
MAIN SWITCHBOARD (MSB)**



4 GROUNDING ONE LINE DIAGRAM DETAIL
NOT TO SCALE

ELECTRICAL SYMBOLS LEGEND									
RECEPTACLES		SWITCHES		MISC. POWER SYMBOLS		FIRE PROTECTION SYSTEM		COMMUNICATIONS	
	SIMPLEX		SINGLE POLE		DISCONNECT		FIRE ALARM CONTROL PANEL		DATA JACK - WALL
	DUPLEX		DOUBLE POLE		FUSED DISCONNECT		FIRE ALARM ANNUNCIATOR PNL		FLOOR DATA JACK
	ISOLATED GROUND		3-WAY		FAN		SMOKE DETECTOR		DATA JACK - CEILING
	TAMPER RESISTANT		4-WAY		ELECT. CONTROLLED VALVE		HEAT DETECTOR		TELEPHONE JACK - WALL
	WEATHER PROOF W/GFI		EMERGENCY		FUSESTAT		HORN ONLY		DATA VOICE JACK - WALL
	GROUND FAULT INTERRUPT		FAN		HAND DRYER		HORN ONLY		TELEVISION JACK
	CONTROLLED RECEPTACLE		KEY OPERATED		HAIR DRYER		STROBE ONLY (C = CLG MTD)		SPEAKER - CEILING
	COUNTERTOP RECEPTACLE		LOW VOLTAGE		HEATER		SPKR STROBE (C = CLG MTD)		SPEAKER - WALL/SURFACE
	COMBO RECEPTACLE / USB		PILOT LIGHT		JUNCTION BOX		EXTERIOR HORN W/ STROBE		CLOCK
	HIGH VOLTAGE		TIMER		MOTOR		MINI HORN		BELL
	SPLIT WIRE		CIRCUIT BREAKER		MOTOR WITH DISCONNECT		ANSL TIE		BUZZER
	DOUBLE DUPLEX		DIMMER		RELAY		SPRINKLER TAMPER SWITCH		INTERCOM
	220 VOLT		TOUCHSCREEN		SOLENOID VALVE		SPRINKLER FLOW SWITCH		MICROPHONE
	SPECIAL PURPOSE		MOTOR		COMBINATION STARTER & DISC		WALL SPEAKER - FIRE		SPEAKER/CLOCK
	CEILING MOUNTED RECPT		SPEED CONTROLLER		MOTOR STARTER		CEILING SPEAKER - FIRE		TIME CLOCK
	CEILING MOUNTED SP RECPT		SPRING WOUND TIMER		THERMOSTAT		MAGNETIC DOOR HOLDER		WIRELESS ACCESS POINT
	FLOOR BOX RECEPTACLE		MOMENTARY CONTACT		DUCT-TYPE SMOKE DETECTOR		MANUAL PULL STATION		TOUCHPAD
			WEATHER PROOF		USB CHARGING STATION		ADDRESSABLE INPUT MODULE		PROJECTOR
			OCCUPANCY SENSOR-WALL				ADDRESSABLE OUTPUT MOD.		BLUETOOTH
			VACANCY SENSOR-WALL				ABORT SWITCH		
			OCCUPANCY SENSOR-CLG				BELL-CHIME		
			VACANCY SENSOR-CLG				END OF LINE RESISTOR		
			PHOTO CELL				FIRE/SMOKE DAMPER		
			3-BUTTON SWITCH				SMOKE DAMPER		
			LOW VOLTAGE SWITCH / TYPE				CARBON MONOXIDE DETECTOR		

5 ONE LINE ELECTRICAL RISER
NOT TO SCALE



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

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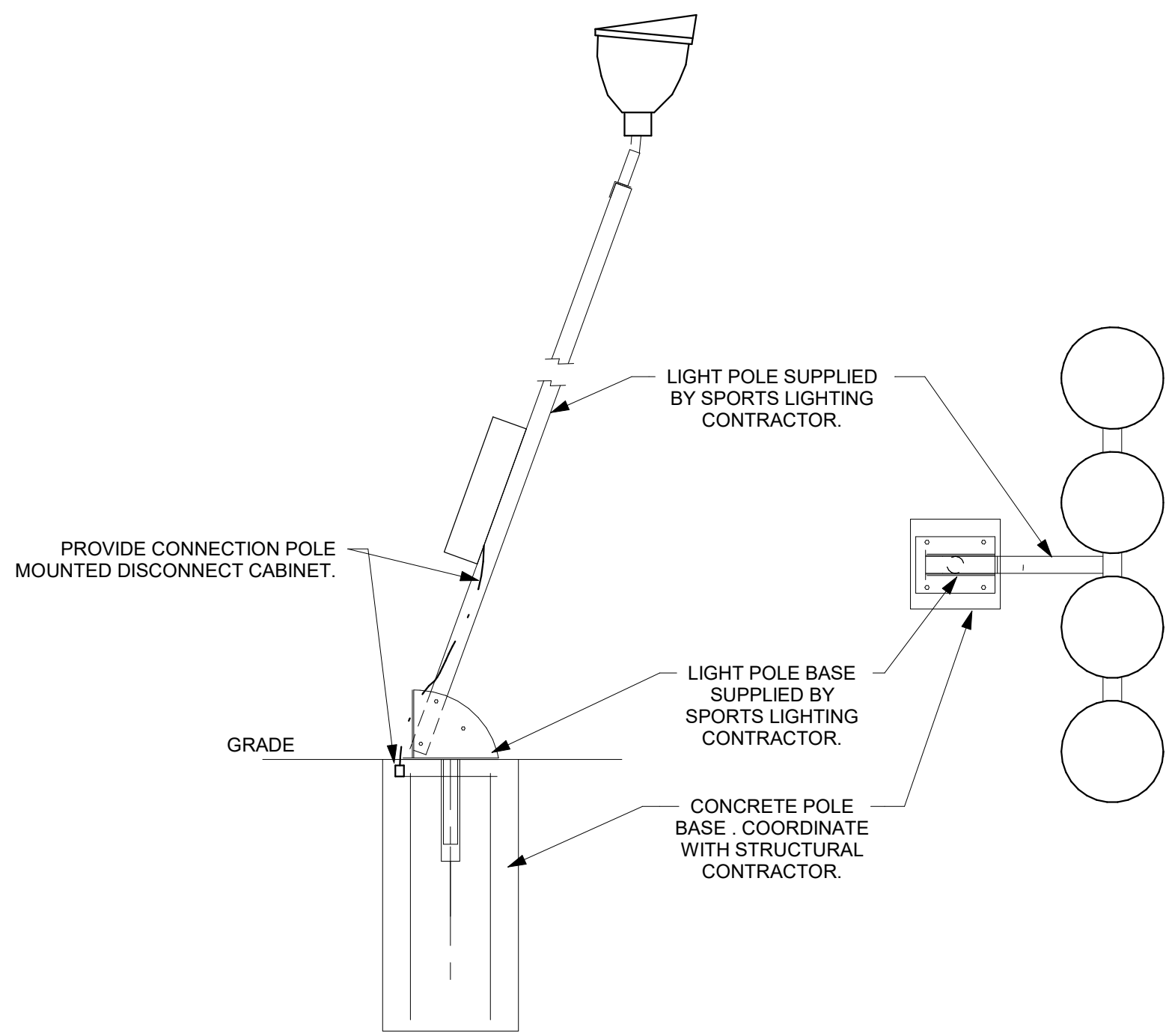
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DRAWN BY	ALB
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REVIEWED BY	JMH
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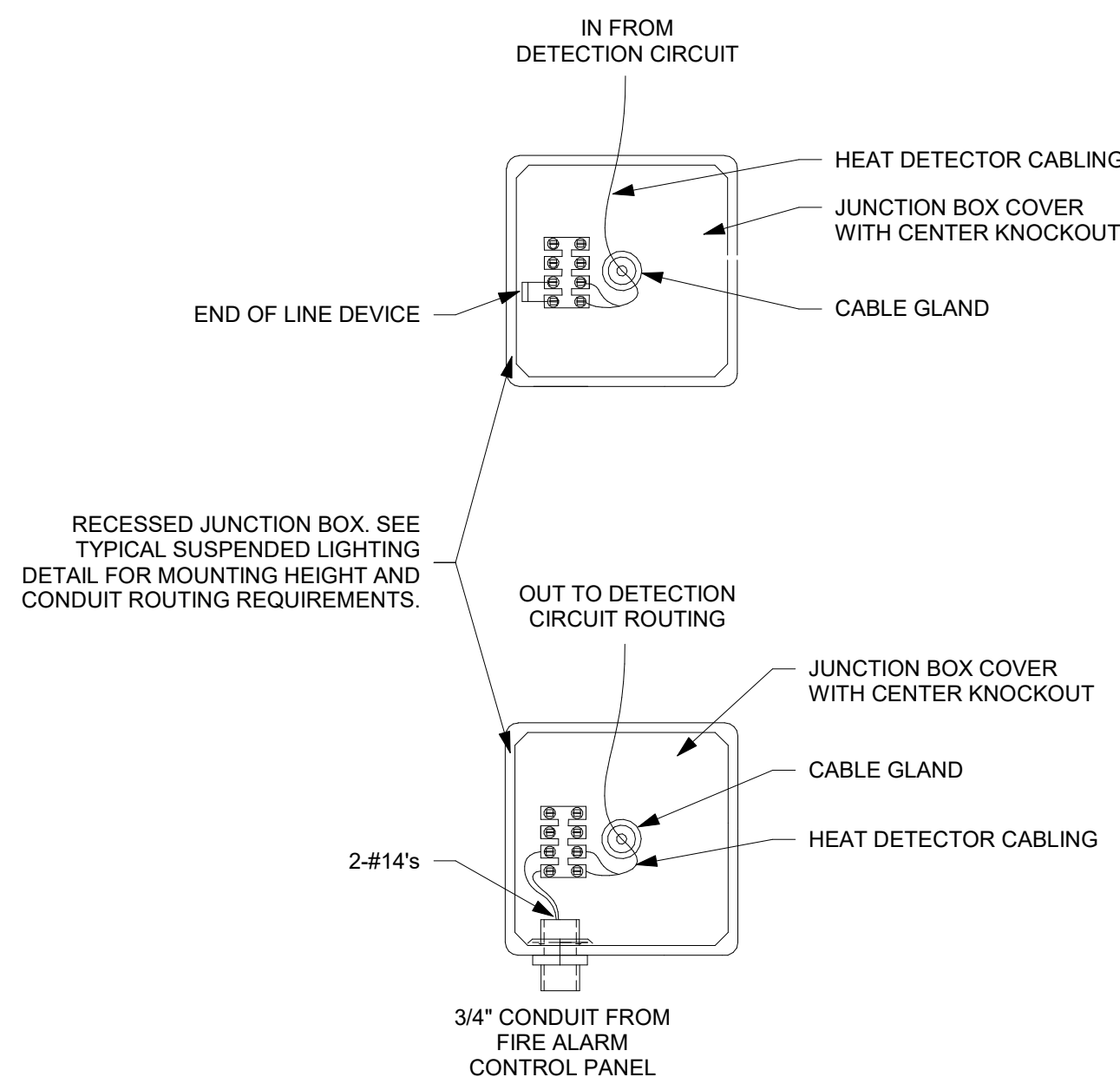
ELECTRICAL DETAILS AND ONE-LINE DIAGRAM

SHEET

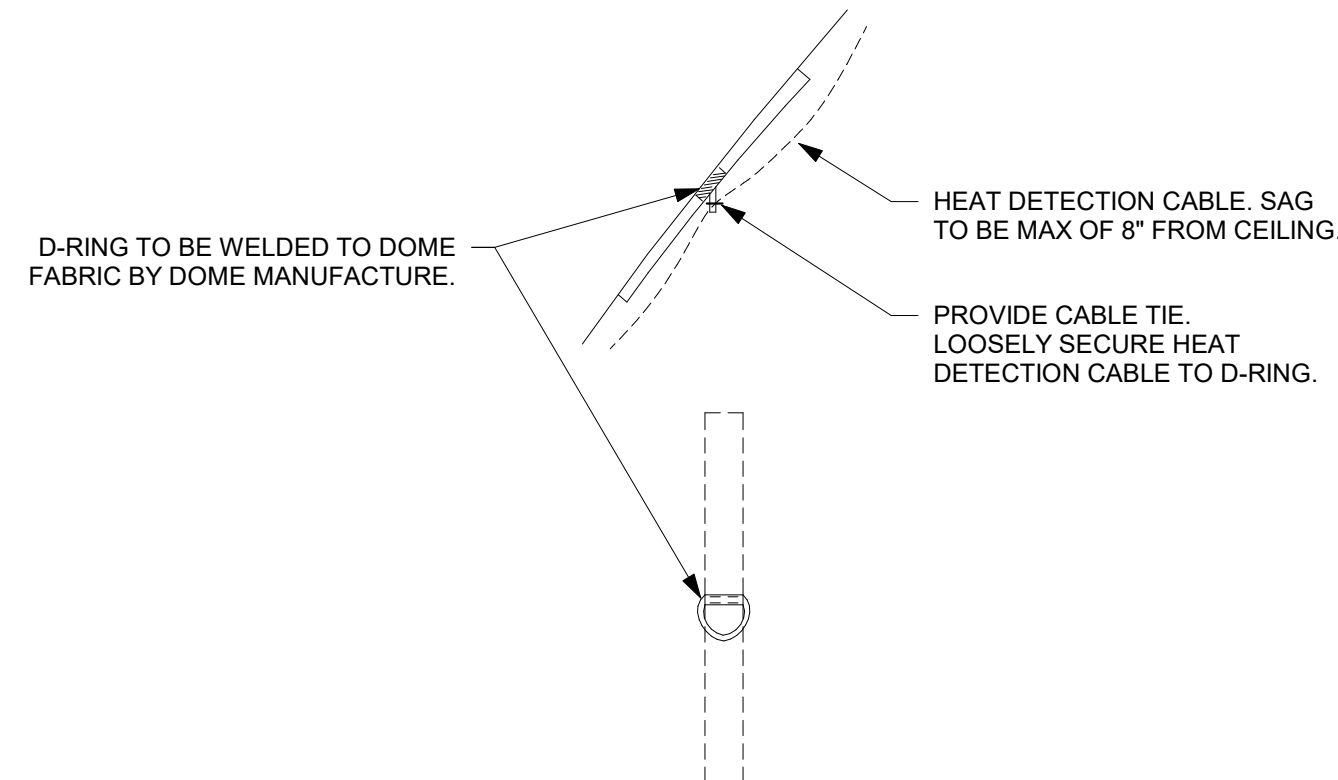
E4-11



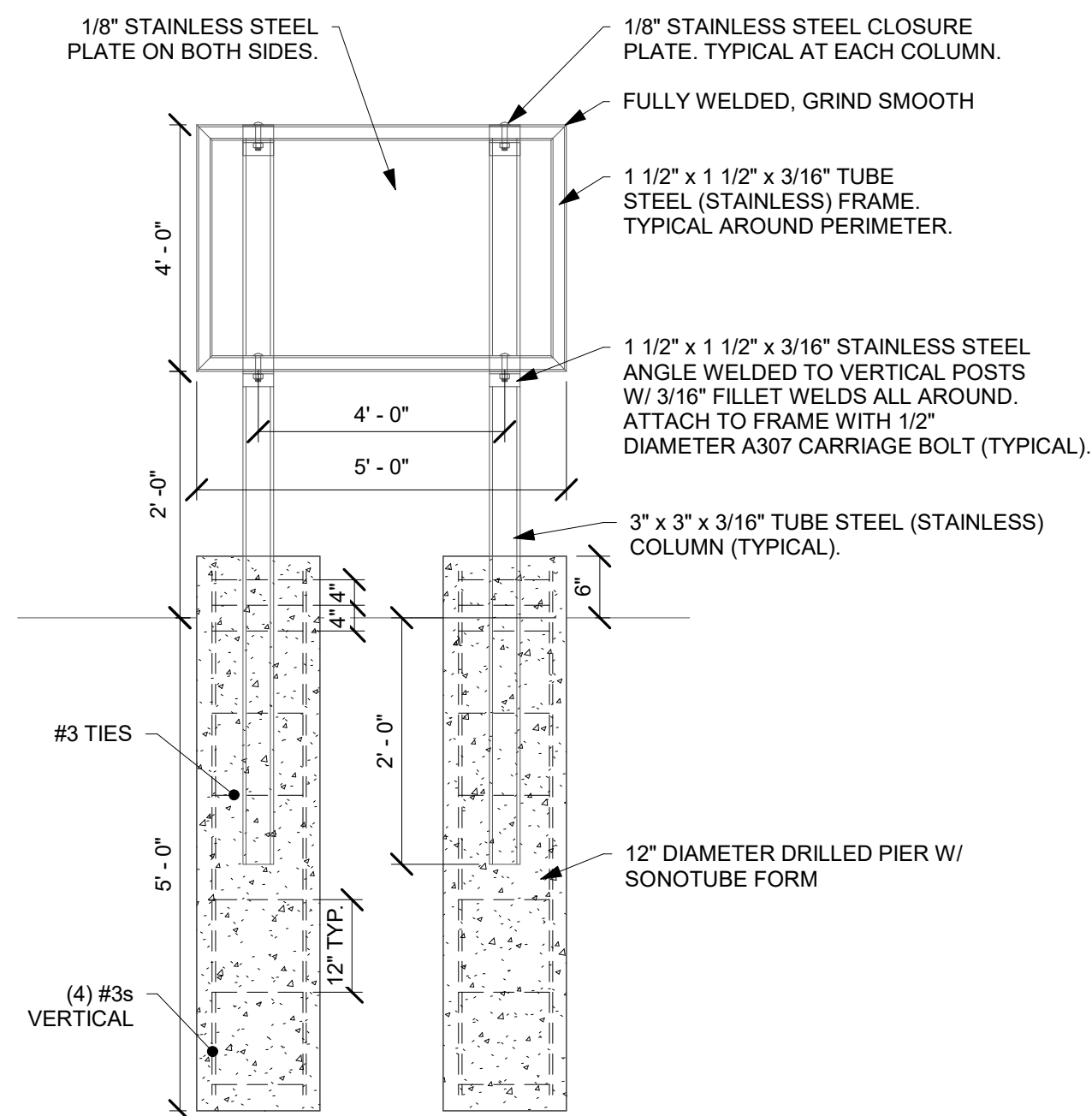
1 FOUR FIXTURE LIGHT POLE DETAIL
NOT TO SCALE



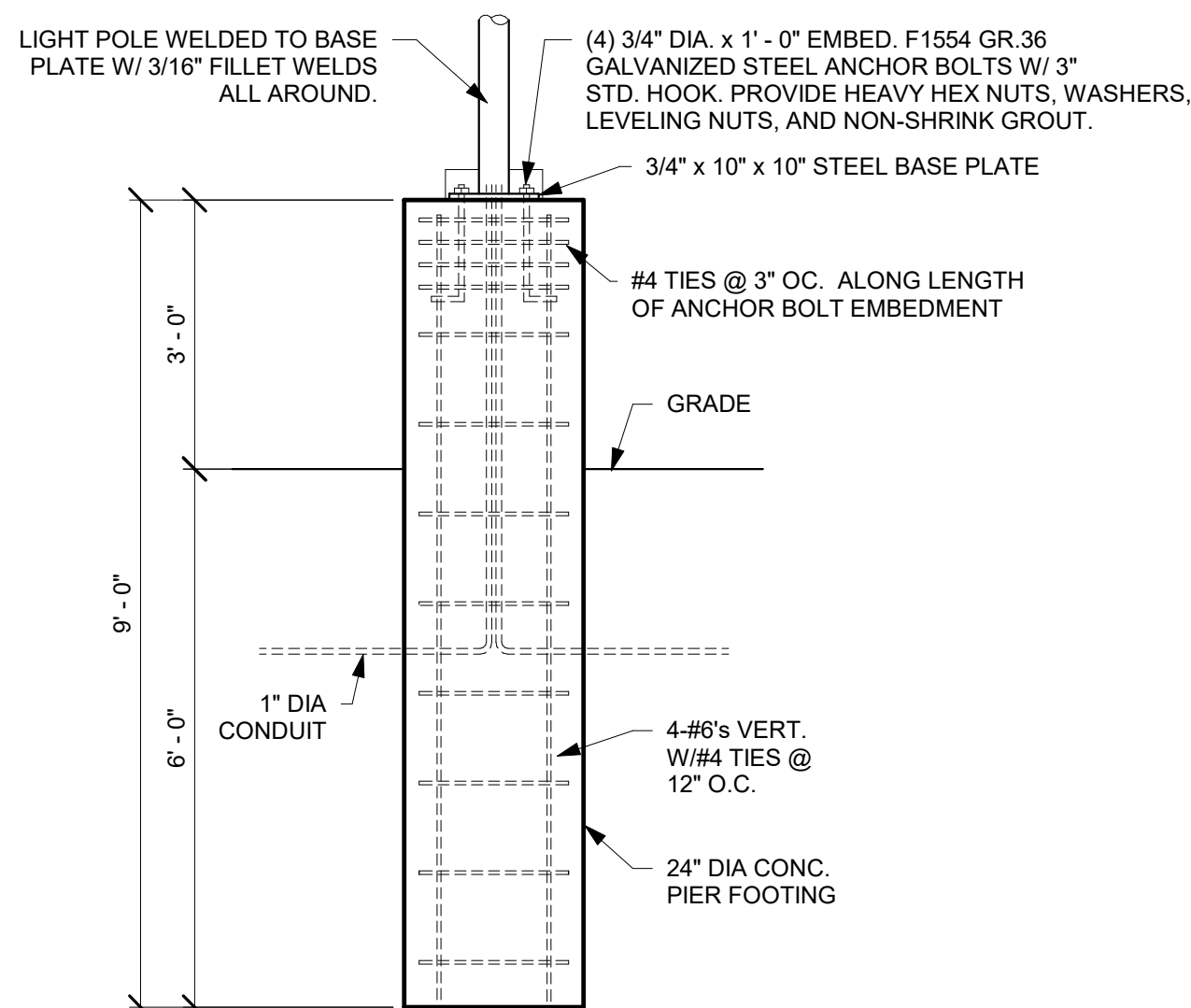
2 HEAT CABLE CONNECTIONS DETAIL
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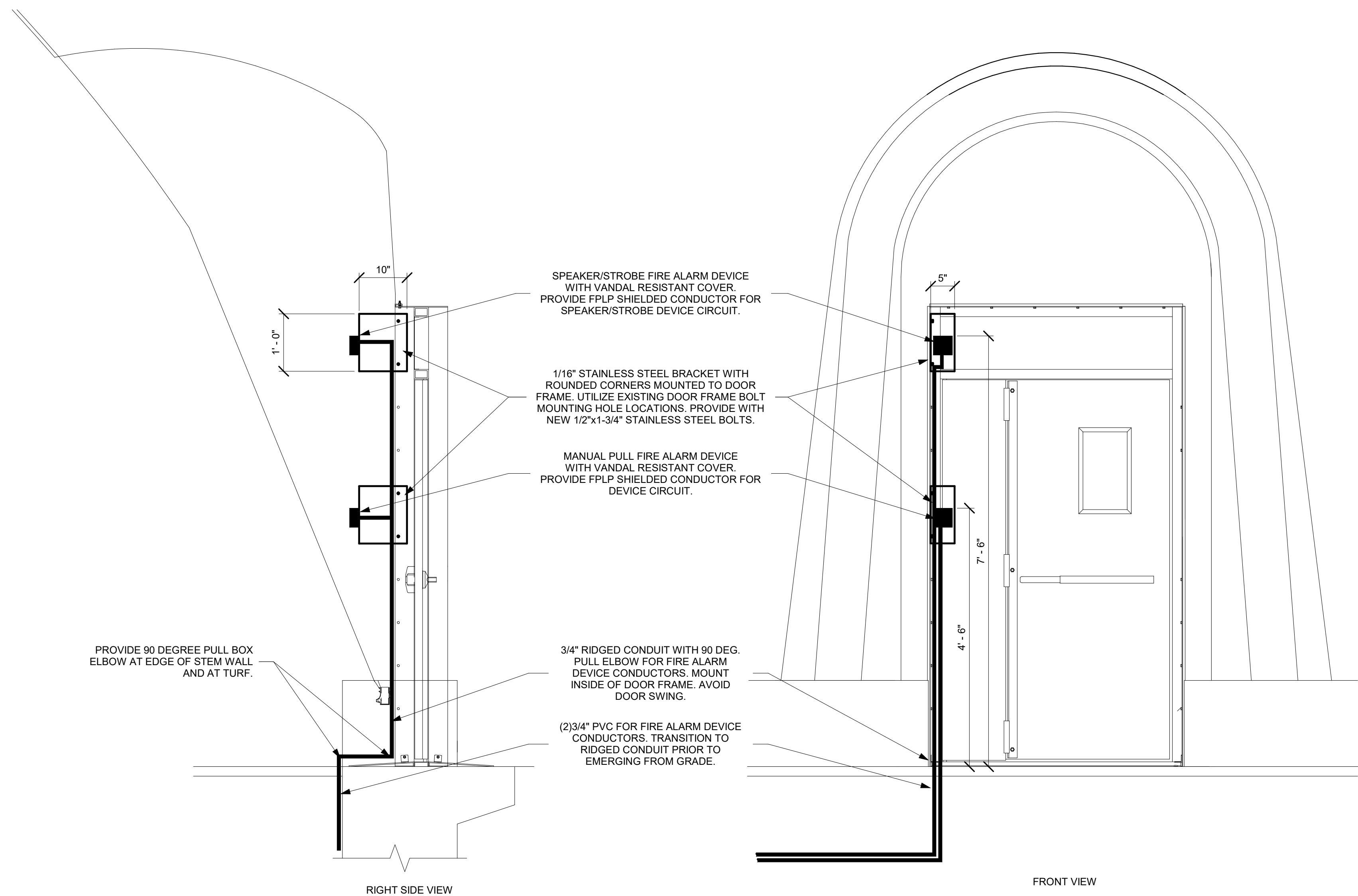
3 HEAT CABLE MOUNTING TO DOME FABRIC DETAIL
NOT TO SCALE



4 METER BACKBOARD DETAIL
1/16" = 1'-0"



5 SITE POLE MOUNTING BASE DETAIL
1/2" = 1'-0"



6 FIRE ALARM DEVICE MOUNTING BRACKET DETAIL
NOT TO SCALE



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	24-29721
FILE NAME	29721 Elec R22
DRAWN BY	ALB
DESIGNED BY	ALB
REVIEWED BY	JMH
ORIGINAL ISSUE DATE	06/13/24
CLIENT PROJECT NO.	

TITLE

ELECTRICAL DETAILS

SHEET

E4-12

Branch Panel: LP

Location: MECH & ELEC. 107
Supply From: TN
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10 kAIC
Mains Type: MCB
Mains Rating: 200 A
MCB Rating: 200 A

Notes:

CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT
1	HARDWIRED PLUMBING - ...	20 A	1	45	90			1	20 A HARDWIRED PLUMBING - 104	2
3	PUMP-1	15 A	1			62	180	1	20 A RCPT - CONCESSIONS 101	4
5	HARDWIRED PLUMBING - 103	20 A	1					1	20 A RCPT - 100	6
7	RCPT - DR FOUNTAIN	20 A	1	600	1260			1	20 A RCPT - DOME	8
9	RCPT - 106, 107	20 A	1			900	1260	1	20 A RCPT - DOME	10
11	RCPT - 101-105	20 A	1					1	20 A RCPT - CONCESSIONS 101	12
13	RCPT - DOME	20 A	1	1440	1100			1	20 A RCPT - CONCESSIONS 101	14
15						1100	1100	2	20 A ELECTRIC UNIT HEATER-1	16
17	ELECTRIC UNIT HEATER-2	20 A	2					2	25 A ELECTRIC RADIANT HEATER-2	18
19	RCPT - CONCESSIONS 101	20 A	1	180	2000			1	20 A RCPT - CONCESSIONS 101	22
21	ELECTRIC RADIANT HEATER-1	15 A	2			2000	180	1	20 A CONTACTIR CABINET	24
23								2	20 A ELECTRIC UNIT HEATER-3	26
25	BASEBOARD HEATER-1	20 A	1	1000	1100			1	20 A SPARE	30
27	BASEBOARD HEATER-2	20 A	1			1000	1100	1	20 A SPARE	32
29	ELECTRIC UNIT HEATER-5	20 A	2					1	20 A SPARE	34
31				1100	0			1	20 A SPARE	36
33	ELECTRIC UNIT HEATER-4	20 A	2			1100	0	1	20 A SPARE	38
35								1	-- BLANK	40
37	SPARE	20 A	1	0	--			1	-- BLANK	42
39	SPARE	20 A	1			0	--	1	-- BLANK	
41	SPARE	20 A	1					1	-- BLANK	
				Total Load:	9915 VA	9982 VA	10010 VA			
				Total Amps:	83 A	83 A	84 A			

Legend:

Branch Panel: ELP

Location: MECH & ELEC. 107
Supply From: TE
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10 kAIC
Mains Type: MCB
Mains Rating: 60 A
MCB Rating: 60 A

Notes:

CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT
1	RCPT - GEN MOUNTED	20 A	1	180	300			1	20 A FACP	2
3	LCP	20 A	1			300	720	1	20 A GEN BATTERY CHARGER	4
5	GEN BLOCK HEATER	30 A	1					1	20 A SPARE	6
7	EMERGENCY CONTACTOR...	20 A	1	500	0			1	20 A SPARE	8
9	SPARE	20 A	1			0	0	1	20 A SPARE	10
11	SPARE	20 A	1					1	20 A SPARE	12
13	SPARE	20 A	1	0	0			1	20 A SPARE	14
15	SPARE	20 A	1			0	0	1	20 A SPARE	16
17	SPARE	20 A	1					1	20 A SPARE	18
19	BLANK	--	1	--	--			1	-- BLANK	20
21	BLANK	--	1	--	--			1	-- BLANK	22
23	BLANK	--	1	--	--			1	-- BLANK	24
25	BLANK	--	1	--	--			1	-- BLANK	26
27	BLANK	--	1	--	--			1	-- BLANK	28
29	BLANK	--	1	--	--			1	-- BLANK	30
				Total Load:	980 VA	1020 VA	2500 VA			
				Total Amps:	8 A	9 A	21 A			

Legend:

Branch Panel: HP

Location: MECH & ELEC. 107
Supply From: MSB
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 35 kAIC
Mains Type: MLO
Mains Rating: 400 A
MCB Rating: 400 A

Notes:

CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT
1				9915	993					2
3	TRANSFORMER TN	125 A	3			9982	993			4
5				1383	993			10010	993	6
7										8
9	LTG - DOME	15 A	3			1383	993			10
11								1383	993	12
13										14
15	LTG - DOME	15 A	3	1383	993			1383	993	16
17										18
19				1383	993					20
21	LTG - DOME	15 A	3			1383	993			22
23								1383	993	24
25				1383	993					26
27	LTG - DOME	15 A	3			1383	993			28
29								1383	993	30
31				1383	993					32
33	LTG - DOME	15 A	3			1383	993			34
35								1383	993	36
37				1383	993					38
39	LTG - DOME	15 A	3			1383	993			40
41								1383	993	42
43				1383	993					44
45	LTG - DOME	15 A	3			1383	993			46
47								1383	993	48
49				1383	993					50
51	LTG - DOME	20 A	3			1383	993			52
53								1383	993	54
55				1383	993					56
57	LTG - DOME	15 A	3			1383	993			58
59								1383	993	60
61				1383	993					62
63	LTG - DOME	15 A	3			1383	993			64
65								1383	993	66
67				1383	993					68
69	LTG - DOME	15 A	3			1383	993			70
71								1383	993	72
73				1383	408					74
75	LTG - DOME	15 A	3			1383	6000			76
77								1383	0	78
79	SPARE	20 A	1	0	0					80
81	SPARE	20 A	1			0	0			82
83	SPARE	20 A	1					0	0	84
				Total Load:	38823 VA	44502 VA	38530 VA			
				Total Amps:	140 A	161 A	139 A			

Legend:

Branch Panel: EHP

Location: MECH & ELEC. 107
Supply From: ATS
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 35 kAIC
Mains Type: MLO
Mains Rating: 150 A
MCB Rating: 150 A

Notes:

CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT
1				980	397			1	20 A LTG - 101-107	2
3	TE	20 A	3			1020	1170			4
5								2500	1170	6
7				1170	1170					8
9	LTG - DOME EMERGENCY	15 A	3			1170	1170			10
11								1170	1170	12
13				1170	1170					14
15	LTG - DOME EMERGENCY	15 A	3			1170	90			16
17								1170	90	18
19	SPARE	20 A	1	0	0					20
21	SPARE	20 A	1			0	0			22
23	SPARE	20 A	1					0	0	24
25	BLANK	--	1	--	--					26
27	BLANK	--	1	--	--					28
29	BLANK	--	1	--	--			--	--	30
				Total Load:	6038 VA	5786 VA	7266 VA			
				Total Amps:	22 A	21 A	26 A			

Legend:

ELECTRICAL EQUIPMENT SCHEDULE														
TAG	DESCRIPTION	POWER REQUIREMENTS					LOCATION	PNL - CKT	MINIMUM CONDUIT, WIRE SIZE, GROUND	STARTER		DISCONNECT		NOTES
		HP	VOLTS	POLES	FLA	VA				TYPE	BY	TYPE	BY	
BH-1	BASEBOARD HEATER-1	-	120 V	1	8.3 A	1000 VA	OFFICE 106	LP - 25	3/4"C, 2- 12%, 12GND	(none)	(none)	NF	WU	
BH-2	BASEBOARD HEATER-2	-	120 V	1	8.3 A	1000 VA	TOILET 105	LP - 27	3/4"C, 2- 12%, 12GND	(none)	(none)	NF	WU	
EE-1	INFLATION UNIT A	(2) 3/4	480 V	3	63.0 A	52377 VA	EXTERIOR	MSB - 1,3,5	1"C, 3- 4%, 8GND	VFD	WU	NF	EC	
EE-2	INFLATION UNIT B	(2) 3/4	480 V	3	63.0 A	52377 VA	EXTERIOR	MSB - 2,4,6	1"C, 3- 4%, 8GND	VFD	WU	NF	EC	
EE-3	CONDENSING UNIT A	-	480 V	3	178.0 A	147886 VA	EXTERIOR	MSB - 7,9,11	2"C, 3- 40%, 4GND	(none)	(none)	NF	EC	
EE-4	CONDENSING UNIT B	-	480 V	3	178.0 A	147886 VA	EXTERIOR	MSB - 8,10,12	2"C, 3- 40%, 4GND	(none)	(none)	NF	EC	
ERH-1	ELECTRIC RADIANT HEATER-1	-	208 V	2	19.2 A	4000 VA	VESTIBULE 100	LP - 21,23	3/4"C, 2- 10%, 10GND	(none)	(none)	NF	WU	
ERH-2	ELECTRIC RADIANT HEATER-2	-	208 V	2	19.2 A	4000 VA	VESTIBULE 100	LP - 18,20	3/4"C, 2- 10%, 10GND	(none)	(none)	NF	WU	
EUH-1	ELECTRIC UNIT HEATER-1	-	208 V	2	11.0 A	2200 VA	MECH & ELEC. 107	LP - 14,16	3/4"C, 2- 12%, 12GND	(none)	(none)	NF	WU	
EUH-2	ELECTRIC UNIT HEATER-2	-	208 V	2	11.0 A	2200 VA	MENS 104	LP - 15,17	3/4"C, 2- 12%, 12GND	(none)	(none)	NF	WU	
EUH-3	ELECTRIC UNIT HEATER-3	-	208 V	2	11.0 A	2200 VA	WOMENS 103	LP - 26,28	3/4"C, 2- 12%, 12GND	(none)	(none)	NF	WU	
EUH-4	ELECTRIC UNIT HEATER-4	-	208 V	2	11.0 A	2200 VA	SUPPORT 102	LP - 33,35	3/4"C, 2- 12%, 12GND	(none)	(none)	NF	WU	
EUH-5	ELECTRIC UNIT HEATER-5	-	208 V	2	11.0 A	2200 VA	CONCESSIONS 101	LP - 29,31	3/4"C, 2- 12%, 12GND	(none)	(none)	NF	WU	
P-1	PUMP-1	-	120 V	1	0.0 A	62 VA	MECH & ELEC. 107	LP - 3	3/4"C, 2- 12%, 12GND	(none)	(none)	NF	EC	
WH-1	WATER HEATER-1	-	277 V	1	21.6 A	6000 VA	MECH & ELEC. 107	HP - 76	3/4"C, 2- 10%, 10GND	(none)	(none)	NF	EC	
STARTER TYPE		STARTER BY					DISCONNECT TYPE		DISCONNECT BY					
COMB - COMBINATION		EC - ELECTRICAL CONTRACTOR					BO - BY OTHERS		EC - ELECTRICAL CONTRACTOR					
ECM - ELECTRONICALLY CONTROLLED MOTOR		ES - EQUIPMENT SUPPLIER					F - FUSED DISCONNECT		ES - EQUIPMENT SUPPLIER					
MAG - MAGNETIC STARTER		MC - MECHANICAL CONTRACTOR					NF - NON-FUSED DISCONNECT		MC - MECHANICAL CONTRACTOR					
MAN - MANUAL STARTER		WU - WITH UNIT					WU - WITH UNIT							
SS - SOFT STARTER														
VFD - VARIABLE FREQUENCY DRIVE														



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PROJECT

MUSCATINE
INDOOR SPORTS
COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY
		</

DOME LIGHTING SCHEDULE										
TAG	DESCRIPTION	MANUFACTURER	MODEL	POWER REQUIREMENTS				MINIMUM CONDUIT, WIRE SIZE, GROUND	NOTES	
				VOLTS	POLES	FLA	VA	PNL - CKT		
M1	DOME LIGHTING	MUSCO	(2) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	3.5 A	2980 VA	HP - 2,4,6	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C1 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M1. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M1E	DOME EMERGENCY LIGHTING	MUSCO	(1) TLC-RGBW 28,000 LUMENS	480 V	3	2.4 A	1170 VA	EHP - 4,6,8	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C1 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M1. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M2	DOME LIGHTING	MUSCO	(3) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	5.0 A	4150 VA	HP - 7,9,11	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C2 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M2. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M3	DOME LIGHTING	MUSCO	(2) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	3.5 A	2980 VA	HP - 8,10,12	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C2 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M2. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M3E	DOME EMERGENCY LIGHTING	MUSCO	(1) TLC-RGBW 28,000 LUMENS	480 V	3	2.4 A	1170 VA	EHP - 4,6,8	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C2 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M3. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M4	DOME LIGHTING	MUSCO	(3) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	5.0 A	4150 VA	HP - 13,15,17	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C3 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M3. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M5	DOME LIGHTING	MUSCO	(2) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	3.5 A	2980 VA	HP - 14,16,18	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C3 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M4. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M5E	DOME EMERGENCY LIGHTING	MUSCO	(1) TLC-RGBW 28,000 LUMENS	480 V	3	2.4 A	1170 VA	EHP - 4,6,8	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C3 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M5. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M6	DOME LIGHTING	MUSCO	(3) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	5.0 A	4150 VA	HP - 19,21,23	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C4 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M4. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M7	DOME LIGHTING	MUSCO	(2) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	3.5 A	2980 VA	HP - 20,22,24	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C4 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M5. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M7E	DOME EMERGENCY LIGHTING	MUSCO	(1) TLC-RGBW 28,000 LUMENS	480 V	3	2.4 A	1170 VA	EHP - 7,9,11	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C5 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M6. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M8	DOME LIGHTING	MUSCO	(3) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	5.0 A	4150 VA	HP - 25,27,29	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C5 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M7. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M9	DOME LIGHTING	MUSCO	(2) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	3.5 A	2980 VA	HP - 26,28,30	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C6 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M8. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M9E	DOME EMERGENCY LIGHTING	MUSCO	(1) TLC-RGBW 28,000 LUMENS	480 V	3	2.4 A	1170 VA	EHP - 7,9,11	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C6 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M9. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M10	DOME LIGHTING	MUSCO	(3) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	5.0 A	4150 VA	HP - 31,33,35	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C7 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M9. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M11	DOME LIGHTING	MUSCO	(2) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	3.5 A	2980 VA	HP - 32,34,36	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C7 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M10. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M11E	DOME EMERGENCY LIGHTING	MUSCO	(1) TLC-RGBW 28,000 LUMENS	480 V	3	2.4 A	1170 VA	EHP - 7,9,11	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C8 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M11. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M12	DOME LIGHTING	MUSCO	(3) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	5.0 A	4150 VA	HP - 37,39,41	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C8 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M11. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M13	DOME LIGHTING	MUSCO	(2) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	3.5 A	2980 VA	HP - 38,40,42	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C9 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M12. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M13E	DOME EMERGENCY LIGHTING	MUSCO	(1) TLC-RGBW 28,000 LUMENS	480 V	3	2.4 A	1170 VA	EHP - 10,12,14	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C9 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M13. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M14	DOME LIGHTING	MUSCO	(3) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	5.0 A	4150 VA	HP - 43,45,47	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C10 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M13. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M15	DOME LIGHTING	MUSCO	(2) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	3.5 A	2980 VA	HP - 44,46,48	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C10 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M14. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M15E	DOME EMERGENCY LIGHTING	MUSCO	(1) TLC-RGBW 28,000 LUMENS	480 V	3	2.4 A	1170 VA	EHP - 10,12,14	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C11 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M15. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M16	DOME LIGHTING	MUSCO	(3) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	5.0 A	4150 VA	HP - 49,51,53	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C11 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M15. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M17	DOME LIGHTING	MUSCO	(2) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	3.5 A	2980 VA	HP - 50,52,54	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C12 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M16. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M17E	DOME EMERGENCY LIGHTING	MUSCO	(1) TLC-RGBW 28,000 LUMENS	480 V	3	2.4 A	1170 VA	EHP - 10,12,14	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C12 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M17. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M18	DOME LIGHTING	MUSCO	(3) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	5.0 A	4150 VA	HP - 55,57,59	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C13 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M17. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M19	DOME LIGHTING	MUSCO	(2) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	3.5 A	2980 VA	HP - 56,58,60	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C13 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M18. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M19E	DOME EMERGENCY LIGHTING	MUSCO	(1) TLC-RGBW 28,000 LUMENS	480 V	3	2.4 A	1170 VA	EHP - 13,15,17	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C14 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M19. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M20	DOME LIGHTING	MUSCO	(3) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	5.0 A	4150 VA	HP - 61,63,65	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C14 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M19. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M21	DOME LIGHTING	MUSCO	(2) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	3.5 A	2980 VA	HP - 62,64,66	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C15 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M20. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M21E	DOME EMERGENCY LIGHTING	MUSCO	(1) TLC-RGBW 28,000 LUMENS	480 V	3	2.4 A	1170 VA	EHP - 13,15,17	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C15 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M21. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M22	DOME LIGHTING	MUSCO	(3) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	5.0 A	4150 VA	HP - 67,69,71	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C16 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M21. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M23	DOME LIGHTING	MUSCO	(2) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	3.5 A	2980 VA	HP - 68,70,72	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C16 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M22. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M23E	DOME EMERGENCY LIGHTING	MUSCO	(1) TLC-RGBW 28,000 LUMENS	480 V	3	2.4 A	1170 VA	EHP - 13,15,17	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C17 WITHIN CONTROL CABINET 1. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M22. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.
M24	DOME LIGHTING	MUSCO	(3) TLC-LED-1200 150,000 LUMENS (1) TLC-RGBW 28,000 LUMENS	480 V	3	5.0 A	4150 VA	HP - 73,75,77	3/4"C, 3- 12", 12GND	ROUTE THROUGH CONTACTOR C17 WITHIN CONTROL CABINET 2. ROUTE THROUGH IN-GRADE BOX AT FIELD LIGHT POLE M23. INTERCONNECT LIGHT FIXTURES ON MOUNTING ARM AND PROVIDE SO CORD FROM MOUNTING ARM THROUGH LIGHT POLE TO IN-GRADE BASE. SEE DETAIL.

LIGHT FIXTURE SCHEDULE							
TYPE	DESCRIPTION	MANUFACTURER	MODEL	LAMP	WATTS	TYPE COMMENTS	
A	2x4 INDIRECT TROFFER	LITHONIA	2BLT4-30L-ADP-EZ1-LP840	3200 LM	23 W		
A1	2x4 INDIRECT TROFFER - GYP MOUNT	LITHONIA	2BLT4-30L-ADP-EZ1-LP840	3200 LM	23 W	PROVIDE WITH DRYWALL ADAPTER #DGA24.	
S	SURFACE MOUNT STRIP	LITHONIA	ZL1D-L48-5000LM-MVOLT-40K-80CRI-WH	5500 LM	41 W		
S1	SUSPENDED STRIP	LITHONIA	ZL1D-L48-5000LM-MVOLT-40K-80CRI-L80ZU-WH	4000 LM	30 W	PROVIDE WITH CHAIN HANGER #HC36-M12 AND SUSPEND WITH BOTTOM OF FIXTURE @ 10' A.F.F COORDINATE MOUNTING LOCATION WITH STRUCTURE.	
Z	AREA LIGHT TYPE III HSS	LITHONIA	DSX1-P1-40K-70CRI-T3M-MVOLT-RPA-HS-DOBXD	7600 LM	51 W	INSTALL ON 3' BASE AND 17' POLE	
Z1	AREA LIGHT TYPE III HSS	LITHONIA	DSX1-P1-40K-70CRI-TFTM-MVOLT-RPA-HS-DOBXD	7700 LM	51 W	INSTALL ON 3' BASE AND 17' POLE	

LIGHTING SCENARIO SCHEDULE	
SCENARIO#	LIGHTING SCENARIO DESCRIPTION
L\$1	MANUAL ON/OFF CONTROL.
L\$2	AUTOMATIC CONTROL OF FIXTURES BASED UPON THE FOLLOWING SCHEDULE: OCCUPIED AND UNOCCUPIED HOURS. LIGHTING SET TO ON WHEN OCCUPANCY IS SENSED. UPON EXITING SPACE, SENSOR TO TRIGGER SPACE TO OFF AFTER 20 MINUTES OF NO OCCUPANCY SENSED.
L\$3	OCCUPANCY SENSOR AND MANUAL ON/OFF.
L\$4	OCCUPANCY SENSOR TO TURN OFF LIGHTING AFTER 20 MINUTES OF OCCUPANT LEAVING SPACE.
L\$5	VACANCY SENSOR AND MANUAL CONTROL. VACANCY SENSOR TO TURN OFF LIGHTING AFTER 20 MINUTES OF OCCUPANT LEAVING SPACE.
L\$6	OCCUPANCY SENSOR AND MANUAL CONTROL OF DIMMED FIXTURES BASED UPON THE FOLLOWING SCHEDULE: SWITCH #1: MANUAL ON/OFF CONTROL AND DIMMING CONTROL. OCCUPANCY SENSOR AUTO ON, OCCUPANCY SENSOR TO TURN LIGHTS OFF AFTER 20 MINUTES OF OCCUPANT LEAVING SPACE.
	VACANCY SENSOR & MANUAL CONTROL OF DIMMED FIXTURES BASED UPON THE FOLLOWING SCHEDULE: SWITCH #1: MANUAL ON/OFF CONTROL WITH DIMMING CONTROL.
	UPON EXITING ROOM, SENSOR TO TRIGGER ROOM TO 'OFF' POSITION AFTER 20-MINUTES OF NO OCCUPANCY SENSED AND RETURN SYSTEM TO A MANUAL 'ON' CONDITION.



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PROJECT

MUSCATINE INDOOR SPORTS COMPLEX

MUSCATINE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 24-29721
FILE NAME 29721 Elec R22
DRAWN BY ALB
DESIGNED BY ALB
REVIEWED BY JMH
ORIGINAL ISSUE DATE 06/13/24

CLIENT PROJECT NO.

TITLE

ELECTRICAL SCHEDULES

SHEET

E5-12



City of Muscatine

ITEM NUMBER 2024-0272

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Andrew Fangman, Assistant Community Development Director

SUBJECT

Resolution Approving a Preliminary/Final Plat for Niemann Acres

EXECUTIVE SUMMARY

Presented for Council's consideration is a resolution approving a combined preliminary/final plat for Niemann Acres. The proposed subdivision would split the existing 11.1-acre property located at 2720 Isett Avenue into two lots. The proposed 2.96-acre Lot 1 would contain the existing home and accessory structures. The proposed 8-acre Lot 2 is intended for the development of one new single-family home.

STAFF RECOMMENDATION

At their June 11 meeting, the Planning and Zoning Commission unanimously approved the combined preliminary/final plat. Staff recommends approval of the proposed subdivision, as it is consistent with the adopted Comprehensive Plan and existing land use patterns.

BACKGROUND/DISCUSSION

Angela Niemann has submitted a combined preliminary/final plat for Niemann Acres. The proposed subdivision would split the existing 11.1-acre property located at 2720 Isett Avenue into two lots. The proposed 2.96-acre Lot 1 would contain the existing home and accessory structures. The proposed 8-acre Lot 2 would be intended for the development of one new single-family home.

The Muscatine city limit line runs through the middle of the proposed subdivision. It is proposed to realign the city limit line to follow the boundary between the proposed Lot 1 and Lot 2. This would be done by annexing a portion of the proposed Lot 2 into the City of Muscatine and severing a portion of the proposed Lot 1 from the City. Action items to proceed with the annexation and severance will be brought forward to the City Council at a future meeting, after the Muscatine County Board of Supervisors and Bloomington Township Board of Trustees have been given the time required by the Code of Iowa to make recommendations on the proposed annexation and severance. Completion of the annexation/severance process is not necessary for final approval of the proposed plat as the county is concurrently acting on it.

The existing home and structures are currently taxed as if they are solely located within unincorporated Muscatine County, even though the existing home is split by the city limit line.

CITY FINANCIAL IMPACT

The creation of the proposed Lot 2 would allow for the development of a new single-family home within the city limits, positively impacting the tax base

ATTACHMENTS

1. Niemann Acres Subdivision Resoultion & Supporting Docs
2. Niemann Acres Memo Map
3. Niemann Acres Plat

Prepared by Andrew Fangman, 215 Sycamore St., Muscatine, IA 52761 – (563) 262-4141

NIEMANN ACRES
CERTIFICATE OF ACCEPTANCE OF FINAL PLAT

STATE OF IOWA, MUSCATINE COUNTY, ss:

We, the undersigned, Brad Bark and Carol Webb, of the City of Muscatine, Iowa, do hereby certify that the attached plat named and designated **Niemann Acres**, in the City of Muscatine, Muscatine County, Iowa, was on **June 20, 2024**, filed in the office of the City Clerk and presented to the City Council of the City of Muscatine, Iowa, by resolution, a true copy of which is hereto attached, marked Exhibit A, and by this reference made a part hereof; and we, the undersigned, as Mayor and City Clerk, respectively, of the City of Muscatine, Iowa, were by said Resolution duly directed to certify such examination, consent, and approval in order to entitle said plat to be recorded in the Office of the County Recorder of Muscatine County, Iowa, among the real estate records of Muscatine County, Iowa.

Dated at Muscatine, Iowa, this **20th Day of June, 2024**

Brad Bark, Mayor

Attest:

Carol Webb, City Clerk

STATE OF IOWA, MUSCATINE COUNTY, ss:

Be it Remembered that on this **20th Day of June, 2024** before me, a Notary Public in and for the State of Iowa, personally appeared Brad Bark and Carol Webb, to me personally known, who being by me each duly sworn, did say that they are Mayor and City Clerk of the City of Muscatine, Iowa, respectively, and that the seal affixed to the foregoing instrument is the seal of the City of Muscatine, Iowa; that said instrument was signed and sealed on behalf of the City of Muscatine, Iowa, in accordance with a Resolution passed by the City Council held on the **20th Day of June, 2024**, that Brad Bark and Carol Webb, as Mayor and City Clerk of the City of Muscatine, Iowa, respectively, severally acknowledged the execution of said instrument to be the voluntary act and deed of the City of Muscatine, Iowa, by its and them voluntarily executed.

Witness my hand and Notarial Seal the day and year last above written.

Cinda Hilger, Notary Public in and for the State of Iowa

EXHIBIT A

Prepared by Andrew Fangman , 215 Sycamore Street, Muscatine, IA 52761 (563) 262-4141

RESOLUTION NO. 2024-0272

**A RESOLUTION APPROVING THE FINAL PLAT
OF NIEMANN ACRES**

WHEREAS, there has been filed with the Planning and Zoning Commission of the City of Muscatine, Iowa, and there is now submitted to the City Council of said City, a final plat of the real estate partially situated within the Corporate Limits of the City of Muscatine, State of Iowa, which plat lays out **two** lots; to wit:

PART OF THE SOUTHEAST QUARTER OF SECTION 23, TOWNSHIP 77 NORTH, RANGE 2 WEST OF THE 5TH PRINCIPAL MERIDIAN, MUSCATINE COUNTY, IOWA.

BEGINNING AT THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 23; THENCE NORTH 00°16'20" EAST 79.64 FEET; THENCE SOUTH 89°31'17" EAST 1722.07 FEET TO THE OLD CENTERLINE OF NORTH ISETT AVENUE; THENCE SOUTH 25°45'18" EAST 203.25 FEET; THENCE SOUTH 66°14'30" WEST 79.39 FEET; THENCE SOUTH 86°24'56" WEST 213.32 FEET; THENCE SOUTH 88°11'51" WEST 498.49 FEET; THENCE SOUTH 20°57'21" EAST 130.47 FEET; THENCE NORTH 83°57'17" WEST 596.44 FEET; THENCE NORTH 13°25'45" WEST 64.00 FEET; THENCE NORTH 89°38'20" WEST 466.46 FEET; THENCE NORTH 00°17'52" EAST 172.64 FEET TO THE POINT OF BEGINNING. CONTAINING 11.10 ACRES AND SUBJECT TO EASEMENTS OF RECORD

WHEREAS, said plat has been approved by the Planning and Zoning Commission of the City of Muscatine, Iowa, and has been examined by the City Council of the City of Muscatine, Iowa; and

WHEREAS, the Final Plat fully conforms with ordinances of the City applicable thereto; and

WHEREAS, the City Council of the City of Muscatine, Iowa, finds the final plat of **Niemann Acres** should be approved.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MUSCATINE, IOWA, that said final plat named **Niemann Acres** is hereby approved and accepted by the City Council of the City of Muscatine, Iowa, and that the Mayor and City Clerk of the City of Muscatine are hereby authorized and directed to certify upon said plat the examination, consent, approval, and acceptance of the same by the City Council of the City of Muscatine, Iowa, in order that said plat may be recorded in the Office of the County Recorder among the real estate records of Muscatine County, Iowa.

PASSED, APPROVED, AND ADOPTED this **20th Day of June, 2024**.

**BY THE CITY COUNCIL OF THE
CITY OF MUSCATINE, IOWA**

Attest:

Brad Bark, Mayor

Carol Webb, City Clerk

**CERTIFICATE OF THE PLANNING AND ZONING COMMISSION
OF THE CITY OF MUSCATINE, IOWA**

I, the undersigned, Andrew Fangman, do hereby certify that I am the Secretary of the Planning and Zoning Commission of the City of Muscatine, Muscatine County, Iowa, and that the attached Final Plat of **Niemann Acres**, a subdivision partially in the City of Muscatine, Iowa, was approved and recommended by said Commission on the **11th Day of June, 2024**, according to the minutes and records of said Commission in my possession.

Dated at Muscatine, Iowa, this **20th Day of June, 2024**.

Andrew Fangman, Secretary
Planning and Zoning Commission
City of Muscatine, Iowa

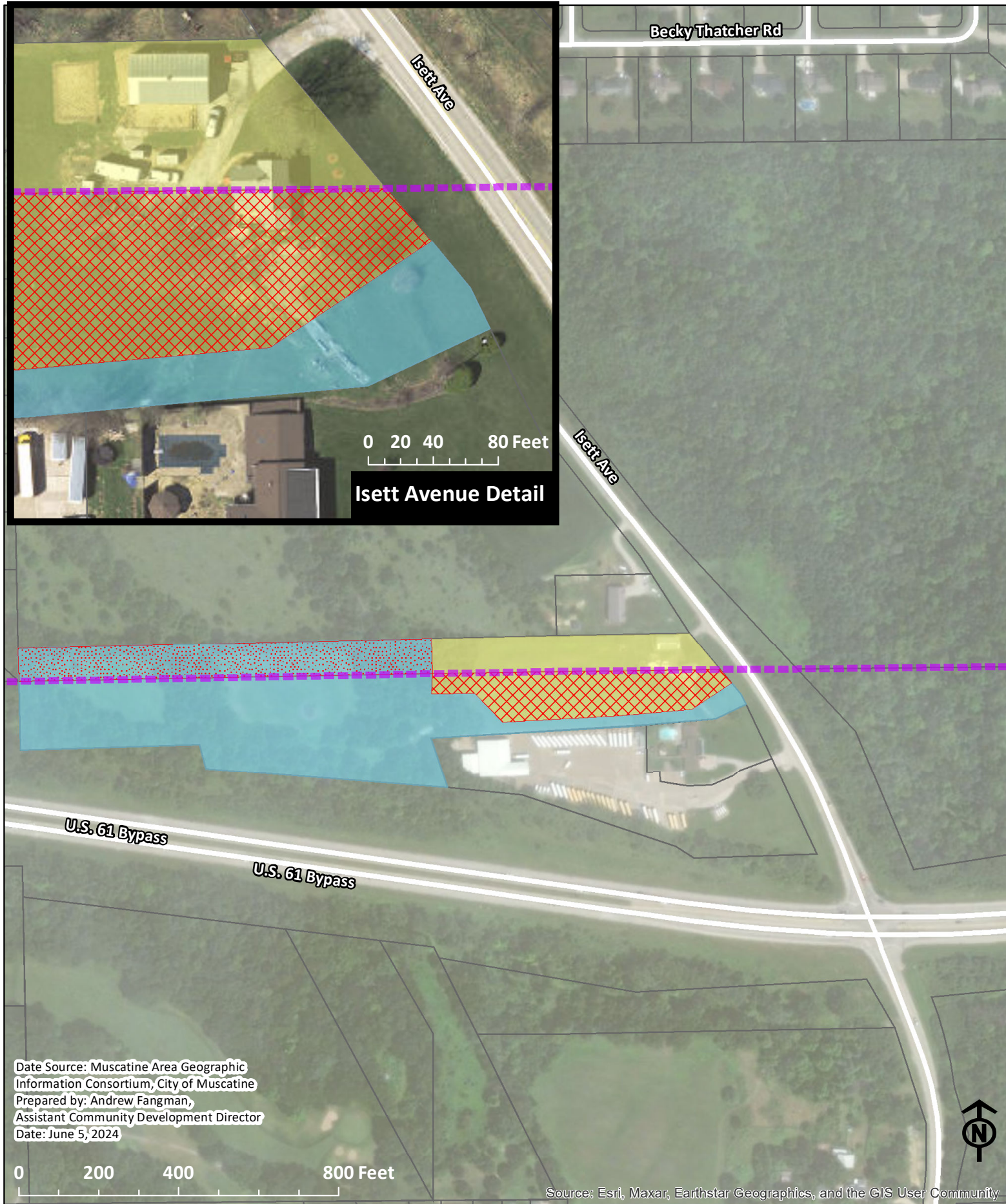
CERTIFICATE OF TRUE COPY

I, Nancy Lueck, Director of Finance of the City of Muscatine, Iowa, certify that attached hereto are true copies of the following:

1. Certificate of Acceptance of Final Plat (original).
2. Resolution No. _____ - _____ approving the Final Plat of **Niemann Acres**, a subdivision partially in the City of Muscatine, Iowa.
3. Certificate of the Planning & Zoning Commission.

All related to the subdivision of real estate described in those documents, and that all were duly adopted and approved by the City Council and Mayor of the City of Muscatine, Iowa, and the originals are on file in the official records at City Hall for the City of Muscatine, Iowa.

Nancy Lueck, Director of Finance



Date Source: Muscatine Area Geographic Information Consortium, City of Muscatine
 Prepared by: Andrew Fangman,
 Assistant Community Development Director
 Date: June 5, 2024



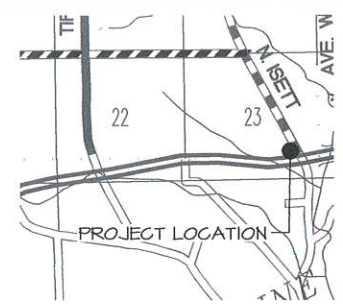
Niemann Acres Subdivision

- | | | | |
|---|----------------|--|---|
|  | Proposed Lot 1 |  | Area Being Proposed for Severance from City |
|  | Proposed Lot 2 |  | Area Being Proposed for Annexation to City |
|  | Parcels |  | Current City Limits |

NIEMANN ACRES
PRELIMINARY/FINAL PLAT



BASIS OF BEARINGS
IOWA REGIONAL COORDINATE SYSTEM
ZONE 14



VICINITY MAP

OWNER + DEVELOPER

ANGELA K. NIEMANN

CURRENT ZONING

COUNTY - CO-R1

CITY - MU-R3

CURRENT SETBACKS

COUNTY	CITY
FRONT 50'	FRONT 35'
SIDE 15'	SIDE 10'
REAR 40'	REAR 40'

*EXCEPT AS RESTRICTED BY EASEMENTS

Eastern Iowa Light and Power Cooperative utility easement requirements for all rural housing subdivisions.

Utility easements shall consist of all platted streets or roads and a 7 1/2 foot wide strip along each side of all interior lot lines and a 25 foot wide strip along all exterior lot lines and a 25 foot wide strip along and adjacent to all platted streets or roads, and a 15 foot wide strip of land on all lots, 7 1/2 foot either side of the underground electric service as built, from the point of origin to the point of service entrance.

LAND DESCRIPTION

PART OF THE SOUTHEAST QUARTER OF SECTION 23, TOWNSHIP 77 NORTH, RANGE 2 WEST OF THE 5TH PRINCIPAL MERIDIAN, MUSCATINE COUNTY, IOWA.
BEGINNING AT THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 23; THENCE NORTH 00°16'20" EAST 79.64 FEET; THENCE SOUTH 89°31'17" EAST 1722.07 FEET TO THE OLD CENTERLINE OF NORTH ISETT AVENUE; THENCE SOUTH 25°45'18" EAST 203.25 FEET; THENCE SOUTH 66°14'30" WEST 79.39 FEET; THENCE SOUTH 86°24'56" WEST 213.32 FEET; THENCE SOUTH 88°11'51" WEST 498.49 FEET; THENCE SOUTH 20°57'21" EAST 130.47 FEET; THENCE NORTH 83°57'17" WEST 596.44 FEET; THENCE NORTH 13°25'45" WEST 64.00 FEET; THENCE NORTH 89°38'20" WEST 466.46 FEET; THENCE NORTH 00°17'52" EAST 172.64 FEET TO THE POINT OF BEGINNING.
CONTAINING 11.10 ACRES AND SUBJECT TO EASEMENTS OF RECORD.

AREAS

LOT 1
NET = 2.96 ACRES
R.O.W = 0.14 ACRES
GROSS = 3.10 ACRES

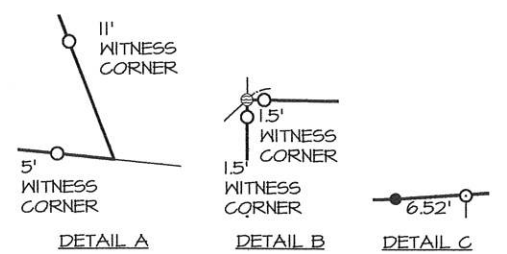
LOT 1
NW SE 1/4 = 0.63 ACRES
NE SE 1/4 = 0.84 ACRES
SW SE 1/4 = 0.63 ACRES
SE SE 1/4 = 1.00 ACRES

LOT 2
NET = 7.95 ACRES
ROW = 0.05 ACRES
GROSS = 8.00 ACRES

LOT 2
NW SE 1/4 = 1.99 ACRES
SW SE 1/4 = 5.64 ACRES
SE SE 1/4 = 0.37 ACRES

LEGEND

- SET 1/2" X 36" REBAR W/YELLOW CAP #10316
- FOUND 1/2" REBAR
- ⊙ FOUND 1/2" X 36" REBAR W/YELLOW CAP #10316
- ⊕ FOUND STEEL T-BAR
- ⊞ FOUND 5/8" REBAR W/D.O.T. CAP
- ▲ FOUND STONE
- FOUND PIPE
- FOUND T BAR
- FENCE POST
- WELL
- TELEPHONE RISER
- POWER POLE
- SEPTIC FIELD
- UTILITY EASEMENT
- E — E — UNDERGROUND ELECTRIC
- OE — OE — OVERHEAD ELECTRIC
- GAS — GAS — UNDERGROUND GAS LINE
- TEL — TEL — UNDERGROUND COMMUNICATIONS LINE



The utility easements as shown are acceptable to the following utilities:

MUSCATINE POWER & WATER

Transmission & Distribution	Title	Date
Water Production & Distribution	Title	Date
Communications	Title	Date

This plat and subdivision provisions are acceptable to the Muscatine County Board of Supervisors.

CHAIRPERSON Title Date

This plat and subdivision provisions are acceptable to the County Engineer provided all roads are to remain in private maintenance.

This plat and subdivision provisions are acceptable to the Muscatine County Zoning Commission.

This plat and subdivision provisions are acceptable to the Muscatine County Board of Health.

EASTERN IOWA LIGHT & POWER COOPERATIVE Date

EASTERN IOWA LIGHT, & POWER

ALLIANT ENERGY

LUMEN

I hereby certify that this land surveying document was prepared and the related survey work was performed by me or under my direct personal supervision and that I am a duly licensed Professional Land Surveyor under the laws of the State of Iowa.

Gary W. Whitacre
Date _____ Reg. No. 10316
My license renewal date is December 31, 2025

Pages or sheets covered by this seal: 1



SURVEY COMPANY / RETURN TO:
Martin & Whitacre
Surveyors & Engineers, Inc.
1508 BIDWELL ROAD, MUSCATINE, IOWA 52761
INFO@MARTIN-WHITACRE.COM (563)263-7691

SURVEYOR: GARY W. WHITACRE
PROPRIETOR(S): ANGELA K. NIEMANN

REQUESTOR: ANGELA NIEMANN

LOCATION: SE 1/4 SECTION 23 T77N R2W

SURVEY TYPE: PRELIMINARY/FINAL PLAT

FILE	BOOK	SCALE	DRN	CHK'D	DATE	JOB NO.
SCANNED	T77N R2W	1"=150'	EJA	GWW	5/31/24	9062.24
REV.	0				9062 NIEMANN.DWG	SHEET 1 OF 1



City of Muscatine

ITEM NUMBER 2024-0249

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Brian Stineman, Public Works Director

SUBJECT

Motion to Take from the Table a Request to Approve a Secondary Driveway Entrance at 408 Parham Street, that was laid on the table at the June 6, 2024 Regular City Council Meeting.

EXECUTIVE SUMMARY

Staff laid this item on the table at the June 6 Council meeting and requested feedback from the neighbor of the resident requesting a second driveway and a drawing of the proposed driveway. These two items are provided in the attached documents.

STAFF RECOMMENDATION

BACKGROUND/DISCUSSION

CITY FINANCIAL IMPACT

ATTACHMENTS



City of Muscatine

ITEM NUMBER 2024-0249

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Kevin Coon, City Engineer
Brian Stineman, Public Works Director

SUBJECT

Request to Approve a Secondary Driveway Entrance at 408 Parham Street

EXECUTIVE SUMMARY

Request to approve a secondary entrance at 408 Parham Street to help alleviate potential traffic delays and assist the homeowner with more safely entering and exiting their property.

STAFF RECOMMENDATION

Staff does not have a recommendation.

BACKGROUND/DISCUSSION

Per city code 10-27-8 G. "there shall not be more than one entrance and one exit, or one combined entrance or exit, along any one street, unless the same is deemed necessary by the City Council for the alleviation of traffic congestion and interference of traffic movement along such street." The addition of another driveway off of Parham for this property would fall under a second access off of the same street. Typically we do not allow second access points off of the same street on residential homes due to the elimination of snow storage and the elimination of available area for utilities, among other concerns. However, the hillside of Parham is steep making it difficult to see oncoming traffic when backing out of the driveway and potentially causing interference with traffic leaving the hospital. The planned second entrance would be on the southwest side of the property and is roughly shown on the attached image.

Per Council discussion at the June 6, 2024, meeting, staff contacted the owner of 408 Parham and requested that they discuss this proposal with their neighbor at 406 Parham to see if they had any concerns. The attached letter indicates that 406 has no concerns with this proposal.

CITY FINANCIAL IMPACT

No financial impact.

ATTACHMENTS

1. 408 Parham
2. Neighbor Agreement Letter



Dear Neighbor,

To help improve safety and available parking at my home (408 Parham Street), I am putting a concrete drive on the south side of the house. Hopefully you have noticed the new wall which was the first step to prepare for the new concrete.

City approval is required to connect this new drive to Parham Street. In the initial City meeting, it was requested for me to check with you on any concerns you might have with connecting this concrete drive to Parham Street.

If you are okay with this improvement being connected to Parham Street, would you please make a note on this page saying as much and signing, dating and returning to the front door of 408 Parham. Please call me with any questions.

Thank you for your time,


Leland Lorentzen
3037188277

I have no concerns

Andy Salcedo



6/8/24



City of Muscatine

ITEM NUMBER 2024-0266

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Jon Koch, Water Pollution Control Plant Director
Scott Swift

SUBJECT

Request To Approve the Issuance of a Purchase Order to MH Equipment Company in the Amount of \$50,543.80 for the Purchase of a Fork Truck for the Water and Resource Recovery Facility.

EXECUTIVE SUMMARY

Request to issue a purchase order to MH Equipment Company for the purchase of a fork lift truck in the amount of \$50,543.80 for the Water and Resource Recovery Facility's Muscatine Organics Recycling Center. \$40,000.00 was budgeted for this purchase, but there is money available in the capital budget from other deferred purchases to cover the overage. Three quotes were received for this purchase with the low quote coming from MH Equipment.

STAFF RECOMMENDATION

Staff recommends approval of this purchase.

BACKGROUND/DISCUSSION

The Muscatine Organics Recycling Center utilizes an LP powered fork lift truck to offload pallets of food waste from trucks and to load the separator machine. A used 2014 Toyota fork lift was purchased with the construction project in 2020 for \$25,500.00 and has required over \$23,000.00 in repairs over the last two years. A second fork lift is useful during very busy times, so it will be kept as a backup as well as to help when the facility receives extra loads. A new LP powered fork lift will come with a warranty, be more reliable, improve safety and increase efficiency. After budgeting and in discussions with the vendors, a slightly larger truck was recommended for safety due to the weight of some of the material handled to reduce the potential for tipping. This accounts for the increased price over the original \$40,000.00 budgeted amount. The purchase price is \$50,543.80. There is \$36,000.00 remaining in the department's capital budget to cover the \$10,543.80 overage due to deferred purchases of pipe supports and a pump for the Papoose Lift Station. These will be addressed in the next two years during the Papoose Station upgrade during the end of the sewer separation project.

Quotes were received from MH Equipment for \$50,548.80, Crown Lift Trucks for \$53,860.00 and Hupp Toyota Lift for \$54,990.00.

CITY FINANCIAL IMPACT

\$40,000.00 was budgeted for this purchase. There is \$36,000.00 remaining in the department's capital budget due to deferred purchases of pipe supports and a pump for the Papoose Lift Station. These will be addressed in the next two years during the Papoose Station upgrade during the end of the sewer separation project.

ATTACHMENTS

1. Fork Truck Quotes HSW.240612



MH EQUIPMENT COMPANY
8140 N HARRISON STREET
DAVENPORT, Iowa 52806
Phone: 563-381-9989



View my Truck in my Space



MODEL: GP70N

CUSTOMER DETAILS

CUSTOMER	City of Muscatine
ADDRESS	215 Sycamore St. Muscatine, Iowa 52761
SHIP-TO ADDRESS	215 Sycamore St. Muscatine, Iowa 52761
CONTACT NAME	Randy Moeller
PHONE	+1 563-264-1550

PROPOSED BY	Travis Hargrave	TITLE	Fleet Management & Aftermarket Specialist
PHONE	309-579-8020	EMAIL	thargrave@mhequipment.com
CELL	563-529-6195		

DATE	2024-06-10	QUOTE EXPIRATION	2024-07-10
------	------------	------------------	------------



MH EQUIPMENT COMPANY
8140 N HARRISON STREET
DAVENPORT, Iowa 52806
Phone: 563-381-9989



Quoted Model: GP70N Available Features

Yale® GP70N Lift Truck - 7,000 lb. Nominal Capacity, Class V

Proposal Summary

Included Items	Description	Quantity
Model	Yale® GP70N Lift Truck - 7,000 lb. Nominal Capacity, Class V	1
Construction	Keyswitch Start Standard (-4° F to 104° F)	
Powertrain	Engine - Yanmar 2.2L LPG Certified Brakes - Self Energizing Drum Single Pedal Inch/Brake Arrangement Electronic Powershift Transmission	
Powertrain Options	High Air Intake Low Exhaust Integrated Fuel Level Sensor Fixed LPG Bracket with Steel Strap UL Label - Classification Type LP	
Powertrain Accessories	System Monitoring	
Mast	3 Stage Full Free Lift Mast - Class III - 181" (4620mm) Maximum Lift Height - 86" (2195mm) Overall Lowered Height [Premium] Mast Tilt - 6° Forward / 6° Back	
Carriages & Attachments	42" (1067mm) Wide - Class III - Hook Type Carriage Without Load Backrest	
Forks	Without Forks	
Hydraulics	3 Function (1 Auxiliary) Hydraulic Control Valve Mechanical Lever Hydraulic Controls - Cowl Mounted Engine Driven Cooling System Standard Displacement Hydraulic Pump	
Hoses	1 Auxiliary Function Hose Group - 2 Hoses Internally Mounted	
Wheels & Tires	Standard Tread Width Drive Tires - 28 x 9-15 - Pneumatic Shaped Solid (PSS) [Standard] Steer Tires - 6.50 x 10 - Pneumatic Shaped Solid	



MH EQUIPMENT COMPANY
8140 N HARRISON STREET
DAVENPORT, Iowa 52806
Phone: 563-381-9989



Included Items	Description	Quantity
Operator Compartment	85" Rectangular Tube - High Grid Style Overhead Guard Mirrors - Dual Side View - Mounted on the Left and Right Side of Overhead Guard 2.8" (71mm) Color Touchscreen Display Console Tray Dynamic Stability System Rear Drive Handle with Horn Button	
Directional Control	Lever Shift Direction Control - Mounted on Left Hand Side of Steering Column Steer Column with Infinitely Adjustable Tilt On Demand Hydrostatic Power Assist Steering Steering Wheel with Spinner Knob	
Seat	Full Suspension Cloth Seat [Premium] Seat Belt - Black - No-Cinch with ELR (Emergency Locking Retractor)	
Chassis Options	Hood	
Telemetry	Telemetry Antenna Delete	
Lights & Alarms	Manual Work Light Control LED Work Lights - 2 Front, 1 Rear [Premium]	
Warranty	12 Months / 2,000 Hours Manufacturer's Warranty, 36 Months / 6,000 Hours Powertrain Warranty; please see full Warranty Statement for additional details.	
Literature & Nameplate	English Literature Pack and Labels	
Fees & Surcharges	Freight Fees & Surcharges Destination Charge	

Additional Items or Accessories Included

	Description	Quantity
Dealer Prep	Dealer Prep	1
Delivery	Delivery	1
Rotator	Bolzoni Auramo RC3511B Rotator with shipping	1
Install	Install rotator onto GP070	1
Discount	Preferred Partner Discount - -\$14,000.00	1



MH EQUIPMENT COMPANY
8140 N HARRISON STREET
DAVENPORT, Iowa 52806
Phone: 563-381-9989



Total Investment

Price GP70N	\$50,543.80	Qty: 1	
Quoted Quantity	1	TOTAL:	\$50,543.80

Proposal By:	Travis Hargrave	Accepted By:	
Signature:		Signature:	
Date Signed:		Date Accepted:	
		PO Number:	



Your Success Matters

Making the best decision for your material handling needs does not mean you need to be a material handling expert. At MH Equipment, we commit to serving you, and all our customers, by being consultative, transparent, and passionate about your material handling solutions. Your resources are important to us and we believe being a good steward of your resources makes us a team your business can trust.

Downtime means lost money for your business, so we offer a variety of products and services to increase and maintain your material handling efficiency, while reducing downtime.

Products & Services

No matter the problem you are trying to solve, our team focuses on your specific need. While much of our business is new and used sales, service, and rental of Yale lift trucks, our product line

includes a variety of equipment.

Each specialty area is supported by expert specialists that understand the unique needs of very distinctive solutions including rough terrain equipment, compact forklifts, container handling equipment, tele-handlers, sweepers and scrubbers, railcar movers, and more.

Put our experience to work for you to find efficiency in your business. Our team genuinely values your trust, and we are committed your success.

** In select MH Equipment locations only. Product territories are limited in some areas.*

Our Commitment

At MH Equipment, our focus is clear: *People Matter, Passion Inspires, and Purpose Unites.*

People Matter

We treat ALL people with honor and respect. Whether it is our customers, employees, suppliers, or other partners, each person is treated with dignity and respect, and you will be, too.

Passion Inspires

We want our employees to have healthy and balanced passions, both personally and professionally, to make a difference in the lives of others. We believe passion results in better service for you and your business.

Purpose Unites

Like any business, our purpose is to serve our customers with integrity and excellence. Equally important is the service to our communities. A basic foundation of our company is to be more than just a company making a profit.

LCMHE0224

Terms and Conditions

TERMS: NET 10 DAYS UNLESS OTHERWISE SPECIFIED Accounts past due are subject to a 1.5 percent service charge (annual rate 18 percent) and all costs of collection including reasonable attorney's fees. If a credit card is used for payment a 3 percent convenience fee will be assessed. Other acceptable methods of payment are check or wire transfer. Pricing in this proposal does not include Sales Tax. Sales Tax, as applicable, will be calculated and added in accordance with State Law. Tax exempt transactions require the appropriate Tax-Exempt certificate to be on file with MH Equipment.

Freight is FOB Factory. Freight charges will reflect the freight expense at the time of transportation costs.

Cancellations and changes: Cancellations and changes requested and approved more than four (4) business days after receipt of the OEM acknowledgment will be assessed a \$250 fee per truck. Approval of cancellations and changes will be decided based on how close the request is to the factory delivery date.

In these unprecedented times, we want to make sure you are aware of the following two items. (1) The OEM of this Lift Truck has the right to apply (not later than eight weeks prior to the customer acknowledgment date (CAD)) a surcharge to the price payable by the Customer. BECAUSE MH EQUIPMENT VALUES YOUR BUSINESS, MH HAS MADE INVESTMENTS SO THAT THIS SURCHARGE TO THE LIFT TRUCK WILL NOT APPLY TO THIS PRODUCT ORDER. (2) If you are leasing this equipment, please know that because of rising interest rates the actual monthly payment may be higher than the payment provided in this quote. The possible increase is tied to the "Swap Rate". More details can be found in your lease document under Payment Adjustment section.

Thank you again for the opportunity to address your material handling requirements. We are committed to delivering a comprehensive, competitive material handling solution for your operation's needs, and will work diligently with you to address your costs through increased productivity and maximized efficiencies. Please advise how we can be of further assistance.



Crown Lift Trucks - Iowa
5877 NE Industry Dr
Des Moines, IA 50313
515-262-1114
crown.com

Quotation
06/11/2024
Quote No. 716241
Water and Resource Recovery

Features and Options

C5P1050-65 6,500 lb. Capacity, IC Pneumatic Tire

Mfg. Standard for Destination	ANSI
Mast Type	TT
Lift Height	189"/4800mm
Collapsed Height	92"/2335mm
Tilt Options	5 Deg Back / 5 Deg Forward
Steer Axle Mounting	Rigid Steer Axle
LP Bottle Bracket Type	Fold Down Single Strap
Overhead Guard Options	Isomounted Operator Cell
Accessory Hydraulics	Double Accessory Hydraulics
Accessory Plumbing	Double Accessory Plumbing
3rd Lever (w/ Single or Double Function Hydraulics)	Rotator Symbol
4th Lever (w/ Double Function Hydraulics)	Rotator Symbol
Fork Carriage Width	44"/1120mm
Thrust Rollers on Carriage	Lower and Upper Thrust Rollers
Zinc Plated Corrosion Resistant Chain	Zinc Plated Chain and Lube
Fork Type	Less Forks
Load Backrest Size	No Load Backrest
Battery Type	Wet Cell - Severe Duty
Alternator	12 Volt 90 Amps Fully Enclosed
Exhaust System	LPG Catalytic Muffler
Radiator Type	Dual Opencore Radiator
Counterweight Grille	Counterweight Wedge
Air Intake	Single Element Mech. Indicator
Seat Option	FlexSeat™ Vinyl
Seat Spacer	Seat Spacer to Raise Seat
Armrest	D4 Armrest
Seatbelt	High Visibility Orange Seatbelt
Steering Wheel Option	13" Steering Wheel
Spinner Knob	Yes
Number of Pedals	Separate Inching and Brake Pedal (3 Pedals)
Horn	Yes
B-post horn	Right Rear Handle with Horn
Brake System	Power Brakes
Tread Width	Standard Tread
Drive Tire Manufacturer	Solideal Xtreme
Drive Tire Options	28 x 9-15 Resilient/Super Elastic
Steer Tire Manufacturer	Solideal Xtreme Solid Soft - Pneumatic



Crown Lift Trucks - Iowa
5877 NE Industry Dr
Des Moines, IA 50313
515-262-1114
crown.com

Quotation
06/11/2024
Quote No. 716241
Water and Resource Recovery

Steer Tire Options
Rear View Mirror
Front Worklights
Rear Worklight
LED Flashing Light
Travel Alarm
Tow Hitch Pin
Mud Scraper/Step Plate
Paint Color
Label & Decal Language
Shipment Handling

6.50-10 Resilient/Super Elastic
Plastic Rear View Mirror
Overhead Guard Mounted LED
One Rear LED Worklight
LED Amber Flashing Light
Smart (Forward-FF)
Tow Pin
Mud Scraper / Step Plate
Crown Beige/Gray
US English
Standing

Warranties:

Warranty

Standard - One Year/Unlimited Hours



Crown Lift Trucks - Iowa
5877 NE Industry Dr
Des Moines, IA 50313
515-262-1114
crown.com

Quotation
06/11/2024
Quote No. 716241
Water and Resource Recovery

Additional Options Included

fork rotator

add fork rotator

Pricing Information

Quantity	Products	Price Each	Extended
1	C5P1050-65	\$53,860.00	\$53,860.00
Total Package Price:			\$53,860.00
(Tax not included in price)			

CUSTOMER AGREES: (1) PRICES ARE FIRM FOR FIFTEEN (15) DAYS FROM THE DATE OF THIS QUOTATION; (2) THIS QUOTATION INCORPORATES CROWN'S TERMS AND CONDITIONS OF SALE AVAILABLE AT crown.com/en-us/terms-and-conditions ("TERMS") AS IF FULLY RESTATED IN THIS QUOTATION (THIS QUOTATION AND THE TERMS ARE COLLECTIVELY THE "AGREEMENT"); (3) IT HAS READ, OR HAS HAD THE OPPORTUNITY TO READ, THE AGREEMENT; AND (4) UNDERSIGNED HAS THE AUTHORITY TO BIND CUSTOMER AND ENTER INTO THE AGREEMENT.

Prices quoted are based upon quantities specified above.
If **Water and Resource Recovery** cannot accept merchandise at the time of shipment from our supplier, **Water and Resource Recovery** will be invoiced and normal terms will apply.

Above prices are subject to all state and local taxes
FOB: Delivered
Terms: Net 10 DAYS

Crown Lift Trucks

John Mitroka

John Mitroka

Water and Resource Recovery

By _____

Title _____

Date _____



Crown Lift Trucks - Iowa
5877 NE Industry Dr
Des Moines, IA 50313
515-262-1114
crown.com

Quotation
06/11/2024
Quote No. 716241
Water and Resource Recovery



Hupp ToyotaLift
4821 Tremont Ave
Davenport, IA 52807-1010
Phone: 563-326-4061
Fax: 563-322-4029

March 28, 2024

James Allen
Muscatine Power & Water
3205 Cedar St
Muscatine, IA 52761-2204

Dear James:

We are pleased to submit the attached Toyota Internal Combustion Lift Truck quotation for your review and approval.

As an authorized Toyota dealer, Hupp ToyotaLift can provide the high-quality equipment and service you would expect from the world's leading forklift manufacturer. This quotation reflects our understanding of your forklift needs, combined with a careful configuration of the appropriate equipment and options.

To place your order, please sign and date the quotation where indicated and return to me. If you have any questions, please contact me.

Thank you for your interest in our company and our Toyota products. We look forward to being of valuable service to you for your material handling needs.

Sincerely,

Chris Remley
Sales Representative
Phone: 563-326-4061
Fax: 563-322-4029
E-mail: cremley@hupptoyotalift.com
encl



Hupp ToyotaLift
4821 Tremont Ave
Davenport, IA 52807-1010
Phone: 563-326-4061
Fax: 563-322-4029

To: Muscatine Power & Water
3205 Cedar St
Muscatine, IA 52761-2204
Attn: James Allen

Date: March 28, 2024
Our Ref: 41298511
Phone: 563-263-2631
Fax: 563-262-3315

We respectfully submit this quotation for the following NEW Toyota Internal Combustion Lift Truck (1 each):

Toyota...Proud to be the world's #1 forklift manufacturer!

TOYOTA MODEL 50-8FGU32, Internal Combustion Lift Truck, quality engineered with the following specification:

- Pneumatic Tires
- LP Gas Powered - UL Type "LP" Rating

This forklift is equipped with a 3-Way Catalytic Muffler System as standard equipment, and conforms to current Federal EPA and California ARB regulations for off-road large spark ignited engines.

SYSTEM OF ACTIVE STABILITY™ (SAS)

Toyota's industry exclusive System of Active Stability (SAS) helps reduce lift truck instability by electronically monitoring and controlling various functions of the lift truck.

- **Active Control Rear Stabilizer:** Various lift truck sensors simultaneously monitor vehicle speed, fork height, load weight, and vehicle yaw (or angular acceleration). Should the operator inadvertently place the truck in a potentially unstable lateral condition, the sensors trigger the SAS controller to activate the Active Control Rear Stabilizer to help reduce the likelihood of a lateral tip over. (Note: Does not apply to dual drive configured models)
- **Active Mast Function Controller (AMC):** Should the operator inadvertently place the lift truck in a potentially unstable longitudinal condition, these same sensors trigger the SAS controller to activate the AMC, which limits forward tilt and/or tilt back speed to help reduce the likelihood of a longitudinal tip over.



Photo may portray optional equipment not included in your quotation.

AUTOMATIC FORK LEVELING

Toyota's Automatic Fork Leveling feature increases productivity while reducing damage with a push of a button. By depressing the Automatic Fork Leveling button during forward tilt, operators are quickly and easily able to level the forks.

PREMIUM, 4-WAY ADJUSTABLE, FULL SUSPENSION SEAT WITH ORANGE, NON-CINCHING SEAT BELT

Operator comfort is taken to a new level with Toyota's Premium, 4-way adjustable, full suspension vinyl seat. With lumbar, weight, tilt, and almost 6 inches of fore/aft adjustability, your operators will be comfortable and productive throughout their shift. Standard orange, non-cinching seat belt provides additional comfort in applications requiring

frequent reverse travel.

LCD MULTI-FUNCTION DISPLAY II

Features on the new MFD II include data log functions, fuel information, & operation data log all with QR code output; fuel gauge (excluding LP); and password protected administrator level access that can manipulate functions such as travel, vehicle management, and operation data log functions.

Mast	3-Stage (FSV) mast with full free lift provides excellent visibility to load and fork tips, while providing smooth, quiet and consistent operation. Mast specifications: Maximum Fork Height - 187" Overall Lowered Height - 89.2" (Overhead Guard Height - 85.50") Free Lift - 41.2" with standard Load Backrest
-------------	--

Lifting Capacity	Base Model Capacity - 6,500 lbs. @ 24" load center Actual Capacity, based on quoted specifications, - 6,500 lbs. @24" load center to 187" MFH
-------------------------	--

Actual capacity ratings stated above are based on standard features, options, and attachments available through Toyota at the time of quoting. Non-standard features, options, and attachments may affect actual capacity ratings. Please contact your Toyota sales representative for additional information.

Tilt	6 degrees forward and 6 degrees backwards
-------------	---

Carriage	ITA Hook Type 42" Carriage
-----------------	----------------------------

Load Backrest	48" High Load Backrest
----------------------	------------------------

Attachments	4 Way Valve (With 3rd & 4th Function Internal Hosing)
--------------------	--

Speeds	Travel Speed: 11.50 mph Lift Speed: 102 fpm
---------------	--

Engine	2.2L 4Y-US Industrial LP Engine 136 cubic inch displacement, 4 cylinder, overhead valve (OHV) Net Torque Rating: 112 @ 1800 rpm SAE ft-lb Net Horsepower Rating: 51 @ 2570 rpm SAE HP
---------------	--

Transmission	Automatic Transmission 1 speed forward, 1 speed reverse standard.
---------------------	--

Steering	Load Sensing Hydrostatic Power Steering with Tilt Steering Column
-----------------	---

Wheels and Tires	Front Tires: 28x9-15-12PR (Pneumatic) Rear Tires: 6.50-10-10PR (Pneumatic)
-------------------------	---

**Additional
Equipment**

**Dual Quick Disconnects
Side Hosing Termination
Toyota 360 Support Plus 5
LED Strobe Light (Amber)
LED Rear Working Light
Low LPG Fuel Warning Indicator
12 Volt Power Supply
Steering Wheel with Knob
Radiator Screen
Adjustable Volume Back-up Alarm (Smart Alarm)
Rear Assist Grip with Horn Button
Clamp Release Interlock - 4th Lever
S28A-SAS Decal
Center Mounted Mirror
Solid Pneumatic Tires - Front
Rear Solid Pneumatic Tires - Including Rear Side Ring Wheels
UL Approved Model Type "LP" (tank not included)**

**Other
Outstanding
Toyota Features**

- Operator Presence Sensing System (OPSS)
- Fully Stamped Steel Side Panels
- Electronic Speed Control
- Weather Protected Electrical System
- Unparalleled Fork Tip Visibility
- Foot Activated Park Brake with High Mount Release
- Electronic Shift Control
- 7" Cyclone Air Cleaner
- Fully Insulated Stamped Steel Engine Hood
- Dual Operator Assist Grips
- Oversized Cup Holder
- Heavy Duty, Non-Slip Rubber Floor Mat

Some standard items listed within this quotation may be replaced or altered due to optional equipment.

Warranty

Warranty coverage for non-standard option components will be covered by the manufacturer of that component and not covered under the Toyota forklift standard or powertrain warranty.

We offer a Toyota factory authorized warranty on all new Toyota Material Handling Equipment.

Extra Care

Toyota 360 Support Plus 5
60 Months/10,000 Hrs Carriage to Counterweight Warranty
60 Months/10,000 Hrs Major Parts and Component Warranty
Up to First (4) PM's Included (Parts and Labor)

\$0

TMH reserves the right to accept or decline any application for enrollment into the T360 Plus warranty plan.

Price, not including battery, charger, or other components listed below: \$47,337 Each

		<u>Qty</u>	<u>Unit Price</u>	<u>Total</u>
Battery, Charger, or Other	Rotator	1	\$7,653	\$7,653

Investment	Price-Toyota Model 50-8FGU32 as specified above:	\$54,990	Each
	Net Price:	\$54,990	Each

Financing and Maintenance	A broad range of competitive and flexible financing options are available through Toyota. Financing requires credit approval. Terms and conditions are subject to change.		
	In addition, Full Maintenance and Planned Maintenance programs are available.		

**Terms and
Conditions**

Payment: Net 10 days / Cash or Financed
Delivery: Will advise at time of order.
F.O.B.: Delivered
Prices are exclusive of any sales or use taxes now in force or which may be made effective in the future by any federal, state, or local governments.
Lease offerings subject to credit approval
Performance and specifications stated are based on specific testing and operating conditions.
Actual performance and specifications may vary based on application, option configuration, operating conditions, and environmental factors.
Some options and configurations may void UL.
Conditions subject to change to those in effect at time of delivery.
Your signature on this proposal constitutes an order.
Please contact your Toyota sales representative for additional information.
Above pricing is valid for 30 days.
Order cancellation is subject to a restocking fee of 25%.
When purchasing with a credit card an additional charge will apply.

TELEMATICS AND DATA COLLECTION

The equipment in this proposal is enabled with the MyInsights system ("System") which collects certain location and operational data concerning the equipment and transmits it to Toyota Material Handling, Inc. for processing and analytics. This proposal is subject to the contractual terms and data usage policies for the System found at <https://www.toyotaforklift.com/myinsights-legal> ("System Terms"). Acceptance of this proposal, or otherwise using the equipment, constitutes acceptance of the System Terms and the formation of an agreement between Customer and Toyota Material Handling, Inc. based on the System Terms. Customer may opt-out of data collection features for the System as provided in the System Terms. Failure to opt-out signifies Customer's consent and agreement to the collection and usage of data in accordance with the System Terms.

Sincerely,
Hupp ToyotaLift

By: _____
Name: Chris Remley
Title: Sales Representative

Accepted:
Muscatine Power & Water

Cash Price \$ _____
Financed Payment* \$ _____ Per Month _____ Months

By: _____
Name: _____
Title: _____
Date: _____

*Financing requires credit approval. Terms and conditions are subject to change.



City of Muscatine

ITEM NUMBER 2024-0263

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Melissa Baker, Parks Supervisor
Richard Klimes, Parks and Recreation Director

SUBJECT

Request to Approve the Issuance of a Purchase order to ZWB Construction in the Amount of \$36,630.00, for the Demolition and Removal of the Old Deck and the Installation of a New Observation Deck for the Weed Park Lagoon Project.

EXECUTIVE SUMMARY

Presented for City Council consideration is a request to approve a purchase order to ZWB Construction in the amount of \$36,630.00 for the demolition and removal of the old deck and the construction of a new observation deck to be installed for the Weed Park Lagoon Project.

STAFF RECOMMENDATION

Approve the purchase order to ZWB Construction in the amount of \$36,630.00 to remove the old deck and to construct a new observation deck for the Weed Park Lagoon Project.

BACKGROUND/DISCUSSION

ZWB construction will be responsible for the removal of the existing deck and installation of a new ADA accessible 46' x 16' wooden deck. This price also includes the replacement of a concrete trail adjacent to the deck.

CITY FINANCIAL IMPACT

\$500,000 in bond proceeds were approved for lagoon restoration and bank stabilization, which includes the deck portion of the project.

ATTACHMENTS

1. ZWB- Wood Deck
2. Deck Bid Results



ZWB General Construction
17138 County Road X-61
Muscatine, IA 52761
+15632602786
info@zwbgeneralconstruction.com

Estimate

ADDRESS
The City of Muscatine 215 Sycamore St Muscatine, IA 52761

ESTIMATE #	DATE	EXPIRATION DATE
1898	05/21/2024	06/30/2024

DATE	DESCRIPTION	QTY	AMOUNT
05/21/2024	Weed Park Lagoon deck project		
	Remove existing deck and haul away off site. Labor, equipment, and other cost.	1	5,120.00
	R&R approximately 120' X 11' of concrete in front of Lagoon deck. 4" of sub base. 4" of 4,000 PSI concrete. #4 rebar 2' OC each way. Broom finish and relief cut. One coat of sealer.	1	11,520.00
	Installing 46' X 16' treated wood deck compliant with current city code. Labor, materials, and equipment.	1	19,990.00

TOTAL

\$36,630.00

Accepted By

Accepted Date

Bid Results Lagoon Deck	Demolition	Wood Deck	Concrete	Totals
ZWB	5,120.00	31,510.00		36,630.00
Hybrand	24,106.00	68,018.00		92,124.00
Henley	12,000.00	65,000.00		77,000.00
Hackett				\$82,815



City of Muscatine

ITEM NUMBER 2024-0273

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Andrew Fangman, Assistant Community Development Director

SUBJECT

Request to Approve Entering into a Professional Services Agreement with RDG Planning & Design, Inc. in the amount of \$85,000 for the Development of a Comprehensive Plan

EXECUTIVE SUMMARY

Presented for Council consideration is a request to approve an agreement for professional services with RDG Planning & Design, Inc. for a new comprehensive plan with a 2040 outlook. The agreement outlines the scope of work, schedule of performance and cost of services. The fee for services is \$85,000. The City budgeted \$85,000 in American Rescue Plan Act funds for this project.

STAFF RECOMMENDATION

Staff recommends Council approve the Agreement as presented.

BACKGROUND/DISCUSSION

The Comprehensive Plan is the community's vision for Muscatine's future and the actions needed to achieve it. The Plan covers topics like land use, zoning, economic development, transportation, housing, recreation, services, amenities, and public safety. The Plan provides a comprehensive vision, in the form of goals, to guide individual decisions and ensure they align with the overall vision for Muscatine. It serves as a roadmap, based on community input, for leveraging strengths, capitalizing on opportunities, addressing weaknesses, and overcoming challenges to achieve all goals of the plan.

The current Comprehensive Plan, adopted in September 2013, is due for an update. The current plan can be viewed at: <https://muscatineiowa.gov/518/Comprehensive-Plan>. The community and conditions have changed and many of the original goals have been achieved. It is time to re-engage the public and stakeholders to ensure the community-based vision and strategies within the plan align with current needs and desires. This will be achieved by creating a new comprehensive plan.

The goals of this project are:

- Engage the public, key stakeholders, staff, and elected officials to receive input and achieve a community-based vision.
- Present a clear message and unified concept on how to achieve the established vision.
- Enhance the quality of life, standard of living, and economic growth of the City.
- Propose optimal land use and necessary regulatory changes to achieve the vision.
- Guide decisions about future growth, development, and community investment.

On February 9th, a request for proposals was issued to solicit consultants to complete a comprehensive plan. Two responsive proposals were received:

- RDG Planning & Design - \$85,000
- MSA Planning + Design Studio - \$85,000

The proposals, including reference checks, were reviewed by an ad hoc committee comprised of City staff, three members of the Planning and Zoning Commission, and a representative from the Community Improvement Action Team. The committee recommends awarding the contract to RDG.

The proposed contract with RDG calls for a complete draft of an adoptable comprehensive plan to be completed by July 1, 2025. The attached scope of work details how RDG will gather public input and use it to produce a new Comprehensive Plan. One of the first tasks will be the creation of an advisory committee to help direct the process. This committee will include representation from the City Council, Planning and Zoning Commission, economic development, major employers, and youth. The committee will meet at key milestones to provide direction, course correction, and review deliverables.

CITY FINANCIAL IMPACT

The City budgeted \$85,000 in American Rescue Plan Act funds for this project.

ATTACHMENTS

1. Proposed Professional Service Agreement
2. Scope of Work
3. RDG RFP Response

**AGREEMENT FOR CONSULTING SERVICES
BETWEEN THE
CITY OF MUSCATINE, IOWA
AND
RDG PLANNING & DESIGN, INC.**

This Agreement is entered by and between the City of Muscatine, Iowa, hereinafter referred to as the "City" and RDG Planning & Design, Inc., hereinafter referred to as the "Consultant."

WHEREAS the City wishes to update their Comprehensive Plan, and

WHEREAS, the Consultant has indicated a willingness to provide professional planning services to the City in the update of this plan.

WHEREAS the Consultant will provide professional consultant services in accordance with this scope of services and according to the terms of this contract; and

NOW, THEREFORE, the parties hereto do mutually agree as follows:

Section One. Scope of Services

The Consultant shall perform in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances at the same time and in the same or similar locality. The Consultant agrees to provide the work elements set forth in **Attachment A, Scope of Services**, attached hereto and incorporated into this Agreement.

Section Two. Additional Services

- 2.1. If, during the progress or upon completion of the work outlined in the Scope of Services in this Agreement, it is desirable or necessary to cause the Consultant to perform additional services other than those outlined in the Scope of Services, a fee for such services will be negotiated and agreed upon by both parties in writing prior to incurring expenses.
- 2.2. Additional Tasks may be added to this agreement by amendment(s) at such time the City is prepared to proceed with each Task.

Section Three. Time of Performance

The schedule for completion of project deliverables is on or before July 1, 2025.

Section Four. Responsibilities of the City

The City agrees to provide the Consultant, in a timely manner, with complete information and available maps and materials relevant to the completion of the services provided herein and to perform the following services:

- 4.1. **Access to Work.** The City shall arrange access to and make provisions for the Consultant to enter upon public and private lands as required for the Consultant to perform such work as inventories, field surveys, and inspections in the development of the Plan.
- 4.2. **Records, Files, and Previous Planning Efforts.** The City shall make all records and files relevant to the Plan available to the Consultant as needed and furnish all reasonable and necessary assistance in the use of such records and files. In addition, the City shall make previous reports and market studies available to the Consultant, along with all other studies and work that provide information pertinent to the completion of the Plan.

- 4.3. **Consideration of Consultant's Work.** The City shall give thorough consideration to all reports, drawings, and other documents presented for review by the Consultant and shall inform the Consultant of all decisions and comments within a reasonable time to avoid undue delays.
- 4.4. **Steering Committee.** The City shall organize a Steering Committee to carry out the detailed components of the planning process. This committee shall be appointed no later than August 1, 2024.
- 4.5. **Meetings.** The City shall provide logistical support for all meetings, including arranging for meeting places, coordination of services (food and beverage) to support participants, and managing registration and notification of participants. The City shall further hold all required public hearings, serve all required notices, and fulfill all legal requirements associated with the project.
- 4.6. **City's Representative.** Andrew Fangman, Assistant Community Development Director, shall be responsible for the City's portion of the project management.

Section Five. Compensation and Method of Payment

- 5.1. Total compensation pursuant to the services specified in this Agreement, except as provided in Section 2.1, shall be a fixed-fee not-to-exceed of Sixty-Five Thousand Dollars (\$65,000).
- 5.2. Payment for services shall be made monthly in proportion to services performed.
- 5.3. The fee includes all travel-related expenses for five (5) planned visits by the Consultant. Additional visits can be negotiated as provided in Section 2.
- 5.4. The City is responsible for fees related to hosting public meetings, including facility rental, food, and beverage. The City is responsible for advertising costs related to promoting the project. Invoices will be the responsibility of the City.
- 5.5. The fee includes the production of one hard copy and one electronic copy of the Plan. Consultant will provide coordination with the City's selected reproduction company for additional copies. Invoices will be the responsibility of the City.

Section Six. Ownership of Materials

- 6.1. The City shall control all media releases or other publicity related to the completion of this project.
- 6.2. No report or map produced in whole or part under this agreement shall be the subject of a copyright application by the Consultant. The City becomes the owner of the project deliverables and has full right to use, copy, distribute and reuse such materials at its discretion without further cost or payment to the Consultant. Reproduction or distribution of illustrations or renderings shall acknowledge the principal author, RDG Planning & Design, Inc.

Section Seven. Assignment

Both Parties agree that they are prohibited from assigning an interest in this agreement or delegating the performance of any of its duties hereunder without the written consent of the other Party.

Section Eight. Amendments

Either party to this Agreement may request an amendment or modification. Such amendment will not take effect unless incorporated into this Agreement in writing and executed by both parties.

Section Nine. Nondiscrimination

In the execution of this Agreement, the Consultant shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, disability, national origin, age, marital status, or receipt of public assistance.

Section Ten. Termination

This agreement may be terminated by either party upon **ten (10) days** written notice should the other party fail substantially to perform in accordance with its terms through no fault of the other. In the event of such termination, the Consultant shall be paid for services and expenses to the date of such termination.

Section Eleven. Independent Contractor.

In relationship to the City, the status of the Consultant under and by virtue of this Agreement is that of independent contractor.

Section Twelve. Indemnification

The Consultant agrees to fully indemnify and hold harmless the City and their officers and employees from any and all loss, damage, liability, claim, demand, or cause of action whatsoever to the extent arising out of or resulting from any negligent act or omission or willful misconduct of the Consultant, its officers, or employees in the performance of this Agreement. The City agrees to indemnify and hold harmless the Consultant from and against any and all loss, damage, liability, claim, demand, causes of action, costs, expenses, fines, penalties, charges or liabilities of whatever nature as may accrue against the Consultant as a result of the negligence of the City in performing its obligations hereunder.

IN WITNESS WHEREOF, the AGREEMENT has been executed this _____ day of June, 2024.

CITY OF MUSCATINE, IOWA

By:

Name/Title:

RDG PLANNING & DESIGN

By:

Amy Haase, Principal

**SCOPE OF WORK FOR CONSULTING SERVICES
BETWEEN THE CITY OF MUSCATINE, IOWA
AND RDG PLANNING & DESIGN, INC.**

TASK 1: ENGAGEMENT

1.1 COMMITTEES

- A. **Project Management Team (PMT).** We see the need for monthly meetings with City staff at the beginning of the process. The coordination meetings with staff (mostly held by video conference) allow the team to plan upcoming events, ensure data collection, review meeting output, and develop content.
- B. **Advisory Committee (AC).** The Advisory Committee should bring a broad representation to the planning process and include representation from City Council, the Planning and Zoning Commission, and economic development along with major employers, and even youth. The Committee will meet at key milestone to provide direction, course correction, and review deliverables. The meeting schedule is set at the beginning of the process to establish involvement expectations and allow members to plan schedules accordingly.

1.2 ONLINE INTERACTIVE MAPPING

The process begins with the development of an online interactive map for participants to identify their ideas and concerns by dropping pins on a map. Other users can “like” submissions to reinforce opinion.

1.3 LISTENING SESSIONS

Our team will conduct a one-day program of small group listening sessions to learn more about the community and further explore the opportunities identified in the interactive map. Traditionally, these sessions are limited to 10 people. However, we realize some individuals have different risk and comfort levels, therefore, some sessions will be offered as Zoom (video conferencing) meetings.

1.4 COMMUNITY ROUNDTABLE

The Community Roundtable offers residents the first larger-scale opportunity to learn more about the importance of the plan and to share insights on the City’s opportunities and challenges. We organize participants into small groups and ask them to talk about their goals and aspirations.

1.5 DESIGN WORKSHOP

Our team will advance the ideas heard throughout our meetings and research to design strategies for the future. This hands-on event includes two public sessions for people to work alongside planners and designers to imagine the City’s future land use, transportation, and park systems.

1.6 IMPLEMENTATION WORKSHOP

We will host a workshop with the Committee to review the land use plan, key concepts, and recommendations before the formal approval process begins. The workshop will have an educational and input component.

Attachment A

1.7 OPEN HOUSE

With a draft comprehensive plan complete, we will host an open house to share a draft of the plan. The open house should be an event that allows people to learn more about the plan, to have time with their neighbors, and to celebrate the next steps.

1.8 APPROVAL MEETINGS

To maximize the limited budget, we recommend that City Staff represent the plan at approval meetings.

1.9 EXPANDED OPPORTUNITIES

Our team will be available to meet with groups via Zoom or during planned trips.

TASK 2: MUSCATINE TODAY

This component of the plan identifies existing facts and patterns for understanding where the city is trending in the future.

2.1 BACKGROUND DOCUMENT REVIEW

RDG will review current planning documents identified in the RFP and others made aware to us by the Committee. Taking advantage of previous efforts informs our process and provides research and material to make us more efficient.

2.2 ECONOMIC & DEMOGRAPHIC TRENDS

Understanding the population, demographic, and economic factors in a city is essential to understand where we are going. Data will be gathered, assembled, and shared in easily communicated ways, including infographics and an atlas to identify neighborhood trends and opportunities. 2020 Census data will be used along with other sources we access such as BLS, ESRI, and MLS. We strongly believe all planning should be based in market realities, thus developing plans that are visionary and realistic.

2.3 LAND USE INVENTORY

We will complete a land use inventory using existing assessor data and on-site verification for a closer analysis of land uses. This task includes additional fieldwork by bike and on foot to inventory the City's character, appearance, and identity. While we have done this through past planning efforts, Muscatine has evolved, and it is important for us to "feel" the life of the community today.

2.4 ENVIRONMENTAL FEATURES

The plan must recognize the environmental constraints and assets. The map includes:

- Topography/Slopes
- Wetlands Inventory
- Drainage System and Structures
- Flooding Boundaries and Flood Problem Areas
- National Register listed or eligible sites.

2.5 TRANSPORTATION

This element will assemble information to understand opportunities and issues facing Muscatine's future.

- Review traffic volumes per existing data.

Attachment A

- Define and map existing street system and proposed changes (GIS).
- Review bike and pedestrian network.
- Identify opportunities to support energy conservation and sustainable growth.
- Identify problem areas, including safety hazards and obstacles to transportation.

TASK 3: MUSCATINE TOMORROW – VISION & LAND USE

The Land Use Concept process uses the detailed data collected in the Muscatine Today tasks to determine land use potential and repositioning by type of residential, commercial, industrial, and public land and transportation improvements and alternatives. Combined with the input of residents regarding community issues and quality of life, a unified Land Use Concept for the City is developed through the workshop process outlined in the Public Engagement Elements.

3.1 DELIVERABLES

- Concepts plans and graphics with supportive narrative.
- Future Land Use/Transportation Concept.
- Any Determined Special Area Concepts.

3.2 CITY RESPONSIBILITIES

- Review of materials with consolidated comments.

TASK 4: MUSCATINE TOMORROW - PLAN ELEMENTS

The plan elements translate to policies that will implement the community vision and achieve the preferred development concept. The goals and principles define the program and design of the city; the specific plan elements are the systems that help the design come to life.

4.1 LAND USE

The land use plan refines the Future Land Use and Transportation Plan. The plan includes:

- **Policy Areas.** This analysis examines planning and land use issues within the established City and growth areas. These policy areas will offer a big-picture perspective with the goal of balancing neighborhoods and providing quality living environments across the City.
- **Future Land Use Map.** The future land use plan will indicate the City-wide plan and identify any specific area plans necessary for deployment of residential, commercial, additional industrial/employment, and mixed-use space. The map includes the two-mile area surrounding existing City limits.

4.2 TRANSPORTATION

We view this as a key formative system that will address the street network and alternative modes, including pedestrian, bicycle, and transit. This will include:

- Improvements to the existing street system.
- Proposed additions to the street system in the City Development Framework that provides continuous access to future residential and commercial areas. The plan will identify missing links within the system and corridors for alternative forms of transportation.
- Standards and concepts for the design of higher-quality streets that serve as public spaces that unite the city.

Attachment A

- Policies and infrastructure to enhance pedestrian and bicycle travel options. This includes emerging technologies such as autonomous vehicles and drone technology.

4.4 COMMUNITY CHARACTER & DESIGN

The urban design element is closely related to the other elements. The policies and actions recommended related to urban design will be driven by public input. Understanding the local community and incorporating its input is essential to this process. While there are many national trends around community design, these need to be tested and viewed in the City's values.

4.5 PARKS, TRAILS, NATURAL AREAS, & GREENWAYS

We will identify any gaps in the system as related to future growth areas and greenway corridors that can connect destinations around the city.

4.6 HOUSING, NEIGHBORHOODS, & COMMUNITY DEVELOPMENT

This section begins with a review of recent housing studies. Expanding on the studies, the housing element will be paired with the City's land use strategy to identify neighborhood-level housing strategies. To do this we will:

- Review recent and current housing activity.
- Assess neighborhood conditions, including a general review of neighborhood conditions based on perceptions of housing conditions, site maintenance issues, streets, sidewalks, infrastructure, physical design, and appearance.
- Determine needs to achieve overall housing objectives and needs by type and cost.
- Create a tailored housing and neighborhood implementation program for Muscatine addressing such issues as available sites, mix of housing types, and neighborhood rehabilitation needs.

4.7 COMMUNITY FACILITIES & PUBLIC INFRASTRUCTURE

Community services and infrastructure both form and adapt to land use directions and policy. Facility managers will be interviewed to reveal current deficiencies (real and perceived) and ability to meet future growth. We will also review and analyze existing infrastructure conditions and provide recommendations on improvements needed to continue to support future growth.

TASK 5: IMPLEMENTATION

The implementation strategy begins with the Implementation Workshop outlined in Task 1.

5.1 IMPLEMENTATION WORKSHOP

During the workshop, the team works with participants to establish criteria for determining the priority of proposed projects. These criteria will be matched with the vision established in the engagement process to recommend phasing.

5.2 IMPLEMENTATION TABLE

The Plan will include an implementation plan presenting the recommendations, sequencing, leaders, partners, and potential funding sources for capital items. Capital items will be presented in zero-to-5-year, 5-to-10-year, and 10-to-20-year increments.

Attachment A

5.3 ZONING REVIEW MAP

RDG will annotate the existing zoning code, providing comments to reconcile conflicts with the comprehensive plan and offer tailored language for consideration. We will provide content for supporting infill development.

5.4 COMPLIANCE WITH IOWA SMART PLANNING PRINCIPLES

RDG will provide a matrix that shows the compliance of the plan with the smart planning principles and elements.

5.5 OPEN HOUSE

The Open House offers the public an opportunity to learn about the plan's recommendations prior to formal approval.

5.4 DELIVERABLES

- Draft Comprehensive Plan
- Digital version of presentations
- Print posters from events
- GIS files

5.5 CITY RESPONSIBILITIES

- Review of materials with comments.
- Help prepare for Open House events.

MUSCATINE COMPREHENSIVE PLAN



www.RDGUSA.com



March 20, 2024

City of Muscatine
Attn: Andrew Fangman
215 Sycamore Street
Muscatine, IA 52761

RE: Proposal to Prepare
the City of Muscatine
Comprehensive Plan

Dear Members of the Selection Committee:

RDG Planning & Design is pleased to submit this proposal to prepare the Comprehensive Plan for the City of Muscatine. RDG has been recognized as regional leaders in planning, urban design, transportation, and the growing fields that connect community culture and physical form. A rewarding aspect of our professional practice is helping Iowa communities - like Bettendorf, Dyersville, Pella, and Ottumwa – who continue to work with us over the decades. Aspects of our process worth noting include:

Extensive Land Use Planning Experience. We have completed hundreds of land use plans for communities of all sizes in Iowa and from North Dakota to Texas. We use an interactive process that informs people about the implications of different growth scenarios that lead to a preferred future.

Practical and Strategic. Our team includes former city officials who understand what it is like to implement a plan. Plans can take many forms and orient to the primary users to ensure they remain relevant. This has resulted in numerous state and national planning awards.

Public Engagement. We blend traditional engagement efforts with online interaction. Regardless of the setting, our marketing strategies are key to attracting people to the process.

Multi-disciplinary. Our team includes leading experts in active transportation, housing strategies, environmental/water resources, preservation, and district/corridor redevelopment. As a multi-disciplinary firm, we have architects, landscape architects, and artists that can bring their unique expertise to the process.

We look forward to working with the City of Muscatine and hope to have an opportunity to share our experiences.

Sincerely,

A handwritten signature in black ink that reads "Cory I. Scott". The signature is written in a cursive, flowing style.

Cory Scott, AICP
Senior Partner
cscott@rdgusa.com



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Cory Scott, AICP - Project Manager
301 Grand Avenue, Des Moines, IA 50309
515.473.6394 | www.rdgusa.com

RDG Planning & Design is a network of design and planning professional dedicated to applying our talents in extraordinary ways. We're architects, landscape architects, engineers, artists, and planners with a passion for design and making a difference. With offices in Omaha (NE), Denver (CO), St. Louis (MO), and Des Moines (IA); we are an employee-owned corporation.

From our newest staff to the founding fathers that began their practices in the 1960s, we are dedicated to the collaborative planning process. Officially formed in 1989 as the Renaissance Design Group and crafted to bring well-established firms together into practice, our organization provides the right people for integrated solutions.

The Community & Regional Planning group provides a wide variety of design and planning services. With a growing national practice, we are a regional leader in urban design, downtown planning, housing studies, comprehensive planning, and enhancement of transportation corridors. Since our formation in 1989, we have worked in more than 300 large and small communities throughout the Midwest.

We believe in applying new ways of thinking and innovative approaches to the preparation of plans that address community and regional issues. At the same time, plan recommendations must be based upon a realistic assessment of the practicality of implementation. The resultant product, as evidenced by our numerous successful planning efforts and awards, is an innovative plan with an emphasis upon implementation.

92 LICENSED
PROFESSIONALS

222 EMPLOYEES

59% OF STAFF ARE
STOCKHOLDERS

38 LEED APS

RDG SERVICES

Planning

Our core team of planners have over 20 years of working together, and have solved complex challenges for hundreds of communities throughout the country.



Landscape Architecture

We respectfully integrate the built and natural environments to create special and memorable experience for our clients and their communities.

Architecture

Great architecture is more than what you see; it's how it makes you feel. We collaborate to create the best solutions for those who will ultimately use the spaces we design.



Artistry

Our art studio thoughtfully creates both structural and ornamental artworks, integrating them into public and private spaces as well as the landscape.

Engineering

Staying on top of industry requirements allows us to incorporate the best engineering opportunities into your facilities.



Graphic Design & Multimedia

Whether creating environmental graphics, wayfinding signage, branding, promotional materials, videos, websites, or more, our skilled designers will tell your story.

Interior Design

Our imaginative solutions are inspired by our clients. With the design team, we create solutions that function, are aesthetically pleasing, and are in harmony with the project.



Lighting Design

Our lighting designers are involved with every project to find the best solutions to save energy and maintenance costs and add ambiance.



CORY SCOTT AICP

Project Manager | 515.288.3141 | cscott@rdgusa.com

EDUCATION

2010, University of Nebraska at Omaha, Master of Science, Urban Studies

2000, Iowa State University, Bachelor of Science, Community and Regional Planning

REGISTRATIONS

American Institute of Certified Planners

National Charrette Institute - Management & Facilitation

Since joining RDG in 2000, Cory has been involved in all phases of project development, including conducting research and focus groups to producing graphics and publications. Cory has been published in numerous articles, cited in academic studies, and spoken at conferences about market-based planning. His plans and passion for communities have resulted in millions of dollars of new investment - both public and private funds, and honored by 20+ awards.

Comprehensive Plans (selected)

IOWA: Altoona, Ames, Ankeny, Bettendorf, Clear Lake, Cedar Rapids, Grimes, Marshalltown, Mason City, Ottumwa, Polk City, Windsor Heights, Cass County, Mills County, Tomorrow Plan

MINNESOTA: Detroit Lakes

NEBRASKA: Douglas County, Madison County, Nemaha County, Sarpy County

N. DAKOTA: Fargo (NW Growth), Jamestown, Williston

S. DAKOTA: Sturgis, Yankton

WYOMING: Gillette

Land Use Planning (selected)

- College Avenue - Fayetteville, AR
- La Crosse Downtown Plan, WI
- Mt. Rushmore Corridor Study - Rapid City, SD
- Wauwatosa EastTosa & MidTown Tosa Plans, WI
- Grand Forks Downtown Plan, ND
- Bemidji Central City Plan, MN
- Hwy 100 Corridor Study - Cedar Rapids, IA
- Douglas Avenue Corridor Study - Des Moines, IA
- Ingersoll Avenue Improvement Study - Des Moines, IA
- Southside Revitalization Plan - Des Moines, IA
- West Lake Drive - Detroit Lakes, MN
- Highway 169 Study - Fort Scott, KS
- Stocktrail Neighborhood Plan - Gillette, WY
- South Locust Corridor Plan - Grand Island, NE
- Marion Active Living Design Guidelines, IA
- Harborside Memorial Plaza - Bremerton, WA



LAURA PETERS PLA

Lead Planner | 515.309.3227 | lpeters@rdgusa.com

EDUCATION

2021, Iowa State University, Master of Real Estate Development
1998, Iowa State University, Bachelor of Landscape Architecture

REGISTRATIONS

State of Iowa, Professional Licensed Landscape Architect, No. 00836
State of Iowa, Professional Real Estate Salesperson, No. 97038

Laura is an urban planner and licensed landscape architect. She joins RDG with a decade of experience in the non-profit and public sector, where she specialized in stakeholder engagement and facilitation of community meetings. In her role as a planner with the City of Des Moines Neighborhood Development Division, Laura led outreach to residents, neighborhood associations, business owners, nonprofit partners, and other stakeholder groups to build consensus and establish a shared vision for each project. With her experience in local government, Laura also understands the realities of project budgets, timelines, and challenges to implementation.

Merrillville Comprehensive Master Plan - Merrillville, IN

Riverside Comprehensive Plan - Riverside, MO

Oskaloosa Comprehensive Plan Update - Oskaloosa, IA

Services Department, City of Des Moines - Des Moines, IA*

Community Development Department, City of Des Moines - Des Moines, IA*

6th Avenue Corridor - Des Moines, IA*

University Avenue Streetscape Project - Des Moines, IA*

Franklin Area Special Investment District Neighborhood Revitalization Plan - Des Moines, IA*

Drake Area Special Investment District Neighborhood Revitalization Plan - Des Moines, IA*

Douglas Avenue Corridor Plan - Des Moines, IA

Sherman Hill Neighborhood Plan - Des Moines, IA*

Viva East Bank Neighborhood Initiative - Des Moines, IA

SW 9th Corridor Plan - Des Moines, IA*

*Prior work from previous firm.



MARTY SHUKERT FAICP

Principal Designer | 402.449.0820 | mshukert@rdgusa.com

EDUCATION

University of California at Berkeley,
Master of Architecture
Yale University, Bachelor in Division IV
Studies (City Planning) - Magna Cum
Laude

REGISTRATIONS

2004, Fellow of the American Institute
of Certified Planners
1984, American Institute of Certified
Planners

AFFILIATIONS

- Certified Instructor - League of
American Bicyclists
- Board Member, Nebraska Bicycling
Alliance

Comprehensive Plans (Selected)

- **Iowa:** Altoona, Bettendorf, Cedar Rapids, Clear Lake, Denison, Le Mars, Mason City, Mount Vernon, Oskaloosa, Ottumwa, Pella, Webster City
- **Kansas:** Derby, Hays, Junction City, Ellis County
- **Minnesota:** Detroit Lakes
- **Missouri:** Camdenton, Excelsior Springs, Maryville
- **Nebraska:** Beatrice, Columbus, Chadron, Fremont, Kearney, Norfolk, Papillion, Plattsmouth, Ralston, Wayne
- **North Dakota:** Dickinson, Jamestown
- **Oklahoma:** Guthrie, Oklahoma City
- **South Dakota:** Brookings, Sturgis, Yankton
- **Texas:** Midland
- **Wyoming:** Gillette

Urban Design, Town Center, and Corridor Plans (Selected)

- **Arkansas:** Fayetteville, Conway
- **Iowa:** Burlington, Clear Lake, Council Bluffs, Marshalltown, Mason City, Oskaloosa, Pella, Perry, Shenandoah
- **Illinois:** Macomb, Mount Vernon
- **Kansas:** De Soto, Fort Scott, Hays, Olathe, Shawnee, Topeka
- **Minnesota:** Bemidji, Detroit Lakes, Park Rapids
- **Missouri:** Excelsior Springs, Saint Louis, Trenton
- **Nebraska:** Alliance, Fremont, Grand Island, Hastings, Lincoln, Kearney, Nebraska City, Omaha, Ralston, Papillion
- **South Dakota:** Deadwood, Rapid City
- **Wisconsin:** De Pere, Waupaca, Wauwatosa
- **Wyoming:** Buffalo, Gillette, Rawlins



MAYASTRUHAR

EDUCATION

2023, University of New Orleans,
Master of Urban and Regional Planning

2021, Cottey College
Bachelor of Arts in Organizational
Leadership, Magna Cum Laude

Urban Planner | 515.309.3272 | mstruhar@rdgusa.com

An urban planner based out of RDG's Des Moines, Iowa office, Maya Struhar brings a focus on environmental planning, hazard mitigation and community resilience to her work for the firm's urban design market. She earned her master's degree in Urban and Regional Planning from the University of New Orleans and a Bachelor of Arts in Organizational Leadership from Cottey College. Her decision to pursue urban planning was fueled by her study abroad program in Liverpool, England, where she witnessed the resilience of communities in the face of natural disasters.

Riverside Comprehensive Plan - Riverside, MO

Salina Housing Assessment Annual Update - Salina, KS

La Crosse Housing Study - LaCrosse, WI

Blue Springs Downtown Master Plan - Blue Springs, MO

Milford Housing Study - Milford, IA

Marion Comprehensive Plan - Marion, IA

O'Fallon Great Streets - O'Fallon, IL

Norman Comprehensive Plan - Norman, OK

Planner I - St. Bernard Parish Government - St. Bernard Parish, LA*
ing ordinance amendments, site plans, and permits.

Professional Assistant - University Office of Academic Affairs - New Orleans, LA*



COMPREHENSIVE PLANNING

Over the past 25+ years, the RDG team has completed dozens of comprehensive plans. The hallmark of this work is our desire to provide plans that are actionable to provide communities with a path forward. Selected projects include:

IOWA: Altoona, Ames, Ankeny, Atlantic, Bettendorf, Carlisle, Cass County, Cedar Rapids, Clear Lake, Denison, Dyersville, Fort Madison, Glenwood, Grimes, Grinnell, Kalona, LeMars, Manchester, Mason City, Mills County, Monticello, Mount Vernon, Nevada, North Liberty, Osceola, Oskaloosa, Ottumwa, Pella, Peosta, Polk City, Riverside, Storm Lake, Webster City

KANSAS: Derby, Ellis County, Hays

NEBRASKA: Atkinson, Beatrice, Benedict, Bradshaw, Brownville, Chadron, Columbus, Cozad, Douglas County, Fremont, Gothenburg, Henderson, Johnson, Kearney, Keith County, Madison County, Nemaha County, Norfolk, Ogallala, Peru, Plattsmouth, Osmond, Papillion, Stromsburg, Ralston, Ravenna, Red Cloud, Sargent, Sarpy County, Schuyler, Seward, Springfield, Waverly, Wayne

MISSOURI: Excelsior Springs, Maryville

NORTH DAKOTA: Dickinson, Jamestown, Fargo NW Area, Valley City

OKLAHOMA: Guthrie, Oklahoma City, Shawnee

SOUTH DAKOTA: Brookings, Huron, Yankton

WYOMING: Gillette



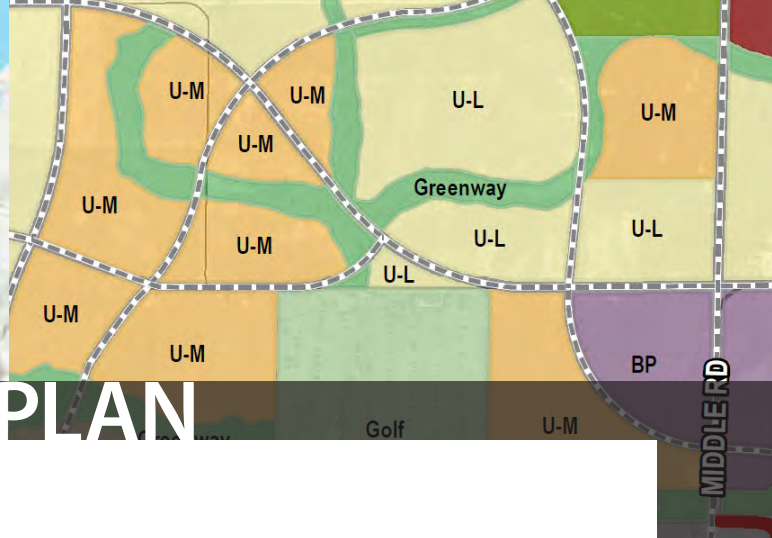
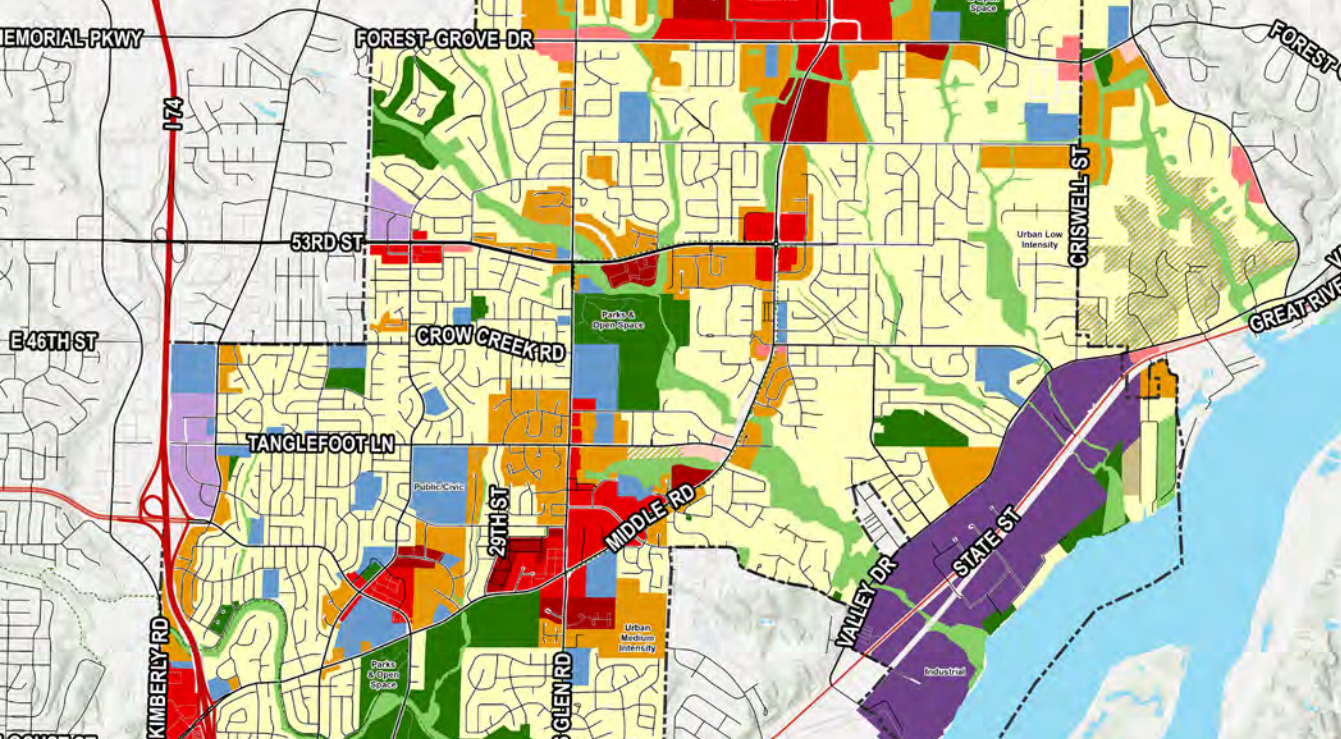
ZONING ORDINANCE, CODE REVISION, AND GUIDELINES

Projects include development of new zoning and subdivision ordinances:

- Bettendorf, IA Zoning Ordinance (pop. 40,000)
- Gillette, WY Unified Development Ordinance (pop. 30,000)
- Plattsmouth, NE Zoning and Subdivision Ordinance (pop. 6,500)
- Kermit, TX Zoning Ordinance (pop. 6,500)
- Manchester, IA Zoning Ordinance (pop. 5,000)
- Dyersville, IA Zoning and Subdivision Ordinance (pop. 4,300)
- Kearney, NE Unified Development Ordinance (pop. 30,000)
- Seward, NE Unified Development Ordinance (pop. 6,500)
- Papillion, NE Zoning and Subdivision Ordinance (pop. 21,000)
- Washington County, IA Zoning Ordinance (pop. 21,000)
- Schuyler, NE Zoning and Subdivision Ordinance (pop. 5,200)

Ordinance Revisions

- Douglas County, NE Stormwater Management Regulations (pop. 571,000)
- Grimes, IA Visual Design Standards (pop. 14,000)
- Pella, IA Zoning Administration, site plan review and code updates (pop. 10,000)
- Marion, IA: Neighborhood at Indian Creek Form-based code (pop. 38,000)
- Land Use and Development Standards for Sioux Falls, IA (pop. 142,000)



BETTENDORF COMPREHENSIVE PLAN

Bettendorf, Iowa

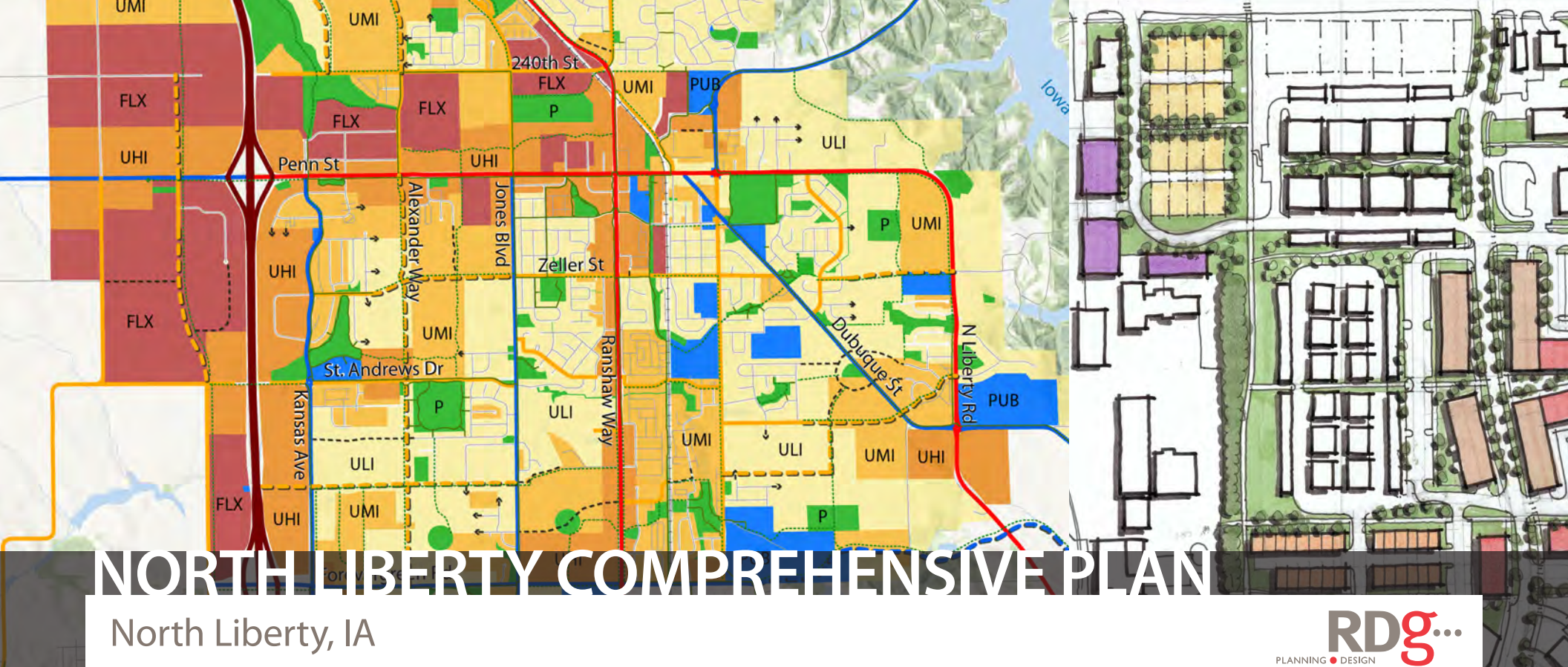
Bettendorf is rapidly growing city along the Mississippi River that is expanding toward Interstate 80. With this growth comes tremendous opportunity for economic development, new housing options, expansions to the parks system, and more. Meanwhile, downtown and the riverfront were experiencing significant reinvestment.

In 2024, RDG completed the update to the original 2015 Plan. The process involved over 1000 people between the two plans, which included an extensive outreach program of going to the people in schools, celebrations, and clubs. The plan includes a detailed implementation strategy, focusing on the cost/benefits of annexing growth areas and the commissioning of a new zoning ordinance to provide more flexibility for both the developer and city through intensity-based land use.

Reference:

Mark Hunt | Community Development Director
563.344.4083 | mhunt@bettendorf.org





North Liberty, IA



The Connected to Tomorrow Plan is a roadmap for North Liberty around land use directions, transportation, housing, parks, infrastructure, and economic development. Community leaders and stakeholders were actively involved in the planning process and helped to mobilize and engage community members. The community engagement process used many of the traditional techniques but also included outreach at the local high schools to engage with students about their vision for the community and priorities for the future. By engaging the students, the planners were able to tap into a new generation of community leaders and ensure that the plan reflects the needs and aspirations of all members of the city.

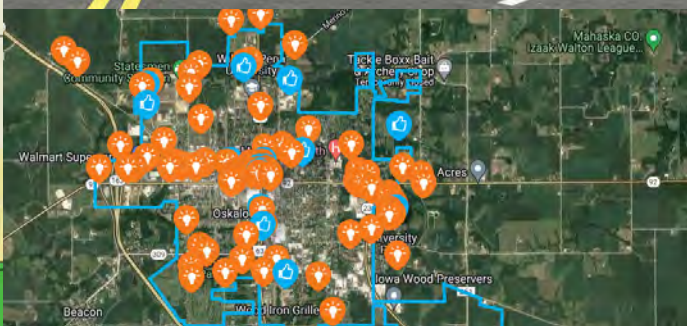
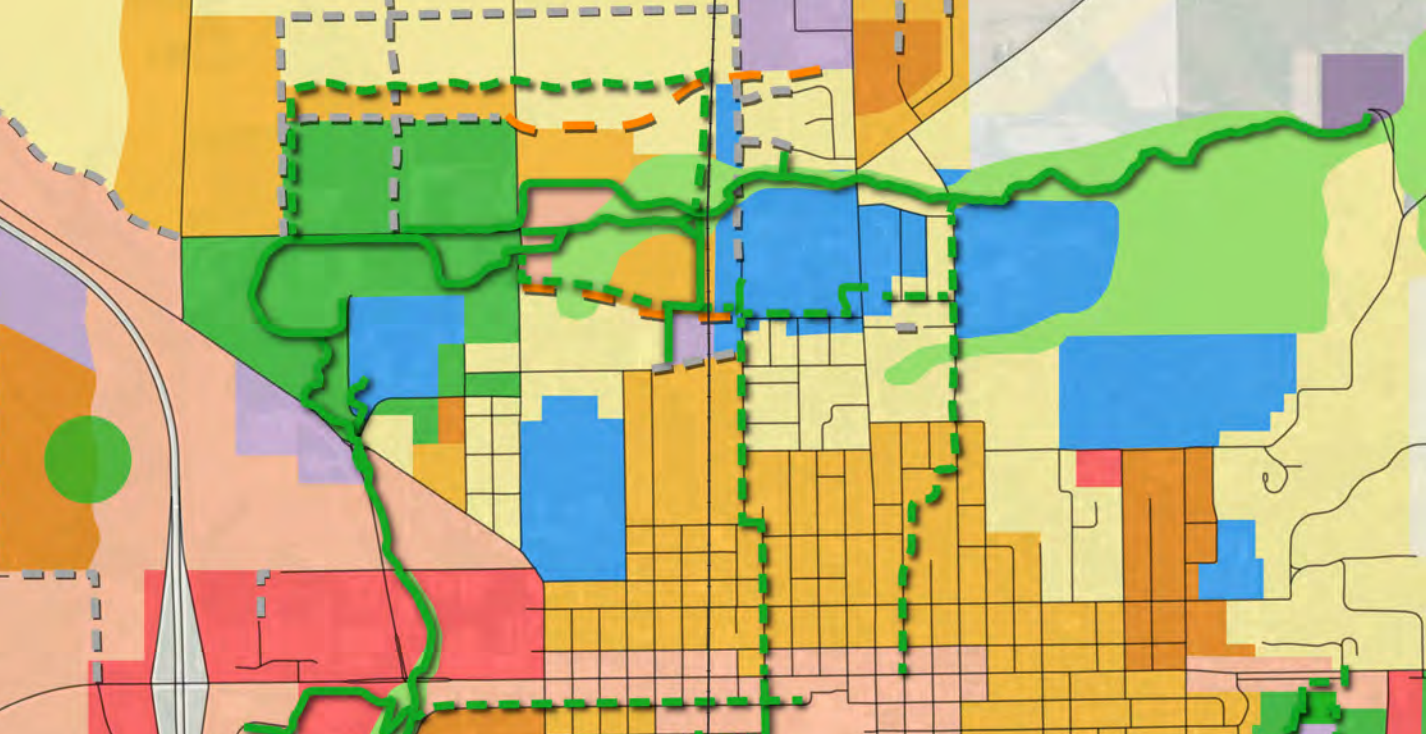
Size/Population: 20,875

Project Cost: \$118,000

Reference:

Ryan Rusnak, Planning Director
City of North Liberty
319.626.5747 | rrusnak@northlibertyiowa.org





OSKALOOSA COMPREHENSIVE PLAN

Oskaloosa, IA

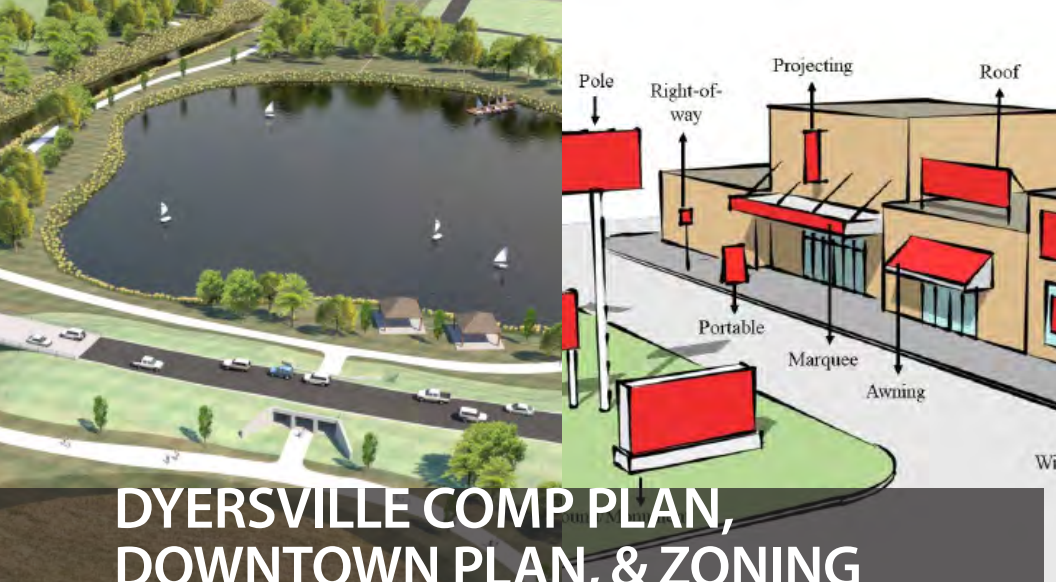


The Connected to Tomorrow Plan is a roadmap for North Liberty around land use directions, transportation, housing, parks, infrastructure, and economic development. Community leaders and stakeholders were actively involved in the planning process and helped to mobilize and engage community members. The community engagement process used many of the traditional techniques but also included outreach at the local high schools to engage with students about their vision for the community and priorities for the future. By engaging the students, the planners were able to tap into a new generation of community leaders and ensure that the plan reflects the needs and aspirations of all members of the city.

Reference:

Shawn Christ, AICP, CFM | Development Services Director
City of Oskaloosa
641.673.7472 | schrist@oskaloosaiowa.org





DYERSVILLE COMP PLAN, DOWNTOWN PLAN, & ZONING

Dyersville, IA

Dyersville is a community that has a rich history with a nationally-known tourist attraction, “The Field of Dreams.” The plan for Dyersville is made of two parts: a city-wide comprehensive plan and a downtown plan. While development strategies for housing were at the core of the comprehensive plan, improving connections to neighborhoods and new gathering spaces were at the center of the downtown plan.

Upon the completion of the plan, the city followed through on planning recommendations by retaining RDG to update their zoning ordinance and prepare an annexation study. The zoning ordinance is now fully incorporated into Muni-Code with tables, graphics, and cross-references.

Reference

Mick Michel, City Administrator
340 1st Avenue East | Dyersville, IA 52040
563.875.7724 | mmichel@cityofdyersville.com



GRIMES COMPREHENSIVE PLAN(S)

Grimes, IA

Grimes is a fast-growing northwestern suburb of Des Moines that is projected to more than triple in size between 2010 and 2030. To accommodate this growth, the land use concept provides several new ideas including: a variety of housing types, necessary commercial services, an expanded park system, and a transportation system to connect neighborhoods. The update of the 2010 plan in 2018 forecasts land use to 2040, identifies signature parks, and modifies policy to align with new leadership in the community. The plan includes a concept to improve downtown and the surrounding area known as the Governors District. This concept uses the abandoned rail corridor as a spine that will connect the city with community destinations and green spaces.

The efforts with the comprehensive plan lead to Grimes retaining RDG again to create a Parks and Trails Master Plan and a Design Standards Manual for the Highway 141 Corridor to help implement zoning regulations.

Reference

Brian Buethe, Executive Director, Grimes Chamber and Economic Development
400 SE 2nd Street, Suite 200 | Grimes, Iowa 50111
515.986.5770 | brianb@grimesiowa.com

Our approach methodology is focused on document creation through community involvement. While there are standard requirements to meet in a comprehensive plan and zoning code, Muscatine's plan should focus on the city's key challenges and on its strengths.

Ultimately, the city's comprehensive plan should be designed and drafted in a ways that provide guidance and inspire the community. Doing this closely with the zoning ordinance update provides better context for the community as ordinances are often not well understood by the general public. Our approach can be broken down into three core elements:

- Where are we now?
- Where do we want to go?
- How do we get there?

We propose confirming the detailed work program at the start to meet milestones, create expectations, and advance the project on time.



TASK 1: PUBLIC ENGAGEMENT & AWARENESS CAMPAIGN

Our overriding approach with any planning process is listening: Listening to the desires of residents and making those come to life in a plan residents can own.

PROJECT MANAGEMENT & ADVISORY COMMITTEE

The day-to-day work of the plan will be completed in close partnership with the City with the understanding staff has limited capacity.

- **City Staff Meetings.** We see the need for monthly meetings with City staff at the beginning of the process. The coordination meetings with staff (mostly held by video conference) allow the team to plan upcoming events, ensure data collection, review meeting output, and develop content.
- **Advisory Committee.** The Advisory Committee should bring a broad representation to the planning process and include representation from City Council, the Planning and Zoning Commission, and economic development along with major employers, and even youth. The Committee will meet at key milestone to provide direction, course correction, and review deliverables. The meeting schedule is set at the beginning of the process to establish involvement expectations and allow members to plan schedules accordingly.

ENGAGEMENT ACTIVITIES

Our public engagement process is an iterative process that builds on each event to expand understanding, set goals, establish a vision, and create momentum for implementation. These activities include:

- **Online Interactive Mapping.** The process begins with the development of an online interactive map for participants to identify their ideas and concerns by dropping pins on a map. Other users can “like” submissions to reinforce opinion.
- **Listening Sessions.** Our team will conduct a one-day program of small group listening sessions to learn more about the community and further explore the opportunities identified in the interactive map. Traditionally, these sessions are limited to 10 people. However, we realize some individuals have different risk and comfort levels, therefore, some sessions will be offered as Zoom (video conferencing) meetings.
- **Community Roundtable.** The Community Roundtable offers residents the first larger-scale opportunity to learn more about the importance of the plan and to share insights on the city's opportunities and challenges. We organize participants into small groups and ask them to talk about their goals and aspirations.



ECONOMIC & DEMOGRAPHIC TRENDS

Understanding the population, demographic, and economic factors in a city is essential to understand where we are going.

Data will be gathered, assembled, and shared in easily communicated ways, including infographics and an atlas to identify neighborhood trends and opportunities. 2020 Census data will be used along with other sources we access such as BLS, ESRI, and MLS. We strongly believe all planning should be based in market realities, thus developing plans that are visionary and realistic.

LAND USE INVENTORY

We will complete a land use inventory using existing assessor data and on-site verification for a closer analysis of land uses. This task includes additional fieldwork by bike and on foot to inventory the city's character, appearance, and identity. While we have done this through past planning efforts, Muscatine has evolved, and it is important for us to "feel" the life of the community today.

ENVIRONMENTAL FEATURES

The plan must recognize the environmental constraints and assets. The map includes:

- Topography/Slopes
- Wetlands Inventory
- Drainage System and Structures
- Flooding Boundaries and Flood Problem Areas
- National Register listed or eligible sites

- **Design Workshop.** Our team will advance the ideas heard throughout our meetings and research to design strategies for the future. This hands-on event includes two public sessions for people to work along side planners and designers to imagine the City's future land use, transportation and park systems.
- **Implementation Workshop.** We will host a workshop with the Committee to review the land use plan, key concepts, and recommendations before the formal approval process begins. The workshop will have an educational and input component.
- **Open House.** With a draft comprehensive plan complete, we will host an open house to share a draft of the plan. The open house should be an event that allows people to learn more about the plan, to have time with their

neighbors, and to celebrate the next steps.

- **Approval Meetings.** To maximize the limited budget, we recommend that City staff represent the plan at approval meetings.
- **Expanded Opportunities.** Our team will be available to meet with groups via Zoom or during planned trips.

TASK 2: MUSCATINE TODAY

This component of the plan identifies existing facts and trends for understanding.

BACKGROUND DOCUMENT REVIEW

We will review current planning documents identified in the RFP and others made aware to us by the Committee. Taking advantage of previous efforts informs our process and provides research and material to make us more efficient.

TRANSPORTATION

This element will assemble information to understand opportunities and issues facing Muscatine's future.

- Review traffic volumes per existing data.
- Define and map existing street system and proposed changes (GIS).
- Review bike and pedestrian network.
- Identify opportunities to support energy conservation and sustainable growth.
- Identify problem areas, including safety hazards and obstacles to transportation.

TASK 3: MUSCATINE TOMORROW - VISION & LAND USE

The Land Use Concept process uses the detailed data collected in the Muscatine Today tasks to determine land use potential and repositioning by type of residential, commercial, industrial, and public land and transportation improvements and alternatives. Combined with the input of residents regarding community issues and quality of life, a unified Land Use Concept for the city is developed through the workshop process outlined in the Public Engagement Elements.

Deliverables

- Concepts plans and graphics with supportive narrative
- Future Land Use/Transportation Concept
- Any Determined Special Area Concepts

City Responsibilities

- Review of materials with consolidated comments

TASK 4: MUSCATINE TOMORROW – PLAN ELEMENTS

The plan elements translate to policies that will implement the community vision and achieve the preferred development concept. The goals and principles define the program and design of the city; the specific plan elements are the systems that help the design come to life.

LAND USE

The land use plan refines the Future Land Use and Transportation Plan. The plan includes:

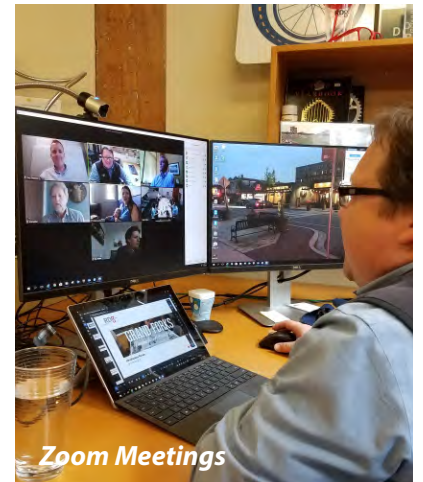
- **Policy Areas.** This analysis examines planning and land use issues within the established city and growth areas. These policy areas will offer a big-picture perspective with the goal of balancing neighborhoods and providing quality living environments across the city.

- **Future Land Use Map.** The future land use plan will indicate the city-wide plan and identify any specific area plans necessary for deployment of residential, commercial, additional industrial/employment, and mixed-use space. The map includes the two-mile area surrounding existing city limits.

TRANSPORTATION ELEMENT

We view this as a key formative system that will address the street network and alternative modes, including pedestrian, bicycle, and transit. This will include:

- Improvements to the existing street system.
- Proposed additions to the street system in the City Development Framework that provides continuous access to future residential and commercial areas. The plan will identify missing links within the system and corridors for alternative forms of transportation.



- Standards and concepts for the design of high-quality streets that serve as public spaces that unite the city.
- Policies and infrastructure to enhance pedestrian and bicycle travel options. This includes emerging technologies such as autonomous vehicles and drone technology.

COMMUNITY CHARACTER & DESIGN

The urban design element is closely related to the other elements. The policies and actions recommended related to urban design will be driven by public input. Understanding the local community and incorporating its input is essential to this process. While there are many national trends around community design, these need to be tested and viewed in the city's values.

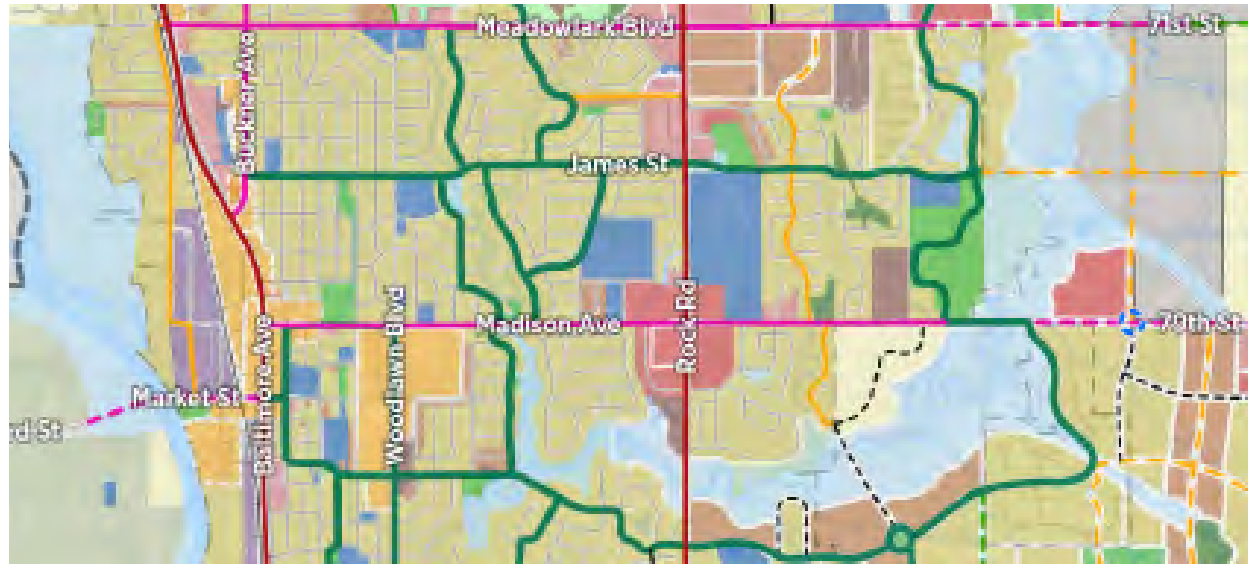
PARKS, TRAILS, NATURAL AREAS, & GREENWAYS

We will identify any gaps in the system as related to future growth areas and greenway corridors that can connect destinations around the city.

HOUSING, NEIGHBORHOODS, & COMMUNITY DEVELOPMENT

This section begins with a review of recent housing studies. Expanding on the studies, the housing element will be paired with the city's land use strategy to identify neighborhood-level housing strategies. To do this we will:

- Review recent and current housing activity.
- Assess neighborhood conditions, including a general review of neighborhood conditions based on perceptions of housing conditions,



site maintenance issues, streets, sidewalks, infrastructure, physical design, and appearance.

- Determine needs to achieve overall housing objectives and needs by type and cost.
- Create a tailored housing and neighborhood implementation program for Muscatine addressing such issues as available sites, mix of housing types, and neighborhood rehabilitation needs.

COMMUNITY FACILITIES & PUBLIC INFRASTRUCTURE

Community services and infrastructure both form and adapt to land use directions and policy. Facility managers will be interviewed to reveal current deficiencies (real and perceived) and ability to meet future growth. We will also review and analyze existing infrastructure conditions and provide recommendations on improvements

needed to continue to support future growth.

TASK 5: IMPLEMENTATION

The implementation strategy begins with the Implementation Workshop outlined in Task 1.

- **Implementation Workshop.** During the workshop, the team works with participants to establish criteria for determining the priority of proposed projects. These criteria will be matched with the vision established in the engagement process to recommend phasing.
- **Implementation Table.** The Plan will include an implementation plan presenting the recommendations, sequencing, leaders, partners, and potential funding sources for capital items. Capital items will be presented in zero-to-5-year, 5-to-10-year, and 10-to-20-year increments.

- **Zoning Review Memo.** RDG will annotate the existing zoning code, providing comments to reconcile conflicts with the comprehensive plan and offer tailored language for consideration. In particular, we will provide content for supporting infill development.
- **Compliance with Iowa Smart Planning Principles.** RDG will provide a matrix that shows the compliance of the plan with the smart planning principles and elements.
- **Open House.** The Open House offers the public an opportunity to learn about the plan's recommendations prior to formal approval.



Deliverables

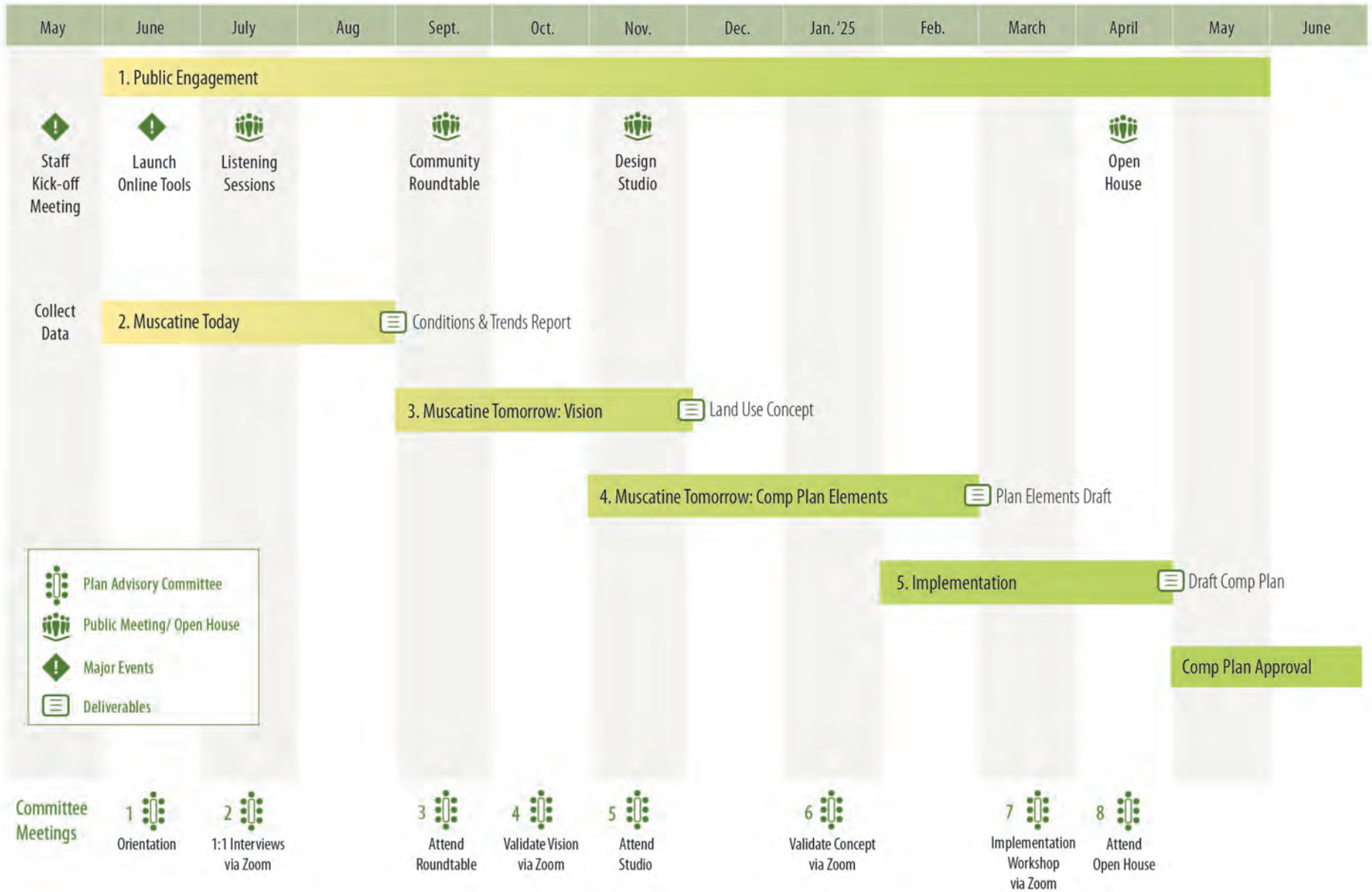
- Draft Comprehensive Plan
- Digital version of presentations
- Print posters from events
- GIS files

City Responsibilities

- Review of materials with comments
- Help prepare for Open House events



SCHEDULE



COST - \$84,995

We pride ourselves on working closely with our clients to create projects that are designed to meet their unique needs. The scope and fee laid out in this proposal is the beginning of this process, and, therefore may be negotiated to better match the needs of Muscatine.

TASKS	Cory	Laura	Marty	Maya	Support
TASK 1: PUBLIC ENGAGEMENT					
Administration	2	4			
City Staff Meetings	6	18		18	
Advisory Committee Meetings	4	16		8	
Interactive Website		1		2	
Listening Sessions (combined with Roundtable)	4	16	4	16	
Community Roundtable (combined with Listening Sessions)	6	5		5	
Design Workshop (see Task 3)					
Implementation Workshop (see Task 5)					
Open House (see Task 5)					
TASK 2: MUSCATINE TODAY					
Document Review	1	4		4	
GIS Maps	1			40	
Data Collection and Analysis	1	4		10	
Supporting Narrative		4		30	
TASK 3: MUSCATINE TOMORROW - VISION					
Design Workshop	18	30	30		
Concept Refinement	4	20	20		
TASK 4: MUSCATINE TOMORROW - PLAN ELEMENTS					
Narrative	7	80			
Maps	1	4		30	
Publication Design	1	4			20
TASK 5: IMPLEMENTATION					
Implementation Workshop	4	4		4	
Zoning Review Memo	6	2			
Open House Event	6	13		16	
Approval Process (add-on)					
SUBTOTAL TASK HOURS	72	229	54	183	20



City of Muscatine

ITEM NUMBER 2024-0274

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Stephanie Romagnoli, Human Resources Manager

SUBJECT

Request to Approve Insurance Renewal for various lines of insurance coverage

EXECUTIVE SUMMARY

The City's insurance coverage is due for renewal on July 1, 2024. This includes coverage by Iowa Communities Assurance Pool (ICAP), Iowa Municipal Worker's Compensation Association (IMWCA) for worker's compensation, and a variety of specialty lines of coverage. The total cost for insurance is \$1,145,028. The projected amount was \$1,177,109. Other lines of coverage include Police and Fire medical, Airport Liability, City Crime, Fine Arts, Pollution, Dredge coverage, and Flood policies on four (4) locations. The total premium for coverage with ICAP is \$907,307; \$904,978 was budgeted. The total premium for worker's compensation coverage is \$86,559; \$110,141 was budgeted.

Most policies are being renewed under the same terms as the city's current coverage. ICAP, however, is making some changes to the policy. These changes include the addition of a 2% wind hail deductible on the value of each of the City's buildings and coverage for actual cash value (vs. replacement value) for any roof over 15 years old.

In consultation with the city's insurance committee, the options were reviewed, and the recommendation is for the City to continue its coverage with ICAP and renew all other lines of coverage as presented.

STAFF RECOMMENDATION

It is staff's recommendation to renew the insurance coverage as presented.

BACKGROUND/DISCUSSION

The City's insurance coverage is due for renewal on July 1, 2024. This includes coverage with ICAP, IMWCA for worker's compensation, and a variety of specialty lines of coverage. The majority of coverage is renewed on an annual basis. As mentioned in the summary, the total cost for insurance is \$1,145,028. The projected amount was \$1,177,109. Other lines of coverage include Police and Fire medical, Airport Liability, City Crime, Fine Arts, Pollution, Dredge coverage, and Flood policies on four (4) locations. The total premium for coverage with ICAP is \$907,307; \$904,978 was budgeted. The total premium for worker's compensation

coverage is \$86,559; \$110,141 was budgeted.

Most policies are being renewed under the same terms as the city's current coverage. ICAP, however, is making some changes to the policy. These changes include the addition of a 2% wind/hail deductible on the value of each of the City's buildings and coverage for actual cash value (vs. replacement value) for any roof over 15 years old. The insurance broker, AJG, sought other options for the property coverage. A quote was received from Chubb. While Chubb's premium quote was lower than ICAP, they also require the equivalent of a 2% wind/hail (although it is presented as a flat dollar amount) and it would require the City to increase from the current \$5000 deductible to a \$25,000 deductible. Other carriers were either more expensive or declined to quote the coverage. After much discussion with the committee, it was determined the recommendation should be to remain with ICAP. In the event of a catastrophic wind/hail storm, the City would have the option to consider bonding for needed roof repairs. The City's insurance committee consists of staff members Carol Webb, Nancy Lueck, and Stephanie Romagnoli, Councilmember Jindrich, Hal Larson - retired risk manager, Rich Dwyer - VP Corporate Affairs for Kent Corp., and Ian Happ, Risk Service Manager for Kent Corp.

CITY FINANCIAL IMPACT

\$1,145,028 for all lines of coverage

ATTACHMENTS

1. City of Muscatine Premium Comparison 2024 (1)



City of Muscatine

ITEM NUMBER 2024-0236

AGENDA ITEM SUMMARY

DATE: 6/20/2024

STAFF

Jodi Royal-Goodwin, Community Development Director

SUBJECT

Request to Approve Contract with RDG Planning & Design Inc. for an Amount not to Exceed \$84,616.00, to Implement the Commercial Façade Activity of the Mulberry Neighborhood Revitalization Grant.

EXECUTIVE SUMMARY

Presented for Council consideration is a request to approve a contract with RDG Planning & Design Inc to provide architectural services for the commercial façade activity of the Mulberry Neighborhood Revitalization Grant. RDG will provide design and project management services for a fee not to exceed \$84,616.

STAFF RECOMMENDATION

Staff recommends approve the contract.

BACKGROUND/DISCUSSION

Staff is requesting Council approve the contract with RDG Planning & Design related to the implementation of the commercial façade activity portion of the Mulberry Neighborhood Revitalization Project. The contract provides for design and revitalization for up to 5 commercial properties along Mulberry Avenue between 5th and 8th Streets for a fee up to \$84,616.

Property owners will be invited to an informational meeting to review the project opportunity and guidelines, and the architect will work with interested property owner to develop appropriate design documents for review by the State Historic Preservation Office, and ultimately RDG will develop construction documents for bidding and manage the construction phase. Bidding is anticipated to take place this fall with construction in 2025.

This project was included in the Comprehensive Neighborhood Revitalization Grant from the Iowa Economic Development Authority's (IEDA) accepted by Council at the April 6, 2023, meeting. That grant is funded with Community Development Block Grant (CDBG) funds made

available by the US Department of Housing and Urban Development and require a 25% match. The Nuisance Property and Abandoned Remediation Fund is allocated by the Iowa legislature from state funds and will provide a portion of the required project match.

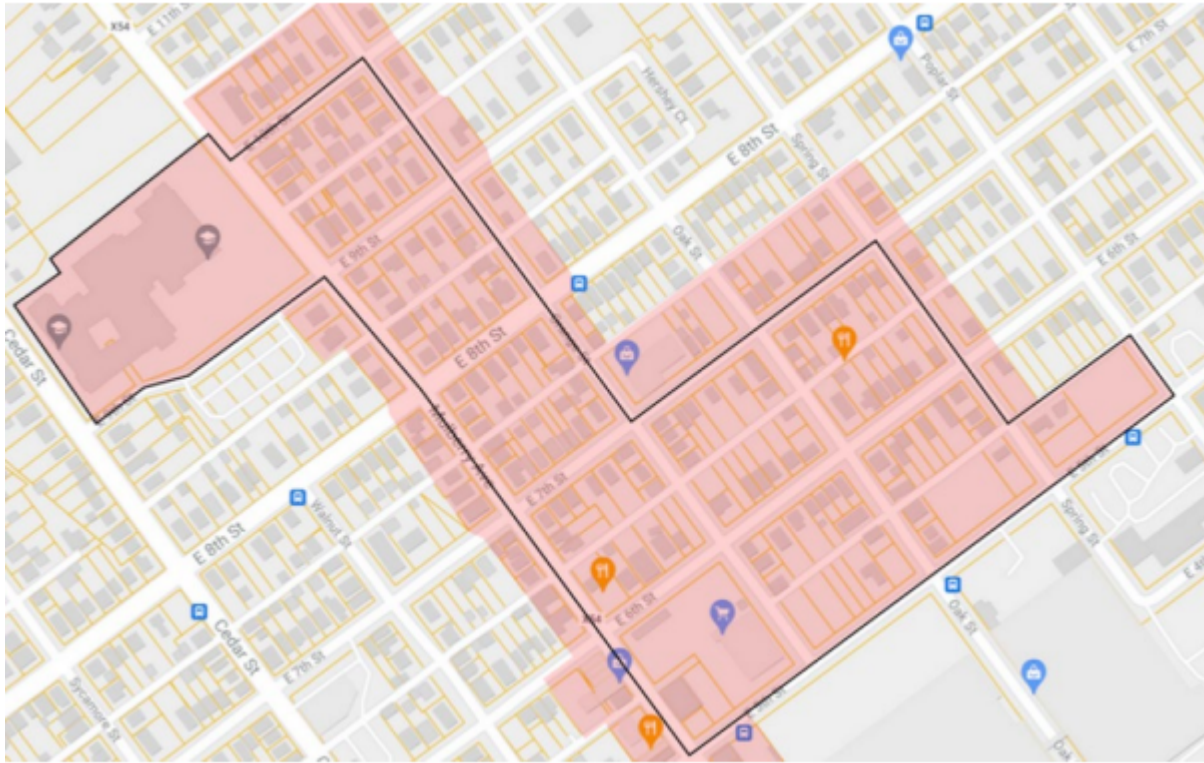
This overall program was developed following the 2021 Housing Summit, following a request by Director Debi Durham to develop a pilot project focusing on revitalizing an area that was 1) near downtown; 2) would have a high visibility impact; and 3) would be replicable in other communities. The team looked in a number of areas and ultimately focused on 2 blocks to be presented to IEDA for final determination. Ultimately the Mulberry Neighborhood (Mulberry to Orange between 6th and 7th streets) and in July Council approved submitting the pilot project proposal.

After a number of discussions with IEDA staff, the area was expanded as depicted on the map below. In addition, the range of projects was expanded to include a range of housing development and improvements, commercial facades, and economic development as well as an array of place-making and community enhancement features to be completed over a 3-5 year period with a total budget over \$22 million, with no official match requirement.

Upon execution of the grant, staff began working on CDBG compliance requirements and project implementation, including environmental reviews and procurement of technical services.

The neighborhood project includes the highlighted area of the map below, close to downtown Muscatine and Jefferson Elementary School. The project is a multifaceted effort to make the neighborhood safer, more connected, and healthier for the people who live there. Grant funded activities include:

- A new pocket park with accessible play equipment
- Additional street lighting to increase safety
- Sidewalk repair and widening
- Crosswalk improvements to increase safety of children walking to nearby Jefferson Elementary School
- Grants to improve housing exteriors
- Façade grants to commercial property owners



Other anticipated activities that will be completed using funds made available to MCSA and the Community Foundation, include:

- Construction of at least six new homes, replacing vacant lots or derelict buildings to be removed with these funds
- Rehab of other deteriorated units

Some highlights of recent activities:

- Developing homeowner façade grant program which is proposed to improve 30 homes.
- Architect selection for the commercial façade grant program which is anticipated to improve 5 properties.
- Completion of Tier I Environmental for all components of the project.
- Prepared RFPs for the playground and engineering services for released by the end of April.

Fast facts about the neighborhood:

- 49% renters (compared to 31%)
- 38% Hispanic (compared to 19% in the City of Muscatine)

- Median household income is \$43,900 (compared to \$54,500)
- Median value of owner-occupied housing units is \$76,100 (compared to \$114,900)
- 1 in 5 residents is under the age of 18
- 72% of students at Jefferson Elementary School are eligible for free or reduced-price lunch
-

A Neighborhood Block Party to kick off remediation and development activity as part of the project was held April 21. More than 100 area residents were provided lunch, participated in family activities, obtained information from a variety of resources, and had opportunities to win prizes. Participating organizations included, but are not limited to, the City of Muscatine, Community Foundation of Greater Muscatine, MCSA, The Arch, Muscatine Power and Water, and the Muscatine Police Department.

CITY FINANCIAL IMPACT

Approving this contract does not impact to the general fund; all fees will be paid with grant resources.

ATTACHMENTS

1. Commercial Facade Architect Contract - Final

AIA® Document B101® – 2017

Standard Form of Agreement Between Owner and Architect

AGREEMENT made as of the Fourth day of June in the year Two Thousand Twenty-Four.
(In words, indicate day, month and year.)

BETWEEN the Architect's client identified as the Owner:
(Name, legal status, address and other information)

City of Muscatine, Iowa
215 Sycamore Street
Muscatine, Iowa 52761
www.muscatineiowa.gov

and the Architect:
(Name, legal status, address and other information)

RDG Planning & Design, Inc.
301 Grand Avenue
Des Moines, IA 50309-1718
Phone: 515-288-3141
www.rdgusa.com

RDG Project Numbers: R3006.466.00 and R3006.466.01

For the following Project:
(Name, location and detailed description)

Downtown Façade Improvements
Muscatine, IA

The Owner and Architect agree as follows.

TABLE OF ARTICLES

- 1 INITIAL INFORMATION**
- 2 ARCHITECT'S RESPONSIBILITIES**
- 3 SCOPE OF ARCHITECT'S BASIC SERVICES**
- 4 SUPPLEMENTAL AND ADDITIONAL SERVICES**
- 5 OWNER'S RESPONSIBILITIES**
- 6 COST OF THE WORK**
- 7 COPYRIGHTS AND LICENSES**
- 8 CLAIMS AND DISPUTES**
- 9 TERMINATION OR SUSPENSION**
- 10 MISCELLANEOUS PROVISIONS**
- 11 COMPENSATION**
- 12 SPECIAL TERMS AND CONDITIONS**
- 13 SCOPE OF THE AGREEMENT**

ARTICLE 1 INITIAL INFORMATION

§ 1.1 This Agreement is based on the Initial Information set forth in this Section 1.1.

(For each item in this section, insert the information or a statement such as “not applicable” or “unknown at time of execution.”)

§ 1.1.1 The Owner’s program for the Project:

(Insert the Owner’s program, identify documentation that establishes the Owner’s program, or state the manner in which the program will be developed.)

See attached Exhibit A.

§ 1.1.2 The Project’s physical characteristics:

(Identify or describe pertinent information about the Project’s physical characteristics, such as size; location; dimensions; geotechnical reports; site boundaries; topographic surveys; traffic and utility studies; availability of public and private utilities and services; legal description of the site, etc.)

See attached Exhibits A.

Scope is limited to 5 buildings.

§ 1.1.3 The Owner’s budget for the Cost of the Work, as defined in Section 6.1:

(Provide total and, if known, a line item breakdown.)

Construction budget: \$400,000 to \$500,000.

§ 1.1.4 The Owner’s anticipated design and construction milestone dates:

.1 Design phase milestone dates, if any:

To be determined at a later date by mutual agreement.

.2 Construction commencement date:

To be determined at a later date by mutual agreement.

.3 Substantial Completion date or dates:

To be determined at a later date by mutual agreement.

.4 Other milestone dates:

To be determined at a later date by mutual agreement.

§ 1.1.5 The Owner intends the following procurement and delivery method for the Project:

(Identify method such as competitive bid or negotiated contract, as well as any requirements for accelerated or fast-track design and construction, multiple bid packages, or phased construction.)

Public Bid (Competitive Bid) in accordance with Iowa Code Chapter 26.

§ 1.1.6 The Owner’s anticipated Sustainable Objective for the Project:

(Identify and describe the Owner’s Sustainable Objective for the Project, if any.)

None.

~~§ 1.1.6.1 If the Owner identifies a Sustainable Objective, the Owner and Architect shall complete and incorporate AIA Document E204™ 2017, Sustainable Projects Exhibit, into this Agreement to define the terms, conditions and services related to the Owner's Sustainable Objective. If E204 2017 is incorporated into this agreement, the Owner and Architect shall incorporate the completed E204 2017 into the agreements with the consultants and contractors performing services or Work in any way associated with the Sustainable Objective. Not used.~~

§ 1.1.7 The Owner identifies the following representative in accordance with Section 5.3:
(List name, address, and other contact information.)

Jodi Royal-Goodwin, Director of Community Development
City of Muscatine, City Hall
215 Sycamore Street
Muscatine, Iowa 52761
jroyal-goodwin@muscatineiowa.gov

§ 1.1.8 The persons or entities, in addition to the Owner's representative, who are required to review the Architect's submittals to the Owner are as follows:
(List name, address, and other contact information.)

Not applicable.

§ 1.1.9 The Owner shall retain the following consultants and contractors:
(List name, legal status, address, and other contact information.)

.1 Geotechnical Engineer:

Not applicable.

.2 Civil Engineer:

Not applicable.

.3 Other, if any:

(List any other consultants and contractors retained by the Owner.)

Not applicable.

§ 1.1.10 The Architect identifies the following representative in accordance with Section 2.3:
(List name, address, and other contact information.)

Scotney Fenton, AIA
Project Manager
RDG Planning & Design
Phone: 515-309-3223
sfenton@rdgusa.com

§ 1.1.11 The Architect shall retain the consultants identified in Sections 1.1.11.1 and 1.1.11.2:
(List name, legal status, address, and other contact information.)

§ 1.1.11.1 Consultants retained under Basic Services:

.1 Structural Engineer:

Not applicable.

.2 Mechanical Engineer:

Not applicable.

.3 Electrical Engineer:

Not applicable.

§ 1.1.11.2 Consultants retained under Supplemental Services:

Not applicable.

§ 1.1.12 Other Initial Information on which the Agreement is based:

See attached Exhibit A.

§ 1.2 The Owner and Architect may rely on the Initial Information. Both parties, however, recognize that the Initial Information may materially change and, in that event, the Owner and the Architect shall appropriately adjust the Architect's services, schedule for the Architect's services, and the Architect's compensation. The Owner shall adjust the Owner's budget for the Cost of the Work and the Owner's anticipated design and construction milestones, as necessary, to accommodate material changes in the Initial Information.

§ 1.3 The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. ~~The parties will use AIA Document E203® 2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.~~

~~§ 1.3.1 Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203® 2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™ 2013, Project Building Information Modeling Protocol Form RDC BIM Project Execution Plan, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.~~

ARTICLE 2 ARCHITECT'S RESPONSIBILITIES

§ 2.1 The Architect shall provide professional services as set forth in this Agreement. The Architect represents that it is properly licensed in the jurisdiction where the Project is located to provide the services required by this Agreement, or shall cause such services to be performed by appropriately licensed design professionals.

§ 2.2 The Architect shall perform its services consistent with the professional skill and care ordinarily provided by architects practicing in the same or similar locality under the same or similar circumstances. The Architect shall perform its services as expeditiously as is consistent with such professional skill and care and the orderly progress of the Project.

§ 2.3 The Architect shall identify a representative authorized to act on behalf of the Architect with respect to the Project.

§ 2.4 Except with the Owner's knowledge and consent, the Architect shall not engage in any activity, or accept any employment, interest or contribution that would reasonably appear to compromise the Architect's professional judgment with respect to this Project.

§ 2.5 The Architect shall maintain the following insurance until termination of this Agreement. If any of the requirements set forth below are in addition to the types and limits the Architect normally maintains, the Owner shall pay the Architect as set forth in Section 11.9.

§ 2.5.1 Commercial General Liability with policy limits of not less than One Million Dollars (\$1,000,000) for each occurrence and Two Million Dollars (\$2,000,000) in the aggregate for bodily injury and property damage.

§ 2.5.2 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Architect with policy limits of not less than One Million Dollars (\$1,000,000) per accident for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles, along with any other statutorily required automobile coverage.

§ 2.5.3 The Architect may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella liability insurance policies result in the same or greater coverage as the coverages required under Sections 2.5.1 and 2.5.2, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ 2.5.4 Workers' Compensation at statutory limits.

§ 2.5.5 Employers' Liability with policy limits not less than Five Hundred Thousand Dollars (\$500,000) each accident, Five Hundred Thousand Dollars (\$500,000) each employee, and Five Hundred Thousand Dollars (\$500,000) policy limit.

§ 2.5.6 Professional Liability covering negligent acts, errors and omissions in the performance of professional services with policy limits of not less than One Million Dollars (\$1,000,000) per claim and Two Million Dollars (\$2,000,000) in the aggregate.

§ 2.5.7 **Additional Insured Obligations.** To the fullest extent permitted by law, the Architect shall cause the primary and excess or umbrella policies for Commercial General Liability and Automobile Liability to include the Owner as an additional insured for claims caused in whole or in part by the Architect's negligent acts or omissions. The additional insured coverage shall be primary and non-contributory to any of the Owner's insurance policies and shall apply to both ongoing and completed operations.

§ 2.5.8 The Architect shall provide certificates of insurance to the Owner that evidence compliance with the requirements in this Section 2.5.

ARTICLE 3 SCOPE OF ARCHITECT'S BASIC SERVICES

§ 3.1 The Architect's Basic Services consist of those described in this Article 3 and include usual and customary structural, mechanical, and electrical engineering services. Services not set forth in this Article 3 are Supplemental or Additional Services.

§ 3.1.1 The Architect shall manage the Architect's services, research applicable design criteria, attend Project meetings, communicate with members of the Project team, and report progress to the Owner.

§ 3.1.2 The Architect shall coordinate its services with those services provided by the Owner and the Owner's consultants; however, the Architect is not responsible to coordinate services provided by the Owner, the Contractor, or the Owner's consultants. The Architect shall be entitled to rely on, and shall not be responsible for, the accuracy, completeness, and timeliness of, services and information furnished by the Owner and the Owner's consultants. The Architect shall provide prompt written notice to the Owner if the Architect becomes aware of any error, omission, or inconsistency in such services or information.

§ 3.1.3 As soon as practicable after the date of this Agreement, the Architect shall submit for the Owner's approval a schedule for the performance of the Architect's services. The schedule initially shall include anticipated dates for the commencement of construction and for Substantial Completion of the Work as set forth in the Initial Information. The schedule shall include allowances for periods of time required for the Owner's review, for the performance of the Owner's consultants, and for approval of submissions by authorities having jurisdiction over the Project. Once approved by the Owner, time limits established by the schedule shall not, except for reasonable cause, be exceeded by the Architect or Owner. With the Owner's approval, the Architect shall adjust the schedule, if necessary, as the Project proceeds until the commencement of construction.

§ 3.1.4 The Architect shall not be responsible for an Owner's directive or substitution, or for the Owner's acceptance of non-conforming Work, made or given without the Architect's written approval.

§ 3.1.5 The Architect shall contact governmental authorities required to approve the Construction Documents and entities providing utility services to the Project. The Architect shall respond to applicable design requirements imposed by those authorities and entities.

§ 3.1.6 The Architect shall assist the Owner in connection with the Owner's responsibility for filing documents required for the approval of governmental authorities having jurisdiction over the Project.

§ 3.1.7 The Owner acknowledges that the nature of the design process is such that the plans, specifications, and other documentation prepared by the Architect under this Agreement may require changes, corrections, and modifications during the construction process which may affect the Project schedule or increase the Cost of the Work. The Owner acknowledges that production of a complete set of perfect construction documents is neither reasonable nor expected under this Agreement.

§ 3.1.8 The Owner and the Architect agree that the funding for contingencies provided for in Sections 6.1. and 6.3 shall include funds to pay costs which may arise from or out of such changes, corrections, or modifications to the plans, specifications or other documentation prepared by the Architect, including, but not limited to, any costs associated with a change or changes in the Project schedule, which portion of the contingency funding shall be in the amount of five percent (5%) of the Cost of the Work, as defined in Article 6.

§ 3.1.8.1 In the event the aforementioned costs exceed the five percent (5%) contingency funding as defined in this Paragraph 3.1.8, the Architect will be responsible for all costs in excess of the five percent (5%) which are attributable to changes, corrections, and modifications in the plans, specifications, and other documents prepared by the Architect, but only to the extent they are caused by the negligence of the Architect.

§ 3.1.9 If the project involves making changes to existing facilities, the Owner shall furnish documentation and information upon which the Architect is entitled to rely for its accuracy and completeness. The Architect shall verify that the existing building drawings provided by the Owner generally represent the actual existing field conditions. Verification shall be limited to general overall visual observation and confirmation of significant dimensions of reasonably accessible exposed elements. In the event the information or documentation supplied by the Owner its consultants or agents, or employees of any of them, or an assumption made by the Architect based upon the documentation or information supplied by them or any of them, is inaccurate or incomplete, all resulting costs and expenses, including the costs of the Architect's Additional Services, if any, shall be the responsibility of the Owner. Unless specifically authorized in writing by the Owner, the Architect shall not be required to perform or to have others perform, destructive testing or to investigate concealed or unknown conditions.

§ 3.1.10 To the fullest extent permitted by law, the Owner shall defend, indemnify, and hold harmless the Architect, the Architect's consultants and agents, and employees of any of them, from and against any and all claims, damages, awards, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from latent, concealed or unknown conditions and/or documentation or information furnished by the Owner, its consultants or agents, or employees of any of them.

§ 3.1.11 The Architect's commitments as set forth in this Agreement are based on the expectation that all of the services described in this Agreement will be provided. In the event the Owner later elects to reduce the Architect's scope of services, the Owner hereby agrees to release, hold harmless, defend, and indemnify the Architect from any and all claims, damages, losses, or costs associated with or arising out of such reduction of services.

§ 3.2 Schematic Design Phase Services

§ 3.2.1 The Architect shall review the program and other information furnished by the Owner, and shall review laws, codes, and regulations applicable to the Architect's services.

§ 3.2.2 The Architect shall prepare a preliminary evaluation of the Owner's program, schedule, budget for the Cost of the Work, Project site, the proposed procurement and delivery method, and other Initial Information, each in terms of the other, to ascertain the requirements of the Project. The Architect shall notify the Owner of (1) any inconsistencies discovered in the information, and (2) other information or consulting services that may be reasonably needed for the Project.

§ 3.2.3 The Architect shall present its preliminary evaluation to the Owner and shall discuss with the Owner alternative approaches, if any, to design and construction of the Project. The Architect shall reach an understanding with the Owner regarding the requirements of the Project.

§ 3.2.4 Based on the Project requirements agreed upon with the Owner, the Architect shall prepare and present, for the Owner's approval, a preliminary design illustrating the scale and relationship of the Project components.

§ 3.2.5 Based on the Owner's approval of the preliminary design, the Architect shall prepare Schematic Design Documents for the Owner's approval. The Schematic Design Documents shall consist of drawings and other documents including a site plan, if appropriate, and preliminary building plans, sections and elevations; and may include some combination of study models, perspective sketches, or digital representations. Preliminary selections of major building systems and construction materials shall be noted on the drawings or described in writing.

§ 3.2.5.1 The Architect shall consider sustainable design alternatives, such as material choices and building orientation, together with other considerations based on program and aesthetics, in developing a design that is consistent with the Owner's program, schedule and budget for the Cost of the Work. The Owner may obtain more advanced sustainable design services as a Supplemental Service under Section 4.1.1.

§ 3.2.5.2 The Architect shall consider the value of alternative materials, building systems and equipment, together with other considerations based on program and aesthetics, in developing a design for the Project that is consistent with the Owner's program, schedule, and budget for the Cost of the Work.

§ 3.2.6 The Architect shall submit to the Owner an estimate of the Cost of the Work prepared in accordance with Section 6.3.

§ 3.2.7 The Architect shall submit the Schematic Design Documents to the Owner, and request the Owner's approval.

§ 3.3 Design Development Phase Services

§ 3.3.1 Based on the Owner's approval of the Schematic Design Documents, and on the Owner's authorization of any adjustments in the Project requirements and the budget for the Cost of the Work, the Architect shall prepare Design Development Documents for the Owner's approval. The Design Development Documents shall illustrate and describe the development of the approved Schematic Design Documents and shall consist of drawings and other documents including plans, sections, elevations, typical construction details, and diagrammatic layouts of building systems to fix and describe the size and character of the Project as to architectural, structural, mechanical and electrical systems, and other appropriate elements. The Design Development Documents shall also include outline specifications that identify major materials and systems and establish, in general, their quality levels.

§ 3.3.2 The Architect shall update the estimate of the Cost of the Work prepared in accordance with Section 6.3.

§ 3.3.3 The Architect shall submit the Design Development Documents to the Owner, advise the Owner of any adjustments to the estimate of the Cost of the Work, and request the Owner's approval.

§ 3.4 Construction Documents Phase Services

§ 3.4.1 Based on the Owner's approval of the Design Development Documents, and on the Owner's authorization of any adjustments in the Project requirements and the budget for the Cost of the Work, the Architect shall prepare Construction Documents for the Owner's approval. The Construction Documents shall illustrate and describe the further development of the approved Design Development Documents and shall consist of Drawings and Specifications setting forth in detail the quality levels and performance criteria of materials and systems and other requirements for the construction of the Work. The Owner and Architect acknowledge that, in order to perform the Work, the Contractor will provide additional information, including Shop Drawings, Product Data, Samples and other similar submittals, which the Architect shall review in accordance with Section 3.6.4.

§ 3.4.2 The Architect shall incorporate the design requirements of governmental authorities having jurisdiction over the Project into the Construction Documents.

§ 3.4.3 During the development of the Construction Documents, the Architect shall assist the Owner in the development and preparation of (1) procurement information that describes the time, place, and conditions of bidding, including bidding or proposal forms; (2) the form of agreement between the Owner and Contractor; and (3) the Conditions of the Contract for Construction (General, Supplementary and other Conditions). The Architect shall also compile a project manual that includes the Conditions of the Contract for Construction and Specifications, and may include bidding requirements and sample forms.

§ 3.4.4 The Architect shall update the estimate for the Cost of the Work prepared in accordance with Section 6.3.

§ 3.4.5 The Architect shall submit the Construction Documents to the Owner, advise the Owner of any adjustments to the estimate of the Cost of the Work, take any action required under Section 6.5, and request the Owner's approval.

§ 3.5 Procurement Phase Services

§ 3.5.1 General

The Architect shall assist the Owner in establishing a list of prospective contractors. Following the Owner's approval of the Construction Documents, the Architect shall assist the Owner in (1) obtaining either competitive bids or negotiated proposals; (2) confirming responsiveness of bids or proposals; (3) determining the successful bid or proposal, if any; and, (4) awarding and preparing contracts for construction.

§ 3.5.2 Competitive Bidding

§ 3.5.2.1 Bidding Documents shall consist of bidding requirements and proposed Contract Documents.

§ 3.5.2.2 The Architect shall assist the Owner in bidding the Project by:

- .1 facilitating the distribution of Bidding Documents to prospective bidders;
- .2 organizing and conducting a pre-bid conference for prospective bidders;
- .3 preparing responses to questions from prospective bidders and providing clarifications and interpretations of the Bidding Documents to the prospective bidders in the form of addenda; and,
- .4 organizing and conducting the opening of the bids, and subsequently documenting and distributing the bidding results, as directed by the Owner.

§ 3.5.2.3 If the Bidding Documents permit substitutions, upon the Owner's written authorization, the Architect shall, as an Additional Service, consider requests for substitutions and prepare and distribute addenda identifying approved substitutions to all prospective bidders.

§ 3.5.3 Negotiated Proposals

~~**§ 3.5.3.1** Proposal Documents shall consist of proposal requirements and proposed Contract Documents.~~

~~**§ 3.5.3.2** The Architect shall assist the Owner in obtaining proposals by:~~

- ~~.1 facilitating the distribution of Proposal Documents for distribution to prospective contractors and requesting their return upon completion of the negotiation process;~~
- ~~.2 organizing and participating in selection interviews with prospective contractors;~~
- ~~.3 preparing responses to questions from prospective contractors and providing clarifications and interpretations of the Proposal Documents to the prospective contractors in the form of addenda; and,~~
- ~~.4 participating in negotiations with prospective contractors, and subsequently preparing a summary report of the negotiation results, as directed by the Owner.~~

~~**§ 3.5.3.3** If the Proposal Documents permit substitutions, upon the Owner's written authorization, the Architect shall, as an Additional Service, consider requests for substitutions and prepare and distribute addenda identifying approved substitutions to all prospective contractors. Not used.~~

§ 3.6 Construction Phase Services

§ 3.6.1 General

§ 3.6.1.1 The Architect shall provide administration of the Contract between the Owner and the Contractor as set forth below and in AIA Document A201®–2017, General Conditions of the Contract for Construction as modified by RDG Planning & Design, Inc. in the form attached as Exhibits B1 and B2. If the Owner and Contractor modify AIA Document A201–2017, those modifications shall not affect the Architect's services under this Agreement unless the Owner and the Architect amend this Agreement.

§ 3.6.1.2 The Architect shall advise and consult with the Owner during the Construction Phase Services. The Architect shall have authority to act on behalf of the Owner only to the extent provided in this Agreement. The Architect shall not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, nor shall the Architect be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect shall be responsible for the Architect's negligent acts or omissions, but shall not have control over or charge of, and shall not be responsible for, acts or omissions of the Contractor or of any other persons or entities performing portions of the Work.

§ 3.6.1.3 Subject to Section 4.2 and except as provided in Section 3.6.6.5, the Architect's responsibility to provide Construction Phase Services commences with the award of the Contract for Construction and terminates on the date the Architect issues the final Certificate for Payment.

§ 3.6.2 Evaluations of the Work

§ 3.6.2.1 The Architect shall visit the site at intervals appropriate to the stage of construction, or as otherwise required in Section 4.2.3, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine, in general, if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect shall not be required to make exhaustive or continuous on-site inspections or to review webcam/videos/photographs to check the quality or quantity of the Work. On the basis of the site visits, the Architect shall keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work.

§ 3.6.2.2 The Architect has the authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect shall have the authority to require inspection or testing of the Work in accordance with the provisions of the Contract Documents, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 3.6.2.3 The Architect shall interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests shall be made in writing within any time limits agreed upon by the Architect and the Owner or otherwise with reasonable promptness.

§ 3.6.2.4 Interpretations and decisions of the Architect shall be consistent with the intent of, and reasonably inferable from, the Contract Documents and shall be in writing or in the form of drawings. When making such interpretations and decisions, the Architect shall endeavor to secure faithful performance by both Owner and Contractor, shall not show partiality to either, and shall not be liable for results of interpretations or decisions rendered in good faith. The Architect's decisions on matters relating to aesthetic effect shall be final if consistent with the intent expressed in the Contract Documents.

§ 3.6.2.5 Unless the Owner and Contractor designate another person to serve as an Initial Decision Maker, as that term is defined in AIA Document A201–2017, the Architect shall render initial decisions on Claims between the Owner and Contractor as provided in the Contract Documents.

§ 3.6.3 Certificates for Payment to Contractor

§ 3.6.3.1 The Architect shall review and certify the amounts due the Contractor and shall issue certificates in such amounts. The Architect's certification for payment shall constitute a representation to the Owner, based on the Architect's evaluation of the Work as provided in Section 3.6.2 and on the data comprising the Contractor's Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to (1) an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, (2) results of subsequent tests and inspections, (3) correction of minor deviations from the Contract Documents prior to completion, and (4) specific qualifications expressed by the Architect.

§ 3.6.3.2 The issuance of a Certificate for Payment shall not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) ascertained how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 3.6.3.3 The Architect shall maintain a record of the Applications and Certificates for Payment.

§ 3.6.4 Submittals

§ 3.6.4.1 The Architect shall review the Contractor's submittal schedule and shall not unreasonably delay or withhold approval of the schedule. The Architect's action in reviewing submittals shall be taken in accordance with the approved submittal schedule or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time, in the Architect's professional judgment, to permit adequate review.

§ 3.6.4.2 The Architect shall review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review of such submittals is not for the purpose of determining the accuracy and completeness of other information such as dimensions, quantities, and installation or performance of equipment or systems, which are the Contractor's responsibility. The Architect's review shall not constitute approval of safety precautions or construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 3.6.4.3 If the Contract Documents specifically require the Contractor to provide professional design services or certifications by a design professional related to systems, materials, or equipment, the Architect shall specify the appropriate performance and design criteria that such services must satisfy. The Architect shall review and take appropriate action on Shop Drawings and other submittals related to the Work designed or certified by the Contractor's design professional, provided the submittals bear such professional's seal and signature when submitted to the Architect. The Architect's review shall be for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect shall be entitled to rely upon, and shall not be responsible for, the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals.

§ 3.6.4.4 Subject to Section 4.2, the Architect shall review and respond to requests for information about the Contract Documents. The Architect shall set forth, in the Contract Documents, the requirements for requests for information. Requests for information shall include, at a minimum, a detailed written statement that indicates the specific Drawings or Specifications in need of clarification and the nature of the clarification requested. The Architect's response to such requests shall be made in writing within any time limits agreed upon by the Architect and the Owner, or otherwise with reasonable promptness. If appropriate, the Architect shall prepare and issue supplemental Drawings and Specifications in response to the requests for information.

§ 3.6.4.5 The Architect shall maintain a record of submittals and copies of submittals supplied by the Contractor in accordance with the requirements of the Contract Documents.

§ 3.6.5 Changes in the Work

§ 3.6.5.1 The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. Subject to Section 4.2, the Architect shall prepare Change Orders and Construction Change Directives for the Owner's approval and execution in accordance with the Contract Documents.

§ 3.6.5.2 The Architect shall maintain records relative to changes in the Work.

§ 3.6.6 Project Completion

§ 3.6.6.1 The Architect shall:

- .1 conduct inspections to determine the date or dates of Substantial Completion and the date of final completion;
- .2 issue Certificates of Substantial Completion;
- .3 forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract Documents and received from the Contractor; and,
- .4 issue a final Certificate for Payment based upon a final inspection indicating that, to the best of the Architect's knowledge, information, and belief, the Work complies with the requirements of the Contract Documents.

§ 3.6.6.2 The Architect's inspections shall be conducted with the Owner to check conformance of the Work with the requirements of the Contract Documents and to verify the accuracy and completeness of the list submitted by the Contractor of Work to be completed or corrected.

§ 3.6.6.3 When Substantial Completion has been achieved, the Architect shall inform the Owner about the balance of the Contract Sum remaining to be paid the Contractor, including the amount to be retained from the Contract Sum, if any, for final completion or correction of the Work.

§ 3.6.6.4 The Architect shall forward to the Owner the following information received from the Contractor: (1) consent of surety or sureties, if any, to reduction in or partial release of retainage or the making of final payment; (2) affidavits, receipts, releases and waivers of liens, or bonds indemnifying the Owner against liens; and (3) any other documentation required of the Contractor under the Contract Documents.

§ 3.6.6.5 Upon request of the Owner, and prior to the expiration of one year from the date of Substantial Completion, the Architect shall, without additional compensation, conduct a meeting with the Owner to review the facility operations and performance.

ARTICLE 4 SUPPLEMENTAL AND ADDITIONAL SERVICES

§ 4.1 Supplemental Services

§ 4.1.1 The services listed below are not included in Basic Services but may be required for the Project. The Architect shall provide the listed Supplemental Services only if specifically designated in the table below as the Architect's responsibility, and the Owner shall compensate the Architect as provided in Section 11.2. Unless otherwise specifically addressed in this Agreement, if neither the Owner nor the Architect is designated, the parties agree that the listed Supplemental Service is not being provided for the Project.

(Designate the Architect's Supplemental Services and the Owner's Supplemental Services required for the Project by indicating whether the Architect or Owner shall be responsible for providing the identified Supplemental Service. Insert a description of the Supplemental Services in Section 4.1.2 below or attach the description of services as an exhibit to this Agreement.)

Supplemental Services

Responsibility

(Architect, Owner, or not provided)

§ 4.1.1.1	Programming	<u>Not Provided</u>
§ 4.1.1.2	Multiple preliminary designs	<u>Not Provided</u>
§ 4.1.1.3	Measured drawings	<u>Not Provided</u>
§ 4.1.1.4	Existing facilities surveys	<u>Not Provided</u>
§ 4.1.1.5	Site evaluation and planning	<u>Not Provided</u>
§ 4.1.1.6	Building Information Model management responsibilities	<u>Not Provided</u>
§ 4.1.1.7	Development of Building Information Models for post construction use	<u>Not Provided</u>
§ 4.1.1.8	Civil engineering	<u>Not Provided</u>
§ 4.1.1.9	Landscape design	<u>Not Provided</u>
§ 4.1.1.10	Architectural interior design	<u>Not Provided</u>
§ 4.1.1.11	Value analysis	<u>Not Provided</u>
§ 4.1.1.12	Detailed cost estimating beyond that required in Section 6.3	<u>Not Provided</u>
§ 4.1.1.13	On-site project representation	<u>Not Provided</u>
§ 4.1.1.14	Conformed documents for construction	<u>Not Provided</u>
§ 4.1.1.15	As-designed record drawings	<u>Not Provided</u>
§ 4.1.1.16	As-constructed record drawings	<u>Not Provided</u>
§ 4.1.1.17	Post-occupancy evaluation	<u>Not Provided</u>
§ 4.1.1.18	Facility support services	<u>Not Provided</u>
§ 4.1.1.19	Tenant-related services	<u>Not Provided</u>
§ 4.1.1.20	Architect's coordination of the Owner's consultants	<u>Not Provided</u>
§ 4.1.1.21	Telecommunications/data design	<u>Not Provided</u>
§ 4.1.1.22	Security evaluation and planning	<u>Not Provided</u>
§ 4.1.1.23	Commissioning	<u>Not Provided</u>
§ 4.1.1.24	Sustainable Project Services pursuant to Section 4.1.3	<u>Not Provided</u>
§ 4.1.1.25	Fast-track design services	<u>Not Provided</u>
§ 4.1.1.26	Multiple bid packages	<u>Not Provided</u>
§ 4.1.1.27	Historic preservation	<u>Not Provided</u>
§ 4.1.1.28	Furniture, furnishings, and equipment design	<u>Not Provided</u>
§ 4.1.1.29	Other services provided by specialty Consultants	<u>Not Provided</u>
§ 4.1.1.30	Other Supplemental Services	<u>Not Provided</u>
	<u>Not applicable.</u>	<u>Not Applicable</u>

§ 4.1.2 Description of Supplemental Services

§ 4.1.2.1 A description of each Supplemental Service identified in Section 4.1.1 as the Architect's responsibility is provided below.

(Describe in detail the Architect's Supplemental Services identified in Section 4.1.1 or, if set forth in an exhibit, identify the exhibit. The AIA publishes a number of Standard Form of Architect's Services documents that can be included as an exhibit to describe the Architect's Supplemental Services.)

Not applicable.

§ 4.1.2.2 A description of each Supplemental Service identified in Section 4.1.1 as the Owner's responsibility is provided below.

(Describe in detail the Owner's Supplemental Services identified in Section 4.1.1 or, if set forth in an exhibit, identify the exhibit.)

Not applicable.

~~§ 4.1.3 If the Owner identified a Sustainable Objective in Article 1, the Architect shall provide, as a Supplemental Service, the Sustainability Services required in AIA Document E204™ 2017, Sustainable Projects Exhibit, attached to this Agreement. The Owner shall compensate the Architect as provided in Section 11.2. Not used.~~

§ 4.2 Architect's Additional Services

The Architect may provide Additional Services after execution of this Agreement without invalidating the Agreement. Except for services required due to ~~the fault~~ any negligent act, error, or omission of the Architect, any Additional Services provided in accordance with this Section 4.2 shall entitle the Architect to compensation pursuant to Section 11.3 and an appropriate adjustment in the Architect's schedule.

§ 4.2.1 Upon recognizing the need to perform the following Additional Services, the Architect shall notify the Owner with reasonable promptness and explain the facts and circumstances giving rise to the need. The Architect shall not proceed to provide the following Additional Services until the Architect receives the Owner's written authorization:

- .1 Services necessitated by a change in the Initial Information, previous instructions or approvals given by the Owner, or a material change in the Project including size, quality, complexity, the Owner's schedule or budget for Cost of the Work, or procurement or delivery method;
- .2 Services necessitated by the enactment or revision of codes, laws, or regulations, including changing or editing previously prepared Instruments of Service;
- .3 Changing or editing previously prepared Instruments of Service necessitated by official interpretations of applicable codes, laws or regulations that are either (a) contrary to specific interpretations by the applicable authorities having jurisdiction made prior to the issuance of the building permit, or (b) contrary to requirements of the Instruments of Service when those Instruments of Service were prepared in accordance with the applicable standard of care;
- .4 Services necessitated by decisions of the Owner not rendered in a timely manner or any other failure of performance on the part of the Owner or the Owner's consultants or contractors;
- .5 Preparing digital models or other design documentation for transmission to the Owner's consultants and contractors, or to other Owner-authorized recipients;
- .6 Preparation of design and documentation for alternate bid or proposal requests proposed by the Owner;
- .7 Preparation for, and attendance at, a public presentation, meeting or hearing;
- .8 Preparation for, and attendance at, a dispute resolution proceeding or legal proceeding, except where the Architect is party thereto;
- .9 Evaluation of the qualifications of entities providing bids or proposals;
- .10 Consultation concerning replacement of Work resulting from fire or other cause during construction; or
- .11 Assistance to the Initial Decision Maker, if other than the Architect.

§ 4.2.2 To avoid delay in the Construction Phase, the Architect shall provide the following Additional Services, notify the Owner with reasonable promptness, and explain the facts and circumstances giving rise to the need. If, upon receipt of the Architect's notice, the Owner determines that all or parts of the services are not required, the Owner shall give prompt written notice to the Architect of the Owner's determination. The Owner shall compensate the Architect for the services provided prior to the Architect's receipt of the Owner's notice.

- .1 Reviewing a Contractor's submittal out of sequence from the submittal schedule approved by the Architect;
- .2 Responding to the Contractor's requests for information that are not prepared in accordance with the Contract Documents or where such information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation;
- .3 Preparing Change Orders and Construction Change Directives that require evaluation of Contractor's proposals and supporting data, or the preparation or revision of Instruments of Service;
- .4 Evaluating an extensive number of Claims as the Initial Decision Maker; or,

- .5 Evaluating substitutions proposed by the Owner or Contractor and making subsequent revisions to Instruments of Service resulting therefrom.

§ 4.2.3 The Architect shall provide Construction Phase Services exceeding the limits set forth below as Additional Services. When the limits below are reached, the Architect shall notify the Owner:

- .1 One (1) reviews of each Shop Drawing, Product Data item, sample and similar submittals of the Contractor
- .2 Twelve (12) visits to the site by the Architect during construction
- .3 One (1) inspections ~~for any portion~~ of the Work to determine whether ~~such portion of~~ the Work is substantially complete in accordance with the requirements of the Contract Documents
- .4 One (1) inspections ~~for any portion~~ of the Work to determine final completion.

§ 4.2.3.1 The Architect shall be compensated for these Additional Services beyond the limits stated above, which will be billed by the Architect in accordance with Section 11.3.

§ 4.2.4 Except for services required under Section 3.6.6.5 and those services that do not exceed the limits set forth in Section 4.2.3, Construction Phase Services provided more than 60 days after (1) the date of Substantial Completion of the Work or (2) the initial date of Substantial Completion identified in the agreement between the Owner and Contractor, whichever is earlier, shall be compensated as Additional Services to the extent the Architect incurs additional cost in providing those Construction Phase Services.

§ 4.2.5 If the services covered by this Agreement have not been completed within Eighteen (18) months of the date of this Agreement, through no fault of the Architect, extension of the Architect's services beyond that time shall be compensated as Additional Services.

ARTICLE 5 OWNER'S RESPONSIBILITIES

§ 5.1 Unless otherwise provided for under this Agreement, the Owner shall provide information in a timely manner regarding requirements for and limitations on the Project, including a written program, which shall set forth the Owner's objectives; schedule; constraints and criteria, including space requirements and relationships; flexibility; expandability; special equipment; systems; and site requirements.

§ 5.2 The Owner shall establish the Owner's budget for the Project, including (1) the budget for the Cost of the Work as defined in Section 6.1; (2) the Owner's other costs; and, (3) reasonable contingencies related to all of these costs. The Owner shall update the Owner's budget for the Project as necessary throughout the duration of the Project until final completion. If the Owner significantly increases or decreases the Owner's budget for the Cost of the Work, the Owner shall notify the Architect. The Owner and the Architect shall thereafter agree to a corresponding change in the Project's scope and quality.

§ 5.3 The Owner shall identify a representative authorized to act on the Owner's behalf with respect to the Project. The Owner shall render decisions and approve the Architect's submittals in a timely manner in order to avoid unreasonable delay in the orderly and sequential progress of the Architect's services.

§ 5.4 The Owner shall furnish surveys to describe physical characteristics, legal limitations and utility locations for the site of the Project, and a written legal description of the site. The surveys and legal information shall include, as applicable, grades and lines of streets, alleys, pavements and adjoining property and structures; designated wetlands; adjacent drainage; rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, boundaries and contours of the site; locations, dimensions, and other necessary data with respect to existing buildings, other improvements and trees; and information concerning available utility services and lines, both public and private, above and below grade, including inverts and depths. All the information on the survey shall be referenced to a Project benchmark.

§ 5.5 The Owner shall furnish services of geotechnical engineers, which may include test borings, test pits, determinations of soil bearing values, percolation tests, evaluations of hazardous materials, seismic evaluation, ground corrosion tests and resistivity tests, including necessary operations for anticipating subsoil conditions, with written reports and appropriate recommendations.

§ 5.6 The Owner shall provide the Supplemental Services designated as the Owner's responsibility in Section 4.1.1.

~~§ 5.7 If the Owner identified a Sustainable Objective in Article 1, the Owner shall fulfill its responsibilities as required in AIA Document E204™ 2017, Sustainable Projects Exhibit, attached to this Agreement. Not used.~~

§ 5.8 The Owner shall coordinate the services of its own consultants with those services provided by the Architect. Upon the Architect's request, the Owner shall furnish copies of the scope of services in the contracts between the Owner and the Owner's consultants. The Owner shall furnish the services of consultants other than those designated as the responsibility of the Architect in this Agreement, or authorize the Architect to furnish them as an Additional Service, when the Architect requests such services and demonstrates that they are reasonably required by the scope of the Project. The Owner shall require that its consultants and contractors maintain insurance, including professional liability insurance, as appropriate to the services or work provided.

§ 5.9 The Owner shall furnish tests, inspections and reports required by law or the Contract Documents, such as structural, mechanical, and chemical tests, tests for air and water pollution, ~~and~~ tests for hazardous materials, and commissioning of mechanical, electrical, or building envelope as required by code.

§ 5.10 The Owner shall furnish all legal, insurance and accounting services, including auditing services, that may be reasonably necessary at any time for the Project to meet the Owner's needs and interests.

§ 5.11 The Owner shall provide prompt written notice to the Architect if the Owner becomes aware of any fault or defect in the Project, including errors, omissions or inconsistencies in the Architect's Instruments of Service.

§ 5.12 The Owner shall include the Architect in all communications with the Contractor that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect.

§ 5.13 Before executing the Contract for Construction, the Owner shall coordinate the Architect's duties and responsibilities set forth in the Contract for Construction with the Architect's services set forth in this Agreement. The Owner shall provide the Architect a copy of the executed agreement between the Owner and Contractor, including the General Conditions of the Contract for Construction.

§ 5.14 The Owner shall provide the Architect access to the Project site prior to commencement of the Work and shall obligate the Contractor to provide the Architect access to the Work wherever it is in preparation or progress.

§ 5.15 Within 15 days after receipt of a written request from the Architect, the Owner shall furnish the requested information as necessary and relevant for the Architect to evaluate, give notice of, or enforce lien rights.

ARTICLE 6 COST OF THE WORK

§ 6.1 For purposes of this Agreement, the Cost of the Work shall be the total cost to the Owner to construct all elements of the Project designed or specified by the Architect and shall include contractors' general conditions costs, overhead and profit. The Cost of the Work also includes the reasonable value of labor, materials, and equipment, donated to, or otherwise furnished by, the Owner. The Cost of the Work does not include the compensation of the Architect; the costs of the land, rights-of-way, financing, or contingencies for changes in the Work; or other costs that are the responsibility of the Owner.

§ 6.2 The Owner's budget for the Cost of the Work is provided in Initial Information, and shall be adjusted throughout the Project as required under Sections 5.2, 6.4 and 6.5. Evaluations of the Owner's budget for the Cost of the Work, and the preliminary estimate of the Cost of the Work and updated estimates of the Cost of the Work, prepared by the Architect, represent the Architect's judgment as a design professional and are based upon its own historical experience. It is recognized, however, that neither the Architect nor the Owner has control over the cost of labor, materials, or equipment; the Contractor's methods of determining bid prices; or competitive bidding, market, or negotiating conditions. Accordingly, the Architect cannot and does not warrant or represent that bids or negotiated prices will not vary from the Owner's budget for the Cost of the Work, or from any estimate of the Cost of the Work, or evaluation, prepared or agreed to by the Architect. If the Owner wishes greater assurance as to the probable Cost of the Work, the Owner shall engage an independent cost estimating consultant acceptable to the Architect, at the Owner's cost.

§ 6.3 In preparing estimates of the Cost of Work, the Architect shall be permitted to include contingencies for design, bidding, and price escalation; to determine what materials, equipment, component systems, and types of construction are to be included in the Contract Documents; to recommend reasonable adjustments in the program and scope of the Project; and to include design alternates as may be necessary to adjust the estimated Cost of the Work to meet the Owner's budget. The Architect's estimate of the Cost of the Work shall be based on current area, volume or similar conceptual estimating techniques. If the Owner ~~requires requests and the Architect agrees to provide~~ a detailed estimate of the Cost of the Work, the Architect shall provide such an estimate, if identified as the Architect's responsibility in Section 4.1.1, as a Supplemental Service.

§ 6.4 If, through no fault of the Architect, the Procurement Phase has not commenced within 90 days after the Architect submits the Construction Documents to the Owner, the Owner's budget for the Cost of the Work shall be adjusted to reflect changes in the general level of prices in the applicable construction market.

§ 6.5 If at any time the Architect's estimate of the Cost of the Work exceeds the Owner's budget for the Cost of the Work, the Architect shall make appropriate recommendations to the Owner to adjust the Project's size, quality, or budget for the Cost of the Work, and the Owner shall cooperate with the Architect in making such adjustments.

§ 6.6 If the Owner's budget for the Cost of the Work at the conclusion of the Construction Documents Phase Services is exceeded by the lowest bona fide bid or negotiated proposal, the Owner shall

- .1 give written approval of an increase in the budget for the Cost of the Work;
- .2 authorize rebidding or renegotiating of the Project within a reasonable time;
- .3 terminate in accordance with Section 9.5;
- .4 in consultation with the Architect, revise the Project program, scope, or quality as required to reduce the Cost of the Work; or,
- .5 implement any other mutually acceptable alternative.

§ 6.7 If the Owner chooses to proceed under Section 6.6.4, the Architect, as Additional Services, shall modify the Construction Documents as necessary to comply with the Owner's budget for the Cost of the Work at the conclusion of the Construction Documents Phase Services, or the budget as adjusted under Section 6.6.1. ~~If the Owner requires the Architect to modify the Construction Documents because the lowest bona fide bid or negotiated proposal exceeds the Owner's budget for the Cost of the Work due to market conditions the Architect could not reasonably anticipate, the Owner shall compensate the Architect for the modifications as an Additional Service pursuant to Section 11.3; otherwise the Architect's services for modifying the Construction Documents shall be without additional compensation.~~ In any event, the Architect's modification of the Construction Documents shall be the limit of the Architect's responsibility under this Article 6.

ARTICLE 7 COPYRIGHTS AND LICENSES

§ 7.1 The Architect and the Owner warrant that in transmitting Instruments of Service, or any other information, the transmitting party is the copyright owner of such information or has permission from the copyright owner to transmit such information for its use on the Project.

§ 7.2 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and shall retain all common law, statutory and other reserved rights, including copyrights. Submission or distribution of Instruments of Service to meet official regulatory requirements or for similar purposes in connection with the Project is not to be construed as publication in derogation of the reserved rights of the Architect and the Architect's consultants.

§ 7.3 The Architect grants to the Owner a nonexclusive license to use the Architect's Instruments of Service solely and exclusively for purposes of constructing, using, maintaining, altering and adding to the Project, provided that the Owner substantially performs its obligations under this Agreement, including prompt payment of all sums due pursuant to Article 9 and Article 11. The Architect shall obtain similar nonexclusive licenses from the Architect's consultants consistent with this Agreement. The license granted under this section permits the Owner to authorize the Contractor, Subcontractors, Sub-subcontractors, and suppliers, as well as the Owner's consultants and separate contractors, to reproduce applicable portions of the Instruments of Service, subject to any protocols established pursuant to Section 1.3, solely and exclusively for use in performing services or construction for the Project. If the Architect rightfully terminates this Agreement for cause as provided in Section 9.4, the license granted in this Section 7.3 shall terminate.

§ 7.3.1 In the event the Owner uses the Instruments of Service without retaining the authors of the Instruments of Service, the Owner releases the Architect and Architect's consultant(s) from all claims and causes of action arising from such uses. The Owner, to the extent permitted by law, further agrees to indemnify and hold harmless the Architect and its consultants from all costs and expenses, including the cost of defense, related to claims and causes of action asserted by any third person or entity to the extent such costs and expenses arise from the Owner's use of the Instruments of Service under this Section 7.3.1. The terms of this Section 7.3.1 shall not apply if the Owner rightfully terminates this Agreement for cause under Section 9.4.

§ 7.4 Except for the licenses granted in this Article 7, no other license or right shall be deemed granted or implied under this Agreement. The Owner shall not assign, delegate, sublicense, pledge or otherwise transfer any license granted herein to another party without the prior written agreement of the Architect. Any unauthorized use of the Instruments of Service shall be at the Owner's sole risk and without liability to the Architect and the Architect's consultants.

§ 7.5 Except as otherwise stated in Section 7.3, the provisions of this Article 7 shall survive the termination of this Agreement.

ARTICLE 8 CLAIMS AND DISPUTES

§ 8.1 General

§ 8.1.1 ~~The Owner and Architect shall commence all~~ All claims and causes of action ~~against the other and between the Owner and the Architect~~ arising out of or related to this Agreement ~~or the Work~~, whether ~~based~~ in contract, tort, ~~warrant~~, or otherwise, in accordance with the requirements of the binding dispute resolution method selected in this Agreement and within the period specified by applicable law, ~~but in any case not shall be deemed to have accrued and the applicable statute of limitations shall commence to run no later than either the date of Substantial Completion for acts or failures to act occurring prior to Substantial Completion or the date of issuance of final Certificate of Payment for acts or failures to act occurring after Substantial Completion. In no event shall such statutes of limitations commence to run any later than the date when the Architect's services are substantially completed, and also in no event shall any claim or cause of action be brought more than 10 years after the date of Substantial Completion of the Work.~~ The Owner and Architect waive all claims and causes of action not commenced in accordance with this Section 8.1.1.

§ 8.1.2 To the extent damages are covered by property insurance, the Owner and Architect waive all rights against each other and against the contractors, consultants, agents, and employees of the other for damages, except such rights as they may have to the proceeds of such insurance as set forth in AIA Document A201-2017, General Conditions of the Contract for Construction. The Owner or the Architect, as appropriate, shall require of the contractors, consultants, agents, and employees of any of them, ~~similar the same scope of~~ waivers in favor of the other parties enumerated herein.

§ 8.1.3 The Architect and Owner waive consequential damages for claims, disputes, or other matters in question, arising out of or relating to this Agreement. This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination of this Agreement, except as specifically provided in Section 9.7.

§ 8.2 Mediation

§ 8.2.1 Any claim, dispute or other matter in question arising out of or related to this Agreement shall be subject to mediation as a condition precedent to binding dispute resolution. If such matter relates to or is the subject of a lien arising out of the Architect's services, the Architect may proceed in accordance with applicable law to comply with the lien notice or filing deadlines prior to resolution of the matter by mediation or by binding dispute resolution.

§ 8.2.2 The Owner and Architect shall endeavor to resolve claims, disputes and other matters in question between them by mediation, which, ~~unless if~~ the parties mutually agree ~~otherwise~~, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of this Agreement. A request for mediation shall be made in writing, delivered to the other party to this Agreement, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of a complaint or other appropriate demand for binding dispute resolution but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. ~~If an arbitration proceeding is stayed pursuant to this section, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.~~

§ 8.2.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 8.2.4 If the parties do not resolve a dispute through mediation pursuant to this Section 8.2, the method of binding dispute resolution shall be the following:
(Check the appropriate box.)

- ☐ Arbitration pursuant to Section 8.3 of this Agreement
- ☒ Litigation in a court of competent jurisdiction
- ☐ Other: (Specify): Not applicable.

If the Owner and Architect do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, the dispute will be resolved in a court of competent jurisdiction.

§ 8.2.5 The Architect or Owner, as appropriate, shall include a similar mediation provision in all its agreements with contractors and consultants retained for the Project and shall require all contractors and consultants to also include a similar mediation provision in all agreements with their subcontractors and sub-consultants so retained for the Project, thereby providing for mediation as the primary method for dispute resolution between the parties to those agreements.

§ 8.3 Arbitration

~~§ 8.3.1 If the parties have selected arbitration as the method for binding dispute resolution in this Agreement, any claim, dispute or other matter in question arising out of or related to this Agreement subject to, but not resolved by, mediation shall be subject to arbitration, which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of this Agreement. A demand for arbitration shall be made in writing, delivered to the other party to this Agreement, and filed with the person or entity administering the arbitration. Not used.~~

~~§ 8.3.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the claim, dispute or other matter in question would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the claim, dispute or other matter in question. Not used.~~

~~§ 8.3.2 The foregoing agreement to arbitrate, and other agreements to arbitrate with an additional person or entity duly consented to by parties to this Agreement, shall be specifically enforceable in accordance with applicable law in any court having jurisdiction thereof. Not used.~~

~~§ 8.3.3 The award rendered by the arbitrator(s) shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof. Not used.~~

§ 8.3.4 Consolidation or Joinder

~~§ 8.3.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation; (2) the arbitrations to be consolidated substantially involve common questions of law or fact; and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s). Not used.~~

~~§ 8.3.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent. Not used.~~

~~§ 8.3.4.3 The Owner and Architect grant to any person or entity made a party to an arbitration conducted under this Section 8.3, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Architect under this Agreement. Not used.~~

§ 8.4 The provisions of this Article 8 shall survive the termination of this Agreement.

ARTICLE 9 TERMINATION OR SUSPENSION

§ 9.1 If the Owner fails to make payments to the Architect in accordance with this Agreement, such failure shall be considered substantial nonperformance and cause for termination or, at the Architect's option, cause for suspension of performance of services under this Agreement. If the Architect elects to suspend services, the Architect shall give seven days' written notice to the Owner before suspending services. In the event of a suspension of services, the Architect shall have no liability to the Owner for delay or damage caused the Owner because of such suspension of services. Before resuming services, the Owner shall pay the Architect all sums due prior to suspension and any expenses incurred in the interruption and resumption of the Architect's services. The Architect's fees for the remaining services and the time schedules shall be equitably adjusted.

§ 9.2 If the Owner suspends the Project, the Architect shall be compensated for services performed prior to notice of such suspension. When the Project is resumed, the Architect shall be compensated for expenses incurred in the interruption and resumption of the Architect's services. The Architect's fees for the remaining services and the time schedules shall be equitably adjusted.

§ 9.3 If the Owner suspends the Project for more than 90 cumulative days for reasons other than the fault of the Architect, the Architect may terminate this Agreement by giving not less than seven days' written notice.

§ 9.4 Either party may terminate this Agreement upon not less than seven days' written notice should the other party fail substantially to perform in accordance with the terms of this Agreement through no fault of the party initiating the termination.

§ 9.5 The Owner may terminate this Agreement upon not less than seven days' written notice to the Architect for the Owner's convenience and without cause.

§ 9.6 If the Owner terminates this Agreement for its convenience pursuant to Section 9.5, or the Architect terminates this Agreement pursuant to Section 9.3, the Owner shall compensate the Architect for services performed prior to termination, Reimbursable Expenses incurred, and costs attributable to termination, including the costs attributable to the Architect's termination of consultant agreements.

§ 9.7 In addition to any amounts paid under Section 9.6, if the Owner terminates this Agreement for its convenience pursuant to Section 9.5, or the Architect terminates this Agreement pursuant to Section 9.3, the Owner shall pay to the Architect the following fees:

(Set forth below the amount of any termination or licensing fee, or the method for determining any termination or licensing fee.)

.1 Termination Fee:

Ten Percent (10%) of the Compensation Stipulated Sum.

.2 Licensing Fee if the Owner intends to continue using the Architect's Instruments of Service:

Ten Percent (10%) of the Compensation Stipulated Sum.

§ 9.8 Except as otherwise expressly provided herein, this Agreement shall terminate one year from the date of Substantial Completion.

§ 9.9 The Owner's rights to use the Architect's Instruments of Service in the event of a termination of this Agreement are set forth in Article 7 and Section 9.7.

§ 9.10 The Owner and Architect's rights set forth in this Article 9 are in addition to and without prejudice to their other rights and remedies provided by law.

§ 9.11 The termination of this Agreement shall not relieve either the Owner or the Architect of any obligation previously accrued. The following provisions of this Agreement, and any other provisions that by their terms so provide, shall specifically survive any such termination: Section 3.1.10, Article 7, Article 8, Article 10, and Article 12.

ARTICLE 10 MISCELLANEOUS PROVISIONS

§ 10.1 This Agreement shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. ~~If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 8.3.~~

§ 10.2 Terms in this Agreement shall have the same meaning as those in AIA Document A201–2017, General Conditions of the Contract for Construction in the form attached to this Agreement as Exhibits B1 and B2.

§ 10.3 The Owner and Architect, respectively, bind themselves, their agents, successors, assigns, and legal representatives to this Agreement. Neither the Owner nor the Architect shall assign this Agreement without the written consent of the other, except that the Owner may assign this Agreement to a lender providing financing for the Project if the lender agrees to assume the Owner's rights and obligations under this Agreement, including any payments due to the Architect by the Owner prior to the assignment.

§ 10.4 If the Owner requests the Architect to execute certificates, the proposed language of such certificates shall be submitted to the Architect for review at least 14 days prior to the requested dates of execution. If the Owner requests the Architect to execute consents reasonably required to facilitate assignment to a lender, the Architect shall execute all such consents that are consistent with this Agreement, provided the proposed consent is submitted to the Architect for review at least 14 days prior to execution. The Architect shall not be required to execute certificates or consents that would require knowledge, services, or responsibilities beyond the scope of this Agreement.

§ 10.5 Nothing contained in this Agreement shall create a contractual relationship with, or a cause of action in favor of, a third party against either the Owner or Architect.

§ 10.6 Unless otherwise required in this Agreement, the Architect shall have no responsibility for the discovery, presence, handling, removal or disposal of, or exposure of persons to, hazardous materials or toxic substances in any form at the Project site.

§ 10.7 The Architect shall have the right to include photographic or artistic representations of the design of the Project among the Architect's promotional and professional materials. The Architect shall be given reasonable access to the completed Project to make such representations. However, the Architect's materials shall not include the Owner's confidential or proprietary information if the Owner has previously advised the Architect in writing of the specific information considered by the Owner to be confidential or proprietary. The Owner shall provide professional credit for the Architect in the Owner's promotional materials for the Project. This Section 10.7 shall survive the termination of this Agreement unless the Owner terminates this Agreement for cause pursuant to Section 9.4.

§ 10.8 If the Architect or Owner receives information specifically designated as "confidential" or "business proprietary," the receiving party shall keep such information strictly confidential and shall not disclose it to any other person except as set forth in Section 10.8.1. This Section 10.8 shall survive the termination of this Agreement.

§ 10.8.1 The receiving party may disclose "confidential" or "business proprietary" information after 7 days' notice to the other party, when required by law, arbitrator's order, or court order, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or to the extent such information is reasonably necessary for the receiving party to defend itself in any dispute. The receiving party may also disclose such information to its employees, consultants, or contractors in order to perform services or work solely and exclusively for the Project, provided those employees, consultants and contractors are subject to the restrictions on the disclosure and use of such information as set forth in this Section 10.8.

§ 10.9 The invalidity of any provision of the Agreement shall not invalidate the Agreement or its remaining provisions. If it is determined that any provision of the Agreement violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Agreement shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Agreement.

ARTICLE 11 COMPENSATION

§ 11.1 For the Architect's Basic Services described under Article 3, the Owner shall compensate the Architect as follows:

- .1 Stipulated Sum
(Insert amount)
Not applicable.
- .2 Percentage Basis
(Insert percentage value)
Not applicable.
~~() % of the Owner's budget for the Cost of the Work, as calculated in accordance with Section 11.6.~~
- .3 Other
(Describe the method of compensation)

Compensation for Schematic Design phase services [3006.466.00] shall be a stipulated sum of Fourteen Thousand Six Hundred Thirty-Nine dollars and zero cents (\$14,639.00) plus reimbursable expenses.

Compensation for Design Development, Construction Documents, Procurement, and Construction phase services [3006.466.01] shall be hourly not to exceed Sixty-Nine Thousand Nine Hundred Seventy-Seven dollars and zero cents (\$69,977.00) plus reimbursable expenses as applicable. Hourly rates shall be in accordance with the Standard Hourly Rate Schedule current at the time services are provided.

§ 11.2 For the Architect's Supplemental Services designated in Section 4.1.1 and for any Sustainability Services required pursuant to Section 4.1.3, the Owner shall compensate the Architect as follows:

(Insert amount of, or basis for, compensation. If necessary, list specific services to which particular methods of compensation apply.)

Compensation shall be hourly based on the Standard Hourly Rate Schedule current at the time services are provided. A copy of the Standard Hourly Rate Schedule is attached hereto as Exhibit C and incorporated herein by this reference.

§ 11.3 For Additional Services that may arise during the course of the Project, including those under Section 4.2, the Owner shall compensate the Architect as follows:

(Insert amount of, or basis for, compensation.)

Compensation shall be hourly based on the Standard Hourly Rate Schedule current at the time services are provided. A copy of the Standard Hourly Rate Schedule is attached hereto as Exhibit C and incorporated herein by this reference.

§ 11.4 Compensation for Supplemental and Additional Services of the Architect's consultants when not included in Section 11.2 or 11.3, shall be the amount invoiced to the Architect plus ten percent (10%), or as follows:

(Insert amount of, or basis for computing, Architect's consultants' compensation for Supplemental or Additional Services.)

§ 11.5 ~~When compensation for Basic Services is based on a stipulated sum or a percentage basis, the proportion of compensation for each phase of services shall be as follows:~~

Schematic Design Phase	percent	(%)
Design Development Phase	percent	(%)
Construction Documents Phase	percent	(%)
Bidding/Negotiations Phase	percent	(%)
Construction Phase	percent	(%)
Total Basic Compensation	one hundred percent	(100%)
<u>Not used.</u>		

~~§ 11.6 When compensation identified in Section 11.1 is on a percentage basis, progress payments for each phase of Basic Services shall be calculated by multiplying the percentages identified in this Article by the Owner's most recent budget for the Cost of the Work. Compensation paid in previous progress payments shall not be adjusted based on subsequent updates to the Owner's budget for the Cost of the Work.~~

~~§ 11.6.1 When compensation is on a percentage basis and any portions of the Project are deleted or otherwise not constructed, compensation for those portions of the Project shall be payable to the extent services are performed on those portions. The Architect shall be entitled to compensation in accordance with this Agreement for all services performed whether or not the Construction Phase is commenced.~~

§ 11.7 The hourly billing rates for services of the Architect and the Architect's consultants are set forth below. The rates shall be adjusted in accordance with the Architect's and Architect's consultants' normal review practices.
(If applicable, attach an exhibit of hourly billing rates or insert them below.)

Employee or Category	Rate (\$0.00)
<u>Standard Hourly Rate Schedule incorporated herein as Exhibit C.</u>	

§ 11.8 Compensation for Reimbursable Expenses

§ 11.8.1 Reimbursable Expenses are in addition to compensation for Basic, Supplemental, and Additional Services and include expenses incurred by the Architect and the Architect's consultants directly related to the Project, as follows:

- .1 Transportation and authorized out-of-town travel and subsistence;
- .2 Long distance services, dedicated data and communication services, teleconferences, Project web sites, and extranets;
- .3 Permitting and other fees required by authorities having jurisdiction over the Project;
- .4 Printing, reproductions, plots, and standard form documents;
- .5 Postage, handling, and delivery;
- .6 Expense of overtime work requiring higher than regular rates, if authorized in advance by the Owner;
- .7 Renderings, physical models, mock-ups, professional photography, and presentation materials requested by the Owner or required for the Project;
- .8 If required by the Owner, and with the Owner's prior written approval, the Architect's consultants' expenses of professional liability insurance dedicated exclusively to this Project, or the expense of additional insurance coverage or limits in excess of that normally maintained by the Architect's consultants;
- .9 All taxes levied on professional services and on reimbursable expenses;
- .10 Site office expenses;
- .11 Registration fees and any other fees charged by the Certifying Authority or by other entities as necessary to achieve the Sustainable Objective; and,
- .12 Other similar Project-related expenditures.

§ 11.8.2 For Reimbursable Expenses the compensation shall be the expenses incurred by the Architect and the Architect's consultants plus ten percent (10%) of the expenses incurred.

§ 11.9 **Architect's Insurance.** If the types and limits of coverage required in Section 2.5 are in addition to the types and limits the Architect normally maintains, the Owner shall pay the Architect for the additional costs incurred by the Architect for the additional coverages as set forth below:

(Insert the additional coverages the Architect is required to obtain in order to satisfy the requirements set forth in Section 2.5, and for which the Owner shall reimburse the Architect.)

Not applicable.

§ 11.10 Payments to the Architect

§ 11.10.1 Initial Payments

§ 11.10.1.1 An initial payment of zero dollars and no cents (\$0.00) shall be made upon execution of this Agreement and is the minimum payment under this Agreement. It shall be credited to the Owner's account in the final invoice.

~~§ 11.10.1.2 If a Sustainability Certification is part of the Sustainable Objective, an initial payment to the Architect of N/A Dollars (\$N/A) shall be made upon execution of this Agreement for registration fees and other fees payable to the Certifying Authority and necessary to achieve the Sustainability Certification. The Architect's payments to the Certifying Authority shall be credited to the Owner's account at the time the expense is incurred. Not used.~~

§ 11.10.2 Progress Payments

§ 11.10.2.1 Unless otherwise agreed, payments for services shall be made monthly in proportion to services performed. Payments are due and payable upon presentation of the Architect's invoice. Amounts unpaid ~~sixty~~ (60) days after the invoice date shall bear interest at the rate entered below, or in the absence thereof at the legal rate prevailing from time to time at the principal place of business of the Architect.

(Insert rate of monthly or annual interest agreed upon.)

One percent (1%) per month.

§ 11.10.2.2 The Owner shall not withhold amounts from the Architect's compensation to impose a penalty or liquidated damages on the Architect, or to offset sums requested by or paid to contractors for the cost of changes in the Work, unless the Architect agrees or has been found liable for the amounts in a binding dispute resolution proceeding.

§ 11.10.2.3 Records of Reimbursable Expenses, expenses pertaining to Supplemental and Additional Services, and services performed on the basis of hourly rates shall be available to the Owner at mutually convenient times.

ARTICLE 12 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Agreement are as follows:

(Include other terms and conditions applicable to this Agreement.)

§ 12.1 The Owner acknowledges that the requirements of the Americans with Disabilities Act (ADA), Fair Housing Act (FHA) and other federal, state and local accessibility laws, rules, codes, ordinances and regulations will be subject to various subjective, discretionary and/or possibly contradictory interpretations. The Architect, therefore, will use its reasonable professional efforts and judgment consistent with the degree of skill and care ordinarily exercised by architects currently practicing under similar circumstances to interpret applicable laws, rules, codes, ordinances and regulations, including accessibility requirements in effect as of the date of the execution of this Agreement, and as they apply to the Project. The Architect, however, cannot and does not warrant or guarantee that the Owner's Project will comply with all interpretations of the accessibility requirements and/or the requirements of other federal, state and local laws, rules, codes, ordinances and regulations as they apply to the Project. The Owner shall defend, indemnify, and hold harmless the Architect, the Architect's consultant and agents, and employees of any of them, from and against any and all claims, damages, awards, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from noncompliance with ADA or FHA.

~~**§ 12.2** To the maximum extent permitted by law, the Owner agrees to limit the Architect's liability for claims brought by or through the Owner to the sum of \$50,000.00 or the Architect's fee, whichever is greater. This limitation shall apply regardless of the cause of action or legal theory pled or asserted.~~

§ 12.3 If this Agreement is terminated, other than pursuant to Section 9.4, the license granted in Section 7.3 shall terminate and the Owner's obligations set forth in Section 7.3.1 and Section 9.7.2 shall govern.

§ 12.4 Not used.

§ 12.5 The Architect may specify certain materials for the Project that may contain substances that may be determined or are considered by some to pose a potential risk to the health and safety of humans, but that are not banned by governmental agencies having jurisdiction over the Project as of the time these products or materials were specified by the Architect. By signing this Agreement, Owner is hereby on notice that such materials may be determined to be hazardous or detrimental to the health and safety of humans, which may be banned in the future, and the Owner agrees to hold the Architect harmless from any and all claims or damages resulting from or arising out of the specification of such products or materials.

ARTICLE 13 SCOPE OF THE AGREEMENT

§ 13.1 This Agreement represents the entire and integrated agreement between the Owner and the Architect and supersedes all prior negotiations, representations or agreements, either written or oral, including but not limited to, the terms of any purchase order, invoice, bid document, or proposal attached to the Agreement. This Agreement may be amended only by written instrument signed by both the Owner and Architect.

§ 13.2 This Agreement is comprised of the following documents identified below:

- .1 AIA Document B101™-2017, Standard Form Agreement Between Owner and Architect as modified by RDG Planning & Design, Inc. and Owner.
- .2 ~~AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:~~
~~(Insert the date of the E203-2013 incorporated into this agreement.)~~
Not used.
- .3 Exhibits:
(Check the appropriate box for any exhibits incorporated into this Agreement.)
☐ ~~AIA Document E204™-2017, Sustainable Projects Exhibit, dated as indicated below:~~
~~(Insert the date of the E203-2013 incorporated into this agreement.)~~
Not applicable.
☒ Other Exhibits incorporated into this Agreement:
(Clearly identify any other exhibits incorporated into this Agreement, including any exhibits and scopes of services identified as exhibits in Section 4.1.2.)
 - .1 Exhibit A: Scope of Services.
 - .2 Exhibit B1: A201™-2017, General Conditions of Contract for Construction, including the incorporated Supplementary Conditions of Contract for Construction, as modified by RDG and Owner.
 - .3 Exhibit B2: Special Conditions of the Contract.
 - .4 Exhibit C: Standard Hourly Rate Schedule.
- .4 Other documents:
(List other documents, if any, forming part of the Agreement.)
Not applicable.

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

Mayor or Designee
City of Muscatine
(Printed name and title)



ARCHITECT (Signature)

John A. Sova, AIA
Principal
(Printed name, title, and license number, if required)

June 4, 2024

Muscatine, Iowa – Façade Rehabilitation - Scope of Professional Design Services

RDG# 3006.466.00

A. Summary Scope:

1. Project Scope. The scope of the design services shall include the addresses listed below; the scope of the project will be determined by the available funds distributed among the project participants.
2. Property Owners. Architect will meet with individual **Property Owners** (Building Owners) at the project location. Occupants or tenants may attend these meetings, in addition to the Property Owner. (Limited to one group meeting (kick off meeting) and up to three individual meetings with each Property Owner or occupant representative. Owner will be responsible for scheduling the meetings and hosting the meeting location. Individual meetings to be consecutive and consolidated into one day on-site. Conference calls or video conferencing may be arranged if Property Owner or their representative cannot attend.)
 - a) Owner, or Owner's representative, will attend each of the meetings with each Property Owner.
 - b) Architect will be meeting with each individual Property Owner to review their building façade and the Architect's recommendation for rehabilitation, and ultimately to give them an opportunity for discussion and to identify any additional issues and concerns they might have, and preliminary costs.
 - c) Architect and Owner acknowledge that minor changes in scope may occur for each individual property during design and construction. Significant changes will be recognized as a material change in the Project, including but not limited to:
 - 1) The addition, or substitution, of one or more buildings to the scope of the Project, following Design Meeting #2 (following completion of Schematic Design).
 - 2) The preparation and review of an excessive number of Proposal Requests and Change Orders. An excessive number shall be defined:
 - i. To include any and all Proposal Requests or Change Orders, in excess of the previous Proposal Requests or Change Orders that total greater than 10% of the Contract Sum as shown on the AIA A101-2017, disregarding any and all deduct Change Orders, and regardless of whether the Proposal Requests were accepted by the Owner or not.
 - ii. To include any and all Proposal Requests in excess of an average of two Proposal Requests per address.
 - iii. The splitting up of alternates, or acceptance of partial alternates, immediately following the opening of the bids and award of construction contract, shall not count towards the excessive number.
 - 3) Such material changes will qualify as Additional Services as defined in the Agreement AIA B101-2017 section 4.2.1.1, and the Architect shall be compensated for Additional Services, as per section 11.3, or under an instrument of change, such as a written Amendment to the Agreement, as per section 13.1.

- d) Any additional meeting or meetings with each Property Owner or occupant representative, including but not limited to meeting or meetings following the opening of bids, beyond the three meetings defined above, shall be considered Additional Services as defined in the Agreement AIA B01-2017 section 4.2.1.1, and the Architect shall be compensated for Additional Services, as per section 11.3, or under an instrument of change, such as a written Amendment to the Agreement, as per section 13.1.
- 3. Deliverables. Architect will furnish bidding and construction documents. These may include photographs and/or drawings. Architect will furnish the project manual and specifications, including text or copies of documents as required by the grants received and as provided to the Architect by the Owner or others. These bidding and construction documents will be in PDF format. Printing costs will be a reimbursable expense.
- 4. Bidding Law. Owner is responsible for complying with Public Construction Bidding laws, including but not limited to:
 - a) Iowa Code, Chapter 26.
- 5. Insurance. Owner will review and advise the Architect on insurance requirements to be defined in AIA A101-2017 Exhibit A, Insurance and Bonds.
- 6. Contract. Construction Contract or Agreement shall be executed by the Owner and one General Contractor. Contract shall be AIA A101-2017 as edited by the Architect. General Conditions shall be AIA A201-2017 as edited by the Architect using the Supplementary Conditions.
- 7. Construction Contract Administration. Architect will perform Construction Contract Administration (CA) services.
 - a) Architect will not be responsible for calculating or tracking individual Property Owner contributions (as their part of the funding for the Project) as construction progresses. However, the Architect will identify changes to the construction cost for each individual building in any Change Orders.
 - b) Architect will conduct Construction Conferences (meetings) at the Project site.
 - 1) A site visit will be made at the time of the conference.
 - 2) Architect will distribute written meeting minutes and site observations following the conference.
 - 3) The number of site visits are defined in the AIA B101-2017.
 - 4) Construction Conferences will not be conducted at the Project site if a significant amount of Work has not occurred since the prior conference.
 - 5) When appropriate, a video conference or telephone conference may be conducted, in lieu of a conference held at the Project site.
- 8. Project Manager. Owner will appoint or designate a **Project Manager** (or Project Liaison). Duties of the Project Manager will include, among other duties:
 - a) Communicate status of design, timeframes, design and construction progress, milestones, schedules, deadlines, budgets and costs, and other pertinent information, including questions and comments, between the Architect and the Property Owners.

- 1) Architect will not communicate directly with Property Owners or tenants, except during the meetings described previously. Exceptions may be made for minor items such as colors, pattern selection, etc. However, exceptions will not be made for questions, decisions, or changes affecting the Project scope, cost, or schedule.
 - b) Communicate with Property Owners about whether or not they are participating in the Project, and at what level of investment or scope of work.
 - c) Collect and distribute information, comments, and questions from the Property Owners or tenants, as needed, to the Architect or the General Contractor.
 - d) Resolve complaints or disputes involving Property Owners, General Contractor, Architect, and others.
 - e) Act as the Liaison with local organizations and entities, including Mayor, City Council, and other City staff, boards and commissions, chambers, and other groups affected by the Project.
 - f) Project Manager:

Director of Community Development
City of Muscatine, Iowa
9. Property Owner Legal Documents. Owner will author and obtain Façade Easement Agreements, Property Owner (Building Owner) Acknowledgement of Terms for Construction, and other legal instruments or documents, as appropriate, from each of the individual Property Owners (Building Owners). Architect will assist with authorship or attachments only as it pertains to design characteristics.
- a) Architect will not review or provide legal comments or other legal services on any legal instruments or documents.
10. Historic Research. Owner will furnish previous historic research, including photos, to the Architect. Architect will base recommendations off of this information.
11. Historic Preservation. Historic Preservation compliance and scope of services.
- a) Work may be subject to review and compliance with the Iowa Economic Development Authority and the Secretary of the Interior's Standards for Rehabilitation.
 - b) Work may be subject to review and compliance with the Iowa State Historic Preservation Office.
 - c) Work will not be subject to review by the National Park Service.
 - d) Each property Site Inventory Forms for the 106 review will be completed by others, if necessary, and provided to the Architect by the Owner before the meeting with the property owners.
 - e) Architect will not assist with the review of the Part 1, 2 or 3 of the Historic State and/or Federal Tax Credit(s), the writing of the applications, and associated historic research, if any. These services may be provided by the Architect, however, as an additional service, as per mutual written agreement.
12. Hazardous Materials. Architect will not be responsible for the testing, detection, identification, removal, remediation, or mitigation of hazardous materials, including but not limited to asbestos, lead, mold, and animal droppings. Owner will contract separately for these services, as necessary. Architect will not manage the Owner's contractors or vendors for these or other services.

13. Structural Engineering. Architect will not be responsible for structural investigations or structural engineering services. If conditions warrant the need for such services, these may be added to the Architect's scope by use of an Amendment to the AIA-B101 agreement.

B. Basis of Design and Restoration:

1. Design and Construction scope generally limited to 12" depth of the façade facing the street, including doors and windows, transoms and sidelights, parapet caps, projected awnings, bay windows, and recessed main entrances. Façade scope is defined from the Ground or Sidewalk level up to the top of the wall, locations at building addresses as shown below.
2. Construction scope to exclude:
 - a) Interior repairs, except those necessary for repair or installation of exterior components.
 - b) Mechanical, electrical and plumbing, including lighting and fire protection.
 - c) Structural engineering, foundation, or other structural repairs.
 - d) Signage and graphics, unless otherwise indicated.
 - e) Handicapped accessibility or Life Safety enhancements.
 - 1) Repairs will not make the buildings any less accessible or less safe than they already are.
 - f) Roof and flashing repairs, unless directly affected by the façade repairs.

C. Community Development Block Grant – Federal Provisions:

The Architect and their sub-Consultants are not responsible or liable for the managing, certifying, verifying, enforcing, or complying with of any of the following provisions, regulations, or laws, to the extent that those provisions, regulations, or laws apply specifically or only to the Owner, Grant Recipient, or other funding Recipient, the construction Contractor and their sub-Contractors, individual building owners and their tenants, or other parties or entities, and not to the Architect and their sub-Consultants.

Section 3 Clause(s):

- A. The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
- B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 75, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify-state that they are under no contractual or other impediment that would prevent them from complying with the part 75 regulations.
- C. The ~~contractor~~ Architect agrees to post copies of a notice advising workers of the ~~Contractor's~~ Architect's commitments under Section 3 in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

- D. The ~~contractor~~ Architect agrees to provide written notice of employment and contracting opportunities to all known Section 3 Workers and Section 3 Businesses.
- E. The ~~contractor~~ Architect agrees to employ, to the greatest extent feasible, Section 3 workers or provide written justification to the recipient that is consistent with 24 CFR Part 75, describing why it was unable to meet minimum numerical Section 3 Worker hours goals, despite its efforts to comply with the provisions of this clause.
- F. The ~~contractor~~ Architect agrees to maintain records documenting Section 3 Workers that were hired to work on previous Section 3 covered projects or activities that were retained by the ~~contractor~~ Architect for subsequent Section 3 covered projects or activities.
- G. The ~~contractor~~ Architect agrees to post contract and job opportunities to the Opportunity Portal and will check the Business Registry for businesses located in the project area.
- H. The ~~contractor~~ Architect agrees to include compliance with Section 3 requirements in every subcontract for Section 3 projects as defined in 24 CFR part 75, and agrees to take appropriate action, as provided in an applicable provision of the subcontract upon a finding that the ~~subcontractor~~ sub-Consultant is in violation of the regulations in 24 CFR part 75. The ~~contractor~~ Architect will not subcontract with any ~~subcontractor~~ sub-Consultant where the ~~contractor~~ Architect has notice or knowledge that the ~~subcontractor~~ sub-Consultant has been found in violation of the regulations in 24 CFR part 75.
- I. The ~~contractor~~ Architect will ~~certify state~~ that any vacant employment positions, including training positions, that are filled (1) after the ~~contractor~~ Architect is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 75 require employment opportunities to be directed, were not filled to circumvent the ~~contractor's~~ Architect's obligations under 24 CFR part 75.
- J. The ~~contractor~~ Architect will ~~certify state~~ that they have followed prioritization of effort in 24 CFR part 75.19 for all employment and training opportunities. The ~~contractor~~ Architect will further ~~certify state~~ that it meets or exceeds the applicable Section 3 benchmarks, defined in 24 CFR Part 75.23, and if not, shall describe in detail the qualitative efforts it has taken to pursue low- and very low-income persons for economic opportunities.
- K. Noncompliance with HUD's regulations in 24 CFR part 75 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

~~Section 3 Business Concerns are encouraged to respond to this proposal.~~ A Section 3 Business Concern is one that satisfies one of the following requirements:

1. It is at least 51 percent owned and controlled by low- or very low-income persons;
2. Over 75 percent of the labor hours performed for the business over the prior three-month period are performed by Section 3 Workers*; or
3. It is a business at least 51 percent owned and controlled by current public housing residents or residents who currently live in Section 8-assisted housing.

* A Section 3 Worker is defined as any worker who currently fits or when hired within the past five years fit at least one of the following categories, as documented:

1. The worker's income for the previous or annualized calendar year is below the applicable income limit established by HUD;
2. The worker is employed by a Section 3 business concern; or

3. The worker is a YouthBuild participant.

~~Businesses that believe they meet the Section 3 criteria are encouraged to register as a Section 3 Business through HUD's website: <https://portalapps.hud.gov/Sec3BusReg/BRegistry/RegisterBusiness>~~

~~The City of Muscatine is an EEO Employer. MBE/WBE firms are urged to respond.~~

D. Additional provisions:

The Architect and their sub-Consultants are not responsible or liable for the managing, certifying, verifying, enforcing, or complying with of any of the following provisions, regulations, or laws, to the extent that those provisions, regulations, or laws apply specifically or only to the Owner, Grant Recipient, or other funding Recipient, the construction Contractor and their sub-Contractors, individual building owners and their tenants, or other parties or entities, and not to the Architect and their sub-Consultants.

1. Access and Maintenance of Records

The ~~contractor~~ Architect must maintain records, including supporting documentation, for three years from closeout of the grant to the state of Iowa.

At any time during normal business hours and as frequently as is deemed necessary, the ~~contractor~~ Architect shall make available to the Iowa Economic Development Authority, the State Auditor, the General Accounting Office, and the Department of Housing and Urban Development, for their examination, all of its records pertaining to all matters covered by this contract and permit these agencies to audit, examine, make excerpts or transcripts from such records, contract, invoices, payrolls, personnel records, conditions of employment, and all other matters covered by this contract.

2. Civil Rights

The ~~Contractor~~ Architect must comply with the following laws and regulations:

- a. Title VI of the Civil Rights Act of 1964 (P.L. 88-352).
States that no person may be excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving Federal financial assistance on the basis of race, color, or national origin.
- b. Title VIII of the Civil Rights Act of 1968 (Fair Housing Act), as amended.
- c. Federal Executive Order 11063, as amended by Executive Order 12259
Equal Opportunity Housing
- d. Iowa Civil Rights Act of 1965.
This Act mirrors the Federal Civil Rights Act.
- e. Section 109 of Title I of the Housing and Community Development Act of 1974, as amended (42 U.S.C. 5309).
Provides that no person shall be excluded from participation in, denied the benefits of, or subjected to discrimination on the basis of race, color, national origin, sex, age, or handicap under any program or activity funded in part or in whole under Title I of the Act.
- f. The Age Discrimination Act of 1975, as amended (42 U.S.C. 1601 et seq.)
Provides that no person on the basis of age, be excluded from participation in, be denied the benefits of or be subjected to discrimination under any program or activity receiving Federal financial assistance.
- g. Section 504 of the Rehabilitation Act of 1973, as amended (P.L. 93-112, 29 U.S.C. 794).

Provides that no otherwise qualified individual shall solely by reason of his/her handicap be excluded from participation in, be denied the benefits of, or be discriminated against under any program or activity receiving Federal financial assistance.

- h. Americans with Disabilities Act (P.L. 101-336, 42 U.S.C. 12101-12213)
Provides comprehensive civil rights to individuals with disabilities in the areas of employment, public accommodations, state and local government services, and telecommunications.
- i. Section 3 of the Housing and Urban Development Act of 1968, as amended (12 U.S.C. 1701u).
The purpose of section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u) (section 3) is to ensure that employment and other economic opportunities generated by certain HUD financial assistance shall, to the greatest extent feasible, and consistent with existing Federal, State and local laws and regulations, be directed to low- and very low-income persons, particularly those who are recipients of government assistance for housing, and to business concerns which provide economic opportunities to low- and very low-income persons.

3. Termination Clause

All contracts utilizing CDBG funds must contain a termination clause that specifies the following:

- a. Under what conditions the clause may be imposed.
- b. The form the termination notice must take (e.g., certified letter).
- c. The time frame required between the notice of termination and its effective date.
- d. The method used to compute the final payment(s) to the contractor.

See the Agreement Between Owner and Architect for further definition of the Termination Clause.

4. Certification regarding government-wide restriction on lobbying.

All contracts utilizing CDBG funds must contain the following certification concerning restriction of lobbying:

The ~~Recipient Architect~~ certifies states, to the best of his or her knowledge and belief, that:

- i. No Federal appropriated funds have been paid or will be paid, by or on behalf of the ~~Recipient Architect~~, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- ii. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee, or an employee of a Member of congress in connection with this Federal contract, grant, loan, or cooperative agreement, the Recipient shall complete and submit Standard Form-LLL, "Disclosure Form to Report Federal Lobbying" in accordance with its instruction.
- iii. The ~~Recipient Architect~~ shall require that the language of this ~~certification statement~~ be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all ~~subrecipients~~ sub-Consultants shall certify and disclose accordingly.

This ~~certification statement~~ is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

5. Lead-Safe Housing Regulations (As applicable)

24 CFR Part 35 et. al.

Requirements for Notification, Evaluation and Reduction of Lead-Based Paint Hazards in Federally Owned Residential Properties and Housing Receiving Federal Assistance, Final Rule

See the Agreement Between Owner and Architect for further definition of the responsibility for hazardous materials.

6. Recycled Materials

The ~~contractor~~ Architect agrees to comply with all the requirements of Code of Iowa chapter 8A.315-317 and Iowa Administrative Code chapter 11-117.6(5) — Recycled Product and Content which states:

When appropriate, specifications shall include requirements for the use of recovered materials and products.

The specifications shall not restrict the use of alternative materials, exclude recovered materials, or require performance standards that exclude products containing recovered materials unless the subrecipient seeking the product can document that the use of recovered materials will impede the intended use of the product.

7. Notice of Awarding Agency Requirements and Regulations Pertaining to Reporting

The ~~Contractor~~ Architect must provide information as necessary and as requested by the Iowa Economic Development Authority for the purpose of fulfilling all reporting requirements related to the CDBG program.

8. ALL CONTRACTS IN EXCESS OF \$10,000

Federal Executive Orders 11246 and 11375:

Provides that no one be discriminated in employment.

During the performance of this contract, the ~~contractor~~ Architect agrees as follows:

- (1) The ~~contractor~~ Architect will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The ~~contractor~~ Architect will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The ~~contractor~~ Architect agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
- (2) The ~~contractor~~ Architect will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- (3) The ~~contractor~~ Architect will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the ~~contractor's~~ Architect's commitments under Section 202 of the Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

- (4) The ~~contractor~~ Architect will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (5) The ~~contractor~~ Architect will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (6) In the event of the ~~contractor's~~ Architect's non-compliance with the nondiscrimination clause of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (7) The ~~contractor~~ Architect will include the provisions of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the ~~contractor~~ Architect may request the United States to enter into such litigation to protect the interests of the United States.



AIA Document A201™ – 2017

General Conditions of the Contract for Construction

For the following Project:

(Name, location and detailed description)

Downtown Façade Improvements
Muscatine, IA

THE OWNER:

(Name, legal status and address)

City of Muscatine, Iowa
215 Sycamore Street
Muscatine, Iowa 52761
www.muscatineiowa.gov

THE ARCHITECT:

(Name, legal status and address)

RDG Planning & Design, Inc.
301 Grand Avenue
Des Moines, IA 50309-1718
Phone: 515-288-3414
www.rdgusa.com

RDG Project Number: R3006.466.00

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 The terms and conditions of the Contract Documents, including but not limited to the General Conditions, the Supplementary Conditions, and Division 01 Specification Sections, apply to all Sections of the Specifications.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.7.1 Instruments of Service transmitted in digital form or any other information or documentation transmitted in digital form are not Contract Documents. Discrepancies may exist between digital data files and corresponding hard-copy Contract Documents including, but not limited to, subsequent modifications to the Contract Documents. In the event of a conflict between the Contract Documents and the digital data files, the Contract Documents shall govern. Users of digital data files shall be responsible for confirming the accuracy and completeness of the files relative to current Contract Documents.

§ 1.7.2 Data contained in Architect provided digital data files, at the time of transfer to third parties, are part of the Architect's Instruments of Service and shall not be used by anyone receiving this data for any purpose other than as a convenience in the preparation of shop drawings for the referenced project. Any other use or reuse by others is prohibited. Users of these digital data files shall agree to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action or any nature against the Architect, its officers, consultants, directors, agents, and sub-consultants, and any employees of them, that may arise out of or in connection with use of these digital data files. Furthermore, users shall, to the fullest extent permitted by law, defend, indemnify and hold harmless the Architect, its officers, consultants, directors, agents, and sub-consultants, and any employees of them, from and against any and all claims, causes of action, damages, liabilities and costs, including, but not limited to, reasonable attorneys' fees and defense costs, arising out of or resulting from the use of these digital data files.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™- 2013, Building Information Modeling and Digital Data Exhibit, and the requisite ~~AIA Document G202™- 2013, Project Building Information Modeling Protocol Form~~ RDG BIM Project Execution Plan, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 ~~Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.~~ Not used.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner

to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3,

the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.2.5 The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Architect for evaluating and responding to the Contractor's requests for information where the requested information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work. Work required by the Contract Documents to be performed after working hours or work the Contractor elects to perform after hours shall be completed at no additional cost to the Owner.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.2.1 After the Contract has been executed, the Owner and Architect will consider requests for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 01 of the Specifications). By making requests for substitutions, the Contractor:

- 1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
- 2 represents that the Contractor will provide the same warranty for the substitution as it would have provided for the product specified;

- 3 certifies that the cost data presented is complete and includes all related costs for the substituted product and for Work that must be changed as a result of the substitution, except for the Architect's redesign costs, and waives all claims for additional costs related to the substitution that subsequently become apparent; and
- 4 shall coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

§ 3.4.2.2 The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Architect for reviewing the Contractor's proposed substitutions and making agreed-upon changes in the Drawings and Specifications resulting from such substitutions.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.6.1 Bidders shall be responsible for informing themselves of tax laws, requirements, regulations, and interpretations as they apply to this project.

§ 3.6.2 This Project is Iowa sales tax exempt. Persons shall purchase such items of tangible personal property without liability for the tax if such property will be used in the performance of the construction contract and a purchasing agent authorization letter and an exemption certificate, issued by the designated exempt entity, are presented to the retailer. Said taxes shall not be included in the bid value for this Project.

§ 3.6.3 The Owner shall issue an authorization letter and an exemption certificate to the Contractor, subcontractor, builder, or manufacturer to be used as provided in Iowa Code. The authorization letter and the exemption certificate shall specify the construction project to which they apply and shall be valid only for that project. The Owner shall notify the Iowa Department of Revenue that such authorization letter and exemption certificate have been issued. The notification shall, to the extent practicable, describe the project and identify the Contractors, subcontractors, builders, and manufacturers which will be using the letter and certificate.

§ 3.6.4 The Contractor shall provide to the Owner a listing of Contractors, subcontractors, builders, and manufacturers which will be purchasing tangible personal property for this Project and request the owner provide an authorization letter and an exemption certificate relative to Article 3.6.2 above.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.1.1 The Owner waives the fee for a building permit. The Contractor does not need to pay for the building permit.

§ 3.7.1.2 The Owner shall pay fees for public or private water, gas, electrical, and other utility extensions at the site. The Contractor shall secure and arrange for all necessary utility connections.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor knowingly encounters and recognizes human remains ~~or recognizes the existence of~~ burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence or good faith belief of such existence of such remains or features may be made as provided in Article 15.

§ 3.7.6 Plan reviews which may be required by the State of Iowa Building Code Commissioner for 661 Iowa Administrative Code Chapter 200 Fire Marshal Administration or 661 Iowa Administrative Code Chapter 300 State Building Code - Administration shall be secured by the Architect and paid for by the Owner. Exception: Fire Alarm and Automatic Sprinkler System plan reviews and fees shall be paid by the Contractor.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not

- in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.9.4 The Contractor shall employ a superintendent or an assistant to the superintendent who will perform as a coordinator for structural, mechanical, and electrical Work. The coordinator shall be knowledgeable in structural, mechanical, and electrical systems and capable of reading, interpreting and coordinating Drawings, Specifications, and shop drawings pertaining to such systems. The coordinator shall assist the Subcontractors in arranging space conditions to eliminate interference between the structural, mechanical, and electrical systems and other Work and shall supervise the preparation of coordination drawings documenting the spatial arrangements for such systems within restricted spaces. The coordinator shall assist in planning and expediting the proper sequence of delivery of structural, mechanical, and electrical equipment to the site.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. ~~If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.~~

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes

and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities

for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.12.11 The Architect's and its consultant's review of Contractor's submittals will be limited to examination of an initial submittal and one (1) re-submittal. The Architect's review of additional submittals will be made only with the consent of the Owner after notification by the Architect. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for evaluation of such additional re-submittals.

§ 3.12.12 The Architect's and its consultant's review of Contractor's submittal out of sequence from the submittal schedule agreed to by the Architect shall entitle the Owner to deduct from the Contract Sum amounts paid to the Architect for review of such out of sequence submittals.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall ~~defend, indemnify and hold harmless the Owner, Architect, Architect's consultants, and their agents and employees of any of them from and against any and all claims, causes of actions, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from the performance or prosecution of the Work by the Contractor, its Subcontractors, agents, or employees; or arising from any neglect, default, or mismanagement or omissions by the Contractor, its Subcontractors, agents, or employees in the performance of any duties imposed by the contract or by law;~~ defend, indemnify and hold harmless the Owner, Architect, Architect's consultants, and their agents and employees from and against any and all claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from the performance or prosecution of the Work by the Contractor, its Subcontractors, agents, or employees; or arising from any neglect, default, or mismanagement or omissions by the Contractor, its Subcontractors, agents, or employees in the performance of any duties imposed by the contract or by law; provided that such claim, damage, loss, or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (2) is but only to the extent caused in whole or in part by any fault, by the negligent acts negligence, act, or omissions of the Contractor, a any Subcontractor, anyone directly or indirectly employed by them, and/or anyone for whose acts they any of them may be liable, and including any of their employee's injury or damages caused in whole or in part by the negligence of the same employee regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other rights or obligations of indemnity ~~that which~~ would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§ 3.19 Mechanic's Liens

§ 3.19.1 Contractor shall keep the Owner's property free of all mechanics' liens and to secure discharge by bond or otherwise of any mechanic's lien that arises from Contractor's dealings with subcontractors or suppliers, or from any subcontractor's dealings with sub-subcontractors or suppliers. Contractor shall indemnify the Owner for any costs the Owner may sustain due to the foreclosure or filing of mechanic's liens arising from Contractor's dealings with subcontractors or suppliers, including the price of any bond to discharge said liens and reasonable attorney's fees. The Owner reserves the right to pay mechanic's liens directly to the claimant Contractor under any progress payment or final payment. This provision shall not abrogate, reduce, or limit the Owner's rights to make any claims or pursue any remedies it might have in contract or common law against the Contractor or surety

§3.20 Iowa Code Chapter 573 Claims

§ 3.20.1 Contractor shall secure discharge by separate surety bond or otherwise of any 573 Claim that arises from Contractor's dealings with subcontractors or suppliers, or from any subcontractor's dealings with sub-subcontractors or suppliers. Contractor shall indemnify the Owner for any costs the Owner may sustain due to the filing of any Iowa Code Chapter 573 Claims arising from Contractor's dealings with subcontractors or suppliers, including the price of any bond to discharge said claims and reasonable attorney's fees incurred in defending said claims. The Owner shall retain all rights to make any claims or pursue any remedies it might have in contract or common law against the Contractor or surety. After Contractor's discharge by separate surety bond or otherwise of any 573 claim, Owner shall waive all rights to withhold double (or any part of) said 573 claim.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.4.1 Communications by and with individual building owners, tenants, and occupants shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the

Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. ~~The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.~~

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon in writing or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon in writing or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number

and means a Subcontractor or an authorized representative of the Subcontractor. The term “Subcontractor” does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term “Sub-subcontractor” is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor’s Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor’s Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- 1 The change in the Work;
- 2 The amount of the adjustment, if any, in the Contract Sum; and
- 3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 Contractor shall comply with the following provisions in determining any change in contract cost.

- 1 For the Prime Contractor, any changes or additions to the work which involve extra cost and for which the additional cost is determined by mutual agreement on a lump sum amount, shall be handled on the basis of net cost plus 10 percent; this percentage shall include overhead and profit. 'Cost' shall include all items of material and labor, including pro rata charge for foreman, use of power tools and equipment (for the time actually used), power, bond premium, liability, compensation, insurance, and automobile insurance. Social security insurance, old age, and unemployment insurance may be considered as cost, but these items will not carry the 10 percent for overhead and profit. When requested, the Contractor shall furnish evidence of net cost by means of invoices and certified time records.
- 2 When the Prime Contractor seeks the work of a change order through the quotation of a subcontractor(s), the cost submitted to the Owner will list a total maximum of 15 percent overhead and profit for all Contractors. Ten percent (10%) overhead and profit will be allowed for the Contractor actually performing the work. The remaining 5 percent will be allowed for coordination of the work by the Prime Contractor.
- 3 Changes in the work involving credits for work not performed shall be made on the basis of total cost. Contractor mark-up for profit and overhead shall be included in the construction cost change.
- 4 The Contractor shall furnish to the Architect an itemized breakdown of quantities and prices on all changes. Degree and detail of breakdown shall be at the Architect's discretion, but, in general, shall be in such detail appropriate to the size and scope of the change so as to allow timely and meaningful evaluation.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1** Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2** Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3** Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4** As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1** Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2** Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3** Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4** Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5** Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by ~~labor disputes~~, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

§ 8.3.4 The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Architect as Additional Services for delays attributed to the Contractor.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents. The form of Application for Payment shall be a notarized AIA Document G702, Application and Certificate for Payment, supported by AIA Document G703, Continuation Sheet.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 The Owner will retain five percent (5%) of each Application for Payment in accordance with Section 573.12 of the Code of Iowa:

- .1 Retainage will be held 30 days after completion and final acceptance of the Work, unless otherwise requested by the Contractor in accordance with Section 26.13 of the Code of Iowa.
- .1 At the end of the 30 day period, the Owner will continue to hold double the total amount of all claims on file and the estimated value of incomplete work.
- .2 A request for early release of retained funds will only be considered upon completion of the following:
 - .1 Substantial Completion of the Work substantiated by an executed Certificate of Substantial Completion.
 - .2 Notification to all known suppliers, subcontractors, and sub-subcontractors of the Contractors intent to request a release of retained funds in compliance with Section 26.13 of the Code of Iowa.

- .3 Receipt of an itemized, tabulated list prepared by the Contractor of all incomplete or nonconforming work items, including valuation of each work item listed. Include separate columns for labor and material for each item listed. Upon approval, this list shall be incorporated into the Schedule of Values for subsequent payment applications. All values shall be listed as double the estimated value of work item.
- .4 G706 - Contractor's Affidavit of Payment of Debts and Claims.
- .5 G706A - Contractor's Affidavit of Release of Liens.
- .6 G707 - Consent of Surety to Final Payment.
- .7 Evidence of continuation of liability coverage, including coverage for completed operations in accordance Section 11.1 of AIA General Conditions.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make

such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- 1 defective Work not remedied;
- 2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- 3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- 4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- 5 damage to the Owner or a Separate Contractor;
- 6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- 7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

~~§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.~~ Not used.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

~~§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.~~

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall

be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.3.1 The Architect shall not be required to make inspections to determine Substantial Completion when the Work is not sufficiently complete or will result in extensive lists of items to be completed or corrected. When the Work is not sufficiently complete and such inspections are requested by the Contractor or are necessary to allow Owner occupancy by the required substantial completion date, the Owner shall have the right to deduct from the Contract Sum amounts paid to the Architect for additional services to conduct such inspections.

§ 9.8.3.2 The Architect's inspection of any portion of the Work to determine whether such portion of the Work is substantially complete will be limited to an initial inspection and one (1) re-inspection. Additional re-inspections will be made only with the consent of the Owner after notification by the Architect. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for such additional re-inspections.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time

within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the such Certificate. ~~Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.~~

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.1.1 The Architect's inspection of the Work to determine whether the Work is acceptable for Final Completion and Final Payment will be limited to one (1) inspection. Additional re-inspections will be made only with the consent of the Owner after notification by the Architect. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for such additional re-inspections.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond

satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- 1** liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- 2** failure of the Work to comply with the requirements of the Contract Documents;
- 3** terms of special warranties required by the Contract Documents; or
- 4** audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- 1** employees on the Work and other persons who may be affected thereby;
- 2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- 3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to the negligent acts, errors, or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall defend, indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against any and all claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon

receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and

Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, ~~excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.~~

§ 13.1.1 Compliance with Law Provision

The Contractor agrees that he will comply with all applicable Federal, State, and local laws, statutes, codes, rules, and regulations having jurisdiction over the Project. Contractor shall take all necessary precautions to keep the site and work in compliance with the safety and health regulations for construction issued by the Bureau of Labor Standards of the U.S. Department of Labor as well as the Occupational Safety and Health Standards, parts 1910 and 1926 as amended and as enforced by the State of Iowa.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.6 Davis-Bacon and Related Acts

§ 13.6.1 Davis-Bacon and Related Acts: This project is funded, in part, by federal grants and funding. Rules and provisions of the Davis Bacon and Related Acts apply to this project. It is the responsibility of the Contractor to acquire current appropriate and necessary publications and materials regarding the Davis-Bacon and Related Acts and to comply with its rules and provisions as they apply to this Project.

§ 13.7 Community Development Block Grant (CDBG)

§ 13.7.1 This project is funded, in part, by a Federal Community Development Block Grant (CDBG) administered through the Iowa Economic Development Authority. Rules and regulations of the Federal Community Development Block Grant Program mandate that certain provisions and standards be invoked for development assisted projects.

§ 13.7.2 The Contractor shall comply with the provisions and standards as stated in Section 00 73 15 - Special Conditions of the Contract.

§ 13.7.3 The Contractor shall comply with the provisions and standards as stated in the current edition of the Federal Labor Standards Provisions, form HUD-4010.

§ 13.8 Minority owned and female owned business participation

§ 13.8.1 Minority Owned and Female Owned Business participation is encouraged. Bidders shall make a good faith documented effort to encourage participation of minority owned and female owned businesses.

§ 13.8.2 The Contractor shall submit documentation to Owner's Representative identifying business contacted and contracts issued to minority owned and female owned businesses.

§ 13.9 Accounting records

§ 13.9.1 The Contractor shall maintain, or cause to be maintained, all books, records and all other financial documents pertaining to the Project in accordance with generally accepted accounting principles. Such records of the Contractor shall be available for inspection and copying by the Iowa Economic Development Authority or its designated agents, the Auditor of the State of Iowa, the Treasurer of the State of Iowa, the Attorney General of the State of Iowa and the Iowa Division of Criminal Investigation at all times within the term of this Agreement and during the term of any extension thereof, and for five (5) full years from the date of completion the Project. The Contractor shall cause the books, records and all other financial documents of its subcontractors and suppliers pertaining to the Project described in this Agreement to be available consistent with this paragraph.

§ 13.9.2 Within thirty (30) days of receipt of a written request, the Contractor shall deliver copies of all agreements or documents relating to the Project; copies of all invoices, receipts, statements or vouchers relating to the Project; a list of all unpaid bills for labor and materials in connection with the Project; and budgets and revisions showing estimated costs of the Project and funds required at any given time to complete and pay for the Project.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- 1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- 2** An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- 3** Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- 4** The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.2.5 Provisions of law pursuant to the Code of Iowa, Act to Provide for Termination of Contracts for Construction of Public Improvements when construction work or work thereon is stopped because of a National Emergency, shall apply to and become a part of this contract and shall be binding upon all parties hereto, including Subcontractors and Sureties upon any Bond given or filed in connection herewith.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.6.3 Claims for increase in the Contract Time shall set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the Work, and the number of days' increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

§ 15.1.6.4 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a

response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 ~~If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree~~

~~otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded. Not used.~~

~~§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim. Not used.~~

~~§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof. Not used.~~

~~§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof. Not used.~~

§ 15.4.4 Consolidation or Joinder

~~§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s). Not used.~~

~~§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent. Not used.~~

~~§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement. Not used.~~

SECTION 00 73 15 – SPECIAL CONDITIONS OF THE CONTRACT

The following provisions are made part of the Contract.

1. Access and Maintenance of Records.

The contractor must maintain all required records for five years after final payments are made and all other pending matters are closed.

At any time during normal business hours and as frequently as is deemed necessary, the contractor shall make available to the Iowa Economic Development Authority, the State Auditor, the General Accounting Office, and the Department of Housing and Urban Development, for their examination, all of its records pertaining to all matters covered by this contract and permit these agencies to audit, examine, make excerpts or transcripts from such records, contract, invoices, payrolls, personnel records, conditions of employment, and all other matters covered by this contract.

2. Civil Rights.

The Contractor must comply with the following laws and regulations:

- Title VI of the Civil Rights Act of 1964 (P.L. 88-352). *States that no person may be excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving Federal financial assistance on the basis of race, color, or national origin.*
- Title VIII of the Civil Rights Act of 1968 (Fair Housing Act), as amended.
- Federal Executive Order 11063, as amended by Executive Order 12259. *Equal Opportunity Housing*
- Iowa Civil Rights Act of 1965. *This Act mirrors the Federal Civil Rights Act.*
- Section 109 of Title I of the Housing and Community Development Act of 1974, as amended (42 U.S.C. 5309). *Provides that no person shall be excluded from participation in, denied the benefits of, or subjected to discrimination on the basis of race, color, national origin, sex, age, or handicap under any program or activity funded in part or in whole under Title I of the Act.*
- The Age Discrimination Act of 1975, as amended (42 U.S.C. 1601 et seq.) *Provides that no person on the basis of age, be excluded from participation in, be denied the benefits of or be subjected to discrimination under any program or activity receiving Federal financial assistance.*
- Section 504 of the Rehabilitation Act of 1973, as amended (P.L. 93-112, 29 U.S.C. 794). *Provides that no otherwise qualified individual shall solely by reason of his/her handicap be excluded from participation in, be denied the benefits of, or be discriminated against under any program or activity receiving Federal financial assistance.*
- Americans with Disabilities Act (P.L. 101-336, 42 U.S.C. 12101-12213) *Provides comprehensive civil rights to individuals with disabilities in the areas of employment, public accommodations, state and local government services, and telecommunications.*

- Section 3 of the Housing and Urban Development Act of 1968, as amended (12 U.S.C. 1701u). *The purpose of section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u) (section 3) is to ensure that employment and other economic opportunities generated by certain HUD financial assistance shall, to the greatest extent feasible, and consistent with existing Federal, State and local laws and regulations, be directed to low- and very low-income persons, particularly those who are recipients of government assistance for housing, and to business concerns which provide economic opportunities to low- and very low-income persons.*

3. Termination Clause.

Reference AIA Document A201-2007 Article 14, as amended.

4. Certification regarding government-wide restriction on lobbying.

The Recipient (Contractor) certifies, to the best of his or her knowledge and belief, that:

- No Federal appropriated funds have been paid or will be paid, by or on behalf of the Recipient, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee, or an employee of a Member of congress in connection with this Federal contract, grant, loan, or cooperative agreement, the Recipient shall complete and submit Standard Form-LLL, "Disclosure Form to Report Federal Lobbying" in accordance with its instruction.
- The Recipient shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

5. Lead-Safe Housing Regulations (as applicable).

24 CFR Part 35 et. al.

Requirements for Notification, Evaluation and Reduction of Lead-Based Paint Hazards in Federally Owned Residential Properties and Housing Receiving Federal Assistance, Final Rule

6. Recycled Materials

The contractor agrees to comply with all the requirements of Code of Iowa chapter 8A.315-317 and Iowa Administrative Code chapter 11-117.6(5) — Recycled Product and Content which states: When appropriate, specifications shall include requirements for the use of recovered materials and products.

The specifications shall not restrict the use of alternative materials, exclude recovered materials, or require performance standards that exclude products containing recovered materials unless the subrecipient seeking the product can document that the use of recovered materials will impede the intended use of the product.

7. Notice of Awarding Agency Requirements and Regulations Pertaining to Reporting

The Contractor must provide information as necessary and as requested by the Iowa Economic Development Authority for the purpose of fulfilling all reporting requirements related to the CDBG program.

8. Executive Orders 11246 and 11375. (For all contracts in excess of \$10,000)

During the performance of this contract, the contractor agrees as follows:

- 1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
- 2) The Contractor will, in all solicitations or advertisement for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- 3) The Contractor will send to each labor union or representative of workers with which they have a collective bargaining agreement or other Contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- 4) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant order of the Secretary of Labor.
- 5) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to their books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- 6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any such rules, regulations or orders, this Contract may be canceled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further government Contracts in accordance with

procedures authorized in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

- 7) The Contractor will include the provision of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.
9. The Contractor will comply with the following laws and regulations. (For all contracts in excess of \$100,000)
 - 1) Section 306 of the Clean Air Acts [42 U.S.C. 1857 (h)].
 - 2) Section 508 of the Clean Water Act [33 U.S.C. 1368].
 - 3) Executive Order 11738. *Providing administration of the Clean Air and Water Acts.*

In accordance with the Clean Air and Water Act, during the performance of this contract, the Contractor agrees as follows:

- 1) The Contractor will certify that any facility to be utilized in the performance of any nonexempt contract or subcontract is not listed on the List of Violating Facilities issued by the Environmental Protection Agency pursuant to 40 CFR 15.20.
 - 2) The Contractor agrees to comply with all the requirements of Section 114 of the Clean Air Act, as amended, (42 U.S.C. 1857c-8) and Section 308 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1318) relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.
 - 3) The Contractor agrees that as a condition for the award of a Contract, prompt notice will be given of any notification received from the Director, Office of Federal Activities, Environmental Protection Agency, indicating that a facility utilized or to be utilized for the Contract is under consideration to be listed on the Excluded Party Listing System
 - 4) The Contractor agrees that it will include or cause to be included the criteria and requirements in Paragraphs (1) through (4) of this section in every nonexempt subcontract and require every subcontractor to take such action as the Government may direct as a means of enforcing such provisions.
10. Federal Labor Standards Provisions. (For all construction contracts in excess of \$2,000)

In addition to the preceding provisions, all construction contracts in excess of \$2,000 must include the Federal Labor Standards Provisions (verbatim) found in Appendix 2 under Required Contract Provisions. (Housing rehabilitation contracts of less than 8 units are excluded from this requirement.)

Federal Labor Standards Provisions (verbatim) found in Appendix 2, including:

- Davis-Bacon and Related Acts
- Contract Work Hours and Safety Standard Act
- Copeland Anti-kickback Act

11. Section 3 Clause(s) language for Contracts.

- A. The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
- B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 75, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 75 regulations.
- C. The contractor agrees to post copies of a notice advising workers of the Contractor's commitments under Section 3 in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.
- D. The contractor agrees to provide written notice of employment and contracting opportunities to all known Section 3 Workers and Section 3 Businesses.
- E. The contractor agrees to employ, to the greatest extent feasible, Section 3 workers or provide written justification to the recipient that is consistent with 24 CFR Part 75, describing why it was unable to meet minimum numerical Section 3 Worker hours goals, despite its efforts to comply with the provisions of this clause.
- F. The contractor agrees to maintain records documenting Section 3 Workers that were hired to work on previous Section 3 covered projects or activities that were retained by the contractor for subsequent Section 3 covered projects or activities.
- G. The contractor agrees to post contract and job opportunities to the Opportunity Portal and will check the Business Registry for businesses located in the project area.
- H. The contractor agrees to include compliance with Section 3 requirements in every subcontract for Section 3 projects as defined in 24 CFR part 75, and agrees to take appropriate action, as provided in an applicable provision of the subcontract upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 75. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 75.

- I. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 75 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 75.
- J. The contractor will certify that they have followed prioritization of effort in 24 CFR part 75.19 for all employment and training opportunities. The contractor will further certify that it meets or exceeds the applicable Section 3 benchmarks, defined in 24 CFR Part 75.23, and if not, shall describe in detail the qualitative efforts it has taken to pursue low- and very low-income persons for economic opportunities.
- K. Noncompliance with HUD's regulations in 24 CFR part 75 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

A Section 3 Business Concern is one that satisfies one of the following requirements:

- 1. It is at least 51 percent owned and controlled by low- or very low-income persons;
- 2. Over 75 percent of the labor hours performed for the business over the prior three-month period are performed by Section 3 Workers*; or
- 3. It is a business at least 51 percent owned and controlled by current public housing residents or residents who currently live in Section 8-assisted housing.

* A Section 3 Worker is defined as any worker who currently fits or when hired within the past five years fit at least one of the following categories, as documented:

- 1. The worker's income for the previous or annualized calendar year is below the applicable income limit established by HUD;
- 2. The worker is employed by a Section 3 business concern; or
- 3. The worker is a YouthBuild participant.

Businesses that believe they meet the Section 3 criteria are encouraged to register as a Section 3 Business through HUD's website: <https://portalapps.hud.gov/Sec3BusReg/BRegistry/RegisterBusiness>

END OF SECTION 00 73 15

Effective January 1, 2024*

Standard Hourly Rate Schedule

Title	Rate/Hour
Principal	\$280.00
Principal Emeritus	\$280.00
Architect 3	\$185.00
Architect 2	\$155.00
Architect 1	\$130.00
Unlicensed Architect 2	\$135.00
Unlicensed Architect 1	\$110.00
Senior Architectural Staff	\$155.00
Architectural Technician 2	\$125.00
Architectural Technician 1	\$100.00
Construction Administrator 2	\$175.00
Construction Administrator 1	\$145.00
Urban Planner 2	\$140.00
Urban Planner 1	\$105.00
Landscape Architect 5	\$185.00
Landscape Architect 4	\$175.00
Landscape Architect 3	\$150.00
Landscape Architect 2	\$135.00
Landscape Architect 1	\$125.00
Intern Landscape Architect 1	\$105.00
Interior Designer 3	\$150.00
Interior Designer 2	\$120.00
Interior Designer 1	\$105.00
Water Resource Engineer	\$225.00
Intern Water Resource Engineer 1	\$115.00
Lighting Designer 3	\$225.00
Lighting Designer 2	\$120.00
Lighting Designer 1	\$110.00
Artist 3	\$140.00
Artist 2	\$100.00
Artist 1	\$90.00
Experiential Graphic Designer 4	\$150.00
Experiential Graphic Designer 3	\$125.00
Experiential Graphic Designer 2	\$110.00
Experiential Graphic Designer 1	\$95.00
CGI and Video Specialist 1	\$135.00
Sustainability Strategist	\$150.00
Senior Project Manager	\$225.00
Project Manager 3	\$180.00
Project Manager 2	\$140.00
Project Manager 1	\$110.00
Studio Coordinator	\$105.00
Student Intern	\$75.00
Marketing Coordinator 3	\$145.00

Marketing Coordinator 2	\$120.00
Marketing Coordinator 1	\$95.00
Client Development Director 1	\$180.00
Digital Communications Manager 1	\$120.00
Communications Director 1	\$145.00
Technology Administrator 3	\$185.00
Technology Administrator 2	\$165.00
Helpdesk Technician 1	\$105.00
BIM Manager 2	\$155.00
Computation Designer	\$175.00
HR Manager	\$120.00
Business Manager	\$185.00
Administrative 3	\$125.00
Administrative 2	\$110.00
Administrative 1	\$95.00
Accountant 2	\$115.00
Accountant 1	\$100.00

*Current hourly rates may be adjusted annually on January 1 of each year.