



CITY OF IONIA
PLANNING COMMISSION
REGULAR MEETING AGENDA
4:30 PM, Wednesday, November 12, 2025
IONIA CITY HALL - COUNCIL CHAMBERS

I. Call to Order

II. Roll Call

III. Approval of Agenda

IV. Approval of Minutes

1. October 8, 2025 – Regular Meeting

V. Public Comments

VI. Public Hearings and Associated Action

1. Public hearing to receive comments on Ordinance No. 601 to allow parking as an accessory use on an adjacent lot by Special Land Use in the B-3, General Business District
Action Required – Recommendation for City Council to approve or reject Ordinance No. 601

VII. Old Business

VIII. New Business

1. Steele Park Site Plan Review

IX. Commissioner Comments

X. Adjournment

Next Meeting - December 10, 2025

PUBLIC PARTICIPATION POLICY: The City of Ionia Planning Commission encourages public comment on agenda and non-agenda items. Those desiring to speak should do so under Public Comments at the beginning of the meeting. After that point during the meeting public comments are not normally allowed. The Chairperson may limit the amount of time allowed for each person wishing to make comments during the meeting.



CITY OF IONIA
PLANNING COMMISSION
REGULAR MEETING MINUTES
4:30 PM, Wednesday, October 8, 2025
IONIA CITY HALL - COUNCIL CHAMBERS

I. CALL TO ORDER

Vice Chairperson Kelley called the meeting of the Ionia Planning Commission to order at 4:30 PM.

II. ROLL CALL

Roll call revealed a Quorum with Planning Commissioners Ryan Gregory, Keturah Kelley, Tim Lee, and Jason Perry present. Commissioners Logan Bailey, Michael Donaldson, and Judy Swartz were absent.

III. APPROVAL OF AGENDA

Vice Chairperson Kelley introduced the agenda and asked if there were any requested changes. Planning Commissioner Lee made a motion, seconded by Planning Commissioner Perry, to approve the agenda as presented.

MOTION CARRIED BY VOICE VOTE.

IV. APPROVAL OF MINUTES

(IV.1.) September 11, 2025 – Regular Meeting

Minutes from the regular meeting of September 11, were reviewed. Planning Commissioner Perry made a motion, seconded by Planning Commissioner Lee, to approve the September 11, 2025, meeting minutes as presented.

MOTION CARRIED BY VOICE VOTE.

V. PUBLIC COMMENTS

None.

VI. PUBLIC HEARINGS AND ASSOCIATED ACTION

(VI.1.) City of Ionia 2025-2030 Master Plan

Assistant City Manager Bowman provided background information on the efforts by the Planning Commission and staff to prepare the City of Ionia 2025-2030 Master Plan. Bowman highlighted the robust public engagement throughout the process and several key focus areas of the Plan.

Vice Chairperson Kelley opened the public hearing for comments on the City of Ionia 2025-2030 Master Plan at 4:37 PM and subsequently closed the hearing following no comments from the public at 4:38 PM.

Planning Commissioner Lee made a motion, seconded by Planning Commissioner Gregory, to

approve Planning Commission Resolution 2025-01, which recommends City Council approval and adoption of the City of Ionia 2025-2030 Master Plan.

MOTION CARRIED BY UNANIMOUS VOICE VOTE.



**CITY OF IONIA
PLANNING COMMISSION
COUNTY OF IONIA, MICHIGAN
RESOLUTION 2025-01**

A RESOLUTION RECOMMENDING ADOPTION OF THE PROPOSED CITY OF IONIA MASTER PLAN TO THE CITY COUNCIL AND CONSTITUTING PLANNING COMMISSION APPROVAL OF SUCH MASTER PLAN

At a regular meeting of the City of Ionia Planning Commission held on October 8, 2025, at 4:30 PM, in the Council Chambers at Ionia City Hall, 114 N. Kidd Street, Ionia, Michigan, there were:

PRESENT: Ryan Gregory, Keturah Kelley, Tim Lee, and Jason Perry

ABSENT: Logan Bailey, Michael Donaldson, and Judy Swartz

The following resolution was offered for adoption by Planning Commissioner Lee and seconded by Planning Commissioner Gregory:

WHEREAS, the Michigan Planning Enabling Act, MCL 125.3801 et seq. (“MPEA”) authorizes the Planning Commission to prepare a Master Plan for the use, development, and preservation of all lands in the City; and

WHEREAS, the Planning Commission prepared a Master Plan and submitted such plan to the City Council for review and comment; and

WHEREAS, on Wednesday, August 6, 2025, the Ionia City Council received and reviewed the proposed Master Plan prepared by the Planning Commission and authorized distribution of the Master Plan to the Notice Group entities identified in the MPEA; and

WHEREAS, notice was provided to the Notice Group entities as provided in the MPEA; and

WHEREAS, the Planning Commission held a public hearing on today’s date to consider public comment on the proposed Master Plan, and to further review and comment on the proposed Master Plan; and

WHEREAS, the Planning Commission finds that the proposed Master Plan is desirable, proper, and reasonable and furthers the use, preservation, and development goals and strategies of the City;

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS:

1. ***Approval of Proposed Master Plan.*** The Planning Commission approves the proposed Master Plan, including all of the chapters, figures, descriptive matters, maps, and tables

contained therein.

2. ***Distribution to City Council.*** Pursuant to MCL 125.3843, the City Council has asserted by resolution its right to approve or reject the proposed Master Plan and therefore, the approval granted herein is not the final step for adoption of the plan as provided in MCL 125.3843. In addition, the Planning Commission hereby approves distribution of the proposed Master Plan to the City Council. The Planning Commission respectfully recommends that the City Council give final approval and adoption of the proposed Master Plan.
3. ***Findings of Fact.*** The Planning Commission has made the foregoing determination based on a review of existing land uses in the City, a review of the existing Master Plan provisions and maps, and input received from the City Council and at the public hearing, as well as the assistance of a professional planning group. The Planning Commission also finds that the proposed Master Plan will accurately reflect and implement the City's goals and strategies for the use, preservation, and development of lands within the City of Ionia.
4. ***Effective Date.*** The Master Plan will be effective upon adoption by the Ionia City Council.

PLANNING COMMISSION RESOLUTION 2025-01 DECLARED ADOPTED.

VII. OLD BUSINESS

None.

VIII. NEW BUSINESS

(VIII.1.) Final Site Plan Review for 283 S. Steele Street - Little Learners Child Care Center Assistant City Manager Bowman introduced the site plan review application submitted by Ms. Karie Robbins to convert 283 S. Steele Street into a child care facility. He provided feedback from Public Safety that the plan would need to be approved by the Michigan Bureau of Fire Service because of the intended use. Bowman also reported that the Department of Public Utilities did not have any concerns with the site plans besides informing the property owner that a stormwater sewer main crosses the southeast corner of the property.

Planning Consultant Kotrba reviewed the site plan review standards found in Section 1276.07 with the Commission. Kotrba noted questions related to landscaping, lighting, and dumpster screening for the Commission to address with the applicant. He indicated that remaining standards were met or could be addressed through conditions.

Vice Chairperson Kelley invited Karie Robbins and Kayla Hull to address the Planning Commission on their proposal. Robbins indicated that they would meet all landscaping requirements from the City. She also explained that she has been in communication with the Michigan Bureau of Fire Service and submitted plans for approval. Robbins noted that preliminary approval has already been received, and a final approval would be issued upon inspection by the Bureau after the renovations are completed. She responded to the question on waste management by indicating that if a dumpster is needed, it will be properly screened and placed at the back of the property, otherwise the typical carts will be used. Robbins mentioned that existing lighting locations would be utilized with upgraded fixtures.

Bowman requested further explanation of the intended business plan for operations.

Robbins responded with details on the improvements being made, which included HVAC, siding, fencing, playground, and striping of the parking lot. She indicated that 26–30 children would be enrolled dependent on licensing with the potential for more with a building expansion in the next few years.

Commissioner Lee asked about the hours of operation and the busy drop-off and pick-up time periods. He indicated that Matcor operates a third shift and creates the most traffic at 7:00 AM and 3:00 PM.

Ms. Hull explained that operations would be between 6:00 AM and 6:00 PM with drop-off between 6:00 and 9:00 AM and pick-up between 3:30 and 6:00 PM. Robbins added that each parent would have a set time frame for drop-off and pick-up to keep it manageable for staff. Hull shared that in her experience there are not more than 3 or 4 children being dropped off at one time.

Commissioner Lee asked when the applicant plans on opening.

Robbins said they are targeting a January 2026 opening.

Planning Commissioner Lee made a motion, seconded by Planning Commissioner Perry, to approve the site plan review for a child care center at 283 S. Steele Street, based on the findings that the proposed plan complies with the Site Plan Approval Standards of Chapter 1276 as discussed and subject to the approval by staff of the conditions and outstanding site plan items, as noted in the staff conditions and additional conditions created by the Planning Commission listed below.

MOTION CARRIED BY VOICE VOTE.

Staff Listed Conditions

1. The appropriate landscaping is installed within three months of the site work and construction completion per the requirements of Section 1286.02, which include:
 - a. Two canopy trees, two ornamental trees, and two evergreen trees are installed along the Steele Street road frontage.
 - b. The perimeter of the parking lot area has at least two canopy trees installed.
2. That any existing or proposed lighting be installed and maintained in accordance with Section 1286.03.
3. The outdoor dumpster location is adequately sized and screened in order to maintain a neat and orderly site and prevent vermin from entering the dumpster.
4. That any proposed signage receives a review and approval under Chapter 1284 as required per the City of Ionia Zoning Ordinance.
5. Receive any other permits or approvals necessary by any local, state, or federal permitting authority.
6. Best management practices for construction site management shall be maintained at all times for the health, safety, and welfare of the motorists, pedestrians, and neighboring property owners.

Planning Commission Conditions

1. Documentation must be provided to the City indicating approval from the Michigan Bureau of Fire Services.

(VIII.2.) Ordinance Amendment - Special Land Uses

Assistant City Manager Bowman introduced an ordinance amendment to allow parking as an accessory use to an adjacent lot through the Special Land Use process in the B-3, General Business District. The ordinance would create Section 1274.10 and amend Section 1260.03. He explained that this change was drafted by the City Attorney following an inquiry to allow parking as an accessory use to a primary use on an adjacent property located in Ionia Township.

The Commission had several questions on the proposed ordinance and expressed concerns about unintended consequences caused by this change for other properties in the B-3 District. Commissioners also requested that the City Attorney evaluate a maximum threshold on the permitted accessory use.

Planning Commissioner Perry made a motion, seconded by Planning Commissioner Lee, to assign an ordinance number and schedule a public hearing for the next Planning Commission meeting at Ionia City Hall on Wednesday, November 12 at 4:30 PM.

MOTION CARRIED BY VOICE VOTE.

IX. COMMISSIONER COMMENTS

None.

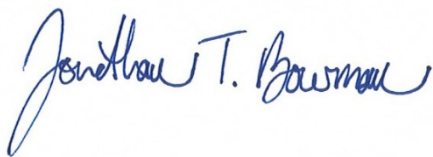
X. ADJOURNMENT

Planning Commissioner Lee made a motion, seconded by Planning Commissioner Perry, to adjourn.

MOTION Carried BY VOICE VOTE.

The meeting was adjourned at 5:22 PM.

Respectfully Submitted,



Jonathan T. Bowman, Recording Secretary
for Judy Swartz, Secretary



CITY OF IONIA

STAFF REPORT FOR PLANNING COMMISSION AGENDA ITEM

Agenda Item: VI.1

TO: Planning Commissioners

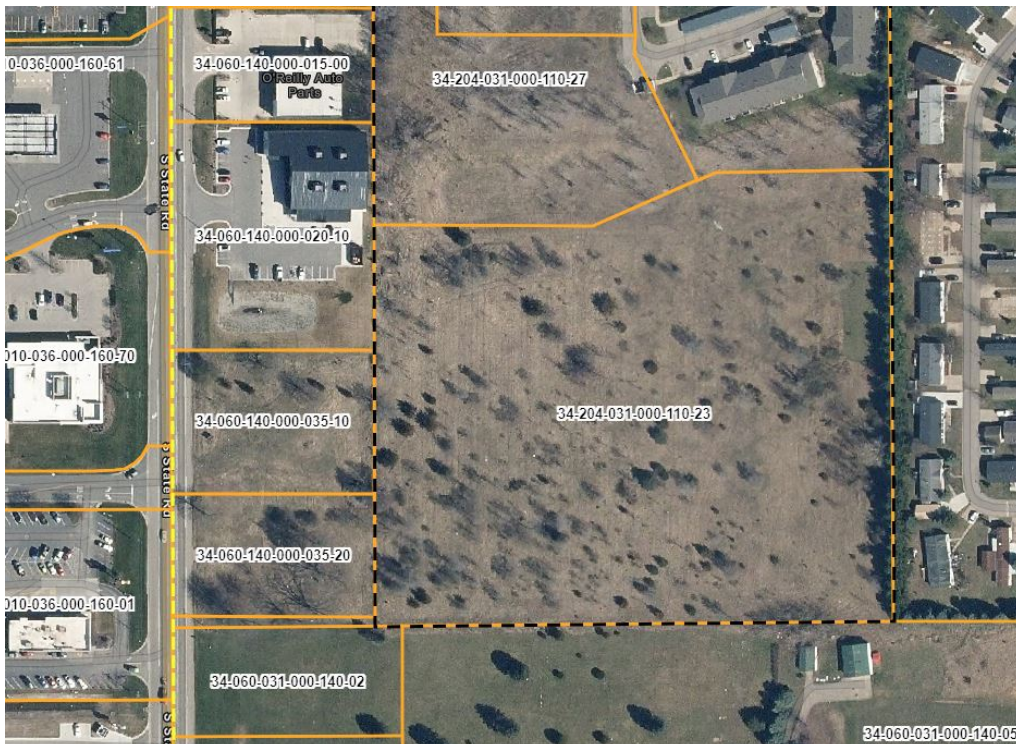
FROM: Jonathan Bowman, Assistant City Manager

DATE: November 12, 2025

RE: Public hearing to receive comments on Ordinance No. 601 to allow parking as an accessory use on an adjacent lot by Special Land Use in the B-3, General Business District

Background:

A developer has approached the City requesting to utilize a portion of their property within the City limits (PPN: 34-204-031-000-110-23) for parking associated with the development of property in Ionia Township (PPN: 34-060-140-000-035-10 and 34-060-140-000-035-20). All three of the parcels are owned by Abbey Residential Dec. LLC. See picture below.



The City's Zoning Code does not allow for a parking use on a vacant property without a primary structure or use. Parking is generally described as an accessory use as defined in Section 1240.11 of the Zoning Code. Additionally, parking requirements are intended to support the principal use of the property.

After consulting with the City Attorney, a solution to assist the developer with their project in Ionia Township was determined. This solution requires the City to amend its Zoning Code to allow parking as an accessory use to an adjacent lot. Staff recommend this accessory use then be added as a special land use to the zoning district in which the referenced property is located. Parcel 34-204-031-000-110-23 is zoned B-3, General Business District. The drafted ordinance would therefore regulate parking as an accessory use to an adjacent lot in a newly created Section 1274.10 within Chapter 1274 - Special Land Uses. Next, the ordinance would add this accessory use as an allowable special land use in the B-3 District via Section 1260.03. If the ordinance is adopted by City Council, the developer would then be able to submit a site plan and special land use permit application for Planning Commission's consideration.

Based on feedback from Planning Commission, the City Attorney has added clarifying language to Section 1274.10(a). This language emphasizes that the permitting of an accessory use is based on the site constraints or existing development. Along a similar thought process for allowing a zoning variance, the need for the accessory use should not be self-created. As the approval is a special land use, situations will be reviewed on a case-by-case basis, providing ample safeguards for the City.

Requested Action / Motion:

It is requested that the Planning Commission conduct a public hearing and decide whether to recommend that City Council approve or reject Ordinance No. 601, an ordinance to amend Section 1260.03 and enact a new Section 1274.10 entitled "Parking as an Accessory Use to an Adjacent Lot" of the Codified Ordinances of the City of Ionia.

Motion By:

Seconded By:

CITY OF IONIA
IONIA COUNTY, MICHIGAN
(Ordinance No. 601)

At a regular meeting of City Council for the City of Ionia, Michigan held at City Hall on _____, 2025, beginning at 6:30 P.M., City Councilmember _____ made a motion to adopt this Ordinance, which by motion was supported by Councilmember _____.

AN ORDINANCE TO AMEND CHAPTER 1260, SECTION 1260.03 AND ENACT A NEW SECTION 1274.10 ENTITLED “PARKING AS AN ACCESSORY USE TO AN ADJACENT LOT” OF THE CODIFIED ORDINANCES OF THE CITY OF IONIA.

The CITY OF IONIA (the “City”) HEREBY ORDAINS:

Section 1. Amendment to Part Twelve, Title Six, Chapter 1260, Section 1260.03. Part Twelve, Title Six, Chapter 1260, Section 1260.03 of the Codified Ordinances is hereby amended as follows:

1260.03 SPECIAL LAND USES.

The following uses may be allowed subject as a special land use by the Planning Commission subject to the general and specific requirements of Chapter 1274:

- (a) Business in the character of a drive-in or open front store.
- (b) Indoor and outdoor commercial storage and warehousing facilities.
- (c) Lumber yards, provided they comply with the following conditions:
 - (1) Primary access shall be provided on a major street or highway.
 - (2) The maximum size allowed when considering total land size shall not exceed 2.25 acres.
 - (3) No greater than thirty percent (30%) of the sellable goods shall be stored in the open air.
- (d) Plant materials nursery for the retail sale of plant materials not grown on the site and sales of lawn furniture, playground equipment, and garden supplies, subject to the following conditions:
 - (1) The storage and/or display of any materials and/or products shall meet all structure setback requirements.
 - (2) All loading and parking shall be provided off-street.

- (3) The storage of any soil, fertilizer, or other loose, unpackaged materials shall be contained to prevent any effects on adjacent use.
- (e) Outdoor theaters and open space venues - because outdoor theaters are unique in that they are used only after dark and since they develop a concentration of vehicular traffic entering and leaving their parking area, they shall be permitted in B-3 and I-1 districts only. Outdoor theaters shall further be subject to the following conditions:
 - (1) The proposed internal design shall receive approval from the Planning Commission and City Engineer regarding the adequacy of drainage, lighting, and other technical aspects based on applicable legal requirements.
 - (2) Outdoor theaters shall abut a major thoroughfare, and points of ingress and egress shall be available only from such major thoroughfares.
 - (3) All vehicles queuing up to enter the facility shall be provided with off-street waiting space. No vehicle shall be permitted to wait or stand within a dedicated right-of-way.
 - (4) The area shall be laid out to prevent the movie screen from being viewed from residential areas or adjacent major thoroughfares. All lighting used to illuminate the area shall be confined within and directed onto the outdoor theater site premises and subject to Section 1286.03.
- (f) Veterinary Hospitals or Veterinary Clinics, provided that all activities are conducted within an enclosed building and provided, further, that all buildings are set back at least 200 feet from abutting residential districts on the same side of the street.

(g) Parking as an accessory use to an adjacent lot, subject to Section 1274.10.

Section 2. Enactment of Part Twelve, Title Six, Chapter 1274, Section 1274.10. Part Twelve, Title Six, Chapter 1274 of the Codified Ordinances is hereby amended to enact a new Section 1274.10 to read in its entirety as follows:

1274.10 PARKING AS AN ACCESSORY USE TO AN ADJACENT LOT.

- (a) Notwithstanding the general requirement of Section 1240.11(1) that an accessory use be located on the same zoning lot as the principal use to which it is related, the Planning Commission may permit parking as an accessory use to an adjacent lot if the applicant demonstrates that the proposed parking cannot be reasonably placed on the same lot as the principal use due to site constraints or existing development.
- (b) For purposes of the setback requirements under Section 1282.01(a), the barrier-free parking requirements under Section 1282.02(q), and calculating minimum and maximum parking space requirements, the two lots shall be considered one lot.
- (c) All requirements under Chapter 1282 apply to parking approved under this section, provided, however, that if the principal use is on a lot outside of the City, the minimum and maximum parking space requirements shall not apply.

(d) As part of approval under this section, the Planning Commission may allow a dumpster enclosure or similar accessory structure that serves the principal use on the adjacent lot, subject to all applicable requirements of this Ordinance.

(e) In addition to any conditions that the Planning Commission may impose under Section 1274.05, the Planning Commission shall impose the following conditions with approval of a special land use under this section:

(1) The provision for parking as an accessory use to an adjacent lot shall be set forth in a recordable instrument recorded at the office of the Ionia County Register of Deeds, describing the lands affected by this agreement.

(2) The special land use approval shall automatically terminate if (A) the principal use on the adjacent lot ceases or changes or (B) the instrument required under Section 1274.10(d)(1) is found to be invalid or void by a court of competent jurisdiction or is terminated.

(3) Accessory structures shall not be allowed unless made part of said approval when granted.

Section 3. Severability. Should any portion of this Ordinance be declared to be invalid or unconstitutional by a court of competent jurisdiction, such declaration shall not affect any other portion or provision of this Ordinance, which shall remain valid and in full force and effect.

Section 4. Effective Date. This Ordinance shall become effective upon the expiration of seven (7) days after this Ordinance's adoption, or a summary thereof, appears in the newspaper as provided by law.

The vote to approve and adopt this Ordinance was as follows:

YEAS: _____

NAYS: _____

ABSENT/ABSTAIN: _____

ORDINANCE NO. 601 DECLARED ADOPTED.

CITY OF IONIA

Dated: _____

Jonathan T. Bowman, City Clerk

CERTIFICATION

I hereby certify that the above is a true copy of the Ordinance adopted by the City Council of the City of Ionia as of the date, time, and place as specified above, pursuant to the required statutory procedures.

Jonathan T. Bowman, City Clerk

Introduction and First Reading:
Notice of Public Hearing:
Public Hearing, Second Reading, Adoption:
Effective (7 days after publication):

DRAFT



CITY OF IONIA

STAFF REPORT FOR PLANNING COMMISSION AGENDA ITEM

Agenda Item: VIII.1

TO: Planning Commissioners
FROM: Jonathan Bowman, Assistant City Manager
DATE: November 12, 2025
RE: Steele Park Site Plan Review

Background:

The Planning Commission is being asked to review a public recreation project for the Parks and Recreation Department to develop the initial phase of Steele Park. This project has been in the works for many years and was included in the past two Master Plans as varying concepts. The City has received a grant from the Michigan Department of Natural Resources under the Natural Resources Trust Fund Grant Program to assist with the costs of the project. The approved grant amount is \$400,000; the City's required match is \$532,300.

The design includes paved parking, a performing arts pavilion, a restrooms/storage building, two pickleball courts, a grass volleyball court, and pedestrian pathways throughout, including a connection to the Fred Meijer Grand River Valley Rail Trail. The Master Plan anticipated this property being used for parks and recreation, due to its location in the floodplain. Recreational space is the highest and best potential use for the property. The floodplain still poses challenges to site development, and there are strict environmental requirements from the Michigan Department of Environment, Great Lakes, and Energy (EGLE). For example, the City was required to obtain a Part 31 Floodplain Permit that restricts the quantities of soil that can be "cut" and "filled" on the property. These environmental considerations require grading to be finished for the entire 7.7 acre parcel during the initial development phase, even though the current project will only affect the northern portion of the site. This has resulted in higher than anticipated costs above and beyond the typical inflationary increases since the grant application was submitted.

The City's landscape design architect for this project is MCSA Group from East Grand Rapids. Based on the scope of the project from submitted grant applications, staff have worked with MCSA to trim the project back and evaluate cost-saving measures. MCSA estimates the current phase of Steele Park to cost \$1,577,386. In addition to the Trust Fund Grant, the City has received a \$185,600 Revitalization and Placemaking Grant from the Michigan Economic Development Corporation for the performing arts pavilion and a tree grant to offset some of the landscaping costs. However, even with the additional grant funding, this park project will require a significantly higher than expected local match from the City. For this reason, fundraising options are being considered, and City Council approved the option of naming rights for the performing arts pavilion, if a donation of over \$100,000 is received.

Attached for review by the Commission are the site plan and project renderings. A representative from MCSA will be present to answer any questions about the park design.

Requested Action / Motion:

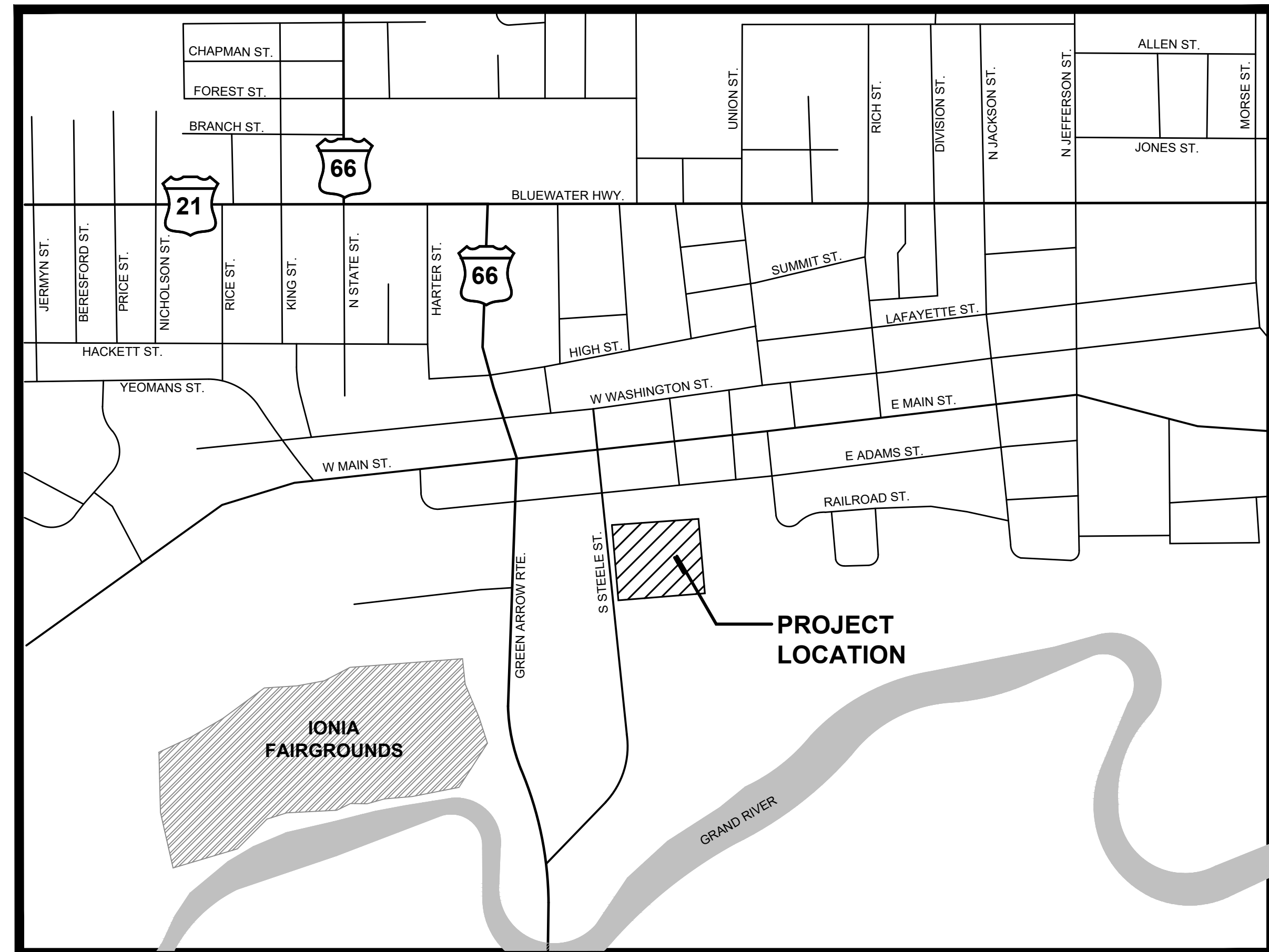
It is requested that the Planning Commission review the provided plans and consider a motion to approve the final site plans for Steele Park.

Motion By:

Seconded By:

CONSTRUCTION PLANS STEELE PARK IMPROVEMENTS

CITY OF IONIA, MICHIGAN
11.03.25



LOCATION MAP

NOT TO SCALE



CONSULTING TEAM MEMBERS:

Topographic and Civil Engineering

LRE Engineers & Surveyors

2121 3 Mile Road NW
Walker, MI 49544
(616) 301-7888

Structural

Classic Engineering

100 Grandville Ave SW Ste 400
Grand Rapids, MI 49503
(616) 742-2810

Geotechnical

Soils & Structures

6480 Grand Haven Rd
Muskegon, MI 49441
(800) 933-3959

Mechanical, Electrical, & Plumbing Engineering

Matrix Engineering

2828 Kraft Ave SE Suite 149
Grand Rapids, MI 49512
(517) 487-2511

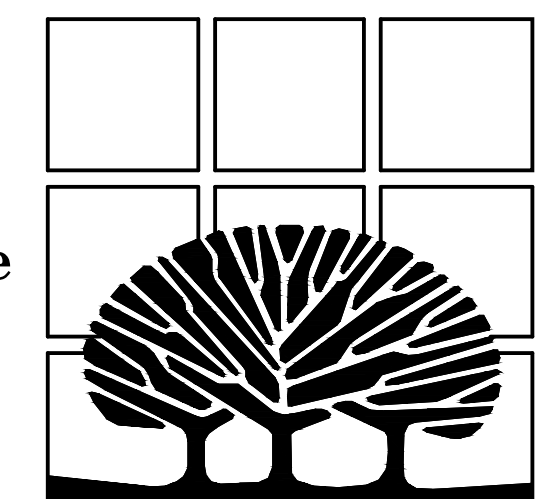
SHEET INDEX

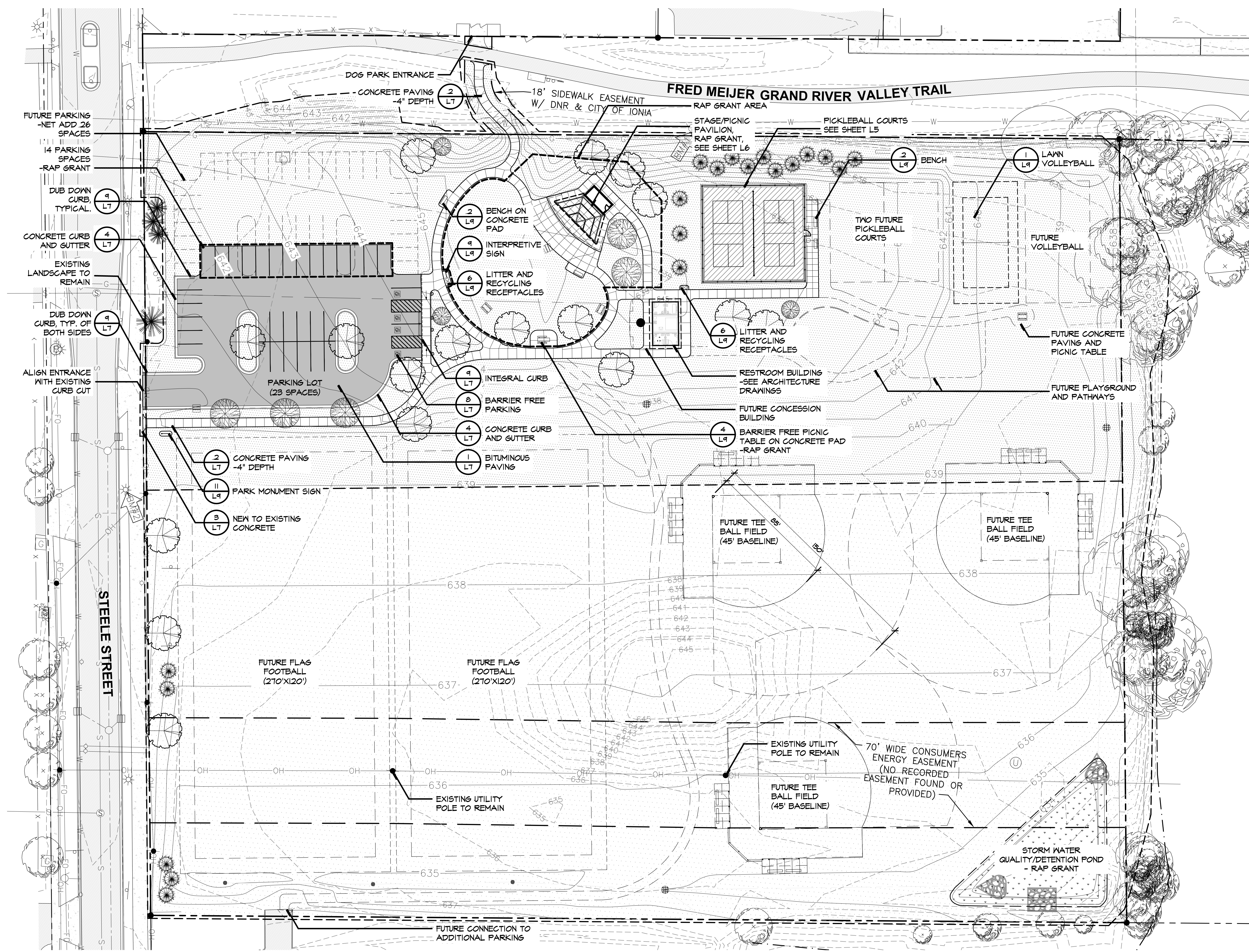
L1	Site Plan
L2	Existing Conditions & Removals Plan
L3	Layout Plan
L4	Landscape Plan
L5	Pickleball Court Enlargement Plan
L6	Pavilion Enlargement Plan
L7-10	Construction Details
C1	Topographic & Boundary Survey
C2	Grading and SESC Plan
C3	Utility Plan
C4	Details
A1	Floor Plans, Schedules
A2	Exterior Elevations, Sections
S001	Structural Notes
S101	Structural Foundation Plans
S102	Structural Framing Plans
S301	Structural Foundation Details
S401	Structural Framing Details
M-100	Mechanical Symbols, Notes, and Abbrev.
MP-100	Mechanical and Plumbing Specifications
M-400	Floor Plan - Mechanical New
P-100	Plumbing Symbols, Notes, and Abbrev.
P-400	Floor Plan-Plumbing New
E-100	Electrical Notes, Symbols, and Abbrev.
E-101	Electrical Specifications
E-400	Restroom Building-Lighting
E-401	Pavilion Area-Lighting
E-500	Restroom Building-Power
E-501	Pavilion Area-Power
E-600	Electrical Riser Diagram
E-800	Electrical Details

MCSA GROUP, INC.

Landscape Architecture • Park & Recreation Planning • Architecture
Downtown Planning • Interior Design • Sports Facility Planning

529 Greenwood Avenue S.E. • East Grand Rapids, MI 49506
616-451-3346 • FAX: 616-451-1935 • EMAIL: tas@mcsagroup.com




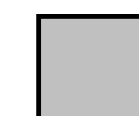
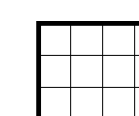
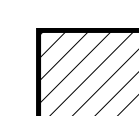

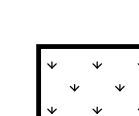
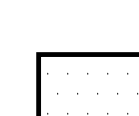



SITE GENERAL NOTES:

1. SITE PLAN SHOWN FOR GENERAL INFORMATION AND DETAIL REFERENCE ONLY. SEE FOLLOWING PLAN SHEETS FOR SITE REMOVALS, EXISTING CONDITIONS, LAYOUT, GRADING, AND PLANTING INFORMATION.

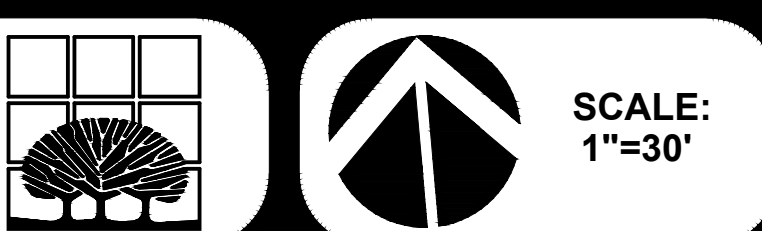
COMPLIANCE:

- ALL CONSTRUCTION SHALL CONFORM TO ALL ASPECTS OF THE STATE OF MICHIGAN BUILDING CODE (MBC), THE ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADAAG) AND THE AMERICANS WITH DISABILITIES ACT (ADA). ALL WORK BY THE CONTRACTOR FOR COMPLETE EXECUTION OF THIS PROJECT SHALL MEET OR EXCEED LAWS, GUIDELINES, AND STATUTES IN EVERY SITUATION. IN THE EVENT THE CONTRACTOR BELIEVES THAT ANY PORTION OF THE WORK IS INCONSISTENT WITH THE MBC, ADAAG, AND ADA THEY MUST IMMEDIATELY INFORM THE LANDSCAPE ARCHITECT.

- SITE PLAN LEGEND**
-  DETAIL NUMBER SHEET NUMBER
 -  BITUMINOUS PAVING
 -  CONCRETE PAVING -4" DEPTH
 -  POST TENSION CONCRETE PICKLEBALL COURTS WITH ACRYLIC SURFACING
 -  LAWN SEEDING WITH 4" OF TOP SOIL
 -  NATIVE STORM WATER BASIN SEED MIX
 -  MDOT ROADSIDE SEED MIX
 -  LIMIT OF WORK

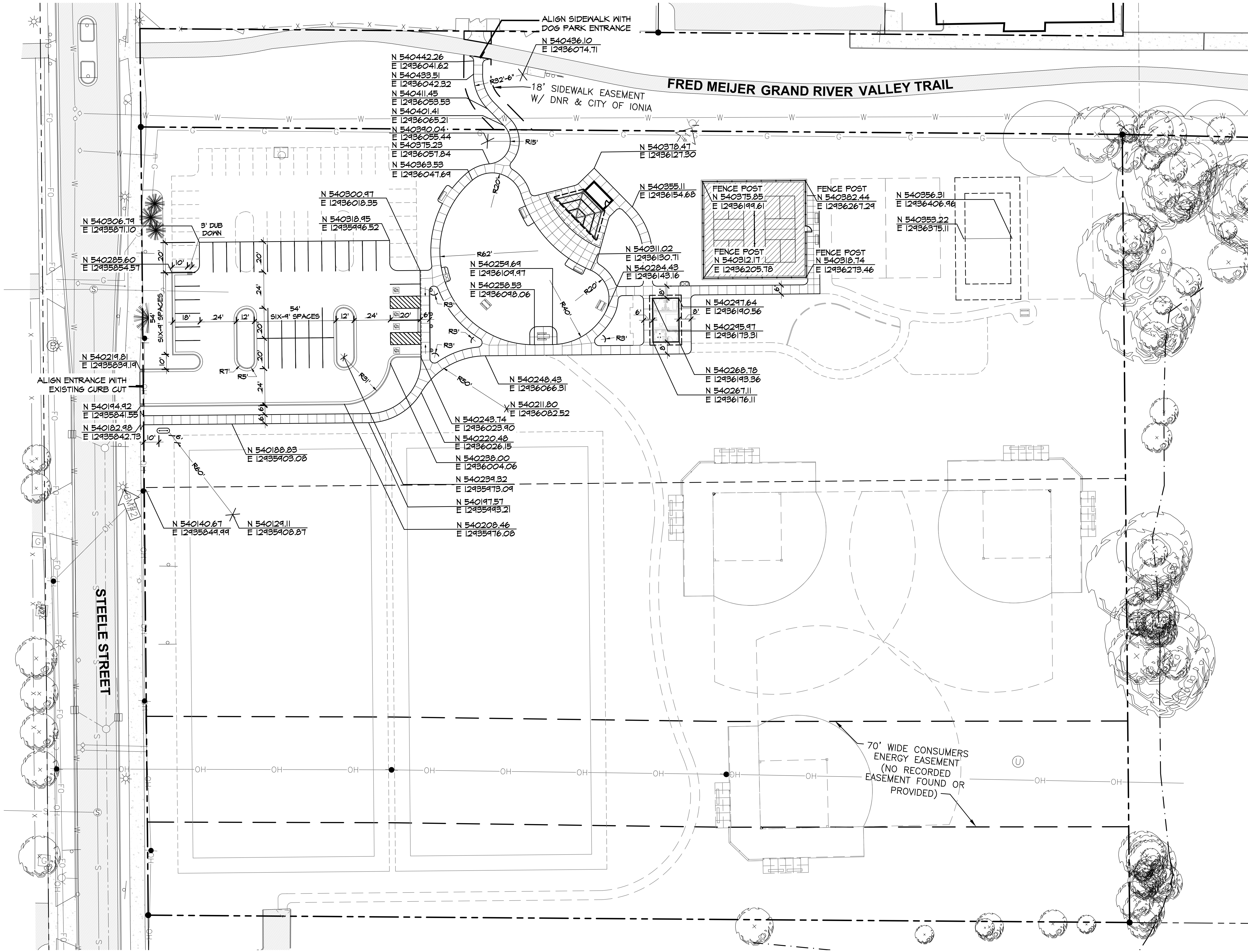
STEELE PARK IMPROVEMENTS
CITY OF IONIA, MICHIGAN

MCSA GROUP, INC.
Landscape Architecture • Park & Recreation Planning • Architecture
Downtown Planning • Interior Design • Sports Facility Planning
529 Greenwood Avenue S.E. • East Grand Rapids, MI 49506
616-451-3346 • FAX: 616-451-1935 • EMAIL: tas@mcsgroup.com



Site Plan

DATE	PROJECT NO.
11.03.2025	2252
REVISIONS	SHEET NO.
	L1



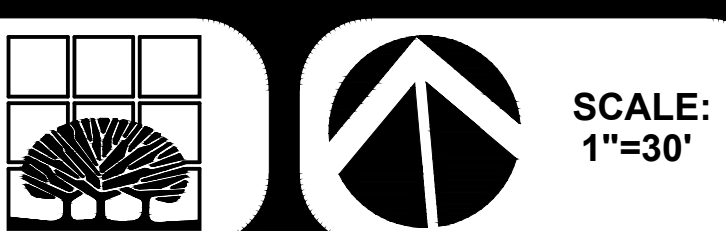
- LAYOUT NOTES:**
1. ALL LAYOUT IS TO BE STAKED BY THE CONTRACTOR FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.
 2. NORTHINGS AND EASTINGS REFLECT MAJOR END POINTS OF SITE ELEMENTS. THESE NORTHINGS AND EASTINGS MAY ONLY BE ADJUSTED WITH THE APPROVAL OF THE LANDSCAPE ARCHITECT.
 3. NORTHING/EASTING AND DIMENSIONS OF CURB AND GUTTER ARE TAKEN FROM FLOW LINE.
 4. CONTRACTOR SHALL VERIFY IN THE FIELD ALL LINES AND DIMENSIONS INDICATED IN THE PLANS AND REPORT ANY INCONSISTENCIES TO THE LANDSCAPE ARCHITECT FOR RESOLUTION.
 5. ALL ANGLES ARE PERPENDICULAR UNLESS OTHERWISE NOTED.
 6. CONTRACTOR TO RECEIVE ELECTRONIC FILES OF PLANS IN AUTOCAD 2024 PRIOR TO CONSTRUCTION.
 7. ADDITIONAL DIMENSIONS AND COORDINATES CAN BE AVAILABLE UPON REQUEST.

COMPLIANCE:

- ALL CONSTRUCTION SHALL CONFORM TO ALL ASPECTS OF THE STATE OF MICHIGAN BUILDING CODE (MBC), THE ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADAAG) AND THE AMERICANS WITH DISABILITIES ACT (ADA). ALL WORK BY THE CONTRACTOR FOR COMPLETE EXECUTION OF THIS PROJECT SHALL MEET OR EXCEED LAWS, GUIDELINES, AND STATUTES IN EVERY SITUATION. IN THE EVENT THE CONTRACTOR BELIEVES THAT ANY PORTION OF THE WORK IS INCONSISTENT WITH THE MBC, ADAAG, AND ADA THEY MUST IMMEDIATELY INFORM THE LANDSCAPE ARCHITECT.

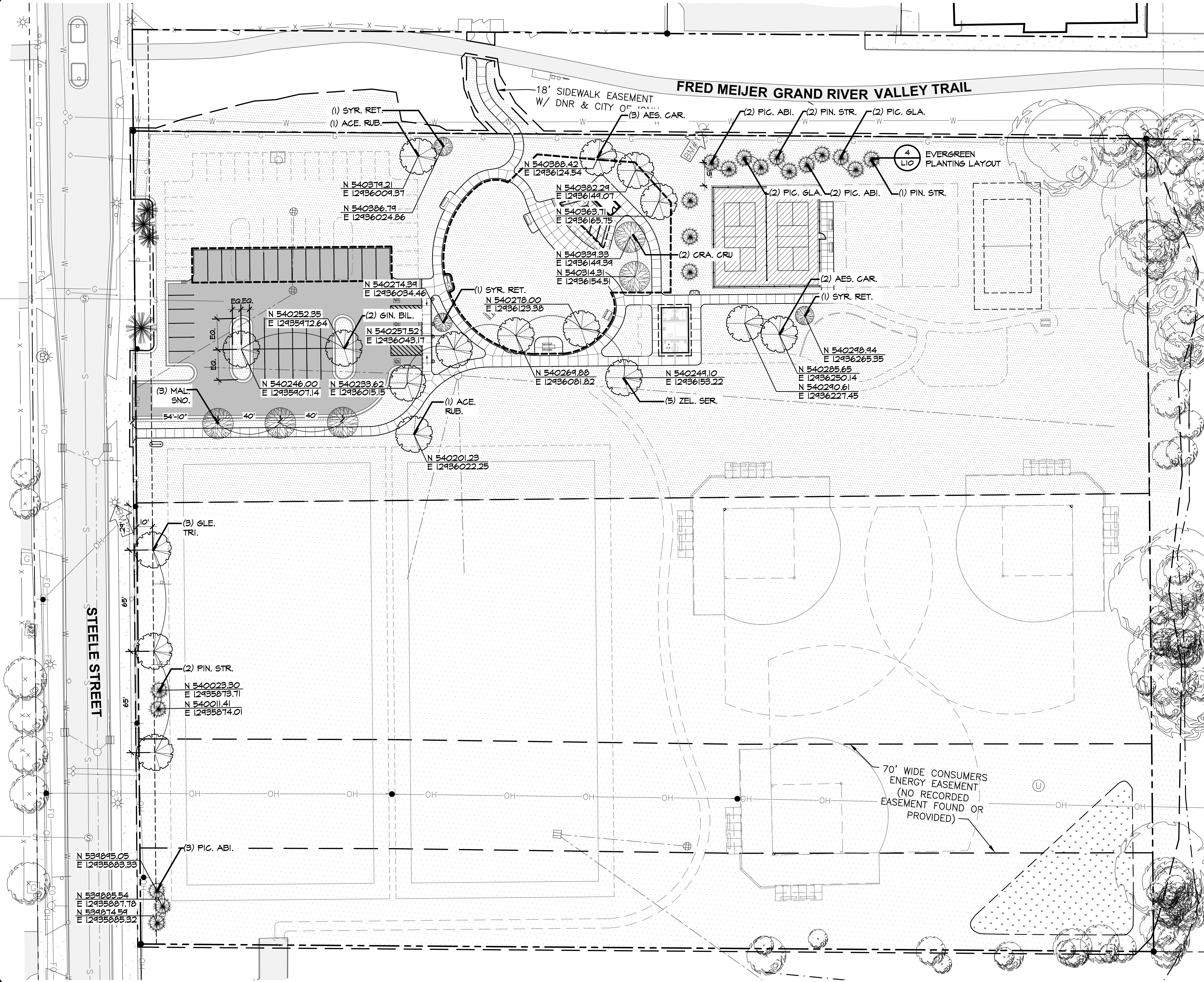
STEELE PARK IMPROVEMENTS
CITY OF IONIA, MICHIGAN

MCSA GROUP, INC.
Landscape Architecture • Park & Recreation Planning • Architecture
Downtown Planning • Interior Design • Sports Facility Planning
529 Greenwood Avenue S.E. • East Grand Rapids, MI 49506
616-451-3346 • FAX: 616-451-1935 • EMAIL: tas@mcsgroup.com



Layout Plan

DATE	PROJECT NO.
11.03.2025	2252
REVISIONS	SHEET NO.
	L3



LANDSCAPE NOTES

1. PLANTING SOIL AND MULCH FOR ALL TREES, SHRUBS, AND PERENNIALS SHALL BE AS PER APPROPRIATE DETAIL.
2. ALL TREES TO BE STAKED BY THE CONTRACTOR FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO ANY INSTALLATION.
3. TREES SHALL BE FURNISHED, BALLED, AND BURLAPPED.
4. SEED ALL DISTURBED AREAS. SEED LIMIT LINE (LIMITS OF DISTURBANCE) IS APPROXIMATE, ALL DISTURBED AREAS SHALL BE SEEDED AND RESTORED, UNLESS OTHERWISE NOTED.
5. SEE SPECIFICATION FOR SEED MIX.
6. CONTRACTOR TO FURNISH AND INSTALL 4" MINIMUM OF SCREENED TOPSOIL ON ALL AREAS TO RECEIVED SEED. EXISTING ON SITE TOP SOIL MAY BE USED. IT MUST TESTED AND AMENDED PER SPECIFICATIONS. IF THERE IS NOT ENOUGH TOPSOIL TO ACHIEVE A MINIMUM OF 4" DEPTH, THEN TOP SOIL SHALL BE IMPORTED.
7. FINISH SURFACE OF SEEDED LAWN SHALL BE 1" BELOW TOP FINISH SURFACE OF WALK TO ALLOW FOR GROWTH OF TURF.

PLANTING LEGEND

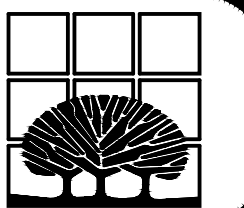
- LAWN SEEDED WITH 4" OF TOP SOIL
- NATIVE STORM WATER BASIN SEED MIX
- MDOT ROADSIDE SEED MIX
- LIMIT OF WORK

PLANT MATERIAL LIST

PLANT KEY	TOTAL QUANTITY	SIZE	COMMON NAME BOTANICAL NAME
EVERGREEN TREES			
PIC. ABI.	7	6' HT.	NORWAY SPRUCE <i>Picea abies</i>
PIC. GLA.	4	6' HT.	BLACK HILLS SPRUCE <i>Picea glauca 'Densata'</i>
PIN. STR.	5	6' HT.	EASTERN WHITE PINE <i>Pinus strobus</i>
DECIDUOUS TREES			
ACE. RUB.	2	2.5" CAL.	RED SUNSET RED MAPLE <i>Acer rubrum 'Franksred'</i>
AES. CAR.	5	2.5" CAL.	RED HORSE CHESTNUT <i>Aesculus x carnea 'Briotii'</i>
GIN. BIL.	2	2.5" CAL.	GINKGO <i>Ginkgo biloba</i>
GLE. TRI.	3	2.5" CAL.	'STREET KEEPER' HONEYLOCUST <i>Gleditsia triacanthos 'Street Keeper'</i>
ZEL. SER.	5	2.5" CAL.	GREEN VASE JAPANESE ZELKOVA <i>Zelkova serrata 'Green Vase'</i>
ORNAMENTAL TREES			
CRA. CRU.	2	2.0" CAL.	THORNLESS COCKSPUR HAWTHORN <i>Crataegus cruso-galli var. inermis</i>
MAL. SNO.	3	2.0" CAL.	SNOWDRIFT FLOWERING CRABAPPLE <i>Malus 'Snowdrift'</i>
SYR. RET.	3	2.0" CAL.	IVORY SILK JAPANESE LILAC TREE <i>Syringa reticulata 'Ivory Silk'</i>

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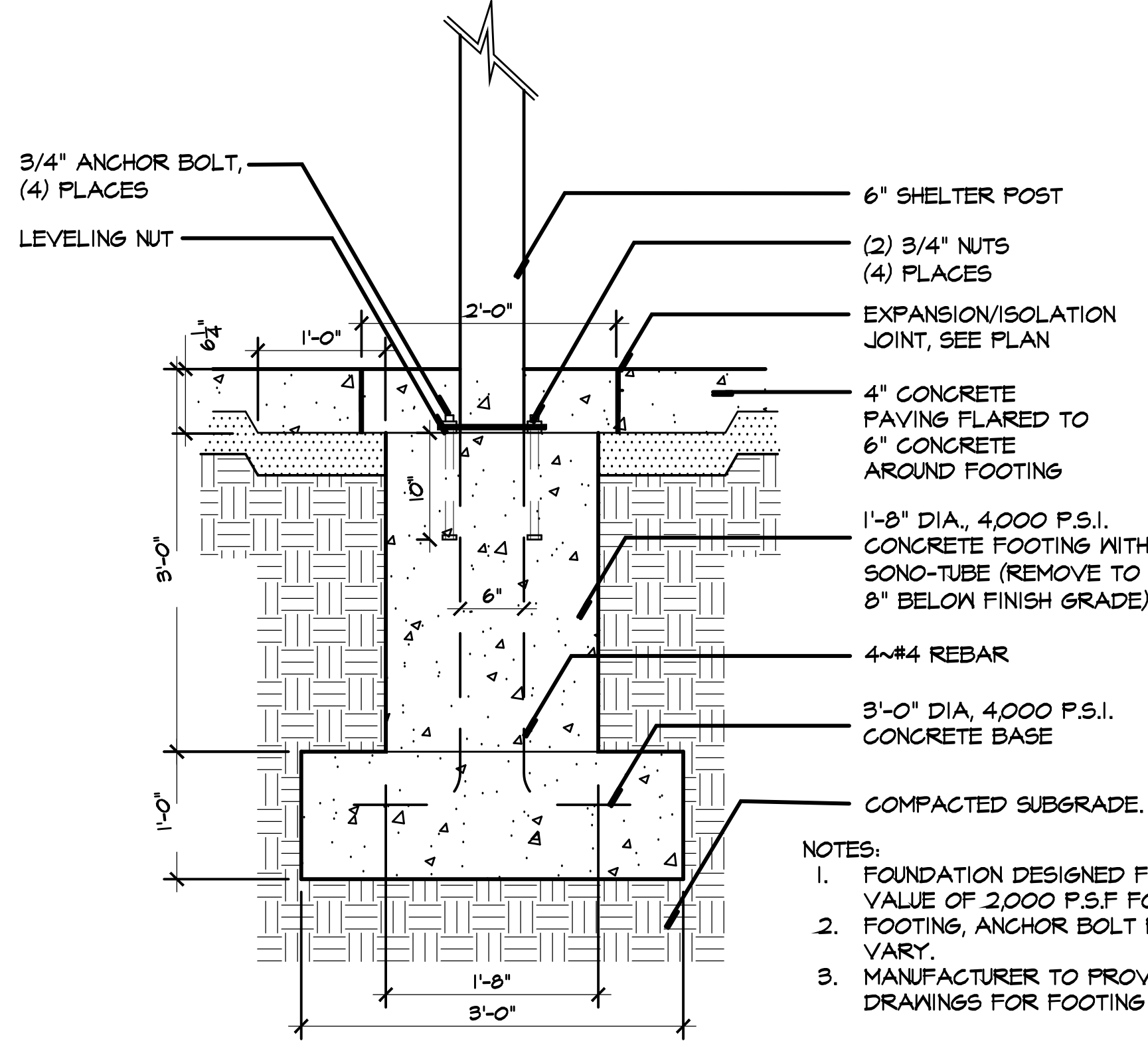
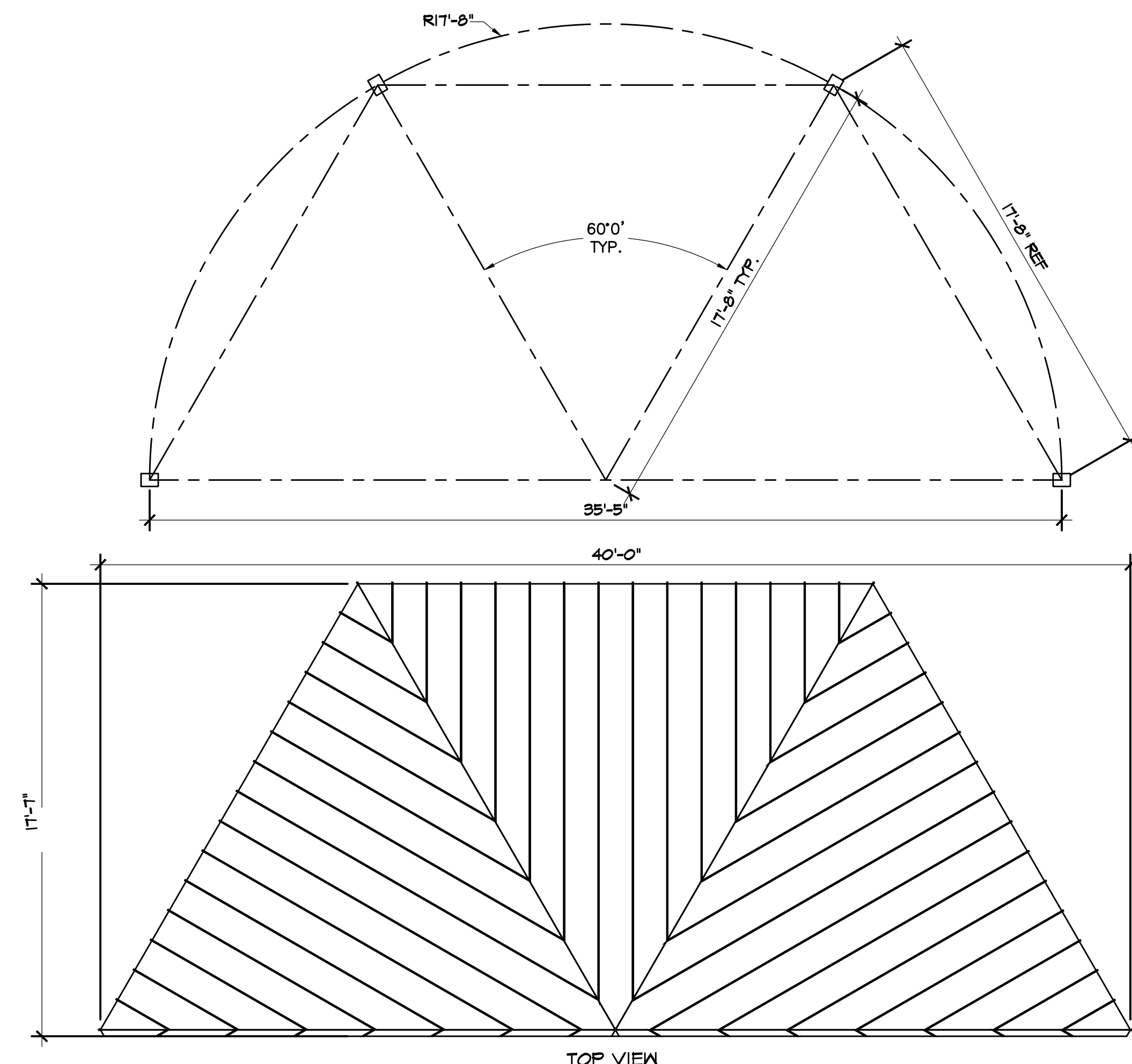


SCALE:
1"=30'

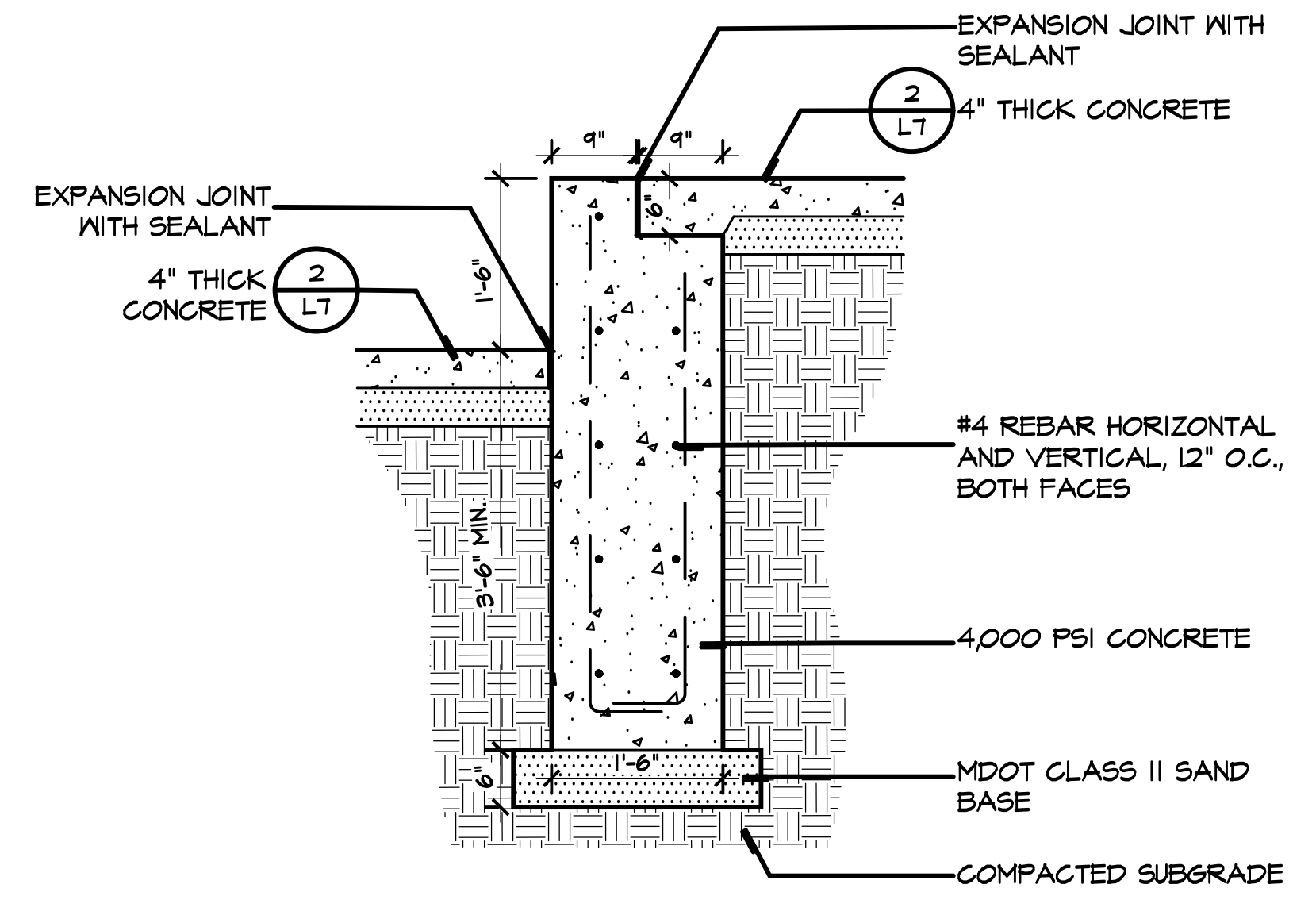
Landscape Plan

DATE
11.03.2025
REVISIONS

PROJECT NO.
2252
SHEET NO.
L4

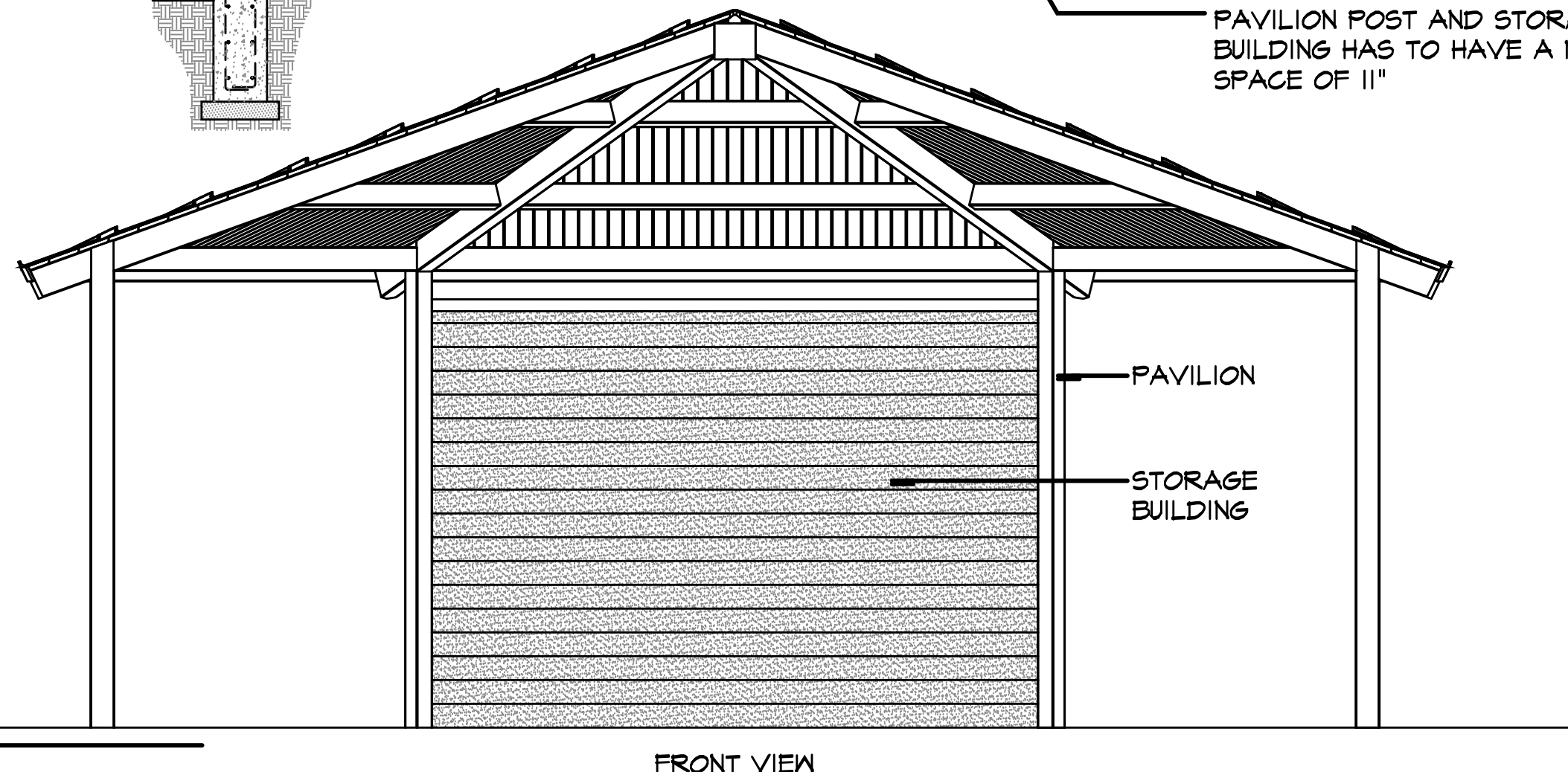
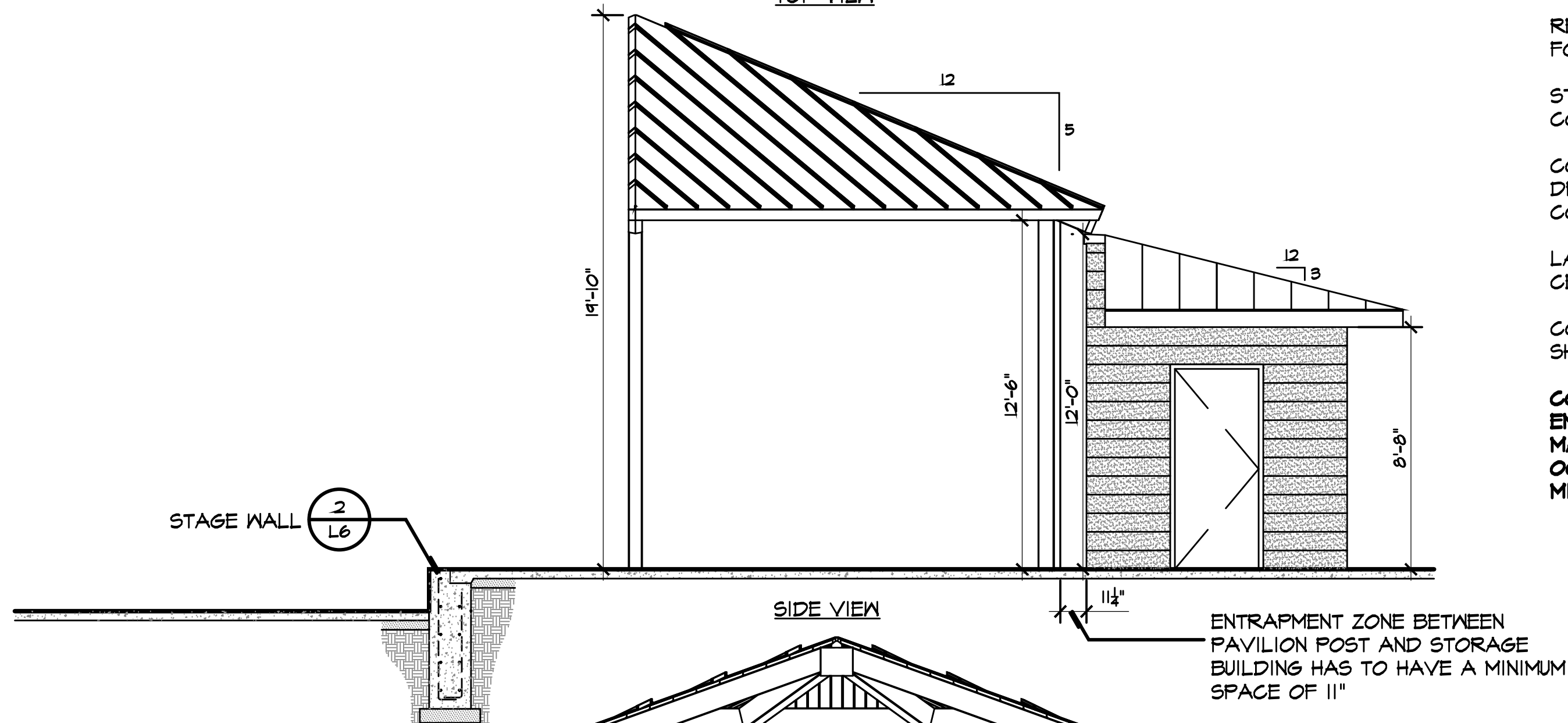


3 Shelter Footing
Scale: 1"=1'-0"

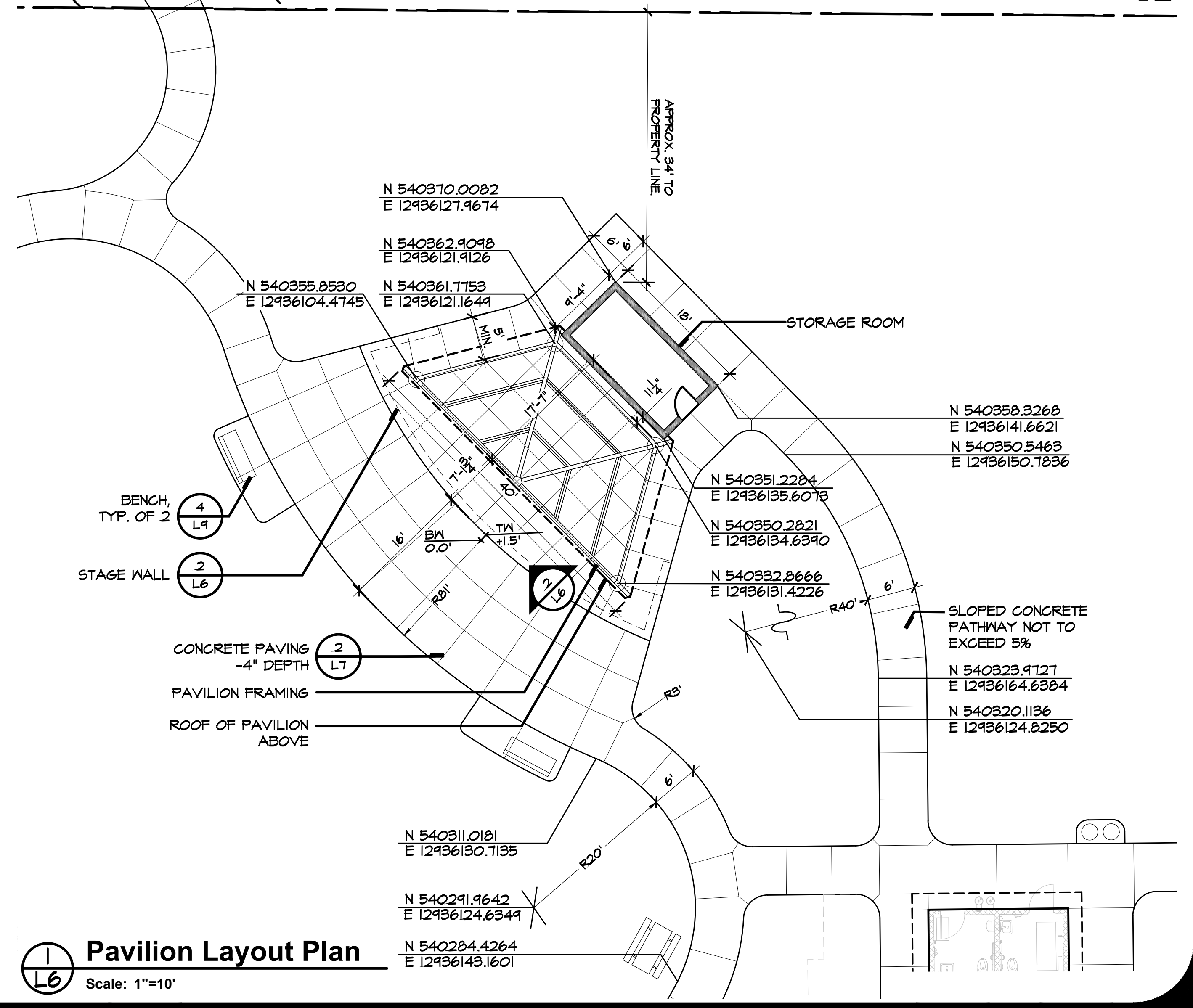


2 Stage Wall
Scale: 3/4"=1'-0"

PAVILION NOTES:
REFER TO MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION.
STEEL FRAMING, COLUMNS, AND ROOF COLOR TO BE PER LANDSCAPE ARCHITECT.
CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.
LAYOUT ALL PAVILION ELEMENTS FROM THE CENTER OF THE SHELTER.
COORDINATE LAYOUT WITH FINAL SHELTER SHOP DRAWINGS.
CONTRACTOR TO PROVIDE ALL NECESSARY ENGINEERING DRAWINGS FROM MANUFACTURER TO ACQUIRE BUILDING OCCUPANCY PERMIT FROM THE STATE OF MICHIGAN



4 Pavilion
Scale: 1/4"=1'-0"



1 Pavilion Layout Plan
Scale: 1"=10'

STEELE PARK IMPROVEMENTS
CITY OF IONIA, MICHIGAN

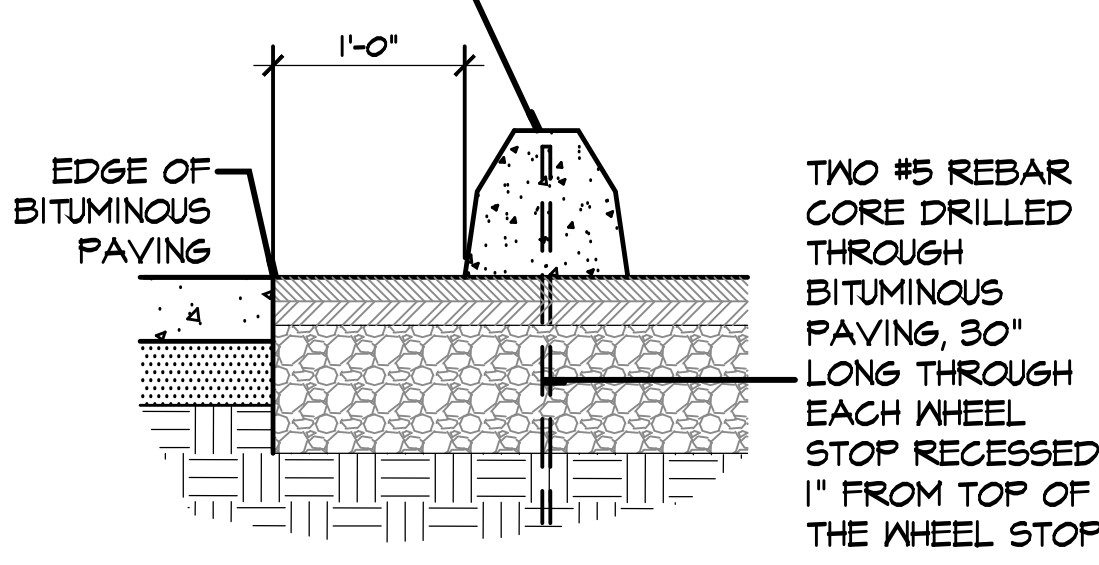
MCSA GROUP, INC.
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529 Greenwood Avenue S.E. • East Grand Rapids, MI 49506
616-451-3346 • FAX: 616-451-1935 • EMAIL: tas@mcsagroup.com

SCALE:
As Shown

Pavilion Enlargement Plan

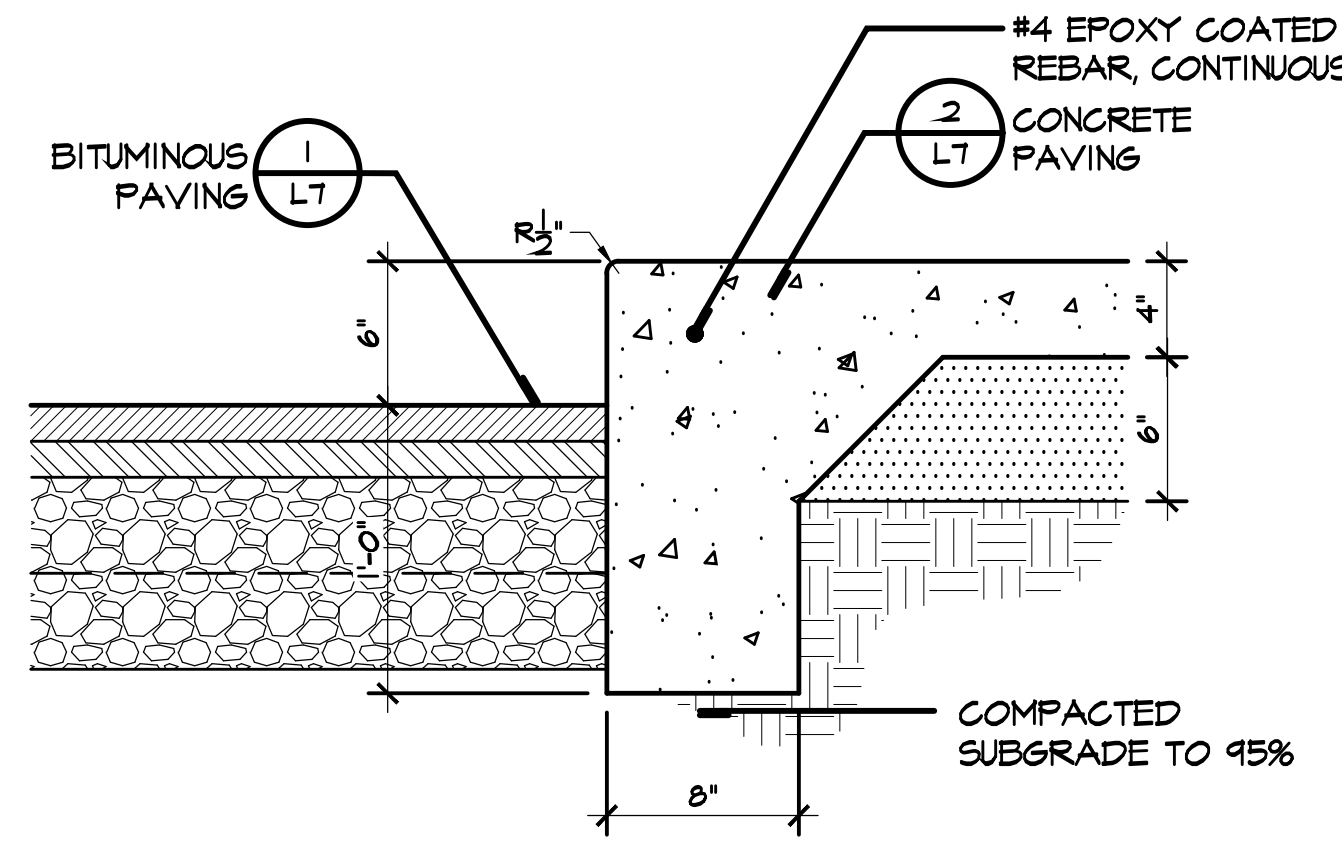
DATE: 11.03.2025
PROJECT NO.: 2252
SHEET NO.: L6

CONCRETE BUMPER BLOCK 7'-0" LONG, CENTERED ON PARKING SPACE. MODEL NUMBER TBB OR APPROVED EQUAL, AVAILABLE FROM BUSH CONCRETE PRODUCTS, INC. PH: 1-800-866-2874



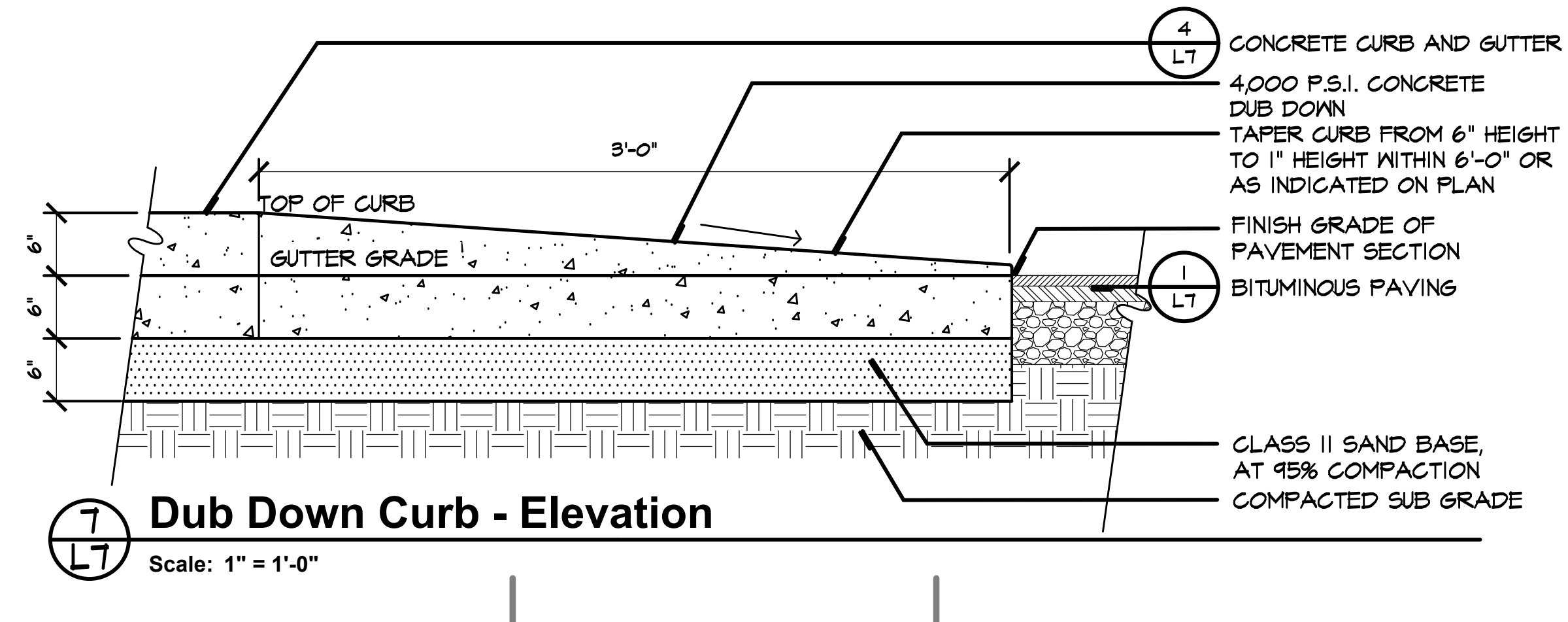
10 Concrete Wheel Stop

Scale: 1"=1'-0"



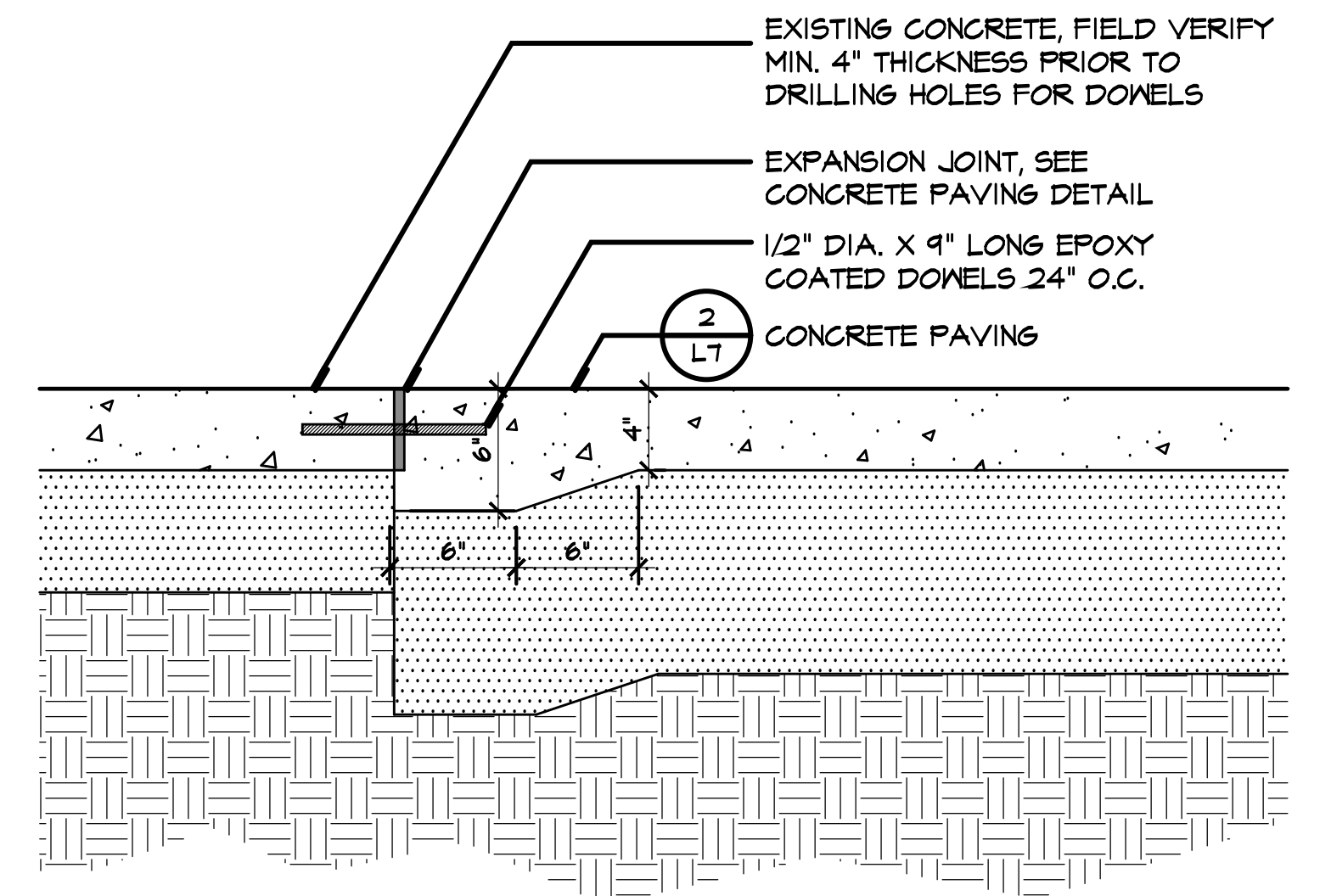
9 Sidewalk with Integral Curb

Scale: 1-1/2"=1'-0"



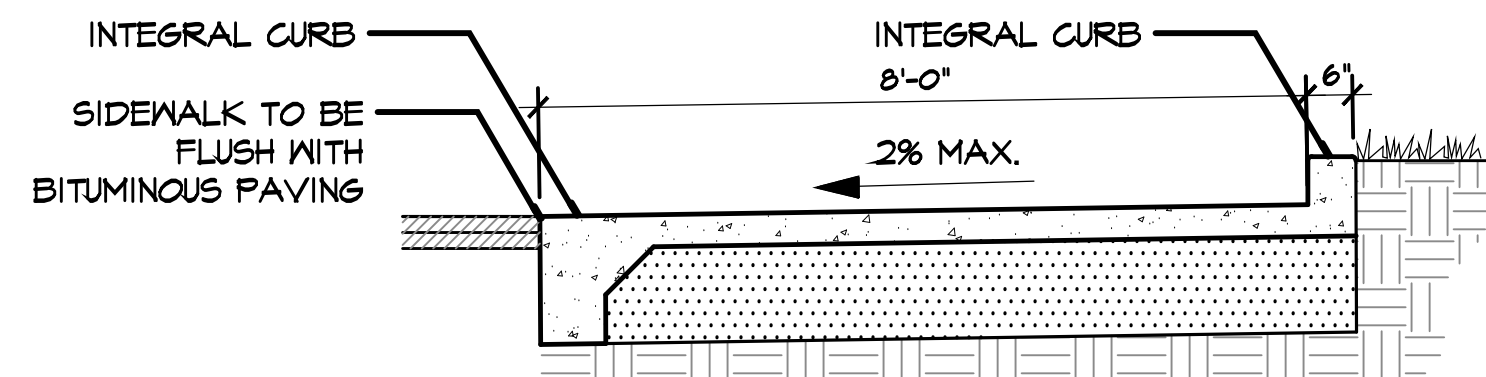
7 Dub Down Curb - Elevation

Scale: 1" = 1'-0"

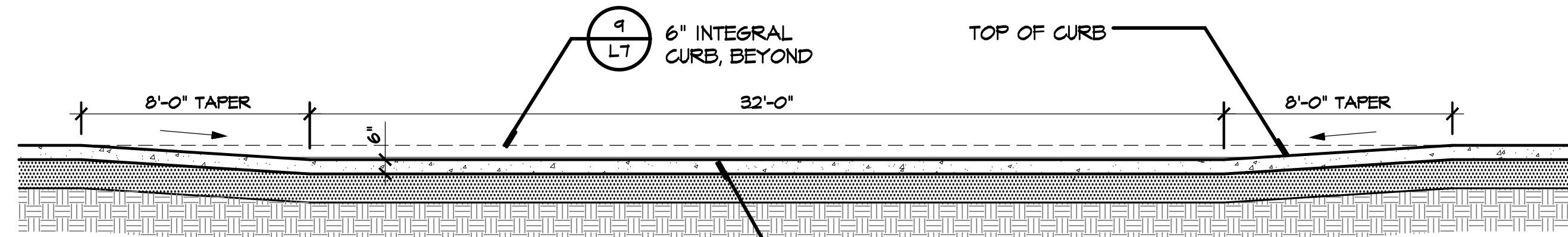


3 New Concrete at Existing Concrete

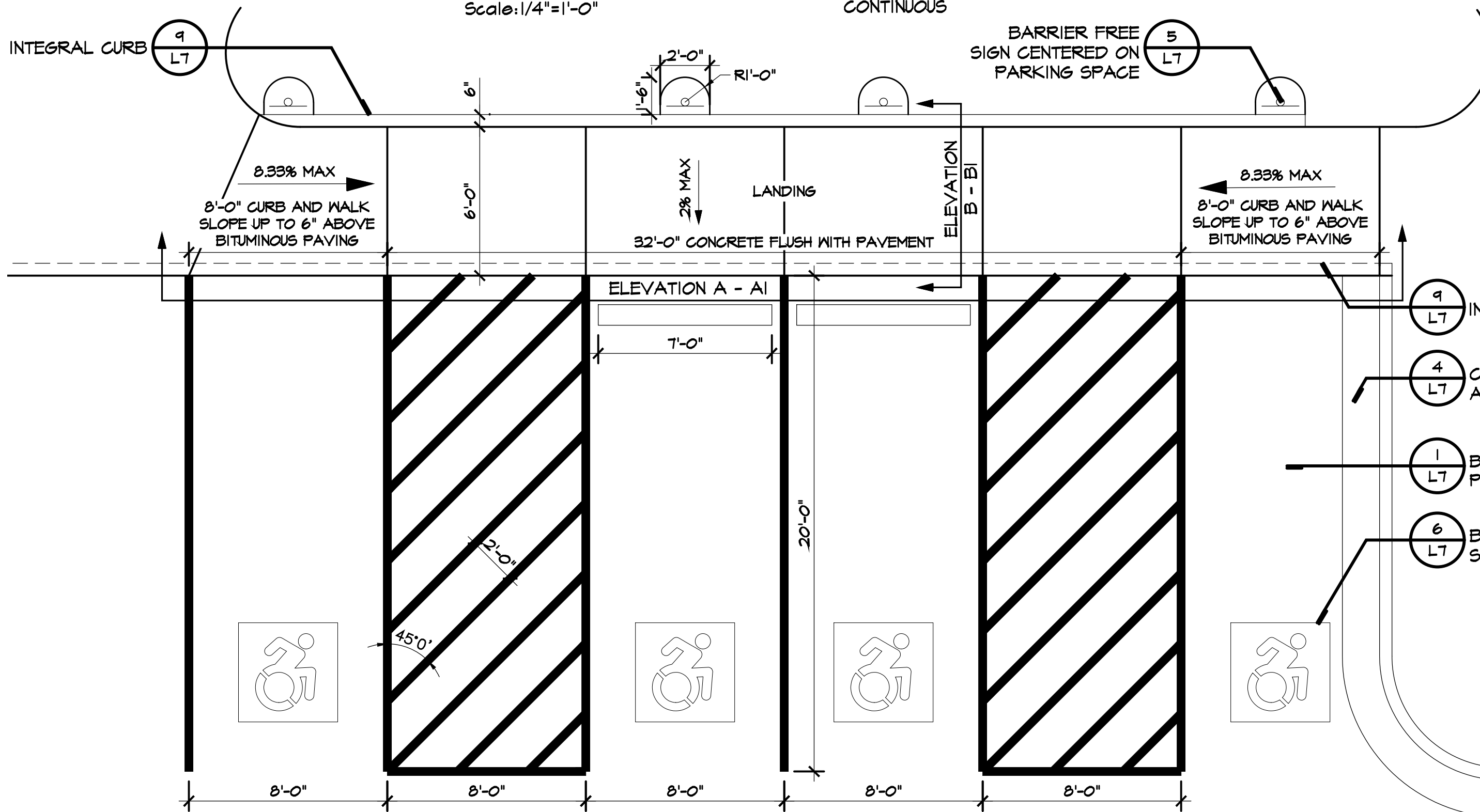
Scale: 1-1/2"=1'-0"



ELEVATION B-B
Scale: 1/2"=1'-0"

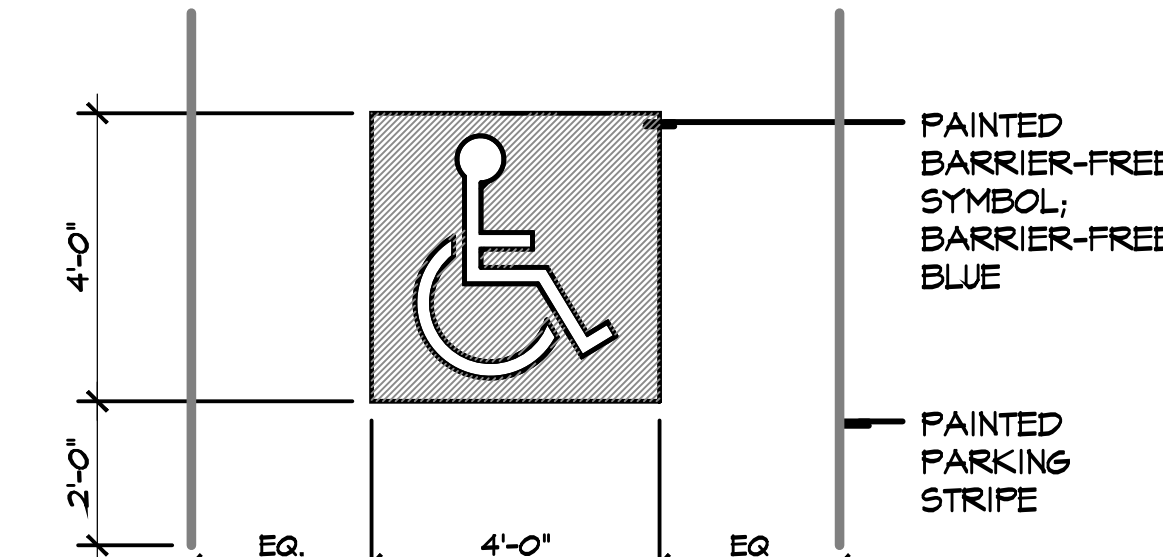


ELEVATION A-A
Scale: 1/4"=1'-0"



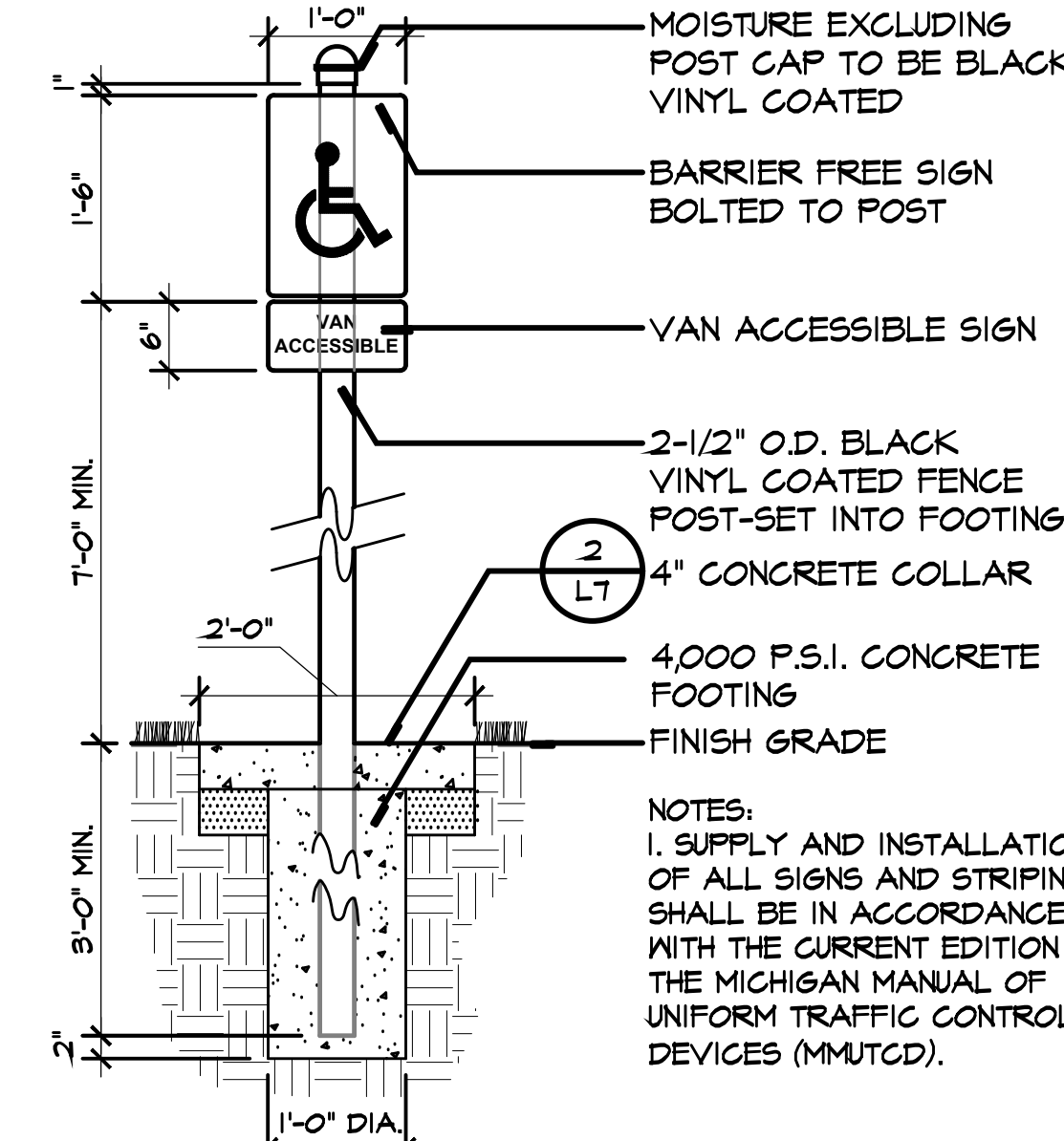
8 Barrier Free Parking Space and Striping

Scale: 1/4"=1'-0"



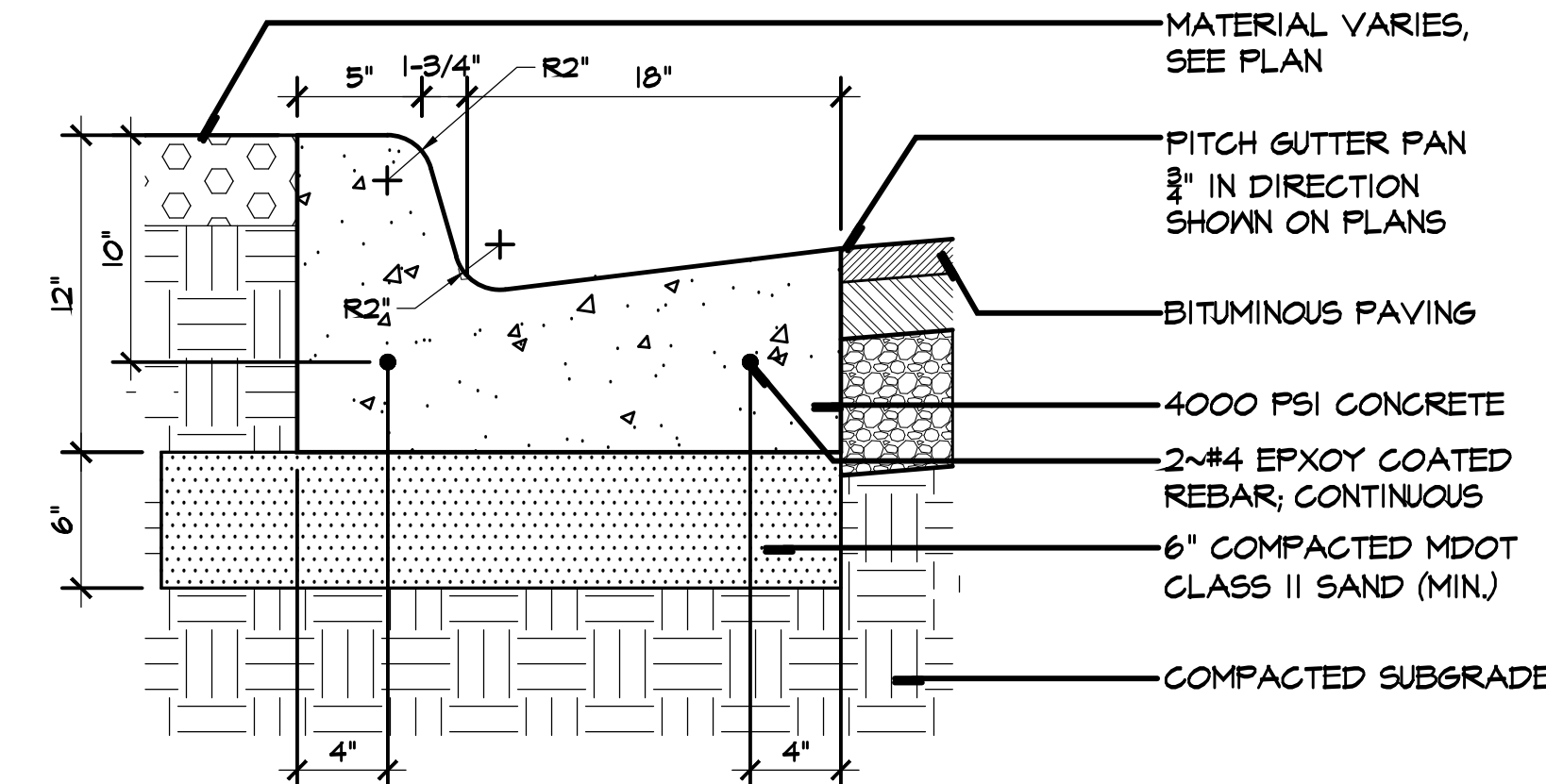
6 Barrier-Free Symbol

Scale: 3/8"=1'-0"



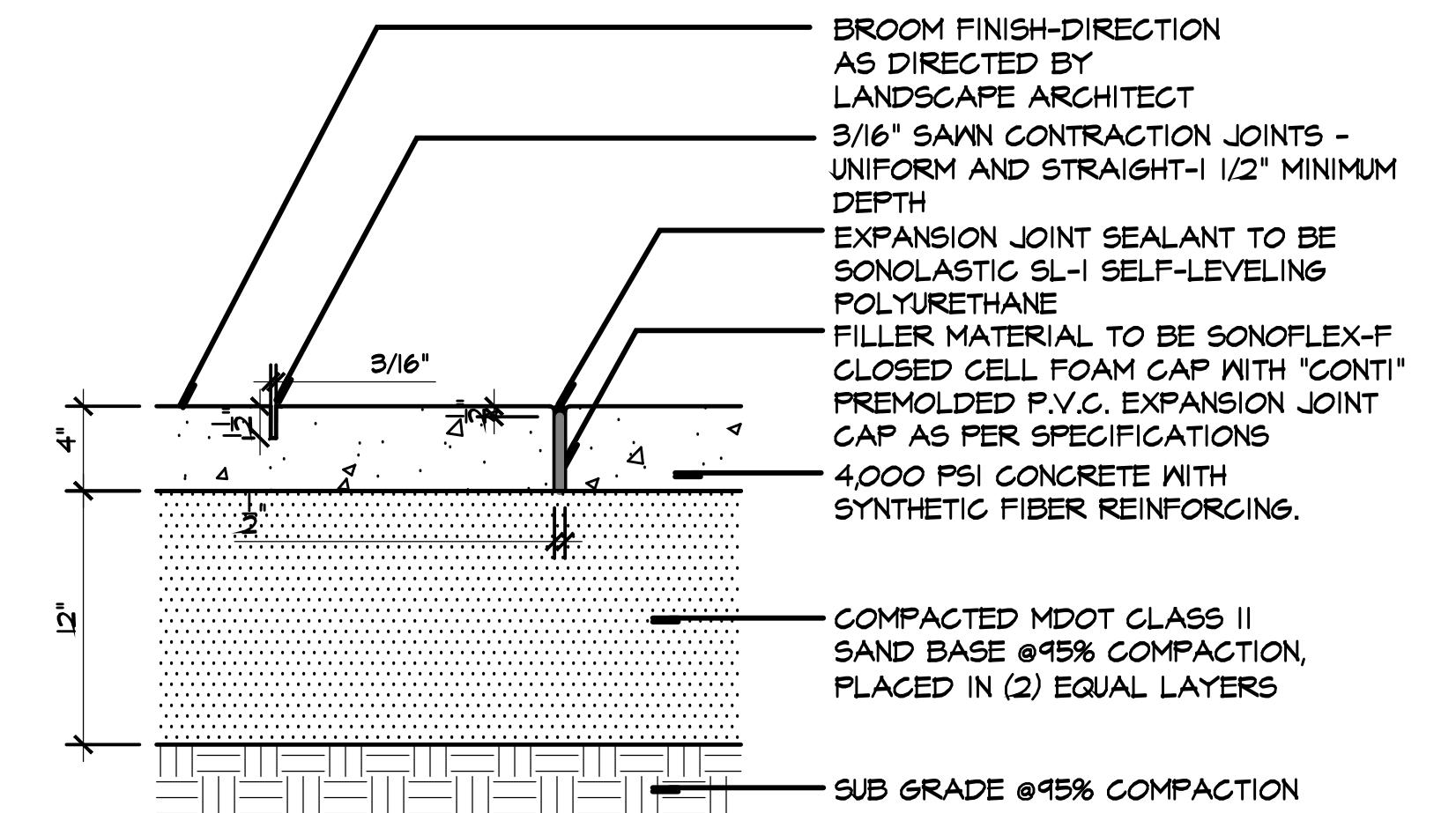
5 Barrier Free Parking Sign

Scale: 3/4"=1'-0" PRODUCT DATA REQUIRED



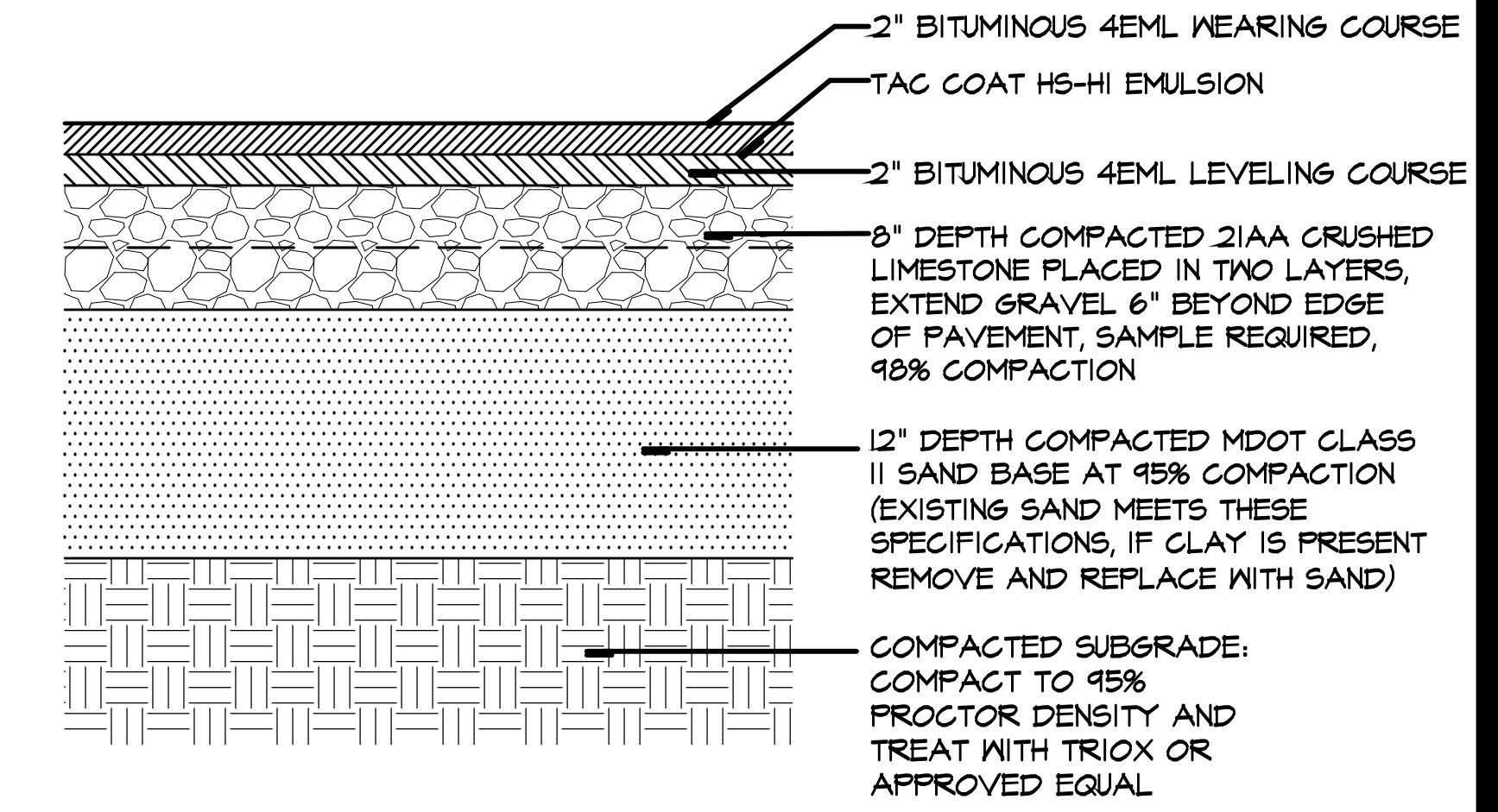
4 Curb and Gutter

Scale: 1 1/2"=1'-0"



2 Concrete Paving and Joints

Scale: 1 1/2"=1'-0"



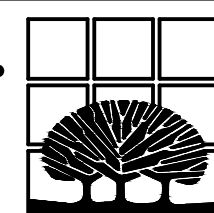
1 Bituminous Paving

Scale: 1 1/2"=1'-0"

STEELE PARK IMPROVEMENTS
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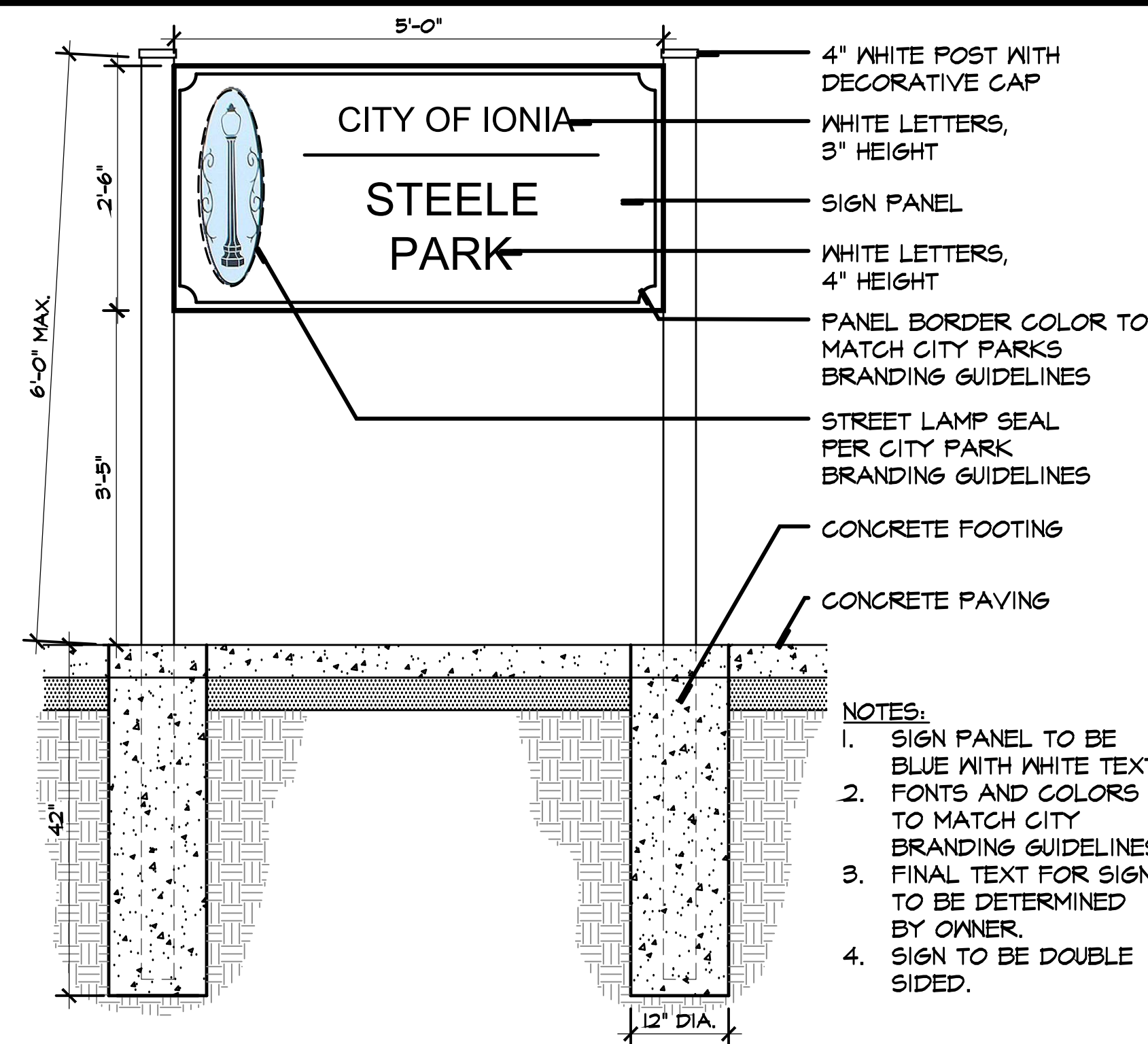


SCALE:
As Noted

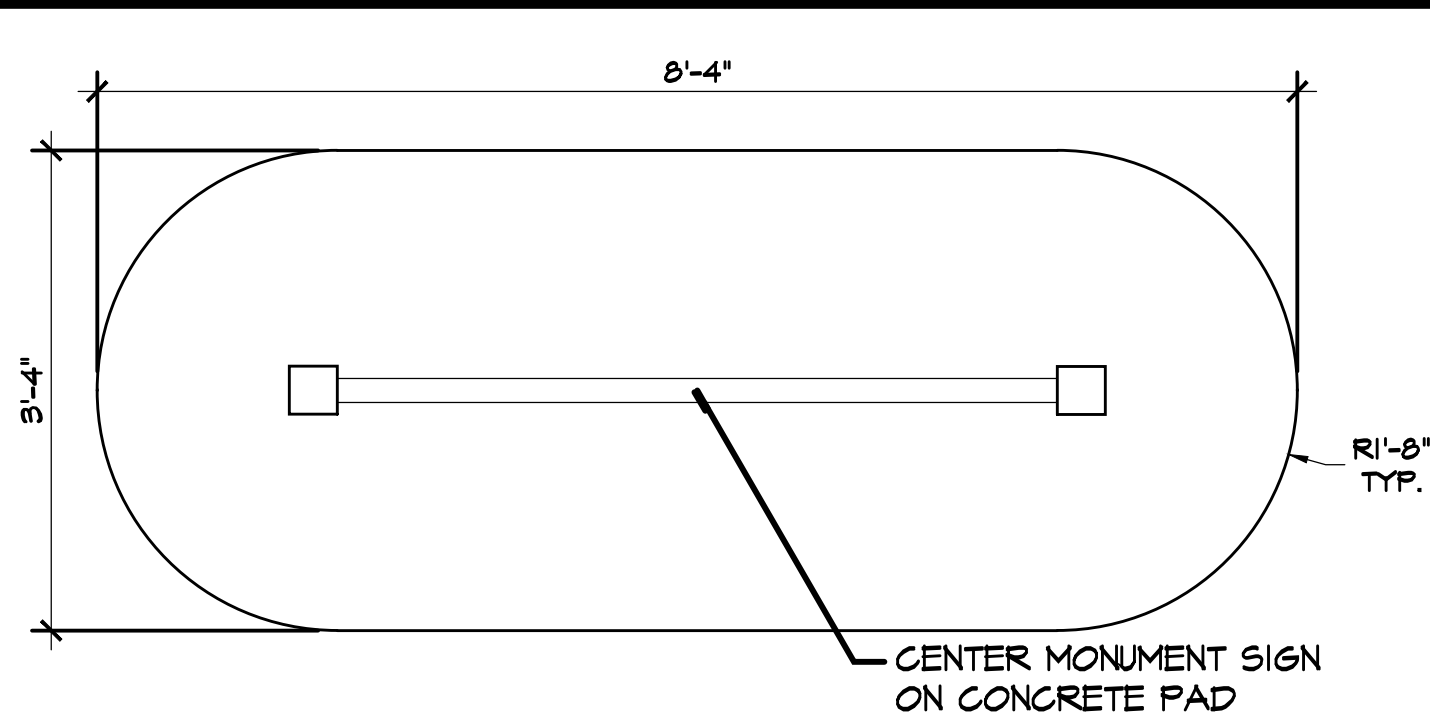
Construction Details

DATE
11.03.2025
REVISIONS
PROJECT NO.
2252
SHEET NO.
L7

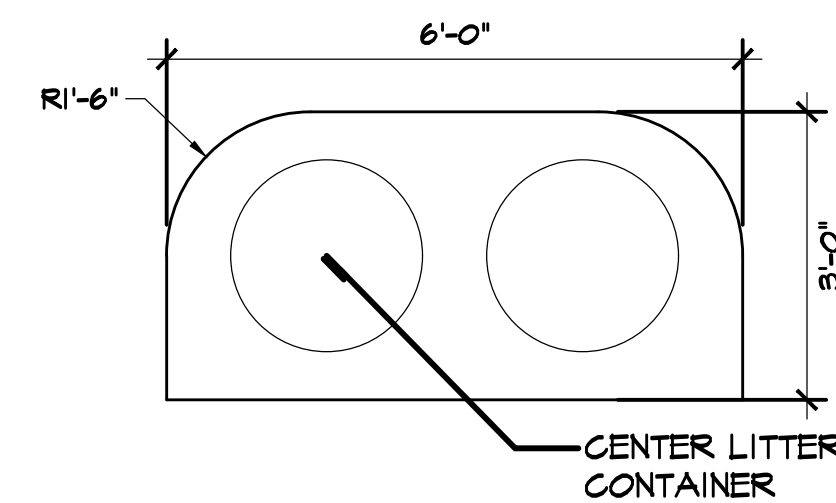
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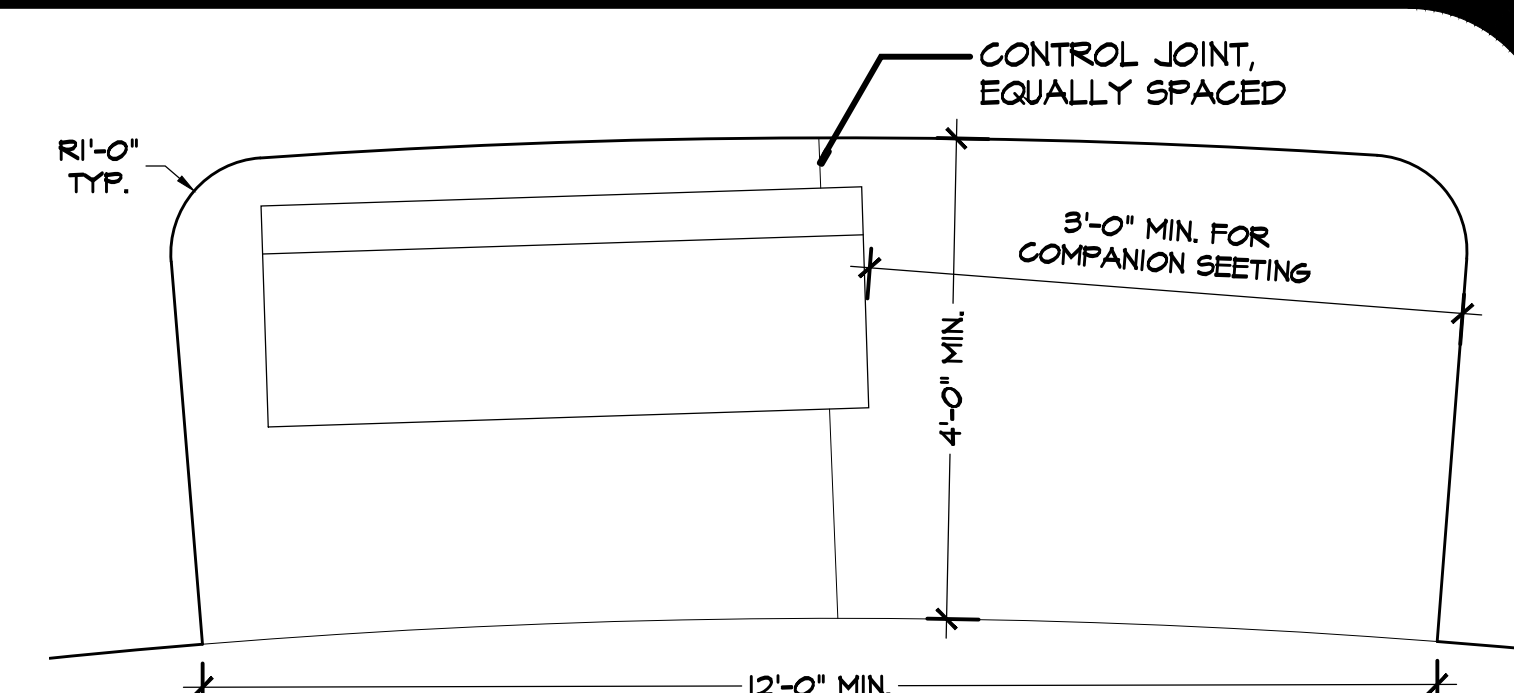
11 Park Monument Sign- Elevation
 Scale: 3/4"=1'-0"



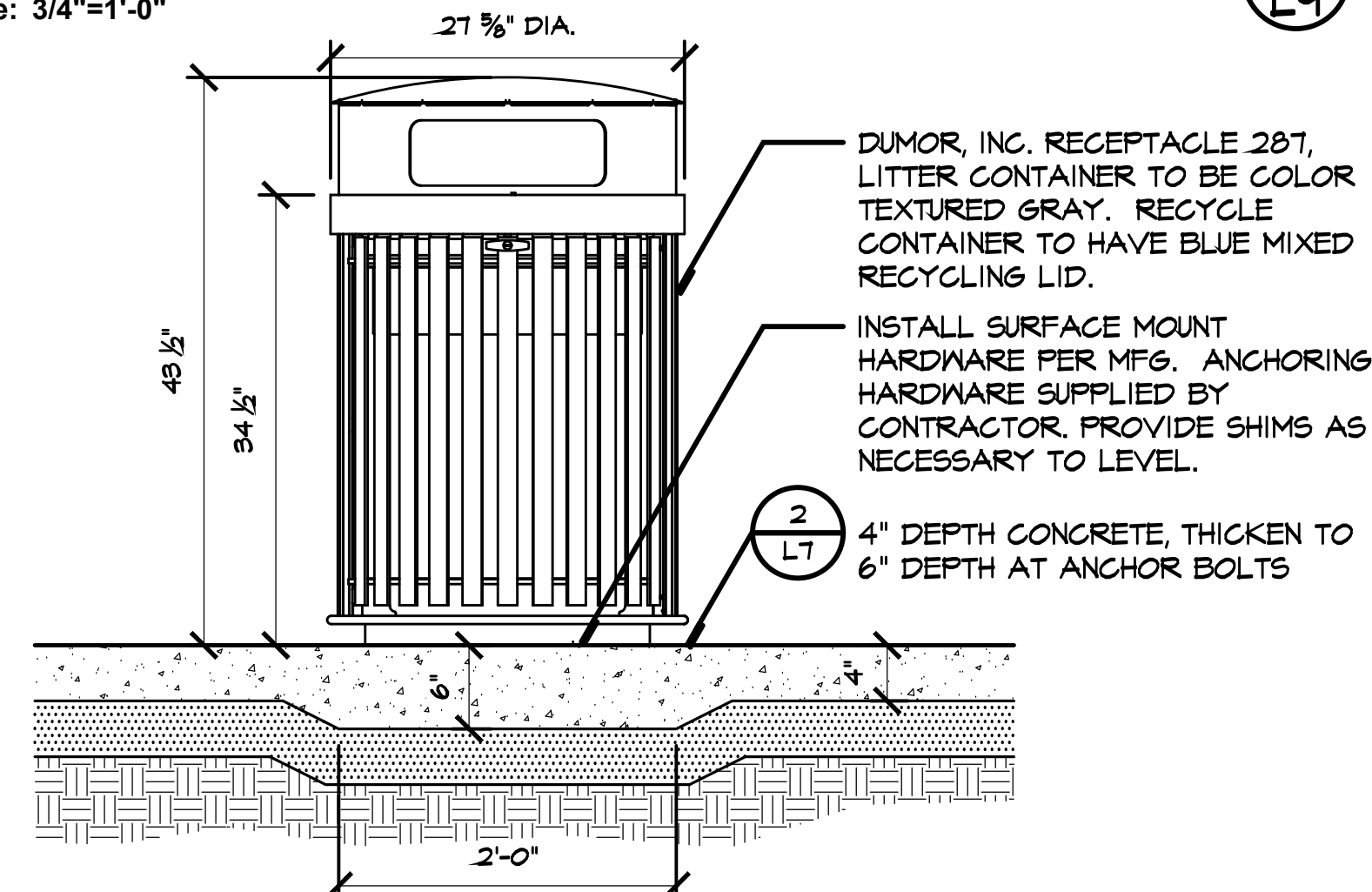
8 Park Monument Sign- Plan
 Scale: 3/4"=1'-0"



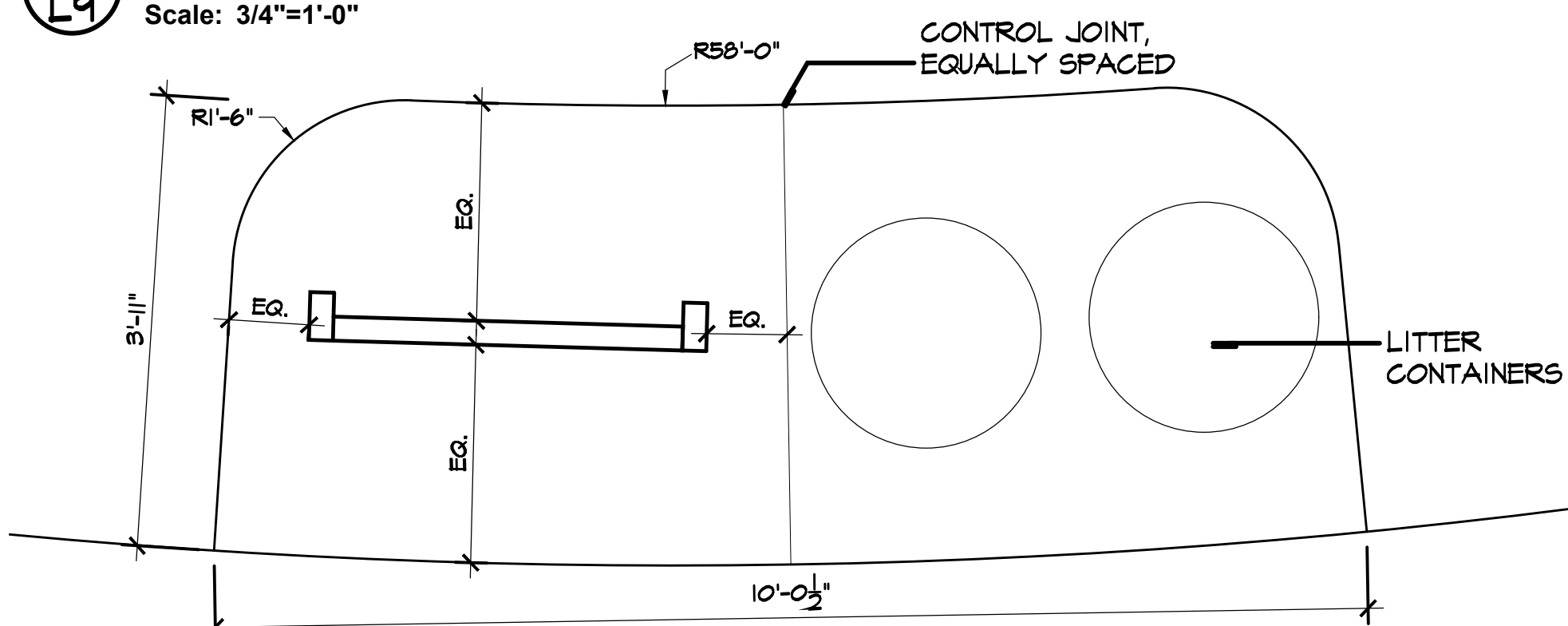
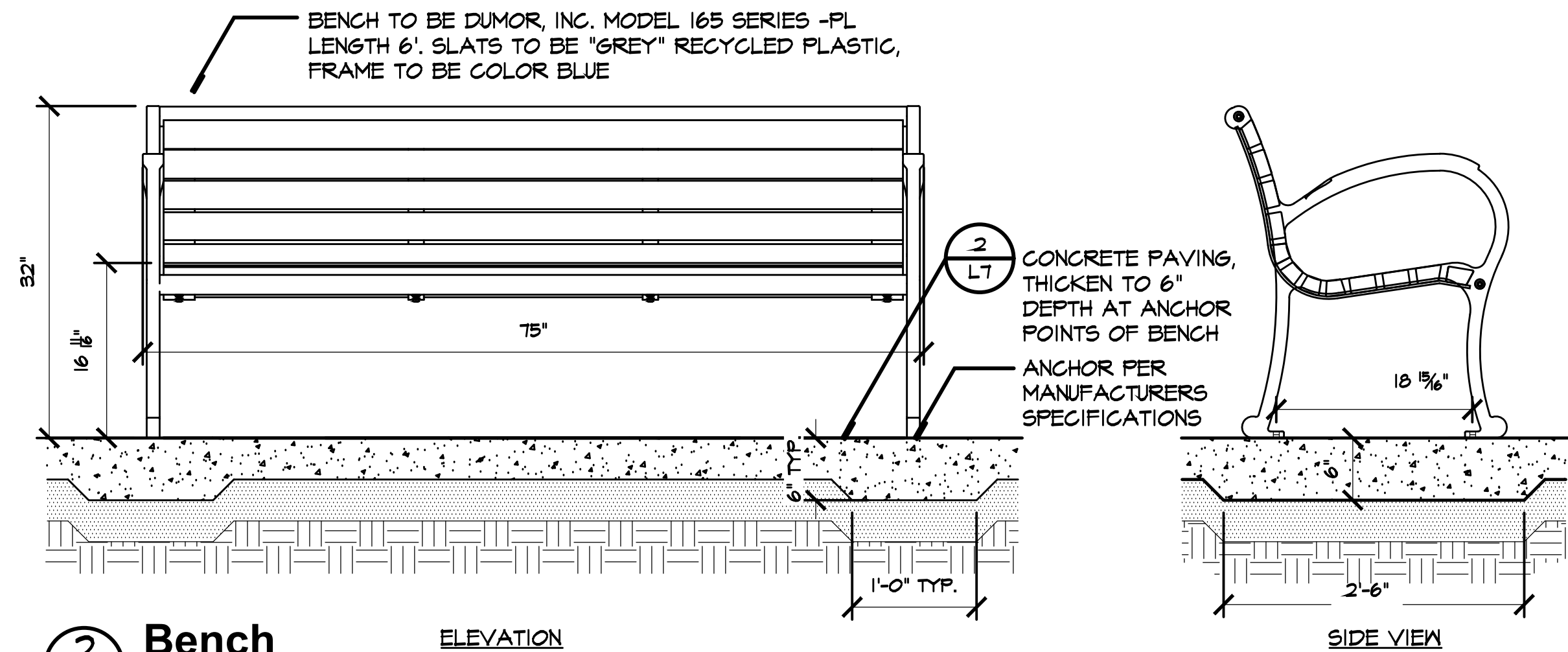
7 Litter and Recycle Containers - Plan
 Scale: 1/2"=1'-0"



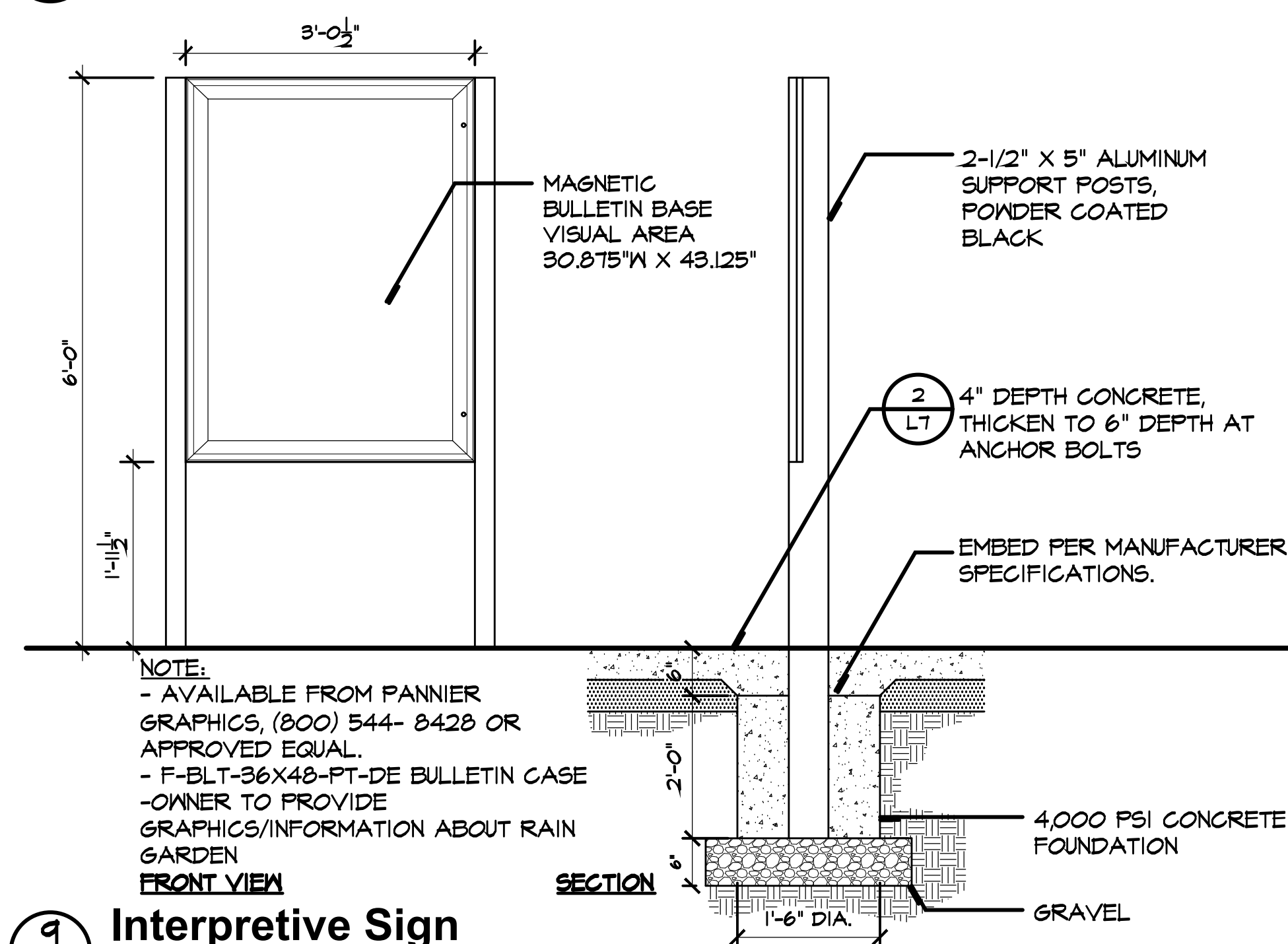
3 Bench- Plan
 Scale: 1/2"=1'-0"



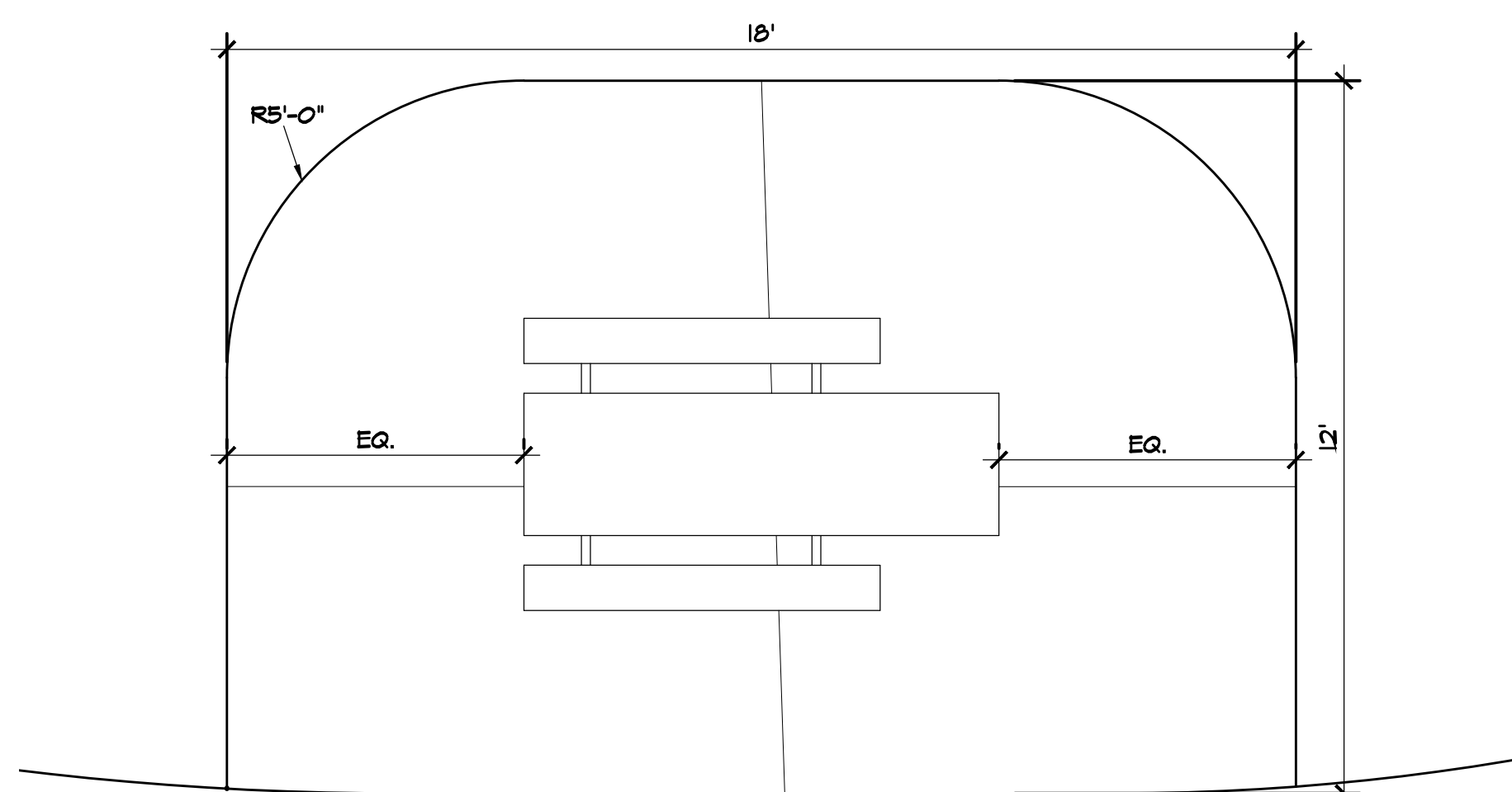
6 Litter and Recycle Containers
 Scale: 1"=1'-0"



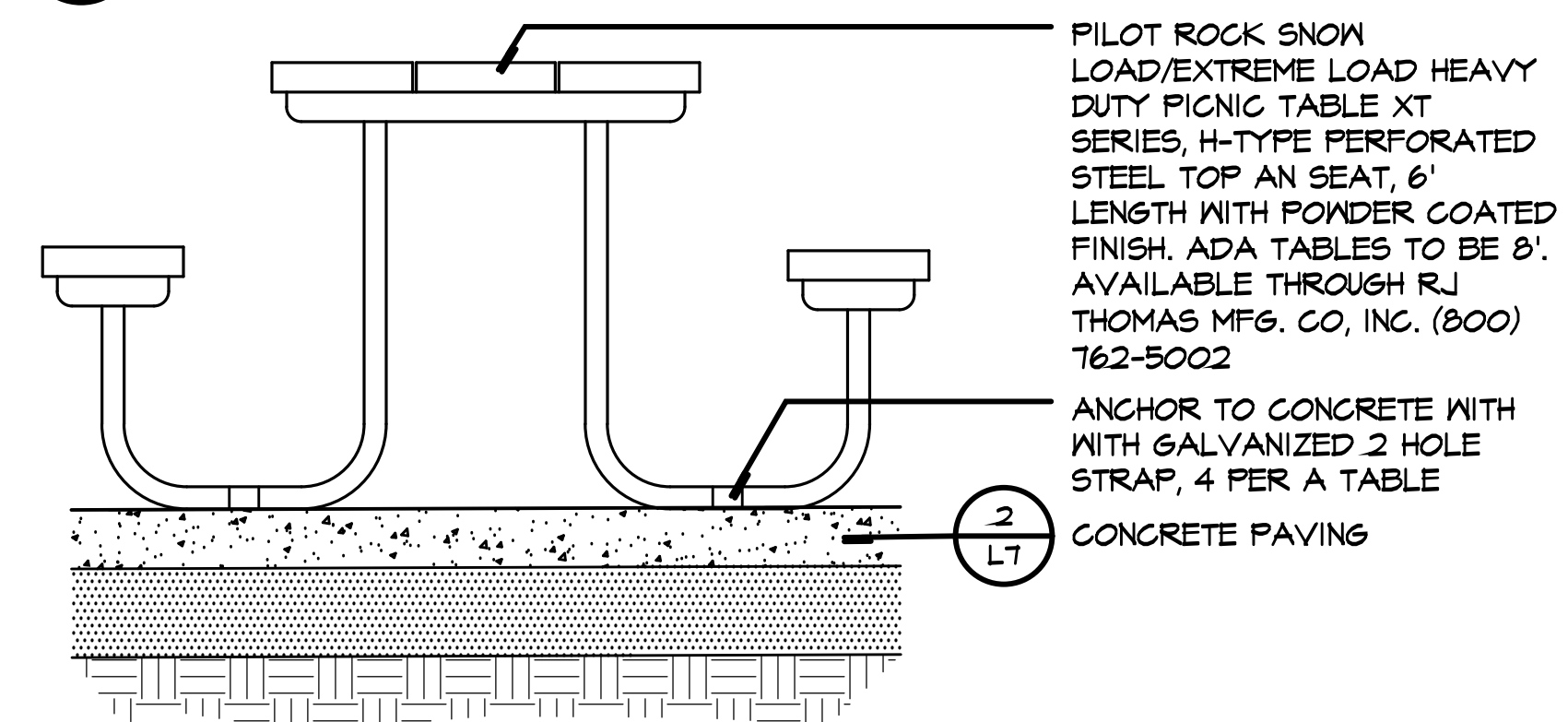
10 Interpretive Sign- Plan
 Scale: 3/4"=1'-0"



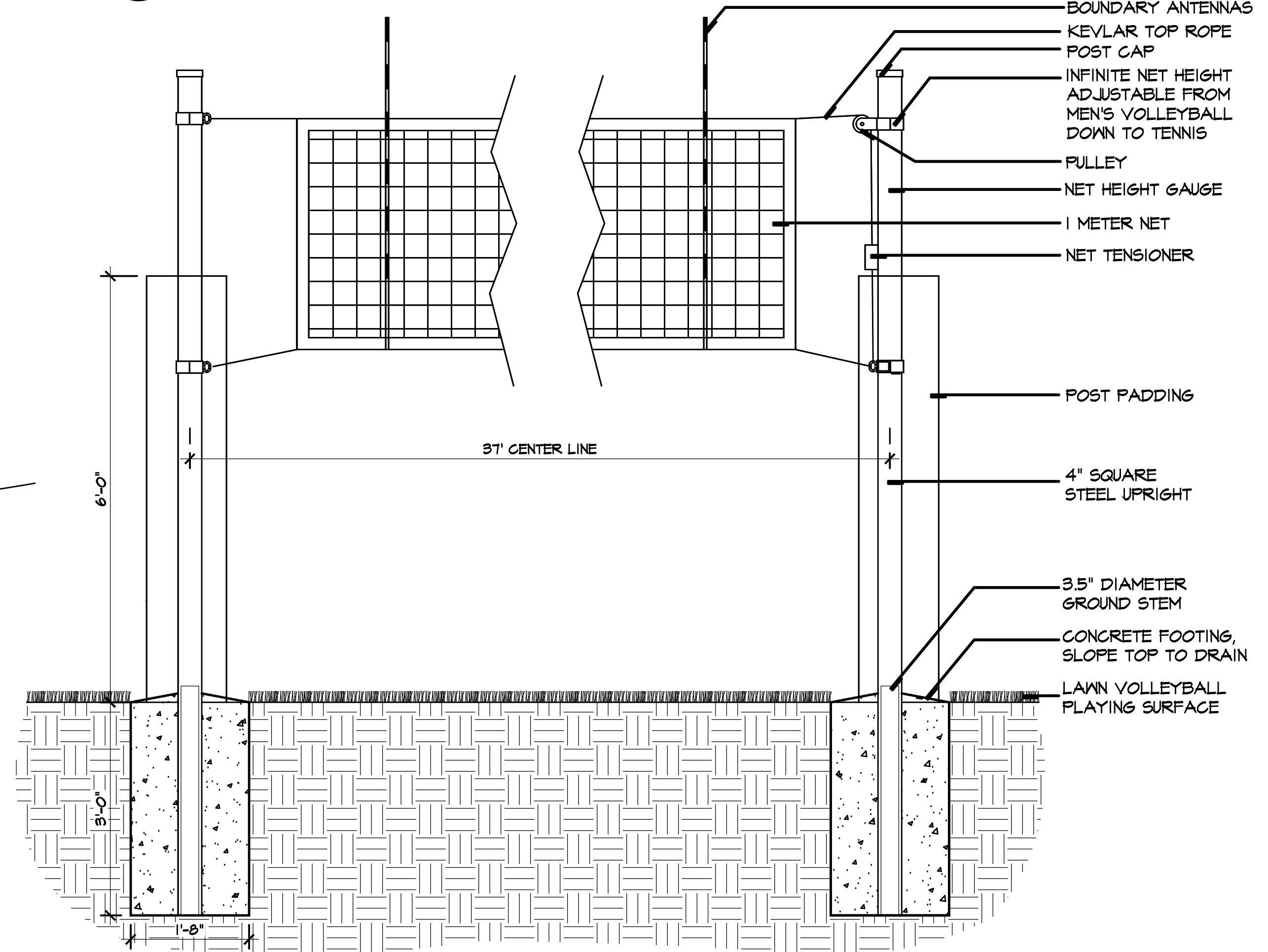
9 Interpretive Sign
 Scale: 3/4"=1'-0"



5 ADA Picnic Table- Plan
 Scale: 3/8"=1'-0"

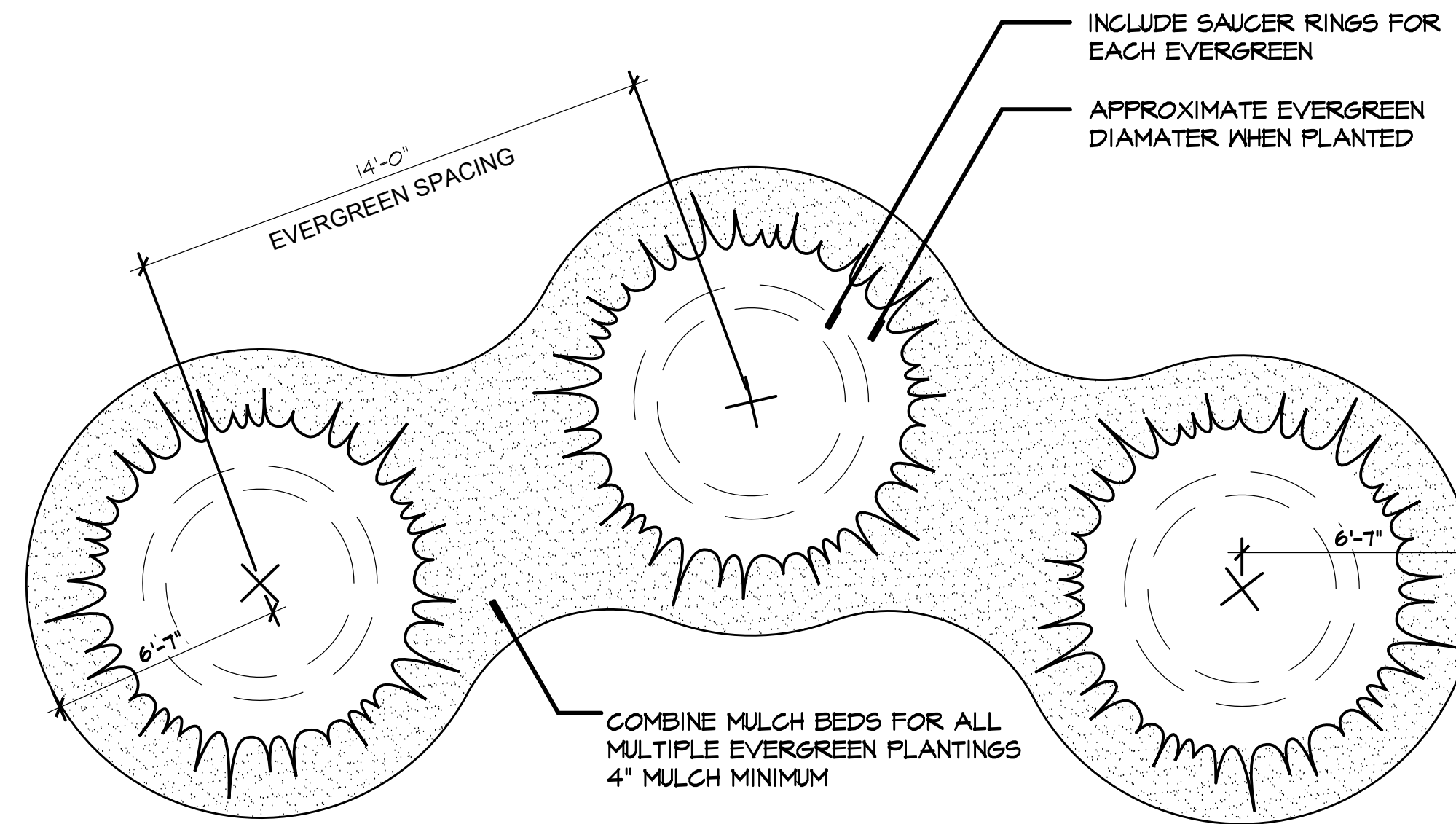


4 Picnic Table Installation
 Scale: 1"=1'-0" PRODUCT DATA REQUIRED

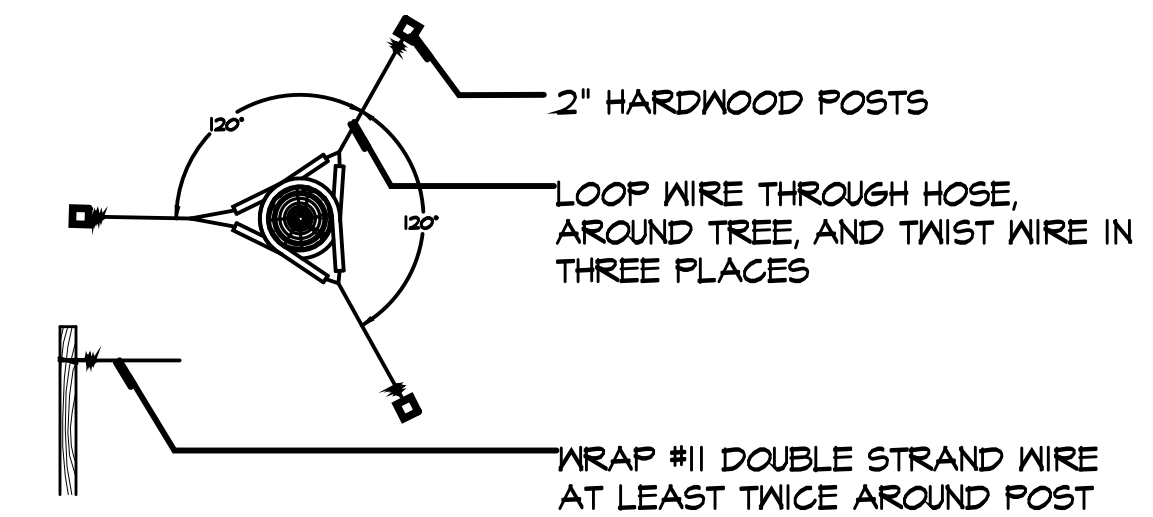


1 Volleyball Net
 Scale: 3/4"=1'-0"

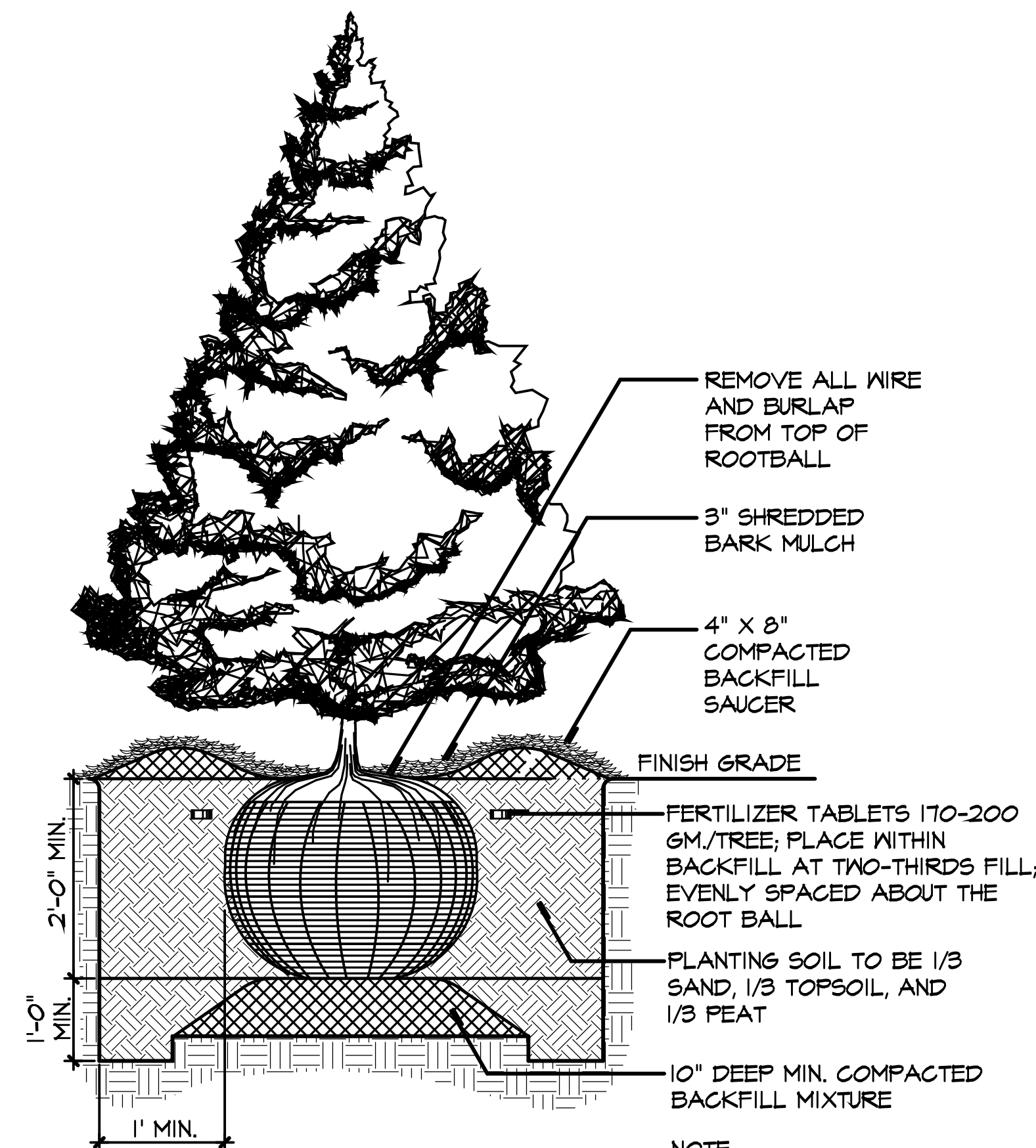
NOTE: VOLLEYBALL NET TO BE FIRST TEAM SPORTS INC. BLAST TOTAL VOLLEYBALL SET, HUTCHINSON, KS, PHONE: 1-800-644-3688



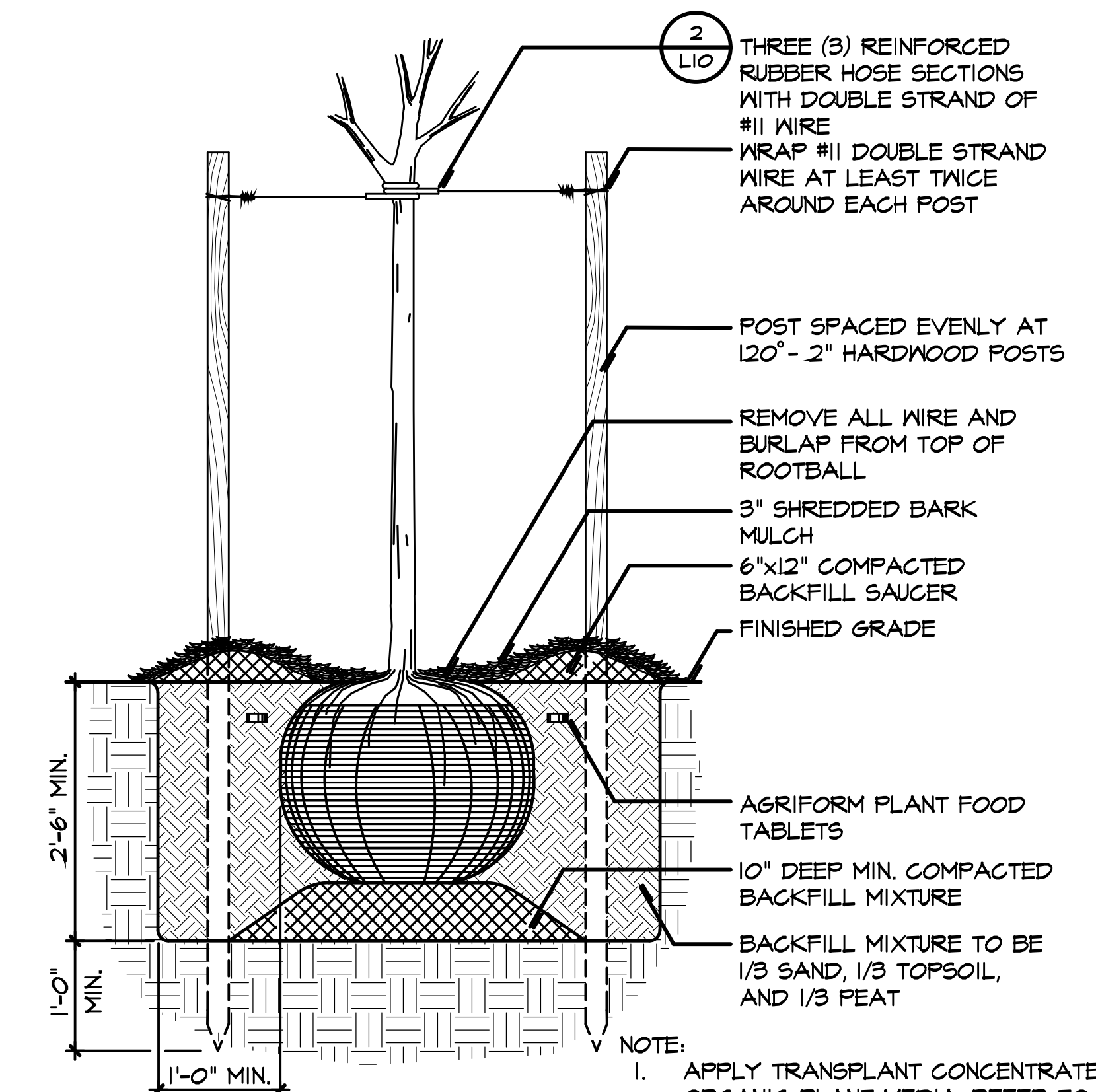
4 Evergreen Planting Detail
 Scale: 1/4"=1'-0"



2 Bracing Detail
 Scale: 1/2"=1'-0"

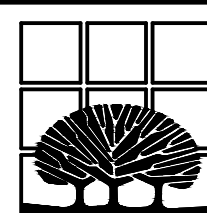


3 Evergreen Tree Installation
 Scale: Not To Scale SUBMITTAL REQUIRED



1 Tree Installation Detail
 Scale: Not To Scale

NOTE:
 1. APPLY TRANSPLANT CONCENTRATE AND ORGANIC PLANT MEDIA, REFER TO SPECIFICATION.
 2. ALL DECIDUOUS TREES SHALL HAVE WATERING BAGS. CONTRACTOR TO PROVIDE PRODUCT DATA.



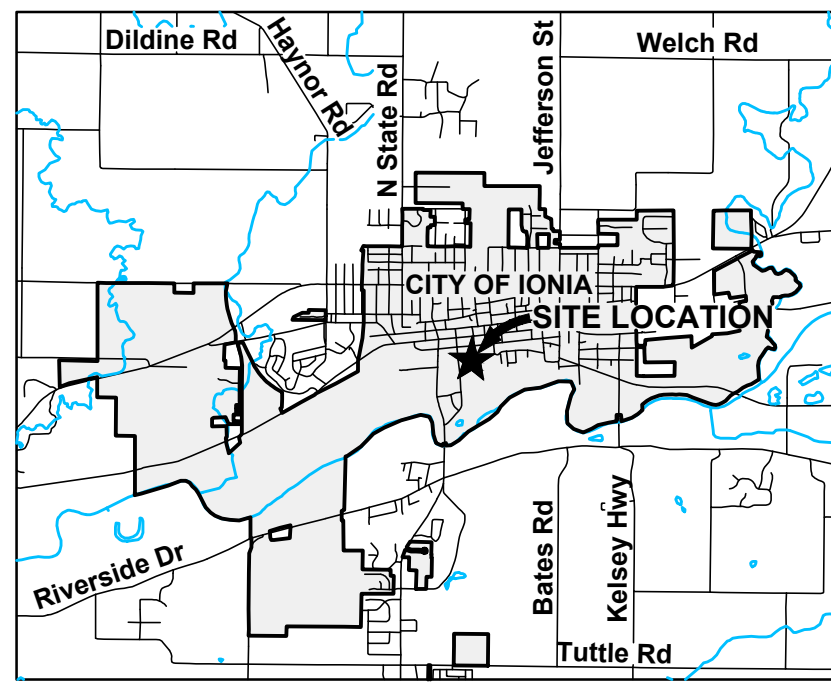
STEELE PARK

CITY OF IONIA, IONIA COUNTY, MICHIGAN

DESCRIPTION

BEGINNING AT THE INTERSECTION OF THE EAST LINE OF STEELE STREET WITH THE SOUTH LINE OF OF THE GT RAILROAD ROW; THENCE SOUTH 02° EAST 522 FEET ALONG THE EAST LINE OF STEELE STREET; THENCE NORTH 89°01' EAST 650 FEET; THENCE NORTH 02° WEST 522 FEET; THENCE SOUTH 89°01' WEST 650 FEET ALONG THE SOUTH LINE OF THE GR TT ROW TO POINT OF BEGINNING.

CONTAINING 339,097 SQUARE FEET (7.78 ACRES)



BENCHMARK INFORMATION

BM#1) ELEVATION: 641.34
UNDER THE 'E' ON THE SW. FLANGE BOLT OF THE HYDRANT ALONG THE FRED MEIJER GRAND RIVER VALLEY TRAIL

BM#2) ELEVATION: 639.85
CUT SQUARE OF SE. CORNER OF LIGHT POST ALONG EASTERN R.O.W. OF STEELE STREET

THE ELEVATIONS ARE BASED ON NAVD88

BASIS OF BEARINGS

MICHIGAN STATE PLANE COORDINATE SYSTEM, NAD83(2011), MICHIGAN ZONE SOUTH

FLOOD PLAIN INFORMATION

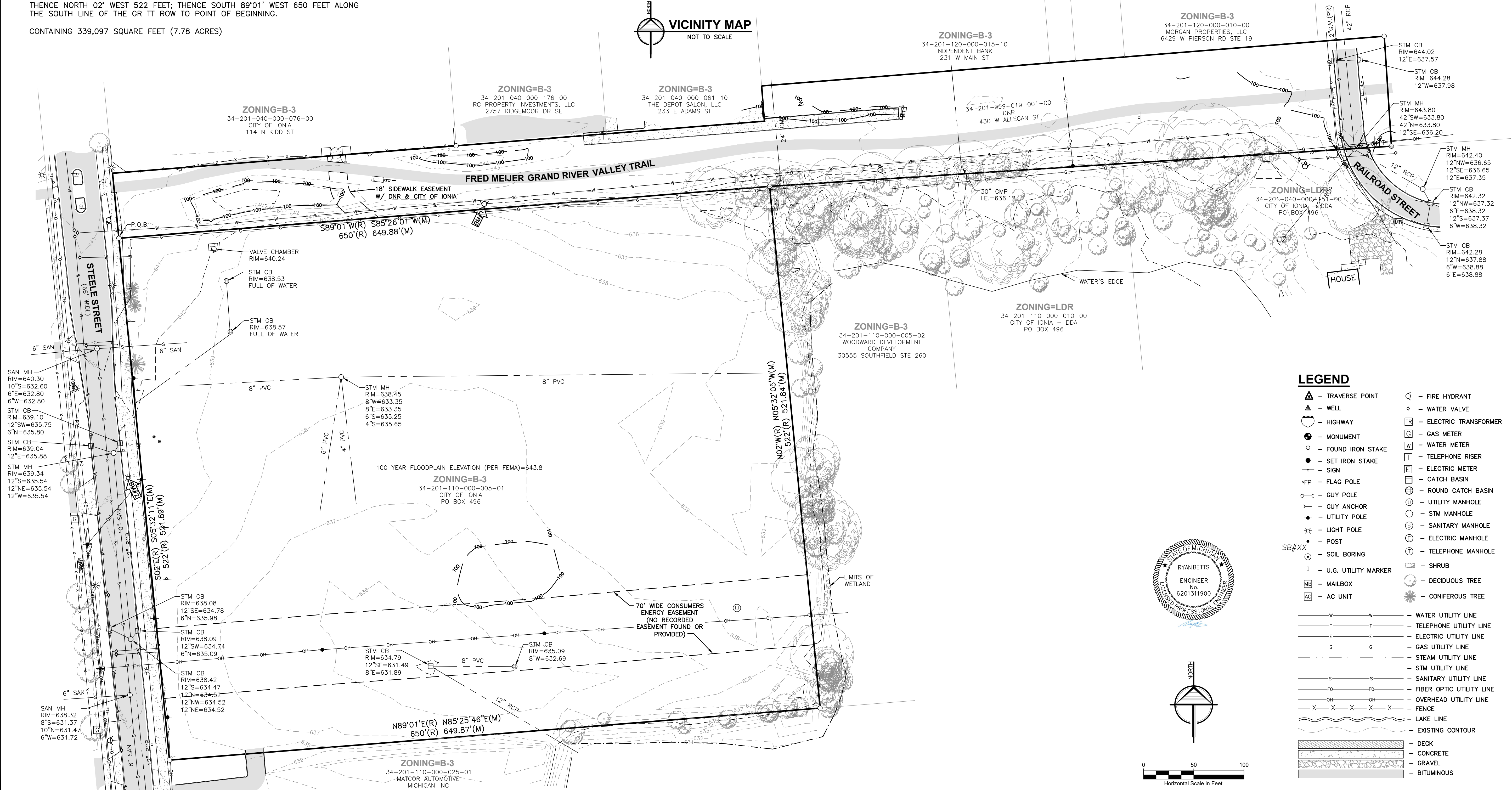
SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A DESIGNATION "AE" BY THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT, ON FLOOD INSURANCE MAP NO. 26067C0177D, WITH A DATE OF 01/16/2015, FOR COMMUNITY NUMBER 260097, IN IONIA COUNTY, MICHIGAN, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PROPERTY IS SITUATED.

NOTES

1. CONTRACTOR TO FIELD VERIFY HORIZONTAL & VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND MUST NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

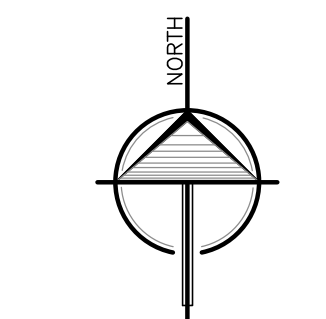
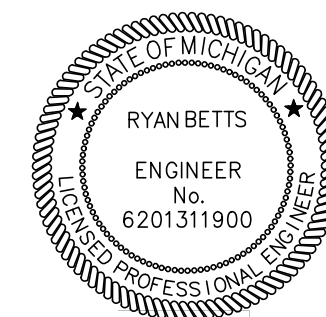
ZONING CLASSIFICATION

B-3 - GENERAL BUSINESS DISTRICT



LEGEND

- ▲ - TRAVERSE POINT
- △ - WELL
- ⬢ - HIGHWAY
- ⊙ - MONUMENT
- - FOUND IRON STAKE
- - SET IRON STAKE
- - SIGN
- ⊕ - FLAG POLE
- ⊖ - GUY POLE
- ⊗ - UTILITY POLE
- ⊛ - UTILITY POLE
- ⊙ - LIGHT POLE
- ⊙ - POST
- ⊙ - SOIL BORING
- ⊙ - U.G. UTILITY MARKER
- ⊙ - MAILBOX
- ⊙ - AC UNIT
- ⊙ - FIRE HYDRANT
- ⊙ - WATER VALVE
- ⊙ - ELECTRIC TRANSFORMER
- ⊙ - GAS METER
- ⊙ - WATER METER
- ⊙ - TELEPHONE RISER
- ⊙ - ELECTRIC METER
- ⊙ - CATCH BASIN
- ⊙ - ROUND CATCH BASIN
- ⊙ - UTILITY MANHOLE
- ⊙ - STM MANHOLE
- ⊙ - SANITARY MANHOLE
- ⊙ - ELECTRIC MANHOLE
- ⊙ - TELEPHONE MANHOLE
- ⊙ - SHRUB
- ⊙ - DECIDUOUS TREE
- ⊙ - CONIFEROUS TREE
- - WATER UTILITY LINE
- - TELEPHONE UTILITY LINE
- - ELECTRIC UTILITY LINE
- - GAS UTILITY LINE
- - STEAM UTILITY LINE
- - STM UTILITY LINE
- - SANITARY UTILITY LINE
- - FIBER OPTIC UTILITY LINE
- - OVERHEAD UTILITY LINE
- - FENCE
- - LAKE LINE
- - EXISTING CONTOUR
- - DECK
- - CONCRETE
- - GRAVEL
- - BITUMINOUS



ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUEST FROM SURVEYORS MAY BE IGNORED, RESULTING IN AN INCOMPLETE RESPONSE.

21213 Mile Rd. NW
Walker, MI 49544
Ph: 616-301-7888
www.LREMI.com

LRE

ENGINEERS & SURVEYORS

REVISIONS:

NO.	ISSUED FOR	DATE
1.	CLIENT REVIEW	3/25/2025
2.	30% REVIEW	6/19/2025
3.	PERMITS	8/15/2025
4.	BIDS & CONSTRUCTION	11/13/2025

CLIENT:

MCSA GROUP INC.

529 GREENWOOD AVENUE S.E. EAST GRAND RAPIDS, MICHIGAN 49506

PROJECT:

STEELE PARK

CITY OF IONIA, MI

SHEET NUMBER:

25-032

DATE:

03/2025

DESIGNED BY:

RJB

DRAFTED BY:

KJB

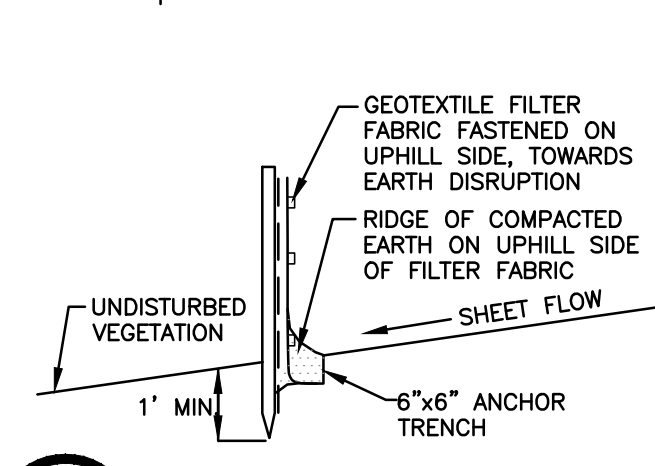
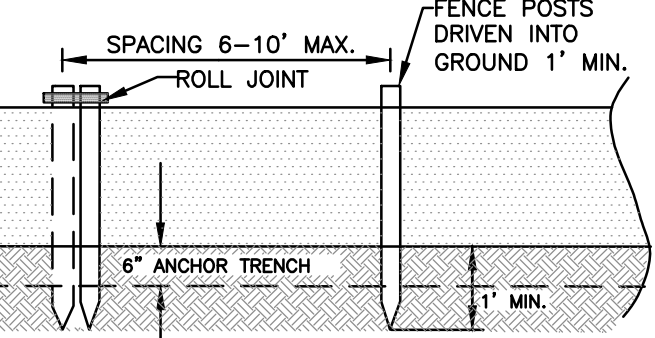
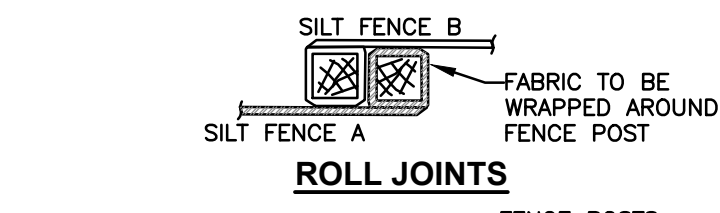
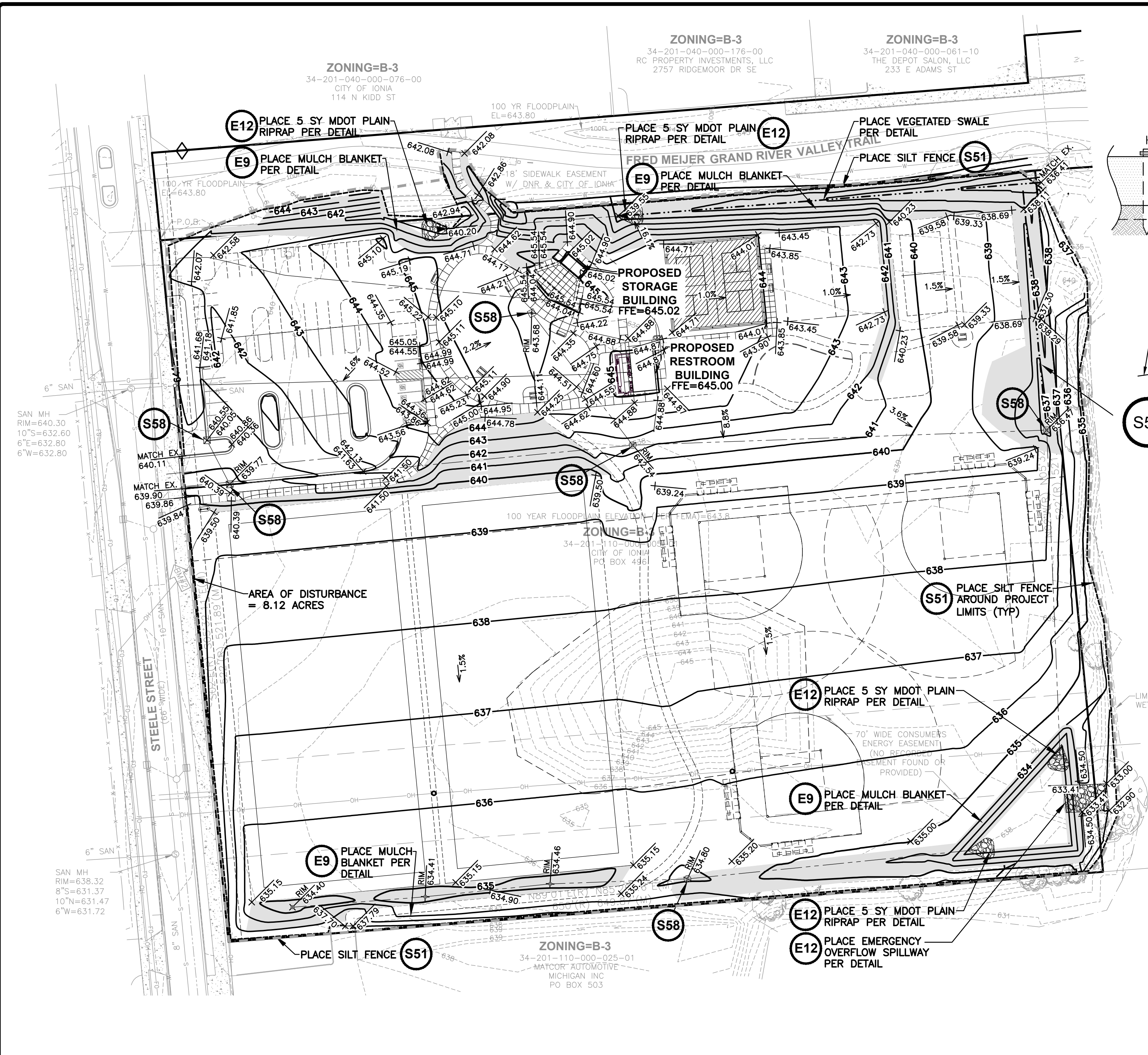
QA/QC:

KJV

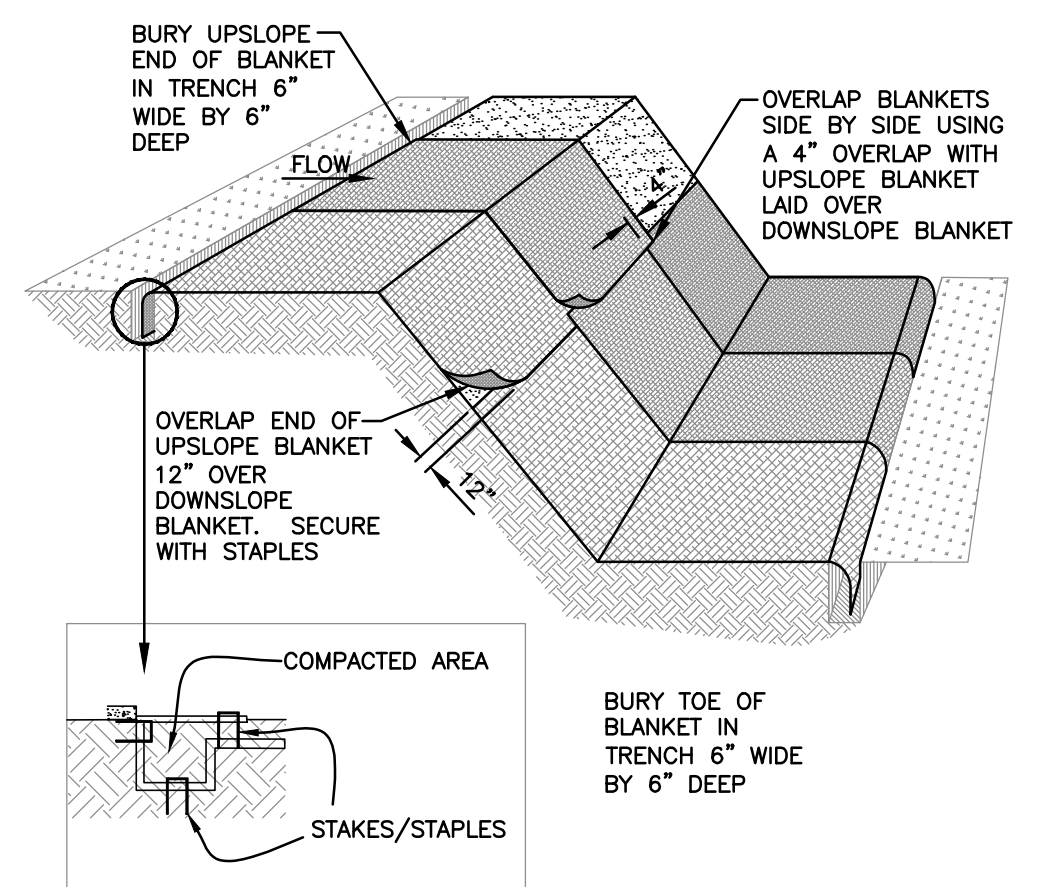
TOPOGRAPHIC & BOUNDARY SURVEY

SHEET NUMBER

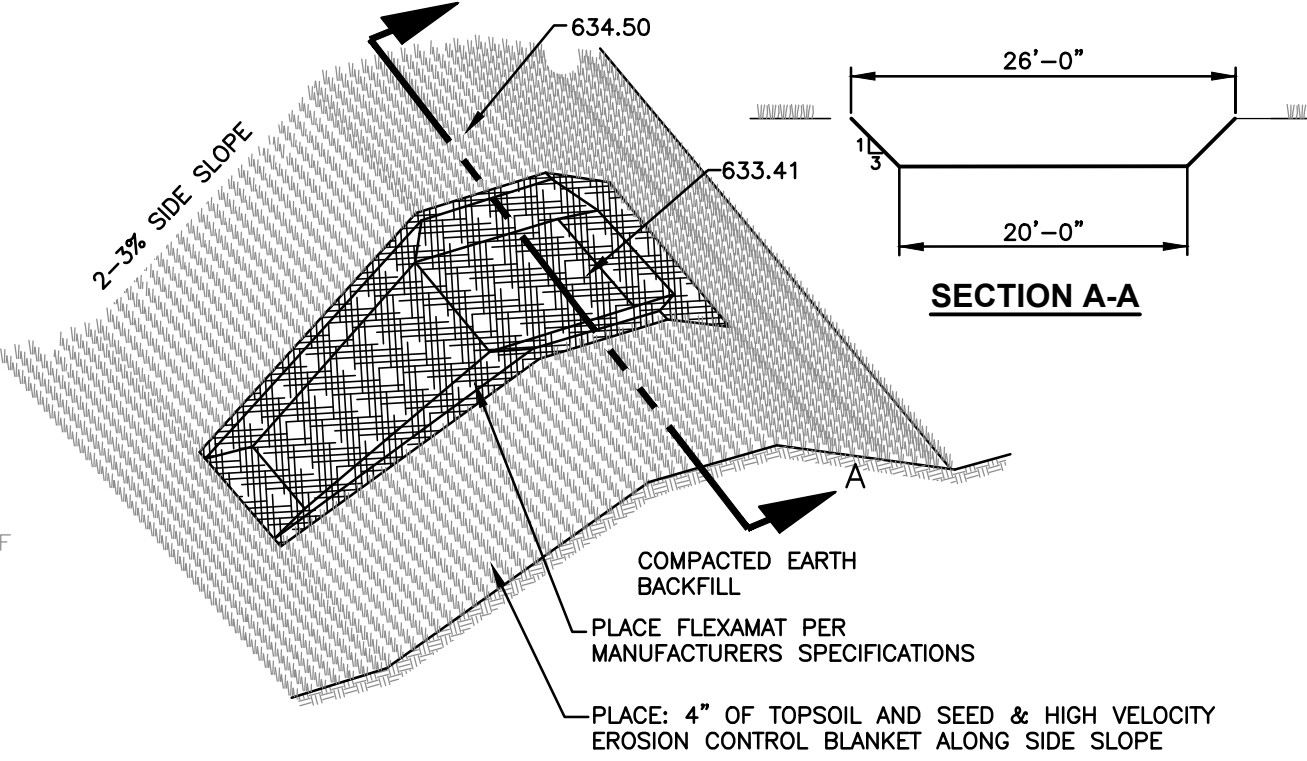
C1



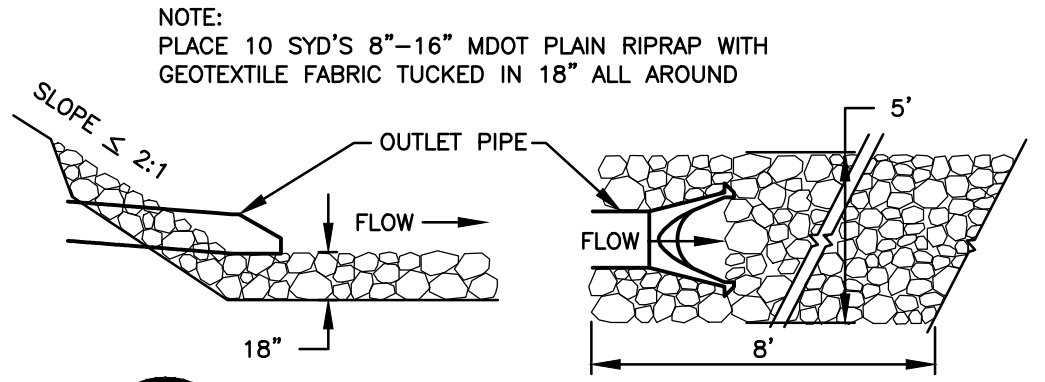
S51 SILT FENCE DETAIL
NOT TO SCALE



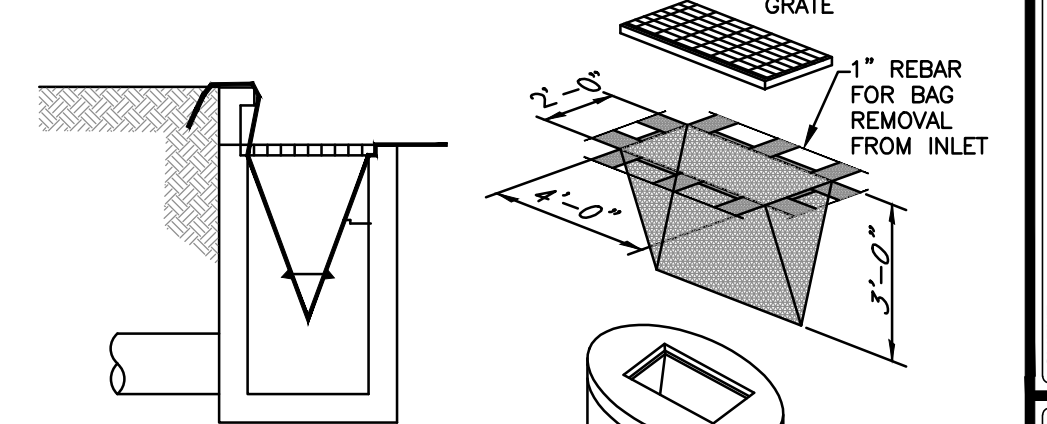
E9 MULCH BLANKETS
NOT TO SCALE



EMERGENCY OVERFLOW SPILLWAY
NOT TO SCALE

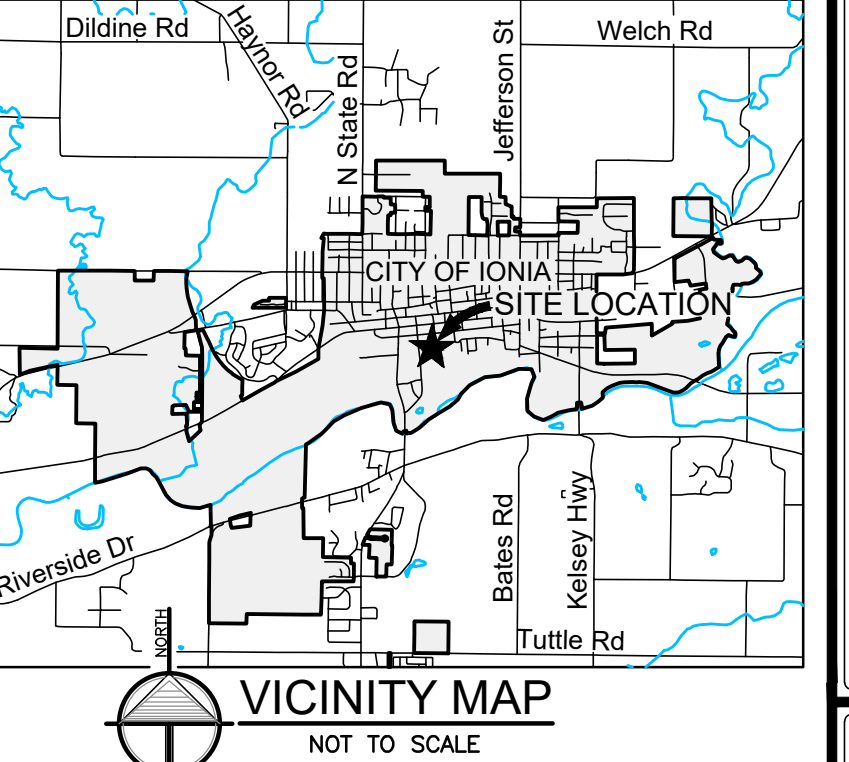


E12 RIPRAP - OUTLET PROTECTION
NOT TO SCALE



S58 INLET PROTECTION - FABRIC DROP
NOT TO SCALE

- LEGEND**
- (ELEV) PROPOSED CONTOURS
 - (ELEV) EXISTING CONTOURS
 - DRAINAGE STRUCTURES
 - RIP-RAP
 - EROSION CONTROL BLANKET
 - SILT FENCE
 - TOP OF CURB/WALL ELEVATION
 - GUTTER/SPOT ELEVATION
 - DIRECTION OF DRAINAGE FLOW
 - SWALES, PARKING LOT LOW POINTS



- NOTES:**
- PLACE N.A.G 150-BN MULCH BLANKET PARALLEL TO FLOW AND ANCHOR SECURELY.
 - STAPLES INSTALLED/SECURED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

**MICHIGAN DEPARTMENT OF MANAGEMENT AND BUDGET
S-E-S-C KEYING SYSTEM**

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
EROSION CONTROLS			
E8	PERMANENT SEEDING		Stabilization method utilized on sites where earth change has been completed (final grading attained).
E9	MULCH BLANKETS		On exposed slopes, newly seeded areas, new ditch bottoms, or areas subject to erosion.
E12	RIPRAP		Use along shorelines, waterways, or where concentrated flows occur. Slows velocity, reduces sediment load, and reduces erosion.
SEDIMENT CONTROLS			
S51	SILT FENCE		Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.
S58	INLET PROTECTION FABRIC DROP		Use at stormwater inlets, especially at construction sites.

EROSION & SEDIMENTATION CONTROL NOTES

- INSTALL SILT FENCE AS SHOWN. MAINTAIN SILT FENCE BY REMOVING SEDIMENT WHEN IT HAS REACHED 1/3 TO 1/2 OF THE HEIGHT OF THE FENCE.
- CLEAR & GRUB SITE AS NECESSARY AND REMOVE ALL RESULTING MATERIALS FROM THE SITE.
- REMOVE & STOCKPILE TOPSOIL. INSTALL SILT FENCE AT THE TOE OF THE SLOPE ON THE DOWNSTREAM SIDE AND ADD TEMPORARY SEED MIX TO ESTABLISH VEGETATION.
- NO SOIL WILL BE ALLOWED TO ACCUMULATE OFF SITE. ANY SOIL TRACKED OFF SITE WILL BE IMMEDIATELY REMOVED.
- PERMANENT CONTROL MEASURES MUST BE COMPLETED 15 CALENDAR DAYS AFTER THE FINAL EARTH CHANGE IS COMPLETED FOR EACH AREA DISTURBED. THIS INCLUDES BLANKETS, SEEDING, MULCHING & HYDROMULCHING.
- FOR ALL AREAS TO BE SEEDDED, THE MULCH MUST BE APPLIED IMMEDIATELY AFTER SEED APPLICATION.
- CONTRACTOR SHALL CLEAN AND MAINTAIN THE STORM SEWER INLETS AND PIPES DURING THE COURSE OF CONSTRUCTION AND SHALL CLEAN THE SYSTEM OF ALL DEBRIS UPON COMPLETION AND STABILIZATION OF THE PROJECT.
- REMOVE TEMPORARY CONTROLS SUCH AS SILT FENCE, INLET PROTECTION AND NETTING ONCE VEGETATION IS ESTABLISHED AND THE SITE HAS BEEN STABILIZED.

TIMING AND SEQUENCE OF CONSTRUCTION

CONSTRUCTION ACTIVITY	ACTIVITY BY MONTH/WEEKS												
	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6	MONTH 7	MONTH 8	MONTH 9	MONTH 10	MONTH 11	MONTH 12	TBD
1. MOBILIZE EQUIPMENT ON SITE													
2. PLACE TEMPORARY SESC MEASURES													
3. CLEAR AND GRUB SITE AS NECESSARY													
4. STRIP AND STOCKPILE TOPSOIL													
5. EXCAVATE NEW DETENTION BASIN													
6. SITE GRADING													
7. EXCAVATE AND PLACE FOUNDATIONS													
8. INSTALL UTILITIES INCLUDING STORM, SANITARY, AND WATER													
9. PAVE SITE													
10. RESTORE DISTURBED AREAS WITH SEED AND MULCH													
11. REMOVE SESC CONTROL MEASURES*													

*NOTE: TEMPORARY CONTROL MEASURES TO BE REMOVED ONCE VEGETATION IS ESTABLISHED AND SITE IS STABILIZED.

E8 PERMANENT SEEDING NOTE:

ALL PROPOSED LAWN AREAS AND ALL AREAS DISTURBED BY CONSTRUCTION SHALL RECEIVE A MINIMUM OF 4" OF TOPSOIL AND LAWN SEED MIX AS INDICATED ON LANDSCAPE PLANS.

NOTES

- CONTRACTOR TO FIELD VERIFY HORIZONTAL & VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND MUST NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
- VOLUME CALCULATIONS:
FILL = 20,600 CY
CUT = 11,000 CY
NET = 9,600 CY FILL
REQUIRED ENGINEERED FILL IS ~1,700 CY
- SOIL TYPES:
CARABA-CARLISLE MUCK
EDWADA-EDWARDS MUCK
GLA-GLADWIN SANDY LOAM
- NEAREST WATER COURSE:
1,320 FEET FROM GRAND RIVER

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUEST FROM SURVEYORS MAY BE IGNORED, RESULTING IN AN INCOMPLETE RESPONSE.

LRE ENGINEERS & SURVEYORS
2121 3 Mile Rd. NW
Walker, MI 49544
Ph: 616-301-7888
www.LREMI.com

NO.	ISSUED FOR	DATE
1.	CLIENT REVIEW	3/25/2025
2.	30% REVIEW	6/19/2025
3.	PERMITS	8/15/2025
4.	BIDS & CONSTRUCTION	11/3/2025

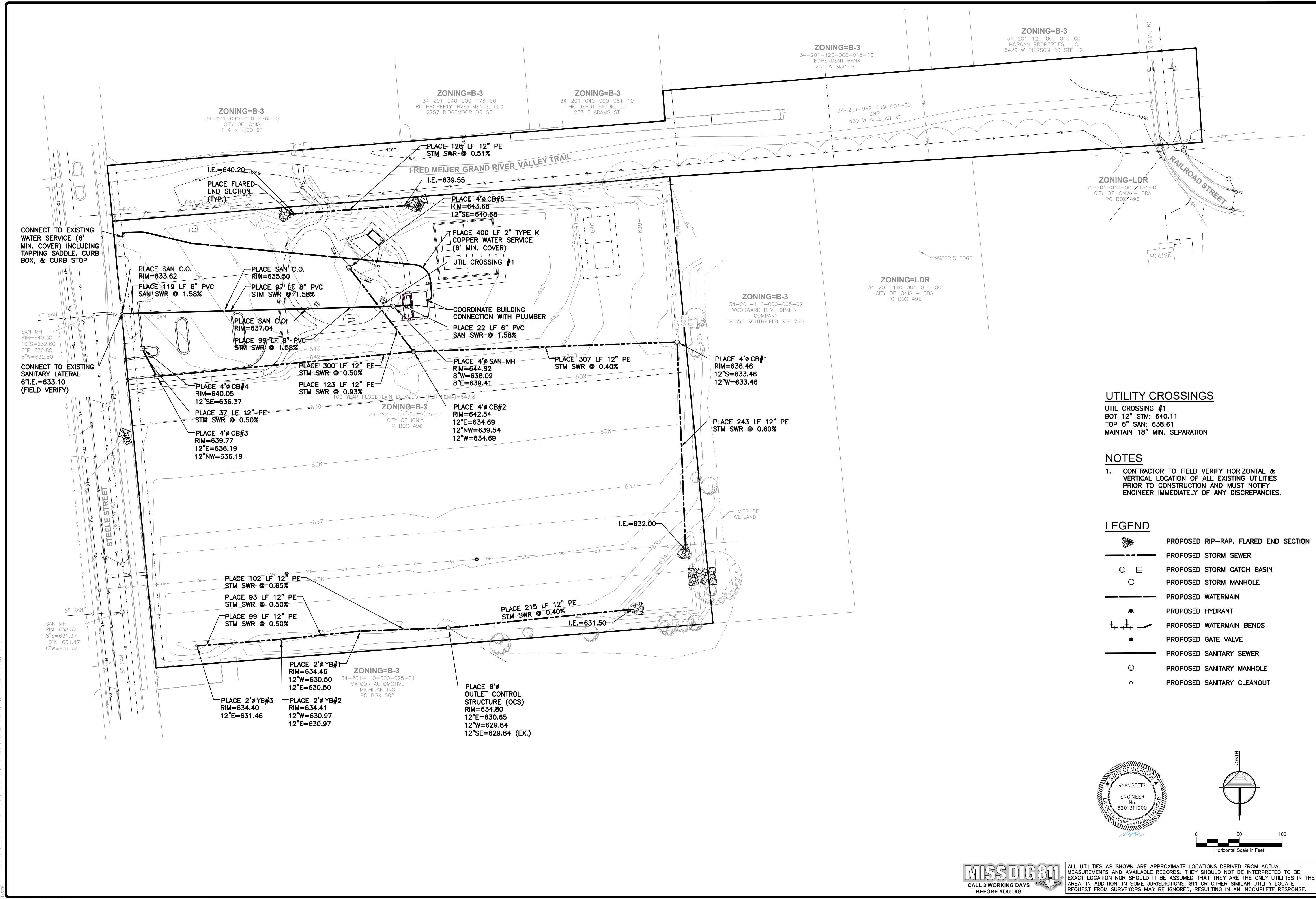
MCSA GROUP INC.
528 GREENWOOD AVENUE S.E. EAST GRAND RAPIDS, MICHIGAN 49506

STEELE PARK
CITY OF IONIA, MI

PROJECT: 25-032
DATE: 03/2025
DESIGNED BY: RJB
DRAFTED BY: KJB
QA/QC: KJV

GRADING & SESC PLAN

SHEET NUMBER: **C2**



CONNECT TO EXISTING WATER SERVICE (6' MIN. COVER) INCLUDING TAPPING SADDLE, CURB BOX, & CURB STOP

CONNECT TO EXISTING SANITARY LATERAL 6" I.E.=633.10 (FIELD VERIFY)

UTILITY CROSSINGS

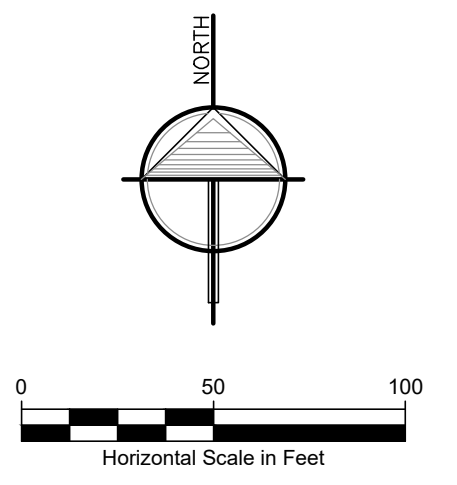
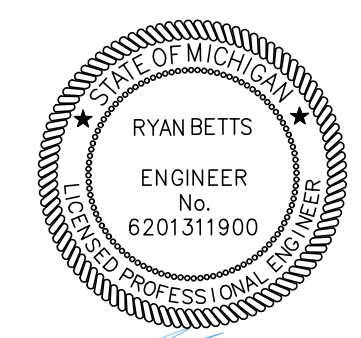
UTIL CROSSING #1
 BOT 12" STM: 640.11
 TOP 6" SAN: 638.61
 MAINTAIN 18" MIN. SEPARATION

NOTES

1. CONTRACTOR TO FIELD VERIFY HORIZONTAL & VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND MUST NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

LEGEND

- PROPOSED RIP-RAP, FLARED END SECTION
- PROPOSED STORM SEWER
- PROPOSED STORM CATCH BASIN
- PROPOSED STORM MANHOLE
- PROPOSED WATERMAIN
- PROPOSED HYDRANT
- PROPOSED WATERMAIN BENDS
- PROPOSED GATE VALVE
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY CLEANOUT



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www.LREMI.com

LRE

ENGINEERS & SURVEYORS

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529 GREENWOOD AVENUE S.E. EAST GRAND RAPIDS, MICHIGAN 49506

PROJECT: STEELE PARK
CITY OF IONIA, MI

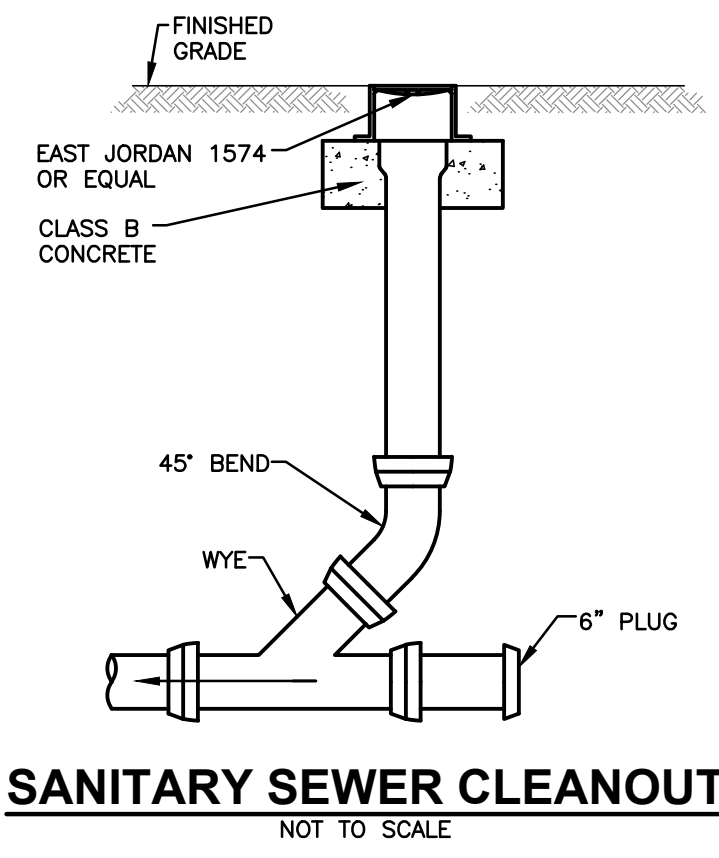
PROJECT NUMBER:	DATE
26-032	03/2025
SURVEYED BY: LCS	08/2025
DESIGNED BY: RUB	03/2025
DRAFTED BY: KJB	03/2025
QA/QC: KJV	08/2025

UTILITY PLAN

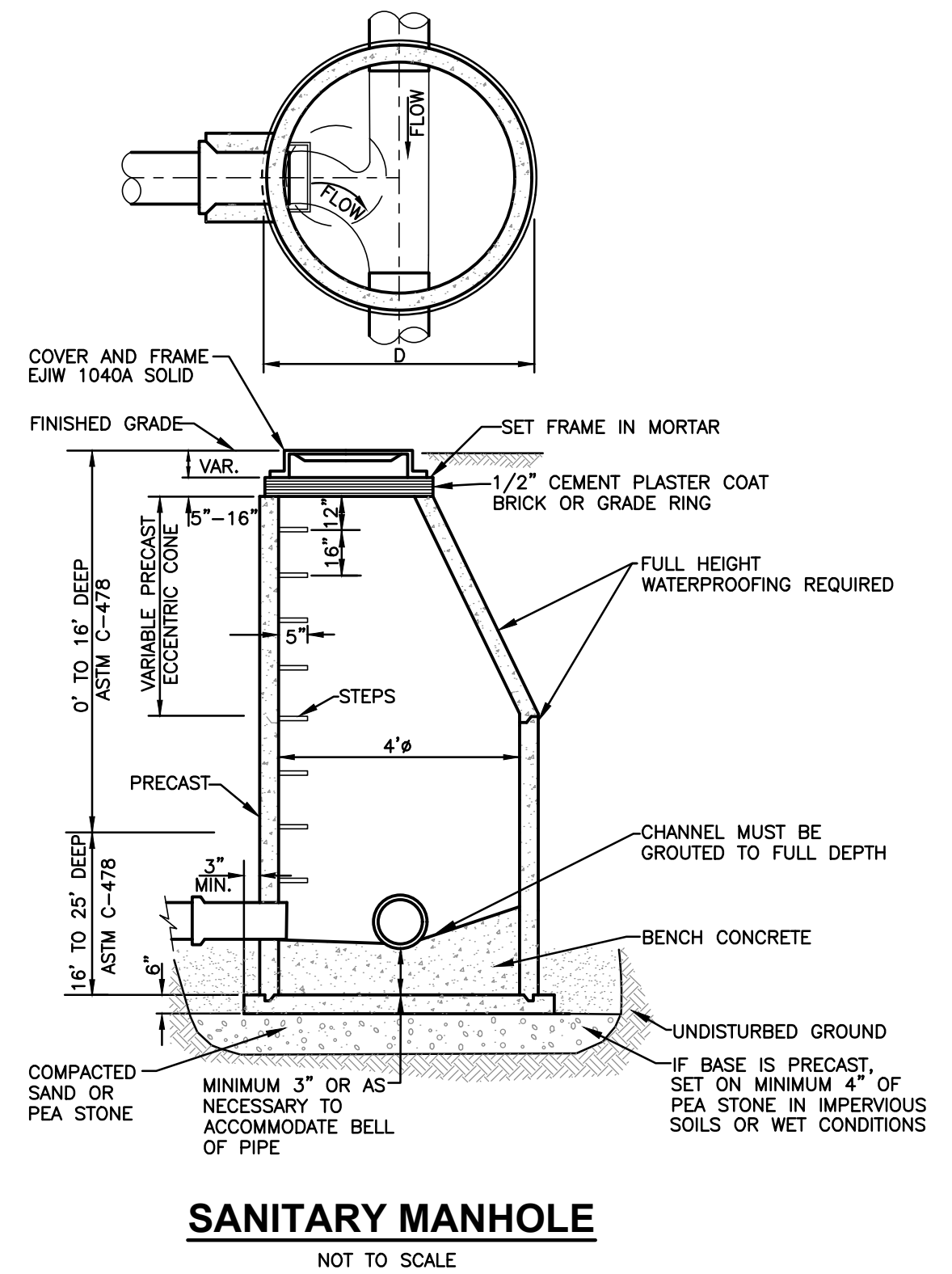
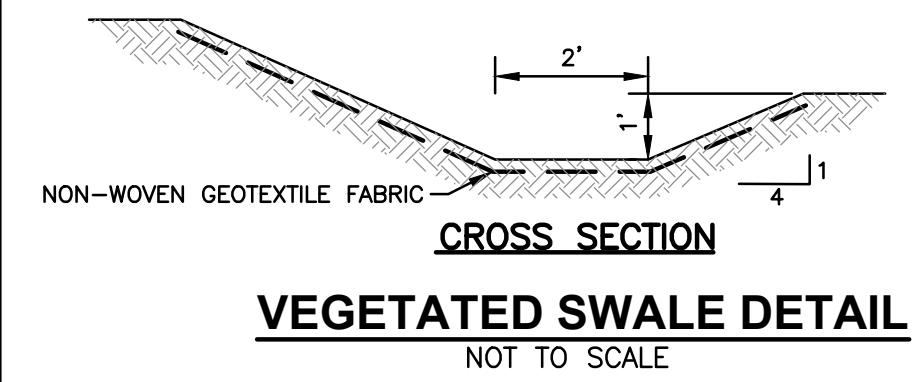
SHEET NUMBER

C3

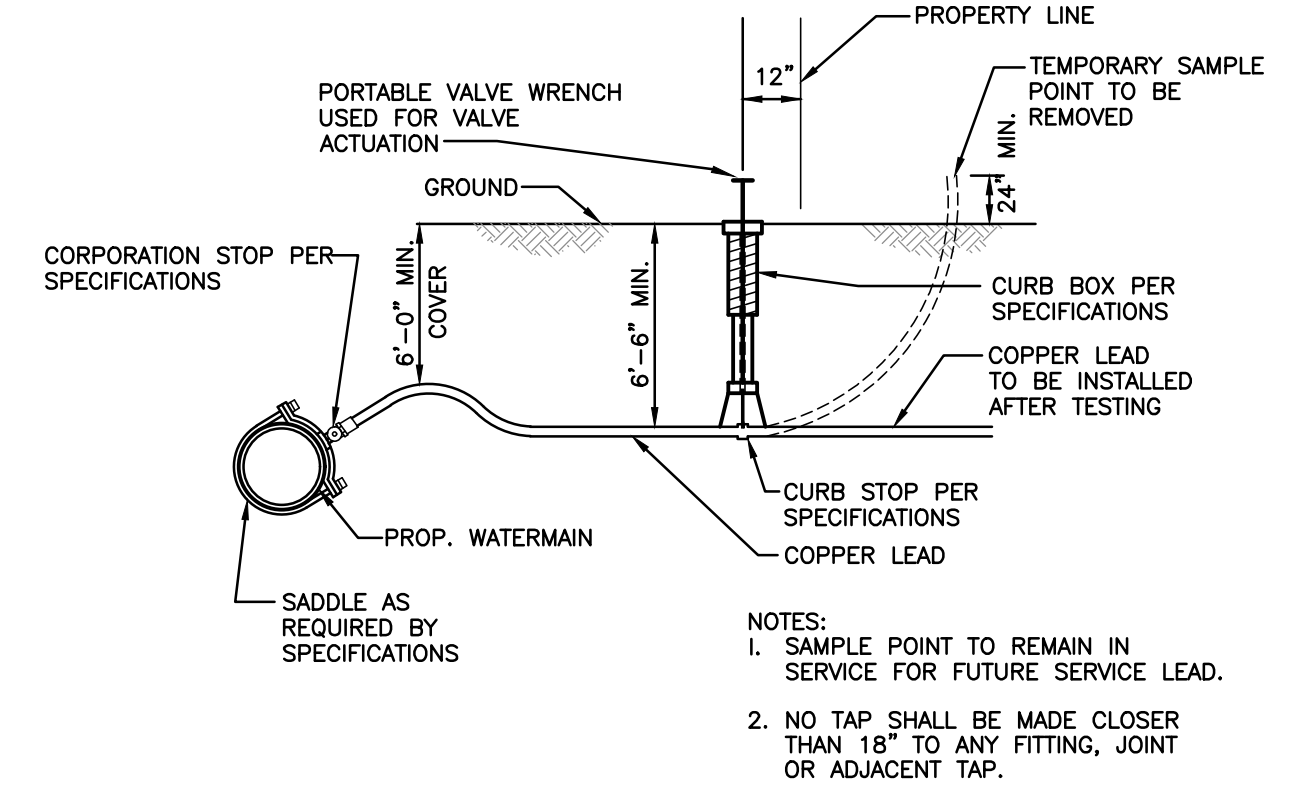
Nov. 02, 2025 - 10:31am in: P:\Projects\25-032 Steele Park - 100% Utility Plans\25-032_001.dwg (25-032_001.dwg) [25-032_001.dwg] [25-032_001.dwg]



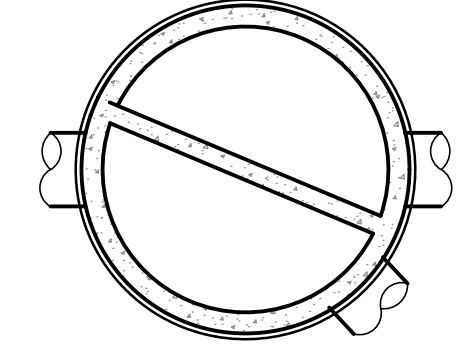
SANITARY SEWER CLEANOUT
NOT TO SCALE



SANITARY MANHOLE
NOT TO SCALE

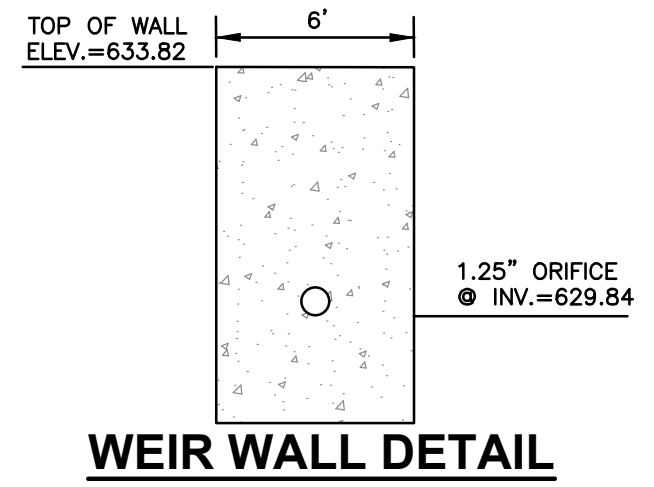


COPPER SERVICE LEAD CONNECTION/SAMPLE POINT
NOT TO SCALE

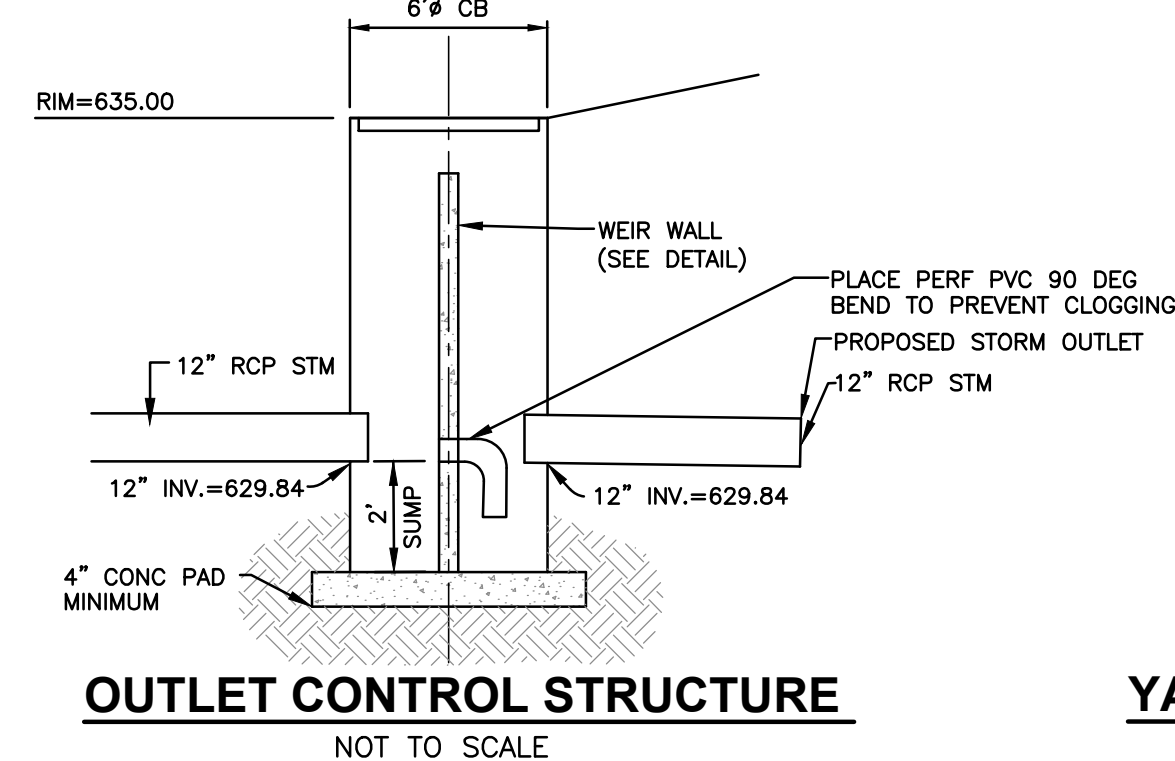


STORM STRUCTURE TABLE

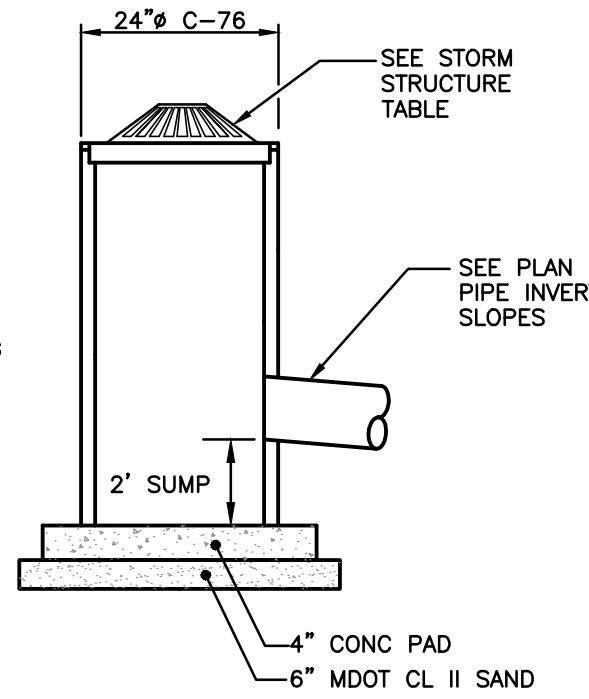
STRUCTURE	EJIW FRAME	EJIW GRATE
CB#1	6508	BEEHIVE
CB#2	6508	BEEHIVE
CB#3	7045	M1
CB#4	7045	M1
CB#5	5100	M1
YB#1	6508	BEEHIVE
YB#2	6508	BEEHIVE
YB#3	6508	BEEHIVE
OCS	6508	BEEHIVE



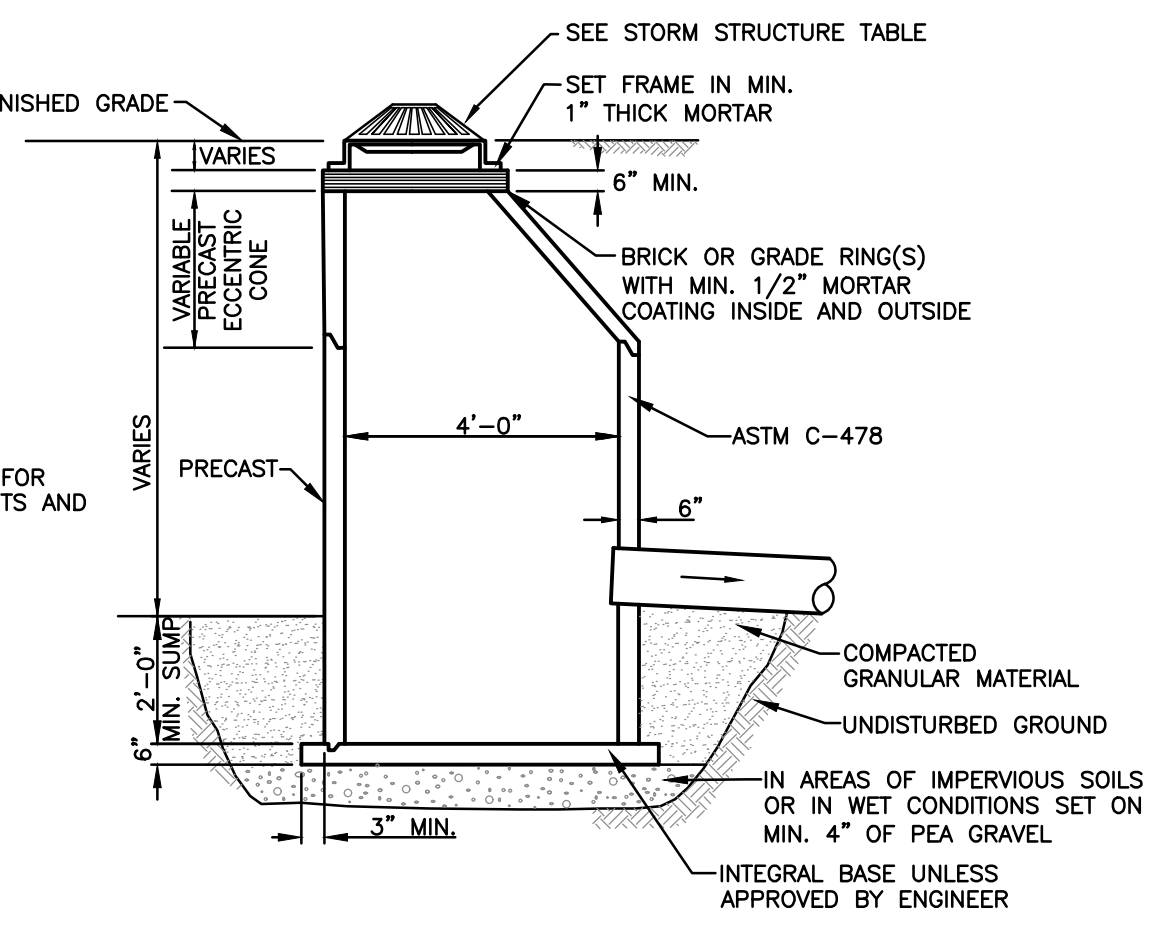
WEIR WALL DETAIL



OUTLET CONTROL STRUCTURE
NOT TO SCALE

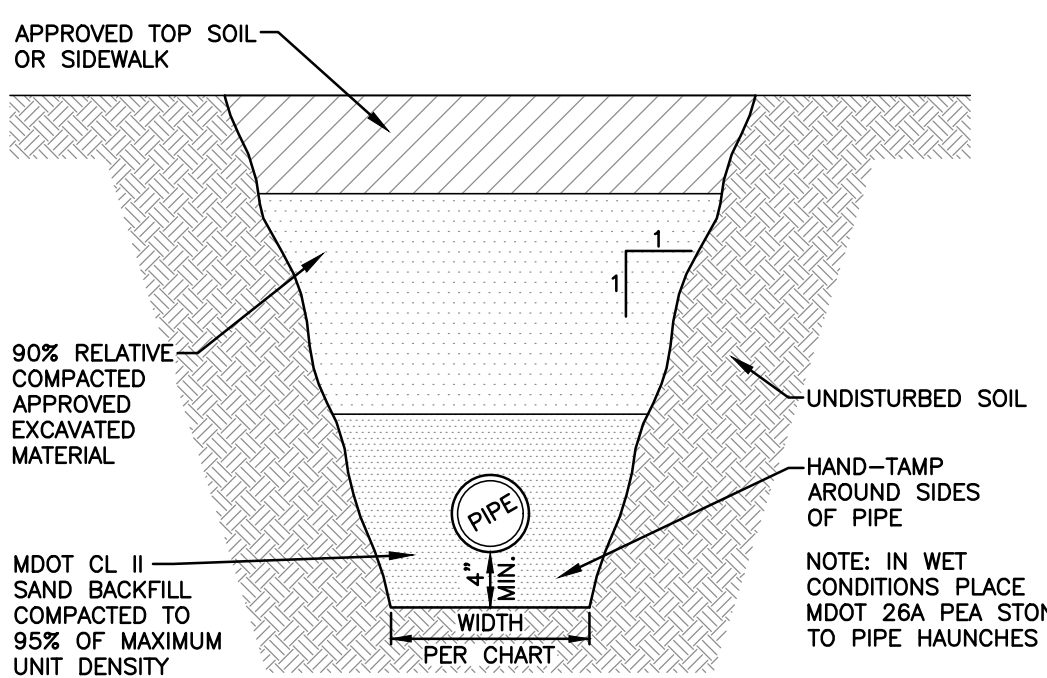


YARD BASIN DETAIL
NOT TO SCALE

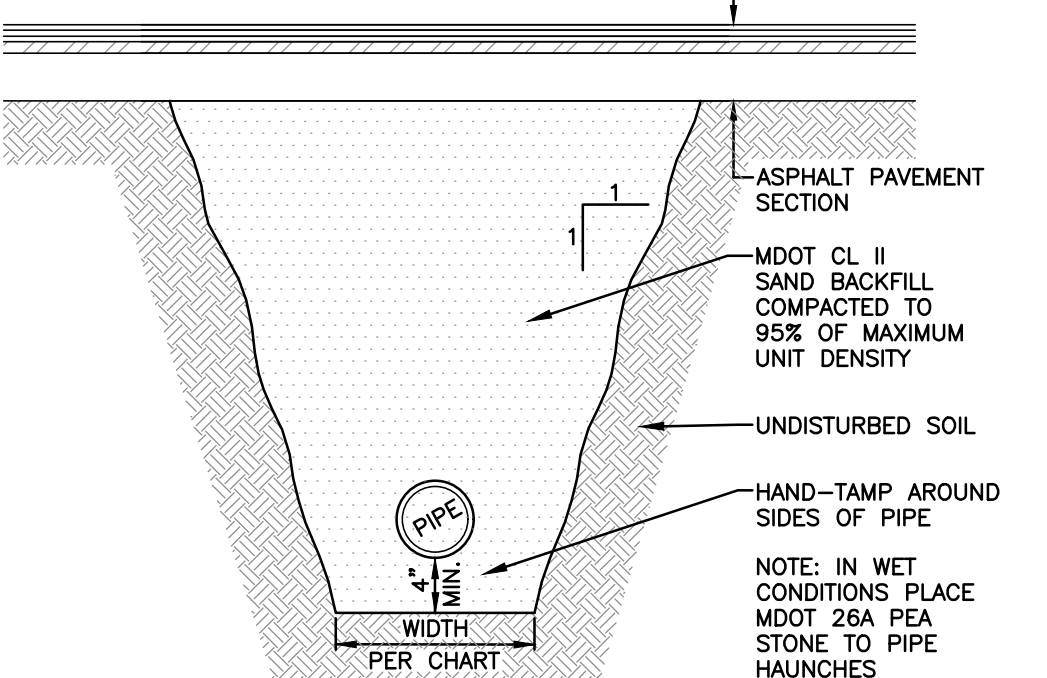


STANDARD CATCH BASIN
NO SCALE

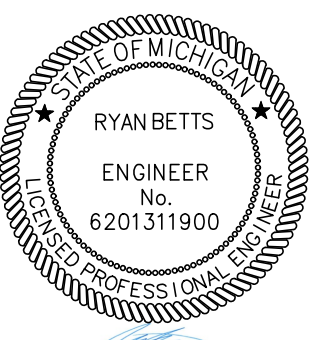
PIPE DIAMETER	MINIMUM TRENCH WIDTH OR PER MANUFACTURERS SPECIFICATIONS TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	38"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
60"	96"



TYPICAL TRENCH DETAIL
NOT TO SCALE



TYPICAL TRENCH DETAIL UNDER ASPHALT SURFACES ONLY
NOT TO SCALE

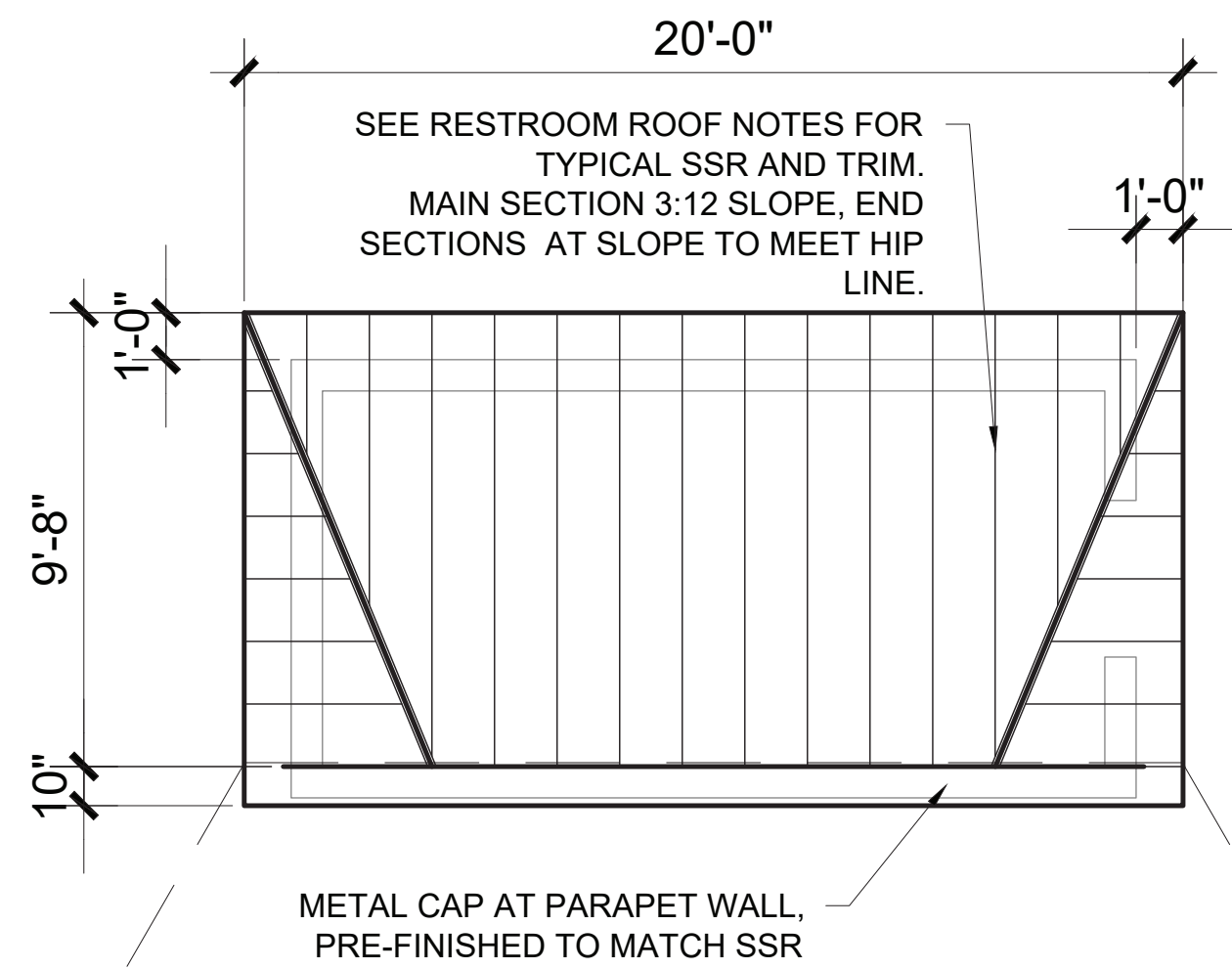


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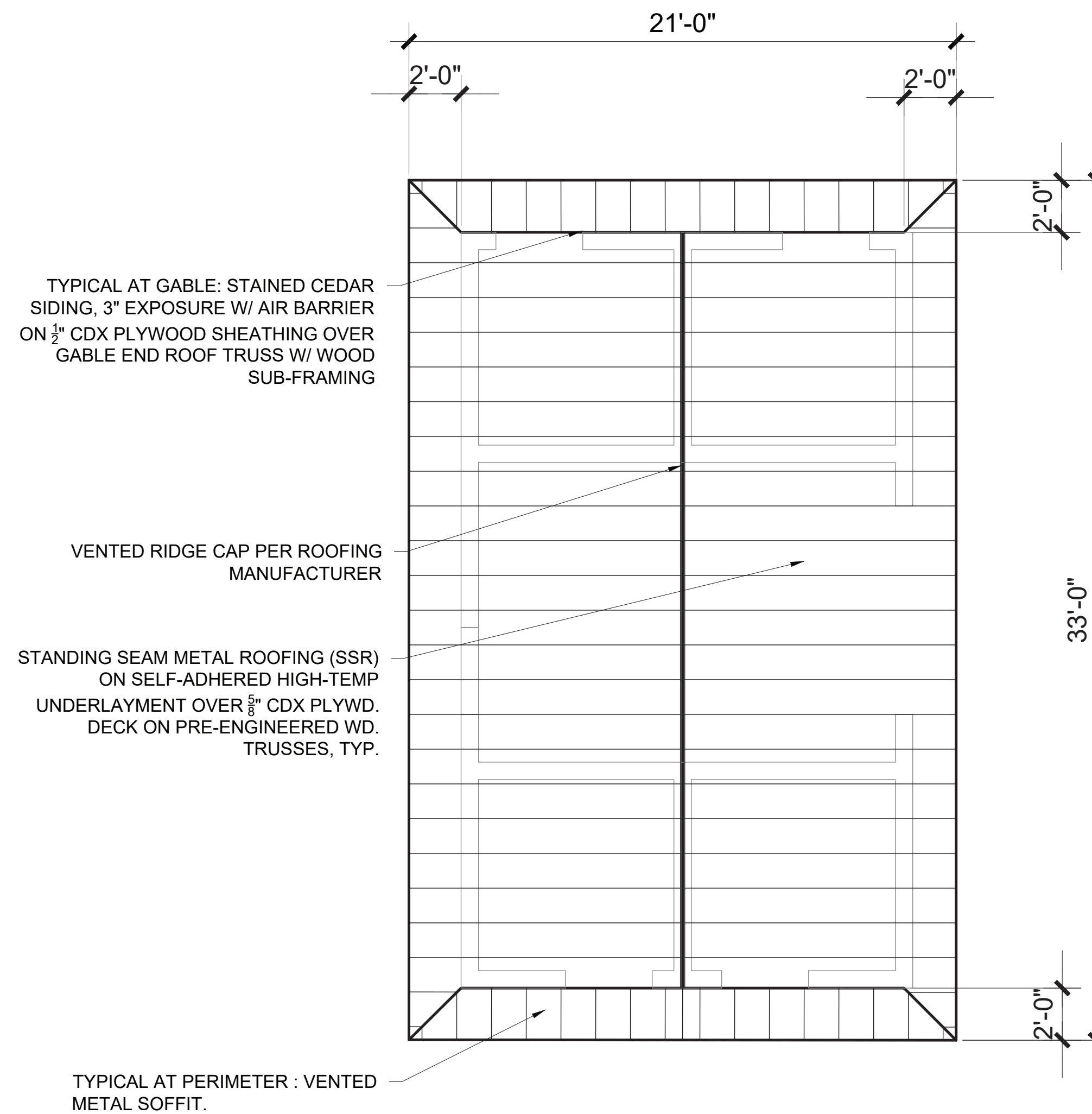
CLIENT: MCSA GROUP INC.
528 GREENWOOD AVENUE S.E. EAST GRAND RAPIDS, MICHIGAN 49506
PROJECT: STEELE PARK
CITY OF ONIA, MI

DATE	PROJECT NUMBER: 25-032
03/2025	
08/2025	
03/2025	
08/2025	

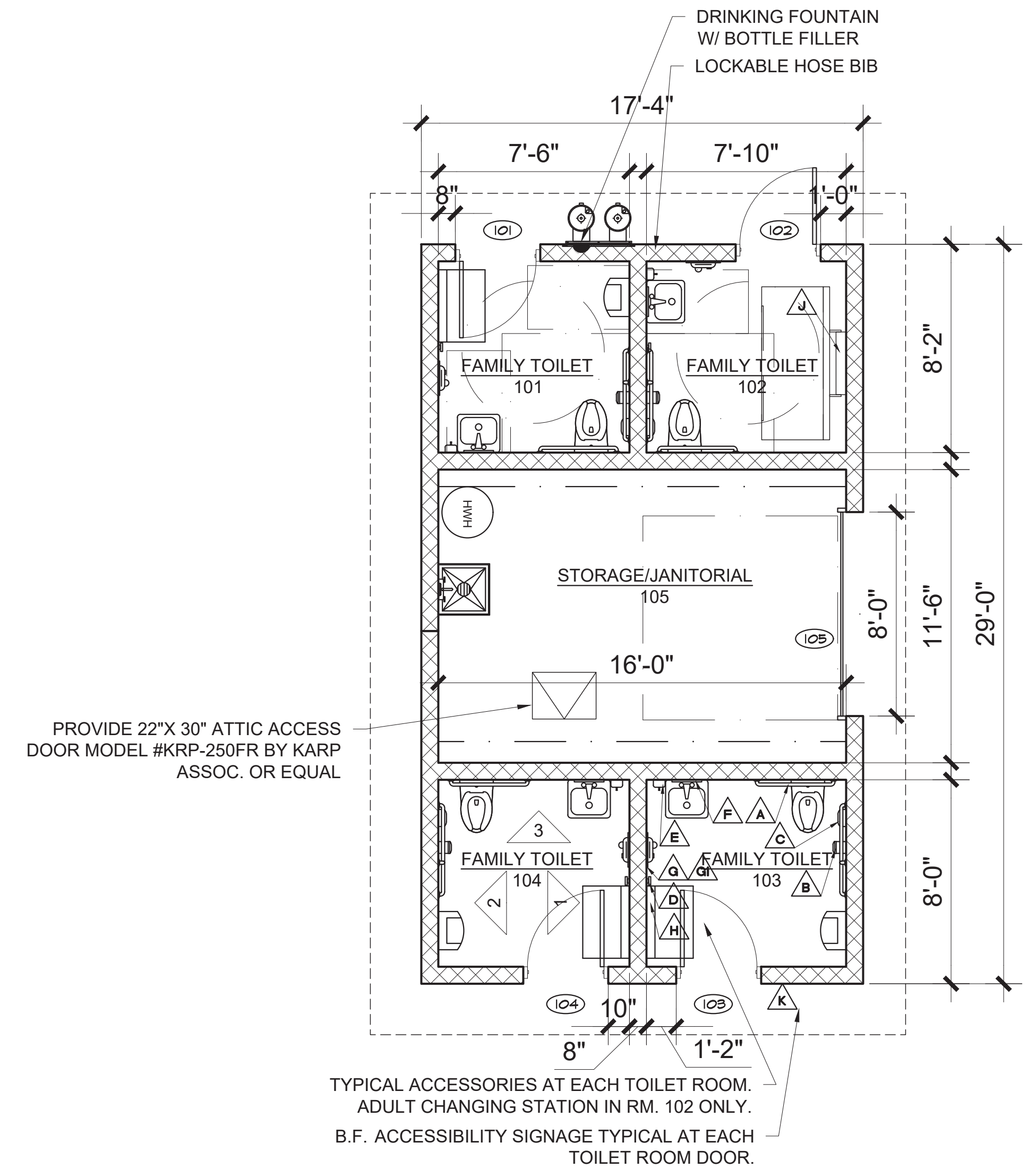
SHEET NAME: DETAILS
SHEET NUMBER: C4



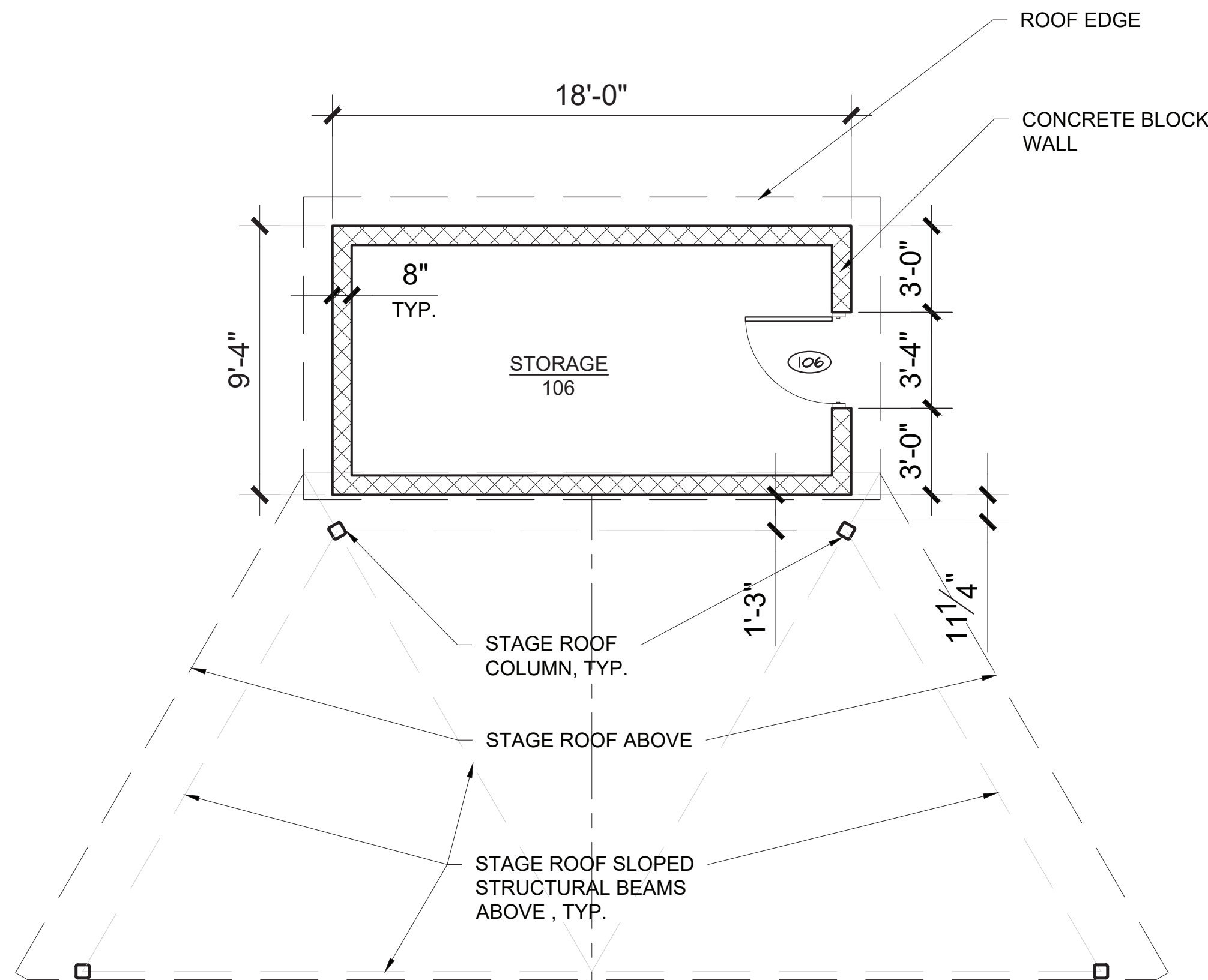
STORAGE BLDG. ROOF PLAN
1/4" = 1'-0"



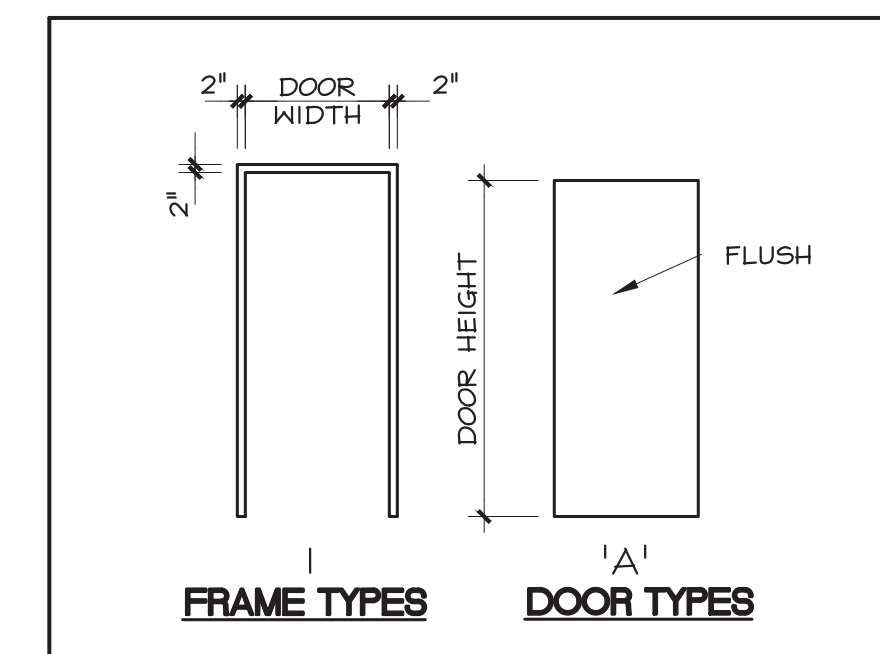
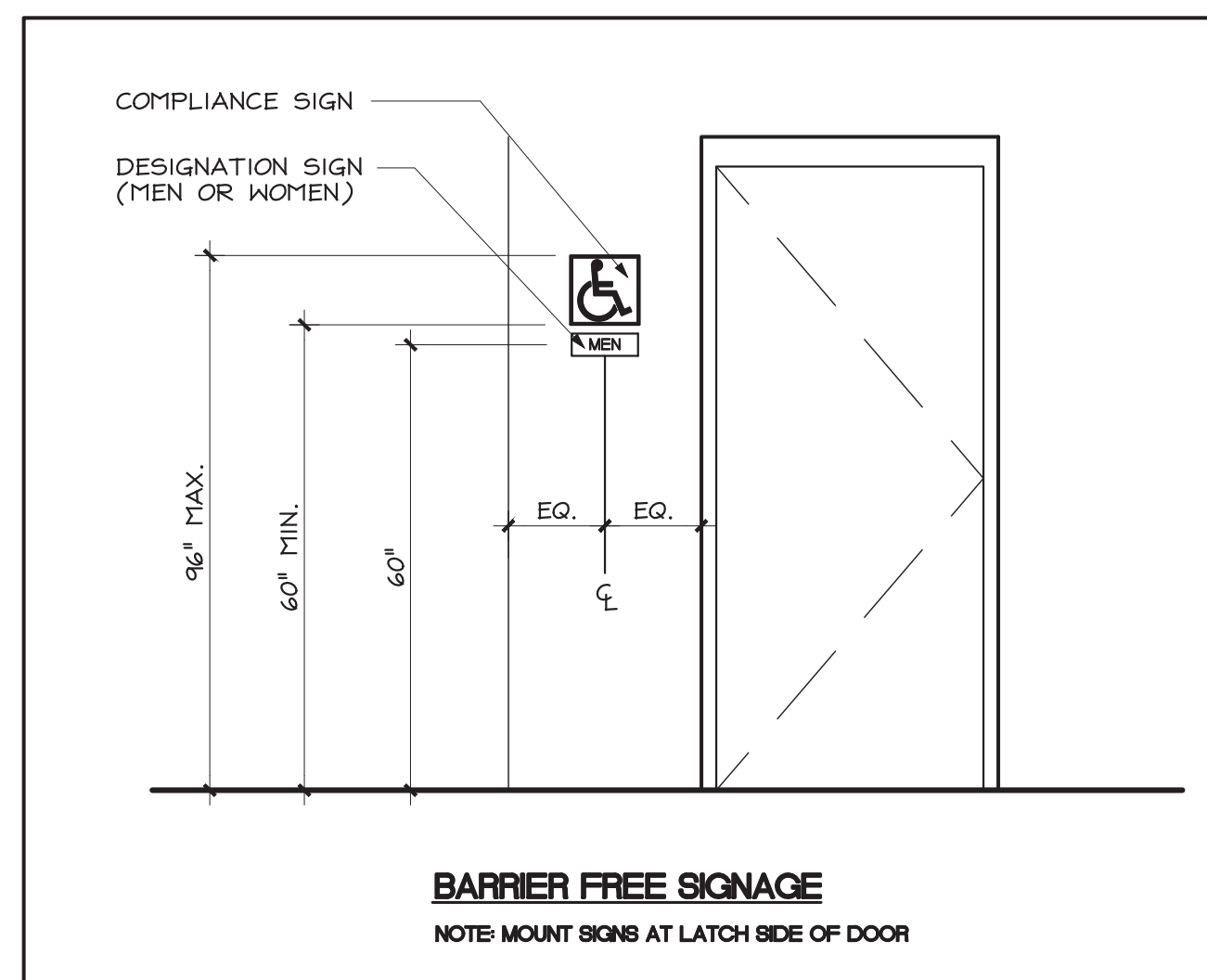
RESTROOM ROOF PLAN
1/4" = 1'-0"



RESTROOM FLOOR PLAN
1/4" = 1'-0"



STORAGE BLDG. FLOOR PLAN
1/4" = 1'-0"



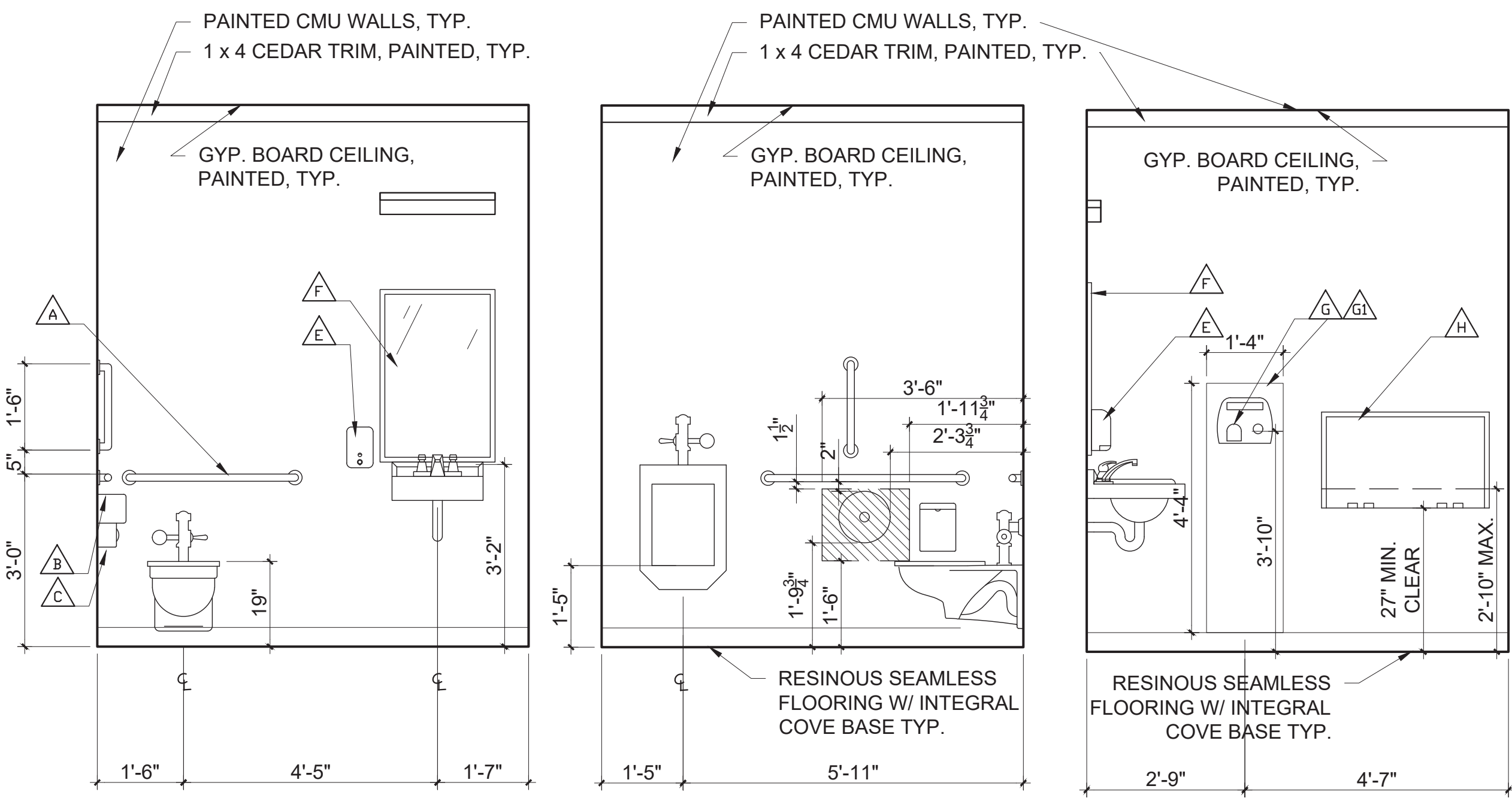
ROOM NUMBER	ROOM NAME	FLOOR		WALLS		CEILING	
		MTL	BASE	MTL	FINISH	MTL	HT.
101	FAMILY TOILET 101	RESINOUS SEAMLESS	IRC	CMU	EP	GYP / EP	9'-4"
102	FAMILY TOILET 102	RESINOUS SEAMLESS	IRC	CMU	EP	GYP / EP	9'-4"
103	FAMILY TOILET 103	RESINOUS SEAMLESS	IRC	CMU	EP	GYP / EP	9'-4"
104	FAMILY TOILET 104	RESINOUS SEAMLESS	IRC	CMU	EP	GYP / EP	9'-4"
105	STORAGE / JANITORIAL	SEALED CONC.	-	CMU	EP	PLYWOOD / PAINT	9'-4"
106	STORAGE	SEALED CONC.	-	CMU	EP	PLYWOOD / PAINT	9'-4"

EP = EPOXY PAINT
GYP = GYPSUM BOARD, HIGH-IMPACT
IRC = INTEGRAL RESINOUS COVEBASE (4" HIGH MIN.)
RES = RESILIENT BASE

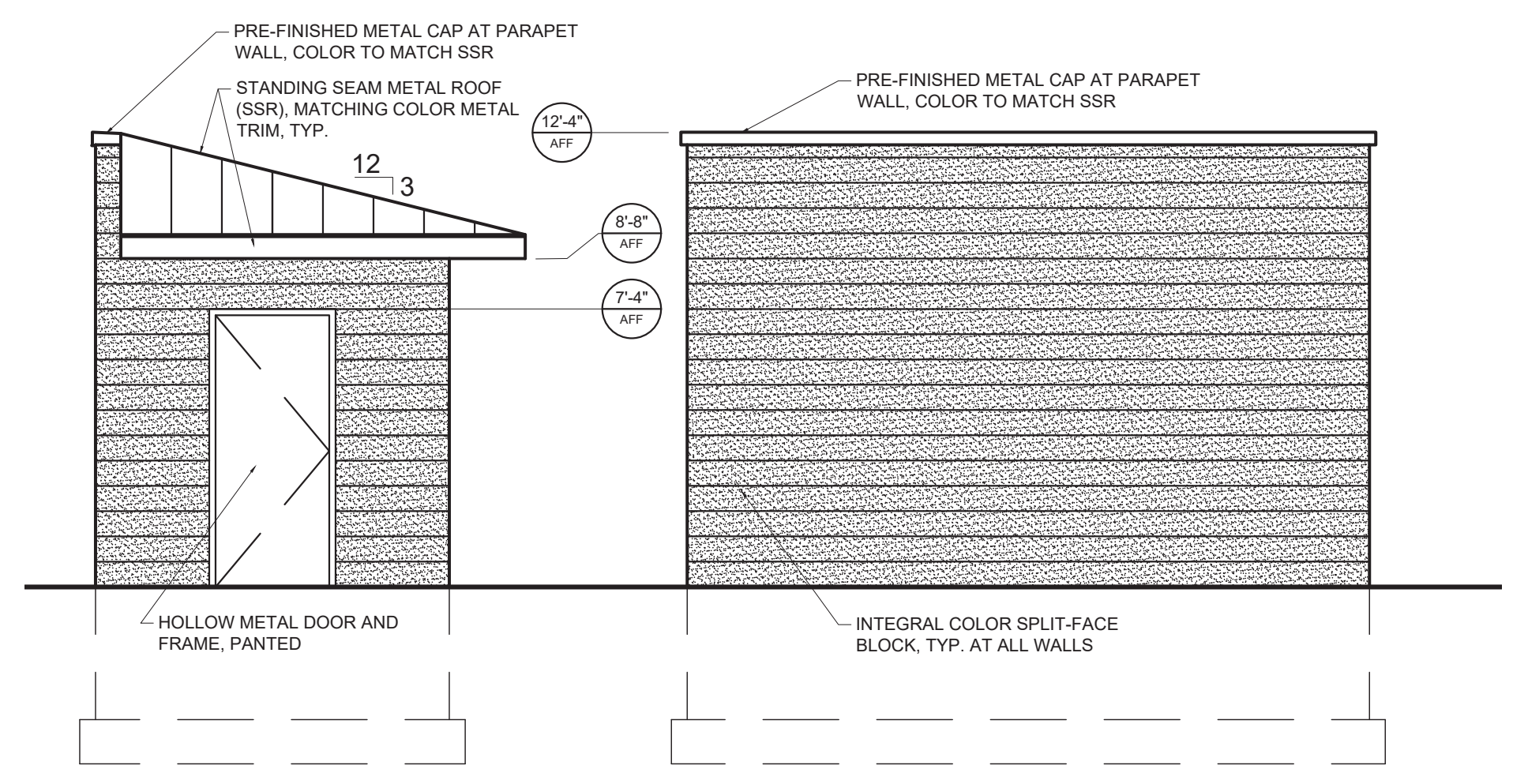
NO.	ROOM	SIZE	DOOR		FRAME		HARDWARE	NOTES
			MTL	FINISH	MTL	FINISH		
1	101	FAMILY TOILET 101	3'-0" x 7'-2"	H.M.	PAINT	H.M.	PAINT	1
2	102	FAMILY TOILET 102	3'-0" x 7'-2"	H.M.	PAINT	H.M.	PAINT	2
3	103	FAMILY TOILET 103	3'-0" x 7'-2"	H.M.	PAINT	H.M.	PAINT	1
4	104	FAMILY TOILET 104	3'-0" x 7'-2"	H.M.	PAINT	H.M.	PAINT	1
5	105	STORAGE / JANITORIAL	8'-0" x 7'-4"	OHD	MFC.	CMU	PAINT	4
6	106	STORAGE	3'-0" x 7'-2"	H.M.	PAINT	H.M.	PAINT	3

NOTES:
1. PROGRAMMABLE MORTISE LOCK W/ PRIVACY FUNCTION. SEE SPECIFICATIONS. DOOR IS SWINGING OUT.
2. STORAGE FUNCTION MORTISE LOCK. SEE SPECIFICATIONS. DOOR IS SWINGING IN OR OUT(*) SEE PLAN.
3. OVERHEAD SECTIONAL DOOR, PREFINISHED. SEE SPECIFICATIONS. REMOTE CONTROLLED OPENER.

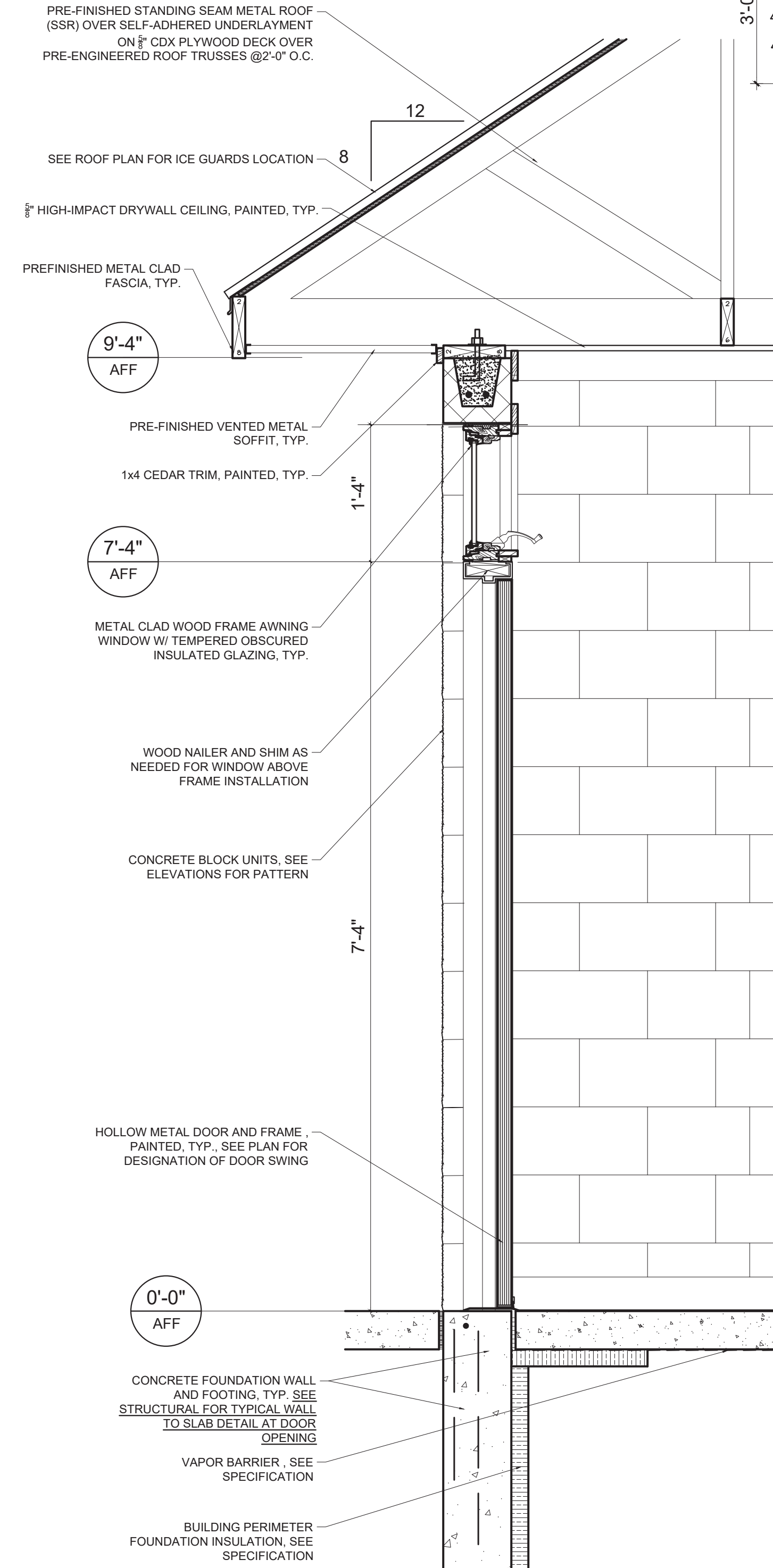
TOILET ACCESSORY SCHEDULE	
A	GRAB BARS SET
B	TOILET TISSUE DISPENSER - BY OWNER
C	SANITARY NAPKIN DISPOSAL
D	COAT HOOK (x 2 PER ROOM)
E	LIQUID SOAP DISPENSER - BY OWNER
F	MIRROR
G	WARM AIR HAND DRYER
G1	SOLID SURFACE BACKSPASH PANEL 16"x 52"
H	DIAPER CHANGING STATION
J	ADULT CHANGING STATION - FUTURE
	BARRIER FREE ROOM ACCESSIBILITY SIGNAGE



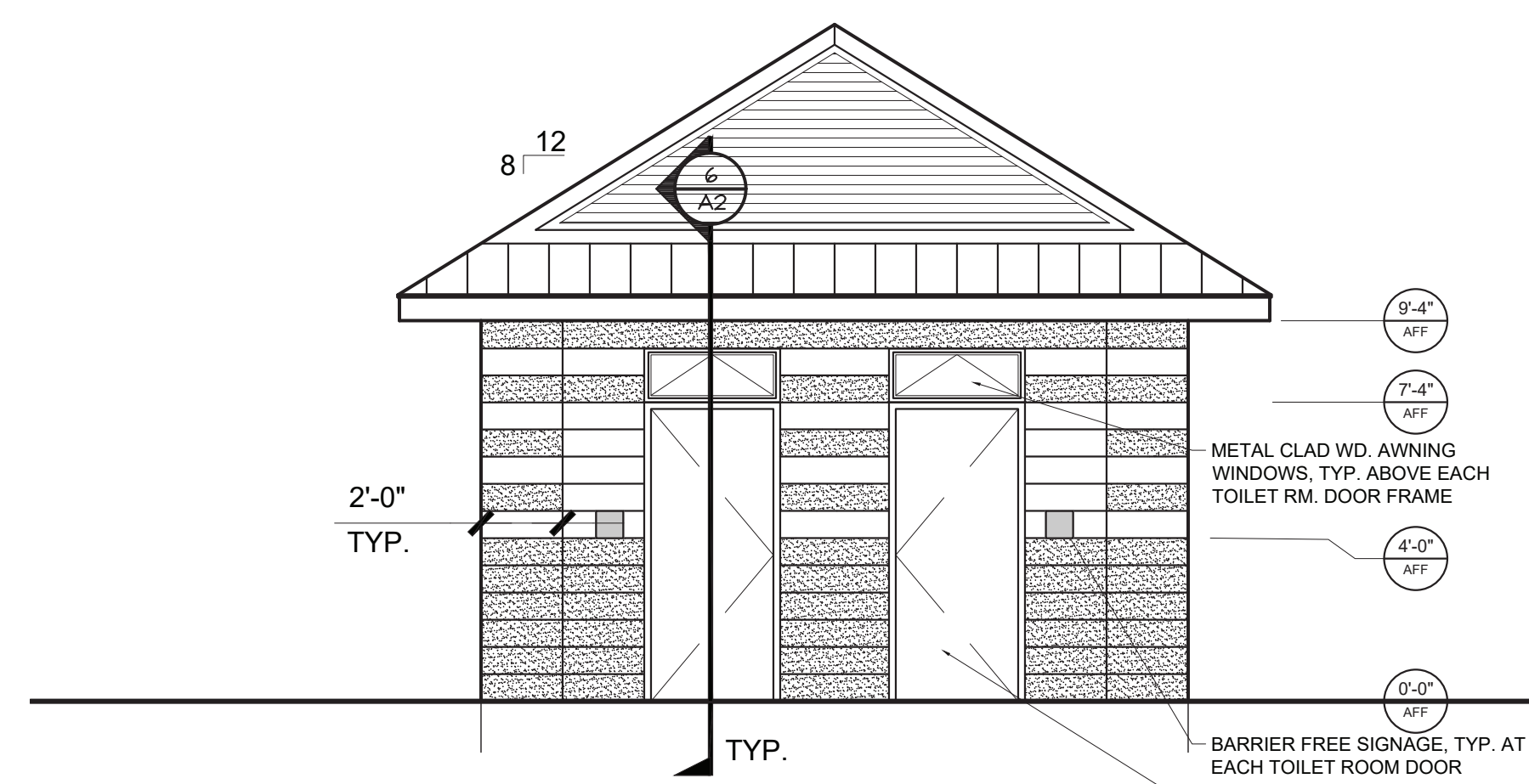
7 TYPICAL TOILET INTERIOR ELEVATIONS
SCALE: 1/2" = 1'-0"



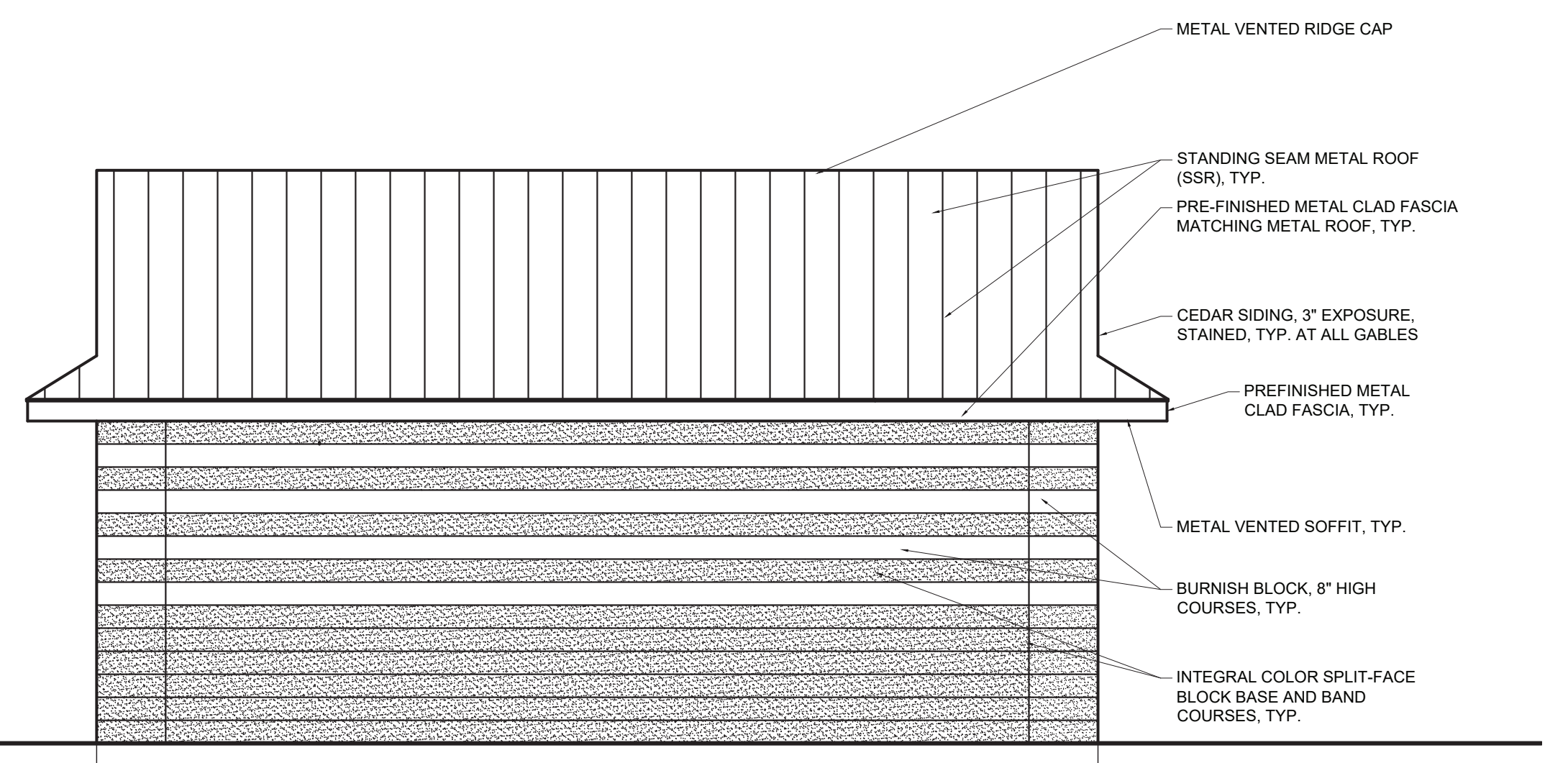
1 TYPICAL STORAGE BLDG. EXTERIOR ELEVATIONS
SCALE: 1/2" = 1'-0"



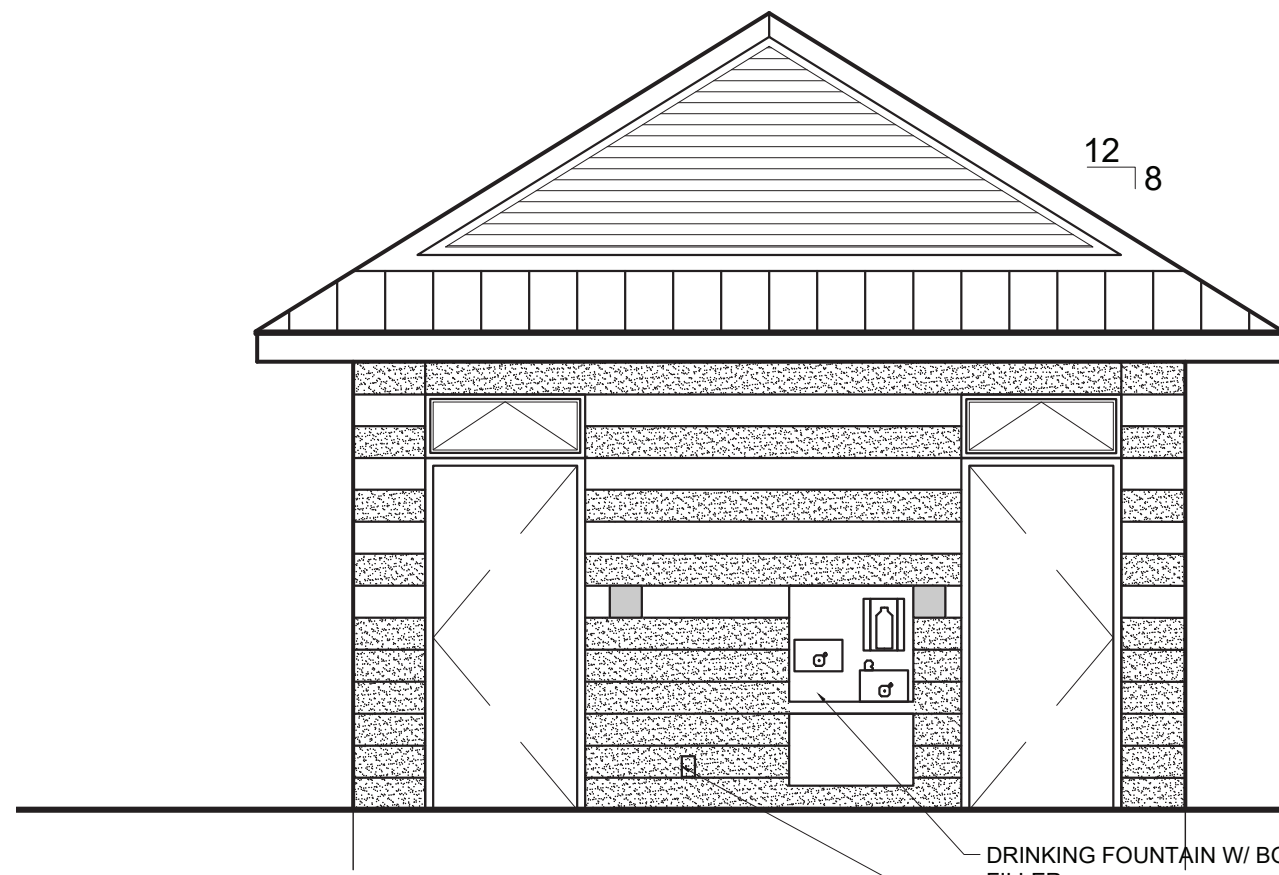
6 TYPICAL WALL SECTION
SCALE: 1" = 1'-0"



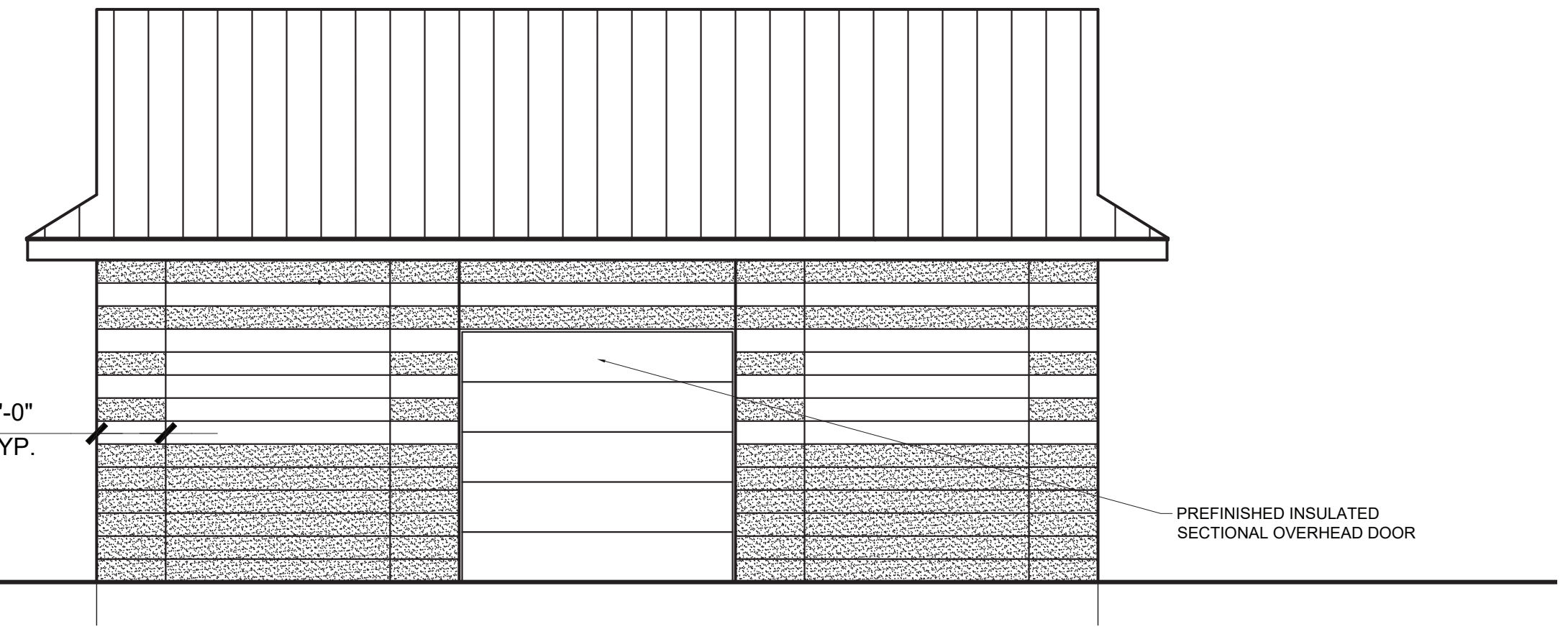
3 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



2 FUTURE WEST ELEVATION
SCALE: 1/4" = 1'-0"



5 NORTH ELEVATION
SCALE: 1/4" = 1'-0"



4 EAST ELEVATION
SCALE: 1/4" = 1'-0"



GENERAL NOTES

- ALL APPLICABLE LOCAL, STATE AND FEDERAL RULES, REGULATIONS, ORDINANCES AND CODES SHALL APPLY THROUGHOUT THE PROJECT.
- THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH 2021 MICHIGAN BUILDING CODE.
- FOUNDATION CRITERIA DESIGN PER GEOTECHNICAL ENGINEERING REPORT FIRM: SOILS & STRUCTURES
PHONE: (231) 798-4127
REPORT NUMBER: 25MKG-079
REPORT DATE: 06/04/25
- THE FOLLOWING LOADS HAVE BEEN USED FOR DESIGN PURPOSES:
 - A. BUILDING DESIGN CATEGORY** II
 - B. SNOW LOADS**
 - GROUND SNOW LOAD (Pg) 35 psf
 - SNOW LOAD IMPORTANCE FACTOR (I_s) 1.0
 - SNOW EXPOSURE FACTOR (C_e) 1.0
 - THERMAL FACTOR (C_t) 1.2
 - FLAT ROOF SNOW LOAD (P_s) 29.4 psf
 - C. WIND LOADS**
 - BASIC WIND SPEED (V) 115 mph
 - WIND IMPORTANCE FACTOR (I_w) 1.0
 - WIND EXPOSURE CATEGORY C
 - INTERNAL PRESSURE COEFFICIENT (GCp1) ±0.18
 - MWFRS WIND BASE PRESSURE 24.4 psf
 - D. SEISMIC LOAD**
 - SEISMIC IMPORTANCE FACTOR (I_e) 1.0
 - MAPPED SPECTRAL RESPONSE COEFFICIENTS:
 - SHORT PERIOD (S_s) 0.100g
 - 1 SECOND PERIOD (S₁) 0.050g
 - SPECTRAL RESPONSE COEFFICIENTS:
 - SHORT PERIOD (S_s) 0.107g
 - 1 SECOND PERIOD (S₁) 0.080g
 - RESPONSE MODIFICATION COEFFICIENT (R) 2
 - SEISMIC RESPONSE COEFFICIENT (C_s) 0.053
 - SITE CLASS D
 - SEISMIC DESIGN CATEGORY B
 - BASIC SEISMIC-FORCE RESISTING SYSTEM:
 - ORDINARY REINFORCED MASONRY SHEAR WALLS
 - ANALYSIS PROCEDURE:
 - EQUIVALENT LATERAL FORCE
 - E. LIVE LOAD**
 - ROOF 20 psf
- VERIFY ALL APPLICABLE DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO FABRICATION AND CONSTRUCTION.
- DO NOT SCALE DRAWINGS. REPRODUCTIONS OF CONTRACT STRUCTURAL DRAWINGS SHALL NOT BE USED FOR SHOP DRAWINGS. ELECTRONIC FILES ARE NOT AVAILABLE FOR USE BY SUBCONTRACTORS.
- CONTRACTOR TO COORDINATE WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL OPENINGS AND PENETRATIONS. NO OPENINGS SHALL PENETRATE STRUCTURAL ELEMENTS WITHOUT THE ENGINEER OF RECORD'S APPROVAL.
- ALL SPECIAL INSPECTIONS AND STRUCTURAL TESTS SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 17 OF THE 2021 MICHIGAN BUILDING CODE.
- IF THERE ARE ANY CONFLICTS BETWEEN THE SPECIFICATIONS AND DESIGN DRAWINGS PLEASE NOTIFY THE ARCHITECT.
- THE STRUCTURE HAS BEEN DESIGNED TO RELY UPON THE ROOF AND FLOOR SYSTEMS FOR STABILITY. IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO PROVIDE ADEQUATE TEMPORARY BRACING UNTIL THE STRUCTURE HAS BEEN INSTALLED IN ACCORDANCE WITH THE DRAWINGS. THIS SHALL ALSO INCLUDE ANY SUPERIMPOSED CONSTRUCTION LOADS.
- ALL INDICATED STRUCTURAL ELEVATIONS ARE BASED ON THE GROUND FLOOR FINISHED TOP SURFACE ELEVATION OF 100'-0".
- CONTRACTOR PROPOSED ALTERNATES TO THE CONTRACT DRAWINGS AND SPECIFICATIONS WILL BE CONSIDERED IF THEY RESULT IN SUBSTANTIAL SAVINGS TO THE OWNER WITHOUT ADVERSELY IMPACTING THE INTEGRITY AND FUNCTION OF THE STRUCTURE. ANY REQUEST FOR SUBSTITUTION SHALL BE ACCOMPANIED BY WRITTEN DOCUMENTATION OF THE SAVINGS INCLUDING ALL BACKUP DATA AND SEALED ENGINEERING CALCULATIONS NECESSARY TO EVALUATE THE MERITS OF THE PROPOSED ALTERNATE. ADDITIONAL ENGINEERING AND ARCHITECTURAL REVIEW COSTS MAY IMPACT THE VIABILITY OF ANY PROPOSED ALTERNATE.
- SOILS AND STRUCTURES SHALL BE PROVIDED (2) COPIES OF ALL STRUCTURAL SHOP DRAWINGS FOR REVIEW PRIOR TO CONSTRUCTION FOR CONFORMANCE TO THE DESIGN CONCEPT ONLY. WE WILL RETURN (1) COPY WITH OUR RED-MARKED COMMENTS IN A MINIMUM OF (5) BUSINESS DAYS TIME FROM RECEIVING OUR COPIES. NO WORK SHALL BE PERFORMED WITHOUT REVIEWED SHOP DRAWINGS.
- FRAMING CONDITIONS NOT SPECIFICALLY DETAILED OR INDICATED SHALL BE FRAMED SIMILAR TO DETAILS SHOWN FOR THE RESPECTIVE MATERIAL OR CONDITION.

STRUCTURAL NOTES

CONCRETE

- ALL CONCRETE HAS BEEN DESIGNED AND SHALL BE BUILT IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318
 - ALL CONCRETE TO HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI.
- CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS TO SOILS & STRUCTURES FOR APPROVAL. FOR ALL CAST-IN-PLACE CONCRETE INCLUDING FOUNDATIONS, WALLS AND FLOOR SLABS. EXCLUDE PAVING OR OTHER EXTERIOR CONCRETE BY OTHERS.
- THE USE OF CHLORIDE ACCELERATORS IN ANY CONCRETE MIX DESIGN IS NOT PERMITTED.
- EXTERIOR CONCRETE AND CONCRETE EXPOSED TO FREEZE THAW CYCLES OR DEICING CHEMICALS SHALL BE AIR ENTRAINED WITH AIR CONTENT PER ACI TABLE 19.3.3.1
- ALL REINFORCING STEEL BARS TO BE ASTM A615 GRADE 60 DEFORMED AND ALL DEFORMED WELDED WIRE FABRIC TO BE ASTM A195. ALL REINFORCING TO BE PLACED IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318 AND CRSI SPECIFICATIONS.
- CONCRETE COVER FOR REINFORCING (UNLESS NOTED OTHERWISE):
 - A. CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH = 3"
 - B. EXPOSED TO EARTH OR WEATHER:
 - #6 THRU #18 BARS = 2"
 - #5 BARS AND 5/8" WIRE AND SMALLER = 1-1/2"
 - C. NOT EXPOSED TO EARTH OR WEATHER:
 - 1. SLABS, WALLS AND JOISTS
 - #14 AND #18 BARS = 1-1/2"
 - #11 AND SMALLER BARS = 3/4"
 - 2. BEAMS, GIRDERS AND COLUMNS:
 - PRINCIPAL REINFORCEMENT, TIES, STIRRUPS AND SPIRALS = 1-1/2"
- MINIMUM CLEAR SPACE BETWEEN PARALLEL BARS IN A LAYER INCLUDING SPLICE BARS, SHALL NOT BE LESS THAN:
 - A. FOR COLUMNS & PEDESTALS:
 - 1. THE DIAMETER OF THE BAR TIMES 1.5
 - 2. 1-1/2"
 - 3. 1.33 TIMES THE MAXIMUM AGGREGATE SIZE.
 - B. FOR ALL OTHER BARS:
 - 1. THE DIAMETER OF THE BAR
 - 2. 1"
 - 3. 1.33 TIMES THE MAXIMUM AGGREGATE SIZE.
- ALL NEW CONCRETE SHALL BE CURED IMMEDIATELY AFTER FINISHING OF REMOVING FORMWORK. CURING SHALL BE EITHER A MOIST CURE METHOD OF THE USE OF A CURING COMPOUND, COLD WEATHER CONCRETE PLACED PER ACI 306R.
- PROVIDE CORNER BARS THAT MATCH CONTINUOUS REINFORCEMENT SIZE AND QUANTITY AT ALL INTERSECTIONS AND CORNERS OF FOOTINGS AND WALLS.
- FOOTINGS SHALL BE PLACED ON SOLID BEARINGS REGARDLESS OF THE ELEVATION SHOWN ON THE DRAWINGS. IF THE SOIL CONDITIONS ARE QUESTIONABLE, REFER TO SOILS AND STRUCTURES FOR DIRECTION.
- PER THE GEOTECHNICAL REPORT, AN ALLOWABLE SOIL BEARING PRESSURE OF 3,000 POUNDS PER SQUARE FOOT FOR ALL WALL FOUNDATIONS WAS USED FOR DESIGN PURPOSES.
- ALL ANCHOR RODS TO BE ASTM F1554 GRADE 36, WITH "UNC" CLASS 2A THREADS, HEAVY HEX NUTS AND STANDARD CUT WASHERS UNLESS NOTED OTHERWISE.
- FOUNDATION WALLS SHALL NOT BE BACKFILLED UNTIL CONCRETE HAS REACHED ITS 28-DAY COMPRESSIVE STRENGTH, AND THE WALLS MUST BE ADEQUATELY BRACED W/ TEMPORARY BRACING AND/OR UPPER FLOOR AND LOWER SLAB IS INSTALLED.
- ALL FILL REQUIRED SHALL BE COMPACTED AND TESTED TO A MINIMUM OF 95% OF ITS MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
- THE WELDING OF REINFORCING STEEL BARS IS NOT PERMITTED, INCLUDING BUT NOT LIMITED TO TACK WELDS, BUTT WELDS, GROOVE WELDS, ETC.

STEEL

- ALL STEEL HAS BEEN DESIGNED AND SHALL BE BUILT IN ACCORDANCE WITH THE LATEST EDITION OF THE AISC STEEL CONSTRUCTION MANUAL.
- ALL STEEL TO BE AS FOLLOWS UNLESS NOTED OTHERWISE:
 - A. W-SHAPES: ASTM A992 GRADE 50
 - B. PLATE, BAR, MISC STEEL: ASTM A36
 - C. STRUCTURAL BOLTS: ASTM A325N
 - D. HEADED STUD ANCHORS: ASTM A108 TYPE B 65 KSI
- ALL WELDING TO BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF AWS D1.1. ALL WELD ELECTRODES TO BE E70xx LOW HYDROGEN.
- COORDINATE PAINT AND FIREPROOFING REQUIREMENT WITH ARCHITECT.
- ALL BOLTS SHALL BE TIGHTENED TO AISC SNUG TIGHT CONDITIONS UNLESS NOTED OTHERWISE.
- ALL LINTELS IN EXTERIOR WALLS TO BE GALVANIZED.
- STRUCTURAL SHAPES AND PLATES TO BE GALVANIZED SHALL BE IN ACCORDANCE WITH ASTM A123. BOLTS AND NUTS TO BE GALVANIZED SHALL BE IN ACCORDANCE WITH ASTM A153. ANY DAMAGE TO GALVANIZING SHALL BE TOUCHED UP WITH VOIGHT AND SCHWEITZER L209 ZINC PASTE OR AN APPROVED EQUAL.

WOOD

- ALL WOOD MEMBER AND TRUSS DESIGN SHALL CONFORM WITH THE LATEST EDITIONS OF AITC TIMBER CONSTRUCTION MANUAL, NDS, AND TPI.
 - WOOD TRUSS SUPPLIER SHALL SUBMIT SIGNED AND SEALED DESIGN CALCULATIONS, FABRICATION AND ERECTION DRAWINGS PREPARED BY A PROFESSIONAL ENGINEER.
 - TRUSS SUPPLIER IS RESPONSIBLE FOR ALL TRUSS BRACING AND BRIDGING, INCLUDING BUT NOT LIMITED TO PERMANENT TRUSS BRACING. ALL GABLE END TRUSSES SHALL BE DESIGNED TO SUPPORT WIND PERPENDICULAR TO THE TRUSS SPAN.
 - GABLE END TRUSSES TO BE DESIGNED BY TRUSS SUPPLIER FOR WIND LOAD PERPENDICULAR TO THE TRUSS.
 - BRACING AND ERECTION OF WOOD TRUSSES SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE TPI'S HB DOCUMENT.
 - CONNECTIONS FOR WOOD MEMBERS SHALL CONFORM TO THE MICHIGAN BUILDING CODE WOOD FASTENING SCHEDULE TABLE 2304.10.2 AS A MINIMUM UNLESS OTHERWISE DETAILED.
 - ROOF TRUSS LAYOUT SHOWN IS CONCEPTUAL AND FRAMING SHALL NOT EXCEED THE SPACING INDICATED ON THE DRAWINGS. ALL ROOF TRUSS CONNECTIONS WILL BE FINALIZED BASED UPON REVIEW OF THE TRUSS SHOP DRAWINGS.
 - NAILS SIZES SPECIFIED ON THE PLANS, DETAILS AND TO BE USED IN SIMPSON STRONG-TIE CONNECTORS SHALL BE COMMON NAILS THAT CONFORM TO ASTM F1667.
 - HOLES AND NOTCHES DRILLED OR CUT INTO WOOD FRAMING MEMBERS SHALL NOT EXCEED THE REQUIREMENTS OF THE 2021 MICHIGAN BUILDING CODE SECTIONS 2308.5.5, 2308.5.10 AND 2308.7.4.
 - ALL WOOD EXPOSED TO WEATHER, WOOD SILLS AND ANY WOOD IN CONTACT WITH MASONRY, STEEL, OR CONCRETE SHALL BE PRESERVATIVE PRESSURE TREATED LUMBER. ENDS OF EXPOSED LUMBER SHALL BE SEALED INCLUDING ANY LUMBER THAT IS FIELD CUT.
 - FOR CORRECT INSTALLATION OF SIMPSON CONNECTION HARDWARE, PLEASE REFER TO THE LATEST EDITION OF THE SIMPSON STRONG-TIE WOOD CONSTRUCTION CONNECTORS CATALOG.
 - IN EXTERIOR APPLICATIONS ALL CONNECTION HARDWARE AND CONNECTION FASTENERS MUST BE STAINLESS STEEL WHEN IN CONTACT AND WHEN USED TO FASTEN AC3-C, AC3-D, CAB, CBA-A, OR ACZA PRESERVATIVE PRESSURE TREATED LUMBER.
 - ALL SHEATHING SHALL BE INSTALLED CONTINUOUS OVER A MINIMUM OF THREE SUPPORTS WITH THE FACE GRAIN PERPENDICULAR TO SUPPORT. ALLOW AN 1/8" GAP AT ALL PANEL EDGES AND ENDS.
- MASONRY**
- ALL MASONRY HAS BEEN DESIGNED AND SHALL BE BUILT IN ACCORDANCE WITH THE LATEST EDITION OF ACI 530.
 - ALL MASONRY TO HAVE MASONRY STRENGTH OF f_m = 1900 PSI USING THE UNIT STRENGTH METHOD.
 - ALL REINFORCING BARS SHALL BE ASTM A615 GRADE 60.
 - ALL CONCRETE MASONRY UNITS SHALL CONFORM WITH ASTM C90.
 - MORTAR CEMENT FOR LOAD BEARING AND EXTERIOR MASONRY WALLS SHALL CONFORM TO ASTM C270 AND SHALL BE TYPE S.
 - GROUT FOR BOND BEAMS AND TO FILL CMU CORES SHALL CONFORM TO ASTM C476. GROUT SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 2500 PSI. GROUT SHALL BE MECHANICALLY VIBRATED TO INSURE COMPLETE FILLING OF THE CORES. IF HIGH LIFT GROUTING IS USED, CLEANOUTS SHALL BE PROVIDED AT THE BASE OF EACH REINFORCED CELL AND AT INTERVALS PER ACI 530.
 - MASONRY HORIZONTAL JOINT REINFORCING SHALL BE 9 GAUGE GALVANIZED TRUSS TYPE CONFORMING TO ASTM A951 AT 16 INCHES ON CENTER IN ALL MASONRY WALLS. 8" MINIMUM LAPS ARE REQUIRED UNLESS NOTED OTHERWISE. ALL CORNERS MUST USE PREFABRICATED SECTIONS.
 - ALL MASONRY CORES SHALL BE FULLY GROUTED BELOW ALL BEARING PLATES.
 - ALL REINFORCING STEEL IN MASONRY WALLS SHALL BE CENTERED IN THE WALL USING BAR POSITIONERS AT 48" O.C. VERTICALLY AND PLACED IN A FULLY GROUTED CORE.
 - A #5 REINFORCING BAR SHALL BE PLACED IN THE (2) CORES DIRECTLY NEXT TO ALL OPENINGS AND FULLY GROUTED IN PLACE.
 - ALL INTERIOR NON-LOAD BEARING MASONRY WALLS SHALL BE REINFORCED WITH #5 BARS @ 32" O.C. AND HAVE A MINIMUM 8" BOND BEAM AT THE TOP OF THE WALL WITH (2) CONT. #5 BARS.
 - ALL ANCHORS SHALL BE PLACED INTO FULLY GROUTED CORES.
 - REFER TO ARCHITECTURAL DRAWINGS FOR ALL VERTICAL CONTROL JOINTS.
 - GROUT FILL CORES TO THE TOP OF A COURSE AND MECHANICALLY VIBRATE TO CREATE A 2" KEYWAY.
 - ALL BARS SPLICED BY NONCONTACT LAPS SHALL NOT BE SPACED TRANSVERSELY FARTHER APART THAN 1/5 THE REQUIRED LENGTH OF THE LAP OR MORE THAN 8 INCHES.
 - NO MORTAR SHALL BE USED AS GROUT FOR FILLING CORES.

MASONRY SPECIAL INSPECTION					
VERIFICATION AND INSPECTION		FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA	
		CONTINUOUS	PERIODIC	IBC	ACI 530/1/ASCE5/ TMS 402
1	AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:				
A	PROPORTIONS OF SITE-PREPARED MORTAR.	—	X	—	ART. 2.6A
B	CONSTRUCTION OF MORTAR JOINTS.	—	X	—	ART. 3.3B
C	LOCATION OF REINFORCEMENT, CONNECTORS, PRESTRESSING TENDONS AND ANCHORAGES.	—	X	—	ART. 3.4, 3.6A
D	PRESTRESSING TECHNIQUE.	—	X	—	ART. 3.6B
E	GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES.	—	X	—	ART. 2.4B, 2.4H
2	THE INSPECTION PROGRAM SHALL VERIFY:				
A	SIZE AND LOCATION OF STRUCTURAL ELEMENTS.	—	X	—	ART. 3.3B
B	TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAME OR OTHER CONSTRUCTION.	—	X	—	SEC. 1.2.2 [E], 2.1.4, 3.1.6
C	SPECIFIED SIZE, GRADE AND TYPE OF REINFORCEMENT.	—	X	—	SEC. 1.1.13
D	WELDING SIZE OF REINFORCING BARS.	X	—	—	SEC. 2.1.10.7.2, 3.3.3.4 [B]
E	PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40° F) OR HOT WEATHER (TEMPERATURE ABOVE 90° F).	—	X	—	ART. 1.8C, 1.8D
F	APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	—	X	—	ART. 3.6B
3	PRIOR TO GROUTING, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:				
A	GROUT SPACE IS CLEAN.	—	X	—	ART. 3.2D
B	PLACEMENT OF REINFORCEMENT AND CONNECTORS AND PRESTRESSING TENDONS AND ANCHORAGES.	—	X	—	SEC. 1.13
C	PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS.	—	X	—	ART. 2.6B
D	CONSTRUCTION OF MORTAR JOINTS.	—	X	—	ART. 3.3B
4	GROUT PLACEMENT SHALL BE VERIFIED TO ENSURE COMPLIANCE WITH CODE AND CONSTRUCTION DOCUMENT PROVISIONS.	X	—	—	ART. 3.5
A	GROUTING OF PRESTRESSING BONDED TENDONS.	X	—	—	ART. 3.6C
5	PREPARATION OF ANY REQUIRED GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS SHALL BE OBSERVED.	X	—	—	ART. 1.4
6	COMPLIANCE WITH REQUIRED INSPECTION OF PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS SHALL BE VERIFIED.	—	X	—	ART. 1.5

CONCRETE SPECIAL INSPECTION				
VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE
1	INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	—	ACI 318: 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2	REINFORCING BAR WELDING: A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM $\frac{5}{16}$ " AND C. INSPECT ALL OTHER WELDS.	— — X	— AWS D1.4 ACI 318: 26.6.4	—
3	INSPECT ANCHORS CAST IN CONCRETE.	—	X ACI 318: 26.13.3.3	—
4	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS: A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. B. MECHANICAL AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	X — X	— ACI 318: 26.13.3.2 ACI 318: 26.13.3	—
5	VERIFY USE OF REQUIRED DESIGN MIX.	—	X ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	— ASTM C 172 ASTM C 31 ACI 318: 26.5, 26.12	1908.10
7	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	— ACI 318: 26.5	1908.6, 1908.7, 1908.8
8	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	—	X ACI 318: 26.5.3-26.5.5	1908.9
9	INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	—	X ACI 318: 26.9	—
10	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	—	X ACI 318: 26.11.1.2(b)	—

ASCE7 COMPONENTS AND CLADDING WIND LOAD SCHEDULE					
EFFECTIVE WIND AREA (SQ. FT.)	WALL		ROOF		
	INTERIOR ZONE (PSF)	EDGE ZONE (PSF)	INTERIOR ZONE (PSF)	EDGE ZONE (PSF)	CORNER ZONE (PSF)
≤ 10	+37.9/-40.3	+37.9/-47.6	+35.4/-63.5	+35.4/-68.4	+35.4/-84.3
50	+34.8/-37.3	+34.8/-41.6	+28.6/-46.4	+28.6/-55.3	+28.6/-68.9
100	+33.6/-36.0	+33.6/-39.0	+25.7/-40.3	+25.7/-49.6	+25.7/-62.3
≥ 500	+30.5/-33.0	+30.5/-33.0	+25.7/-39.1	+25.7/-44.0	+25.7/-44.0

NOTES:
 1. VALUES ARE BASED ON ASCE7-10 ULTIMATE WIND SPEED
 2. POSITIVE AND NEGATIVE PRESSURES ACT TOWARD AND AWAY FROM SURFACES RESPECTIVELY.
 3. ZONE WIDTH $\phi = 3.0$ FT.

CONCRETE REINFORCING STEEL LAP SPLICES			
SIZE	TOP BARS	OTHER BARS	
#3	24"	21"	
#4	33"	27"	
#5	42"	33"	
#6	51"	39"	
#7	72"	54"	
#8	81"	63"	
#9	93"	72"	
#10	102"	81"	
#11	114"	87"	

NOTE: TOP BARS ARE HORIZ. BARS W/ MORE THAN 12" FRESH CONC. CAST BELOW THE SPLICE INCLUDING HORIZ. BARS IN WALLS.

MASONRY REINFORCING STEEL LAP SPLICES		
BAR	SPLICE LENGTH	
#3	27"	
#4	36"	
#5	46"	
#6	54"	
#7	63"	
#8	72"	
#9	82"	

SOIL SPECIAL INSPECTION		
VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1	VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	X
2	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	X
3	PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS.	X
4	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL.	—
5	PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	X

STEELE PARK IMPROVEMENTS
CITY OF IONIA, MICHIGAN

MCSA GROUP, INC.
 Landscape Architecture • Park & Recreation Planning • Architecture
 Downtown Planning • Interior Design • Sports Facility Planning
 529 Greenwood Avenue S.E. • East Grand Rapids, MI 49506
 616-451-3546 FAX: 616-451-1305 EMAIL: tas@msgroup.com

SCALE:
NONE

STRUCTURAL NOTES

DATE
11.03.2025
PERMITS

PROJECT NO.
2252
SHEET NO.
S001



FOUNDATION NOTES

NONE TYPICAL FLOOR SLAB: 4" CONCRETE SLAB ON GRADE w/ 6X6 W2.9XW2.9 W.W.M. OVER 10 MIL VAPOR BARRIER & 6" CLEAN SAND (REFER TO GEOTECHNICAL REPORT).

SHADED AREA REFERS TO THRESHOLD AREA. T.O.W. = 99'-4" SEE DETAIL 3/S301.

NOTE: PROVIDE FLOOR SLAB CONTROL JOINTS AT A MAXIMUM SPACING OF 14'-0" EACH WAY. REFER TO 1/S301 FOR JOINT DETAILS.

F.F. = FINISHED FLOOR = 100'-0" U.N.O.

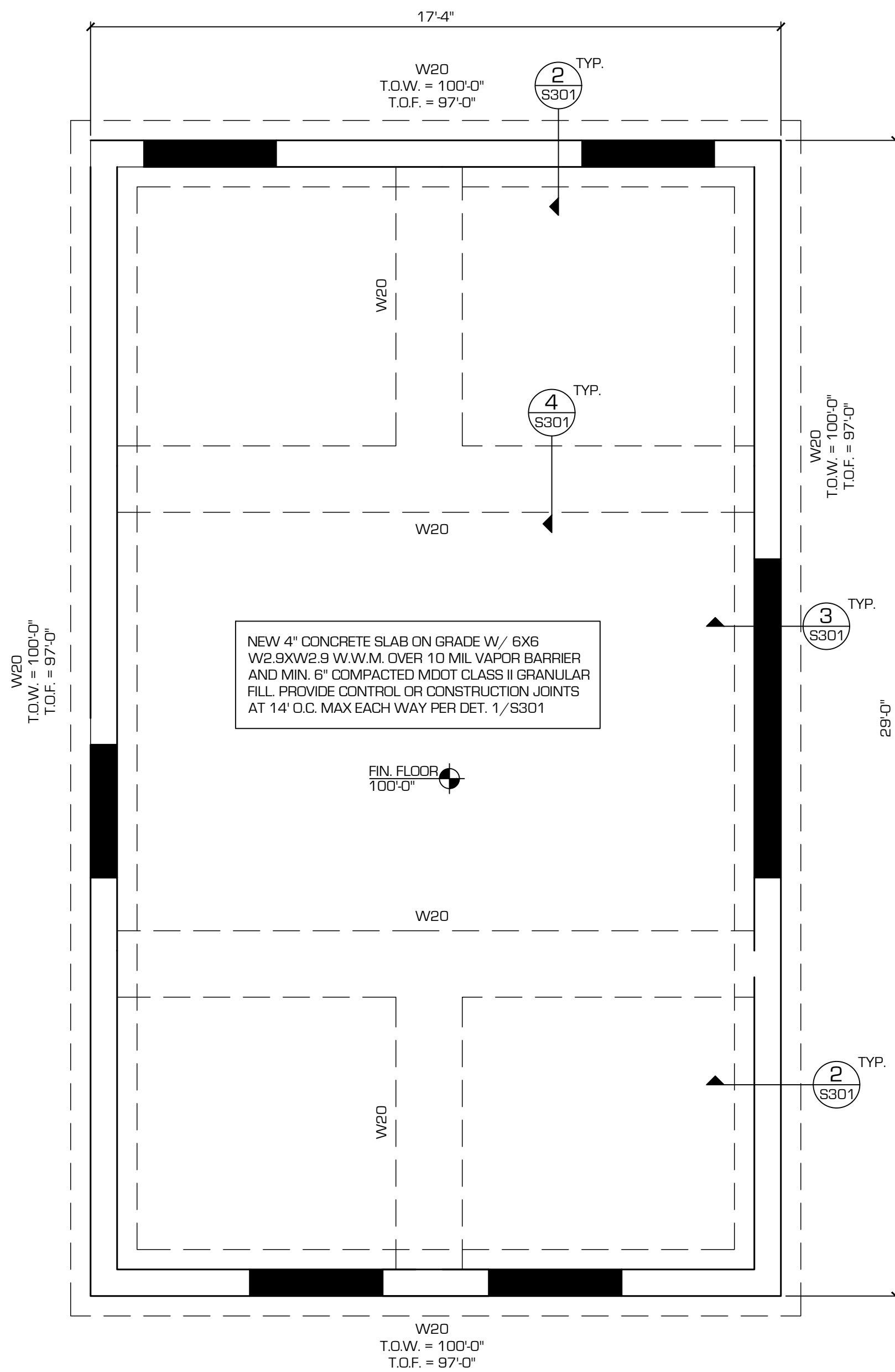
T.O.F. = TOP OF FOOTING = 97'-0" U.N.O.

T.O.W. = TOP OF WALL = 100'-0" U.N.O.

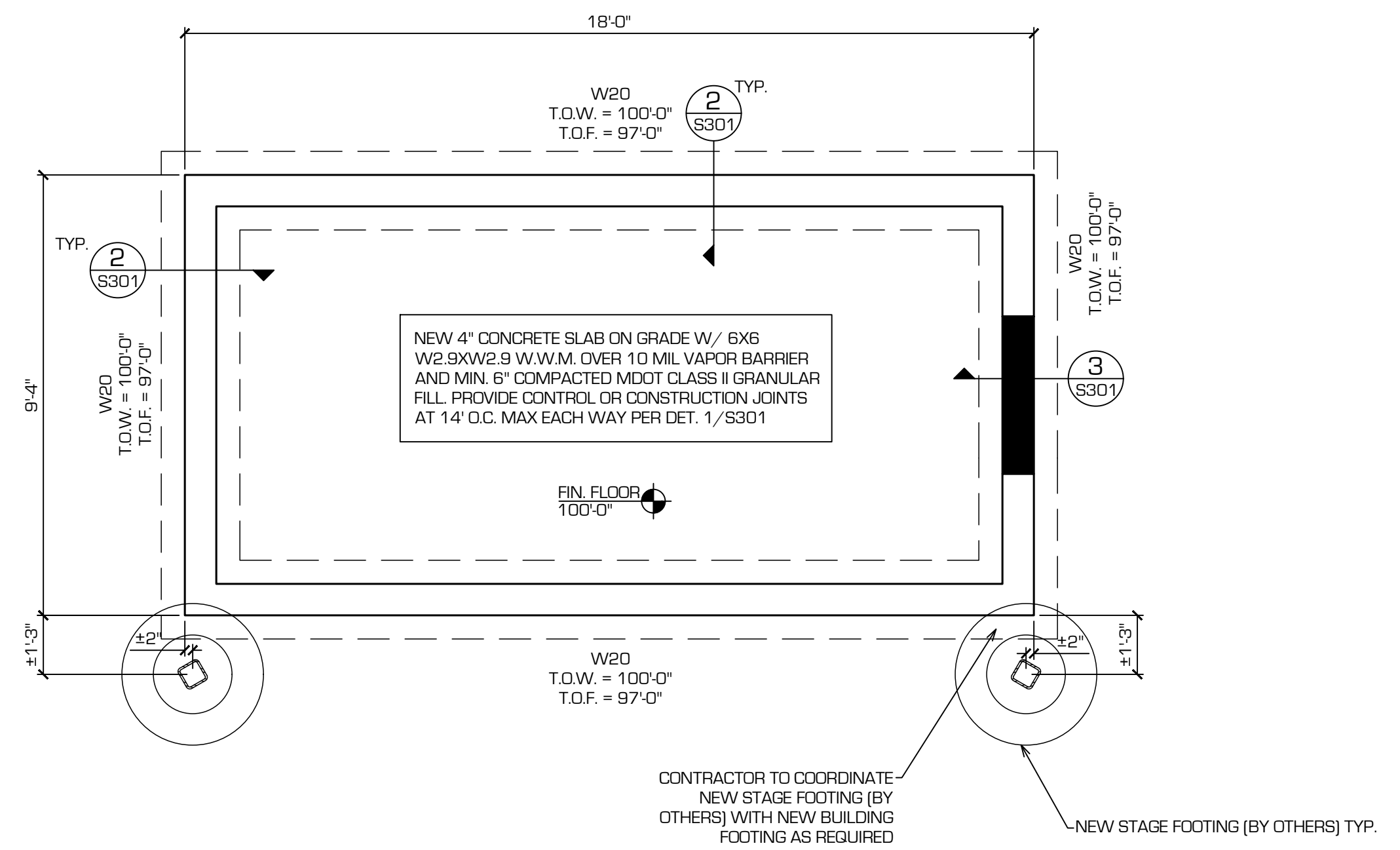
FOOTING SCHEDULE

MARK	SIZE			REINFORCING	DETAILS
	LENGTH	WIDTH	THK.		
W20	CONT.	1'-8"	1'-0"	(3) #5 BARS CONT.	2, 3 & 4/S301

FOOTING NOTES:
1. FOOTING REINFORCING BARS SHALL BE EQUALLY SPACED ACROSS FOOTING WIDTH W/ 2" OF CLEAR COVER ON EACH SIDE.



RESTROOM FOUNDATION PLAN
NORTH SCALE: 3/8" = 1'-0"



STAGE FOUNDATION PLAN
NORTH SCALE: 3/8" = 1'-0"



GENERAL FRAMING NOTES

M1: 8" MASONRY WALLS W/ #5 BARS @32" O.C. FULL HEIGHT. PROVIDE #5 JAMB BARS IN FULLY GROUTED CORES IN (2) CORES ON EACH SIDE OF ALL DOOR & WINDOW OPENINGS. HORIZONTAL REINFORCING TO BE 9 GAUGE TRUSS TYPE @ 16" O.C. .

- A. DESIGN ALL ROOF TRUSSES FOR THE LOADS ON S001 AND THE FOLLOWING:
 DEAD LOAD (SUPERIMPOSED):
 TOP CHORD 10 psf
 BOTTOM CHORD 10 psf
- B. NO PENETRATIONS ARE ALLOWED THROUGH MASONRY BOND BEAMS WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD.

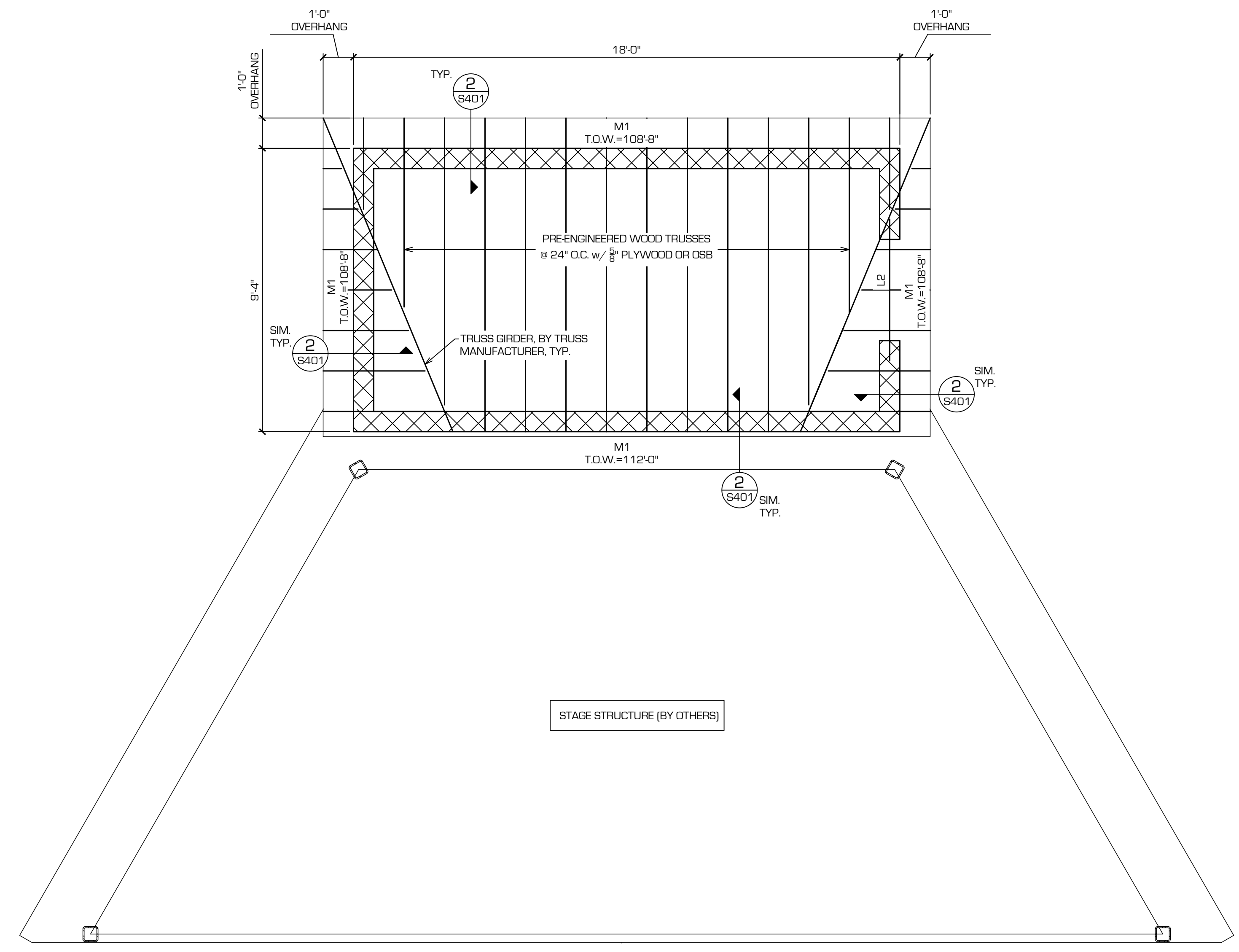
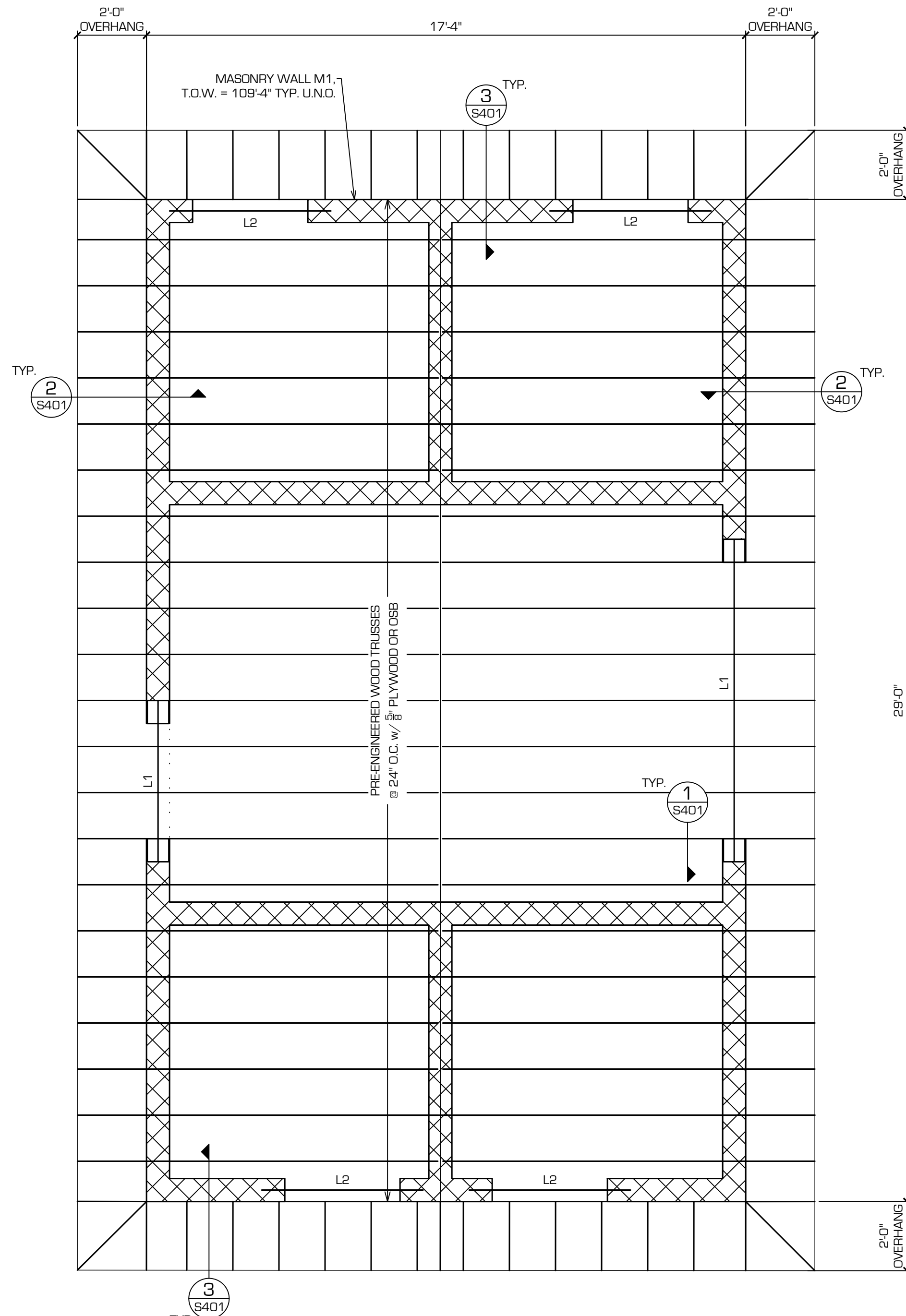
SHEATHING FASTENING SCHEDULE

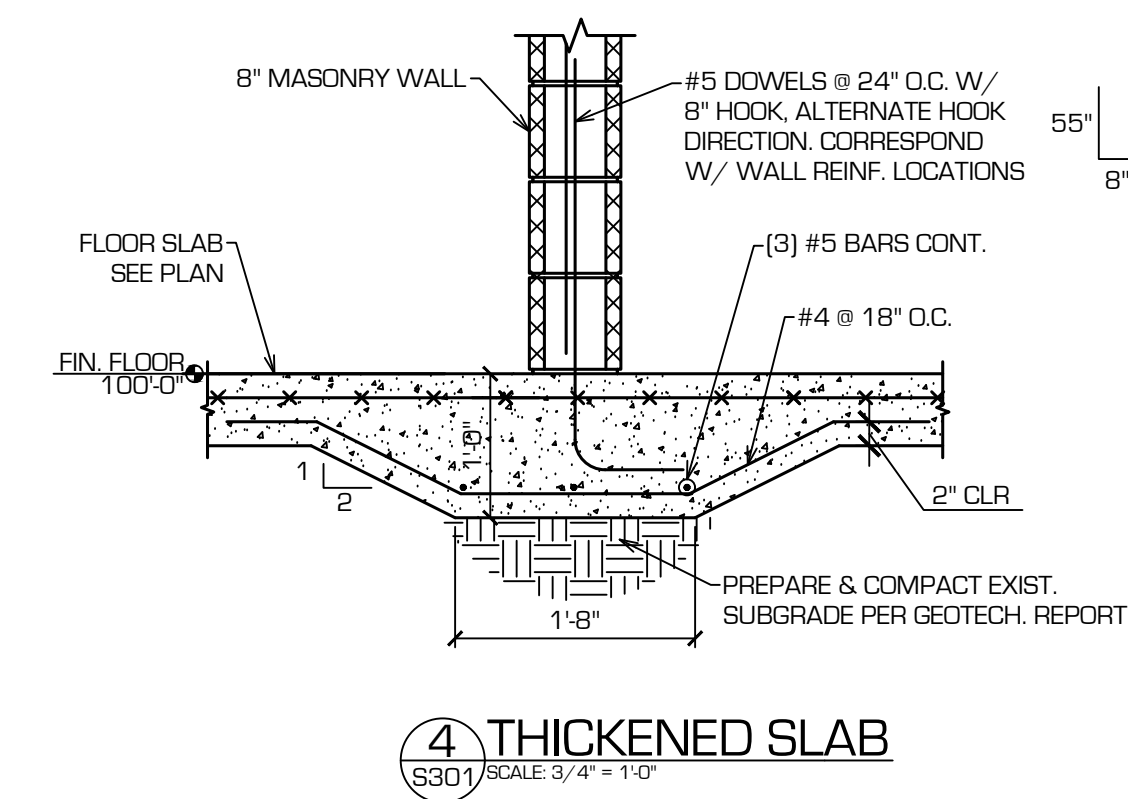
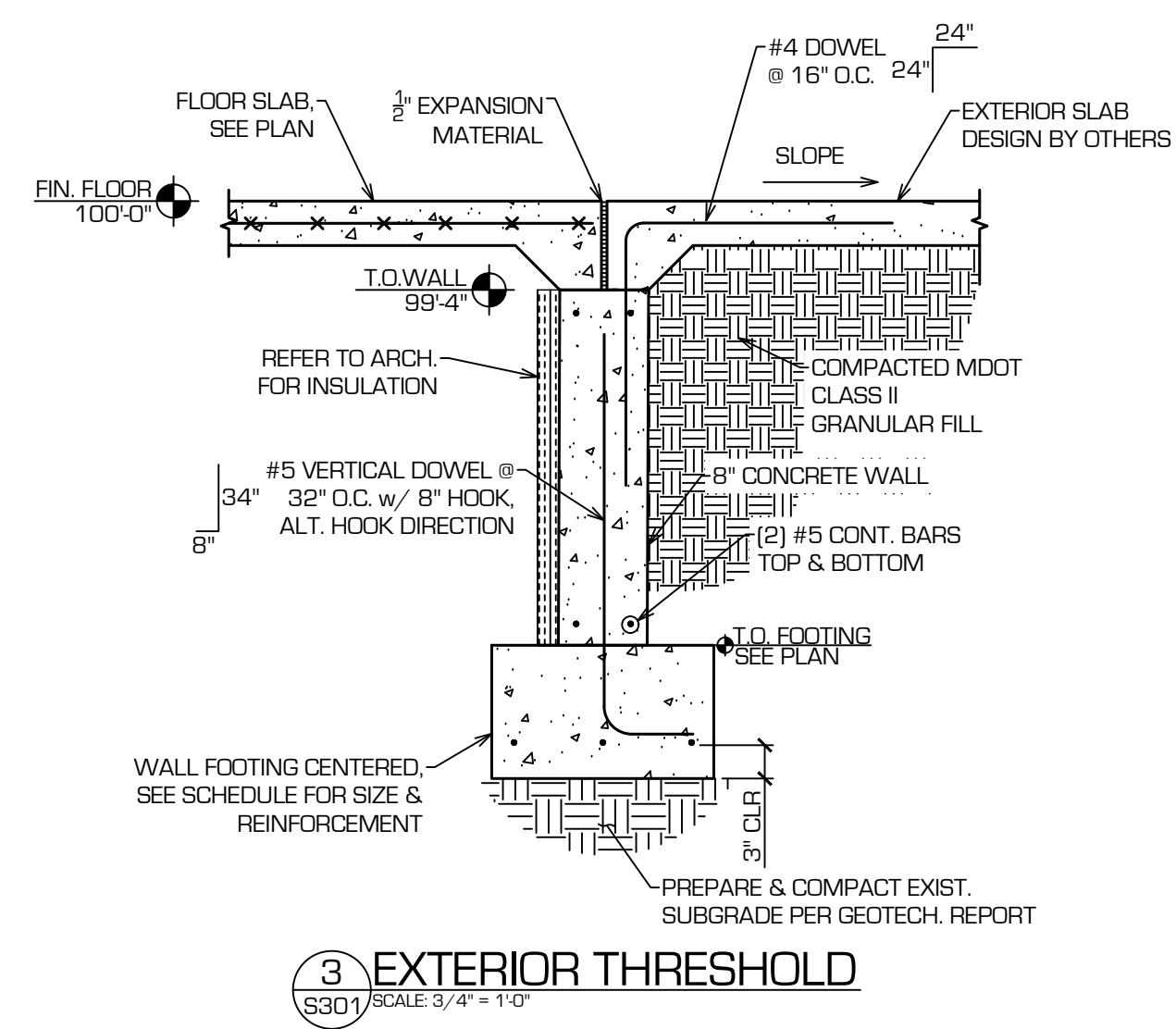
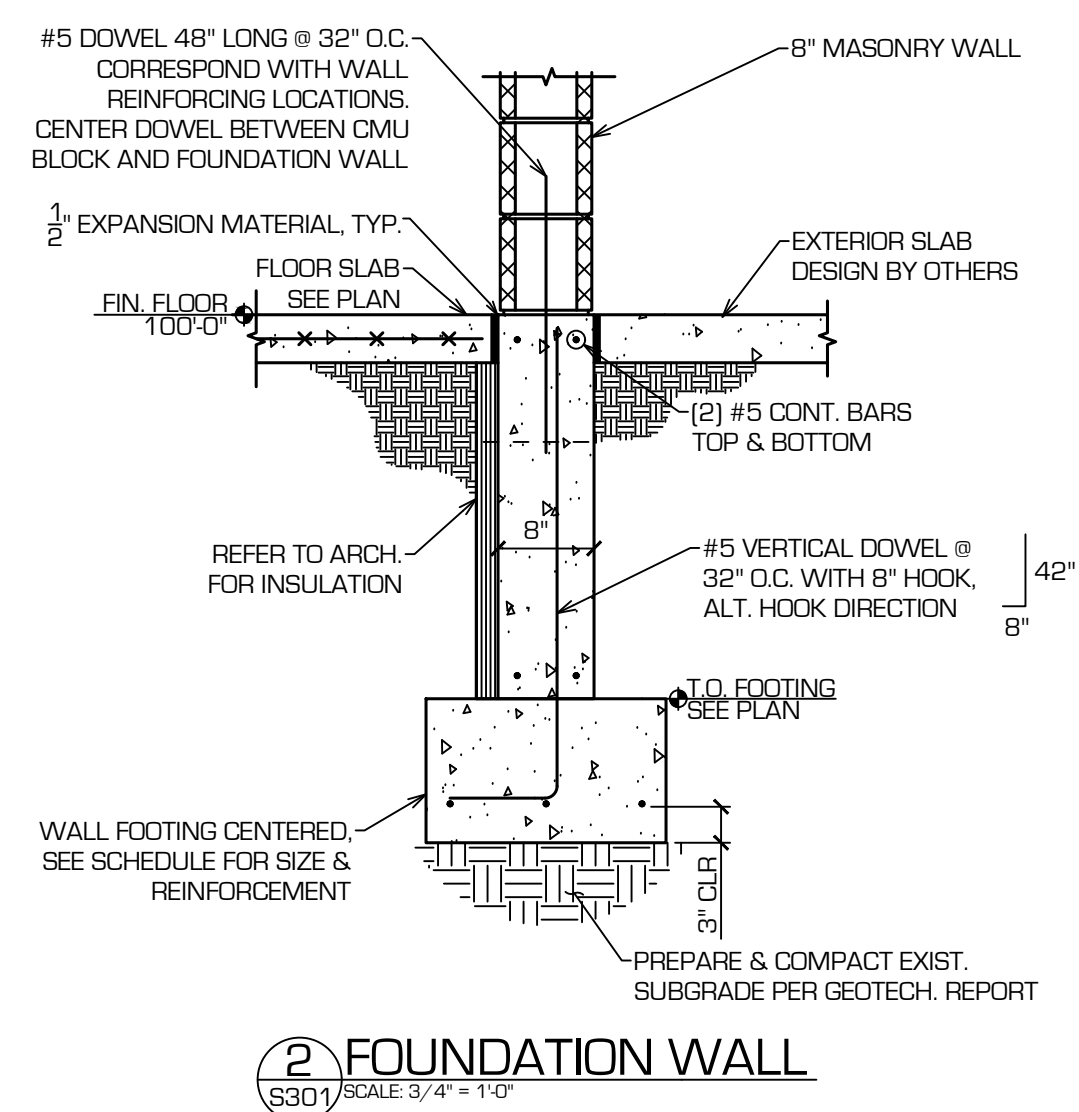
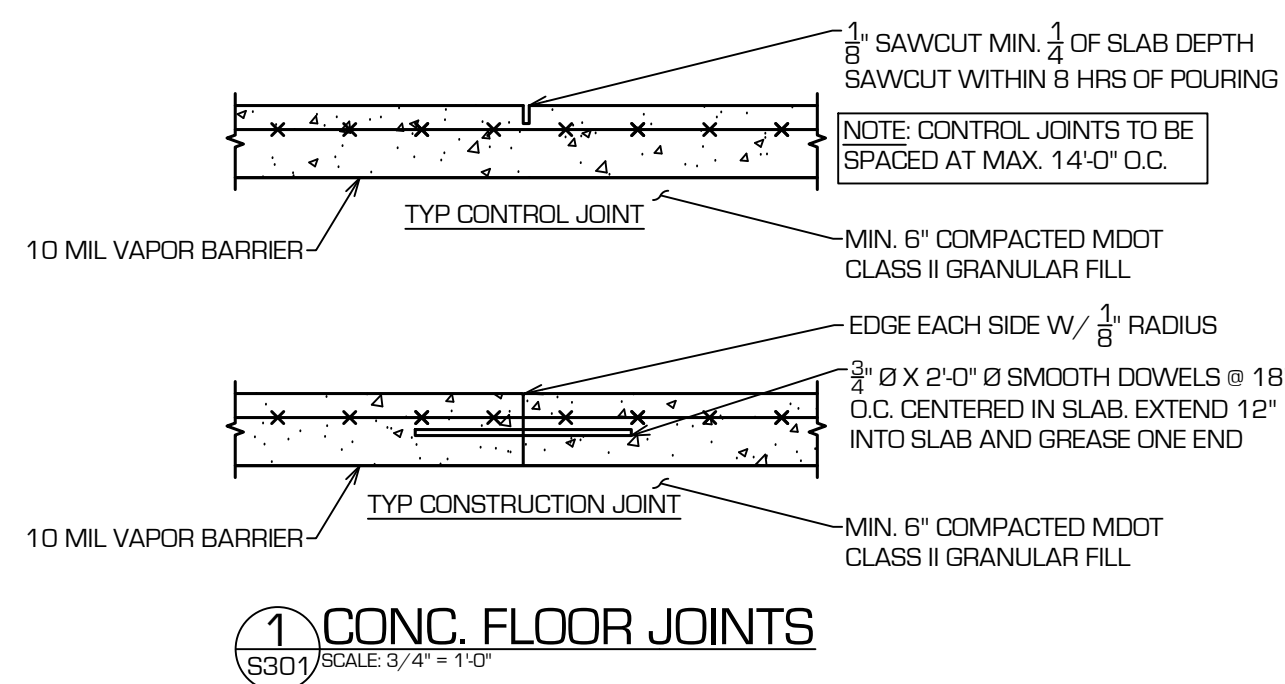
AREA	SPACING		FASTENER TYPE
	PANEL EDGE	PANEL INTERIOR	
ROOF	6"	12"	10D
WALL	6"	12"	10D

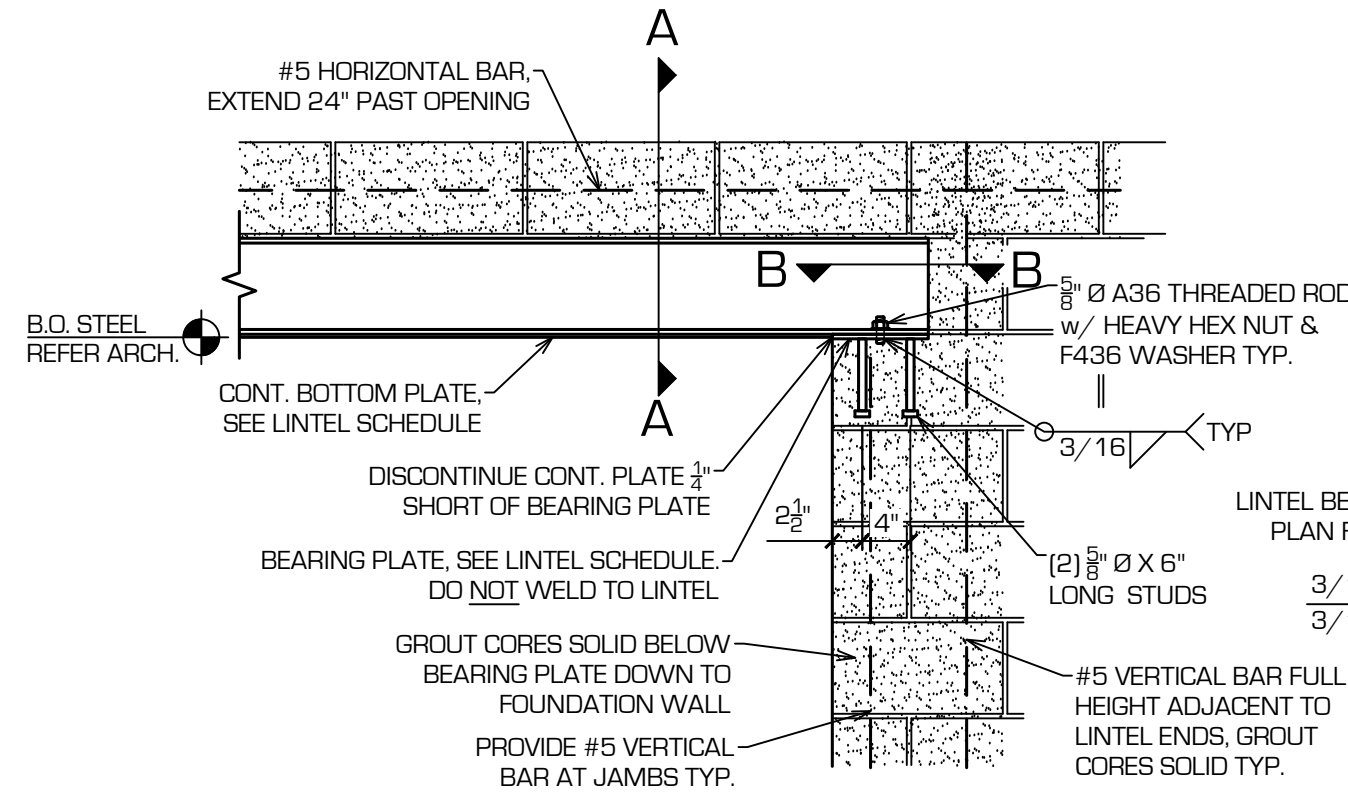
LINTEL SCHEDULE

MARK	TYPE	SIZE	BRG. PLATE	DETAIL	g
L1	STEEL	W8X10 W/ 7 1/2" X 3/4" CONT. BTM. PL.	7 1/2" X 8" X 3/8"	1/S401	2 1/2"
L2	MASONRY	8" BOND BEAM W/ (2) #5 BARS BOTTOM & (1) #5 BAR TOP	N/A	N/A	N/A

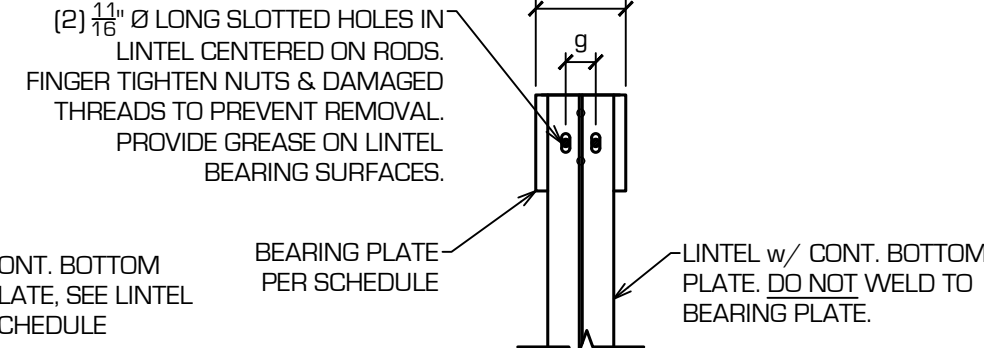
- LINTEL NOTES:
 1. REFER TO ARCHITECTURAL DRAWINGS FOR LINTEL ELEVATIONS.
 2. ALL STEEL LINTELS IN EXTERIOR WALLS SHALL BE GALVANIZED.
 3. MASONRY LINTEL BOND BEAM AND REINFORCEMENT TO EXTEND MIN. 16" PAST OPENINGS.





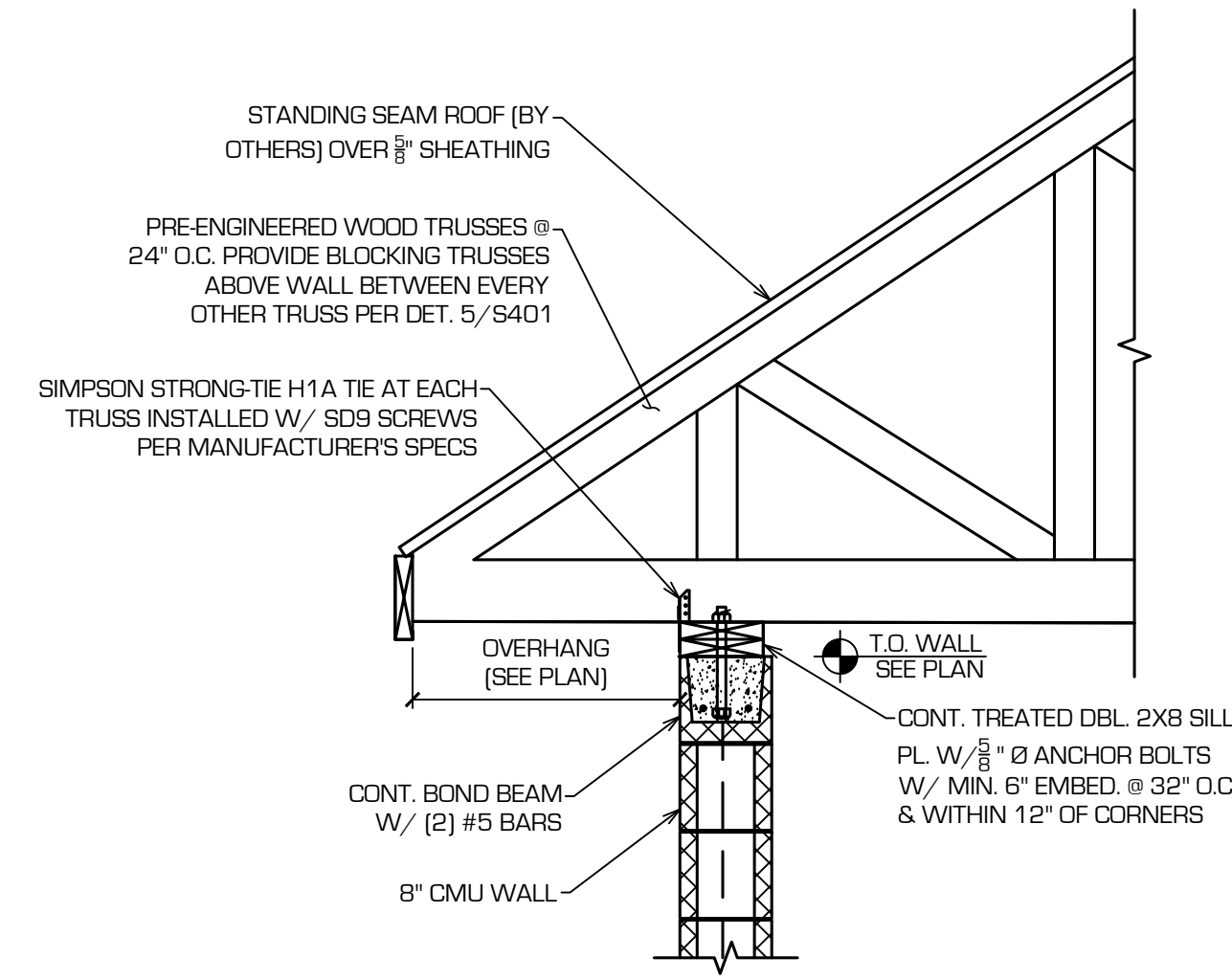


SECTION A

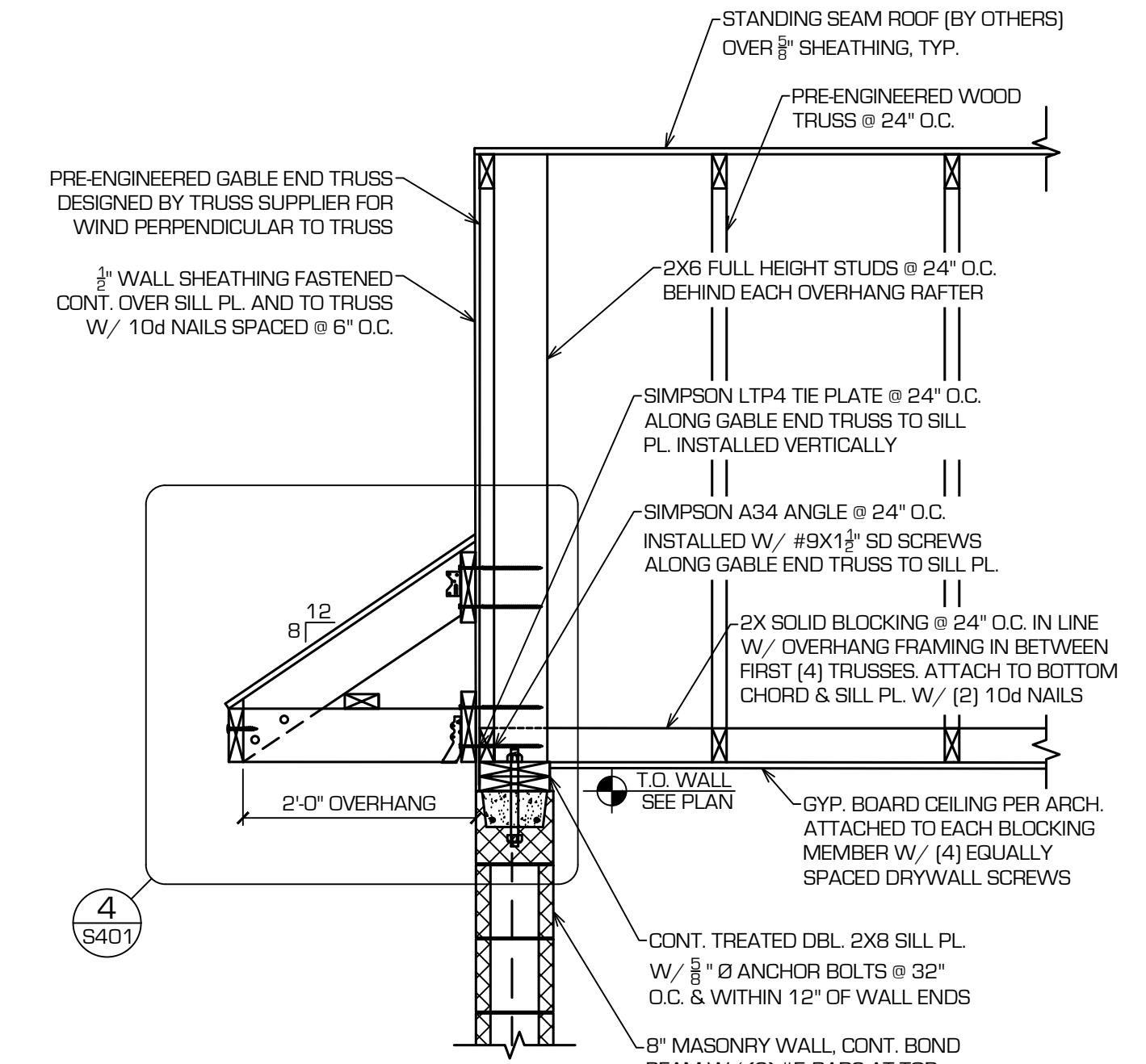


SECTION B

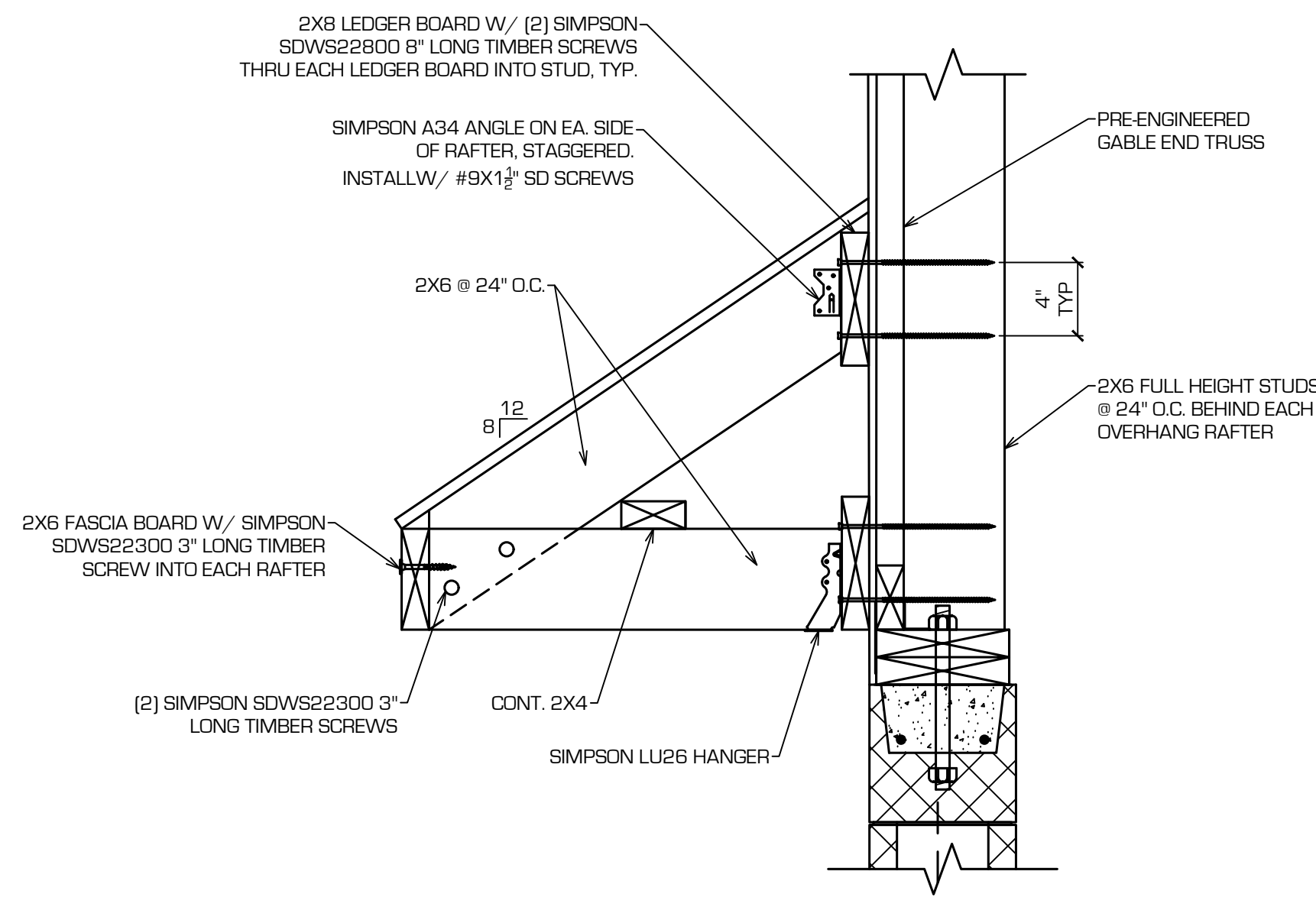
1 STEEL LINTEL DETAILS
S102 SCALE 3/4" = 1'-0"



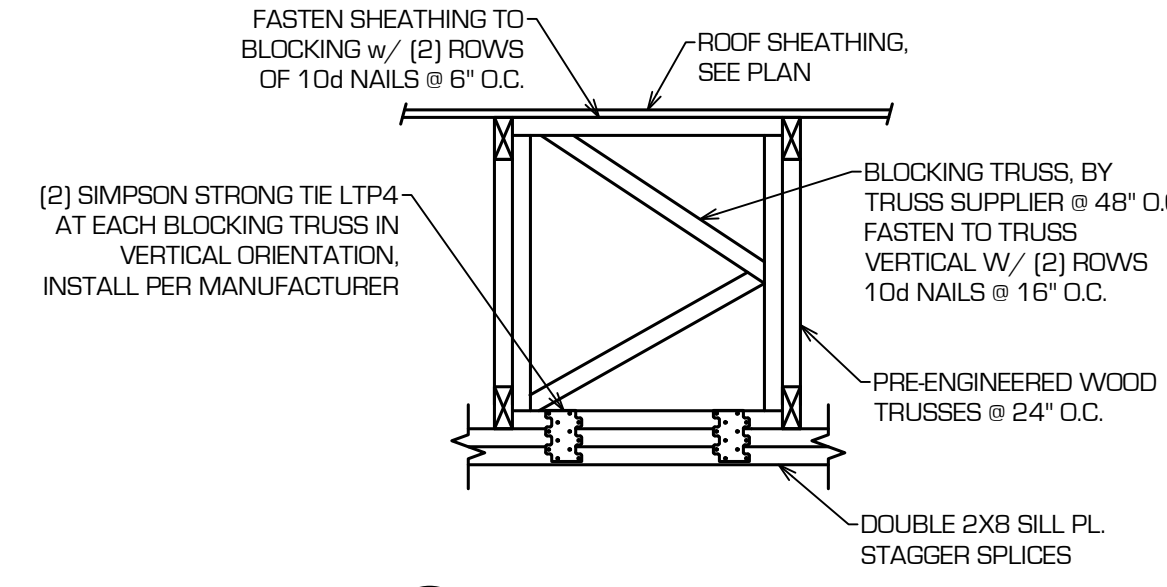
2 TRUSS BEARING
S102 SCALE 3/4" = 1'-0"



3 GABLE END TRUSS
S102 SCALE 3/4" = 1'-0"



4 OVERHANG DETAIL
S401 SCALE 1 1/2" = 1'-0"



5 BLOCKING TRUSS DETAIL
S401 SCALE 3/4" = 1'-0"

MECHANICAL ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	ID	INSIDE DIAMETER
AC	AIR COMPRESSOR	I.E.	INVERT ELEVATION
AHU	AIR HANDLING UNIT	IAH	INTAKE HOOD
AS	AIR SEPARATOR	LAT	LEAVING AIR TEMPERATURE
A.T.C.	ARCHITECTURAL TRADES CONTRACTOR	LH	LATENT HEAT (MBH)
B	BOILER	LWT	LEAVING WATER TEMPERATURE
B.A.S.	BUILDING AUTOMATION SYSTEM	MAX	MAXIMUM
CAF	COMBUSTION AIR FAN	MBH	BTU PER HOUR (THOUSAND)
CC	COOLING COIL	MIN	MINIMUM
CFM	CUBIC FEET PER MINUTE	M.T.C.	MECHANICAL TRADES CONTRACTOR
CHLR	CHILLER	N.C.	NOISE CRITERIA
CHP	CONSOLE HEAT PUMP	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CONV	CONVECTOR	NTS	NOT TO SCALE
CT	COOLING TOWER	P	PUMP
CU	CONDENSING UNIT	PCR	PUMPED CONDENSATE RETURN
CUH	CABINET UNIT HEATER	PD	PRESSURE DROP
CV	CONTROL VALVE	PCP	RADIANT CEILING PANEL
CWP	CHILLED WATER PUMP	REQD	REQUIRED
DB	DRY BULB	RG	RETURN GRILLE
DFU	DUCT FURNACE	RH	RELATIVE HUMIDITY
DIA	DIAMETER	RLH	RELIEF HOOD
DN	DOWN	RTU	ROOF TOP UNIT
DPR	DAMPER	SD	SUPPLY DIFFUSER
DS	DUCT SILENCER	SF	SUPPLY FAN
EAT	ENTERING AIR TEMPERATURE	SG	SUPPLY GRILLE
EF	EXHAUST FAN	SH	SENSIBLE HEAT (MBH)
EG	EXHAUST GRILLE	SM	SHEET METAL
E.T.C.	ELECTRICAL TRADES CONTRACTOR	SQ. FT.	SQUARE FEET
EVR	EVAPORATOR	SST	SATURATED SUCTION TEMPERATURE
EWT	ENTERING WATER TEMPERATURE	STR	STRAINER
EXH	EXHAUST	TC	TOTAL COOLING (MBH)
EXIST	EXISTING	TCL	TEMPERATURE CONTROL
FF	FINISH FLOOR	T&P	TEMPERATURE & PRESSURE RELIEF VALVE
FPM	FEET PER MINUTE	TYP	TYPICAL
FT	FEET	UH	UNIT HEATER
FTR	FINNED TUBE RADIATION	VAV	VARIABLE AIR VOLUME BOX
FU	FURNACE	VRH	VARIABLE AIR VOLUME REHEAT BOX
GAL	GALLON	FPVAV	FAN POWERED VARIABLE AIR VOLUME BOX
GFRH	GAS FIRED RADIANT HEATER	V.F.D	VARIABLE FREQUENCY DRIVE
GR	GRILLE	ZD	ZONE DAMPER
H	HUMIDIFIER	X-SA	EXISTING ITEM (EXISTING SUPPLY AIR DUCT)
HC	HEATING COIL		EXISTING ITEM
HD	HEAD (FT)		EXISTING
HP	HORSE POWER		
HHP	HORIZONTAL HEAT PUMP		
HTG	HEATING		
HVAC	HEATING, VENTILATION, & AIR CONDITIONING		
HWP	HEATING WATER PUMP		
HX	HEAT EXCHANGER		

GENERAL HVAC NOTES

- ALL WORK SHALL CONFORM TO MICHIGAN MECHANICAL CODE, LATEST APPLICABLE EDITION.
- INSTALL ALL EQUIPMENT, MATERIALS, AND ACCESSORIES PER MANUFACTURERS WRITTEN INSTRUCTIONS.
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER DISCIPLINES PRIOR TO CONSTRUCTION TO AVOID CONFLICTS.
- OFFSET PIPING TO ACCOMMODATE LARGE DUCTWORK.
- THE CONTRACTOR SHALL FIELD VERIFY THE SIZES, LOCATION, ELEVATIONS, AND DETAILS OF ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EQUIPMENT AND MATERIALS IN A "NEW" CONDITION DURING CONSTRUCTION.
- ALL WORK SHALL BE PERFORMED BY LICENSED CONTRACTORS AND SUBCONTRACTORS AS REQUIRED BY LAW.
- CONTRACTOR SHALL USE LOW PRESSURE LOSS DUCT FITTINGS IN ACCORDANCE WITH SMACNA. (WYES, RADIUS OR VANED TEES, ETC.) DUCTWORK SHALL BE GALVANIZED SHEET METAL, MIN. 26 GA.
- ALL DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSION. INCREASE DUCT SIZE FOR LINING.
- PERFORM WORK IN ACCORDANCE WITH THE LATEST EDITIONS, REVISIONS, AMENDMENTS, OR SUPPLEMENTS OF APPLICABLE STATUTES, ORDINANCES, CODES OR REGULATIONS OF FEDERAL, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION IN EFFECT ON THE DATE BIDS ARE RECEIVED.
- WHERE APPROVED STANDARDS HAVE BEEN ESTABLISHED BY OSHA, UNDERWRITERS, LABORATORIES, AMERICAN CODES, ASA, ASHRAE, ARI, NEC, STATE FIRE INSURANCE REGULATION BODY, NFPA OR OTHERS, THESE STANDARDS SHALL BE FOLLOWED WHETHER OR NOT INDICATED ON THE DRAWING AND SPECIFICATIONS.
- DUCT/PIPING LAYOUT IS SCHEMATIC. EXACT LOCATION OF DUCT/PIPING AND EQUIPMENT SHALL BE COORDINATED WITH BUILDING STRUCTURE, EQUIPMENT FURNISHED, ARCHITECTURAL DRAWINGS, AND ALL OTHER TRADES PRIOR TO INSTALLATION. ANY CONTRACTOR INSTALLING WORK WITHOUT PRIOR COORDINATION SHALL RELOCATE HIS WORK AT HIS EXPENSE TO ALLOW PROPER INSTALLATION OF ANY AND ALL TRADES WORK.
- UNLESS OTHERWISE NOTED, ALL DUCT/PIPING SHALL BE CONCEALED WHEREVER POSSIBLE. PROVIDE CHROME ESCUTCHEON OR ALUMINUM DUCT COLLAR AT EACH PENETRATION OF A FINISHED SURFACE.
- DUCT/PIPING SHALL NOT BE RUN ABOVE ELECTRICAL GEAR IN THE SERVICE SPACE REQUIRED BY THE NATIONAL ELECTRICAL CODE.
- PROVIDE VIBRATION ISOLATION AT EACH CONNECTION TO A MOTORIZED PIECE OF EQUIPMENT BY THE HVAC CONTRACTOR.
- IF THERE IS CONFLICTING INFORMATION IN THE PLANS OR SPECIFICATIONS THE MORE STRINGENT AND GREATER COST ITEM SHALL BE USED.
- DRAWINGS INDICATE REQUIRED SIZES AND POINTS OF TERMINATION OF PIPES AND DUCTS SUGGESTED ROUTES. IT IS NOT INTENTION OF DRAWINGS TO INDICATE ALL NECESSARY OFFSETS. INSTALL WORK IN MANNER TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. DO NOT SCALE FROM DRAWINGS.

MECHANICAL SYMBOLS LEGEND

HVAC DUCTWORK SYMBOLS

- SUPPLY AIR DUCT RISER
- RETURN AIR DUCT RISER
- OUTSIDE AIR DUCT RISER (AS NOTED)
- EXHAUST AIR DUCT
- INSULATED DUCTWORK (AS NOTED)
- SUPPLY AIR DIFFUSER (SQUARE)
- SUPPLY AIR DIFFUSER (INLINE)
- TURNING VANES
- SURFACE MTD. GRILLE
- SUPPLY AIR DIFFUSER (ROUND)
- 90° TEE W/45° APPROACH
- CONICAL TAKE-OFF
- CONICAL TAKE-OFF W/ DAMPER
- BALANCE DAMPER
- CEILING EXHAUST FAN
- ROOF MOUNTED EXHAUST FAN

HVAC DUCTWORK & DIFFUSER TAGS

SD-1	250	TAG	CFM
8"ø	---	NECK	REMARKS
		SIZE	

MISCELLANEOUS NOTES

- POINT OF CONNECTION BETWEEN NEW AND EXISTING
- POINT OF EXISTING TO REMAIN AND EXISTING TO BE REMOVED
- INDICATES PLAN NOTE
- INDICATES DEMOLITION NOTE
- DETAIL BUBBLE
- DETAIL NUMBER
- PAGE LOCATION INDICATES
- DIRECTION OF DETAIL SECTION

HVAC DUCTWORK

- SA— SUPPLY AIR DUCT
- X-SA— EXIST SUPPLY AIR DUCT
- RA— RETURN AIR DUCT
- X-RA— EXIST RETURN AIR DUCT
- OA— OUTSIDE AIR DUCT
- X-OA— EXIST OUTSIDE AIR DUCT
- EA— EXHAUST AIR DUCT
- X-EA— EXIST EXHAUST AIR DUCT

EXHAUST FAN SCHEDULE												
TAG	MODEL	SERVICE/ LOCATION	CFM	TYPE	DRIVE	ESP (IN WC)	FAN RPM	SONES	ELECTRICAL			NOTES
									FLA	VOLTAGE	PHASE	
EF-1	SP-LP810W	FAMILY TOILET 101	100	CEILING	DIRECT	0.3	894	1.5	0.4	120	1	MANU 1,2,3
EF-2	SP-LP810W	FAMILY TOILET 102	100	CEILING	DIRECT	0.3	894	1.5	0.4	120	1	MANU 1,2,3
EF-3	SP-LP810W	FAMILY TOILET 103	100	CEILING	DIRECT	0.3	894	1.5	0.4	120	1	MANU 1,2,3
EF-4	SP-LP810W	FAMILY TOILET 104	100	CEILING	DIRECT	0.3	894	1.5	0.4	120	1	MANU 1,2,3

NOTES:

- BASED ON GREENHECK
- GRAVITY BACKDRAFT DAMPER
- INTERLOCK WITH BATHROOM LIGHT SWITCH TO RUN FOR 5 MINUTES AFTER THE LIGHT TURNS OFF

ABBREVIATIONS:

- EC - ELECTRICAL CONTRACTOR
- MANU - MANUFACTURER

DIFFUSER, REGISTER, & GRILLE SCHEDULE										
TAG	MODEL	NECK SIZE	FACE SIZE	CFM RANGE (MIN-MAX.)	PATTERN	MOUNT	MATERIAL	COLOR	100 FPM THROW	COMMENTS
EG-1	27ZRL	8x8	8x8	250	1/2x1/2x1/2 GRID	SURFACE	ALUMINUM	WHITE	-	1,2,3,4

NOTES:

- BASED ON: TITUS
- MAX. NC = 30
- MAX. APD = 0.10 INCHES
- SELECT BORDER TO MATCH ROOM FINISH SCHEDULE

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MECHANICAL AND PLUMBING SPECIFICATIONS

- ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, INDUSTRY STANDARDS AND UTILITY COMPANY REGULATIONS.
- IN CASE OF DIFFERENCE BETWEEN BUILDING CODES, SPECIFICATIONS, STATE LAWS, LOCAL ORDINANCES, INDUSTRY STANDARDS, UTILITY COMPANY REGULATIONS, CONTRACT DOCUMENTS, AND AUTHORITY HAVING JURISDICTION, THE MOST STRINGENT SHALL GOVERN. CONTRACTOR SHALL PROMPTLY NOTIFY OWNER IN WRITING OF ANY SUCH DIFFERENCE.
- NON-COMPLIANCE: SHOULD CONTRACTOR PERFORM ANY WORK THAT DOES NOT COMPLY WITH REQUIREMENTS OF APPLICABLE BUILDING CODES, STATE LAWS, LOCAL ORDINANCES, INDUSTRY STANDARDS, UTILITY COMPANY REGULATIONS, CONTRACT DOCUMENTS, OR AUTHORITY HAVING JURISDICTION, HE SHALL BEAR ALL COSTS ARISING IN CORRECTING THE DEFICIENCIES.
- APPLICABLE CODES AND STANDARDS SHALL INCLUDE ALL STATE LAWS, LOCAL ORDINANCES, UTILITY COMPANY REGULATIONS AND APPLICABLE REQUIREMENTS OF MICHIGAN BUILDING CODE, MICHIGAN PLUMBING CODE, MICHIGAN DEPARTMENT OF FIRE AND BUILDING SERVICES.
- EXCEPT AS OTHERWISE SPECIFIED HEREIN, ALL PIPING WORK AND MATERIAL ARE TO CONFORM TO THE AMERICAN STANDARDS ASSOCIATION CODE FOR PRESSURE PIPING.
- PERMITS: CONTRACTOR SHALL PAY FOR ALL BUILDING PERMITS REQUIRED BY WORK AND PERMITS FOR OPENING STREETS AND FOR CONNECTION TO VARIOUS UTILITIES, INCLUDING FEES FOR WATER METER INSTALLATION AND ANY OTHER REQUIREMENTS NECESSARY TO CARRY OUT HIS WORK. WHERE STREETS OR SIDEWALKS ARE CUT, SAME MUST BE REPAIRED TO AT LEAST AS GOOD A CONDITION AS THEY WERE BEFORE, ALL AT EXPENSE OF THIS CONTRACTOR. PERMITS SHALL BE POSTED IN A PROMINENT PLACE AT THE BUILDING SITE AND BE PROPERLY PROTECTED FROM WEATHER AND PHYSICAL DAMAGE.

GUARANTEE

- CONTRACTOR SHALL, BY ACCEPTING THESE DRAWINGS AND SPECIFICATIONS, GUARANTEE THE FOLLOWING:
 - HE WILL FURNISH ALL MATERIAL AND EQUIPMENT AS SPECIFIED EXCEPT WHERE SPECIFIC WRITTEN APPROVAL IS GIVEN BY ENGINEER FOR SUBSTITUTION.
 - ALL MATERIAL AND EQUIPMENT WILL BE INSTALLED SUBSTANTIALLY AS SHOWN ON DRAWINGS AND AS REQUIRED WITHIN INTENT OF THESE SPECIFICATIONS. ALL EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.
 - ALL EQUIPMENT, PIPING, ETC., WILL BE DRIPTIGHT, AIRTIGHT, FREE OF VIBRATION, POUNDING AND OTHER OBJECTIONABLE NOISES.
 - ALL EQUIPMENT, ACCESSORIES AND MATERIAL FURNISHED BY THE CONTRACTOR, INCLUDING INSTALLATION, PIPE JOINTS, ETC., FURNISHED AND/OR DONE BY HIM FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE AGAINST ALL DEFECTS IN MATERIAL AND WORKMANSHIP.
 - IF ANY EQUIPMENT, MATERIAL AND/OR PIPE JOINTS, CONNECTIONS, ETC., FAILS OR DOES NOT OPERATE SATISFACTORILY OR SHOWS UNDUE WEAR, HE WILL, UPON BEING NOTIFIED, IMMEDIATELY REMEDY DEFECT AT HIS OWN EXPENSE.

WORK AND WORKMANSHIP

- PROVIDE ALL REQUIRED LABOR, MATERIALS, EQUIPMENT AND CONTRACTOR'S SERVICES NECESSARY FOR COMPLETE INSTALLATION OF SYSTEMS REQUIRED IN FULL CONFORMITY WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION, ALL AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.
- FINISHED JOB SHALL BE FUNCTIONAL AND COMPLETE IN EVERY DETAIL, INCLUDING ANY AND ALL SUCH ITEMS REQUIRED FOR A COMPLETE SYSTEM WHETHER OR NOT THESE ITEMS BE SPECIFIED OR SHOWN ON DRAWINGS.
- SPECIAL ATTENTION SHALL BE GIVEN TO ACCESSIBILITY OF WORKING PARTS AND CONTROLLING PARTS. ADJUSTABLE PARTS SHALL BE WITHIN EASY REACH. REMOVABLE PARTS SHALL HAVE SPACE FOR REMOVAL.
- EACH CONTRACTOR SHALL ACQUAINT HIMSELF WITH DETAILS OF ALL WORK TO BE PERFORMED BY OTHER TRADES AND TAKE NECESSARY STEPS TO INTEGRATE AND COORDINATE HIS WORK WITH OTHER TRADES.
- IT IS ASSUMED THE CONTRACTOR IS FAMILIAR WITH STANDARD 1ST CLASS INSTALLATION PROCEDURES. THEREFORE, THESE SPECIFICATIONS DO NOT ATTEMPT TO INCLUDE EVERY DETAIL OR OPERATION NECESSARY FOR THE COMPLETE INSTALLATION.
- IT SHOULD BE PARTICULARLY NOTED THAT THE TERMS "FURNISH" AND "PROVIDE" ARE INTERCHANGEABLE AND THAT EACH OF THESE MEANS TO PROVIDE, INSTALL AND CONNECT, UNLESS OTHERWISE STATED.
- WHENEVER TABLES OR SCHEDULES SHOW QUANTITY OF MATERIALS, THEY SHALL NOT BE USED AS A GUIDE TO CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIALS NOTED ON DRAWINGS AS SPECIFIED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION, SAFE-KEEPING AND CLEANLINESS OF ALL EXISTING EQUIPMENT, MATERIAL, ETC., LOCATED IN SPACES TO BE REMODELED IN WHICH HE IS WORKING. AS PART OF HIS RESPONSIBILITY, HE SHALL PROVIDE NECESSARY COVERS, STRUCTURES, ETC., AS REQUIRED TO KEEP ALL DIRT, WATER, MOISTURE AND DUST FROM EQUIPMENT. METHOD THE CONTRACTOR PROPOSES TO USE IN PROTECTING EQUIPMENT SHALL BE COORDINATED WITH ENGINEER AND OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE ANY WORK IS STARTED. ANY DAMAGE SUSTAINED DURING CONSTRUCTION SHALL BE CORRECTED OR REPLACED BY CONTRACTOR.
- MECHANICAL INSTALLATIONS: COORDINATE MECHANICAL EQUIPMENT AND MATERIALS INSTALLATION WITH OTHER BUILDING COMPONENTS. VERIFY ALL DIMENSIONS BY FIELD MEASUREMENTS. WHERE MOUNTING HEIGHTS ARE NOT DETAILED OR DIMENSIONED, INSTALL MECHANICAL SERVICES AND OVERHEAD EQUIPMENT TO PROVIDE THE MAXIMUM HEADROOM POSSIBLE. INSTALL MECHANICAL EQUIPMENT TO FACILITATE MAINTENANCE AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS PRACTICAL, CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM OF INTERFERENCE WITH OTHER INSTALLATIONS. COORDINATE THE INSTALLATION OF MECHANICAL MATERIALS AND EQUIPMENT ABOVE CEILINGS WITH SUSPENSION SYSTEM, LIGHT FIXTURES, AND OTHER INSTALLATIONS. INSTALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
- OPERATION AND MAINTENANCE DATA: MANUFACTURER'S PRINTED OPERATION PROCEDURES TO INCLUDE START-UP, BREAK-IN, ROUTINE, NORMAL, SUMMER AND WINTER OPERATION INSTRUCTIONS, REGULATION, CONTROL, STOPPING, SHUT-DOWN, AND EMERGENCY INSTRUCTIONS, PROCEDURES FOR ROUTINE PREVENTATIVE MAINTENANCE AND TROUBLESHOOTING, DISASSEMBLY, REPAIR, REASSEMBLY, ALIGNING AND ADJUSTING INSTRUCTIONS, TRAIN OWNER'S PERSONNEL ON PROCEDURES FOR STARTING, STOPPING, TROUBLESHOOTING, SERVICING, AND MAINTAINING EQUIPMENT, TURN OVER TO THE OWNER.

- RECORD DRAWINGS: THE CONTRACTOR SHALL KEEP A RUNNING RECORD OF EACH CHANGE AND DEVIATION FROM THE DRAWINGS. UPON THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT ONE COMPLETE SET OF CLEAN DRAWINGS NEATLY SHOWING DEVIATIONS FROM THE CONTRACT DOCUMENTS WITH DIMENSIONS SHOWING THE EXACT LOCATION OF CONCEALED OR INACCESSIBLE PIPING, DUCTS, ETC.

ASSIGNMENT OF MISCELLANEOUS WORK

- PAINTING: MECHANICAL CONTRACTOR WILL PROVIDE PRIME PAINTING ON ALL FERROUS METALS SUCH AS SUPPORT STEEL OR HANGERS FOR MECHANICAL PIPING AND EQUIPMENT. PIPING IS NOT TO BE PRIMED. ANY FINISH PAINTING REQUIRED, INCLUDING PAINTING OF PIPING AND STEEL EXPOSED TO OUTSIDE ENVIRONMENT WILL BE PAINTED BY MECHANICAL CONTRACTOR.
- HOLES THRU STRUCTURAL - HOLES REQUIRED FOR PIPING OR DUCTWORK OF SIZE 5" OR SMALLER SHALL BE CUT IN FIELD AT EXPENSE OF MECHANICAL CONTRACTOR WITH APPROVAL OF STRUCTURAL ENGINEER. OWNER SHALL BE GIVEN APPROVAL PRIOR TO ANY CUTTING. ALL LARGER HOLES SHALL BE PROVIDED BY GENERAL CONTRACTOR, WITH LOCATION APPROVAL FROM STRUCTURAL ENGINEER.
- CEILING AND WALL ACCESS PANELS: MECHANICAL CONTRACTOR SHALL CUT AND PATCH FINISHED AREAS AS REQUIRED BY MECHANICAL CONTRACTOR. PROVIDE WHERE SHOWN OR REQUIRED FOR ACCESS TO COILS, VALVES, ETC., ACCESS PANELS AS SPECIFIED.
- CUTTING AND PATCHING: MECHANICAL CONTRACTOR SHALL CUT AND PATCH FINISHED AREAS AS REQUIRED BY MECHANICAL CONTRACTOR. IN ABSENCE OF GENERAL CONTRACTOR, EACH CONTRACTOR SHALL DO HIS OWN CUTTING AND PATCHING.
- ROOF OPENINGS AND FLASHING REQUIRED BY MECHANICAL CONTRACTOR SHALL BE BY MECHANICAL CONTRACTOR. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR CORRECT SIZE AND LOCATION OF SAME. COUNTER FLASHING BY MECHANICAL CONTRACTOR. PIPE CURBS SHALL BE USED FOR ALL ROOF PENETRATIONS CREATED BY PIPING OR CONDUIT RELATED TO MECHANICAL EQUIPMENT.
- PADS AND FOUNDATIONS FOR MECHANICAL EQUIPMENT SHALL BE FORMED AND COURED BY MECHANICAL CONTRACTOR. MECHANICAL CONTRACTOR SHALL VERIFY PADS AND ALL ANCHORING DEVICES.
- EXCAVATING AND BACKFILLING FOR MECHANICAL WORK SHALL BE BY MECHANICAL CONTRACTOR.
- SANITARY VENT PANS AND FLASHING BY MECHANICAL CONTRACTOR.

SHOP DRAWING

- COMPLETE SCHEDULE OF EQUIPMENT, ETC., PROPOSED FOR INSTALLATION SHALL BE SUBMITTED FOR APPROVAL BEFORE ORDERS ARE PLACED.
- ELECTRONIC SHOP DRAWINGS SHALL BE REQUIRED WITHIN 30 DAYS OF AWARD ON CONTRACT AND SHALL INCLUDE CATALOG NUMBERS AND OTHER PERTINENT INFORMATION.
- THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL PRIOR TO ORDERING OF ANY OF THE FOLLOWING:
 - DUCTWORK & ACCESSORIES
 - HVAC EQUIPMENT
 - PLUMBING FIXTURES
 - PIPES & ACCESSORIES
 - DOMESTIC WATER HEATER

DRAWINGS

- MECHANICAL DRAWINGS SHOW GENERAL ARRANGEMENT OF ALL PIPING EQUIPMENT AND APPURTENANCES. THEY SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT.
- MECHANICAL WORK SHALL CONFORM TO REQUIREMENTS SHOWN ON ALL DRAWINGS. GENERAL AND STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER MECHANICAL DRAWINGS.
- BECAUSE OF SMALL SCALE OF MECHANICAL DRAWINGS IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. CONTRACTOR SHALL INVESTIGATE STRUCTURAL AND FINISH CONDITIONS AFFECTING WORK AND SHALL ARRANGE HIS WORK ACCORDINGLY, PROVIDING SUCH FITTINGS, VALVES AND ACCESSORIES AS MAY BE REQUIRED TO MEET SUCH CONDITIONS.

COORDINATION BETWEEN CONTRACTORS

- EACH CONTRACTOR AND SUBCONTRACTOR SHALL STUDY ALL DRAWINGS APPLICABLE TO THIS WORK SO COMPLETE COORDINATION BETWEEN TRADES WILL BE EFFECTED. SPECIAL ATTENTION SHALL BE GIVEN TO POINTS WHERE DUCTS CROSS OTHER DUCTS OR PIPING, WHERE LIGHTS FIT INTO CEILINGS AND WHERE PIPE, DUCTS AND CONDUIT PASS THRU WALLS AND COLLUMNS.
- IT IS RESPONSIBILITY OF EACH CONTRACTOR AND SUBCONTRACTOR TO LEAVE NECESSARY ROOM FOR OTHER TRADES. NO EXTRA COMPENSATION WILL BE ALLOWED TO COVER COST OF REMOVING PIPING, CONDUIT, DUCTS OR EQUIPMENT FOUND ENCROACHING ON SPACE REQUIRED BY OTHERS.

MINOR DEVIATIONS

- FOR PURPOSE OF CLARITY AND LEGIBILITY, DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC ALTHOUGH SIZE AND LOCATION OF EQUIPMENT AND PIPING ARE DRAWN TO SCALE WHEREVER POSSIBLE. VERIFY CONTRACT DOCUMENT INFORMATION AT SITE.
- DRAWINGS INDICATE REQUIRED SIZES AND POINTS OF TERMINATION OF PIPES AND DUCTS AND SUGGESTED ROUTES. IT IS NOT INTENTION OF DRAWINGS TO INDICATE ALL NECESSARY OFFSETS. INSTALL WORK IN MANNER TO CONFORM TO STRUCTURE. AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. DO NOT SCALE FROM DRAWINGS.

ATTACHING TO BUILDING CONSTRUCTION

- EQUIPMENT AND PIPING SUPPORTS SHALL BE ATTACHED TO STRUCTURAL MEMBERS (BEAMS, JOISTS, ETC.) RATHER THAN TO FLOOR OR ROOF SLABS.
- WHERE PIPING IS SUSPENDED FROM NEW CONCRETE CONSTRUCTION, FURNISH, LOCATE AND INSTALL BLACK STEEL CHANNEL-TYPE CONCRETE INSERTS WELDED TO COVER-PLATE. INSERTS SHALL PROVIDE FOR HORIZONTAL AND VERTICAL ADJUSTMENTS.
- WHERE PIPING IS SUSPENDED FROM EXISTING CONCRETE OR MASONRY CONSTRUCTION, USE EXPANSION SHIELDS TO ATTACH PIPE SUPPORTS TO

- CONSTRUCTION. EXPANSION SHIELD BOLT DIAMETER SHALL BE SAME SIZE AS SUPPORT ROD DIAMETER HEREINAFTER SPECIFIED.
- ERECTION OF METAL SUPPORTS & ANCHORAGES: CUT, FIT, AND PLACE MISCELLANEOUS METAL SUPPORTS ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION TO SUPPORT AND ANCHOR MECHANICAL MATERIALS AND EQUIPMENT.

BALANCING

- WORK BY MECHANICAL CONTRACTOR.
- GENERAL: BALANCE AND ADJUST SYSTEMS TO ACHIEVE COMFORT AND PROPER OPERATION OF SYSTEMS.
 - USE PROCEDURES AS OUTLINED IN NATIONAL STANDARDS FOR FIELD MEASUREMENTS AND INSTRUMENTATION, CURRENT VOLUME, AS PUBLISHED BY ASSOCIATED AIR BALANCE COUNCIL.
 - IF A PIECE OF EQUIPMENT IS NOT OPERATING IN SATISFACTORY MANNER, COORDINATE WITH MANUFACTURER TO REPAIR OR ADJUST.
 - SUBMIT REPORT TO ENGINEER IF SYSTEM OR PIECE OF EQUIPMENT CANNOT BE ADJUSTED TO OPERATE SATISFACTORILY.

PIPING

- INSTALL CHROME-PLATED PIPE ESCUTCHEONS ON EXPOSED PIPE @ FLOORS, WALLS, AND CEILINGS.
- 125# WROUGHT COPPER UNIONS WITH SOLDER JOINT FITTINGS, CRANE 633.
- FURNISH AND INSTALL SUPPORTS, GUIDES AND ANCHORS REQUIRED FOR PROPER SUPPORT OF PIPES.
- LAY UNDERGROUND PIPING ONLY ON SOLID UNDISTURBED GROUND, TAMP BOTTOM OF TRENCH. GRADE FOR REQUIRED SLOPE. COVER PIPE WITH SAND.
- SUPPORT VERTICAL RUNS WITH HANGER ADJACENT TO ELBOW.
- SUPPORT HORIZONTAL PIPE WITH GALVANIZED ALL-THREAD STEEL RODS (ASTM A107), SPACING: 1/2" - 2" PIPE, 8-4" ON CENTERS WITH 3/8" DIA. ROD, 2 1/2" - 3" PIPE, 12-4" ON CENTERS WITH 1/2" DIA. ROD.
- DOMESTIC HOT AND COLD WATER, HARD COPPER TUBE, ASTM B88, TYPE-L WATER TUBE, DRAWN TEMPER WITH COPPER SOLDER JOINT PRESSURE FITTINGS, JOINING MATERIAL- SOLDER, ASTM B32, ALLOY SN65, SN94, OR E. LEAD FREE. CLEANING & DISINFECTING: PURGE AND DISINFECT POTABLE WATER SYSTEMS AS PRESCRIBED BY AUTHORITIES HAVING JURISDICTION.
- BALL VALVES: TWO PIECE ALLOY, BRONZE BODY WITH FULL PORT, CHROME PLATED BALL, TFE SEATS, 600-PSIG MINIMUM CWP RATING. LEVER HANDLE WITH EXTENDED STEM FOR INSULATION.
- USE DIELECTRIC COUPLINGS WHEN JOINING DISSIMILAR PIPING MATERIALS.

PIPE HANGERS

- ADJUSTABLE STEEL CLEVIS HANGERS, NON-METALLIC COATING FOR ELECTROLYTIC PROTECTION WHERE ATTACHMENTS ARE IN DIRECT WITH COPPER. COPPER U-STRAP HANGERS FOR UN-INSULATED PIPE. COMPLY WITH MSS STANDARD PRACTICE SP-99.

INSULATION

- PIPE INSULATION
 - SERVICE-DOMESTIC HOT WATER AND COLD WATER, MATERIAL: 1" MINERAL FIBER WITH ASJ JACKET, SEAL JOINTS TO PREVENT CONDENSATION.
 - APPLY INSULATION ONLY AFTER PIPES HAVE BEEN TESTED AND CLEANED.
 - INSTALL INSULATION IN A NEAT WORKMANLIKE MANNER.
 - ALL INSULATION: RATING NOT TO EXCEED 25 FLAME, 50 SMOKE, RATED FOR USE IN RETURN AIR PLENUM.

"LOW PRESSURE" DUCTWORK AND ACCESSORIES

- DUCTWORK: GALVANIZED SHEET STEEL MIN. 26 GAUGE, CONSTRUCTED TO SMACNA STANDARDS. LOCK-FORMING QUALITY, ASTM A653, G90 COATING. FABRICATE ELBOWS WITH INSIDE RADIUS EQUAL TO ONE AND ONE-HALF TIMES THE DUCT WIDTH OR SQUARE WITH TURNING VANES. FABRICATE DIVIDED FLOW FITTINGS WITH A 45-DEGREE TAPERED ENTRY TO BRANCH DUCTS.
- FLEXIBLE DUCTS: FACTORY FABRICATED ROUND DUCT WITH A POLYETHYLENE OUTER JACKED ENCLOSING A 1-1/2 INCH THICK GLASS-FIBER INSULATION AROUND A STEEL-WIRE HELIX ENCAPSULATED IN A POLYETHYLENE FILM INNER LINER AND RATED FOR 6-INCH WG POSITIVE PRESSURE. PROVIDE 4 TO 6 FEET OF FLEX DUCT AT APPROPRIATE SUPPLY DIFFUSERS FOR SOUND ATTENUATION.
- MANUAL VOLUME DAMPERS: CONSTRUCT TO SMACNA STANDARDS. PROVIDE DAMPERS AT ALL BRANCH TAPS TO EACH DIFFUSER OR GRILLE OR ON REGISTERS WHERE SCHEDULED.

CEILING EXHAUST FANS

- HOUSING: STEEL, LINED WITH ACOUSTICAL INSULATION.
- FAN WHEEL: CENTRIFUGAL WHEELS DIRECTLY MOUNTED ON MOTOR SHAFT. FAN SHROUDS, MOTOR, AND FAN WHEEL SHALL BE REMOVABLE FOR SERVICE.
- GRILLE: PLASTIC OR STAINLESS-STEEL, LOUVERED GRILLE WITH FLANGE ON INTAKE AND THUMBSCREW ATTACHMENT TO FAN HOUSING.
- ELECTRICAL REQUIREMENTS: JUNCTION BOX FOR ELECTRICAL CONNECTION ON HOUSING AND RECEPTACLE FOR MOTOR PLUG-IN.
- ACCESSORIES:
 - BACKDRAFT DAMPER,
 - DISCONNECT

PLUMBING

- FURNISHED AND INSTALL EQUIPMENT, SPECIALTIES AND ACCESSORIES TO PROVIDE SYSTEMS AS SHOWN ON DRAWINGS OR HEREUNDER SPECIFIED.
- FOR PLUMBING FIXTURES, REFER TO EQUIPMENT SCHEDULE ON DRAWINGS.
- VITREOUS CHINA FIXTURES TO BE CLASS A AND WHITE, UNLESS COLOR IS SPECIFICALLY NOTED. ALL ELSEWHERE TO BE ACID-RESISTING.
- EXPOSED FIXTURE METAL AND FITTINGS: COORDINATE W/ ARCH.
- FIXTURES SET PLUMB TO WALL LINES. FASTEN SECURELY IN PLACE.
- FIXTURES AND TRIM PROTECTED BY CONTRACTOR UNTIL FINAL ACCEPTANCE. CLEAN FIXTURES AND TRIM BEFORE FINAL INSPECTION. CRACKED FIXTURES OR

SCRATCHED TRIM REPLACED BY CONTRACTOR BEFORE FINAL ACCEPTANCE.

- FIXTURES SET, CLEANED AND CONNECTED SO THEY MAY BE USED BY OWNER'S PERSONNEL AT EARLIEST POSSIBLE DATE.
- FIXTURES AND EQUIPMENT EQUIPPED WITH ANTI-SIPHON DEVICES OR CONSTRUCTED TO ELIMINATE POSSIBILITY OF SIPHONING WASTE MATERIAL INTO WATER SUPPLY.
- CHROMIUM PLATING TO BE IN ACCORDANCE WITH U.S. GOVERNMENT STANDARDS UNDER LICENSE FROM THE CHROME CORPORATION OF AMERICA. BRASS PLATE STEEL OR CAST IRON AND NICKEL PLATE BRASS OR BRASS PLATING BEFORE CHROMIUM PLATING. SATIN OR POLISHED FINISH AS SPECIFIED. COORDINATE FINAL FINISH WITH ARCHITECT BEFORE ORDERING.
- SANITARY VENT PIPING
 - ALL ABOVEGROUND PIPING SHALL BE: CAST-IRON SOIL PIPE, CISPI 301 WITH HUB LESS CAST-IRON COUPLINGS.
 - ALL UNDERGROUND PIPING SHALL BE: PVC PLASTIC PIPE, ASTM D2665, SCHEDULE 40 WITH DRAINAGE PATTERN SOCKET FITTINGS.

1-1/2 & 2" PIPE	60-INCH MAX. SPACING	3/8-INCH ROD
3" PIPE	60-INCH MAX. SPACING	1/2-INCH ROD
4" & 5" PIPE	60-INCH MAX. SPACING	5/8-INCH ROD
- RUN LOCAL HORIZONTAL DRAINAGE PIPING AT GRADE A MINIMUM OF 1/8" FT. MAKE CHANGES IN DIRECTION OF DRAINING PIPING WITH APPROPRIATE USE OF 45 DEGREE WYES, LONG SWEEP QUARTER, SIXTH EIGHTH OR SIXTEENTH BENDS, EXCEPT THAT WHERE SPACE CONDITIONS REQUIRE, SHORT TURN SANITARY TEES MAY BE USED ON VERTICAL LINES. SLIP JOINTS: PERMITTED ONLY ON FIXTURE TRAP INLETS OR ELBOWS CONNECTING TO FIXTURE TAILPIECES. UNIONS NOT PERMITTED ON SEWER SIDE OF TRAPS. USE TUCKER OR HUB END FITTINGS.
- ANY SOIL WASTE OR VENTS PASSING THRU ROOF SHALL BE MINIMUM 3" IN SIZE. LOCATED AT LEAST 18" FROM PARAPETS, ROOF DRAINS, BULKHEAD WALLS, TO ALLOW FOR FLASHING. FLASH WITH #4 SHEET LEAD WITH SQUARE BASE EXTENDING MINIMUM 7" OUT FROM PIPE AND TURN TOP OVER DOWN INTO PIPE.
- RUN VENT PIPING WITH LONG TURN ELBOWS AT CHANGES IN DIRECTION. GRADE TO DRAIN OUT CONDENSATION AND CONNECT AT BASE TO PREVENT ACCUMULATION OF RUST, WHERE POSSIBLE, MAKE VENT STACK AND DRY SOIL AND WASTE STACK EXTENSION OFFSETS AT ANGLE OF 45 DEGREES.
- RUN PIPING FREE OF TRAPS WHEREVER POSSIBLE AND GRADE AND VALVE FOR COMPLETE CONTROL AND DRAINAGE OF SYSTEM WITH DRAIN COCKS AT LOW POINTS, AT BASE OF VALVED RISERS AND WHERE INDICATED.

- UNLESS OTHERWISE NOTED, PROVIDE INDIVIDUAL WATER BRANCHES TO FIXTURES AND EQUIPMENT WITH HEAVY DUTY SHOCK ABSORBERS IN LIEU OF AIR CHAMBERS TO ELIMINATE PIPE HAMMER. EXACT SIZE AND LOCATION AS SHOWN ON DRAWINGS. JOSAM ABSORBOTRON OR APPROVED EQUAL.

- INSTALL CHROME PLATED BRASS PIPE WITH CHROME PLATED THREADED CAST BRASS FITTINGS FOR EXPOSED PIPE AT PLUMBING FIXTURES.

- MAKE CONNECTIONS TO EQUIPMENT WITH FLANGES OR UNIONS AND WITH THREADED ADAPTERS USED FOR SWING CONNECTIONS.

- PROVIDE OVERRIM WATER SUPPLY TO FIXTURES AND EQUIPMENT PROVIDE APPROVED VACUUM BREAKERS TO ALL BELOW RIM CONNECTIONS (EXCEPT SILL COCKS).

- TERMINATE PLUGGED TEES WHEN NOTED IN THREADED PLUG.

- TEST WITH COLD WATER @ 100 PSIG OR 1-1/2 TIMES WORKING PRESSURE, WHICHEVER IS GREATER. MAINTAIN FOR ONE HOUR.

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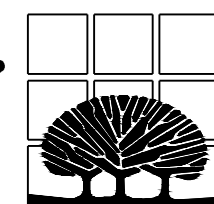
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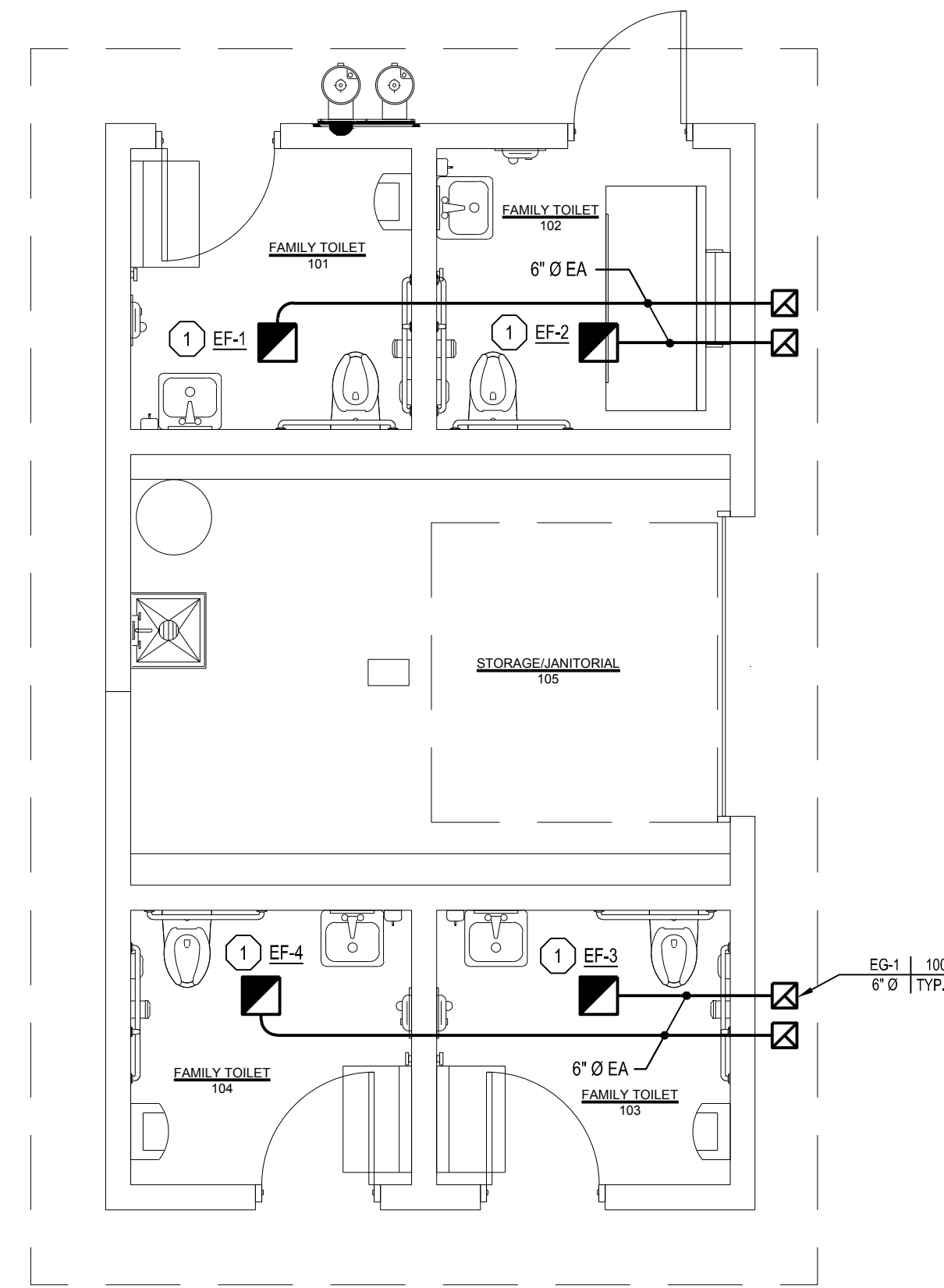
SCALE:
NTS

MECHANICAL AND PLUMBING
SPECIFICATIONS

DATE
11.03.2025
REVISIONS

PROJECT NO.
2252
SHEET NO.
MP-100

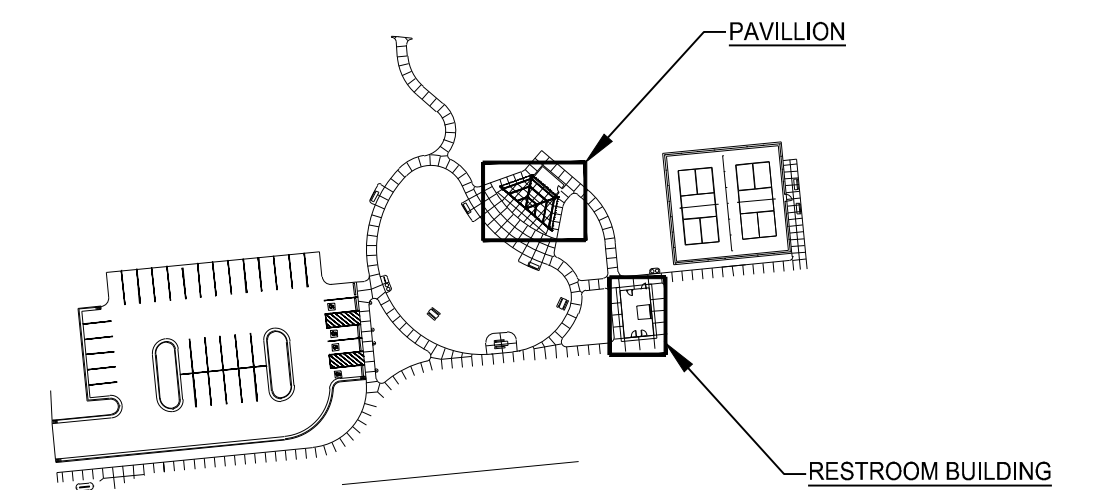




MECHANICAL KEY NOTES

- ① INSTALL CEILING EXHAUST FAN, EXHAUST DUCTWORK, LOCAL CONTROLS, AND ALL ASSOCIATED ACCESSORIES AT LOCATION SHOWN PER MANUFACTURERS WRITTEN INSTRUCTIONS.

FLOOR PLAN - MECHANICAL NEW
 SCALE: 1/4"=1'-0"

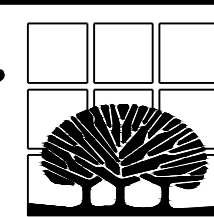


KEY PLAN
 SCALE: N.T.S.

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SCALE:
 1/4"=1'

**FLOOR PLAN - MECHANICAL
 NEW**

DATE	REVISIONS
11.03.2025	

PROJECT NO.
 2252
 SHEET NO.
M-400

PLUMBING ABBREVIATIONS

AD	AREA DRAIN	NTS	NOT TO SCALE
ASR	AUTOMATIC SPRINKLER RISER		
BFS	BELOW FLOOR SLAB	ORD	OVERFLOW ROOF DRAIN
BWV	BACK WATER VALVE	OXY	OXYGEN
CB	CATCH BASIN	P	PUMP
CI	CAST IRON	PD	PRESSURE DROP
CO	CLEAN OUT	PVC	POLY-VINYL-CHLORIDE
CV	CONTROL VALVE		
DF	DRINKING FOUNTAIN	RC	RAIN CONDUCTOR
DIA	DIAMETER	RD	ROOF DRAIN
DN	DOWN	RI	ROUGH-IN
DWH	DOMESTIC WATER HEATER	REQ'D	REQUIRED
E.T.C.	ELECTRICAL TRADES CONTRACTOR	SAN	SANITARY
EWC	ELECTRIC WATER COOLER	SHWR	SHOWER
EXIST	EXISTING	SK	SINK
		SP	STAND PIPE
FD	FLOOR DRAIN	SQ. FT.	SQUARE FEET
FC	FINAL CONNECTIONS	SS	SERVICE SINK
FDC	FIRE DEPT. CONNECTION	ST	STORM
FF	FINISH FLOOR	S&W	STOP & WASTE
FHV	FIRE HOSE VALVE	STR	STRAINER
FT	FEET	SV	STACKED VENT
		TYP.	TYPICAL
GAL	GALLON	UR	URINAL
GD	GARBAGE DISPOSAL		
GI	GREASE INTERCEPTOR	VB	VACUUM BREAKER
GPH	GALLONS PER HOUR	VS	VENT STACK
GPM	GALLONS PER MINUTE	V.F.D	VARIABLE FREQUENCY DRIVE
		VTR	VENT THRU ROOF
HB	HOSE BIB	W	WASTE
HD	HEAD (FT)	WB	WET BULB
HP	HORSE POWER	WC	WATER CLOSET
		WH	WALL HYDRANT
ID	INSIDE DIAMETER	WS	WASTE STACK
I.E.	INVERT ELEVATION	W&V	WASTE AND VENT
LAV	LAVATORY	X-CW	EXIST. CW PIPING
LT	LAUNDRY TRAY		ITEM
			EXISTING
MA	MEDICAL AIR		
MAX	MAXIMUM		
MGC	MEDICAL GAS CONSOLE		
MH	MAN HOLE		
MIN	MINIMUM		
MS	MOP SINK		
M.T.C.	MECHANICAL TRADES CONTRACTOR		

GENERAL PLUMBING NOTES

- ALL PLUMBING WORK SHALL CONFORM TO MICHIGAN PLUMBING CODE, LATEST APPLICABLE EDITION, AND ALL APPLICABLE LOCAL CODES.
- INSTALL ALL EQUIPMENT, MATERIALS, AND ACCESSORIES PER MANUFACTURERS WRITTEN INSTRUCTIONS.
- INSTALL ISOLATION BALL VALVES @ ALL FIXTURE WATER SUPPLY LINES.
- SITE CONTRACTOR TO RUN UTILITIES TO 5'-0" FROM BUILDING LINE.
- ALL INVERT ELEVATIONS ARE BASED ON A FINISH FLOOR LEVEL OF 100'-0". ALL INVERTS, STATED OR NOT, NEW OR EXISTING, SHALL BE COORDINATED IN THE FIELD. VERIFY EXISTING INVERTS PRIOR TO STARTING WORK.
- ALL ELEVATIONS SHOWN ARE INVERTS OF PIPING. THE SLEEVES SHALL BE COORDINATED WITH THESE ELEVATIONS.
- ALL PIPE SIZES SHOWN ARE SERVICE SIZE. SIZE SLEEVES FOR 1" CLEAR SPACE BETWEEN PIPE AND SLEEVE FOR INSTALLATION OF MECHANICAL SEAL.
- MECHANICAL SEALS REQUIRED FOR BELOW GRADE WALL PENETRATIONS. ALL WALL AND SLAB PENETRATIONS OF MASONRY OR CONCRETE CONSTRUCTION SHALL BE SLEEVED.
- ALL FLOOR DRAINS TO BE EQUIPPED WITH TRAP PRIMERS OR CODE APPROVED TRAP SEALS, UNLESS OTHERWISE NOTED.
- 2% SLOPE FOR ALL SANITARY PIPING 2-1/2" OR LESS IN DIAMETER. 1% SLOPE FOR ALL SANITARY PIPING 3" OR MORE IN DIAMETER.
- PROVIDE SHOCK STOPS FOR EVERY PLUMBING GROUP. PROVIDE SHOCK ABSORBER IN THE DOMESTIC COLD AND HOT WATER PIPING. SHOCK ABSORBERS TO BE LOCATED IN AN ACCESSIBLE LOCATION.
- PROVIDE AIR ELIMINATION DEVICES FOR EACH PLUMBING SYSTEM.
- THE CONTRACTOR SHALL FIELD VERIFY THE SIZES, LOCATION, ELEVATIONS, AND DETAILS OF ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EQUIPMENT AND MATERIALS IN A "NEW" CONDITION DURING CONSTRUCTION.
- ALL WORK SHALL BE PERFORMED BY LICENSED CONTRACTORS AND SUBCONTRACTORS AS REQUIRED BY LAW.
- DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CODES AND REGULATIONS ENFORCED BY LOCAL BUILDING OFFICIALS.
- IF THERE IS CONFLICTING INFORMATION IN THE PLANS OR SPECIFICATIONS THE MORE STRINGENT AND GREATER COST ITEM SHALL BE USED.
- DRAWINGS INDICATE REQUIRED SIZES AND POINTS OF TERMINATION OF PIPES AND SUGGESTED ROUTES. IT IS NOT INTENTION OF DRAWINGS TO INDICATE ALL NECESSARY OFFSETS. INSTALL WORK IN MANNER TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. DO NOT SCALE FROM DRAWINGS.
- PIPING LAYOUT IS SCHEMATIC. EXACT LOCATION OF PIPING AND EQUIPMENT SHALL BE COORDINATED WITH BUILDING STRUCTURE, EQUIPMENT FURNISHED, ARCHITECTURAL DRAWINGS AND ALL OTHER TRADES PRIOR TO INSTALLATION. ANY CONTRACTOR INSTALLING WORK WITHOUT PRIOR COORDINATION SHALL RELOCATE HIS WORK AT HIS EXPENSE TO ALLOW PROPER INSTALLATION OF ANY AND ALL TRADES WORK.
- UNLESS OTHERWISE NOTED, ALL PIPING SHALL BE CONCEALED WHEREVER POSSIBLE. PROVIDE CHROME ESCUTCHEON AT EACH PENETRATION OF A FINISHED SURFACE.
- PLUMBING UTILITY PIPING SHALL NOT BE RUN ABOVE ELECTRICAL GEAR OR IN THE SERVICE SPACE REQUIRED BY THE NATIONAL ELECTRICAL CODE.
- ALL FIXTURES SHALL HAVE SHUT-OFF STOP VALVES IN AN ACCESSIBLE LOCATION. PIPING BEYOND THE STOP VALVES AND EXPOSED IN OCCUPIED SPACES SHALL BE CHROME PLATED. ANY NOTED SHUTOFF VALVES ARE IN ADDITION TO THIS REQUIREMENT.

DOMESTIC WATER HEATER SCHEDULE										
TAG	MODEL	LOCATION	GALLON CAPACITY	GPH @ 100°F RISE	ELECTRICAL				HOT WATER TEMP. SETTING	REMARKS
					KW	VOLTAGE	PHASE	STARTER BY		
EWH-1	LES-36 DAP	STORAGE/JANITORIAL - 105	33	25	6	240	1	EC	120	1

NOTES:
 1. BASED ON LOCHINVAR ABBREVIATIONS
 EC - ELECTRICAL CONTRACTOR
 MC - MECHANICAL CONTRACTOR
 NR - NOT REQUIRED

PLUMBING FIXTURE SCHEDULE										
TAG	FIXTURE	BASIS OF DESIGN		MIN ROUGH-IN				FAUCET TYPE	FIXTURE SIZE	ACCESSORIES AND COMMENTS
		MANUFACTURER	MODEL	CW	HW	SAN	VENT			
WC-1	WALL MOUNTED FLUSH VALVE WATER CLOSET (B.F.)	KOHLER	K-84323-L	1/2"	-	4"	-	MANUAL FLUSH VALVE BASED ON SLOAN: REGAL 111	-	COMMERCIAL SEAT, CARRIER
UR-1	WALL HUNG URINAL (B.F.)	ZURN	Z5755.261	3/4"	-	2"	1 1/2"	MANUAL FLUSH VALVE BASED ON SLOAN: REGAL 186	-	TOP SPUD, Z1222 URINAL CARRIER
LAV-1	WALL HUNG LAVATORY (B.F.)	KOHLER	K-2005	1/2"	1/2"	1 1/2"	1 1/2"	TWO HANDLE FAUCET BASED ON DELTA: 86T1153	20 x 18	STAINLESS STEEL ASSE 1070 THERMOSTATIC VALVE, 1 1/2" P-TRAP, TRAP WRAP, ANGLE STOPS, CHROME PLATED SUPPLIES, Z1231 LAV CARRIER WITH UPRIGHTS
EWC-1	ELECTRIC WATER COOLER WALL HUNG BI-LEVEL	MDF	1045 WMSS	1/2"	-	1 1/2"	1 1/2"	-	-	WATER COOLER CARRIER, BI-LEVEL, BOTTLE FILLER
MS-1	MOP SINK	ZURN	Z1996	1/2"	1/2"	3"	-	FAUCET BASED ON ZURN: Z843M1	24 x 24	DOME STRAINER, HOSE WITH BRACKET, MOP HANGER, STAINLESS STEEL WALL GUARDS AND STAINLESS STEEL RIM GUARDS, FAUCET TO HAVE ADJUSTABLE SWIVEL INLETS AND VACUUM BREAKER
HB-1	HOSE BIBB	ZURN	Z1341XL	1/2"	-	-	-	-	-	AUTO DRAINING, HOSE CONNECTION, VANDAL RESISTANT VACUUM BREAKER
FD-1	FINISH AREA FLOOR DRAIN	ZURN	ZN415-6BZ1	-	-	2"	-	-	-	SEE PLAN FOR SANITARY SIZE, PROVIDE SURE SEAL ASSE 1072 TRAP SEAL

PLUMBING SYMBOLS LEGEND

PLUMBING PIPING

- CW — COLD WATER
- - CW - - COLD WATER BELOW FINISH SLAB
- HW — HOT WATER
- - HW - - HOT WATER BELOW FINISH SLAB
- SAN — SANITARY WASTE
- - SAN - - SANITARY WASTE BELOW FINISH SLAB
- V — VENT PIPING
- - V - - VENT PIPING BELOW FINISH SLAB
- - - - - DEMOLITION

PLUMBING VALVES

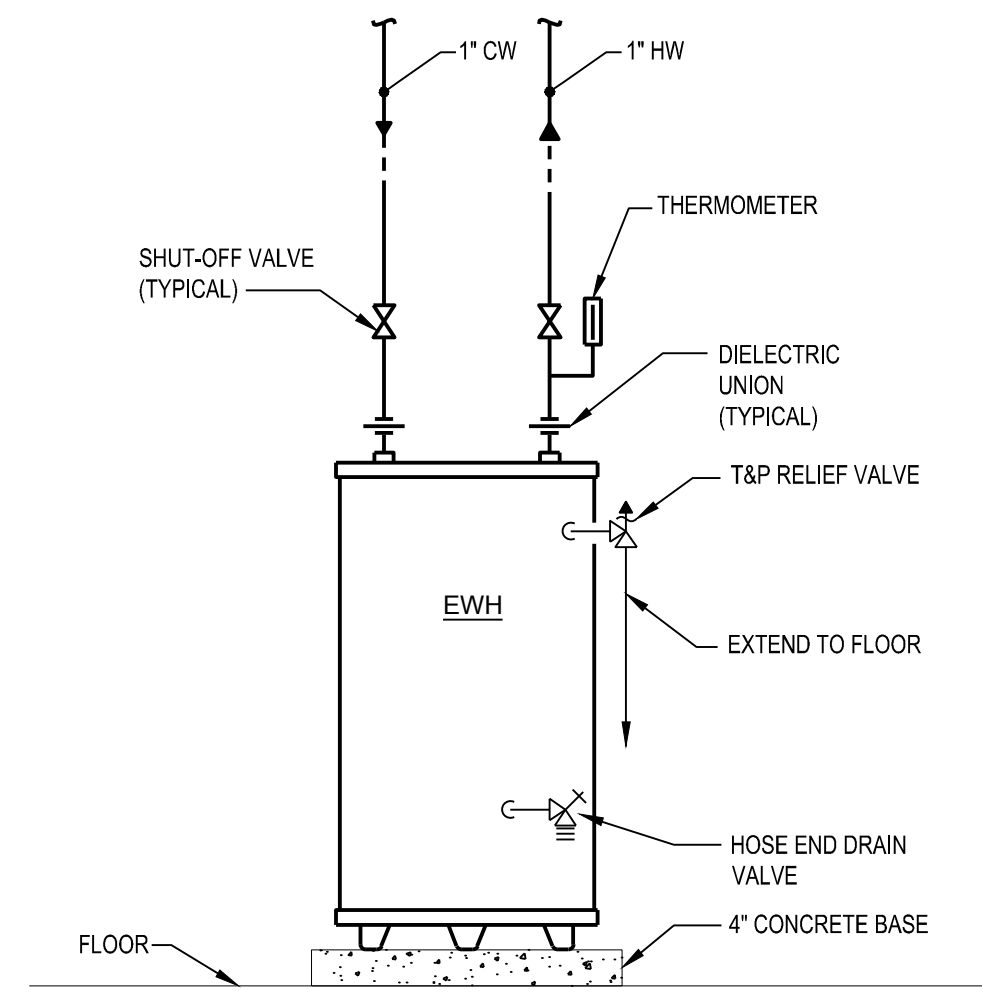
- GATE VALVE
- GAS COCK
- CHECK VALVE
- BALANCE COCK
- CIRCUIT SETTER
- TWO-WAY CONTROL VALVE
- THREE-WAY CONTROL VALVE
- GLOBE VALVE
- BALL VALVE
- TRIPLE DUTY VALVE
- GAS PRESSURE REGULATOR
- STRAINER (BLOW-OFF)

PLUMBING EQUIPMENT

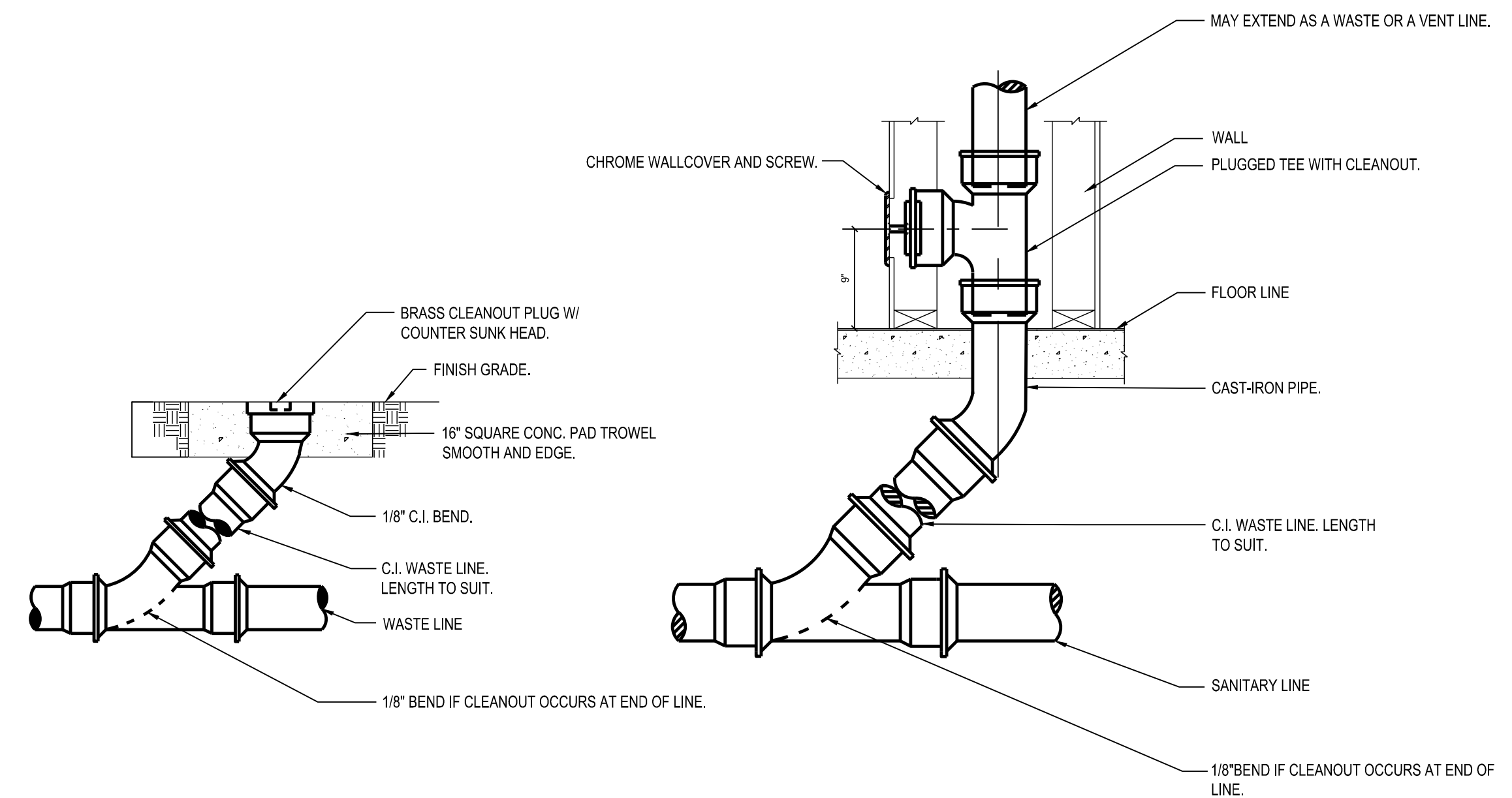
- FLOW DIRECTION
- PIPING DROP
- PIPING RISE
- FLOOR CLEANOUT
- INLINE PIPING DROP
- INLINE PIPING RISE
- PIPING TEE
- PIPING ELBOW
- INLINE CLEANOUT
- PLUMBING TRAP
- THERMOMETER CONNECTION
- FLOOR DRAIN & FLOOR SINK
- FLANGE END CONNECTION
- WALL HYDRANT & HOSE BIBB
- REGULAR & OVERFLOW ROOF DRAIN
- PIPE CAP
- PIPE BREAK
- WATER METER
- GAS METER
- PRESSURE GAUGE

MISCELLANEOUS NOTES

- POINT OF CONNECTION BETWEEN NEW AND EXISTING
- POINT OF EXISTING TO REMAIN AND EXISTING TO BE REMOVED
- INDICATES PLAN NOTE
- INDICATES DEMOLITION NOTE
- DETAIL BUBBLE
- DETAIL NUMBER
- PAGE LOCATION INDICATES
- DIRECTION OF DETAIL SECTION



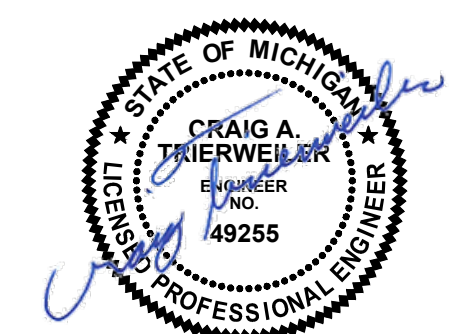
1 WATER HEATER DETAIL
SCALE: NTS



2 CLEAN-OUT DETAILS
SCALE: NTS

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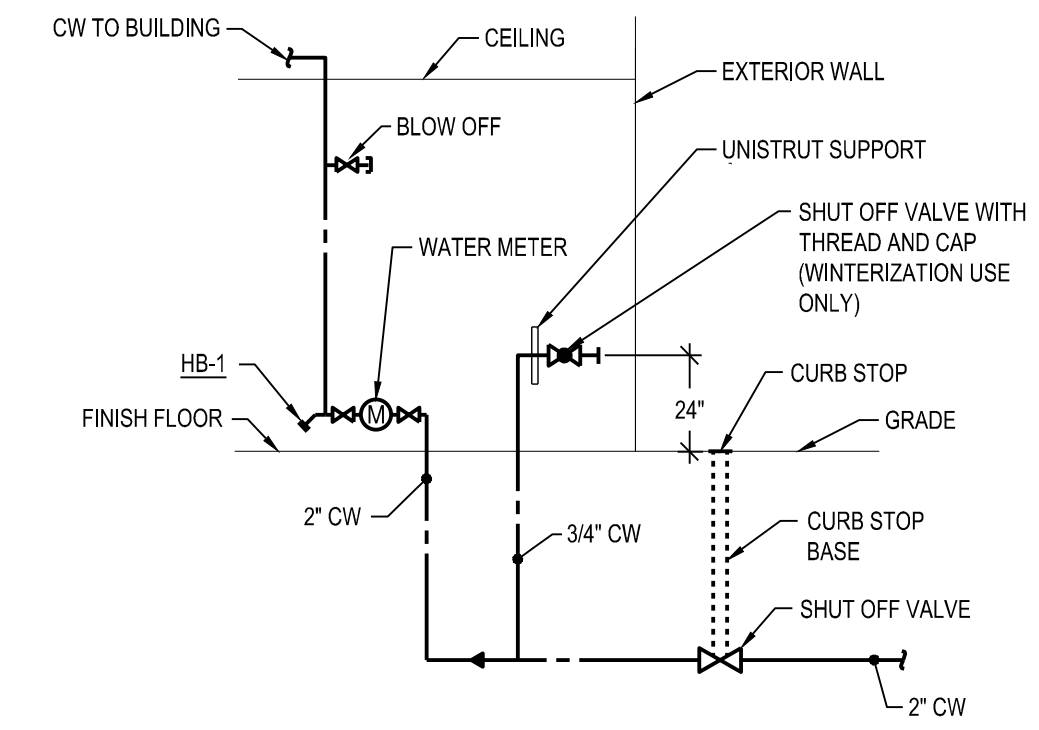
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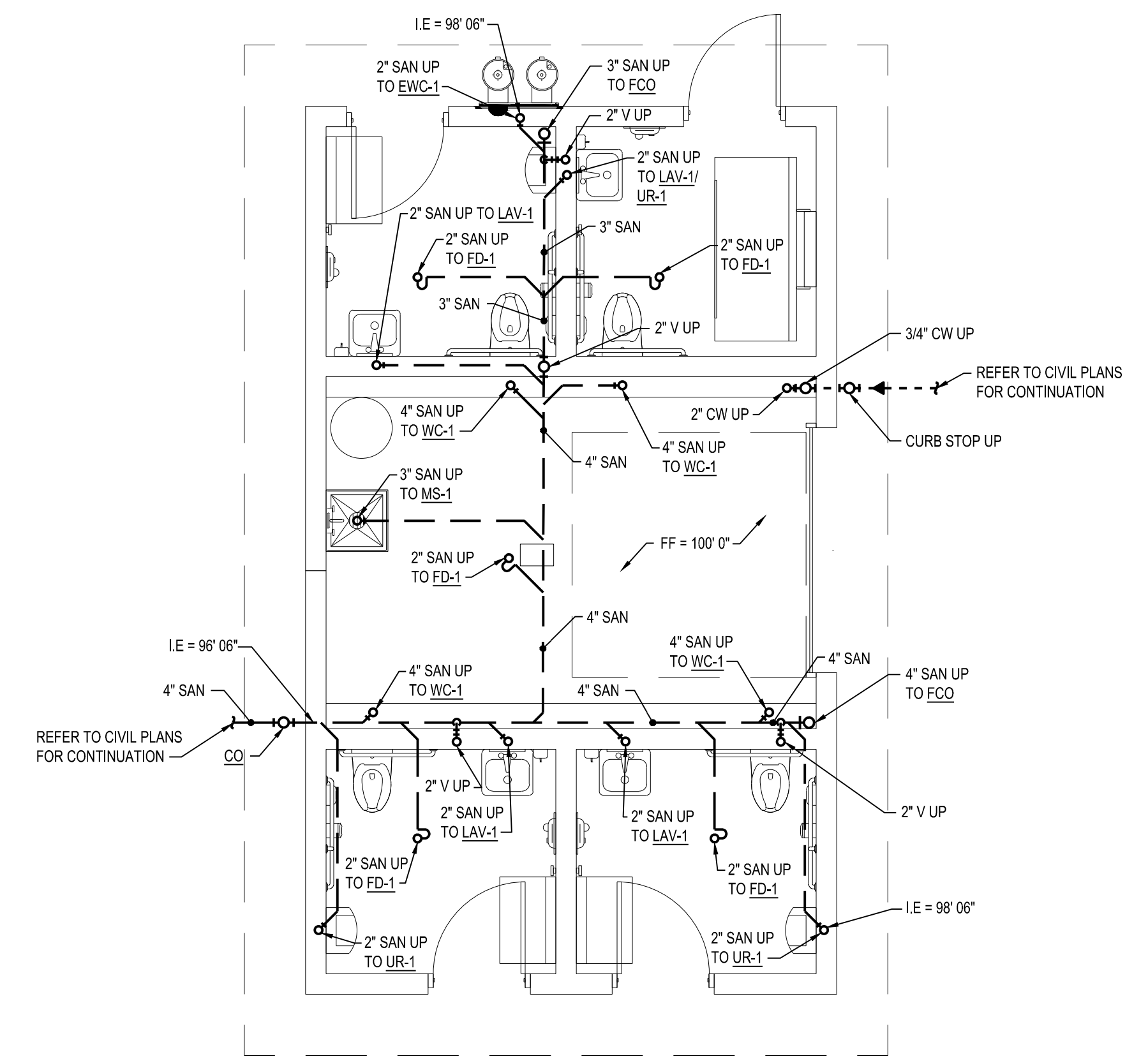
**PLUMBING SYMBOLS, NOTES,
AND ABBREV.**

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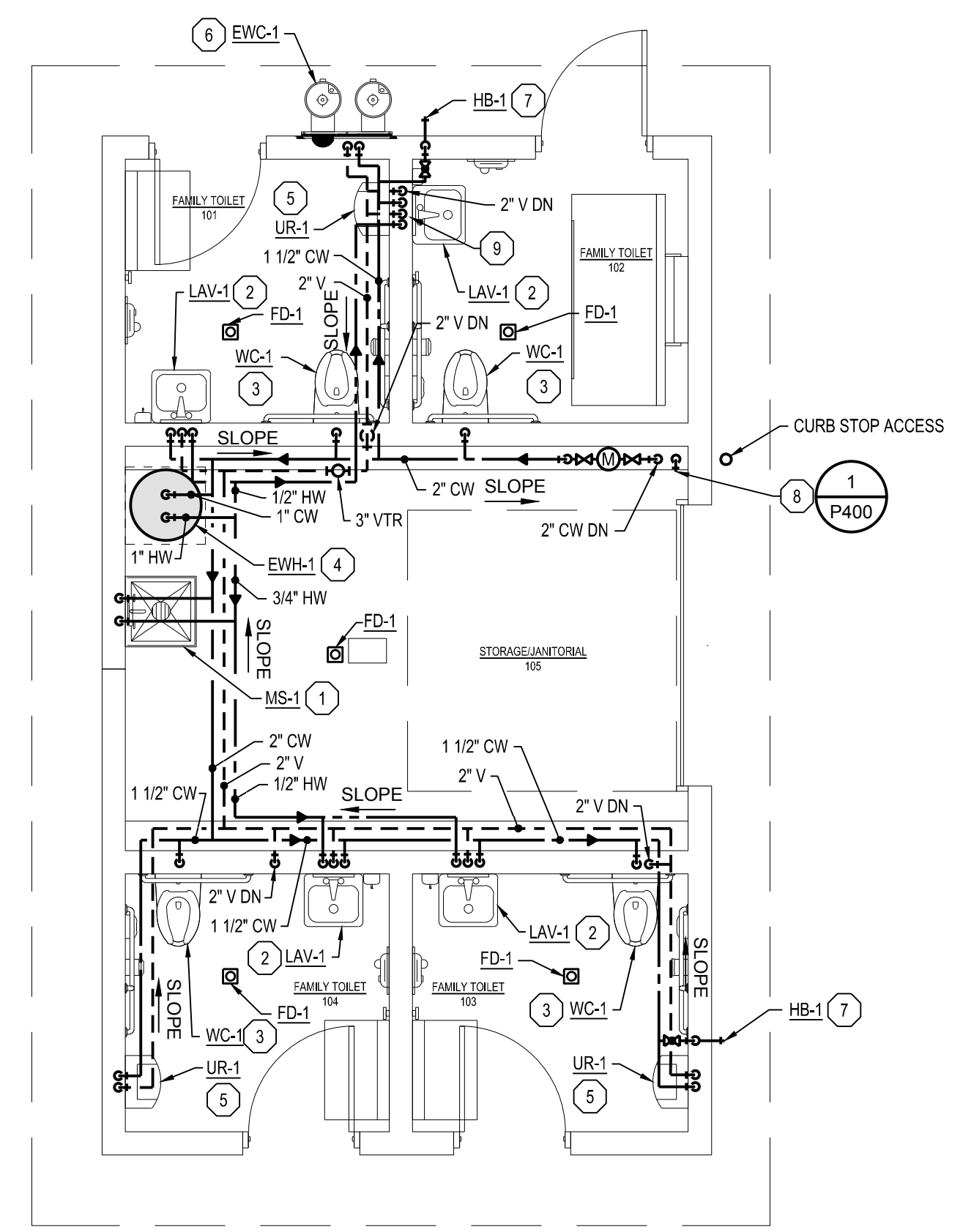


- NOTES:
- OWNER TO WINTERIZE THE BUILDING WHEN OUTSIDE AIR TEMPERATURES ARE BELOW FREEZING. COORDINATE WITH CITY FOR SHUT DOWN OF WATER SERVICE AND WATER METER REMOVAL.
 - DOMESTIC COLD WATER PIPING PRIOR TO THE CURB STOP SHALL BE AT A MINIMUM BURY DEPTH OF 42\"/>

1 DOMESTIC WATER WINTERIZATION DETAIL
SCALE: NTS



BELOW FLOOR PLAN - PLUMBING NEW
SCALE: 1/4\"/>



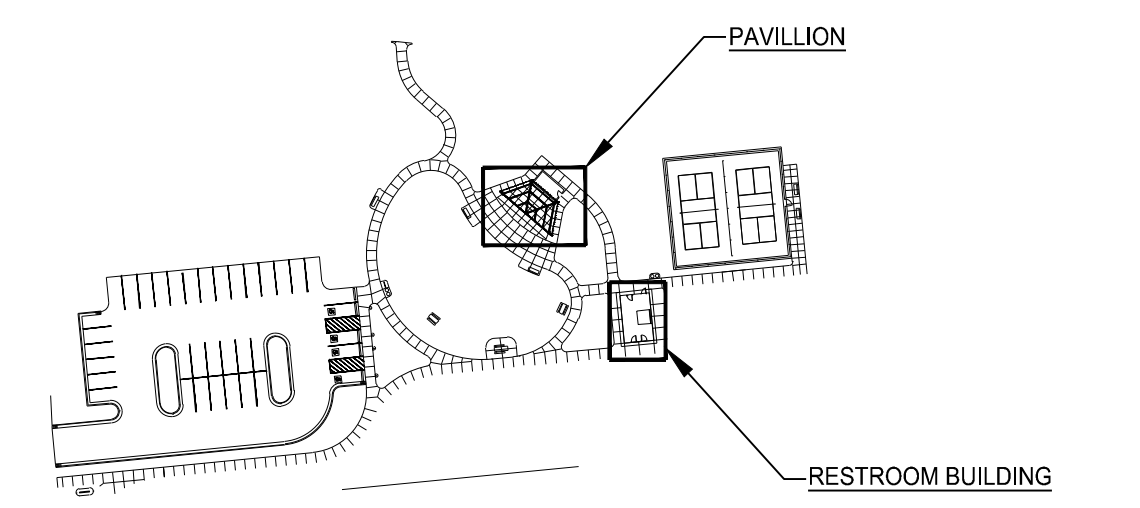
FLOOR PLAN - PLUMBING NEW
SCALE: 1/4\"/>

PLUMBING KEY NOTES

- SLOPE DOMESTIC COLD WATER PIPING AND DOMESTIC HOT WATER PIPING IN THE DIRECTION INDICATED ON DRAWINGS TOWARDS HOSE DRAIN CONNECTIONS WITH SHUT OFF VALVES AT LOW POINTS NOT INDICATED AS REQUIRED FOR PROPER WINTERIZATION OF PIPING.
- INSTALL ADDITIONAL SHUT OFF VALVES AND COMPRESSED AIR QUICK CONNECTS AT HIGH POINTS OF PIPING AND INSTALL HOSE DRAIN CONNECTIONS WITH SHUT OFF VALVES AT LOW POINTS NOT INDICATED AS REQUIRED FOR PROPER WINTERIZATION OF PIPING.

PLUMBING KEY NOTES

- INSTALL MOP SINK AT LOCATION SHOWN. CONNECT TO HOT WATER, COLD WATER, AND SANITARY PIPING.
- INSTALL LAVATORY AT LOCATION SHOWN. CONNECT TO HOT WATER, COLD WATER, SANITARY, AND VENT PIPING.
- INSTALL WATER CLOSET AT LOCATION SHOWN. CONNECT TO COLD WATER AND SANITARY PIPING.
- INSTALL ELECTRIC WATER HEATER AND ALL ASSOCIATED ACCESSORIES AT LOCATION SHOWN. CONNECT TO HOT WATER AND COLD WATER PIPING.
- INSTALL URINAL AT LOCATION SHOWN. CONNECT TO COLD WATER, SANITARY, AND VENT PIPING.
- INSTALL ELECTRIC WATER COOLER AT LOCATION SHOWN. CONNECT TO COLD WATER, VENT, AND SANITARY PIPING.
- OWNER TO WINTERIZE THE HYDRANT ASSEMBLY WHEN OUTSIDE AIR TEMPERATURES ARE BELOW FREEZING.
- INSTALL WINTERIZATION VALVE ASSEMBLY AT LOCATION SHOWN.
- 3/4\"/>



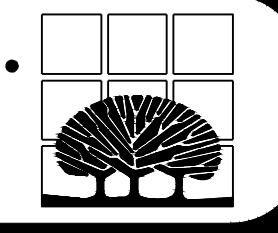
KEY PLAN
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SCALE:
1/4\"/>

FLOOR PLAN - PLUMBING
NEW

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P-400

ELECTRICAL SYMBOLS LEGEND

<p>OUTLETS</p> <ul style="list-style-type: none"> ⊕ SINGLE RECEPTACLE (120 VOLT) ⊕ DUPLEX RECEPTACLE ⊕ EMERGENCY RECEPTACLE ⊕ DOUBLE DUPLEX RECEPTACLE ⊕ FLUSH FLOOR BOX ⊕ SURFACE FLOOR BOX ⊕ SPECIAL EQUIPMENT RECEPTACLE ⊕ TELEPHONE OUTLET ▽ DATA OUTLET ▽ TELEPHONE / DATA OUTLET ■ POWER POLE ⊕ JUNCTION BOX ⊕ WALL JUNCTION BOX ⊕ PULL (JUNCTION) BOX ⊕ UNDERFLOOR JUNCTION BOX ⊕ CEILING MOUNTED WIFI <p>SWITCHES</p> <ul style="list-style-type: none"> \$ SINGLE-POLE SWITCH \$3 THREE-WAY SWITCH \$4 FOUR-WAY SWITCH \$5 SWITCH WITH PILOT LIGHT \$10 THERMAL OVERLOAD SWITCH \$6 MANUAL MOTOR SWITCH \$7 KEY SWITCH \$8 TIME SWITCH \$9 DIMMER SWITCH <p>MECHANICAL</p> <ul style="list-style-type: none"> ⊕ SINGLE PHASE MOTOR ⊕ THREE PHASE MOTOR ⊕ RESISTANCE HEATER, KW SHOWN ⊕ PIPE TRACE HEATER ⊕ ELECTRIC UNIT HEATER ⊕ ELECTRIC WATER HEATER <p>NURSE CALL</p> <ul style="list-style-type: none"> ⊕ NURSE CALL CONTROLLER ⊕ MASTER STATION ⊕ EMERGENCY PULL STATION ⊕ EMERGENCY PUSH STATION ⊕ CODE BLUE STATION ⊕ PENDENT INTERFACE ⊕ BED / LIGHT INTERFACE ⊕ SINGLE BED STATION ⊕ DUAL BED STATION ⊕ DOME LIGHT ⊕ STAFF REGISTER STATION ⊕ STAFF STATION ⊕ DUTY STATION <p>DESIGNATIONS</p> <ul style="list-style-type: none"> ⊕ DEMOLITION NOTE ⊕ PLAN NOTE ⊕ ADDENDUM NOTE 	<p>FIXTURES</p> <ul style="list-style-type: none"> ⊕ LIGHT FIXTURE ⊕ STRIP FIXTURE ⊕ EMERGENCY LIGHT FIXTURE ⊕ IN-GRADE LIGHT FIXTURE ⊕ SPOTLIGHT (number of heads shown) ⊕ EXIT SIGN (face & direction as shown) ⊕ WALL MOUNT LIGHT FIXTURE ⊕ CEILING LIGHT FIXTURE ⊕ TRACK & FIXTURE ⊕ STREET TYPE POLE FIXTURE ⊕ POLE MOUNTED LIGHT FIXTURE ⊕ EXTERIOR WALL MOUNT LIGHT FIXTURE ⊕ WALLPACK LIGHT FIXTURE ⊕ SPECIAL PURPOSE LIGHT FIXTURE ⊕ HIGH BAY LIGHT FIXTURE ⊕ EMERGENCY EGRESS LIGHT FIXTURE (number of heads shown) ⊕ DOCK LIGHT FIXTURE <p>CIRCUITRY and RACEWAYS</p> <ul style="list-style-type: none"> — CONDUIT INSTALLED (by E.C.) - - - CONDUIT INSTALLED (by others) — CONDUIT STUB UP — CONDUIT STUB DOWN — 1.3 HOME RUN (with circuit numbers) — END OF CONDUIT RUN — END OF CONDUIT RUN, CAP AND STAKE — "CONDUIT RUN CONTINUES" INDICATION — FLEXIBLE PIGTAILS/CONNECTIONS — WM WIREMOLD AS SPECIFIED — PM PLUGMOLD AS SPECIFIED — BD BUS DUCT — UFD UNDERFLOOR DUCT <p>SOUND and SIGNAL</p> <ul style="list-style-type: none"> ⊕ SPEAKER ⊕ WALL MOUNTED SPEAKER ⊕ WALL MOUNTED SPEAKER / CLOCK COMBO ⊕ SINGLE FACE CLOCK ⊕ DUAL FACE CLOCK ⊕ VIDEO INPUT ⊕ AUDIO / VIDEO INPUT ⊕ BELL ⊕ VOLUME CONTROL ⊕ BUZZER ⊕ CHIME ⊕ TELEVISION OUTLET ⊕ MICROPHONE OUTLET ⊕ INTERCOM OUTLET ⊕ CAMERA ⊕ DOOR CONTACT ⊕ MOTION DETECTOR ⊕ BEAM DETECTOR ⊕ KEY PAD ⊕ SECURITY SYSTEM CONTROL PANEL ⊕ CCTV CONTROL PANEL ⊕ CARD READER ⊕ STUDENT STATION ⊕ ADMINISTRATION STATION ⊕ TEACHER STATION ⊕ GLASS BREAK 	<p>SERVICE and EQUIPMENT</p> <ul style="list-style-type: none"> ⊕ TRANSIENT VOLTAGE SURGE SUPPRESSION ⊕ VARIABLE FREQUENCY DRIVE ⊕ TRANSFORMER ⊕ FUSED DISCONNECT SWITCH ⊕ MAGNETIC STARTER ⊕ COMB. STARTER ⊕ PANELBOARD, SURFACE MOUNTED ⊕ PANELBOARD, FLUSH MOUNTED ⊕ WEATHERHEAD ⊕ UTILITY METER, AS REQUIRED ⊕ DIGITAL EQUIPMENT METER, AS REQUIRED ⊕ CURRENT TRANSFORMERS ⊕ GENERATOR, KW SHOWN ⊕ TELEPHONE TERMINAL BOARD ⊕ GROUND CONNECTION PER N.E.C. ⊕ WIREWAY ⊕ TRANSFER SWITCH ⊕ ENCLOSED CIRCUIT BREAKER ⊕ CAPACITOR <p>CONTROL</p> <ul style="list-style-type: none"> ⊕ THERMOSTAT ⊕ HUMIDISTAT ⊕ PHOTOCELL (voltage as required) ⊕ TIME CLOCK (24 hour U.O.N.) ⊕ PUSHBUTTON STATION (number of buttons indicated) ⊕ CONTROL TRANSFORMER ⊕ LIGHTING CONTACTOR ⊕ IRRIGATION CONTROLLER (120 volt xxVA connection by x/C) <p>⊕ WALL MOUNT DUAL TECHNOLOGY SENSOR</p> <p>⊕ OCCUPANCY SENSOR / PHOTOCELL</p> <p>⊕ ULTRASONIC SENSOR - 360" - 2 CIRCUIT</p> <p>⊕ DUAL TECHNOLOGY SENSOR - 360" - 1000 SQ FT</p> <p>⊕ DUAL TECHNOLOGY SENSOR - 360" - 500 SQ FT</p> <p>⊕ SWITCH STYLE OCCUPANCY SENSOR</p> <p>⊕ POWER PACK</p> <p>⊕ DIGITAL TIME SWITCH</p> <p>FIRE ALARM</p> <ul style="list-style-type: none"> ⊕ SMOKE DETECTOR ⊕ HEAT DETECTOR ⊕ DUCT SMOKE DETECTOR ⊕ DUCT SMOKE DETECTOR ⊕ HORN ⊕ HORN & LIGHT ⊕ SPEAKER ⊕ SPEAKER & LIGHT ⊕ PULL STATION ⊕ FIRE ALARM CONTROL PANEL ⊕ ANNUNCIATOR PANEL ⊕ END OF LINE DEVICE ⊕ REMOTE INDICATING LIGHT, WALL MTD. ⊕ REMOTE INDICATING LIGHT, CLG. MTD. ⊕ MAGNETIC DOOR HOLDER ⊕ FIREFIGHTER COMMUNICATION JACK ⊕ FLOW SWITCH (furnished by FP/C) ⊕ TAMPER SWITCH (furnished by FP/C) ⊕ VISUAL ONLY UNIT ⊕ FIRE CONTROL POWER SUPPLY ⊕ MONITOR MODULE ⊕ CONTROL MODULE ⊕ CARBON MONOXIDE DETECTOR
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GENERAL ELECTRICAL NOTES

1. ALL WALL AND FLOOR PENETRATIONS ARE TO BE SEALED TO MAINTAIN ORIGINAL RATING.
2. ALL CONDUITS TO BE FIELD ROUTED ALONG EXISTING PIPING AND STRUCTURAL STEEL.
3. THE DIVISION 26 CONTRACTORS SHALL VISIT THE PROJECT AND DETERMINE THE EXACT EXTENT OF THE DEMOLITION WORK REQUIRED BEFORE BIDDING THE PROJECT.
4. REMOVE ALL EXISTING OBSOLETE EXPOSED CONDUIT, WIRE AND UNUSED EQUIPMENT WHERE WORK IS BEING DONE EXCEPT ITEMS NOTED OTHERWISE.
5. WHERE BUILDING SURFACES ARE DAMAGED BY THE REMOVAL OF OLD WORK, SURFACES SHALL BE PATCHED TO MATCH ADJACENT.
6. EXISTING WORK WHICH IS PRESENTLY CONCEALED AND WHICH WILL REMAIN CONCEALED AND DOES NOT INTERFERE WITH ANY NEW WORK OF ANY TRADE NEED NOT BE REMOVED. HOWEVER, ALL CONDUIT SHALL BE CAPPED BELOW FINISH SURFACE AND THEN PATCHED TO MATCH, OR AS NOTED.
7. EXISTING OPENINGS, WHICH ARE TO BE REUSED, SHALL BE MODIFIED OR ENLARGED TO SUIT THE NEW SYSTEMS AS REQUIRED. PROVIDE ALL REQUIRED CUTTING AND PATCHING.
8. IF ASBESTOS IS PRESENT, IT WILL BE REMOVED OR RENDERED HARMLESS UNDER SEPARATE CONTRACT BY THE OWNER.
9. THE DIVISION 26 CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING THE EXISTING WALLS TO MATCH THE ADJACENT SURFACES BEHIND ALL SURFACE MOUNTED EQUIPMENT.
10. CONTRACTOR SHALL FIELD VERIFY ALL EQUIPMENT VOLTAGES AND LOADS PRIOR TO INSTALLING SERVICE TO EQUIPMENT.
11. DRAWINGS ARE BASED ON EXISTING RECORD DOCUMENT AND CASUAL FIELD OBSERVATION. REPORT ANY DISCREPANCIES TO ENGINEER FOR CLARIFICATION.

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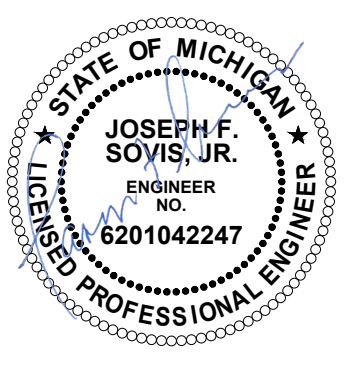
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ABBREVIATIONS LEGEND

A	AMPS	GC	GENERAL CONTRACTOR	P	POLE
AC	ABOVE COUNTER	GFI	GROUND FAULT INTERRUPTER	P-	PUMP
ACU-	AIR CONDITIONING UNIT	GND	GROUND	PB	PULL BOX
AFF	ABOVE FINISHED FLOOR			PNL	PANEL
AHJ	AUTHORITY HAVING JURISDICTION	H-	HUMIDIFIER	PRV-	POWER ROOF VENTILATOR
AHU-	AIR HANDLING UNIT	HID	HIGH INTENSITY DISCHARGE	PVC	POLY VINYL CHLORIDE
AIC	AMPS INTERRUPTING CAPACITY	HOA	HAND-OFF-AUTO SELECTOR SWITCH	PWR	POWER
AS	ABOVE SHELF	HP	HORSEPOWER	RECEPT	RECEPTACLE
ATS	AUTOMATIC TRANSFER SWITCH	HR	HOUR	RGC	RIGID GALVANIZED STEEL CONDUIT
		HVAC	HEATING/VENTILATING/AIR CONDITIONING	RTU-	ROOF TOP UNIT
B-	BOILER	IG	ISOLATED GROUND	SF-	SUPPLY FAN
BC	BELOW COUNTER	IMC	INTERMEDIATE METAL CONDUIT	SPEC SW	SPECIFICATIONS SWITCH
BLDG	BUILDING	JB	JUNCTION BOX	SWBD	SWITCHBOARD
CHLR-	CHILLER	LC	LIGHT CONTROL	TCC	TEMPERATURE CONTROL CONTRACTOR
CND (C)	CONDUIT	LT	LIGHT	TR	TAMPER PROOF RECEPTACLE
CKT	CIRCUIT	LTG	LIGHTING	TS	TAMPER PROOF SWITCH
CKT BKR	CIRCUIT BREAKER	LT FLEX	LIQUID TIGHT FLEXIBLE METAL CONDUIT	TYP	TYPICAL
CT-	COOLING TOWER			UF	UNDER FLOOR
CU-	CONDENSING UNIT			UH-	UNIT HEATER
CUH-	CABINET UNIT HEATER	MAX	MAXIMUM	UL	UNDERWRITERS' LABORATORIES, INC. UNLESS NOTED OTHERWISE
		MC	MECHANICAL CONTRACTOR	UNO	
DFU-	DUCT FURNACE	MCC	MOTOR CONTROL CENTER		
DISC	DISCONNECT	MIN	MINIMUM		
DWG	DRAWING	MLO	MAIN LUG ONLY		
DWH-	DOMESTIC WATER HEATER	MT	MOUNT		
		MTD	MOUNTED		
EBB-	ELECTRIC BASEBOARD	MTG	MOUNTING		
EC	ELECTRICAL CONTRACTOR	MUAU-	MAKE-UP AIR UNIT		
EF-	EXHAUST FAN				
EM	EMERGENCY				
EMT	ELECTRICAL METALLIC TUBING	NC	NORMALLY CLOSED		
EWC	ELECTRIC WATER COOLER	NIC	NOT IN CONTRACT		
EXIST/EX.	EXISTING	NL	NIGHT LIGHT		
		NO	NORMALLY OPEN		
FLA	FULL LOAD AMPS	NTS	NOT TO SCALE	XFMR	TRANSFORMER
FLEX	FLEXIBLE CONDUIT				
FLR	FLOOR				
FLUOR	FLUORESCENT				
FSES	FOOD SERVICE EQUIP. SUPPLIER				
F/S	FIRE/SMOKE				
FU-	FURNACE				

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NO.	DESCRIPTION AND COMMENTS	DIMMING INFO	FIXTURE MOUNTING HEIGHT	LIGHT ENGINE
LA	KENALL	MLH48-48-F-MB-PP-45L40K-DCC-DV	4' LED WET LOCATION FIXTURE WITH MATTE BLACK FINISH. PROVIDE ALL REQUIRED MOUNTING HARDWARE.	0-10V	CEILING MOUNTED	5072 LUMENS 49W, 4000K LED
LAEM	KENALL	MLH48-48-F-MB-PP-45L40K-DCC-DV-LEL	4' LED WET LOCATION FIXTURE WITH MATTE BLACK FINISH. CONTRACTOR SHALL PROVIDE 10W EMERGENCY BATTERY PACK. PROVIDE ALL REQUIRED MOUNTING HARDWARE.	0-10V	CEILING MOUNTED	5072 LUMENS 49W, 4000K LED
LB	KENALL	MLH48-24-F-MW-PP-25L40K-DCC-DV	2' LED WET LOCATION FIXTURE WITH MATTE WHITE FINISH. PROVIDE ALL REQUIRED MOUNTING HARDWARE.	0-10V	CEILING MOUNTED	2536 LUMENS 25W, 4000K LED
LC	KIRLIN	LRC-07VND-1500L-120-RWF-MFL-80CR-40K-TW	7' WET LOCATION DOWNLIGHT WITH WHITE TRIM FINISH.	0-10V	CEILING MOUNTED	1500 LUMENS 15W, 4000K LED



DIVISION 26
ELECTRICAL SPECIFICATIONS

DIVISION 26 - ELECTRICAL SPECIFICATIONS

DESCRIPTION OF WORK

WORK SHALL INCLUDE, BUT IS NOT NECESSARILY LIMITED TO, THE FOLLOWING:

1. DEMOLITION
2. TEMPORARY POWER AND LIGHTING
3. CONDUIT AND RACEWAYS
4. CONDUCTORS
5. GROUNDING
6. SAFETY DISCONNECT SWITCHES
7. DEVICES, SWITCHES AND RECEPTACLES
8. DISTRIBUTION, LIGHTING AND RECEPTACLE PANELS
9. METERING EQUIPMENT
10. LIGHTING, LIGHTING CONTACTORS AND CONTROLS

STANDARDS

ELECTRICAL MATERIALS AND EQUIPMENT SHALL CONFORM TO THE REQUIREMENTS LISTED BELOW. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER. IN THE ABSENCE OF SPECIFIC INSTRUCTION IN THE TECHNICAL SPECIFICATIONS, EQUIPMENT AND INSTALLATION SHALL CONFORM TO THE FOLLOWING APPLICABLE CODES, STANDARDS AND REGULATIONS, LATEST EDITIONS:

1. AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM).
2. AMERICAN NATIONAL STANDARD INSTITUTE (ANSI).
3. UNDERWRITER'S LABORATORIES, INC. (UL).
4. AMERICAN WELDING SOCIETY CODE (AWSC).
5. LOCAL BUILDING, ELECTRICAL, AND FIRE CODES.
6. NATIONAL ELECTRICAL CODE (NEC).
7. SERVICE RULES AND REGULATIONS OF LOCAL ELECTRICAL UTILITY COMPANY.
8. NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA).
9. U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES "HRS-M-HF" 84, 1.
10. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
11. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).
12. AMERICANS WITH DISABILITIES ACT (ADA).

CODES AND ORDINANCES

COMPLY WITH ALL LOCAL, STATE AND NATIONAL CODES AND ORDINANCES. COMPLY WITH OWNER'S SPECIFICATIONS, GUIDELINES AND REQUIREMENTS. BIDDERS SHALL FAMILIARIZE THEMSELVES WITH CODE REQUIREMENTS FOR THE TYPE OF FACILITY WHERE THE WORK IS BEING PERFORMED.

PERMITS AND INSPECTION FEES

THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTION FEES. FINAL INSPECTION CERTIFICATES BY THE AUTHORITIES HAVING JURISDICTION, INCLUDING THE LOCAL ELECTRICAL INSPECTOR AND FIRE MARSHAL, SHALL BE OBTAINED BY THE CONTRACTOR. COPIES SHALL BE SUBMITTED IN DUPLICATE TO THE OWNER.

SUBMITTALS

SUBMIT PRODUCT DATA, SHOP DRAWINGS, WIRING DIAGRAMS, AND DESCRIPTIVE LITERATURE FOR ALL ELECTRICAL MATERIALS AND EQUIPMENT TO BE INSTALLED UNDER THIS CONTRACT. MAKE SUBMITTALS WITHIN THIRTY (30) DAYS AFTER THE SIGNING OF THE CONTRACT. PRODUCT SHIPMENTS ARE NOT PERMITTED UNTIL SUBMITTALS HAVE RECEIVED FINAL APPROVAL.

AS-CONSTRUCTED DOCUMENTS

UPON PROJECT COMPLETION, THE CONTRACTOR SHALL PROVIDE A MARKED-UP COPY OF THE ORIGINAL CONTRACT DOCUMENTS TO THE OWNER, INDICATING CHANGES, ADDITIONS AND MODIFICATIONS TO THE ORIGINAL DESIGN. DRAWINGS SHALL BE MANUALLY-PREPARED.

OPERATION & MAINTENANCE MANUALS

PROVIDE OPERATING INSTRUCTIONS AND MAINTENANCE INFORMATION, FOR EACH SYSTEM AND EQUIPMENT SPECIFIED, FOR USE BY FACILITY OPERATION AND MAINTENANCE PERSONNEL. MANUALS SHALL BE PROVIDED IN 3-RING BINDERS OR ELECTRONIC COPIES. THE MANUALS SHALL INCLUDE:

1. WIRING DIAGRAMS, CONTROL DIAGRAMS, AND CONTROL SEQUENCE FOR EACH SYSTEM AND ITEM OF EQUIPMENT.
2. START-UP, PROPER ADJUSTMENT, OPERATING, LUBRICATION, AND SHUTDOWN PROCEDURES.
3. SAFETY PRECAUTIONS.
4. THE PROCEDURE TO BE FOLLOWED IN THE EVENT OF EQUIPMENT FAILURE.
5. OTHER ITEMS OF INSTRUCTION AS RECOMMENDED BY THE MANUFACTURER OF EACH SYSTEM OR ITEM OF EQUIPMENT.

TRAINING

DURING OR UPON COMPLETION OF THE PROJECT, CONTRACTOR SHALL PROVIDE TRAINING OF OPERATION AND MAINTENANCE PERSONNEL FOR ALL REQUIRED ELECTRICAL COMPONENTS AND SYSTEMS. TRAINING SHALL BE CONDUCTED AT THE OWNER'S FACILITY. COORDINATE WITH THE OWNER FOR SCHEDULE.

SIGNAGE AND IDENTIFICATION OF SYSTEMS AND EQUIPMENT

1. OPERATING INSTRUCTIONS: PRINT OR ENGRAVE INSTRUCTIONS AND FRAME UNDER GLASS OR APPROVED LAMINATED PLASTIC. POST INSTRUCTIONS IN VIEW OF EQUIPMENT. PROVIDE WEATHER-RESISTANT MATERIALS FOR EXTERIOR APPLICATIONS.
2. EQUIPMENT: PROVIDE NAMEPLATES FOR ALL EQUIPMENT AND DEVICES. NAMEPLATES SHALL BE SELF-ADHESIVE WITH ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABELS. PROVIDE NAMEPLATES WITH WHITE LETTERS ON A BLACK BACKGROUND. MINIMUM LETTER HEIGHT SHALL BE 1/8-INCH.
3. WARNING SIGNS: PROVIDE A SELF-ADHESIVE WARNING LABEL THAT IS FACTORY PRINTED AND MULTI-COLOR. COMPLY WITH N.E.C. 70 AND 29 CFR 1910.145. LABELS FOR MULTIPLE POWER SOURCES SHALL READ: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES". LABELS FOR OTHER EQUIPMENT REQUIRING WORK SPACE CLEARANCES SHALL READ: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36-INCHES".
4. ARC-FLASH WARNING SIGNS: PROVIDE A SELF-ADHESIVE ARC-FLASH WARNING LABEL ON ALL SAFETY SWITCHES, STARTERS, SWITCHBOARDS, PANELBOARDS AND OTHER REQUIRED EQUIPMENT. LABEL SHALL READ: "WARNING - ARC FLASH AND SHOCK HAZARD. APPROPRIATE PPE AND TOOLS REQUIRED WHEN WORKING ON THIS EQUIPMENT."

GUARANTEE

PROVIDE WRITTEN GUARANTEE FOR ALL LABOR AND MATERIALS FOR ONE (1) YEAR AFTER OWNER'S WRITTEN ACCEPTANCE OF THE PROJECT.

LAYOUT OF THE WORK

THE CONTRACTOR SHALL EXAMINE THE AREA OF WORK, AND ALL OTHER DISCIPLINE DRAWINGS, BEFORE PROCEEDING WITH THE LAYOUT AND INSTALLATION OF THE ELECTRICAL WORK. LOCATE ELECTRICAL EQUIPMENT ESSENTIALLY AS SHOWN ON THE DRAWINGS. EXACT LOCATION OF EQUIPMENT SHALL BE DETERMINED AT THE JOB SITE TO SUIT ACTUAL CONDITIONS. THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES PRIOR TO INSTALLATION, SO THAT ALL COMPONENTS WILL BE INSTALLED IN PROPER RELATIONSHIP AND SEQUENCE.

DEMOLITION

CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIAL INDICATED ON THE DEMOLITION PLANS OR AS REQUIRED TO INSTALL THE EQUIPMENT THAT IS PART OF THIS CONTRACT. LIGHT FIXTURES INDICATED TO BE REUSED SHALL BE REMOVED, CLEANED AND RE-LAMPED BEFORE REINSTALLING. REMOVED LIGHT FIXTURES TO BE DEMOLISHED SHALL BE TURNED OVER TO THE OWNER UNLESS OTHERWISE SPECIFIED. ALL OTHER ELECTRICAL DEMOLITION ITEMS SHALL BE REMOVED FROM THE SITE. EXISTING CONDUITS MAY BE REUSED WHEN PRACTICAL. CONTRACTOR SHALL PATCH EXISTING WALL AND CEILING OPENINGS IN FINISHED AREAS UPON REMOVAL OF ELECTRICAL EQUIPMENT. CONTRACTOR SHALL PROTECT ALL EXISTING ELECTRICAL EQUIPMENT, INDICATED TO REMAIN, DURING CONSTRUCTION PERIOD.

CUTTING AND PATCHING

ALL NECESSARY CUTTING AND PATCHING OF THE BUILDING WALLS, FLOORS AND CEILINGS REQUIRED FOR REMOVAL OR INSTALLATION OF THE NEW WORK, SHALL BE FURNISHED BY THE CONTRACTOR. NO STRUCTURAL MEMBERS OF THE BUILDING SHALL BE CUT WITHOUT PRIOR APPROVAL OF THE ENGINEER. ALL NECESSARY PATCHING AND PAINTING OF SURFACES SHALL BE BY CONTRACTOR. PAINT SHALL MATCH EXISTING.

TEMPORARY POWER AND LIGHTING

CONTRACTOR SHALL SUPPLY TEMPORARY POWER AND LIGHTING IN NEW WORK AREAS AND EXISTING AREAS WHERE POWER OR LIGHTING IS BEING MODIFIED. THIS INCLUDES POWER TO EXISTING CRITICAL AND LIFE SAFETY SYSTEMS. TEMPORARY LIGHTING SHALL EQUAL OR EXCEED EXISTING LIGHT LEVELS. MINIMUM ILLUMINATION LEVEL SHALL BE 10-FOOT-CANDLES. COORDINATE ALL POWER AND LIGHTING SHUTDOWNS WITH OWNER.

ELECTRICAL SERVICE

CONTRACTOR SHALL CONTACT THE LOCAL ELECTRIC UTILITY COMPANY TO COORDINATE THE INSTALLATION OF NEW ELECTRICAL SERVICE. ALL WORK SHALL COMPLY WITH LOCAL ELECTRICAL UTILITY COMPANY RULES AND REGULATIONS. CONTRACTOR SHALL INCLUDE ALL CHARGES FOR NEW SERVICE IN BASE BID. NORMAL SECONDARY SERVICE IS 120/240 VOLT, 1-PHASE, 3 WIRE, AS INDICATED ON DRAWINGS. CONTRACTOR SHALL PROVIDE NEW SERVICE ENTRANCE CONDUIT AND CONDUCTORS FROM THE UTILITY TRANSFORMER TO THE NEW METERING CUBICLE OR CURRENT TRANSFORMER (CT) CABINET AS APPLICABLE.

CONTRACTOR SHALL PROVIDE AND INSTALL METERING EQUIPMENT, PANELS, DISCONNECTS AND EQUIPMENT AS SHOWN. ALL SERVICE EQUIPMENT SHALL BE RATED AS "SUITABLE FOR USE AS SERVICE EQUIPMENT." ELECTRICAL WATT-HOUR METER AND CURRENT TRANSFORMERS SHALL BE PROVIDED BY THE UTILITY COMPANY AND INSTALLED BY THE CONTRACTOR, UNLESS NOTED OTHERWISE.

GROUNDING

ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION. PROVIDE GROUND RODS AND BARE COPPER GROUND CONDUCTORS AT UTILITY TRANSFORMER PAD. PROVIDE A GROUND ROD AND GROUND CONDUCTOR AT THE BUILDING MAIN DISCONNECT SWITCH. PROVIDE A GROUND CONDUCTOR IN ALL POWER RACEWAYS. GROUND ELECTRICAL SYSTEMS PER NEC ARTICLE 250 OR AS DETAILED ON THE DRAWINGS.

ELECTRICAL DISTRIBUTION, RECEPTACLE AND LIGHTING PANELS

DISTRIBUTION PANELS SHALL BE CIRCUIT BREAKER TYPE, WITH COPPER BUS, SERVICE ENTRANCE RATED, 14,000 AIC RATED, SURFACE OR FLUSH-MOUNTED AS SHOWN. VOLTAGE AS INDICATED ON THE DRAWINGS. SUPPLY WITH BRANCH CIRCUIT BREAKERS AS INDICATED ON THE DRAWINGS. SQUARE D TYPE QMB OR EQUAL.

RECEPTACLE AND LIGHTING PANELS SHALL BE CIRCUIT BREAKER TYPE, SURFACE OR FLUSH-MOUNTED AS SHOWN, WITH COPPER BUS, MINIMUM 10,000 AIC RATED, HINGED LOCKABLE DOOR, BOLT-ON CIRCUIT BREAKERS WITH MAIN BREAKER OR MAIN LUGS ONLY (MLO) AS INDICATED ON THE DRAWINGS. VOLTAGE AS INDICATED ON THE DRAWINGS. SUPPLY WITH BRANCH CIRCUIT BREAKERS AS INDICATED ON THE PANEL SCHEDULES. SQUARE D TYPE NQ OR NF OR EQUAL.

PROVIDE GROUND FAULT CIRCUIT INTERRUPTING AND ARC FLASH CIRCUIT INTERRUPTING CIRCUIT BREAKERS WHERE INDICATED.

WIRE AND CABLE

SECONDARY FEEDERS SHALL BE TYPE THWN-2 or XHHW-2, 600V RATED, COLORED BLACK OR COLOR CODED. BRANCH CIRCUIT WIRING SHALL BE TYPE THWN-2 OR XHHW-2, 600V RATED, 7 STRAND, #12 AWG MINIMUM, COLORED HOT-BLACK, NEUTRAL-WHITE AND GROUND-GREEN. BARE COPPER GROUND WIRE SHALL BE STRANDED TYPE.

ALL BRANCH CIRCUIT WIRING SHALL BE CONTINUOUS BETWEEN JUNCTION BOXES, WITH SPLICES MADE ONLY WITHIN BOXES. SOLDERLESS PRESSURE-TYPE CONNECTORS, PROPERLY INSULATED, SHALL BE USED FOR ALL SPLICES. NO POWER WIRE SMALLER THAN #12 AWG MAY BE USED UNLESS SPECIFIED UNDER DESCRIPTIONS OF SPECIAL SYSTEMS.

LABEL ALL CONDUCTORS WITH CIRCUIT NUMBERS AT BOTH ENDS, MINIMUM.

CONDUIT AND BOXES

CONDUIT SHALL BE 3/4" MINIMUM. EXPOSED OUTDOOR CONDUIT SHALL BE RGC. BELOW GRADE CONDUIT SHALL BE SCHEDULE 40 PVC OR HDPE. EXPOSED INTERIOR CONDUIT SHALL BE EMT. CONDUIT INSTALLED IN INDUSTRIAL FACILITIES SHALL BE RGC. CONDUIT FOR CONDUCTORS GREATER THAN 480-VOLTS SHALL BE RGC. CONCEALED INTERIOR CONDUIT SHALL BE EMT. CONDUIT AND BOXES IN CORROSIVE ENVIRONMENTS SHALL BE PVC-COATED RGC. BELOW GRADE, NON-METALLIC CONDUIT CONTAINING DATA AND COMMUNICATIONS WIRING, SHALL BE INSTALLED WITH A TRACER WIRE.

WHERE FLEXIBLE CONNECTIONS ARE REQUIRED, SUCH AS CONNECTIONS TO MOTORS AND LIGHT FIXTURES, LIQUID-TIGHT, FLEXIBLE METAL CONDUIT SHALL BE USED, WHERE PERMITTED BY THE NEC.

EXTERIOR RGC CONDUIT JOINTS SHALL BE MADE WATERTIGHT BY COATING THREADS WITH A ZINC PAINT.

EXTERIOR-MOUNTED DEVICE BOXES AND BOXES INSTALLED IN INDUSTRIAL FACILITIES SHALL BE CAST TYPE. INTERIOR OUTLET BOXES SHALL BE PRESSED STEEL, COMPLETE WITH PLASTER RING IF NECESSARY, FOR EACH SWITCH, RECEPTACLE OR DEVICE SHOWN. CEILING OUTLET BOXES SHALL BE 4-INCH OCTAGON, 1-1/2-INCH DEEP. EACH OUTLET SHALL BE RIGIDLY SUPPORTED FROM THE BUILDING CONSTRUCTION (INDEPENDENT OF THE RACEWAY SYSTEM). LIGHT FIXTURE BOXES SHALL BE SUPPLIED WITH FIXTURE SUPPORT HARDWARE AND SUPPORTED TO WITHSTAND 80 LBS.

DEVICES

WALL SWITCHES SHALL BE 20A RATED, SPECIFICATION GRADE, TOGGLE TYPE, SINGLE-POLE, TWO-POSITION. PROVIDE 3-WAY AND 4-WAY AND TWO-POLE SWITCHES WHERE INDICATED. COLOR SELECTED BY OWNER OR MATCH EXISTING. LUTRON, LEVITON, G.E. OR EQUAL.

RECEPTACLES SHALL BE 20A RATED, SPECIFICATION GRADE, 125VAC, 3-WIRE DUPLEX TYPE, NEMA 5-20R UNLESS NOTED OTHERWISE. PROVIDE GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLES AND AFC FLASH CIRCUIT INTERRUPTING RECEPTACLES WHERE REQUIRED OR AS INDICATED. COLOR SELECTED BY OWNER OR MATCH EXISTING. LEVITON, G.E. OR EQUAL.

PROVIDE IN-USE, HINGED LOCKABLE COVERS FOR ALL EXTERIOR-MOUNTED RECEPTACLES. NICKEL OR GALVANIZED STEEL COVERS IN INDUSTRIAL FACILITIES AND NICKEL, PLASTIC COVERS (MATCHING OWNER'S EXISTING COVERS) IN FINISHED AREAS.

SUPPORTS AND HANGERS

PROVIDE AND INSTALL NECESSARY STEEL BRACKETS, RODS, CHANNELS, CLAMPS, ETC., FOR SUPPORT OF ALL WORK UNDER THIS CONTRACT. MOUNT SECURELY TO CEILING OR WALL.

SAFETY DISCONNECT SWITCHES

SAFETY DISCONNECT SWITCHES SHALL BE CIRCUIT BREAKER OR FUSED TYPE, 250VAC OR 480VAC, CLASS A, HEAVY DUTY, DUAL HORSEPOWER RATED IN NEMA 1 ENCLOSURE OR WEATHER-PROOF AS INDICATED ON DRAWINGS. BUILDING SAFETY DISCONNECT SWITCHES SHALL BE RATED FOR "SERVICE ENTRANCE.". VOLTAGE, CURRENT RATING, NUMBER OF POLES, CIRCUIT BREAKER OR FUSES AS INDICATED. CONSTRUCTION SHALL BE SUCH THAT, WHEN THE SWITCH HANDLE IS IN THE "ON" POSITION, THE COVER CANNOT BE OPENED. SWITCHES FOR 30-AMPERE TO 200-AMPERE LOADING SHALL BE SQUARE D TYPE HD OR EQUAL.

LIGHTING FIXTURES

PROVIDE AND INSTALL LIGHT FIXTURES AS SPECIFIED IN THE LIGHTING FIXTURE SCHEDULE. ALL LIGHTING FIXTURES AND COMPONENTS SHALL BE U.L., D.L.C., ENERGY STAR AND E.T.L. APPROVED. EMERGENCY LIGHT FIXTURES AND EXIT SIGNS SHALL BE CONNECTED TO THE CIRCUIT SUPPLYING NORMAL POWER TO LIGHTING FIXTURES IN THE AREA THEY SERVE, AHEAD OF ANY SWITCHES.

PROVIDE CONCRETE FOUNDATIONS, GROUNDING AND POLES FOR POLE-MOUNTED EXTERIOR LIGHTS. REFER TO LIGHT FIXTURE SCHEDULE AND DETAILS ON THE DRAWINGS FOR POLE AND MOUNTING ARM SPECIFICATIONS.

LIGHTING CONTROL

PROVIDE A LIGHTING CONTROL PANEL AS DETAILED ON THE DRAWINGS. PANEL SHALL BE MULTI-ZONE, PROGRAMMABLE TYPE WITH ASTRONOMICAL TIME CLOCK. PROVIDE CEILING AND WALL-MOUNTED OCCUPANCY SENSORS AND SWITCHES AS SHOWN ON THE DRAWINGS. HONEYWELL, EATON, LUTRON, EDWARDS, LEVITON, SCHNEIDER OR EQUAL.

LIGHTING CONTACTORS

PROVIDE AN ELECTRICALLY-HELD LIGHTING CONTACTOR AS SHOWN ON THE DRAWINGS. CONTACTOR SHALL BE FURNISHED IN A NEMA 12 ENCLOSURE AND SHALL HAVE A HAND-OFF-AUTO SELECTOR SWITCH ON THE COVER. PROVIDE EXTERIOR-MOUNTED PHOTOCELL WHERE SHOWN. SUPPLY WITH NEMA 3R ENCLOSURE FOR EXTERIOR LOCATIONS. CONTACTOR SHALL BE 3-POLE MINIMUM, RATED FOR VOLTAGE AND AMPERAGE AS SHOWN ON THE DRAWINGS. SQUARE D CLASS 8903 OR EQUAL.

TIME CLOCKS

TIME CLOCKS SHALL BE ASTRONOMICAL, 40-AMPS PER POLE, ELECTRONIC WITH BATTERY BACK-UP. MOUNTED IN NEMA 1 ENCLOSURE. TORK, INTERMATIC OR EQUAL.

END OF DIVISION 26

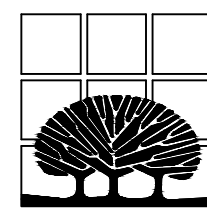


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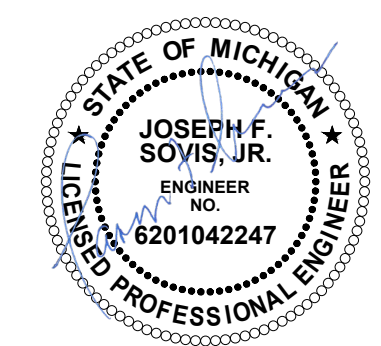


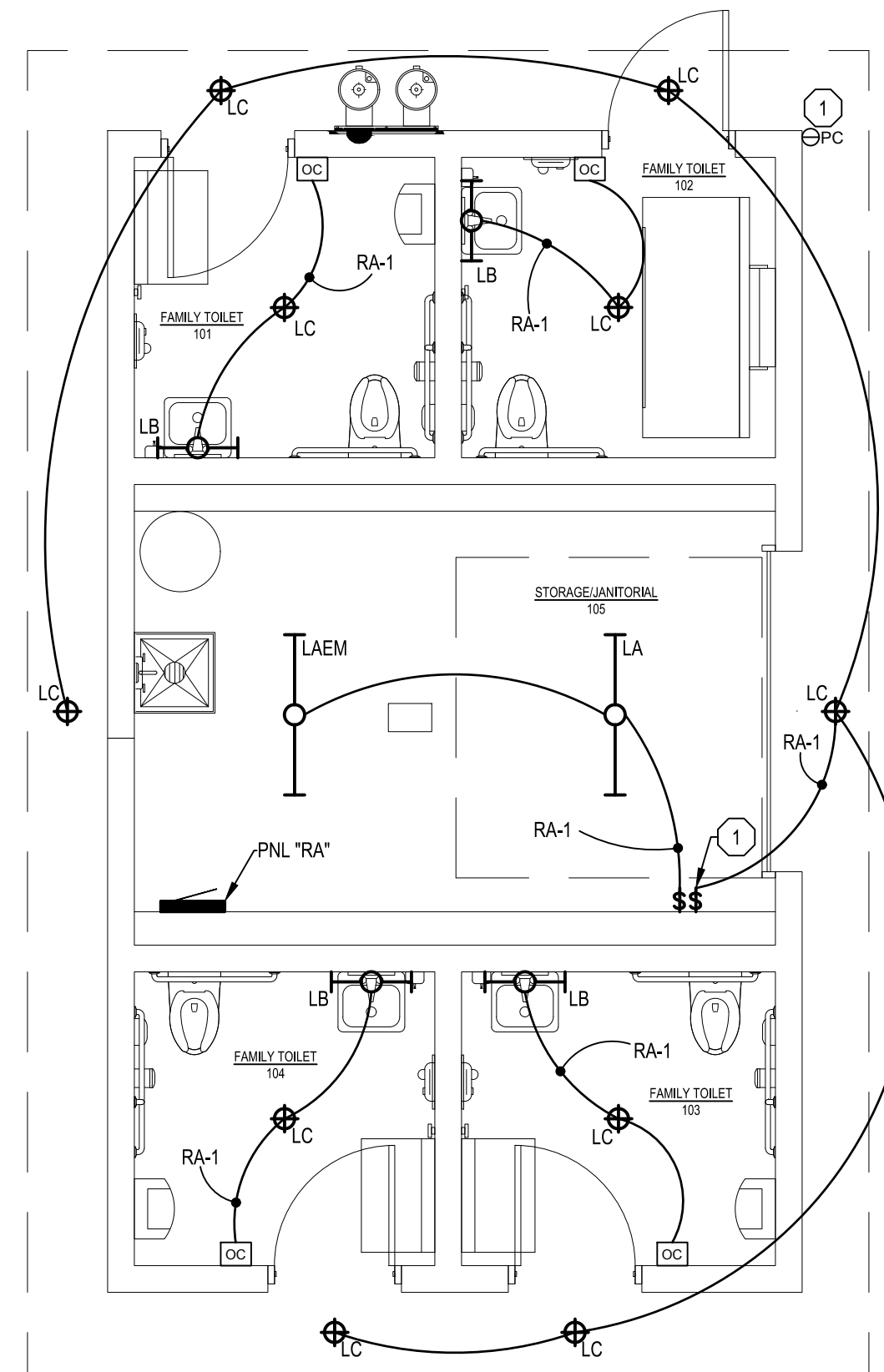
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ELECTRICAL
SPECIFICATIONS

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REVISIONS	

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SHEET NO.	E-101

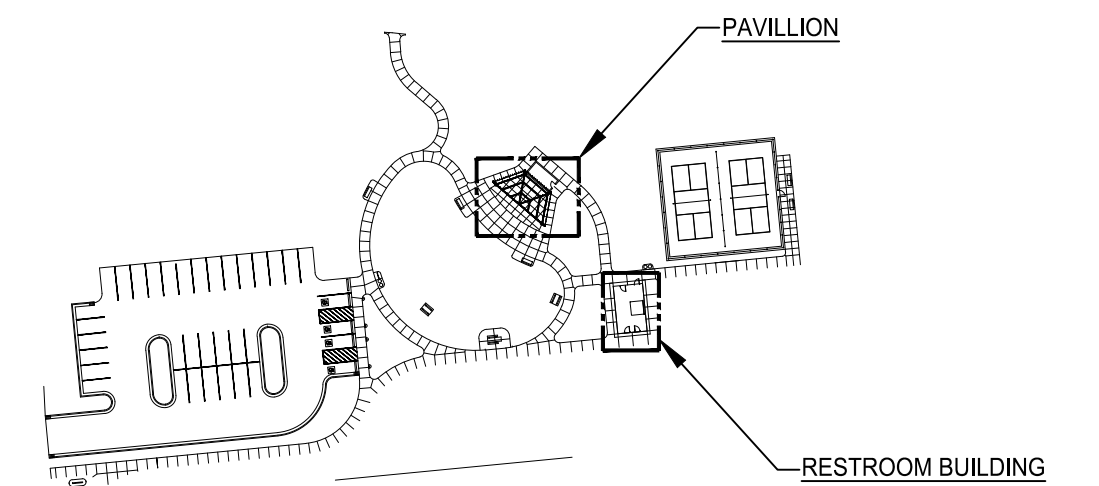




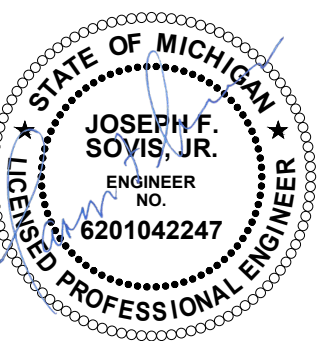
ELECTRICAL KEY NOTES

- 1 ALL EXTERIOR LIGHT FIXTURES SHALL BE CONTROLLED VIA PHOTOCELL. PROVIDE MANUAL OVERRIDE SWITCH TO TURN OFF EXTERIOR LIGHTING. THIS SHALL OVERRIDE THE PHOTOCELL.

RESTROOM BUILDING - LIGHTING
 0 1 5 10
 SCALE: 1/4" = 1'-0"



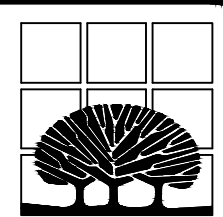
KEY PLAN
 SCALE: N.T.S.



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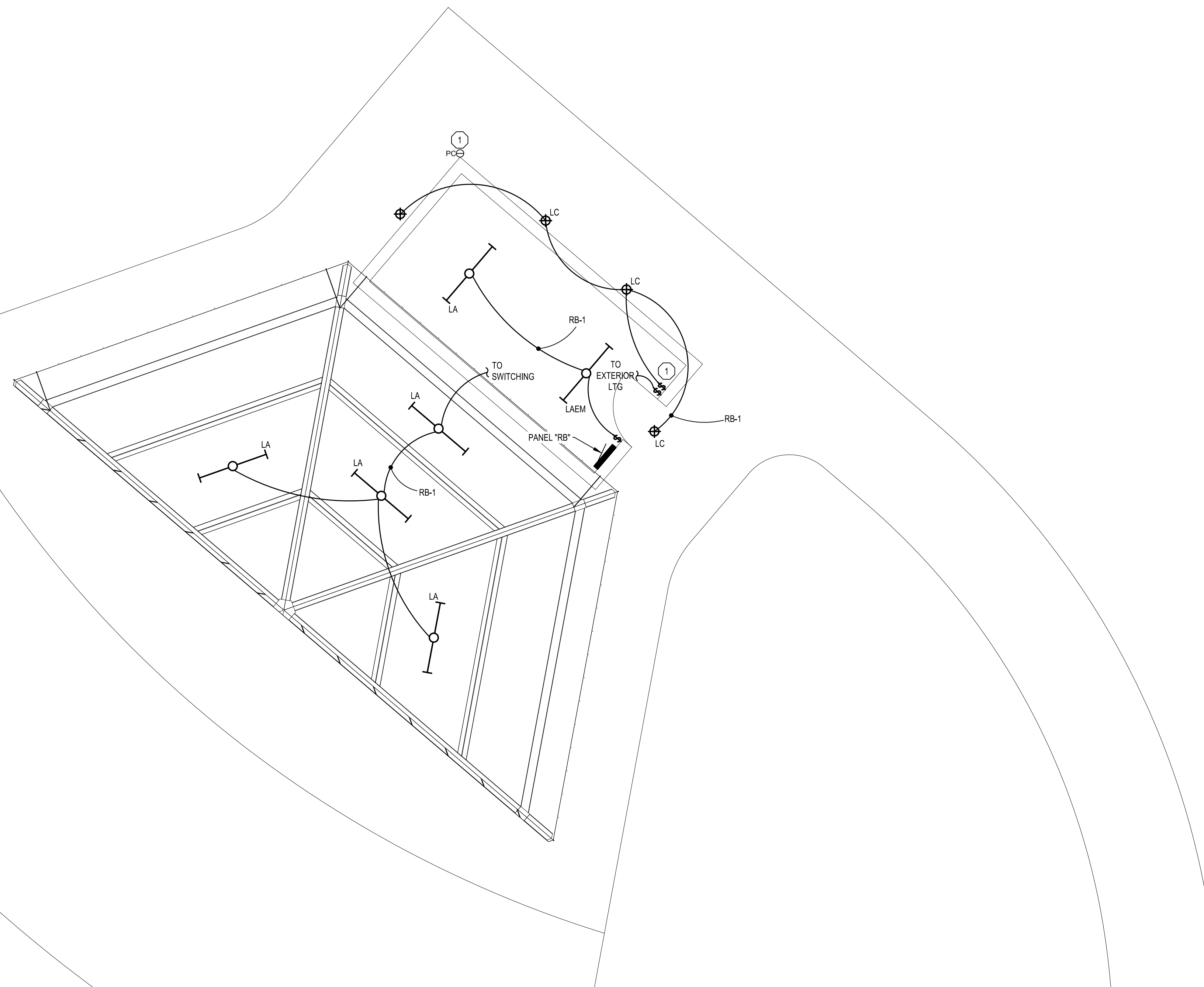


SCALE:
 1/4"=1'

RESTROOM BUILDING - LIGHTING

DATE	REVISIONS
11.03.2025	

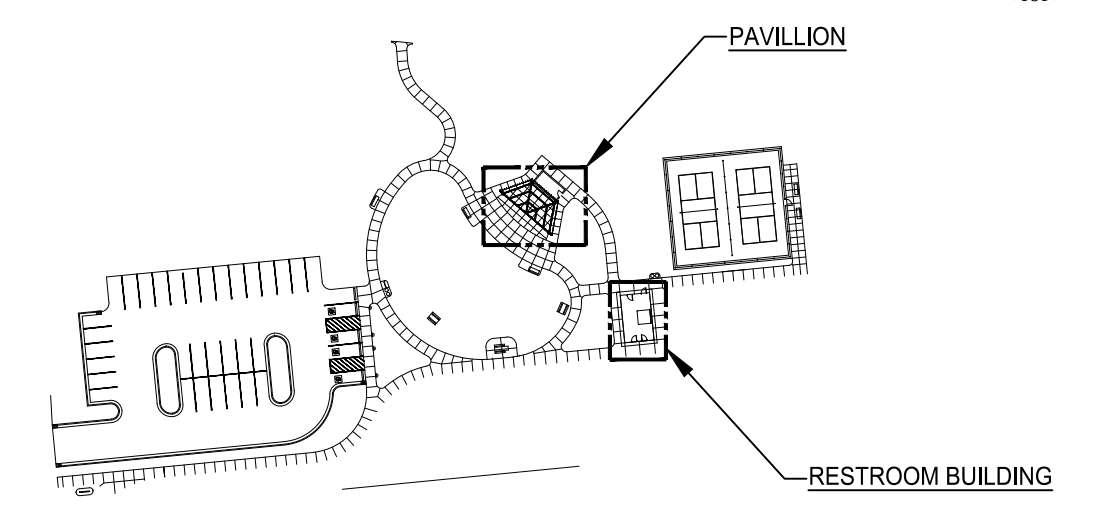
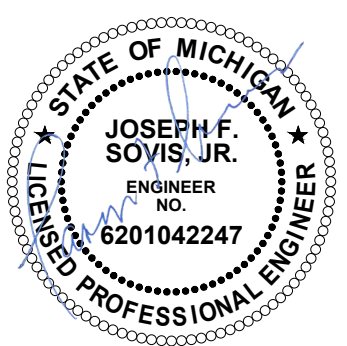
PROJECT NO.
 2252
 SHEET NO.
E-400



ELECTRICAL KEY NOTES

1 ALL EXTERIOR LIGHT FIXTURES SHALL BE CONTROLLED VIA PHOTOCELL. PROVIDE MANUAL OVERRIDE SWITCH TO TURN OFF EXTERIOR LIGHTING. THIS SHALL OVERRIDE THE PHOTOCELL.

PAVILION AREA - LIGHTING
 SCALE: 1/4" = 1'-0"



KEY PLAN
 SCALE: N.T.S.

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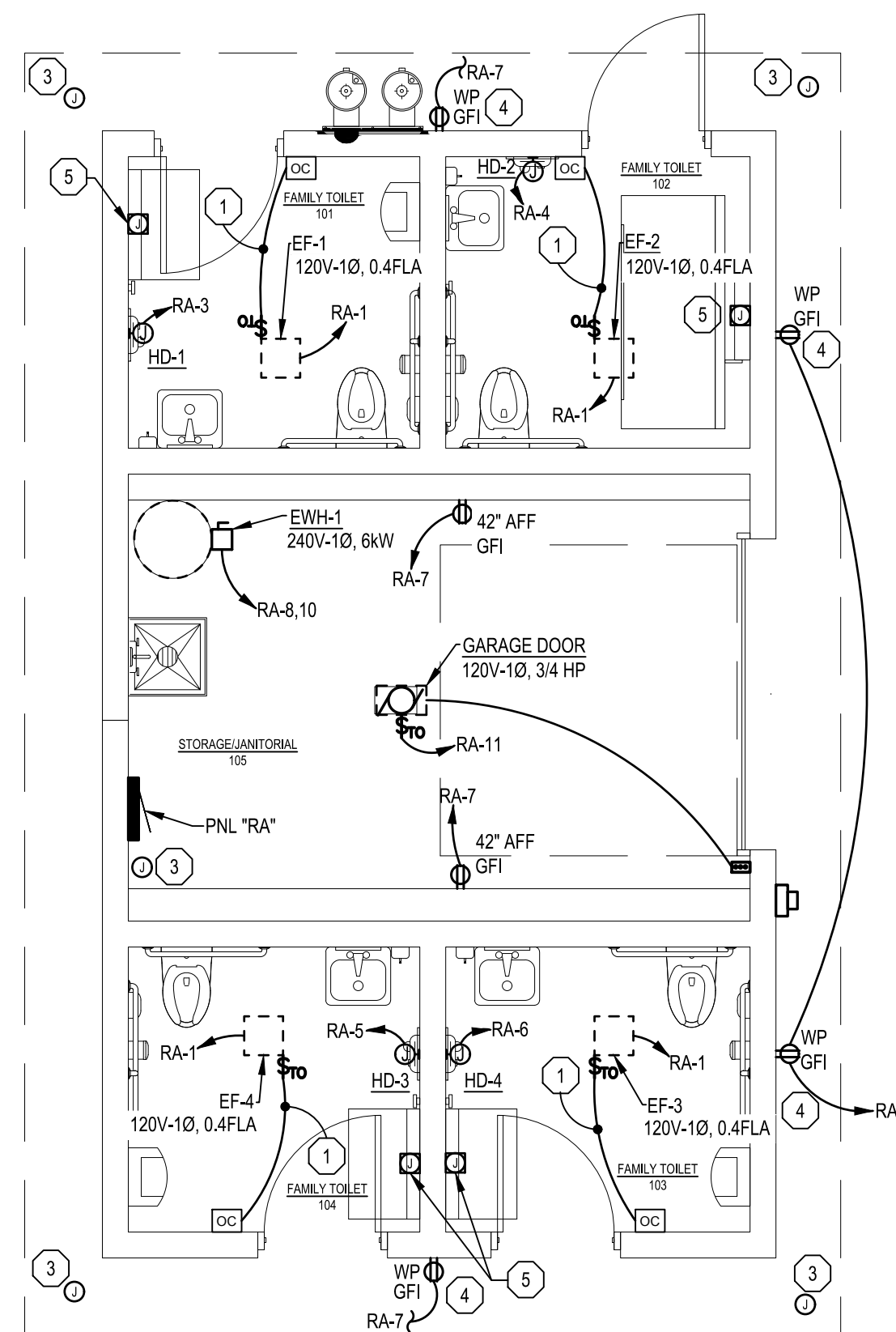
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SCALE:
 1/4"=1'

PAVILION AREA - LIGHTING

DATE	REVISIONS
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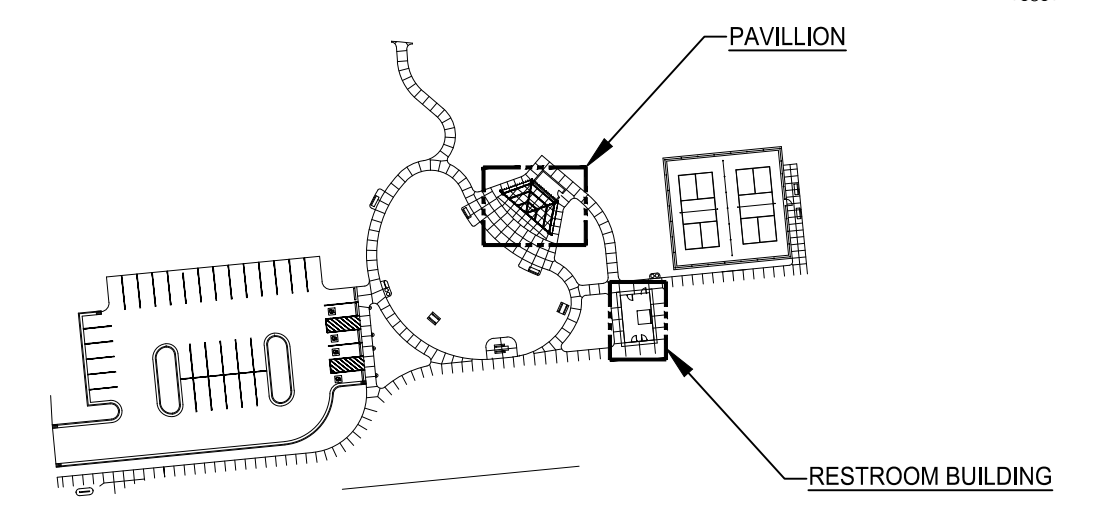
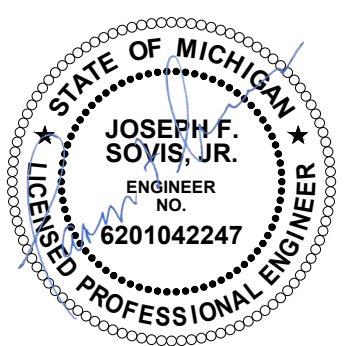
PROJECT NO.
 2252
 SHEET NO.
E-401



ELECTRICAL KEY NOTES

- ① CONTRACTOR SHALL WIRE EXHAUST FAN CONTROLS TO LIGHTING SWITCH IN THIS AREA.
- ② CONTRACTOR SHALL COORDINATE LOCATION WITH LOCAL UTILITY.
- ③ CONTRACTOR SHALL PROVIDE JUNCTION BOX WITH COVERPLATE AND RACEWAY WITH PULL STRING TO LOCATION NEAR ELECTRICAL PANEL FOR FUTURE SECURITY CAMERA INSTALLATION BY OWNER.
- ④ CONTRACTOR SHALL PROVIDE HEAVY DUTY LOCKABLE ENCLOSURE FOR ALL EXTERIOR RECEPTACLES.
- ⑤ CONTRACTOR SHALL PROVIDE JUNCTION BOX AND RACEWAY WITH PULL STRING FOR FUTURE ADULT CHANGING STATION. COORDINATE CHANGING STATION E-STOP BUTTON LOCATION WITH OWNER PRIOR TO INSTALLATION.

RESTROOM BUILDING - POWER
 SCALE: 1/4"=1'-0"



KEY PLAN
 SCALE: N.T.S.

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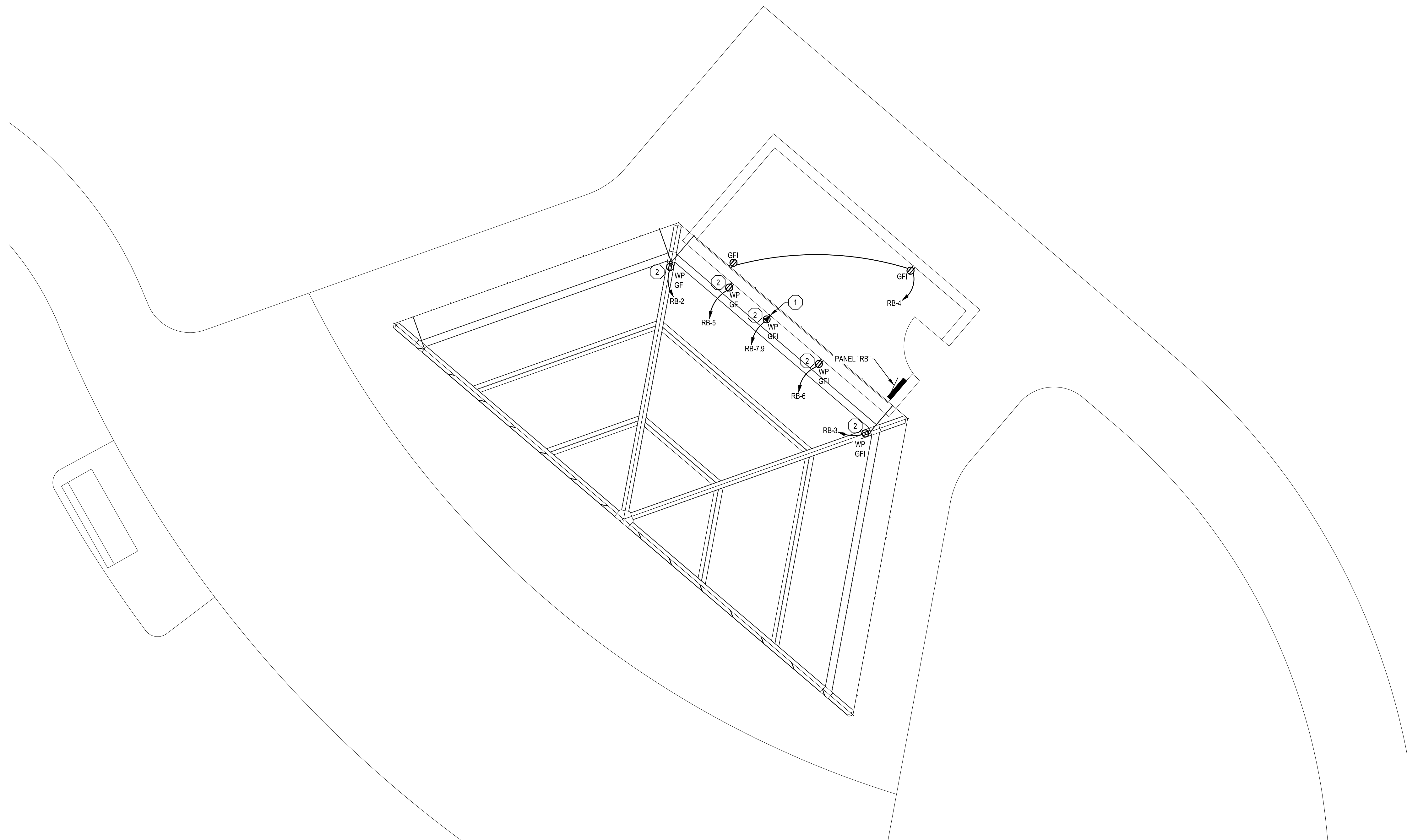
SCALE:
 1/4"=1'

RESTROOM BUILDING - POWER

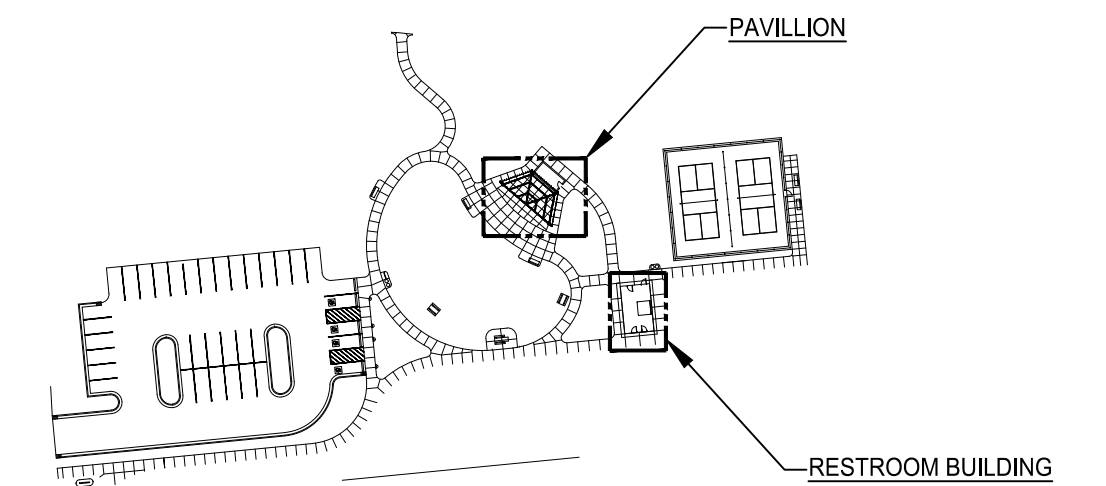
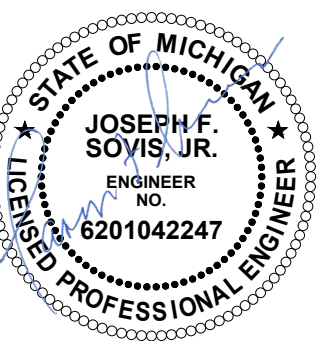
DATE	PROJECT NO.
11.03.2025	2252
REVISIONS	SHEET NO.
	E-500

ELERBTRIRBAL KEY NOTES

- ① CONTRACTOR SHALL PROVIDE 50A-2P RECEPTACLE, NEMA 14-50R.
- ② CONTRACTOR SHALL PROVIDE LOCKABLE ENCLOSURE FOR ALL EXTERIOR RECEPTACLES.



PAVILION AREA - POWER
 0 1 5 10
 SCALE: 1/4"=1'-0"

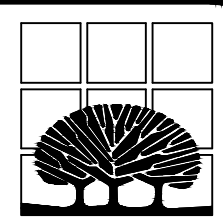


KEY PLAN
 SCALE: N.T.S.

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SCALE:
 1/4"=1'

PAVILION AREA - POWER

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11.03.2025	

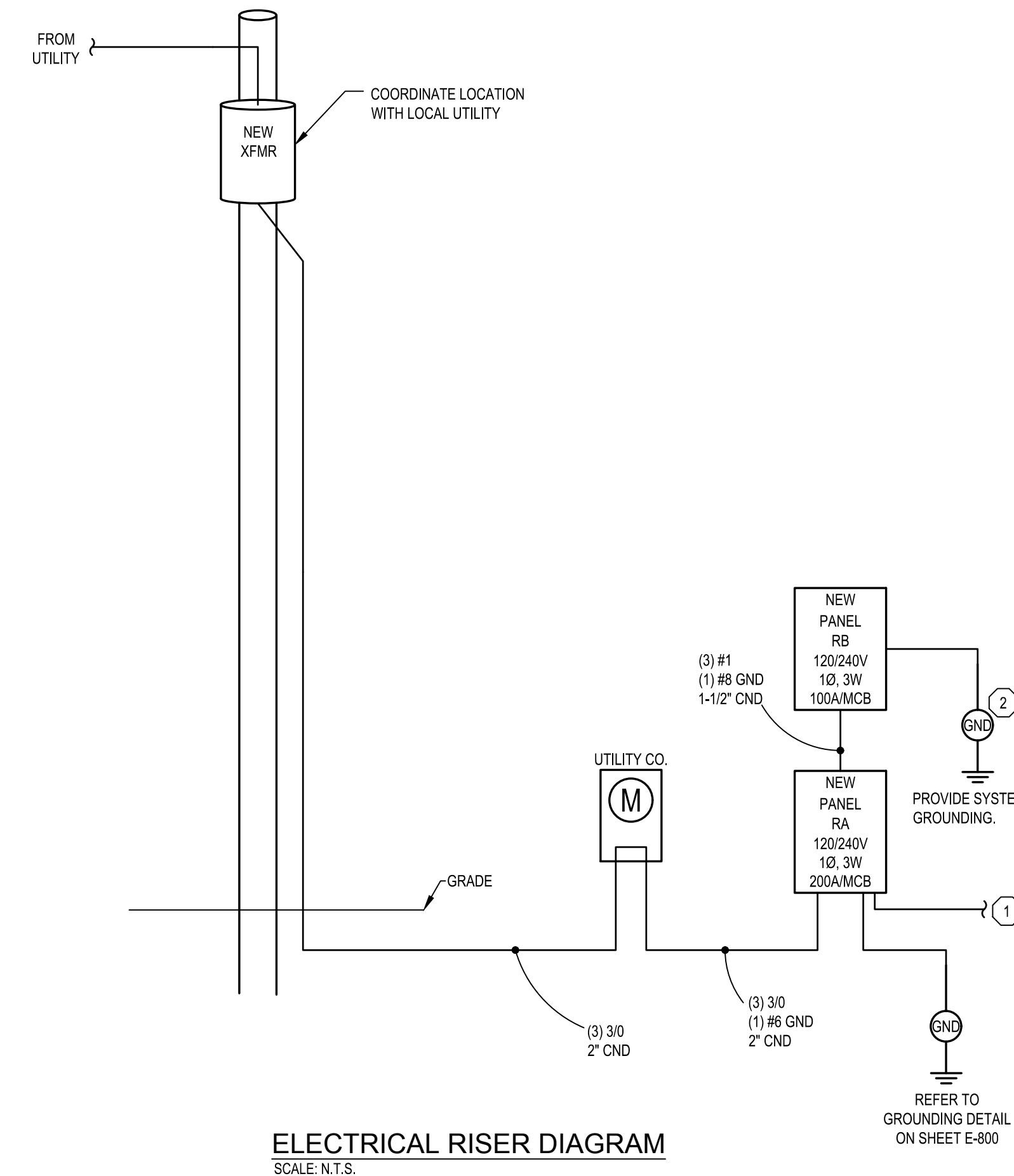
PROJECT NO.
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 SHEET NO.
E-501

ELECTRICAL KEY NOTES

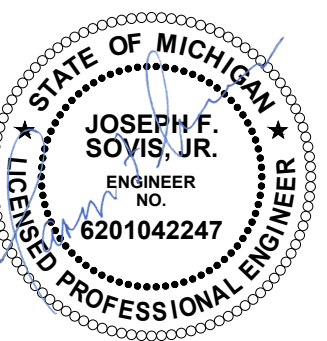
- ① CONTRACTOR SHALL PROVIDE (2) 2" CND FROM PANEL TO HANDHOLE IN GREENSPACE FOR FUTURE USE.
- ② PROVIDE GROUNDING ELECTRODE SYSTEM AT PAVILION PER NEC 250. DO NOT PROVIDE SYSTEM BOND.

NEW PANEL "RA"												
LOCATION: JANITOR RM			MOUNTING: SURFACE			A.I.C. RATING: 14 kA			NOTES:			
SUPPLY FROM: UTILITY XFMR			ENCLOSURE: NEMA 1									
VOLTS: 240 / 120			PHASE: 1			WIRE: 3			AMPS: 200 MAIN: MCB			
BRKR	DESCRIPTION	CIRCUIT	PHASE LOADS			CIRCUIT	DESCRIPTION	BRKR	A		P	
			VA	A	C				VA			
20	1	LIGHTING/EF'S	568	1	928	2	360	EXTERIOR RESTROOM RECEP	20	1		
20	1	HD-1	1000	3		4	1000	HD-2	20	1		
20	1	HD-3	1000	5	2000	6	1000	HD-4	20	1		
20	1	RESTROOM BLDG RECEP	1080	7		8	3000	EW-1	40	2		
20	1	FUTURE CAMERAS	1000	9	4000	10	3000	-	-	-		
20	1	GARAGE DOOR	1680	11		12		SPARE	20	1		
20	1	SPARE		13	0	14		SPARE	20	1		
20	1	SPARE		15		16		SPARE	20	1		
		SPACE		17	0	18		SPACE				
		SPACE		19		20		SPACE				
		SPACE		21	0	22		SPACE				
		SPACE		23		24		SPACE				
		SPACE		25	0	26		SPACE				
		SPACE		27		28		SPACE				
		SPACE		29	0	30		SPACE				
		SPACE		31		32		SPACE				
		SPACE		33	0	34		SPACE				
		SPACE		35		36		SPACE				
100	2	PANEL RB	6939	37	6939	38		SPACE				
-	-		4960	39		40		SPACE				
CONNECTED			13867		12720	TOTAL CONNECTED LOAD		26587	VOLT-AMPS			
TOTAL CONNECTED			26587					110.78		AMPS		

NEW PANEL "RB"												
LOCATION: STORAGE RM			MOUNTING: SURFACE			A.I.C. RATING: 10 kA			NOTES:			
SUPPLY FROM: PANEL RA			ENCLOSURE: NEMA 1									
VOLTS: 240 / 120			PHASE: 1			WIRE: 3			AMPS: 100 MAIN: MCB			
BRKR	DESCRIPTION	CIRCUIT	PHASE LOADS			CIRCUIT	DESCRIPTION	BRKR	A		P	
			VA	A	C				VA			
20	1	PAVILION/STORAGE LIGHTING	339	1	1339	2	1000	STAGE RECEP	20	1		
20	1	STAGE RECEP	1000	3		4	360	STORAGE RECEP	20	1		
20	1	STAGE RECEP	1000	5	2000	6	1000	STAGE RECEP	20	1		
50	2	STAGE RECEP	3600	7		8		SPARE	20	1		
-	-		3600	9	3600	10		SPARE				
		SPARE		11		12		SPARE				
		SPARE		13	0	14		SPARE				
		SPARE		15		16		SPARE				
		SPARE		17	0	18		SPARE				
		SPARE		19		20		SPARE				
CONNECTED			6939		4960	TOTAL CONNECTED LOAD		11899	VOLT-AMPS			
TOTAL CONNECTED			11899					49.58		AMPS		



ELECTRICAL RISER DIAGRAM
SCALE: N.T.S.



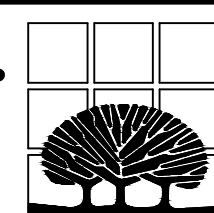
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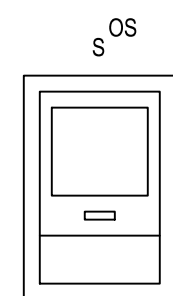


SCALE:
NTS

ELECTRICAL RISER DIAGRAM

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E-600



BASIS OF DESIGN:

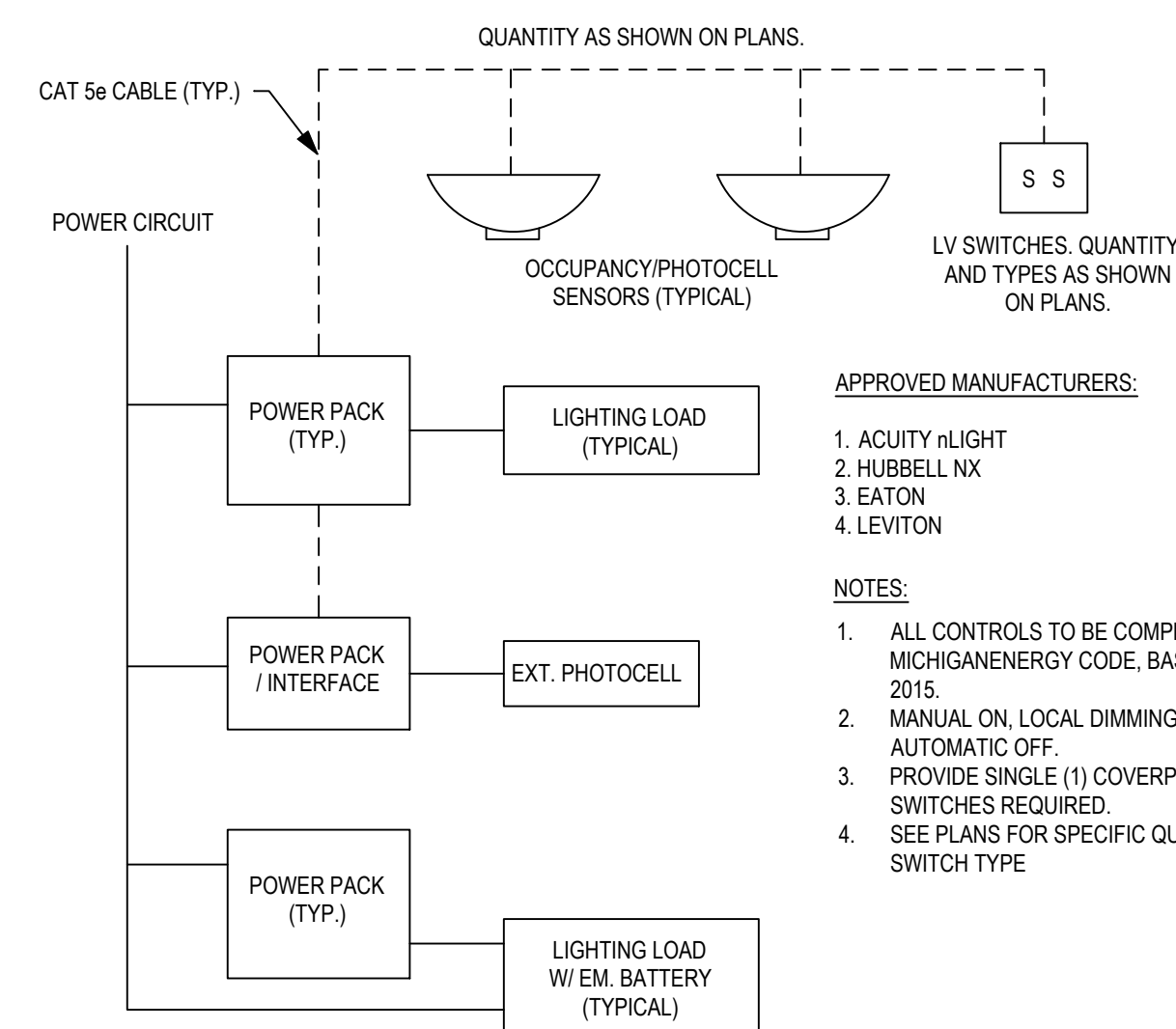
APPROVED ALTERNATES:

1. EATON
2. LEVITON
3. HUBBELL

SEQUENCE OF OPERATION:

1. ALL CONTROLS TO BE COMPLIANT WITH MICHIGAN ENERGY CODE.
2. MANUAL ON, ON/OFF OVERRIDE, AUTOMATIC OFF.
3. TOILETS AND STORAGE CLOSETS SHALL BE AUTOMATIC ON/OFF.
4. EF FANS SHALL BE CONTROLLED BY OCCUPANCY SENSOR; COORDINATE WITH MECHANICAL CONTRACTOR.

1 TYPICAL WALL MOUNTED OCCUPANCY SENSOR
SCALE: N.T.S.



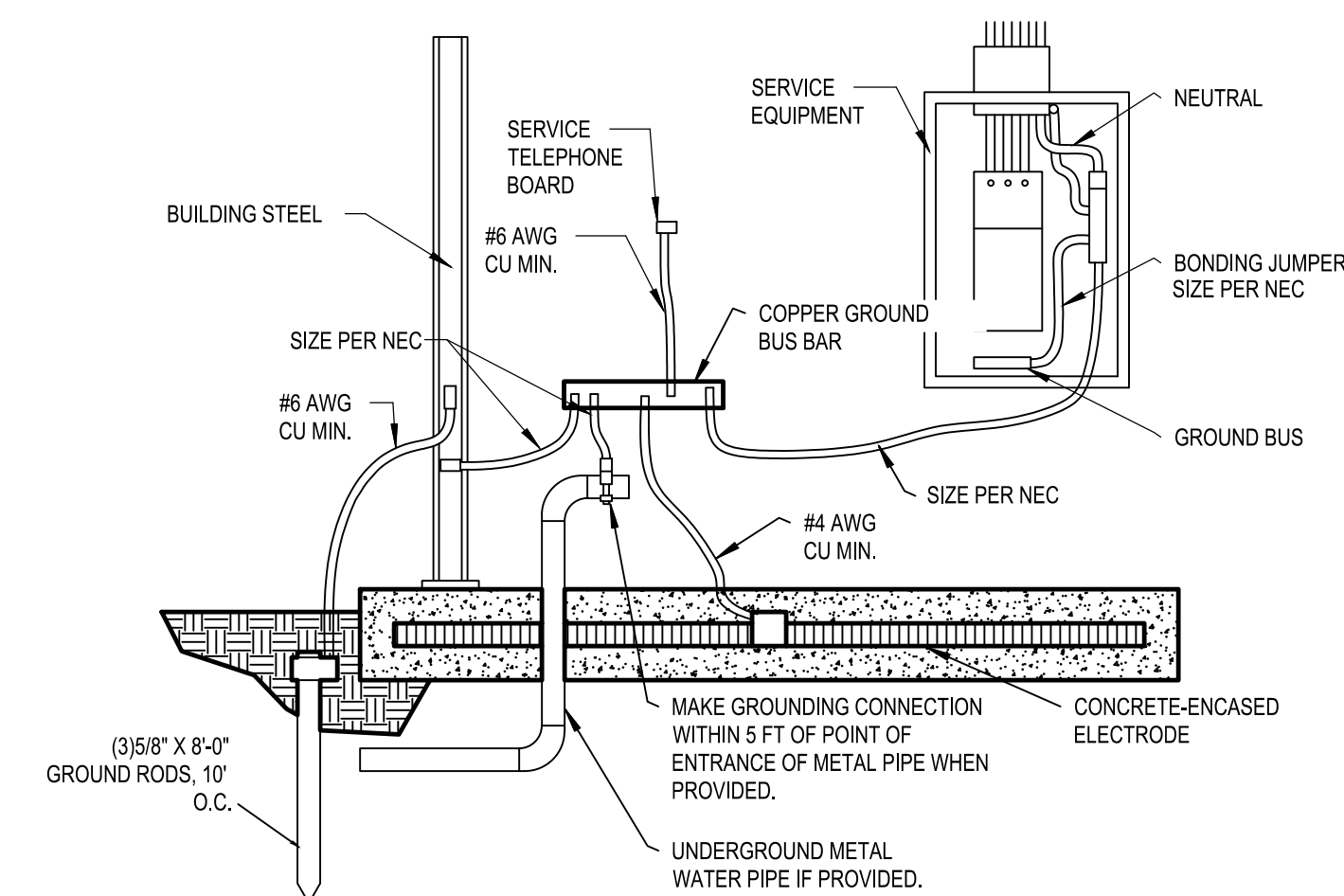
APPROVED MANUFACTURERS:

1. ACUITY i-LIGHT
2. HUBBELL NX
3. EATON
4. LEVITON

NOTES:

1. ALL CONTROLS TO BE COMPLIANT WITH MICHIGAN ENERGY CODE, BASED UPON ASHRAE 90.1, 2015.
2. MANUAL ON, LOCAL DIMMING AND ON/OFF OVERRIDE, AUTOMATIC OFF.
3. PROVIDE SINGLE (1) COVERPLATE. SIZE BASED ON SWITCHES REQUIRED.
4. SEE PLANS FOR SPECIFIC QUANTITY AND LOCATION OF SWITCH TYPE.

2 TYPICAL OCCUPANCY SENSOR/PHOTOCELL CONTROLS
SCALE: N.T.S.



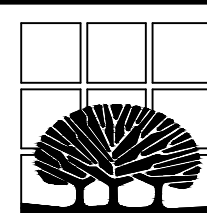
3 GROUNDING AND BONDING WITH GROUND BAR
SCALE: N.T.S.

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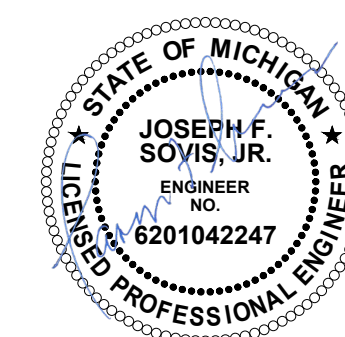


SCALE:
NTS

ELECTRICAL DETAILS

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BAND SHELL RENDERINGS

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BAND SHELL RENDERINGS

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