



4/14/2026

Bidder:

Traverse City Light & Power (TCLP) will receive electronically submitted sealed bids by **Friday, May 1st, at 2:00 PM Eastern** for the following project:

Hall St Substation Fire Suppression
(specifications attached)

It is the sole responsibility of the Bidder to check the website for updates and addenda prior to the bid being submitted. Updates can be found using the following link:

<http://www.tclp.org/Display/Items/RFPs>.

TCLP reserves the right to accept or reject any or all bids, waive irregularities, and to accept the bids either on an entire or individual basis that is in the best interest of TCLP.

TCLP accepts no responsibility for any expense incurred by the Bidder in the preparation and presentation of a bid. Such expenses shall be borne exclusively by the Bidder.

Only the successful Bidder will be notified. If you desire, you may call for results.

You must submit an e-mailed bid. Please indicate in the subject line of the e-mail that you are submitting a “Sealed Bid” together with the project description “Hall St Substation Fire Suppression” and submit your e-mailed bid to purchasing@tclp.org.

Please note that if you have previously submitted an informal quote, you will still need to submit a sealed bid prior to the date and time specified above in order to be considered. Please ensure that all requirements listed in the specifications are met.

Please direct ALL questions to: Jonah Flange, Electrical Engineer, Traverse City Light & Power, at jflange@tclp.org.

BIDS SHALL BE SUBMITTED ELECTRONICALLY ONLY TO:

purchasing@tclp.org



A. SPECIFICATIONS

1. Scope of Work

TCLP is requesting bids to provide all labor, equipment and material comprehensive fire risk assessment, and design of a fire suppression and detection system for the Hall St substation. The project encompasses the elevated control room for the substation and the server room below it.

This contract is for assessment and design services only. Installation and construction activities will be performed under a separate future contract.

The Successful Bidder shall complete the following during this project:

- a. **Site Inspection and Assessment:** Conduct a full survey of the control room and server room to validate fire-rated barriers and identify specific protection requirements.
- b. **Fire Hazard Analysis:** Provide a written assessment of risks.
- c. **System Design and Engineering:** Provide a performance-based fire suppression system design for the control room and server room. The design shall identify the most appropriate suppression method for each space based on hazard classification, risk analysis, equipment sensitivity, and applicable NFPA standards. While a clean-agent (non-conductive) gaseous system may be appropriate for these environments, bidders are not restricted to this method and may propose alternative code-compliant solutions supported by engineering analysis.
- d. **Drawings and plans:** Deliver a professional drawing set and plans for installation bid documents. Drawings shall depict a complete code-compliant system and demonstrate conformance with all applicable local, state, and federal regulations governing this project. Plans should include all details bidders will require that are not included in the prints, if applicable.

The design and bid documents shall clearly identify all required testing, commissioning, and acceptance procedures necessary for final system approval and placement into service. The design shall incorporate applicable code, manufacturer, and Authority Having Jurisdiction (AHJ) testing requirements, which shall be executed under a future installation contract.

- e. **System Lifecycle, Regulatory Viability, and Serviceability:**
The proposed fire suppression system shall utilize technology and agents that are currently permitted under applicable federal, state, and environmental regulations and are expected to remain serviceable for the life of the system. The system shall be designed to allow for future servicing, recharge, and component replacement using commercially available parts.



The bidder shall avoid systems that rely on agents or components subject to known regulatory phase-outs or significant supply constraints unless an equivalent long-term service strategy is clearly demonstrated.

The project is located at 130 Hall St. Within the City of Traverse City, Michigan. All bidders must familiarize themselves with the site conditions prior to submitting a bid for this project. All work must be completed no later than **June 26th, 2026**.

TCLP will, upon request, coordinate a site walkthrough to allow bidders to familiarize themselves with existing conditions and constraints. In addition, representative photographs of the site may be provided upon request to assist bidders in preparing their proposals. Walkthroughs and photographs are provided for informational purposes only and do not relieve the bidder from the responsibility of verifying site conditions or complying with all requirements of the specifications.

The Successful Bidder shall submit a Certificate of Insurance meeting the requirements stated herein prior to commencing the work.

Bids must be submitted on a lump sum price basis on the attached forms. All sales, consumer, use and other similar taxes required by law to be paid by the Bidder shall be included in the bid price.

2. Instructions to Bidders

- a. All bids must be submitted on the forms provided. Complete and return **ONLY** the following forms:
 1. Section C – Iran Economic Sanctions Act
 2. Section E – Submission Form
- b. Successful Bidder invoicing will be completed on a lump sum basis once the work is completed.
- c. The Successful Bidder will submit all invoices to ap@traversecitymi.gov for payment. All invoices must show Traverse City Light & Power as the invoiced party.

3. Completion Date

- a. All work on the project(s) must be substantially completed on or before June 19, 2026, and fully completed by the Successful Bidder no later than **June 26, 2026**.

4. Site Restoration

- a. Contractor will be responsible to restore or replace when any public or private property is damaged by the Successful Bidder's work, equipment or employees, to a condition at



least equal to that existing immediately prior to the beginning of Successful Bidder's operations. This includes all highways, driveway, walk or landscaping, etc.

5. Safety Rules

- a. Entry into the Substation, control room and server room house shall be scheduled with TCLP and must be accompanied by a TCLP representative.

6. Contract Date Extensions

- a. All requests for contract date extensions shall be written requests and submitted to the Owner.



B. INSURANCE REQUIREMENTS

The following insurance requirements must be met throughout the project:

- a. The Successful Bidder shall file with Traverse City Light & Power (TCLP) satisfactory certificates of insurance prior to commencement of project work. The form, content and limits of such insurance, together with the insurer thereof in each case, shall be acceptable to TCLP (Best rating of A or better.) Advance written notice will be given to TCLP before any material modification, cancellation, or expiration of any policy covered thereby. Notice of policy material modification, cancellation, or expiration shall be made by certified mail to TCLP.
- b. Should any of the insurance requirements stated herein be terminated by the Insurer, the Insurer will mail thirty days written notice to TCLP. Failure to mail by the Insurer will not waive the obligation or liability of any kind upon the insurer affording coverage. These requirements must be stated on all certificates of insurance. Modifications of the standard cancellation clause are acceptable.
- c. All certificates shall list any exclusions which are nonstandard within the industry as they appear on the policy.
- d. Each insurance policy shall have an Additional Insured endorsement naming TCLP, its officers, agents, directors, and employees (including the Engineer). The issuing company for comprehensive general liability and excess liability shall waive subrogation of all claims against parties named as additional insureds.
- e. The worker's compensation, automobile liability, and general liability insurance specified shall apply to all Successful Bidders on site.
- f. For insurance purposes, the title of ownership of the equipment, if any, furnished by the Successful Bidder shall remain with the Successful Bidder until official acceptance of the work by TCLP.
- g. Third Party Beneficiaries. If the Successful Bidder is doing all or a part of the work in public rights-of-way, the City of Traverse City and Grand Traverse County, including their Departments and Commissions, are third party beneficiaries of the Successful Bidder's obligations under this RFP and they shall be added as named Additional Insureds in all requires insurance policies. Except for those entities, there are no other third-party beneficiaries intended by the parties.
- h. Insurance types and coverages:
 1. Workers' Compensation: The parties shall maintain suitable workers compensation insurance pursuant to Michigan law and Successful Bidder shall provide a certificate of insurance or copy of state approval for self-insurance to TCLP upon execution of this Contract.



2. Comprehensive General Liability Insurance Coverage: Naming the City Of Traverse City and TCLP as additional insured's:

Limits for bodily injury or death not less than \$2,000,000 for each person \$2,000,000 for each incident.

This insurance must cover timber trespass

3. Owners and Successful Bidders Protective Liability Insurance Coverage \$2,000,000.00 minimum coverage.

The Successful Bidder agrees not to change such insurance and agrees to maintain such insurance throughout the period of performance of this Agreement. Successful Bidder will upon execution of this Agreement provide a certificate of insurance to the TCLP Controller. Such certificate shall name TCLP as an additional insured with the broad form endorsement for ongoing operations and completed operations on the insurance policies for general liability, excess liability, and Successful Bidder liability. Successful Bidder shall also provide Additional Insured Endorsement CG 20330413 or its equivalent. If any of the required insurance is not renewed or canceled, the Successful Bidder and all sub-Successful Bidders shall cease operations and shall not resume until new insurance is obtained. Successful Bidder shall obtain Third Party Notice Endorsement IL 79901010 for each required policy requiring the insurer to give Owner 30 days' notice of non-renewal or cancellation.

4. Comprehensive Automobile Liability Insurance Coverage: On all self-propelled vehicles used in connection with the contract whether owned, non-owned, or hired in the minimum coverage amount of \$2,000,000.

Property damage limit shall not be less than \$1,000,000 for each incident.



C. IRAN ECONOMIC SANCTIONS ACT

**Sworn and Notarized Affidavit of Compliance
Iran Economic Sanctions Act
Michigan Public Act No. 517 of 2012**

All bidders must submit the following certification statement in compliance with Public Act No. 517 of 2012 (the “Iran Economic Sanctions Act”) and attach this form to the bid. **Traverse City Light & Power shall not accept any bid that does not include this sworn and notarized certification of statement.**

The undersigned, the owner or authorized officer of _____ (the Bidder), hereby certifies, represents and warrants that the Bidder (including its officers, directors and employees) is not an “Iran linked business” within the meaning of the Iran Economic Sanctions Act, and that in the event the Bidder is awarded a contract for Parsons and Three Mile Repair, the Bidder will not become an “Iran linked business” at any time during the course of performing the work or any services under the contract.

The Bidder further acknowledges that any person who is found to have submitted a false certification is responsible for a civil penalty of not more than \$250,000.00 or 2 times the amount of the contract or proposed contract for which the false certification is made, whichever is greater, the cost of Traverse City Light & Power’s investigation, and reasonable attorney fees, in addition to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on a Request for Proposal for 3 years from the date it is determined that the person has submitted the false certification.

BIDDER

By: _____
Its: _____
Date: _____

STATE OF _____)

COUNTY OF _____)

This instrument was acknowledged before me on the _____ day of _____, _____, by

_____ .

_____, Notary Public

_____ County, _____

My Commission Expires: _____

Acting in the County of: _____



D. BID SUMMARY

Bidder – Please complete and return

TITLE: Hall St Fire Suppression

DUE DATE: Friday, May 1st, at 2:00 PM Eastern

Having carefully examined the specifications and any other applicable information, the bidder proposes to furnish all items necessary for and reasonably incidental to the proper completion of this bid. Bidder submits this bid and agrees that the bid may not be withdrawn for a period of thirty (30) days from the actual date of the opening of the bid.

Bidder understands and agrees, if selected as the successful bidder, to accept a Contract from TCLP and to provide proof of any required insurance.

Bidder submits this bid and agrees to meet or exceed all TCLP's requirements and specifications unless otherwise indicated in writing and attached hereto.

Bid forms are to be completed, including bid sheet, and submitted. Items not meeting specifications must be noted in the "comply" column and bidder shall fully describe every variance, exception, and/or deviation. Additional sheets may be used and submitted with bid.

Bidder is also required to submit, with the bid, the latest printed manufacturer's specifications and advertising literature on the equipment (including components) to be provided. Completed unit MUST be equipped in compliance with all applicable ANSI, OSHA, State and Federal Motor Vehicle Safety standards and regulations in effect at time of manufacture.

Bidder understands that TCLP reserves the right to accept any or all bids in whole or in part and to waive irregularities in any bid in the best interest of TCLP. The bids will be evaluated and awarded based on the best value to TCLP. Criteria used will include, but not be limited to, bidder/Successful Bidder's ability, qualifications, experience, type and amount of equipment, purchase price, maintenance cost(s), insurance, resale, license and permits and overall capability meeting the needs of TCLP. TCLP is sales tax exempt – Government.

Bidder shall pay all sales, consumer, use and other similar taxes required to be paid by Bidder in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the work.

The Bidder certifies that it is in compliance with the City of Traverse City's Nondiscrimination Policy as set forth in Administrative Order No. 47 and Chapter 605 of the City's Codified Ordinances.

The Bidder certifies that none of the following circumstances have occurred with respect to the Bidder, an officer of the Bidder, or an owner of a 25% or more share in the Bidder's business, within 3 years prior to the bid:



- a) conviction of a criminal offense incident to the application for or performance of a contract.
- b) conviction of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or any other offense which currently, seriously and directly reflects on the Bidder's business integrity.
- c) conviction under state or federal antitrust statutes.
- d) attempting to influence a public employee to breach ethical conduct standards; or
- e) conviction of a criminal offense or other violation of other state, local, or federal law, as determined by a court of competent jurisdiction or an administrative proceeding, which in the opinion of the City indicates that the bidder is unable to perform responsibility or which reflects a lack of integrity that could negatively impact or reflect upon TCLP, including but not limited to, any of the following offenses or violations of:
 - i. The Natural Resources and Environmental Protection Act.
 - ii. A persistent and knowing violation of the Michigan Consumer Protection Act.
 - iii. Willful or persistent violations of the Michigan Occupational Health and Safety Act.
 - iv. A violation of federal, local, or state civil rights, equal rights, or non-discrimination laws, rules or regulations.
 - v. Repeated or flagrant violations of laws related to the payment of wages and fringe benefits.
- f) the loss of a license or the right to do business or practice a profession, the loss or suspension of which indicates dishonesty, a lack of integrity, or a failure or refusal to perform in accordance with the ethical standards of the business or profession in question.

Terms: Payment will be made as soon as possible after delivery/acceptance of all required deliverables. Price quoted shall include any title fee and all delivery costs to TCLP, 1131 Hastings Street, Traverse City, MI 49686.

Bidder certifies that as of the date of this bid, Bidder's company or Bidder is not in arrears to TCLP or the City of Traverse City for debt or contract and is in no way a defaulter as provided in Section 152, Chapter XVI of the Charter of the City of Traverse City.

TCLP may require an in-house equipment demonstration for your bid to be considered.



Bidder agrees that the bid may not be withdrawn for a period of thirty (30) days from the actual date of the opening of the bid.

Please direct ALL questions to: Jonah Flange, Electrical Engineer, Traverse City Light & Power, at (231) 932-4562



By submitting a response to this RFP you acknowledge that TCLP may be required from time to time to release records in its possession under the Michigan Freedom of Information Act. By submitting a response, you hereby give permission to TCLP to release any records or materials submitted by you as TCLP may be requested to do so as permitted by the Freedom of Information Act, MCL 15.231 et seq.

Signature		Company Name	
Name and Title (Print)		Company Address	
Phone	Fax	City,	State, Zip
		Sole proprietorship/partnership/corporation	
		If corporation, state of corporation	
		Bid Total: \$	

Company Name

Attention		
Street Address		
City ,	State,	Zip
Email Address		



REFERENCES: (include name of organization, contact person, and daytime phone number).

1.

Name of Organization

Contact Person

Phone Number

2.

Name of Organization

Contact Person

Phone Number

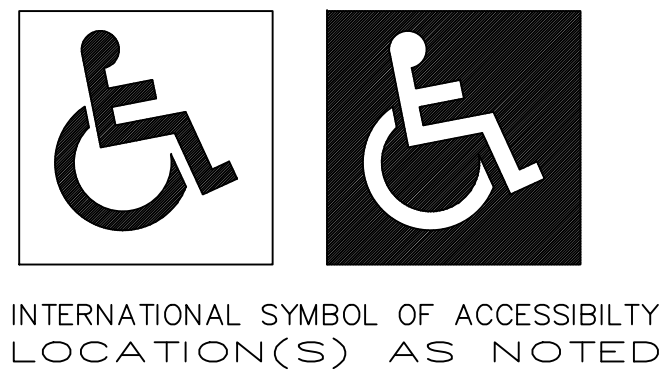
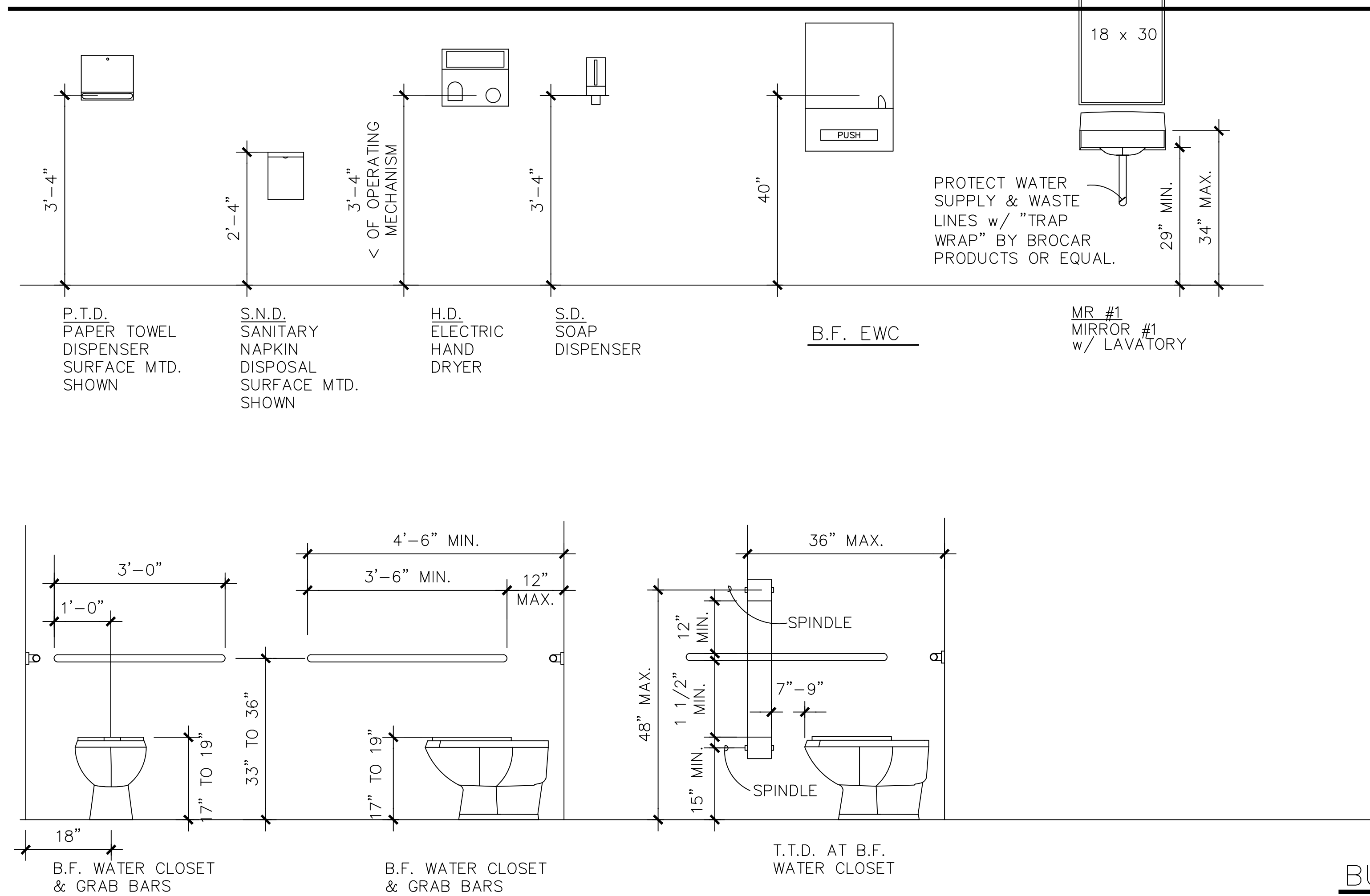
3.

Name of Organization

Contact Person

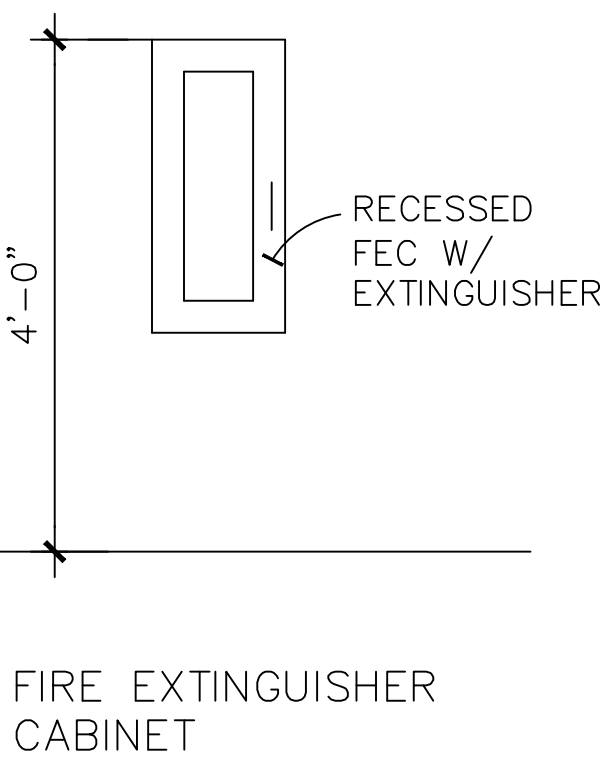
Phone Number

PLUMBING FIXTURES AND TOILET ACCESSORIES



TOILET ROOM SIGNAGE
ALONG SIDE LATCH SIDE OF DOOR, 60" A.F.F. TO < OF SIGN, COMPLY WITH THE ACCESSIBLE REQUIREMENTS OF THE STATE OF MICHIGAN BUILDING CODE FOR CHARACTER HEIGHT & PROPORTION.

B.F. SIGNAGE



BUILDING DRAWING INDEX:

ARCHITECTURAL		STRUCTURAL	
A0.1	GENERAL INFORMATION / BOILER PLATE/CODE INFORMATION	S0.1	GENERAL NOTES AND SCHEDULES
A2.1	MAIN LEVEL FLOOR PLAN & DETAILS	S0.2	TYPICAL DETAILS
A2.2	UPPER LEVEL FLOR PLAN & PLAN DETAILS	S2.1	FOUNDATION PLAN & DETAILS
A3.1	PLAN DETAILS AND MISCELLANEOUS DETAILS	S2.2	FLOOR AND ROOF FRAMING PLANS & DETAILS
A4.1	ROOF PLAN, ROOM FINISH SCHEDULE, AND DETAILS	MECHANICAL	
A5.1	ELEVATIONS	M2.1	MECHANICAL PLAN
A5.2	BUILDING SECTIONS AND DETAILS	PLUMBING	
A6.1	WALL SECTIONS & DETAILS	P2.1	FIRST & SECOND LEVEL - PLUMBING PLAN
A6.2	WALL SECTIONS & DETAILS	ELECTRICAL	
A8.1	DOOR & WINDOW SCHEDULE / GATE DETAILS	E2.1	FIRST LEVEL - ELECTRICAL PLAN
A8.2	DOOR & WINDOW DETAILS	E2.2	SECOND LEVEL - ELECTRICAL PLAN
CIVIL			
C2.1	ARCHITECTURAL SITE PLAN		
C3.1	SITE GRADING AND SOIL EROSION PLAN		
C6.1	SITE PLAN DETAILS		
LANDSCAPE			
L1.1	LANDSCAPE PLAN		

ABBREVIATIONS

A.B.	ANCHOR BOLT	DIA.	DIAMETER	L.H.	LEFT HAND	R.H.	RIGHT HAND
A.C.T.	AIR CONDITIONING	DN.	DIMENSION	LIN.	LINEAR	RM.	ROOM
A.C.	ACOUSTIC, ACOUSTICAL	D.F.	DOWN	L.L.	LIVE LOAD	R.O.	ROUGH OPENING
ADD.	ADDITIVE	D.W.G.	DRINKING FOUNTAIN	L.L.H.	LONG LEG HORIZONTAL	R.O.W.	RIGHT OF WAY
ADJ.	ADJACENT	E.A.	DRAWING	L.L.V.	LONG LEG VERTICAL	R.S.	ROOF SUMP
A.F.F.	ABOVE FINISH FLOOR	E.F.	EACH	L.P.	LOW POINT	R.U.	ROUND
ALT.	ALTERNATE	E.F.	EACH FACE	MAG.	MAGNETIC	S.A.	SUPPLY AIR
ALUM.	ALUMINUM	ELEC.	ELECTRIC(AL)	MAS.	MASONRY	S.C.	SOLID CORE
APPROX.	APPROXIMATE	ELEV.	ELEVATION	MAT.	MATERIAL	SCHED.	SCHEDULE
ARCH.	ARCHITECT	E.W.	EACH WAY	MAX.	MAXIMUM	S.D.	SOAP DISPENSER
&	AND	E.Q.	EQUAL	M.B.	MARKER BOARD	SEC.	SECTION
@	AT	E.W.C.	ELECTRIC WATER COOLER	MET.	METAL	S.F.	SQUARE FOOT
B.C.S.	BABY CHANGE STATION	EXP.	EXPANSION	MEZZ.	MEZZANINE	SHT., SH.	SHEET
B.F.	BARRIER FREE	E.J.	EXPANSION JOINT	M.T.	MARBLE THRESHOLD	S.I.	SQUARE INCH
BM.	BEAM	EXIST.	EXISTING	MTD.	MOUNTED	SIM.	SIMILAR
B.M.	BENCH MARK	EXT.	EXTERIOR	MECH.	MECHANICAL	S.N.D.	SANITARY NAPKIN DISPOSAL
BRG.	BEARING	EQUIP.	EQUIPMENT	MFRG.	MANUFACTURER	S.N.V.	SANITARY NAPKIN VENDOR
BIT.	BITUMINOUS	F.O.C.	FACE OF CONCRETE	M.H.	MANHOLE	SPEC.	SPECIFICATIONS
BLKG.	BLOCK OR BLOCKING	F.O.M.	FACE OF MASONRY	MIN.	MINIMUM	SQ.	SQUARE
BOARD	BOARD	F.O.S.	FACE OF STUD	MISC.	MISCELLANEOUS	S.S.	STAINLESS STEEL/SAN. SEWER
BOT.	BOTTOM	FIN.	FINISH	M.O.	MASONRY OPENING	STOR.	STORAGE
B.O.F.	BOTTOM OF FOOTING	F.E.C.	FIRE EXTINGUISHER CABINET	MR.	MIRROR	STL.	STEEL
BLDG.	BUILDING	F.R.T.	FIRE RETARDANT TREATED	M.T.P.	METAL TOILET PARTITION	STRUCT.	STRUCTURAL
B.U.R.	BUILT-UP-ROOF	F.D.	FLOOR DRAIN	N.L.C.	NOT IN CONTRACT	SUSP.	SUSPEND(ED)
C/C	CENTER TO CENTER	FT.	FOOT/FEET	NO., #	NUMBER	T.B.	TACK BOARD
C.B.	CATCH BASIN	FTG.	FOOTING	NOM.	NOMINAL	T. & B.	TOP AND BOTTOM
CEM.	CEMENT	FDN.	FOUNDATION	N.T.S.	NOT TO SCALE	TEL.	TELEPHONE
CER.	CERAMIC	F.L.	FLOW LINE	#	NUMBER/POUND	T & G	TONGUE AND GROOVE
C.I.	CAST IRON	GALV.	GALVANIZED	O.A.	OVERALL	THK.	THICKNESS
C.I.P.	CAST IN PLACE	GA	GAUGE	O.C.	ON CENTER	T.O.	TOP OF
C.J.	CONTROL JOINT	G.C.	GENERAL CONTRACTOR	O.D.	OUTSIDE DIAMETER	T.O.M.	TOP OF MASONRY
CLNG.	CEILING	G.B.	GRAB BAR	O.H.	OVERHEAD	T.O.S.	TOP OF SLAB
<	CENTERLINE	GL.	GLASS	OPNG.	OPENING	T.P.	TOWEL PIN
CLO.	CLOSET	GR.	GRADE	OPP. HD.	OPPOSITE HAND	T.T.D.	TOILET TISSUE DISPENSER
C.M.U.	CONCRETE MASONRY UNIT	GYP.	GYPSUM	PART	PARTITION	T.W.	TOP OF WALL
C.O.	CLEAN OUT	H.D.	HAND DRYER	P.C.	PRECAST	TYP.	TYPICAL
COL.	COLUMN	H.S.	HOOK STRIP	PLAS.	PLASTIC	U.L.	UNDERWRITERS LABORATORIES
CONTR.	CONTRACTOR	H.B.	HOLLOW CORE	PL.	PLATE	U.N.O.	UNLESS NOTED OTHERWISE
CONC.	CONCRETE	H.W.	HARDWARE	PLYWD.	PLYWOOD	U.S.	URINAL SCREEN
CONN.	CONNECTION	H.M.	HOLLOW METAL	P.L.	PROPERTY LINE	VERT.	VERTICAL
CONT.	CONTINUOUS	HORIZ.	HORIZONTAL	PNL.	PANEL	W.	WIDE/WIDTH
CORR.	CORRIDOR	H.P.	HIGH POINT	PR.	PAIR	W.C.	WATER CLOSET
OPT.	CARPET	HVAC	HEATING/VENTING/AIRCONDITIONING	P.S.F.	POUNDS PER S.F.	WSCOT	WELDED WIRE FABRIC
C.S.	CARPET STRIP	HT., H.	HEIGHT/HIGH	P.S.I.	POUNDS PER S.I.	WWF.	WITH
C.U.H.	CUPIDOR	HT.	HEIGHT/HIGH	P.T.D.	PAPER TOWEL DISPENSER	w/o	WITHOUT
CUSP.	CUSPIDOR	H.W.	HARDWOOD	P.V.C.	POLYVINYL CHLORIDE	w/o	WITHOUT
D.	DEAD LOAD	I.D.	INSIDE DIAMETER	Q.T.	QUARRY TILE	XFMR.	TRANSFORMER
D.L.	DEEP/DEPTH	INSUL.	INSULATION	R.	RADIUS		
DET.	DETAIL	INT.	INTERIOR	R.A.	RETURN AIR		
D.D.	DIAPER DISPENSER	INV.	INVERT	R. & G.	ROD AND GROUT		
		LAV.	LAVATORY	REQ'D.	REQUIRED		
		LAM.	LAMINATED				

DESIGN CRITERIA

CODE
- 2000 MICHIGAN BUILDING CODE
- ACCESSIBILITY REQUIREMENTS OF THE STATE OF MICHIGAN BUILDING CODE EFFECTIVE 11/30/98

USE, OCCUPANCY & CONSTRUCTION

- USE GROUP: SEPARATED MIXED USE
- 1ST FLOOR: USE GROUP (B)
- 2ND FLOOR: USE GROUP (S-2)
- OCCUPANT LOAD:
- 1ST FLOOR:
- OCCUPANT LOAD: 2065 S.F. / 100 S.F. PER OCCUPANT (GROSS) = 26.65 OR 27 OCCUPANTS
- 2ND FLOOR:
- OCCUPANT LOAD: 2065 S.F. / 300 S.F. PER OCCUPANT (GROSS) = 6.88 OR 7 OCCUPANTS
- BUILDING AREA: 2065 S.F.
(NOTE: NO AREA MODIFICATIONS TAKEN)
- BUILDING AREA LIMITATIONS: 23,000 GROSS S.F.
- BUILDING HEIGHT LIMITATION: 4 STORIES
- ACTUAL BUILDING HEIGHT: 27'-4", 2 STORIES
- CONSTRUCTION TYPE: 2B (2000 M.B.C.)
- EQUIPMENT YARD AREA: 10727 S.F.
- AREA OF YARD UNDER ROOF: 1858 S.F.

FIRE-RATED CONSTRUCTION:

- REQUIRED SEPARATION OF OCCUPANCIES B & S-2 IS (2) HOURS.
- STORAGE ROOMS OVER 100 SQUARE FEET: 1-HOUR

- ALL PENETRATIONS THROUGH FIRE RATED WALL & FLOOR ASSEMBLIES SHALL BE PROPERLY FIRESTOPPED WITH AN APPROVED TESTING AGENCY SYSTEM AND MATERIAL SUITABLE FOR THE TYPE OF CONSTRUCTION PENETRATED AND THE PENETRATING MATERIAL, PROVIDED BY THE RESPONSIBLE INSTALLING CONTRACTOR.

TEXT SYMBOLS

∠	ANGLE
CL	CENTERLINE
[	CHANNEL
⊥	PERPENDICULAR
PL	PLATE
&	AND
@	AT

MATERIAL LEGEND

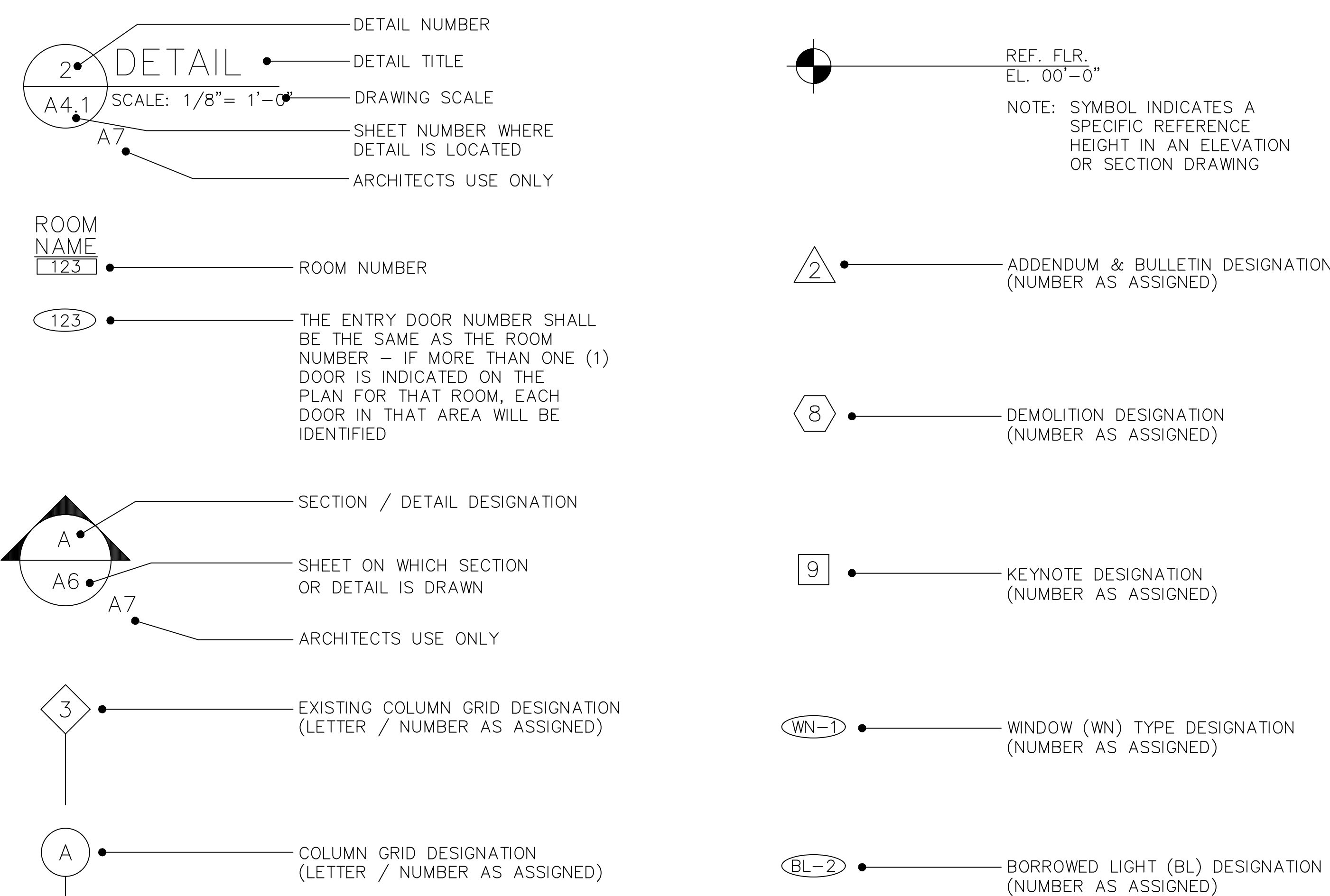
GRADE OR EARTH	
COMPACT FILL	
CONCRETE	
HEAVYWEIGHT CONCRETE BLOCK	
LIGHTWEIGHT CONCRETE BLOCK	
FACE BRICK	
STONE	
MARBLE / GRANITE	
STEEL	
FINISH WOOD	
ROUGH WOOD	
WOOD BLOCKING	
PLYWOOD	
BATT/LOOSE FILL	
RIGID INSULATION	
ACOUSTICAL TILE	
GYPSUM WALLBOARD	
CERAMIC TILE	
CARPET AND PAD	
GRAVEL	
RENAISSANCE MASONRY UNIT	

GENERAL CONSTRUCTION AND SAFETY

1. ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION SELECTED BY CONTRACTOR.
2. THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. WHEN ON SITE, THE ARCHITECT/ENGINEER IS RESPONSIBLE FOR HIS OWN SAFETY BUT HAS NO RESPONSIBILITY FOR THE SAFETY OF OTHER PERSONNEL OR SAFETY CONDITIONS AT THE SITE.
3. CONTRACTOR AND HIS AGENT(S) SHALL VERIFY ALL INFORMATION AND DIMENSIONS CONTAINED WITHIN THESE CONSTRUCTION DOCUMENTS. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, INCLUDING BUILDINGS, SITE CONDITIONS, AND SOIL BEARING PRESSURE. ALL ERRORS, OMISSIONS, AND INCONSISTENCIES ARE TO BE REPORTED TO THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK. FAILURE TO DO SO WILL RELEASE THE ARCHITECT/ENGINEER OF ALL RESPONSIBILITY. ANY CHANGES FROM THESE DOCUMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR. THESE DRAWINGS ARE NOT TO BE SCALED. IF INSUFFICIENT INFORMATION EXISTS, CONTACT THE ARCHITECT/ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. SHOULD ANY DISCREPANCY BE FOUND, CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER IMMEDIATELY OF THE CONDITION.

DRAWING STANDARDS

GRAPHIC SYMBOLS



TRAVERSE CITY LIGHT & POWER
HALL STREET SUBSTATION
GENERAL INFORMATION/BOILER PLATE/CODE INFORMATION

URS
1004 East 8th Street
Traverse City, Michigan
231-947-0060
architecture,
artistry
interiors, inc.
GRAND RAPIDS, MI.
3600 16TH AVE. S.E.
49508-4805

DA/E R.J.S.
DR S.S.H.
CK R.J.K.
APP R.J.S.
IN CHARGE
DATE
ISSUED FOR

02/20/2004 APPROVED FINAL RECORD DRAWINGS
12/24/03
05-15-02
05-15-02
02-15-02

RECORD DRAWINGS
BIDS AND CONSTRUCTION
REVIEW
PRELIMINARY REVIEW

DRAWING
A0.1

FILE
M105002

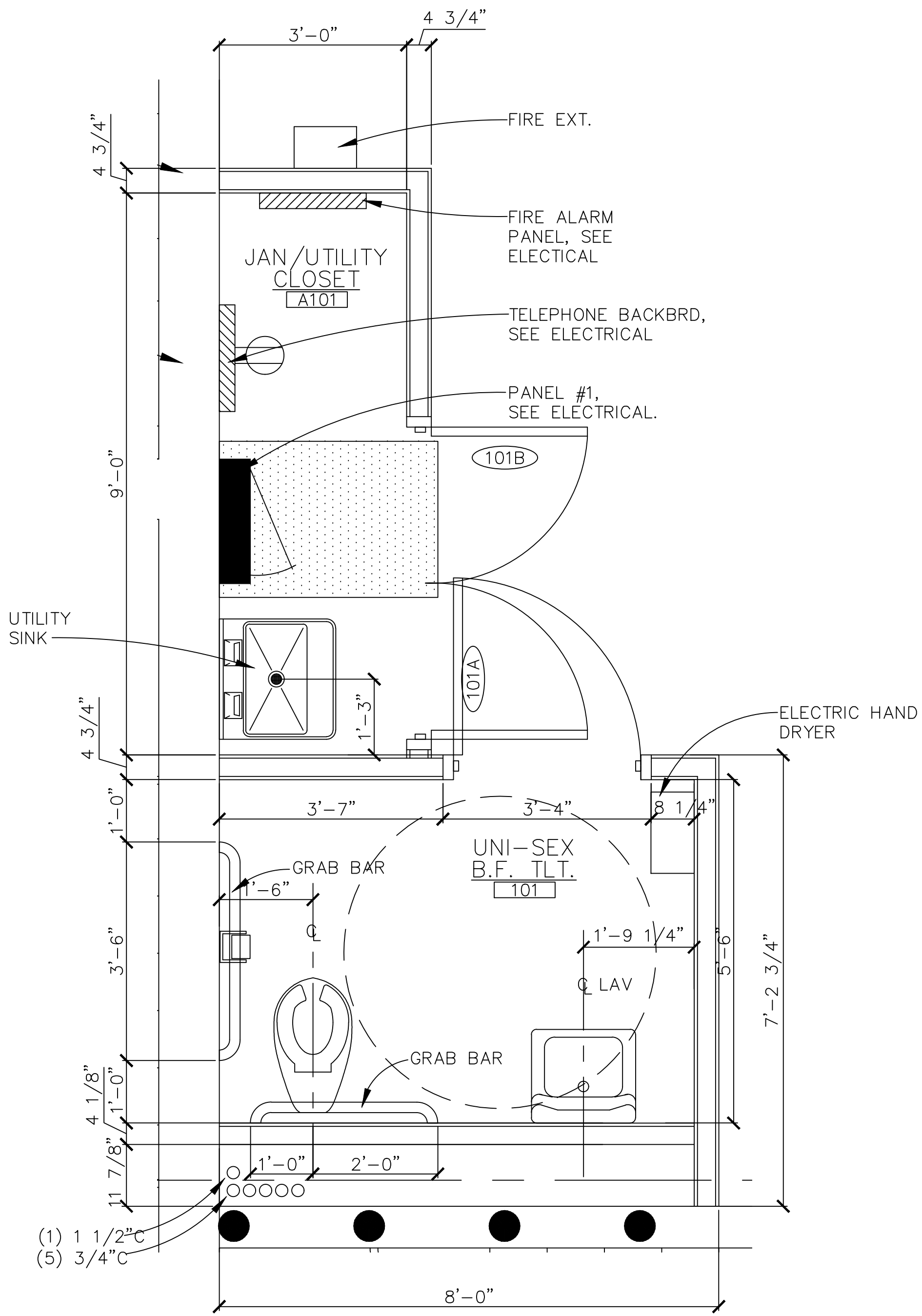
GENERAL NOTES

1. AT ALL RECESSED ITEMS IN (1) HOUR RATED WALLS, MAINTAIN CONTINUITY OF REQUIRED FIRE RATED ASSEMBLY.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS AT THE SITE PRIOR TO SUBMITTING A BID OR PROCEEDING WITH ANY PORTION OF WORK.
3. WHENEVER QUESTIONS ARISE OR CONDITIONS ARE ENCOUNTERED WHICH ARE NOT COVERED OR ARE IN CONFLICT WITH THE CONTRACT DOCUMENTS, CONSULT W/ THE ARCHITECT PRIOR TO TAKING ANY FURTHER ACTION
4. ALL DIMENSIONS ARE FACE OF STUD TO FACE OF STUD OR FACE OF MASONRY TO FACE OF MASONRY UNLESS NOTED OTHERWISE, EXTERIOR WALL DIMENSIONS INCLUDES 1/2" EXTERIOR SHEATHING.
5. ALL MASONRY DIMENSIONS INDICATED ARE NOMINAL DIMENSIONS U.N.O.
6. ALL FIRE RATED PARTITIONS SHALL EXTEND FROM FLOOR, TIGHT TO FIRE RATED CEILING ASSEMBLY ABOVE.
7. [EL = 0'-0"] INDICATES TOP OF STPOOP ELEVATION.

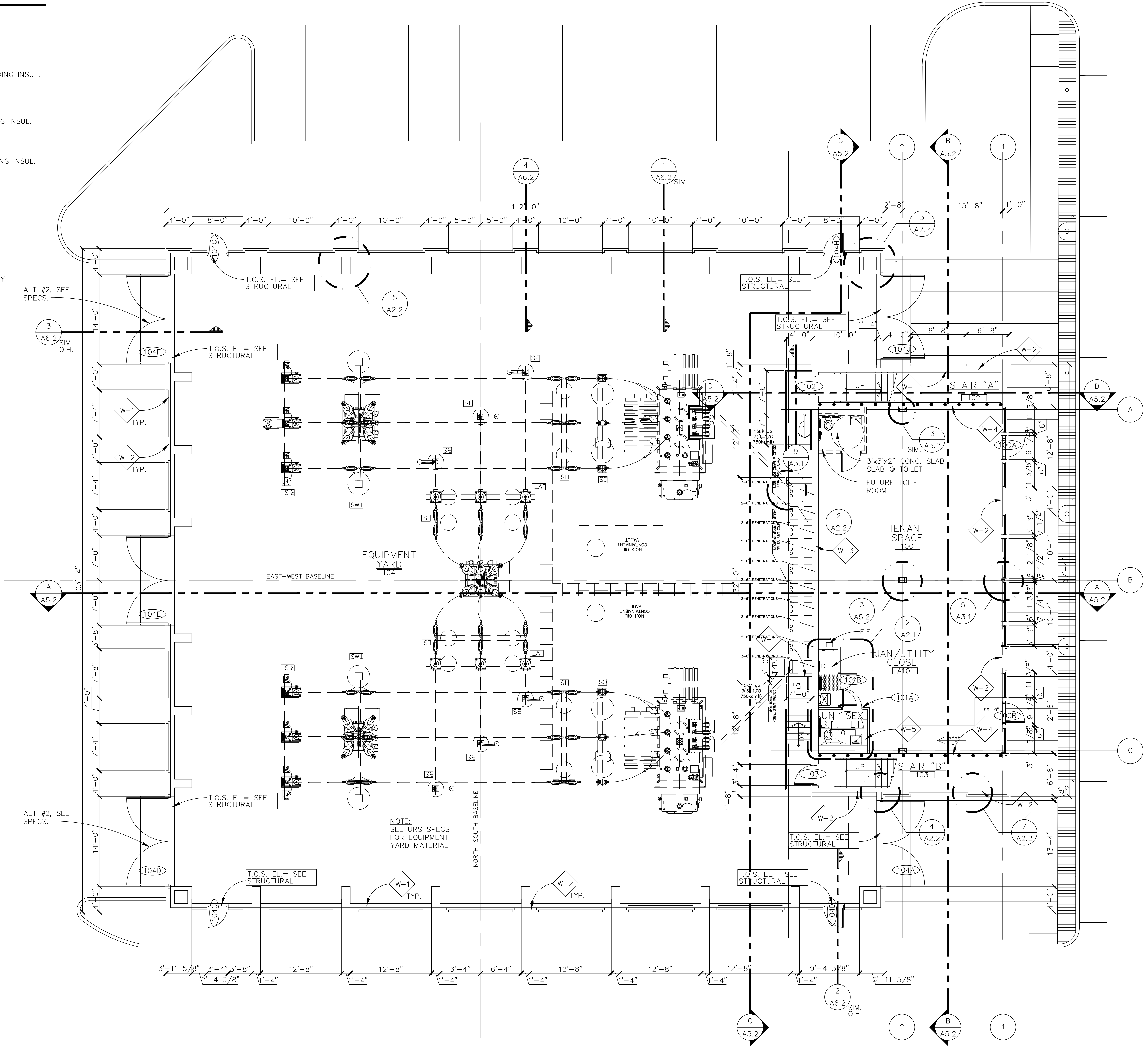
WALL LEGEND:

SCALE: 1/8" = 1'-0"

W-1	4" FACE BRICK VENEER 8" CMU INTERIOR WALL W/EXPANDING INSUL.
W-2	4" FACE BRICK VENEER AIR SPACE 8" CMU BLOCK WALL W/EXPANDING INSUL.
W-3	EXTERIOR WALL: 12" CMU BLOCK WALL W/EXPANDING INSUL.
W-4	INTERIOR WALL: 8" CMU BLOCK WALL
W-5	INTERIOR WALL: 5/8" GYP. BD 3-1/2" METAL STUD W/ ACOUSTICAL BATT. INSUL. 5/8" GYP. BD.
	2 HR. FIRE RATED WALL ASSEMBLY TIGHT TO DECK ABOVE.



2 TL.T. RM. 101/JAN A100
A2.1 SCALE: 1/2" = 1'-0"



1 MAIN LEVEL FLOOR PLAN
A2.1 SCALE: 1/8" = 1'-0"

DA/E R.J.S.	DR S.S.H.	CK R.J.K.	APP R.J.S.	IN CHARGE	DATE
02/20/2004	02/20/2004	02/20/2004	02/20/2004	02/20/2004	02/20/2004
APPROVED FOR RECORD DRAWING					
RECORD DRAWING					
BID AND CONSTRUCTION					
PRELIMINARY REVIEW					
ISSUED FOR					

1004 East 8th Street
Traverse City, MI 49606
231-947-0060

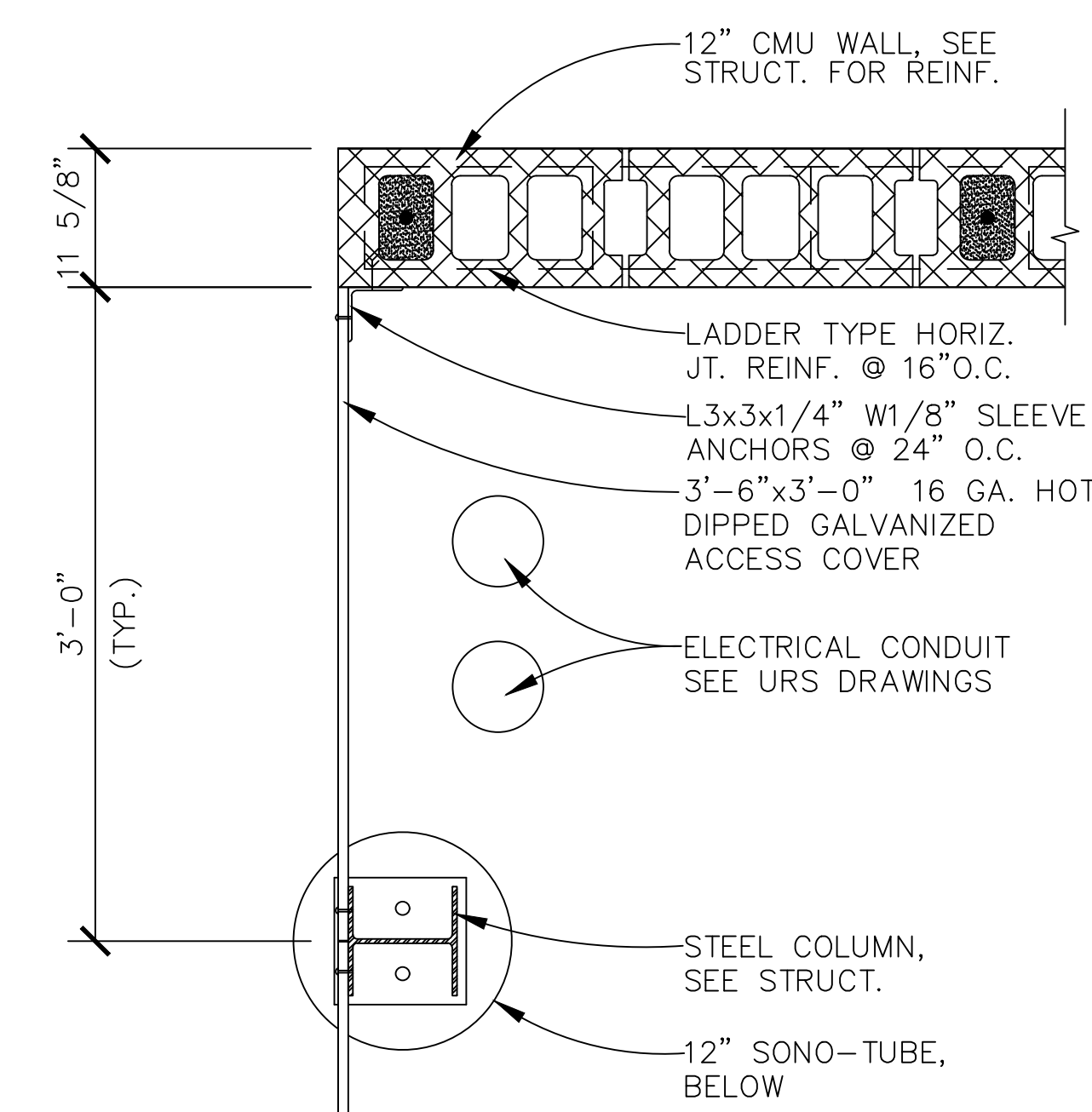
URS architecture,
artistry
interiors, inc.

GRAND RAPIDS, MI
3550 PARKWAY S.E.
49508-4800

TRAVERSE CITY LIGHT & POWER
HALL STREET SUBSTATION
MAIN LEVEL FLOOR PLAN & DETAILS

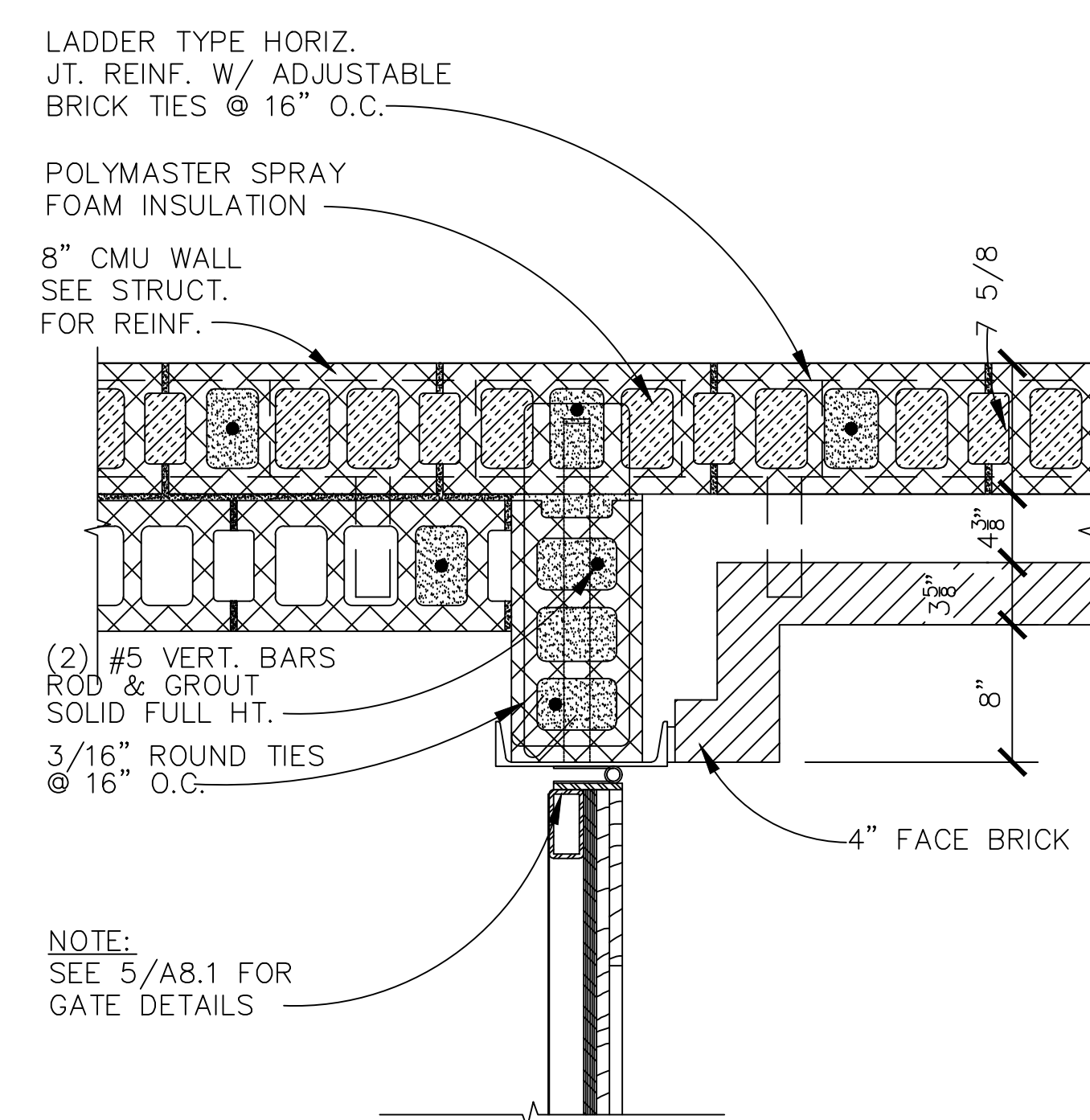
DRAWING
A2.1

FILE
M105002



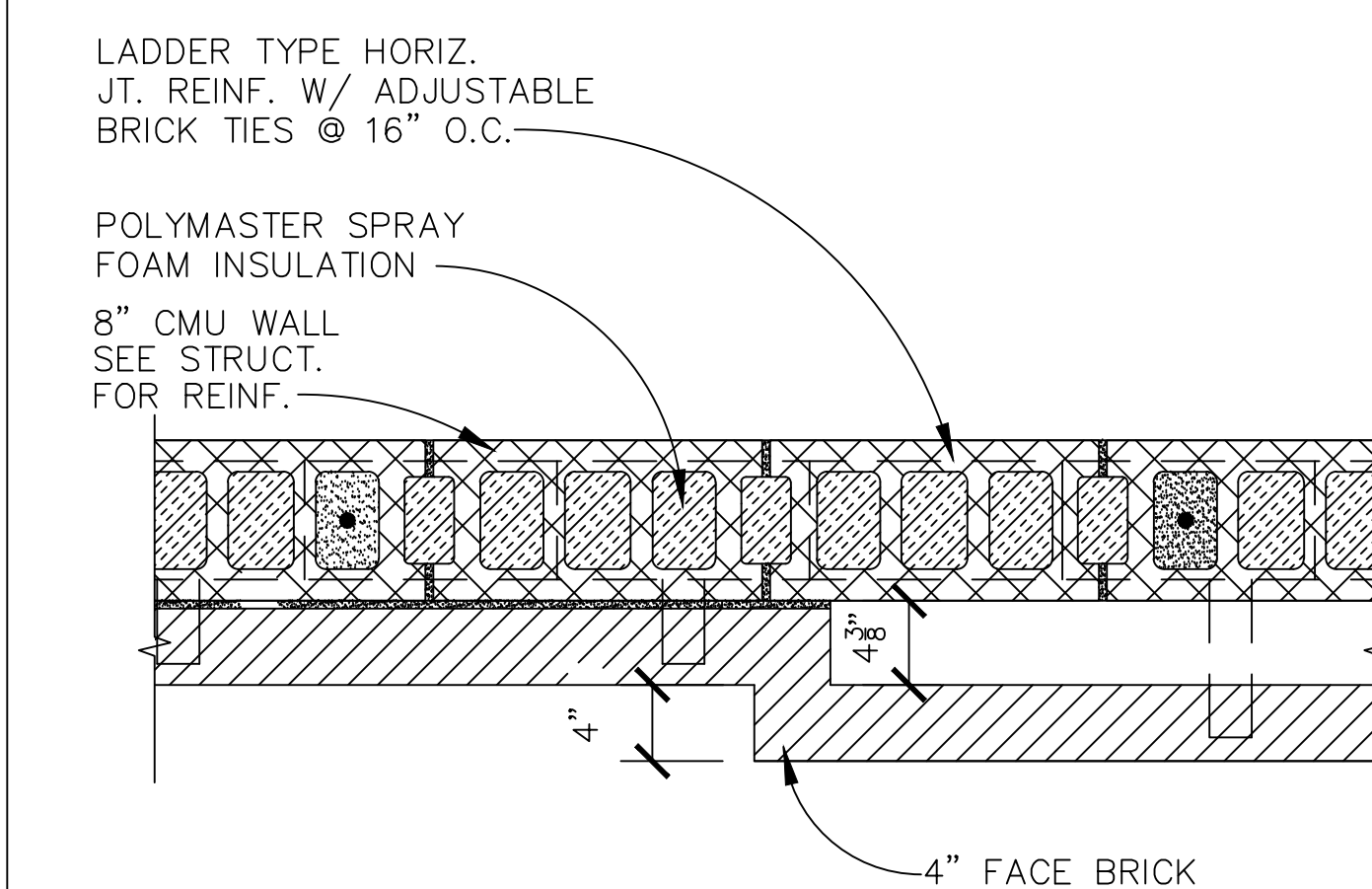
3
A2.2

DETAIL
SCALE: 1"= 1'-0"



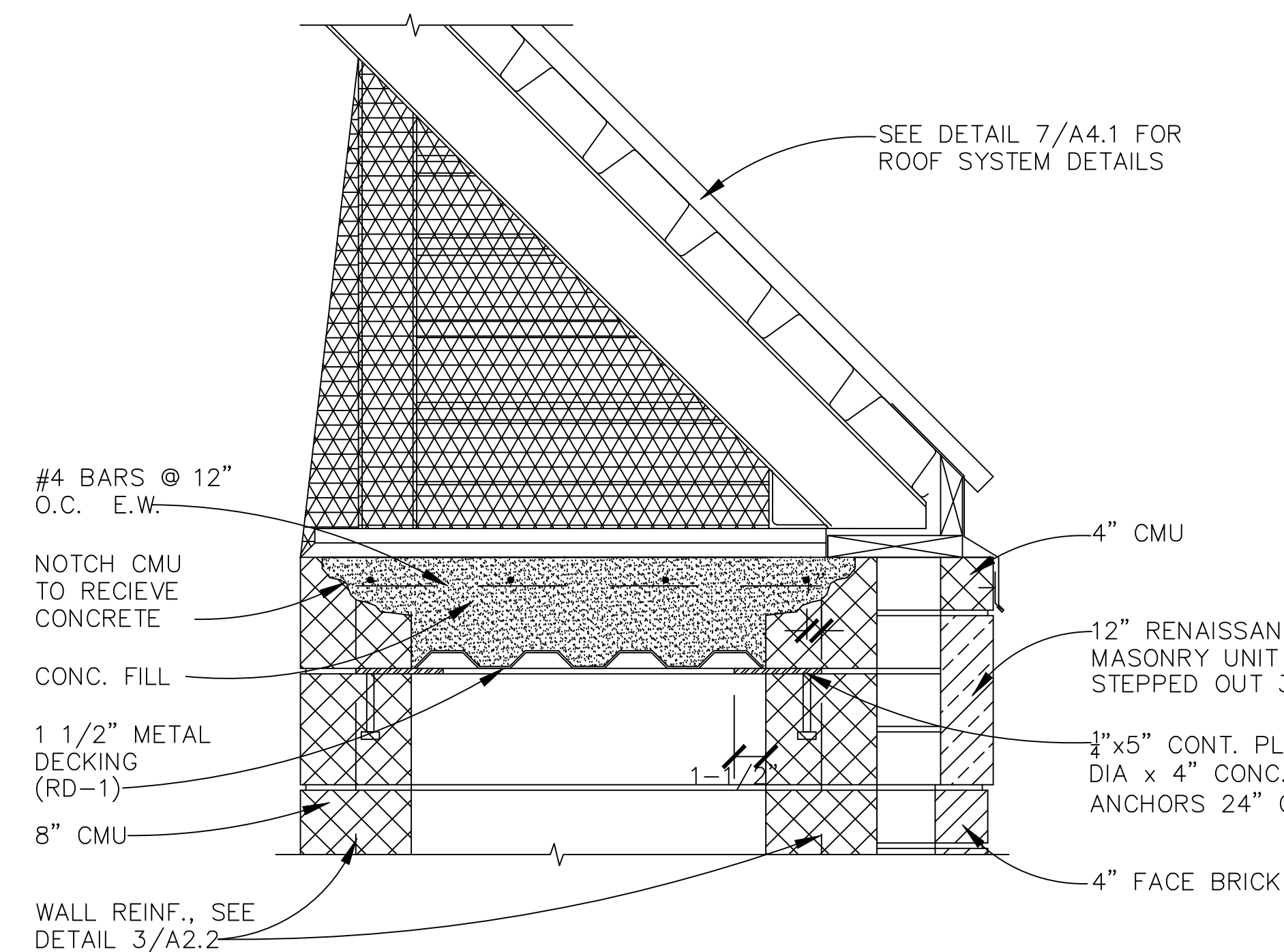
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A2.2

DETAIL
SCALE: 1"= 1'-0"



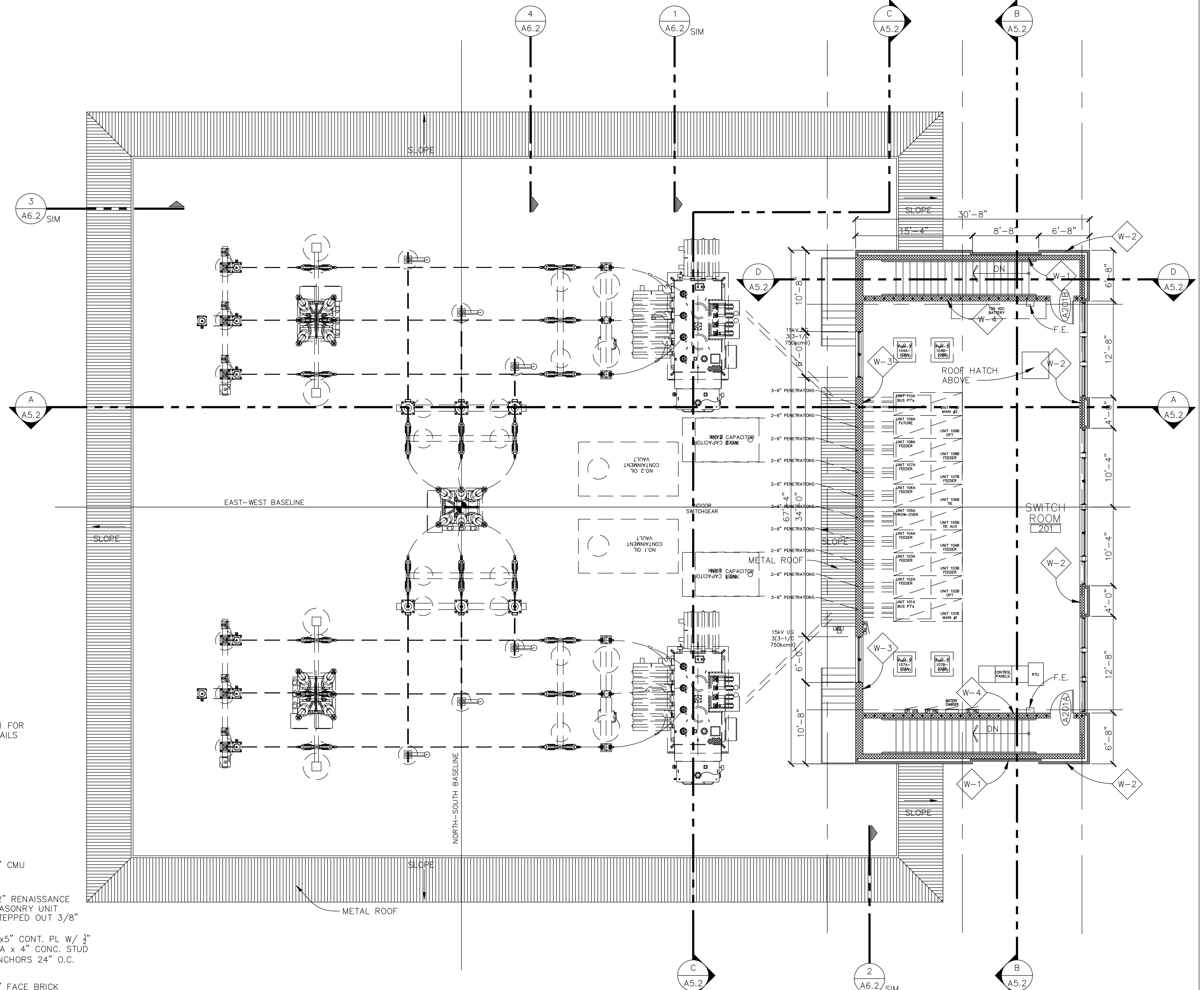
7
A2.2

DETAIL
SCALE: 1" = 1'-0"



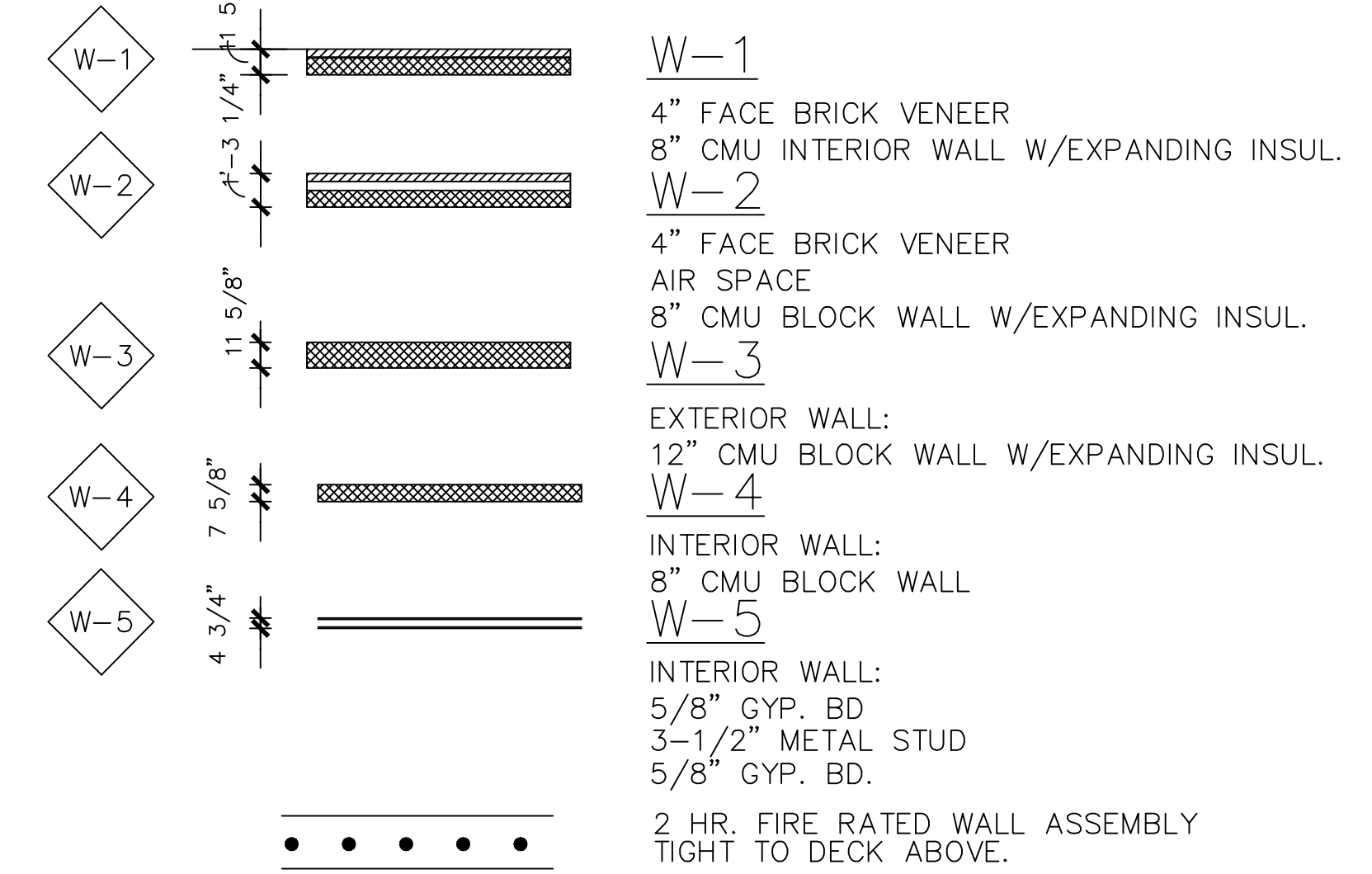
6 SECTION
A2.2 SCALE: 1" = 1'-0"

- ## GENERAL NOTES
-
1. AT ALL RECESSED ITEMS IN (1) HOUR RATED WALLS, MAINTAIN CONTINUITY OF REQUIRED FIRE RATED ASSEMBLY.
 2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS AT THE SITE PRIOR TO SUBMITTING A BID OR PROCEEDING WITH ANY PORTION OF WORK.
 3. WHENEVER QUESTIONS ARISE OR CONDITIONS ARE ENCOUNTERED WHICH ARE NOT COVERED OR ARE IN CONFLICT WITH THE CONTRACT DOCUMENTS, CONSULT W/ THE ARCHITECT PRIOR TO TAKING ANY FURTHER ACTION
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 5. ALL MASONRY DIMENSIONS INDICATED ARE NOMINAL DIMENSIONS U.N.O.
 6. ALL FIRE RATED PARTITIONS SHALL EXTEND FROM FLOOR, TIGHT TO FIRE RATED CEILING ASSEMBLY ABOVE.



1 UPPER LEVEL FLOOR PLAN
A2.2 SCALE: 1/8" = 1'-0"

SCALE: $1/8" = 1'-0"$



DATE	R.J.S.			
DR	S.S.H.			
CK	R.J.K.			
APP	R.J.S.			
		05/26/2004	APPROVED FINAL RECORD DRAWINGS	
		12/04/03	RECORD DRAWINGS	
		05-16-02	BIDS AND CONSTRUCTION	
		03-05-02	PRELIMINARY REVIEW	
		02-19-02	PRELIMINARY REVIEW	
IN CHARGE		DATE	ISSUED FOR	

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interiors, inc.

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GRAND RAPIDS, MI,
3950 SPARKS DR. S.E.
616-574-8500

TRAVERSE CITY LIGHT & POWER

HALL STREET SUBSTATION TRAVERSE CITY, MICHIGAN

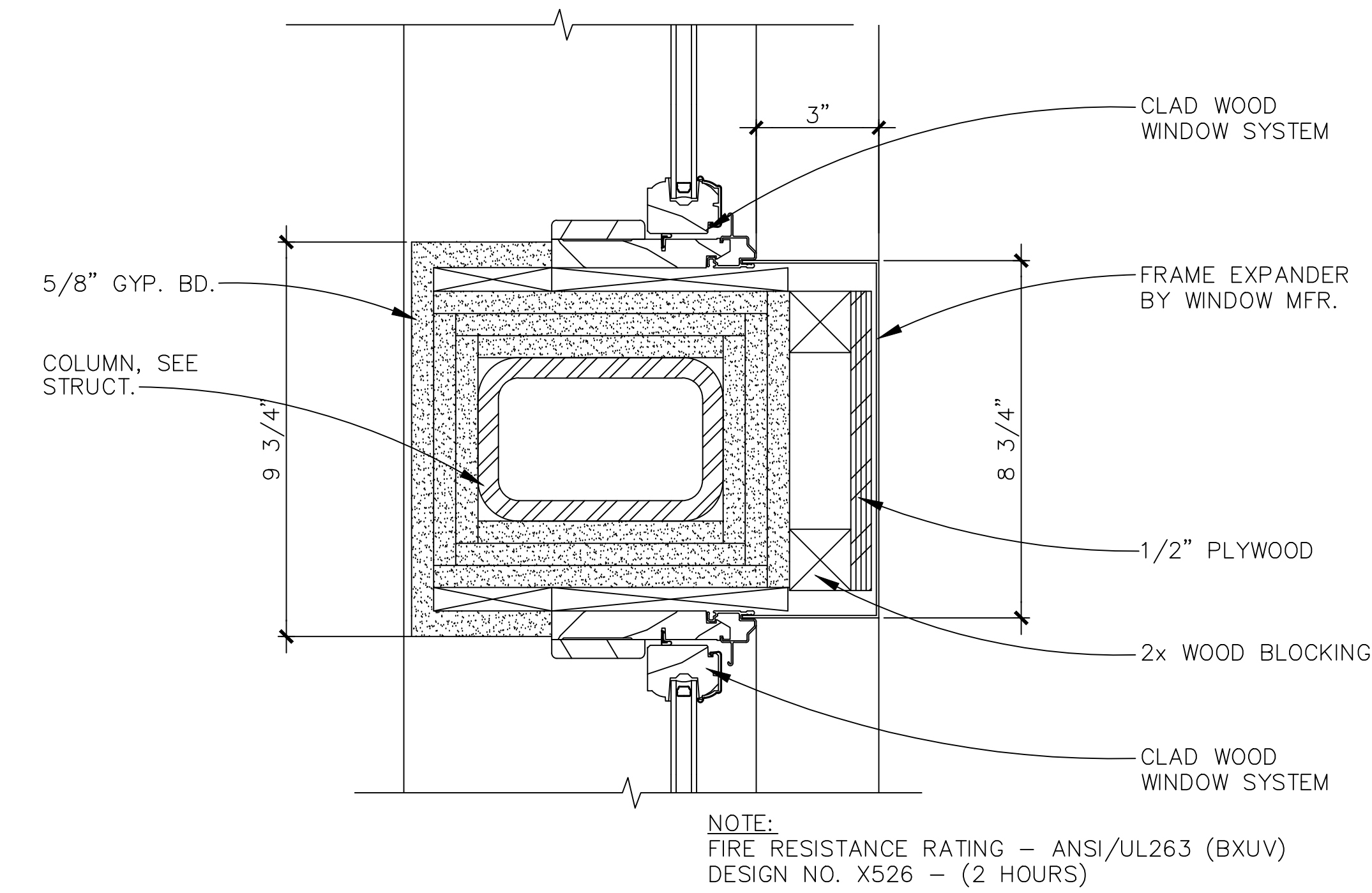
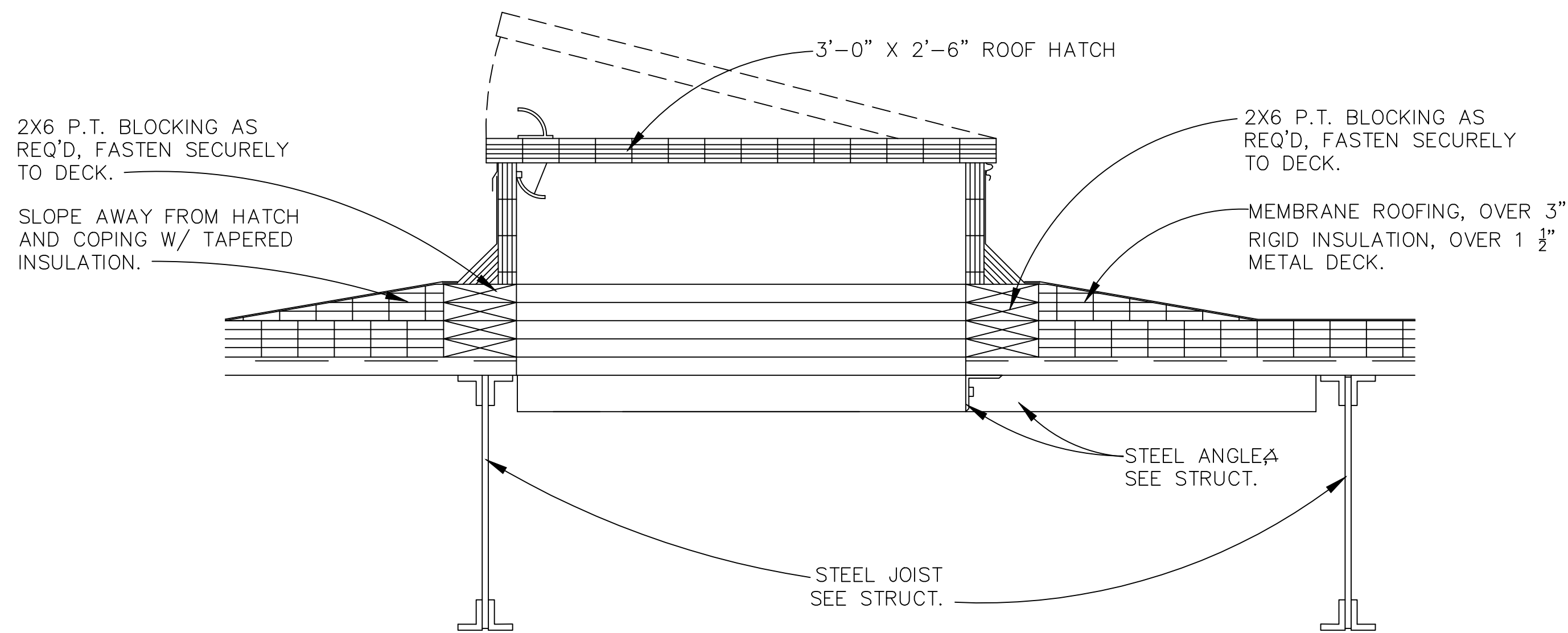
UPPER LEVEL FLOOR PLAN & PLAN DETAILS

DRAWING
A2.2

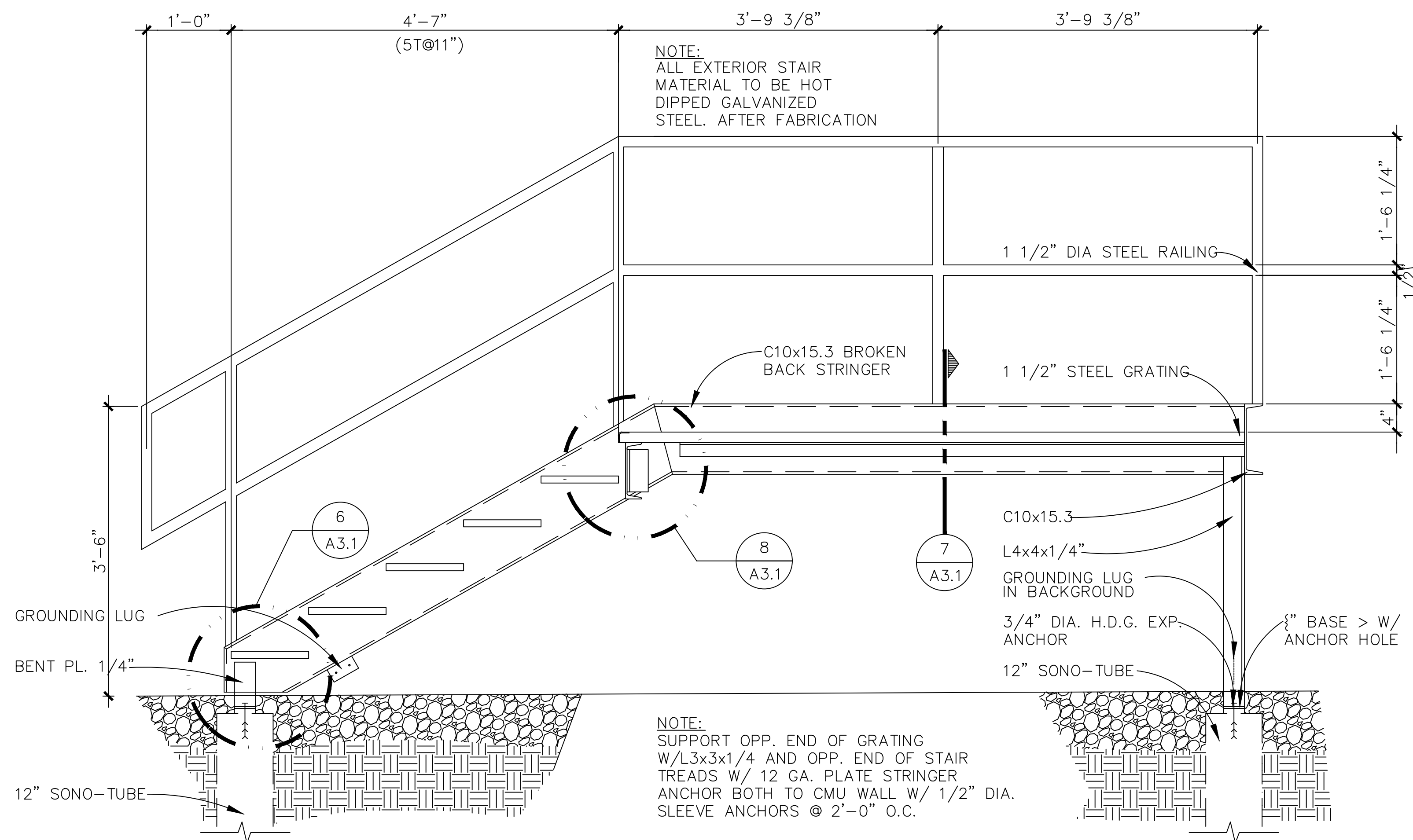
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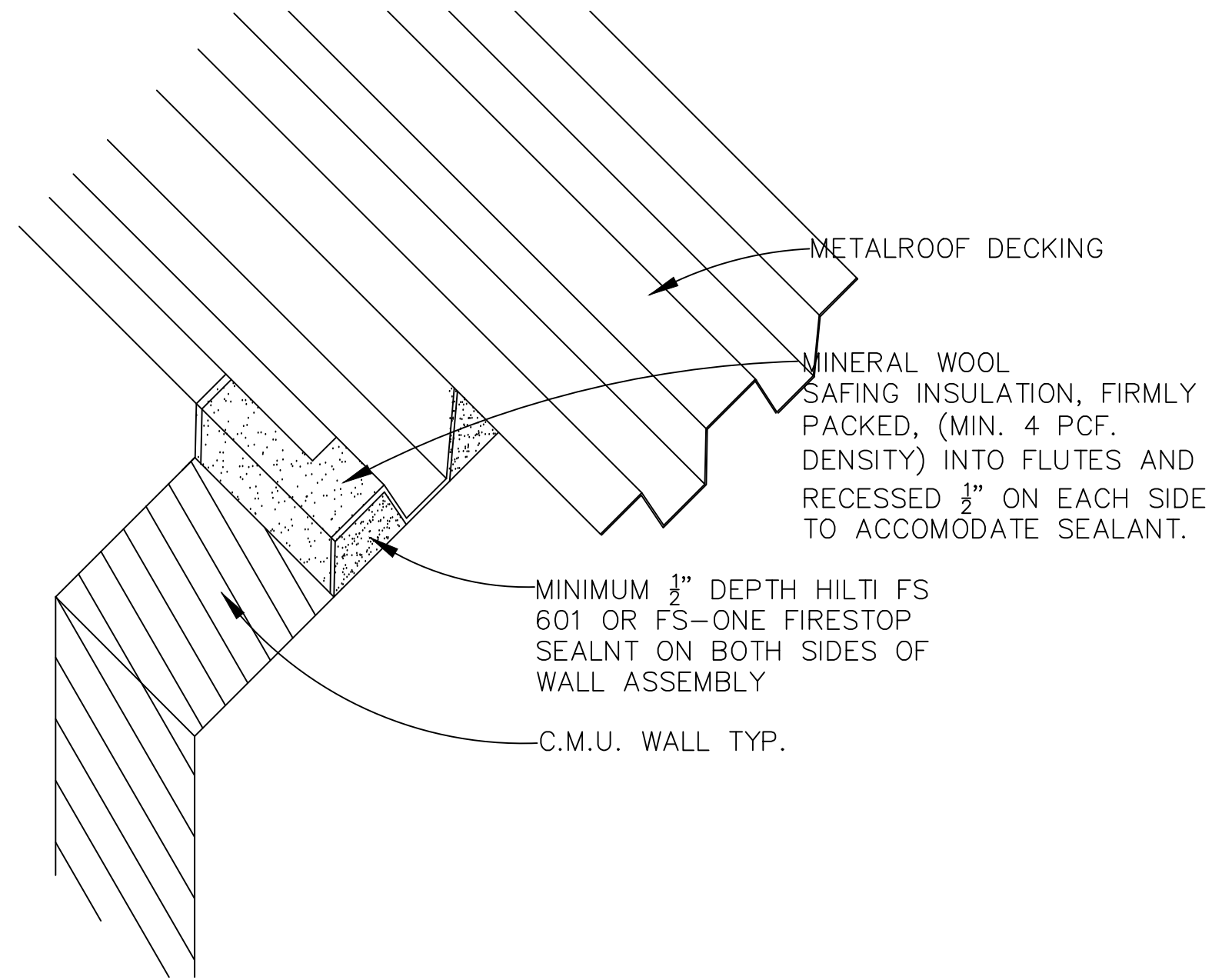
ROOM FINISH SCHEDULE		FLOOR	BASE	WALLS	CEILING	NOTES:	
RM #	ROOM NAME	EXPOSED CONCRETE				CLG HT	REMARKS
100	TENANT SPACE	●					
101	UNI-SEX B.F. TLT. RM.	●		●	●	8'-0"	
102	STAIR "A"	●		●	●		
103	STAIR "B"	●		●	●		
201	SWITCH GEAR ROOM	●		●	●		



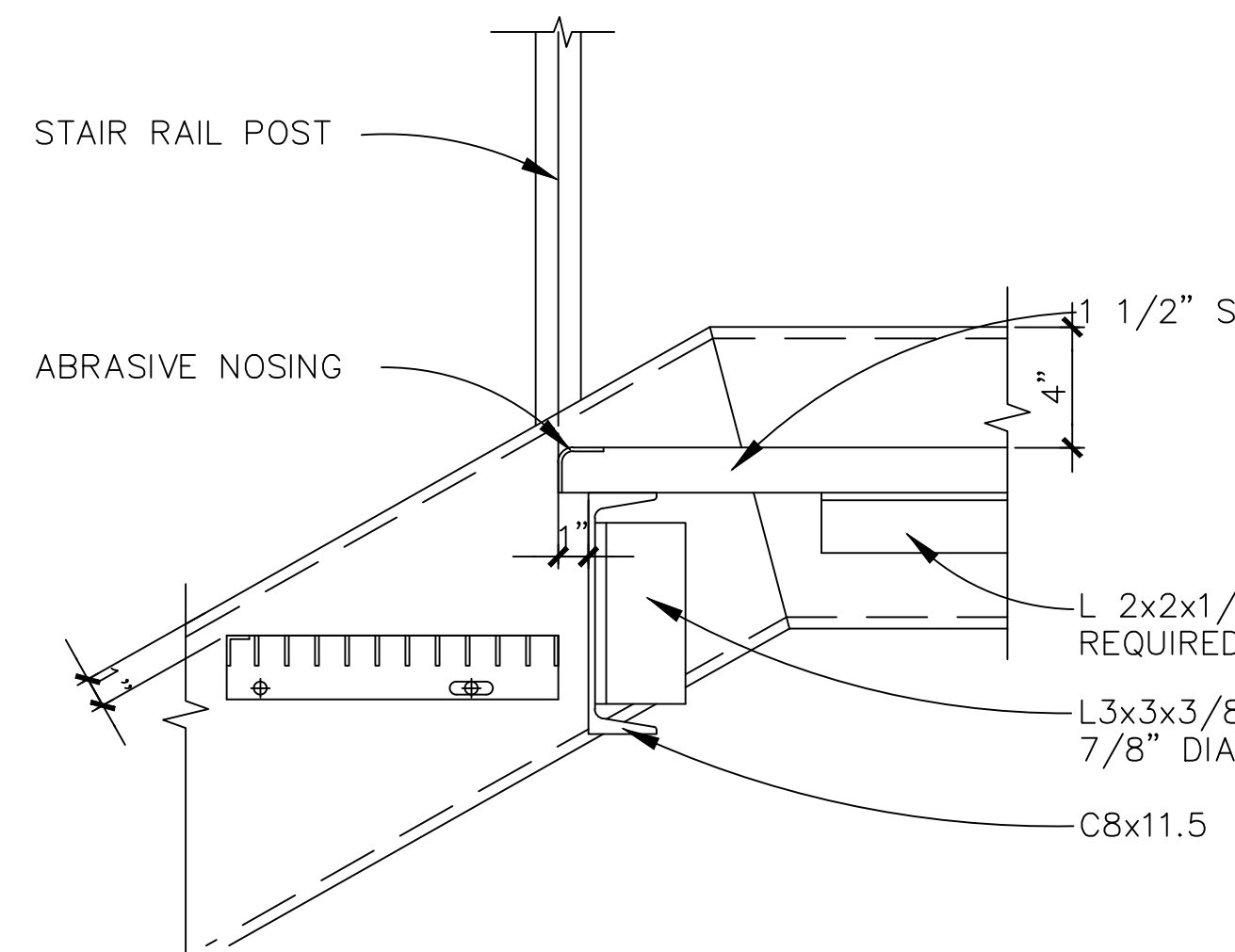
11 ROOF ACCESS HATCH
A3.1 SCALE: 1"= 1'-0"



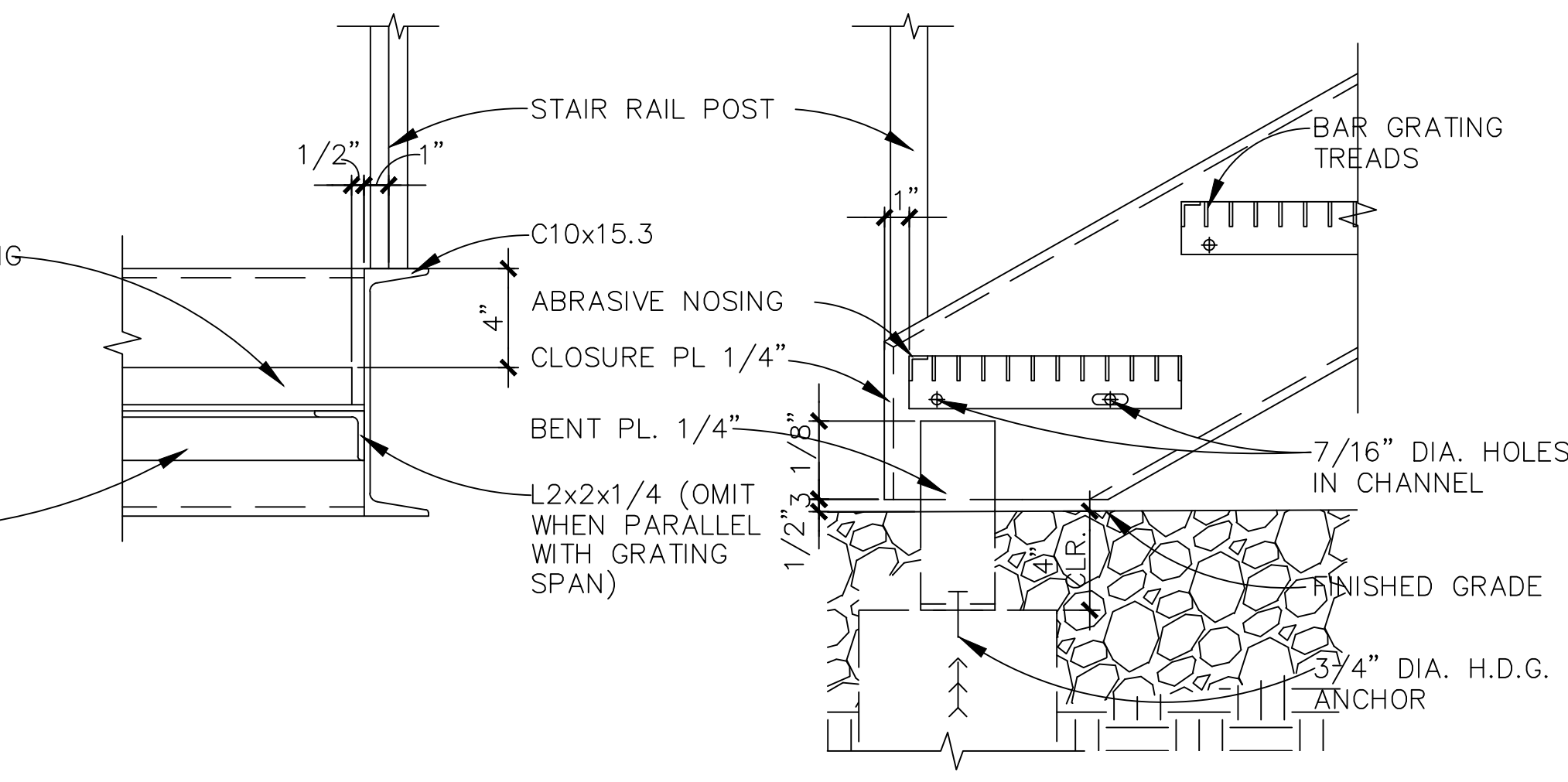
9 DETAIL @ EXTERIOR SERVICE STAIR
A3.1 SCALE: 3/4"= 1'-0"



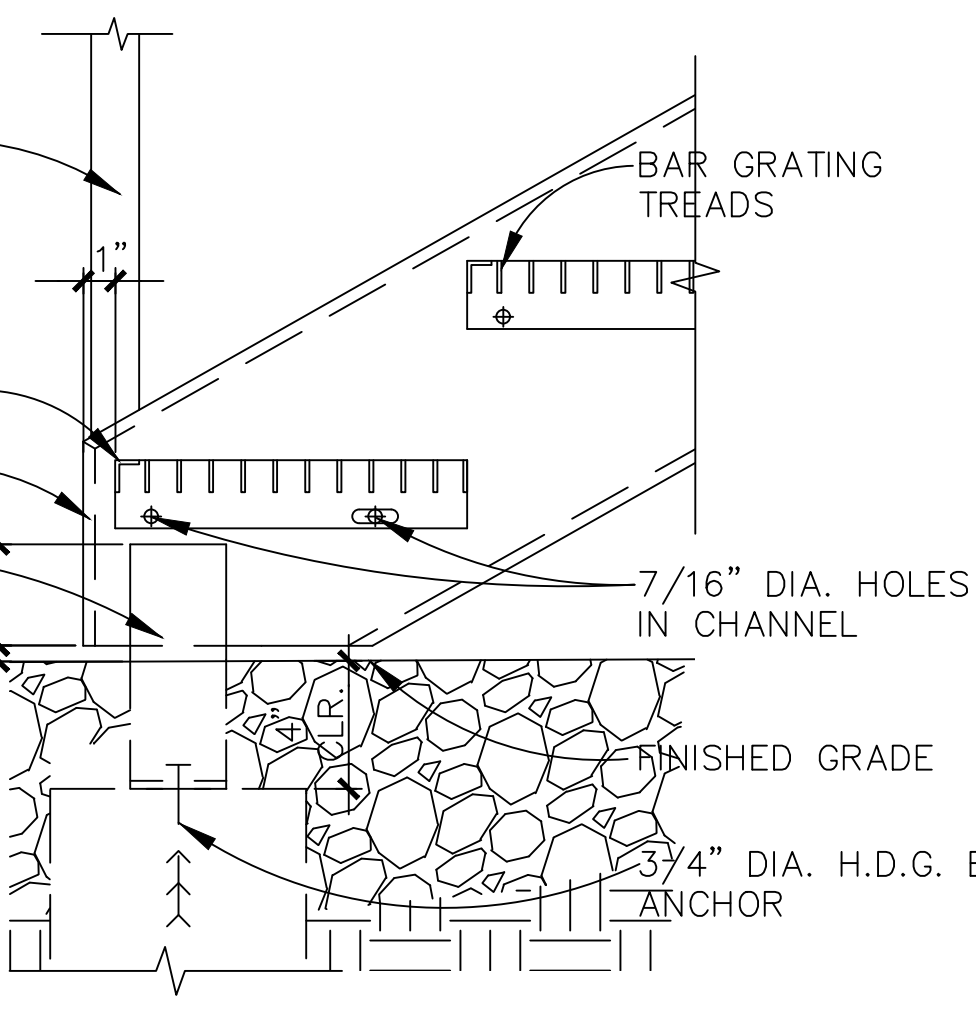
10 WALL TERMINATION DETAIL
A3.1 SCALE: 1"= 1'-0"



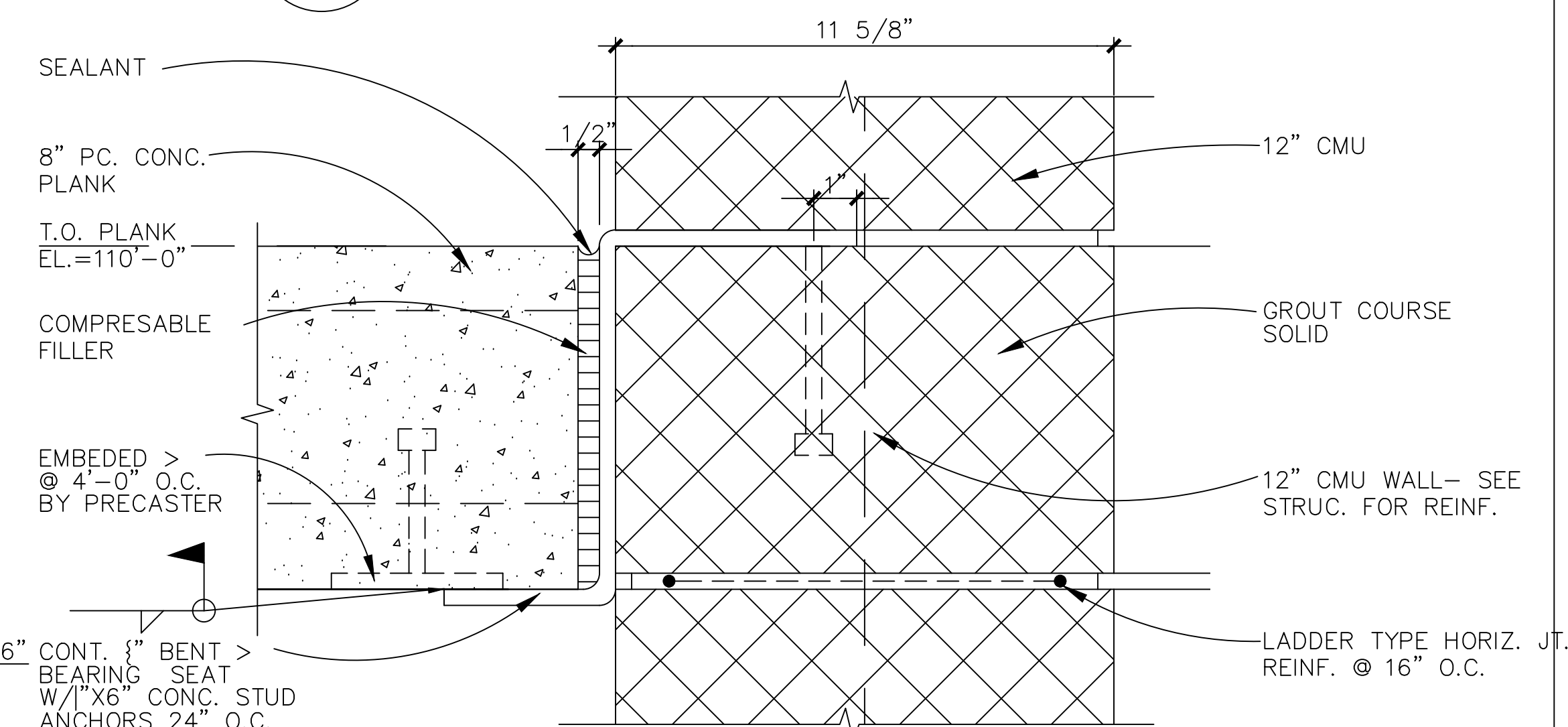
8 STAIR DETAIL
A3.1 SCALE: 1-1/2"= 1'-0"



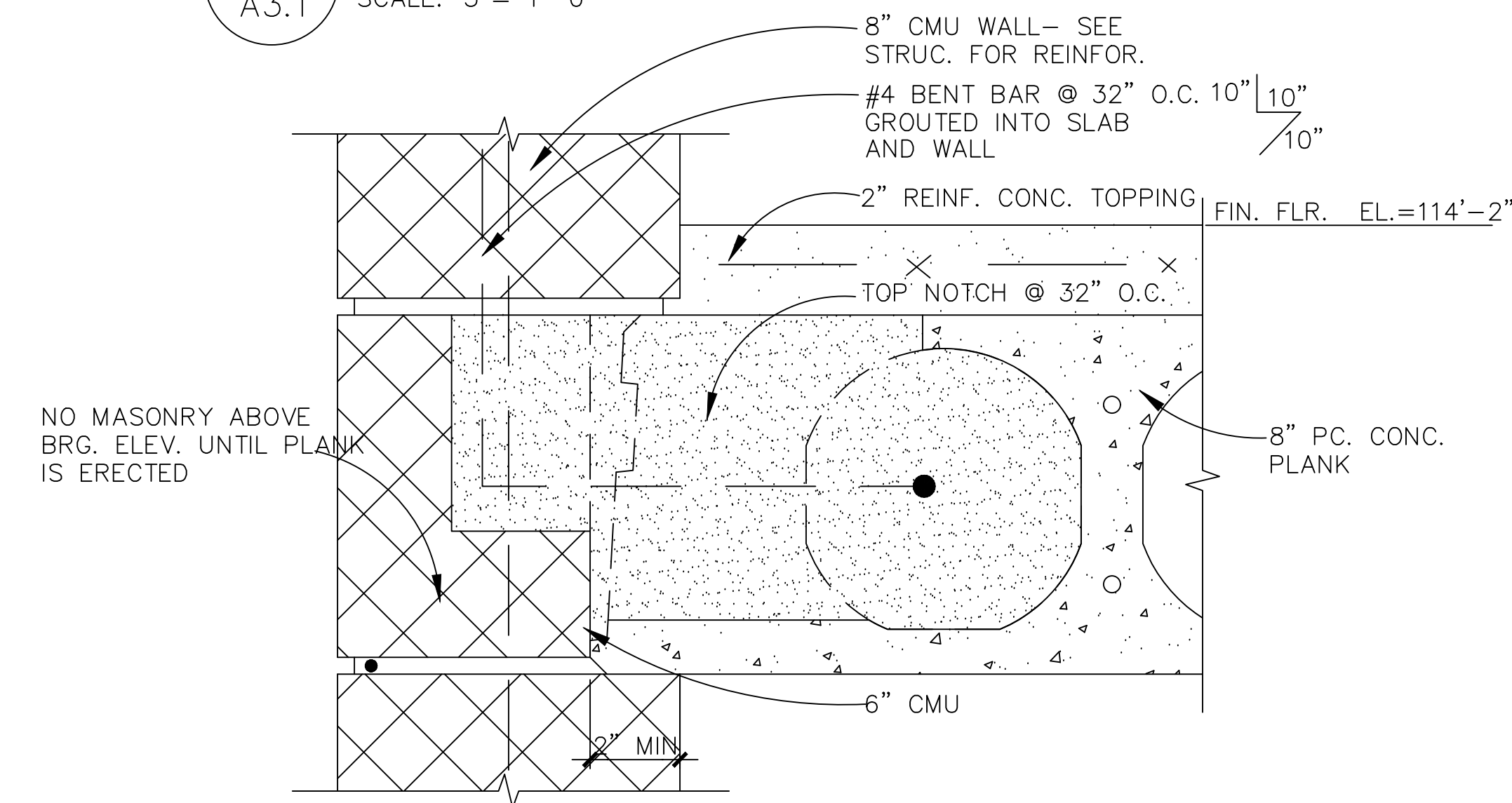
7 DETAIL
A3.1 SCALE: 1-1/2"= 1'-0"



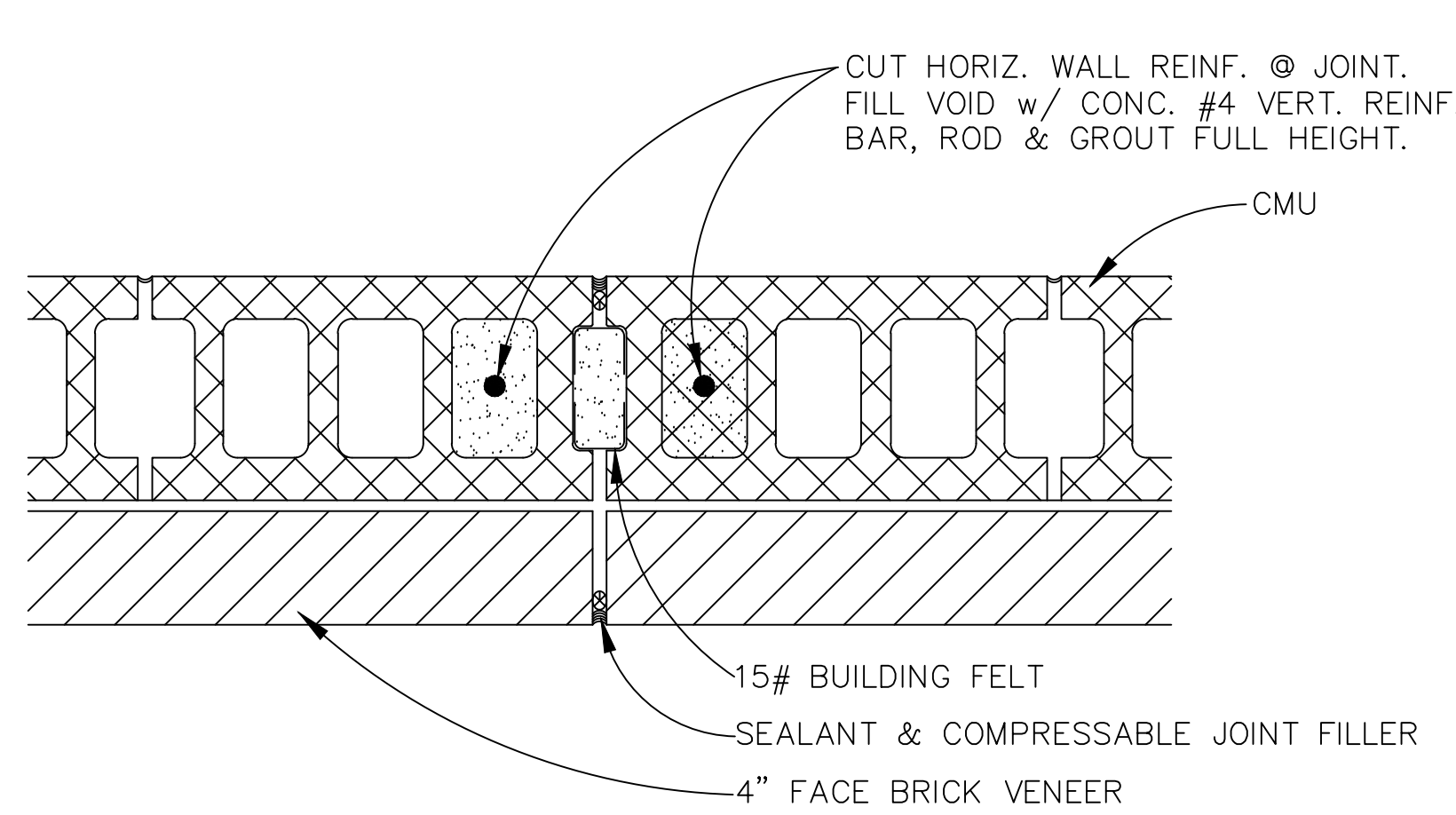
6 DETAIL
A3.1 SCALE: 1-1/2"= 1'-0"



4 DETAIL
A3.1 SCALE: 3"= 1'-0"



3 DETAIL
A3.1 SCALE: 3"= 1'-0"



2 EXPANSION JOINT DETAIL
A3.1 SCALE: 1 1/2"= 1'-0"

DATE	ISSUED FOR
02/25/2004	APPROVED FINAL RECORD DRAWINGS
12/04/03	RECORD DRAWINGS
05-15-02	BID AND CONSTRUCTION
05-15-02	PRELIMINARY REVIEW
02-15-02	PRELIMINARY REVIEW

DA/E	R.J.S.
DR	S.S.H.
CK	R.J.K.
APP	R.J.S.

IN CHARGE

1004 East 8th Street
Traverse City, Michigan
231-947-0060

URS architecture,
interiors, inc.

GRAND RAPIDS, MI.
3660 16th Ave. S.E.
49508-4805

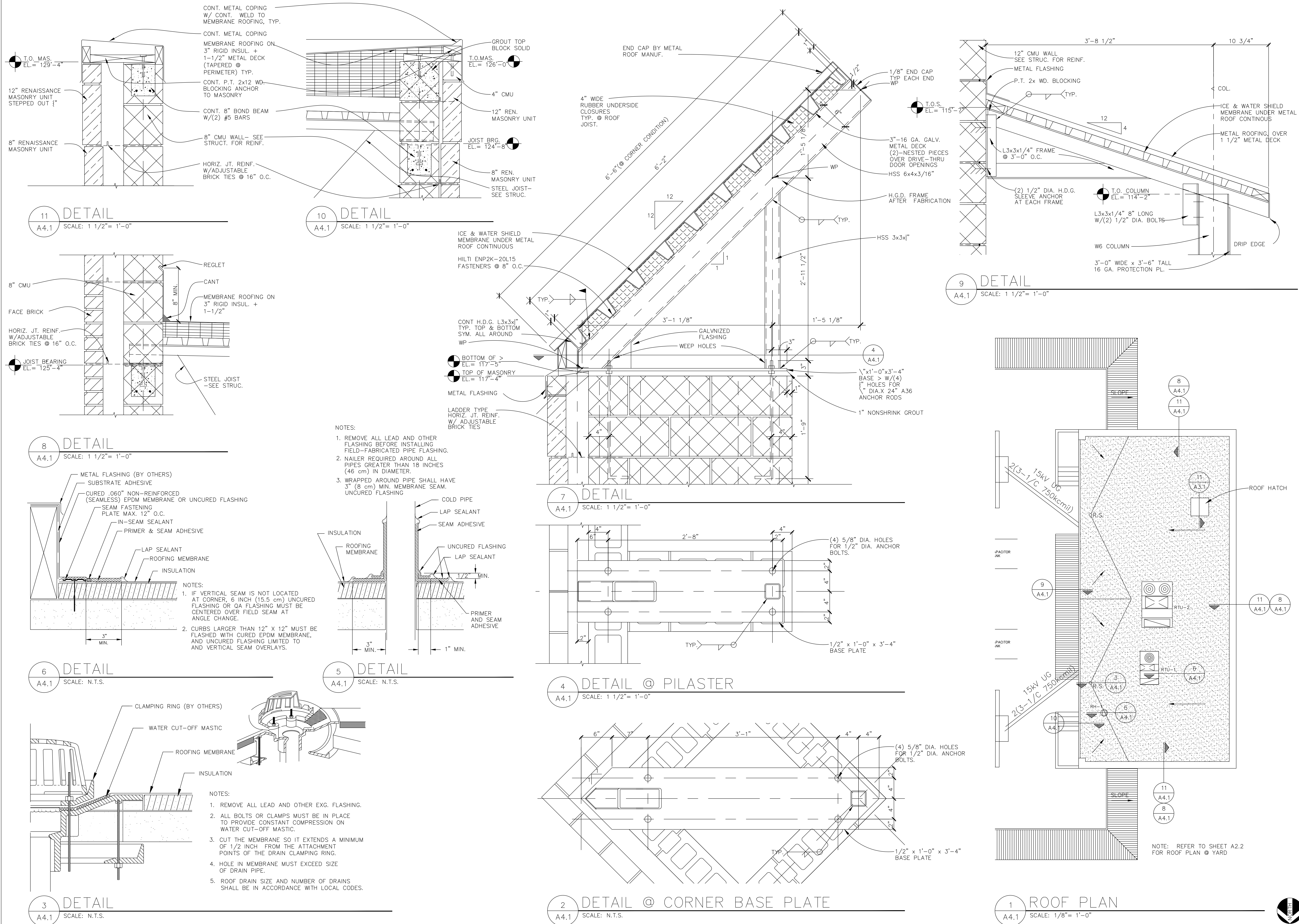
TRAVERSE CITY LIGHT & POWER
TRAVERSE CITY, MICHIGAN

HALL STREET SUBSTATION
PLAN DETAILS AND MISCELLANEOUS DETAILS

DRAWING
A3.1

FILE
M105002

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DATE	ISSUED FOR
02/20/04	APPROVED FINAL RECORD DRAWING
12/04/03	RECORD DRAWING
05-15-02	BID AND CONSTRUCTION
03-15-02	PRELIMINARY REVIEW
02-15-02	PRELIMINARY REVIEW

DATE	ISSUED FOR
02/20/04	APPROVED FINAL RECORD DRAWING
12/04/03	RECORD DRAWING
05-15-02	BID AND CONSTRUCTION
03-15-02	PRELIMINARY REVIEW
02-15-02	PRELIMINARY REVIEW

DATE	ISSUED FOR
02/20/04	APPROVED FINAL RECORD DRAWING
12/04/03	RECORD DRAWING
05-15-02	BID AND CONSTRUCTION
03-15-02	PRELIMINARY REVIEW
02-15-02	PRELIMINARY REVIEW

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Traverse City, MI 49781-0004
URS
architecture,
artistry
interiors, inc.

URS
GRAND RAPIDS, MI
3000 EAST 1ST AVE. S.E.
49508-4000

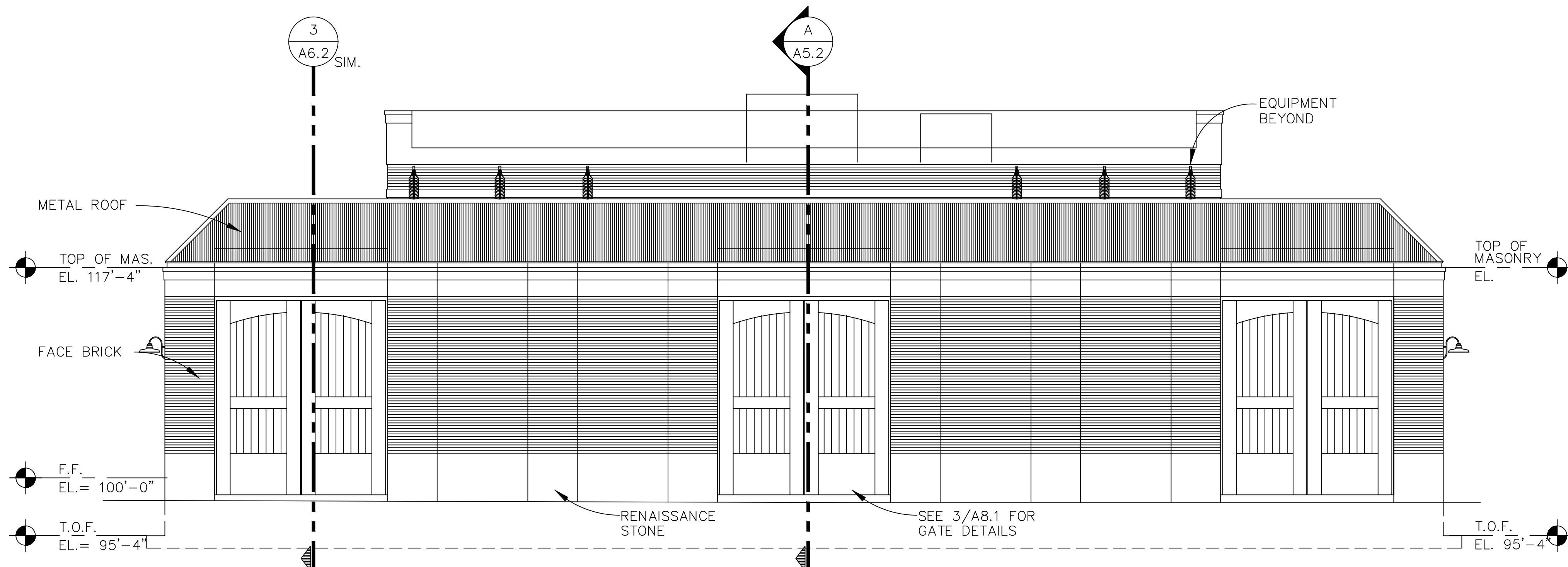
TRAVERSE CITY LIGHT & POWER
HALL STREET SUBSTATION
ROOF PLAN, ROOM FINISH SCHEDULE, AND DETAILS
TRAVERSE CITY, MICHIGAN

DRAWING
A4.1
FILE
M105002

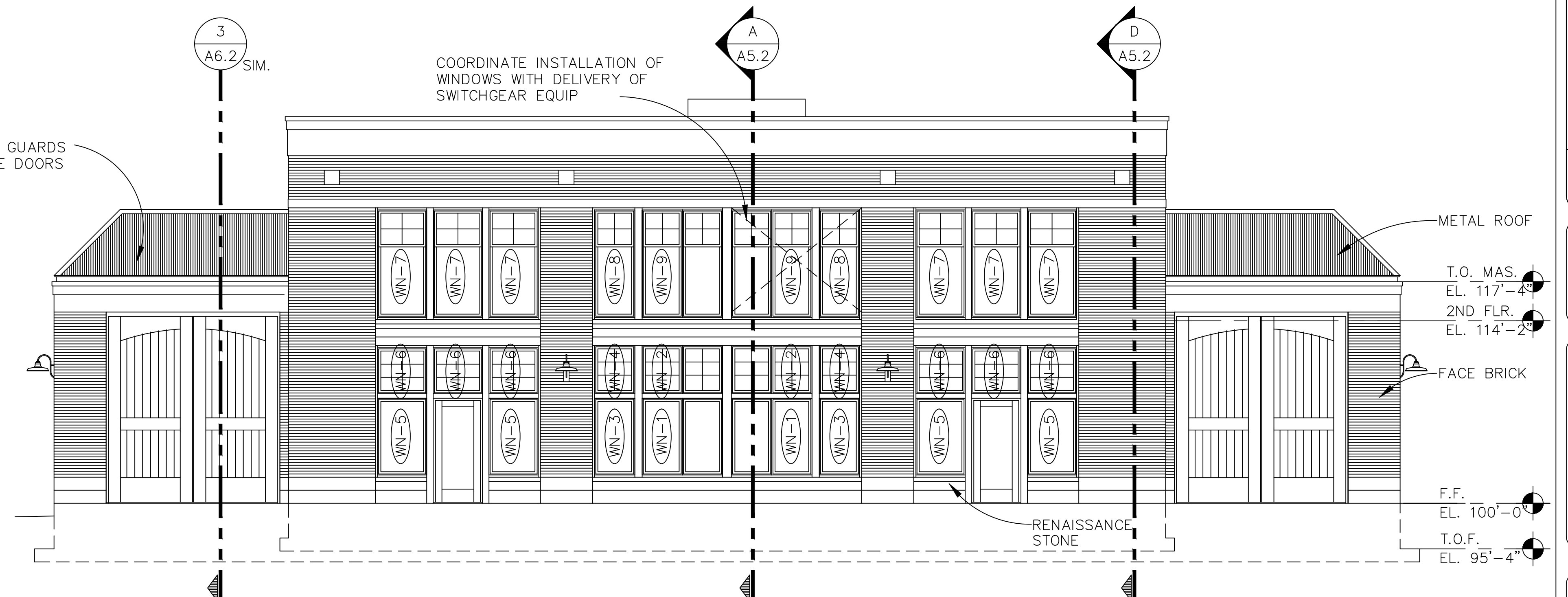


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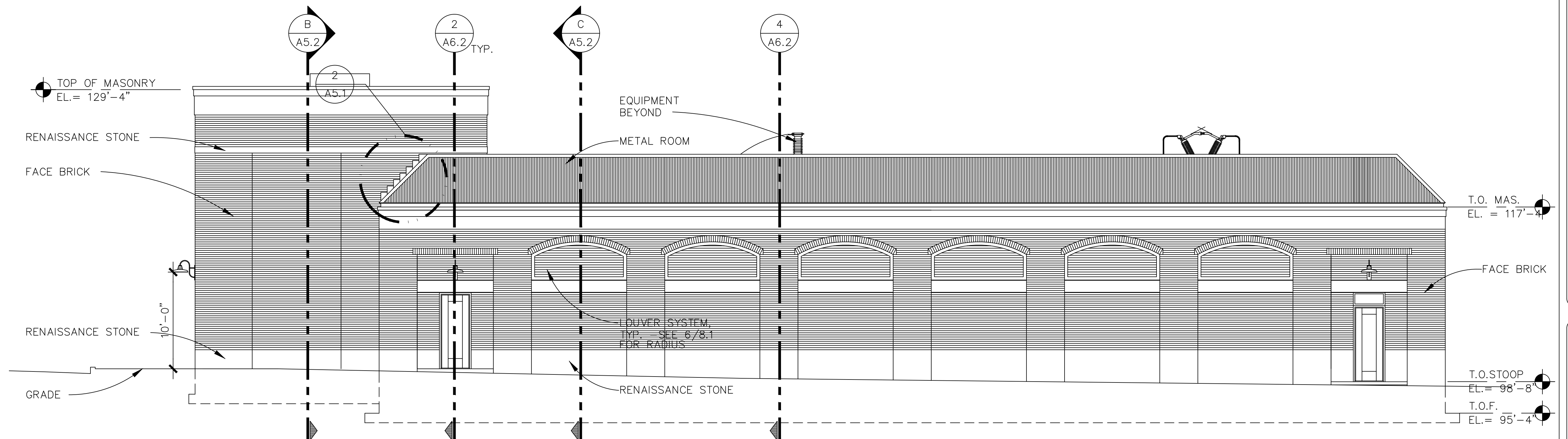
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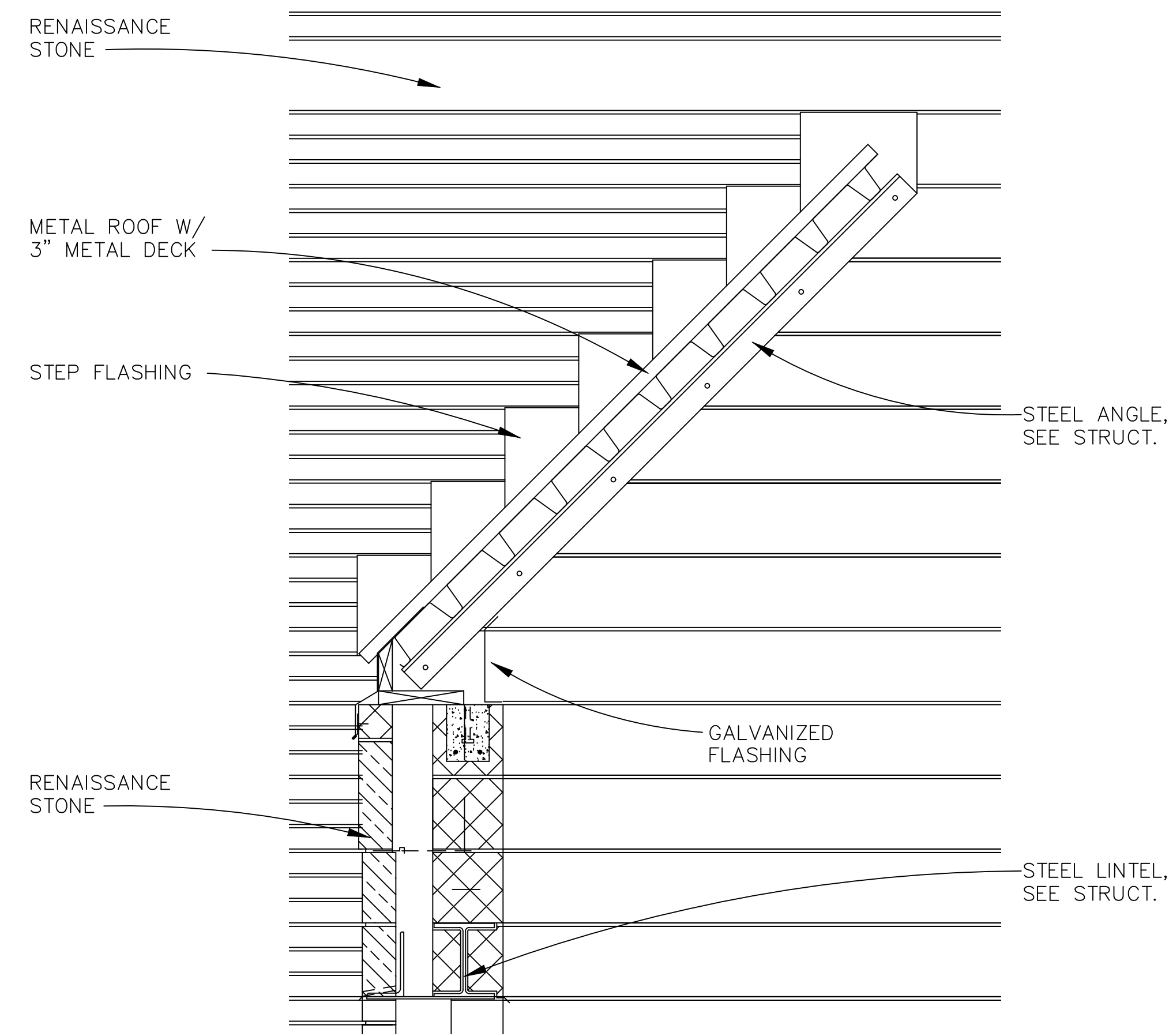
5 EAST ELEVATION
A5.1 SCALE: 1/8" = 1'-0"



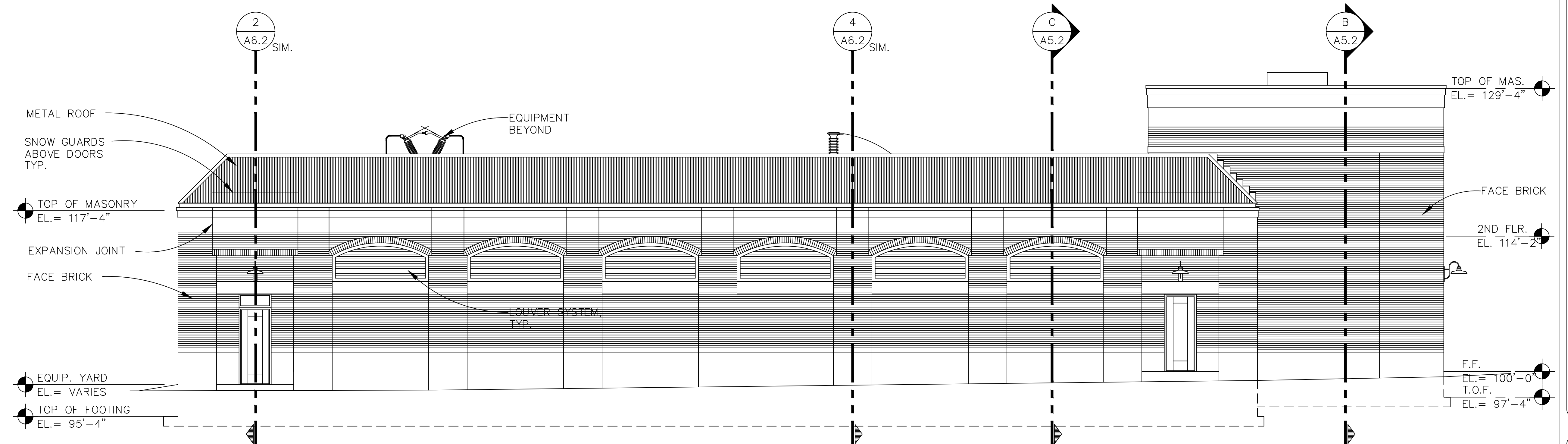
4 WEST ELEVATION
A5.1 SCALE: 1/8" = 1'-0"



3 SOUTH ELEVATION
A5.1 SCALE: 1/8" = 1'-0"



2 DETAIL @ STEP FLASHING
A5.1 SCALE: 3/4" = 1'-0"



1 NORTH ELEVATION
A5.1 SCALE: 1/8" = 1'-0"

DATE	ISSUED FOR
02/26/2004	APPROVED FINAL RECORD DRAWINGS
12/04/03	RECORD DRAWINGS
05-16-02	BIDS AND CONSTRUCTION
02-15-02	PRELIMINARY REVIEW

DATE	IN CHARGE
DA/E	R.J.S.
DR	S.S.H.
CK	R.J.K.
APP	R.J.S.

1004 East 8th Street
Traverse City, Michigan
231-947-0066

URS

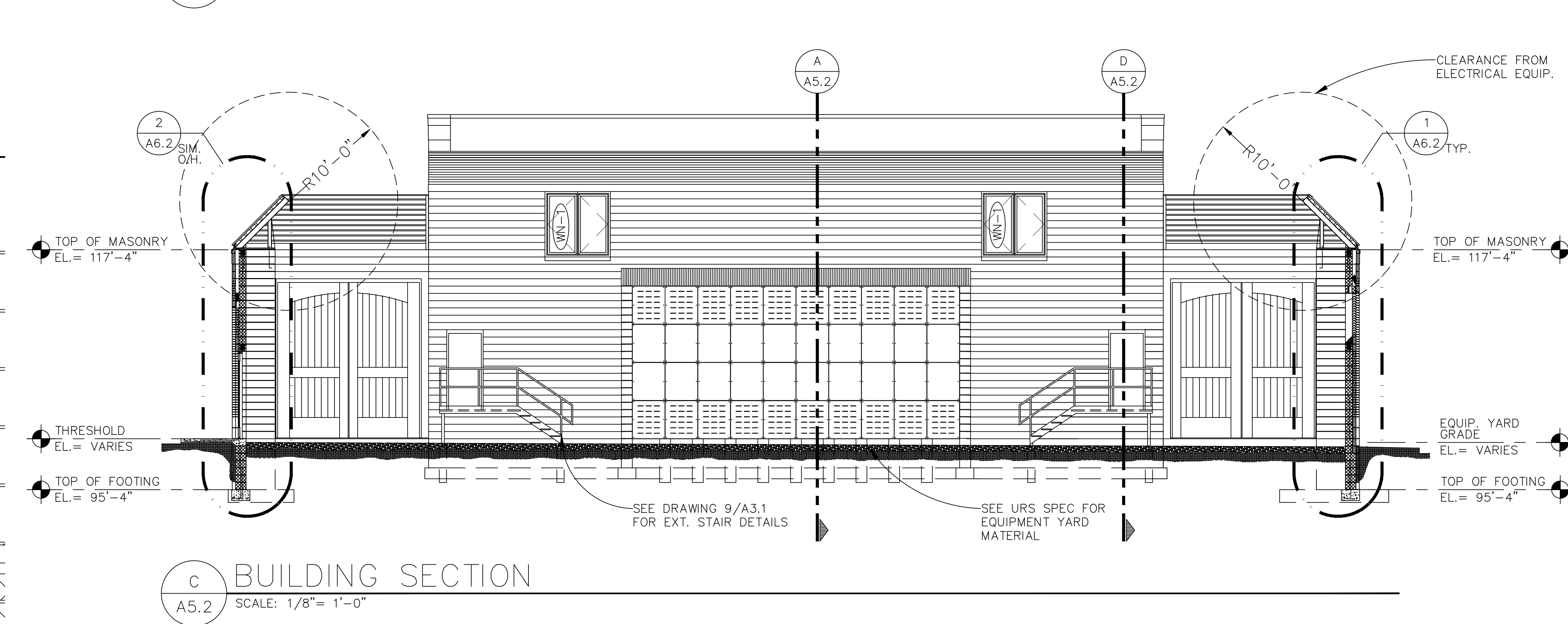
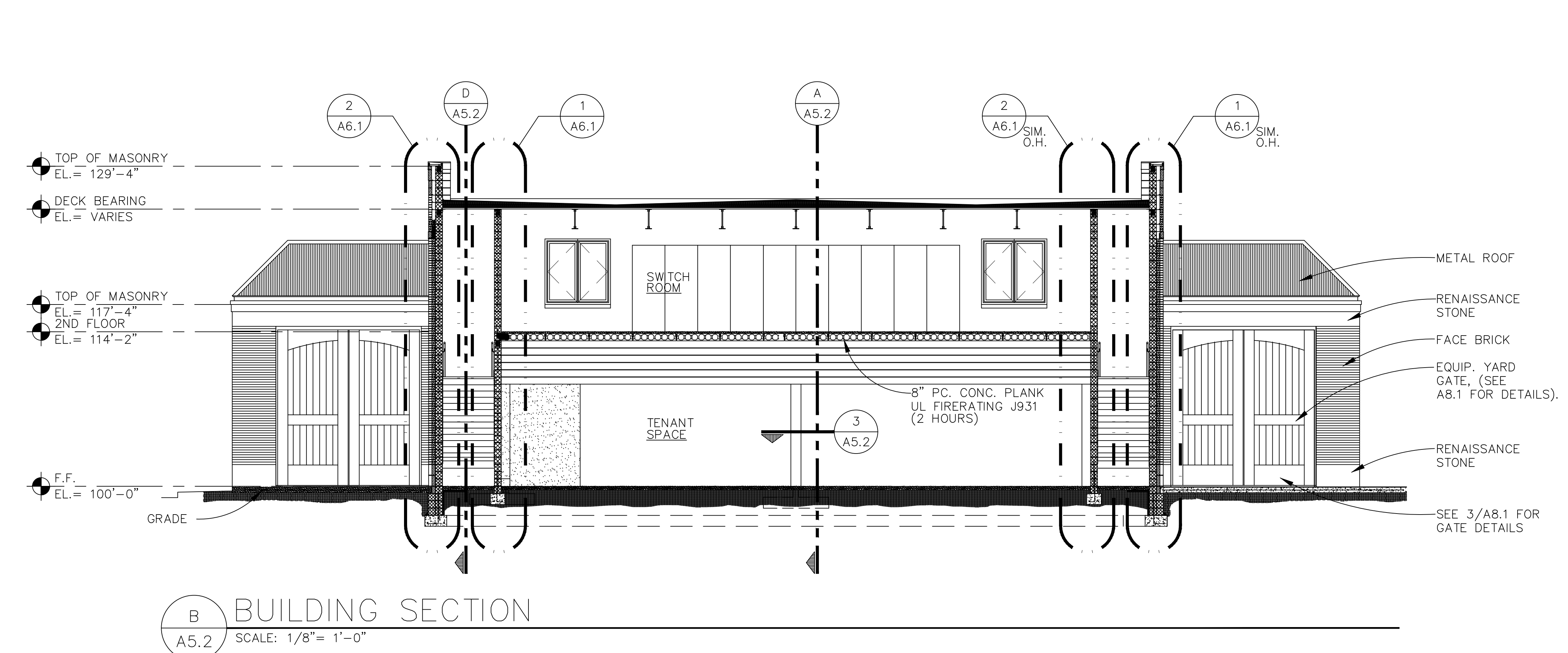
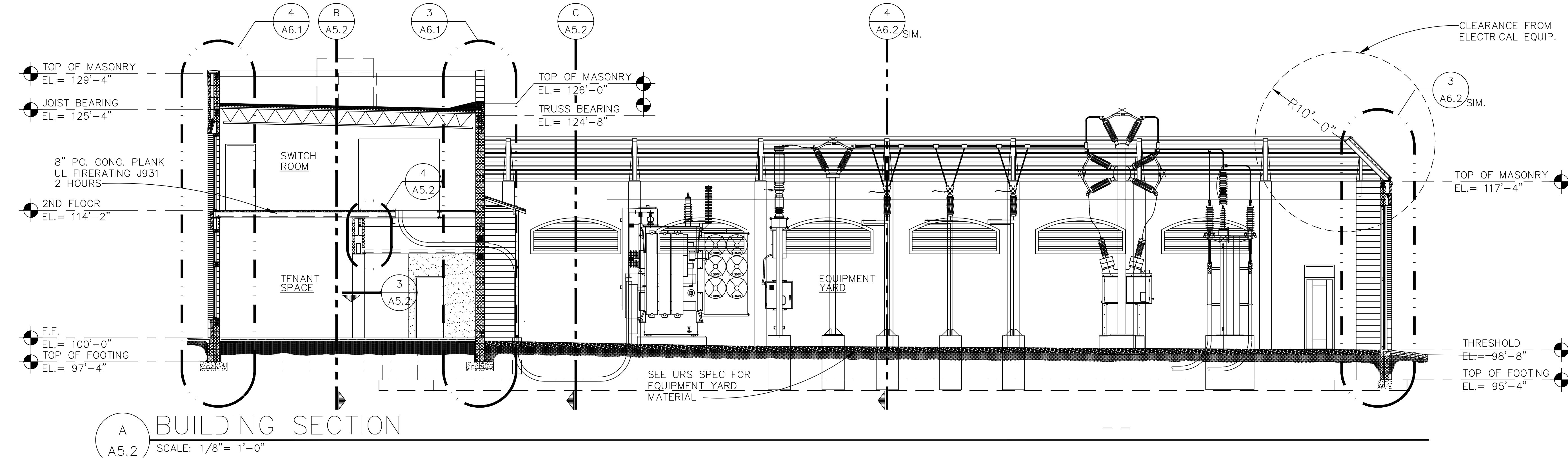
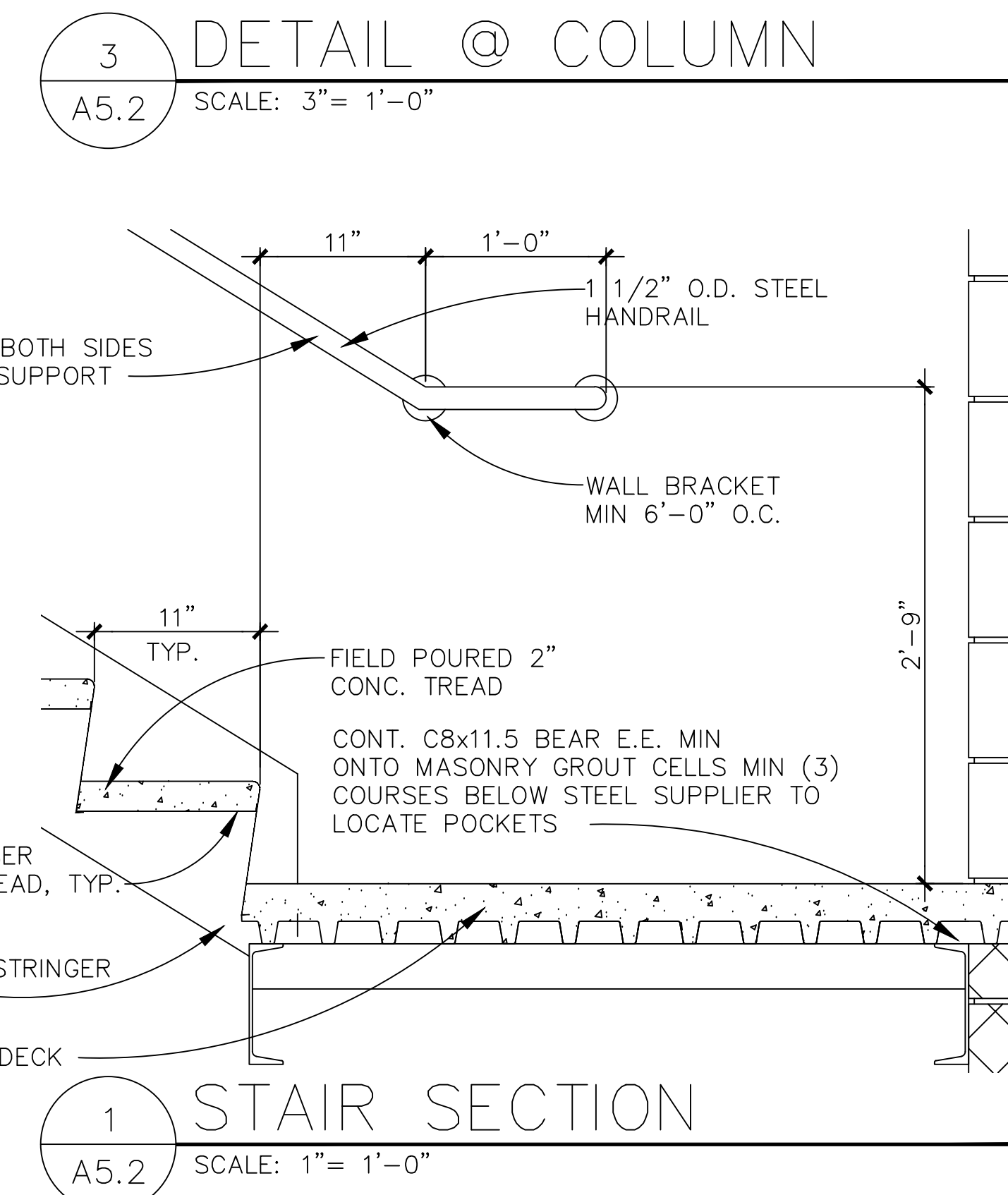
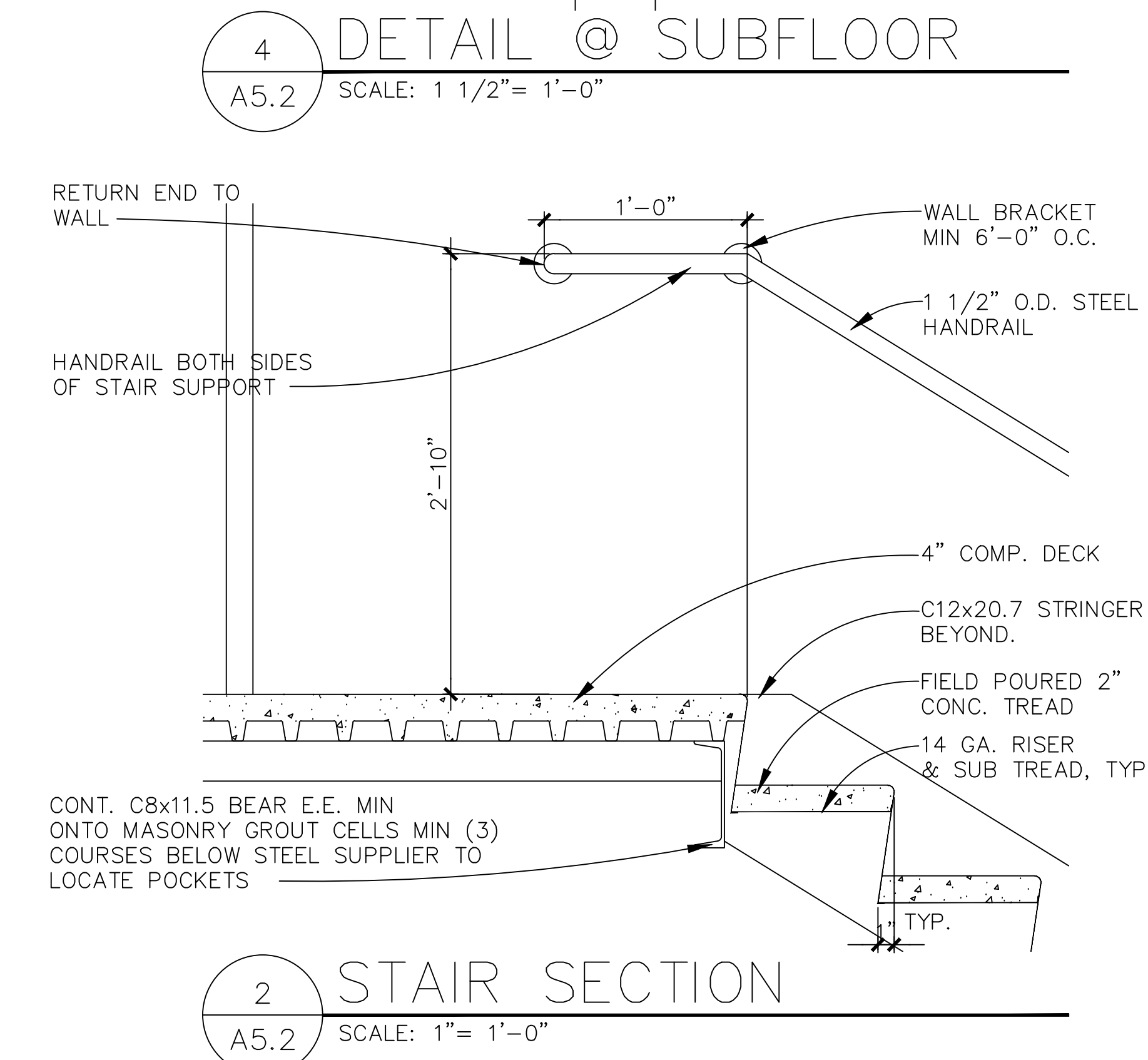
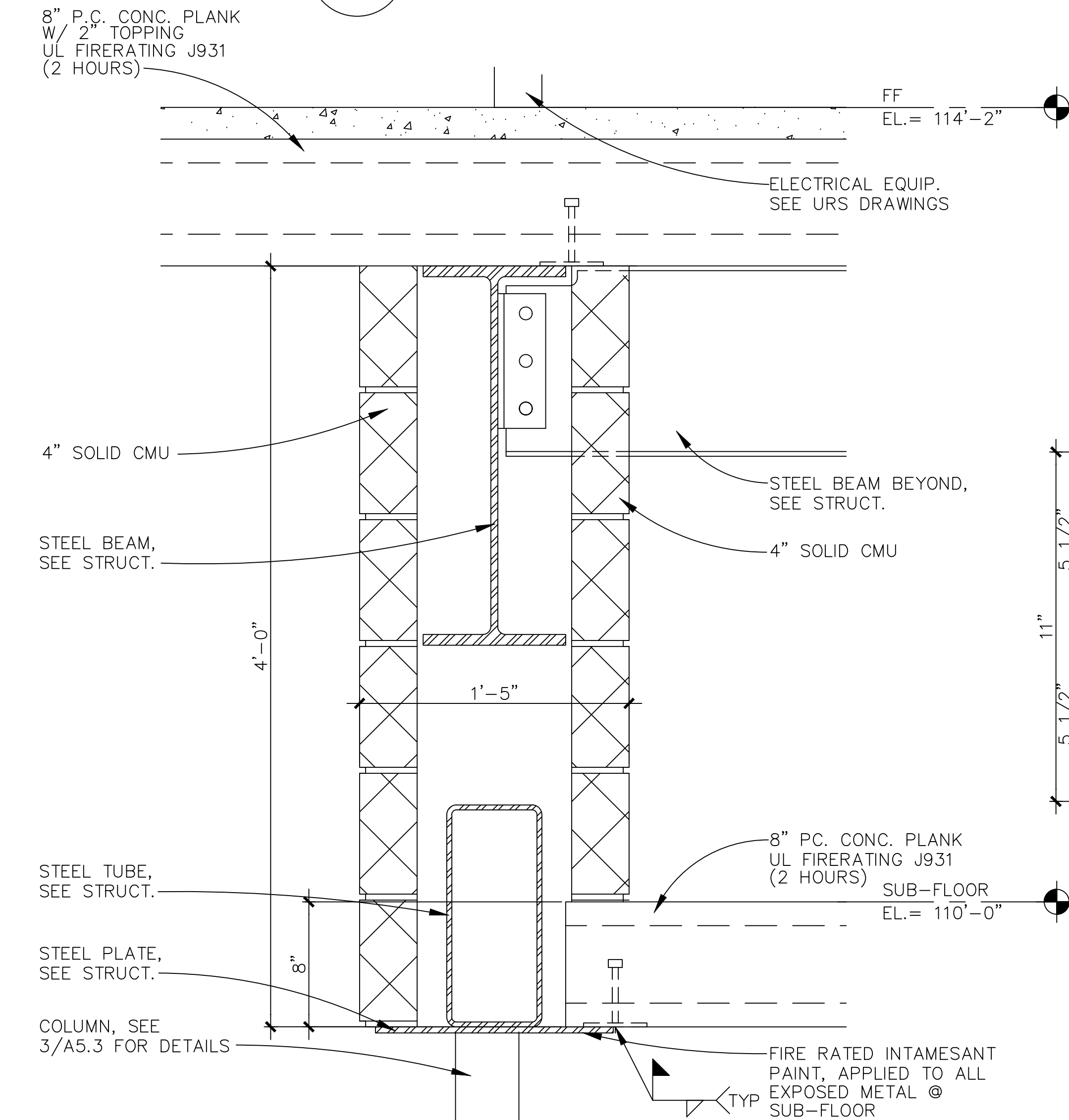
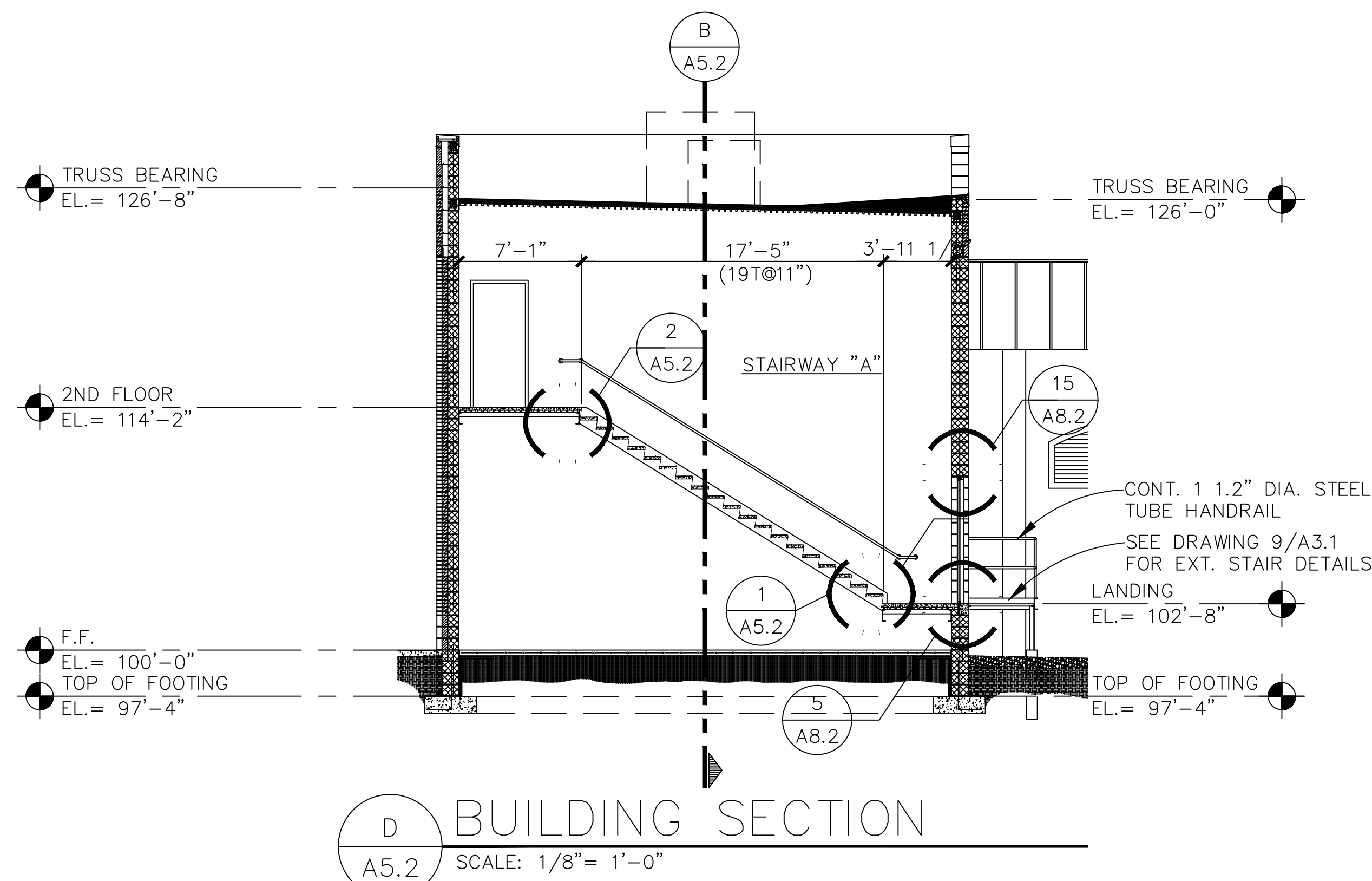
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3550 PARK AVE. S.E.
49506-4505

TRAVERSE CITY LIGHT & POWER
HALL STREET SUBSTATION
TRAVERSE CITY, MICHIGAN
ELEVATIONS

DRAWING
A5.1
FILE
M105002

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DATE	ISSUED FOR
02/15/02	PRELIMINARY REVIEW
03-15-02	RECORD DRAWINGS
12/04/03	RECORD DRAWINGS
02/20/04	APPROVED FINAL RECORD DRAWINGS

DA/E R.J.S.	DR S.S.H.	CK R.J.K.	APP R.J.S.	IN CHARGE	DATE

1004 East 8th Street
Wilmington
231-947-0060

URS architecture,
artistry
interiors, inc.

GRAND RAPIDS, MI.
3050 BAYVIEW S.E.
49508-4200

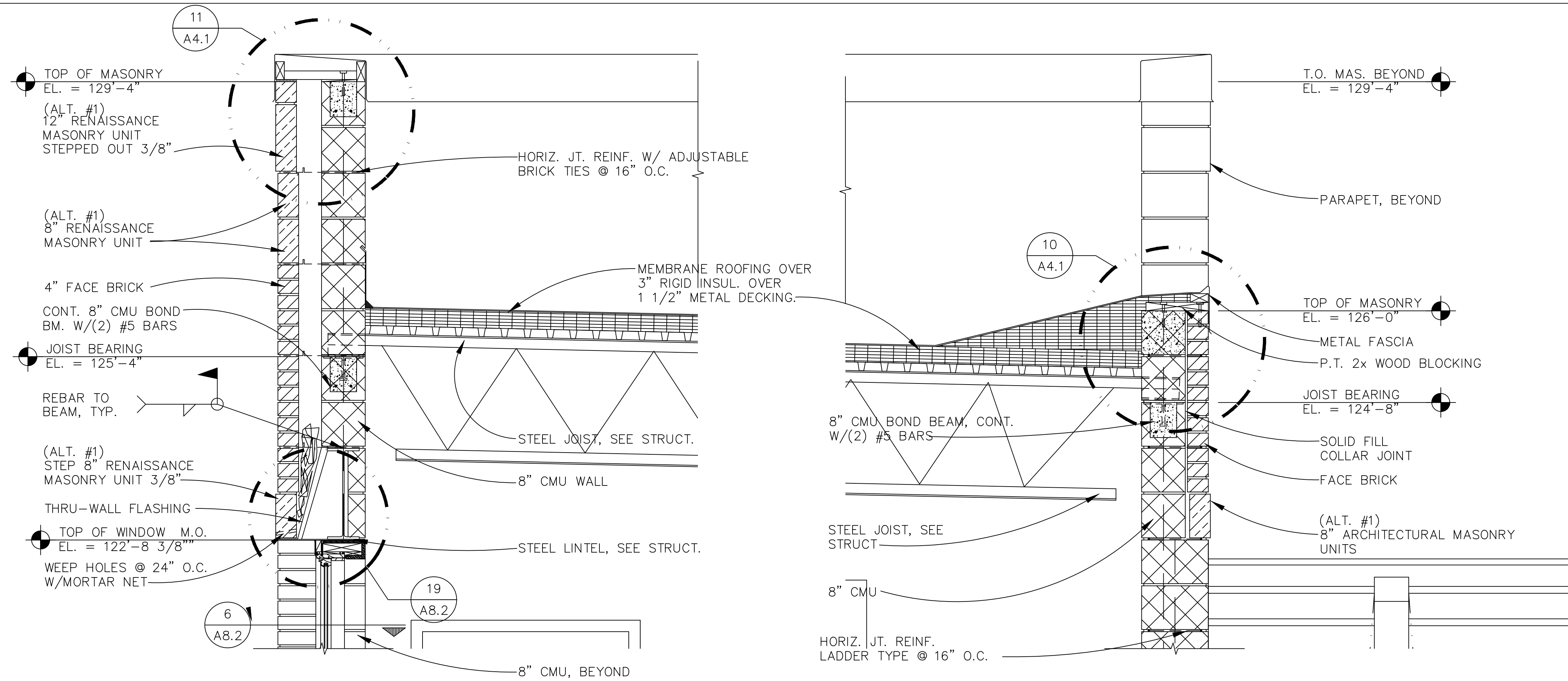
TRAVERSE CITY LIGHT & POWER
HALL STREET SUBSTATION
TRAVERSE CITY, MICHIGAN
BUILDING SECTIONS AND DETAILS

DRAWING
A5.2

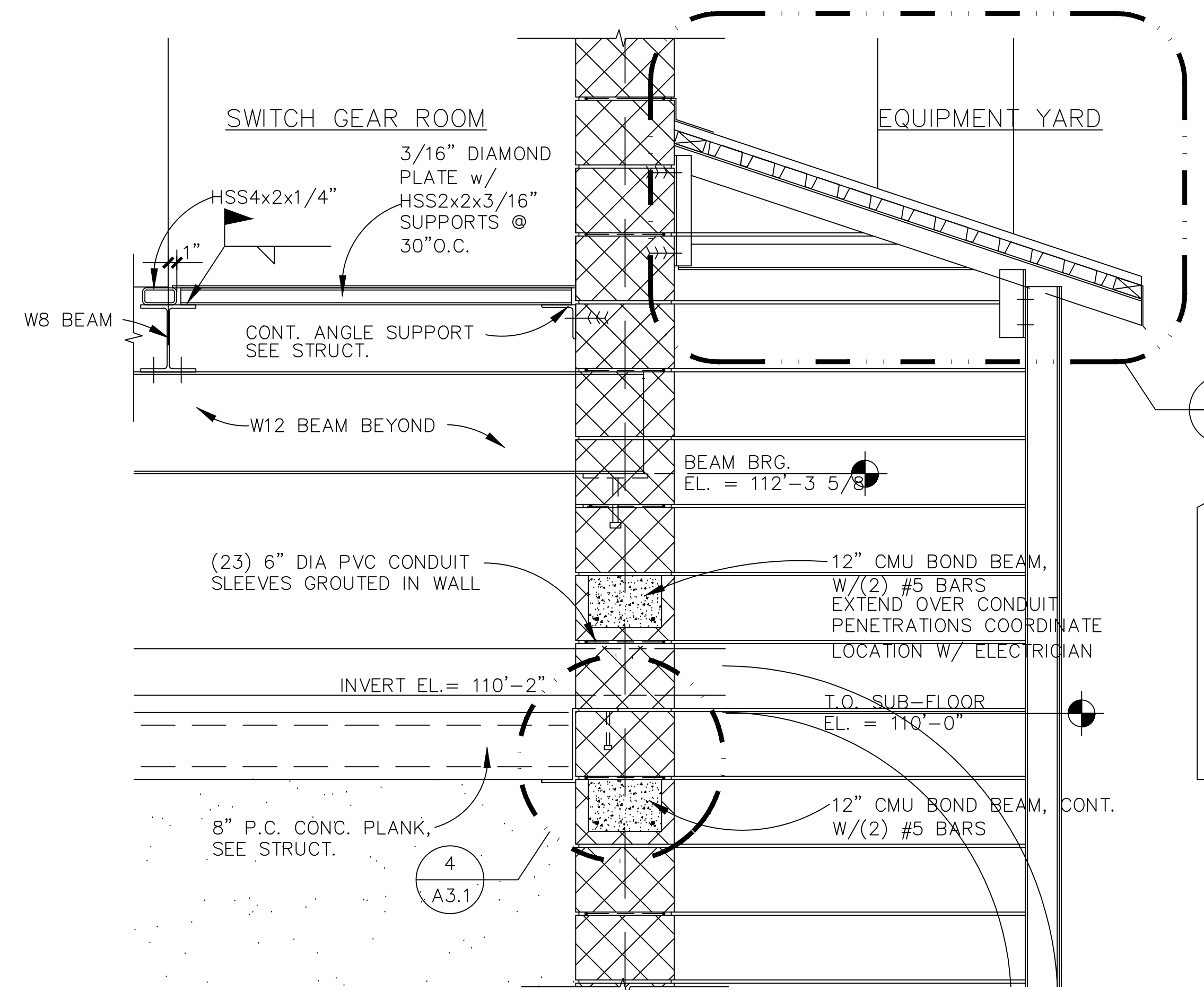
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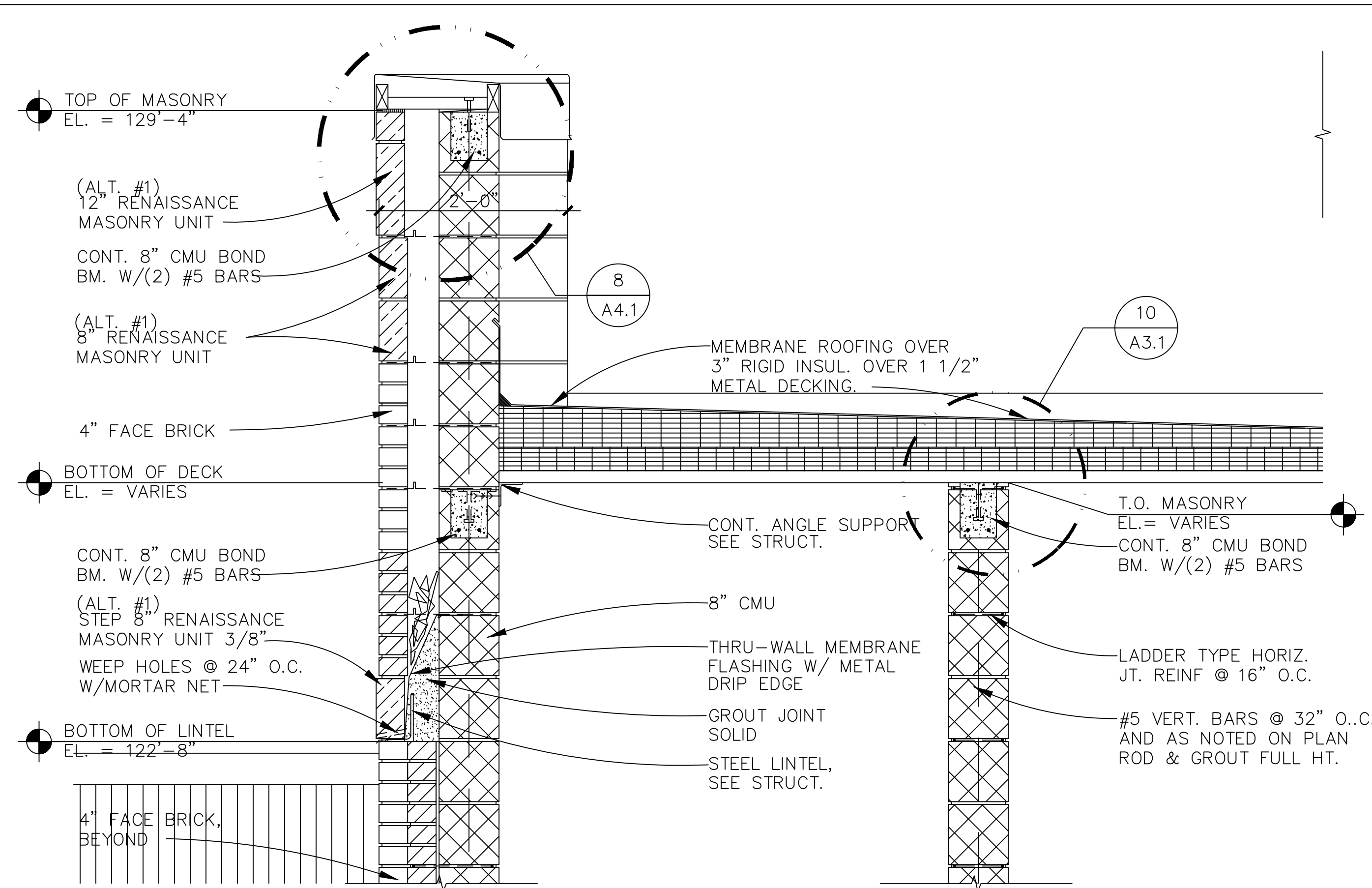
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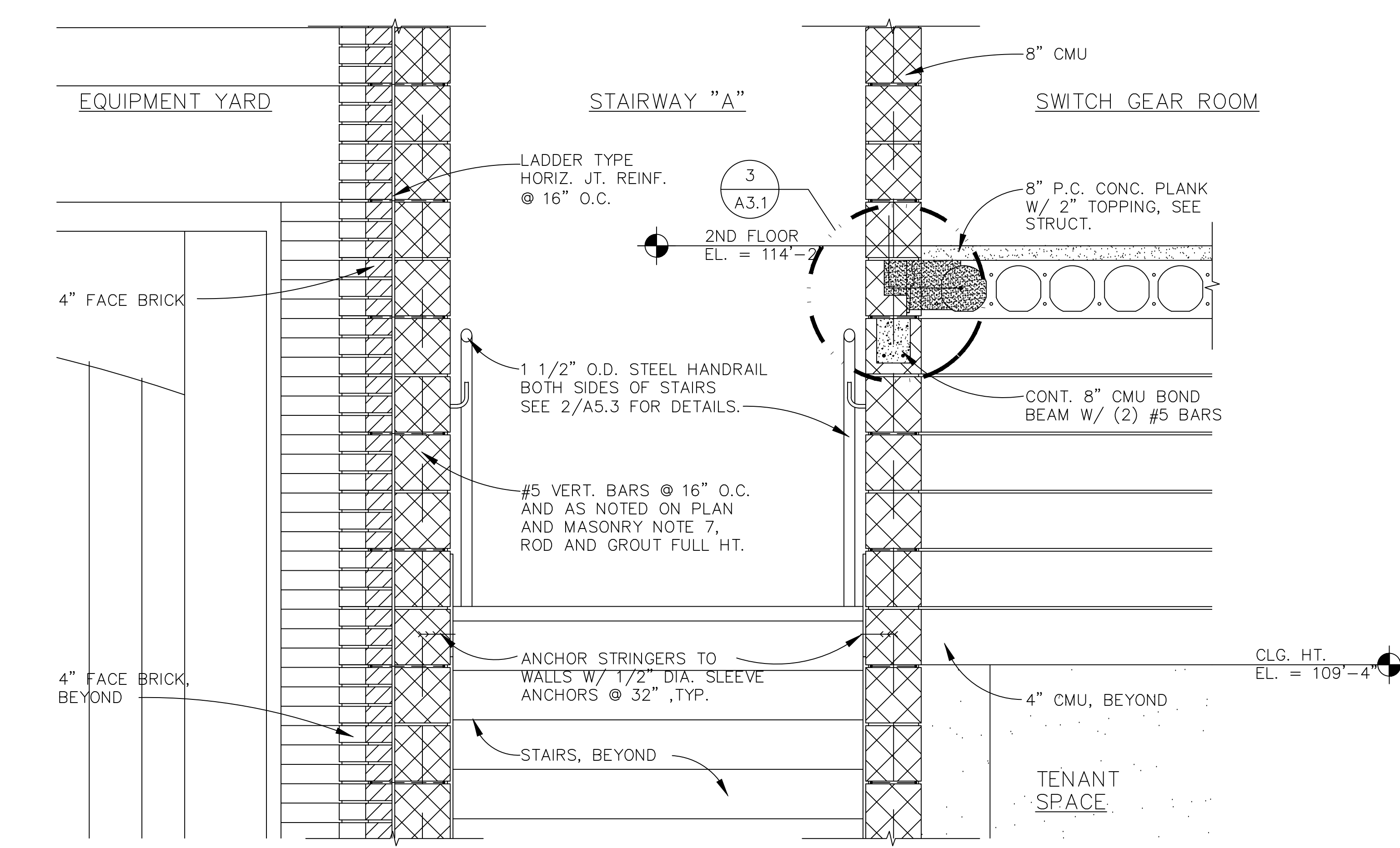
4 WALL SECTION
A6.1 SCALE: 3/4"= 1'-0"



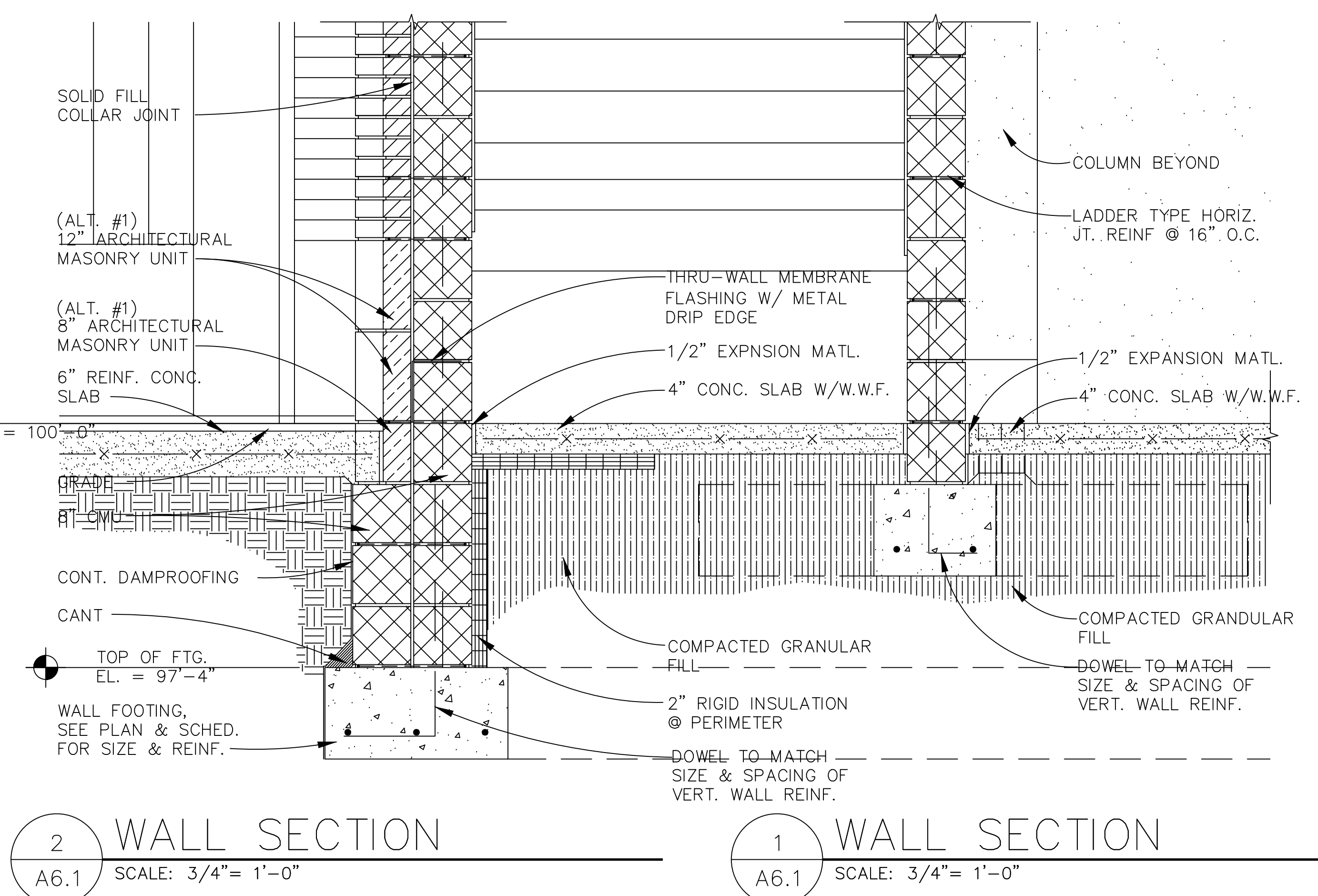
3 WALL SECTION
A6.1 SCALE: 3/4"= 1'-0"



2 WALL SECTION
A6.1 SCALE: 3/4"= 1'-0"



1 WALL SECTION
A6.1 SCALE: 3/4"= 1'-0"



1 WALL SECTION
A6.1 SCALE: 3/4"= 1'-0"

DATE	ISSUED FOR
02/20/2004	APPROVED FINAL RECORD DRAWING
12/04/03	RECORD DRAWING
05-15-02	BID AND CONSTRUCTION
05-15-02	PRELIMINARY REVIEW
02-15-02	DATE

DATE	DR	CK	R.L.K.	APP	R.L.S.	IN CHARGE
02/20/2004	DR	CK	R.L.K.	APP	R.L.S.	IN CHARGE

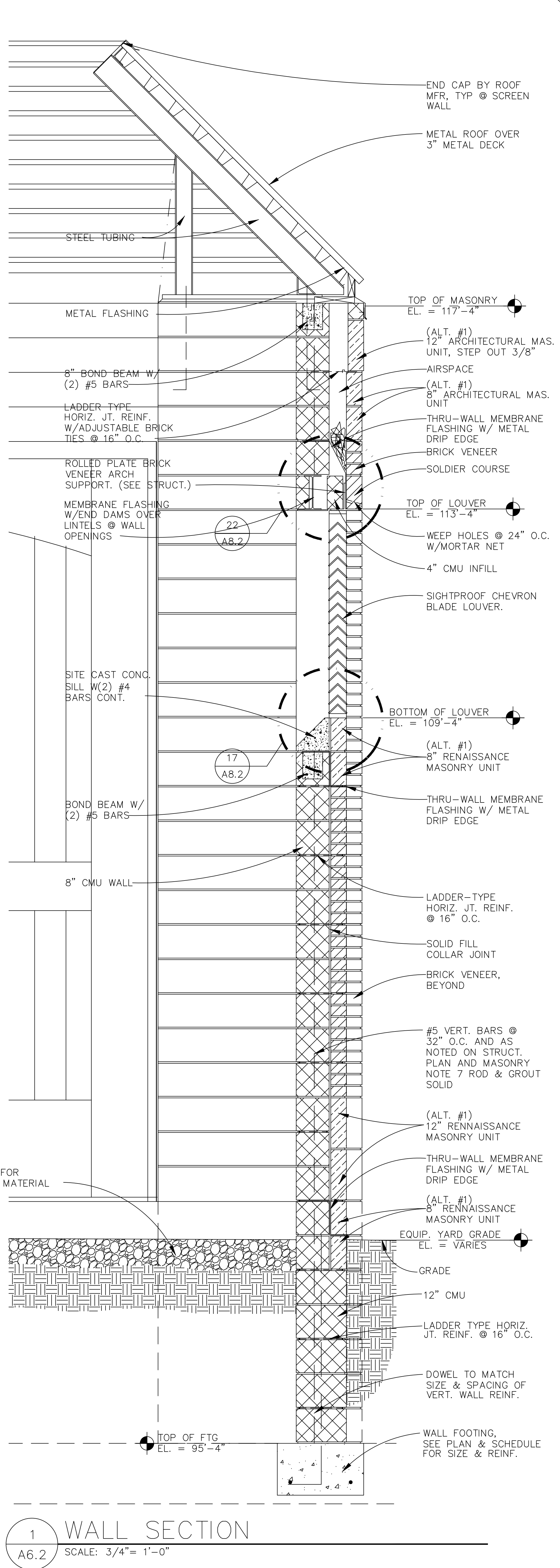
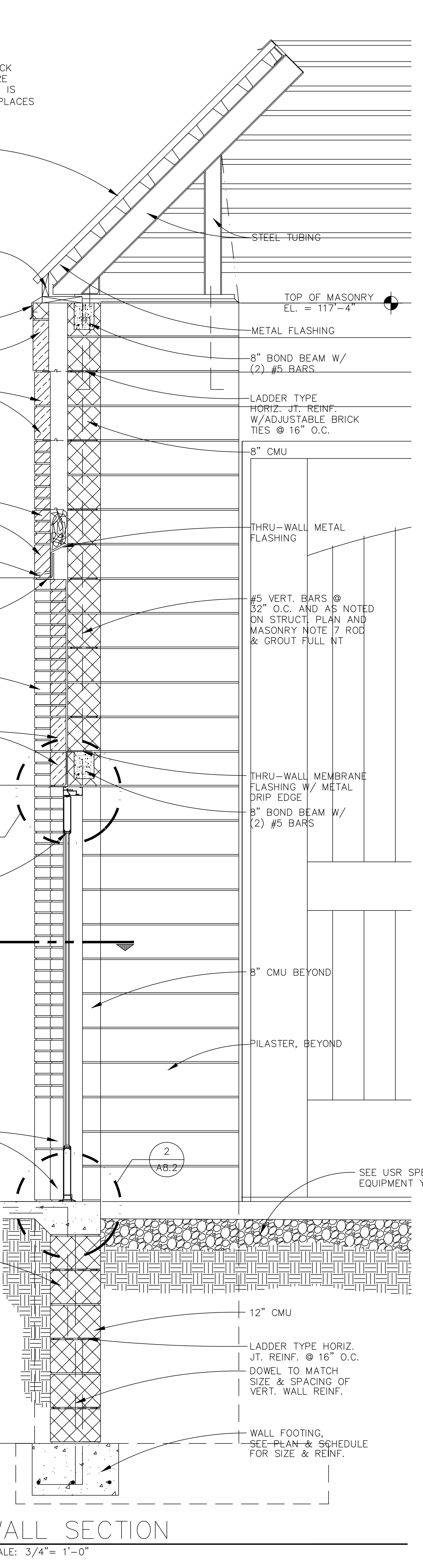
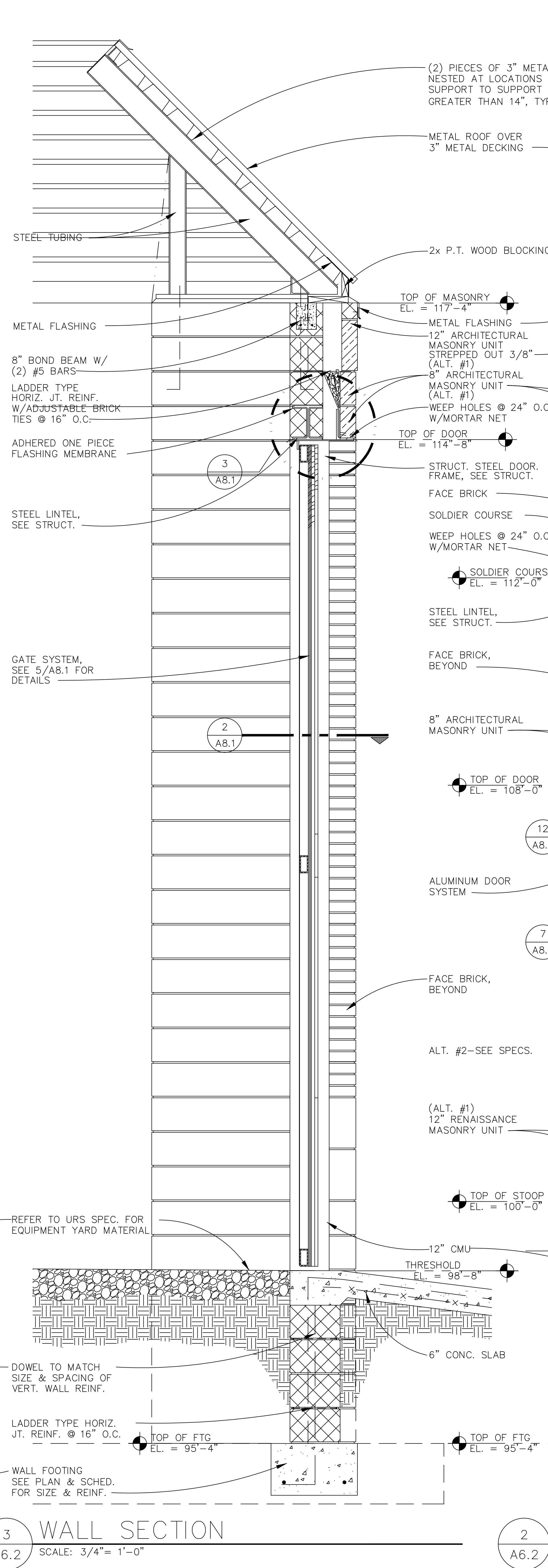
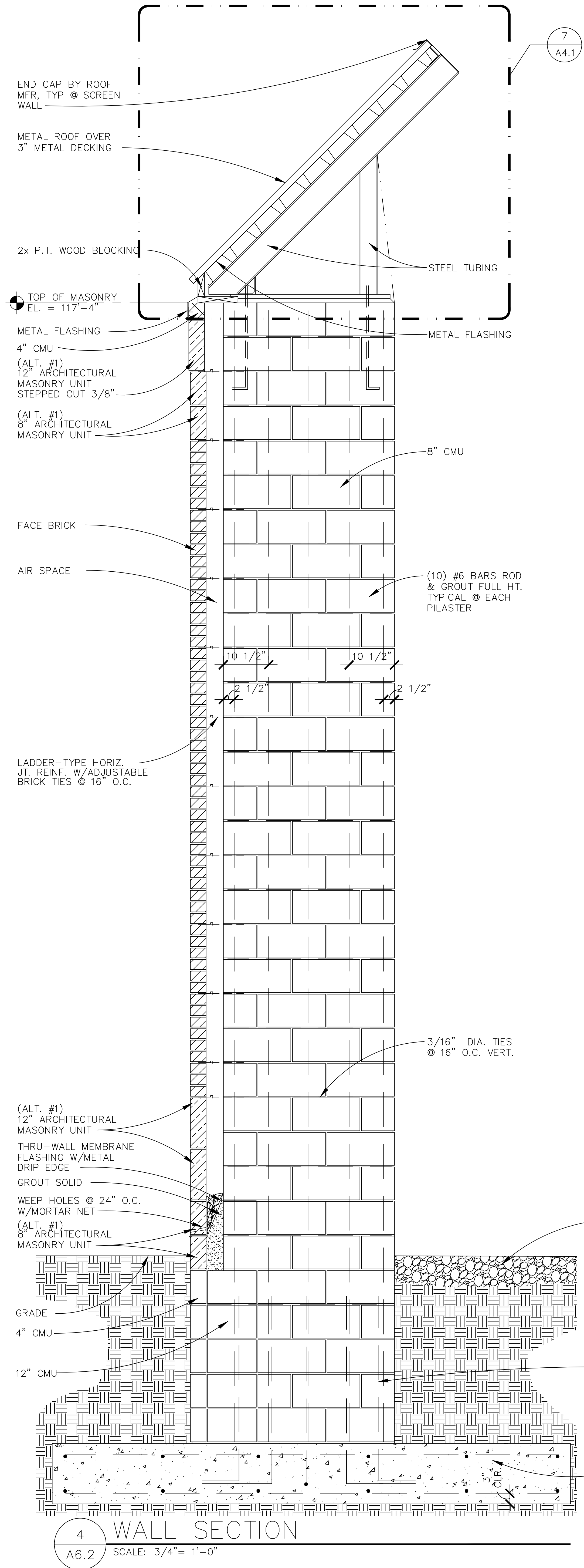
1004 East 8th Street
Traverse City, Michigan 49606
231-947-0060

URS architecture, interiors, inc.
GRAND RAPIDS, MI.
3550 PARKWAY S.E.
49508-4800

TRAVERSE CITY LIGHT & POWER
HALL STREET SUBSTATION
WALL SECTIONS & DETAILS

DRAWING
A6.1

FILE
M105002



DATE		ISSUED FOR	
DR	S.S.H.	CK	R.J.K.
APP	R.J.S.	APP	R.J.S.
02/20/04 APPROVED FINAL RECORD DRAWING		02/20/04 APPROVED FINAL RECORD DRAWING	
05-15-02 RECORD DRAWING		05-15-02 RECORD DRAWING	
05-15-02 PRELIMINARY REVIEW		05-15-02 PRELIMINARY REVIEW	
05-15-02 PRELIMINARY REVIEW		05-15-02 PRELIMINARY REVIEW	

1004 East 8th Street
Traverse City, Michigan 49606
231-947-0060

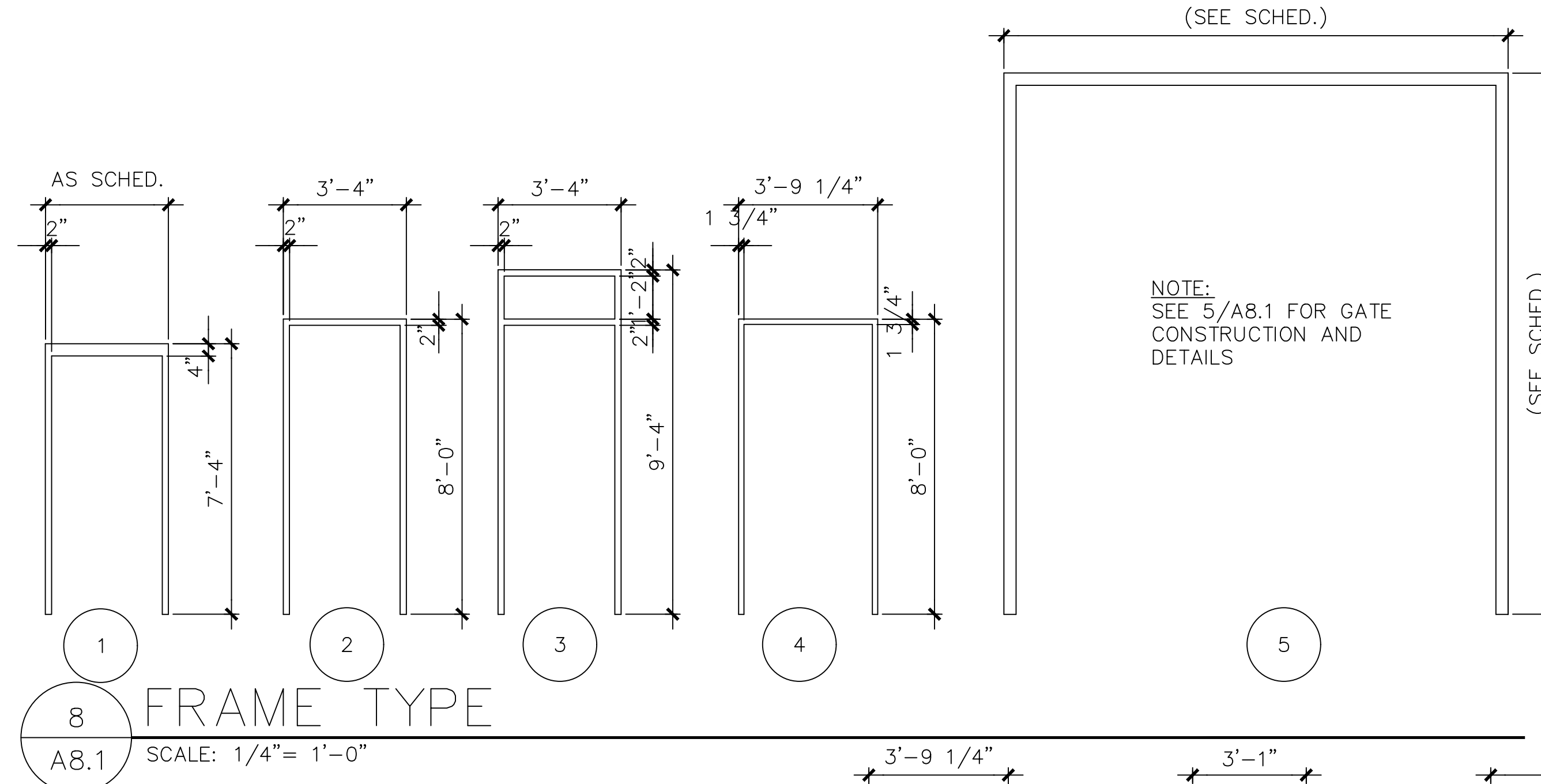
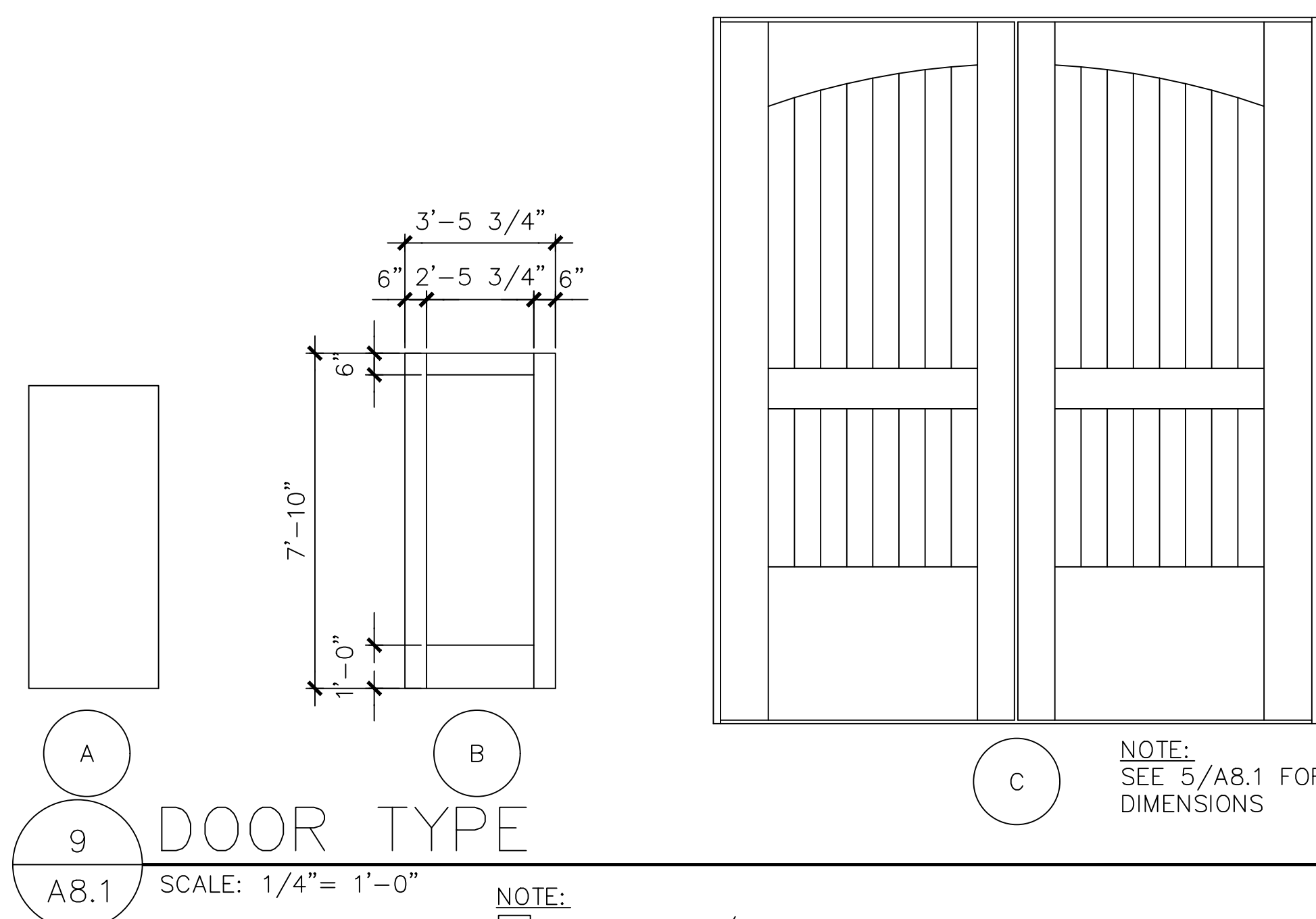
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GRAND RAPIDS, MI.
3000 EAST 1ST AVE. S.E.
49508-4000

TRAVERSE CITY LIGHT & POWER
HALL STREET SUBSTATION
WALL SECTIONS & DETAILS
TRAVERSE CITY, MICHIGAN

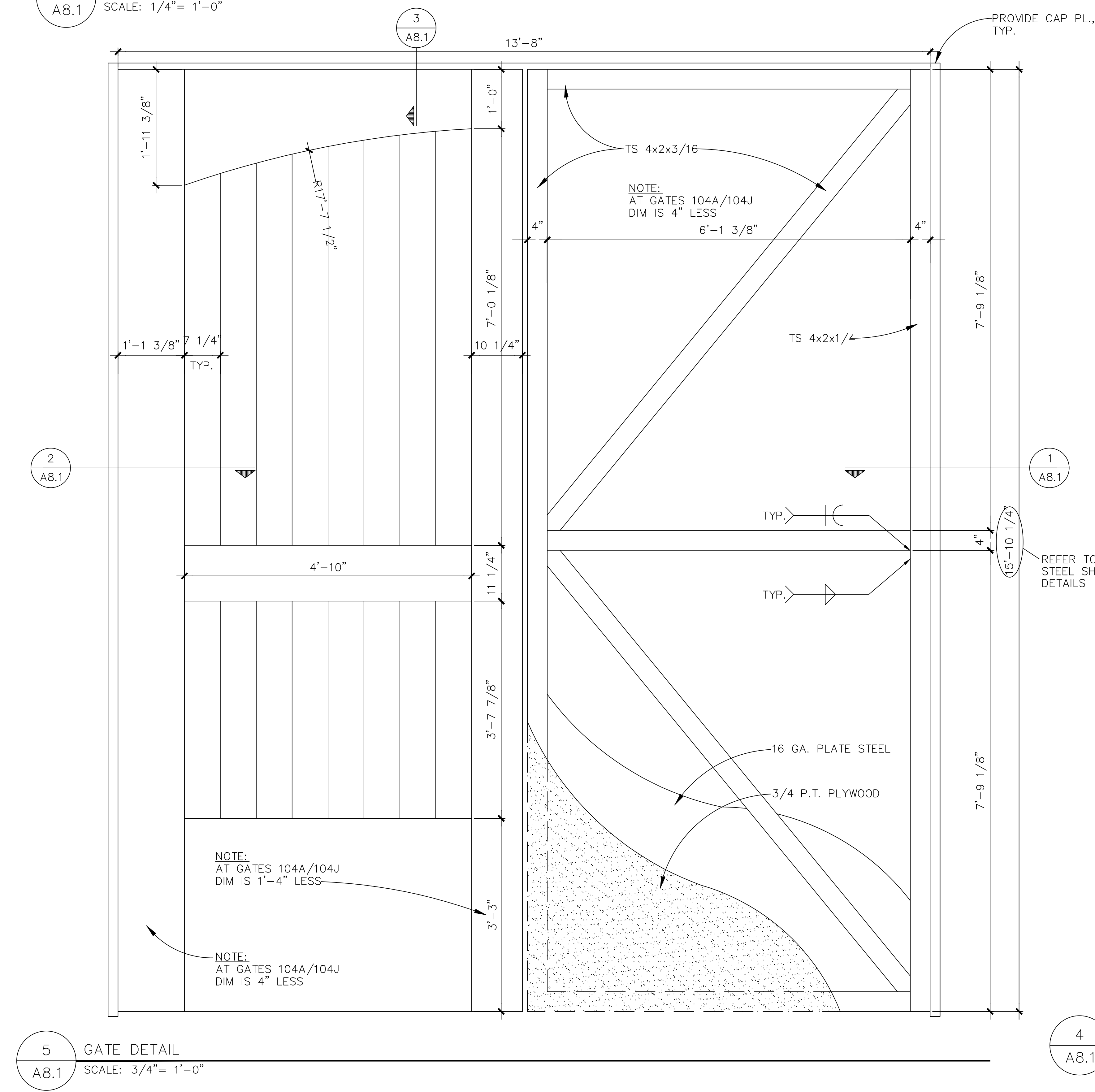
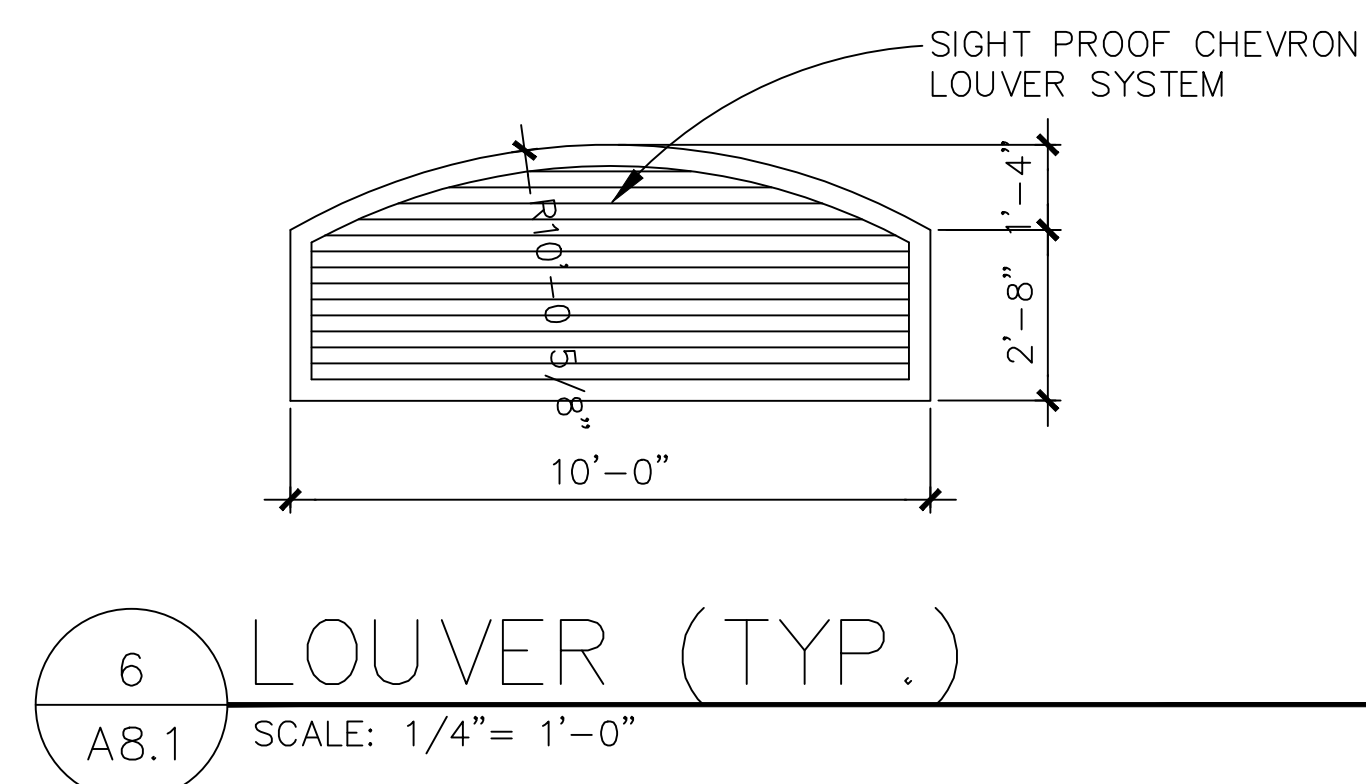
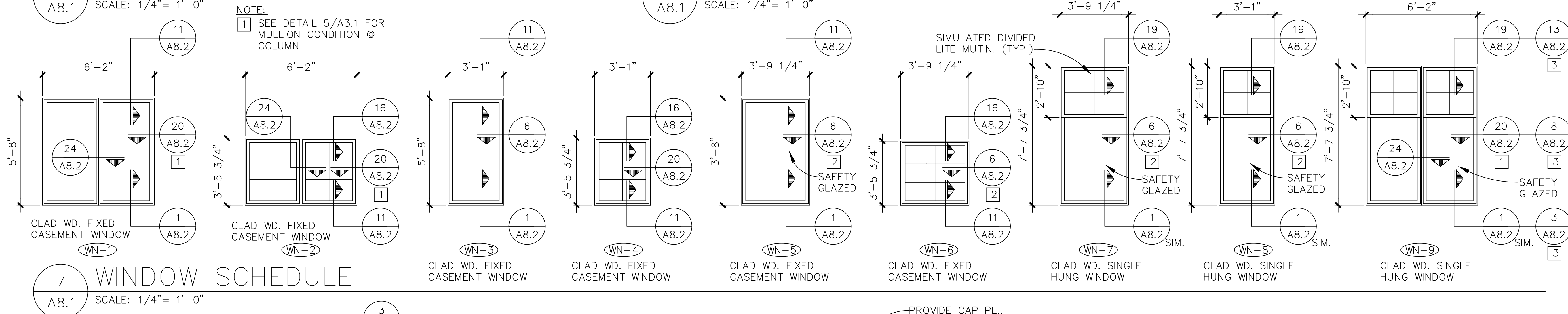
DRAWING
A6.2

FILE
M105002

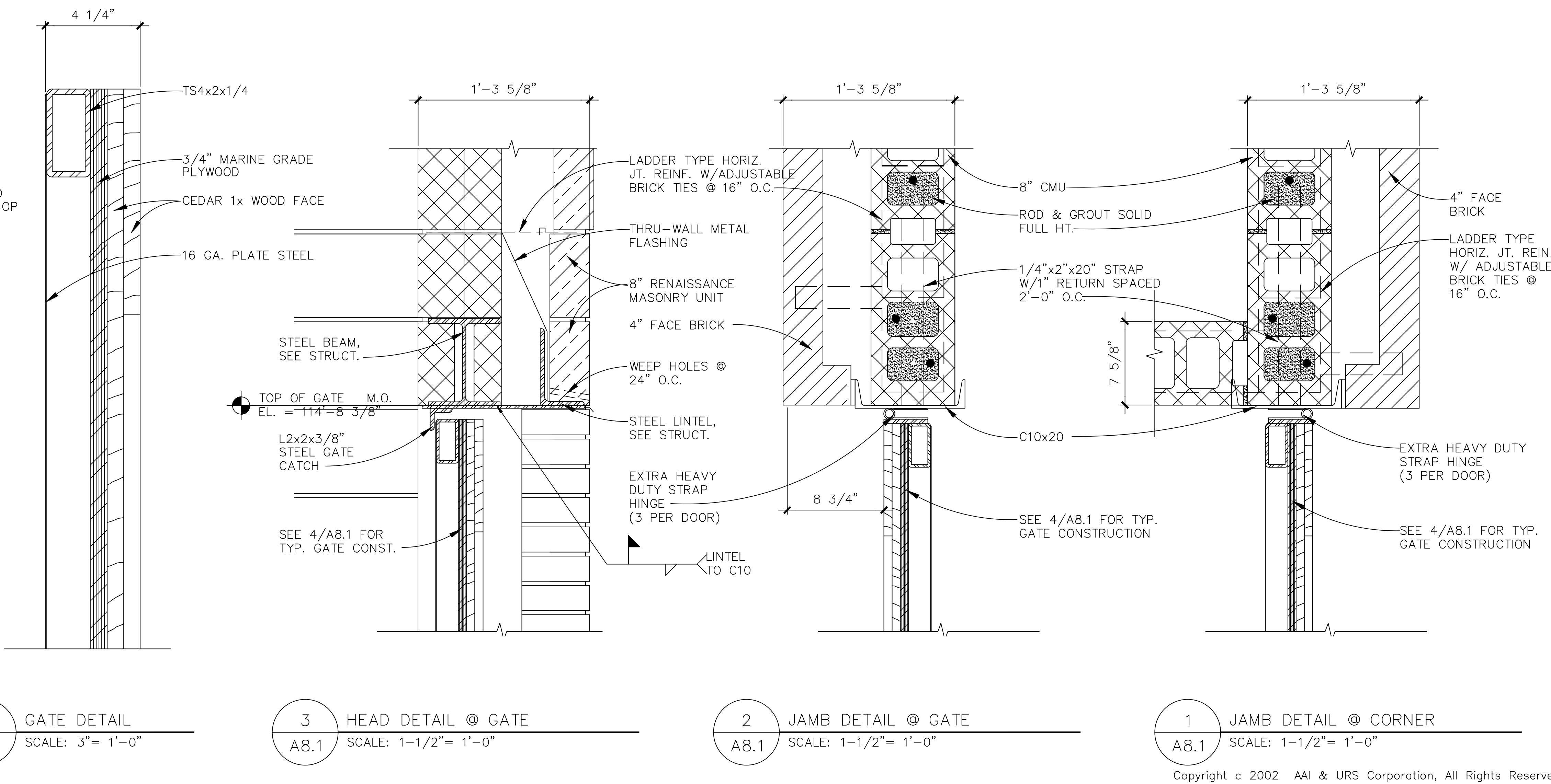


DOOR & FRAME SCHEDULE

NO.	SIZE	TYPE	MATL.	FRAME			THRES.	HOURLY RATING	REMARKS
				TYPE	MATL.	HEAD			
100A	3' 0" X 7' 0"	B	AL. GLAD	4	AL.	14/A8.2	9/A8.2	4/A8.2	
100B	3' 0" X 7' 0"	B	AL. GLAD	4	AL.	14/A8.2	9/A8.2	4/A8.2	
101A	3' 0" X 7' 0"	A	H.M.	1	HM.	26/A8.2	21/A8.2		
101B	(2) 3' 0" X 7' 0"	A	H.M.	1	HM.	26/A8.2	21/A8.2		
102	3' 0" X 7' 0"	A	FRP.	1	FRP.	15/A8.2	10/A8.2	5/A8.2	
103	3' 0" X 7' 0"	A	FRP.	1	FRP.	15/A8.2	10/A8.2	5/A8.2	
104A	1' 3" X 7' 0"	C	WD./MTL.	5	MTL.	3/A8.1	2/A8.1	1/A8.1	
104B	3' 0" X 7' 0"	A	FRP.	2	FRP.	12/A8.2	7/A8.2	2/A8.2	
104C	3' 0" X 7' 0"	A	FRP.	3	FRP.	25/A8.2	7/A8.2	2/A8.2	TRANSOM HEAD DETAIL 27/A8.2
104D	1' 0" X 7' 0"	C	WD./MTL.	5	MTL.	3/A8.1	2/A8.1	1/A8.1	
104E	1' 0" X 7' 0"	C	WD./MTL.	5	MTL.	3/A8.1	2/A8.1	1/A8.1	
104F	1' 0" X 7' 0"	C	WD./MTL.	5	MTL.	3/A8.1	2/A8.1	1/A8.1	
104G	3' 0" X 7' 0"	A	FRP.	3	FRP.	25/A8.2	7/A8.2	2/A8.2	TRANSOM HEAD DETAIL 27/A8.2
104H	3' 0" X 7' 0"	A	FRP.	2	FRP.	12/A8.2	7/A8.2	2/A8.2	
104J	1' 3" X 7' 0"	C	WD./MTL.	5	MTL.	3/A8.1	2/A8.1	1/A8.1	
201A	3' 0" X 7' 0"	A	H.M.	1	HM.	23/A8.2	18/A8.2		90 MIN.
201B	3' 0" X 7' 0"	A	H.M.	1	HM.	23/A8.2	18/A8.2		90 MIN.



NOTE: CONTRACTOR TO ACCOUNT FOR WIDTH OF HINGES AND ADJUST GATE WIDTH ACCORDINGLY



DATE	ISSUED FOR
02/15/02	PRELIMINARY REVIEW
05-15-02	BIDS AND CONSTRUCTION
12/04/03	RECORD DRAWINGS
02/28/2004	APPROVED FINAL RECORD DRAWINGS

DA/E	R.J.S.
DR	S.S.H.
CK	R.J.K.
APP	R.J.S.
IN	CHARGE

1004 East 8th Street
Traverse City, MI 49781
231-947-0060

URS

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artistry
interiors, inc.

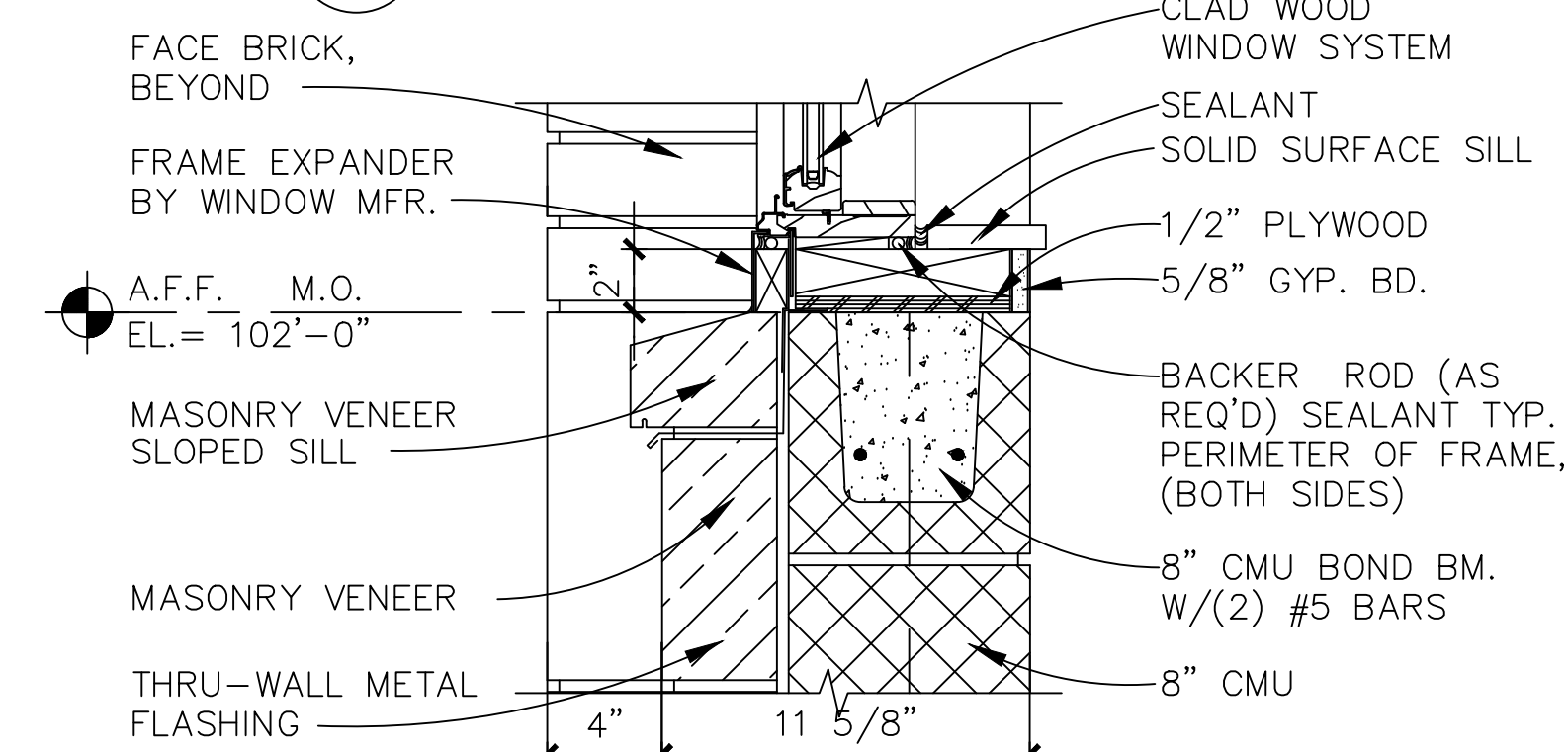
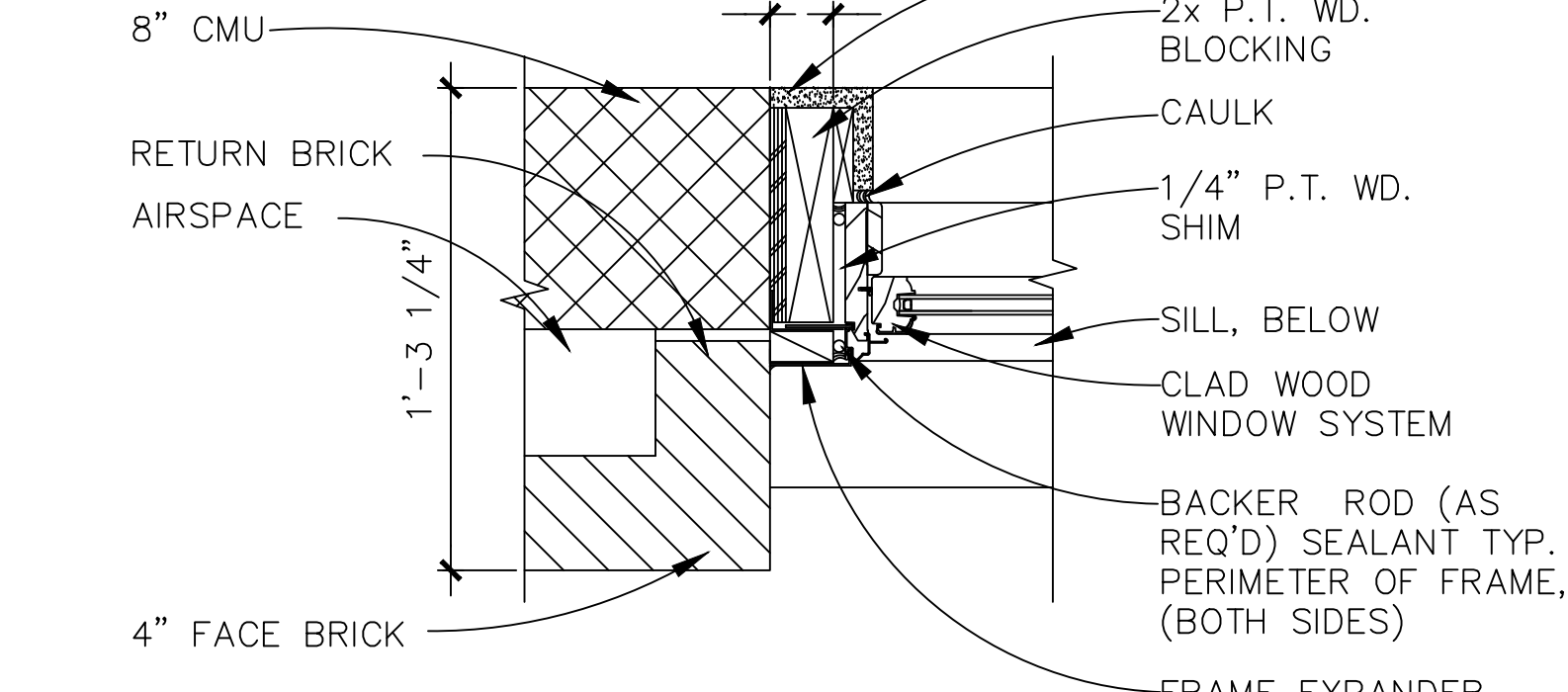
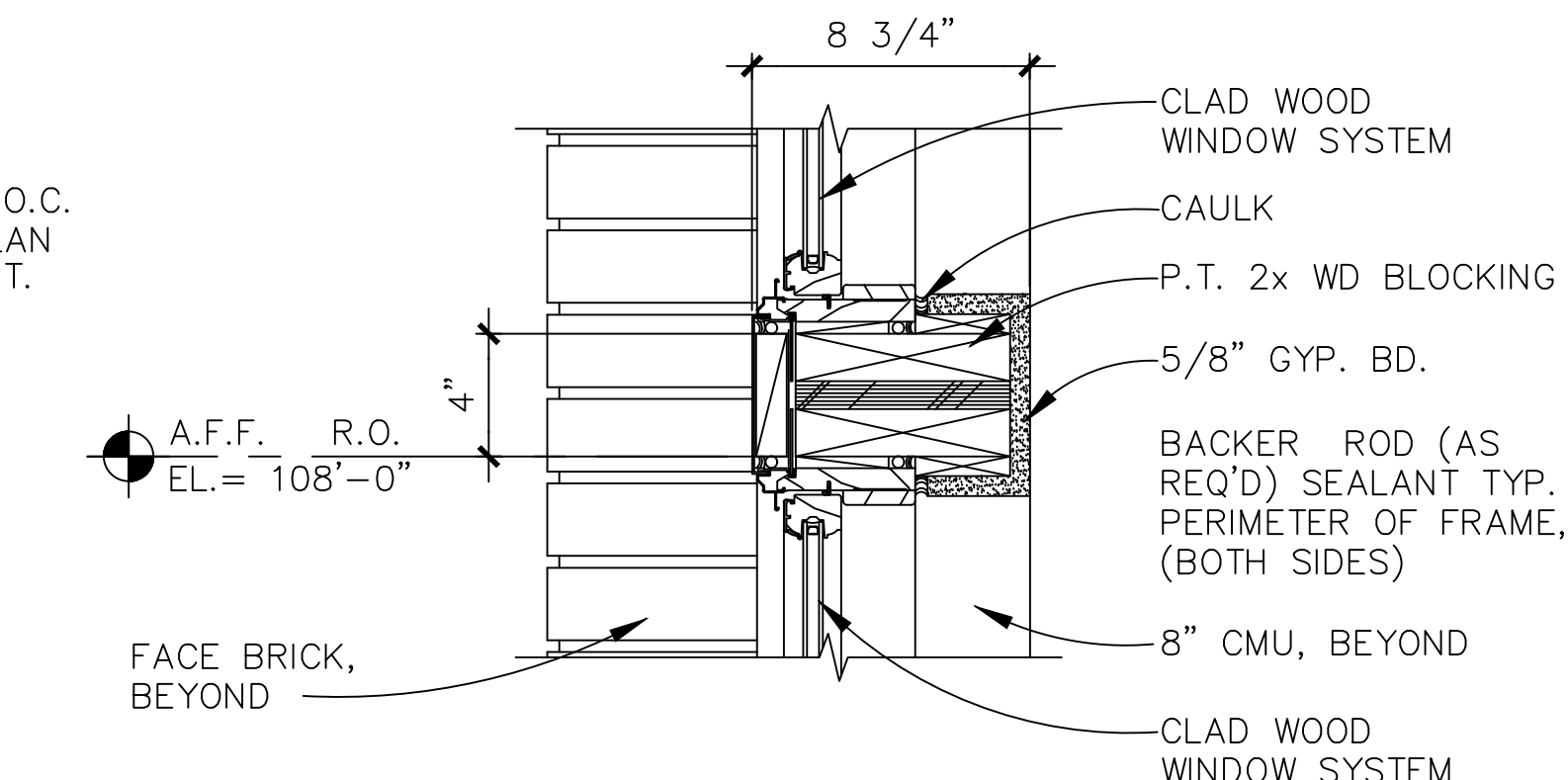
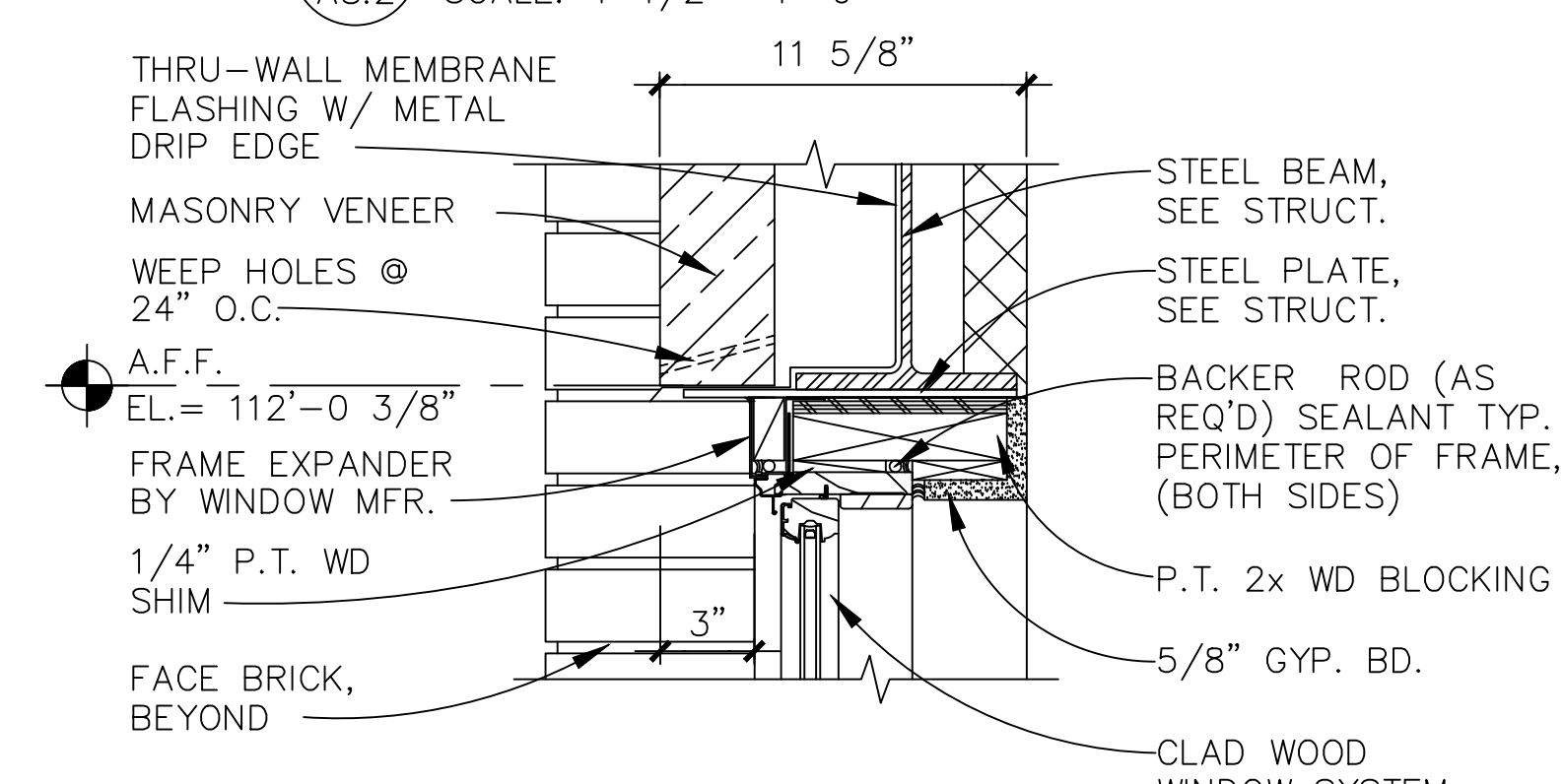
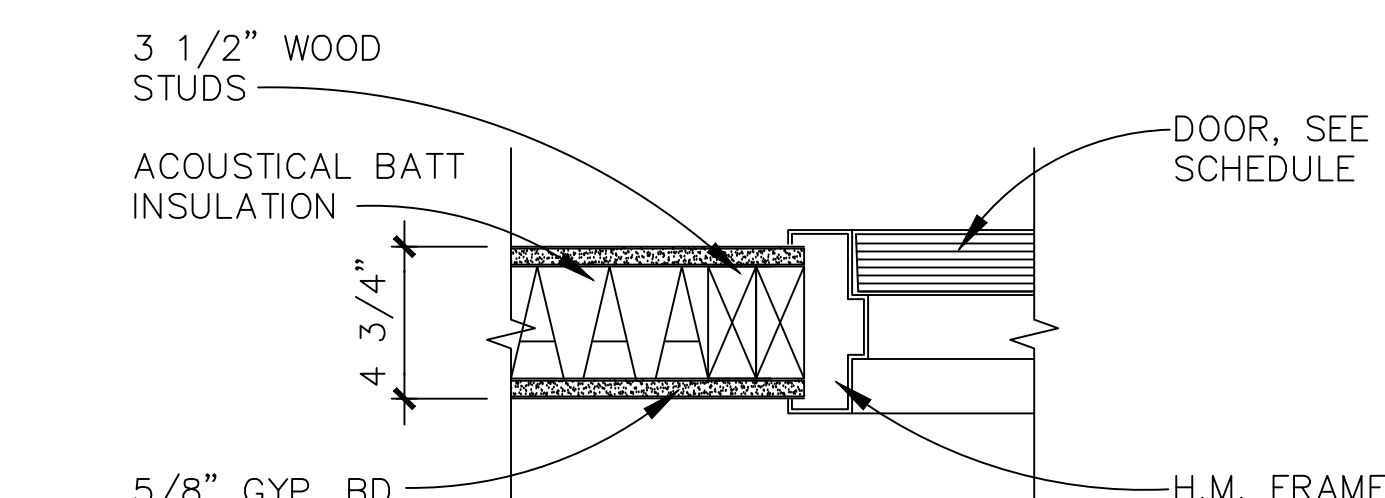
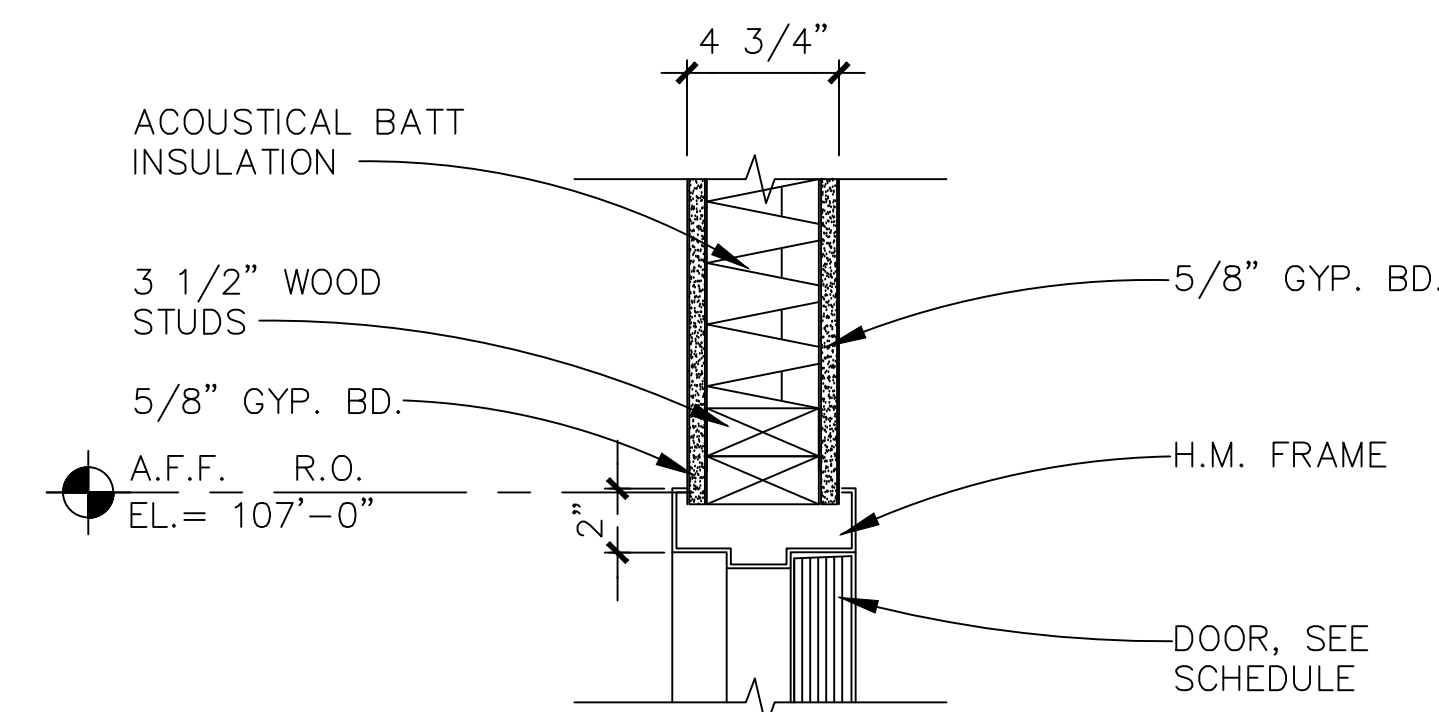
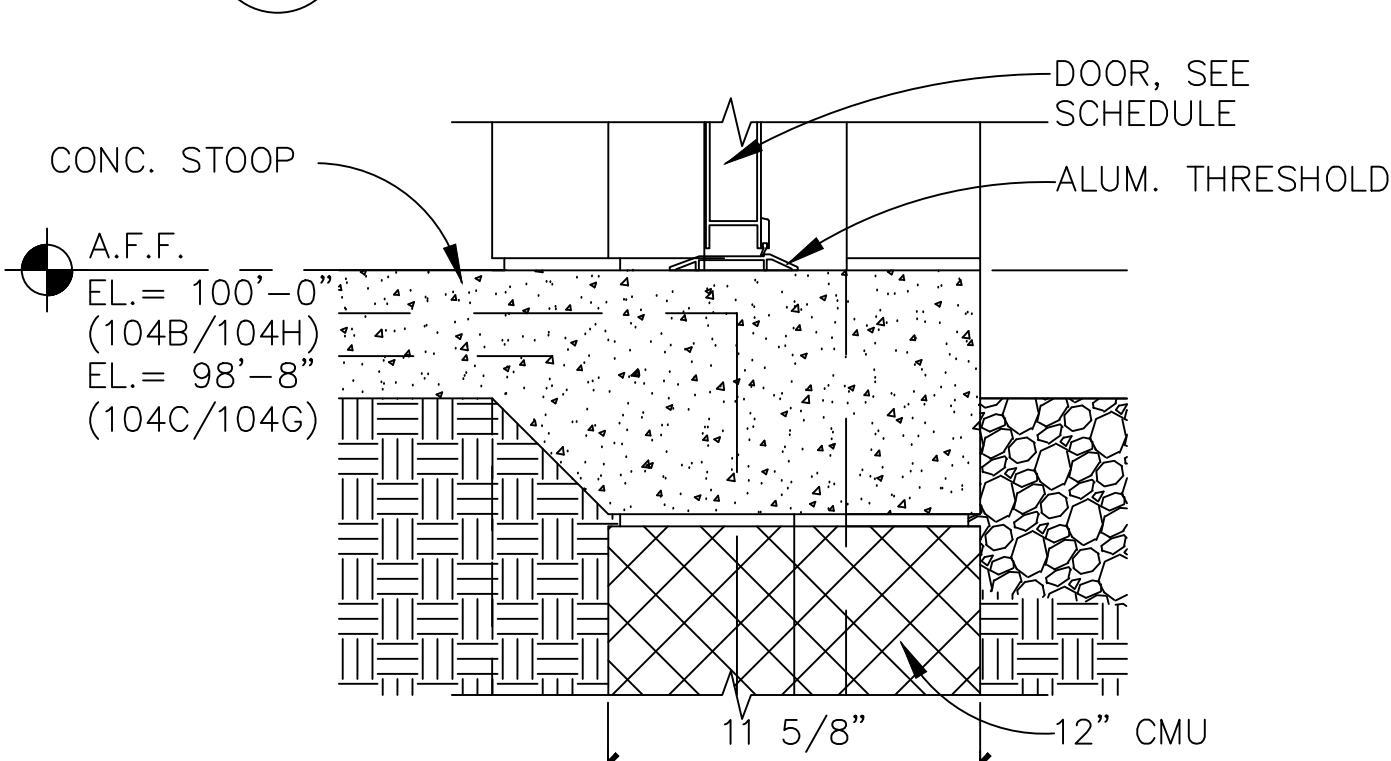
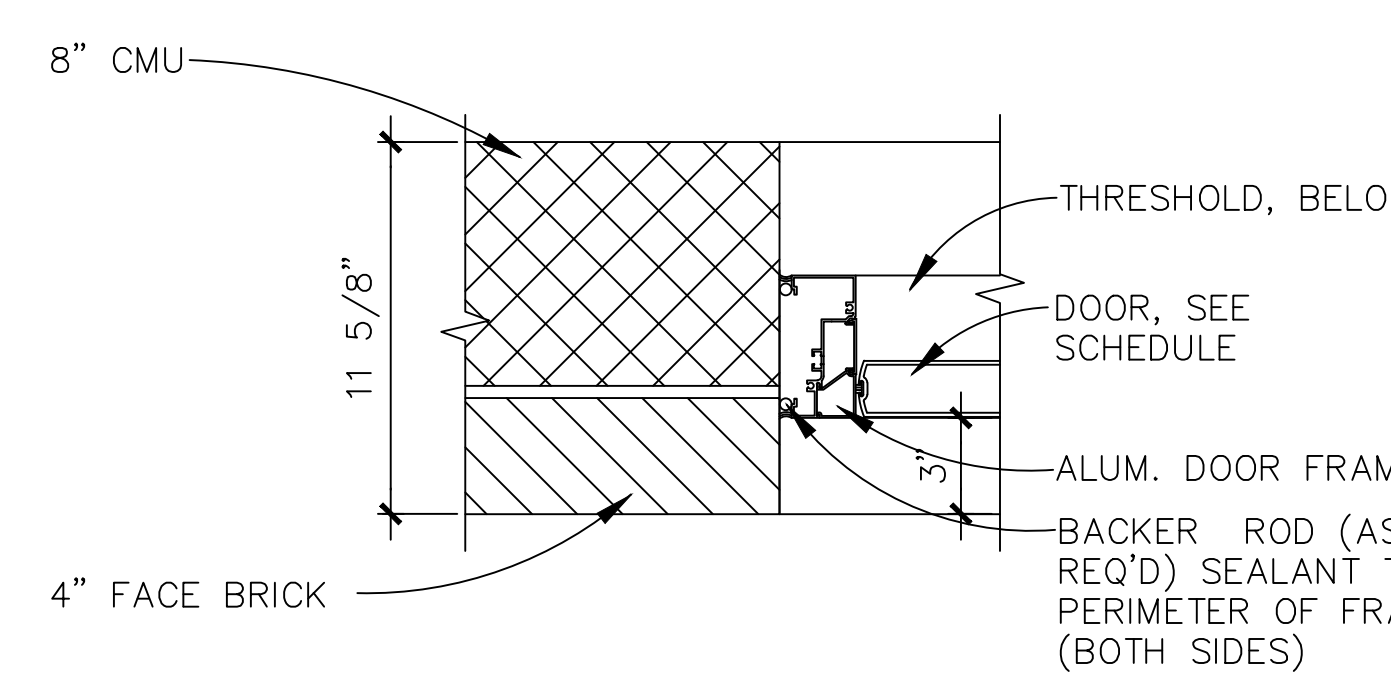
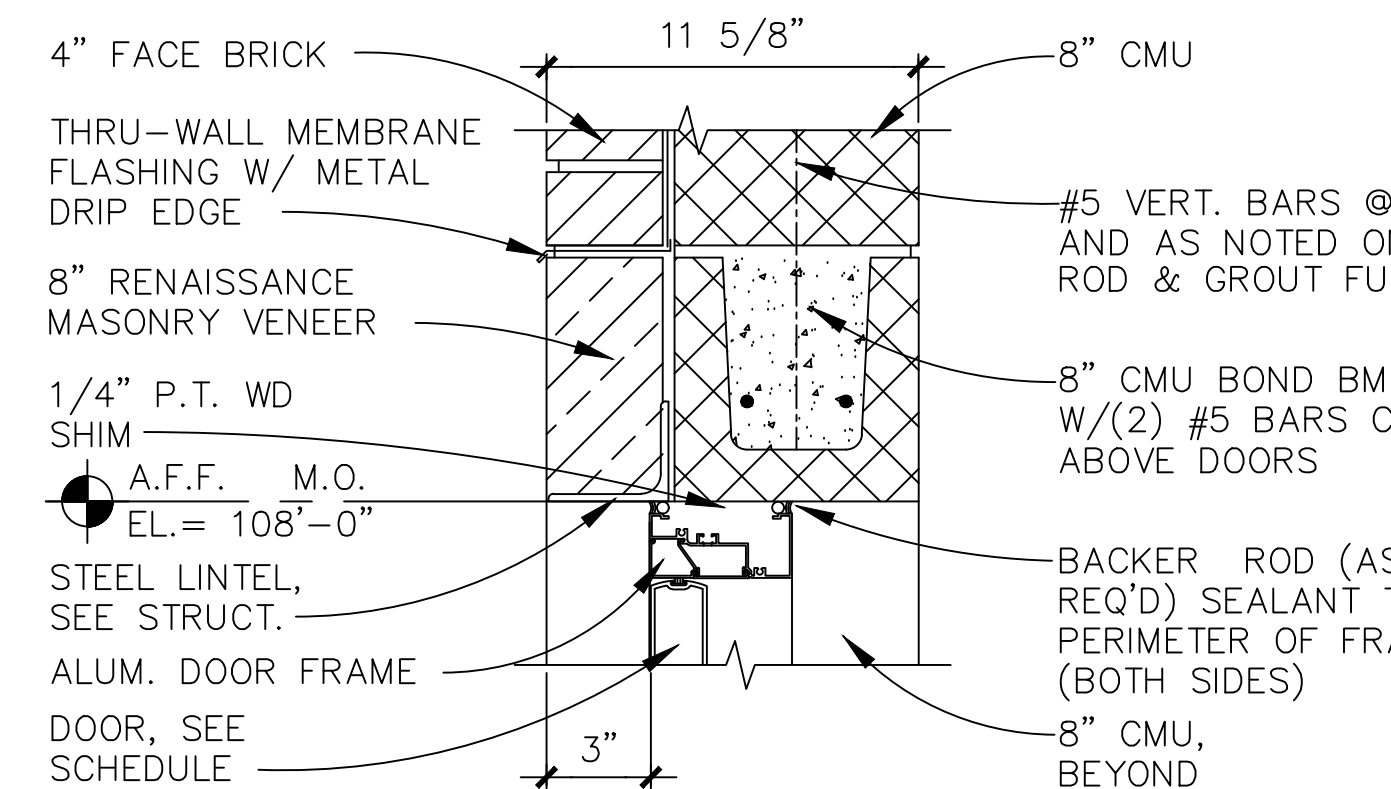
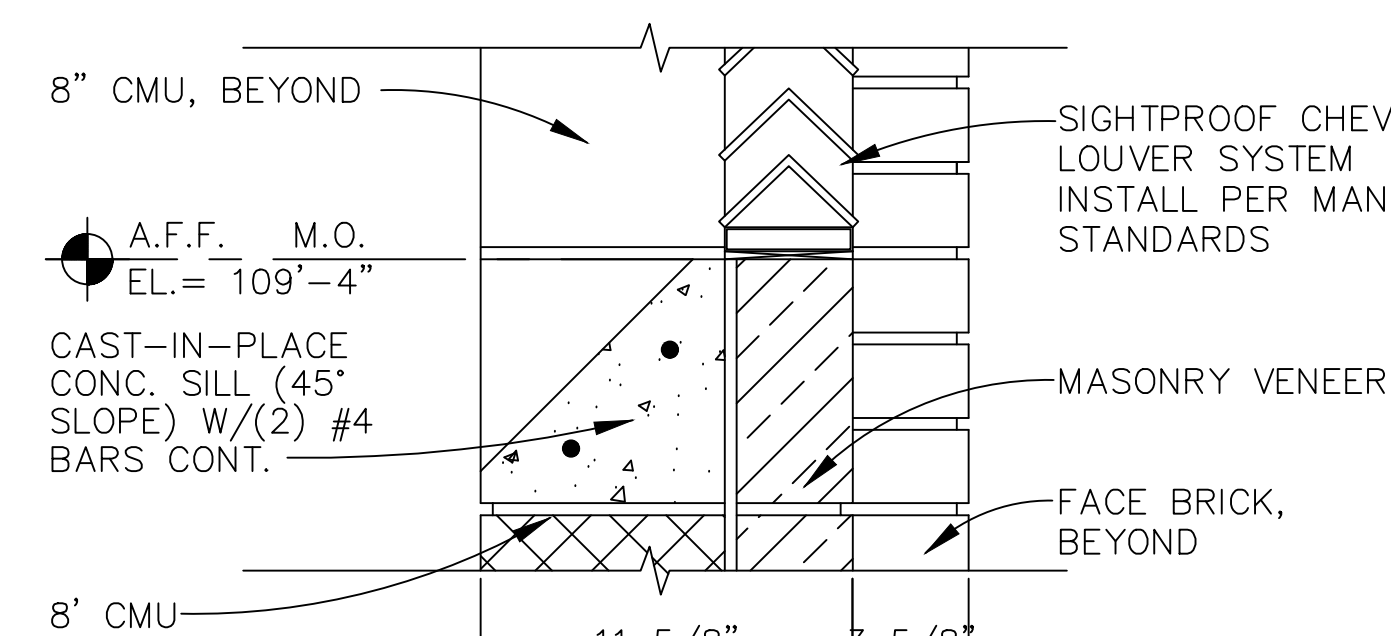
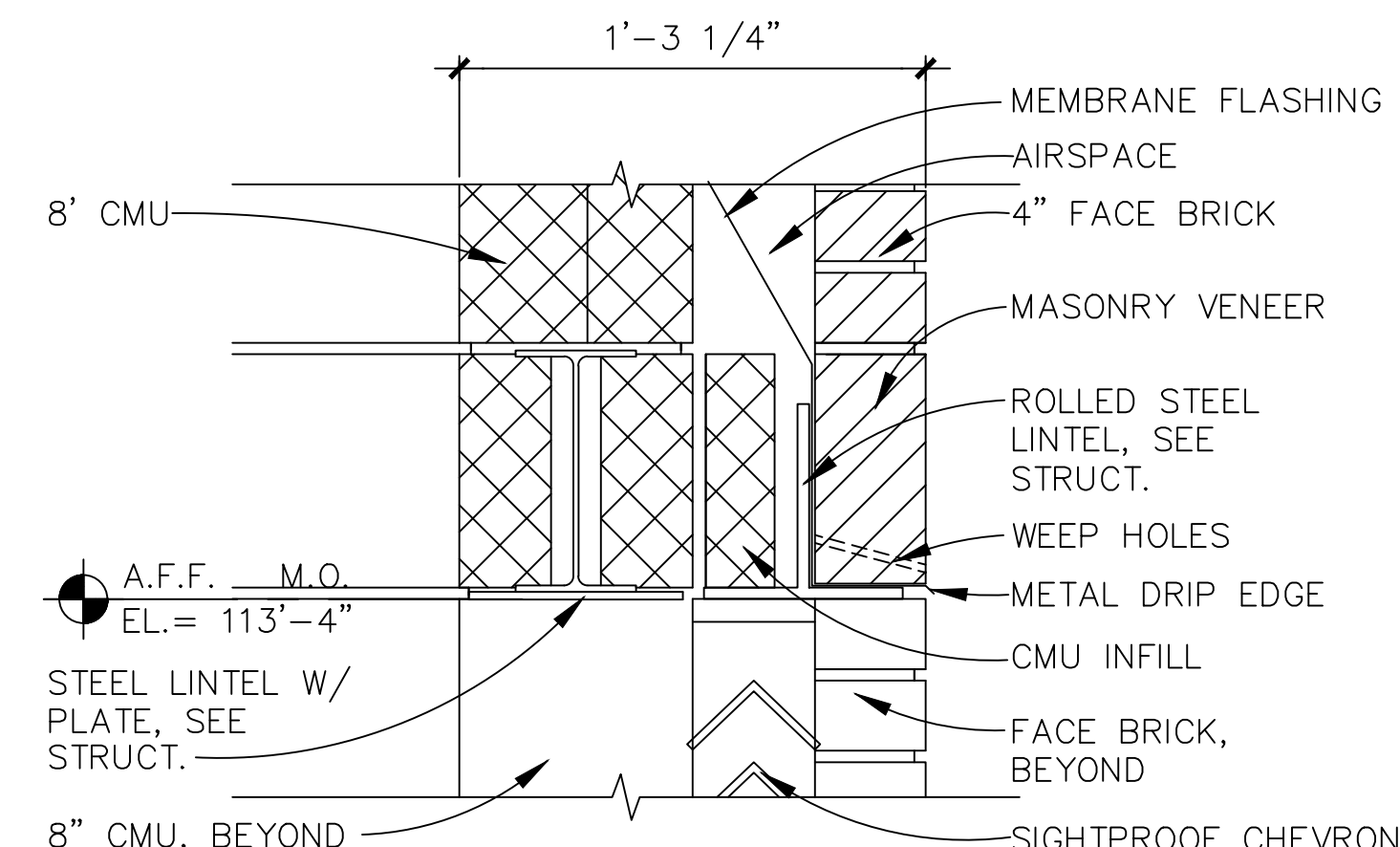
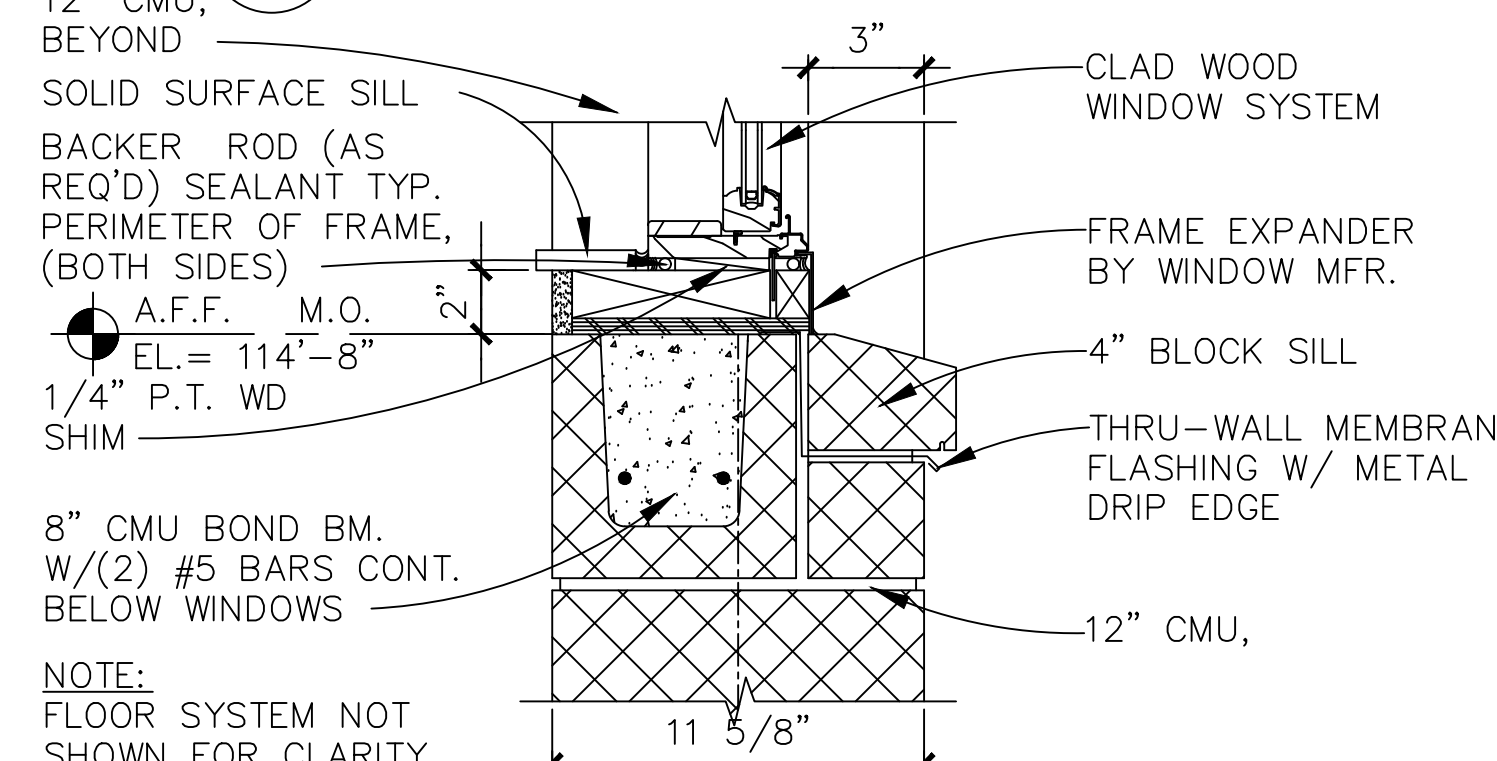
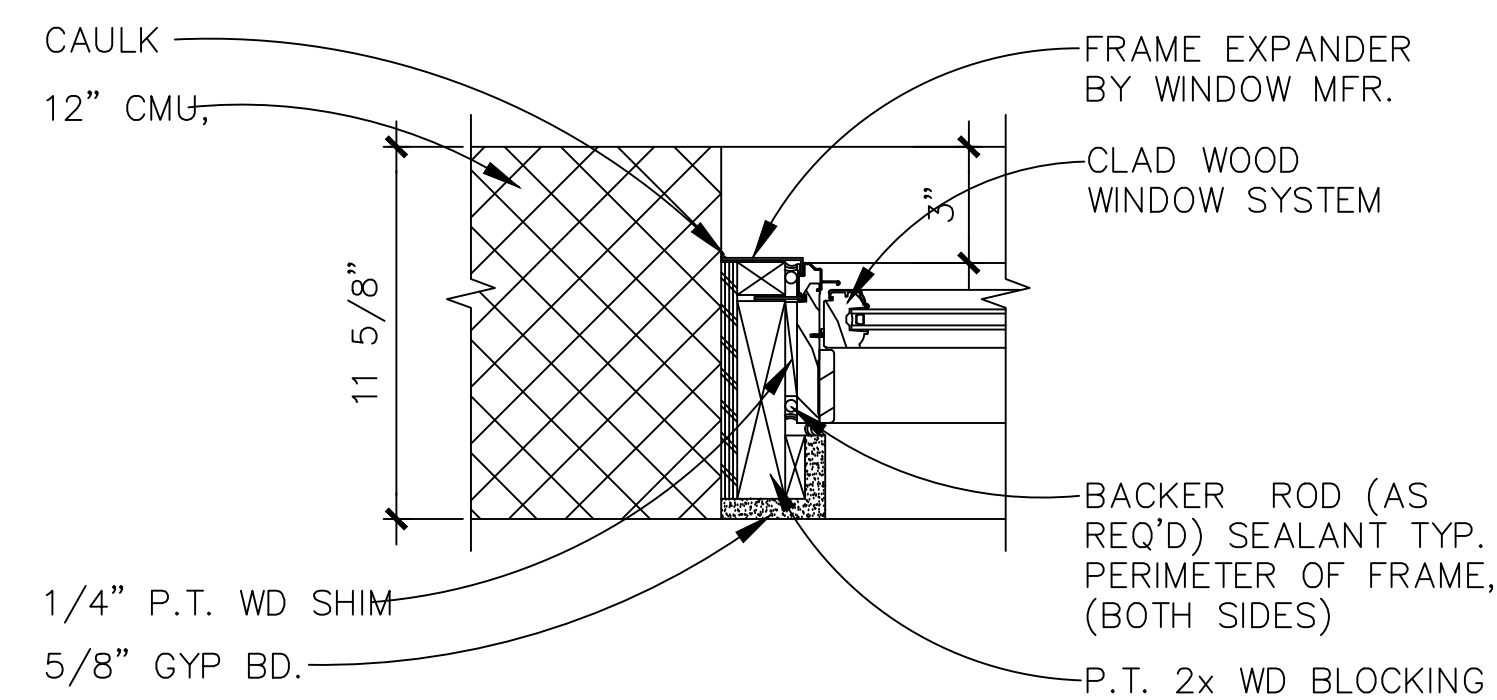
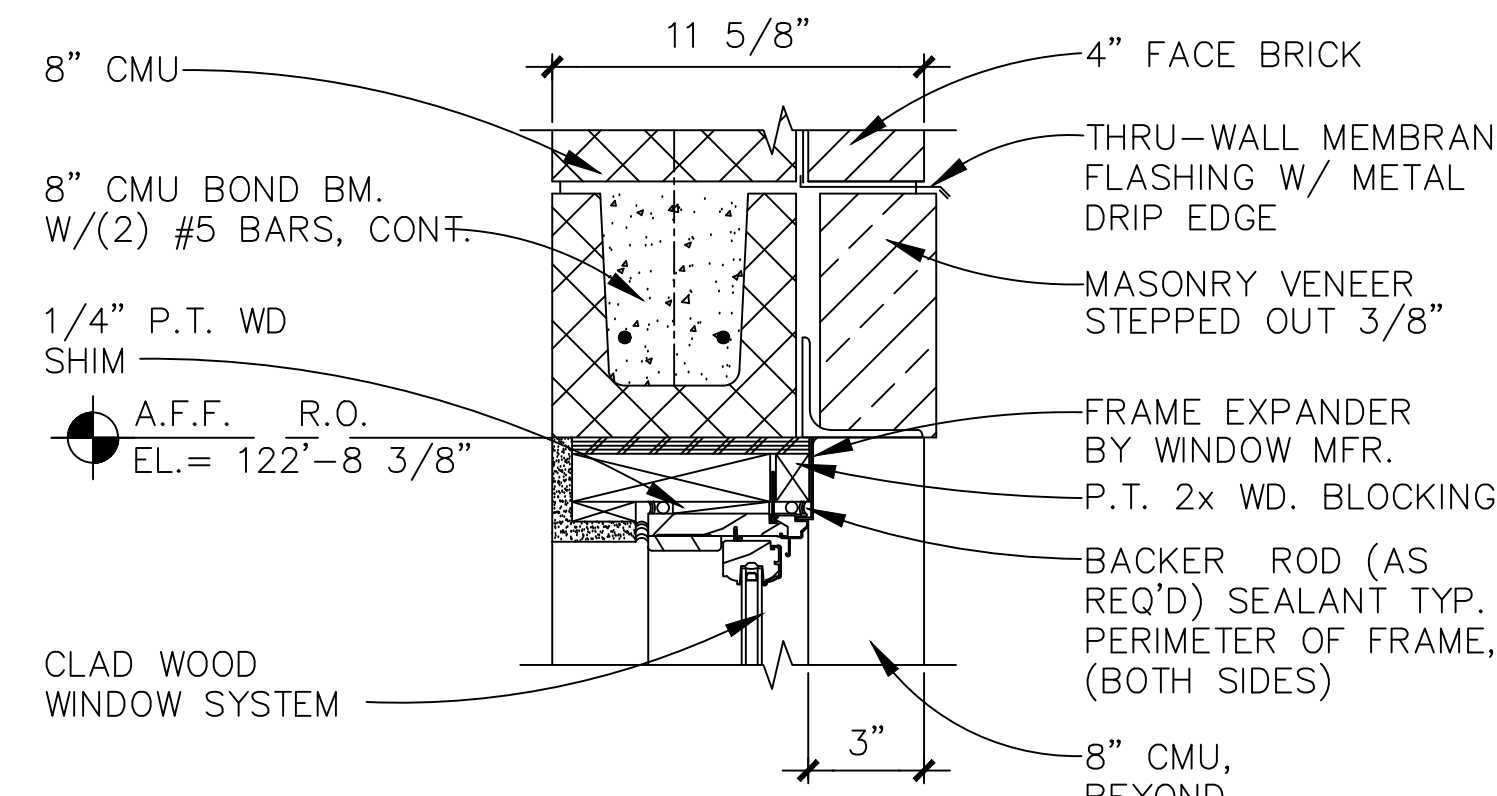
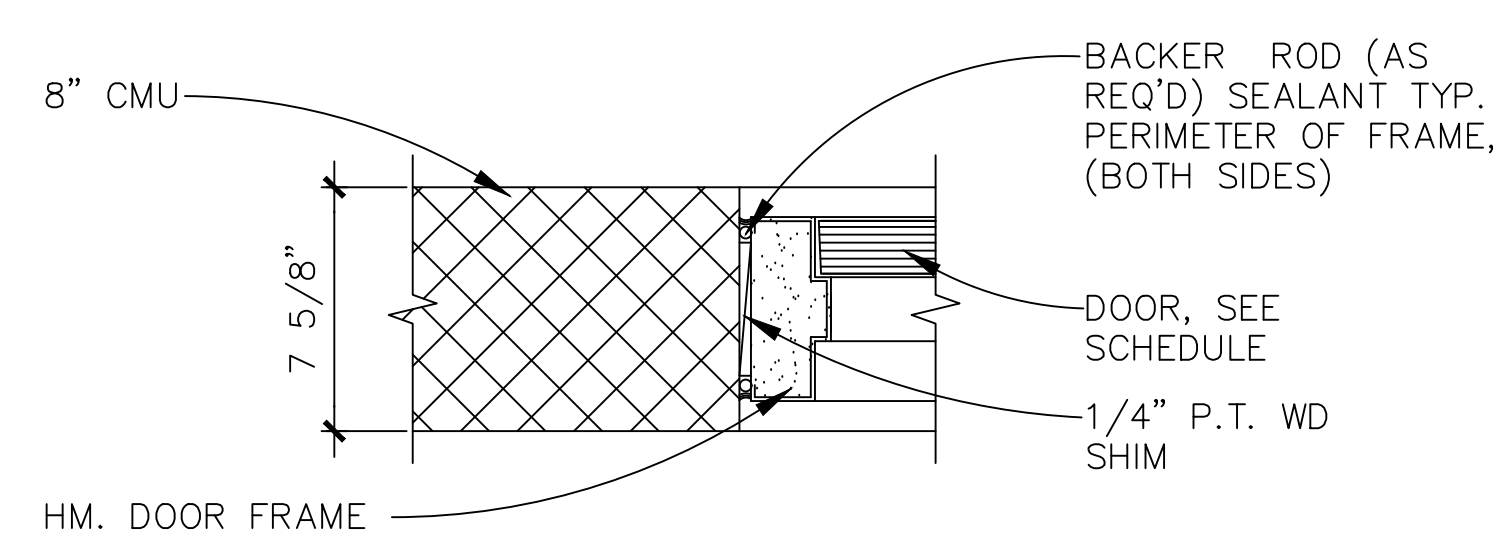
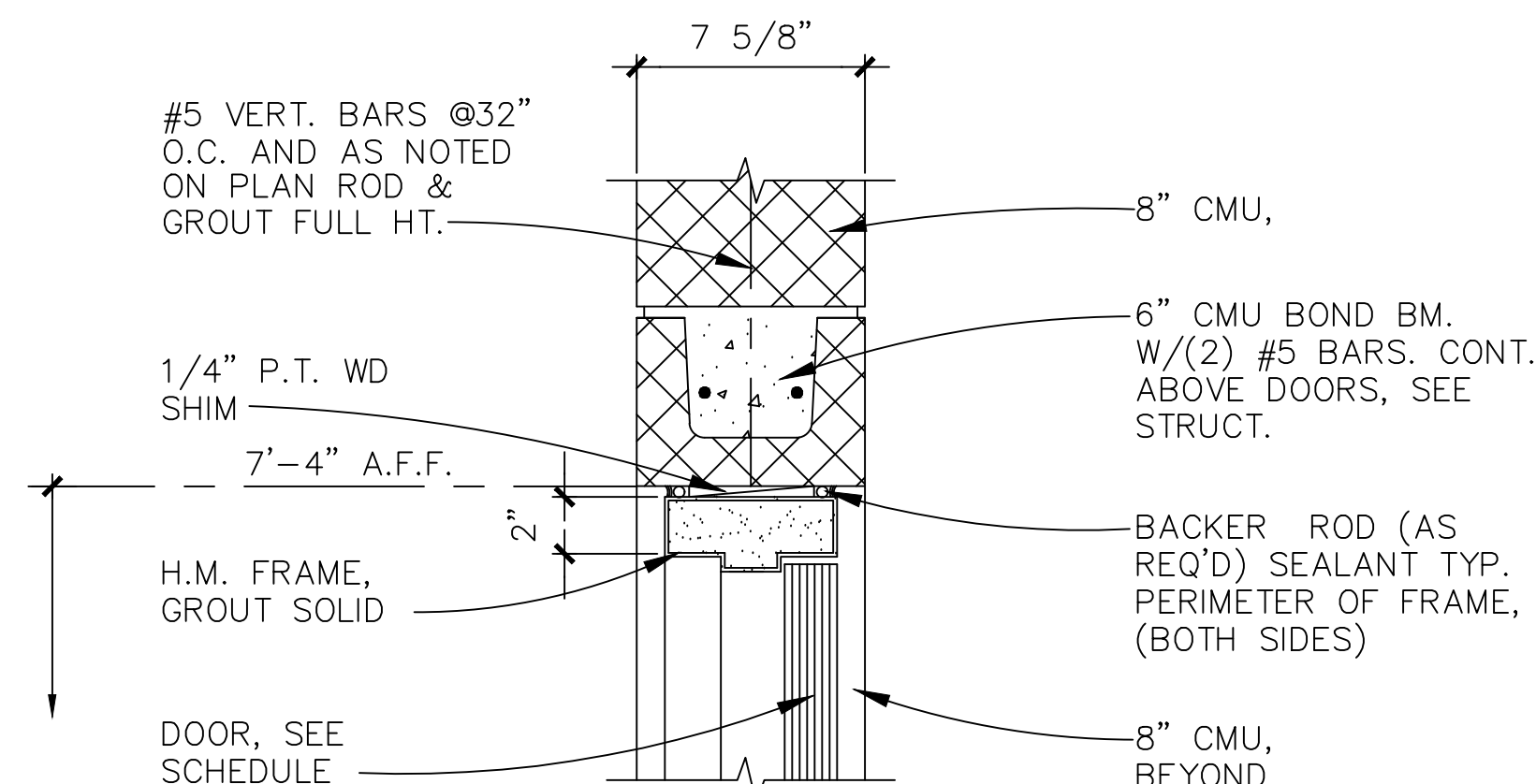
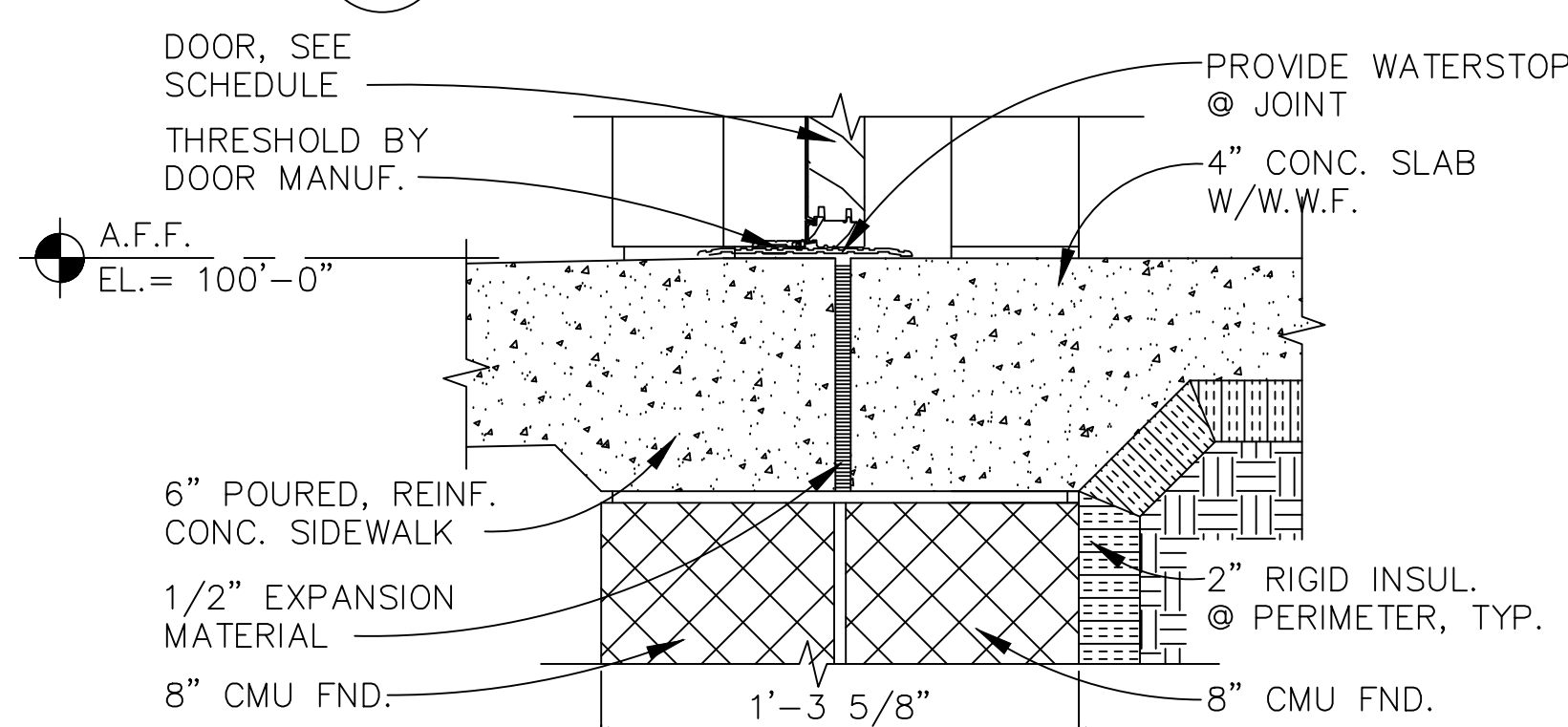
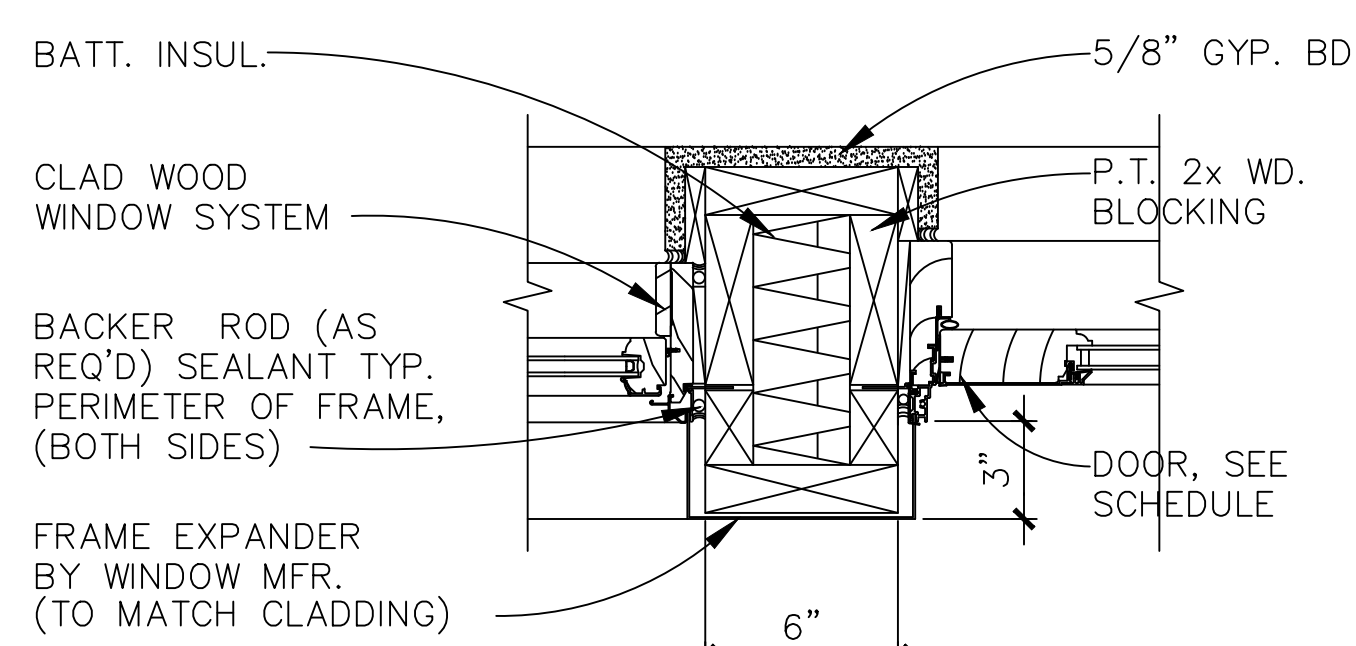
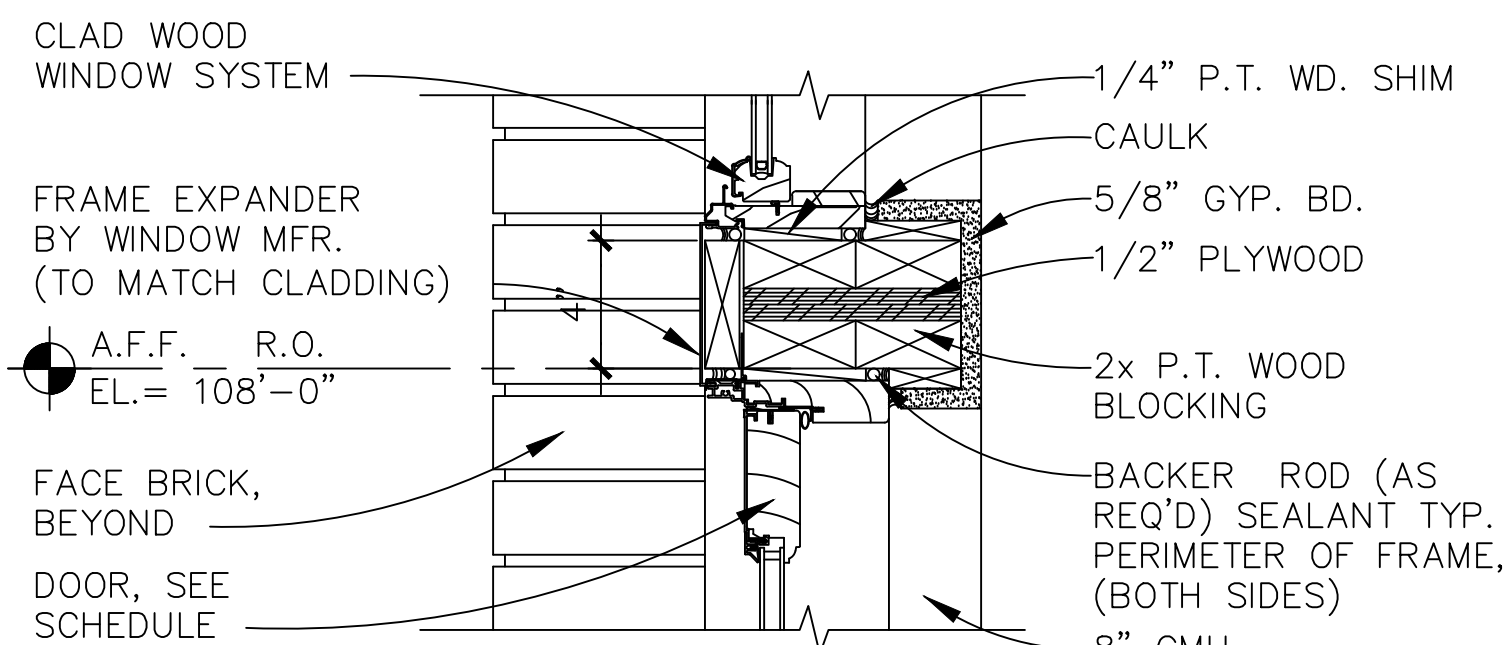
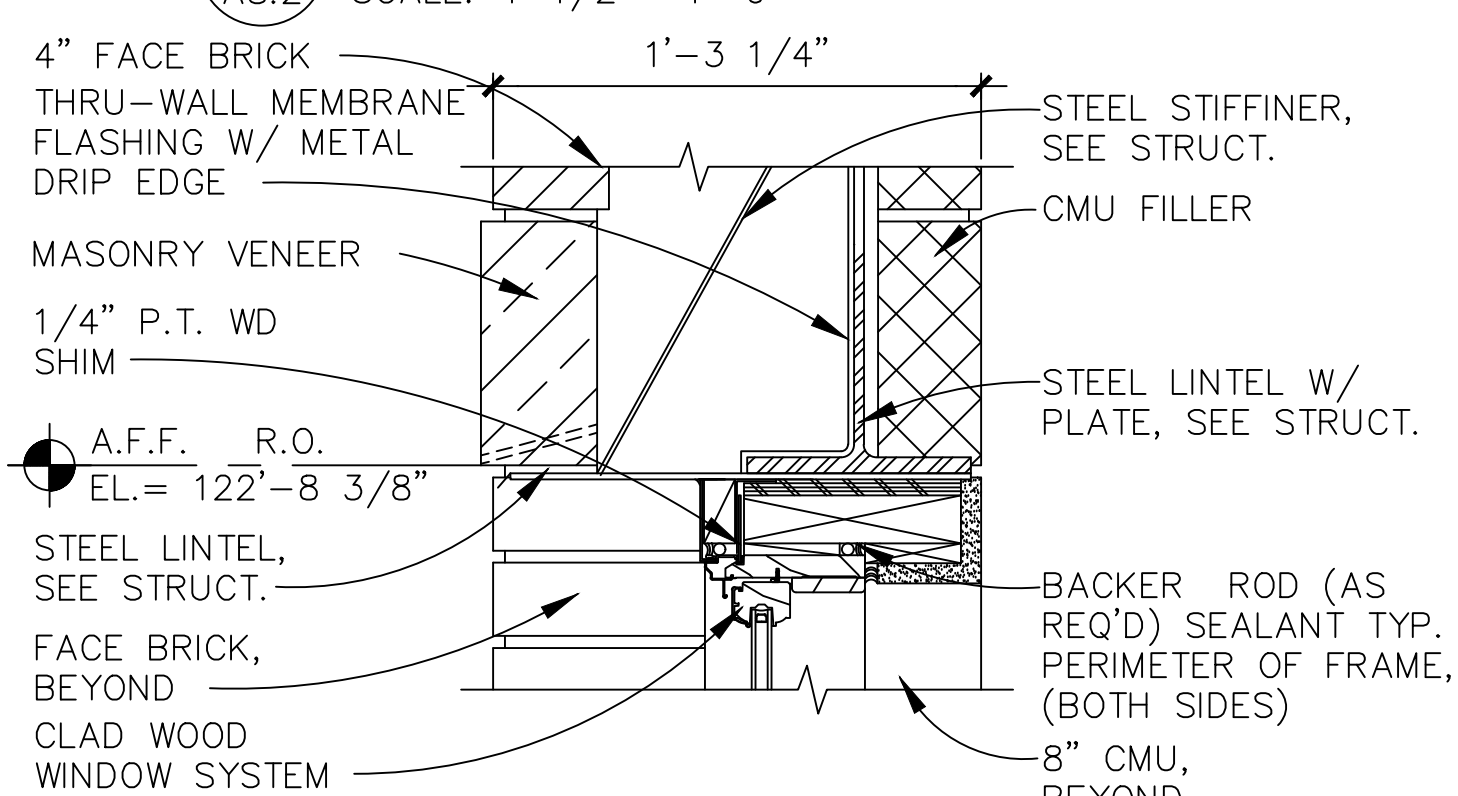
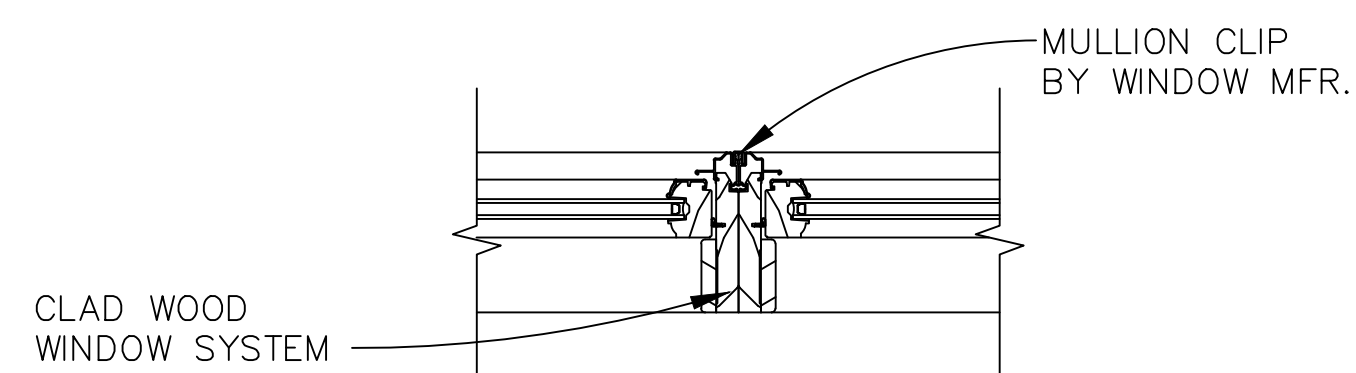
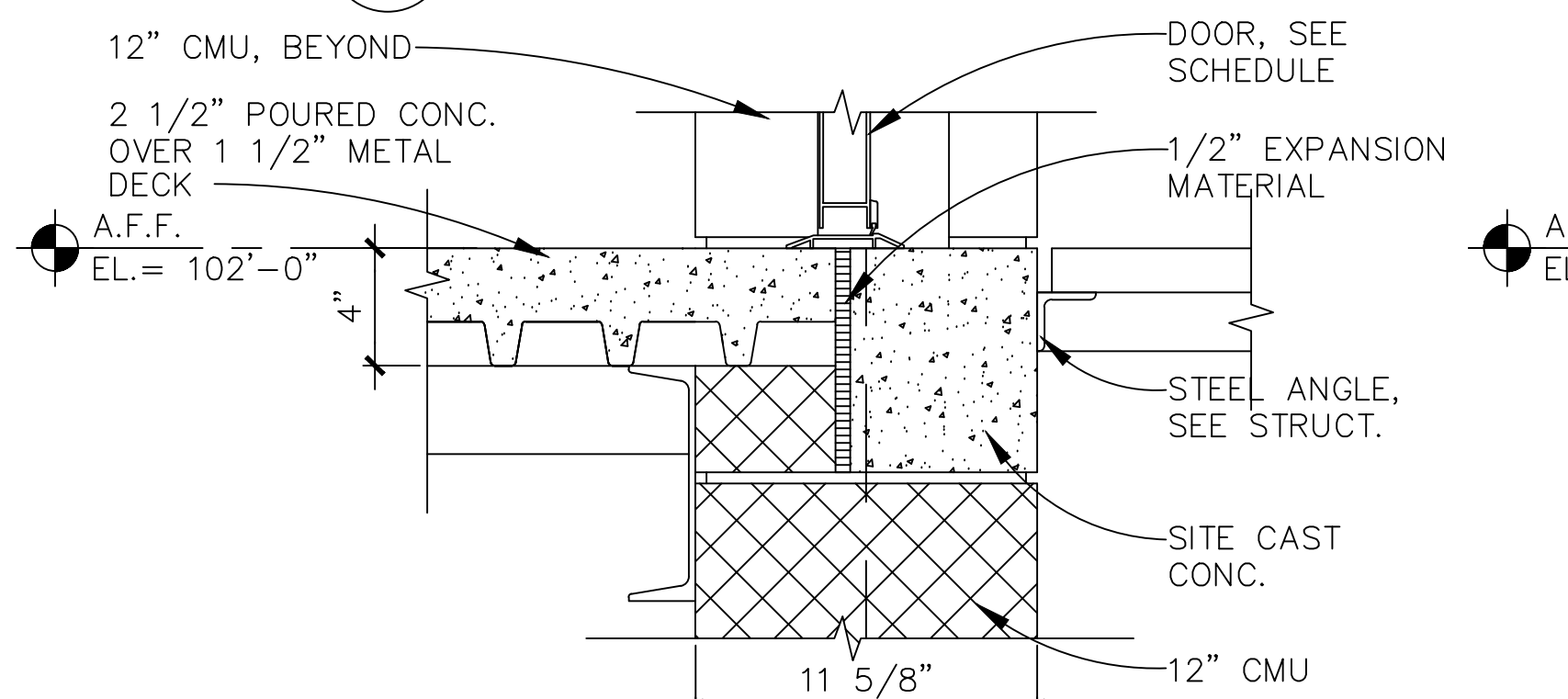
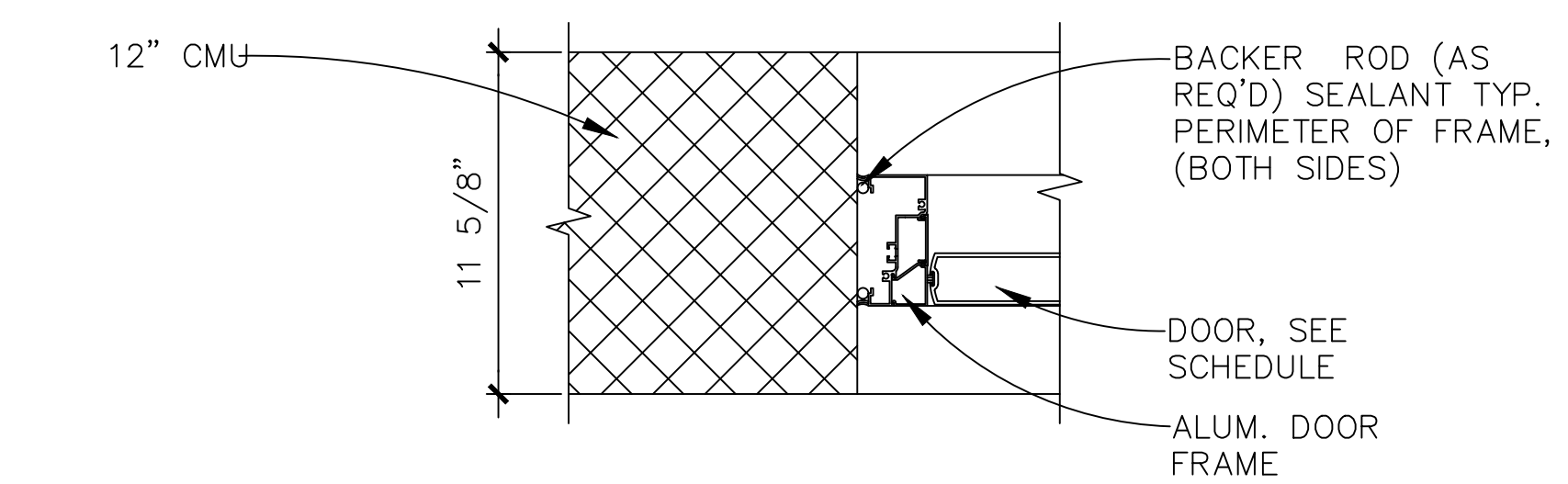
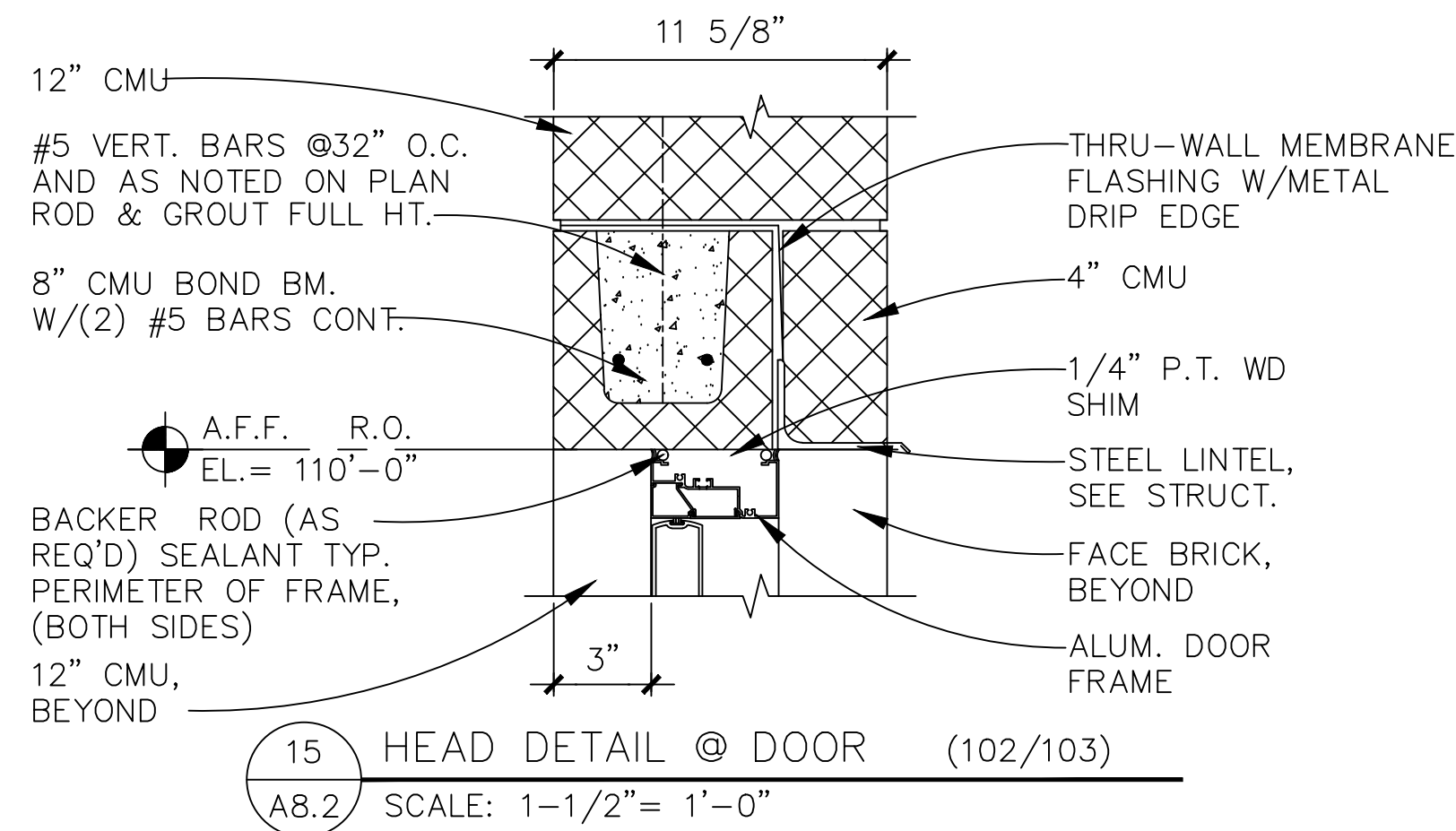
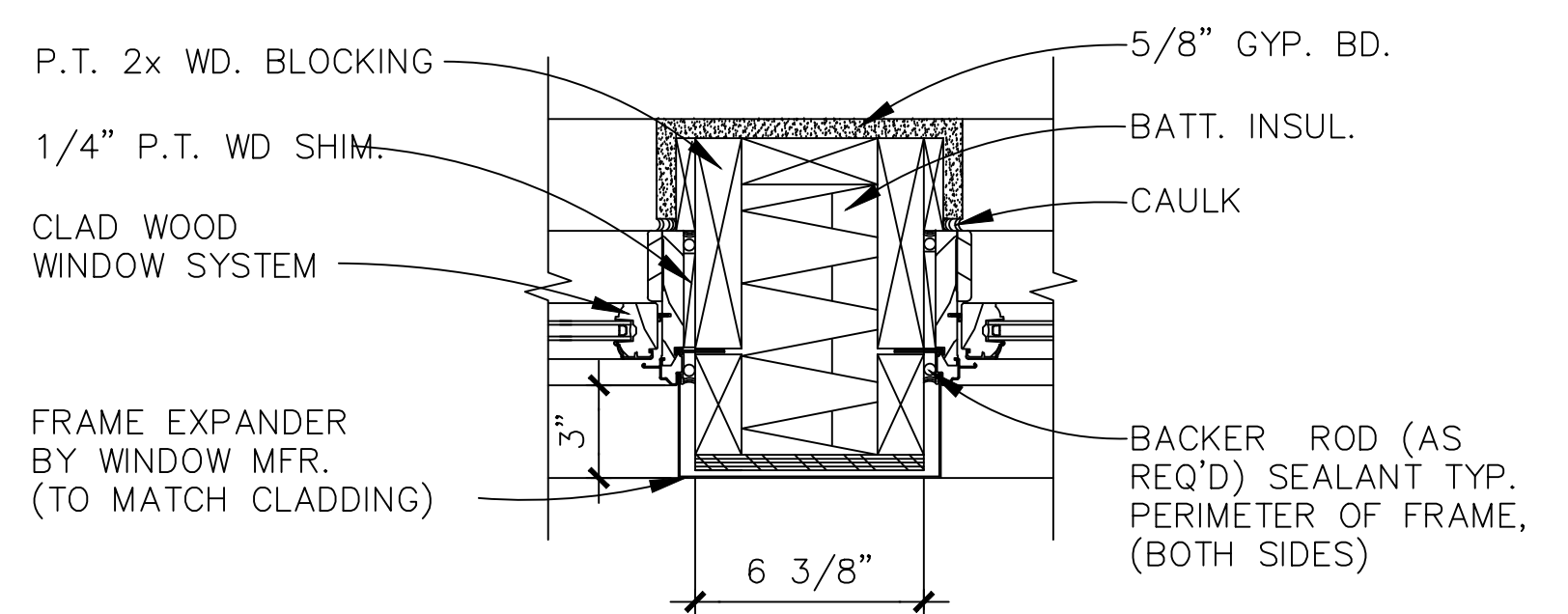
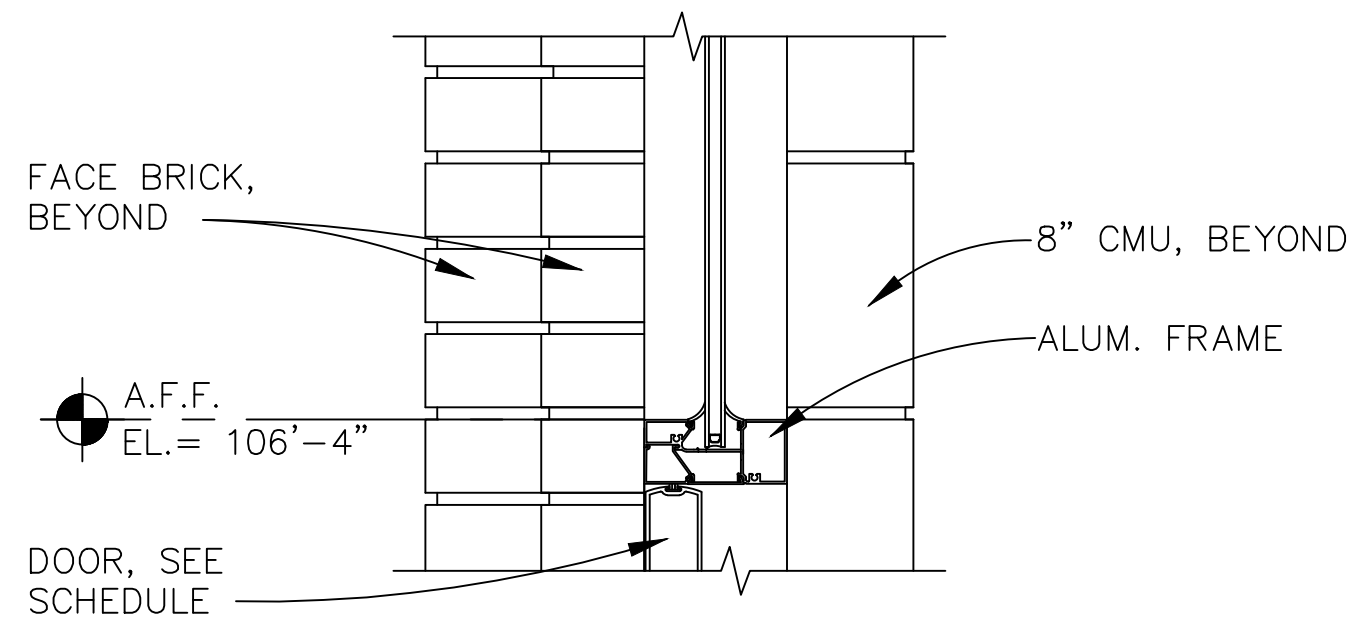
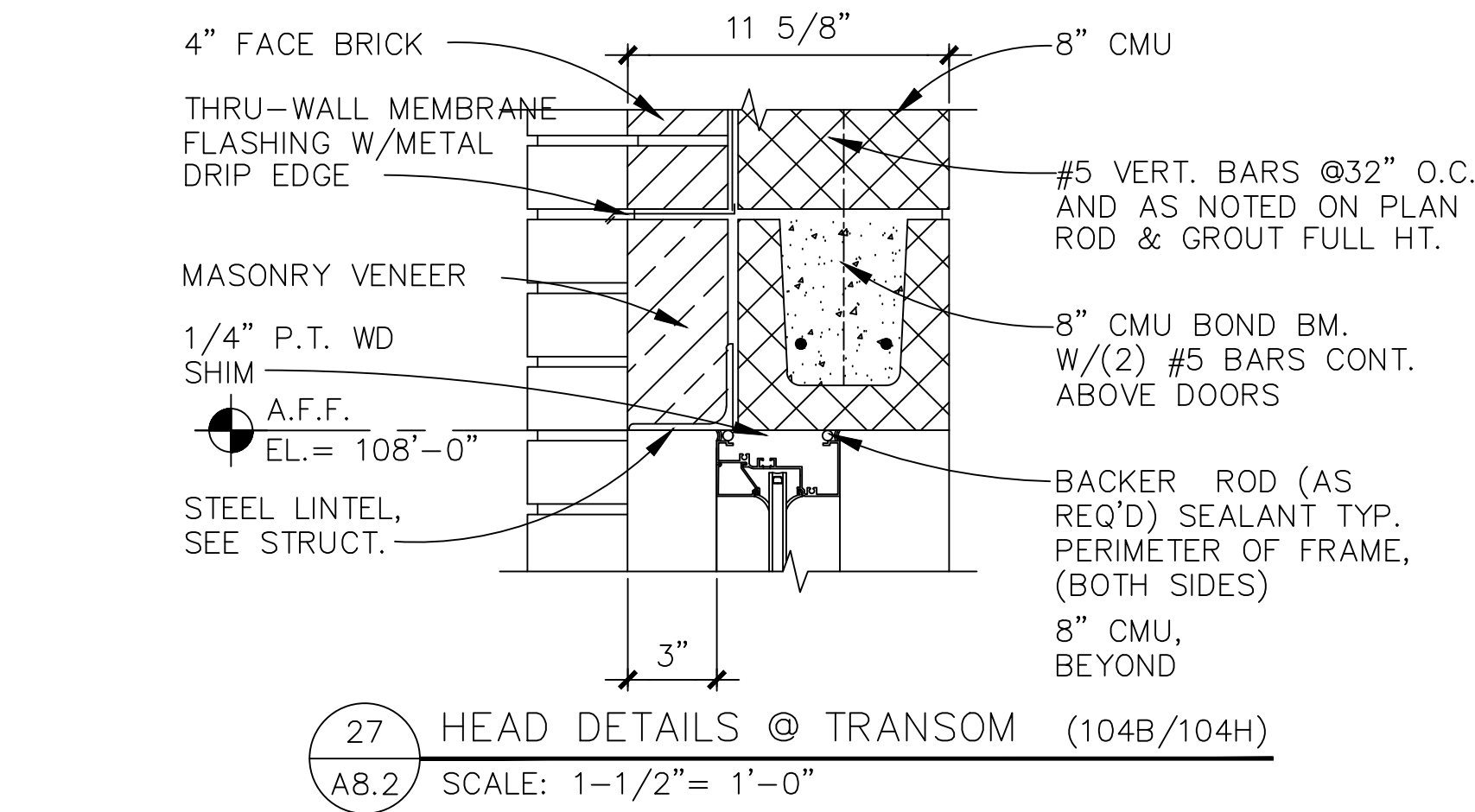
GRAND RAPIDS, MI
3550 16TH AVE. S.E.
49508-4505

TRAVERSE CITY LIGHT & POWER
HALL STREET SUBSTATION
TRAVERSE CITY, MICHIGAN

DOOR & WINDOW SCHEDULE / GATE DETAILS

DRAWING
A8.1

FILE
M105002



DATE	ISSUED FOR
02/15/02	PRELIMINARY REVIEW
03-15-02	RIS AND CONSTRUCTION
12/04/03	RECORD DRAWINGS
02/28/2004	APPROVED FINAL RECORD DRAWINGS

DA/E	R.J.S.
DR	S.S.H.
CK	R.J.K.
APP	R.J.S.
IN CHARGE	

1004 East 8th Street
Ann Arbor, Michigan
48106-1004

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interiors, inc.

GRAND RAPIDS, MI.
3000 EAST AVENUE, S.E.
49508-4000

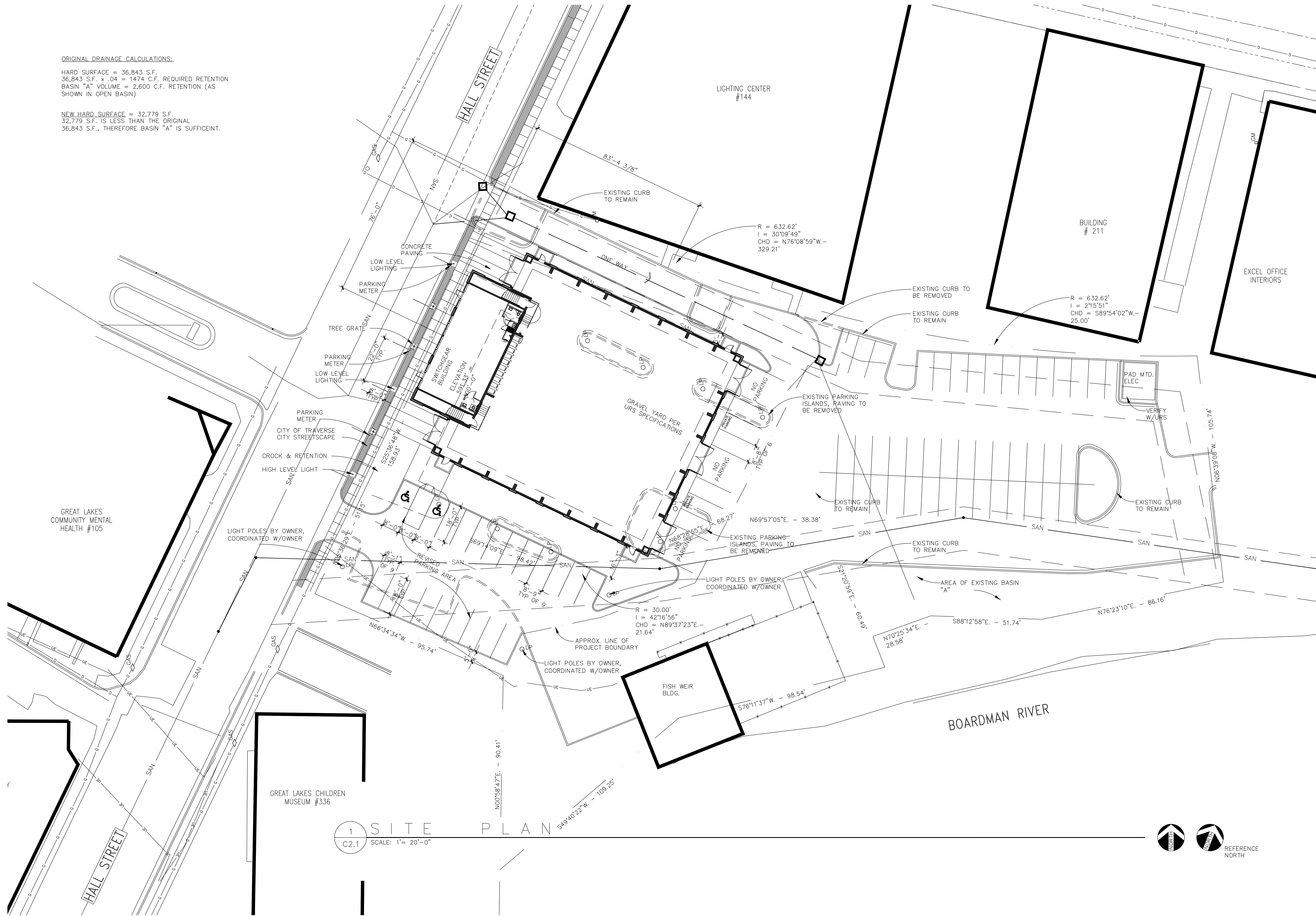
TRAVERSE CITY LIGHT & POWER
HALL STREET SUBSTATION
TRAVERSE CITY, MICHIGAN

DOOR & WINDOW DETAILS

DRAWING
A8.2

FILE
M105002

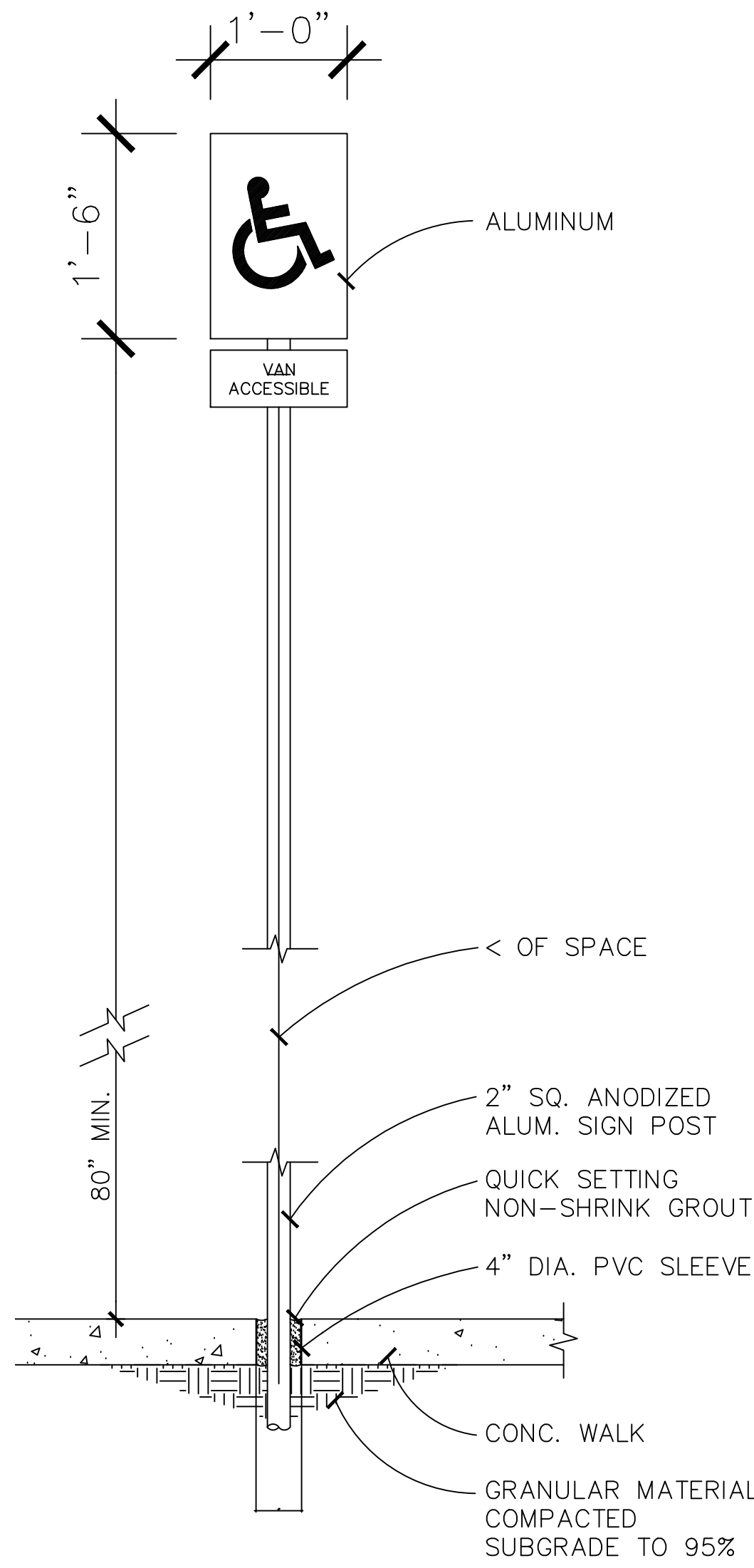
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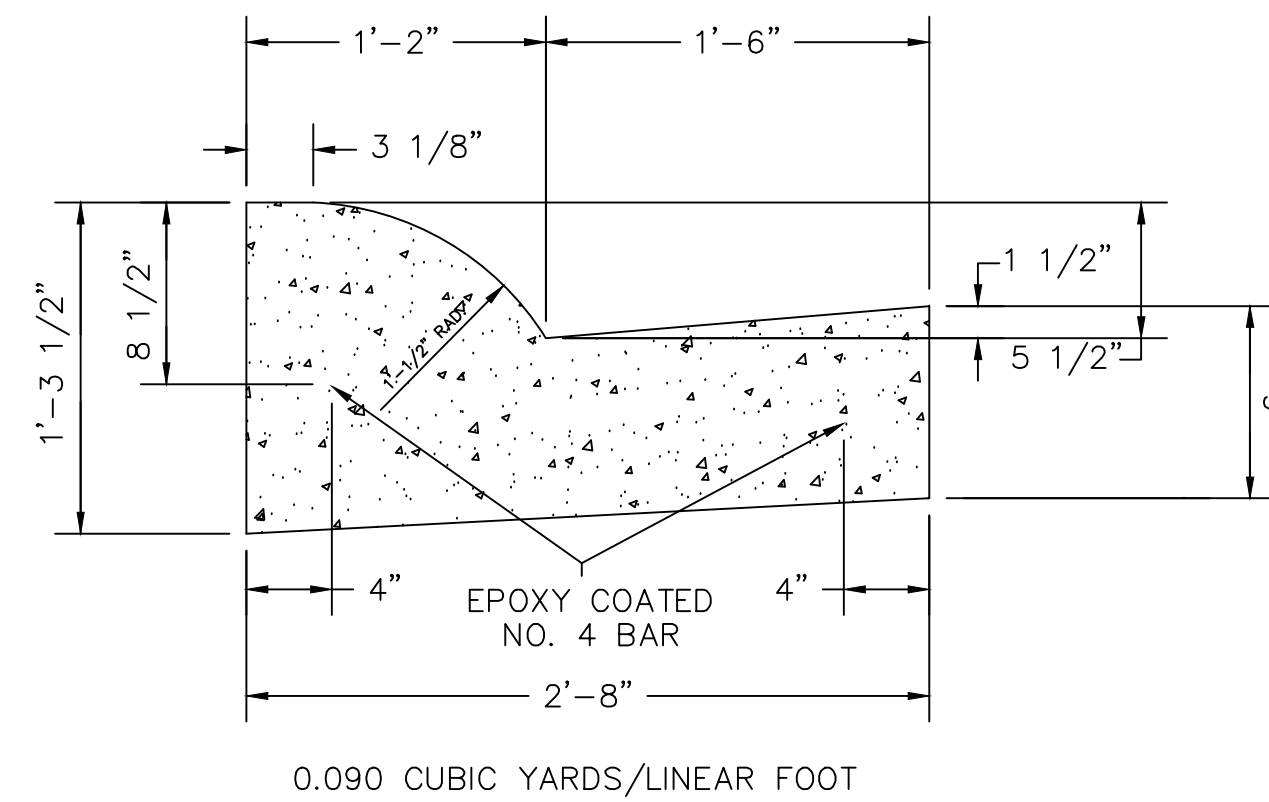
4 B.F. SIGN DETAIL

C6.1 SCALE: N.T.S.



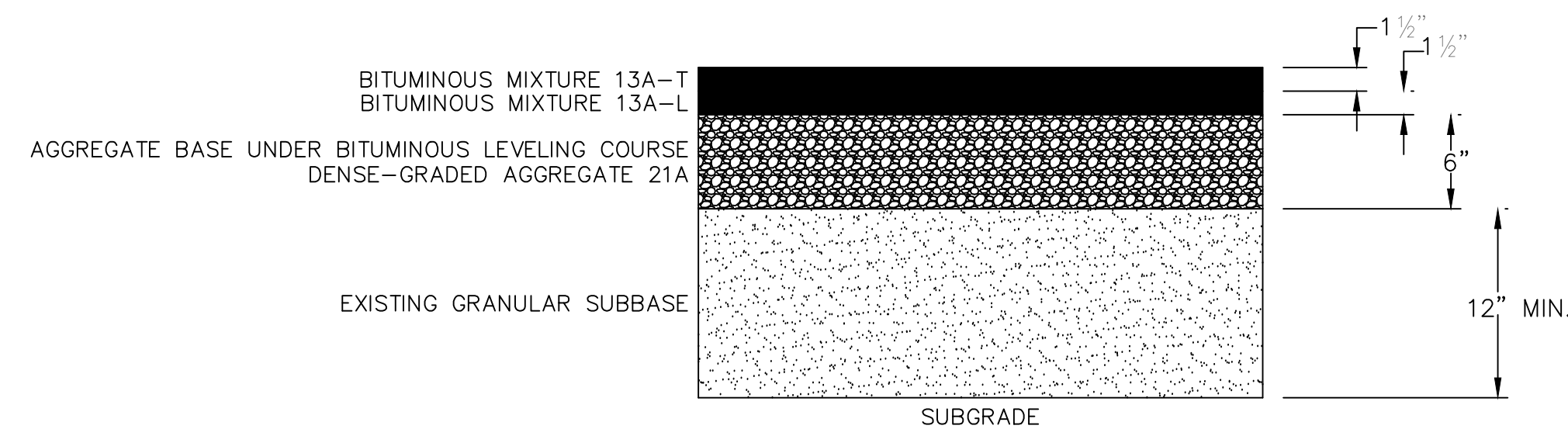
3 CURB DETAIL

C6.1 SCALE: N.T.S.



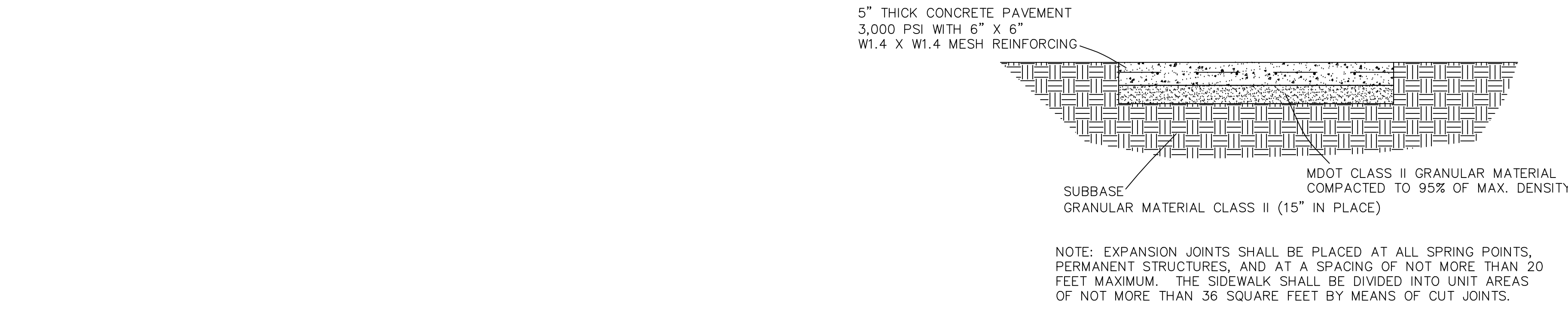
5 BITUMINOUS PAVEMENT STRUCTURE

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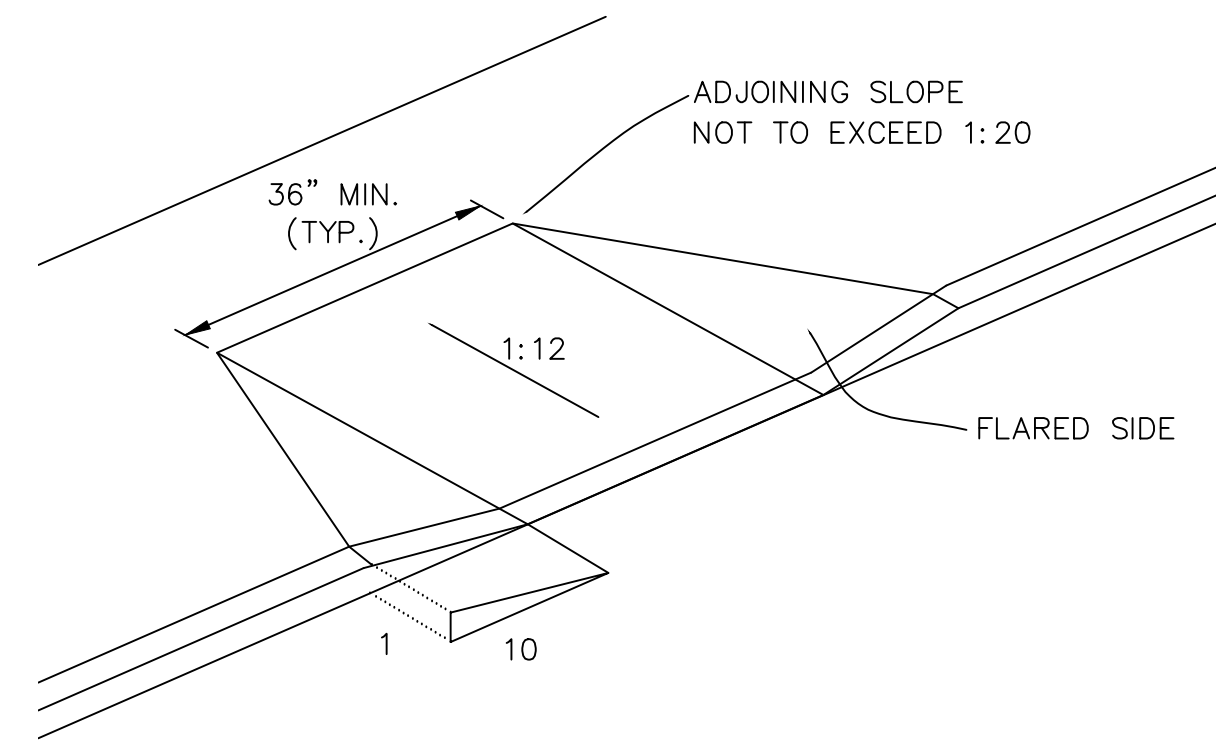
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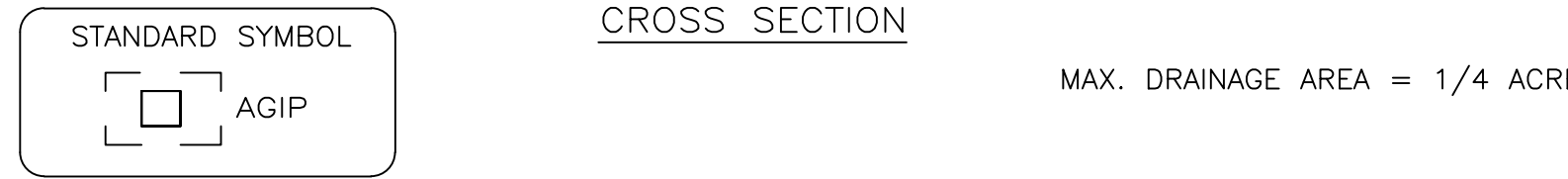
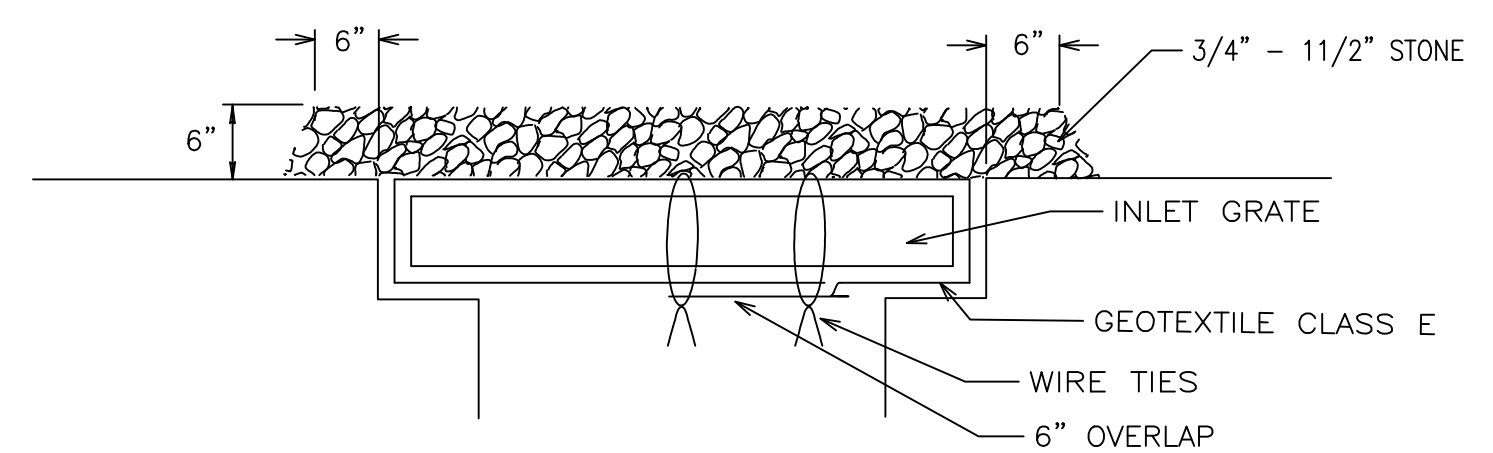
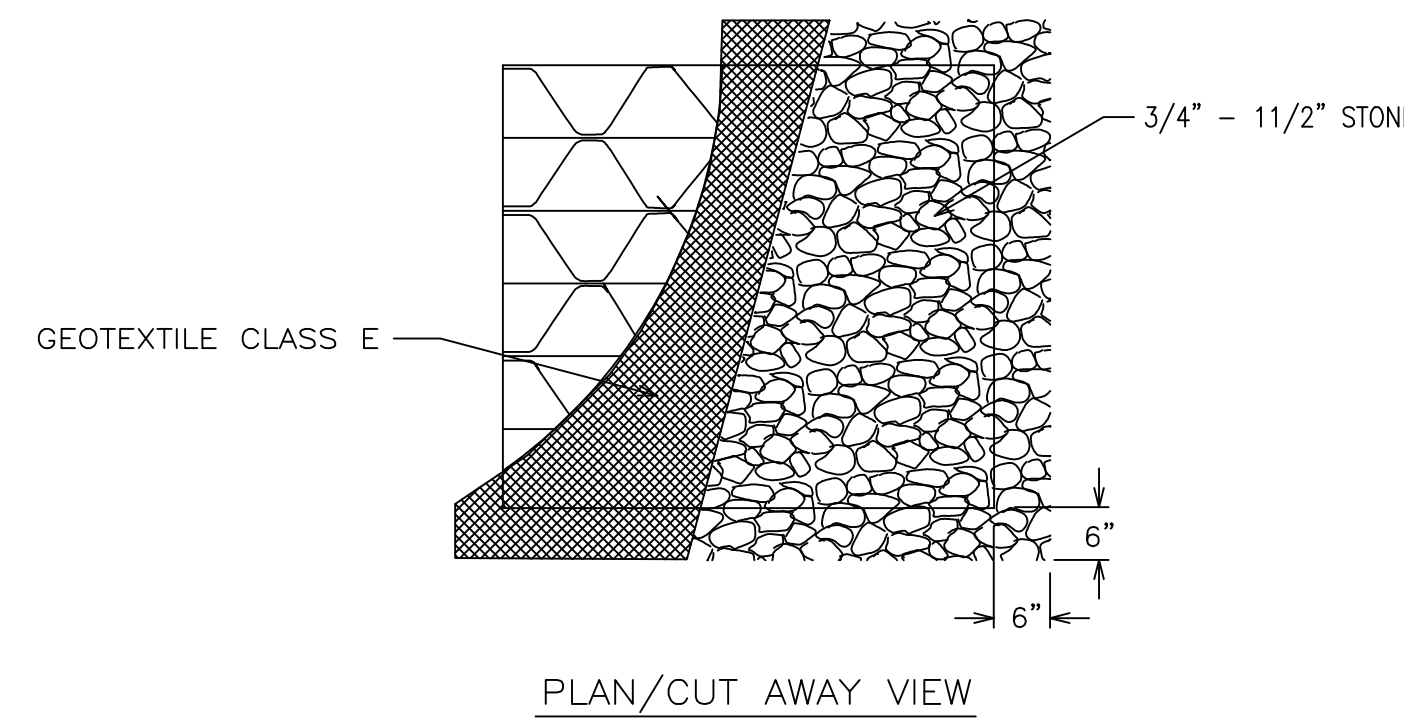
7 BARRIER FREE RAMP

C6.1 SCALE: N.T.S.



6 SEWER UNDER ROADBED DETAIL

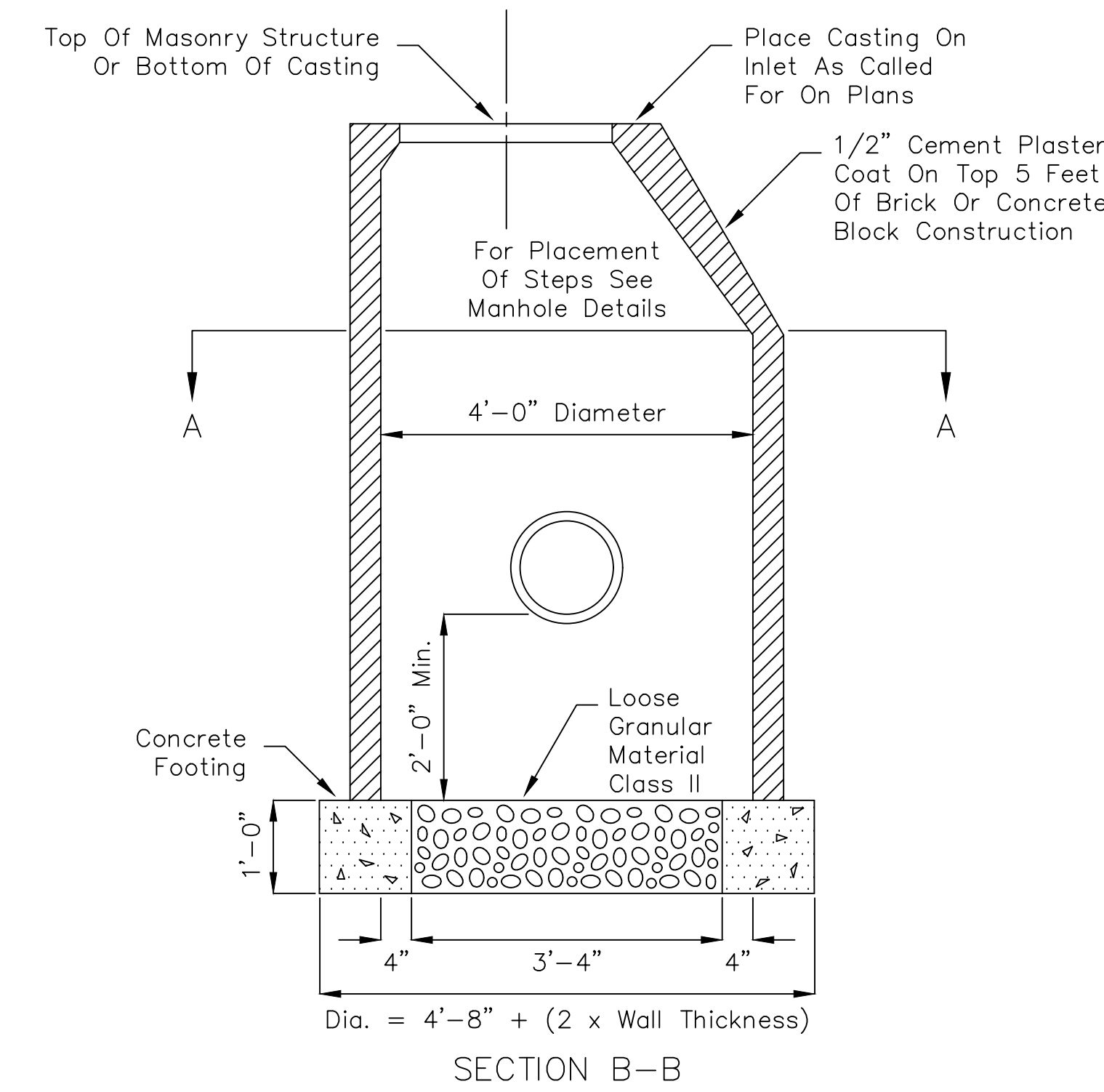
C6.1 SCALE: N.T.S.



- Construction Specifications
1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
 2. Place 3/4" to 1 1/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

1 LEACHING BASIN

C6.1 SCALE: N.T.S.



NOTES

Bedding Under The Utility Shall Be As Shown Or The Trench May Be Undercut Below The Utility And The Undercut Material Replaced With Granular Material Class IIIA. Backfilling Shall Be In Accordance With The Current MDOT Standard Specifications.

Backfill For Utility Trenches Above Granular Material Class IIIA Shall Be As Follows:

Granular Material Class III Shall Be Used To Backfill Utility Trenches Under Roadbed And Shall Be Compacted To Not Less Than 95% Of The Unit Weight.

Granular Material Class III Shall Be Used To Backfill Utility Trenches Within The 1 On 1 Zone Of Influence Shown. Granular Material Class III Shall Also Be Used As Backfill Under Sidewalks, Surfaced Areas, And Miscellaneous Structures, And Compacted To Not Less Than 95% Of Maximum Unit Weight.

Material Excavated From Utility Trenches Shall Be Used To Backfill Utility Trenches Outside The Limits Of The 1 On 1 Zone Of Influence And Shall Be Compacted To Not Less Than 90% Of Maximum Unit Weight.

Granular Material Class I, II, IIIA, Or IIIA May Be Used Where Granular Material Class III Is Called For On Plans.

Sufficient Trench Width Shall Be Provided To Allow Free Working Space And To Permit Compacting The Backfill Around The Pipes.

The Following Trench Widths Are To Be Used As A Guide Only:

ID Pipe Size (Inches)	Trench Width "W" (Feet)
Less Than 18	3.0
21	3.5
24	4.0
30	5.0
36	6.0
42	7.0
48	8.0

Estimated Pavement Removal Width Is To Be Trench Width "W" Plus 1' Each Side Of The Trench (6' Minimum).

DRAWING

C6.1

FILE

M105002

TRAVERSE CITY LIGHT & POWER
HALL STREET SUBSTATION
TRAVERSE CITY, MICHIGAN
SITE PLAN DETAILS

URS
GRAND RAPIDS, MI.
3550 GRAND RAPIDS S.E.
49508-4500

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artistry
interiors, inc.

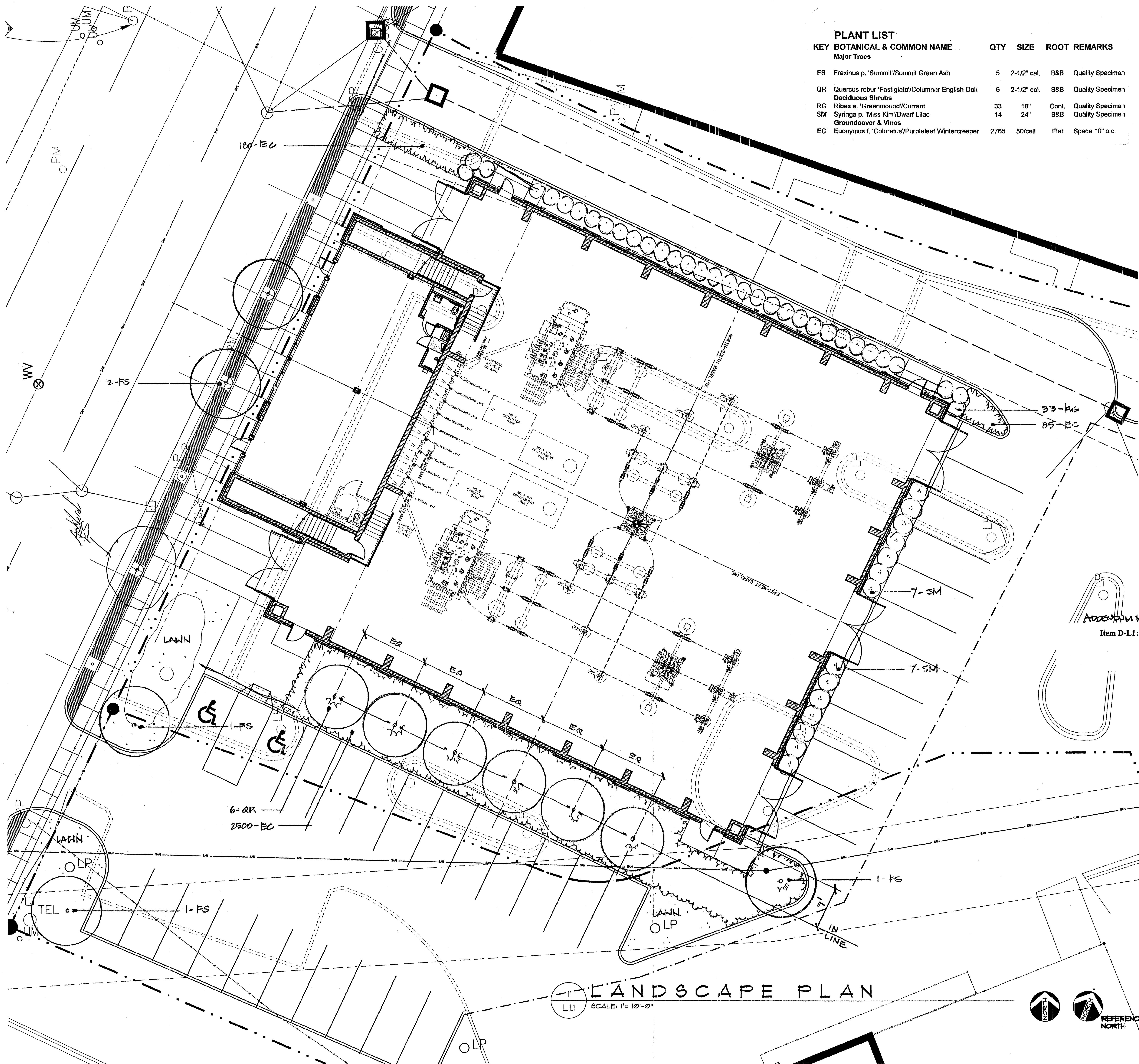
1004 East 8th Street
Traverse City, Michigan
231-947-0060

EC&S ENGINEERING INC.
SOUTH BEND, IN 46708
TELEPHONE (219) 441-2700

DA/E R.J.S.
DR S.S.H.
CK R.J.K.
APP R.J.S.
IN CHARGE

02/25/2004 APPROVED FINAL RECORD DRAWING
12/24/03 RECORD DRAWING
05-15-02 BID AND CONSTRUCTION
02-15-02 PRELIMINARY REVIEW
DATE

ISSUED FOR



PLANT LIST

KEY	BOTANICAL & COMMON NAME	QTY	SIZE	ROOT	REMARKS
Major Trees					
FS	Fraxinus p. 'Summit'/Summit Green Ash	5	2-1/2" cal.	B&B	Quality Specimen
QR	Quercus robur 'Fastigiata'/Columnar English Oak	6	2-1/2" cal.	B&B	Quality Specimen
RG	Ribes s. 'Greenmount'/Currant	33	18"	Cont.	Quality Specimen
SM	Syringa p. 'Miss Kim'/Dwarf Lilac	14	24"	B&B	Quality Specimen
Groundcover & Vines					
EC	Euonymus f. 'Coloratus'/Purpleleaf Wintercreeper	2765	50/cell	Flat	Space 10" o.c.

LANDSCAPE SPECIFICATIONS:

- SITE CONDITIONS:**
- Provide all required temporary water supply from source(s) provided by the Owner.
 - Locate all utilities, public and private, prior to any landscape construction operations.
 - Protect existing utilities, paving, sidewalks, curbs, landscape and other elements on the site from damage caused by landscape operations. Any damage caused by landscape operations shall be restored to its original condition at the Landscape Contractor's expense.
 - Obtain all necessary permits prior to any construction operations.
- PLANT MATERIAL:**
- Refer to the Plant List for specific types and quantities of plants to be furnished. Quantities shown are for convenience only. The contractor must confirm all materials and supply sufficient materials to complete the job as drawn. Report any plant quantity discrepancies to Landscape Architect.
 - Plant material must meet or exceed standards set forth in "American Standard for Nursery Stock" guideline specification.
 - Plants shall be nursery grown, not field collected, in accordance with good horticultural practices, root pruned within the last two years, and grown under climate conditions similar to those in the locality of the project for at least the last two years.
 - All plant species are subject to availability. Material shortages in the landscape industry may require substitutions. All substitutions must be approved by the Landscape Architect.

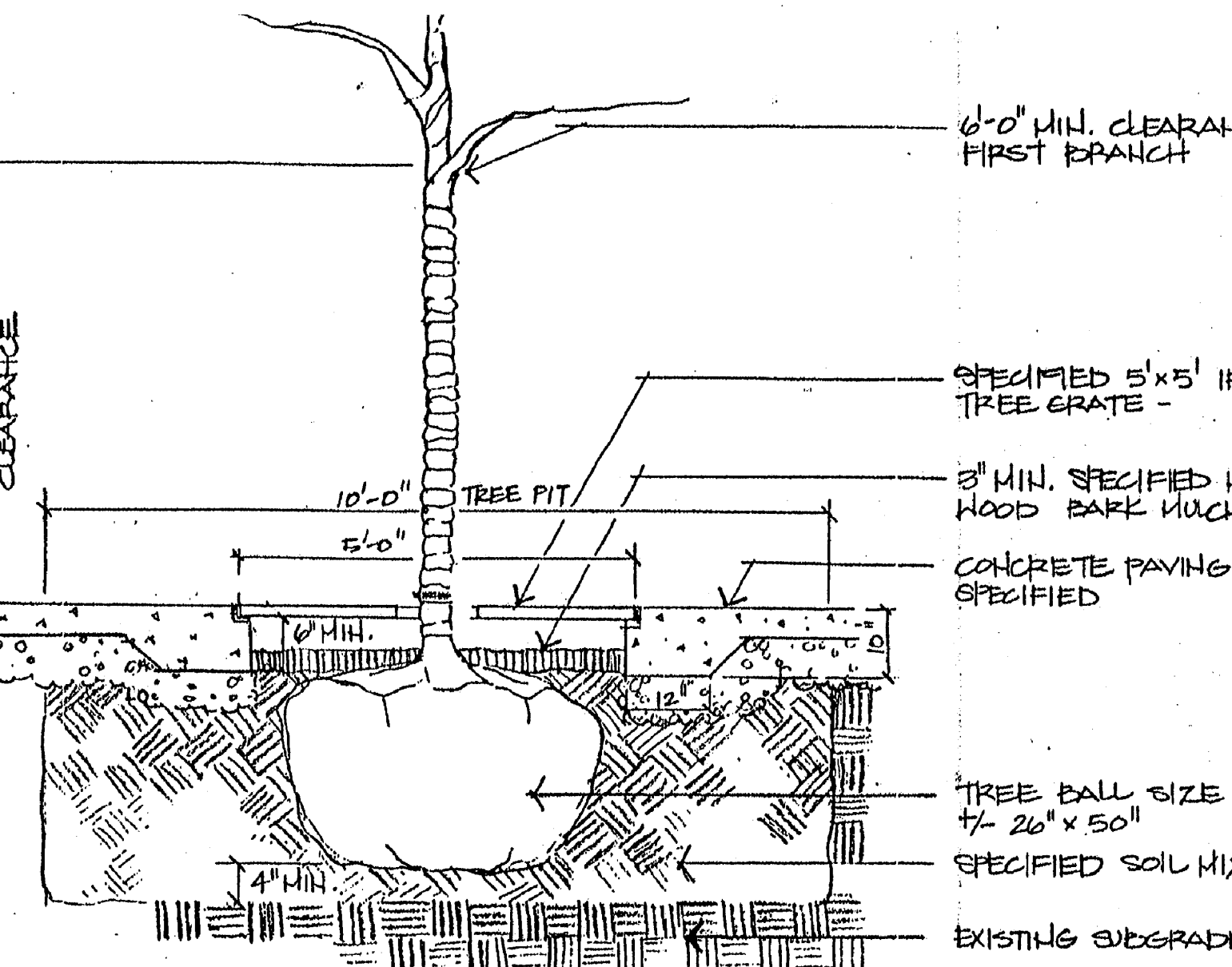
- WARRANTY:**
- Warrant that all work in this section shall be free from defects of materials and workmanship for a period of one (1) year from the date of acceptance of the project.
 - Warrant all plant material for a period of one (1) year beginning from the date of acceptance to be in good, healthy and flourishing condition.
 - Remove dead or dying plants immediately during the warranty period. Any replacement plant material shall be warranted for an additional (12) month period.
 - Remove and replace all plants as determined by the Landscape Architect to be unsatisfactory during initial planting installation.

- PLANTING OPERATIONS:**
- All plant bed edges are to be hand spaded with clean, smooth lines as shown on plans. Layout beds and plants for approval by Landscape Architect prior to any planting activities.
 - Landscape Contractor shall provide soil mix backfill in all planting holes and beds consisting of 50% compost and 50% topsoil mix. Landscape Contractor is responsible for verifying amount of soil mix required.
 - Roll all grades, smooth and continuous, and ensure positive drainage.
 - Place trees & shrubs on 4" min. planting soil mix.
 - Set trees and shrubs in center of pits on layer of soil mix, plumb and straight and at such level that, after settlement, the crown of the tree root balls shall be 2" above the adjacent finished grade, and shrub root balls shall be at finish grade. Brace plants rigidly in position until the planting soil has been tamped solidly around the ball and roots. Tamp thoroughly before installing remainder of the planting soil to the top of pit, eliminating all air pockets.
 - No initial staking is required. However, if during the warranty period, any plant fails to maintain a straight and plumb position, furnish specified supports and install per drawings at no additional cost to the Owner. Perform staking only after review and consultation with the Landscape Architect. Plants shall stand plumb after staking.
 - Single-Staking: Single-stake small trees up to 2-1/2" in caliper. Stake any shrubs showing difficulty in supporting themselves and/or by request of the Landscape Architect. Place stakes away from trunk of the tree taking care to clear roots. Set stake on windward side of each tree. Orient all tree stakes in a similar direction.
 - Double-Staking: Double-stake trees to 3-1/2" in caliper. Place stakes away from trunk of the tree taking care to clear roots. Orient all tree stakes in a similar direction.
 - For groundcover, set plant so the crown will have the same relationship to finished grade as it was in the container.
 - Thoroughly water all plants immediately after planting. Take care to not wash soil away from roots.
 - Mulch all plants immediately after planting, as planting progresses using shredded hardwood bark mulch, not to exceed 2" in its largest dimension, free of foreign matter, sticks, stones and clods. Spread 3" layer around all trees & shrubs and a dusting of groundcover beds taking care to not bury leafy stems. Tree pit size shall be a minimum of five feet in diameter, fully mulched. Mulch all plant beds, including beds for shrubs and perennials in their entirety.
 - All areas noted as lawn shall be top-dressed with a minimum of 4 inches topsoil to create a uniform appearance and proper drainage, finely raked and hand seeded.

- POST-PLANTING OPERATIONS:**
- Prune, thin out and shape trees and plants in accordance with standard horticultural practice under the direct observation of the Landscape Architect. Prune to preserve the natural character of the plant and to compensate the loss of roots during transplanting. Do not prune before delivery or planting.

- IRRIGATION:**
- Design an irrigation system with approval of Landscape Architect prior to installation.
 - Irrigation Contractor shall provide an as-built drawing to the Owner and Landscape Architect prior to final payment.

Item D-L1: Refer to Drawing L1.1, Landscape, Landscape Specifications, Irrigation.
Added note C. as follows:
"C. Irrigation Contractor shall provide backflow prevention as part of the irrigation system."



TREE GRATE PLANTING DETAIL
NO SCALE

ANITA C. SILVERMAN
LANDSCAPE ARCHITECT
330 W. 7th STREET
TRAVERSE CITY, MI 49684
PH: 231-932-1825
FAX: 231-935-6773

DA/E
DR
CK
APP
IN CHARGE
DATE
ISSUED FOR

URS
architecture,
interiors, inc.

1004 East 8th Street
Traverse City, Michigan
231-947-0066

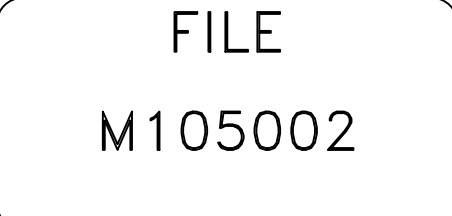
GRAND RAPIDS, MI
3650 16th Street S.E.
49508-2800

TRAVERSE CITY LIGHT & POWER
HALL STREET SUBSTATION
LANDSCAPING PLAN

TRAVERSE CITY, MICHIGAN

DRAWING
L1.1

FILE
M105002



FOUNDATIONS:

1. THE FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN THE "GEO TECHNICAL INVESTIGATION FOR THE TRAVERSE CITY LIGHT AND POWER PROPOSED HALL STREET SUBSTATION AND TRANSMISSION LINE RELOCATION" BY INLAND SEAS ENGINEERING, INC., DATED MARCH 2002, AND AS MODIFIED BY THE LETTER FROM INLAND SEAS ENGINEERING, INC., TO AECOM DATED APRIL 5, 2002 MODIFYING THE ALLOWABLE BEARING CAPACITY AT THE 3'-0" WIDE WALL FOOTINGS.
2. ALL FOOTINGS ARE DESIGNED USING AN ALLOWABLE SOIL CONTACT PRESSURE OF 2500psf. WITH THE ACCEPTANCE OF THE 3'-0" WIDE WALL FOOTINGS WHERE THE ALLOWABLE BEARING CAPACITY IS 3500psf. ALL OTHER WALL OPERATIONS SHOULD TAKE PLACE BELOW BUILDING OR PAVEMENT AREAS SHOULD FOLLOW THE STANDARD ALLOWABLE BEARING CAPACITY IN THE PREPARATION SECTION OF THE REPORT OF THE GEO TECHNICAL INVESTIGATION MENTIONED ABOVE.
3. FILL SHOULD BE SPREAD IN SHALLOW LIFTS, 6" TO 8" MAXIMUM, AND COMPACTED TO 95% MODIFIED PROCTOR DENSITY (ASTM D-1557).
4. WHERE FOUNDATION WALLS ARE REQUIRED TO HAVE FILL PLACED ON EACH SIDE, PLACE FILL ON BOTH SIDES OF WALL TO MAINTAIN A COMMON ELEVATION ON EACH SIDE OF THE WALL.
5. FOUNDATION WALLS THAT RETAIN EARTH SHALL BE BRACED AGAINST BACKFILLING PRESSURES UNTIL FLOOR STRUCTURE AT TOP AND BOTTOM ARE IN PLACE.
6. GENERAL CONTRACTOR SHALL VERIFY LOCATION OF ALL MECHANICAL LINES BEFORE CASTING FOUNDATIONS AND PROVIDE SLEEVES, LOWER FOUNDATIONS OR CAST PROTECTION AROUND LINES AS REQUIRED.

CONCRETE:

1. ALL CONCRETE SHALL ATTAIN A 28-DAY COMPRESSIVE STRENGTH f'_c OF 4000 PSI (U.N.O.) ALL C.I.P. CONCRETE SHALL BE NORMAL WEIGHT.
2. REINFORCEMENT FOR CONCRETE SHALL CONFORM TO THE FOLLOWING:
 - DEFORMED BARS SHALL BE ASTM A615 GRADE 60.
 - WELDED WIRE FABRIC SHALL BE ASTM A185 AND SHALL HAVE A MINIMUM END AND SIDE LAP OF 6".
3. ANCHOR BOLTS AND ANCHOR RODS EMBEDDED IN CONCRETE SHALL CONFORM TO THE FOLLOWING:
 - ANCHOR BOLTS SHALL BE ASTM A307
 - ANCHOR RODS SHALL BE ASTM A36
4. ALL CONCRETE DESIGN AND CONSTRUCTION SHALL CONFORM TO THE MOST RECENT VERSION OF THE FOLLOWING STANDARDS:
 - "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318)"
 - "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDING (ACI 301)"
 - "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT (ACI 315)"
5. PROVIDE DOWELS FROM ALL WALL FOOTINGS INTO CMU WALLS. DOWELS SHALL MATCH SIZE AND SPACING OF VERTICAL REINFORCING STEEL IN WALLS.
6. HORIZONTAL WALL AND FOOTING REINFORCEMENT CALLED FOR ON THE DRAWING SHALL EXTEND CONTINUOUSLY THROUGH THE MINIMUM 36" EAP OF CENTER LAP CORNER BARS SHALL BE PROVIDED AT ALL OUTSIDE CORNERS AND SHALL BE OF THE SAME SIZE AND SPACING OF MAIN REINFORCEMENT. PROVIDE TWO #5 BARS EACH SIDE OF ALL OPENINGS. ALSO PROVIDE TWO #5 x 4'-0" DIAGONAL BARS AT CORNERS OF OPENINGS.
7. PROVIDE DOWELS FROM ALL FOOTINGS TO CONCRETE PIERS. DOWELS SHALL MATCH SIZE AND SPACING OF REINFORCING BARS IN THE PIERS. AT THE CONTRACTOR'S OPTION, LAP BARS 36 BAR DIAMETERS OR EXTEND DOWELS FULL HEIGHT OF PIERS (U.N.O.).
8. REFER TO ARCHITECTURAL DRAWINGS FOR CONCRETE FINISHES.
9. MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS SHALL BE REFERRED TO FOR DRAINS, SLEEVES, OUTLET BOXES, CONDOL ANCHORS.
10. REFER TO MECHANICAL DRAWING FOR HOUSEKEEPING PADS AND INERTIA BASES AT MECHANICAL EQUIPMENT.
11. BASE PLATES, ANCHOR BOLTS, SUPPORT ANGELS, ETC. BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 3" CONCRETE.
12. REFER TO SITE & MECHANICAL DRAWINGS FOR UNDERLOOR AND PERIMETER FOUNDATION DRAINS.

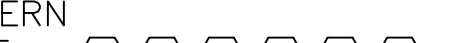
MASONRY:

1. ALL CONCRETE MASONRY UNITS IN WALLS SHALL BE LIGHTWEIGHT AND CONFORM TO ASTM C-90, GRADE N. (f'm = 1500psi for ALL WALLS) U.N.O.
2. MORTAR AND GROUT FOR USE IN CONCRETE MASONRY BEARING WALLS SHALL CONFORM TO ASTM C-270 TYPE S.
3. MORTAR FOR USE IN NONBEARING CONCRETE MASONRY WALLS SHALL CONFORM TO ASTM C-270, TYPE S.
4. PROVIDE DOWELS FROM ALL FOOTINGS OR CONCRETE WALLS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCEMENT SHOWN IN CONCRETE MASONRY WALLS.
5. VERTICAL LAPPS SHALL BE 48 BAR DIAMETERS (12" MIN) GOVERNED BY DIAMETER OF LARGER BAR.
6. HORIZONTAL WALL REINFORCING SHALL BE LADDER TYPE WITH 9 GAGE SIDE AND CROSS WEIRS, HOT DIPPED GALVANIZED PER ASTM A153-CLASS B-2. INSTALL IN BED JOINTS 16" O.C. AND AT 1st AND 2nd BED JOINTS AT BOTTOM OF WALL, TOP OF WALL, ABOVE LINEELS AND BELOW SILL. REINFORCING CONTIGUOUS WITH VERTICAL CONTROL JOINTS. 3" SIDE RODS LAPPED A MIN. OF 6" AT SPLICES, PROVIDE PREFABRICATED CORNERS AND TEES.
7. VERTICAL WALL REINFORCING: 1- #5 EACH SIDE OF MASONRY OPENINGS, CONTROL JOINTS, AT ALL CORNERS, AND AT 32" O.C. UNO. LOCATE AT CENTER OF CMU UNO. AND HOLD IN POSITION WHILE GROUTING. MAXIMUM GROUT LIFTS SHALL BE 48".
8. MASONRY CONTRACTOR SHALL COORDINATE WALL OPENINGS REQUIRED FOR MECHANICAL AND ELECTRICAL SERVICE WITH MECHANICAL CONTRACTOR.
9. ALL BEARING PLATES NOT SET IN BOND BEAMS SHALL HAVE MIN. 3" COURSES OF MASONRY GROUTED SOLID, IN A PYRAMID SHAPE, BELOW PLATE.

PRECAST CONCRETE PLANK:

1. THE PRECAST PLANK SHALL BE PRESTRESSED. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI. AT RELEASE OF PRESTRESS STRANDS AND 6000 PSI. AT 28 DAYS.
2. PRESTRESSING STRANDS SHALL BE UNCOATED, 7 WIRE STRESS RECEIVED CONFORMING TO ASTM C-416.
3. ALL UNITS TO BE LEVELED AND GROUTED BETWEEN JOINTS WITH A GROUT MIXTURE OF 3:1. PROVIDE 1/8" KOROLATH BEARING STRIPS AT MASONRY SUPPORTS.
4. PRECAST SUPPLIER SHALL FURNISH AND INSTALL WELD PLATES, HEADERS, AS REQUIRED.

METAL DECK NOTES:

1. METAL FLOOR AND ROOF DECK SHALL CONFORM TO THE "STEEL DECK INSTITUTE STANDARDS" (LATEST EDITION) AND SHALL BE OF THE TYPE, SIZE AND GAUGE AS CALLED OUT ON THE DRAWING. DECK SHALL RUN MINIMUM 3 SPANS, CONTINUOUS WHENEVER POSSIBLE.
2. METAL ROOF DECK SHALL CONFORM TO THE FOLLOWING SCHEDULE:
- | MEMBER | DESCRIPTION |
|--------|---|
| RD-1: | 1 1/2" - 20G, WIDE-RIB PAINTED (CONT. 3 SPANS MIN.) |
| RD-2: | 3" - 16GA, WIDE-RIB GALVANIZED (CONT. 3 SPANS MIN.) |
3. METAL ROOF DECK SHALL BE ANCHORED TO SUPPORTING MEMBERS USING MECHANICAL FASTENERS ACCORDING TO THE FOLLOWING TABLE U.O. ON PLAN:
- | FASTENER TYPE | 5/8" WELDS
SEAM WELDS | PATTERN |
|--------------------|----------------------------|---|
| SI-PORT
SIDELAP | #10 TENSILE
36 PER SPAN |  |

STEEL JOIST:

1. ALL STEEL JOISTS SHALL CONFORM TO THE STANDARDS OF THE STEEL JOIST INSTITUTE, LATEST EDITION.
2. SPECIAL ENDS SHALL BE PROVIDED WHERE ENDS OF JOIST BUTT OPPOSITE OVER THE TOP SURFING LONGER THAN 2'-1/2" AS SPECIFIED IN SECTION 5.3(b) OF THE STANDARDS. FOR JOIST BEARING ON SPANDREL BEAMS, ENDS OF JOIST SHALL EXTEND FOR FULL WIDTH OF TOP FLANGE U.N.O.
3. BRIDGING IS REQUIRED FOR STEEL JOISTS AND SHALL CONFORM TO THE FOLLOWING SCHEDULE
BRIDGING MARK
HB-1 L 1'-1/2"x1'-1/2"x7/64" HORIZONTAL
4. ALL JOIST FORTY (40) FEET AND LONGER ARE REQUIRED TO HAVE A ROW OF BOLTED BRIDGING IN PLACE BEFORE SLACKENING OF HOISTING LINES.
5. ALL ITEMS SUPPORTED BY JOISTS SHALL BE ATTACHED ONLY AT JOIST PANEL POINTS

STRUCTURAL STEEL:

1. STEEL SHALL CONFORM TO THE FOLLOWING GRADES:
 - a. ALL WIDE FLANGES A992 (Fy=50 ksi, Fu=65 ksi)
 - b. ALL CHANNELS, ANGLES, BASE PLATES, A36
CONN. PLATES AND STIFF. PLATES
 - c. STRUCTURAL PIPE A35 (Fy=35 ksi)
 - d. STRUCTURAL TUBE A500 (Fy=46 ksi)
2. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE (1989), EXCEPT AS MODIFIED IN THESE NOTES AND THE PROJECT SPECIFICATIONS.
3. CONNECTIONS MAY BE BOLTED OR WELDED. THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF CONNECTIONS NOT DESIGNED ON THE DRAWINGS. GENERALLY, CONNECTIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE SCHEMATIC AND ARE ONLY INTENDED TO SHOW THE RELATIONSHIP OF MEMBERS CONNECTED. SEE SPECIFICATIONS.
4. WHEN NOT SHOWN ON THE PLAN, BEAM REACTIONS SHALL BE COMPUTED AS FOLLOWS:
 - a. NON-COMPOSITE BEAMS:
BY THE METHOD ON PAGES 2-24 OF AISC MANUAL OF STEEL CONSTRUCTION, 8TH EDITION. USE W_c VALUES AS TABULATED ON PAGES 2-27 TO 2-39 FOR REACTION $= W_c/2L$
5. MEMBER FORCES ARE SHOWN ON THE DRAWINGS AS FOLLOWS: P = AXIAL FORCE IN KIPS (+) = TENSION (-) = COMPRESSION V = SHEAR IN KIPS M = MOMENT IN FOOT-KIPS THESE FORCES HAVE BEEN REDUCED IN CONFORMANCE WITH CODE PROVISIONS RELATED TO TEMPORARY COMBINATIONS OF LOADINGS THAT INCLUDE WIND FORCES.
6. THE MINIMUM PLATE THICKNESS SHALL BE 3/8", THE MINIMUM BOLT DIAMETER SHALL BE 3/4", THE MINIMUM WELD SHALL BE 1/4" AND THE MINIMUM DESIGN LOAD ON ANY CONNECTION SHALL BE 6 KIPS.
7. BOLTED CONNECTIONS:
 - a. ALL BOLTED CONNECTIONS SHALL BE BEARING TYPE USING A325N OR A490N BOLTS. ALL BOLTS SHALL BE PRETENSIONED. OVERSIZED HOLES AND LONG-SLOTTED HOLES ARE NOT ALLOWED UNLESS SHOWN ON THE DRAWINGS.
 - b. A307 BOLTS MAY BE USED WHERE INDICATED ON THE DRAWINGS.
8. WELDED CONNECTIONS:
 - a. ALL WELDING SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE "STRUCTURAL WELDING CODE" (AWS D1.1) PUBLISHED BY THE AMERICAN WELDING SOCIETY. ELECTRODES FOR WELDING SHALL COMPLY WITH THE REQUIREMENTS OF TABLE 4.1. OF (AWS D1.1) WELDING SHALL BE DONE BY CERTIFIED WELDERS.
9. SPALLS OF STEEL MEMBERS, UNLESS SHOWN ON THE DRAWINGS, IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.
10. NO CHANGE IN SIZE OR POSITION OF THE STRUCTURAL ELEMENTS SHALL BE MADE AND HOLES, SLOTS, CUTS, ETC., ARE NOT PERMITTED THROUGH ANY MEMBER UNLESS THEY ARE DETAILED ON THE APPROVED SHOP DRAWINGS.
11. NO FINAL BOLTING SHALL BE MADE UNTIL AS MUCH OF THE STRUCTURE AS WILL BE STIFFENED THEREBY HAS BEEN PROPERLY ALIGNED.
12. FABRICATE ALL BEAMS WITH MILL CAMBER UP.

MISCELLANEOUS:

1. STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS AND WORK.
2. NO OPENINGS IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.
3. NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.
4. OPENINGS 1'-0" AND LESS ON A SIDE ARE GENERALLY NOT SHOWN THE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SUCH OPENINGS.
5. THE CONTRACTOR SHALL LIMIT THE AMOUNT OF CONSTRUCTION LOADS IMPOSED UPON STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME OF LOADS ARE IMPOSED.
6. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.
7. UNLESS OTHERWISE NOTED, FIRE PROOFING METHODS AND MATERIALS FOR STRUCTURAL MEMBERS ARE NOT SHOWN ON STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR FIRE RATING REQUIREMENTS, FIRE PROOFING METHODS AND MATERIALS.
8. DO NOT SCALE THESE DRAWINGS. USE DIMENSIONS.
9. THE CONTRACTOR SHALL INFORM THE ARCHITECT/ENGINEER IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY FOR SUCH DEVIATION BY THE ARCHITECT/ENGINEER'S APPROVAL OF SHOP DRAWINGS, PROPOSALS, ETC. UNLESS THE CONTRACTOR IS SPECIFICALLY INFORMED BY THE ARCHITECT/ENGINEER OF SUCH DEVIATION AT THE TIME OF SUBMISSION AND THE ARCHITECT/ENGINEER HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.

1. BUILDING CODE - THE MICHIGAN BUILDING CODE/2000
2. THE STRUCTURE IS DESIGNED FOR ALL APPLICABLE DEAD LOADS AND THE FOLLOWING DESIGN LIVE LOADS:

FLOOR LIVE LOADS:	
STAIRS	100 psf
ELEC. CRAWL SPACE	40 psf
FIRST FLOOR	100 psf
SECOND FLOOR	150 psf (+ EQUIPMENT LOADS w/IMPACT LOAD)

SNOW: BASED ON 60 PSF GROUND SNOW LOAD
SNOW EXPOSURE FACTOR $C_e = 0.9$ EXPOSURE D-PARTIALLY EXPOSED
SLOPE FACTOR $C_s = 1.0$
THERMAL FACTOR $C_t = 1.1$ (ENCLOSED BUILDING)
 $C_t = 1.2$ (SCREEN WALL)
IMPORTANCE FACTOR $I = 1.2$

WIND LOADS: SIMPLIFIED PROCEDURE
WIND SPEED = 90 MPH (BASED ON A 3 SECOND GUST)
EXPOSURE D - FULLY EXPOSED
FORCE COEFFICIENT $C_f=1.2$ (SOLID FREESTANDING WALL $V<3$)
IMPORTANCE FACTOR $I = 1.15$

BEARING PLATE SCHEDULE			
BEAMS	JOISTS	BEARING PLATE EACH END (U.N.O.)	REMARKS
--	ALL "K" SERIES	1/2" x 6" x 7 1/2"	w/ (2) 5/8" DIA. x 6" CONC. STUD ANCHORS
W5-W6	--	1/2" x 6" x 7 1/2"	w/ (2) 5/8" DIA. x 6" CONC. STUD ANCHORS
W8x10-W8x28	--	1/2" x 7 1/2" x 7 1/2"	w/ (2) 5/8" DIA. x 6" CONC. STUD ANCHORS
W8x31-W8x67	--	1/2" x 9" x 9"	w/ (2) 5/8" DIA. x 6" CONC. STUD ANCHORS
W10x12-W16x31	--	1/2" x 7" x 12"	w/ (4) 5/8" DIA. x 6" CONC. STUD ANCHORS
W16x36-W24	--	3/4" x 7 1/2" x 9"	w/ (4) 5/8" DIA. x 6" CONC. STUD ANCHORS

NOTE:

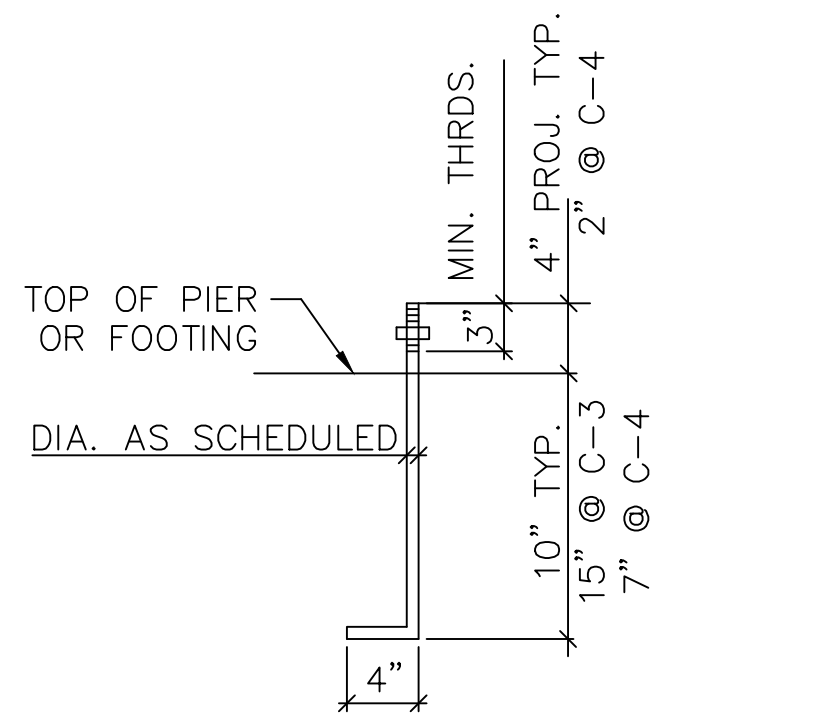
- a. ALL BRG. PL'S NOT SET IN BOND BEAMS SHALL HAVE MIN. (3) COURSES OF MASONRY GROUTED SOLID BELOW PLATE IN A PYRAMID FASHION.

$$\frac{00'-0''}{00'-0''}$$

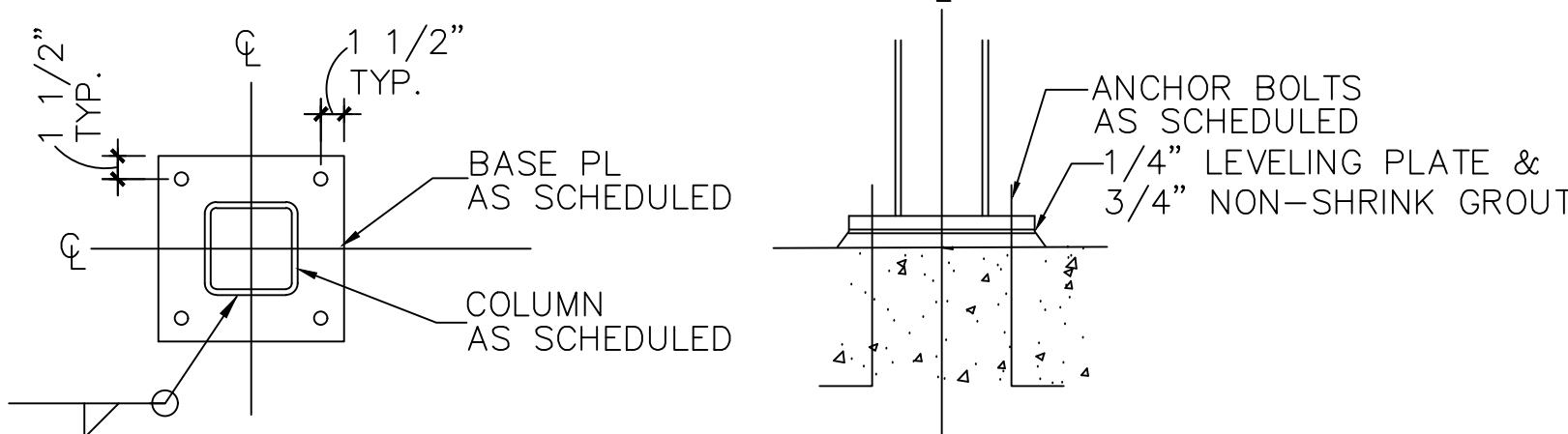
F - ?	COLUMN MARK (SEE SCHEDULE)
F - ?	SPREAD FOOTING MARK (SEE SCHEDULE)
F - ?	FINCH MARK (SEE SCHEDULE)
W - ?	WALL MARK (SEE SCHEDULE)
WF - ?	WALL FOOTING MARK (SEE SCHEDULE)
B.F. = ?	BOTTOM OF FOOTING ELEVATION
CENT.	CENTERLINE
CL.	CLEAR COVER
CONT.	CONTINUOUS
CONC.	CONCRETE
C.J.	CONTROL JOINT
C.M.U.	CONCRETE MASONRY UNIT
DI.	DIAMETER
ELEV.	ELEVATION
EMBED.	EMBEDMENT
EXIST.	EXISTING
E.W.	EACH WAY
EXP. JT.	EXPANSION JOINT
F.F. = ?	FINISH FLOOR ELEVATION
H.G. = ?	HOT-DIPPED GALVANIZED
MIN.	MINIMUM
MAX.	MAXIMUM
O.C.	ON CENTER
O.F.S.	OFFSET FROM
PL.	PLATE
PROJ.	PROJECTION
REINF.	REINFORCING
SIM.	SIMILAR
T.F. = ?	TOP OF FOOTING ELEVATION
T.O.C. = ?	TOP OF CONCRETE ELEVATION
T.O.S. = ?	TOP OF STEEL ELEVATION
T.O.M. = ?	TOP OF MASONRY ELEVATION
T.O.P. = ?	TOP OF PIER ELEVATION
W.F.	WELDED WIRE FABRIC

STEP FOOTING MARK ELEVATION
SHOWN ARE BOTTOM OF FOOTING
EACH SIDE OF STEP.

COLUMN MARK (SEE SCHEDULE)
 SPREAD FOOTING MARK (SEE SCHEDULE)
 PIER MARK (SEE SCHEDULE)
 WALL MARK (SEE SCHEDULE)
 WALL FOOTING MARK (SEE SCHEDULE)
 BOTTOM OF FOOTING ELEVATION
 CENTER
 CLEAR COVER
 CONTINUOUS
 CONCRETE
 CONTROL JOINT
 CONCRETE MASONRY UNIT
 DIAMETER
 ELEVATION
 EMBEDMENT
 EXISTING
 EACH WAY
 EXPANSION JOINT
 FINISH FLOOR ELEVATION
 HOT-DIPPED GALVANIZED
 MINIMUM
 MAXIMUM
 ON CENTER
 OFFSET FROM
 PLATE
 PROJECTION
 REINFORCING
 SIMILAR
 TOP OF FOOTING ELEVATION
 TOP OF CONCRETE ELEVATION
 TOP OF STEEL ELEVATION
 TOP OF MASONRY ELEVATION
 TOP OF PIER ELEVATION
 TYPICAL
 WELDED WIRE FABRIC



ANCHOR BOLT DETAIL
(TYPICAL U.N.O.)



TYPICAL BASE PLATE DETAIL

NO SCALE

MARK	SIZE		REINFORCING	REMARKS
	WIDTH	DEPTH		
WF-1	1'-8"	12"	(2) #5 CONT.	
WF-2	3'-0"	12"	(4) #5 CONT.	
WF-3	1'-4"	12"	(2) #5 CONT.	
WF-4	2'-0"	12"	(3) #5 CONT.	

COLUMN FOOTING			
MARK	SIZE	REINFORCING	REMARKS
F-1	6'-0"x10'-8"x14"	(7) - #6 10'-4" LONG BOTTOM (5) - #6 LONG TOP (8) - #4 5'-8" SHORT TOP & BOTTOM	
F-2	7'-0"x7'-0"x14"	(8) - #5 EACH WAY BOTTOM (9) - #6 29'-8" LONG TOP & BOTTOM	
F-3	30'-0"x9'-0"x14"	(28) - #6 8'-8" SHORT BOTTOM (24) - #4 8'-8" SHORT TOP	
F-4	6'-0"x6'-0"x12"	(6) - #6 EACH WAY BOTTOM	
F-5	8'-0"x8'-0"x18"	(9) - #6 EACH WAY BOTTOM	

MARK	SIZE	REINFORCING		REMARKS
		VERTICAL	HORIZONTAL	
W-1	12" / 8" NOM.	#5 @ 32" O.C.	9 GA. LADDER @ 16" O.C.	12" CMU BELOW GRADE, 8" CMU ABOVE GRADE
W-2	16" / 8" NOM.	#5 @ 16" O.C.	9 GA. LADDER @ 16" O.C.	(2) WYTHE 8" CMU BELOW GRADE, 8" CMU ABOVE GRADE
W-3	12" NOM.	#5 @ 32" O.C.	9 GA. LADDER @ 16" O.C.	

NOTE:

- a. LOCATE VERTICAL REINF. CENTERED ON ABOVE GRADE CMU WALL U.N.O.
b. PROVIDE DOWELS FROM WALL FOOTINGS TO MATCH SIZE AND SPACING OF VERT. REINF. ROD AND GROUT SOLID FULL HEIGHT

PIER SCHEDULE					
MARK	MATERIAL	SIZE	VERT. BARS	TIES	REMARKS
P-1	MASONRY	16"x44"	(10) - #6	3/16" BARS @ 16" O.C.	SEE DETAIL 5/A/2.2
P-2	MASONRY	44"x44"	(8) - #5	9 GA. LADDS REINF.	SEE DETAIL 3/A/2.2
P-3	CONCRETE	12" DIA. SONOTUBE	(4) - #6	#3 @ 12" O.C.	SEE DETAIL 4/S/2.1
P-4	MASONRY	24"x 24"	(8) - #6	#3 BARS @ 8" O.C.	GROUT SOLID TO ELEV. 99'-4"

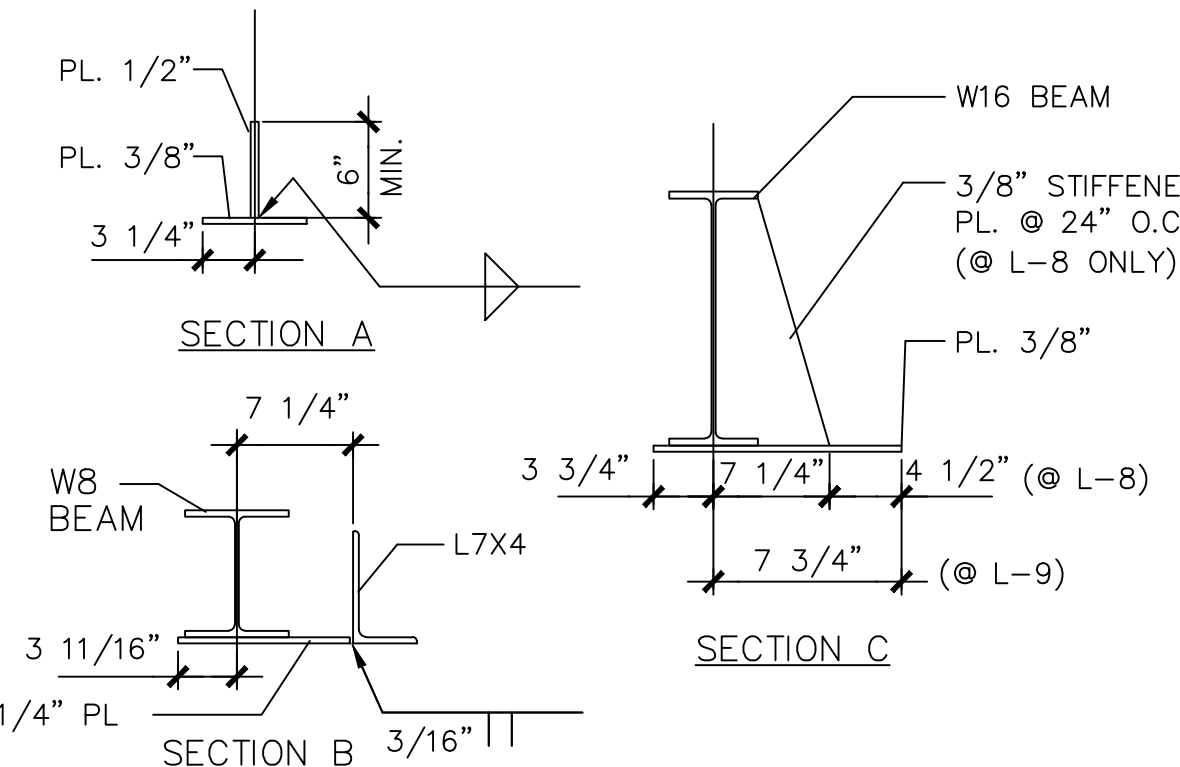
MARK	SIZE	BASE PL	ANCHOR BOLTS	REMARKS
C-1	W10x39	1"-1/8"x16"x16"	(4) 3/4" DIA.	BASE PL BRG. EL.= 99'-5" & TOS EL = 113'-4"
C-2	W10x30	1"x9"x16"	(4) 3/4" DIA.	BASE PL BRG. EL.= 99'-5" & TOS EL = 113'-4"
C-3	HSS6x41/2"	1"x12"x12"	(4) 3/4" DIA.	BASE PL BRG. EL.= 99'-5" & TOS EL = 112'-0 1/8" CL OF COLUMN OFFSET 1" WEST OF COLUMN GRID LINE 1
C-4	W6x9	1/2"x7"x7"	(2) 1/2" DIA.	BASE PL BRG. EL.= 99'-5" & TOS EL = 112'-2"
C-5	HSS4x4X3/8"	SEE CONNECTION DETAIL ON SO.2		BASE PL BRG. EL.= 114'-0" & TOS EL = 122'-8"

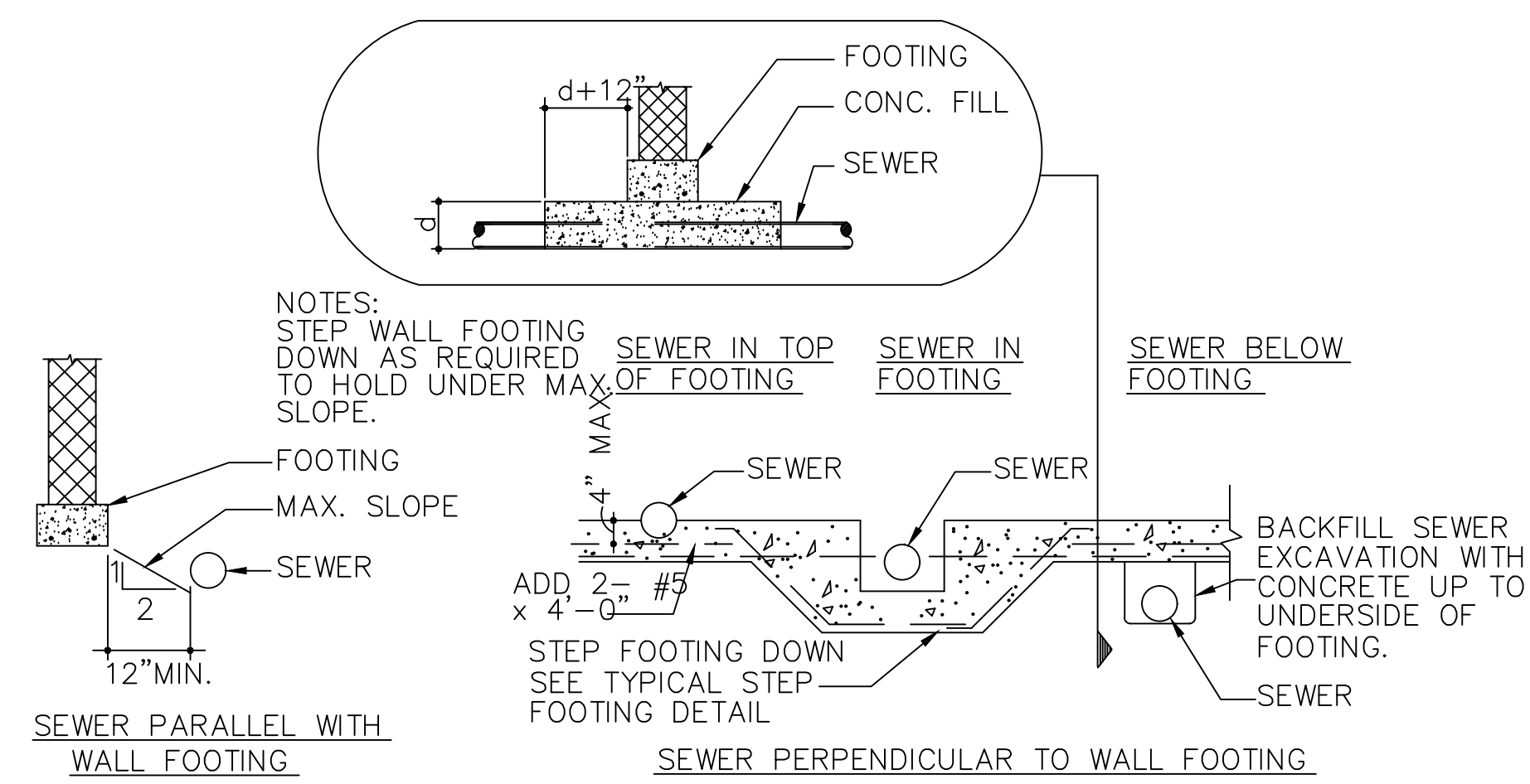
MARK	DEPTH	TOPPING	SUPERIMPOSED LOAD	REMARKS
PP-1	8"	2"-STRUC.	150 PSF w/8400# PHANTOM LOAD OVER 3'-0"x4'-0" AREA	SECOND FLOOR
PP-2	8"	NONE	40 PSF	ELEC. CRAWL SPACE

MARK	MATERIAL	SHAPE	BEARING E.E.	REMARKS
L-1	W8x10 w/1/4" x 7" CONT. PL		8"	
L-2	3/8" x 6 1/2" ROLLED PL @ 10'-0 5/8" RAD. w/1/2" STIFFENER PL 6" MIN DEPTH		4"	SECTION A
L-3	8"x8" CMU w/ (2) # 5 BOTT. + L4x3 1/2x5/16" LLV		8"	
L-4	L6x3 1/2x5/16" L.L.V.		4"	
L-5	W8x24 w/1/4" x 10 1/4" CONT. PL + L7x4x3/8" LLV + L2x21x1/4" GATE CATCH		8"	SECTION B - SEE DETAIL 3/A8.1
L-6	8"x24" CMU w/ (2) #5 TOP & (2) #5 BOTT. + #3 STIRRUPS @ 12"+L4x3 1/2x5/16" LLV		8"	
L-7	8"x14" CMU w/(1) #5 TOP & (1) #5 BOTT.		8"	BOTTOM OF MASONRY ELEV. = 121'-6"
L-8	W16x31 w/3/8"x15 1/2" CONT. PL + 3/8" STIFFENER PL's @ 24" O.C.		12"	SECTION C - MIN 4" BRG. AT VENEER
L-9	W16x31 w/ 3/8"x11 1/2" CONT. PL		12"	SECTION C - MIN 4" BRG. AT VENEER
L-10	12"x8" CMU w/ (2) # 5 BOTT.		8"	

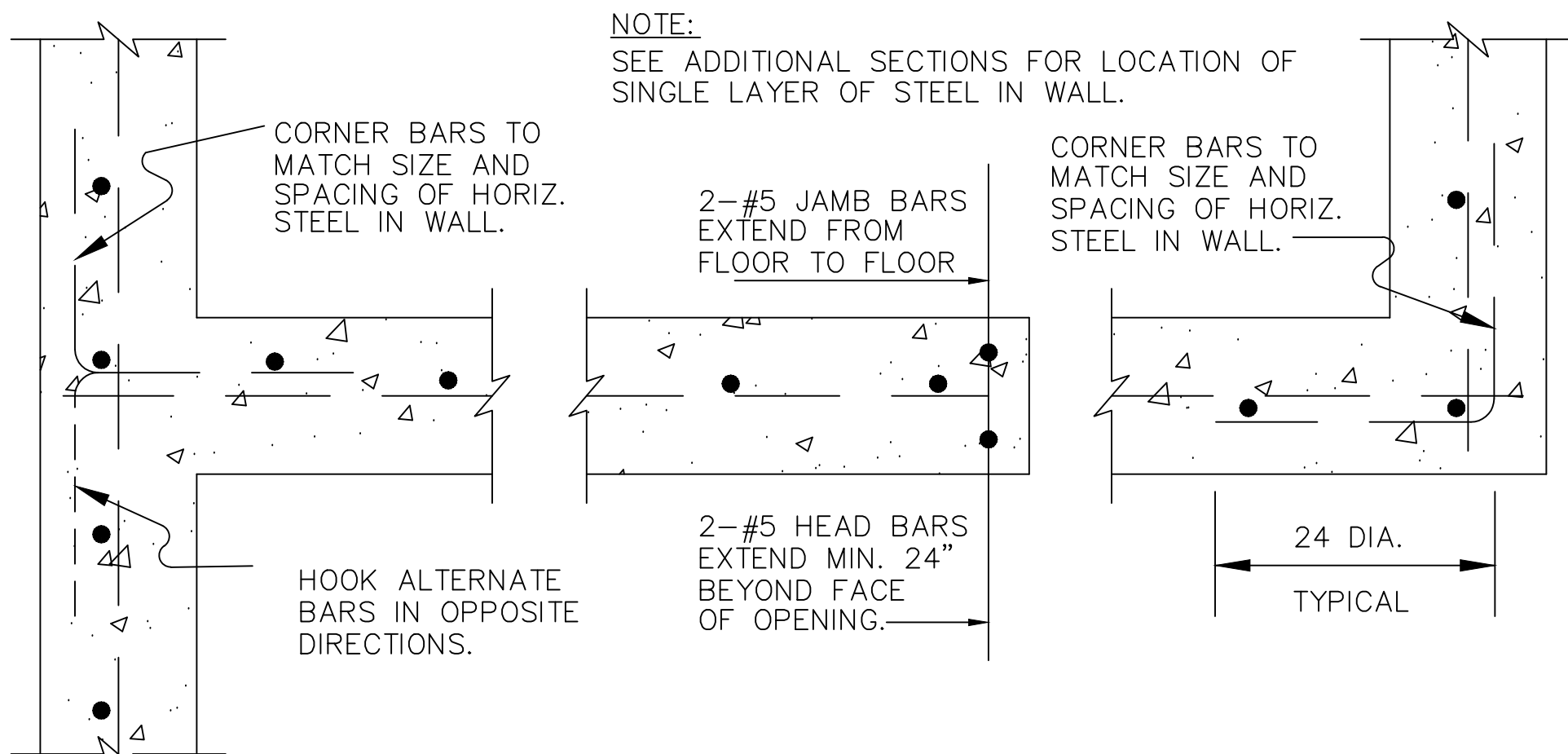
NOTE:

- a. MINIMUM 3 COURSES OF MASONRY SHALL BE GROUTED SOLID FOR BEARING EACH END
- b. ALL STEEL LINTELS REQUIRE BEARING PLATE EACH END (U.N.O.)
- c. ALL STEEL LINTELS WITH BOTTOM PLATES SHALL HAVE PLATE TERMINATE AT FACE OF MASONRY OPENING EXCEPT AT VENEER EXTEND PLATE 4" INTO MORTAR JOINT.
- d. ALL EXTERIOR EXPOSED STEEL LINTELS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION

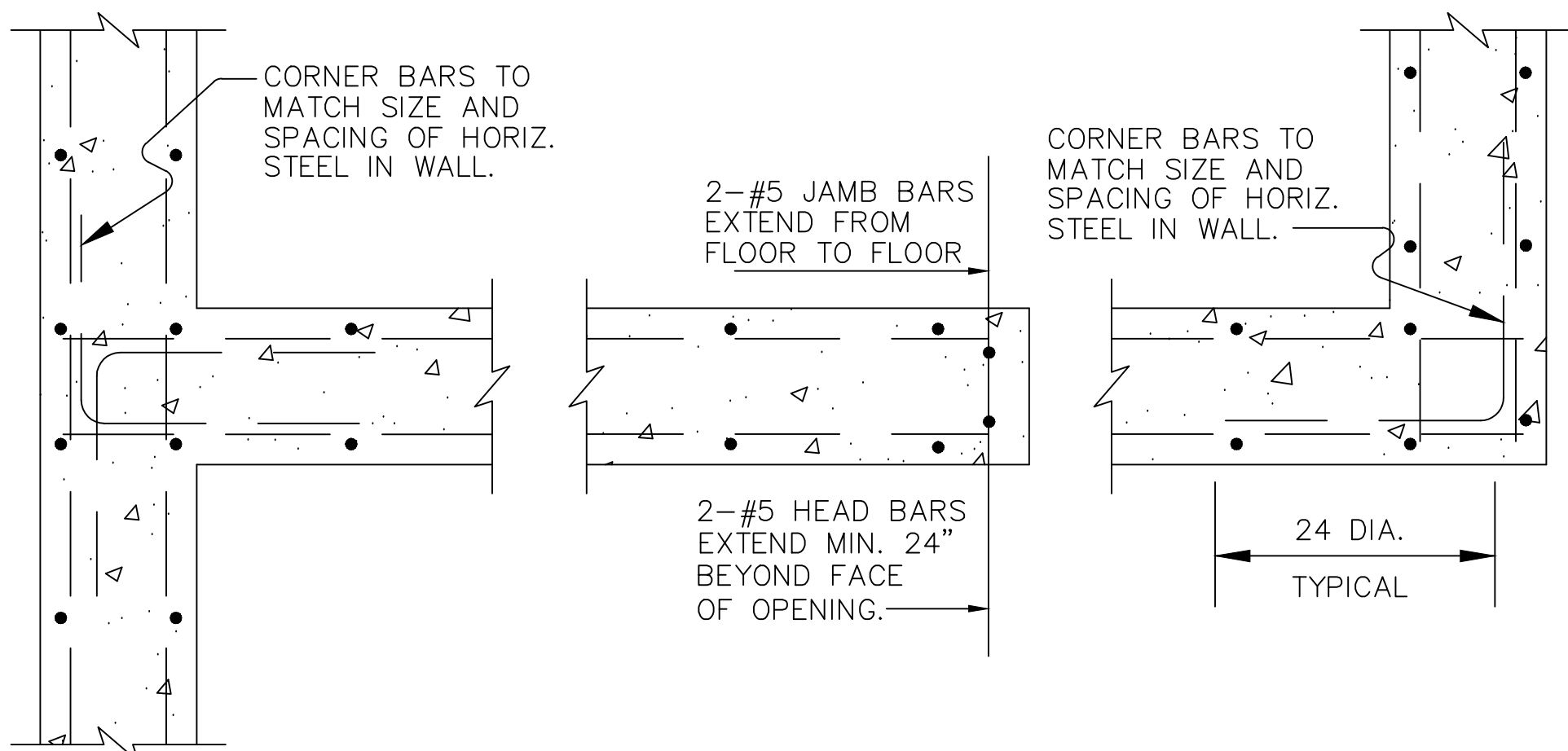




TYPICAL SEWER/FOOTING DETAILS
NO SCALE

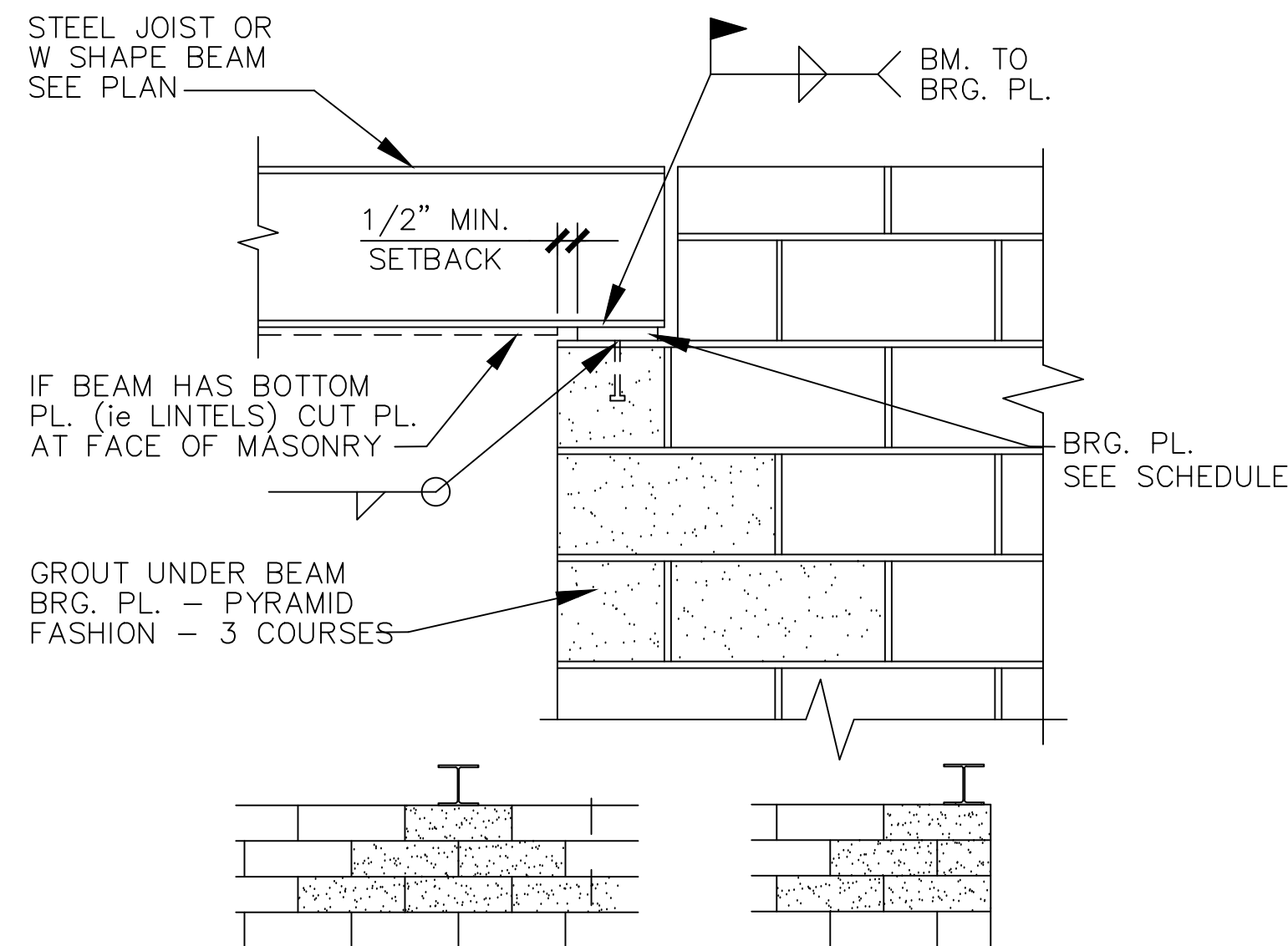


TEE WALL JAMB AND HEAD CORNER
SINGLE REINFORCING LAYER

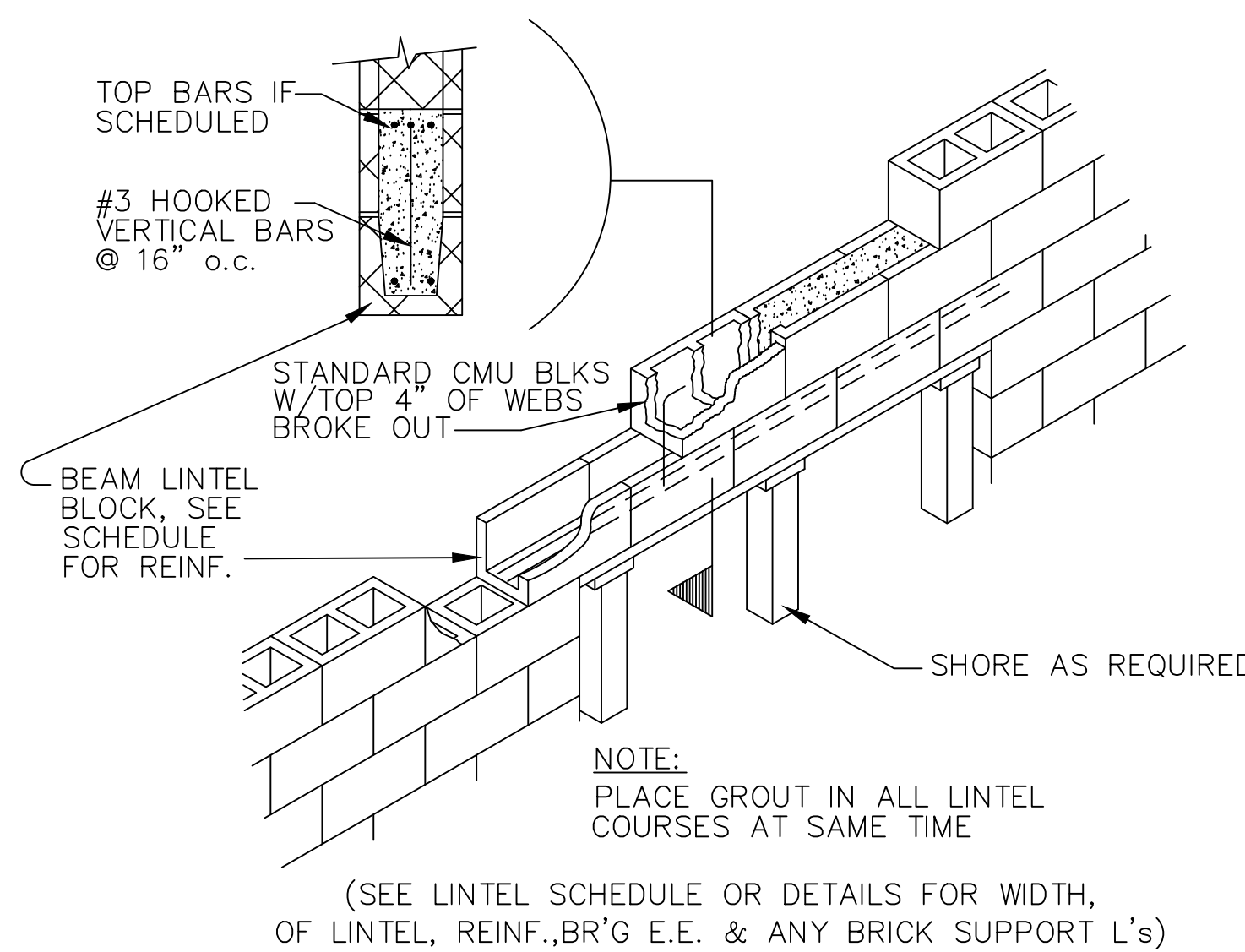


TEE WALL JAMB AND HEAD CORNER
DOUBLE REINFORCING LAYER

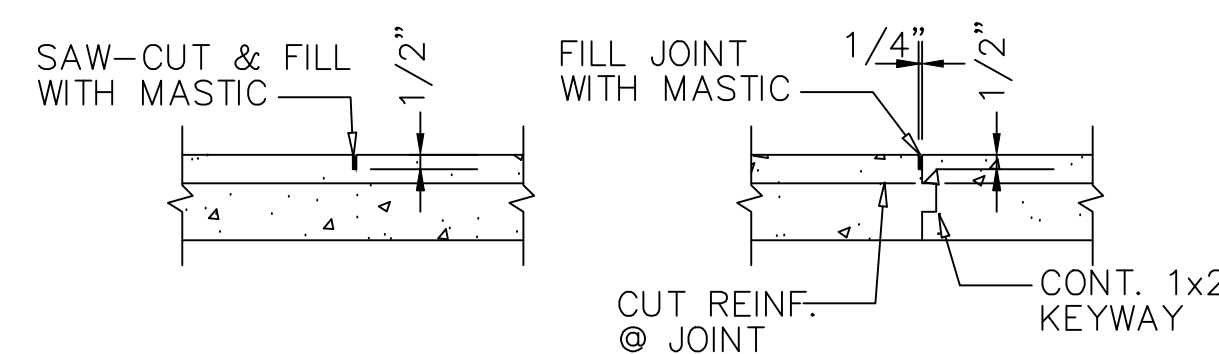
TYPICAL CORNER BAR DETAILS
NO SCALE



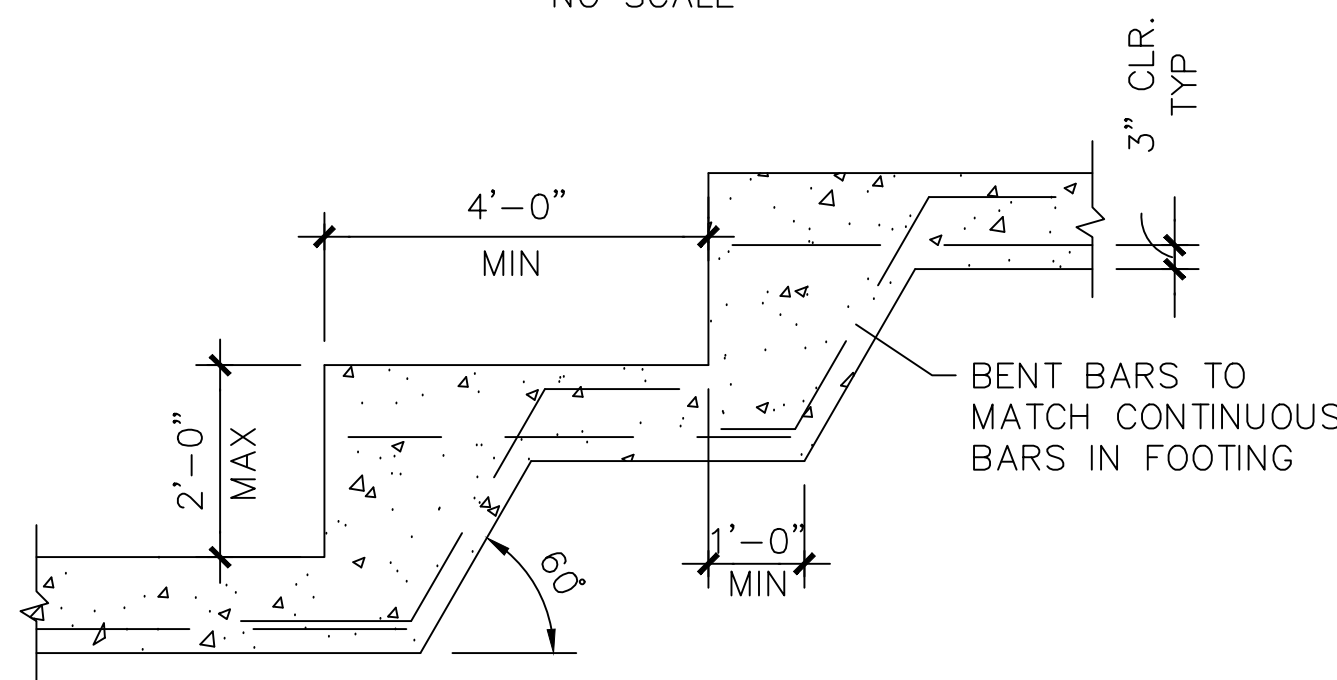
TYPICAL BEAM BEARING DETAILS
NO SCALE



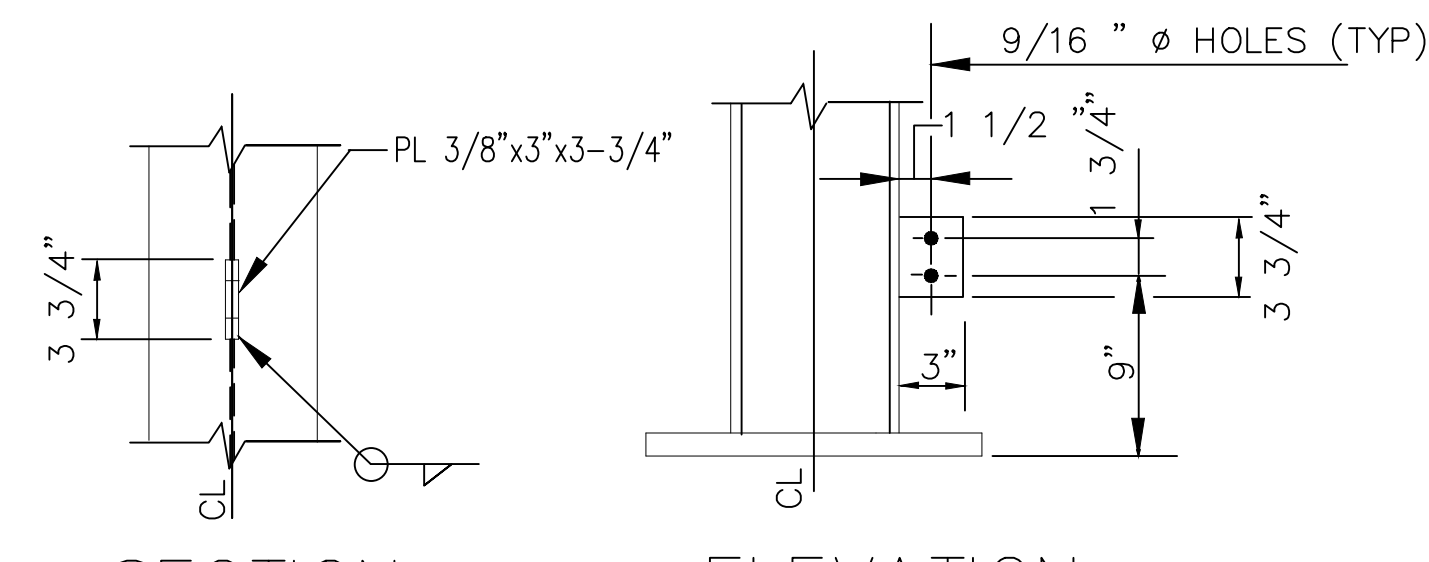
MULTI-COURSE REINFORCED CMU LINTEL
NO SCALE



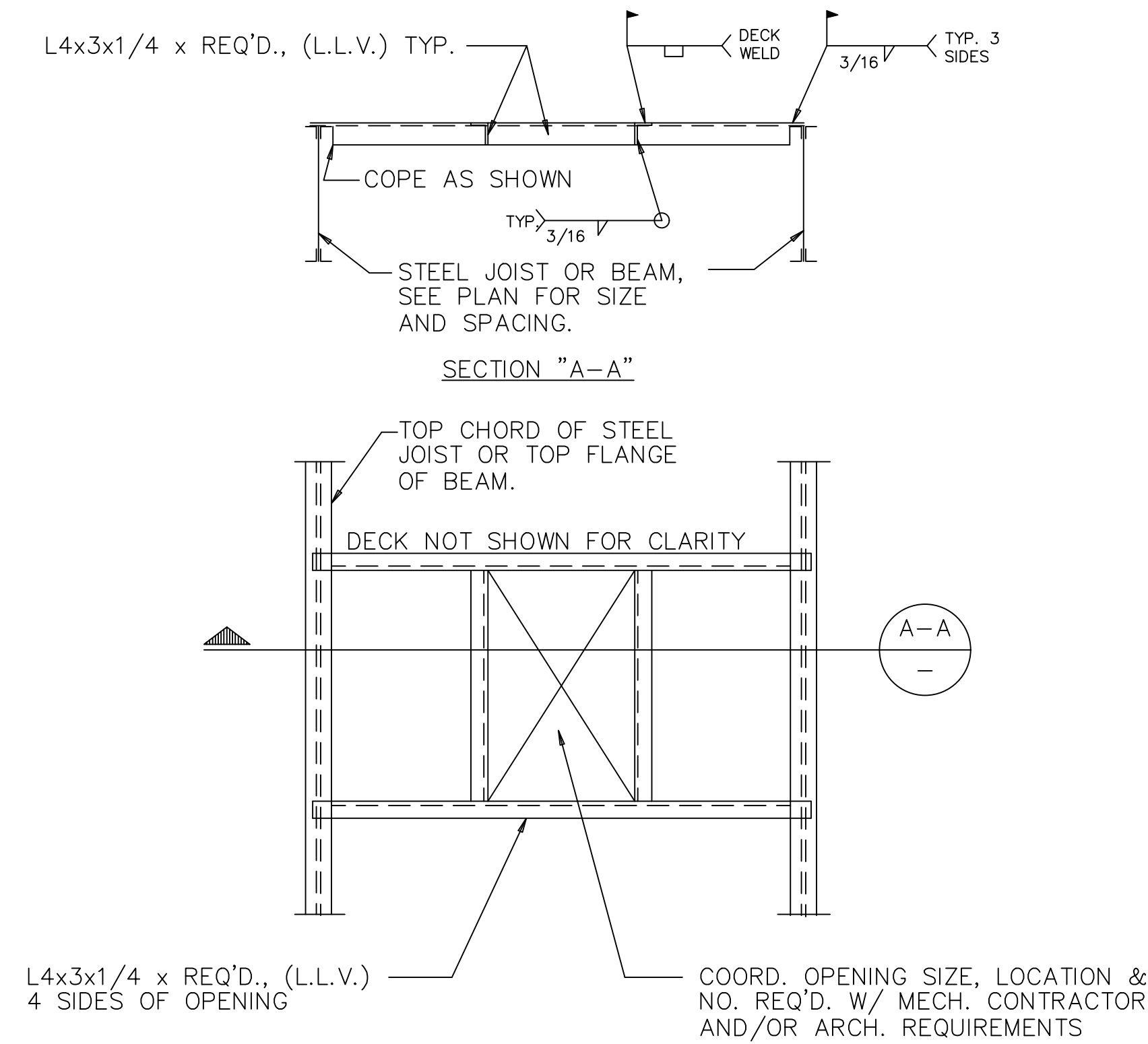
TYPICAL SLAB ON GRADE
CONTROL & CONSTRUCTION
JOINT DETAILS
NO SCALE



TYPICAL STEP FOOTING DETAIL
NO SCALE

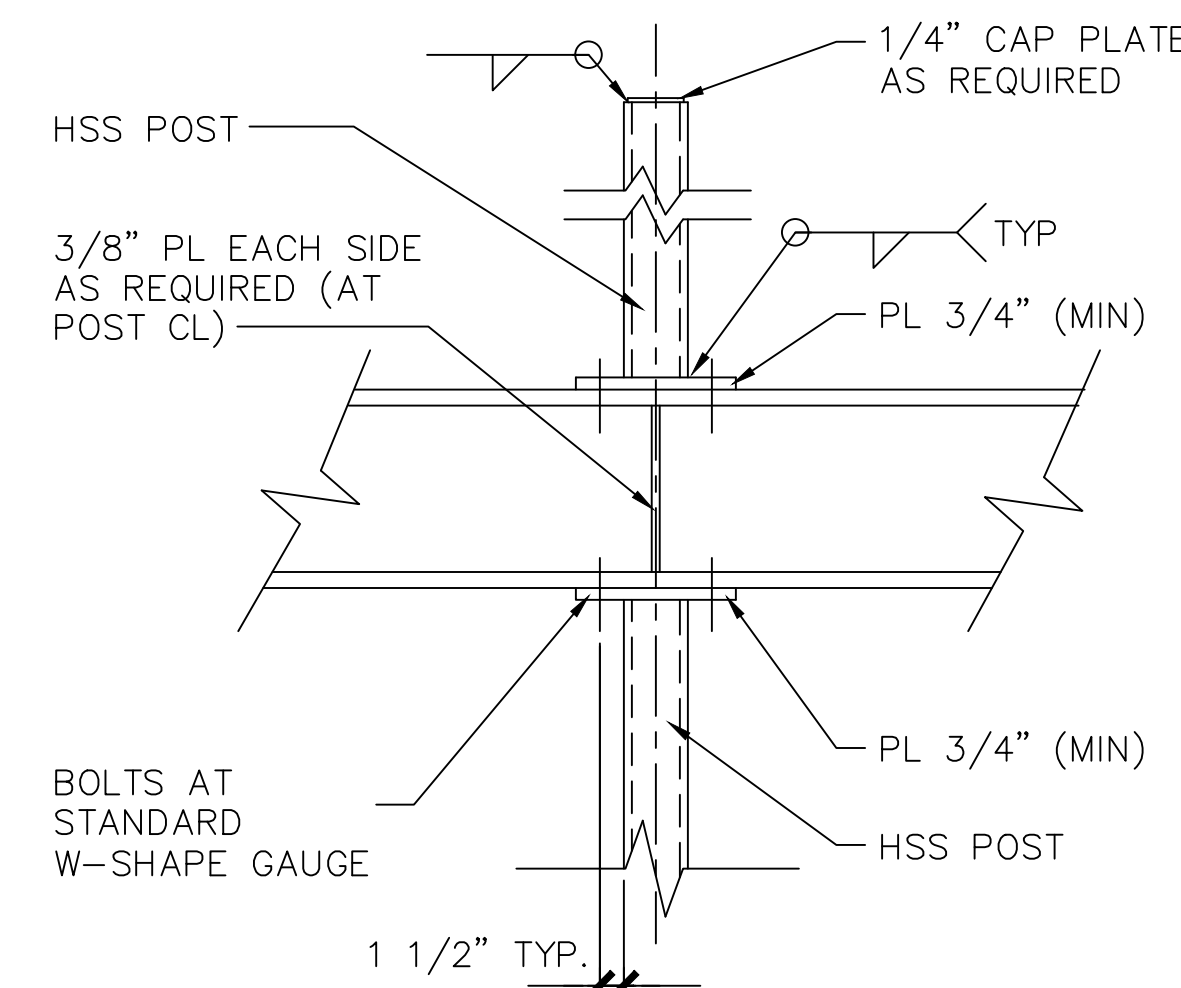


SECTION ELEVATION
TYPICAL GROUNDING DETAIL
NO SCALE

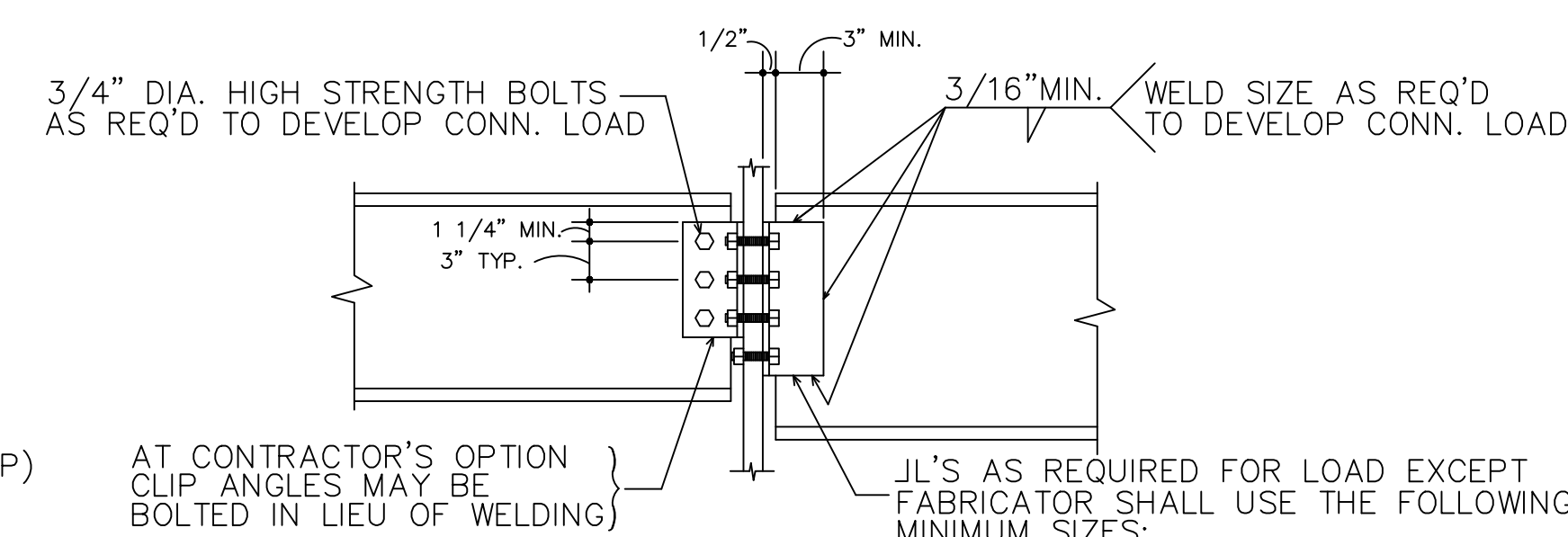


TYPICAL ROOF OPENING FRAME DETAIL

NOTE: THIS DETAIL APPLIES TO ALL OPENINGS GREATER THAN 8" IN ANY DIRECTION, U.N.O. OPENINGS DIRECTLY ADJACENT TO WALLS AND/OR FRAMING MAY NOT REQUIRE A FULL FRAME. UPTURN CLOSURE ANGLES AROUND PERIMETER OF OPENING SHALL BE AS REQUIRED BY ARCHITECT.



POST CONNECTION DETAIL
NO SCALE



BEAM CONN. BOLT TABLE	
BEAM SIZE	MIN. NO. OF BOLTS (1/2 EA. ANGLE)
6"	2
8", 10", 12"	4
14", 16", 18"	6
21"	8
24"	10
27"	12
30"	14
33"	16

TYPICAL BOLTED BEAM CONNECTION
NO SCALE

DATE	ISSUED FOR
02/15/02	PRELIMINARY REVIEW
03-15-02	BIDS AND CONSTRUCTION
12/04/03	RECORD DRAWINGS
02/26/04	APPROVED FINAL RECORD DRAWINGS

DA/E A.O.V.	DR A.O.V.	CK R.J.K.	APP R.J.S.	IN CHARGE

1004 East 8th Street
Ann Arbor, MI 48106
231-947-0060

URS architecture,
artistry
interiors, inc.

GRAND RAPIDS, MI
3660 16th Ave. S.E.
49508-4500

TRAVERSE CITY LIGHT & POWER
TRAVERSE CITY, MICHIGAN

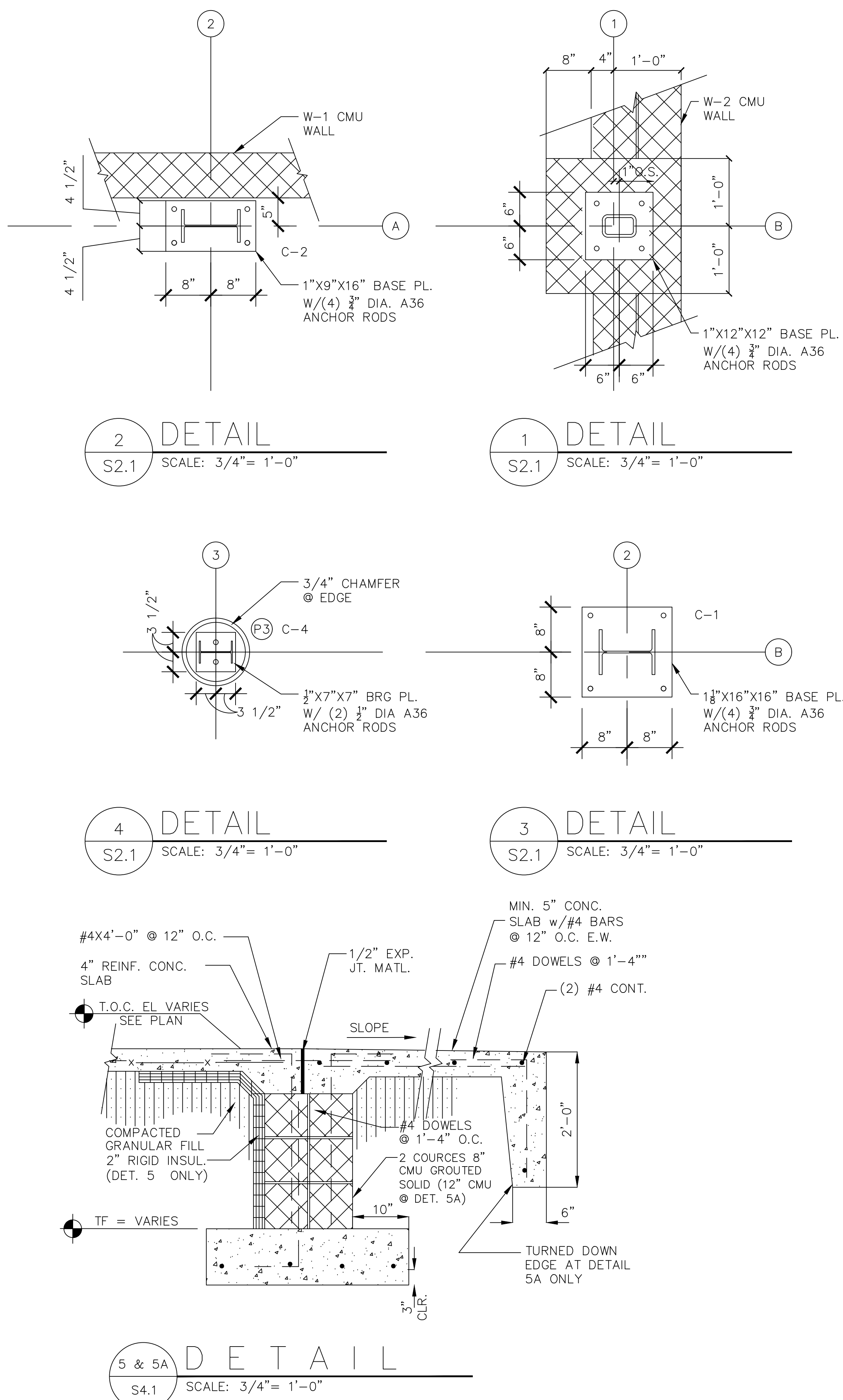
HALL STREET SUBSTATION
TYPICAL DETAILS

DRAWING

S0.2

FILE

M105002



FOUNDATION PLAN

SCALE: $1/8" = 1'-0"$

FOUNDATION NOTES

1. SEE SPECIFICATIONS AND SHEETS S0.1 AND S0.2 FOR ADDITIONAL INFORMATION.
2. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR UTILITY PENETRATIONS THRU FOUNDATION WALLS AND FLOOR SLAB.
3. SEE ARCHITECTURAL DRAWING FOR FLOOR DRAIN LOCATIONS. PITCH FLOOR SLABS TO DRAINS.
4. ALL INTERIOR SLAB AND FLOOR SURFACES ON THIS DRAWING SHALL BE TROWEL FINISHED. ALL EXTERIOR SLABS SHALL BE BROOM FINISHED.
5. PROVIDE 1/2" EXPANSION JOINT MATERIAL AT PERIMETER OF ALL FLOOR SLABS.
6. AT LOCATIONS INDICATED ON PLAN, PROVIDE (6) #5 VERT. BARS @ 8" ON CENTER WITH MATCHING DOWELS INTO FOOTINGS. GROUT SOLIS FROM FOOTING UP TO BEAM BEARING PL ELEVATIONS. TYPICAL (2) PLACES
7. * INDICATED FOOTINGS WITH COLUMN ANCHOR BOLTS CAST DIRECTLY IN FOOTING.

