

I-470 BUSINESS & TECHNOLOGY CENTER

NEW SHELL FOR

I-470 BUSINESS & TECHNOLOGY CENTER

AT
NORTHEAST McBAINE DRIVE
LEE'S SUMMIT MISSOURI

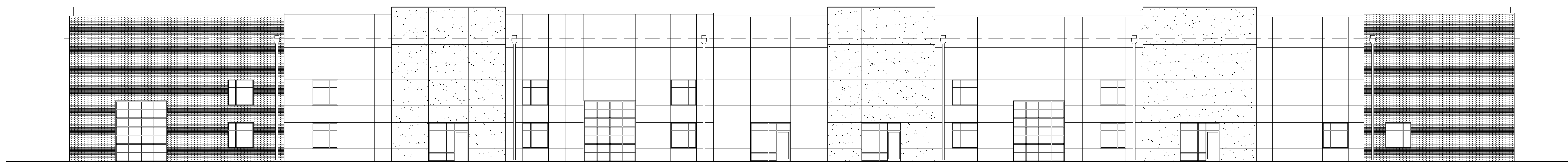
DATE: 6/10/2019

REVISIONS:



ARCHITECTURAL SERVICES
Robert J. Shirk Jr. - Principal / Project Mgr.

3009 ELMIRA CT.
INDEPENDENCE,
MISSOURI 64057
(816) 797-7115



PROJECT SITE

LOCATION PLAN



project synopsis:

Governing Municipality: Lee's Summit, Missouri

Stories: one

Building Height: 36'-0"
Clear Height: 26'-0"

Construction Type: IIB

Tabular Area (B): 23,000 sq. ft.
Sprinkler Inc. (300%): 69,000 sq. ft.
Allowable Area: 91,000 sq. ft.

Actual Building Area: 68,222 sq. ft.

Fire Suppression: yes (NFPA13)

Occupant Group: S-1

Occupant Load:
(S-1) Warehouse - 68,222 sq. ft. / 500 gross = 137 occ.
Total - 137 occupants

applicable codes:

2018 International Building Code
2018 International Plumbing Code
2018 International Mechanical Code
2018 International Fuel Gas Code
2018 International Fire Code
2017 National Electrical Code
ICC/ANSI A117.1-2017, Accessible and Usable Buildings and Facilities

general notes:

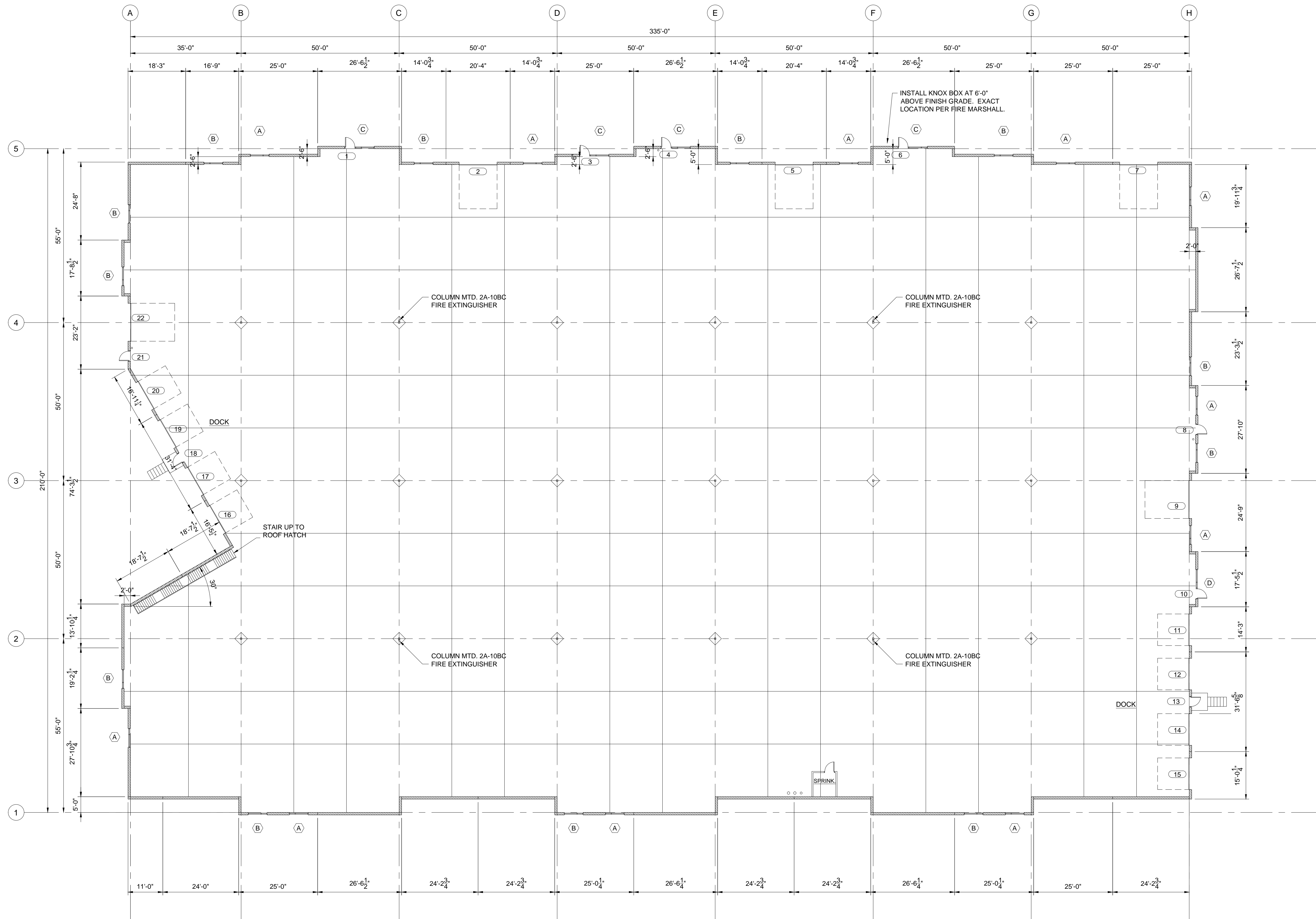
- See Structural and Tilt-up drawings for panel dimensions. Exterior dimensions on Architectural sheets are for reference only.
- Double keyed locks are not permitted on any required or marked exit.
- Provide 2A-10BC fire extinguishers (min. 5 lb.) - location & quantity per fire marshal.
- Exit/emergency lighting are subject to an on site inspection.
- Furnish and install approved address numbers on front and rear of building (5" white vinyl numbers to contrast). Refer to sign standards manual.
- Building construction must fully comply with all requirements of ADA accessibility guidelines.
- Exit doors shall be operable from the inside without the use of a key or any special knowledge or effort.
- Coordinate window mullion & exterior opening locations with shell building contractor & existing conditions and notify architect of any discrepancies.
- Egress illumination will be provided at an intensity of not less than 1 foot candle at floor level & at the exterior of the building.
- Any new exterior utility service equipment shall be painted to match the building standard colors.
- Provide 3-1/2" batt insulation between conditioned & unconditioned spaces.
- Furnish and install electrical outlets at 15' a.f.f. to the lowest outlet per ADA.
- HVAC system to have approved interconnected, smoke detector activated, automatic shutoffs with the detectors located in the return duct.
- HVAC rooftop units shall have an accessible G.F.C.I. outlet per code.
- Furnish and install horns and strobes as required.

sheet index:

<p>ARCHITECTURAL CVR Cover A101 Floor Plan A102 Exterior Elevations A103 Roof Plan A104 Schedules & Details A105 Wall Sections A106 Wall Sections</p>	<p>TILT-UP T000 Tilt-up Details T100 North Tilt-up T110 West Tilt-up T120 South Tilt-up T130 East Tilt-up</p>
<p>STRUCTURAL S000 Notes & Design Criteria S100 Foundation Plan S110 Foundation Details S120 Foundation Details S130 Foundation Details S200 Roof Framing Plan S210 Roof Framing Details S220 Roof Framing Details</p>	<p>MECH / ELECT / PLUMB MP101 Floor Plan MP201 Notes E101 Electrical Floor Plan E102 Notes & Symbols</p>

SHEET NO.

CVR



1 Floor Plan
 scale: 1/16"=1'-0"
 north

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A101
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exterior materials and finishes:

Verify colors with Owner.

Brick:
exterior brick integral with tilt up concrete panel

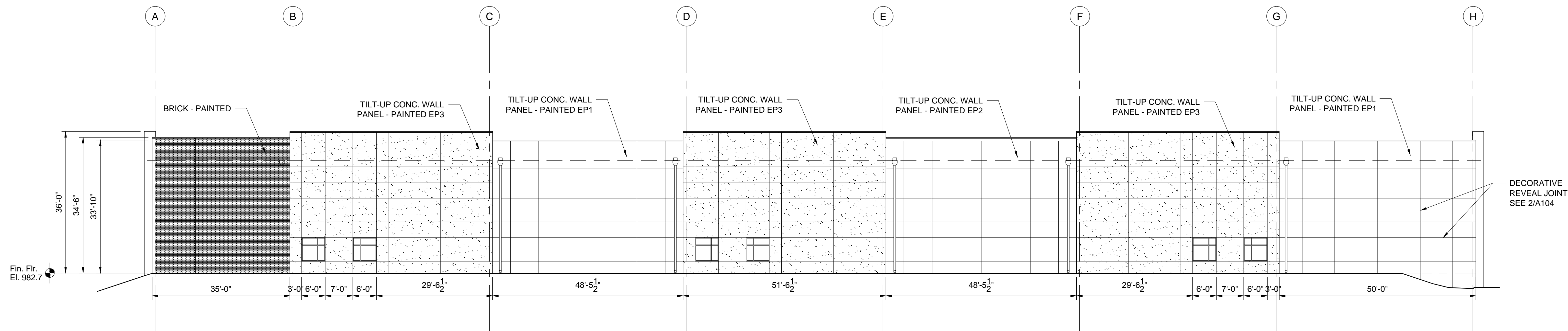
Tilt Up Concrete: paint finish to be Benjamin Moore medium texture finish
EP1 - Benjamin Moore - revere pewter HC-172
EP2 - Benjamin Moore - summerdale gold HC-17
EP3 - Benjamin Moore - knoxville gray HC-160

Storefront:
1" insulated clear glass in thermally broken clear anodized aluminum storefront frame

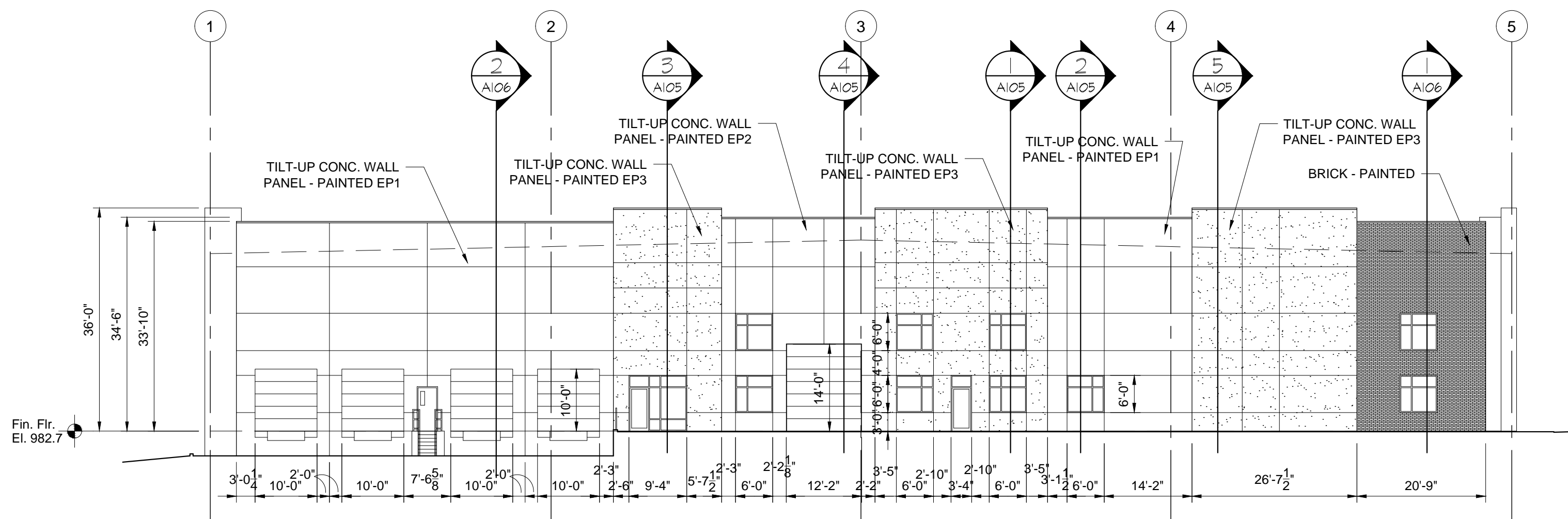
Overhead Doors:
prefinished - color to match adjacent walls

Flashing:
pre-finished metal cap flashing - color: Aluminum

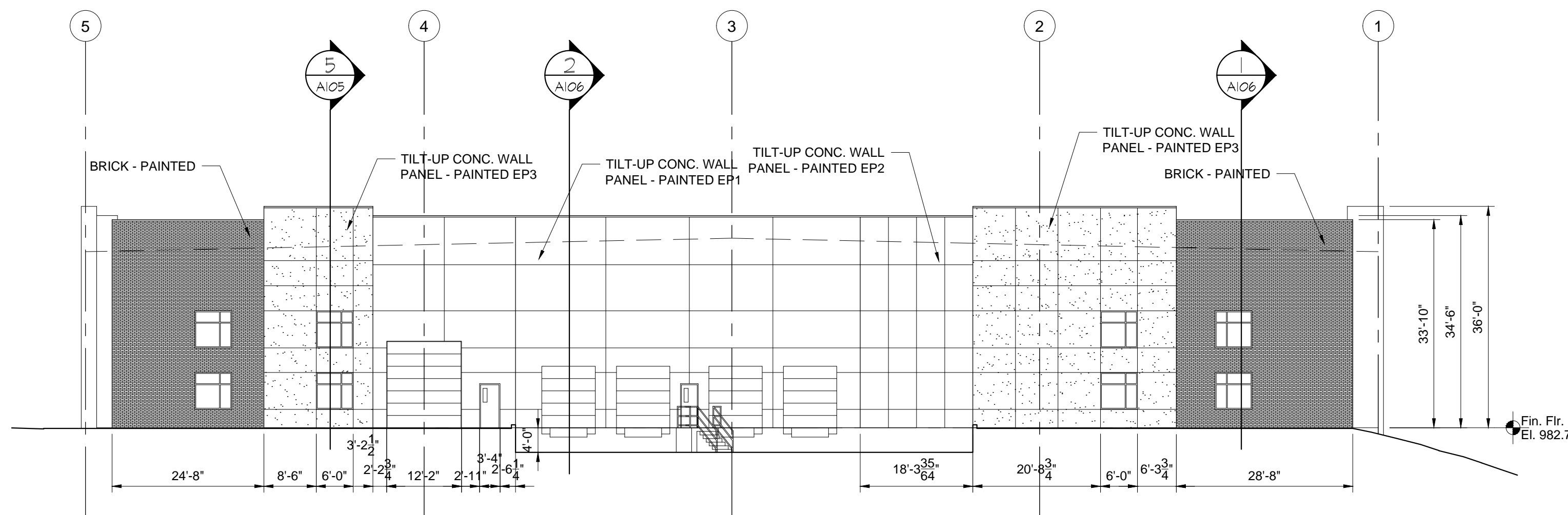
Caulk:
to match adjacent wall color



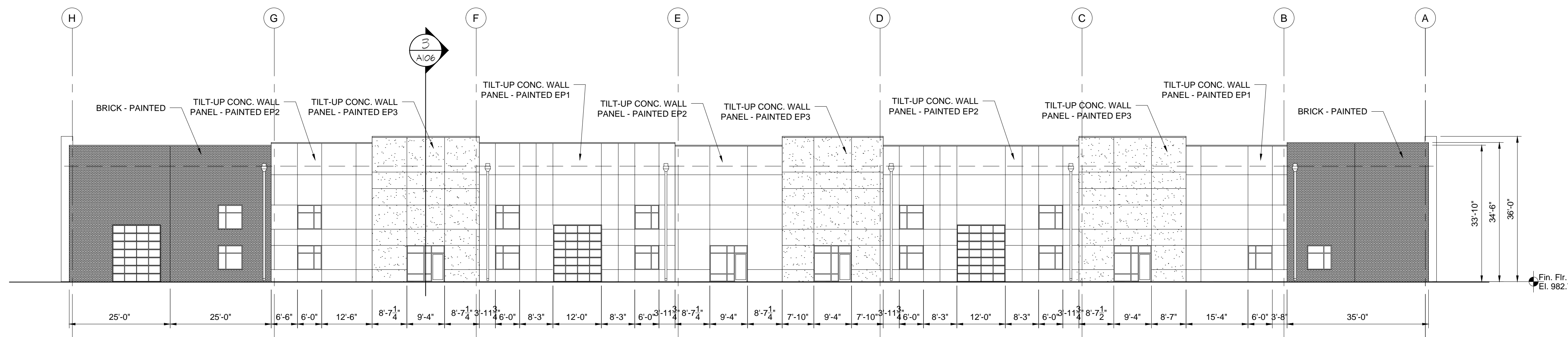
4 WEST ELEVATION
scale: 1/16"=1'-0"



3 SOUTH ELEVATION
scale: 1/16"=1'-0"



2 NORTH ELEVATION
scale: 1/16"=1'-0"



1 EAST ELEVATION
scale: 1/16"=1'-0"

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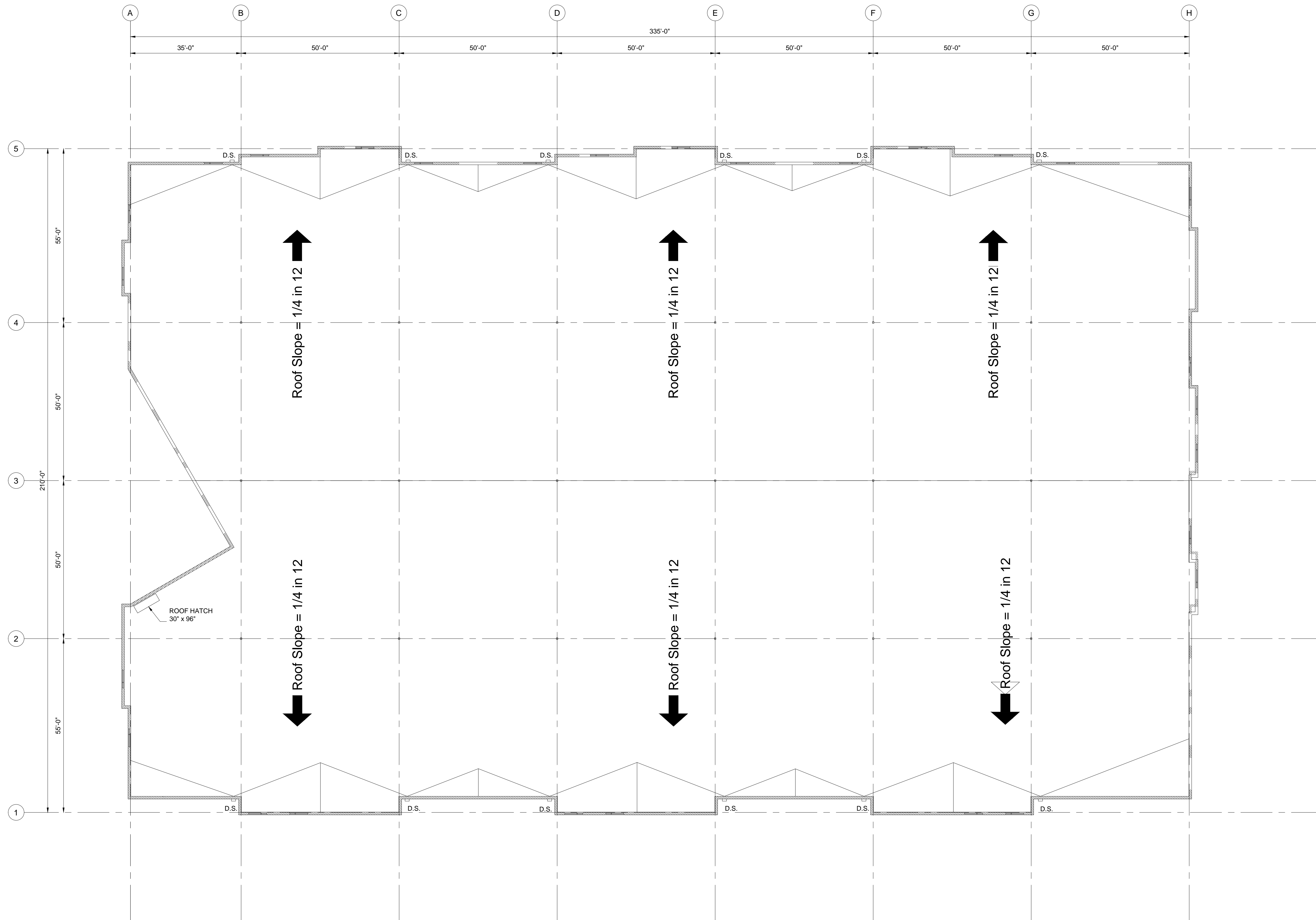


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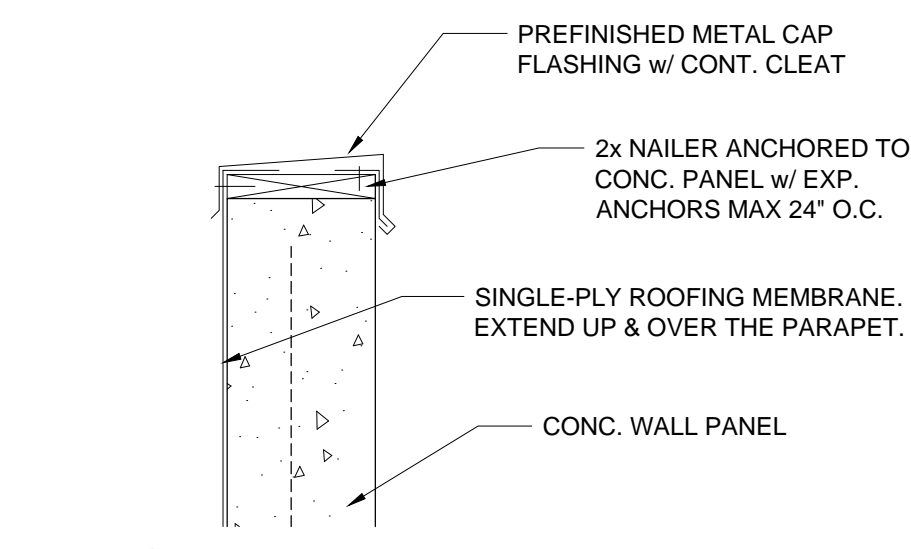
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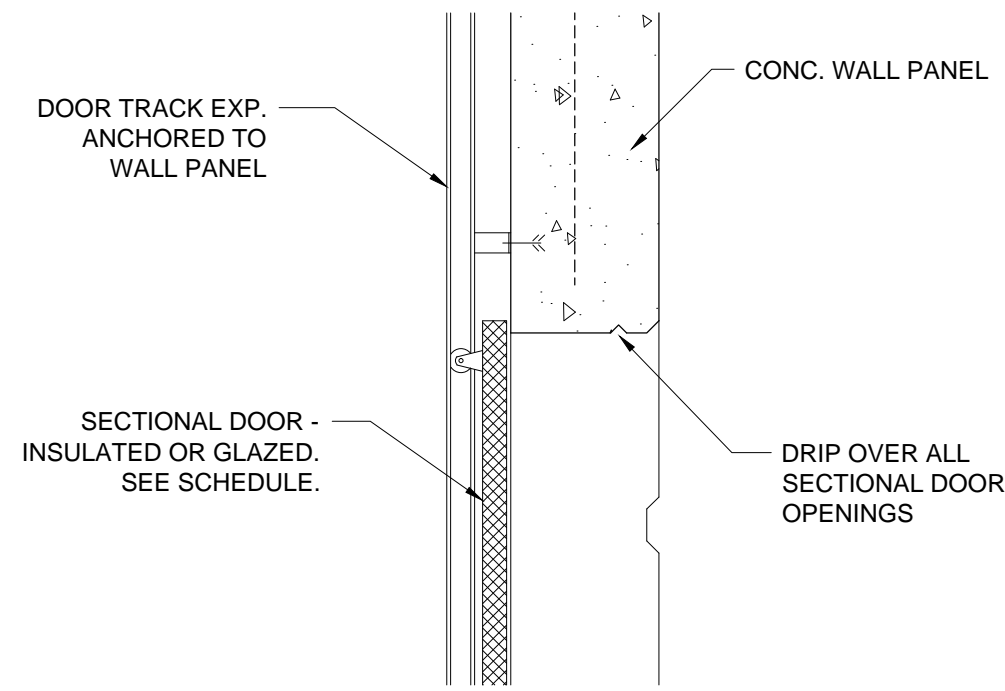
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1 Roof Plan
 scale: 1/16"=1'-0" north

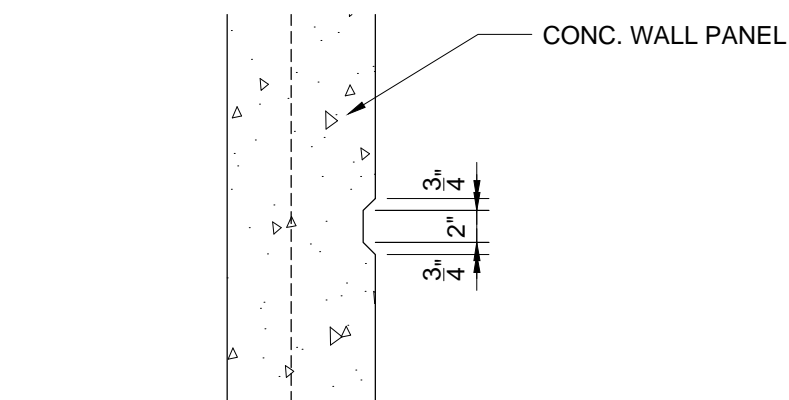
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A103
 © 2018



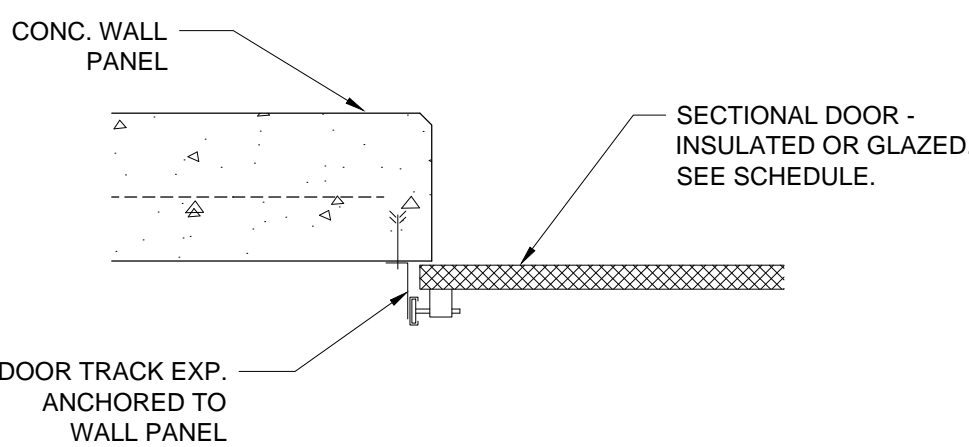
1 Cap Flashing
scale: 1"=1'-0"



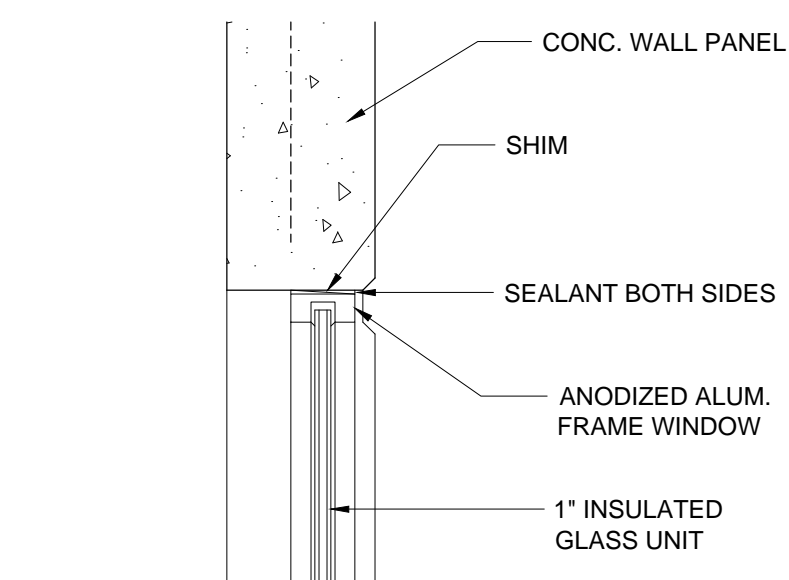
7 Sectional Door Head
scale: 1"=1'-0"



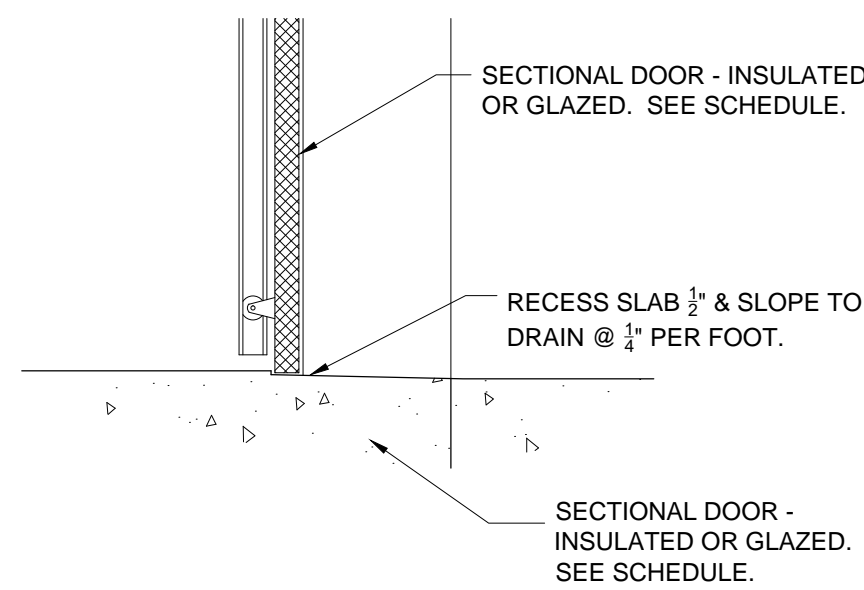
2 Decorative Reveal
scale: 1"=1'-0"



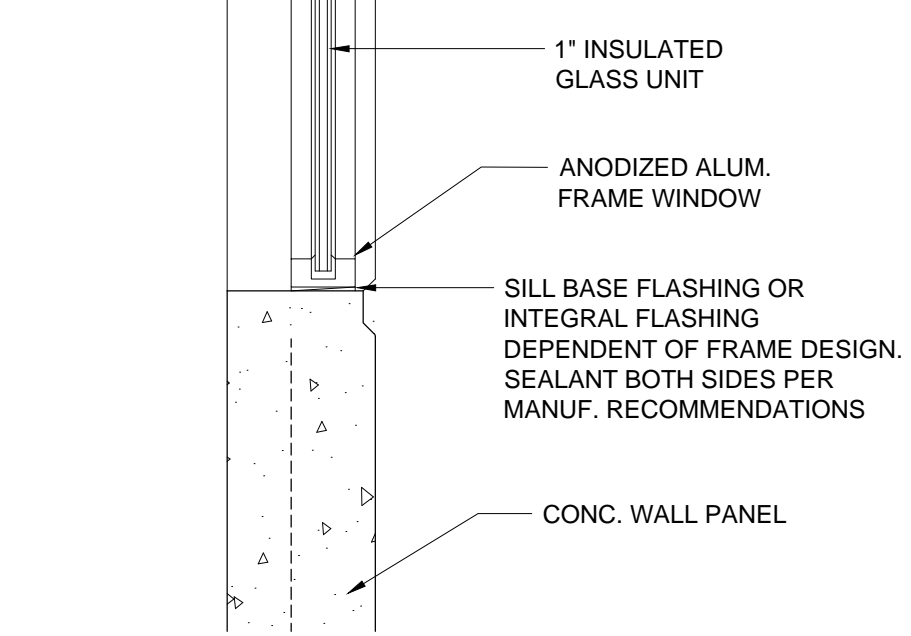
8 Sectional Door Jamb
scale: 1"=1'-0"



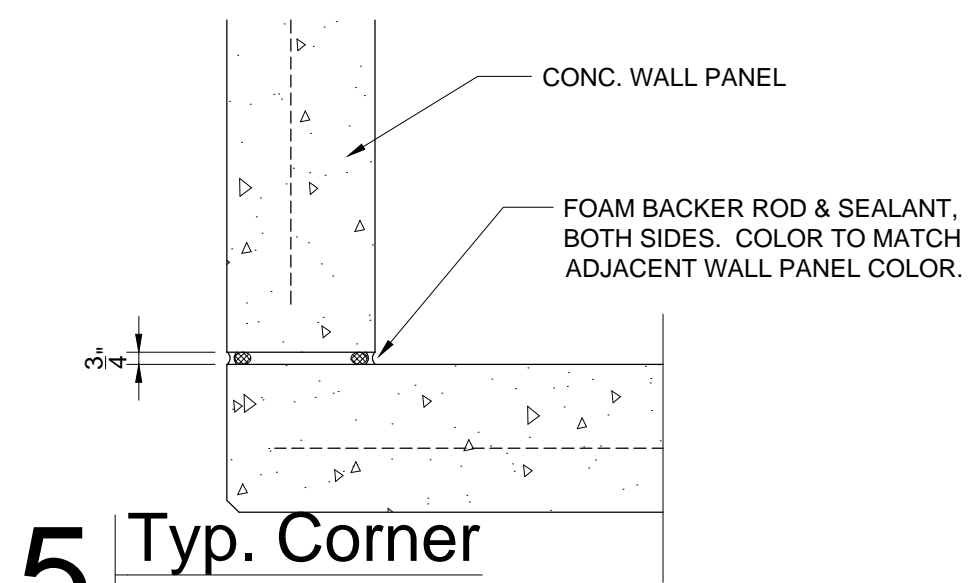
3 Window Head (Jamb Sim.)
scale: 1"=1'-0"



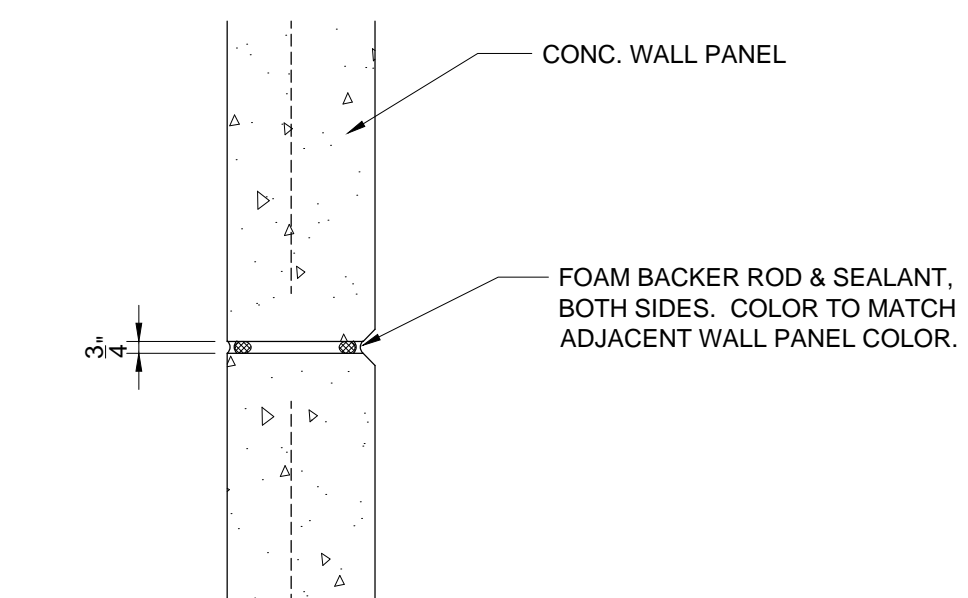
9 Sectional Door Sill
scale: 1"=1'-0"



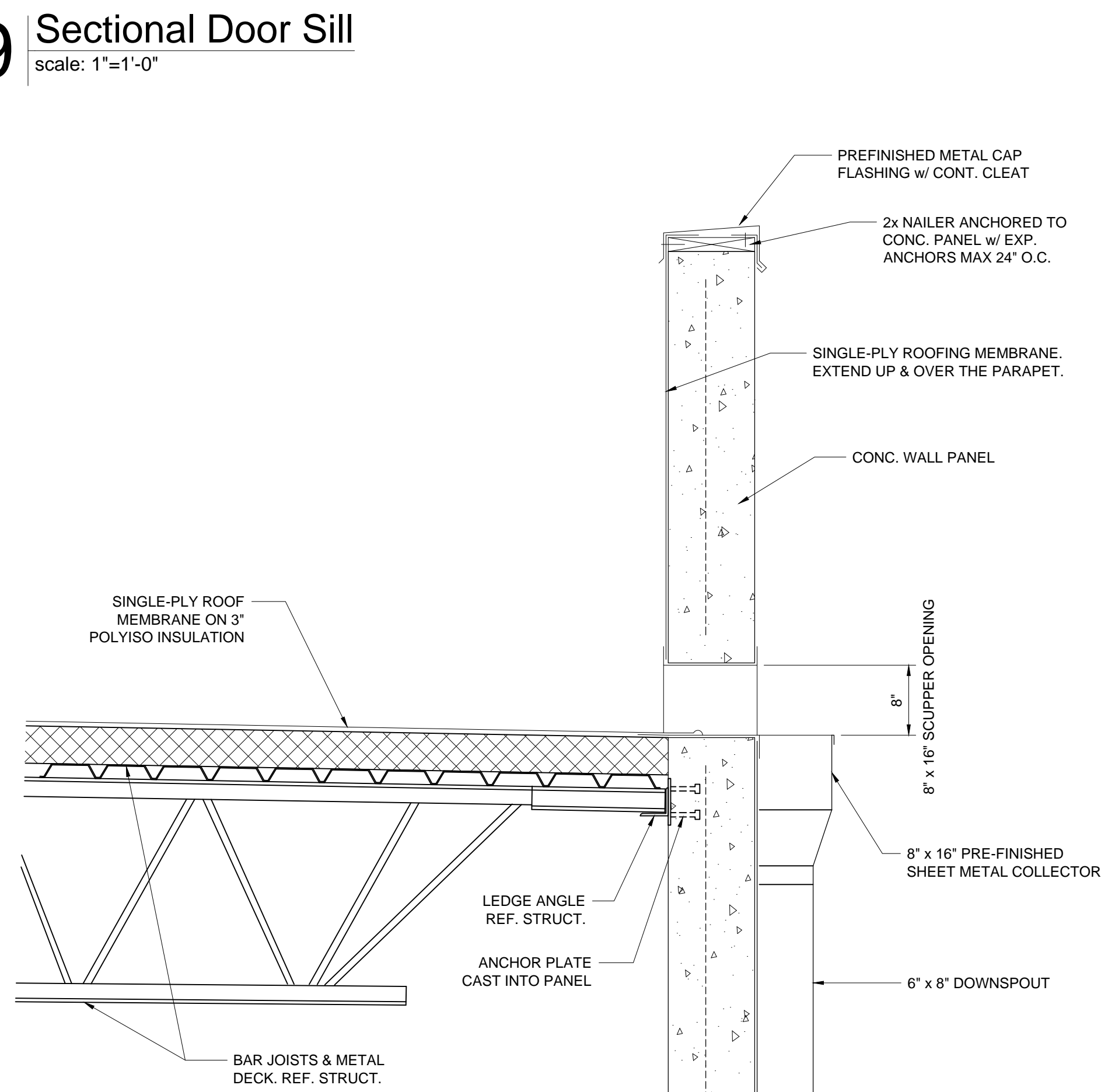
4 Window Sill
scale: 1"=1'-0"



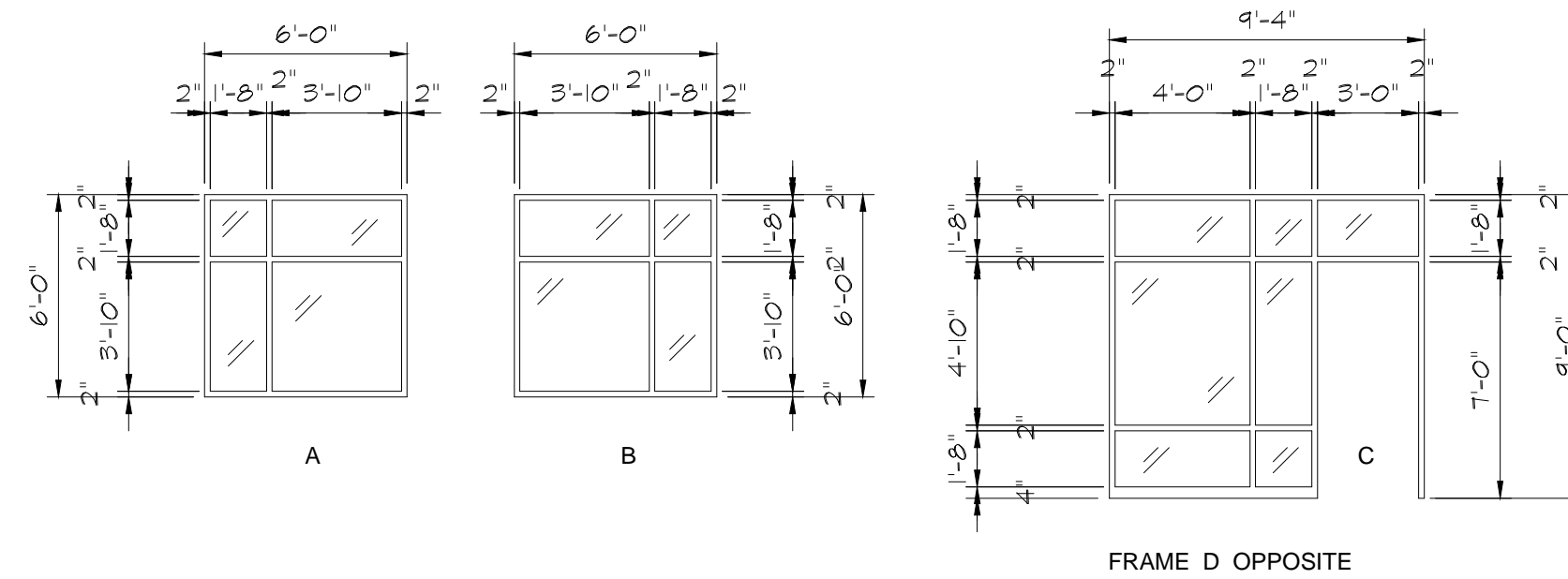
5 Typ. Corner
scale: 1"=1'-0"



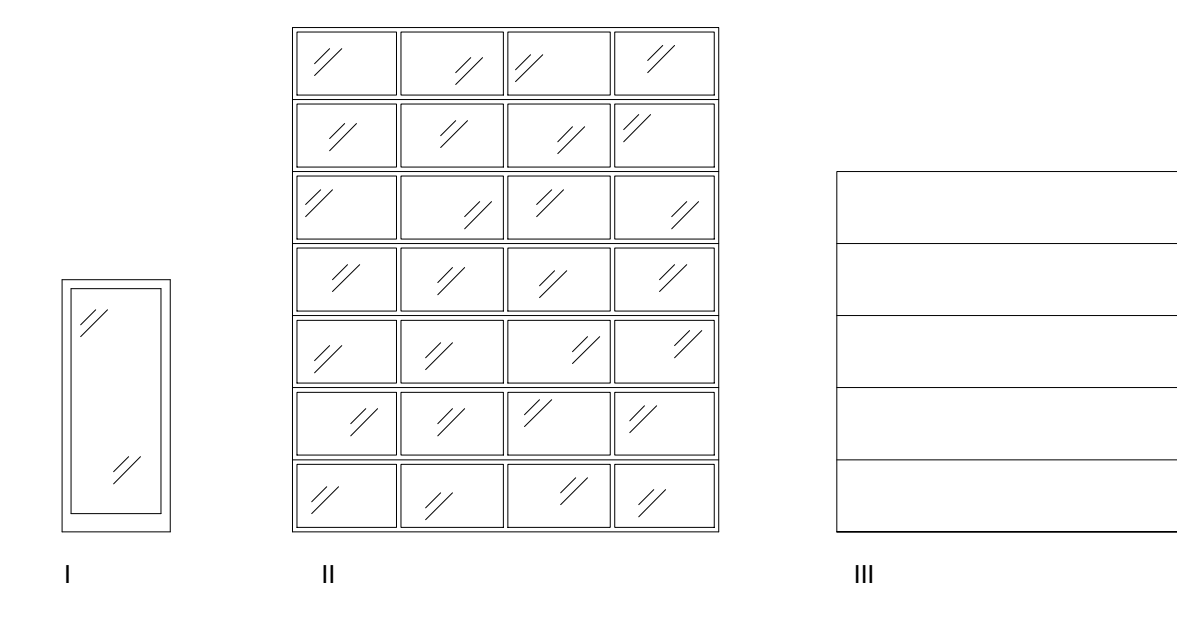
6 Typ. Joint
scale: 1"=1'-0"



10 Scupper Detail
scale: 1"=1'-0"



ALUMINUM FRAME TYPES



DOOR TYPES

DOOR SCHEDULE								
DOOR NO.	TYPE	NOMINAL WIDTH	NOMINAL HEIGHT	DOOR MATERIAL	LABEL	GLASS	FRAME	REMARKS
1	I	3'-0"	7'-0"	ALUMINUM	-	YES	C	
2	II	12'-0"	14'-0"	SECTIONAL	-	YES	-	DETAILS 7, 8, 9 / A104
3	I	3'-0"	7'-0"	ALUMINUM	-	YES	C	
4	I	3'-0"	7'-0"	ALUMINUM	-	YES	C	
5	II	12'-0"	14'-0"	SECTIONAL	-	YES	-	DETAILS 7, 8, 9 / A104
6	I	3'-0"	7'-0"	ALUMINUM	-	YES	C	
7	II	12'-0"	14'-0"	SECTIONAL	-	YES	-	DETAILS 7, 8, 9 / A104
8	I	3'-0"	7'-0"	ALUMINUM	-	YES	E	
9	II	12'-0"	14'-0"	SECTIONAL	-	YES	-	DETAILS 7, 8, 9 / A104
10	I	3'-0"	7'-0"	ALUMINUM	-	YES	D	
11	III	10'-0"	10'-0"	SECTIONAL	-	-	-	DETAILS 7, 8, 9 / A104
12	III	10'-0"	10'-0"	SECTIONAL	-	-	-	DETAILS 7, 8, 9 / A104
13	I	3'-0"	7'-0"	ALUMINUM	-	YES	E	
14	III	10'-0"	10'-0"	SECTIONAL	-	-	-	DETAILS 7, 8, 9 / A104
15	III	10'-0"	10'-0"	SECTIONAL	-	-	-	DETAILS 7, 8, 9 / A104
16	III	10'-0"	10'-0"	SECTIONAL	-	-	-	DETAILS 7, 8, 9 / A104
17	III	10'-0"	10'-0"	SECTIONAL	-	-	-	DETAILS 7, 8, 9 / A104
18	I	3'-0"	7'-0"	ALUMINUM	-	YES	E	
19	III	10'-0"	10'-0"	SECTIONAL	-	-	-	DETAILS 7, 8, 9 / A104
20	III	10'-0"	10'-0"	SECTIONAL	-	-	-	DETAILS 7, 8, 9 / A104
21	I	3'-0"	7'-0"	ALUMINUM	-	YES	E	
22	II	12'-0"	14'-0"	SECTIONAL	-	YES	-	DETAILS 7, 8, 9 / A104

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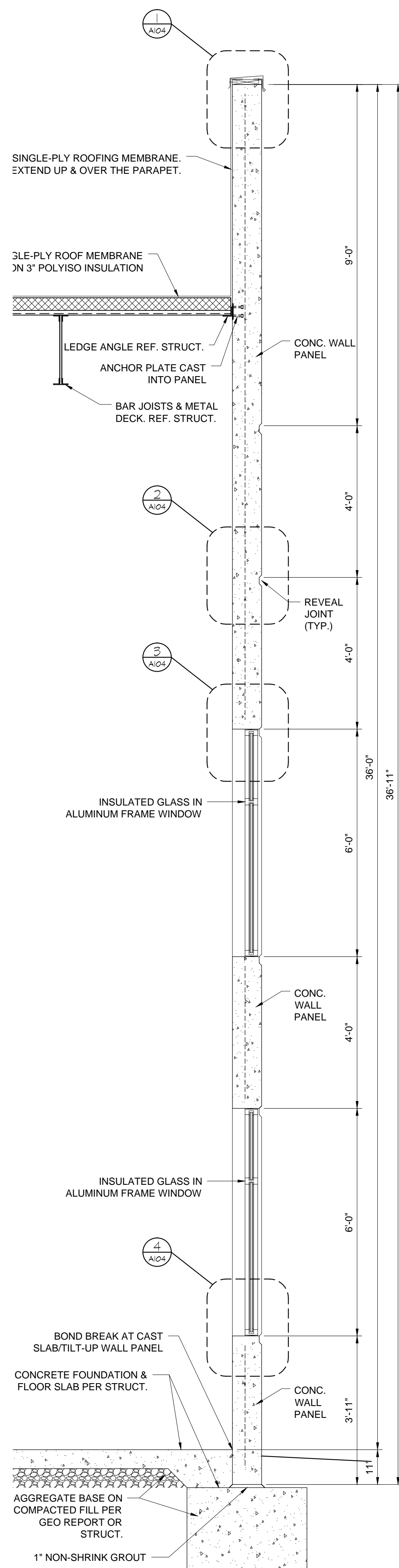
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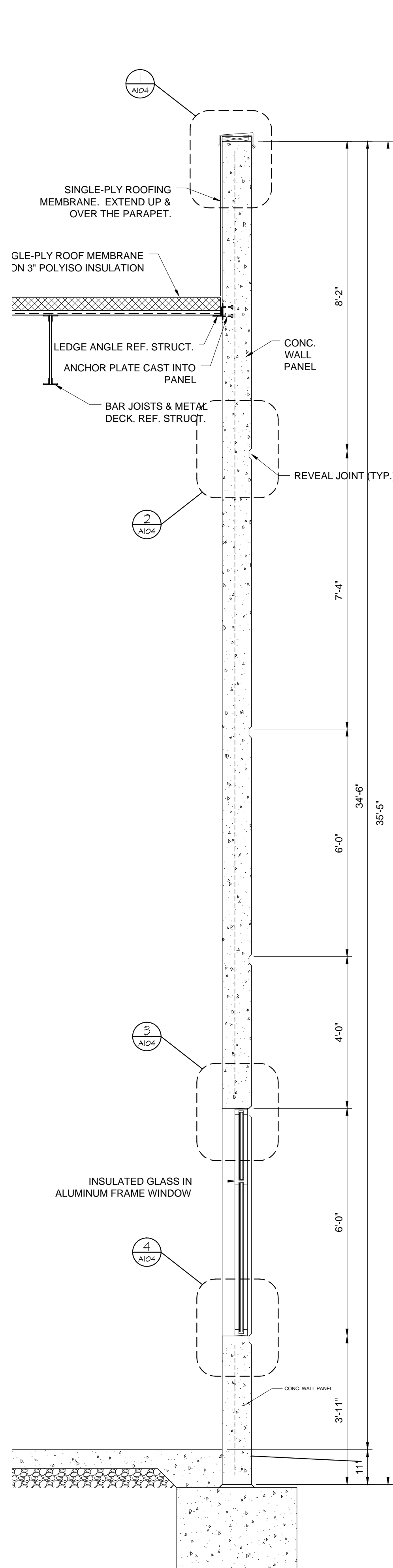
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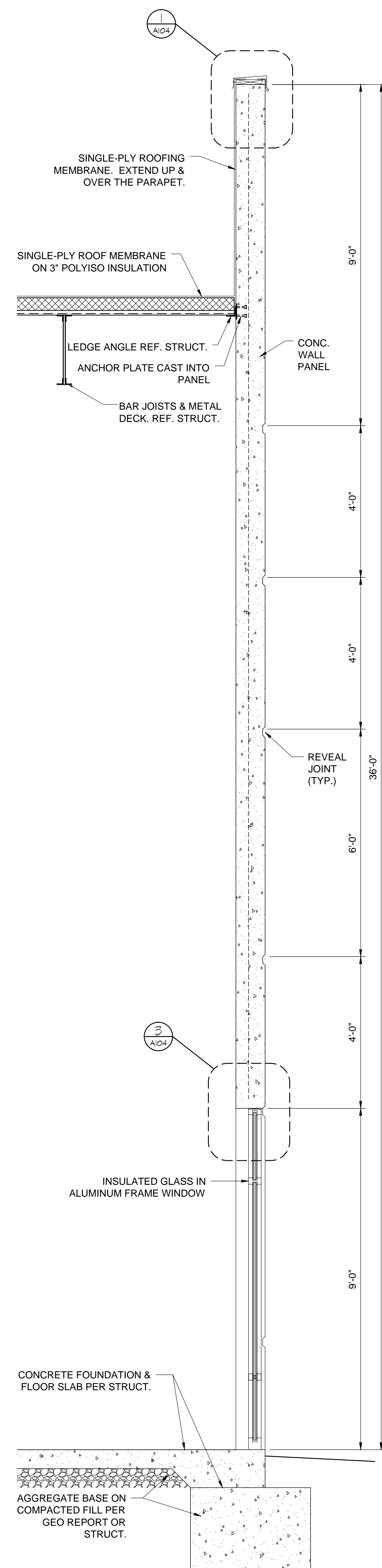
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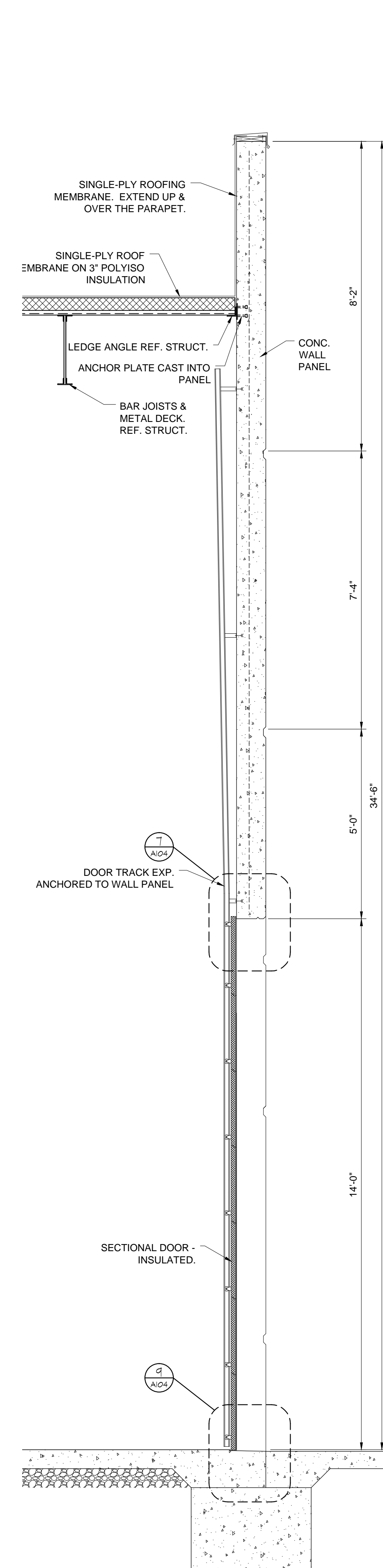
1 Wall Section
scale: 1/2"=1'-0"



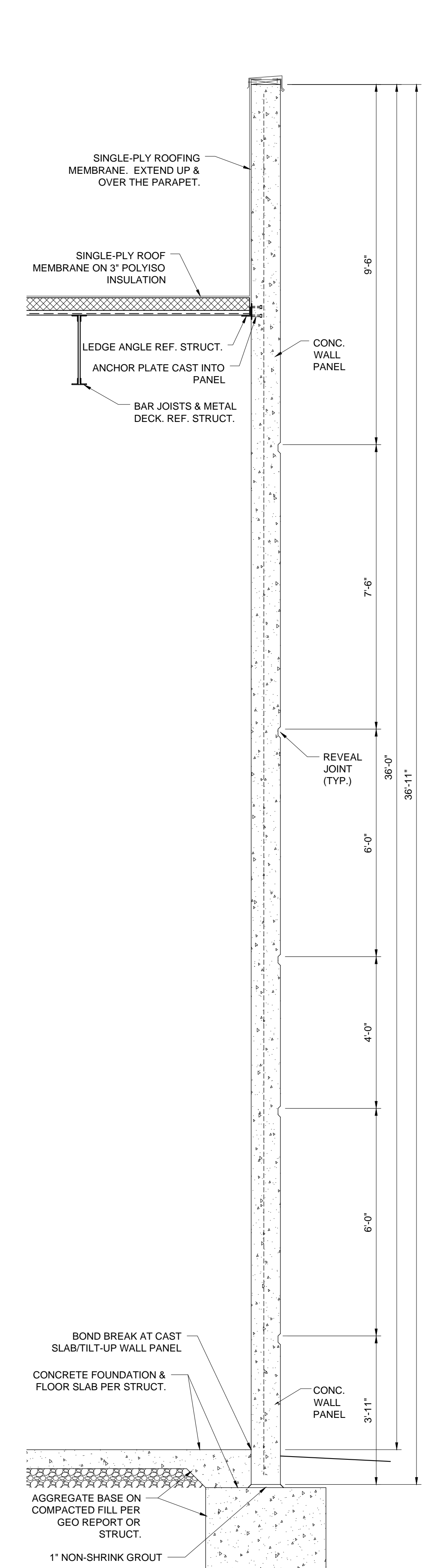
2 Wall Section
scale: 1/2"=1'-0"



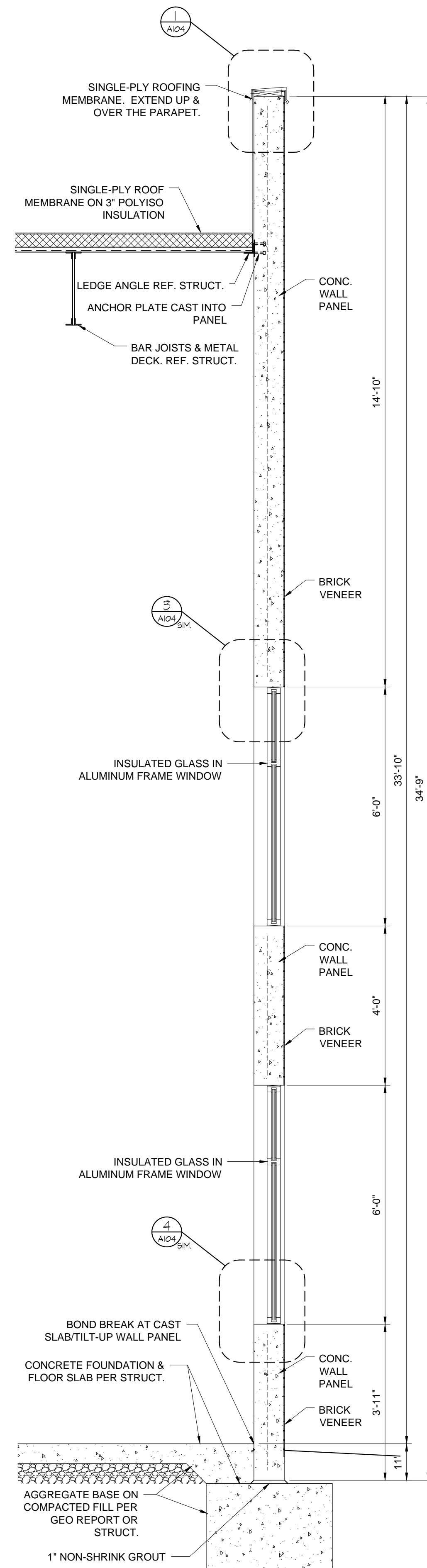
3 Wall Section
scale: 1/2"=1'-0"



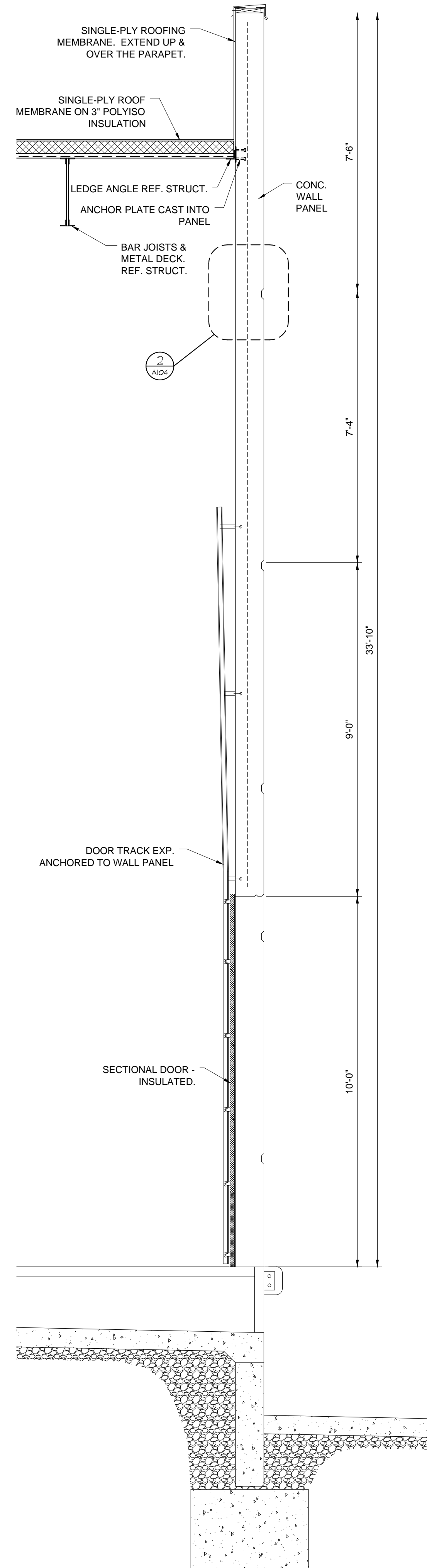
4 Wall Section
scale: 1/2"=1'-0"



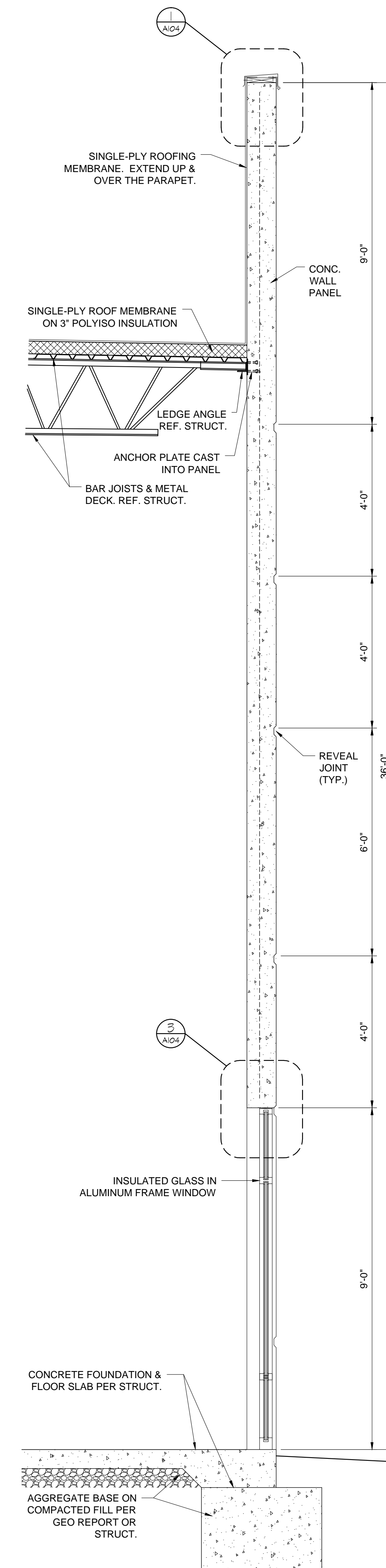
5 Wall Section
scale: 1/2"=1'-0"



1 Wall Section
scale: 1/2"=1'-0"



2 Wall Section
scale: 1/2"=1'-0"



3 Wall Section
scale: 1/2"=1'-0"

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A106

BUILDING CODE DESIGN CRITERIA:

Risk Category, ASCE 7, T. 1.5-1 II
Importance Factors, T. 1.5-2 1.0
Snow, *Is* 1.0
Seismic, *Ie* 1.0

Ground Snow Load, Fig. 7-1 20 psf
Pf 15.4 psf
Flat Roofs 20 psf

Wind Design Velocity 115 miles per hour

GENERAL

- 1. The contractor shall verify dimensions and conditions and notify the architect/ engineer of any discrepancies, inconsistencies, or difficulties affecting work before proceeding.
- 2. The contractor shall coordinate all disciplines, verifying size and location of all openings. All conflicts, inconsistencies, or other difficulties affecting structural work shall be called to the attention of the architect or engineer for direction before proceeding. The contractor shall confirm all existing and field conditions prior to fabrication.
- 3. All design and construction for this project shall conform to the requirements of the 2012 International Building Code (IBC), as adopted and amended.
- 4. These drawings are for this specific project, and no other use is authorized.
- 5. Structural systems in these documents have been designed for the in place use of the intended occupancy. Means and methods of construction used by the contractor(s) such as sequencing and shoring are not intended to be directed.
- 6. The contractor shall be responsible for supplying shop drawings for joist girder, bar joists, structural steel, metal decking, reinforcing steel, grout and concrete mix designs. Shop drawings shall be reviewed for conformance with means, methods, techniques, sequences and operations of construction and safety precautions and programs incidental thereto, all of which are the sole responsibility of the contractor. Shop drawings shall be reviewed by the contractor and stamped "Approved" prior to submittal. All structural shop drawings shall be reviewed by the structural engineer of record prior to fabrication.
- 7. Contractor to maintain OSHA safety precautions for workers.

STRUCTURAL INSPECTIONS:

- 1. Periodic inspections and site observations, if directed by the owner, by field representatives of Structura Logica, LLC, is for the purpose of determining if the work of the contractor is proceeding in accordance with the structural contract documents. These limited site observations should not be construed as exhaustive or continuous to check the quality of work, or to confirm the quality or quantity of work, but are intended to guard the owner against defects or deficiencies in the work of the contractor.
- 2. Deputy or special inspections are required for the following:
 - a. Field Welding
 - b. Concrete Placement & Compressive Strength, *Fc*
 - c. Tilt-up Concrete *Fc* & Reinforcement Placement
 - d. Structural Steel Placement & Erection
 - e. Epoxy Fastening Systems.
- 3. Periodic inspection is defined as generally once a week at a minimum, and more often as needed to observe work requiring inspections, as outlined above prior to covering by subsequent construction.

SLAB-ON-GRADE:

- 1. Slab reinforcing per plan. Welded wire fabric shall conform to ASTM A185. Welded wire fabric shall be supplied in sheets only. Rolled sheets are not permitted.
- 2. Welded wire fabric shall be supported on chairs or blocks prior to concrete placement. WWF shall not be hooked and pulled up during concrete placement.
- 3. WWF shall have end and edge laps of one full mesh spacing plus 2" between cross wires. Wire tie all WWF together to insure not movement during pour.
- 4. Slab floor finish per the owner's requirements. Contractor to coordinate with owner.
- 5. Soil preparation per the Geotechnical Report.

SOIL PREPARATIONS AND CONDITIONS:

- 1. This design assumes site & soil preparation will follow recommendations contained in the Geotechnical Engineering Report provided by Alpha-Omega, Kansas City, Kansas (AOG 18-429E).
- 2. Excavate and remove all organic soil material below pad base per soil report. Provide low volume subgrade and aggregate base beneath slab per soil report.
- 3. Per the soil report, soil bearing capacity for perimeter walls may be 2,500 psf at a depth of 36 inches. Interior pier/pad footings a minimum of 18 inches may use 3,000 psf.

REINFORCING STEEL, EMBED PLACEMENT AND ANCHOR BOLTS:

- 1. Reinforcing steel, #4 or greater, shall conform to the requirements of ASTM A615, Grade 60.
- 2. #3 used as ties or stirrups may be ASTM A615, Grade 40.
- 3. Reinforcing welded to structural steel shall be ASTM A706.
- 4. Clear minimum coverage of concrete over reinforcing steel shall be as follows:
 - Concrete cast and placed against earth 3"
 - Formed concrete against earth 2"
 - Tilt-up concrete exposed to weather 1"
- 5. All dowels shall be the same size and spacing as adjoining main bars (splice lap 40 bar diameters, or per Table within these plans).
- 6. Wire tie steel prior to pour to insure steel remains in place when concrete is poured.
- 7. Prior to the delivery of concrete, the inspector shall verify that the reinforcing steel is in conformance with the jurisdiction approved plans, specifications and shop drawings. The inspector shall confirm that the reinforcing steel is of the correct size and grade and ensure that the proper spacing, clearances, splice lengths and embedded items have been provided. All reinforcing steel shall be in place prior to the placement of concrete and be secured against displacement.
- 8. The inspector shall verify bolt size, location, and embedment length of all anchor bolts are in conformance with the jurisdiction approved plan, specifications and shop drawings.
- 9. Anchor bolts or rods to be in accordance with ASTM F1554, Grade 36. Anchor bolts or rods shall be placed by means of a template and shall be worked into concrete to achieve vertical alignment. Anchor bolts and rods 3/4 inch in diameter or smaller may be placed in wet concrete, floated in place, as long as fresh concrete allows full contact with the shank of the bolt.

CONCRETE:

- 1. All concrete shall develop a minimum 28 day compressive design strength, *Fc* as follows:

Location	Minimum 28 Day Compressive Strength, <i>Fc</i>	Max. Aggregate Size	Max. Water/Cement Ratio	Slump (in.)	Air Entrainment (%) ²	Concrete Testing Required
Interior Slab	4000	¾"	0.5	4±1	0	No
Exterior Slab ¹	3500	¾"	0.5	4±1	6±1	No
Perimeter Foundations	3500	1"	0.5	4±1	6±1	Yes
Interior Foundations	3500	1"	0.5	4±1	0	Yes
Tilt-Up	4000	¾"	0.48	4±1	0	Yes

Footnote 1 - Minimum recommendations; Design by Architect or Civil Engineer
2 - Air entrainment additives applicable in locations where concrete is exposed to freezing water conditions.

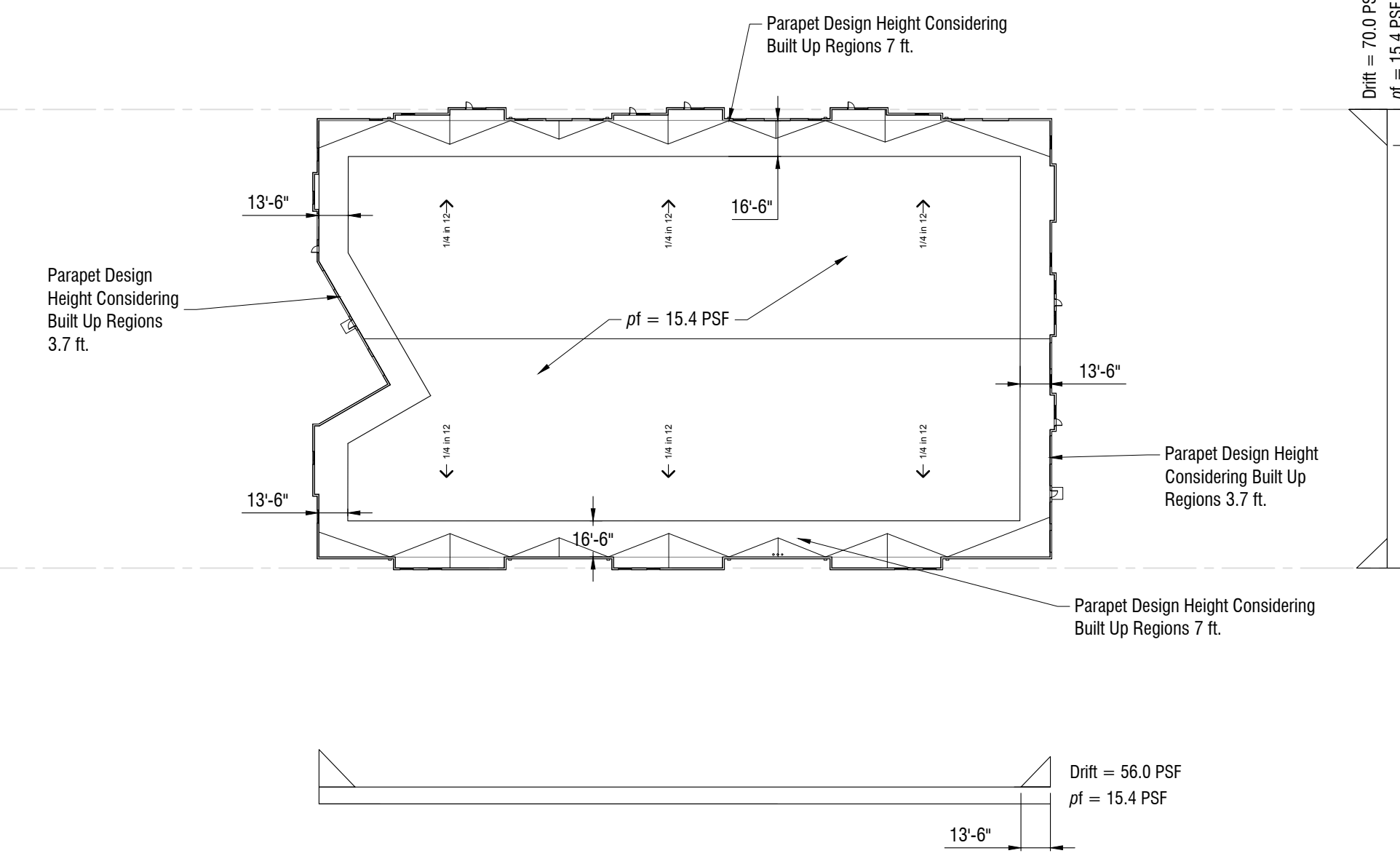
- 2. Admixtures to increase the slump shall not be used unless approved in writing by the engineer of record.
- 3. Fly ash shall not be used unless approved in writing by the engineer of record. Fly ash if approved, shall conform to ASTM C618 and ACI 232.2R-96. Fly ash shall be limited to Types C & F and shall not exceed 15% of the total cement volume.
- 4. Contractor shall verify that all concrete inserts, reinforcing and embedded items are correctly located and rigidly secured prior to concrete placement.
- 5. No aluminum items shall be embedded in any concrete.
- 6. Provide concrete design submittal for approval.
- 7. Concrete cylinder tests shall be prepared for each days pour of each concrete mix and at a minimum of every 50 cubic yards for all concrete requiring testing. Conform to ASTM C39. At least four (4) test cylinders are to be made and cured on site for the first 24 hours. Test one of the specimens at seven (7) days and two at twenty-eight (28) days. Maintain the fourth specimen for later testing if needed.
- 8. Perform slump tests on a representative concrete sample at the point of discharge. Perform additional tests when concrete consistency seems to have changed. The maximum slump is 5 inches. Conform to ASTM C143. Slump, air content and temperature tests shall be conducted at a minimum when strength specimens are made.
- 9. Perform air content tests on all concrete specified to be air entrained. Conform to ASTM C231.
- 10. Perform a temperature test every hour when the air temperature is 40°F and below, or when air temperature is 80°F and above. Conform to ASTM C1064.

STRUCTURAL STEEL & BAR JOIST CONSTRUCTION:

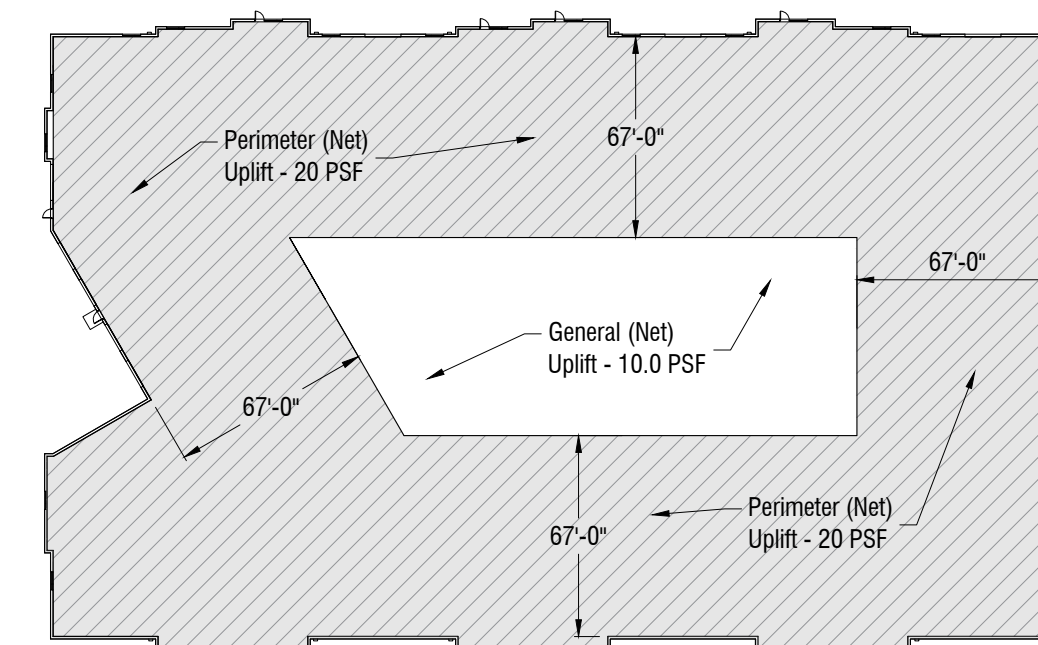
- 1. Erect steel in accordance with ASTM 303 and 360.
- 2. ASTM Material Specifications to meet:
 - W-Shapes: ASTM A992, ASTM A572, Grade 50
 - Channels, Angles, M, S-Shapes: ASTM A36, *Fy*=36 ksi or ASTM A572, *Fy*=50 ksi.
 - Plate and Bar: ASTM A36, *Fy*=36 ksi
 - All Hollow Structural Steel (HSS) Tubing: ASTM A500, *Fy*=46 ksi
 - All Steel Piping: ASTM A36 or A501, *Fy*=35 ksi Min.
- 3. Bar joist systems to be accordance with ANSI/SJI-K-1.1, Standard Specification for Open Web Steel Joists & ANSI/SJI-JG-1.1, Standard Specification for Joist Girders. Shop drawings shall specify required bridging. Submit shop drawings for review. Contractor to approve before submittal to the engineer of record.
- 4. Weld all joists to supporting members with 1/8"x2" long fillet welds on each side of the joist.
- 5. All roof bar joists shall be designed for uplift as stipulated by the building code and these plans. Extra bracing shall be added as required, and the joist manufacturer shall certify that the joists have been designed for reverse bending due to uplift where required.
- 6. All hangers from bar joists exceeding 100 lbs shall be supported within 2 inches of joist panels points. Additional web members shall be provided where necessary.
- 7. Except at RTU, all openings in the roof shall be framed with L4x4x1/4 angles minimum, unless noted otherwise. Framing for RTU will depend upon individual unit weights and sizes.
- 8. Roof and floor decking/sheathing to comply with ANSI/SDI-RD1.0, Standard for Steel Roof Deck. Shop drawings shall specify required fasteners, and welding. Roof sheathing to be fastened meeting the uplift criteria shown within these drawings. Submit shop drawings for review. Contractor to approve before submittal to the engineer of record.
- 9. Welding shall be in accordance with American Welding Society. Welding electrodes shall be E70XX unless otherwise noted. Inspection is required for single-pass fillet welds, multi-pass fillet welds, complete and partial penetration welds, floor and roof decking. Prior to the start of work, materials, qualifications, qualifications of welding procedures and welder qualifications shall be verified. Provide continuous or periodic inspection of the structural welding as directed in IBC T. 1704.3. A visual inspection to ensure proper type, size, length, and quality of all field welds is required prior to work being concealed by other materials.
- 10. Structural steel bolts, not including anchor bolts, unless noted otherwise are to be ASTM A325 and brought into a snug-tight condition.
- 11. Shear connector stud welds to be inspected and tested in accordance with AWS D1.1. Shear connector stud welds may be visually inspected unless less than a 360 degree flash welds are acceptable achieved. If unacceptable, bend tests shall be performed.
- 12. Special inspections for welding are not required if fabricated in the shop of an approved fabricator. An approved fabricator shall be certified by a recognized organization.

POST INSTALLED ANCHORAGE & EPOXY SYSTEMS

- 1. Epoxy systems for bolts and rebar anchorage to be Hilti Hit-HY, Simpson SAP, Or Equal Listed Product.
- 2. Special inspection required for all post installed anchors.



C4 SNOW DRIFT CRITERIA
SCALE 1/64"=1' FT

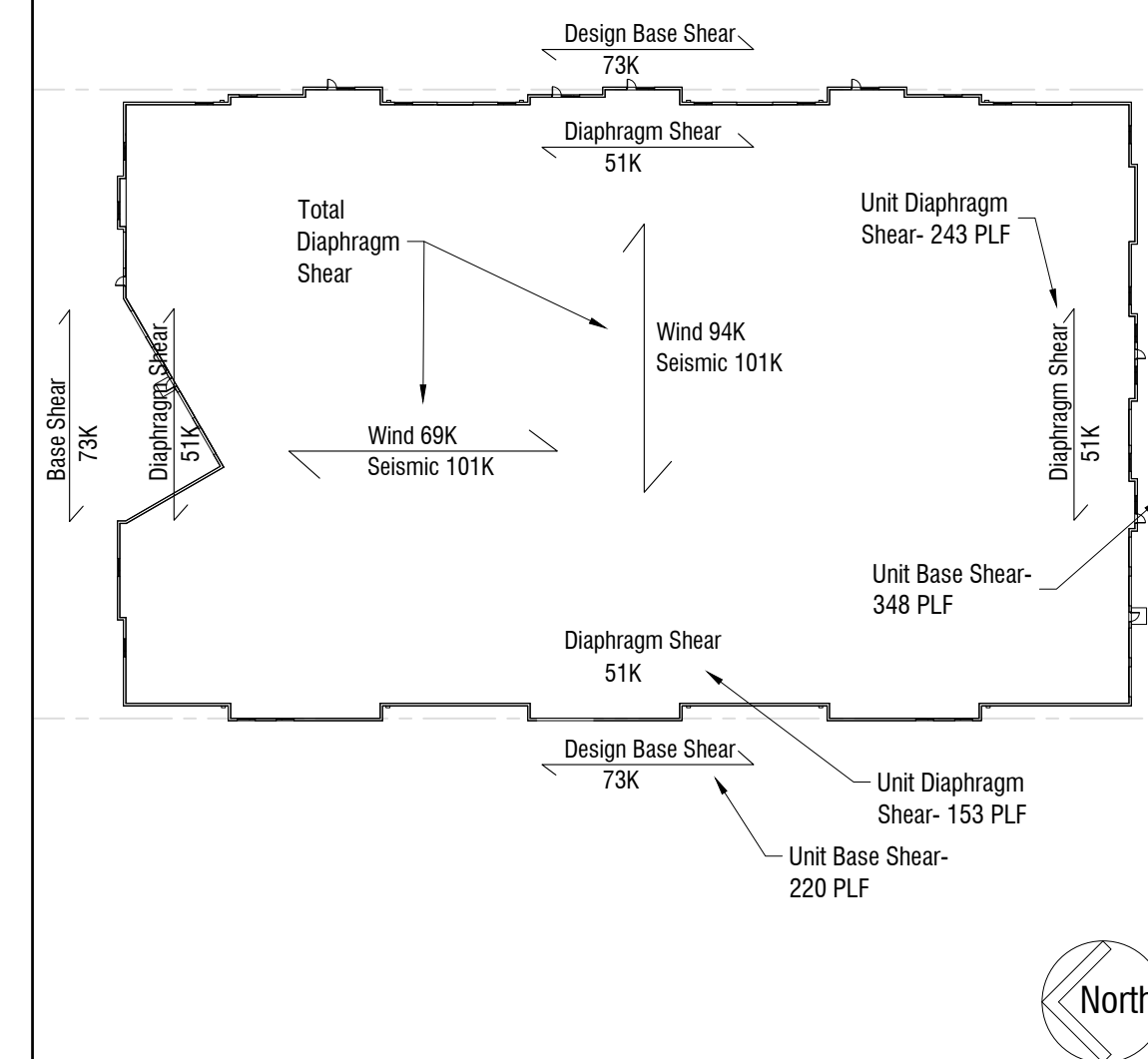


B4 ROOF UPLIFT DESIGN CRITERIA
SCALE 1/64"=1' FT

ABBREVIATIONS:

- A.B. Anchor Bolts
- A.F.F. Above Finish Floor
- @ At
- A.J. Construction Joint
- E.J. Expansion Joint
- EQ. Equal
- E.W. Each Way
- ELEV. Elevation (Relative Grade Height)
- Ft. Foot, Feet
- L.F. Lineal Feet
- LLH Long Leg Horizontal
- LLV Long Leg Vertical
- # Number
- Sim. Similar
- SJI Steel Joist Institute
- Sq.Ft. Square Feet
- T.O.B. Top Of Beam
- T.O.F. Top Of Footing
- T.O.W. Top Of Wall
- Typ. Typical
- O.C. On Center Spacing
- U.N.O. Unless Noted Otherwise
- W.W.F. Welded Wire

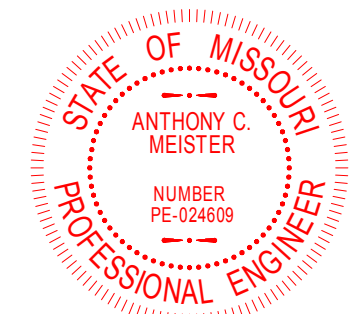
B5 LATERAL DESIGN CRITERIA
SCALE 1/64"=1' FT



A1 NOTES
NO SCALE

A4 ABBREVIATIONS
NO SCALE

A5 DETAIL
SCALE 3/4"=1' FT



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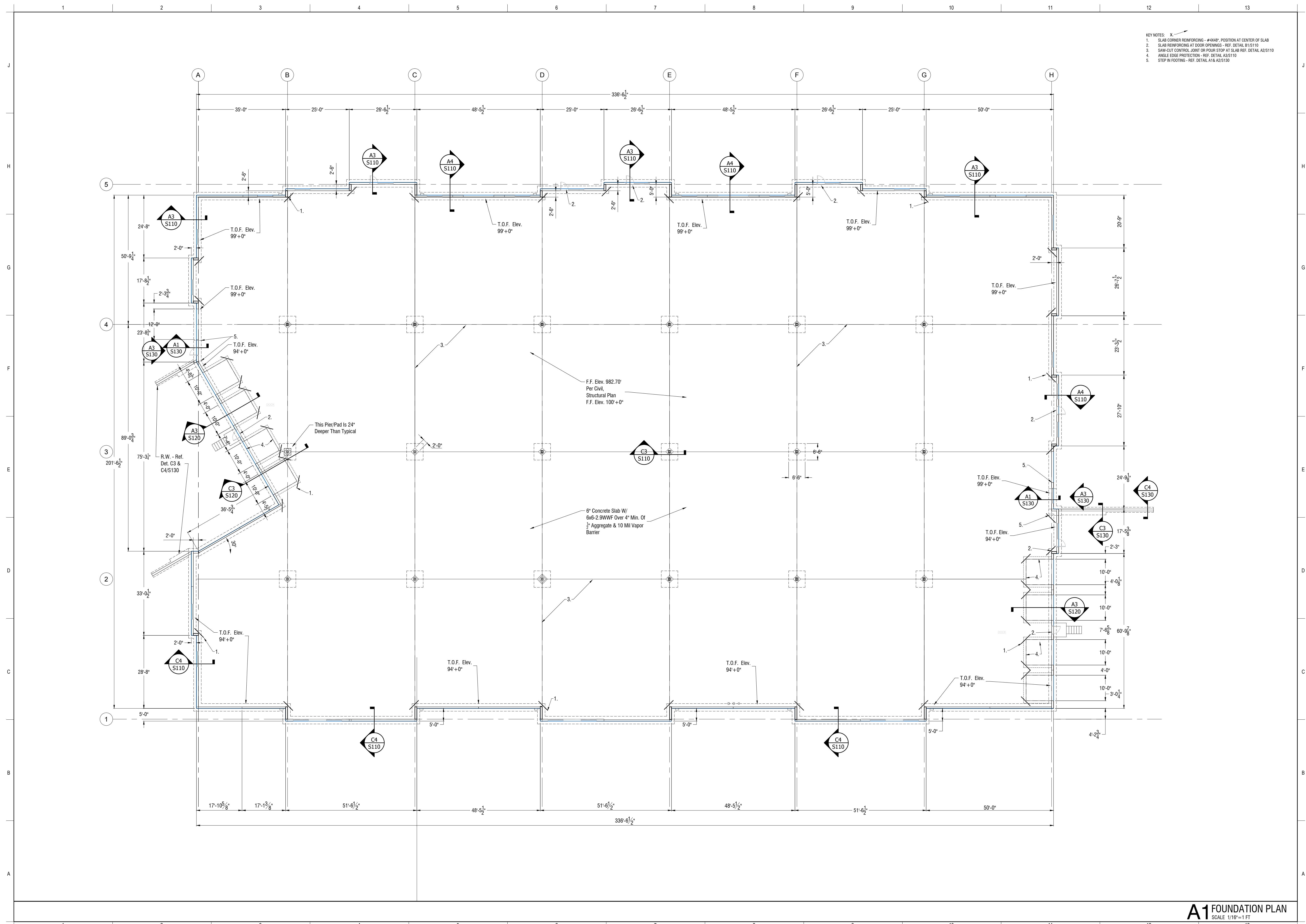
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PROJECT NUMBER: 18-125
ISSUE DATE: 7 JUNE 2019

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STRUCTURAL
NOTES & DESIGN
CRITERIA

S000



- KEY NOTES: X
1. SLAB CORNER REINFORCING - #4X6P. POSITION AT CENTER OF SLAB
 2. SLAB REINFORCING AT DOOR OPENINGS - REF. DETAIL B1/S110
 3. SAW-CUT CONTROL JOINT OR POUR STOP AT SLAB REF. DETAIL A2/S110
 4. ANGLE CODE PROTECTION - REF. DETAIL A3/S110
 5. STEP IN FOOTING - REF. DETAIL A16 A2/S130



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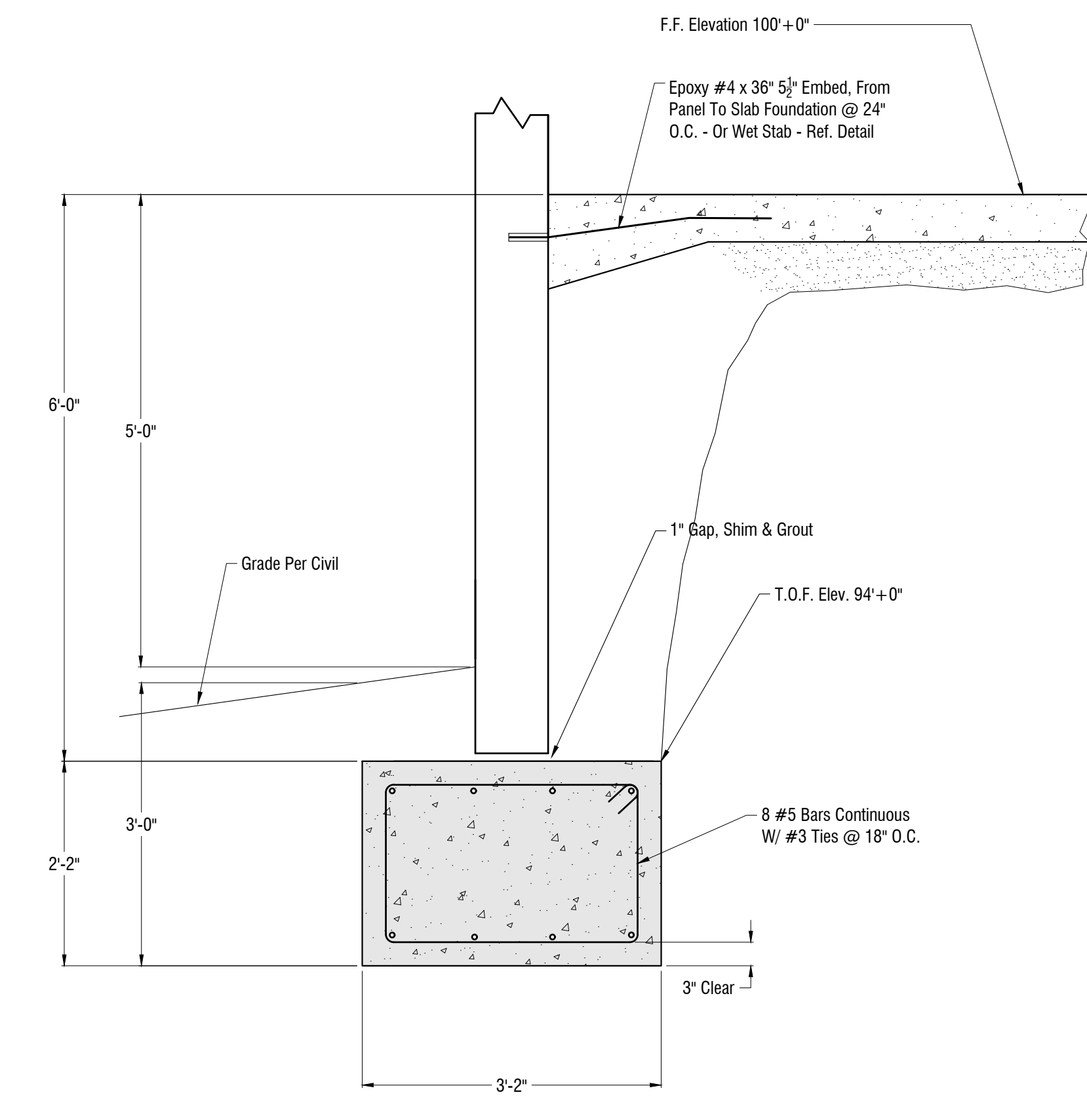
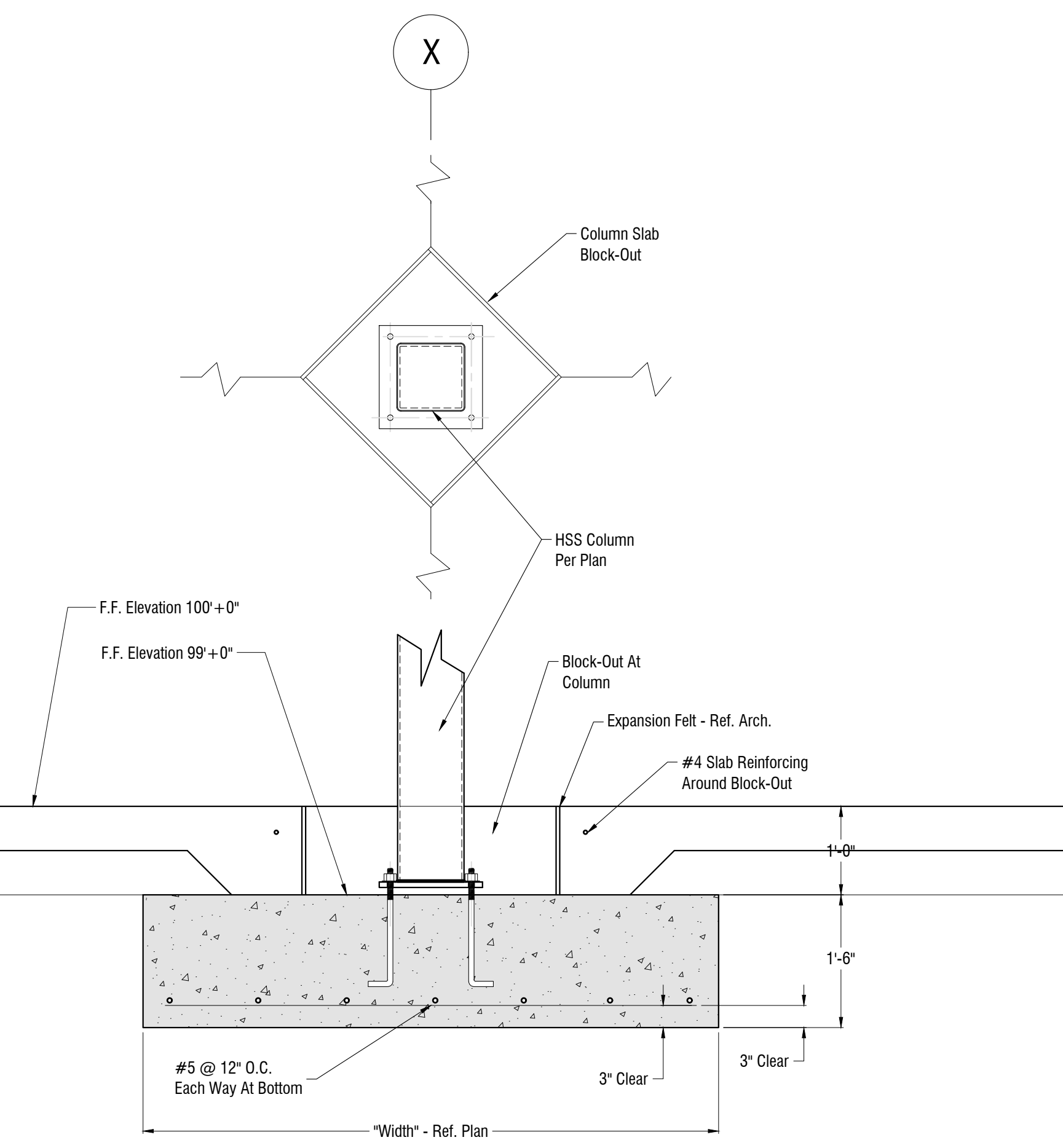
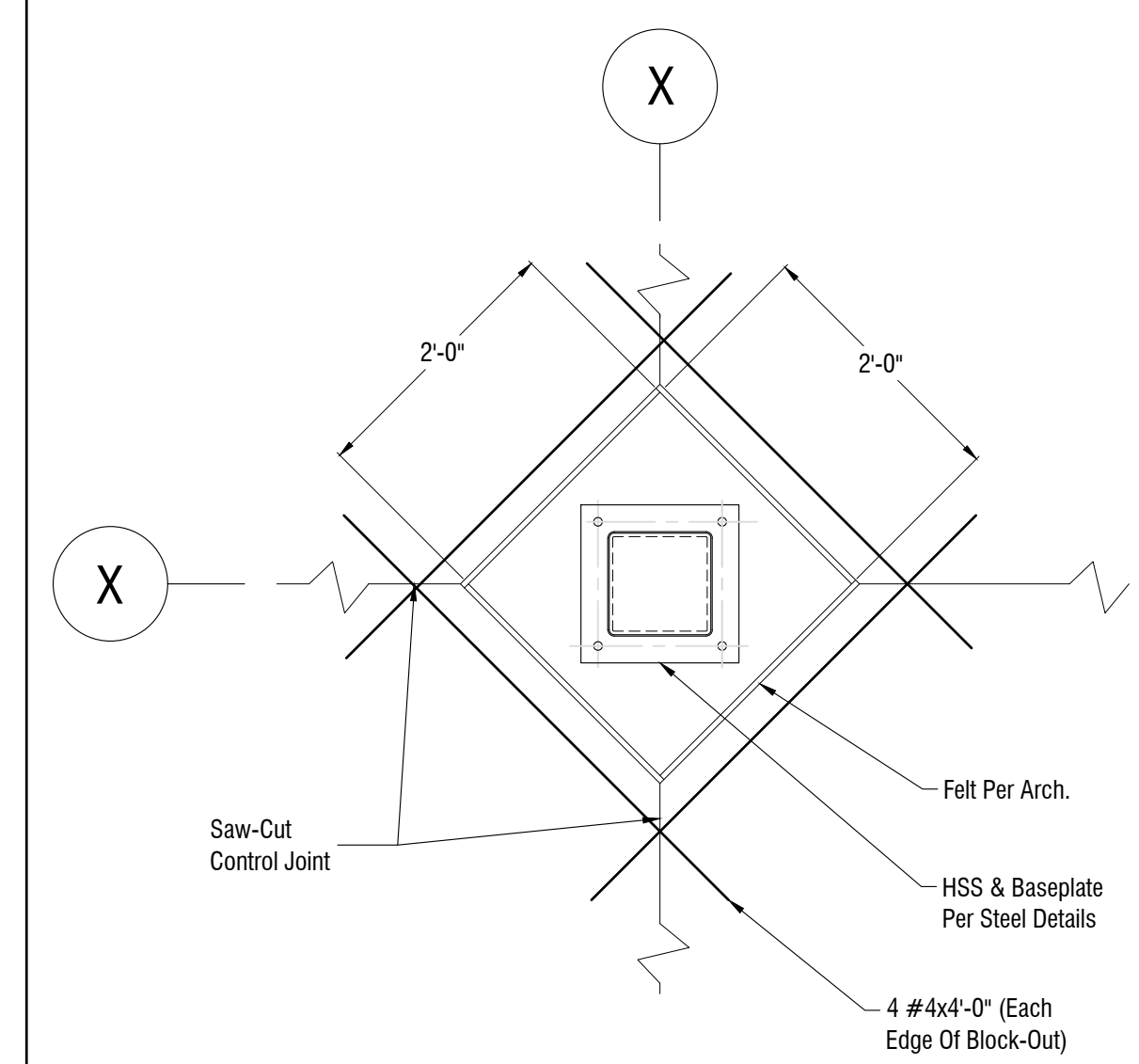
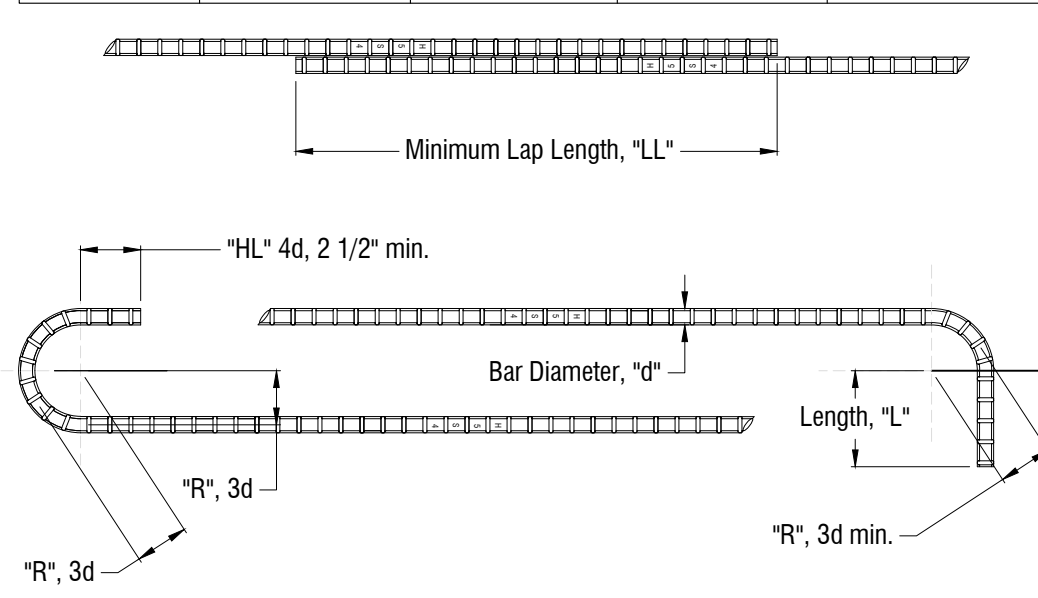
A1 FOUNDATION PLAN
 SCALE 1/16" = 1 FT

S100

FOUNDATION PLAN

STANDARD REINFORCING LAPS, BENDS AND HOOKS

BAR Diameter, d	LAP LENGTH, "LL"	LENGTH "L", 12d	RADIUS "R", 3d	HOOK LENGTH "HL", 4d
3	24	4 1/2	1	2 1/2
4	24	6	1 1/2	2 1/2
5	25	7 1/2	2	2 1/2
6	30	9	2 1/4	3

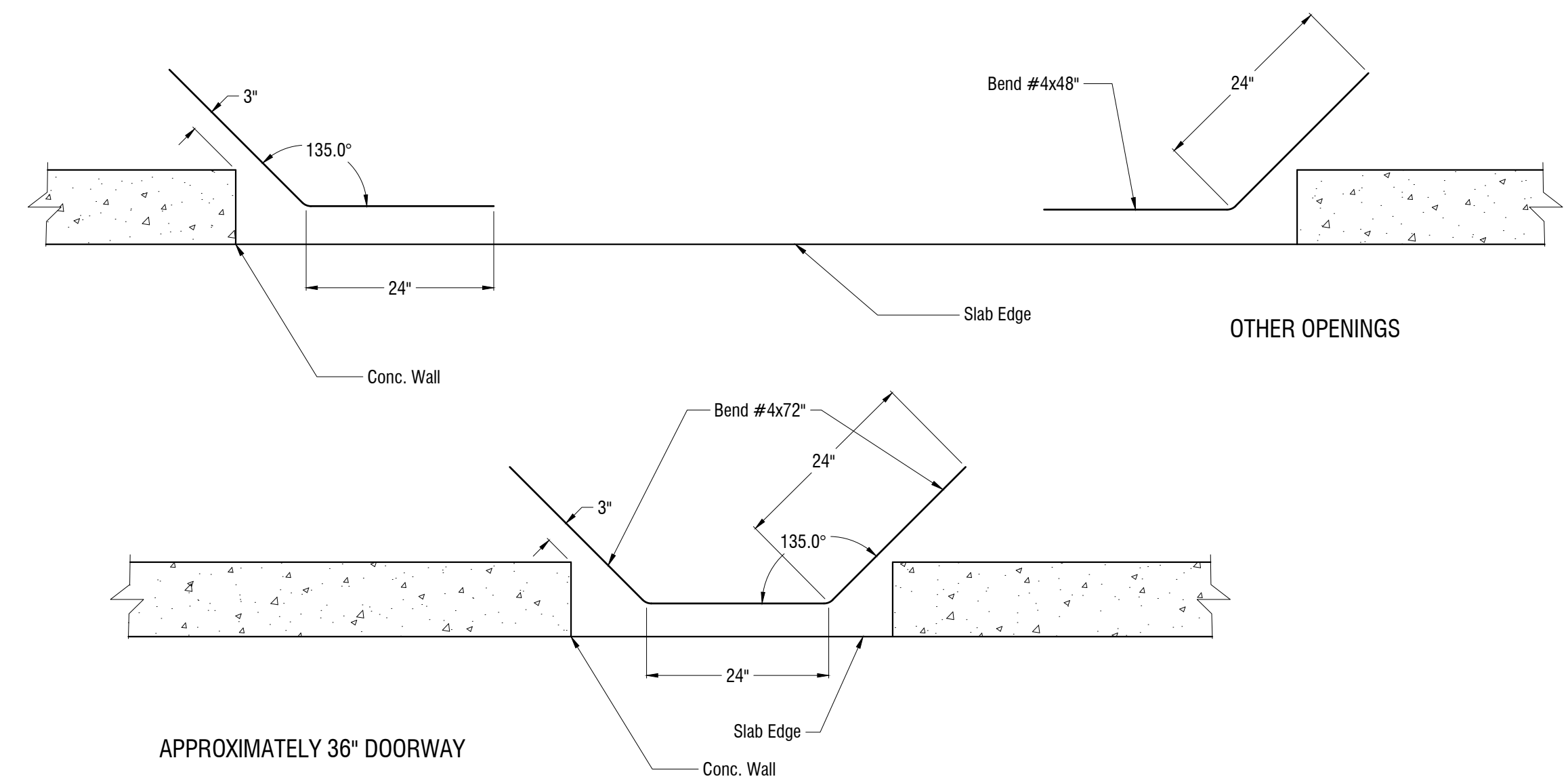


C1 REINFORCING LAP, BENDS & HOOKS
NO SCALE

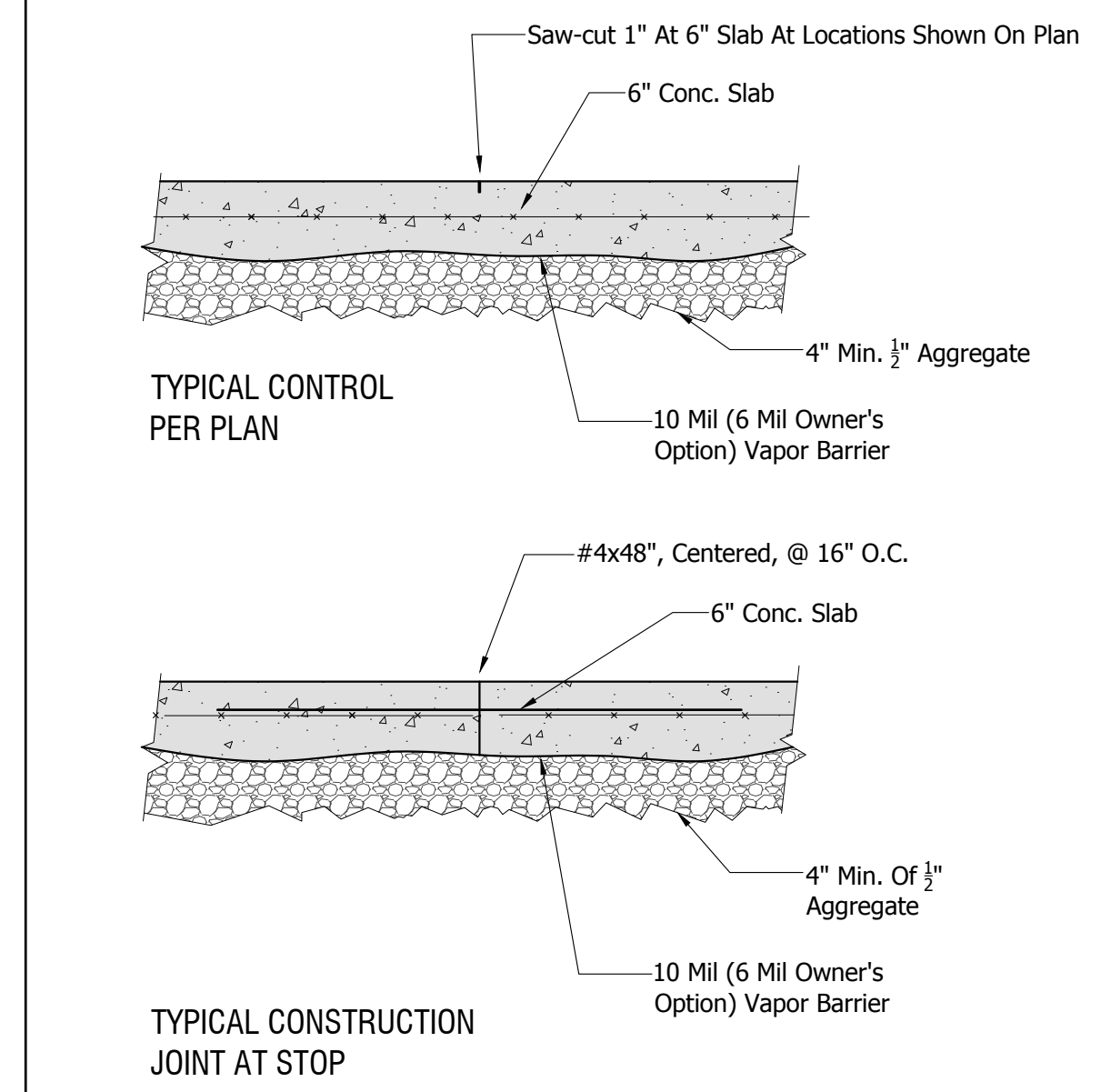
C2 COLUMN BLOCK-OUT AT PIER PAD PLAN VIEW
SCALE 3/4"=1 FT

C3 TYPICAL PIER PAD DETAIL
SCALE 3/4"=1 FT

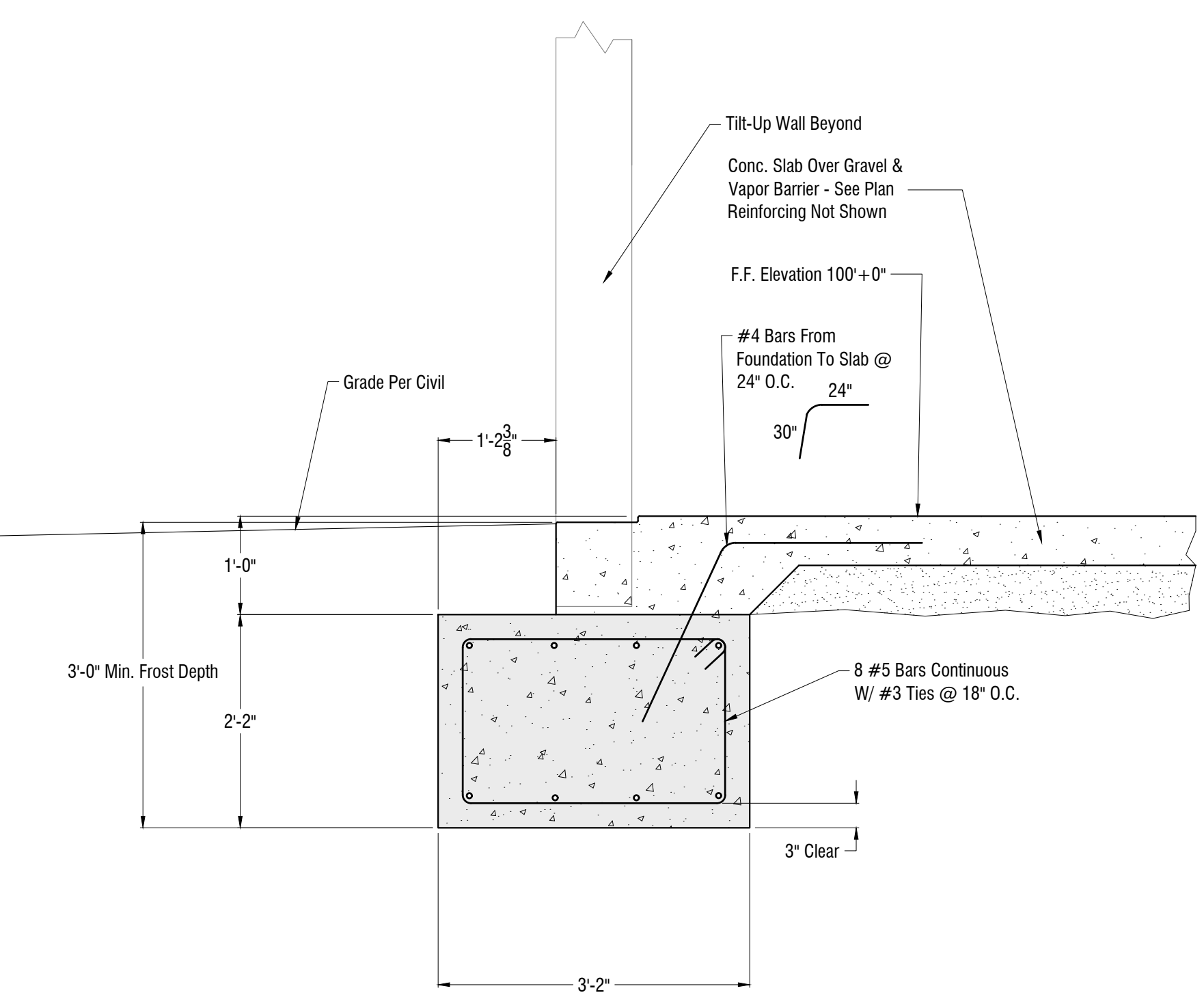
C4 DEEPEN PANEL DETAIL
SCALE 3/4"=1 FT



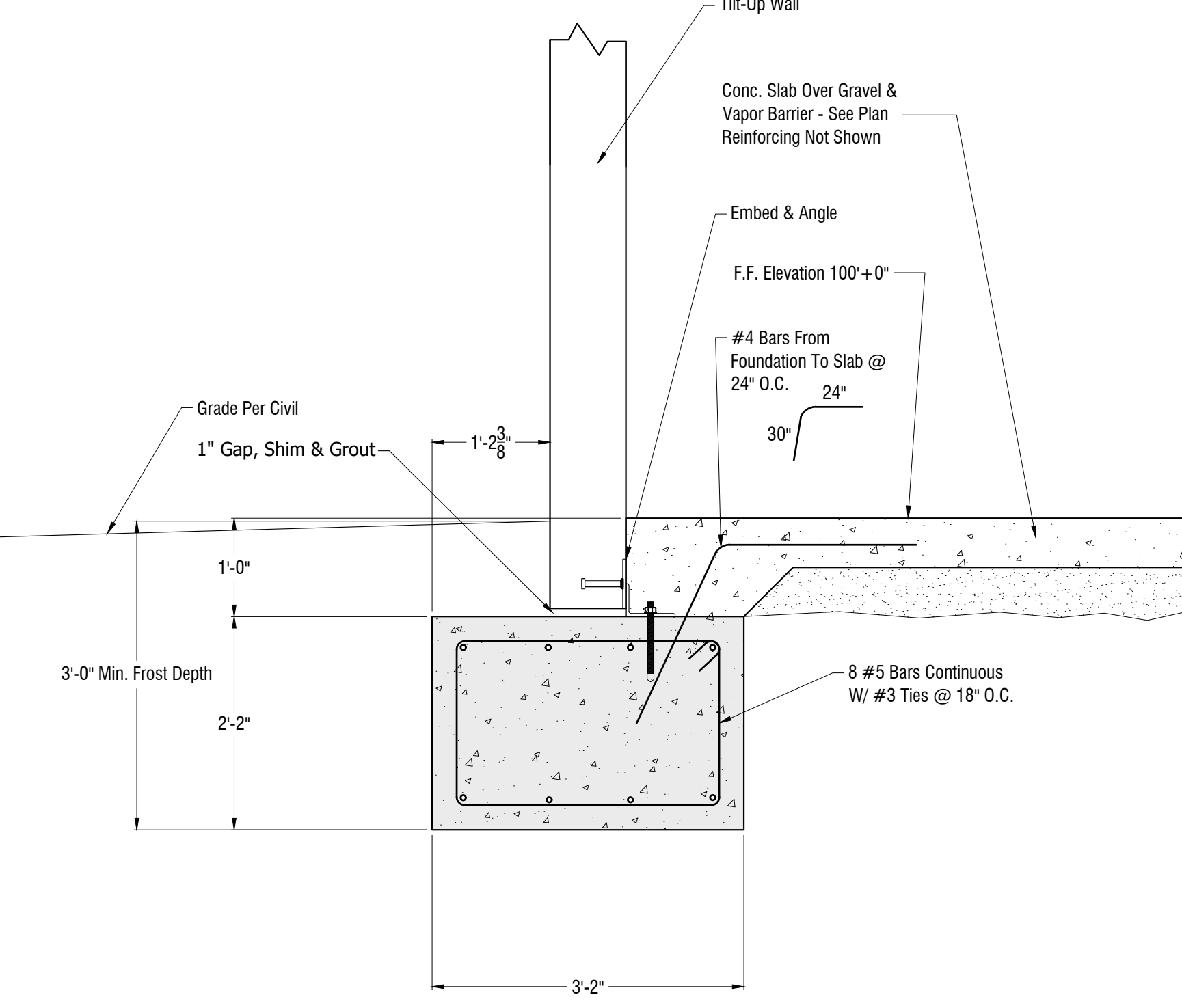
B1 SLAB REINFORCING AT OPENINGS DETAIL
SCALE 3/4"=1 FT



A2 SLAB SAW-CUT & CONSTRUCTION CONTROL JOINT
SCALE 3/4"=1 FT



A3 FOUNDATION AT DOOR DETAIL
SCALE 3/4"=1 FT



A4 TYPICAL FOUNDATION DETAIL
SCALE 3/4"=1 FT

A1 DETAIL
SCALE 3/4"=1 FT



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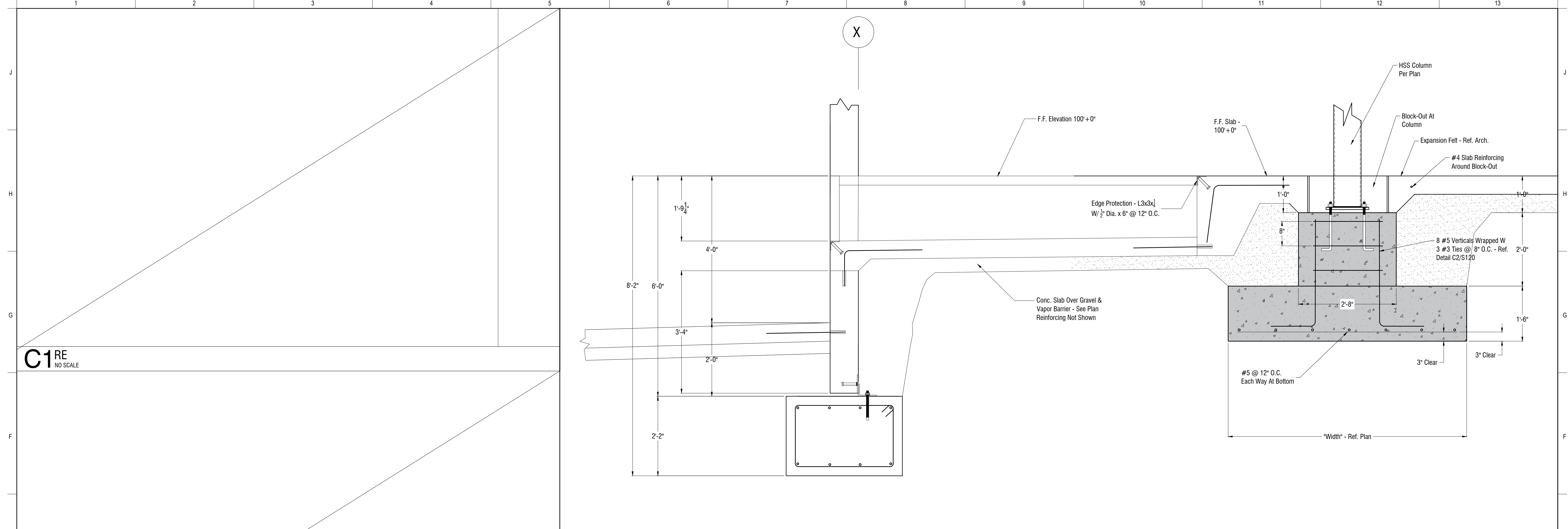
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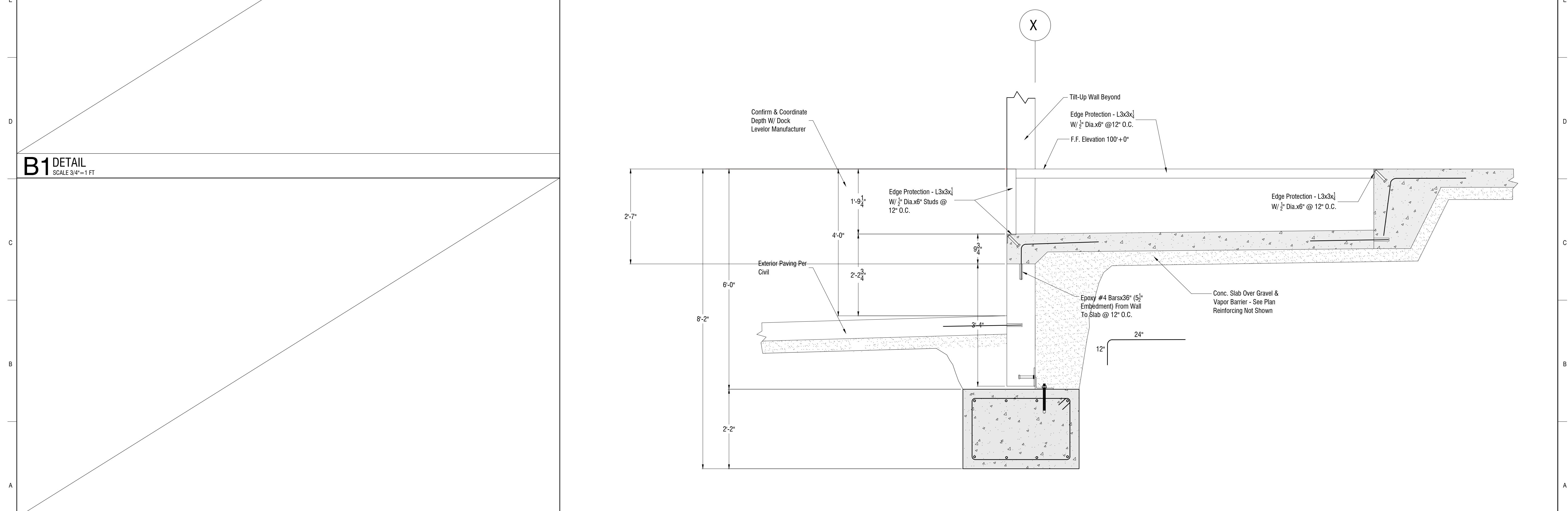
FOUNDATION DETAILS

S110



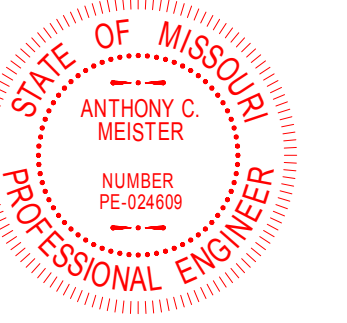
C1 RE
NO SCALE

C3 DEEPEN PIER/PAD DEPTH DETAIL AT GRID B3
SCALE 3/4"=1 FT



B1 DETAIL
SCALE 3/4"=1 FT

A3 TYPICAL DOCK DETAIL
SCALE 3/4"=1 FT



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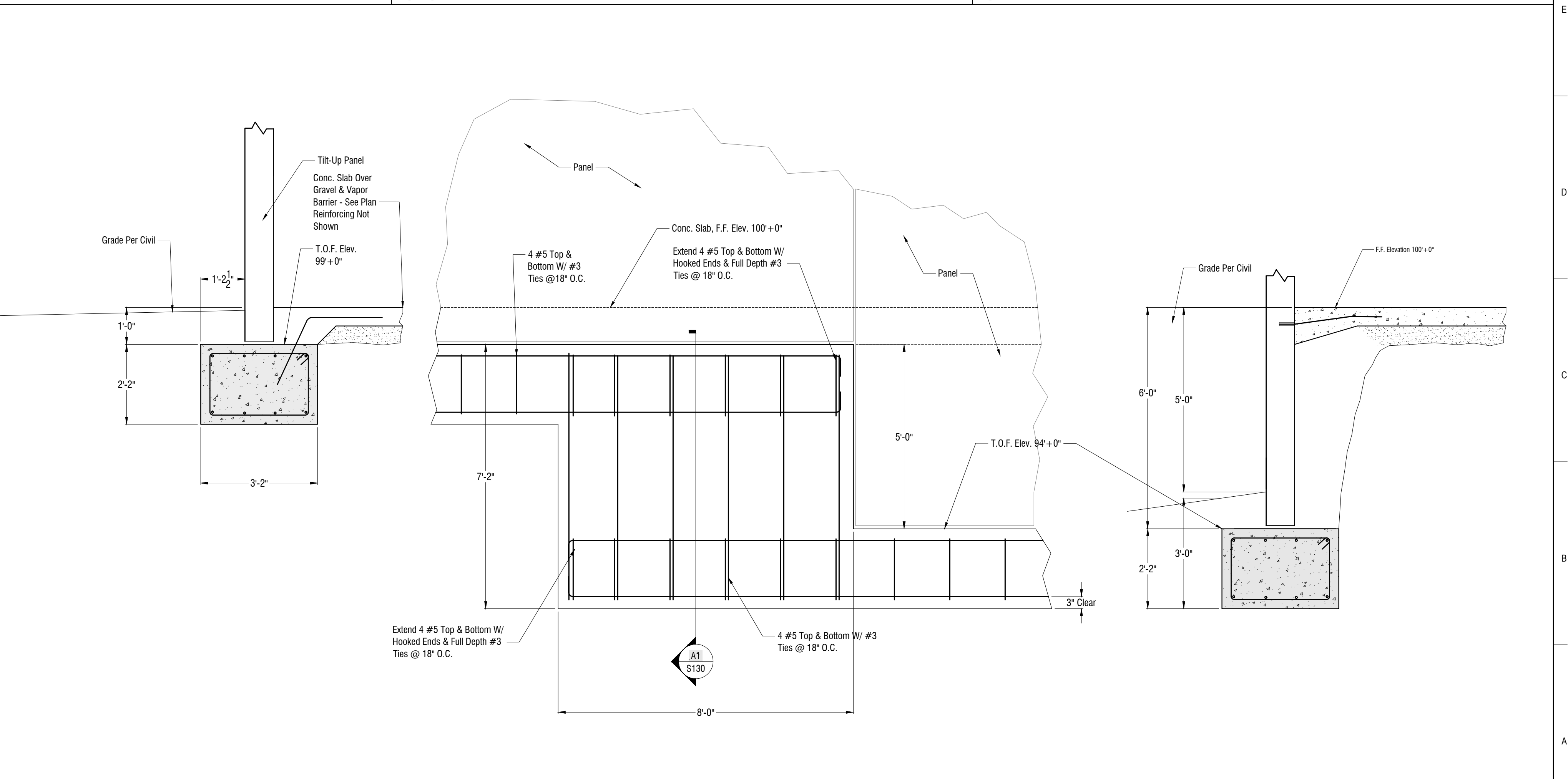
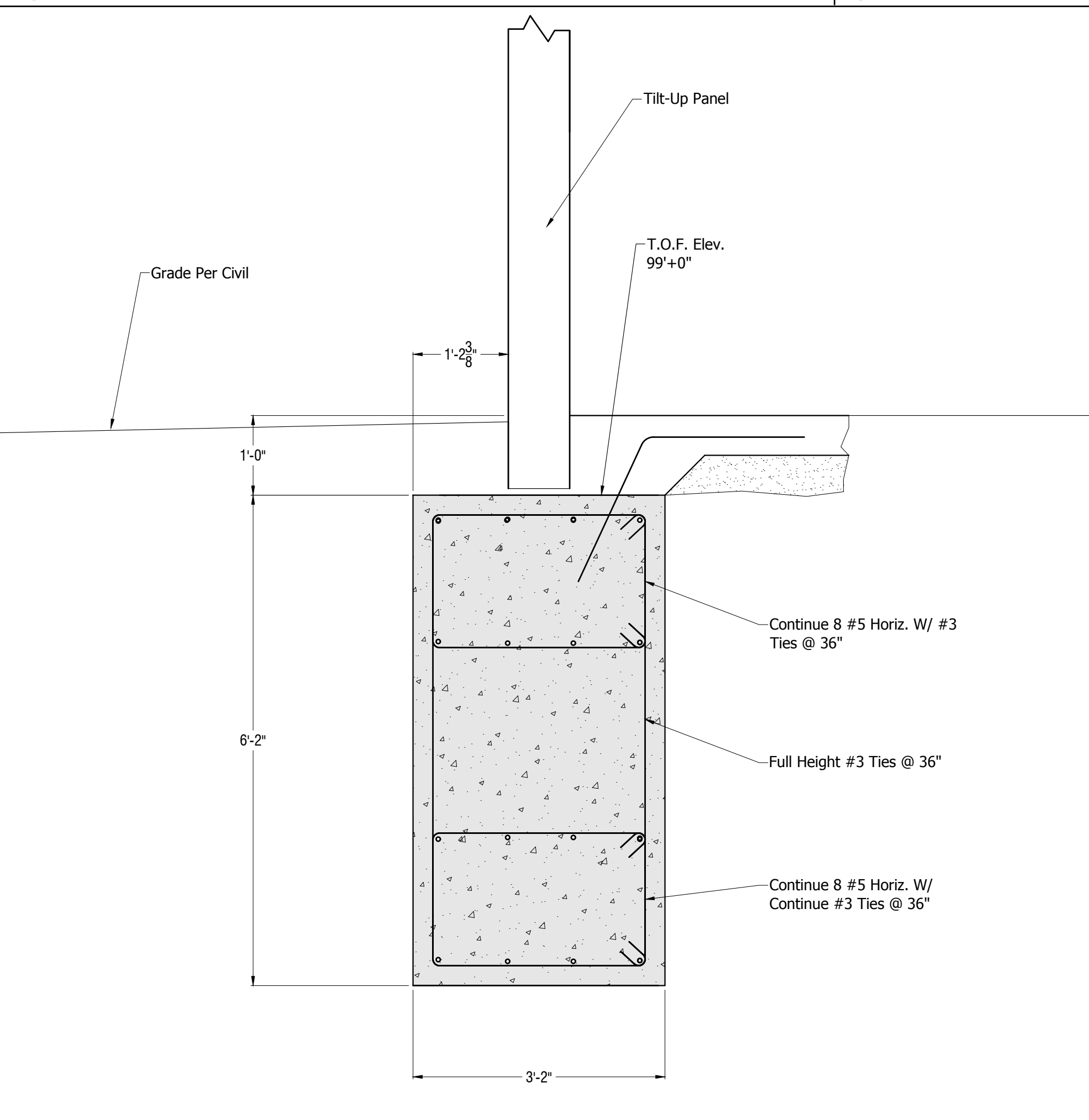
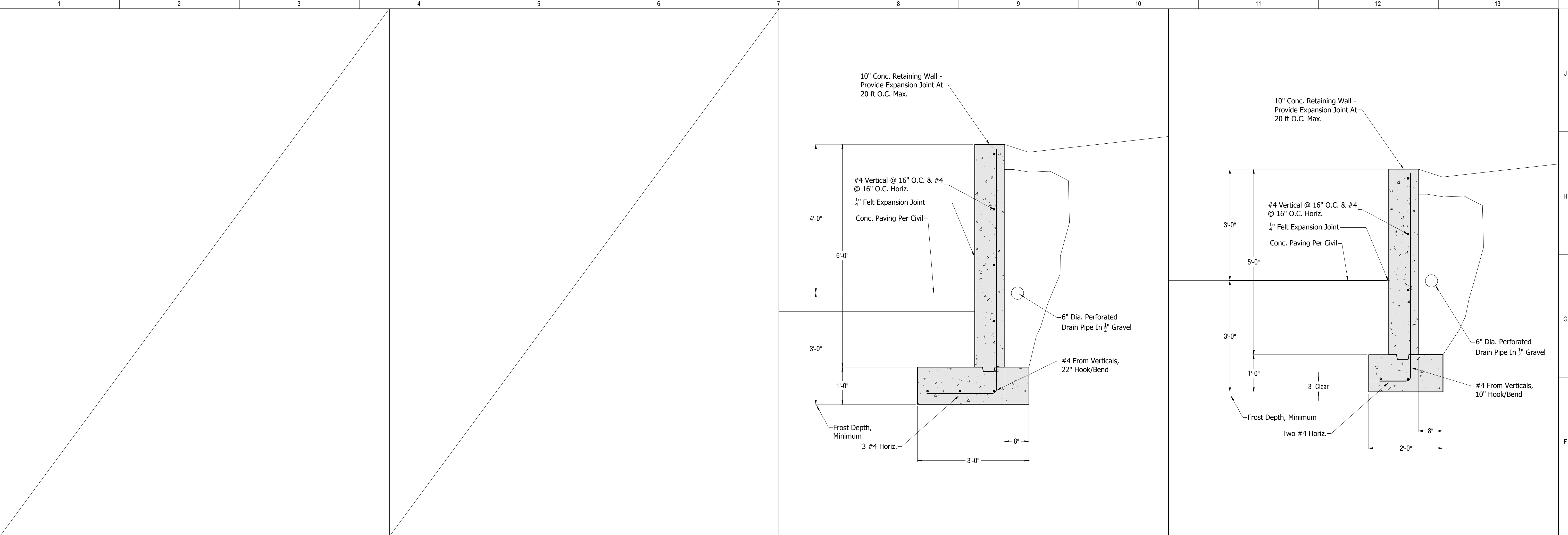
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FOUNDATION
DETAILS

S120



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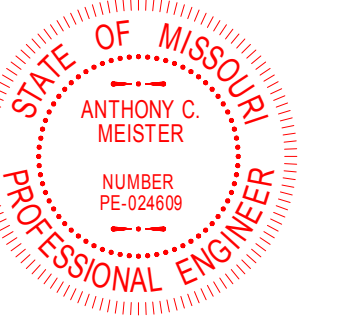
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FOUNDATION
DETAILS

S130

EAST (INTERIOR) ELEVATION - SHEET T130

- KEY NOTES: X
1. W BEAM - REF. PLAN SCHEDULE
 2. BAR JOIST DESIGNED FOR UPLIFT - REF. SHEET S000.
 3. ROOF JOIST DESIGNED FOR UPLIFT - REF. SHEET S000
 4. LINE OF SNOW DRIFT BOUNDARY
 5. ROOF DECKING - 1.5B22
 6. BUILT-UP INSULATION - NOT STEEL FRAMING
 7. PANEL IS 7" THICK & BAR JOIST IS 2" LONGER
 8. EXTEND 1.4x3/8" LLV, CONTINUOUS BUILDING CHORD TIE THROUGH BUILDING POP-OUTS



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ROOF FRAMING PLAN

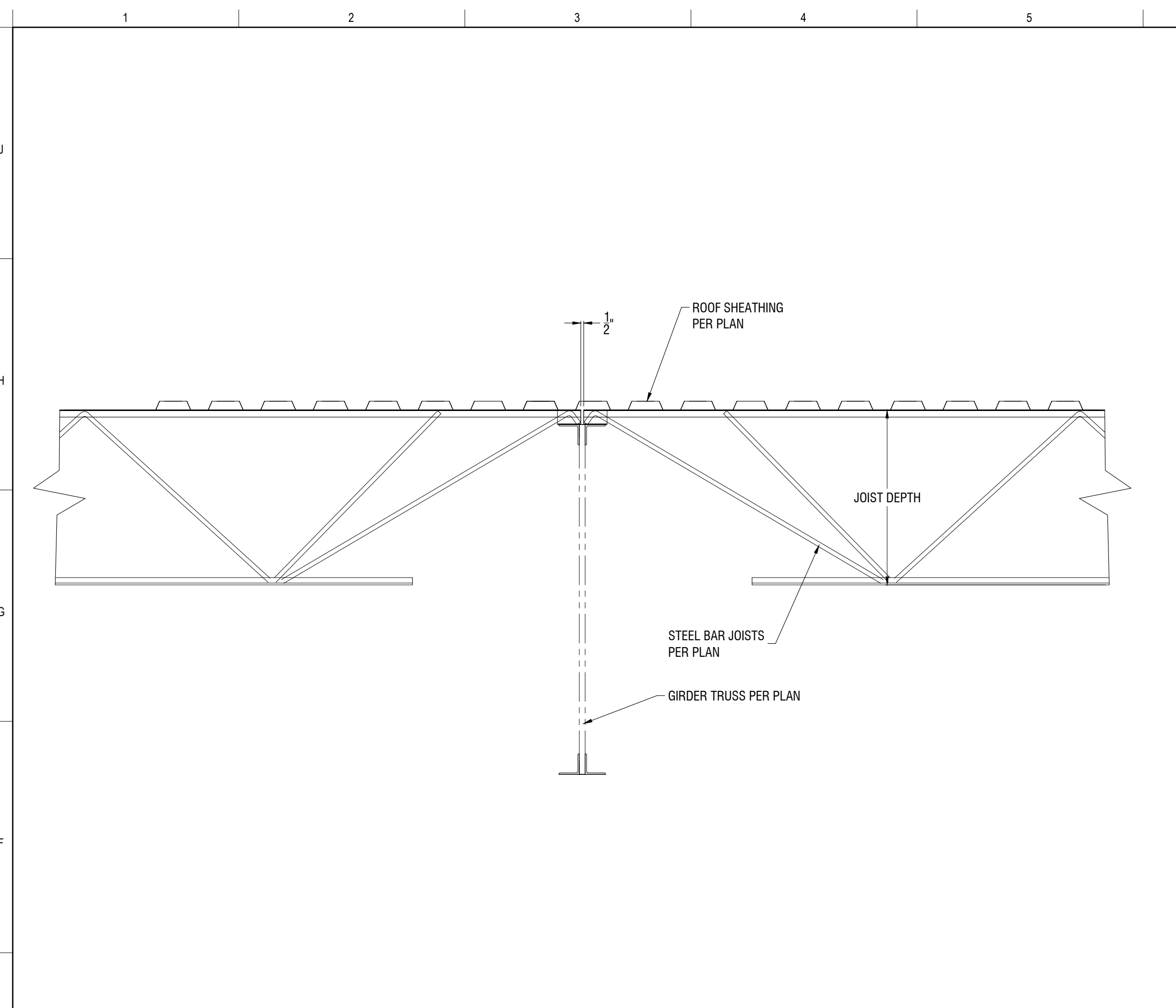
S200

NORTH (INTERIOR) ELEVATION - SHEET T100

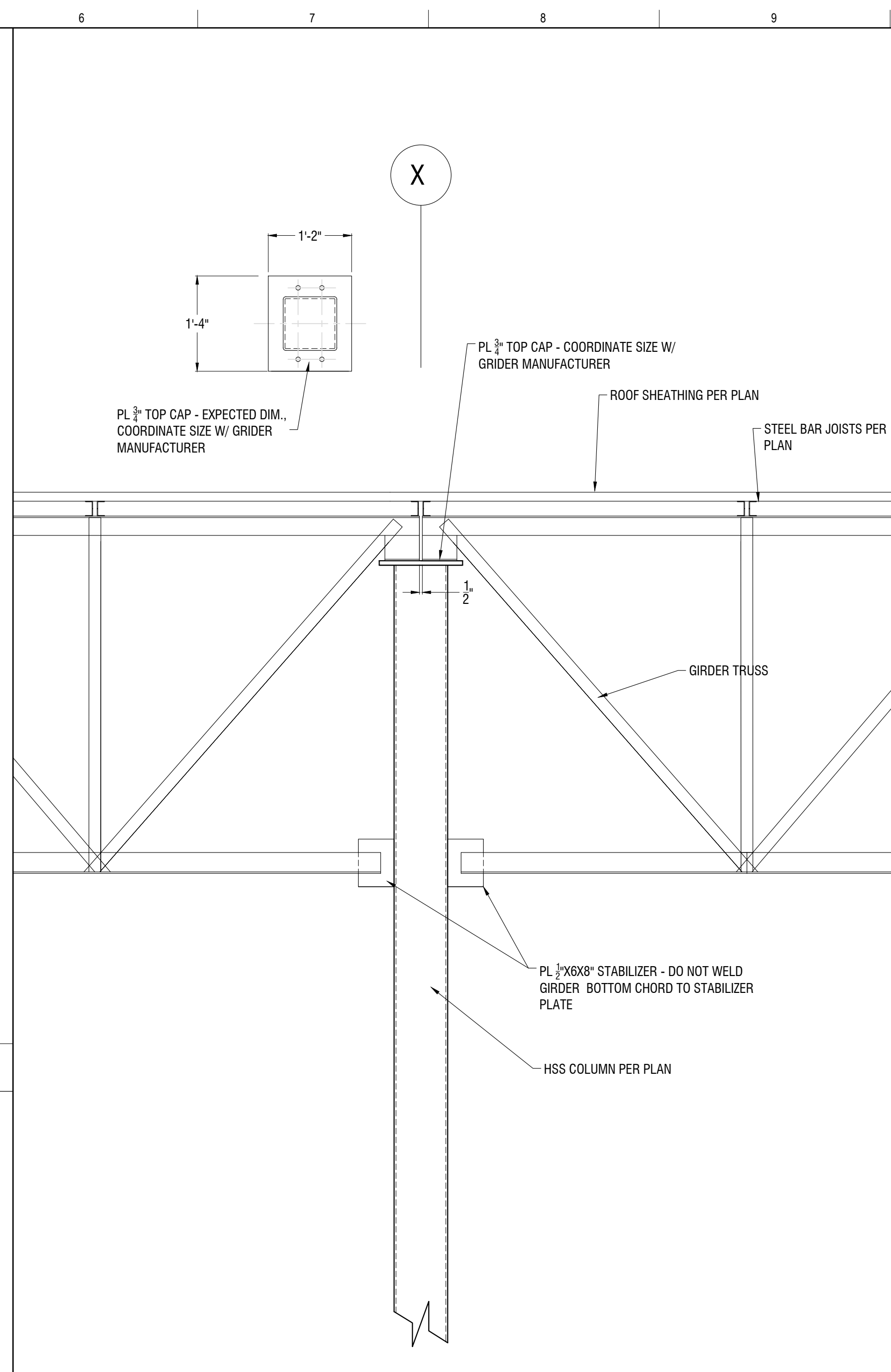
SOUTH (INTERIOR) ELEVATION - SHEET T120

WEST (INTERIOR) ELEVATION - SHEET T110

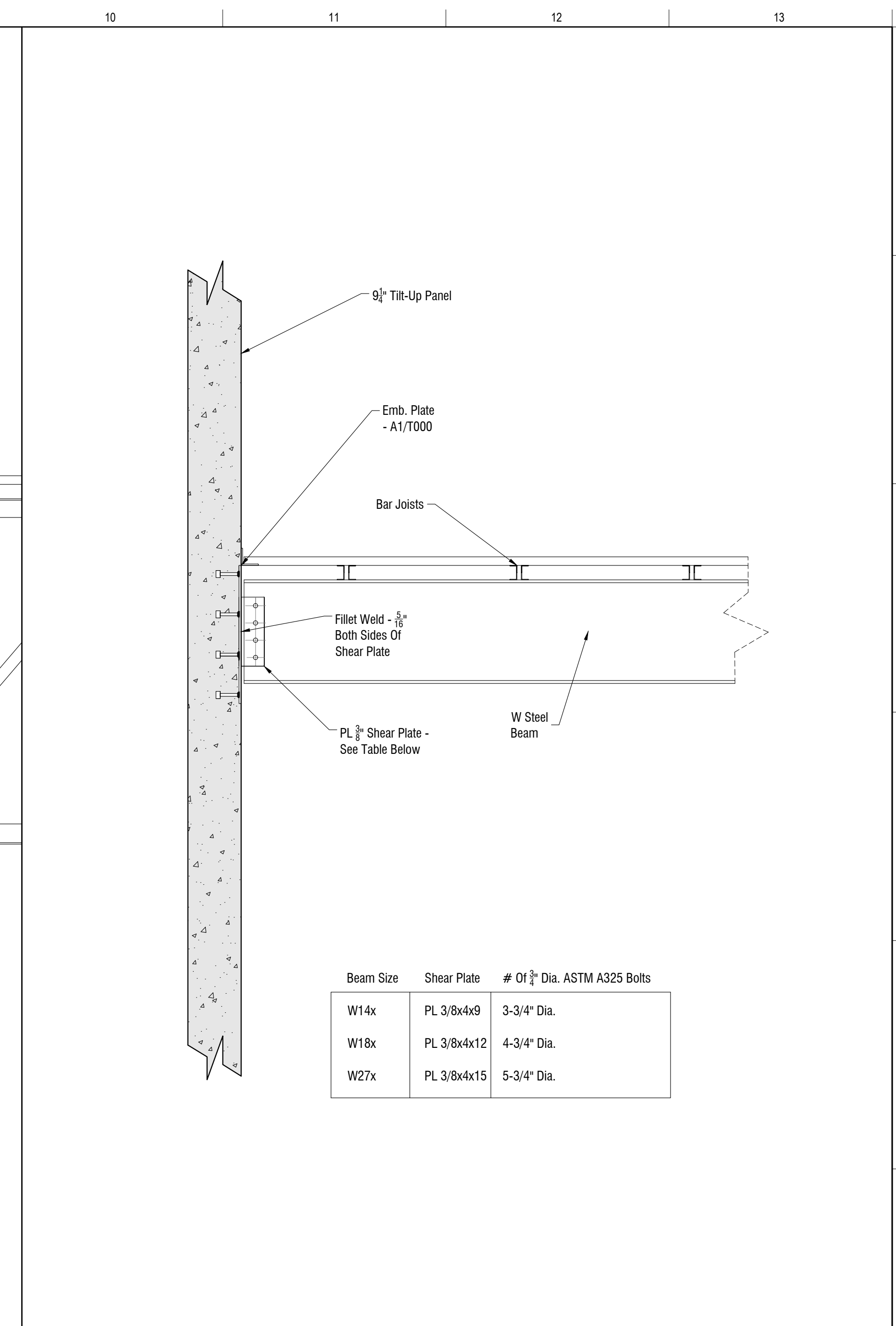
A1 ROOF FRAMING PLAN
SCALE 1/16" = 1' FT



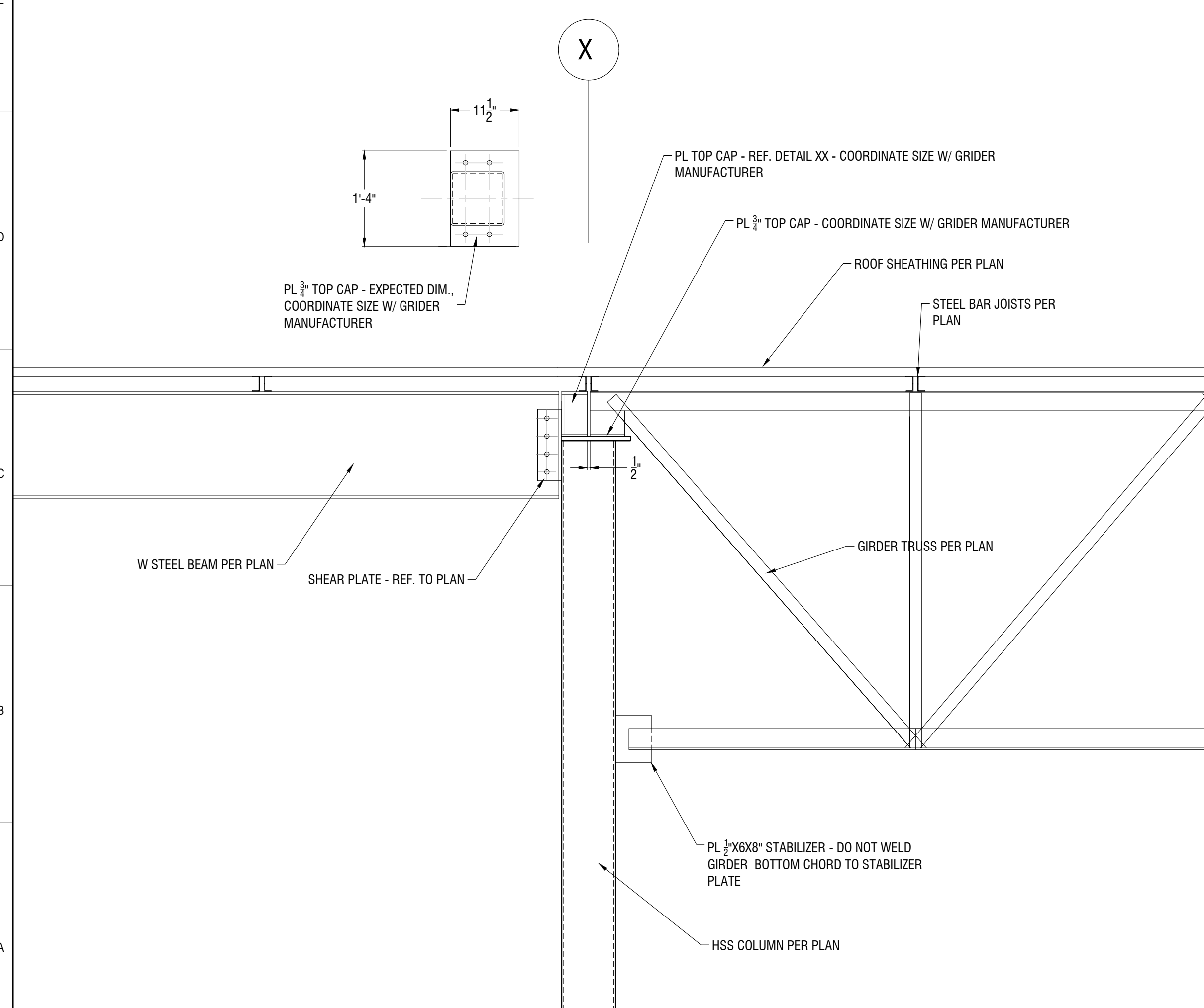
C1 JOISTS AT GIRDER AT DETAIL
SCALE 3/4"=1 FT



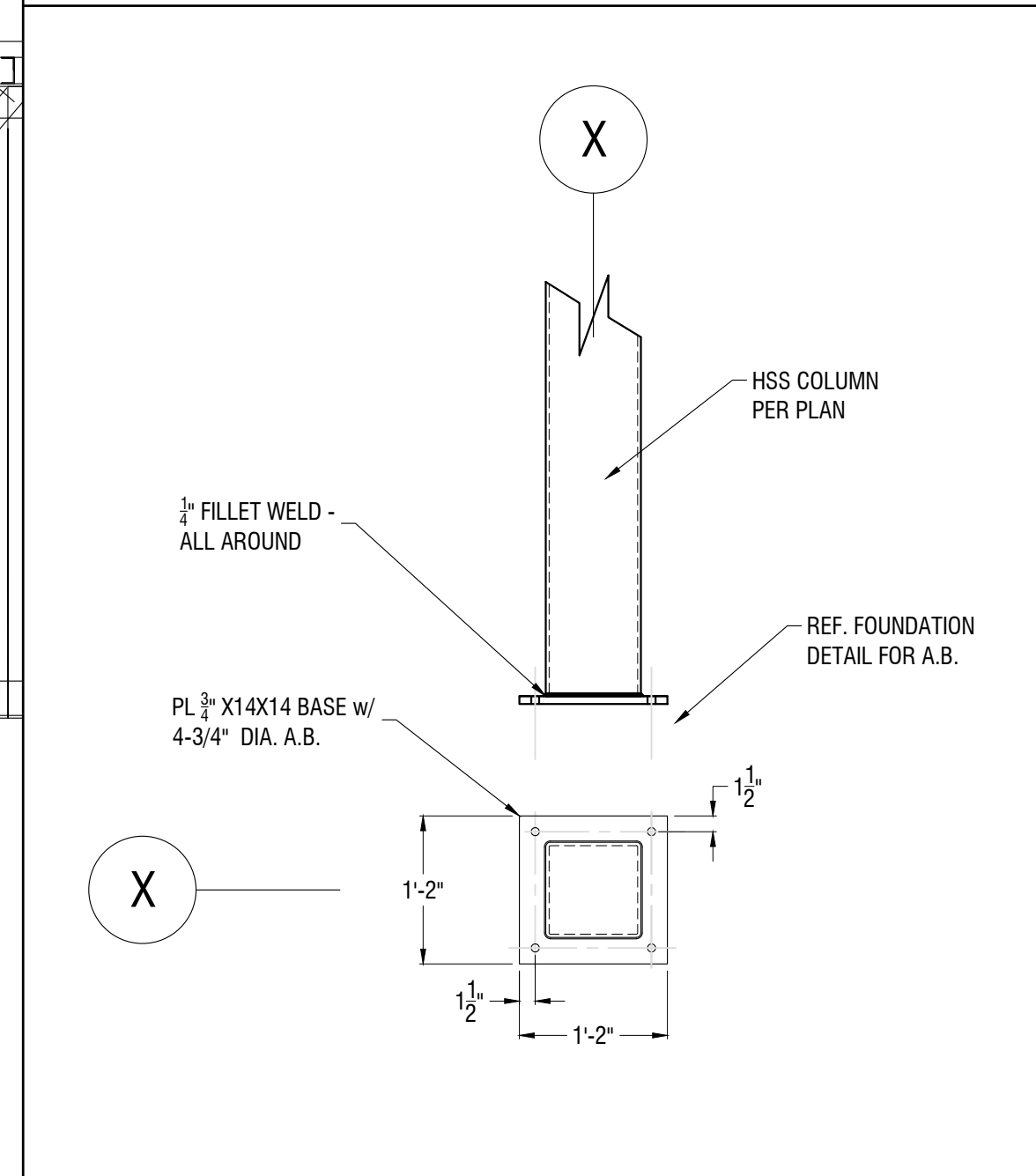
B3 GIRDER AT COLUMN DETAIL
SCALE 3/4"=1 FT



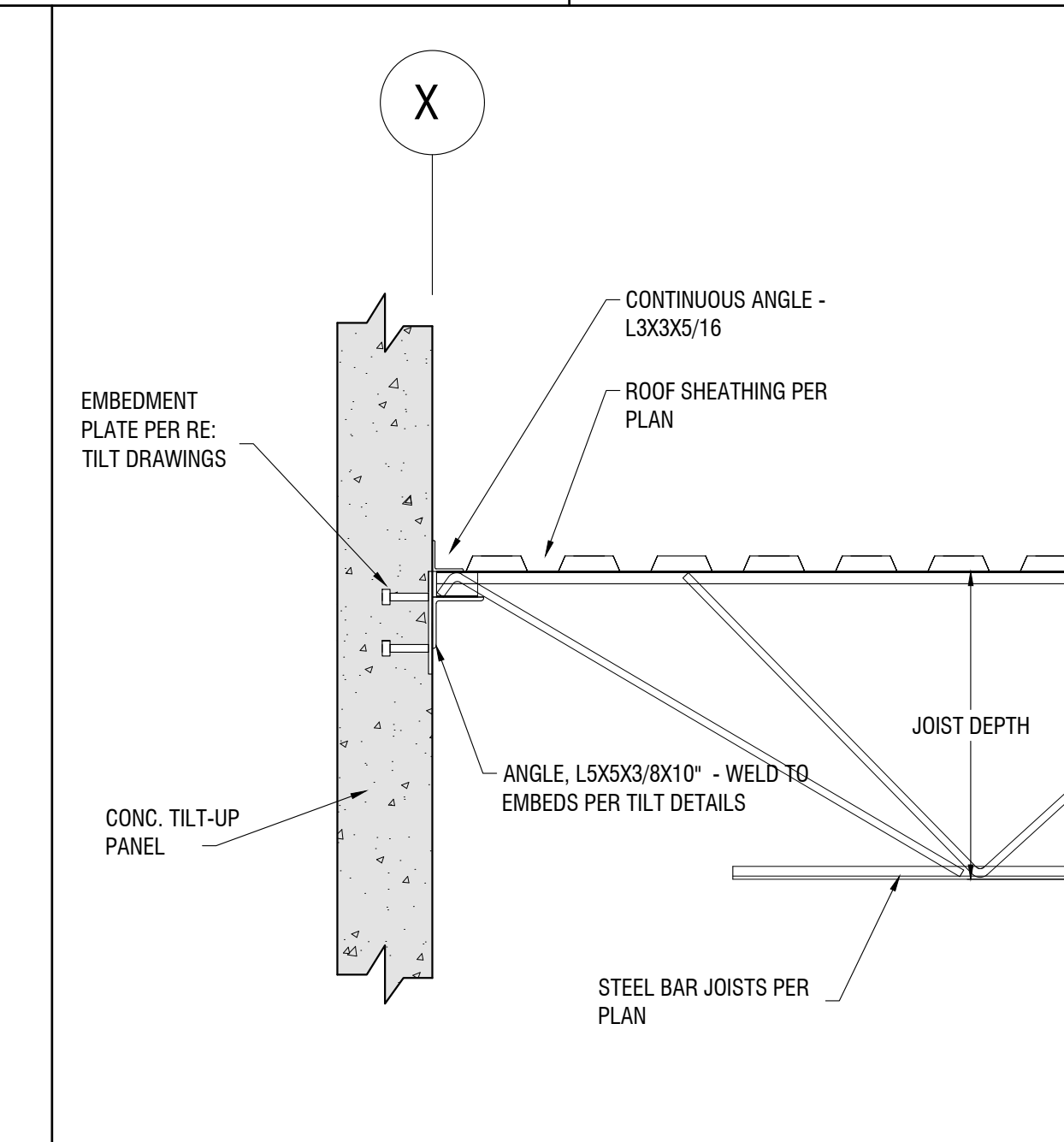
B4 BEAM AT WALL DETAIL
SCALE 3/4"=1 FT



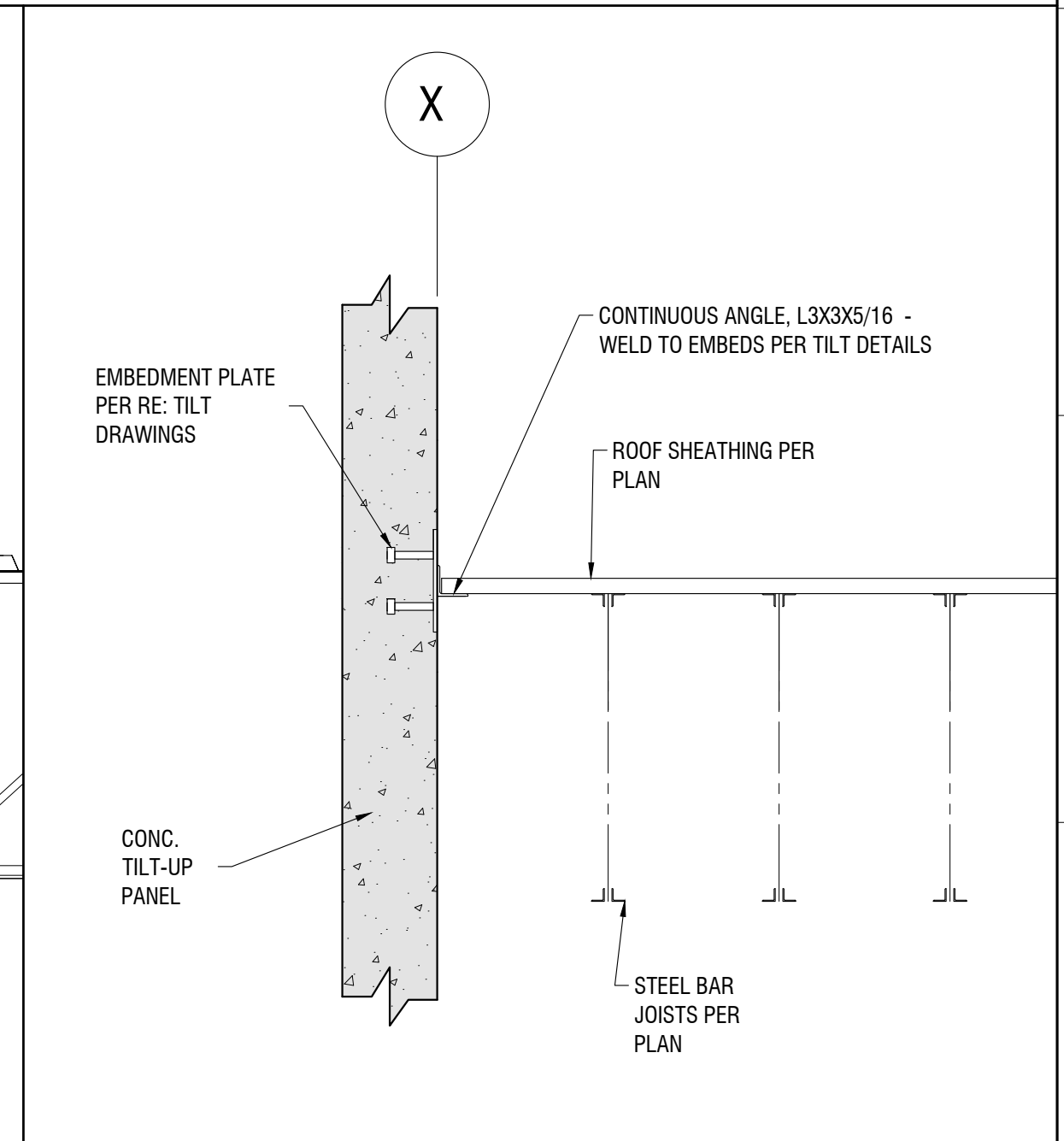
A1 W BEAM AT COLUMN DETAIL
SCALE 3/4"=1 FT



A3 TYPICAL BASEPLATE DETAIL
SCALE 3/4"=1 FT



A4 BAR JOIST PERPENDICULAR TO WALL DETAIL
SCALE 3/4"=1 FT



A5 BAR JOIST PARALLEL AT WALL DETAIL
SCALE 3/4"=1 FT



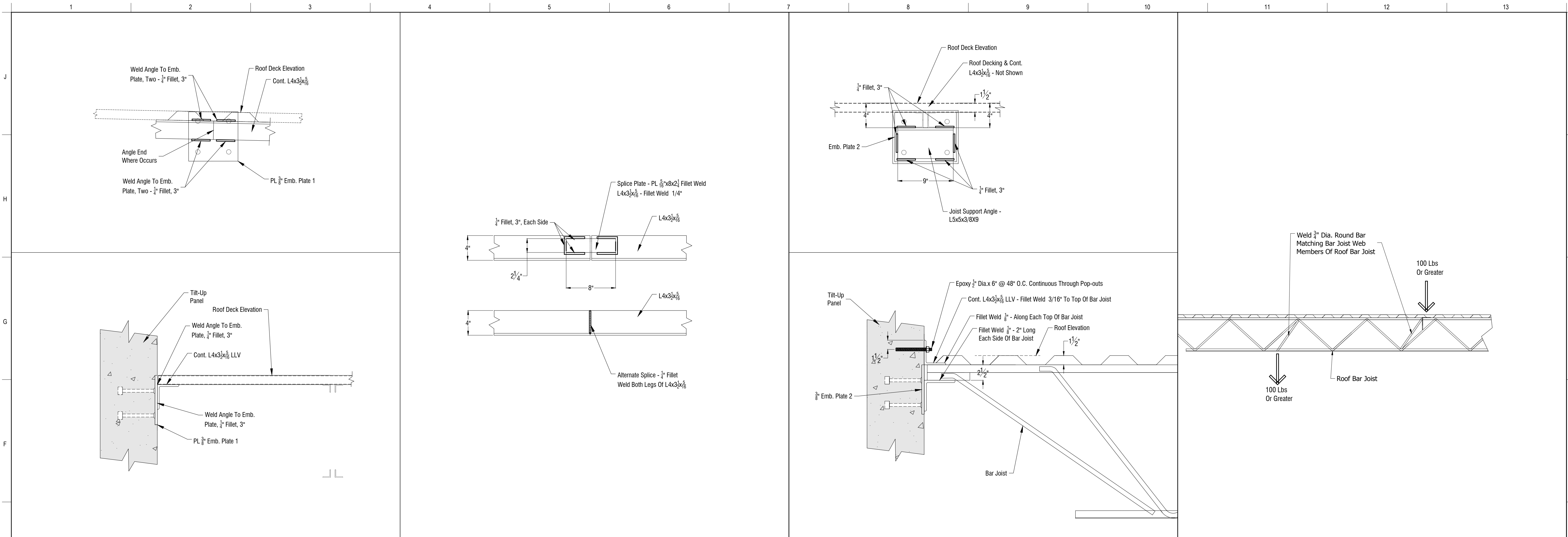
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ROOF FRAMING
DETAILS

S210

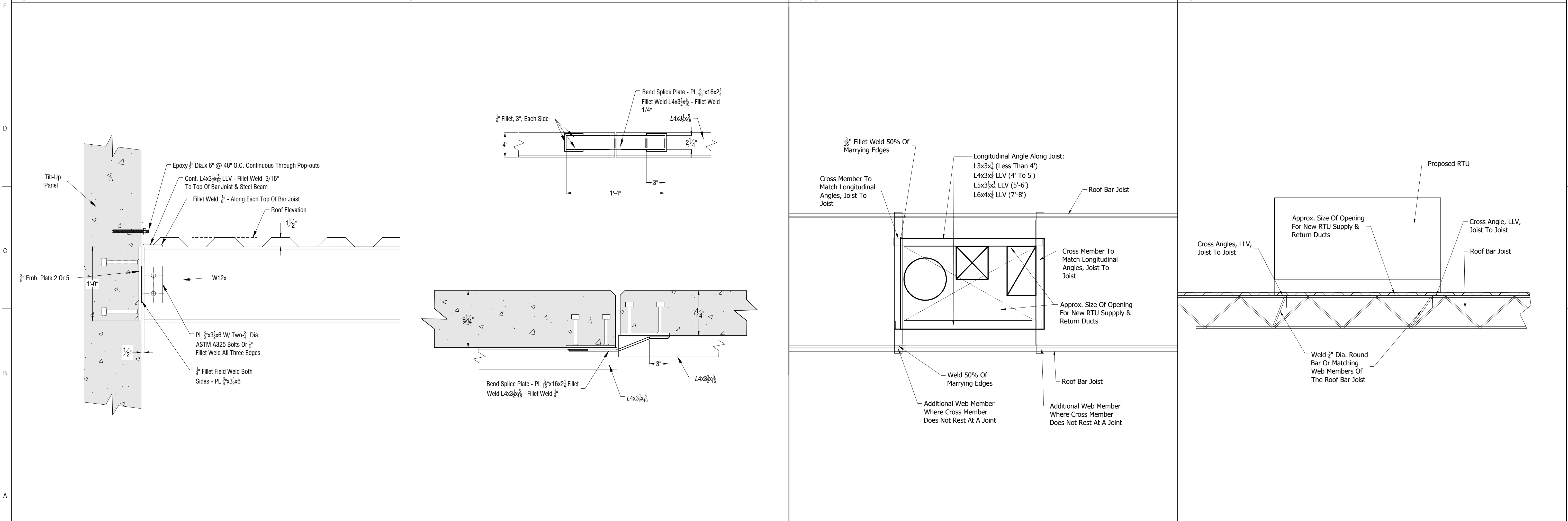


C1 ROOF EDGE PARALLEL WITH JOISTS AT GIRDER AT DETAIL
SCALE 1 1/2" = 1 FT

C2 CHORD ANGLE DETAIL
SCALE 1 1/2" = 1 FT

C3 EMBEDMENT PLATE POSITION DETAILS - AT BAR JOIST SUPPORT
SCALE 1 1/2" = 1 FT

C4 TYPICAL BAR JOISTS AT POINT LOADS DETAIL
SCALE 1/2" = 1 FT



A1 SMALL BEAM CONNECTION DETAIL
SCALE 1 1/2" = 1 FT

A2 TILT-UP PANEL THICKNESS CHANGE DETAIL
SCALE 1 1/2" = 1 FT

A3 ROOF TOP UNIT PLAN VIEW
SCALE 1/2" = 1 FT

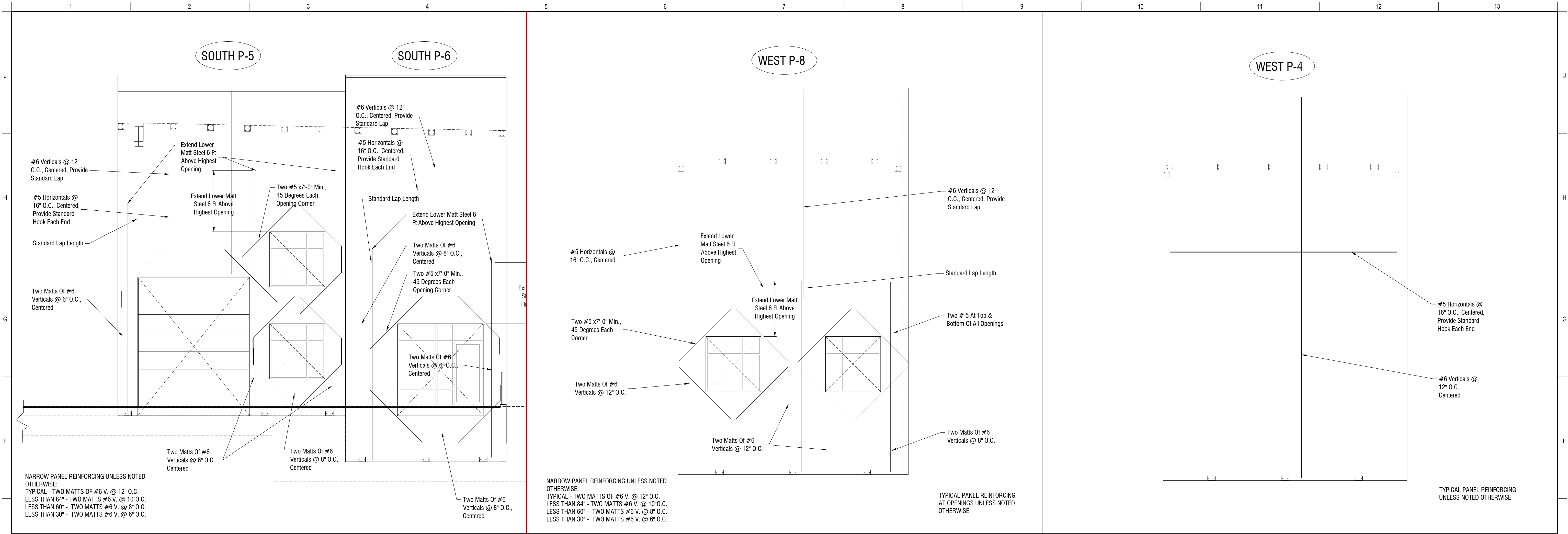
A4 ROOF TOP HVAC UNIT DETAIL
SCALE 1/2" = 1 FT



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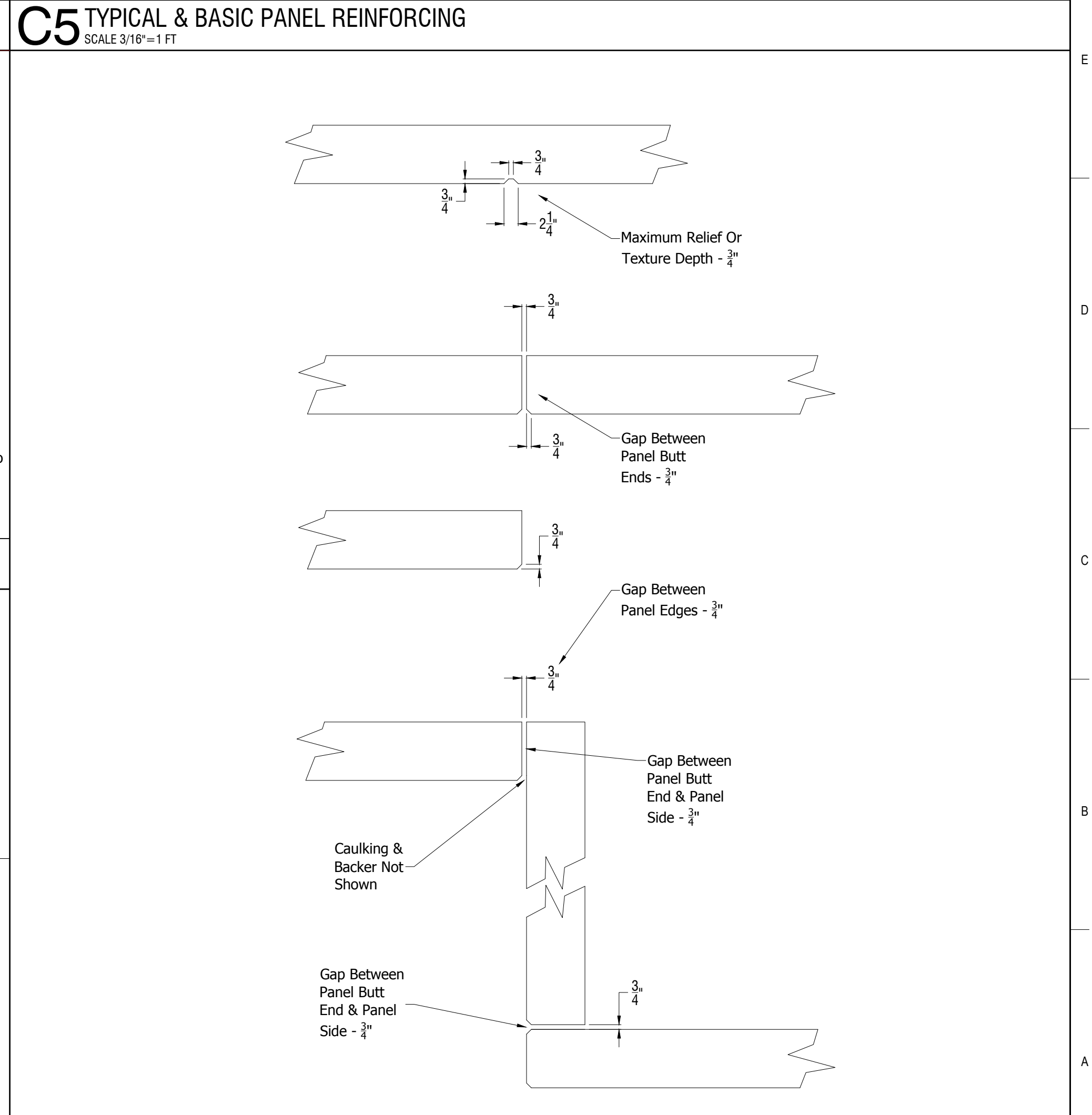
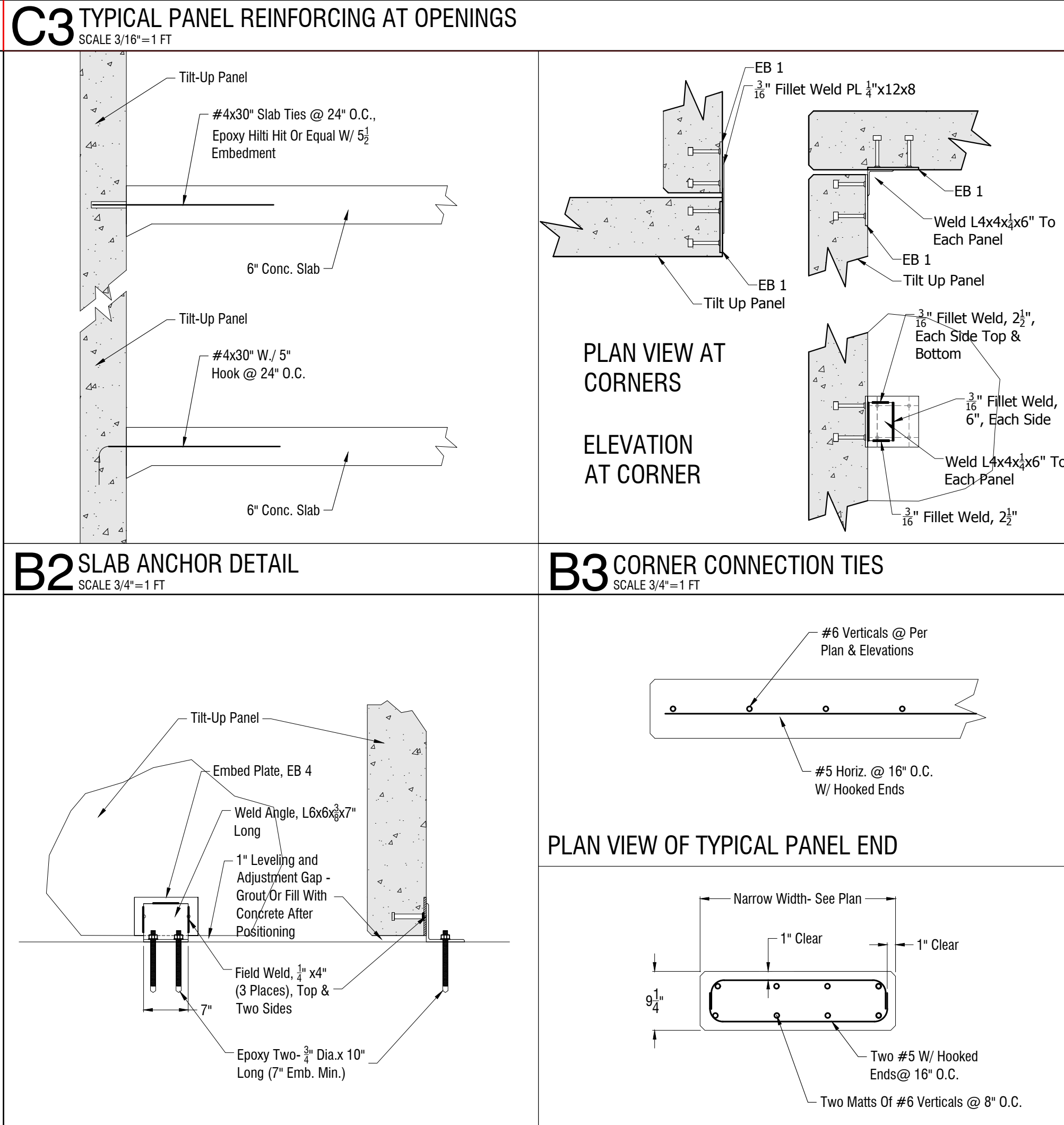
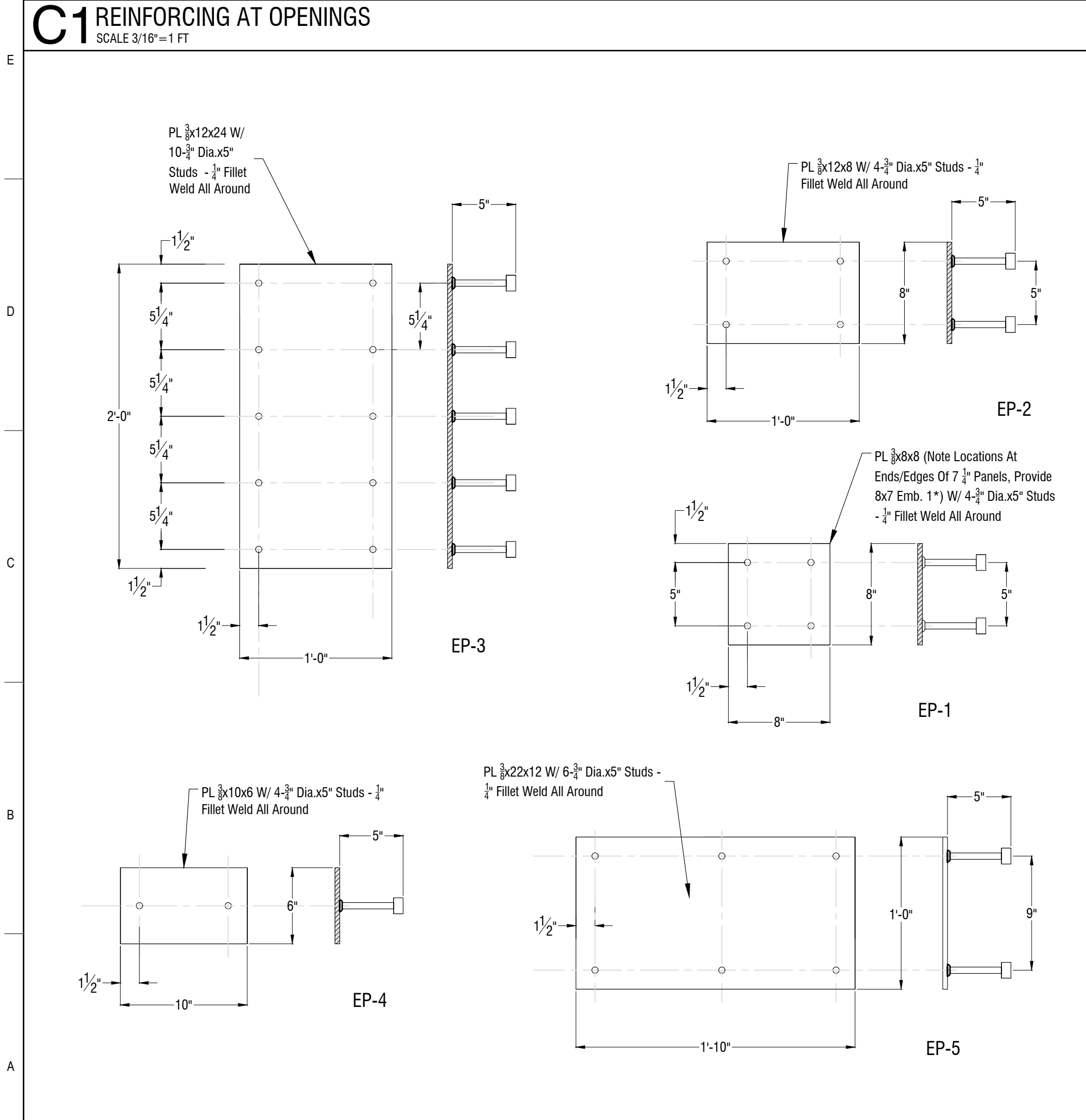
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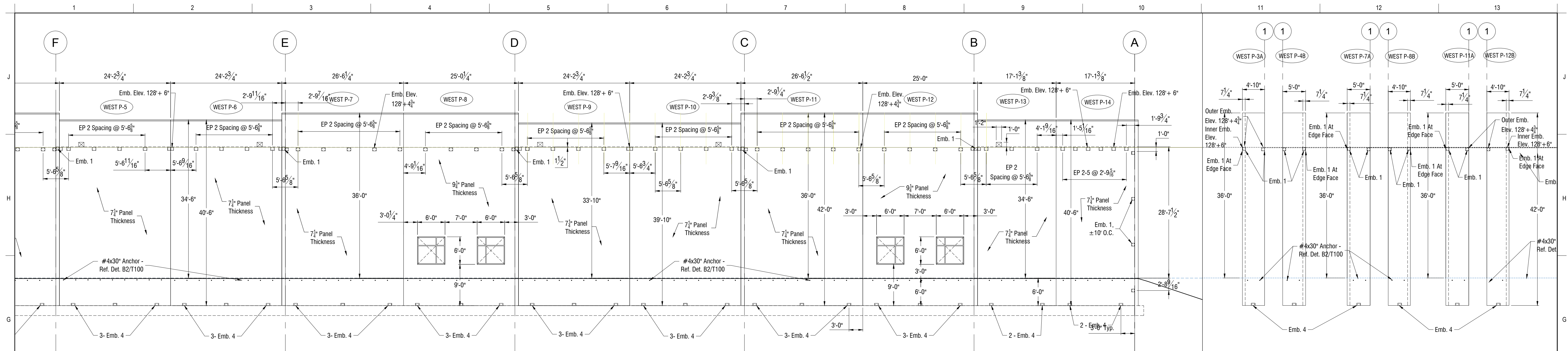
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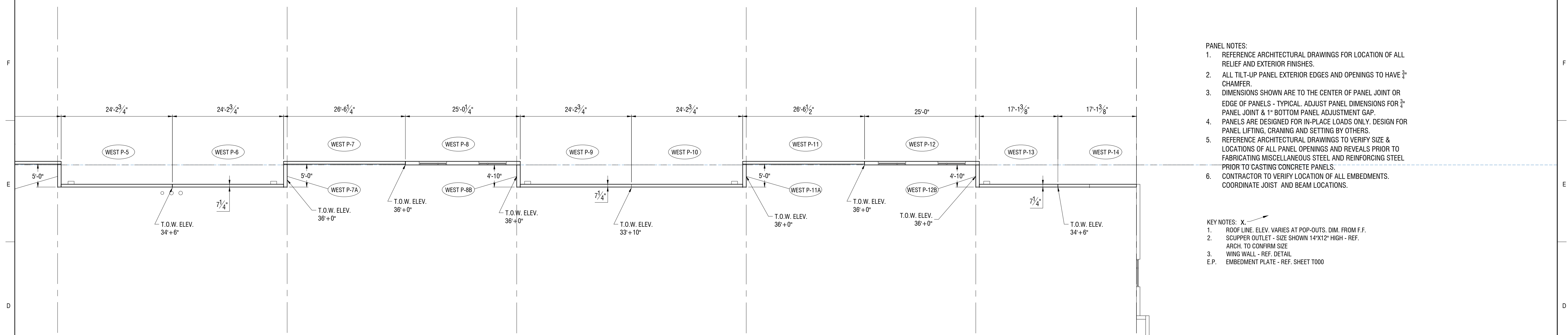
TILT-UP DETAILS

T000



C1 WEST PANEL INTERIOR ELEVATIONS
SCALE 3/32"=1 FT

C5 WEST PANEL (NARROW) INTERIOR ELEVATIONS
SCALE 3/32"=1 FT



B1 PARTIAL WEST PLAN VIEW
SCALE 3/32"=1 FT

A3 PARTIAL WEST PANEL ELEVATION
SCALE 3/32"=1 FT

- PANEL NOTES:**
1. REFERENCE ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL RELIEF AND EXTERIOR FINISHES.
 2. ALL TILT-UP PANEL EXTERIOR EDGES AND OPENINGS TO HAVE 3/8" CHAMFER.
 3. DIMENSIONS SHOWN ARE TO THE CENTER OF PANEL JOINT OR EDGE OF PANELS - TYPICAL. ADJUST PANEL DIMENSIONS FOR 3/8" PANEL JOINT & 1" BOTTOM PANEL ADJUSTMENT GAP.
 4. PANELS ARE DESIGNED FOR IN-PLACE LOADS ONLY. DESIGN FOR PANEL LIFTING, CRANING AND SETTING BY OTHERS.
 5. REFERENCE ARCHITECTURAL DRAWINGS TO VERIFY SIZE & LOCATIONS OF ALL PANEL OPENINGS AND REVEALS PRIOR TO FABRICATING MISCELLANEOUS STEEL AND REINFORCING STEEL PRIOR TO CASTING CONCRETE PANELS.
 6. CONTRACTOR TO VERIFY LOCATION OF ALL EMBEDMENTS. COORDINATE JOIST AND BEAM LOCATIONS.

- KEY NOTES:**
1. ROOF LINE. ELEV. VARIES AT POP-OUTS. DIM. FROM F.F.
 2. SCUPPER OUTLET - SIZE SHOWN 14"X12" HIGH - REF. ARCH. TO CONFIRM SIZE.
 3. WING WALL - REF. DETAIL.
 - E.P. EMBEDMENT PLATE - REF. SHEET T000



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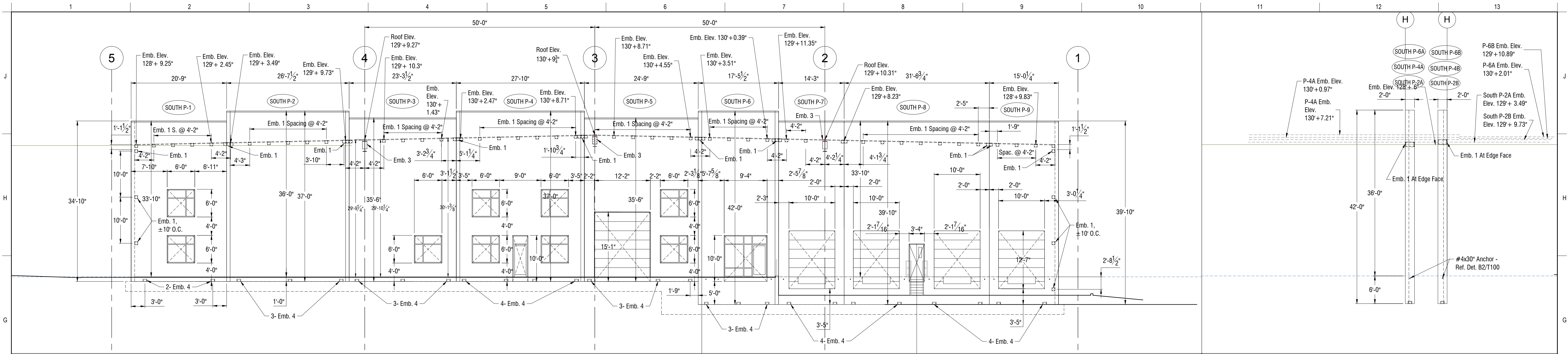
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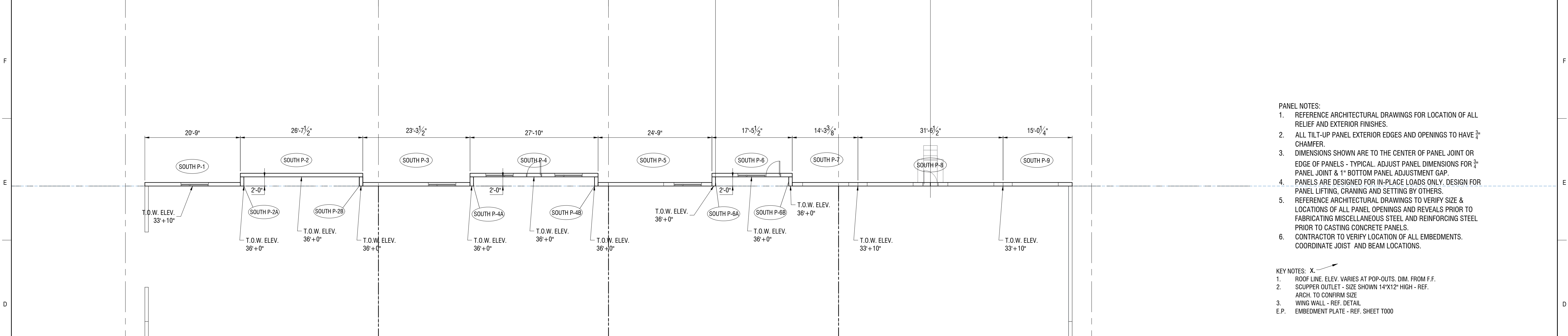
WEST TILT-UP

T110



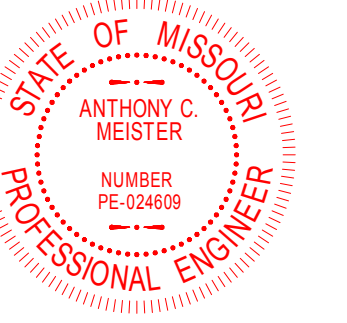
C1 SOUTH PANEL INTERIOR ELEVATIONS
SCALE 3/32"=1 FT

C5 SOUTH (NARROW) PANEL INTERIOR ELEVATIONS
SCALE 3/32"=1 FT



B1 SOUTH PLAN VIEW
SCALE 3/32"=1 FT

- PANEL NOTES:**
1. REFERENCE ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL RELIEF AND EXTERIOR FINISHES.
 2. ALL TILT-UP PANEL EXTERIOR EDGES AND OPENINGS TO HAVE 3/8" CHAMFER.
 3. DIMENSIONS SHOWN ARE TO THE CENTER OF PANEL JOINT OR EDGE OF PANELS - TYPICAL. ADJUST PANEL DIMENSIONS FOR 3/8" PANEL JOINT & 1" BOTTOM PANEL ADJUSTMENT GAP.
 4. PANELS ARE DESIGNED FOR IN-PLACE LOADS ONLY. DESIGN FOR PANEL LIFTING, CRANING AND SETTING BY OTHERS.
 5. REFERENCE ARCHITECTURAL DRAWINGS TO VERIFY SIZE & LOCATIONS OF ALL PANEL OPENINGS AND REVEALS PRIOR TO FABRICATING MISCELLANEOUS STEEL AND REINFORCING STEEL PRIOR TO CASTING CONCRETE PANELS.
 6. CONTRACTOR TO VERIFY LOCATION OF ALL EMBEDMENTS. COORDINATE JOIST AND BEAM LOCATIONS.
- KEY NOTES:** X
1. ROOF LINE, ELEV. VARIES AT POP-OUTS, DIM. FROM F.F.
 2. SCUPPER OUTLET - SIZE SHOWN 14"X12" HIGH - REF. ARCH. TO CONFIRM SIZE
 3. WING WALL - REF. DETAIL
 - E.P. EMBEDMENT PLATE - REF. SHEET T000



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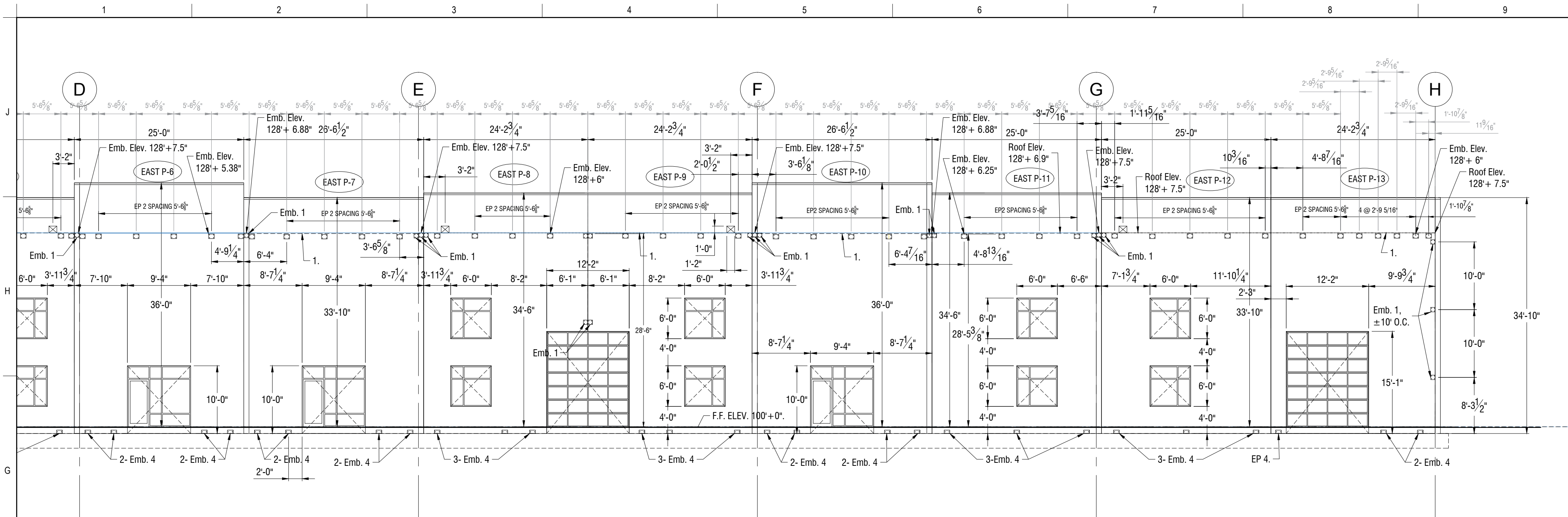
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A1 ELEVATION
SCALE 3/16"=1 FT

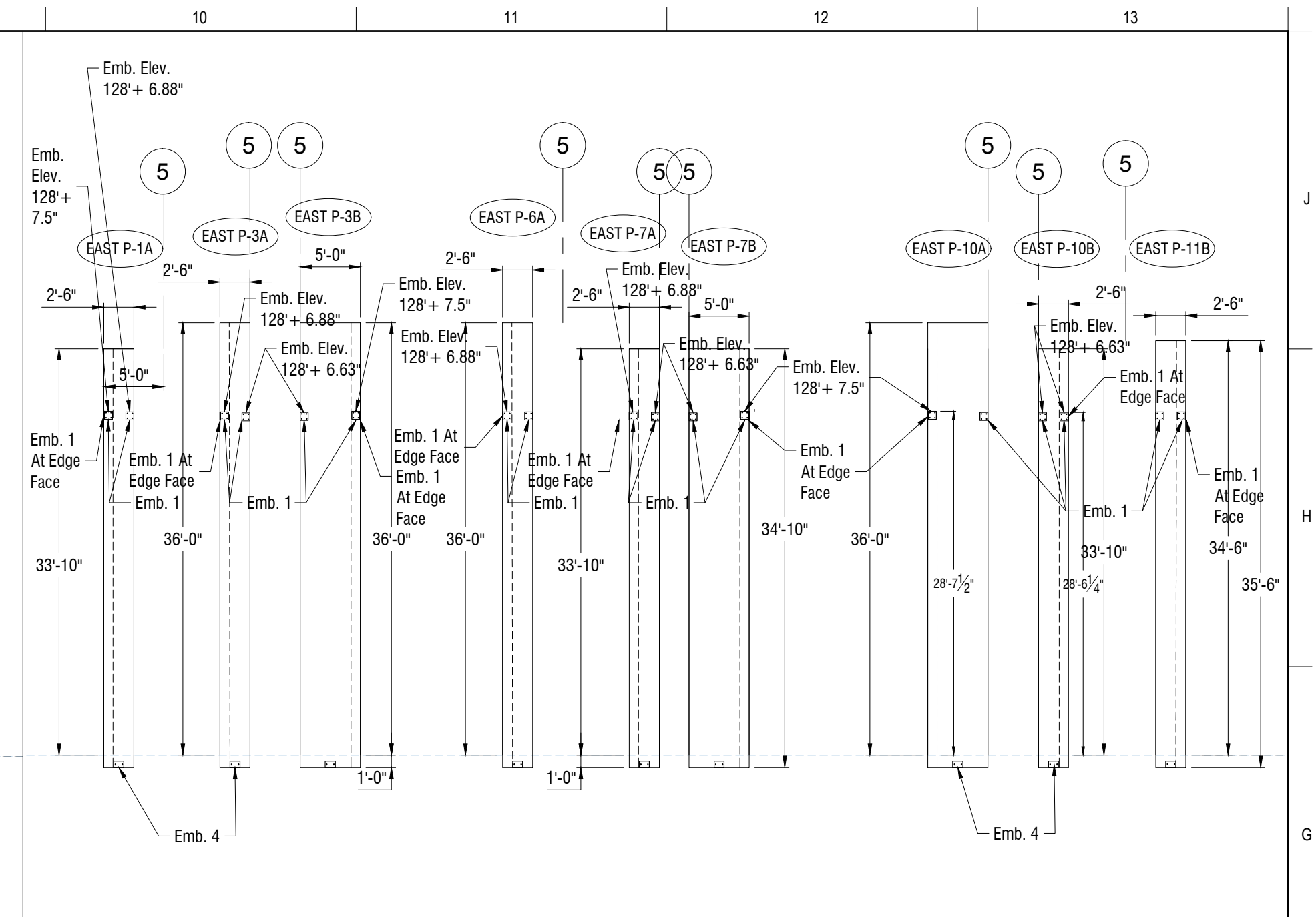
A3 DETAIL
SCALE 3/4"=1 FT

SOUTH TILT-UP

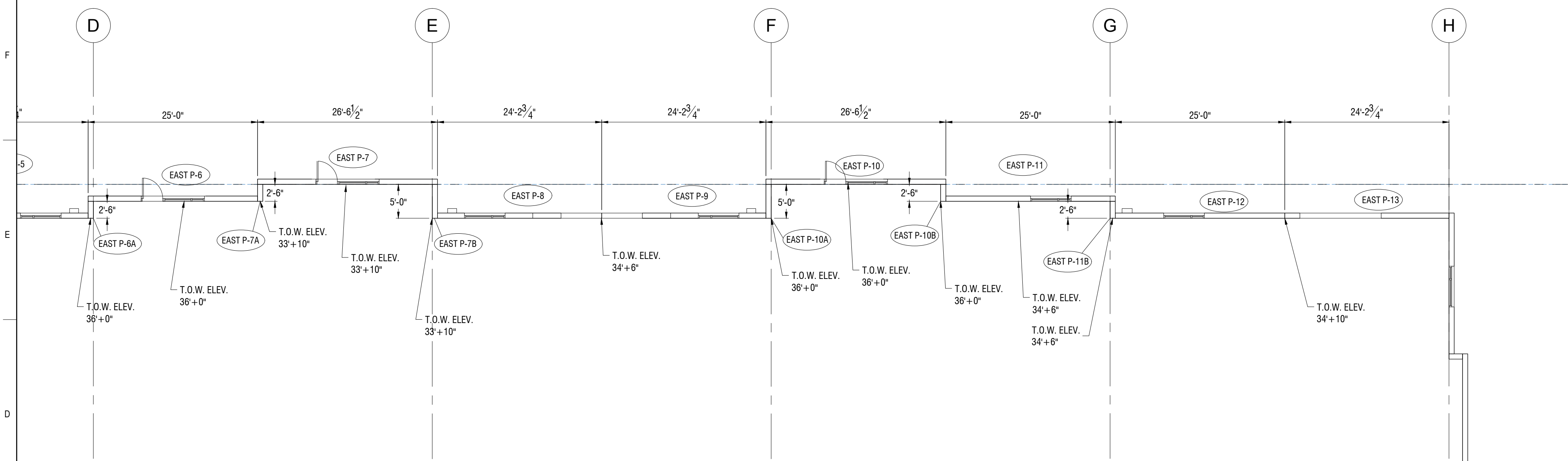
T120



C1 PARTIAL EAST PANEL INTERIOR ELEVATIONS
SCALE 3/32"=1 FT



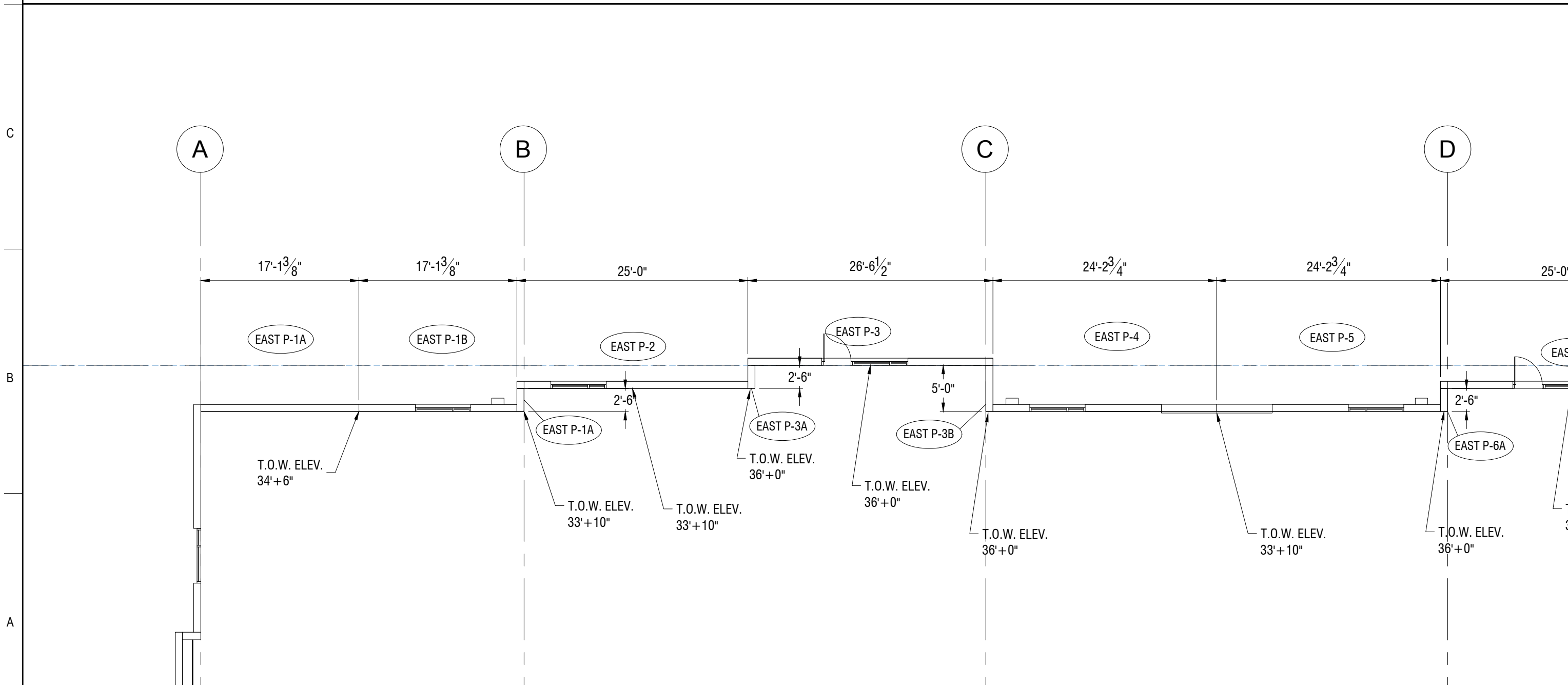
C5 EAST (NARROW) PANEL INTERIOR ELEVATIONS
SCALE 3/32"=1 FT



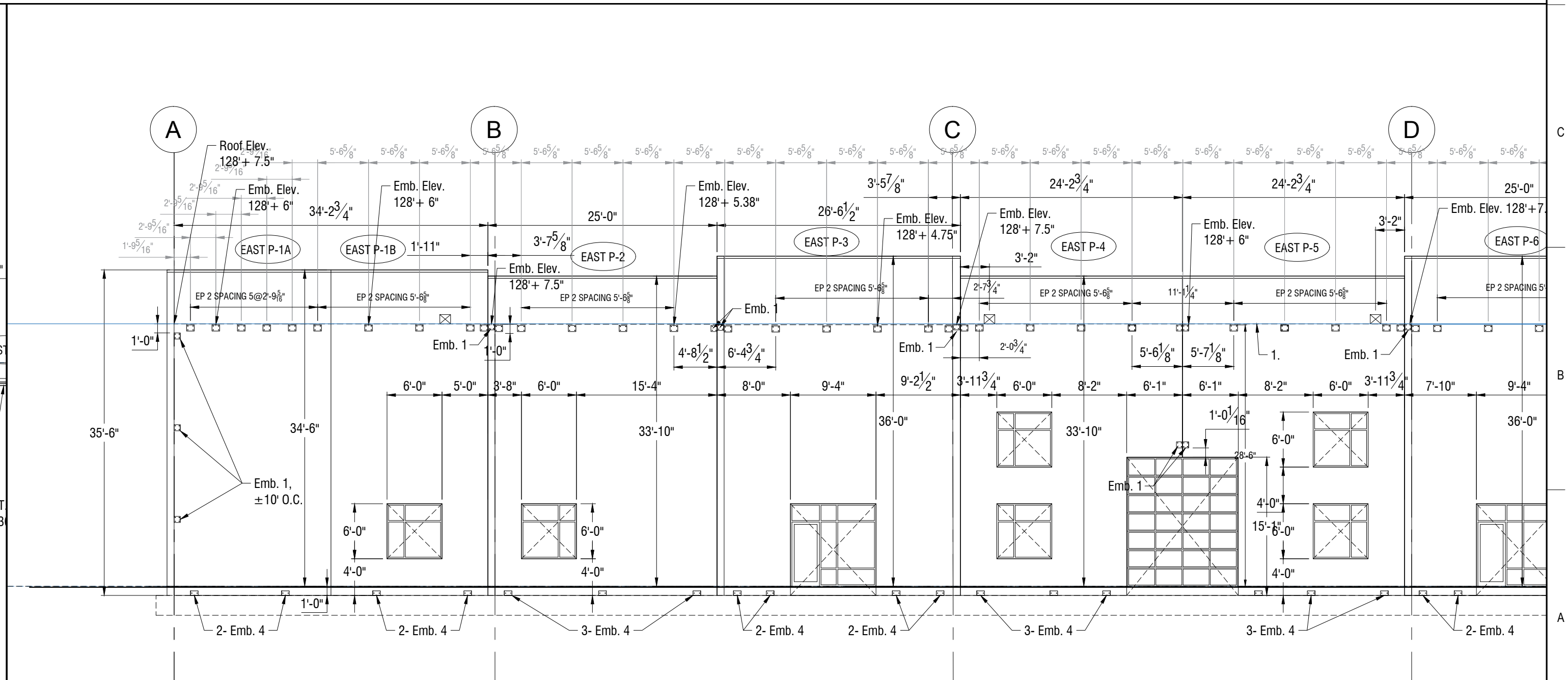
B1 PARTIAL EAST PLAN VIEW
SCALE 3/32"=1 FT

- PANEL NOTES:**
1. REFERENCE ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL RELIEF AND EXTERIOR FINISHES.
 2. ALL TILT-UP PANEL EXTERIOR EDGES AND OPENINGS TO HAVE 3/8" CHAMFER.
 3. DIMENSIONS SHOWN ARE TO THE CENTER OF PANEL JOINT OR EDGE OF PANELS - TYPICAL. ADJUST PANEL DIMENSIONS FOR 3/8" PANEL JOINT & 1" BOTTOM PANEL ADJUSTMENT GAP. PANELS ARE DESIGNED FOR IN-PLACE LOADS ONLY. DESIGN FOR PANEL LIFTING, CRANING AND SETTING BY OTHERS.
 4. REFERENCE ARCHITECTURAL DRAWINGS TO VERIFY SIZE & LOCATIONS OF ALL PANEL OPENINGS AND REVEALS PRIOR TO FABRICATING MISCELLANEOUS STEEL AND REINFORCING STEEL PRIOR TO CASTING CONCRETE PANELS.
 5. CONTRACTOR TO VERIFY LOCATION OF ALL EMBEDMENTS. COORDINATE JOIST AND BEAM LOCATIONS.

- KEY NOTES:** X
1. ROOF LINE ELEV. VARIES AT POP-OUTS. DIM. FROM F.F.
 2. SCUPPER OUTLET - SIZE SHOWN 14"x12" HIGH - REF. ARCH. TO CONFIRM SIZE
 3. WING WALL - REF. DETAIL
 - E.P. EMBEDMENT PLATE(S) - REF. SHEET T000



A1 PARTIAL EAST INTERIOR ELEVATION
SCALE 3/32"=1 FT



A3 PARTIAL EAST PLAN
SCALE 3/32"=1 FT



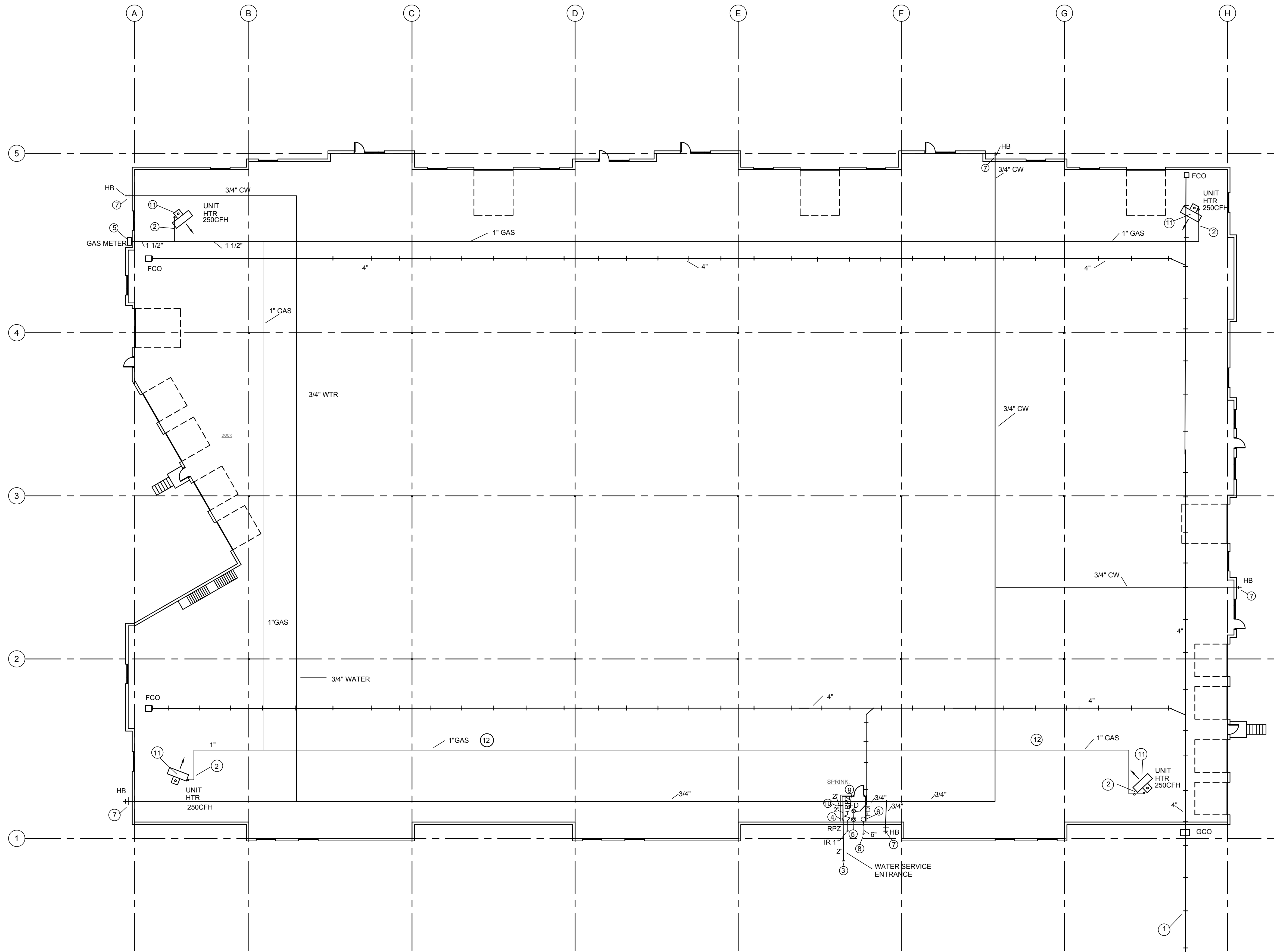
structural
STRUCTURA LOGICA
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I-470 BUSINESS AND TECHNOLOGY CENTER
NE MCBAIN DRIVE
LEES SUMMIT, MISSOURI

PROJECT NUMBER	18-125
ISSUE DATE	7 JUNE 2019
REVISIONS	DATE

EAST TILT-UP

T130



- MECHANICAL/PLUMBING PLAN NOTES:**
- ① SEE CIVIL DRAWINGS FOR CONTINUATION OF 4" WASTE. MAINTAIN 30" COVER.
 - ② ROUTE PIPE TO IN AND CONNECT GAS PIPING TO IN WITH REGULATOR WITH VENT THRU ROOF ACCORDING TO DETAIL AND MANUFACTURER'S REQUIREMENTS.
 - ③ SEE CIVIL DRAWINGS FOR CONTINUATION OF 2" CW. MAINTAIN 48" COVER.
 - ④ PROVIDE 2" RPZ BACKFLOW PREVENTER AND INSTALL 24" A.F.F. 4 6" FROM WALL AS PER MODR. ROUTE 2" CW UP FROM BELOW FLOOR TO SHUT OFF BALL VALVE THEN CONNECT TO RPZ. ROUTE DRAIN FROM RPZ BFP TO FLOOR DRAIN WITH AN AIR GAP.
 - ⑤ LOCATION OF 4" VTR. VERIFY 10" CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
 - ⑥ 6" FIRE LINE THRU FLOOR. PROVIDE USC CERTIFIED DOUBLE CHECK BACKFLOW PREVENTOR AND THE SPRINKLER MAIN DRAIN SHALL DISCHARGE AT FLOOR DRAIN WITH AIR GAP. COORDINATE WITH SPRINKLER CONTRACTOR FOR PROPER INSTALLATION. COORDINATE WITH WATER DEPARTMENT FOR SERVICE FLUSHING REQUIREMENTS. GAP LINE FOR FUTURE CONTINUATION BY SPRINKLER CONTRACTOR. VERIFY EXACT SIZE OF SERVICE WITH SPRINKLER CONTRACTOR BEFORE INSTALLING ANY PIPE.
 - ⑦ ROUTE 3/4" CW DOWN TO FPNH. SEAL PENETRATION WEATHERTIGHT.
 - ⑧ 6" FIRE PIPING. SEE CIVIL PLAN FOR CONTINUATION. MAINTAIN A MINIMUM OF 48" COVER.
 - ⑨ PROVIDE 1" RPZ FOR IRRIGATION AS REQUIRED. STUB 1" IRRIGATION LINE OUTSIDE BUILDING FOR CONTINUATION BY IRRIGATION CONTRACTOR. MIN. OF 48" COVER.
 - ⑩ 2" CW STUB CAPPED W/ SHUT-OFF VALVE FOR FUTURE CONNECTION BY TENANT.
 - ⑪ LOCATE BOTTOM OF HEATER 16" AFF. SUPPORT FROM STRUCTURE AS REQUIRED. ROUTE 8" TYPE-B FLUE UP THRU ROOF TO WEATHERHEAD AS REQUIRED. OFFSET AS REQUIRED TO MAINTAIN 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES.
 - ⑫ ROUTE GAS PIPE IN BAR JOISTS.
 - ⑬ 3/4" CW PIPE DROP FOR FPNH. LOCATED TIGHT TO WALL WITH SHUT-OFF VALVE AT T AFF.

1 Floor Plan
 scale: 1/16"=1'-0"
 north

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AT
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MISSOURI

DATE: 6/10/2019

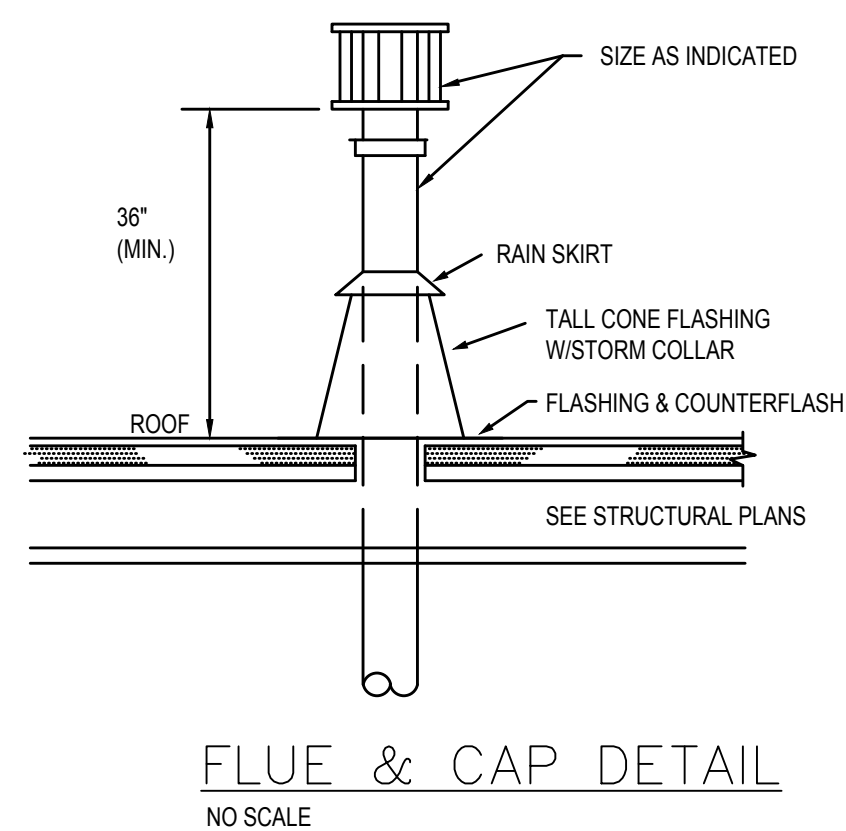
- REVISIONS:**
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ARCHITECTURAL SERVICES
 Robert J. Shirk, Jr. - Principal / Project Mgr.
 Edwin W. Korff - Architect

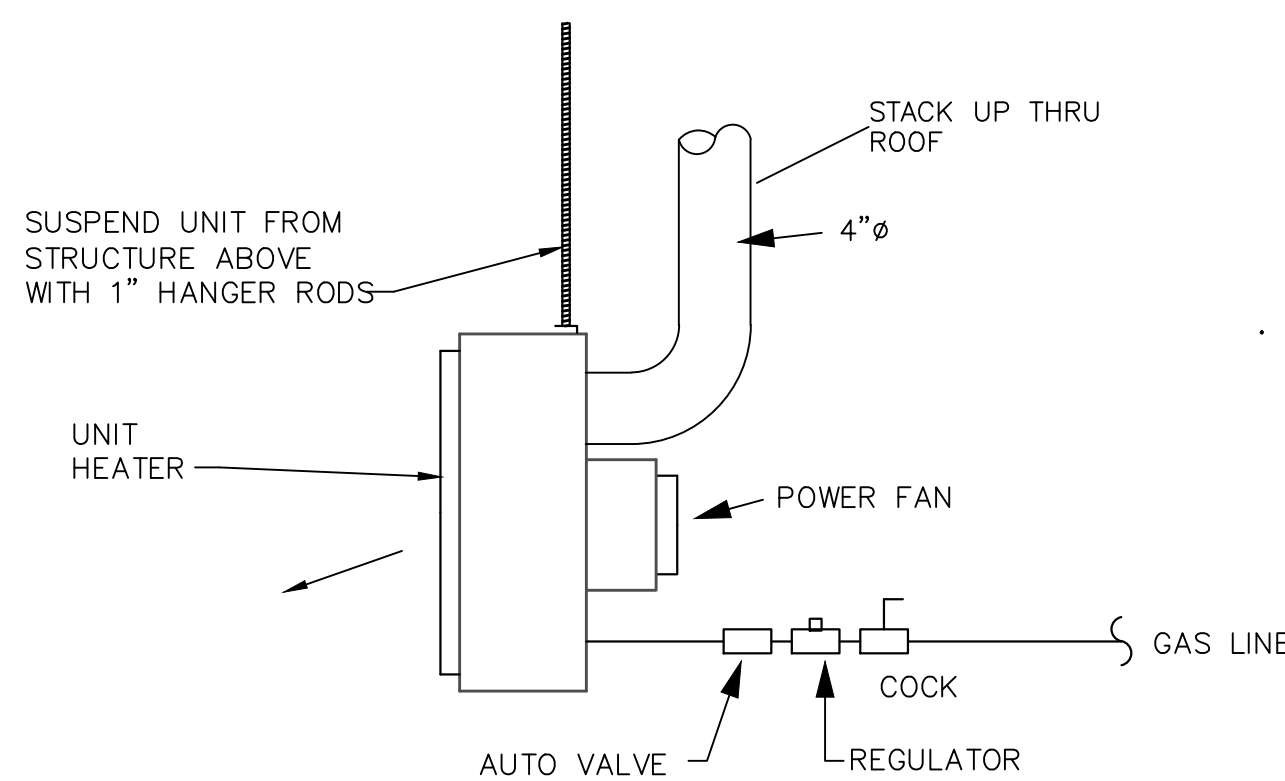
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MP 101
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FLUE & CAP DETAIL

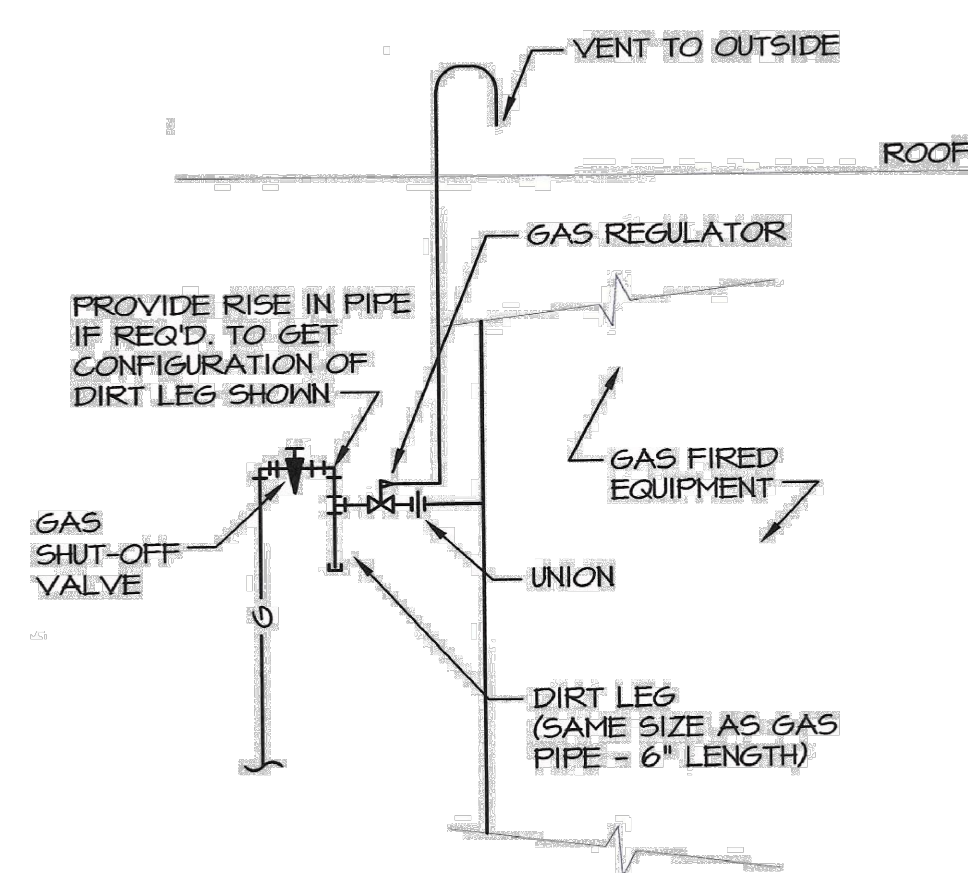
NO SCALE



UNIT HEATER DETAIL

NO SCALE

UNIT HEATER SHALL BE MODINE #PDP250, 3700 CFM, BTU INPUT 250,000, BTU OUTPUT 200,000, 1/3HP, 120V. PROVIDE EACH UNIT WITH UNIT MOUNTED THERMOSTAT AND CONTROL TRANSFORMER. UNIT SHALL HAVE ELECTRONIC PILOT IGNITION & ALUMINIZED STEEL HEAT EXCHANGER.

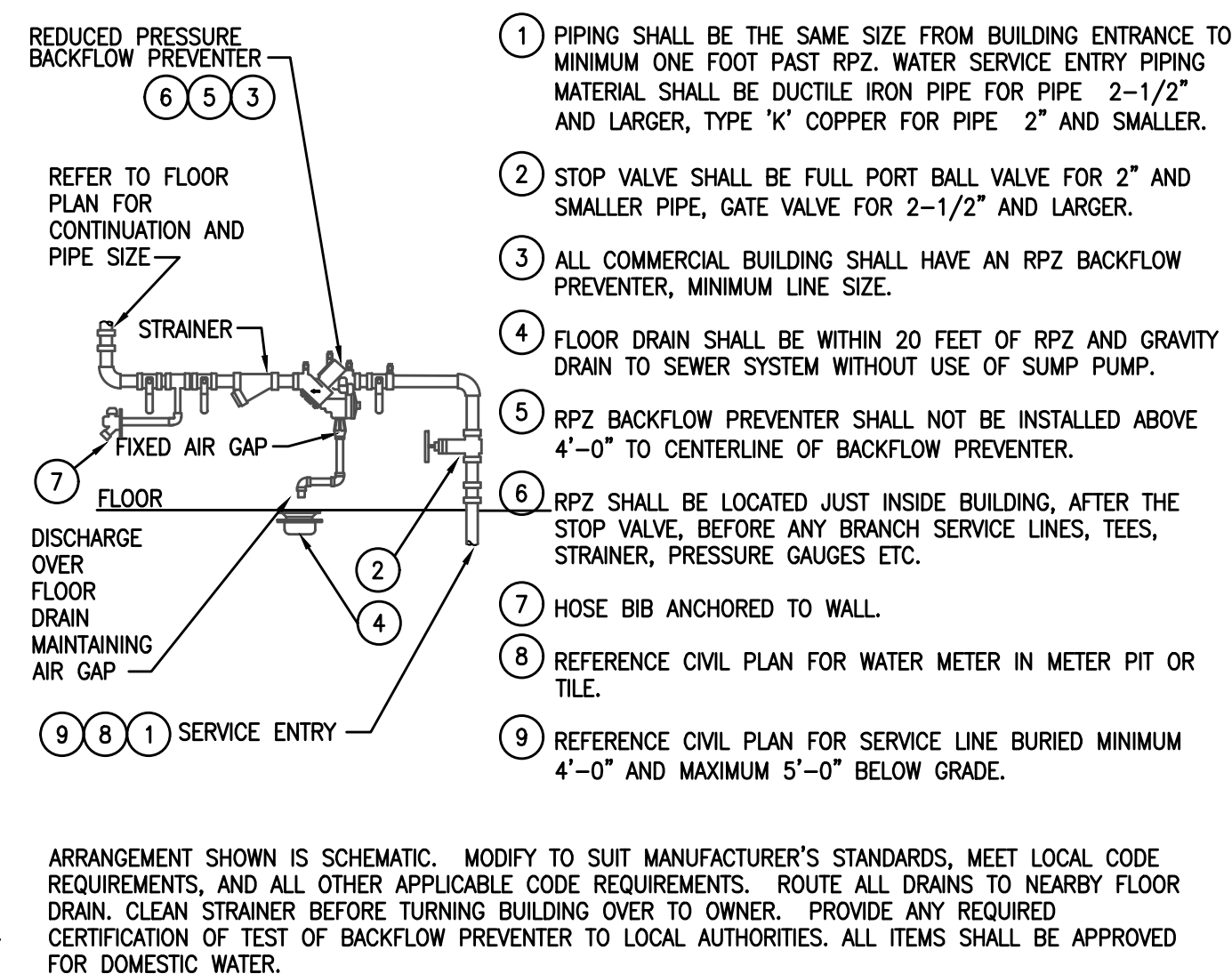


GAS PRESSURE REGULATORS FOR UNIT HEATERS SHALL BE SENSUS #143-80-2, 2 PSI INLET / 7\"/>

CFH	VALVE SIZE
400	3/4\"/>
350	3/4\"/>
250	3/4\"/>
100	3/4\"/>
50	3/4\"/>

GAS CONNECTION DETAIL

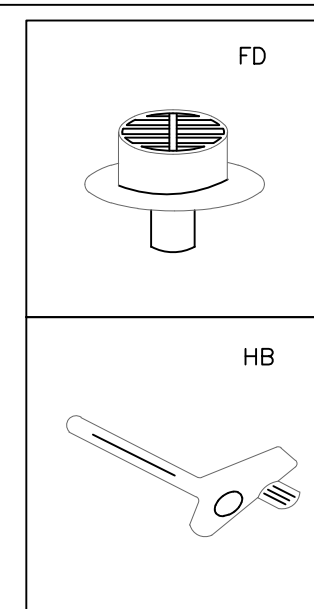
SCALE: NONE



REDUCED PRESSURE ZONE BACKFLOW PREVENTER DETAIL

ARRANGEMENT SHOWN IS SCHEMATIC. MODIFY TO SUIT MANUFACTURER'S STANDARDS, MEET LOCAL CODE REQUIREMENTS, AND ALL OTHER APPLICABLE CODE REQUIREMENTS. ROUTE ALL DRAINS TO NEARBY FLOOR DRAIN. CLEAN STRAINER BEFORE TURNING BUILDING OVER TO OWNER. PROVIDE ANY REQUIRED CERTIFICATION OF TEST OF BACKFLOW PREVENTER TO LOCAL AUTHORITIES. ALL ITEMS SHALL BE APPROVED FOR DOMESTIC WATER.

PLUMBING FIXTURE SCHEDULE



FD FLOOR DRAIN - JOSAM 32000 CAST IRON, ROUND 7\"/>

HB WALL HYDRANT - EXTERIOR WOODFORD #65 NON-FREEZE HYDRANT W/VACUUM BREAKER AND AUTOMATIC DRAIN OR EQUAL. 3/4\"/>

WATER BACKFLOW PREVENTOR SHALL BE A WATTS #LFO09 REDUCED ZONE PRESSURE BACKFLOW PREVENTOR. SEE WATER SERVICE ENTRANCE DETAIL

SCHEDULE OF PIPE AND FITTING MATERIAL

SERVICE	MATERIAL	JOINTS	FITTINGS	NOTES
VENTS AND WASTE LINES (ABOVE GROUND)	SERVICE WEIGHT CAST IRON (CI) (PVC WHEN APPROVED BY CITY)	LEAD OR TYSEAL	CAST IRON-PVC APPROVED	①
SOIL LINES (BELOW GROUND) - UNDER SLAB	CAST IRON (CI) (PVC WHEN APPROVED BY CITY)	LEAD OR TYSEAL	CAST IRON-PVC APPROVED	②
DOMESTIC WATER PIPE (ABOVE GROUND)	COPPER #1 HARD ASTM C-200 OR PEX	SOLDERED OR BRAZED	WROUGHT COPPER OR CAST BRONZE	③
SEWER LINE PIPING (BELOW GROUND) NOT UNDER SLAB	PVC	ASTM C-425	ASTM C-200	① ②
GAS LINES	SCH 40 BLACK IRON	SCREWED OR CRIMPED		

NOTES

- PVC OR ABS SCHEDULE 40, SOLVENT WELDED JOINTS MAY BE USED ONLY WITH WRITTEN AUTHORIZATION OF APPROVAL BY LOCAL INSPECTING AUTHORITY SUBMITTED BELOW TO ARCHITECT AND ENGINEER PRIOR TO BIDDING. CONDITIONS OF NOTE BELONG, SCR-35 SANITARY PIPE WHEN APPROVED.
- NO PVC OR ABS TO BE USED IN TYPE II CONSTRUCTION, THROUGH OR IN RETURN AIR PLENUMS, IN CITIES WHERE SUCH MATERIAL IS NOT ACCEPTABLE; OR BELOW BUILDING SLAB OR DRIVEWAY SURFACES.
- PROVIDE AIR CHAMBERS 18\"/>

A. PLUMBING SPECIFICATIONS

- ALL PLUMBING SYSTEMS MUST BE COMPATIBLE WITH THE TYPE OF MATERIALS USED BY LANDLORD AND SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

DRAINAGE AND VENT PIPE FITTING FOR ABOVE GRADE USE SHALL BE SERVICE WEIGHT, HUBLESS, CAST IRON WITH RUBBER SEALING SLEEVE AND STAINLESS STEEL COUPLING JOINTS WITH STAINLESS STEEL CLAMPS AND BOLTS AS MANUFACTURED BY TYLER PIPE OR EQUIVALENT. BELOW GRADE USE SERVICE WEIGHT, BELL AND SPIGOT CAST IRON WITH LEAD AND OAKUM OR GASKETED JOINTS. PVC IS PERMITTED ONLY WITH PRIOR LANDLORD APPROVAL.

WATER PIPING ABOVE GRADE SHALL BE TYPE L COPPER TUBING, SEAMLESS DRAWN, HARD TEMPERED WITH PLAIN ENDS ASTM B88. FITTING SHALL BE WROUGHT, OR CAST, COPPER WITH SOCKET ENDS FOR LEAD FREE SOLDER.

- ALL VALVES FOR DOMESTIC WATER SHALL BE 125 PSI TEST ALL BRONZE LINE SIZE FULL PORT BALL VALVES QUARTER-TURN INSTALLED IN THE PROPER ORIENTATION. BALL VALVES SHALL BE MANUFACTURED BY ONE OF THE FOLLOWING:

NIBCO
CRANE
WATTS

ALL VALVES SHALL BE ACCESSIBLE FOR EASE OF OPERATIONS.

- PIPE IS TO BE SUPPORTED SECURELY FROM HANGERS AS FOLLOWS:

- PIPES SUPPORTED FROM STEEL STRUCTURE SHALL BE SUPPORTED FROM STEEL BEAMS AND JOISTS WITH APPROVED CLAMPS AND OTHER STRUCTURAL ATTACHMENTS.

IN AREAS WITH CONCRETE FLAT SLABS AND CONCRETE ON METAL INSERTS, SELF-DRILLING ANCHORS OR POWER-DRIVEN ANCHORS WILL BE ALLOWED.

NO PIPE HANGERS WILL BE SUPPORTED FROM THE METAL ROOF DECK.

HANGERS SHALL NOT PIERCE PIPING INSULATION VAPOR BARRIER.

ALL STEEL HANGERS, RODS, SEAM CLAMPS, ETC., EXPOSED TO PUBLIC VIEW SHALL BE PAINTED TO MATCH ADJACENT FINISH.

APPEARANCE AND SPACING OF HANGERS EXPOSED TO PUBLIC VIEW ARE IMPORTANT ASPECTS OF THE FINAL VISUAL ENVIRONMENT, SPECIFIC DETAILS OF SUPPORT METHODS AND LOCATION OF HANGERS MUST BE DEDICATED ON DRAWINGS SUBMITTED TO LANDLORD FOR REVIEW AND ARE SUBJECT TO LANDLORDS APPROVAL. ALL HANGERS MUST BE EVENLY SPACED AND GROUPED AS MUCH AS POSSIBLE WITH SUPPORTS FOR OTHER TRADES TO MINIMIZE VISUAL CLUTTER IN THE UPPER PORTIONS OF ALL SPACES EXPOSED TO PUBLIC VIEW. SUPPORT SYSTEMS MUST BE NEAT AND WORKMANLIKE AND FREE OF EXTRA LENGTH OF SUPPORT RODS BELOW THE SUPPORTED MEMBER/HARDWARE

AND ACCESSORIES MUST BE SELECTED WITH A SMOOTH-FINISHED APPEARANCE FOR THE COMPLETED SUPPORT ASSEMBLY. HANGERS EXPOSED TO PUBLIC VIEW SHALL BE OF THE CLEVIS, OR TRAPEZE TYPE, COMPLETE WITH BOLTS, RODS, AND NUTS.

MINIMUM HANGER ROD DIAMETER SHALL BE LESS THAN, AND MAXIMUM SPACING OF SUPPORTS FOR STEEL AND COPPER HORIZONTAL PIPING MUST NOT BE GREATER THAN, THE VALUES IN THE LATEST ISSUE OF THE ASHRAE EQUIPMENT HANDBOOK. CAST IRON PIPE MUST BE SUPPORTED

AT LEAST EVERY FIVE FEET AND AT EVERY JOINT AND FITTING. CAST IRON PIPE BRANCHES MUST HAVE HANGERS FOUR FOOT ON CENTER MAXIMUM. WHERE REQUIRED TO MEET MINIMUM SPACING OF HANGERS,

PLUMBING CONTRACTOR IS RESPONSIBLE FOR INSTALLING ADDITIONAL INTERMEDIATE STRUCTURAL SUPPORTS.

PROVIDE CAST BRASS OR CHROME ESCUTCHEONS WITH SET SCREWS, DEEP TYPE, TO COVER SLEEVES OR OF A SIZE TO COVER FITTING PROJECTIONS. PROVIDE ESCUTCHEONS FOR ALL EXPOSED PIPING THROUGH WALLS, FLOORS, AND EXPOSED CEILING.

- ALL PIPE INSULATION IN AREAS EXPOSED TO PUBLIC VIEW SHALL BE INSTALLED IN THE MOST WORKMANLIKE MANNER AND IS SUBJECT TO THE APPROVAL OF PROJECT DESIGNER FOR APPEARANCE.

- FIRE PROTECTION

LANDLORD WILL PROVIDE A FIRE SPRINKLER SYSTEM. ALL MODIFICATIONS, ADDITIONS OR RELOCATIONS TO FIRE PROTECTION SYSTEM SHALL BE PERFORMED BY LANDLORD APPROVED SPRINKLER CONTRACTOR AT TENANT'S EXPENSE.

SPRINKLER SUB CONTRACTOR SHALL SUBMIT DRAWINGS, AND ALL REQUIRED LANDLORD, STATE, AND CITY REQUIREMENTS FOR APPROVAL AS PART OF THE WORK.

THE SPRINKLER SYSTEM SHALL BE FULLY CHARGED AND OPERATIONAL WHEN THE CONTRACTOR IS OFF-SITE.

TENANT TO VERIFY WITH LOCAL AUTHORITIES IF A SPRINKLER HEAD IS REQUIRED ABOVE RESTROOM AREA.

B. MECHANICAL SPECIFICATIONS

- NOISE AND VIBRATION CONTROL. ALL EQUIPMENT INSTALLED BY MECHANICAL CONTRACTOR SHALL BE PROVIDED WITH VIBRATION ISOLATORS, SOUND TRAPS, DUCT LINING, ACOUSTICAL HOUSINGS, ACOUSTICAL LOUVERS, AND OTHER NOISE AND VIBRATION CONTROL APPARATUS REQUIRED TO LIMIT INTRUSION INTO THE ADJACENT SPACES

A. INTRUSIVE NOISE LEVELS IN ADJACENT SPACES SHALL NOT EXCEED NC-40 WHEN MEASURED IN THESE SPACES.

B. TENANT EQUIPMENT NOISE EMITTED TO THE EXTERIOR SHALL NOT EXCEED 55 DBA IN ANY OCCUPIED EXTERIOR SPACES.

C. MECHANICAL CONTRACTOR SHALL PROVIDE VIBRATION ISOLATION OF

DUCTWORK, PIPING AND EQUIPMENT IN ACCORDANCE WITH PRACTICES DESCRIBED IN THE LATEST ASHRAE HANDBOOK SO THAT THE MEASUREMENTS MADE IN ADJACENT SPACES DO NOT EXCEED 5

- FIELD CONDITIONS MAY VARY FROM THOSE SHOWN ON THE DRAWINGS. THE MECHANICAL CONTRACTOR IS REQUIRED TO VISIT THE SITE AND VERIFY FIELD CONDITIONS WHICH MAY AFFECT THE DESIGN AND INSTALLATION BEFORE SUBMITTING A BID.

- ALL ROOF PENETRATIONS SHALL BE BY LANDLORDS APPROVED ROOF CONTRACTOR ONLY.

ALL OPENINGS THROUGH STRUCTURALLY SUPPORTED SLABS MUST BE CORE BORED, SLEEVED, GROUTED, SEALED AND MADE WATERPROOF. SLEEVES, EXCEPT FOR WATER CLOSETS, MUST EXTEND AT LEAST TWO INCHES (2) ABOVE THE FINISHED FLOOR. LOCATION OF ALL FLOOR OPENINGS MUST BE APPROVED BY THE LANDLORD IN WRITING. WATERPROOFING MUST BE INSPECTED AND APPROVED BY THE CONTRACTOR BEFORE ANY FLOOR MATERIAL IS INSTALLED. MECHANICAL CONTRACTOR IS RESPONSIBLE TO TAKE WHATEVER MEASURES ARE NECESSARY INCLUDING, BUT NOT LIMITED TO, THOSE MEASURES PRESCRIBED BY LANDLORD IN THE EXERCISE OF ITS REASONABLE JUDGEMENT TO ASSURE THAT CORE BORING WILL NOT DAMAGE THE LANDLORDS STRUCTURE, CONDUITS, ETC. THE COST OF SUCH TESTS OR REPAIR OF ANY DAMAGE WILL BE BORNE BY THE MECHANICAL

C. HVAC SPECIFICATIONS

- WHERE ANY HVAC UNITS, DUCTWORK AND/OR DIFFUSERS, OR OUTLETS ARE PROVIDED BY MECHANICAL CONTRACTOR, M.C. SHALL ENGAGE THE SERVICES OF A CERTIFIED AIR BALANCE CONTRACTOR TO ADJUST AND COMPLETELY BALANCE GENERAL CONTRACTORS PORTION OF THE SYSTEM TO DESIGN AIR AND CHILLED WATER QUANTITIES. GENERAL CONTRACTOR SHALL PROVIDE TO LANDLORD A COPY OF THE CERTIFIED BALANCE REPORT SHOWING DESIGN AND MEASURED QUANTITIES, STATIC PRESSURE, FAN MOTOR RPM, MOTOR CURRENT AND EXHAUST

- CONSTRUCTION OF ALL DUCTWORK SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL IN ACCORDANCE WITH THE BEST RECOMMENDED PRACTICES OF THE AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS (ASHRAE) AND IN STRICT COMPLIANCE WITH ALL THE APPLICABLE STANDARDS OF THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATIONS (SMACNA) LATEST EDITIONS. BRANCHES FROM THE MAIN LOW VELOCITY TRUNK DUCTWORK SHALL BE FURNISHED WITH SPLITTER DAMPERS OR SIMILAR BALANCE DEVICES IN THE LATEST STANDARDS OF THE ASSOCIATED AIR BALANCE COUNCIL. ACCESS PANELS ARE REQUIRED FOR THESE DEVICES IN THE CEILINGS.

- DUCT INSULATION: ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE INSULATED WITH A MINIMUM R-5 VALUE GLASS FIBER INSULATION WITH FOIL VAPOR BARRIER, EXCEPT THOSE PORTIONS WHICH ARE LINED FOR ACOUSTICAL PURPOSES. (USE 2\"/>

- AIR DISTRIBUTION DEVICES: AIR DISTRIBUTION DEVICES SHALL BE GRILLES OR CEILING DIFFUSERS INSTALLED AS REQUIRED TO ACHIEVE DRAFT FREE DISTRIBUTION IN ACCORDANCE WITH GOOD ENGINEERING PRACTICE. DIFFUSERS OR GRILLES SHALL HAVE LOCKABLE, INDIVIDUAL MANUAL VOLUME CONTROL DEVICES.

- PIPING SYSTEMS: ALL PIPING SYSTEMS MUST BE COMPATIBLE WITH THE TYPE OF MATERIALS USED BY THE LANDLORD AND SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS: PIPE SUPPORTS AND VALVES SHALL BE AS SPECIFIED UNDER PLUMBING SPECIFICATIONS UNLESS OTHERWISE

- PIPING SUPPORTS AND VALVES SHALL BE SPECIFIED UNDER PLUMBING SPECIFICATIONS UNLESS OTHERWISE NOTED.

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SHELL FOR

I-470 BUSINESS & TECHNOLOGY CENTER

AT

McBAINE DRIVE LEE'S SUMMIT MISSOURI

DATE: 6/10/2019

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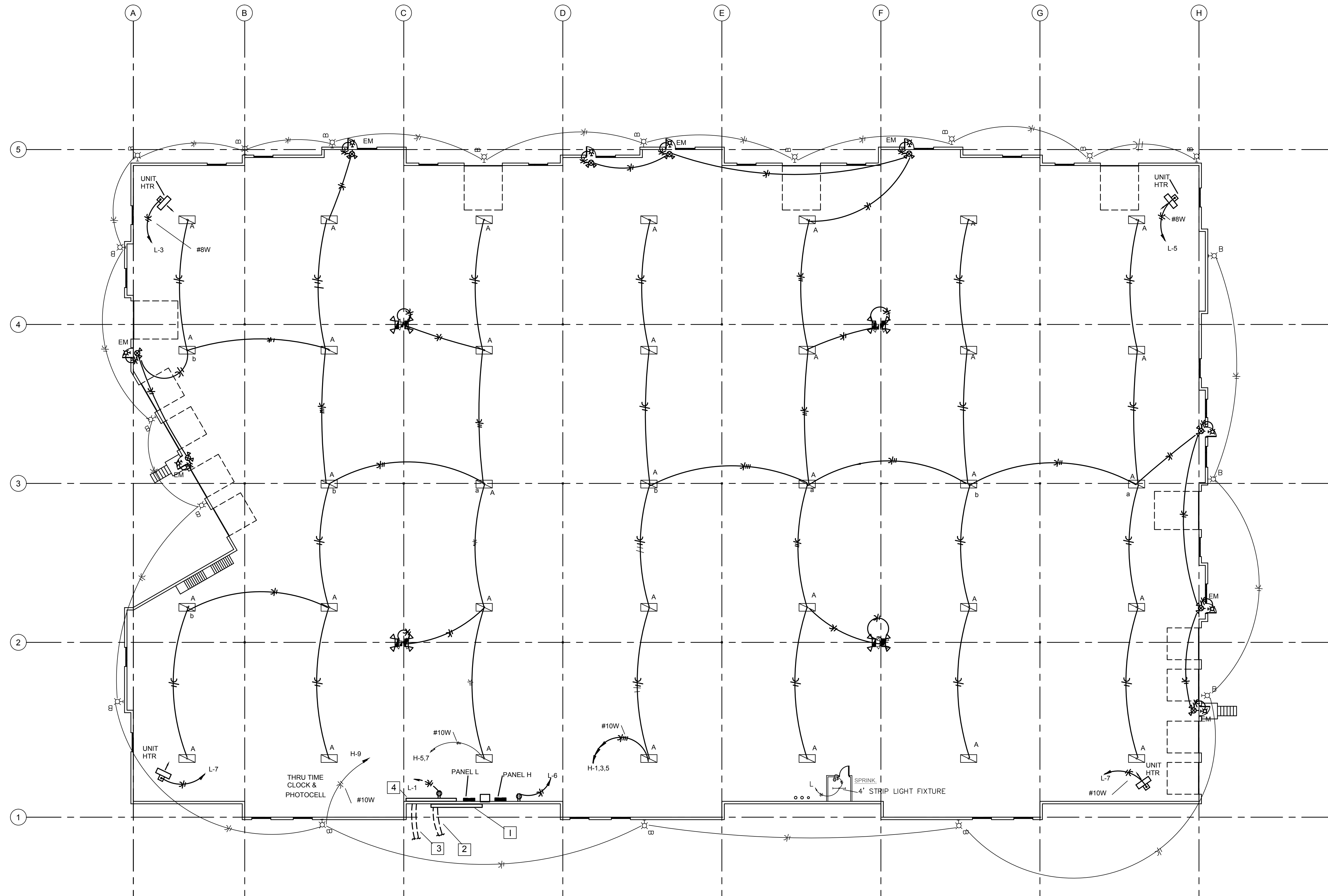


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SHEET NO.

MP201



FLOOR PLAN NOTES:

- 1 LOCATION OF MAIN ELECTRICAL SERVICE AND GEAR. SEE RISER DIAGRAM.
- 2 ELECTRICAL SERVICE TO KCP&L TRANSFORMER.
- 3 PROVIDE (2) 4" CONDUITS TO PROPERTY LINE FOR TELEPHONE/DATA AS DIRECTED BY TELEPHONE CO. SEE CIVIL DRAWINGS.
- 4 8' PLYWOOD TELEPHONE BACKBOARD WITH SIEMENS #ECGB-5 GROUND BAR FOR TEL/DATA EQUIPMENT

1 Floor Plan
scale: 1/16"=1'-0" north

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SHEET NO.

E101

LIGHT FIXTURE SCHEDULE

PANEL <u> H </u> MOUNTING <u> SURFACE </u> BUS <u>100A MAIN 100ACB</u> TYPE <u> BOLT-IN </u>							
LOCATION		WAREHOUSE		VOLT <u>277/480V</u> <u>3</u> <u>Ø</u> <u>4</u> WIRE			
CKT. NO.	DESCRIPTION	BKR.	CKT. V.A.	CKT. V.A.	BKR.	DESCRIPTION	CKT. NO.
1	LIGHTING	20	1850	5840	40/3	TR FOR PANEL 'L'	2
3	LIGHTING	20	1850				4
5	EMERGENCY LIGHTING	20	200				6
7	LIGHTING	20	2590			SPACE	8
9	O.S. LIGHTING	20	2400				10
11	SPARE	20					12
13							14
15							16
17							18
19							20
21							22
23							24
			14715	TOTAL VOLT AMPS		18 AMPS	

PANEL <u> L </u> MOUNTING <u> SURFACE </u> BUS <u>100A MAIN 50A CB</u> TYPE <u> BOLT-IN </u>							
LOCATION		WAREHOUSE		VOLT <u>120/208V</u> <u>3</u> <u>Ø</u> <u>4</u> WIRE			
CKT. NO.	DESCRIPTION	BKR.	CKT. V.A.	CKT. V.A.	BKR.	DESCRIPTION	CKT. NO.
1	TEL BD RECEPT	20	500	500	20	SPKLR CONTROLS	2
3	UNIT HTR	20	960	500	20	IRRIG. CONTROLS	4
5	UNIT HTR	20	960	500	20	PANEL RECEPT	6
7	UNIT HTR	20	960			SPACE	8
9	UNIT HTR	20	960				10
11	SPARE	20					12
13							14
15							16
17							18
19							20
21							22
23							24
			5840	TOTAL VOLT AMPS		16 AMPS	

A HIGH BAY LED FIXTURE, RAB #RAIL 185W, PENDANT MOUNTING 185 WATTS, 277 VOLT

B OUTSIDE LIGHT LITHONIA #KAD LED 60LED 1000 40K.277V, WBD 141 WATTS, 277 VOLT MOUNT AT SAME HT AS FIXTURES ON BUILDING TO SOUTH

COMBO EXIT/EMERGENCY LIGHT WITH HIGH CAPACITY BATTERY TO OPERATE EXTERIOR EMERGENCY FIXTURES

EM EXTERIOR EMERGENCY LIGHT TO OPERATE OFF OF EMERGENCY LIGHT

EMERGENCY LIGHT

EXIT LIGHT

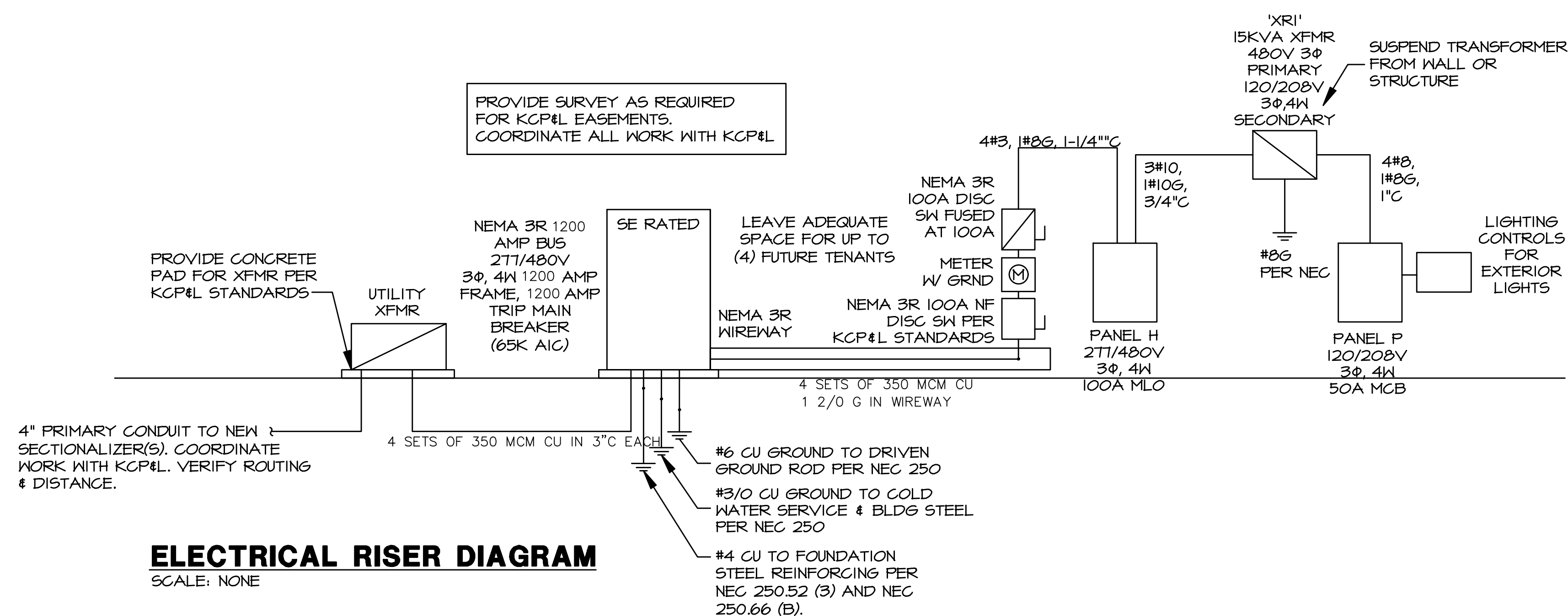
SYMBOLS & LEGEND	
\$	SINGLE POLE SWITCH, MOUNTED AT 46" O.C. A.F.F. UNLESS OTHERWISE NOTED.
\$ ²	TWO POLE SWITCH, MOUNTED AT 46" O.C. A.F.F. UNLESS OTHERWISE NOTED.
\$ ³	THREE-WAY SWITCH, MOUNTED AT 46" O.C. A.F.F. UNLESS OTHERWISE NOTED.
\$ ⁴	FOUR-WAY SWITCH, MOUNTED AT 46" O.C. A.F.F. UNLESS OTHERWISE NOTED.
	EMERGENCY LIGHTING, MOUNTED AT 7'-6" A.F.F. UNLESS OTHERWISE NOTED.
	GFCI RECEPTACLE, MOUNTED AT 18" O.C. A.F.F. UNLESS OTHERWISE NOTED.
	DUPLEX RECEPTACLE, MOUNTED AT 18" O.C. A.F.F. UNLESS OTHERWISE NOTED.
	QUADRUPLEX RECEPTACLE, MOUNTED AT 18" O.C. A.F.F. UNLESS OTHERWISE NOTED.
	VOICE OUTLET, MOUNTED AT 18" O.C. A.F.F. WITH 3/4" CONDUIT TO ABOVE CEILING.
	JUNCTION BOX
M	MOTION SENSOR WALL SWITCH
	FLOOR MOUNTED RECEPTACLE
	COMBINATION DISCONNECT AND STARTER
\$	WALL MOUNTED OCCUPANCY SWITCH
	EXHAUST FAN
	PANELBOARD
WP	WEATHERPROOF
ALL SYMBOLS NOT NECESSARILY REFERENCED ON PLAN	

GENERAL ELECTRICAL NOTES

- ALL EMPTY CONDUITS SHALL BE PROVIDED WITH A PULL WIRE.
- TELEPHONE/DATA CABLES TO BE 4-PAIR CAT. 5. CABLE TO BE FURNISHED AND INSTALLED BY OTHERS. ALL CABLING TO BE PLENUM RATED.
- ELECTRICAL CONTRACTOR TO INCLUDE GROUND WIRE IN ALL RACEWAYS. SIZE RACEWAYS AS NECESSARY TO COMPLY WITH N.E.C.
- REFER TO REFLECTED CEILING PLAN AND DETAILS FOR THE EXACT LOCATION OF ALL LIGHTING FIXTURES AND ANY OTHER EQUIPMENT INSTALLED IN THE CEILING SYSTEM. VERIFY EXACT MOUNTING HEIGHTS AND FINISHES WITH CONSTRUCTION COMPANY PRIOR TO ROUGH-IN.
- DUAL LIGHT SWITCH TO BE PROVIDED IN RESTROOMS, ONE FOR FAN VENT, AND ONE FOR LIGHTING.
- EMPTY MUD RING W/ CONDUIT AND PULL STRING NEXT TO LIGHT SWITCH FOR SPEAKER CONTROLS
- PLYWOOD TELEPHONE BACKERBOARD (4'X4') TO HAVE ROUTED 2" EMPTY CONDUIT BACK TO THE EXISTING TELEPHONE SERVICE ENTRANCE AND 110V OUTLET, FIELD COORDINATE.
- THE WORD "PROVIDE" HEREIN SHALL MEAN FURNISH AND INSTALL.

D. ELECTRICAL SPECIFICATIONS

- THE ENTIRE ELECTRICAL SYSTEM SHALL COMPLY WITH THE FOLLOWING:
 - 2017 NATIONAL ELECTRICAL CODE AND ANY OTHER APPLICABLE LOCAL CODES.
 - ALL FEEDER AND BRANCH CIRCUIT WIRING SHALL BE COPPER ONLY.
 - THE REQUIREMENTS FOR ALL ROOF AND WALL OPENINGS DESCRIBED IN SECTIONS HEREIN.
- MATERIALS, PRODUCTS AND EQUIPMENT INCLUDING COMPONENTS THEREOF, SHALL BE NEW AND SUITABLE FOR THE PURPOSE AND SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND OF THE LOCAL AUTHORITIES HAVING JURISDICTION. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING COMPONENTS THEREOF, SHALL BE SIZED IN CONFORMITY WITH THE REQUIREMENTS OF OTHER RECOGNIZED STANDARDS, SUCH AS, ASTM, IEEE, IPCEA, NFPA AND NEMA WHERE THE REQUIREMENTS OF SUCH STANDARDS ARE MORE STRINGENT THAN THOSE CITED ABOVE.
- ELECTRICAL SERVICE PROVIDED IS 800 AMP, 277/480V, THREE PHASE.
- ALL CONDUCTORS SHALL BE SOFT DRAWN ANNEALED COPPER. MINIMUM SIZE SHALL BE #12 FOR POWER WIRING AND #14 FOR CONTROL WIRING. WIRE SHALL BE 600 VOLT INSULATED, NEC TYPE THHN/THWN. ALL WIRE SHALL BE RUN IN RIGID CONDUIT OR EMT. NO PLASTIC CONDUIT WILL BE PERMITTED, EXCEPT WHERE PERMITTED BY THE NATIONAL ELECTRIC CODES LATEST EDITION. SERVICE ENTRANCE FEEDERS FROM POWER CO TRANSFORMER TO MDP MAY BE ALUM IN PVC CONDUIT.
- LIGHTING AND APPLIANCE PANELBOARDS WITHIN THE SPACE, THEY SHALL BE OF THE THREE PHASE, FOUR WIRE DISTRIBUTED PHASING TYPE. ALL BREAKERS SHALL BE BOLT-ON TYPE. CIRCUITING SHALL BE ARRANGED TO PRESENT, AS NEARLY AS POSSIBLE, AND EVENLY BALANCED LOAD ON ALL PHASES. PANELBOARDS SHALL BE CIRCUIT BREAKER TYPE. ALL CIRCUIT BREAKERS SHALL HAVE INTERRUPTING CAPACITY AT LEAST 10 % GREATER THAN THE AVAILABLE FAULT CURRENT AT THE BREAKER LOCATION.
- ALL ELECTRICAL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING AND REPAIRING. ALL CONDUIT SHALL BE CONCEALED WHERE POSSIBLE EXPOSED CONDUIT SHALL BE IN STRAIGHT LINES PARALLEL WITH, OR AT LEAST 3 INCHES FROM WATER LINES WHENEVER THEY RUN ALONGSIDE OR ACROSS SUCH LINES. HANGERS SHALL BE FASTENED TO STEEL, CONCRETE OR MASONRY, BUT NOT TO PIPING. HANGERS AND SUPPORT SYSTEMS ARE AN INTEGRAL PART OF THE VISUAL ENVIRONMENT. ALL HANGERS AND SUPPORTS EXPOSED TO PUBLIC VIEW MUST BE SHOWN IN DETAIL ON PLANS SUBMITTED TO LANDLORD FOR APPROVAL OF APPEARANCE. ALL HANGERS MUST BE UNIFORMLY SPACED AND NEATLY INSTALLED WITH NO EXCESS MATERIAL BEYOND WHAT IS REQUIRED FOR THE SUPPORT FUNCTION. SELECT ACCESSORIES AND HARDWARE WITH A SMOOTH, NEAT FINISHED APPEARANCE. PAINT ALL EXPOSED CONDUIT HANGERS TO MATCH THE ADJACENT FINISHES.
- GROUNDING SHALL CONSIST OF COPPER CONDUCTORS IN CONDUIT WITH BOLTED, OR BRAZED CONNECTION TO COLD WATER LINE FOR THE NEUTRAL. GROUNDING AND BONDING SHALL COMPLY WITH NEC ARTICLE 250. ALL METALLIC RACEWAYS SHALL BE GROUNDED.
- PROVIDE WIRING DEVICES EQUAL TO THE FOLLOWING: TOGGLE SWITCHES
LEVITON CAT #1221, RECEPTACLES- LEVITON CAT # 5262, GFCI RECEPTACLES, LEVITON #6699, PROVIDE AN EMPTY CONDUIT SYSTEM FOR THE TELEPHONE SYSTEMS.
- EQUIPMENT TO BE APPROVED BY THE LOCAL TELEPHONE COMPANY. COORDINATE ALL CONDUIT REQUIREMENTS AND TERMINATION WITH THE LOCAL SOUTHWESTERN BELL TELEPHONE COMPANY OR OTHER TELEPHONE SYSTEM PROVIDER.
- DUPLEX RECEPTACLES AND TELE-COMMUNICATION OUTLETS SHALL BE MOUNTED AT 15" ABOVE FINISH FLOOR UNLESS OTHERWISE NOTED. TOGGLE SWITCHES SHALL MOUNT AT 48" ABOVE FINISH FLOOR. WALL MOUNTED TELEPHONE OUTLETS SHALL BE MOUNTED AT 48" ABOVE FINISH FLOOR.



ELECTRICAL RISER DIAGRAM
SCALE: NONE

SHELL FOR

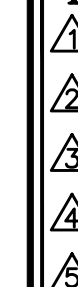
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DATE: 6/10/2019

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