

GENERAL STRUCTURAL NOTES

(The Following apply unless shown otherwise on the plans)

CRITERIA

1. ALL MATERIALS, WORKMANSHIP, DESIGN AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).

2. DESIGN LOADING CRITERIA

ROOF SNOW LOAD	25 PSF
FLOOR LIVE LOAD (LIGHT STORAGE)	125 PSF
STAIR AND EXITS LIVE LOAD	100 PSF
MECHANICAL UNITS	WEIGHTS FURNISHED BY MANUFACTURER

SNOW :

ROOF SNOW LOAD	= 25 PSF
GROUND SNOW LOAD	= 25 PSF
EXPOSURE Co	= 0.90
IMPORTANCE FACTOR Is	= 1.00
THERMAL FACTOR Ct	= 1.00

WIND :

ANALYSIS PROCEDURE: ASCE 7-16 CHAPTER 27 "PART 1 - BUILDINGS OF ALL HEIGHTS" RISK CATEGORY II

98 MPH	EXPOSURE "C"
TOPOGRAPHIC FACTOR Kzt	= 1.0
WIND BASE SHEAR GRID 1-2, NORTH/SOUTH Vw	= 25.16 K
WIND BASE SHEAR GRID 1-2, EAST/WEST Vw	= 169.07 K

CLADDING / WINDOW DESIGN PRESSURE (MAX.)	30 PSF
ROOFING DESIGN PRESSURE NOT AT A CORNER (MAX.)	49 PSF
ROOFING DESIGN PRESSURE AT CORNER (MAX.)	67 PSF

THE DESIGN WIND PRESSURES LISTED ABOVE ARE INWARD OR OUTWARD AND ARE BASED ON AN EFFECTIVE WIND AREA OF 10 SQUARE FEET NEAR A BUILDING CORNER, U.O.N. CORNER AND OTHER ZONES ARE DEFINED BY FIGURE 90.3-1, 90.3-2A TO 2I AND 90.3-5A TO 5B IN ASCE 7-16. REDUCED DESIGN PRESSURES MAY BE CALCULATED USING ASCE 7. NOTE THAT THE DESIGN WIND PRESSURES NOTED ABOVE ARE ULTIMATE VALUES PER THE 2018 IBC AND SHALL BE MULTIPLIED BY 0.6 FOR ALLOWABLE STRESS DESIGN.

EARTHQUAKE :

ANALYSIS PROCEDURE: IBC "EQUIVALENT LATERAL FORCE PROCEDURE"

SEISMIC DESIGN CATEGORY (SDC)	= D
RISK CATEGORY	= II
SEISMIC SITE CLASS	= D
IMPORTANCE FACTOR Ia	= 1.0
MAPPED MCE Ss	= 1.07; S1 = 0.38
DESIGN ACCELERATION Sds	= 0.77; Sd1 = 0.49
SEISMIC RESISTING SYSTEM GRID 1-2: STEEL ORDINARY CONCENTRICALLY BRACED FRAMES, R	= 3.25
SEISMIC RESPONSE COEFFICIENT: Cs	= 0.23
SEISMIC BASE SHEAR Vs	= 80.54 K
SEISMIC RESISTING SYSTEM MEZZANINES: LIGHT-FRAMED COLD-FORMED WALLS WITH STEEL SHEETS SHEAR WALL, R	= 6.5
SEISMIC RESPONSE COEFFICIENT: Cs	= 0.12
OFFICE MEZZANINE SEISMIC BASE SHEAR Vs	= 28.74 K
MECHANICAL MEZZANINE SEISMIC BASE SHEAR Vs	= 15.17 K

SEE PLANS FOR ADDITIONAL LOADING CRITERIA. POST ALL COMMERCIAL OR INDUSTRIAL LIVE LOADS OVER 50 PSF PER IBC SECTION 106.1.

3. LATERAL LOADS ARE TRANSFERRED BY MEZZANINE FLOOR DIAPHRAGM TO THE SHEAR WALLS, MOMENTS, SHEARS AND ROTATIONAL FORCES ARE BASED ON THE RIGIDITY OF EACH SHEAR WALL AND ARE CARRIED BY THE SHEAR WALLS TO THE FOUNDATION.

4. LATERAL LOADS ARE TRANSFERRED BY THE ROOF DIAPHRAGMS TO THE BRACED FRAMES. FORCES ARE BASED ON THE TRIBUTARY AREA FOR EACH BRACED FRAME AND ARE CARRIED BY THE BRACED FRAMES TO THE FOUNDATION.

5. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

6. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THEIR WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES OF THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.

8. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

9. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. WHERE INFORMATION ON THE DRAWINGS IS IN CONFLICT WITH THE SPECIFICATIONS, THE MORE STRINGENT SHALL APPLY, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. DO NOT SCALE THE DRAWINGS.

10. ALL STRUCTURAL SYSTEMS WHICH ARE COMPOSED OF FIELD ERECTED COMPONENTS SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.

11. SHOP DRAWINGS FOR REINFORCING STEEL (FOR CONCRETE CONSTRUCTION), STRUCTURAL STEEL, OPEN WEB STEEL JOISTS, AND METAL DECKING SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS.

12. SHOP DRAWING REVIEW: DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD, AND

THEREFORE MUST BE VERIFIED BY THE CONTRACTOR. CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY ENGINEER OF RECORD. CONTRACTOR SHALL REVIEW DRAWINGS FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND OPERATIONS OF CONSTRUCTION, AND ALL SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO. A MINIMUM OF TWO WEEKS SHALL BE ALLOWED FOR REVIEW.

13. SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT, BY INDICATING WHICH MATERIAL IS INTENDED TO BE FURNISHED AND INSTALLED AND BY DETAILING THE INTENDED FABRICATION AND INSTALLATION METHODS. IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SHOP DRAWING SUBMITTALS AND THE CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SHOP DRAWING SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL AND SHALL BE FOLLOWED.

14. DEFERRED SUBMITTALS OF DESIGN BUILD COMPONENTS SHALL BEAR THE STAMP AND SIGNATURE OF A STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER AND SHALL BE APPROVED BY THE COMPONENT DESIGNER PRIOR TO CURSORY REVIEW BY THE ENGINEER OF RECORD FOR LOADS IMPOSED ON THE BASIC STRUCTURE. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE AND ALL NECESSARY CONNECTIONS NOT SPECIFICALLY CALLED OUT ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. DEFERRED SUBMITTALS SHALL INDICATE MAGNITUDE AND DIRECTION OF ALL LOADS IMPOSED ON BASIC STRUCTURE AND SHALL INCLUDE DESIGN CALCULATIONS WITH THE ENGINEER'S STAMP.

THE FOLLOWING COMPONENTS SHALL BE DEFERRED SUBMITTALS FOR THIS PROJECT:
STAIRS, EXTERIOR CLADDING, CURTAIN WALL SYSTEMS, WINDOW SYSTEMS, RAILINGS, OPEN-WEB JOISTS, METAL BUILDINGS

15. EXTERIOR CLADDING PANELS, GLAZING SYSTEMS, AND CONNECTIONS SHALL BE DESIGNED BY THE MANUFACTURER FOR THE LOADS AND CONDITIONS SHOWN ON THE PLANS. MANUFACTURER SHALL SUBMIT DETAIL DRAWINGS AND CALCULATIONS BEARING THE STAMP AND SIGNATURE OF A STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER. MANUFACTURER'S ENGINEER SHALL BE RESPONSIBLE FOR DESIGN, CODE CONFORMANCE, AND CONNECTION OF EXTERIOR CLADDING PANELS TO BASIC STRUCTURE. ENGINEER OF RECORD TAKES NO RESPONSIBILITY FOR PRODUCT DESIGN, MANUFACTURE, DELIVERY AND HANDLING, OR CONNECTION TO BASIC STRUCTURE. SHOP DRAWINGS SHALL BEAR THE REVIEW STAMP OF THE DESIGNING ENGINEER'S FIRM PRIOR TO REVIEW BY THE ENGINEER OF RECORD. ALL NECESSARY BRACINGS, TIES, ANCHORAGE, DISTRIBUTION MEMBERS, AND SIMILAR ELEMENTS SHALL BE FURNISHED AND INSTALLED IN CONFORMANCE WITH SUBMITTED DRAWINGS AND CALCULATIONS.

16. MECHANICAL UNIT CONNECTIONS TO THE BUILDING SHALL BE DESIGNED BY THE MANUFACTURER FOR THE DESIGN CRITERIA AND CONDITIONS SHOWN ON THE STRUCTURAL DRAWINGS. MANUFACTURER SHALL SUBMIT DETAIL DRAWINGS AND CALCULATIONS, BOTH OF WHICH BEAR THE STAMP AND SIGNATURE OF A STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER. MANUFACTURER'S ENGINEER SHALL BE RESPONSIBLE FOR DESIGN, CODE CONFORMANCE, AND CONNECTION OF THE UNIT TO THE BASIC STRUCTURE. ALL NECESSARY BRACING, TIES, ANCHORAGE, DISTRIBUTION MEMBERS, AND SIMILAR ELEMENTS SHALL BE FURNISHED AND INSTALLED IN CONFORMANCE WITH SUBMITTED DRAWINGS AND CALCULATIONS.

17. SPECIAL INSPECTION: SHALL BE SUPERVISED BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE OWNER IN ACCORDANCE WITH SECTIONS 1704 & 1705 OF THE IBC, THE PROJECT SPECIFICATIONS, AND THE SPECIAL INSPECTION SCHEDULE AT THE END OF THE STRUCTURAL NOTES. THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE OWNER, ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR AND THE BUILDING OFFICIAL. ANY MATERIALS WHICH FAIL TO MEET PROJECT SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

GEOTECHNICAL

18. FOUNDATION NOTES: SUBGRADE PREPARATION INCLUDING DRAINAGE, EXCAVATION, COMPACTION, AND FILLING REQUIREMENTS, SHALL CONFORM STRICTLY WITH RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER. FOOTINGS SHALL BEAR ON SOLID UNDISTURBED EARTH (CONTROLLED, COMPACTED STRUCTURAL FILL OR BOTH) AT LEAST 18" BELOW LOWEST ADJACENT FINISHED GRADE. FOOTING DEPTHS/ELEVATIONS SHOWN ON PLANS (OR IN DETAILS) ARE MINIMUM AND FOR GUIDANCE ONLY; THE ACTUAL ELEVATIONS OF FOOTINGS MUST BE ESTABLISHED BY THE CONTRACTOR IN THE FIELD WORKING WITH THE TESTING LAB AND GEOTECHNICAL ENGINEER. UNLESS OTHERWISE NOTED, FOOTINGS SHALL BE CENTERED UNDER COLUMNS OR WALLS ABOVE.

BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE AS NOTED IN THE GEOTECHNICAL REPORT.

THE STRUCTURAL DESIGN IS BASED ON THE FOLLOWING VALUES FROM THE REFERENCED GEOTECHNICAL REPORT:

ALLOWABLE SOIL BEARING PRESSURE (FOOTINGS 4'-0" AND LARGER)	2,000 PSF
ALLOWABLE SOIL BEARING PRESSURE (FOOTINGS SMALLER THAN 4'-0")	1,500 PSF
LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED)	55 PCF/35 PCF
SEISMIC SURCHARGE PRESSURE (RESTRAINED/UNRESTRAINED)	8H PSF
PASSIVE SOIL PRESSURE	200 PCF
SOIL COEFFICIENT OF FRICTION	0.35

GEOTECHNICAL REPORT REFERENCE: #378422 BY NELSON GEOTECHNICAL ASSOCIATES, INC. DATED JULY 27, 2022.

CONCRETE

19. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH ACI 301. CONSTRUCTION TOLERANCES SHALL NOT EXCEED THOSE LISTED IN ACI 117. STRENGTHS AT 28 DAYS AND MIX CRITERIA SHALL BE AS FOLLOWS:

TYPE OF CONSTRUCTION	28 DAY STRENGTH (f'c)	MAXIMUM SLUMP	MIN. CEMENT CONTENT PER CUBIC YARD	MAX. AGGREGATE SIZE
A. FOOTINGS	3,000 PSI	5"	5-1/2 SACKS	1 1/4"
B. SLABS-ON-GRADE	4,500 PSI	5"	5-1/2 SACKS	1 1/4"
C. SLABS ON METAL DECK, STAIR LANDINGS AND TREADS	3,000 PSI	5"	5-1/2 SACKS	3/4"

MIXES SHALL BE PROPORTIONED SO AS NOT TO EXCEED THE MAXIMUM SLUMPS INDICATED (BEFORE THE ADDITION OF ADMIXTURES). THE WATER/CEMENT RATIO SHALL NOT EXCEED 0.55 FOR FOOTINGS AND 0.45 FOR ALL SLABS AND EXPOSED CONCRETE. THE MINIMUM AMOUNT OF CEMENT AND THE MAXIMUM SLUMP MAY BE CHANGED IF A

CONCRETE PERFORMANCE MIX IS SUBMITTED TO THE STRUCTURAL ENGINEER AND THE BUILDING DEPARTMENT FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. (THE W/C RATIO LIMITS STILL APPLY). THE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, CEMENTITIOUS MATERIAL, FINE AND COARSE AGGREGATE, WATER AND ADMIXTURES AS WELL AS THE WATER/CEMENT RATIO, SLUMP, CONCRETE YIELD AND SUBSTITUTING STRENGTH DATA IN ACCORDANCE WITH ACI 301. CHEMICAL ADMIXTURES AND FLY ASH SHALL CONFORM TO ASTM C494 AND C618 RESPECTIVELY. FLY ASH PERCENTAGE OF TOTAL CEMENTITIOUS MATERIAL SHALL NOT EXCEED 20%. THE USE OF A PERFORMANCE MIX REQUIRES BATCH PLANT INSPECTION, THE COST OF WHICH SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER. REVIEW OF MIX SUBMITTALS BY THE ENGINEER OF RECORD INDICATES ONLY THAT INFORMATION PRESENTED CONFORMS GENERALLY TO CONTRACT DOCUMENTS. CONTRACTOR MAINTAINS FULL RESPONSIBILITY FOR SPECIFIED PERFORMANCE.

ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260. TOTAL AIR CONTENT FOR FROST-RESISTANT CONCRETE SHALL BE IN ACCORDANCE WITH ACI 318-14 TABLE 19.3.3.1. ALL CONCRETE EXPOSED TO THE WEATHER AND ALL GARAGE SLABS-ON-GRADE SHALL OBTAIN A 28-DAY STRENGTH f'c OF 4500 PSI IN ACCORDANCE WITH ACI 318 TABLE 19.3.2.1 AND IBC SECTION 1904.1. THIS INCREASE IN REQUIRED STRENGTH IS FOR DURABILITY ONLY (SPECIAL INSPECTION IS NOT REQUIRED). ALL CONCRETE TO RECEIVE A STEEL TROWELED FINISH SHALL NOT BE AIR-ENTRAINED.

20. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, fy = 60,000 PSI. GRADE 60 REINFORCING STEEL INDICATED ON DRAWINGS TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCING STEEL COMPLYING WITH ASTM A615 (S1) MAY BE WELDED ONLY IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN A.M.S. D1.4 ARE SUBMITTED.

LONGITUDINAL REINFORCING STEEL IN DUCTILE FRAME MEMBERS AND IN SHEAR WALL BOUNDARY MEMBERS SHALL COMPLY WITH ASTM A706. ASTM A615 GRADE 60 REINFORCING STEEL IS ALLOWED IN THESE MEMBERS IF (A) THE ACTUAL YIELD STRENGTH BASED ON MILL TESTS DOES NOT EXCEED THE SPECIFIED YIELD STRENGTH BY MORE THAN 18,000 PSI (RETESTS SHALL NOT EXCEED THIS VALUE BY MORE THAN AN ADDITIONAL 3,000 PSI) AND (B) THE RATIO OF THE ACTUAL ULTIMATE TENSILE STRESS TO THE ACTUAL TENSILE YIELD STRENGTH IS NOT LESS THAN 1.25.

21. REINFORCING STEEL SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315 AND 318. LAP ALL REINFORCEMENTS IN ACCORDANCE WITH "THE REINFORCING SPLICE AND DEVELOPMENT LENGTH SCHEDULE." PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 6" AT SIDES AND ENDS.

NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER. NO REINFORCING BARS SHALL BE "WET-SET" INTO THE CONCRETE. PROVIDE A 20' LONG REBAR GROUND (UPPER GROUND) PER ELECTRICIAN.

22. SYNTHETIC FIBER REINFORCEMENT SHALL BE FIBERMESH 300 POLYPROPYLENE FIBRILLATED FIBERS AS MANUFACTURED BY SIKA CORPORATION IN ACCORDANCE WITH ASTM C1116. FIBER LENGTH SHALL BE GRADED (VARIABLE LENGTHS). ADD SYNTHETIC FIBER REINFORCEMENT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AT A MINIMUM APPLICATION RATE OF 15 POUNDS PER CUBIC YARD OF CONCRETE. SUBSTITUTIONS PROPOSED BY CONTRACTOR SHALL BE SUBMITTED FOR REVIEW.

23. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST EARTH	3"
FORMED SURFACES EXPOSED TO EARTH (i.e. WALLS BELOW GROUND) OR WEATHER SLABS AND WALLS (INTERIOR FACE)	2"
	1"

24. NON-SHRINK GROUT SHALL BE NON-METALLIC CONFORMING TO ASTM C1107 AND BE FURNISHED BY AN APPROVED MANUFACTURER AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (5000 PSI MINIMUM).

ANCHORAGE

25. EXPANSION BOLTS INTO CONCRETE SHALL BE "STRONG-BOLT 2 WEDGE ANCHOR", AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-3031 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR ALL EXPANSION BOLT INSTALLATION.

26. SCREW ANCHORS INTO GROUT FILLED CMU SHALL BE "TITEN HD", AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-1056 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS NOT REQUIRED FOR ALL SCREW ANCHOR INSTALLATION.

27. SCREW ANCHORS INTO CONCRETE SHALL BE "TITEN HD", AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-2113 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR ALL SCREW ANCHOR INSTALLATION.

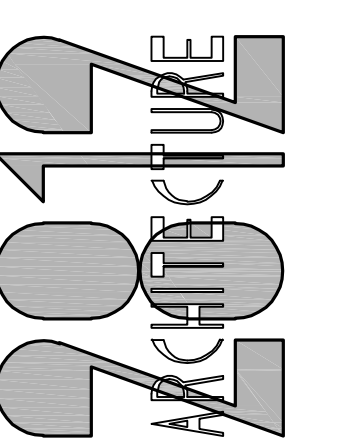
28. DRIVE PINS, SHOT PINS AND OTHER POWDER-ACTUATED FASTENERS SHALL BE LOW VELOCITY TYPE FASTENERS AS MANUFACTURED BY HILTI CORPORATION. WHEN CALLED FOR IN THE DRAWINGS, PROVIDE THE APPROPRIATE FASTENER AS NOTED IN THE TABLE BELOW FOR EACH GIVEN APPLICATION. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORTS NO. ESR-2264 FOR THE X-U FASTENERS AND ESR-2374 FOR THE X-CP FASTENERS. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1" UNLESS OTHERWISE NOTED. MAINTAIN AT LEAST 3" TO NEAREST CONCRETE EDGE AND 4" CENTER TO CENTER SPACING. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES.

ALLOWABLE APPLICATION	ALLOWABLE FASTENER TYPE	SHEAR CAPACITY (LBS)	TENSION CAPACITY (LBS)
LIGHT GAUGE STEEL 33 MILS (20 GA.) MIN. TO CONCRETE (2000 PSI MIN.)	X-U 27 P8 S15	190	165
LIGHT GAUGE STEEL 43 & 33 MILS (18 & 20 GA.) TO STRUCTURAL STEEL (3/16" MIN. TO 1/16" MAX)	X-U 19 P8 TH	445	360



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LIGHT GAUGE STEEL 97, 60 & 54 MILS (12, 14 & 16 GA.) TO STRUCTURAL STEEL (3/16" MIN. TO 11/16" MAX)	X-U 19 PB TH	720	535
LIGHT GAUGE STEEL (ALL GA.) TO STRUCTURAL STEEL (3/4" AND GREATER)	X-U 19 PB TH	350	375

29. EPOXY-GROUTED ITEMS (THREADED RODS OR REINFORCING BAR) INTO CONCRETE SHALL BE INSTALLED USING "AT-XP" ADHESIVE AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH IAFMO UES REPORT NO. ER-263, INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAFMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION OF INSTALLATION IS REQUIRED.

MASONRY

30. CONCRETE MASONRY UNIT WALLS SHALL BE CONSTRUCTED OF MEDIUM WEIGHT UNITS CONFORMING TO ASTM C90, LAID IN A RUNNING BOND. CONTACT ENGINEER FOR RE-DESIGN OF REINFORCING WHERE STACK BOND LAYOUT IS REQUIRED. LINEAR SHRINKAGE SHALL NOT EXCEED 0.065%. MORTAR SHALL BE TYPE "S" IN ACCORDANCE WITH ASTM C270. GROUT SHALL CONFORM TO IBC REQUIREMENTS AND ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI AT 28 DAYS, DESIGN F'm = 2,000 PSI. FULL STRESSES ARE REQUIRED. STRENGTH SHALL BE VERIFIED BY THE UNIT STRENGTH METHOD IN ACCORDANCE WITH TMS 602-16.

UNLESS NOTED OTHERWISE, PROVIDE THE FOLLOWING REINFORCEMENT:

WALL THICKNESS	VERTICAL BARS	HORIZONTAL BARS
4" WALLS	#4 @ 48" O.C.	3/16" DIA. WIRE JOINT REINFORCING AT 8" O.C.
6" WALLS	#4 @ 48" O.C.	(2) #4 @ 48" O.C.
8" WALLS	#5 @ 48" O.C.	(2) #4 @ 48" O.C.
10" WALLS	#5 @ 40" O.C.	(2) #5 @ 48" O.C.
12" WALLS	#5 @ 32" O.C.	(2) #5 @ 40" O.C.

IN ADDITION, PROVIDE (2) #5 ((2)#4 @ 6" AND 4" WALLS) VERT. AT EACH SIDE OF OPENINGS, AT WALL CORNERS AND INTERSECTIONS AND AT FREE ENDS OF WALLS AND (2) #4 HORIZ. AT ELEVATED FLOOR AND ROOF LEVELS, AT TOPS OF WALLS AND ABOVE AND BELOW ALL OPENINGS. ALL HORIZONTAL REINFORCEMENT SHALL BE PLACED IN BOND BEAMS. EXTEND REINFORCEMENT AROUND OPENINGS 2'-0" BEYOND FACE OF OPENING. IF 2'-0" IS UNAVAILABLE, EXTEND AS FAR AS POSSIBLE AND HOOK. PROVIDE CORNER BARS TO LAP HORIZONTAL REINFORCING AT CORNERS AND INTERSECTIONS. UNLESS NOTED OTHERWISE, LAP ALL REINFORCING STEEL IN CMU 48 BAR DIAMETERS, 2'-0" MINIMUM.

ALL CELLS ARE TO BE SOLID GROUTED UNLESS NOTED AS PARTIAL GROUTING. FOR PARTIAL GROUTING FILL ALL CELLS CONTAINING REINFORCEMENT OR EMBEDDED ITEMS AND ALL CELLS BELOW GRADE WITH GROUT. ALL REINFORCEMENT SHALL BE IN PLACE PRIOR TO GROUTING AND SHALL BE HELD AT TOP, BOTTOM AND 1/2 BAR DIAMETERS (MAX.) O.C. PER TMS 602 SPECIFICATION 3.5. GROUT POURS SHALL NOT EXCEED 5'-4" IN HEIGHT UNLESS A TEST PANEL IS CONSTRUCTED BY THE MASON AND APPROVED BY THE STRUCTURAL ENGINEER. PROVIDE CLEANOUT HOLES AT BOTTOM OF ALL CELLS CONTAINING REINFORCEMENT FOR ALL GROUT POURS OVER 5'-4" IN HEIGHT. PROVIDE 1 1/2 IN. GROUT KEYS BETWEEN EACH POUR.

31. HOLLOW CLAY BRICK UNIT WALLS SHALL BE CONSTRUCTED OF GRADE SW UNITS CONFORMING TO ASTM C652 (GRADE MW MODERATE WEATHERING BRICK MAY BE USED WHERE THERE IS NO EXPOSURE TO WEATHER OR FREEZING TEMPERATURES) AND SHALL BE LAID UP IN A RUNNING BOND. CONTACT ENGINEER FOR RE-DESIGN OF REINFORCING WHERE STACK BOND LAYOUT IS REQUIRED. MORTAR SHALL BE TYPE "S" IN ACCORDANCE WITH ASTM C270. GROUT SHALL CONFORM TO IBC REQUIREMENTS AND ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI AT 28 DAYS, DESIGN F'm = 2,000 PSI. STRENGTH SHALL BE VERIFIED BY THE UNIT STRENGTH METHOD IN ACCORDANCE WITH TMS 602-16.

UNLESS NOTED OTHERWISE, PROVIDE THE FOLLOWING REINFORCEMENT:

WALL THICKNESS	VERTICAL BARS	HORIZONTAL BARS
8" WALLS	#5 @ 48" O.C.	(2) #4 @ 48" O.C.

IN ADDITION, PROVIDE (2) #5 ((2)#4 @ 6" WALLS) VERT. AT EACH SIDE OF OPENINGS, AT WALL CORNERS AND INTERSECTIONS AND AT FREE ENDS OF WALLS AND (2) #4 (#4 @ 6" WALLS) HORIZ. AT ELEVATED FLOOR AND ROOF LEVELS, AT TOPS OF WALLS AND ABOVE AND BELOW ALL OPENINGS. ALL HORIZONTAL REINFORCEMENT SHALL BE PLACED IN BOND BEAMS. EXTEND ALL REINFORCEMENT AROUND OPENINGS 2'-0" BEYOND FACE OF OPENING. IF 2'-0" IS UNAVAILABLE, EXTEND AS FAR AS POSSIBLE AND HOOK. PROVIDE CORNER BARS TO LAP HORIZONTAL REINFORCING AT CORNERS AND INTERSECTIONS. UNLESS NOTED OTHERWISE, LAP ALL REINFORCING STEEL IN CMU 48 BAR DIAMETERS, 2'-0" MINIMUM.

ALL CELLS ARE TO BE SOLID GROUTED UNLESS NOTED AS PARTIAL GROUTING. FOR PARTIAL GROUTING FILL ALL CELLS CONTAINING REINFORCEMENT OR EMBEDDED ITEMS AND ALL CELLS BELOW GRADE WITH GROUT. ALL REINFORCEMENT SHALL BE IN PLACE PRIOR TO GROUTING AND SHALL BE HELD AT TOP, BOTTOM AND 1/2 BAR DIAMETERS (MAX.) O.C. PER TMS 602 SPECIFICATION 3.5. GROUT POURS SHALL NOT EXCEED 5'-4" IN HEIGHT UNLESS A TEST PANEL IS CONSTRUCTED BY THE MASON AND APPROVED BY THE STRUCTURAL ENGINEER. PROVIDE CLEANOUT HOLES AT BOTTOM OF ALL CELLS CONTAINING REINFORCEMENT FOR ALL GROUT POURS OVER 5'-4" IN HEIGHT. PROVIDE 1 1/2 IN. GROUT KEYS BETWEEN EACH POUR.

STEEL

32. STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION SHALL BE BASED ON THE LATEST EDITIONS OF THE A.I.S.C. SPECIFICATIONS AND CODES:

- A. AISC - STEEL CONSTRUCTION MANUAL, 15TH EDITION
- B. AISC 303-16 - CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
- C. 2014 RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS.

33. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

TYPE OF MEMBER	ASTM SPECIFICATION	F _y
A. WIDE FLANGE (W AND WT) SHAPES	A492	50 KSI
B. ALL OTHER SHAPES	A36	36 KSI
C. PLATE	A36 OR A572	36 KSI (MIN)
D. PIPE SECTIONS	A500 (GRADE C)	46 KSI

E. STRUCTURAL TUBING (SQUARE OR RECTANGULAR)	A500 (GRADE C)	50 KSI
F. ANCHOR BOLTS AND THREADED RODS (EMBEDDED IN MASONRY OR CONCRETE)	F1554 (GRADE 36) OR F1554 (GRADE 55, SUPP. 51)	36 KSI / 55 KSI
G. CONNECTION BOLTS (7/8" ROUND, UNLESS SHOWN OTHERWISE)	F3125 GRADE A325-N	42 KSI
G. CONNECTION BOLTS (3/4" ROUND, UNLESS SHOWN OTHERWISE)	A307	36 KSI
H. HEADED SHEAR STUDS	A108	44 KSI
I. THREADED RODS	A36	36 KSI
J. STAINLESS STEEL	A191 316L	30 KSI

SUBSTITUTION OF MEMBER SIZES OR STEEL GRADE SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL OF THE ENGINEER. STEEL BEAMS ARE EQUALLY SPACED BETWEEN DIMENSIONED POINTS. ALL STEEL ANCHORS AND TIES AND OTHER MEMBERS EMBEDDED IN CONCRETE OR MASONRY SHALL BE LEFT UNPAINTED. ALL STEEL TO BE FIREPROOFED SHALL BE LEFT UNPAINTED. ALL OTHER STEEL SHALL HAVE ONE COAT OF APPROVED SHOP PAINT.

STRUCTURAL STEEL AND CONNECTIONS EXPOSED TO WEATHER OR EARTH SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION IN COMPLIANCE WITH ASTM A123. GALVANIZE BOLTS AND SIMILAR THREADED FASTENERS EXPOSED TO WEATHER OR EARTH IN ACCORDANCE WITH ASTM A153. ALL FIELD WELDS EXPOSED TO WEATHER OR EARTH SHALL BE COATED WITH BRUSH APPLIED ZINC RICH PAINT COMPLYING WITH ASTM A780 (Z.R.C. OR EQUIVALENT).

A MINIMUM OF TWO BOLTS ARE REQUIRED FOR ALL CONNECTIONS. ALTERNATE CONNECTIONS TO THOSE SHOWN ON THESE DRAWINGS WILL REQUIRE PRIOR APPROVAL OF THE ENGINEER.

ALL MEMBERS ARE TO BE ERECTED WITH THE NATURAL MILL CAMBER OR INDUCED CAMBER UP, UNLESS OTHERWISE NOTED ON THE DRAWINGS. BEAM CAMBER ON THE DRAWINGS IS THE UPWARD CAMBER REQUIRED IN THE BEAM AS DELIVERED TO THE JOBSITE. CONTRACTOR TO CONSIDER CAMBER LOSS, IF ANY, DUE TO SHIPPING AND HANDLING.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ERECTION AIDS AND JOINT PREPARATIONS THAT INCLUDE, BUT ARE NOT LIMITED TO, ERECTION ANGLES, LIFT HOLES, AND OTHER AIDS, WELDING PROCEDURES, REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPEES, SURFACE ROUGHNESS VALUES AND UNEQUAL PARTS.

34. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL SHALL CONFORM TO SECTION 10 OF THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.

35. ALL A325 CONNECTION BOLTS SHALL BE INSTALLED TO THE SNUG-TIGHT CONDITION PER RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. ALL NUTS SHALL CONFORM TO ASTM A563. ALL WASHERS SHALL CONFORM TO ASTM F436 OR ASTM F494 TYPE 325. ALL BOLT HOLES SHALL BE STANDARD SIZE UNLESS OTHERWISE NOTED.

36. ALL A325 CONNECTION BOLTS AT MEMBERS WHICH ARE PART OF THE LATERAL FORCE RESISTING SYSTEM SHALL BE INSTALLED TO THE SLIP-CRITICAL CONDITION PER RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. ALL FAYING SURFACES SHALL BE PREPARED AS CLASS A PER THE AISC SPECIFICATION. ALL NUTS SHALL CONFORM TO ASTM A563. ALL WASHERS SHALL CONFORM TO ASTM F436 OR ASTM F494 TYPE 325. ALL BOLT HOLES SHALL BE STANDARD SIZE UNLESS OTHERWISE NOTED.

37. ALL A307 CONNECTION BOLTS SHALL BE PROVIDED WITH LOCK WASHERS UNDER NUTS OR SELF-LOCKING NUTS. ALL BOLT HOLES SHALL BE STANDARD SIZE UNLESS OTHERWISE NOTED.

38. OPEN WEB STEEL JOISTS (INCLUDING BRIDGINGS) SHALL CONFORM TO IBC SECTION 2207 AND THE SPECIFICATIONS OF THE STEEL JOIST INSTITUTE (SJI), LATEST EDITION, FOR THE JOIST SERIES DESIGNATED ON THE PLANS AND THE LOADING BELOW (EXCEPT AS SHOWN ON THE LOAD DIAGRAMS DESIGNATED ON THE PLANS):

LIVE (SNOW) LOAD	25 PSF
DEAD LOAD	20 PSF
TOTAL LOAD	45 PSF

NET WIND UPLIFT (ENCLOSED BUILDINGS) 10 PSF
NET WIND UPLIFT (OPEN ROOF / OVERHANGS) 15 PSF

MAXIMUM TOTAL DEFLECTION SHALL BE LESS THAN OR EQUAL TO L/240 OF THE TOTAL SPAN AND MAXIMUM LIVE LOAD DEFLECTION SHALL BE LESS THAN OR EQUAL TO L/360 OF THE TOTAL SPAN. PROVIDE ADDITIONAL TRUSSES (AS REQUIRED) TO CARRY ALL CONCENTRATED LOADS AND MECHANICAL UNITS.

ENDS OF BRIDGING ROWS SHALL BE FIELD WELDED TO STRUCTURAL STEEL MEMBERS OR TO PLATES EMBEDDED IN CONCRETE OR MASONRY UNLESS DETAILED OTHERWISE. JOIST MANUFACTURER SHALL CHECK ROOF JOIST AND PROVIDE UPLIFT BRIDGING AS REQUIRED TO ADEQUATELY BRACE THE BOTTOM CHORD AGAINST LATERAL MOVEMENT UNDER WIND UPLIFT PRESSURES (SEE DESIGN CRITERIA NOTE FOR WIND CRITERIA). JOIST BOTTOM CHORD EXTENSIONS AND TOP CHORD ERECTION BOLT HOLES SHALL BE PROVIDED AT ALL COLUMNS TO MEET OSHA REQUIREMENTS.

THE JOIST MANUFACTURER SHALL BE A MEMBER OF THE SJI AND SHALL FURNISH TO THE BUILDING OFFICIAL A CERTIFICATE INDICATING COMPLIANCE WITH IBC SECTION 2207 AND WHICH ALSO IDENTIFIES THE JOISTS DELIVERED FOR THIS SPECIFIC PROJECT.

DETAILED DRAWINGS INDICATING CHORD AND WEB SIZES AND ALL CONNECTIONS SHALL BE SUBMITTED FOR EACH JOIST TYPE TO THE ENGINEER OF RECORD FOR REVIEW PRIOR TO FABRICATION.

39. JOIST MANUFACTURER'S NOTE: THE JOIST CONFIGURATIONS, INCLUDING SPACING, DEPTH AND MEMBER SIZES SHOWN ON THE DRAWINGS, INDICATE THE DESIRED JOIST CONFIGURATIONS AND ARE TO BE COMPLIED WITH WHEREVER POSSIBLE. IF A JOIST MANUFACTURER IS UNABLE TO MEET THE LOAD REQUIREMENTS SPECIFIED WITH THE TRUSS CONFIGURATION INDICATED, THE MANUFACTURER IS TO SUBMIT WRITTEN NOTICE TO THAT AFFECT TO THE ARCHITECT PRIOR TO SUBMITTING A COST PROPOSAL OR BID.

IF A DIFFERENT SYSTEM IS PROPOSED THAT REQUIRES REVISIONS TO PRESENT STRUCTURAL FRAMING OR DETAILS, SUCH SYSTEM SHALL BE CONSIDERED SUBJECT TO THE APPROVAL OF THE OWNER, ARCHITECT, AND STRUCTURAL ENGINEER.

IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND JOIST MANUFACTURER TO VERIFY THE WEIGHT AND LOCATIONS OF ALL MECHANICAL EQUIPMENT PRIOR TO SUBMITTING SHOP DRAWINGS. IT SHALL BE NOTED IN THE JOIST MANUFACTURER'S BID WHETHER OR NOT AN ALLOWANCE HAS BEEN MADE FOR MECHANICAL UNITS.

JOIST SHOP DRAWINGS WILL NOT BE REVIEWED WITHOUT CALCULATIONS STAMPED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF WASHINGTON.

40. ALL WELDING SHALL BE IN CONFORMANCE WITH A.I.S.C. AND A.M.S. STANDARDS AND SHALL BE PERFORMED BY W.A.B.O. CERTIFIED WELDERS USING E70 XX ELECTRODES. ONLY PREQUALIFIED WELDS (AS DEFINED BY A.M.S.) SHALL BE USED. WELDING OF GRADE 60 REINFORCING BARS (IF REQUIRED) SHALL BE PERFORMED USING LOW HYDROGEN ELECTRODES. WELDING OF GRADE 40 REINFORCING BARS (IF REQUIRED) SHALL BE PERFORMED USING E70XX ELECTRODES. WELDING WITHIN 4" OF COLD BENDS IN REINFORCING STEEL IS NOT PERMITTED. SEE REINFORCING NOTE FOR MATERIAL REQUIREMENTS OF WELDED BARS. ALL WELDING OF STAINLESS STEEL SHALL USE E309 ELECTRODES WITH A GMAW PROCESS. ALL WELDING SHALL BE PERFORMED BY WELDERS WITH AWS / W.A.B.O. CERTIFICATION WITH THE MATERIAL AND METHOD REQUIRED.

SHOP DRAWINGS SHALL SHOW ALL WELDING WITH AWS A2.4 SYMBOLS. WELDS SHOWN ON DRAWINGS ARE MINIMUM SIZES. INCREASE WELD SIZE TO AVERAGE MINIMUM SIZES BASED ON PLATE THICKNESS. MINIMUM WELDING SHALL BE 3/16-INCH. THE WELDS SHOWN ARE FOR THE FINAL CONNECTIONS. FIELD WELD ARROWS ARE SHOWN WHERE A FIELD WELD IS REQUIRED BY THE STRUCTURAL DESIGN; THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING IF A WELD SHOULD BE SHOP OR FIELD WELDED IN ORDER TO FACILITATE THE STRUCTURAL STEEL DELIVERY AND ERECTION. SEE THE SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL WELDING REQUIREMENTS, ESPECIALLY AT SPECIAL MOMENT RESISTING FRAMES AND OTHER SEISMIC CRITICAL WELDS.

41. WELDING OF LATERAL FORCE RESISTING MEMBERS SHALL BE PERFORMED IN ACCORDANCE WITH A WELDING PROCEDURE SPECIFICATION (WPS) AS REQUIRED IN AWS D11 AND APPROVED BY THE STRUCTURAL ENGINEER BEFORE WORK BEGINS. THE WPS VARIABLES SHALL BE WITHIN THE PARAMETERS ESTABLISHED BY THE FILLER METAL MANUFACTURER. WELDING ELECTRODES SHALL BE E70T6-K2 OR E70T6 WITH A MINIMUM SPECIFIED CHARPY V-NOTCH (CVN) OF 20 FT-LBS AT -20 DEGREES FAHRENHEIT AND 40 FT-LBS AT 0 DEGREES FAHRENHEIT. REMOVE BOTTOM FLANGE WELD TAB AT MOMENT FRAME CONNECTIONS AND REINFORCE WITH 5/16" FILLET WELD IN CONFORMANCE WITH FEMA-353 RECOMMENDATIONS. WELD ACCESS HOLE DETAILING AT MOMENT FRAME CONNECTIONS SHALL CONFORM WITH FEMA-350 AND FEMA-353 RECOMMENDATIONS.

42. METAL FLOOR AND ROOF DECKING - PROVIDE SIZE, TYPE, GAUGE, AND ATTACHMENT TO THE SUPPORTING STRUCTURE AS SHOWN ON THE PLANS. ALTERNATES MUST BE CONNECTED ACCORDING TO PUBLISHED I.C.C. OR IAFMO UES CRITERIA FOR DIAPHRAGM SHEARS SHOWN. PROVIDE SHORING WHERE REQUIRED PER MANUFACTURER'S PUBLISHED CRITERIA. ALL DECKING SHALL CONFORM TO THE REQUIREMENTS OF THE STEEL DECK INSTITUTE.

43. HEADED STUDS FOR COMPOSITE CONNECTION OF STRUCTURAL STEEL TO CAST-IN-PLACE CONCRETE SHALL BE MANUFACTURED FROM MATERIAL CONFORMING TO ASTM A108 AND SHALL BE WELDED IN CONFORMANCE WITH A.M.S. REQUIREMENTS.

44. DEFORMED BAR ANCHORS (DBA) SHALL BE TYPE D2L ANCHORS BY NELSON STUD WELDING DIVISION, TRM ASSEMBLIES AND FASTENERS GROUP (OR EQUIVALENT). ANCHORS SHALL BE MADE FROM COLD ROLLED, DEFORMED STEEL CONFORMING TO ASTM A1064.

45. COLD-FORMED STEEL FRAMING NOTES - THE FOLLOWING APPLY UNLESS OTHERWISE SHOWN ON THE PLANS:

A. COLD-FORMED STEEL FRAMING MEMBERS SHALL BE OF THE SHAPE, SIZE, AND GAUGE SHOWN ON THE PLANS. ALL FRAMING MEMBERS SHALL COMPLY WITH I.C.C. REPORT NO. ESR-3064P. NOTATIONS ON THE DRAWINGS, RELATING TO MEMBER TYPES AND SIZES OR MISCELLANEOUS FRAMING ITEMS, REFER TO CATALOG NUMBERS OF MEMBERS MANUFACTURED BY THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA). PRODUCTS BY OTHER MANUFACTURERS MAY BE SUBSTITUTED FOR FRAMING SHOWN, PROVIDED THEY ARE EQUIVALENT IN SHAPE, SIZE, STIFFNESS, AND STRENGTH. ALTERNATE FRAMING SHALL BE SUBJECT TO REVIEW BY THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO FABRICATION. ALL COLD-FORMED STEEL FRAMING SHALL CONFORM TO THE A.I.S.I. "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS."

B. MATERIAL: METAL FRAMING SHALL BE GALVANIZED UNLESS OTHERWISE NOTED, CONFORMING AS FOLLOWS:

ASTM A653 S5 GRADE 50, CLASS 1 OR 3	F _y = 50 KSI	110, 97, 60, AND 54 MIL
ASTM A653 S5 GRADE 33	F _y = 33 KSI	43 AND 33 MIL

WHERE NOTED, PAINTED STUDS SHALL CONFORM TO:
ASTM A1011 S5 GRADE 50 F_y = 50 KSI 110, 97, 60, AND 54 MIL

C. WELDING OF COLD-FORMED METAL FRAMING SHALL CONFORM TO AWS D13 AND SHALL BE PERFORMED BY WELDERS QUALIFIED TO PRODUCE THE SPECIFIED CLASSES OF WELD.

D. WALL FRAMING: ALL STUD WALLS SHOWN AND NOT OTHERWISE NOTED SHALL BE 4005162-43 @ 16" O.C. AT INTERIOR WALLS AND 6005162-43 AT 16" O.C. AT EXTERIOR WALLS. TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL WALLS AND AT EACH SIDE OF ALL OPENINGS. TWO 6005162-54 HEADERS SHALL BE PROVIDED OVER ALL OPENINGS UNLESS OTHERWISE NOTED. JOISTS SHALL BE LOCATED DIRECTLY OVER BEARING STUDS. SOLID BLOCKING FOR MULTI-STUD OR STEEL COLUMNS SHALL BE PROVIDED THROUGH FLOORS TO SUPPORTS BELOW. PROVIDE CONTINUOUS FULL WIDTH BLOCKING AT 1/3 POINTS OF ALL STUD WALLS UNLESS NOTED OTHERWISE. MAXIMUM GAP BETWEEN STUD AND TRACK AT ANY POINT SHALL NOT EXCEED 1/16-INCH. NO SPLICES ARE PERMITTED IN STUDS.

ALL STUD WALLS SHALL HAVE THEIR BOTTOM TRACKS ATTACHED TO FRAMING BELOW WITH #10 SCREWS AT 16" O.C. OR ATTACHED TO CONCRETE WITH 5/32" DIAMETER DRIVE-PINS @ 16" O.C. UNLESS INDICATED OTHERWISE. INDIVIDUAL MEMBERS OF BUILT-UP POSTS SHALL BE WELDED OR SCREWED TO EACH OTHER IN ACCORDANCE WITH THE DETAILS. REFER TO THE PLANS AND SHEAR WALL SCHEDULE FOR REQUIRED SHEATHING AND STRAP BRACING. WHEN NOT OTHERWISE NOTED, PROVIDE GYPSUM WALLBOARD ON INTERIOR SURFACES AND GYPSUM SHEATHING ON EXTERIOR SURFACES SCREWED TO ALL STUDS, TOP AND BOTTOM TRACKS, AND BLOCKING WITH SCREWS AT 12" O.C. ALL SCREWS SHALL BE "GRABBER" TYPE FASTENERS COMPLYING WITH I.C.C. REPORT NO. ESR-1271. ALL SPECIFIED PNEUMATIC FASTENERS SHALL BE ET#F, COMPLYING WITH I.C.C. REPORT NO. ESR-1177.

ALL BEARING STUDS SHALL BE LATERALLY SUPPORTED TO PREVENT WEAK AXIS BUCKLING WITH A CENTER U-CHANNEL AT 1/3 POINTS AS SHOWN IN THE DETAILS AND CONNECTING EACH FLANGE TO GYPSUM WALLBOARD PER IBC SECTION 2508.1.

TRACK SECTIONS SHALL BE UNPUNCHED AND HAVE AT LEAST 1" FLANGES AND MATCH STUD THICKNESS.

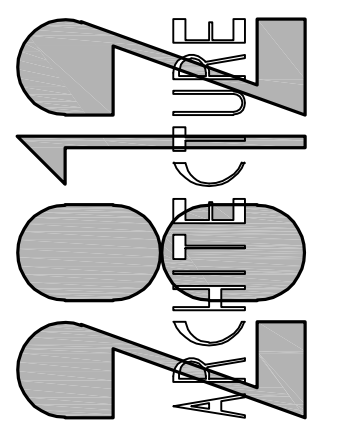
WALLS WHICH HAVE SHEATHING CONNECTED ON ONE SIDE ONLY SHALL HAVE UNSHEATHED FLANGES LATERALLY SUPPORTED IN ACCORDANCE WITH THE DETAILS.

46. SURE-BOARD SERIES 200 STRUCTURAL PANELS SHALL BE FABRICATED BY CEMCO (INTERMAT) AND INSTALLED IN STRICT ACCORDANCE WITH IAFMO UES REPORT NO. ER-126, UNLESS OTHERWISE NOTED ON THE PLANS. PANELS SHALL BE LAID UP WITH THE LONG DIMENSION PARALLEL TO THE WALL STUDS WITH THE STEEL FACE OF THE PANELS IN DIRECT CONTACT WITH THE WALL STUDS. BLOCK ALL PANEL EDGES. PROVIDE DOUBLE (BACK-TO-BACK) STUDS AT ALL WALL ENDS. WHERE NOT NOTED OTHERWISE, FASTEN PANEL EDGES WITH #8 SCREWS @ 6" O.C. EDGES, 12" O.C. IN THE FIELD. SUBSTITUTIONS PROPOSED BY CONTRACTOR SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAFMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR SURE-BOARD PANEL INSTALLATION.

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47. METAL BUILDING SYSTEM (MBS)

- A. BUILDING MANUFACTURER SHALL DESIGN BUILDINGS FOR THE LOADS, SPANS AND CONDITIONS SHOWN ON THESE DRAWINGS.
- B. ALL COLUMNS SHALL BE DESIGNED ASSUMING THEY ARE FREE TO ROTATE, DO NOT FIX COLUMN BASES.
- C. DESIGN AND PROVIDE SUPPORTS AROUND OVERHEAD DOORS. A MINIMUM COLLATERAL LOADING OF 5 PSF SHALL BE INCLUDED IN THE DESIGN OF THE ROOF TO ACCOUNT FOR MISCELLANEOUS DEAD LOAD. THE LATERAL DRIFT OF THE BUILDING SHALL BE LIMITED TO 0.02H, WHERE H IS THE HEIGHT OF THE BUILDING. ALL ROOF MEMBERS SHALL BE LIMITED TO A MAXIMUM TOTAL DEFLECTION OF L/180.
- D. COORDINATE ALL DETAILS WHICH ARE SHOWN ON THESE DRAWINGS WITH THE PREFABRICATED BUILDING DESIGN.
- E. COORDINATE THE FINAL FOUNDATION LOADING AND BASE PLATE CONFIGURATION WITH THE STRUCTURAL ENGINEER. FOUNDATION DESIGN SHOWN IN THESE PLANS MAY NEED TO BE REVISED BASED UPON THE FINAL DESIGN AND/OR COLUMN LOCATIONS.
- F. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. DESIGN SUBMITTALS SHALL BEAR THE STAMP AND SIGNATURE OF A STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER. THE BUILDING MANUFACTURER IS RESPONSIBLE FOR CODE CONFORMANCE AND ALL NECESSARY CONNECTIONS NOT SPECIFICALLY CALLED OUT ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS. SHOP DRAWINGS SHALL INDICATE MAGNITUDE AND DIRECTION OF ALL LOADS IMPOSED ON THE BASIC STRUCTURE.

STRUCTURAL OBSERVATION

AS NOTED IN IBC SECTION 1704.6, STRUCTURAL OBSERVATION IS REQUIRED FOR THIS PROJECT. STRUCTURAL OBSERVATION MEANS THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM, INCLUDING BUT NOT LIMITED TO, THE ELEMENTS AND CONNECTIONS AT SIGNIFICANT CONSTRUCTION STAGES AND THE COMPLETED STRUCTURE FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY OF THE INSPECTIONS REQUIRED BY IBC SECTIONS 110 AND 1704.

IN OUR STRUCTURAL OBSERVATION, WE WILL SELECT PORTIONS OF WORK TO REVIEW CLOSELY AS WELL AS OBSERVE THE STRUCTURAL SYSTEM FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. SUCH REVIEW PROCEDURES WILL BE CONDUCTED IN ACCORDANCE WITH COMMONLY ACCEPTED STANDARDS OF PRACTICE. THE BUILDING OFFICIAL UNDERSTANDS THAT SUCH PROCEDURES INDICATE ACTUAL CONDITIONS ONLY WHERE THE REVIEW IS PERFORMED AND THAT THE RESULTS WILL BE INFERRED TO EXIST IN OTHER AREAS NOT REVIEWED.

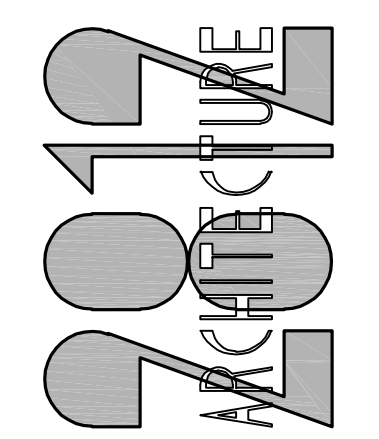
THE BUILDING OFFICIAL ALSO RECOGNIZES THAT STRUCTURAL REVIEW IS A TECHNIQUE EMPLOYED TO MINIMIZE THE RISK OF PROBLEMS ARISING DURING CONSTRUCTION. STRUCTURAL OBSERVATION BY THE DESIGN PROFESSIONAL DOES NOT CONSTITUTE WARRANTY OR GUARANTEE OF ANY TYPE. IN ALL CASES, THE CONTRACTOR SHALL RETAIN RESPONSIBILITY FOR THE QUALITY OF WORK AND FOR ADHERENCE TO THE APPROVED PLANS AND SPECIFICATIONS.

ABBREVIATIONS			
@	At	L	Angle
d	Penny (Nails)	LB.	Pound
∅	Diameter	LL	Live Load
°	Degrees	LLH	Long Leg Horizontal
...#	Founds	LLV	Long Leg Vertical
#...	Number	LONGIT.	Longitudinal
		LT. WT.	Lightweight
(A)	Above		
A.B.	Anchor Bolt	MAX.	Maximum
ADD'L	Additional	MECH.	Mechanical
ALT.	Alternate	MEZZ.	Mezzanine
APPROX.	Approximate	MF	Moment Frame
ARCH.	Architect	MFR.	Manufacturer
		MIN.	Minimum
(B)	Below	MISC.	Miscellaneous
B/	Bottom of	MK.	Mark
BF	Braced Frame		
BLKG.	Blocking	(N)	New
BLDG.	Building	N.	North
BM.	Beam	N.S.	Near Side
BOT.	Bottom	NOM.	Nominal
BRG.	Bearing	NTS	Not to Scale
BTWN.	Between		
		O.C.	On Center
⊕	Centerline	O.D.	Outside Diameter
⊖	Camber	O.F.	Outside Face
CIP	Cast In Place	O.H.	Overhang
C.J.	Construction Joint or Control Joint	OPNG.	Opening
CJP	Complete Joint Penetration	OPP.	Opposite
CLG.	Ceiling		
CLR.	Clear	PAF	Powder Actuated Fastener
CMU	Concrete Masonry Unit	PC	Precast
COL.	Column	PERM.	Permanent
CONC.	Concrete	PERP.	Perpendicular
CONN.	Connections	PJP	Partial Joint Penetration
CONST.	Construction	PL or PL	Plate
CONT.	Continuous	PLF	Pounds per linear Foot
CSK.	Countersink	PLYWD	Plywood
		PREFAB.	Prefabricated
DBA	Deformed Bar Anchor	PSF	Pounds per Square Foot
DBL.	Double	PSI	Pounds per Square Inch
DEG.	Degree	P.T. or PT	Post-Tensioning
DF	Doug Fir-Larch	P/T	Pressure-Treated
DIA.	Diameter		
DIAG.	Diagonal	RAD.	Radius
DIAPH.	Diaphragm	REF.	Reference
DIM.	Dimension	REINF.	Reinforce or Reinforcement
DN.	Down	REQD.	Required
DO	Ditto	REV.	Revise
DTL.	Detail	R.O.	Rough Opening
DWG.	Drawing		
		S.	South
(E)	Existing	SCH. or SCHED.	Schedule
E.	East	SECT.	Section
EA.	Each	SHT.	Sheet
E.F.	Each Face	SIM.	Similar
EL.	Elevation	SOG	Slab On Grade
ELEV.	Elevator	SPEC.	Specification
EMBED.	Embedment Length	SQ.	Square
ENGR.	Engineer	SQ. FT.	Square Feet
EQ.	Equal	SQ. IN.	Square Inch(es)
E.M.	Each Way	SFF	Spruce-Pine-Fir
EXP.	Expansion	S.S.	Stainless Steel
EXT.	Exterior	STD.	Standard
		STIFF.	Stiffener
FDN.	Foundation	STL.	Steel
FIN.	Finish	STR.	Structural
FLR.	Floor	SUB.	Substitute
FRP	Fiber Reinforced Polymer	SYM.	Symmetrical
F.S.	For Side		
FT.	Foot or Feet	T/	Top of
FTG.	Footing	T&B	Top and Bottom
		T&G	Tongue & Groove
GA.	Gauge	TEMP.	Temporary
GALV.	Galvanized	THRU	Through
GL	Glove Laminated	T.O.C.	Top of Concrete
GWB	Gypsum Wall Board	T.O.S.	Top of Steel
		T.O.W.	Top of Wall
HDG	Hot Dipped Galvanized	TRANS.	Transverse
HF	Hem Fir	TS	Tube Steel
HGR.	Hanger	TYP.	Typical
HORIZ.	Horizontal		
HSS	Hollow Structural Section	U.O.N.	Unless Otherwise Noted
HT.	Height		
		VERT.	Vertical
I.D.	Inside Diameter	VIF	Verify in Field
I.F.	Inside Face		
IN.	Inch	W.	West
INFO.	Information	W/ or w/	With
INT.	Interior	W.H.S.	Welded Headed Stud
		W/O	Without
		WP	Work Point
JT.	Joint	W.T.S.	Welded Threaded Stud
		WWF	Welded Wire Fabric
K	Kips		
KSF	Kips per Square Foot	X SECT.	Cross Section
KSI	Kips per Square Inch	X-STR	Extra Strong
		XX-STR	Double Extra Strong

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SPECIAL INSPECTION

(The following apply unless shown otherwise on the plans)

SPECIAL INSPECTION SCHEDULE					
SEE NOTES 1 & 2					
			CONTINUOUS	PERIODIC	REMARKS
FOUNDATION	1	EXCAVATION, GRADING AND FILL	X		BY GEOTECHNICAL ENGINEER
	2	FINAL FOUNDATION PREPARATION	X		BY GEOTECHNICAL ENGINEER
	3	PLACEMENT OF FOUNDATION AND RETAINING WALL BACKFILL	X		BY GEOTECHNICAL ENGINEER
	4	INSTALLATION OF AUGERCAST PILING	X		BY GEOTECHNICAL ENGINEER
	5	PILE DRIVING AND/OR DRILLING OF CAISSONS	X		BY GEOTECHNICAL ENGINEER
	6	INSTALLATION OF AGGREGATE FOUNDATION SYSTEM	X		BY GEOTECHNICAL ENGINEER
CONCRETE	1	INSPECTION OF REINFORCING STEEL, INCLUDING PLACEMENT		X	
	2	INSPECT BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED	X		
	3	VERIFYING USE OF REQUIRED DESIGN MIX		X	
	4	AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X		
	5	INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X		
	6	INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X	
	7	INSPECTION OF EMBED PLATES, BOLTS, AND OTHER EMBEDDED ITEMS PRIOR TO AND DURING PLACEMENT OF CONCRETE		X	
DRILLED IN ANCHORS	1	PLACEMENT OF ADHESIVE ANCHORS, RODS AND DOWELS	X		SEE NOTE 3
	2	PLACEMENT OF EXPANSION AND SCREW ANCHORS		X	SEE NOTE 3
STRUCTURAL STEEL	1	MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:			
		a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS		X	
		b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED		X	
	2	INSPECTION OF HIGH-STRENGTH BOLTING:			
		a. BEARING-TYPE CONNECTIONS		X	
		b. SLIP-CRITICAL CONNECTIONS	X	X	SEE AISC 360-16 SECTIONS M2.5 AND N5.6
	3	MATERIAL VERIFICATION OF STRUCTURAL STEEL:			
		a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS			
		b. MANUFACTURER'S CERTIFIED MILL TEST REPORTS			
	4	MATERIAL VERIFICATION OF WELD FILLER MATERIALS:			
		a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS			
		b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED			
	5	INSPECTION OF WELDING:			
		a. STRUCTURAL STEEL:			
		1) COMPLETE AND PARTIAL PENETRATION GROOVE WELDS	X		SEE NOTE 4
		2) MULTIPASS FILLET WELDS	X		
		3) SINGLE-PASS FILLET WELDS > 5/16"	X		
		4) SINGLE-PASS FILLET WELDS ≤ 5/16"		X	SEE NOTE 5
		5) FLOOR AND DECK WELDS		X	SEE NOTE 5
		b. REINFORCING STEEL:			
		1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706		X	
		2) REINFORCING STEEL-RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL REINFORCED CONCRETE SHEAR WALLS AND SHEAR REINFORCEMENT	X		
		3) SHEAR REINFORCEMENT	X		
	4) OTHER REINFORCING STEEL		X		
	c. OTHER WELDING:				
	1) ANCHORS AND STUDS		X		
	2) STAIR/RAILING SYSTEMS		X		
	3) METAL DECK		X		
	4) LIGHT GAGE METAL FRAMING		X		
6	INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS:			X	
	a. DETAILS SUCH AS BRACING AND STIFFENING				
	b. MEMBER LOCATIONS				
	c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION				

SPECIAL INSPECTION SCHEDULE CONT.					
OPEN-WEB STEEL JOISTS AND JOIST GIRDERS	1	INSTALLATION OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS			
		a. END CONNECTIONS - WELDING OR BOLTED		X	SJI SPECIFICATIONS LISTED IN SECTION 2207.1
		b. BRIDGING - HORIZONTAL OR DIAGONAL		X	
		1) STANDARD BRIDGING		X	SJI SPECIFICATIONS LISTED IN SECTION 2207.1
		2) BRIDGING THAT DIFFERS FROM THE SJI SPECIFICATIONS LISTED IN SECTION 2207.1		X	
COLD FRAMED STEEL FRAMING	1	WELDING		X	
	2	SCREW ATTACHMENT, BOLTING, ANCHORING, AND OTHER FASTENING OF COMPONENTS WITHIN THE SEISMIC-FORCE-RESISTING SYSTEM, INCLUDING STRUTS, BRACES AND HOLDDOWNS		X	
ARCHITECTURAL COMPONENTS	1	DURING ERECTION AND FASTENING OF EXTERIOR CLADDING, INTERIOR NON-BEARING WALLS, AND INTERIOR AND EXTERIOR VENEER		X	SEE NOTE 6
MECHANICAL AND ELECTRICAL COMPONENTS	1	DURING ANCHORAGE OF ELECTRICAL EQUIPMENT FOR EMERGENCY OR STANDBY POWER SYSTEMS		X	
	2	DURING INSTALLATION OF PIPING SYSTEMS INTENDED TO CARRY FLAMMABLE, COMBUSTIBLE OR HIGHLY TOXIC CONTENTS AND THEIR ASSOCIATED MECHANICAL UNITS		X	
APPROVED FABRICATORS	1	APPROVED FABRICATORS MUST SUBMIT CERTIFICATE OF COMPLIANCE FOR ALL OFFSITE FABRICATORS SUCH AS STRUCTURAL STEEL, GLULAMS, PRECAST CONCRETE, ETC.			

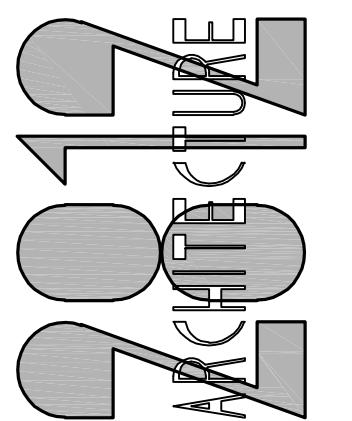
NOTES:

1. THE ITEMS CHECKED WITH AN "X" SHALL BE INSPECTED IN ACCORDANCE WITH IBC CHAPTER 17 BY A CERTIFIED SPECIAL INSPECTOR FROM AN ESTABLISHED TESTING AGENCY. FOR MATERIAL SAMPLING AND TESTING REQUIREMENTS REFER TO THE PROJECT SPECIFICATIONS, THE STRUCTURAL NOTES, AND THE NOTES BELOW. SPECIAL INSPECTION TESTING REQUIREMENTS APPLY EQUALLY TO ALL BIDDER DESIGNED COMPONENTS.
2. CONTINUOUS INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON THE SITE AT ALL TIMES OBSERVING THE WORK REQUIRING SPECIAL INSPECTION (IBC 1702). PERIODIC SPECIAL INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON SITE AT TIME INTERVALS NECESSARY TO CONFIRM THAT ALL WORK REQUIRING SPECIAL INSPECTION IS IN COMPLIANCE.
3. INSPECTION OF DRILLED ANCHORS, INCLUDING EXPANSION AND ADHESIVE GROUTED ANCHORS, WHERE SPECIFIED, SHALL INCLUDE VISUAL VERIFICATION OF DRILLED HOLE DEPTH, SPACING, EDGE DISTANCES AND HOLE CLEANING. FOR GROUTED ANCHORS, GROUT INSTALLATION SHALL BE OBSERVED AND GROUT PRODUCT SPECIFICATION AND PREPARATION SHALL BE VERIFIED.
4. ALL COMPLETE PENETRATION WELDS SHALL BE TESTED ULTRASONICALLY OR AS OTHERWISE SPECIFIED OR BY USING ANOTHER APPROVED METHOD.
5. ALL WELDS SHALL BE VISUALLY INSPECTED.
6. EXCEPTIONS - SPECIAL INSPECTION IS NOT REQUIRED FOR:
 - a) CLADDING AND VENEER WEIGHING 5 PSF OR LESS.
 - b) INTERIOR NON-BEARING WALLS WEIGHING 15 PSF OR LESS.
 - c) ARCHITECTURAL COMPONENTS IN STRUCTURES 30 FEET OR LESS IN HEIGHT.

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Date:	08/08/22			

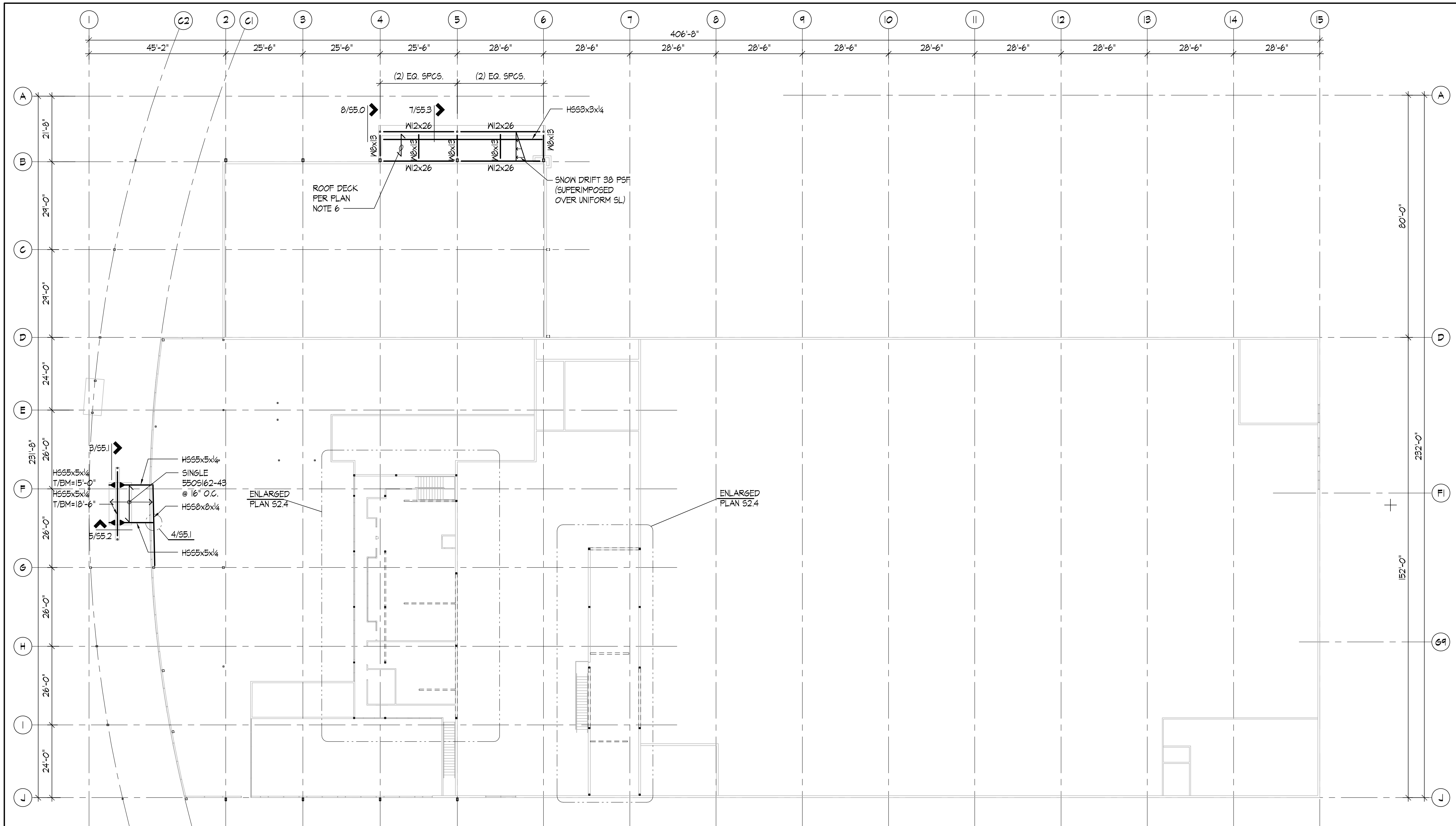


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 SPECIAL INSPECTION

Drawing:
S1.3
 Job Number:
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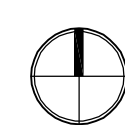


UPPER FLOOR FRAMING PLAN NOTES:

- ALL DIMENSIONS AND ELEVATIONS ON THE STRUCTURAL PLANS ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND MANUFACTURER'S DRAWINGS BEFORE CONSTRUCTION BEGINS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER IMMEDIATELY.
- ALL EXISTING INFORMATION IS ASSUMED AND SHALL BE FIELD VERIFIED. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER IMMEDIATELY.
- FOR STRUCTURAL GENERAL NOTES AND ABBREVIATIONS SEE SHEETS S1.0 TO S1.3.
- TOP OF STRUCTURAL STEEL ELEVATION VARIES. SEE ARCH. PLANS FOR BOTTOM OF DECK ELEVATION.
- SEE 55.0 TO 55.2 FOR TYPICAL STEEL DETAILS. SEE 6/55.0 FOR TYPICAL FRAMING PLAN SYMBOLS.
- TYPICAL ROOF SYSTEM IS 1-1/2" 20 GA. METAL ROOF DECK PER 2/55.3.
- SEE GENERAL STRUCTURAL NOTES FOR OPEN WEB STEEL JOIST AND BRIDGING INFORMATION.

LEGEND:

- INDICATES COLUMN, SIZE CALLED OUT AT BOTTOM OF COLUMN
- INDICATES COLUMN BELOW



UPPER FLOOR & CANOPY FRAMING PLAN

SCALE: 1/16" = 1'-0"

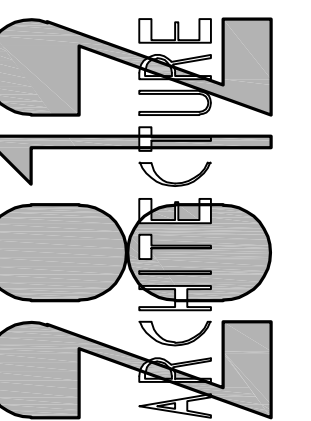
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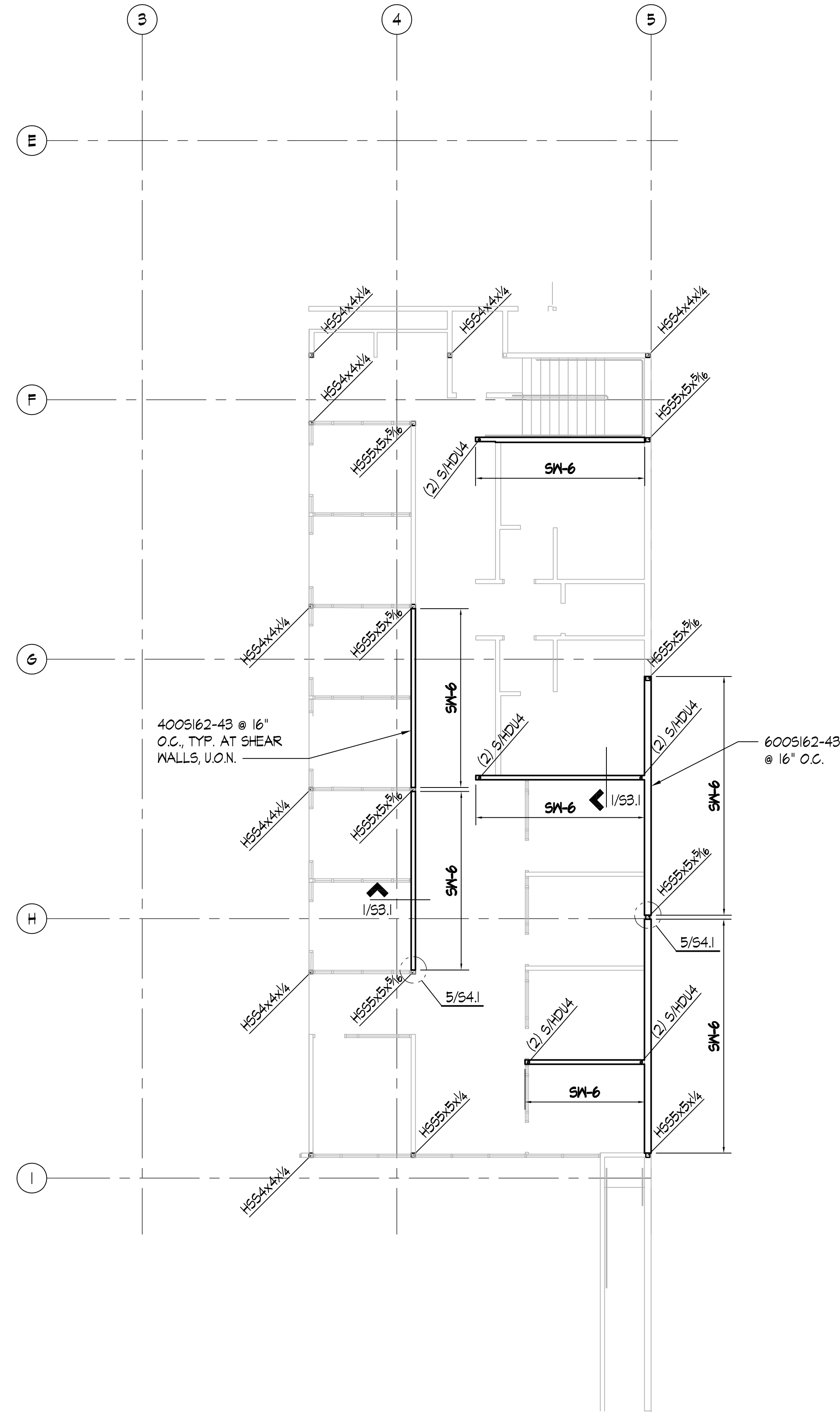
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UPPER FLOOR FRAMING PLAN

Drawing:	S2.1
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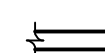
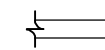

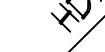


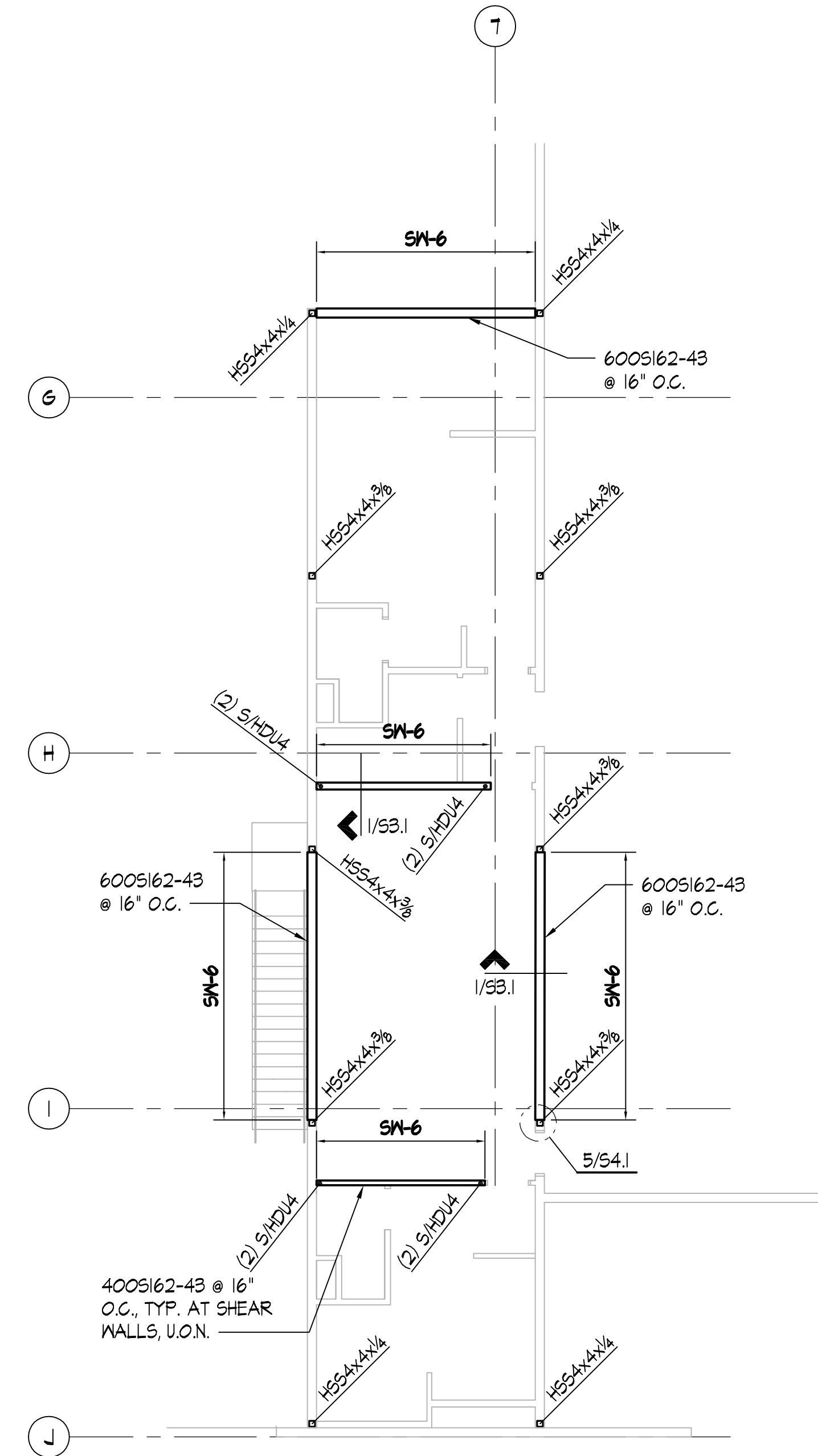
MEZZANINE FOUNDATION PLAN - OFFICE
SCALE: 1/8" = 1'-0"

MEZZANINE FOUNDATION PLAN NOTES:

1. SEE SHEETS S1.0 TO S1.3 FOR STRUCTURAL GENERAL NOTES AND ABBREVIATIONS. SEE SHEET S4.0 FOR TYPICAL METAL STUD DETAILS AT SLAB.
2. SEE SHEETS S4.0 TO S4.2 FOR TYPICAL METAL STUD FRAMING DETAILS.
3. FOR SILL PLATE ANCHOR BOLT LAYOUT TO CONCRETE FOUNDATION WALLS AND SLABS, SEE DETAIL 5/S4.0.
4. PROVIDE WALL TO WALL CONNECTIONS PER 6/S4.0. FOR TOP PLATE SPLICE SEE DETAIL 7/S4.0.
5. SM-x INDICATES A SHEAR WALL AT THIS LEVEL. SEE SHEAR WALL SCHEDULE 4/S4.1. FOR SHEATHING, BLOCKING, NAILING AND ANCHOR BOLT REQUIREMENTS.

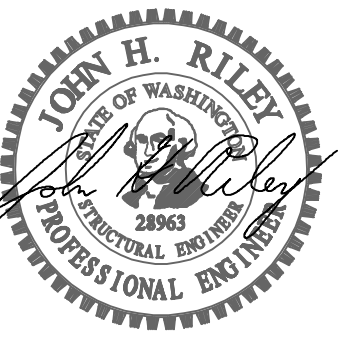
LEGEND:

-  INDICATES METAL STUD BEARING WALL OR SHEAR WALL ABOVE, SEE PLAN NOTE 5
-  INDICATES NON-BEARING/NON-SHEAR WALL ABOVE
-  INDICATES HOLDOWN TYPE. SEE DETAIL 12/S4.1
-  SM-x INDICATES SHEAR WALL TYPE AT THIS LEVEL, SEE PLAN NOTE 5



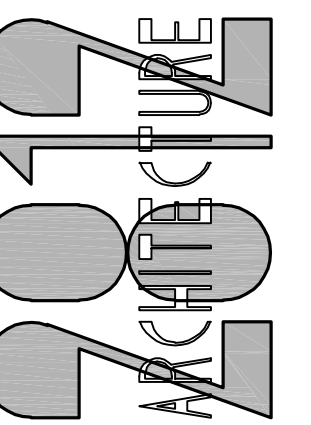
MEZZANINE FOUNDATION PLAN - MECH.
SCALE: 1/8" = 1'-0"

For:
Date: 08/08/22
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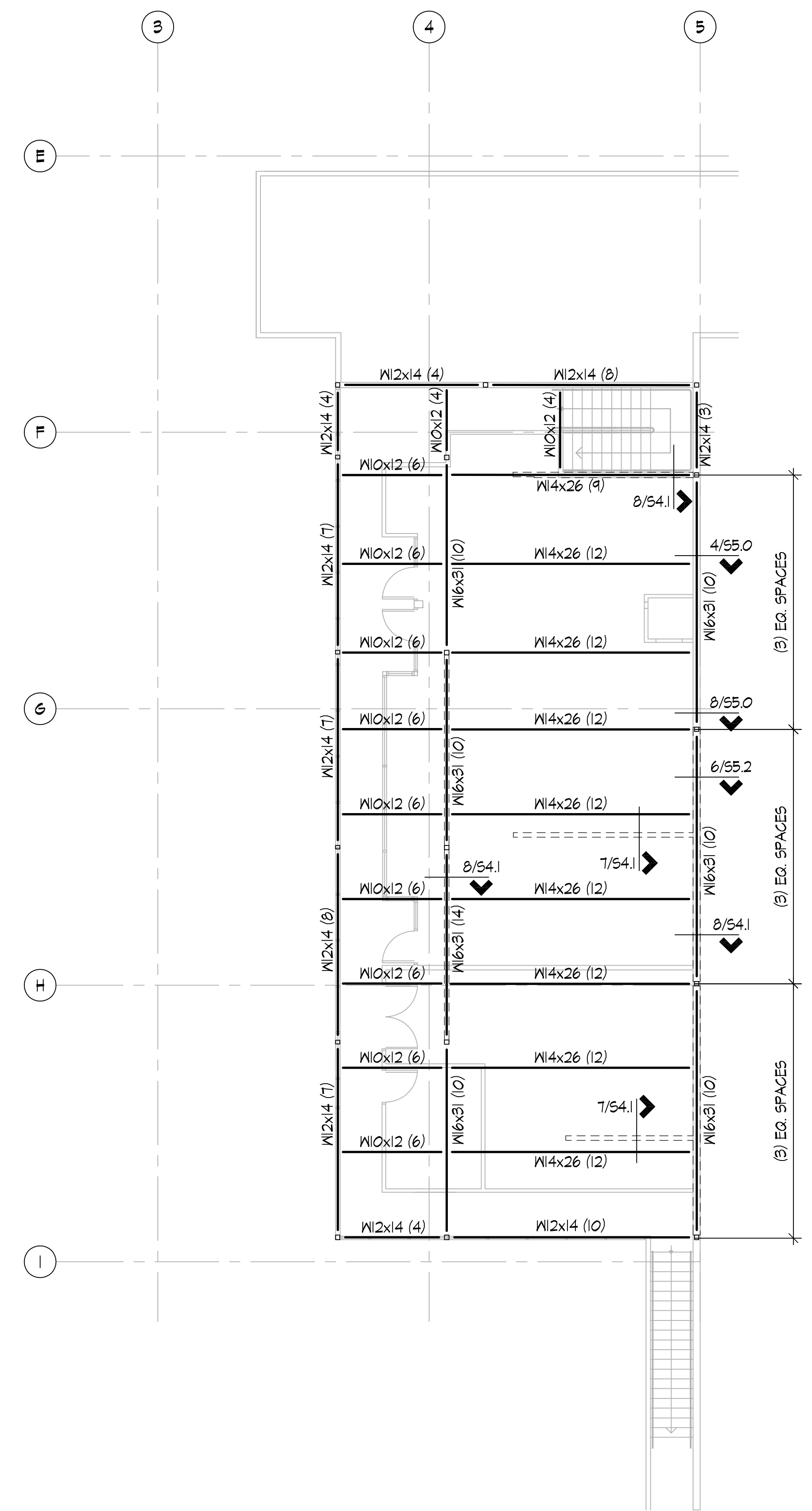
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Comments: MEZZANINE FOUNDATION PLANS

Drawing:
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MEZZANINE FRAMING PLAN - OFFICE
SCALE: 1/8" = 1'-0"

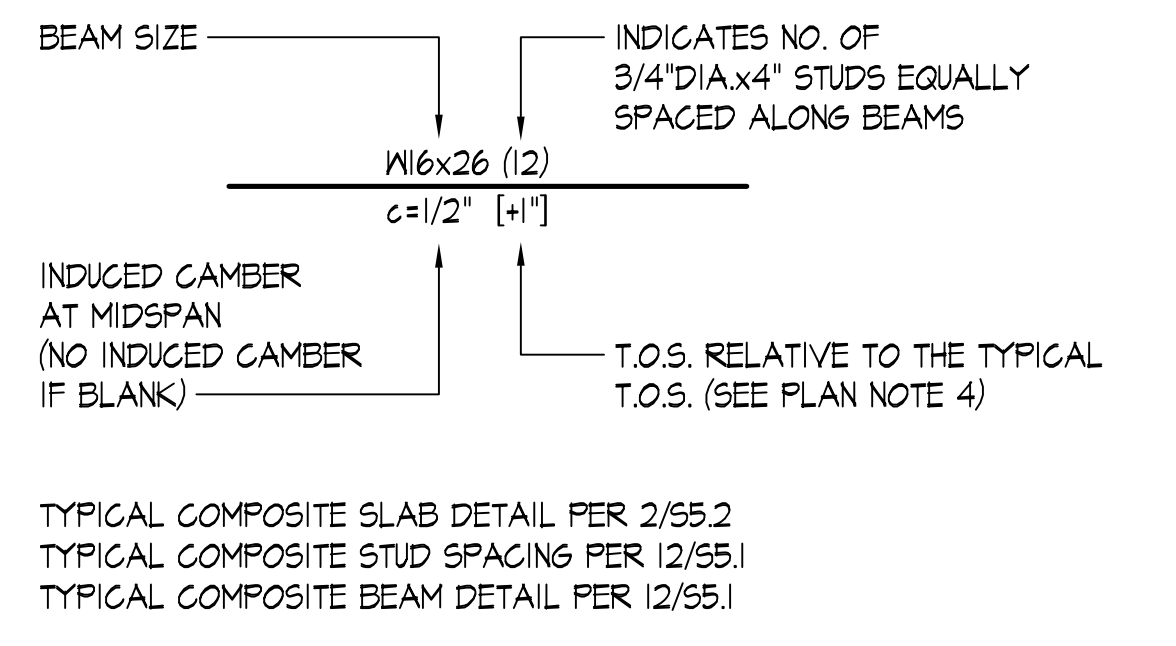
MEZZANINE FRAMING PLAN NOTES:

1. ALL DIMENSIONS AND ELEVATIONS ON THE STRUCTURAL PLANS ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND MANUFACTURER'S DRAWINGS BEFORE CONSTRUCTION BEGINS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER IMMEDIATELY.
2. ALL EXISTING INFORMATION IS ASSUMED AND SHALL BE FIELD VERIFIED. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER IMMEDIATELY.
3. FOR STRUCTURAL GENERAL NOTES AND ABBREVIATIONS SEE SHEETS S1.0 TO S1.3.
4. TYPICAL TOP OF STEEL U.O.N.: 11'-3".
5. SEE S5.0 TO S5.2 FOR TYPICAL STEEL DETAILS. SEE 6/55.0 FOR TYPICAL FRAMING PLAN SYMBOLS.
6. TYPICAL FLOOR SYSTEM IS 2" CONCRETE OVER 3" 20 GA. COMPOSITE METAL DECK (5" TOTAL) PER 2/55.2. (125 PSF LL, U.O.N.) SEE PLAN FOR DECK DIRECTION.

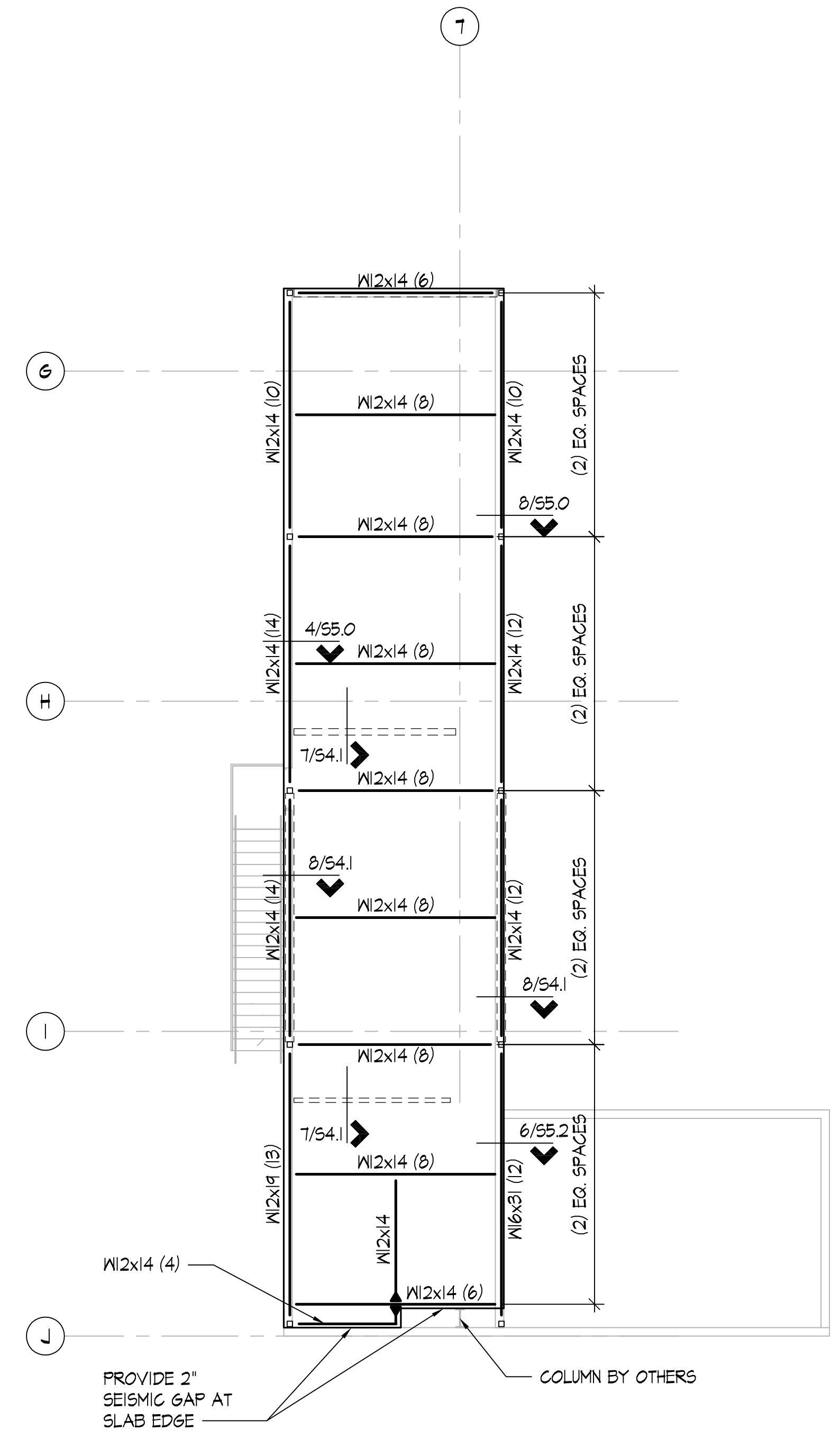
LEGEND:

- INDICATES COLUMN, SIZE CALLED OUT AT BOTTOM OF COLUMN
- ◆ INDICATES FULL DEPTH CONNECTION PLATE PER DETAIL 6/55.1
- > INDICATES A BOTTOM FLANGE BRACE PER 8/55.1
- ||-||-|| INDICATES METAL STUD SHEAR WALL BELOW
- ▶ INDICATES MOMENT CONNECTION PER 12/55.0

COMPOSITE BEAM LEGEND:



TYPICAL COMPOSITE SLAB DETAIL PER 2/55.2
TYPICAL COMPOSITE STUD SPACING PER 12/55.1
TYPICAL COMPOSITE BEAM DETAIL PER 12/55.1

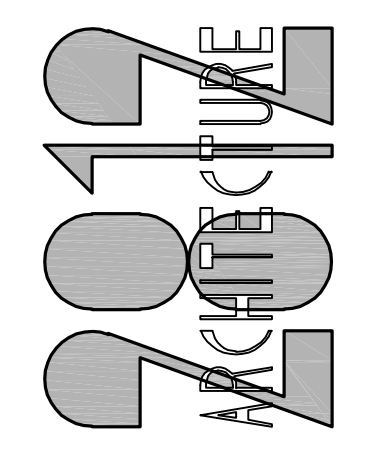


MEZZANINE FRAMING PLAN - MECH.
SCALE: 1/8" = 1'-0"

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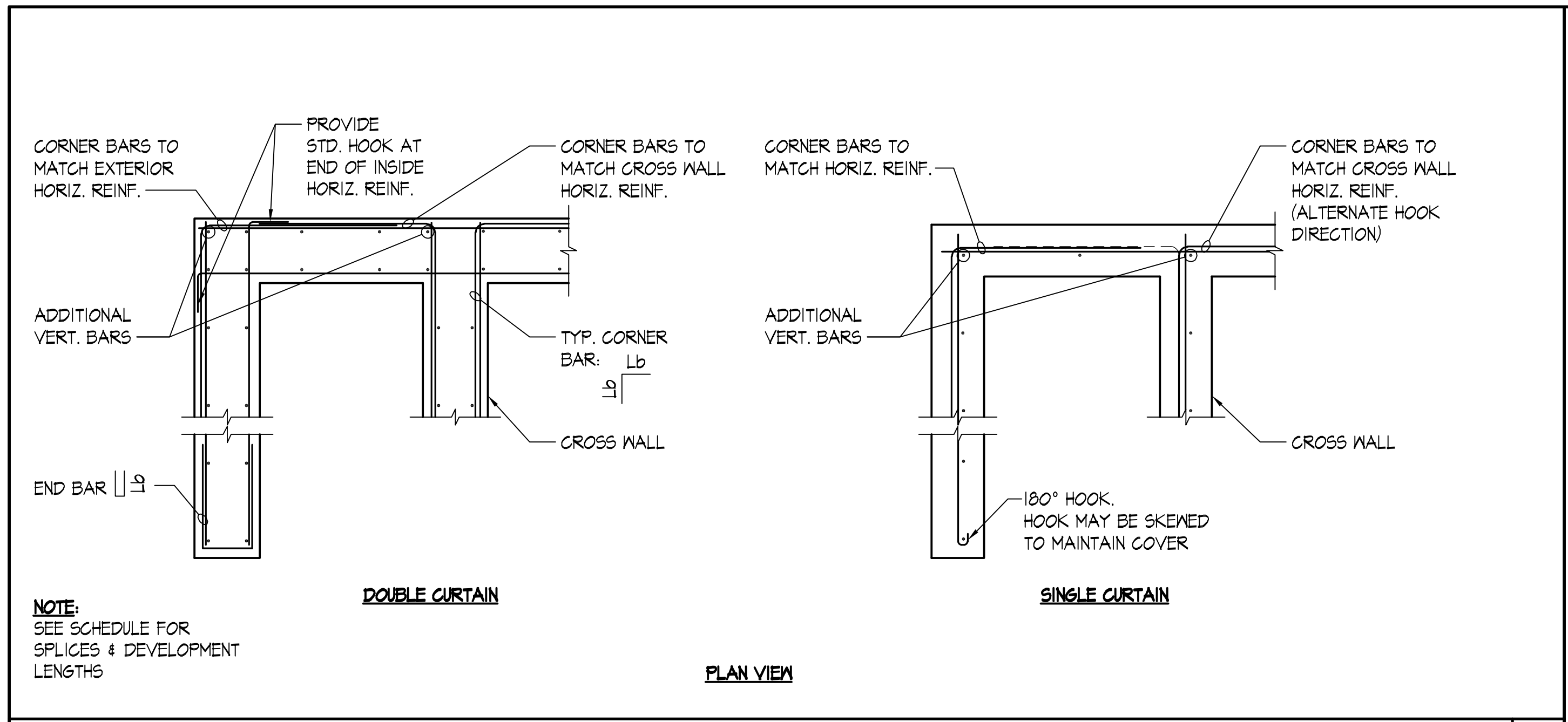
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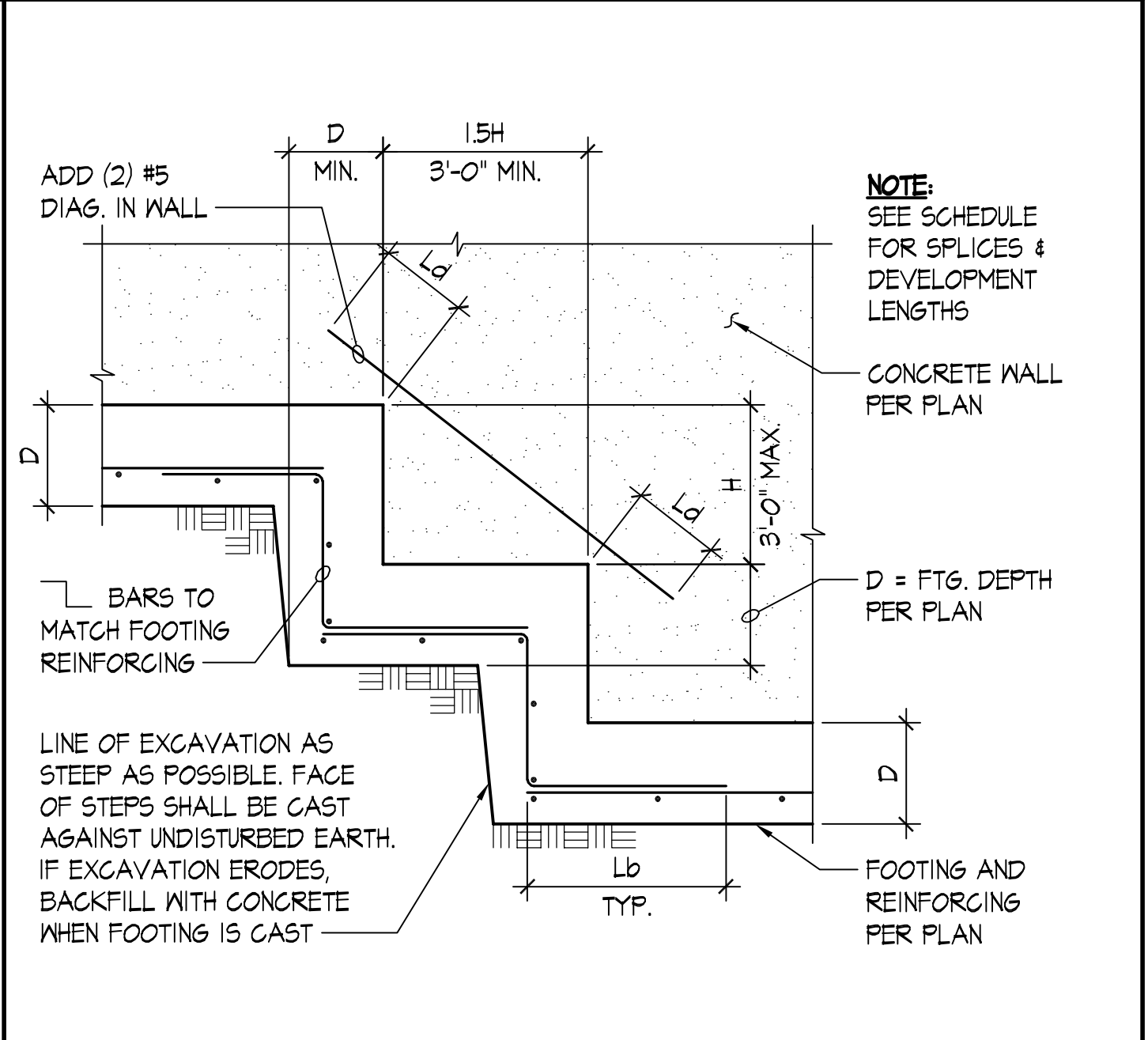
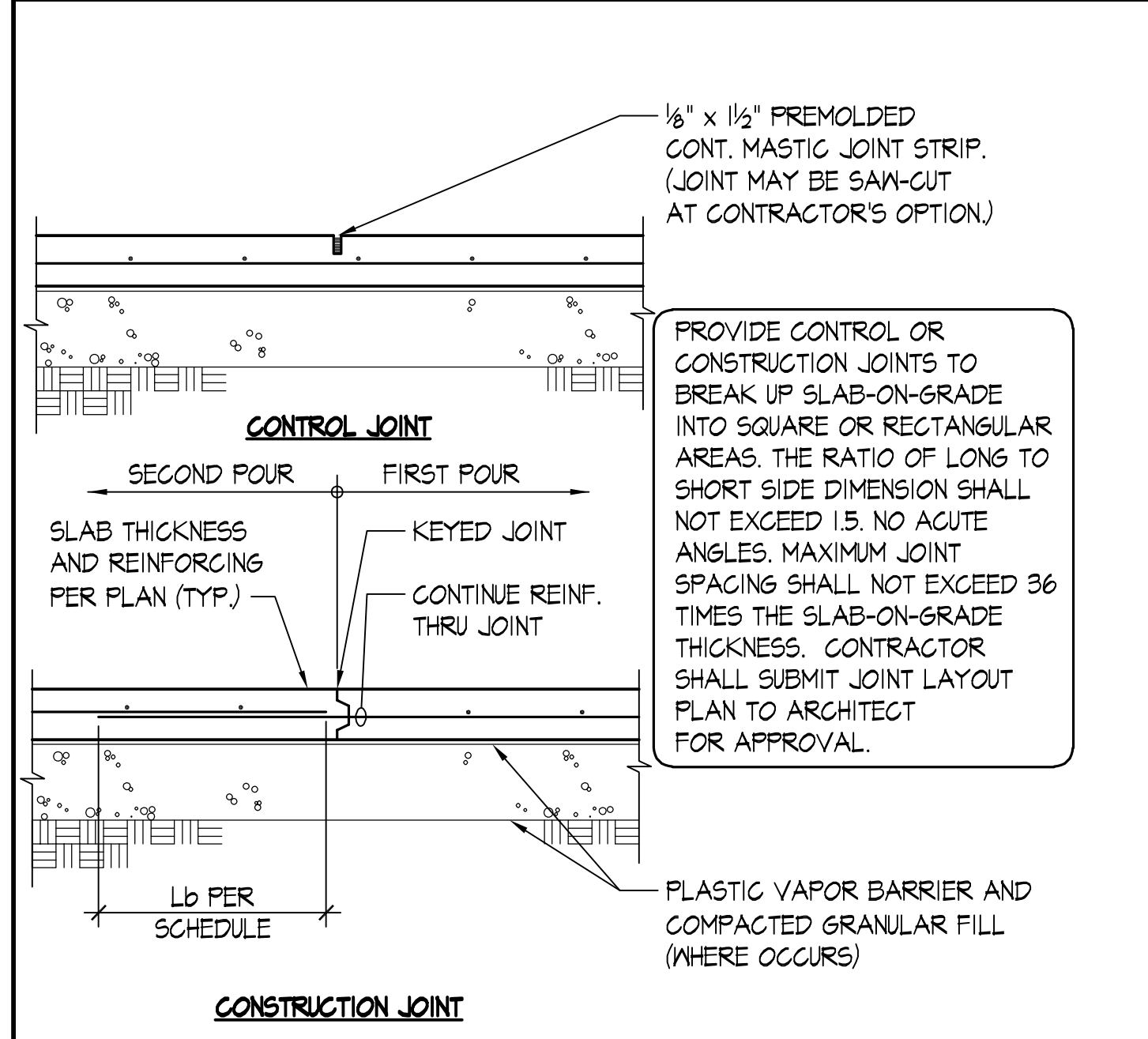
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MEZZANINE FRAMING PLANS

Drawing:	S2.4
Job Number:	22325.01

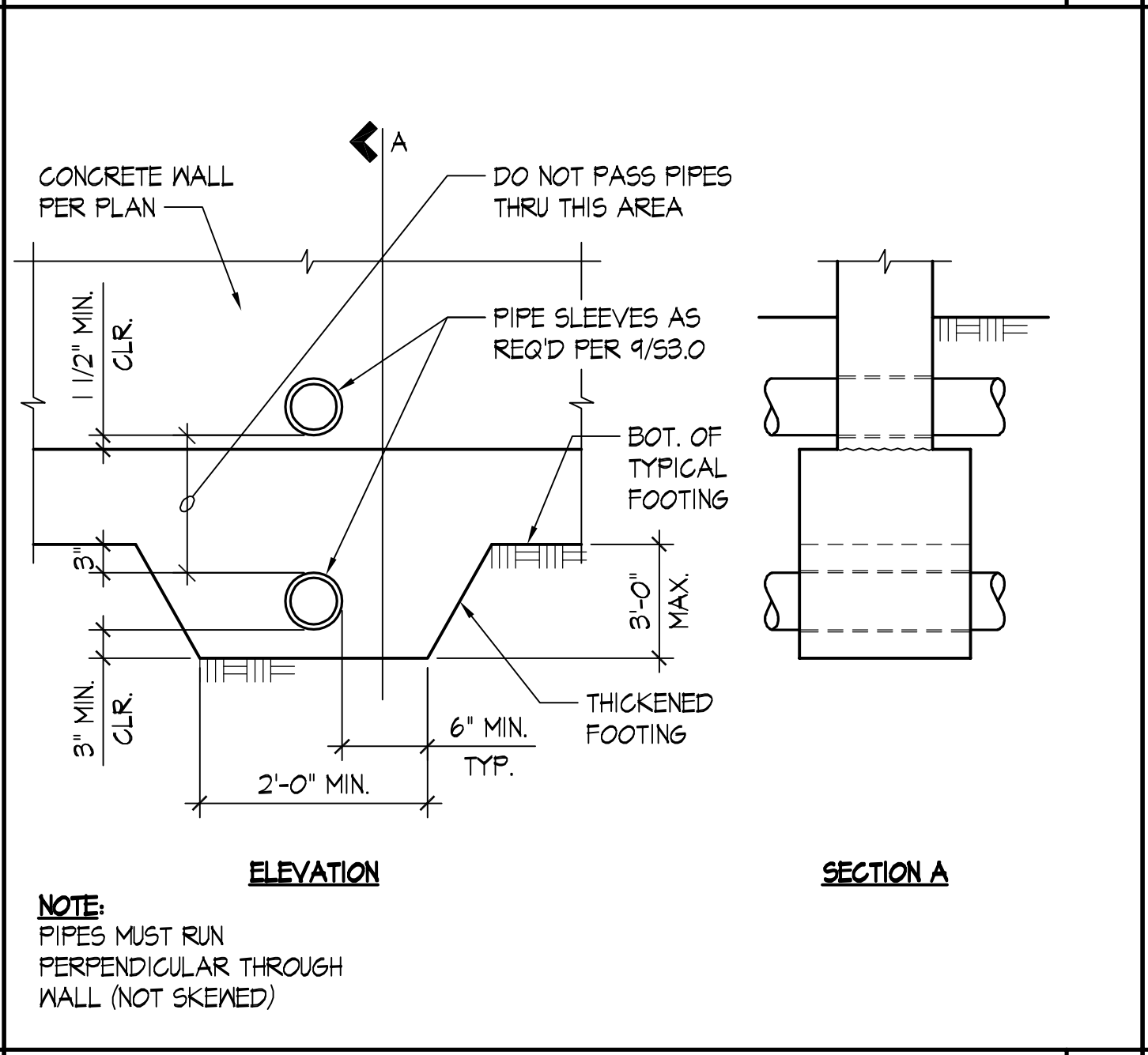
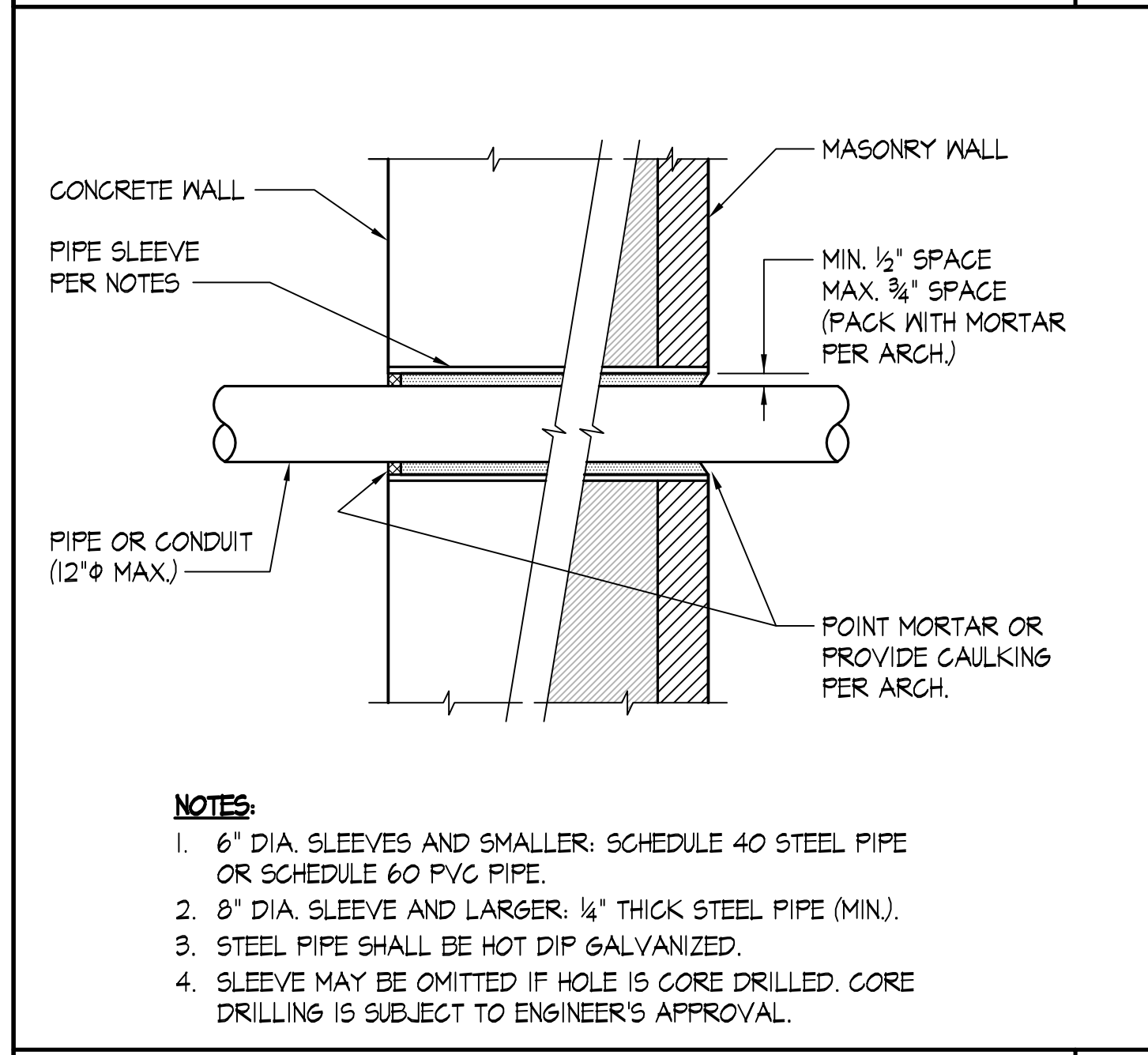


TYPICAL CORNER AND WALL END BAR ARRANGEMENT AT CONCRETE WALLS OR FOOTINGS SCALE: NONE **2**



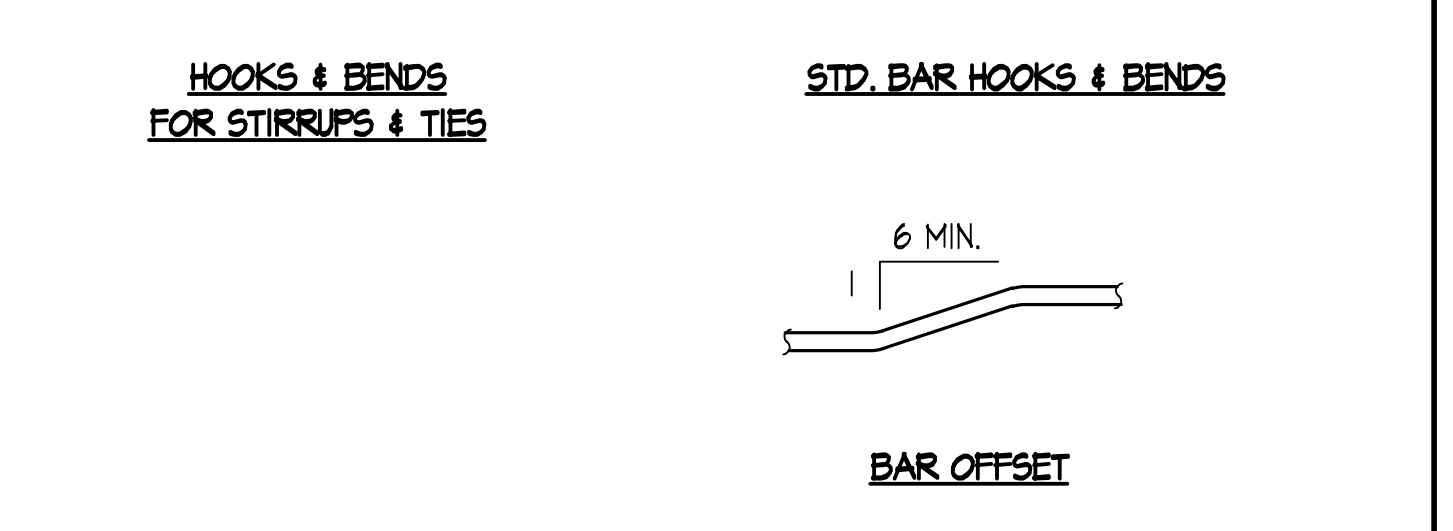
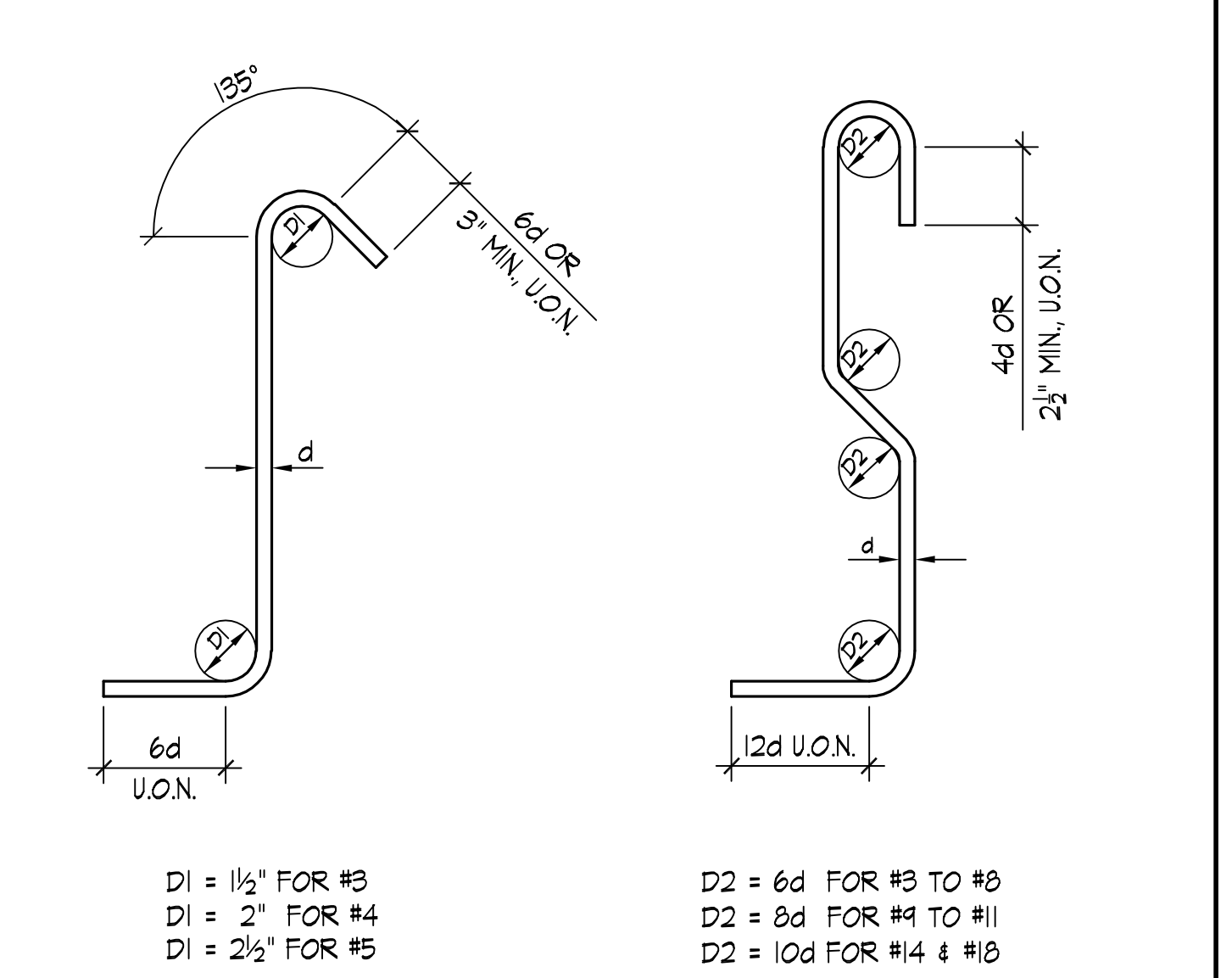
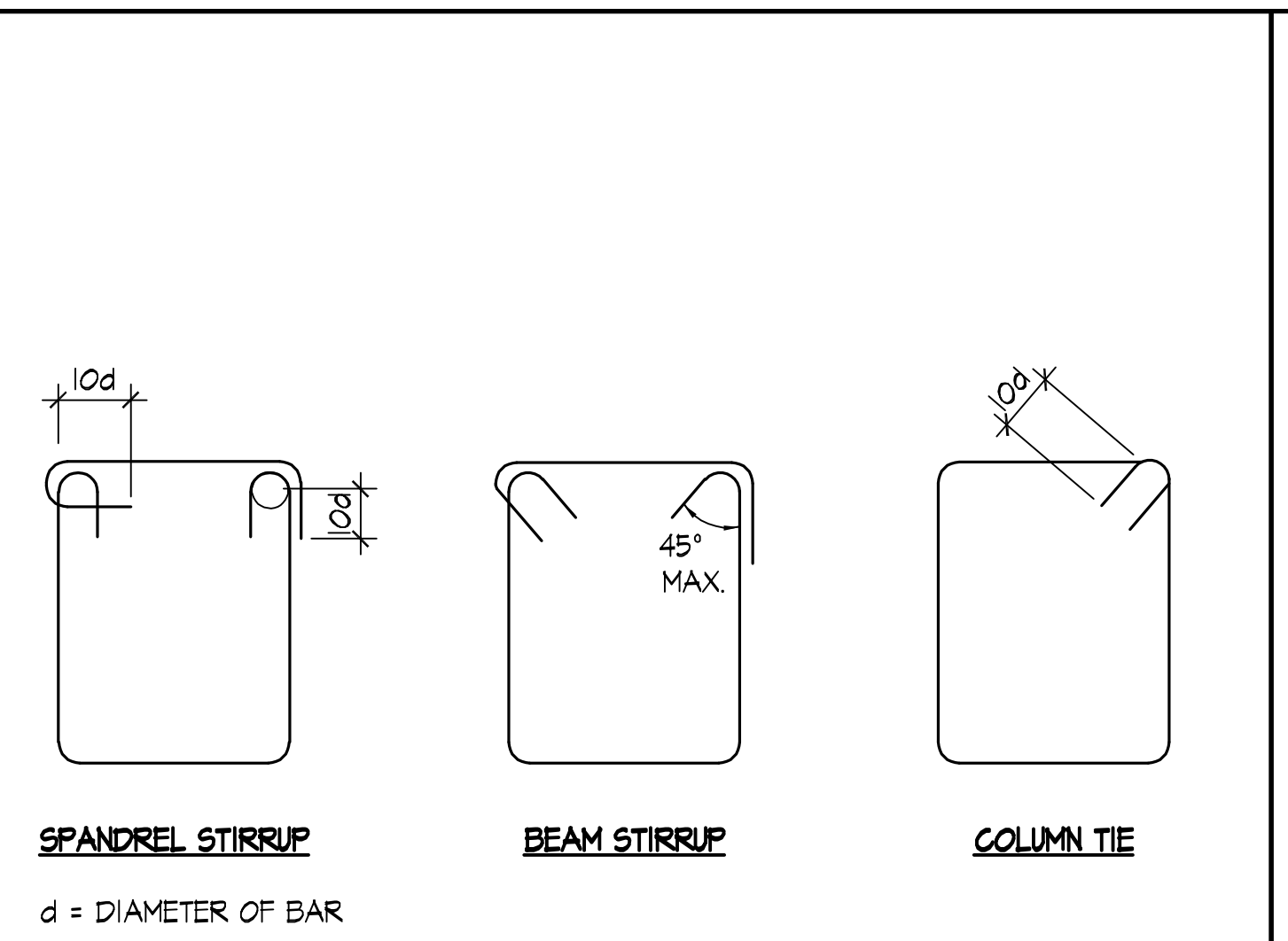
TYPICAL SLAB-ON-GRADE JOINTS SCALE: NONE **5**

TYPICAL STEPPED FOOTING SCALE: NONE **6**

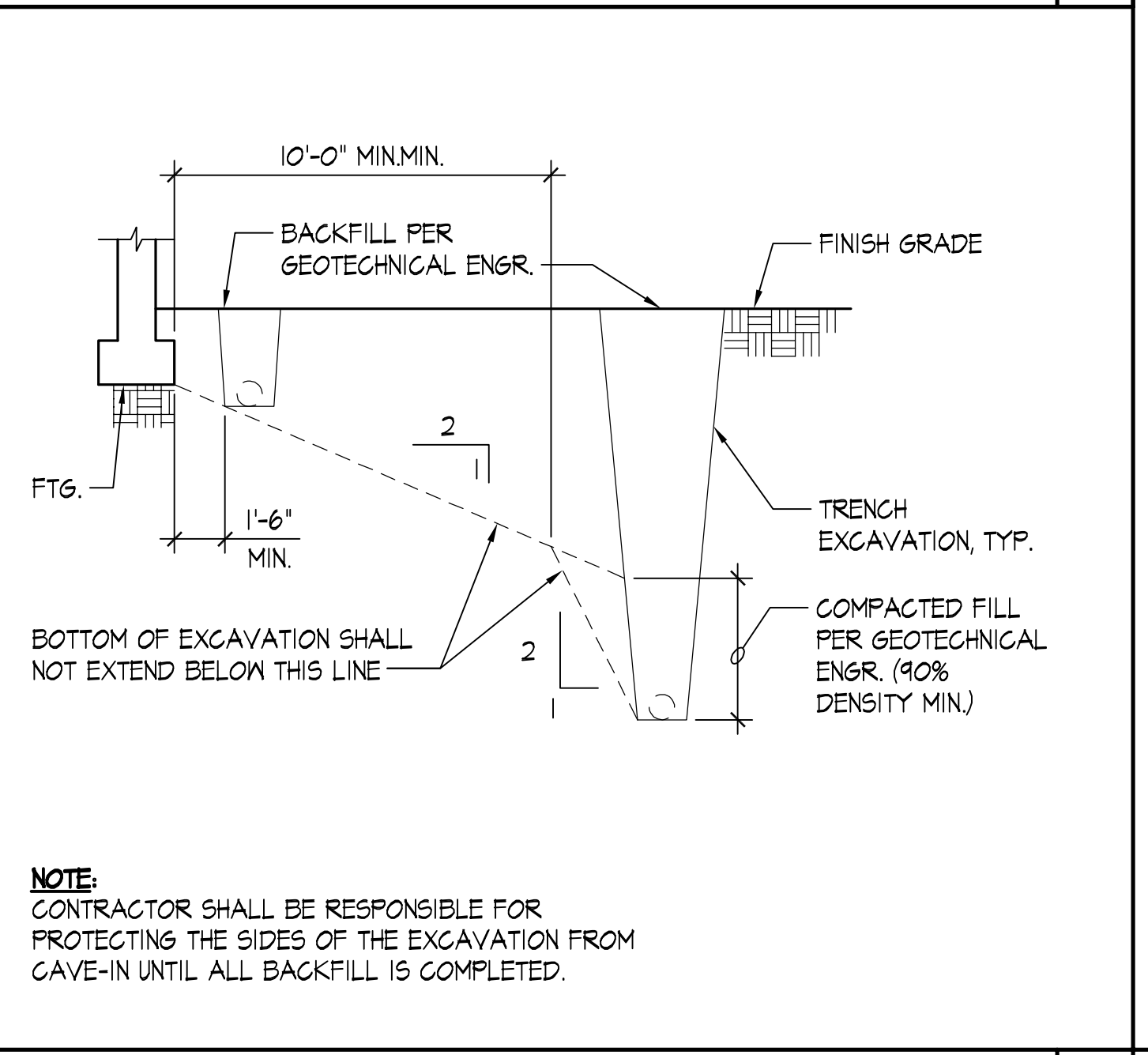


TYPICAL SLEEVE INSTALLATION THRU WALL SCALE: NONE **9**

TYPICAL PIPE INSTALLATION PERPENDICULAR TO FOOTING SCALE: NONE **10**



TYPICAL REBAR BENDS SCALE: NONE **7**



TYPICAL TRENCH EXCAVATION PARALLEL TO FOOTING SCALE: NONE **11**

REINFORCING SPLICE AND DEVELOPMENT LENGTH SCHEDULE
(FOR GRADE 60, UNCOATED BARS, NORMAL WEIGHT CONCRETE)

I MINIMUM STRAIGHT DEVELOPMENT LENGTH FOR BARS IN TENSION (L_d)

BAR SIZE	$f'_c = 3000$ PSI		$f'_c = 4000$ PSI	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	21"	16"	18"	14"
#4	28"	22"	25"	19"
#5	36"	27"	31"	24"
#6	43"	33"	37"	28"
#7	62"	48"	54"	42"
#8	71"	55"	62"	47"
#9	80"	62"	70"	54"
#10	90"	70"	78"	60"
#11	100"	77"	87"	67"

NOTE: "TOP BARS" ARE HORIZONTAL BARS w/ MORE THAN 12" DEPTH OF CONCRETE CAST BELOW THEM. IF CLEAR CONCRETE COVER IS NOT GREATER THAN THE DIAMETER OF THE BAR OR THE CENTER TO CENTER SPACING IS NOT GREATER THAN 2 BAR DIAMETERS, THEN VALUES SHALL BE INCREASED BY 50%.

II MINIMUM CLASS "B" LAP SPLICE LENGTH FOR BARS IN TENSION (L_{lb})

BAR SIZE	$f'_c = 3000$ PSI		$f'_c = 4000$ PSI	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	28"	21"	24"	18"
#4	37"	28"	32"	25"
#5	46"	36"	40"	31"
#6	56"	43"	48"	37"
#7	81"	62"	70"	54"
#8	93"	71"	80"	62"
#9	104"	80"	90"	70"
#10	118"	90"	102"	78"
#11	131"	100"	113"	87"

NOTE: "TOP BARS" IN BEAMS ARE HORIZONTAL BARS w/ MORE THAN 12" DEPTH OF CONCRETE CAST BELOW THEM. IF CLEAR CONCRETE COVER IS NOT GREATER THAN THE DIAMETER OF THE BAR OR THE CENTER TO CENTER SPACING IS NOT GREATER THAN 2 BAR DIAMETERS, THEN VALUES SHALL BE INCREASED BY 50%.

III MINIMUM EMBEDMENT LENGTHS FOR STANDARD END HOOKS (L_{dh})

BAR SIZE	$f'_c = 3000$ PSI		$f'_c = 4000$ PSI	
	ALL BARS	ALL BARS	ALL BARS	ALL BARS
#3	6"	6"	6"	6"
#4	8"	7"	7"	7"
#5	10"	8"	8"	8"
#6	12"	10"	10"	10"
#7	13"	12"	12"	12"
#8	15"	13"	13"	13"
#9	17"	15"	15"	15"
#10	19"	17"	17"	17"
#11	22"	19"	19"	19"

NOTE: IF SIDE COVER IS NOT EQUAL TO OR GREATER THAN 2 1/2" AND/OR END COVER FOR HOOKS IS NOT EQUAL TO OR GREATER THAN 2", THEN VALUES SHALL BE INCREASED BY 43%.

IV MINIMUM STRAIGHT DEVELOPMENT LENGTH FOR BARS IN COMPRESSION (L_{dc})

BAR SIZE	$f'_c = 3000$ PSI		$f'_c = 4000$ PSI	
	ALL BARS	ALL BARS	ALL BARS	ALL BARS
#3	8"	8"	8"	8"
#4	11"	9"	9"	9"
#5	14"	12"	12"	12"
#6	16"	14"	14"	14"
#7	19"	17"	17"	17"
#8	22"	19"	19"	19"
#9	25"	21"	21"	21"
#10	28"	24"	24"	24"
#11	31"	27"	27"	27"

V MINIMUM LAP SPLICE LENGTHS FOR BARS IN COMPRESSION (L_{bc})

BAR SIZE	$f'_c = 3000$ & 4000 PSI	
	ALL BARS	ALL BARS
#3	12"	12"
#4	15"	15"
#5	19"	19"
#6	23"	23"
#7	26"	26"
#8	30"	30"
#9	34"	34"
#10	38"	38"
#11	42"	42"

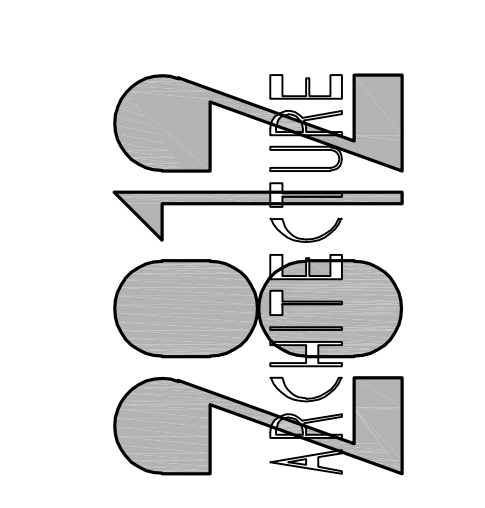
TYPICAL SPLICE SCHEDULE SCALE: NONE **12**

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Date: 08/08/22



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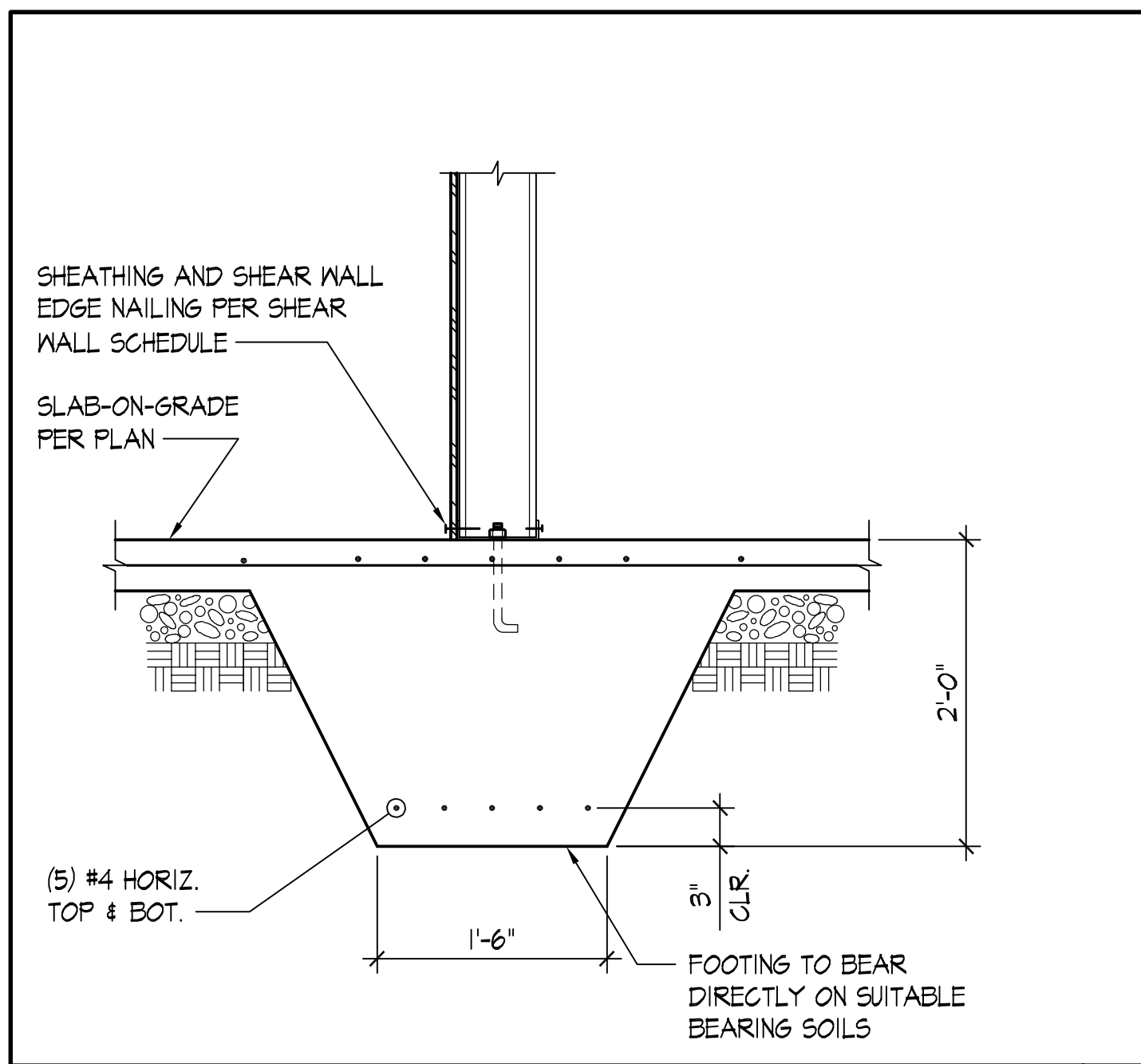
New Auto Dealership for:
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TYPICAL CONCRETE DETAILS

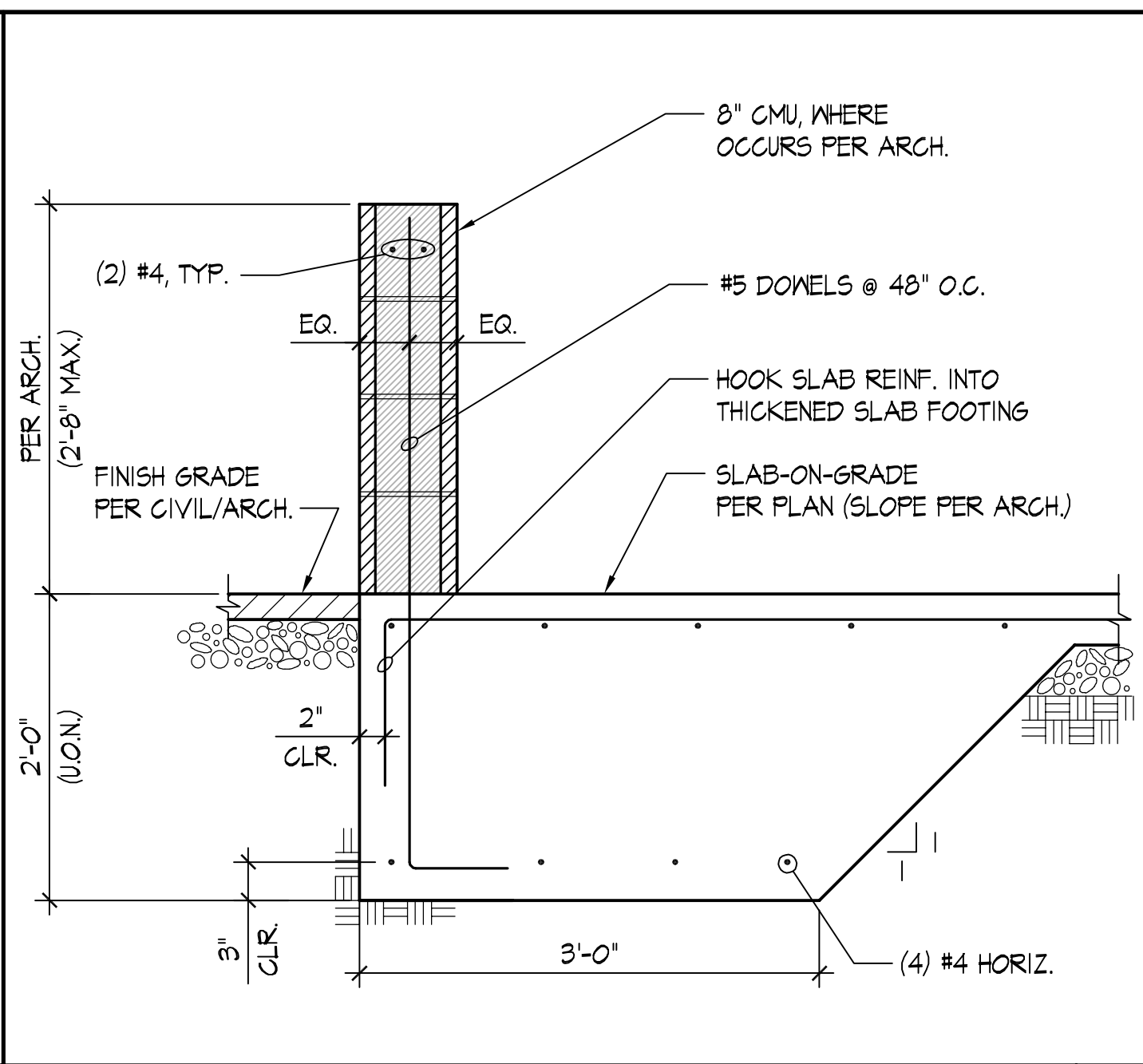
Drawing: **S3.0**

Job Number: 22325.01

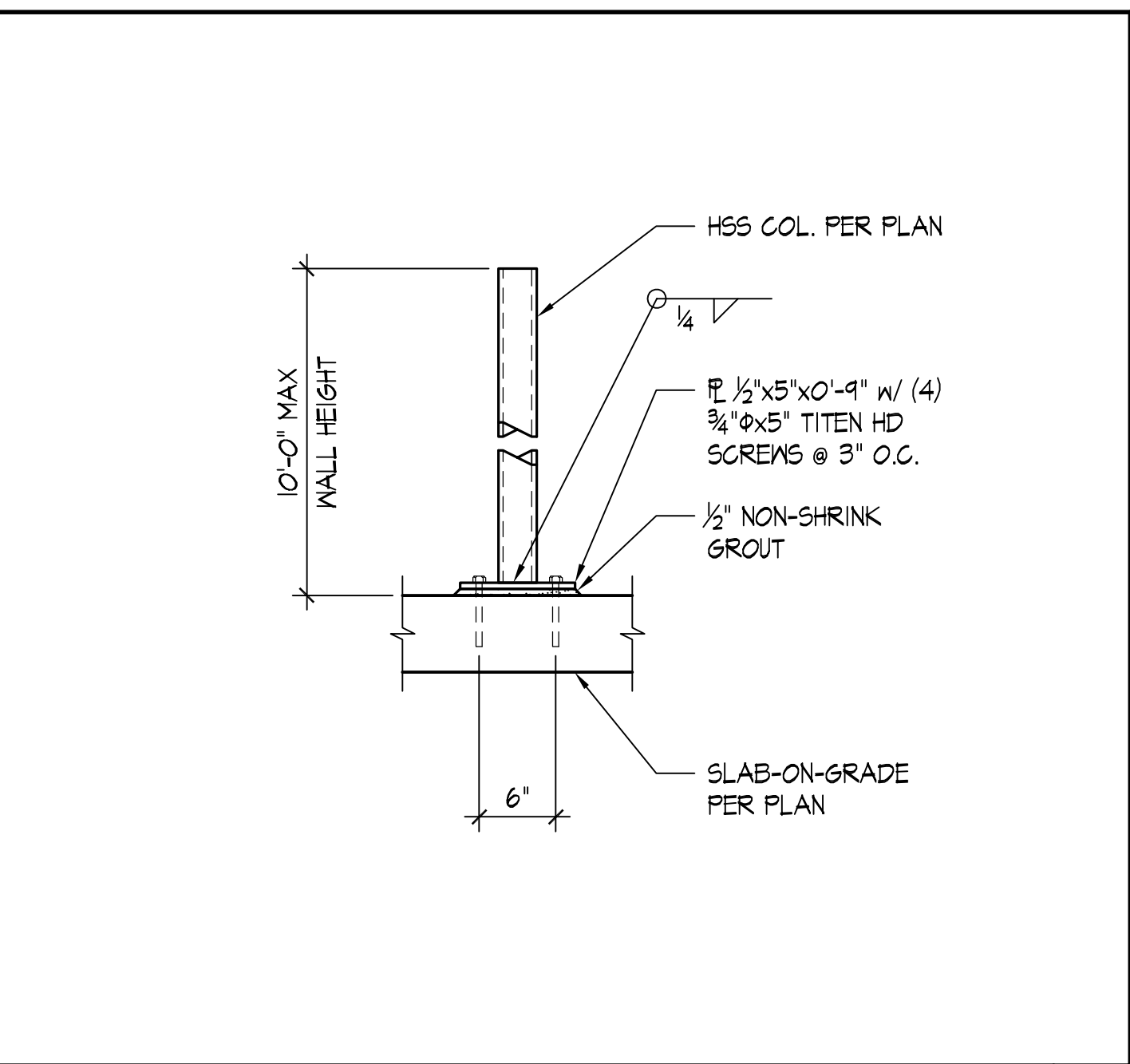
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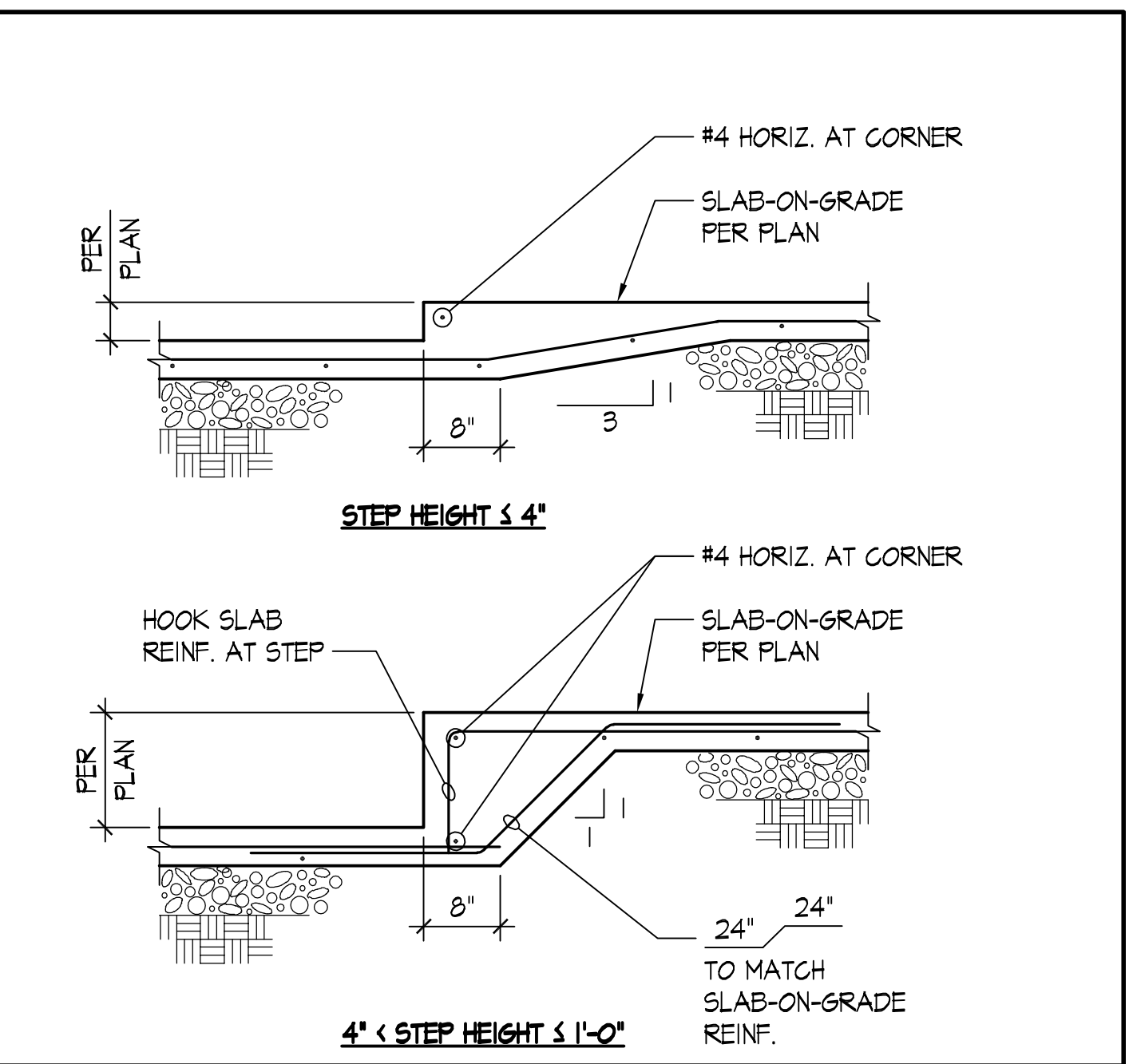
TYPICAL THICKENED SLAB AT SHEAR WALL SCALE: NONE |



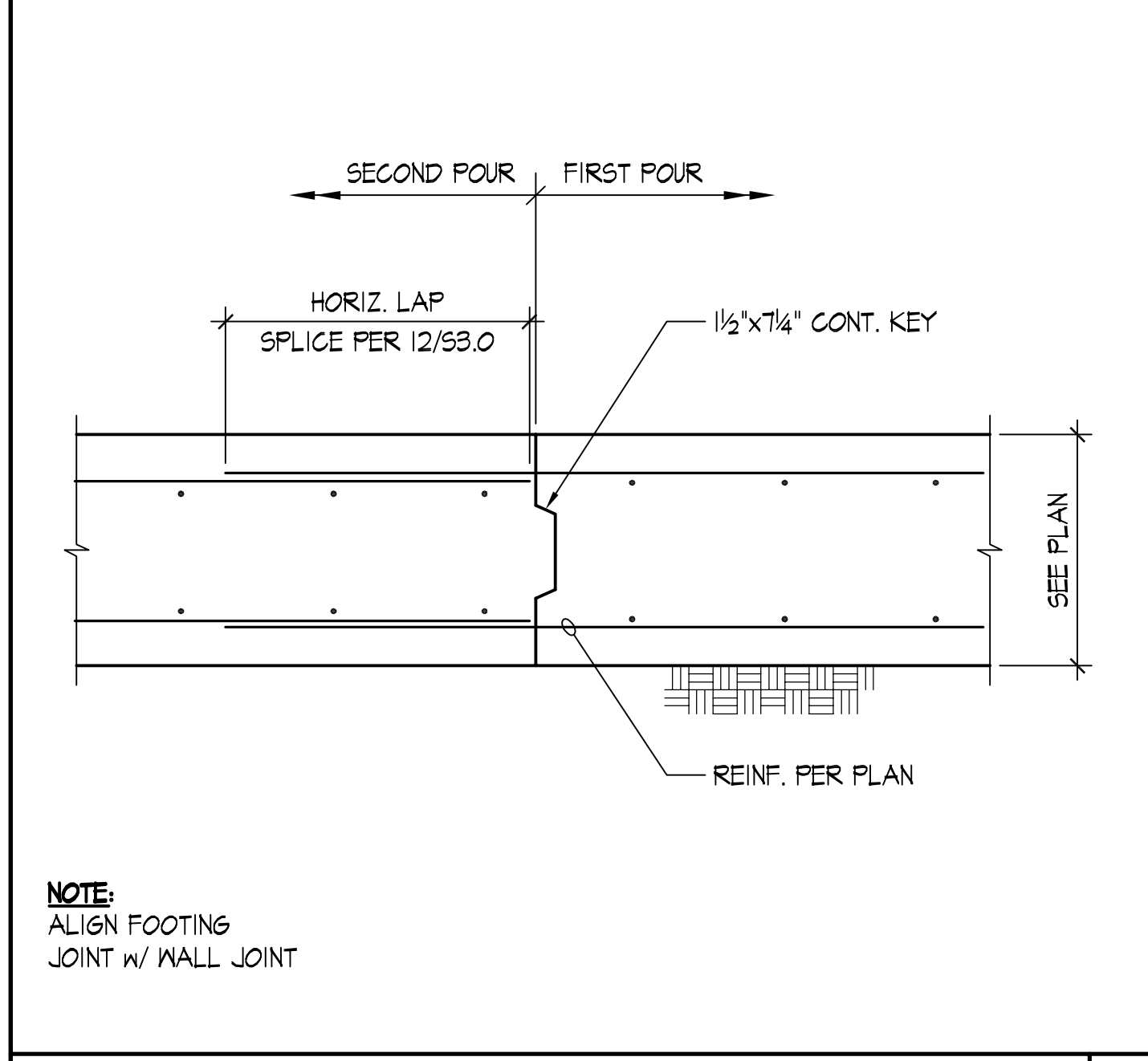
TYPICAL THICKENED SLAB AT BUILDING EDGE SCALE: NONE 2



FREESTANDING WALL SUPPORT COLUMN SCALE: NONE 3



TYPICAL SLAB-ON-GRADE STEP DETAIL SCALE: NONE 4

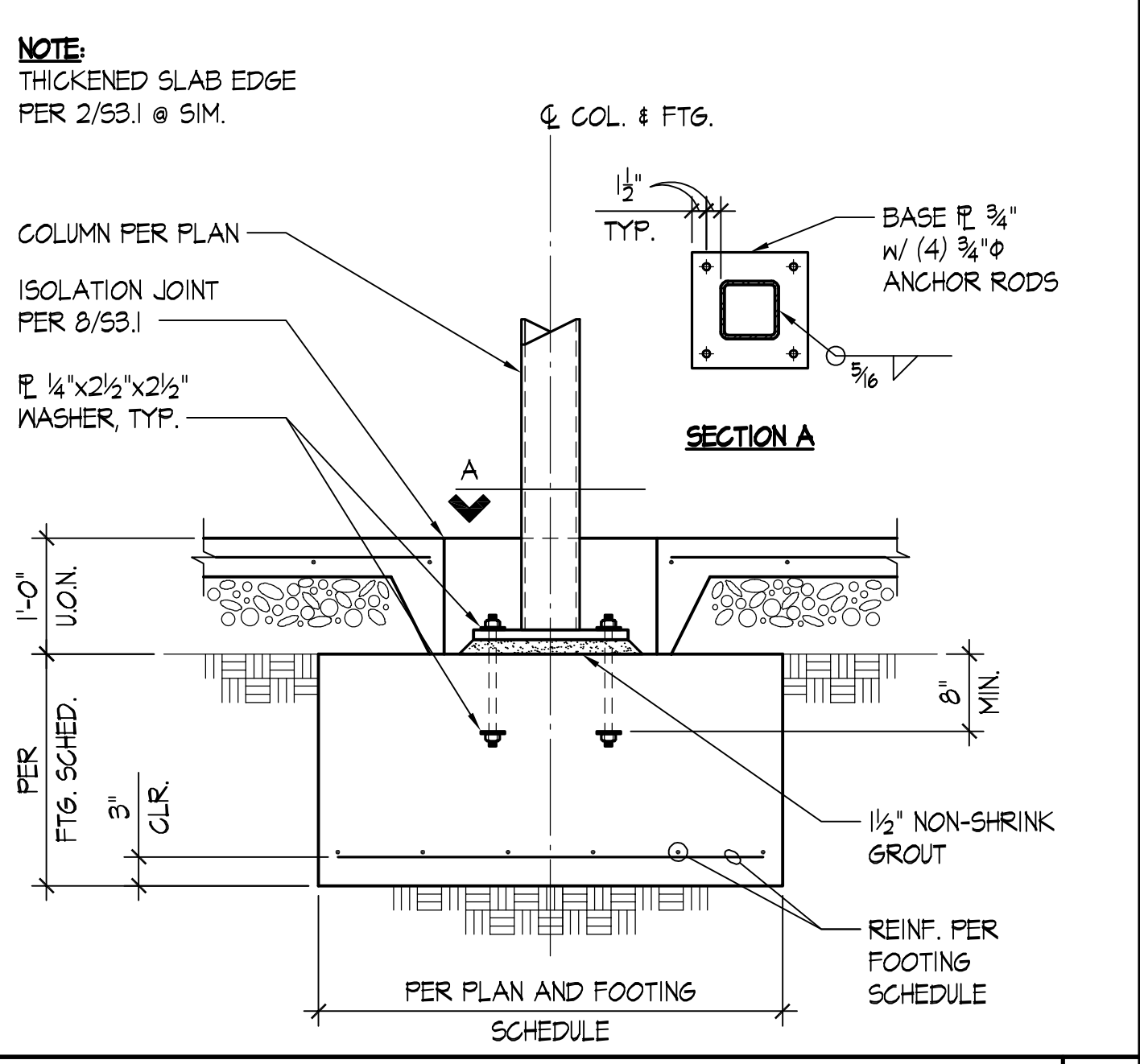


TYPICAL FOOTING JOINT SCALE: NONE 5

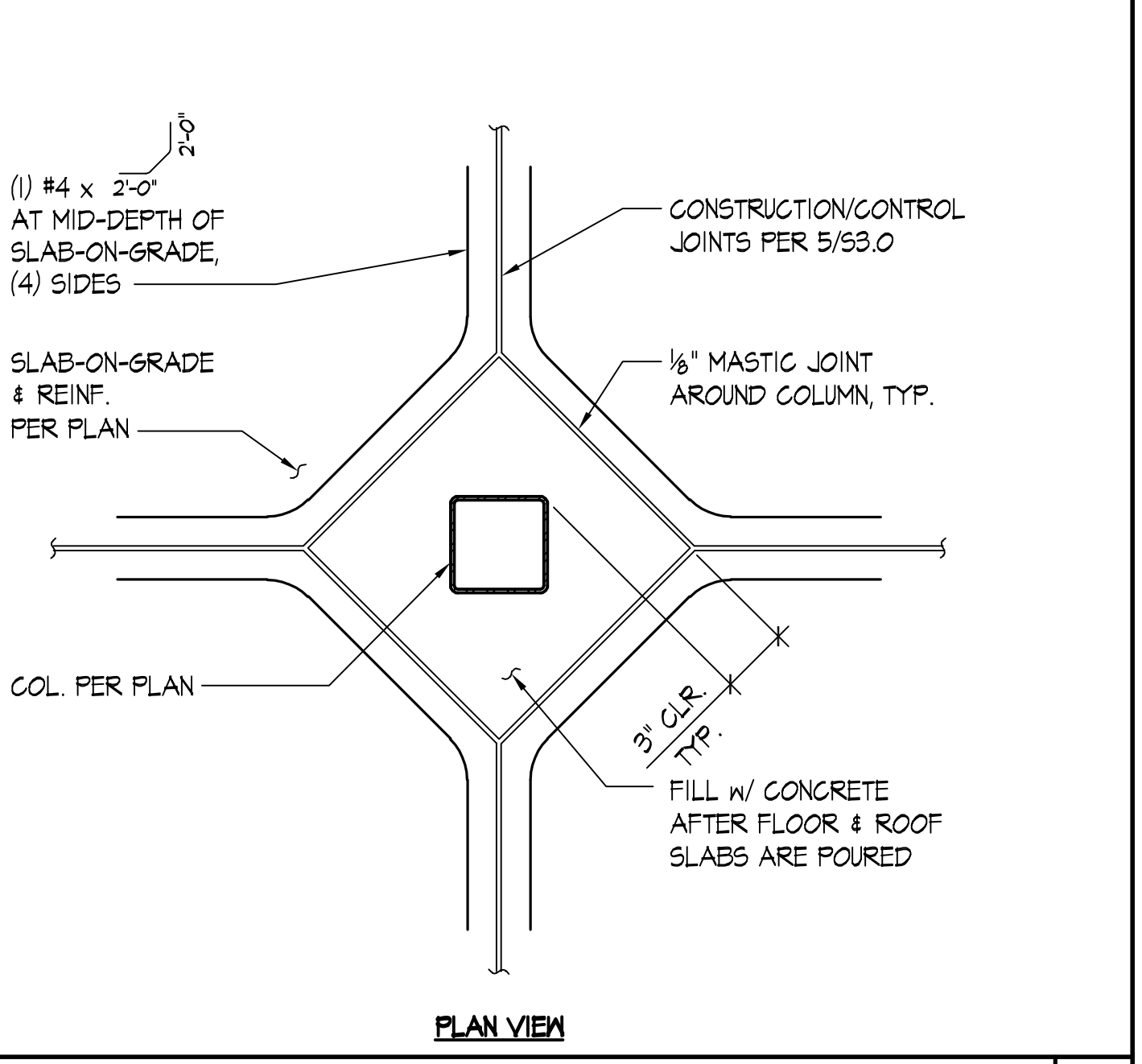
SPREAD FOOTING SCHEDULE				
MARK	SIZE	REINFORCING	DETAIL	REMARKS
F4.0	4'-0" x 4'-0" x 1'-3"	(5) #5 E.W.	1/53.1	-
F5.0	5'-0" x 5'-0" x 1'-8"	(4) #5 E.W. T&B	10/53.1	-
F6.5	6'-6" x 6'-6" x 2'-2"	(6) #5 E.W. T&B	10/53.1	-
F7.0	7'-0" x 7'-0" x 2'-2"	(7) #5 E.W. T&B	10/53.1	-
F8.0	8'-0" x 8'-0" x 2'-4"	(6) #6 E.W. T&B	10/53.1	-
F8.5	8'-6" x 8'-6" x 2'-6"	(7) #6 E.W. T&B	10/53.1	-
F9.5	9'-6" x 9'-6" x 2'-8"	(8) #6 E.W. T&B	10/53.1	-
F11.0	11'-0" x 11'-0" x 2'-10"	(7) #7 E.W. T&B	10/53.1	-

NOTE:
ALLOWABLE SOIL BEARING PRESSURE IS 2.0 KSF

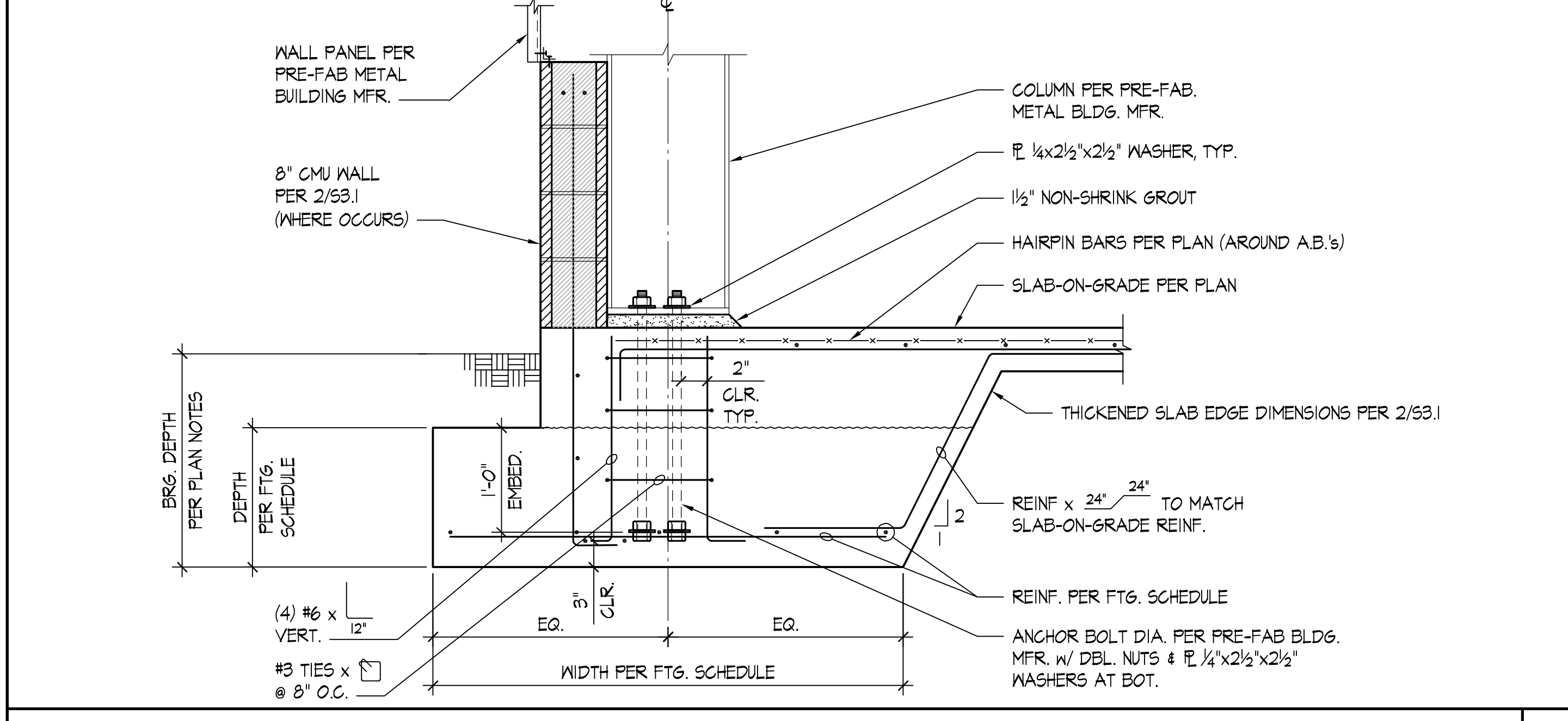
SPREAD FOOTING SCHEDULE SCALE: NONE 6



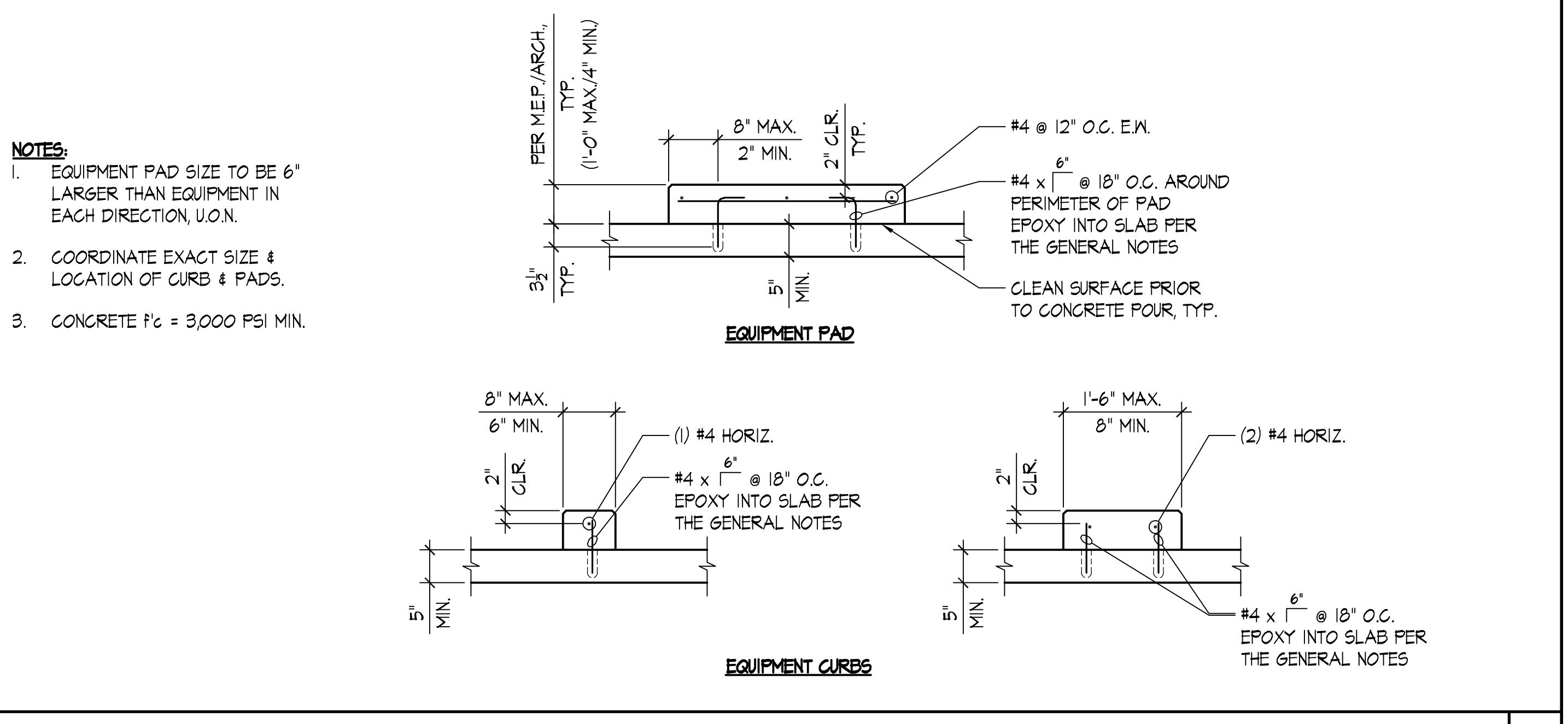
TYPICAL SPREAD FOOTING SUPPORTING HSS COLUMN SCALE: NONE 7



TYPICAL SLAB-ON-GRADE ISOLATION JOINT @ COLUMN SCALE: NONE 8



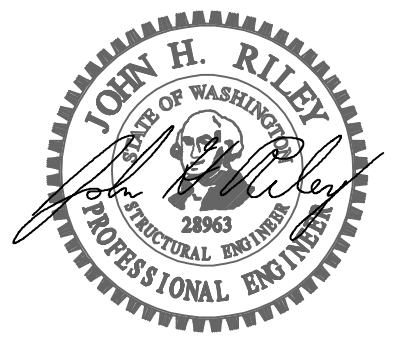
TYPICAL EXTERIOR SPREAD FOOTING SCALE: NONE 10



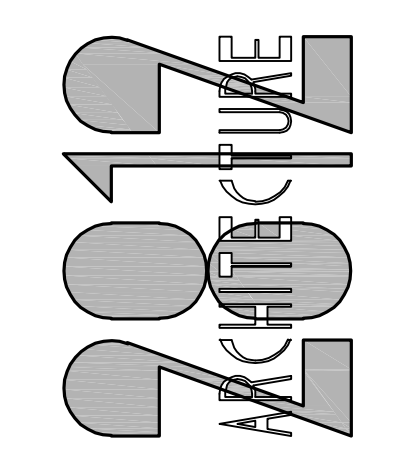
TYPICAL EQUIPMENT CURBS & PADS ON CONCRETE SLABS SCALE: NONE 12

Date: 08/25/2012 8:43 am
 Plot: 22325.01.dwg
 Plotter: P1, 08/25/2012 8:43 am

Date:	08/08/22
For:	PERMIT SET



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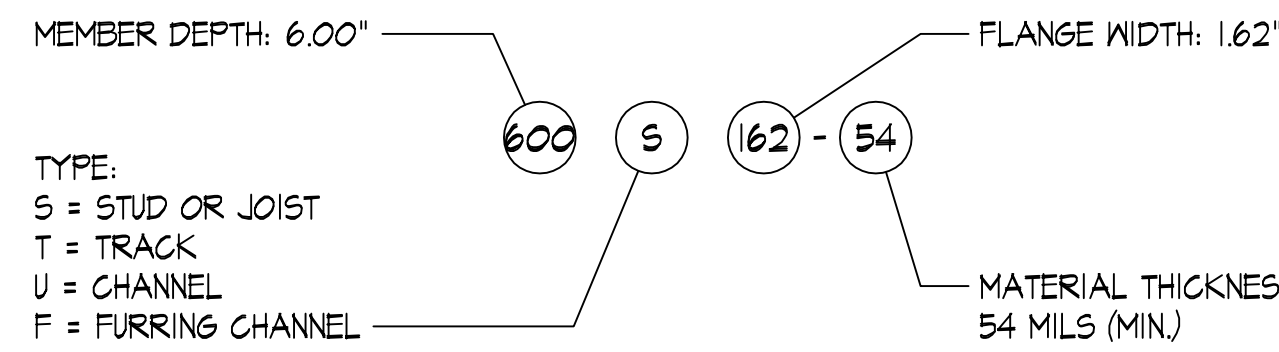
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 TYPICAL CONCRETE DETAILS

Drawing: **S3.1**
 Job Number: 22325.01

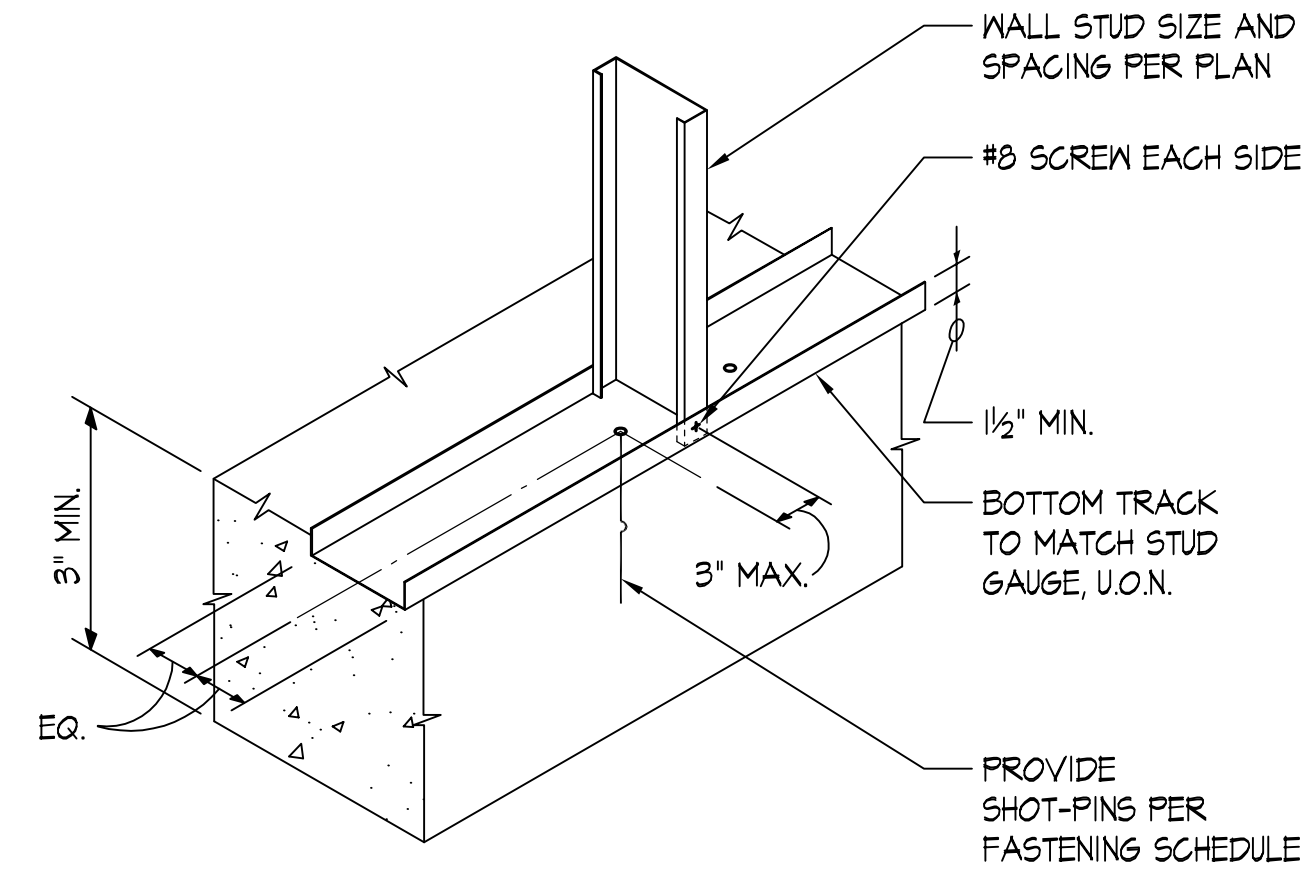
CONVERSION CHART		
MIL.	GAUGE	NOTES
30	20	DRYWALL
33	20	STRUCTURAL
43	18	
54	16	
60	14	
47	12	

EXAMPLE:



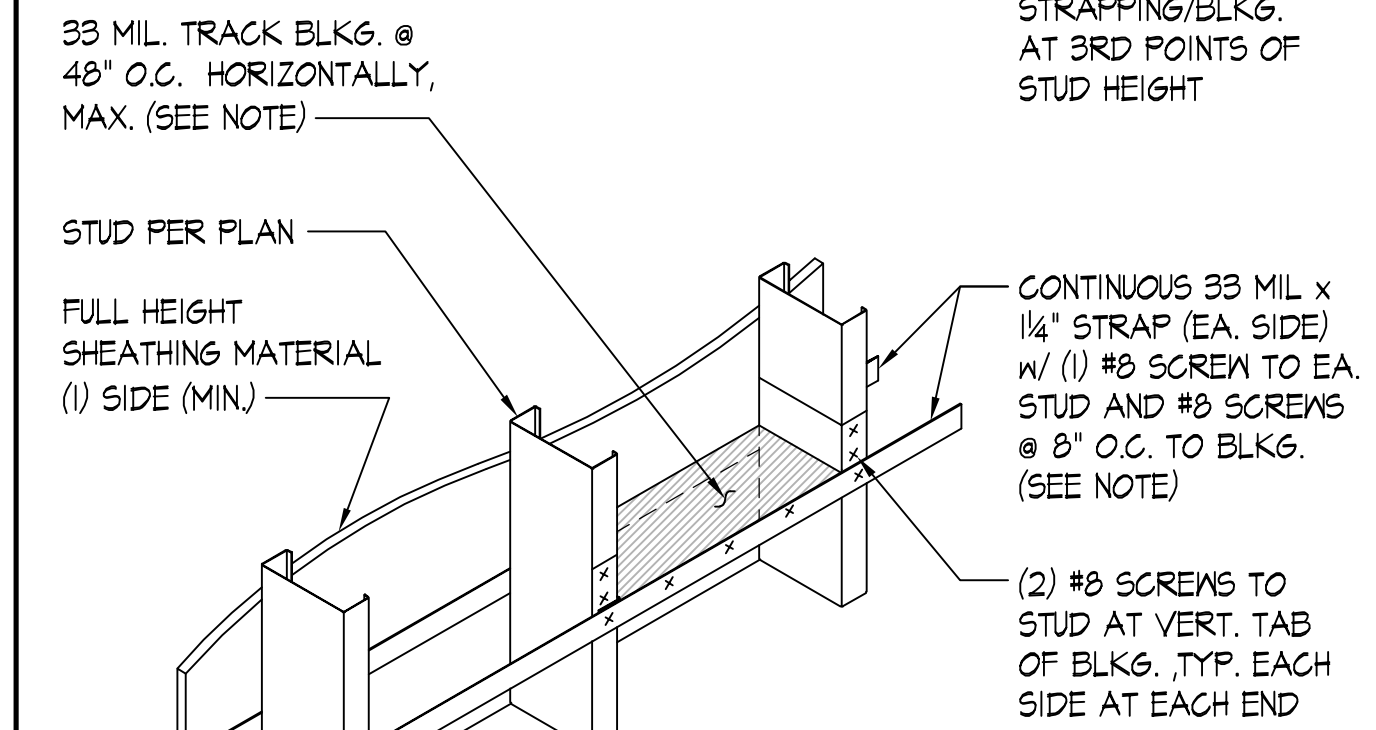
NOTES:

- ALL "SHOT-PINS" SHALL BE POWDER ACTUATED FASTENERS PER THE STRUCTURAL GENERAL NOTES.
- SEE 12/54.1 FOR BOTTOM TRACK ATTACHMENT AT SHEARWALLS.



FASTENING SCHEDULE	
WALL CONDITION	FASTENING REQUIREMENT
EXTERIOR STUD WALLS	(2) SHOT-PINS AT EACH STUD, ALSO PROVIDE (1) SHOT-PIN WITHIN 6" OF WALL END OR JAMB
INTERIOR STUD WALLS	(1) SHOT-PIN AT EACH STUD, ALSO PROVIDE (1) SHOT-PIN WITHIN 9" OF WALL END OR JAMB

NOTE:
REF. 11/54.2 FOR STUD SIZE SCHEDULE



TYPICAL LIGHT GAUGE STEEL NOTATION (95MA STANDARD)

SCALE: NONE

TYPICAL BOTTOM TRACK ATTACHMENT TO CONCRETE

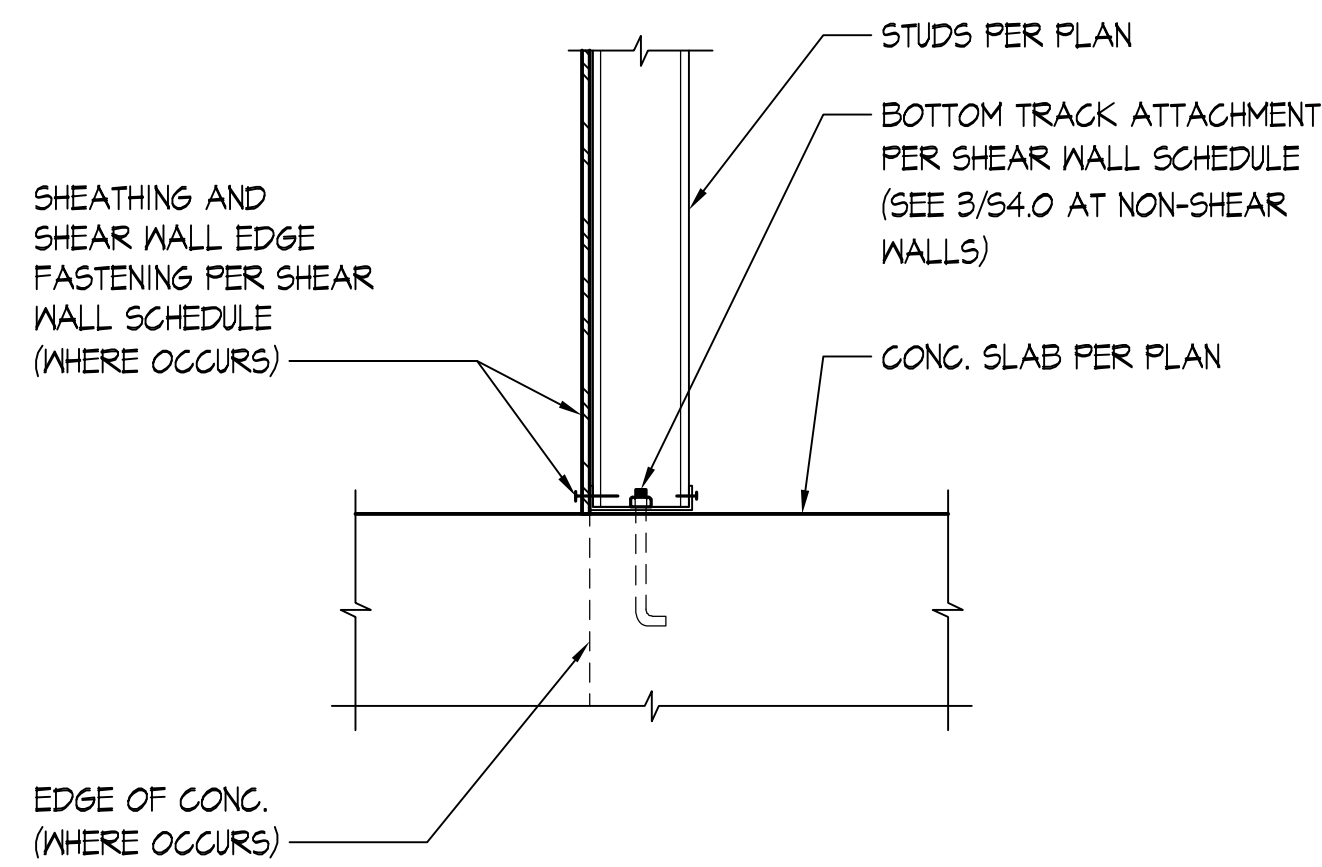
SCALE: NONE

3

TYPICAL HORIZONTAL STRAPPINGS/BLOCKING

SCALE: NONE

4



TYPICAL WALL TO CONCRETE

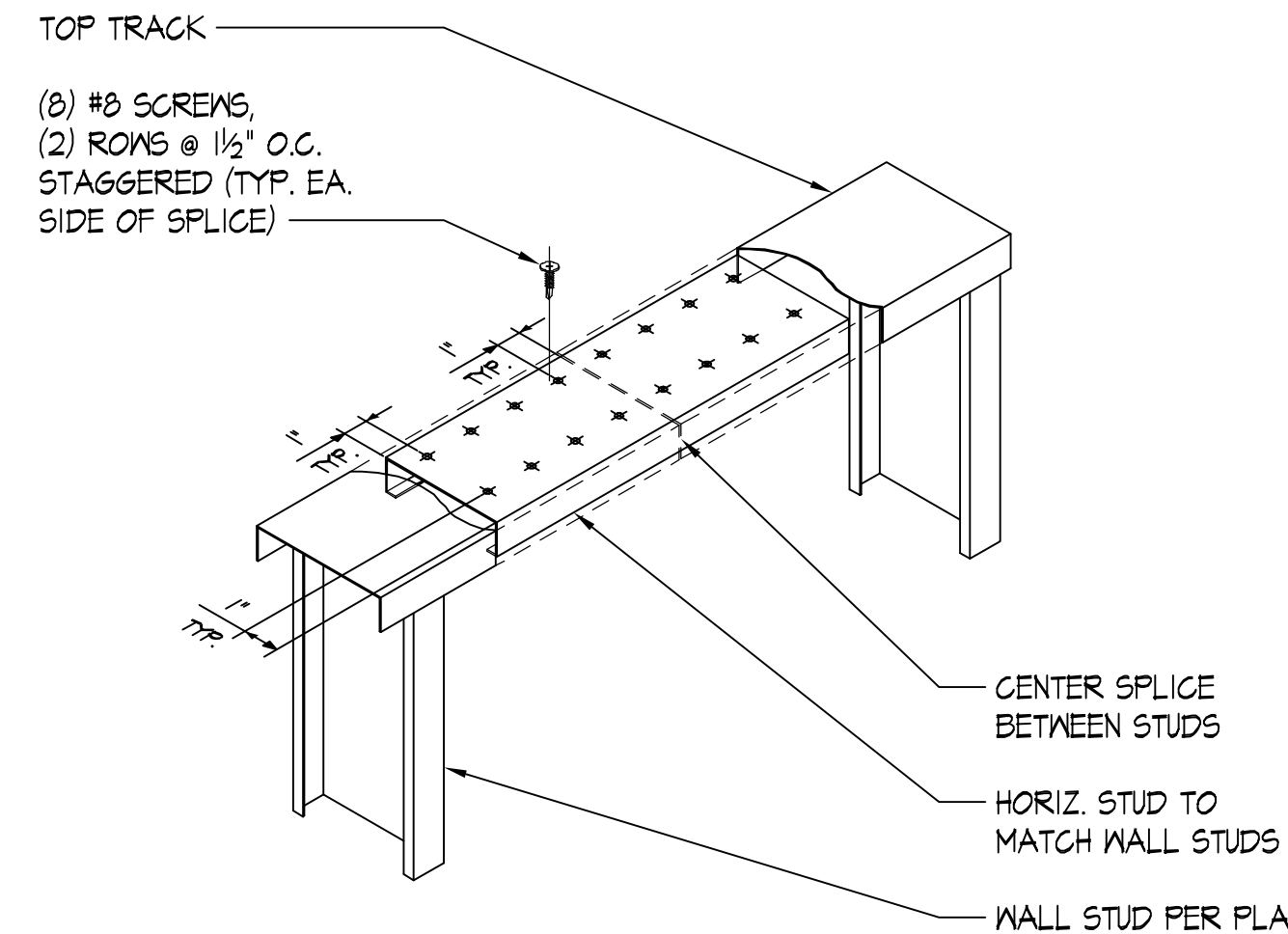
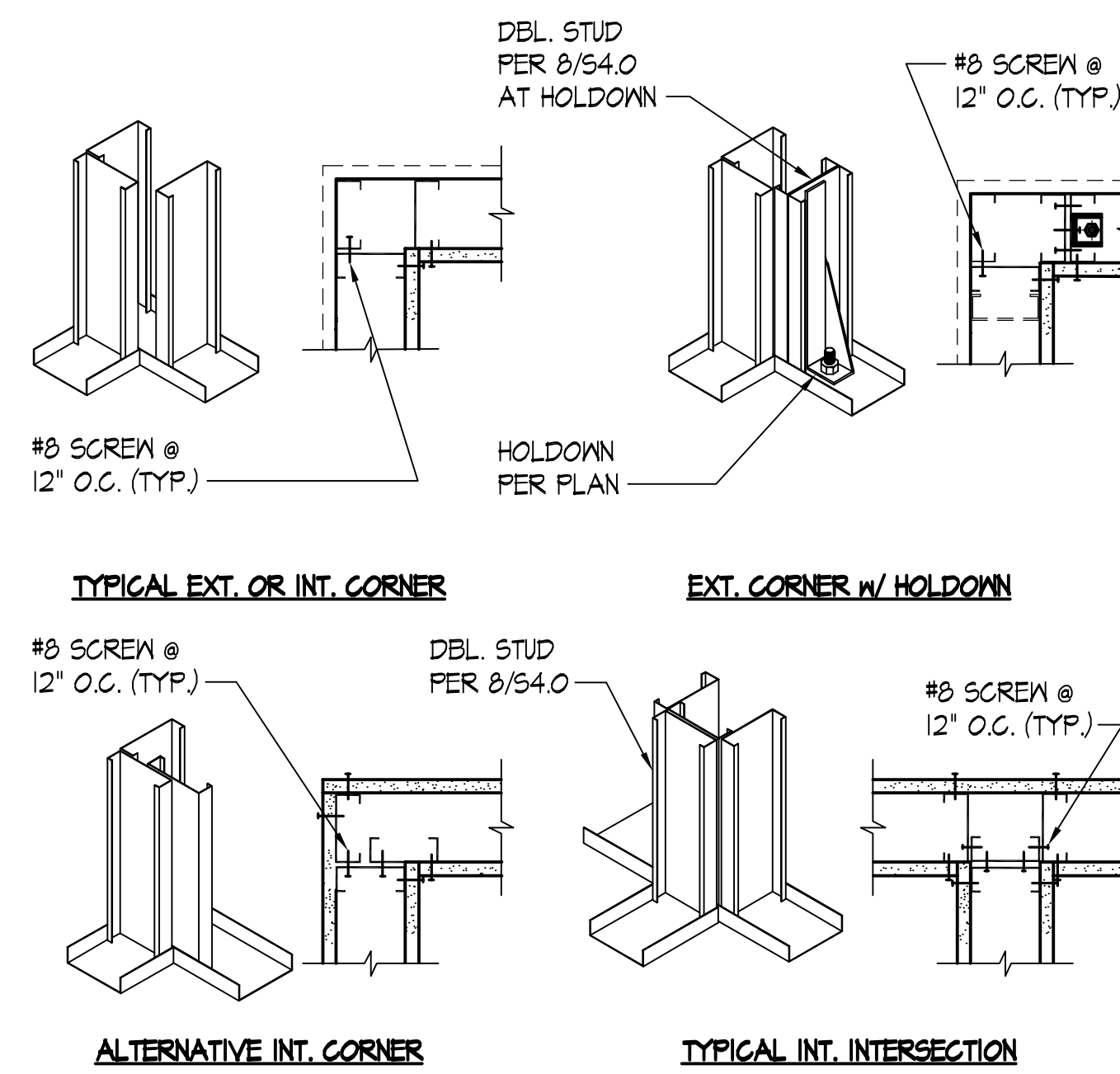
SCALE: NONE

5

TYPICAL WALL INTERSECTION

SCALE: NONE

6



TYPICAL TOP TRACK SPLICE

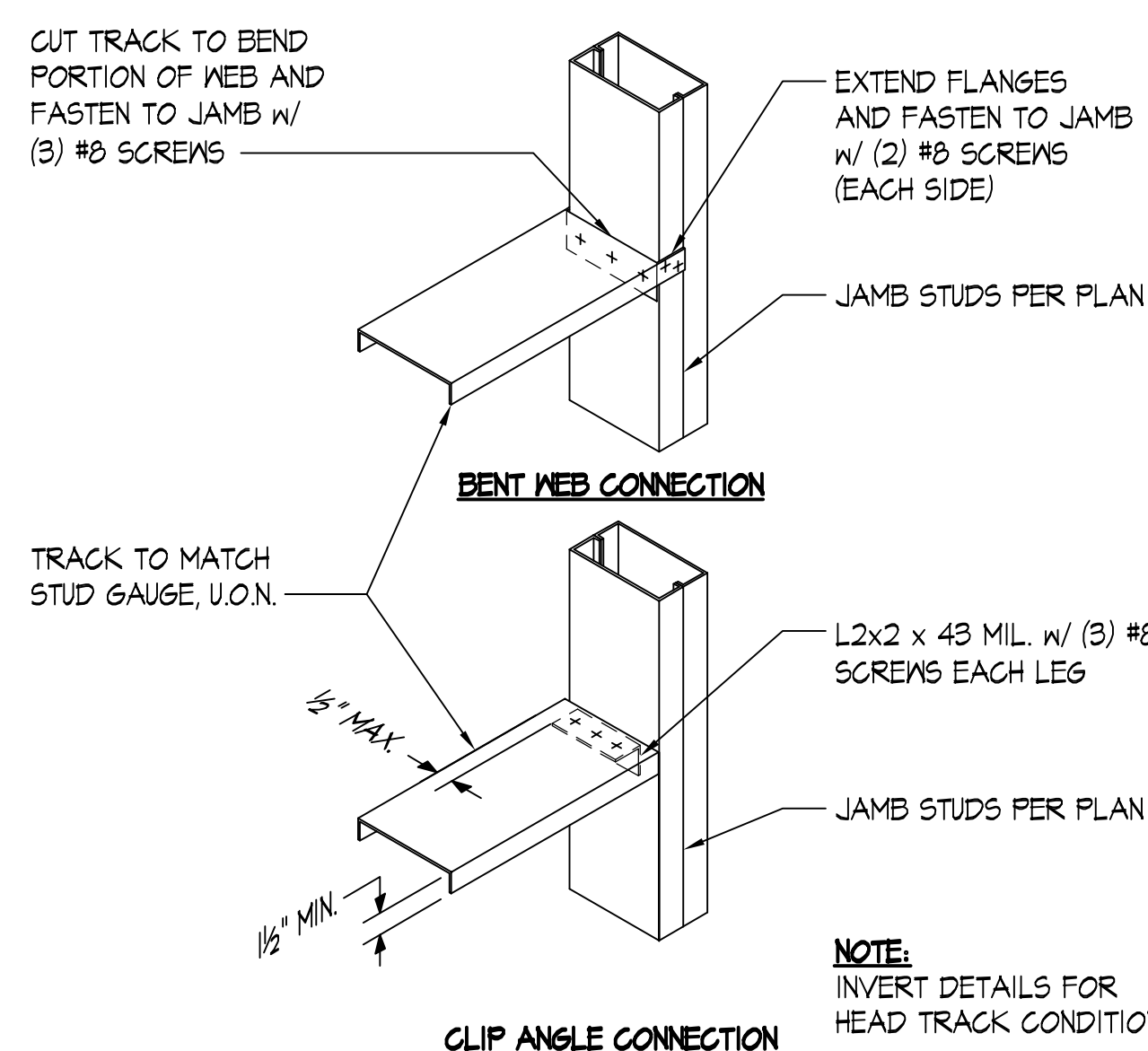
SCALE: NONE

7

TYPICAL DOUBLE STUD

SCALE: NONE

8



TYPICAL SILL AND HEAD TRACK CONNECTIONS

SCALE: NONE

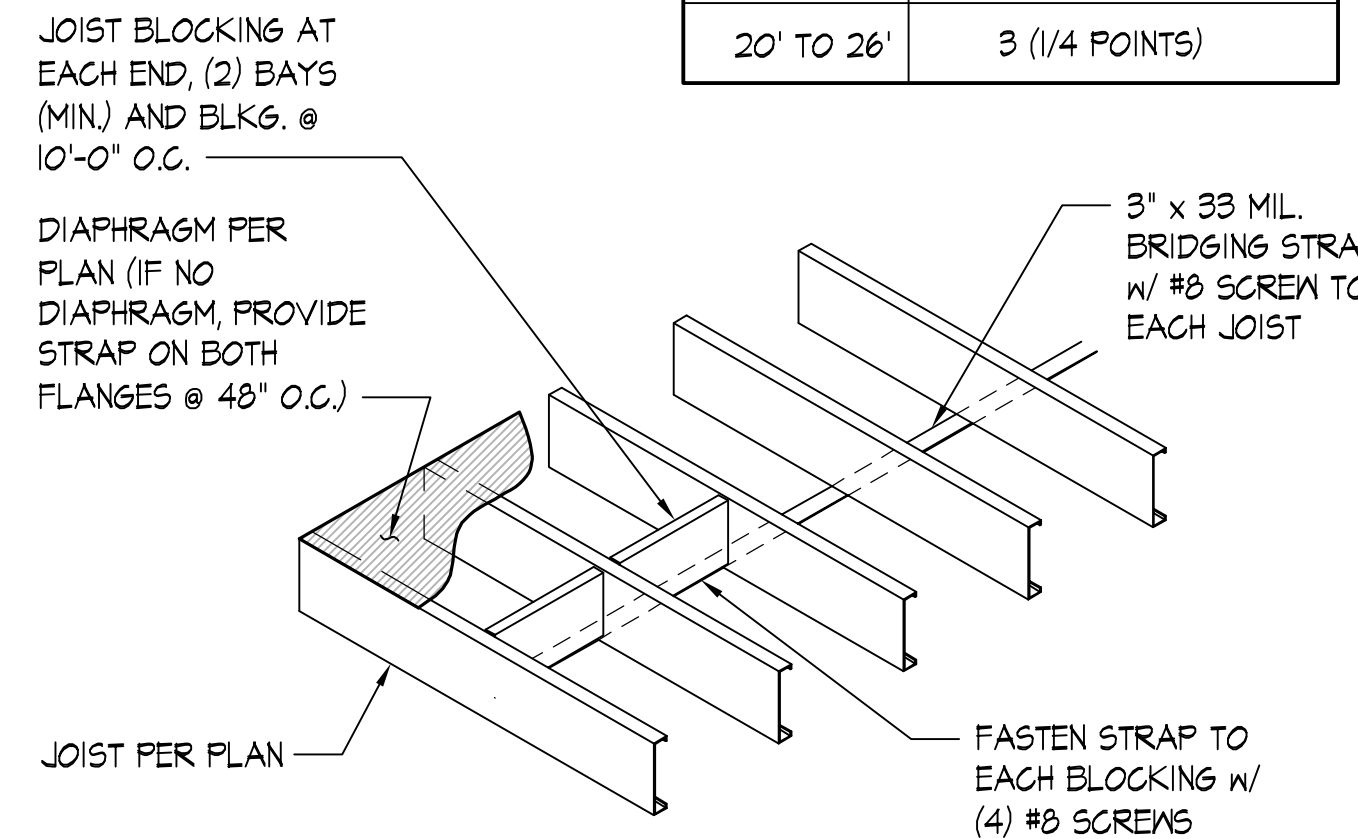
9

TYPICAL JOIST BRIDGING DETAIL

SCALE: NONE

10

BRIDGING SCHEDULE	
SPAN	NUMBER OF ROWS
UP TO 14'	1 (MID-SPAN)
14' TO 20'	2 (1/3 POINTS)
20' TO 26'	3 (1/4 POINTS)



DETAIL

SCALE: NONE

11

TYPICAL LIGHT GAUGE METAL FASTENING SCHEDULE

TYPICAL LIGHT GAUGE METAL FASTENING SCHEDULE	
CONNECTION:	SHEET METAL SCREWS: ① ②
1. JOIST TO TRACK	(2) #8
2. BRIDGING TO JOIST, CLIPS EA. END	(3) #8
3. 1" x 6" SUBFLOOR OR LESS TO EACH JOIST, FACE SCREW	(2) #8
4. WIDER THAN 1" x 6" SUBFLOOR TO EACH JOIST, FACE SCREW	(3) #8
5. 2" SUBFLOOR TO JOIST OR BEAM, BLIND AND FACE SCREW	(2) #8
6. BOTTOM TRACK TO JOIST OR BLOCKING, FACE SCREW	#8 @ 16" O.C.
7. TOP & BOT TRACK TO EA STUD	#8 EA SIDE
8. DOUBLE STUDS, FACE SCREW	(2) ROWS #8 @ 12" O.C.
9. TOP TRACK AT INTERSECTIONS, FACE SCREW	(4) #8
10. TOP TRACK AT LAPS, FACE SCREW	(6) #8
11. CEILING JOISTS TO PLATE	(2) #8
12. CEILING JOISTS, LAPS OVER PARTITIONS, FACE SCREWS	(2) #8
13. CEILING JOISTS TO PARALLEL RAFTERS, FACE SCREWS	(2) #8
14. RAFTER TO TRACK	(2) #8
15. 1" x 8" SHEATHING OR LESS TO EACH BEARING, FACE SCREW	(2) #8
16. WIDER THAN 1" x 8" SHEATHING TO EACH BEARING, FACE SCREW	(3) #8
17. BUILT UP CORNER STUDS	#8 @ 12" O.C.
18. BUILT UP BEAMS	#8 @ 12" O.C. @ T&B, EA SIDE

FOOTNOTES:

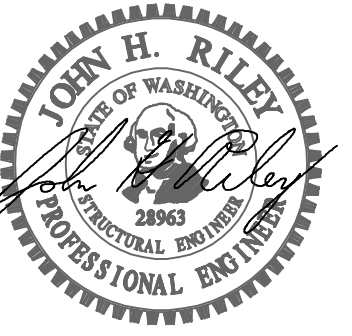
- U.O.N. ON PLAN OR OTHER DETAILS
- LARGER SCREWS MAY BE SUBSTITUTED FOR THOSE SHOWN

TYPICAL LIGHT GAUGE METAL FASTENING SCHEDULE

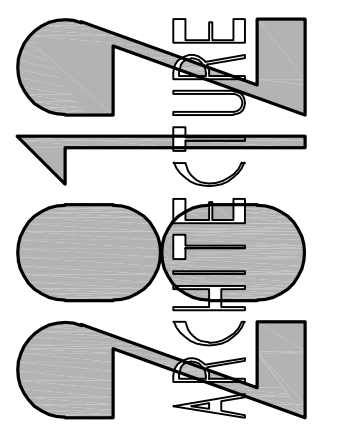
SCALE: NONE

12

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Drawing:
S4.0
 Job Number:
 22325.01

File: S22-4002.dwg
 Plot: 08/08/2022 11:14 am
 Plotter: HP DesignJet 5000

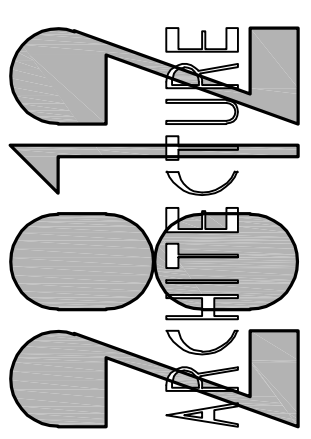
SHEAR WALL SCHEDULE				
SHEAR WALL TYPE	SHEATHING	PANEL EDGE FASTENERS	HORIZONTAL TRACK FASTENERS	BOTTOM TRACK ANCHOR BOLTS TO CONCRETE (54 MIL. TRACK MIN.)
SW-6	22GA. SUREBOARD	#10 SCREW @ 6" O.C.	(2) ROWS OF #8 SCREWS @ 16" O.C.	5/8" ϕ BOLT @ 48" O.C.
SW-4	22GA. SUREBOARD	#10 SCREW @ 4" O.C.	(2) ROWS OF #8 SCREWS @ 12" O.C.	5/8" ϕ BOLT @ 48" O.C.

- NOTES:**
- FASTENERS IN THE FIELD SHALL BE #10 SCREWS @ 12" O.C.
 - BLOCK ALL PANEL EDGES. INSTALL PANELS VERTICALLY.
 - PROVIDE PANEL EDGE FASTENERS TO MULTIPLE STUDS AT HOLDDOWNS.
 - EMBED CAST-IN-PLACE ANCHOR BOLTS 7" MIN.
 - EQUIVALENT ϕ EXPANSION ANCHOR MAY BE USED IN PLACE OF CAST-IN-PLACE ANCHOR. (EMBED 5 1/2" MIN.)
 - "SUREBOARD" IS SERIES 200 STRUCTURAL PANELS COMPLYING WITH THE GENERAL NOTES.

For:	PERMIT SET
Date:	08/08/22

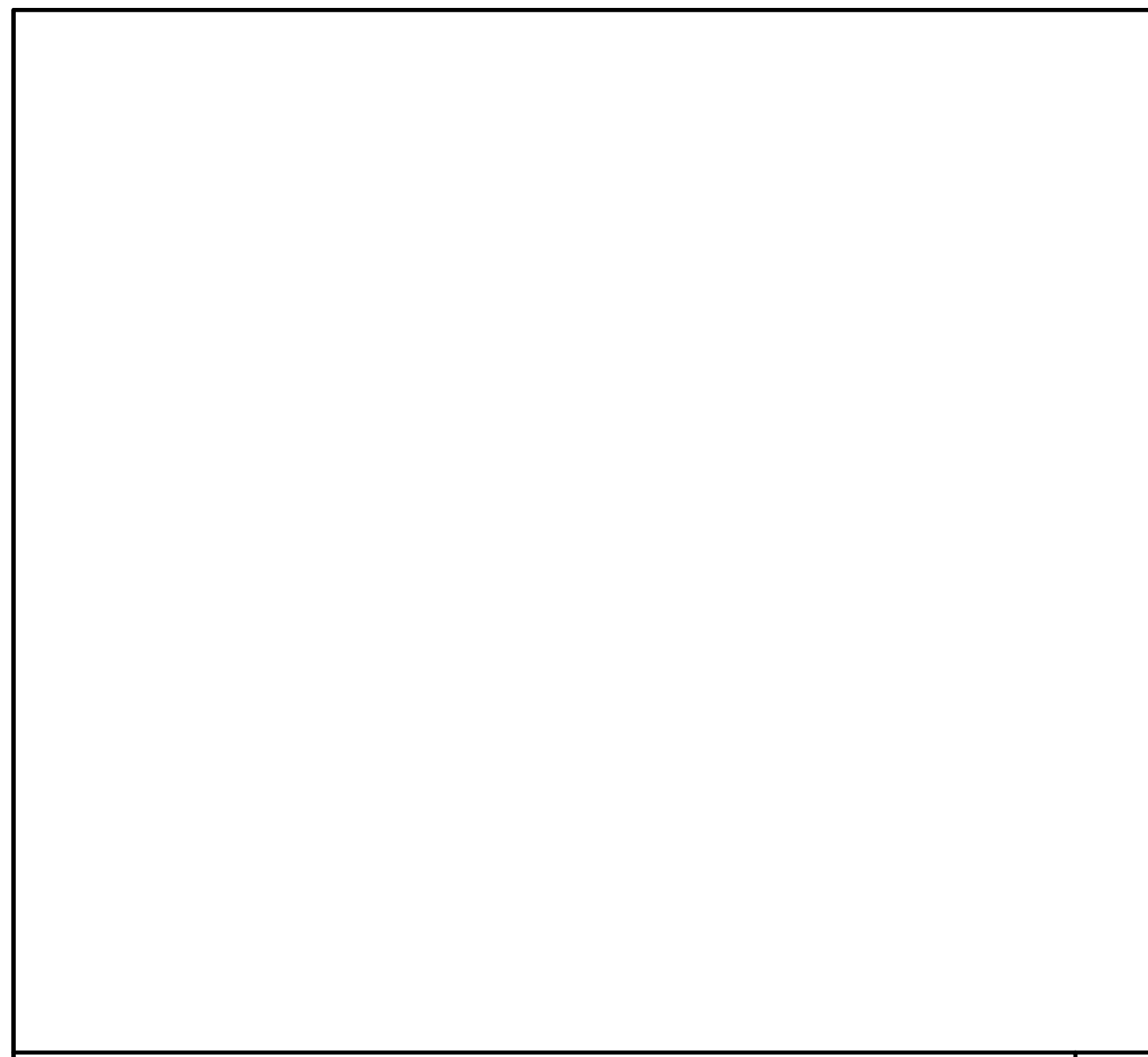


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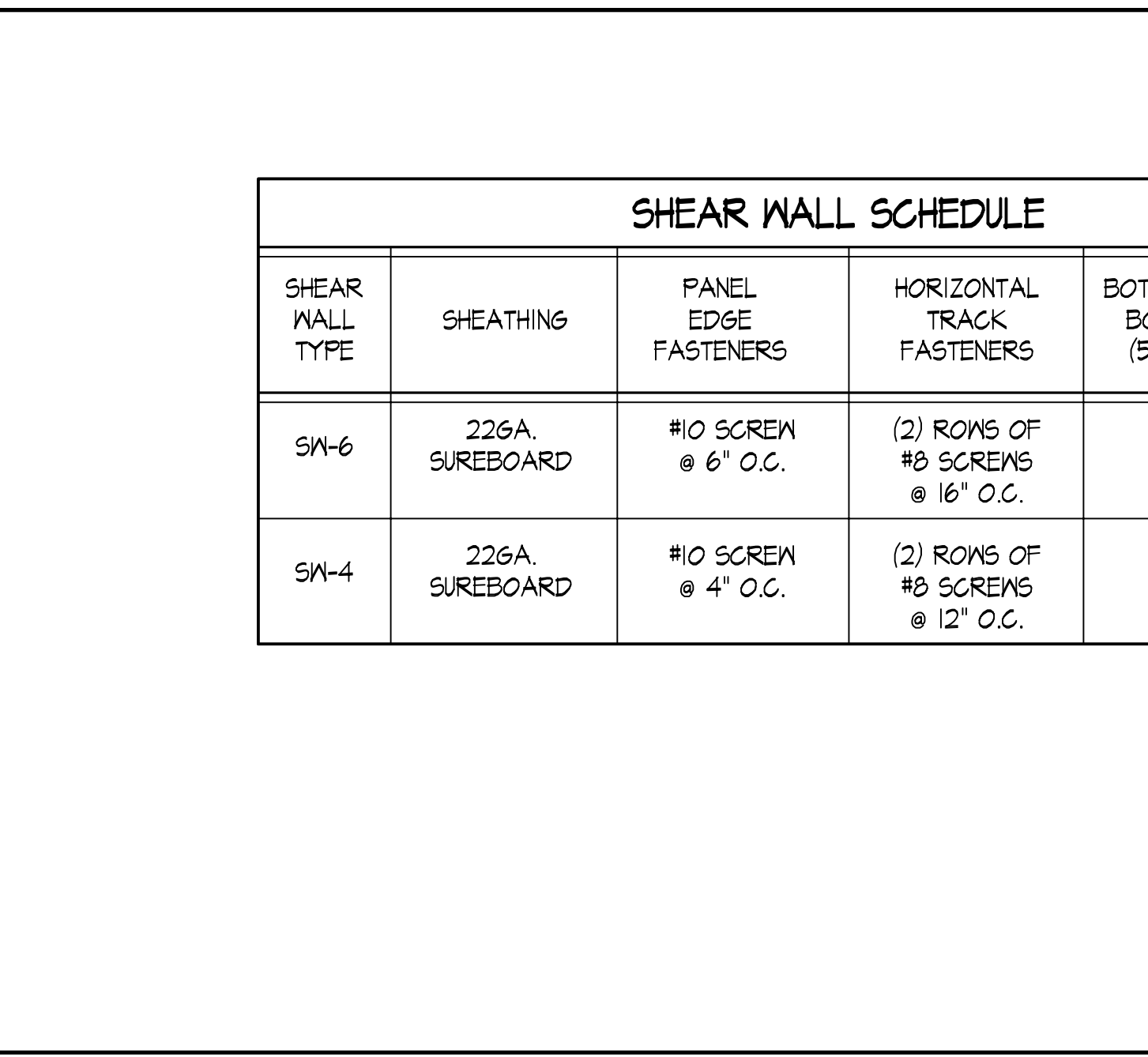
Drawing:
S4.1
Job Number:
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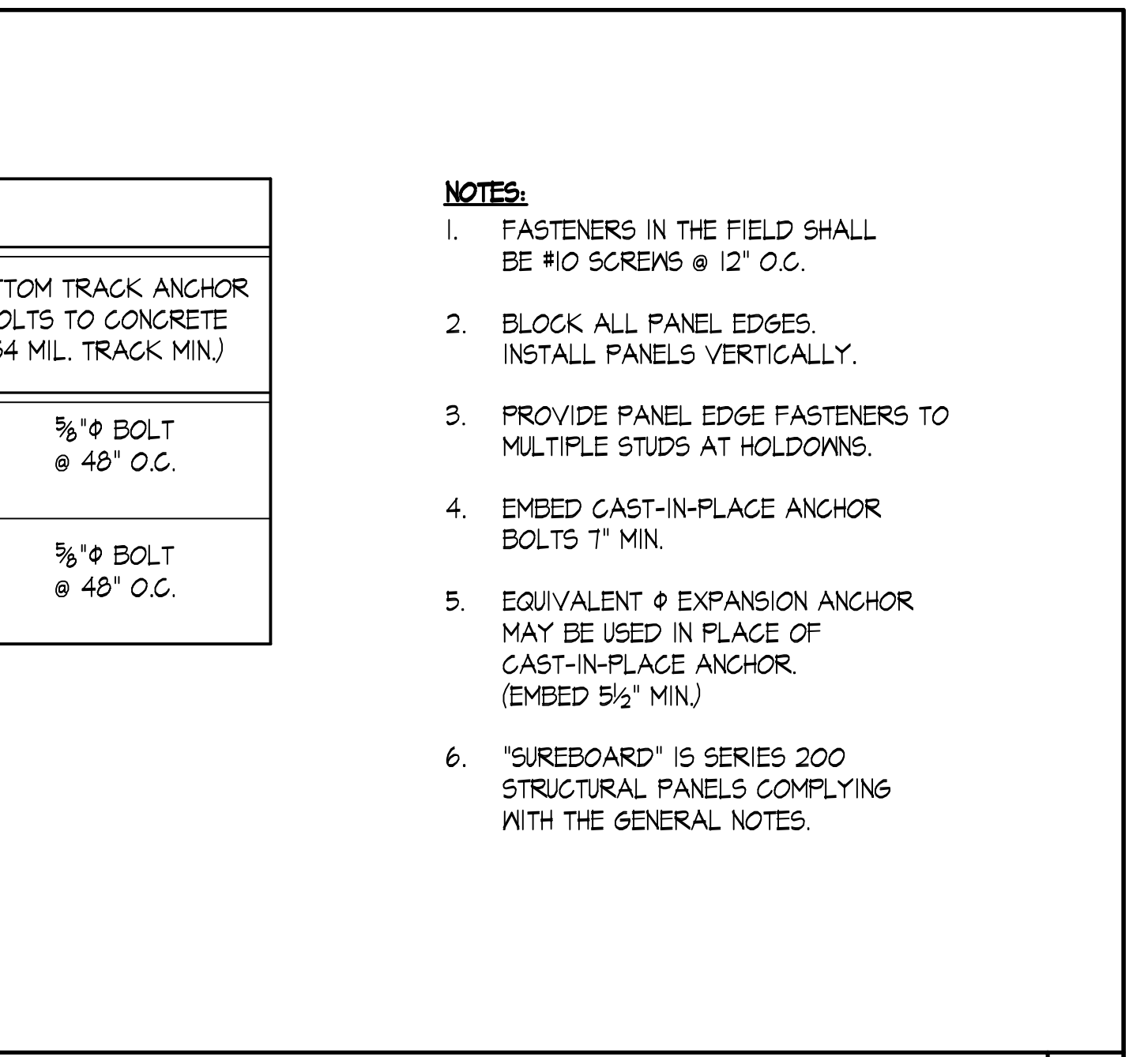
DETAIL SCALE: NONE | 1 SHEAR WALL CONNECTION TO HSS COLUMN SCALE: NONE



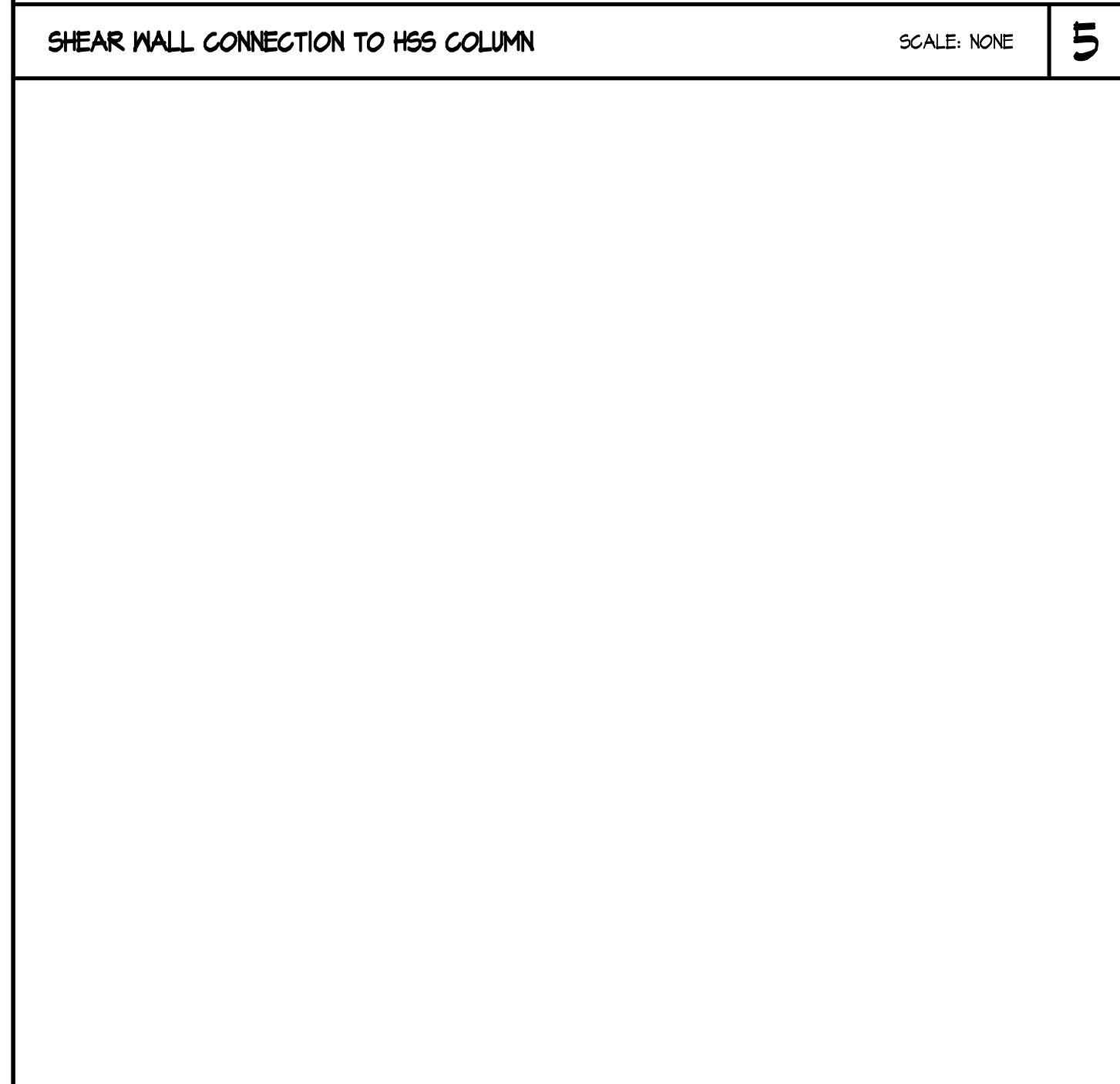
DETAIL SCALE: NONE | 2 SHEAR WALL ATTACHMENT TO UNDERSIDE OF METAL DECK SCALE: NONE



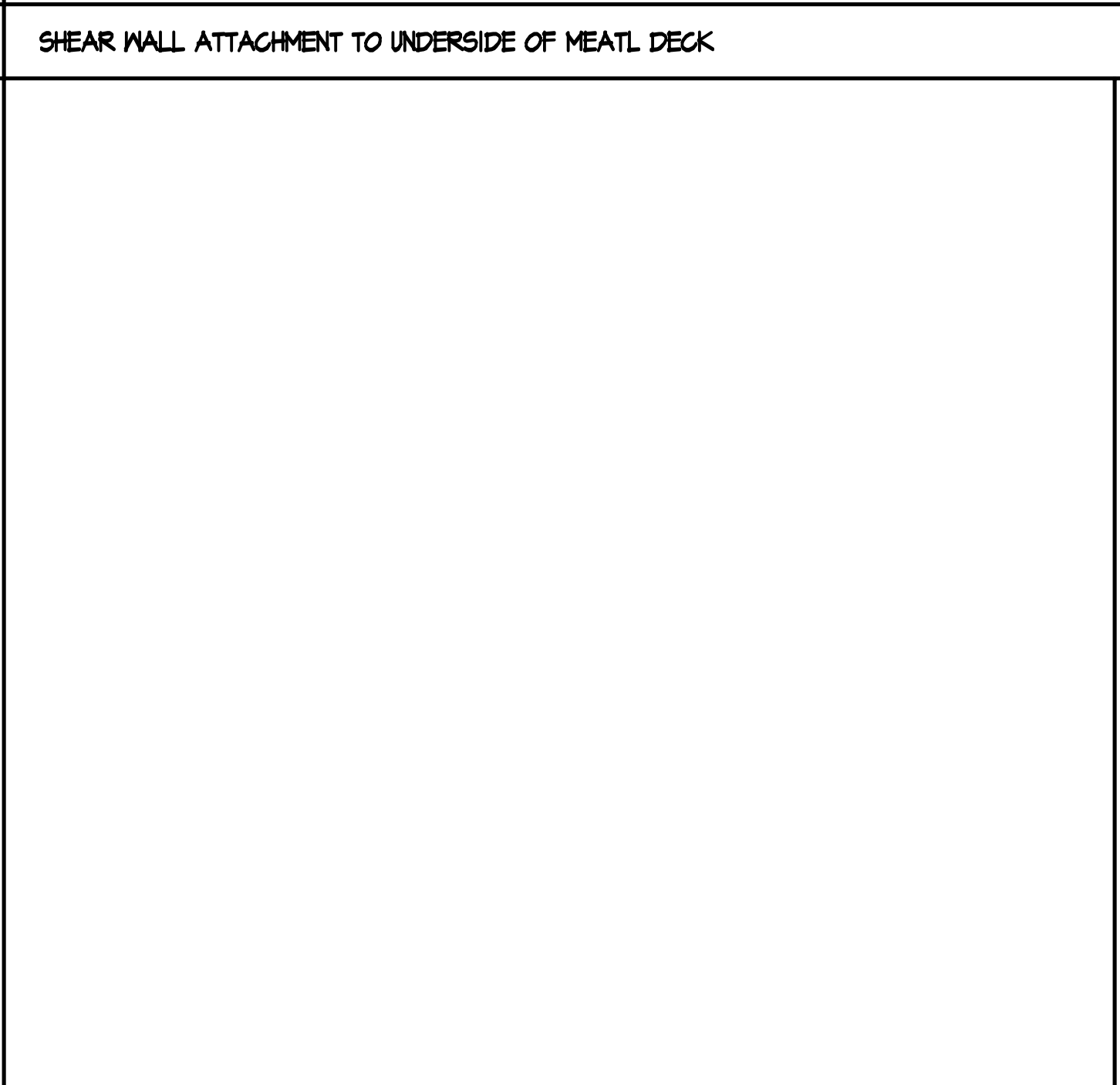
DETAIL SCALE: NONE | 3 SHEAR WALL ATTACHMENT TO STEEL BEAM SCALE: NONE



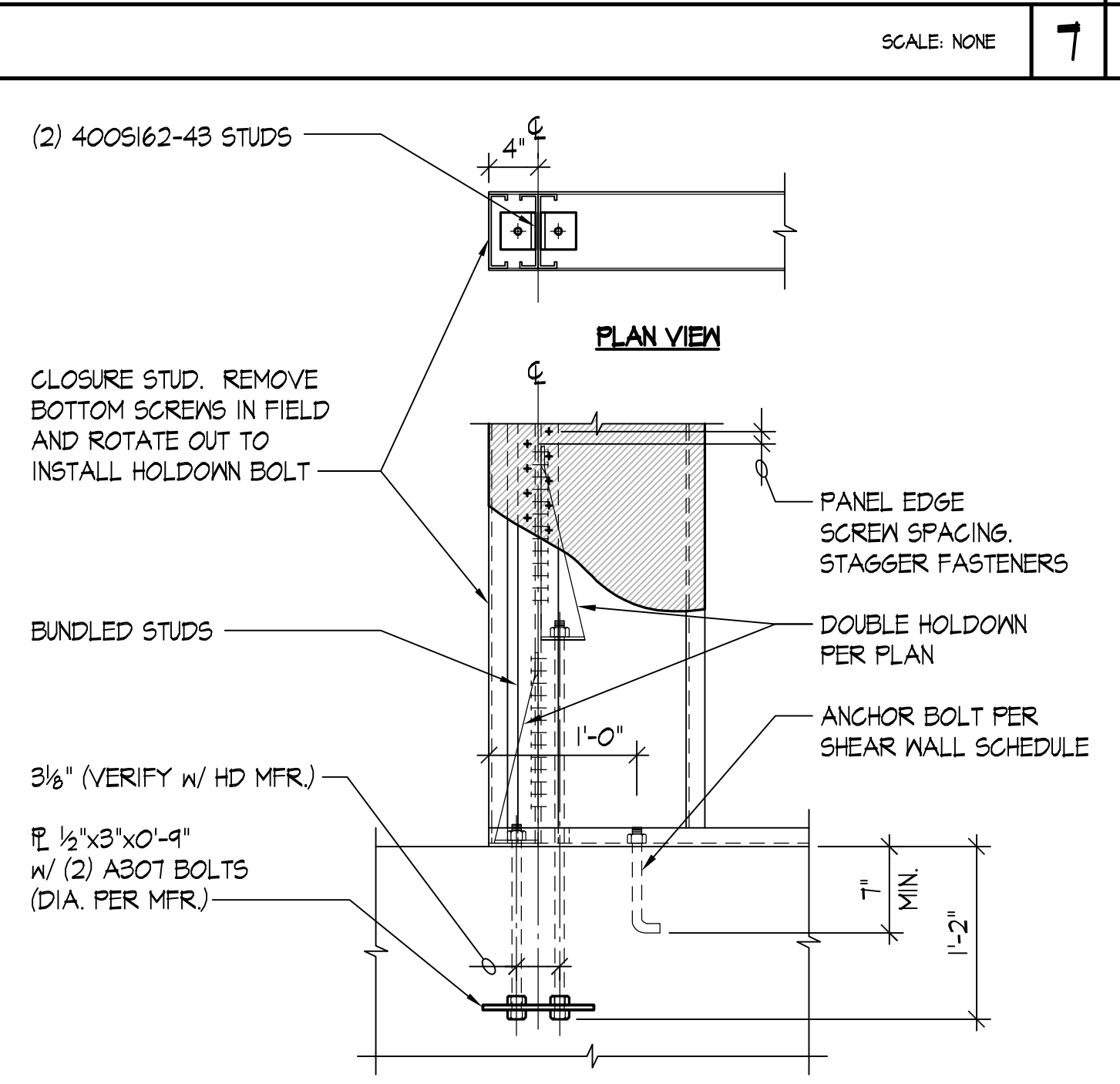
DETAIL SCALE: NONE | 4 TYPICAL BOLTED HOLDOWN AT CONCRETE SCALE: NONE



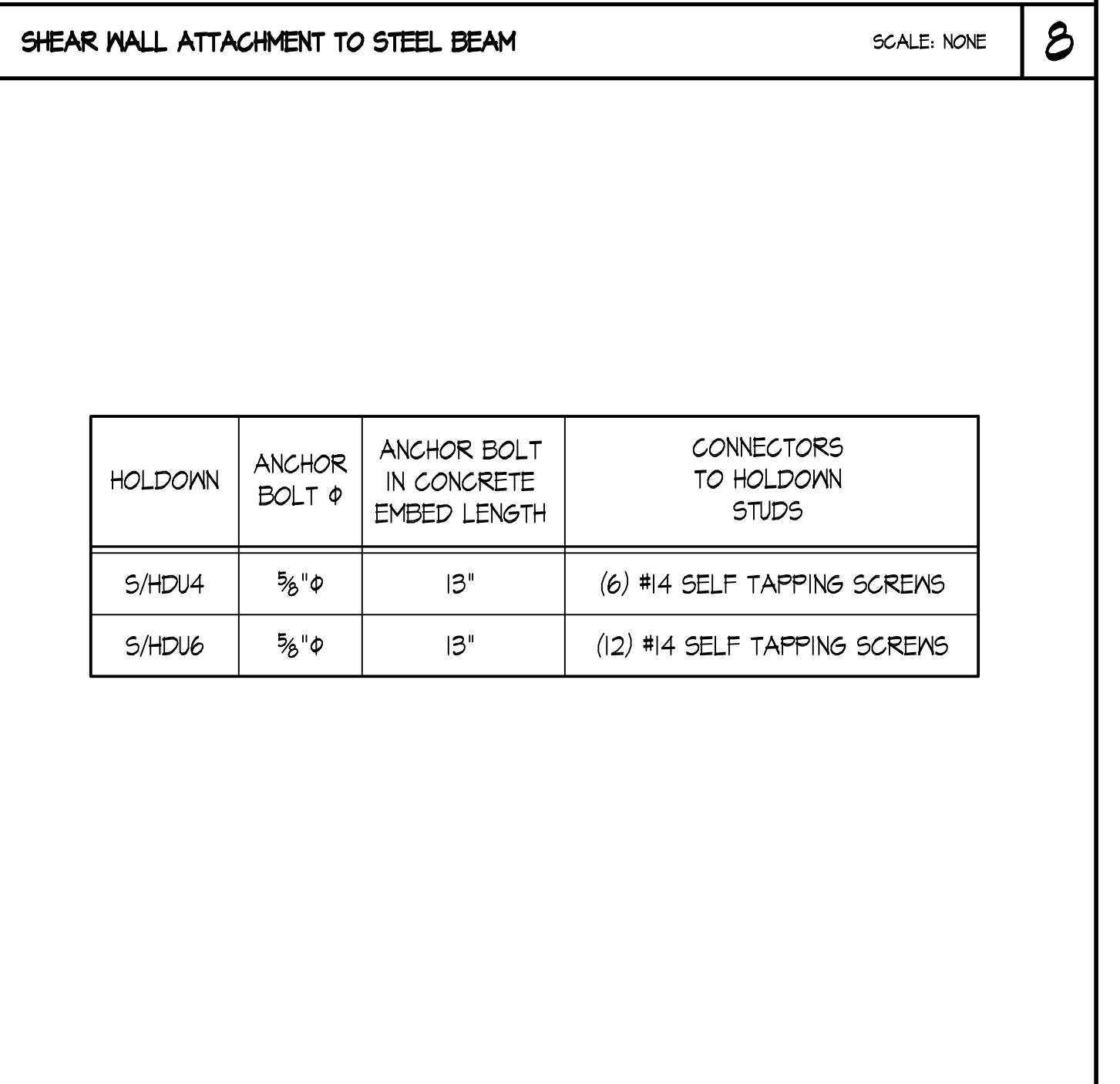
DETAIL SCALE: NONE | 5 SHEAR WALL CONNECTION TO HSS COLUMN SCALE: NONE



DETAIL SCALE: NONE | 6 SHEAR WALL ATTACHMENT TO UNDERSIDE OF METAL DECK SCALE: NONE



DETAIL SCALE: NONE | 7 SHEAR WALL ATTACHMENT TO STEEL BEAM SCALE: NONE



DETAIL SCALE: NONE | 8 TYPICAL BOLTED HOLDOWN AT CONCRETE SCALE: NONE

HOLDOWN	ANCHOR BOLT ϕ	ANCHOR BOLT IN CONCRETE EMBED LENGTH	CONNECTORS TO HOLDOWN STUDS
S/HDU4	5/8" ϕ	13"	(6) #4 SELF TAPPING SCREWS
S/HDU6	5/8" ϕ	13"	(12) #4 SELF TAPPING SCREWS

PLOT: 22325-01.dwg PLOT DATE: 08/08/2022 11:15 am
 PLOT: 22325-01.dwg PLOT DATE: 08/08/2022 11:15 am

Plot: 225-102.dwg Plot Date: 08/02/2022 11:15 am
 Plot Path: \\p01\plotters\

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DETAIL SCALE: NONE | 2

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DETAIL SCALE: NONE | 5

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DETAIL SCALE: NONE | 9

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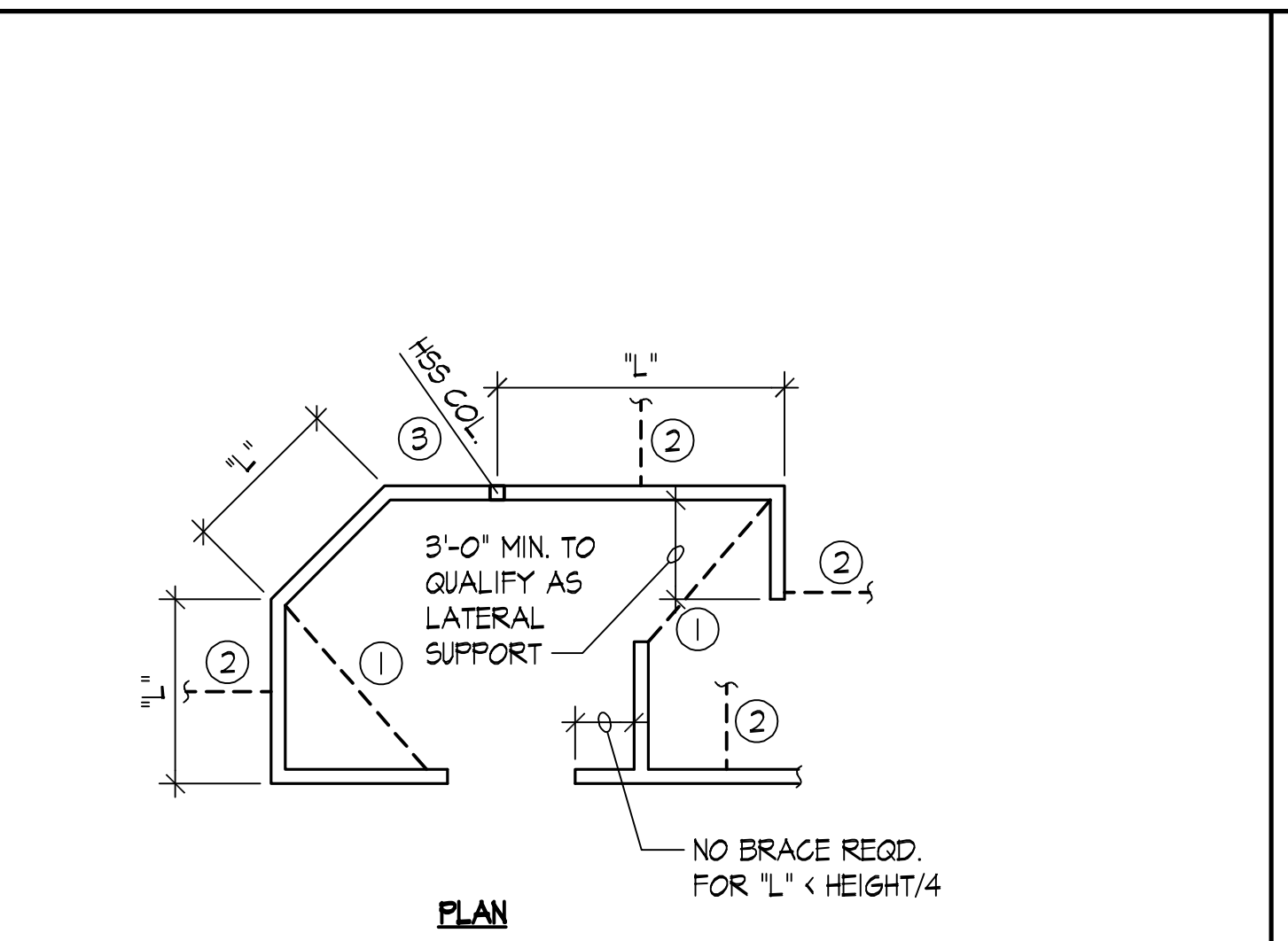
DETAIL SCALE: NONE | 2

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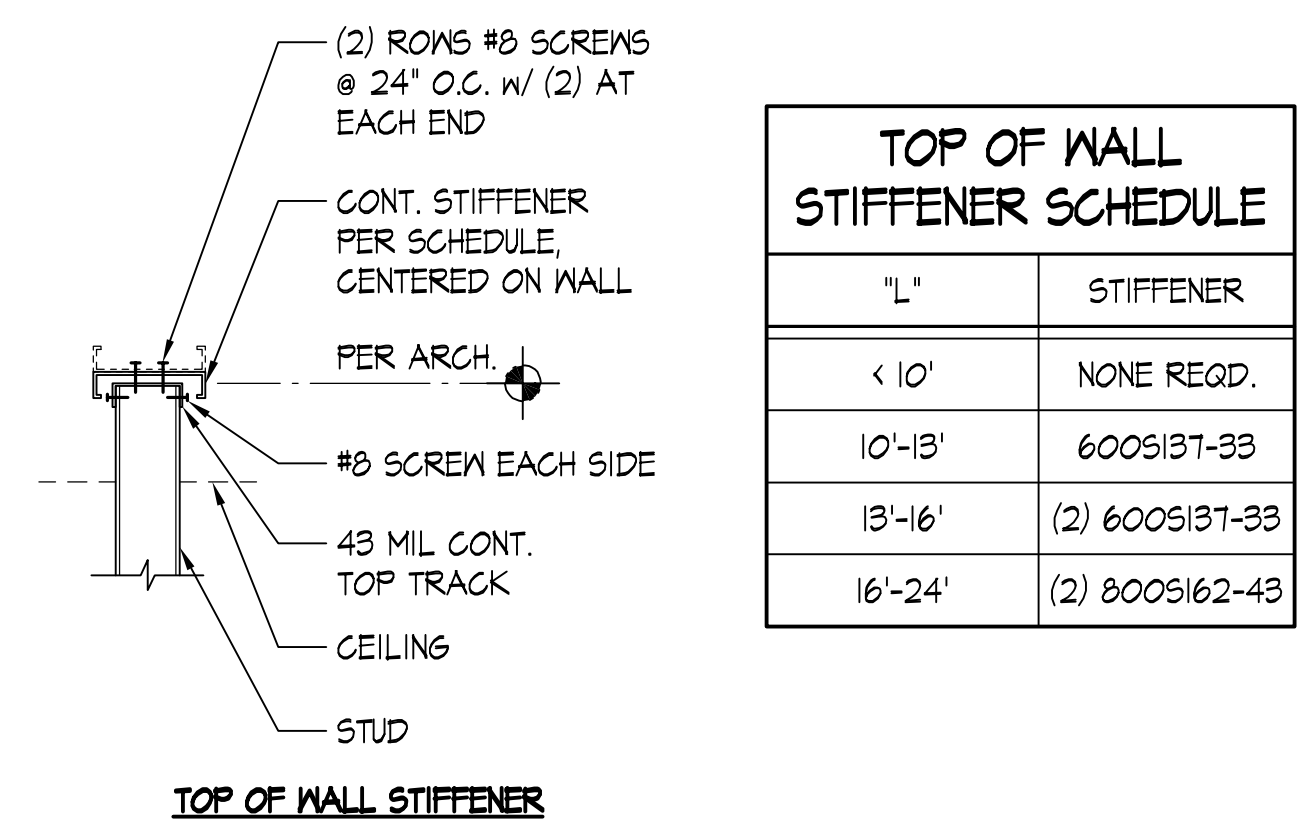
DETAIL SCALE: NONE | 6

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DETAIL SCALE: NONE | 10



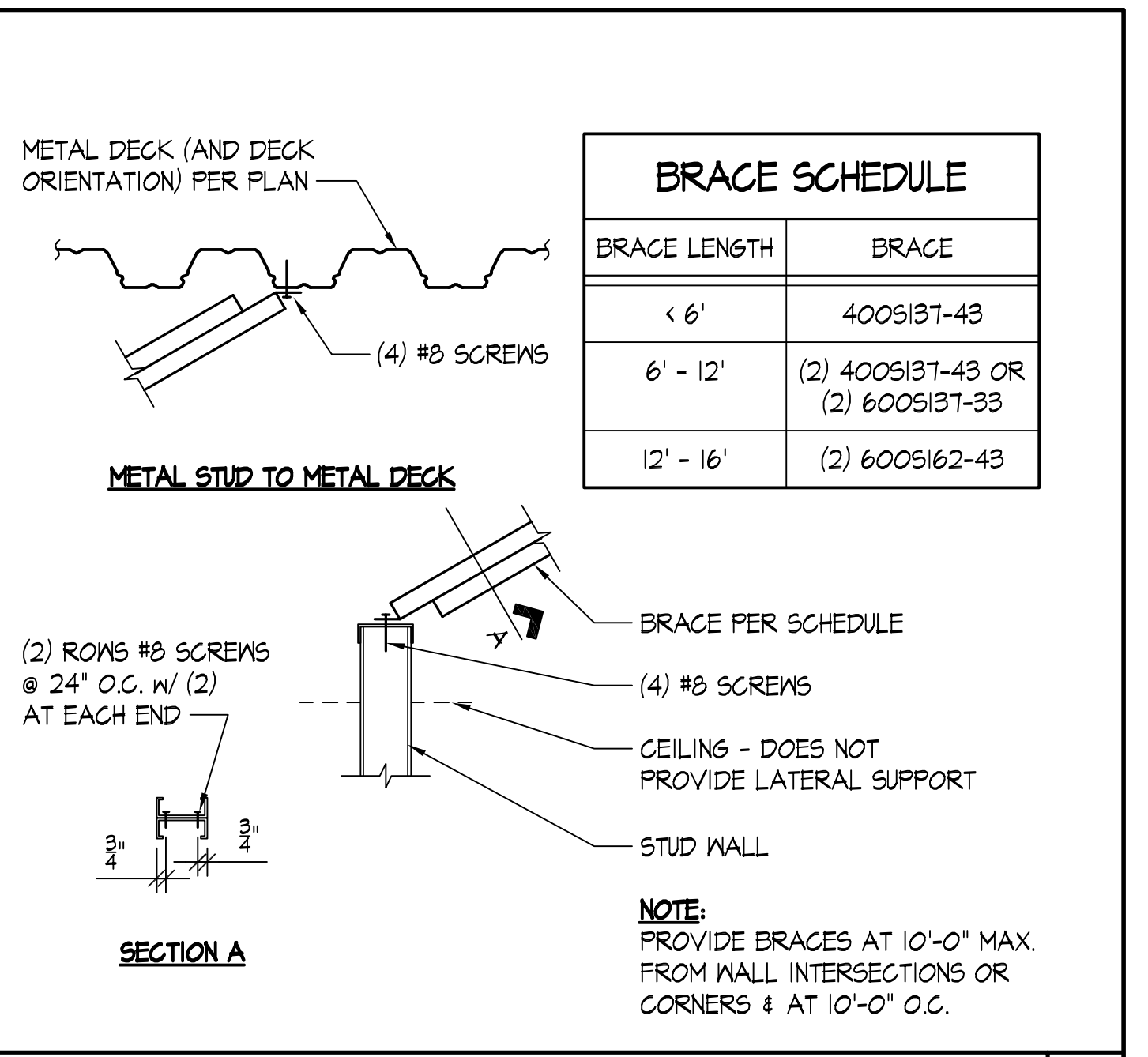
- NOTES:**
- THIS PLAN IS AN EXAMPLE ONLY. IT DOES NOT REPRESENT A SPECIFIC WALL.
 - "L" INDICATES UNBRACED LENGTH OF WALLS. SEE SCHEDULE FOR TOP OF WALL STIFFENER SIZE.
 - AT CONTRACTOR'S OPTION, INSTEAD OF TOP OF WALL STIFFENER:
 - ① INDICATES HORIZ. BRACE EXTENDING TO ADJACENT CORNER PER 8/54.2.
 - ② INDICATES BRACE UP TO STRUCTURE PER 4/54.2.
 - ③ INDICATES WALL BRACED AT HSS COLUMN. FASTEN STUDS TO ADJACENT FACE OF HSS COL. W/ SHOT PINS @ 16" O.C.
 - CEILING DOES NOT PROVIDE LATERAL SUPPORT.
 - PROVIDE BRACING AT ALL TOP TRACK SPLICES.



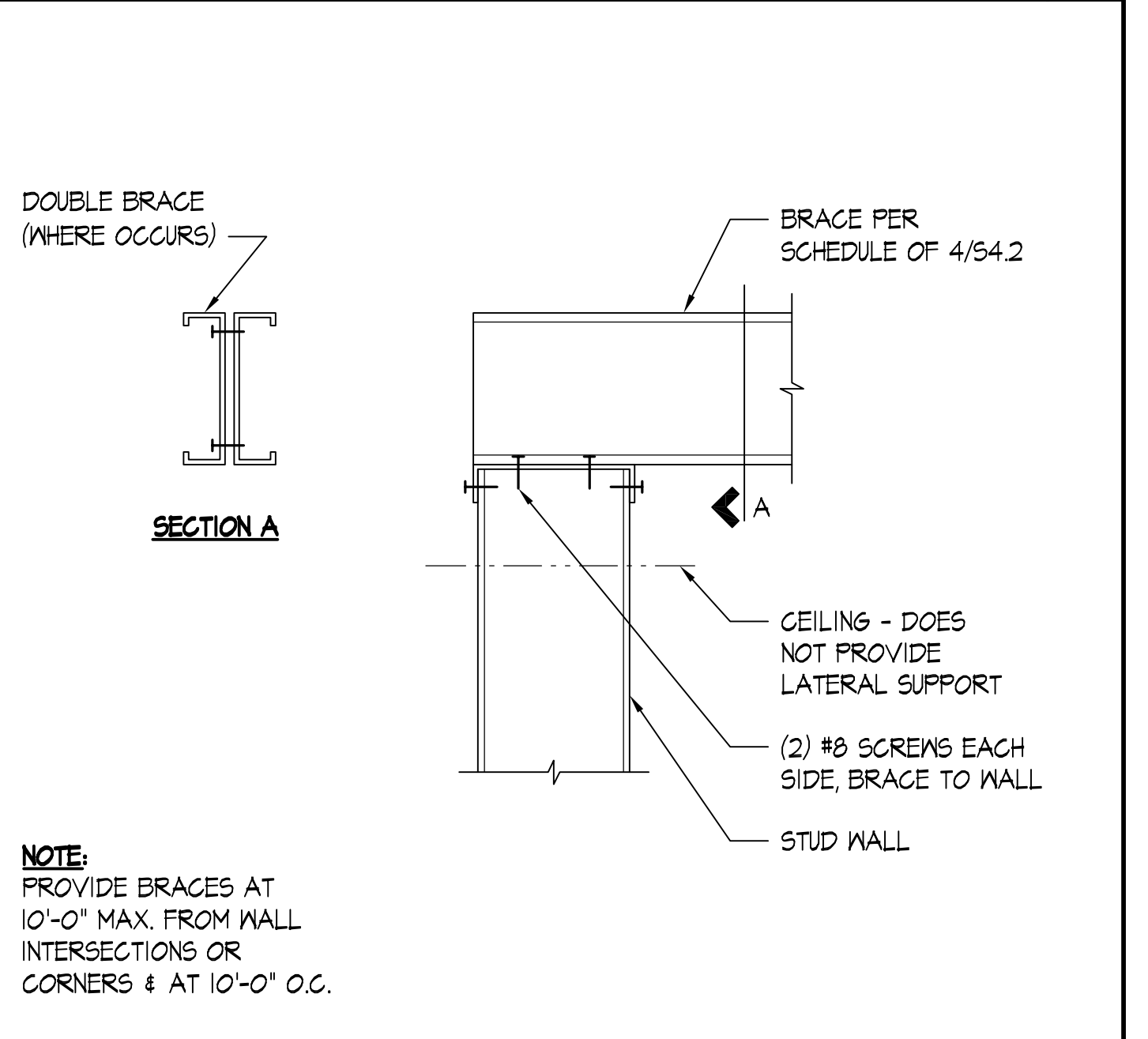
TYPICAL PARTIAL HEIGHT PARTITION WALL LATERAL SUPPORT SCALE: NONE | 7

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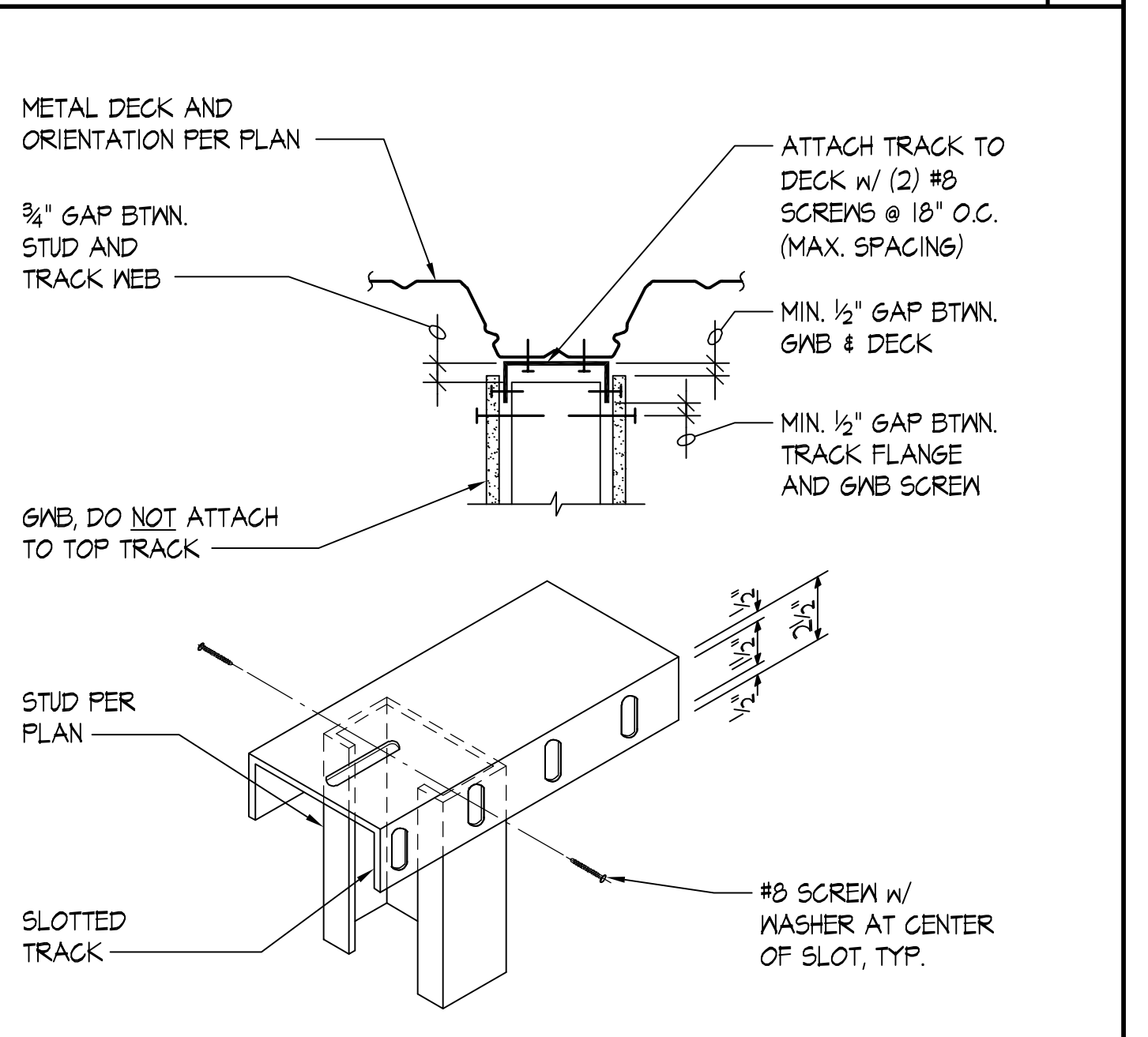
STUD SCHEDULE SCALE: NONE | 11



TYPICAL PARTIAL HEIGHT PARTITION WALL BRACING SCALE: NONE | 4



TYPICAL PARTITION WALL HORIZONTAL BRACE SCALE: NONE | 8

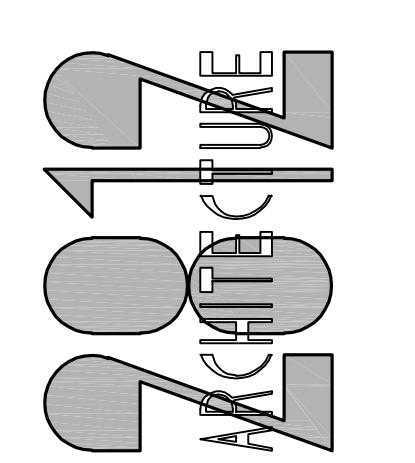


TYPICAL DEFLECTION TRACK SCALE: NONE | 12

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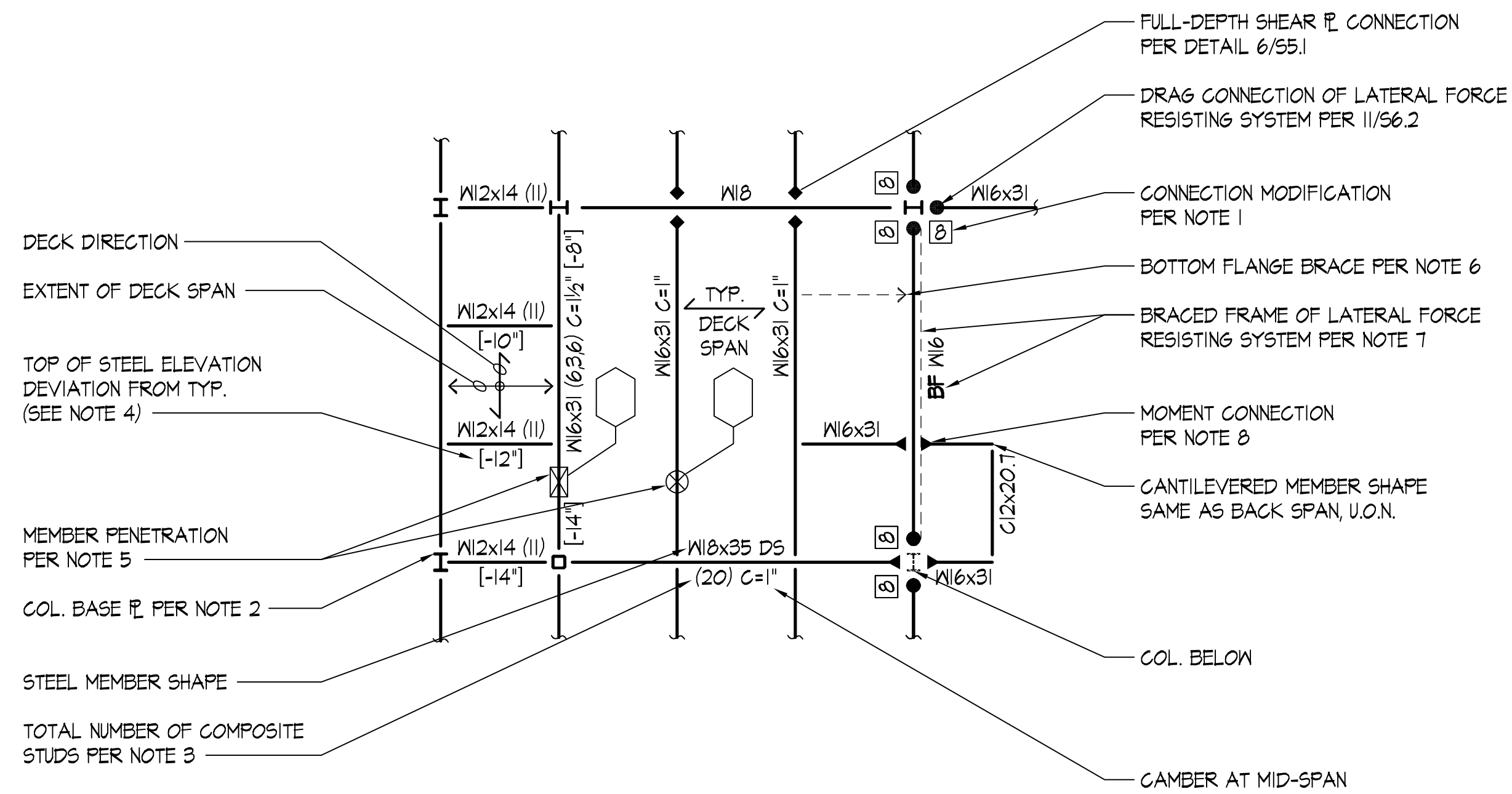
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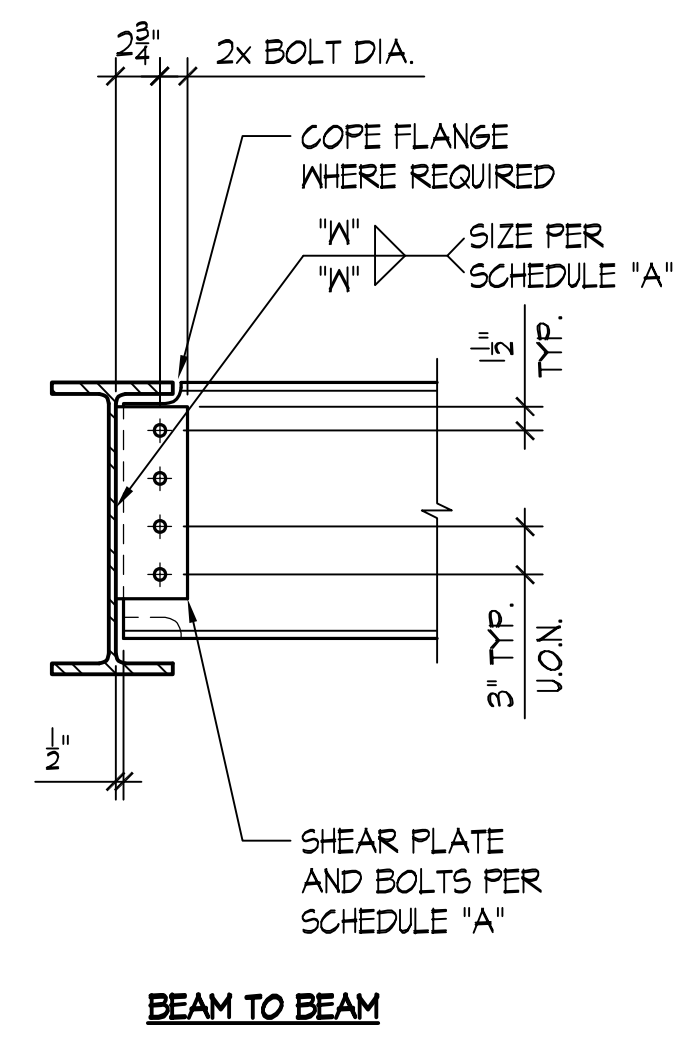
Drawing: **S4.2**
 Job Number: 22325.01



- NOTES:**
- TYPICAL BEAM TO COLUMN WEB CONNECTION PER 8/55.0; TYPICAL BEAM TO BEAM AND BEAM TO COLUMN FLANGE CONNECTION PER 4/55.0.
 - TYPICAL BASE \bar{r} PER 7/53.1.
 - TYPICAL COMPOSITE STUD PER 12/55.1.
 - TOP OF STEEL ELEVATION DEVIATION AT BOTH ENDS OF MEMBER INDICATES SLOPING MEMBER.
 - TYPICAL MEMBER PENETRATION PER 2/55.1:
 - INDICATES SQUARE OR RECTANGULAR PENETRATION
 - INDICATES CIRCULAR OR OVAL PENETRATION
 - INDICATES SCHEDULE CALLOUT
 - TYPICAL BOTTOM FLANGE BRACE PER 8/55.1, ARROW INDICATES BOTTOM FLANGE ATTACHMENT LOCATION.
 - SEE LATERAL FORCE RESISTING SYSTEM ELEVATIONS ON SHEETS S6.0 THROUGH S6.2 FOR MEMBER SHAPES AND CONNECTION CALLOUTS.
 - TYPICAL BEAM TO COLUMN MOMENT CONNECTION PER 12/55.0. TYPICAL BEAM TO BEAM MOMENT CONNECTION PER 12/55.0.
- CONNECTION MODIFICATION FROM TYPICAL CONNECTION SCHEDULE:
INDICATES TOTAL NUMBER OF BOLTS IN MODIFIED CONNECTION

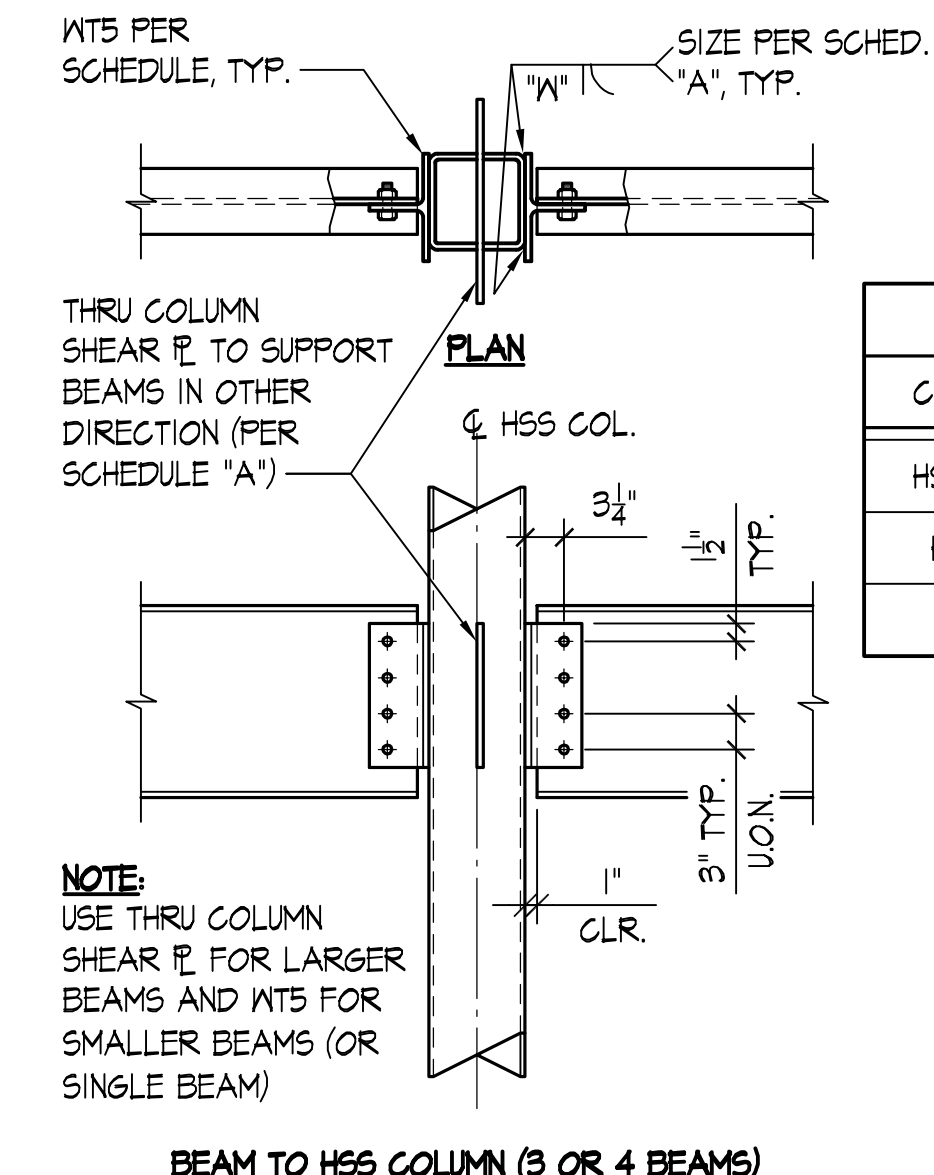
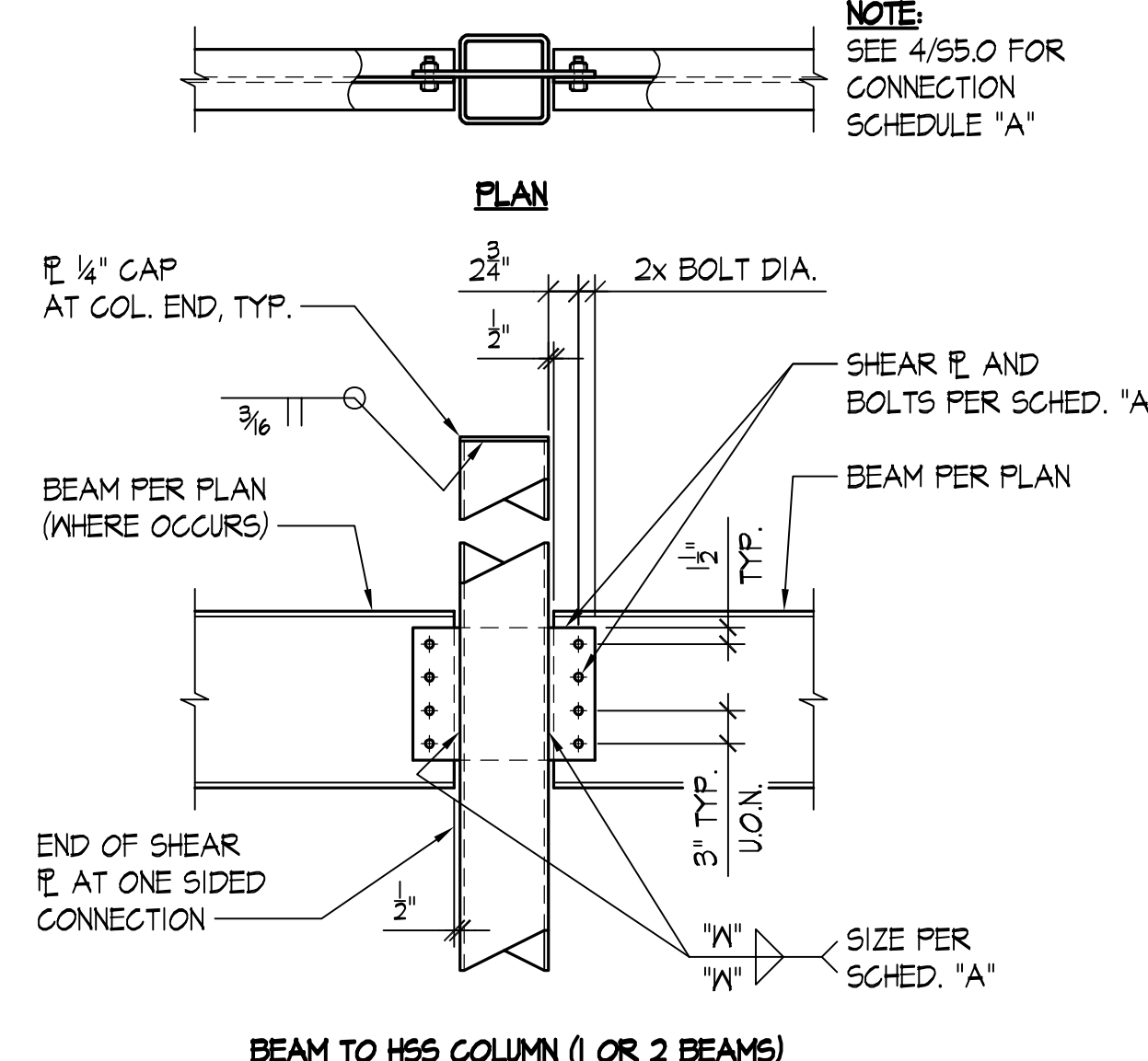
SCHEDULE "A"			
BEAM SIZE	BOLTS	PLATE THICKNESS	WELD SIZE "W"
W8, C8	(2) $\frac{1}{8}$ " ϕ	$\frac{1}{4}$ "	$\frac{3}{16}$ "
W10, C10	(2) $\frac{1}{8}$ " ϕ	$\frac{1}{4}$ "	$\frac{3}{16}$ "
W12, W14, C12	(3) $\frac{1}{8}$ " ϕ	$\frac{3}{8}$ "	$\frac{1}{4}$ "
W16, W18	(4) $\frac{1}{8}$ " ϕ	$\frac{3}{8}$ "	$\frac{1}{4}$ "
W21	(5) $\frac{1}{8}$ " ϕ	$\frac{3}{8}$ "	$\frac{1}{4}$ "
W24	(6) $\frac{1}{8}$ " ϕ	$\frac{3}{8}$ "	$\frac{1}{4}$ "
W27	(7) $\frac{1}{8}$ " ϕ	$\frac{3}{8}$ "	$\frac{1}{4}$ "
W30	(8) $\frac{1}{8}$ " ϕ	$\frac{1}{2}$ "	$\frac{3}{16}$ "

- NOTES:**
- BOLT TYPE = A325N, U.O.N.
 \bar{r} MATERIAL = A36, U.O.N.
 - USE HORIZONTAL SHORT SLOTTED HOLES IN THE SHEAR PLATE
 - BOLTS SHALL BE AT 4" O.C. SPACING FOR W10 BEAMS/C10 CHANNELS



TYPICAL BOLTED BEAM CONNECTION

SCALE: NONE 4



WTS SCHEDULE	
COL. SIZE	WTS
HSS4, 5, 6	WT5x15
HSS7, 8	WT5x19.5
HSS10	WT5x24.5

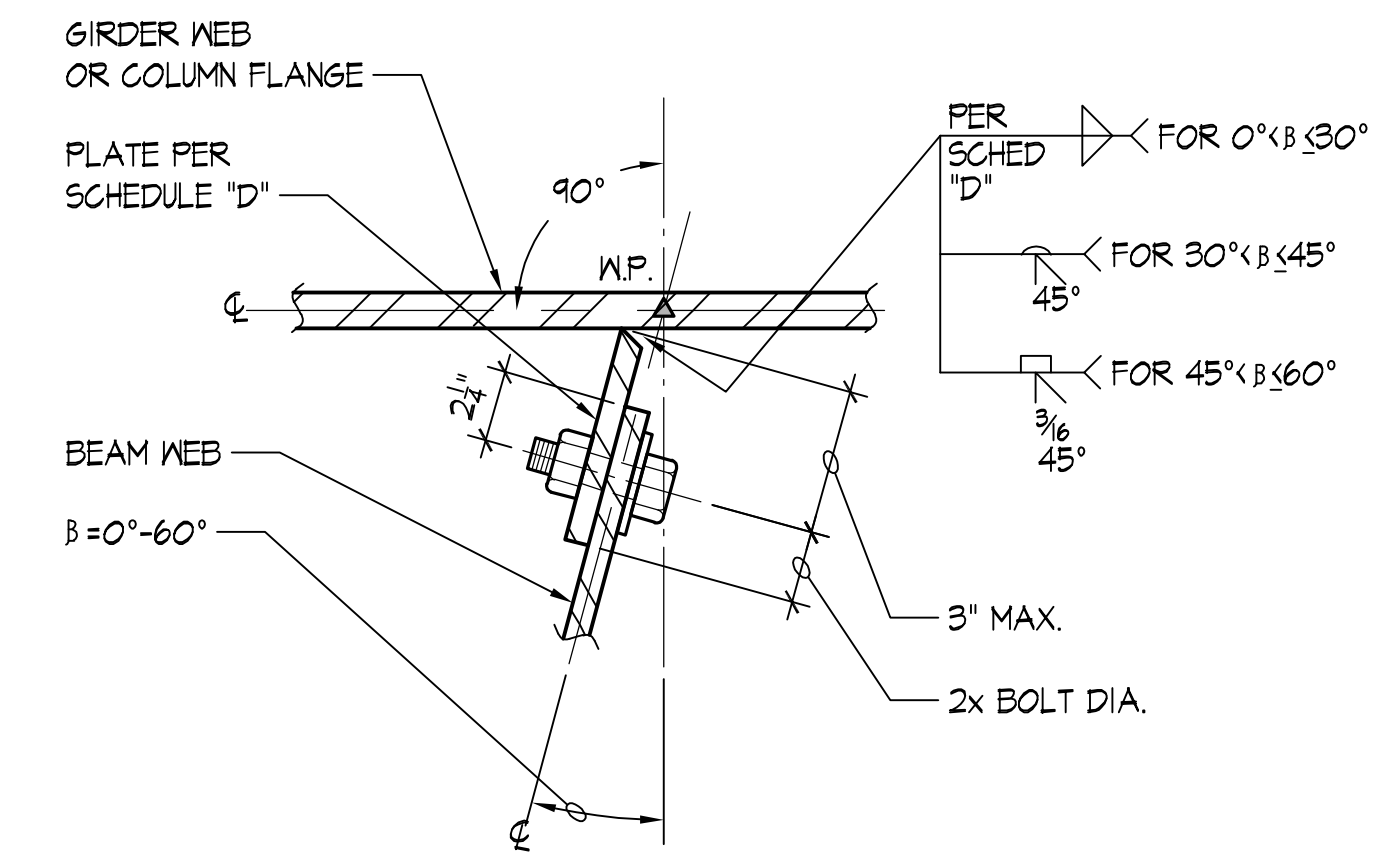
- NOTE:** USE THRU COLUMN SHEAR \bar{r} FOR LARGER BEAMS AND WTS FOR SMALLER BEAMS (OR SINGLE BEAM)

TYPICAL STEEL FRAMING PLAN SYMBOLS

SCALE: NONE 6

SCHEDULE "D"				
BEAM SIZE	BOLTS	PLATE THICKNESS t	WELD FOR 0° < β < 10°	WELD FOR 10° < β < 30°
W8, W10	(2) $\frac{1}{8}$ " ϕ	$\frac{3}{8}$ "		
W12, W14	(3) $\frac{1}{8}$ " ϕ	$\frac{3}{8}$ "		$\frac{1}{4}$ "
W16, W18	(4) $\frac{1}{8}$ " ϕ	$\frac{3}{8}$ "	$\frac{1}{4}$ "	$t/16$
W21	(5) $\frac{1}{8}$ " ϕ	$\frac{3}{8}$ "		
W24	(6) $\frac{1}{8}$ " ϕ	$\frac{3}{8}$ "		
W27	(7) $\frac{1}{8}$ " ϕ	$\frac{3}{8}$ "		
W30	(8) $\frac{1}{8}$ " ϕ	$\frac{1}{2}$ "		45°

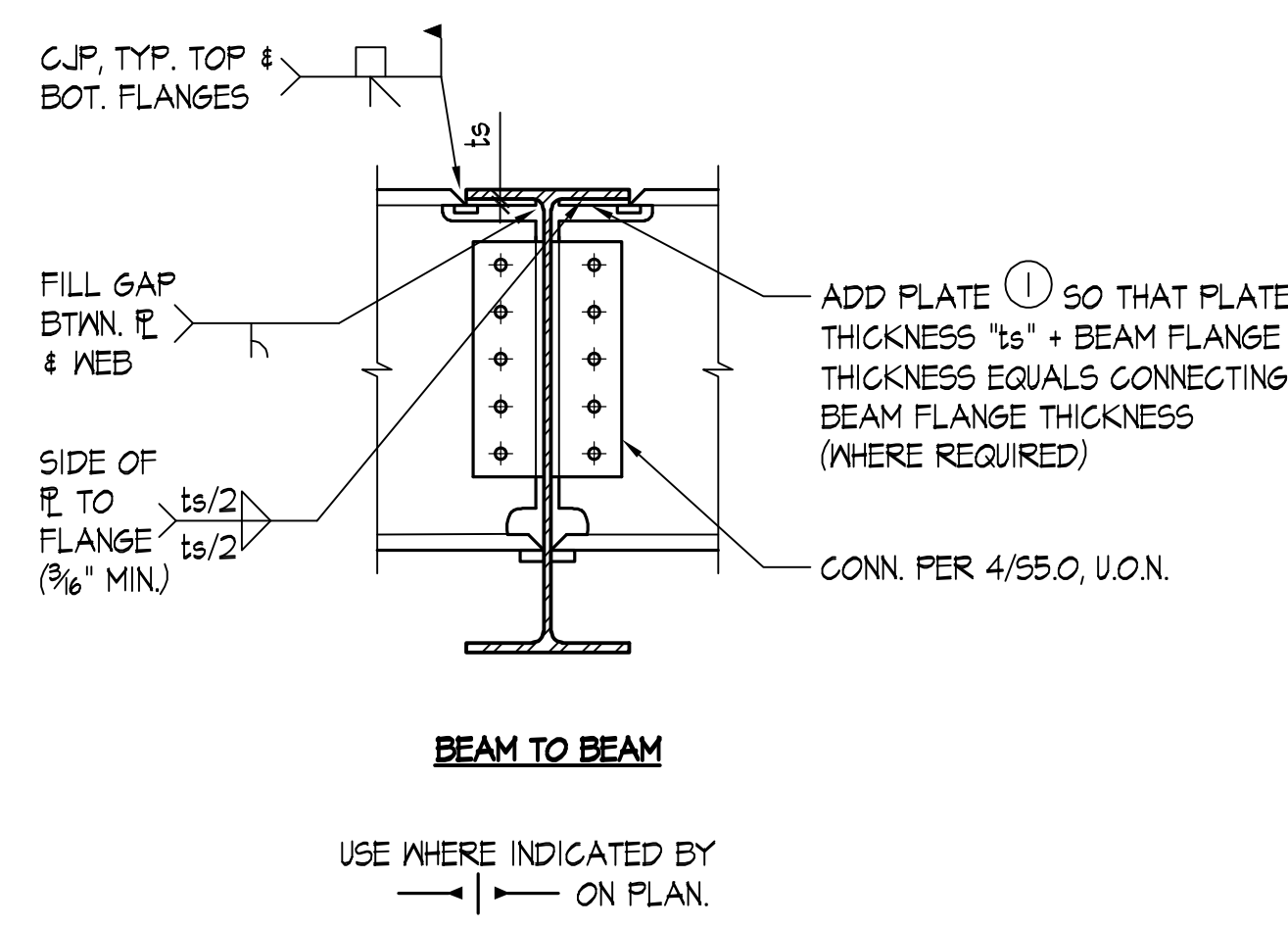
- NOTES:**
- BOLT TYPE = A325N, U.O.N.
 \bar{r} MATERIAL = A36, U.O.N.
 - USE HORIZONTAL SHORT SLOTTED HOLES IN THE PLATE AT COLUMN CONNECTIONS ONLY
 - BOLT SPACING PER DETAIL 4/55.0
 - t = PLATE THICKNESS



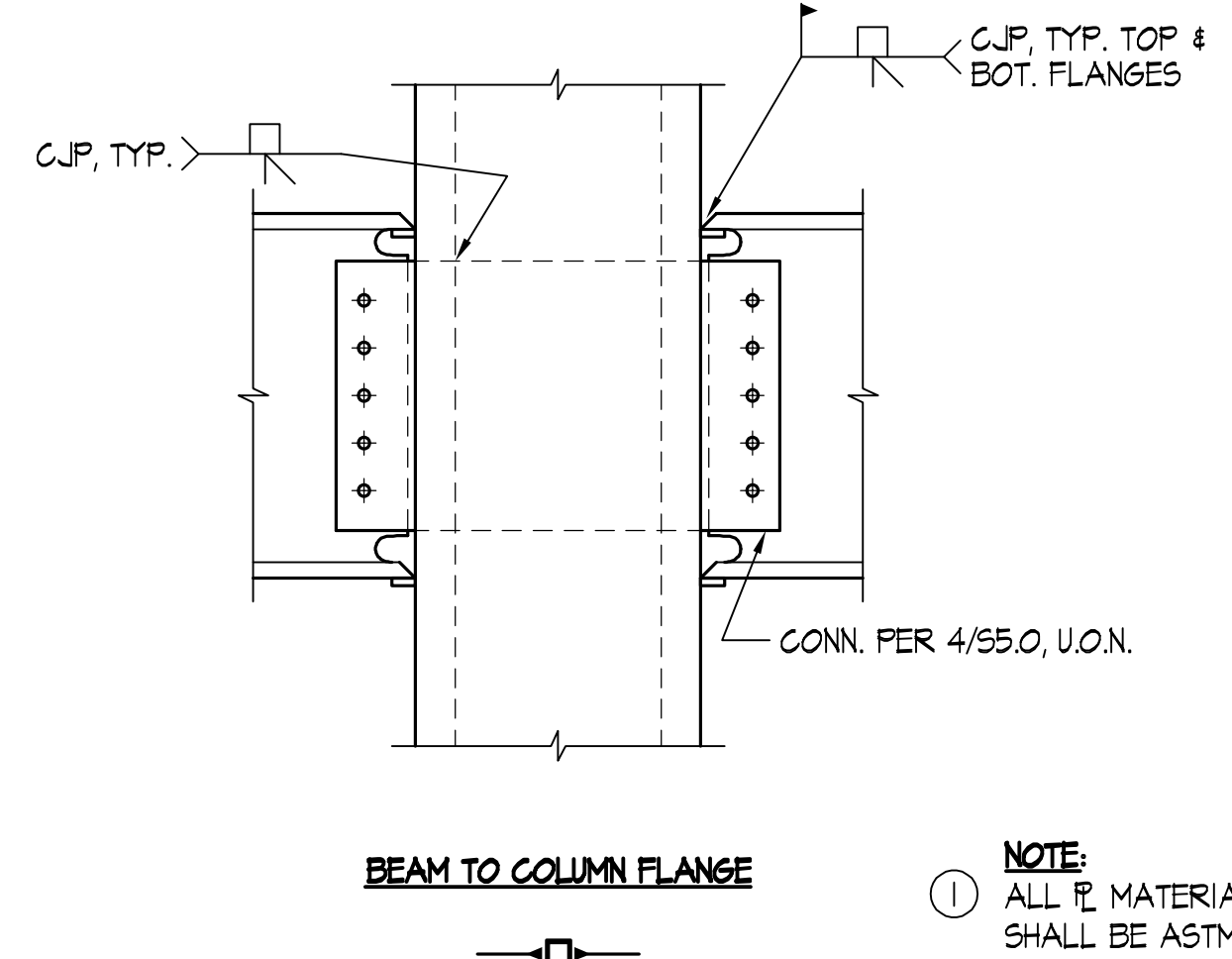
SCALE: NONE 10

TYPICAL BEAM TO HSS COLUMN

SCALE: NONE 8



TYPICAL MOMENT CONNECTION (GRAVITY)



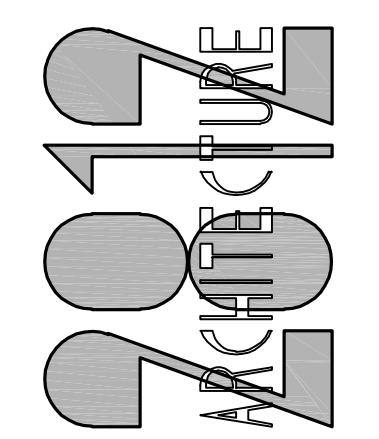
- NOTE:** ALL \bar{r} MATERIAL SHALL BE ASTM A572 GRADE 50, U.O.N.

SCALE: NONE 12

For:	PERMIT SET
Date:	08/08/22



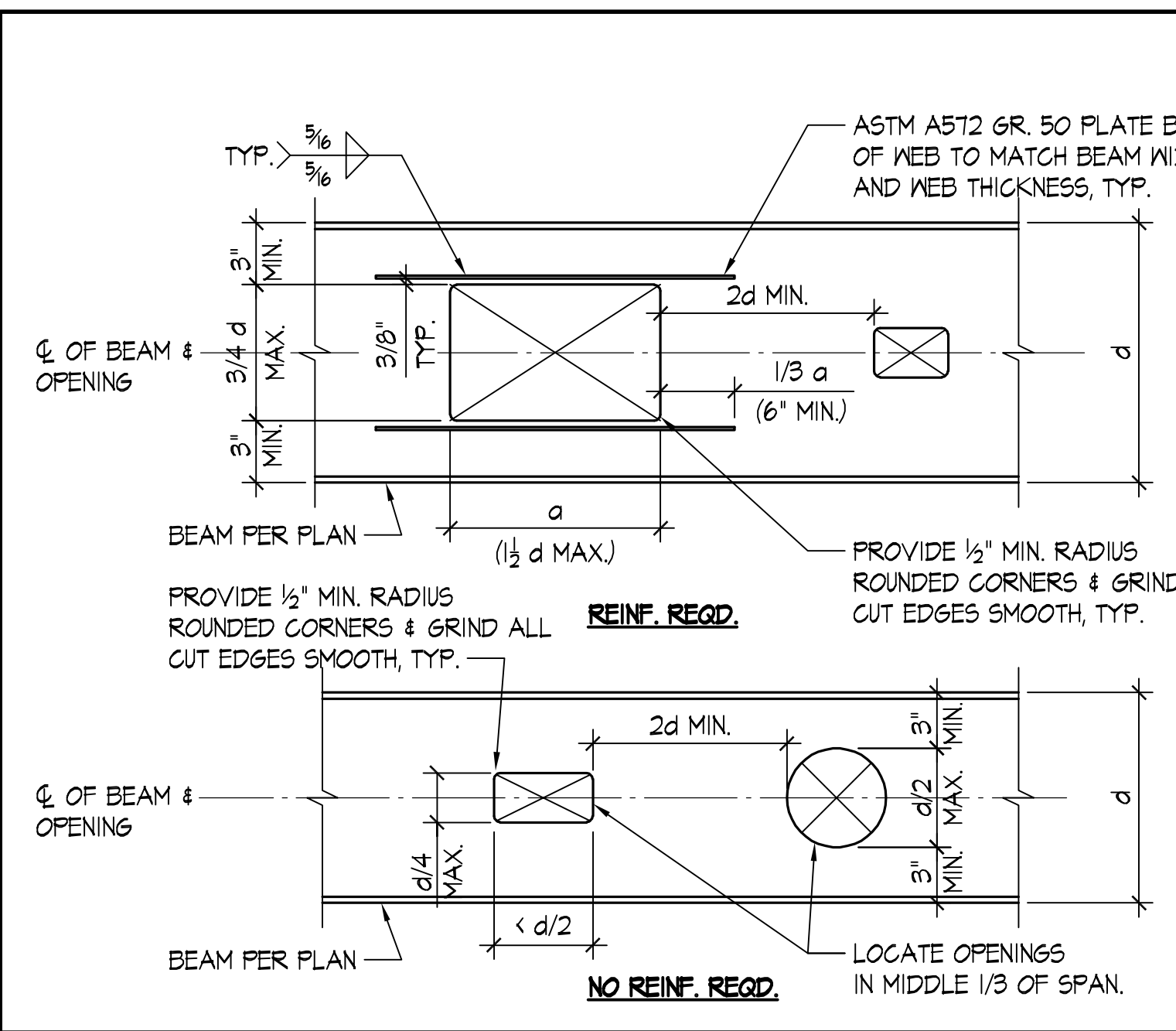
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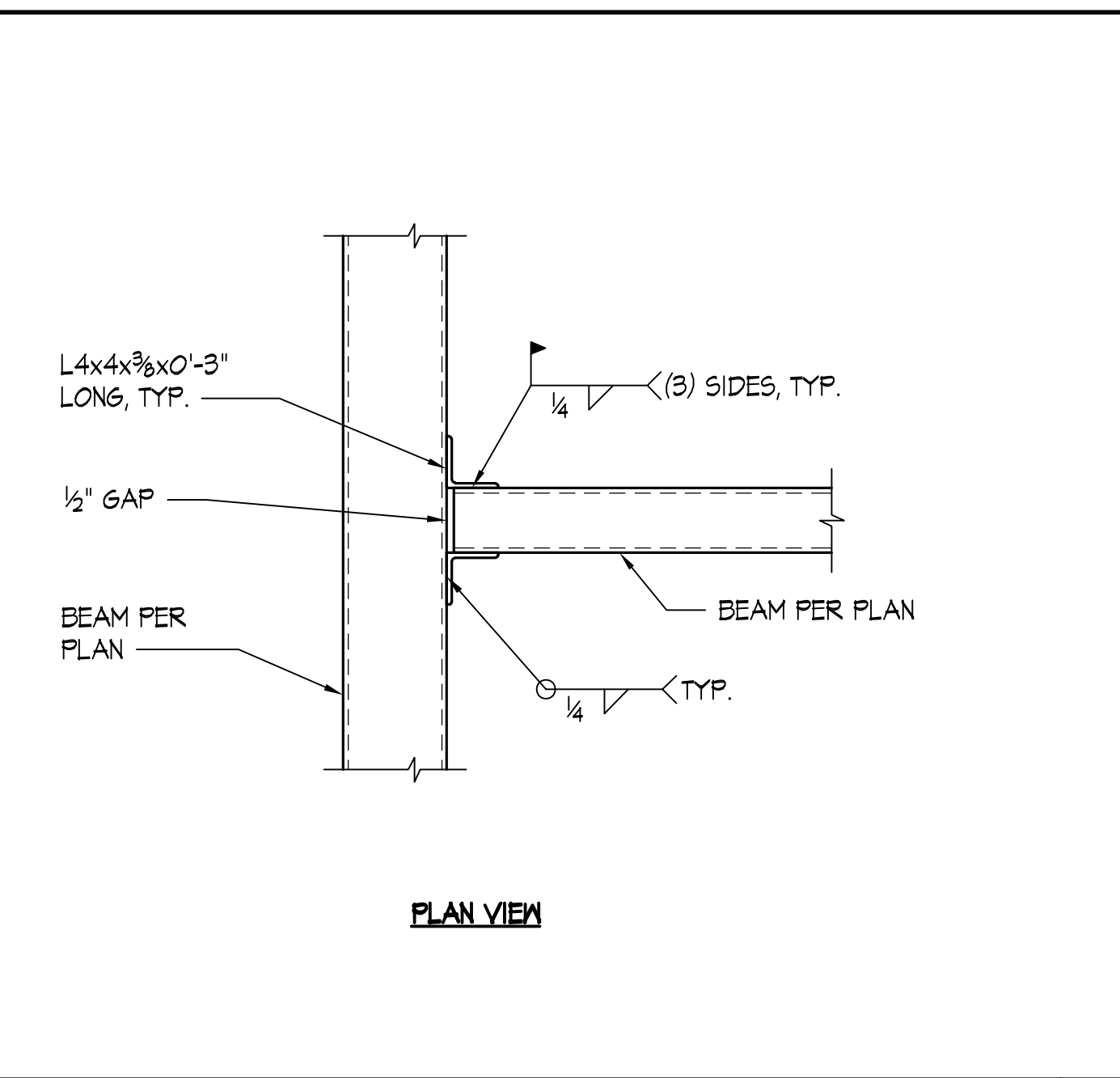
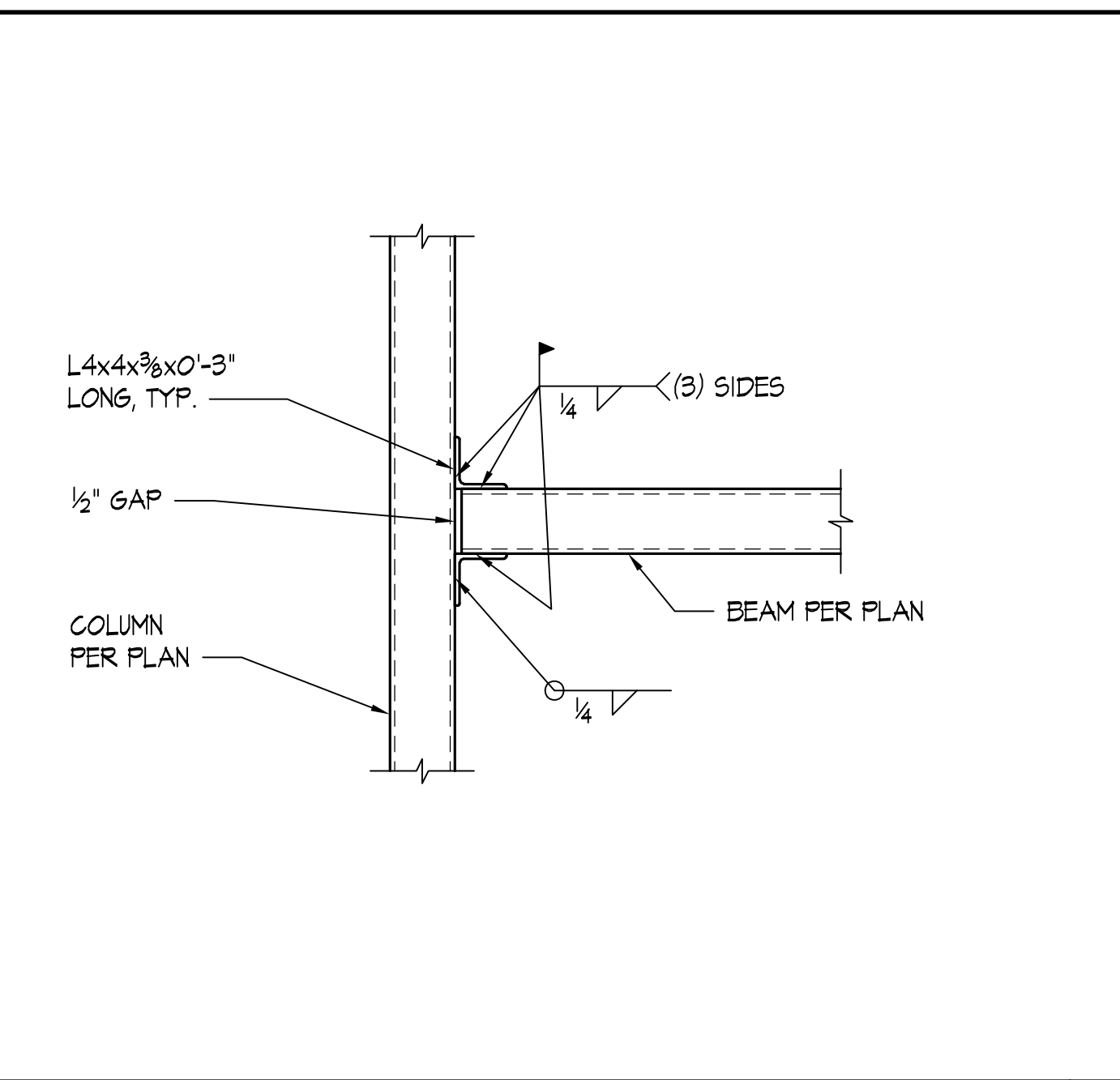
New Auto Dealership for:
KENDALL SUBARU
XXX SMOKEY POINT BLVD.
Marysville, WA 98223

Drawing:	S5.0
Job Number:	22325.01

File: S5 - 2022.dwg Plot Date: 08/08/2022 11:15 am Plot Size: 36x48 inches



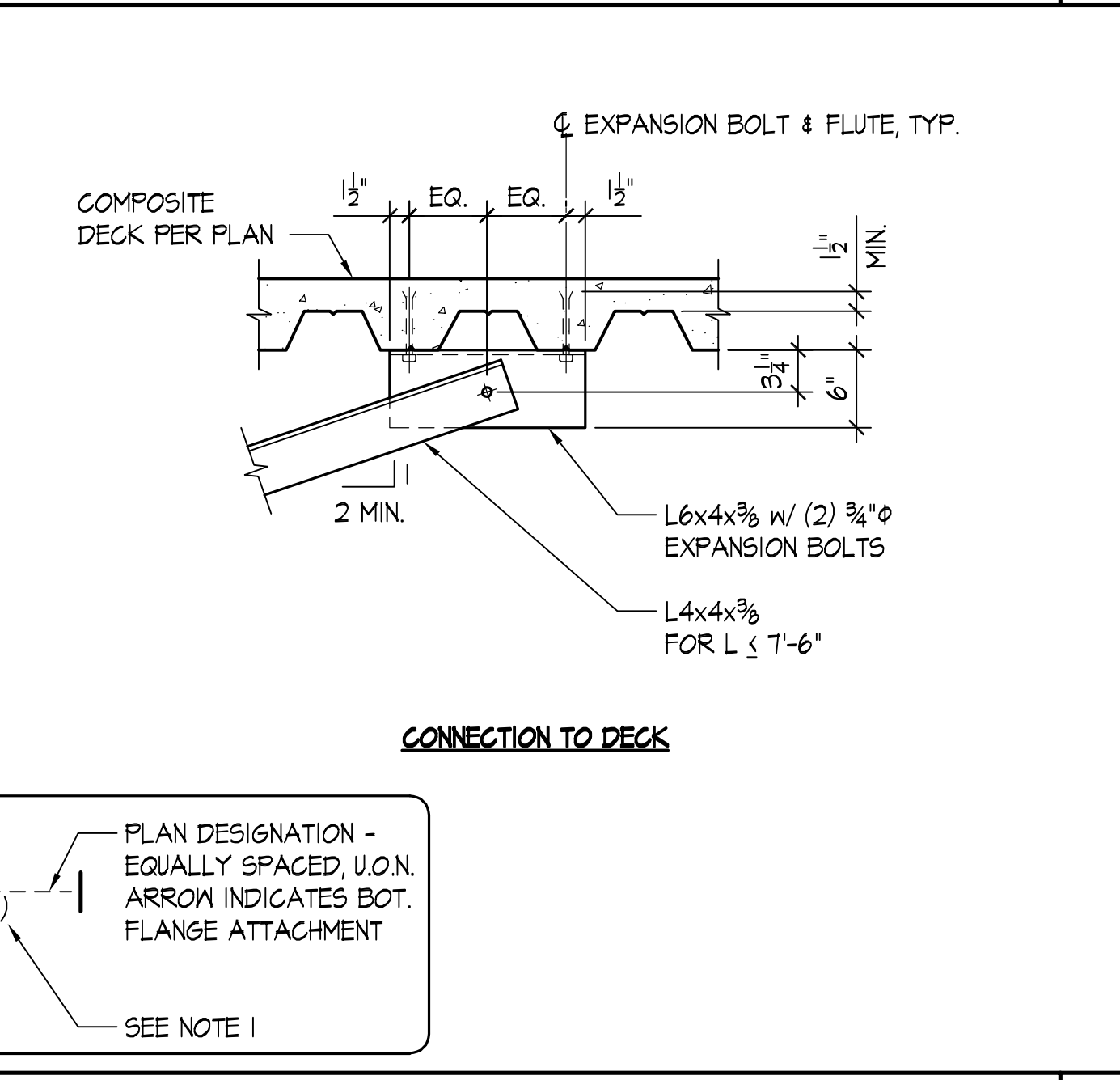
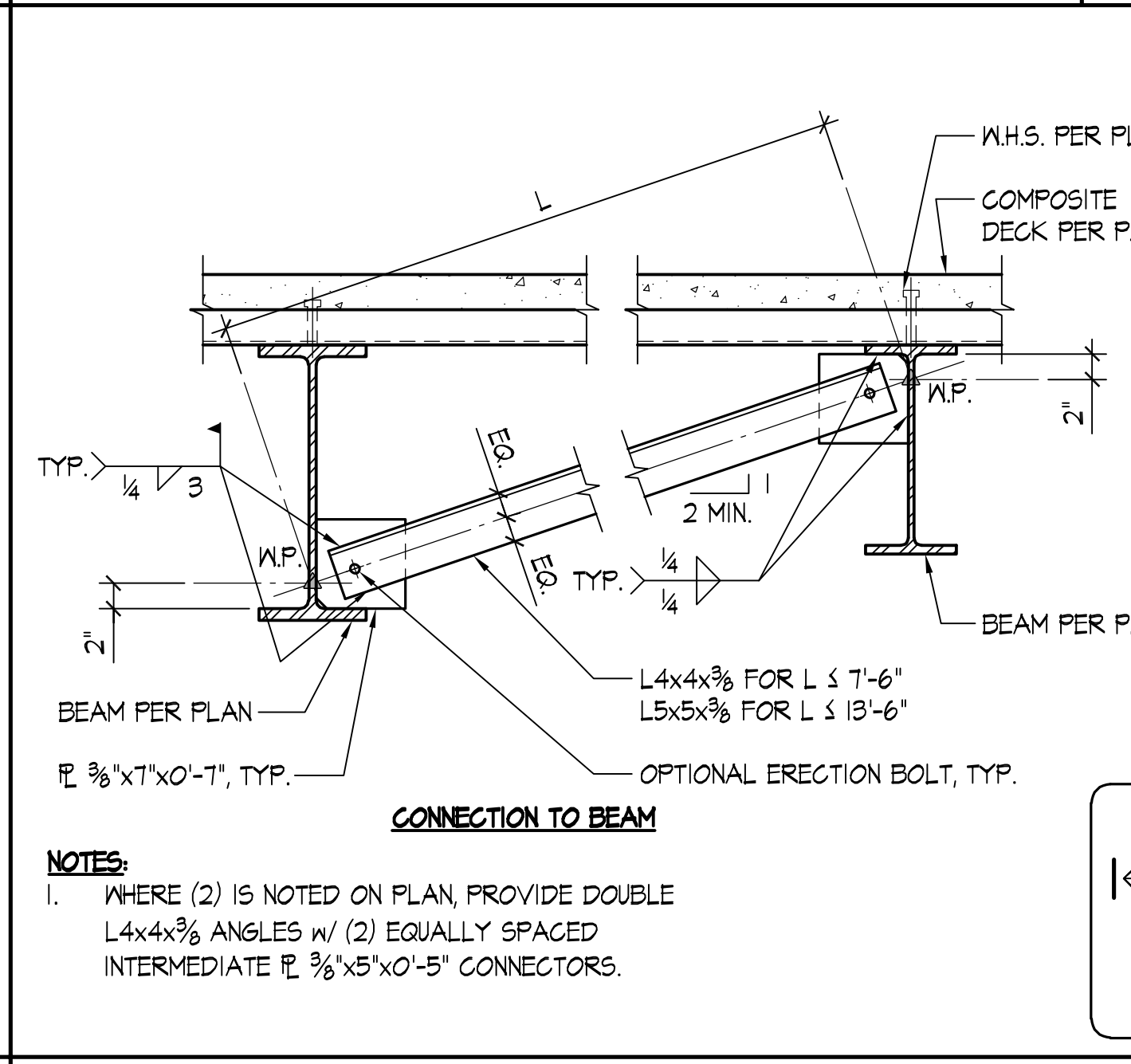
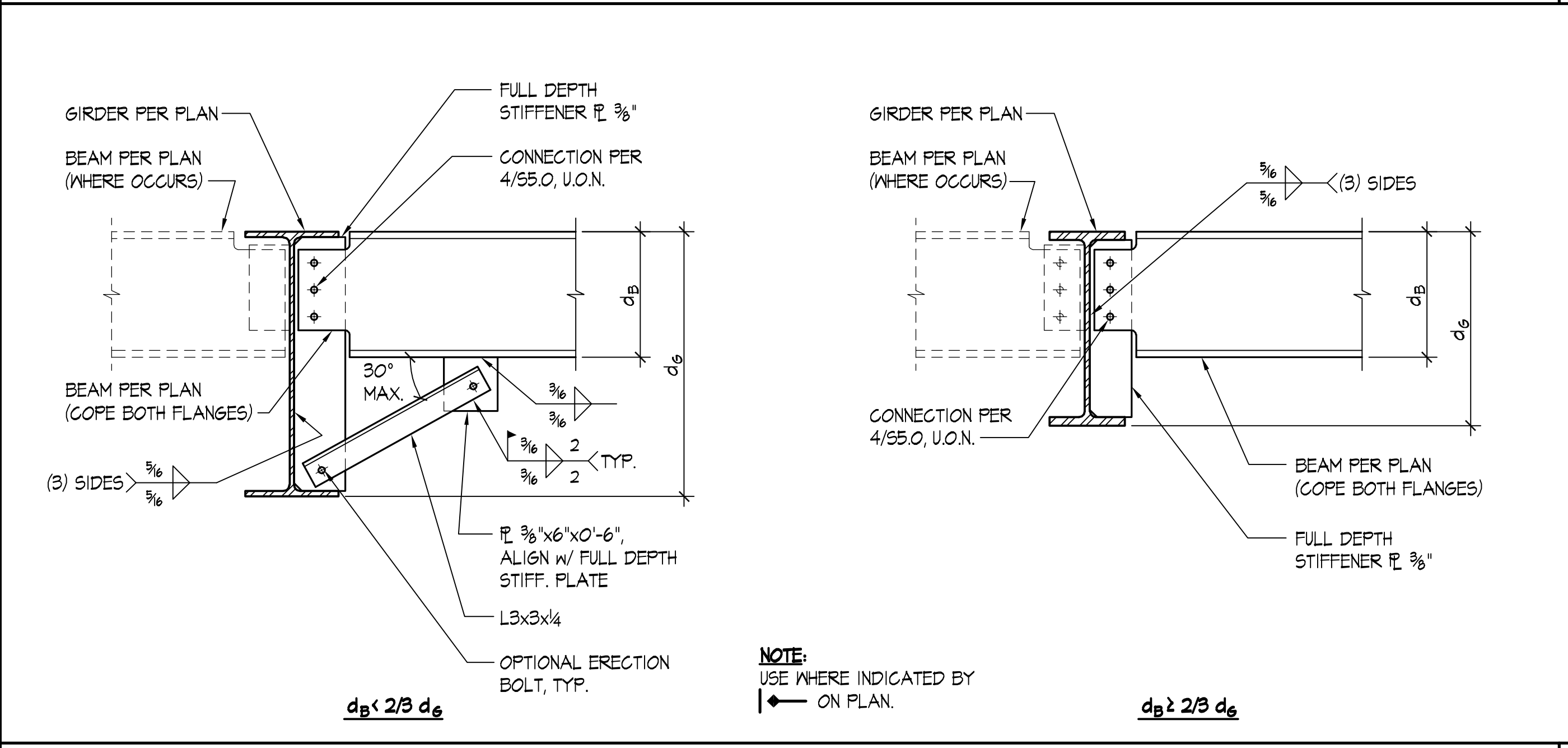
- NOTES:**
1. FIELD CUTTING NOT PERMITTED WITHOUT APPROVAL.
 2. CONTRACTOR SHALL COORDINATE SIZES AND LOCATIONS OF ALL BEAM PENETRATIONS WITH MECHANICAL DRAWINGS. ALL PENETRATIONS LARGER THAN 2" Ø SHALL BE SHOWN ON SHOP DRAWINGS OR SKETCHES AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
 3. EDGE OF OPENING SHALL BE NO CLOSER TO SUPPORT THAN THE MEMBER DEPTH "d".
 4. EDGE OF OPENING SHALL BE AT LEAST A DISTANCE 1/2 d CLEAR FROM ANY CONCENTRATED LOAD.
 5. OPENINGS NOT MEETING CRITERIA LISTED IN NOTES ABOVE SHALL BE SUBMITTED TO ENGINEER FOR REVIEW.



TYPICAL PENETRATION THROUGH BEAM WEB SCALE: NONE **2**

HSS BEAM TO HSS COLUMN SCALE: NONE **3**

HSS BEAM TO HSS BEAM SCALE: NONE **4**



TYPICAL FULL DEPTH PLATE GIRDER CONNECTION SCALE: NONE **6**

TYPICAL BOTTOM FLANGE BRACING SCALE: NONE **8**

METAL DECK DEPTH	"W"	
	SINGLE ROW OF STUDS	TWO OR MORE ROWS OF STUDS
1/2"	2 1/4"	5 1/2"
2"	3"	5 1/2"
3"	4 1/2"	5 1/2"

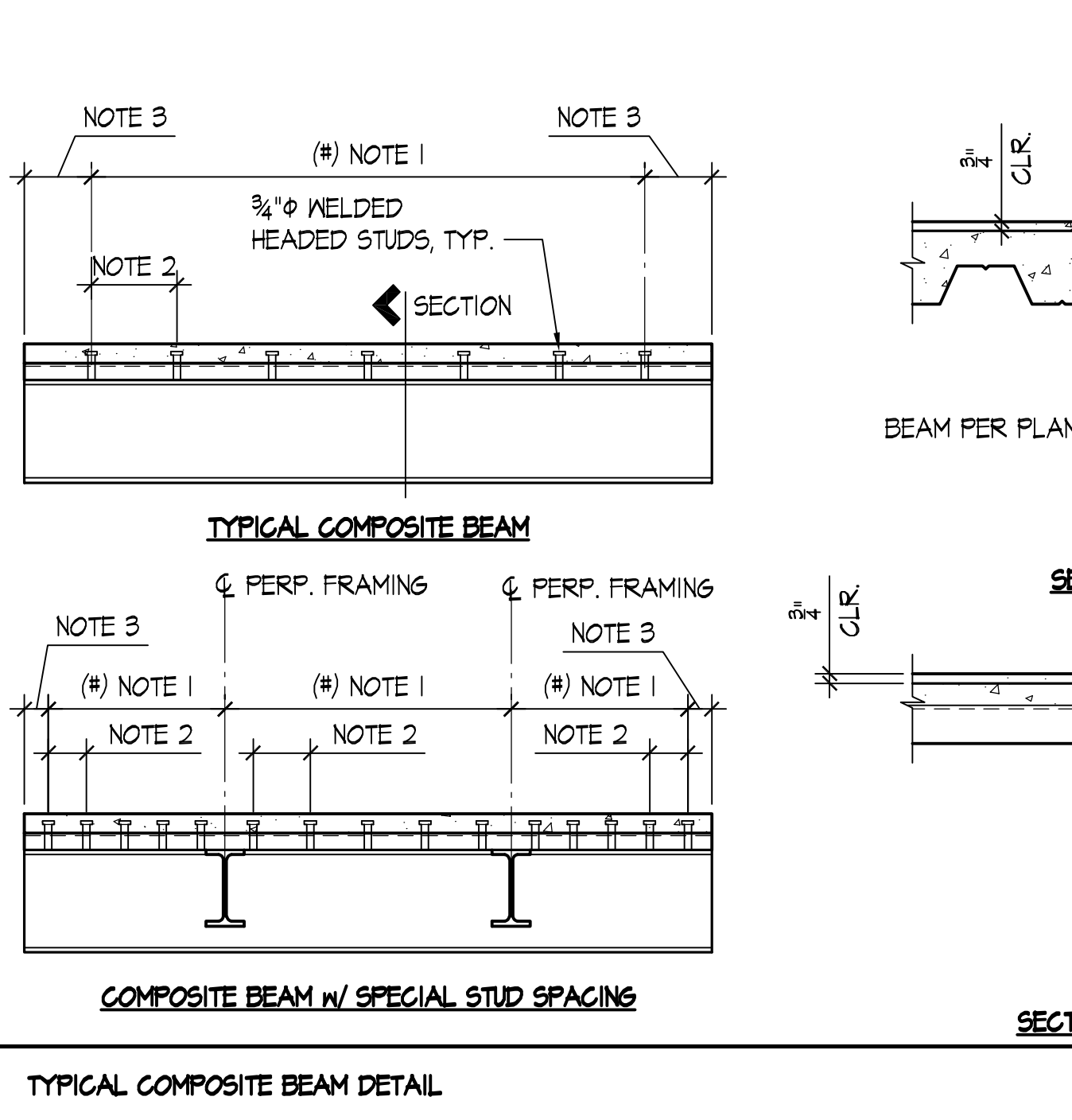
CONNECT SEAMS PER 2/55.2, TYP.

DECK MFR. TO CUT DECK AND PROVIDE CLOSURE STRIP (SAME GAUGE AS METAL DECK) WHERE DECK LOW FLUTE DOES NOT ALIGN W/ BEAM

WELD DECK TO BEAM PER 2/55.2, TYP.

SIZE PER TABLE

TYPICAL COMPOSITE DECK PARALLEL TO BEAM SCALE: NONE **9**



TYPICAL BOTTOM FLANGE BRACING SCALE: NONE **8**

TYPICAL COMPOSITE DECK PARALLEL TO BEAM SCALE: NONE **9**

TYPICAL COMPOSITE BEAM DETAIL SCALE: NONE **12**

For: PERMIT SET

Date: 06/08/22

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2017 ARCHITECTURE

New Auto Dealership for:

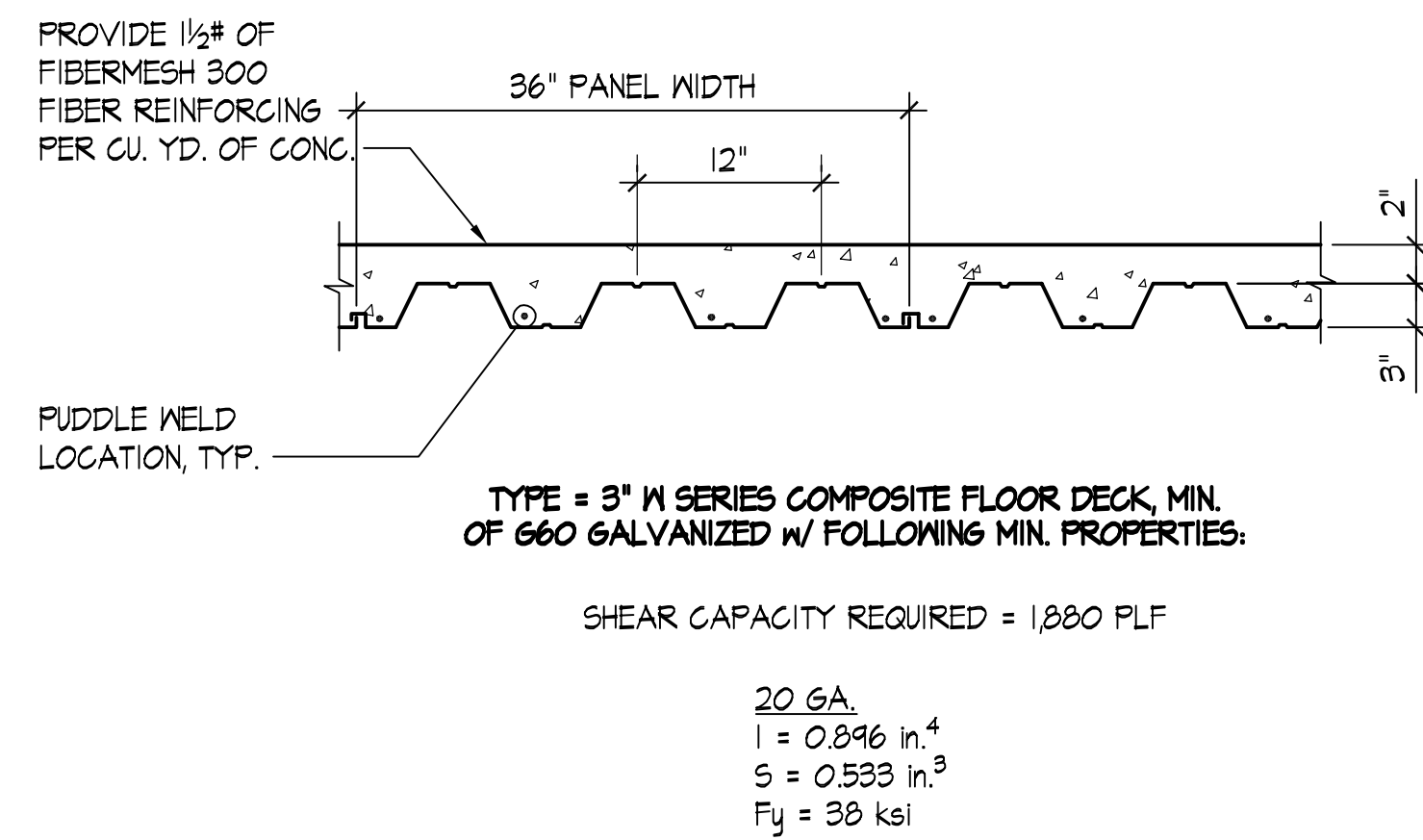
KENDALL SUBARU

XXX SMOKEY POINT BLVD.
Marysville, WA 98223

Drawing: **S5.1**

Job Number: 22325.01

File: 223-1501.dwg Plot Date: 06/08/2022 2:46 pm
 Plot File: 223-1501.dwg Plot Date: 06/08/2022 2:46 pm



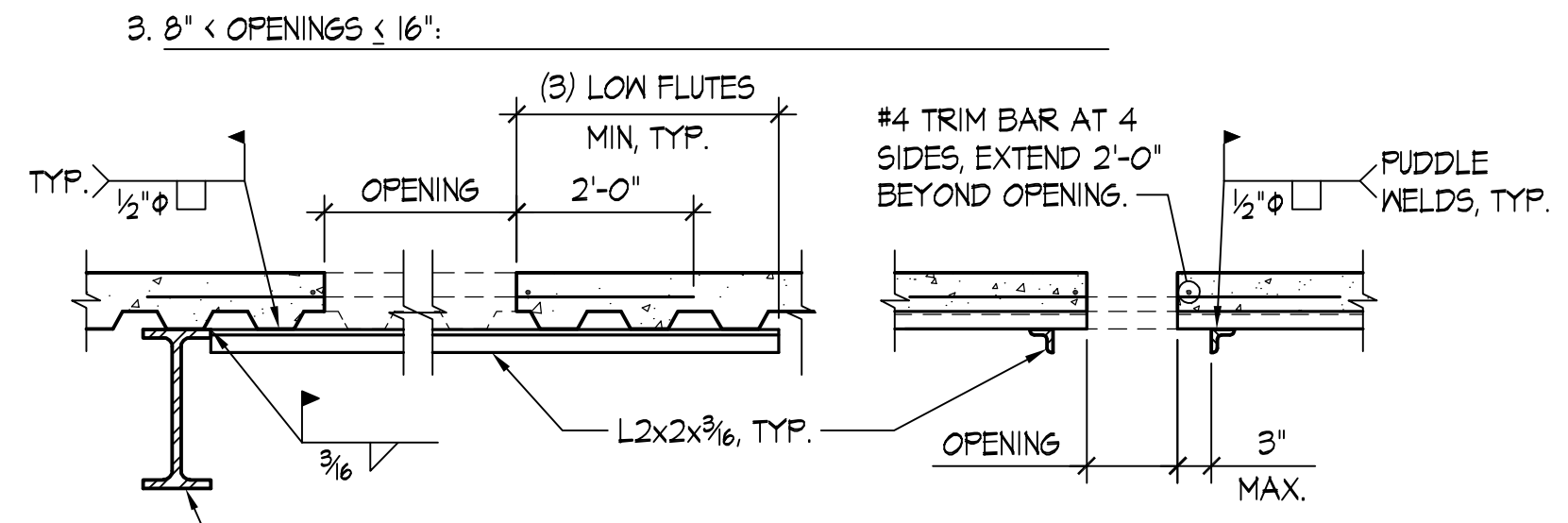
- NOTES:**
1. MAXIMUM DECK SPAN AT INTERIOR FLOOR = 10'-0" CLEAR SPAN (TWO OR MORE CONTINUOUS SPANS).
 2. PROVIDE (4) 1/2"Ø PUDDLE WELDS PER PANEL TO ALL SUPPORTS PERPENDICULAR TO DECK FLUTES. COMPOSITE STUDS MAY REPLACE PUDDLE WELDS.
 3. PROVIDE 1/2"Ø PUDDLE WELDS AT 12" O.C. WHERE DECK ORIENTATION CHANGES AND OTHER SUPPORTS PARALLEL TO DECK FLUTES, U.O.N.
 4. CONNECT SIDE SEAMS WITH BUTTON PUNCHES @ 24" O.C., U.O.N.
 5. DECK TYPE MUST MEET OR EXCEED CRITERIA LISTED, INCLUDING I.C.C. OR IAFMO RESEARCH REPORT ALLOWABLE SHEAR LOADS.
 6. REINFORCE MISC. DECK OPENINGS PER 4/55.2.
 7. ADD TOP REINF. BARS OVER BEAMS & GIRDERS PER 12/55.1.

TYPE = 3" M SERIES COMPOSITE FLOOR DECK, MIN. OF 660 GALVANIZED W/ FOLLOWING MIN. PROPERTIES:

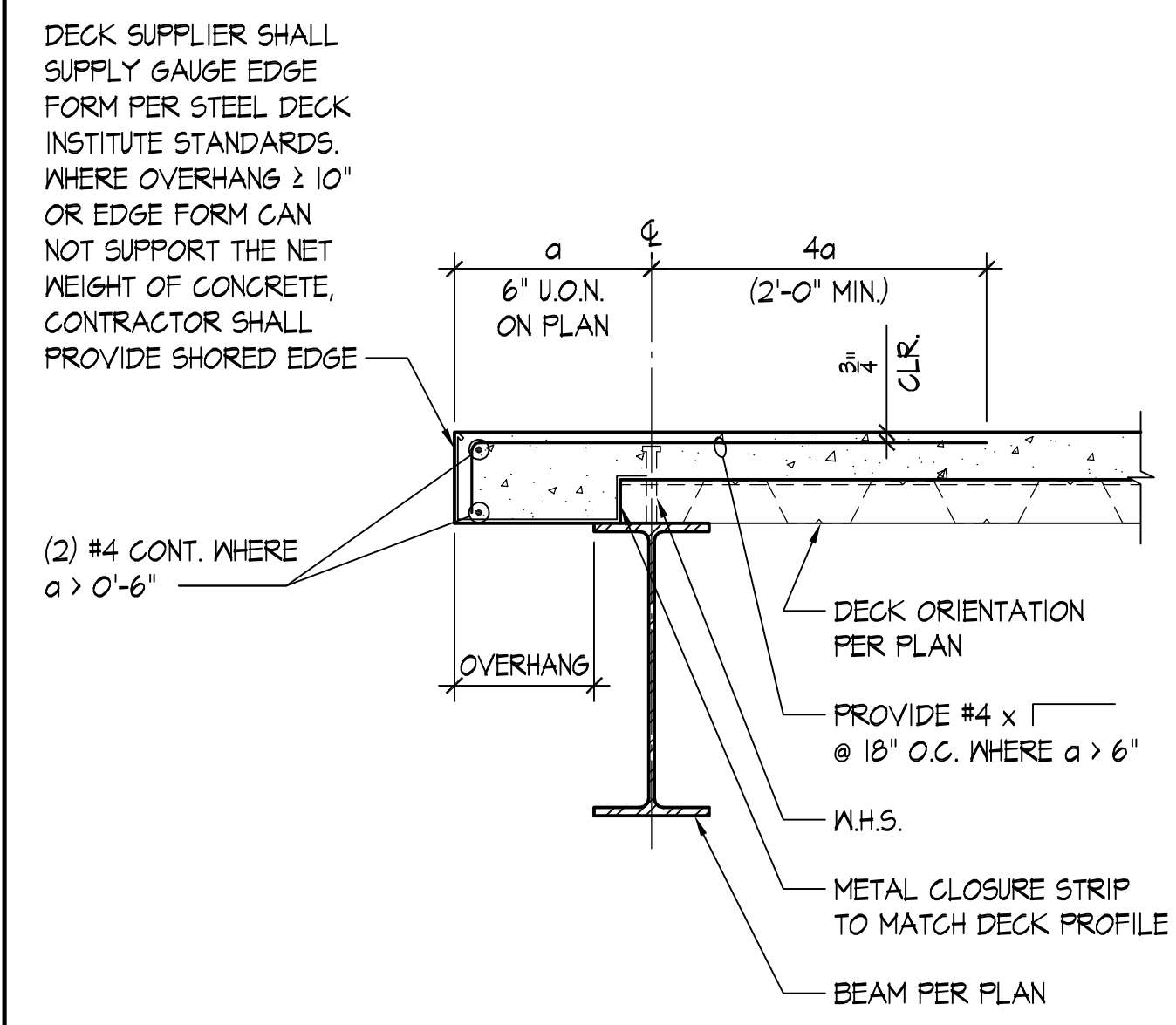
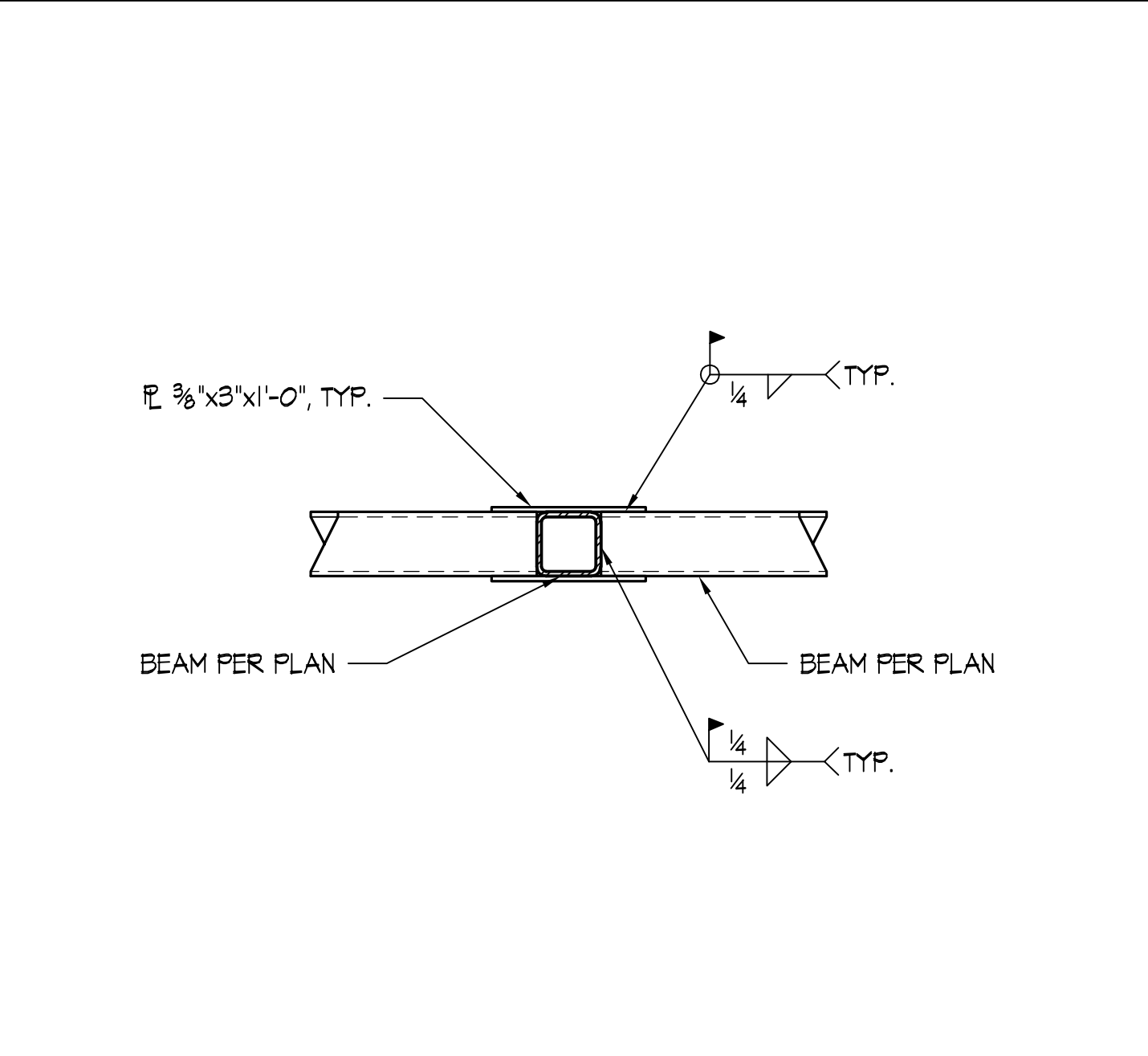
SHEAR CAPACITY REQUIRED = 1,880 PLF

20 GA.
I = 0.846 in.⁴
S = 0.533 in.³
F_y = 38 ksi

- NOTES:**
1. OPENINGS ≤ 4": NO STRENGTHENING IS REQUIRED PROVIDED THAT HOLES ARE NOT CLOSER THAN 12" CLEAR
 2. 4" < OPENINGS ≤ 8": WHERE OPENINGS ARE CLOSER THAN 2'-0" CLEAR CONSIDER AS ONE OPENING & REINFORCE PER ITEM 3 OR 4 BELOW
 3. 8" < OPENINGS ≤ 16":
 4. OPENINGS > 16": SEE DETAIL 8/55.2



TYPICAL 3" COMPOSITE DECK SCALE: NONE 2



DECK SUPPLIER SHALL SUPPLY GAUGE EDGE FORM PER STEEL DECK INSTITUTE STANDARDS. WHERE OVERHANG ≥ 10" OR EDGE FORM CAN NOT SUPPORT THE NET WEIGHT OF CONCRETE, CONTRACTOR SHALL PROVIDE SHORED EDGE

(2) #4 CONT. WHERE a > 0'-6"

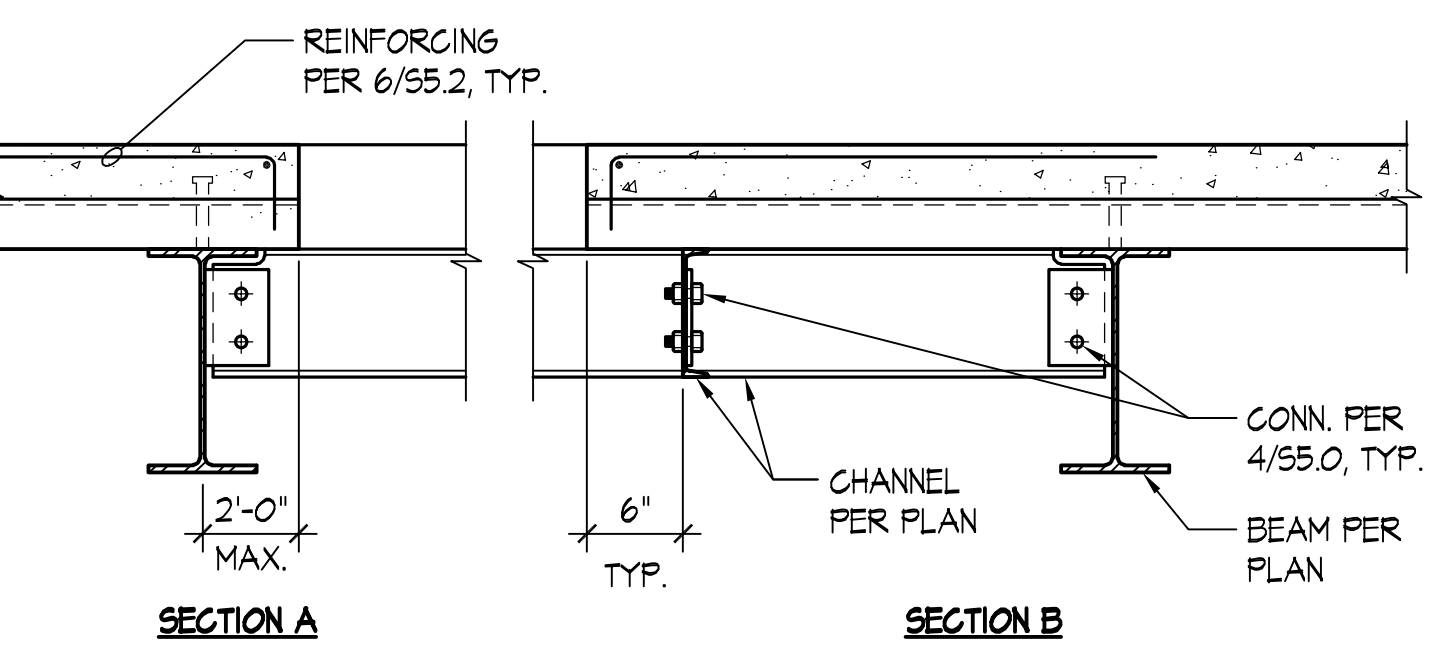
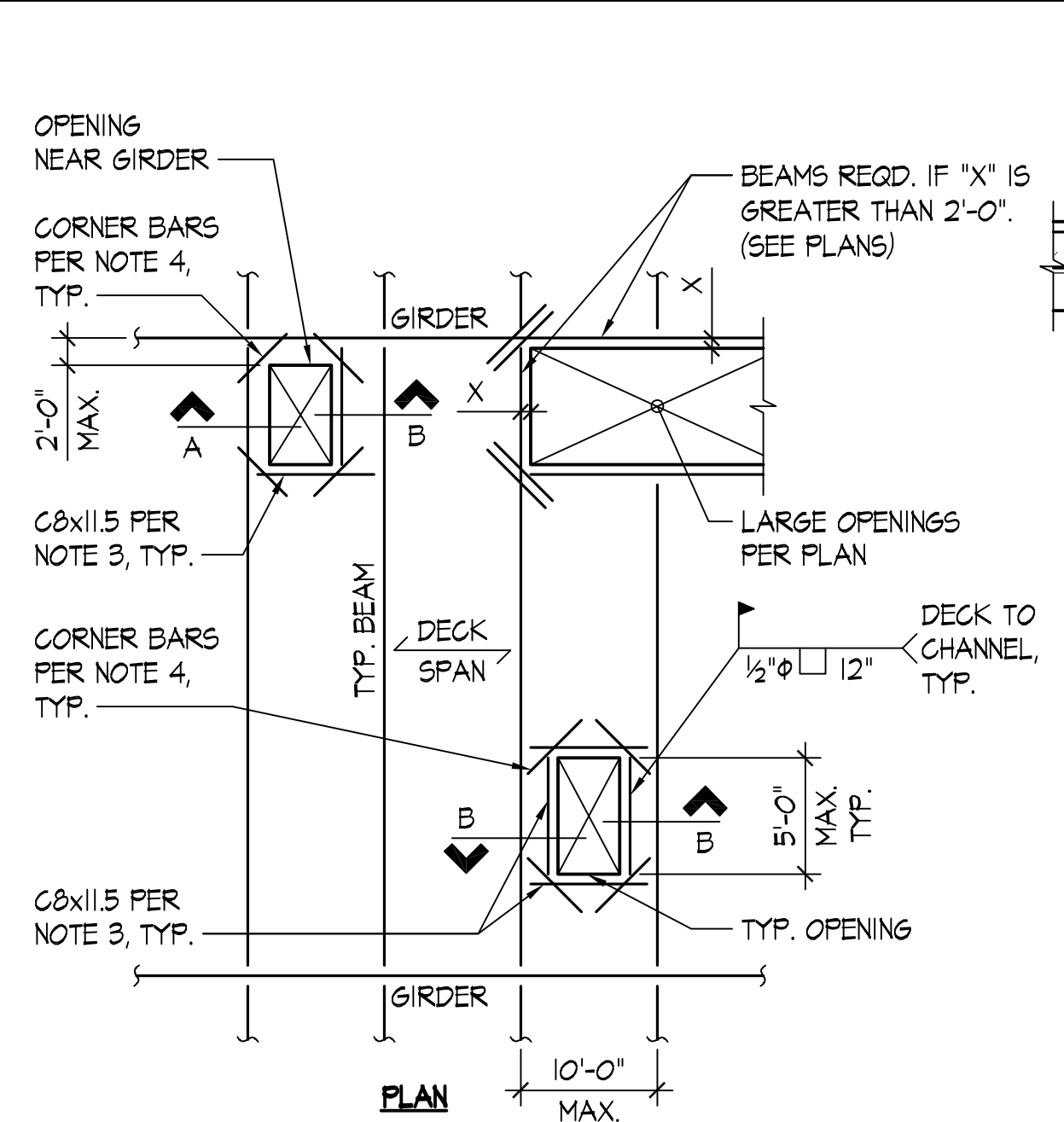
PROVIDE #4 x 1" @ 18" O.C. WHERE a > 6"

W.H.S.

METAL CLOSURE STRIP TO MATCH DECK PROFILE

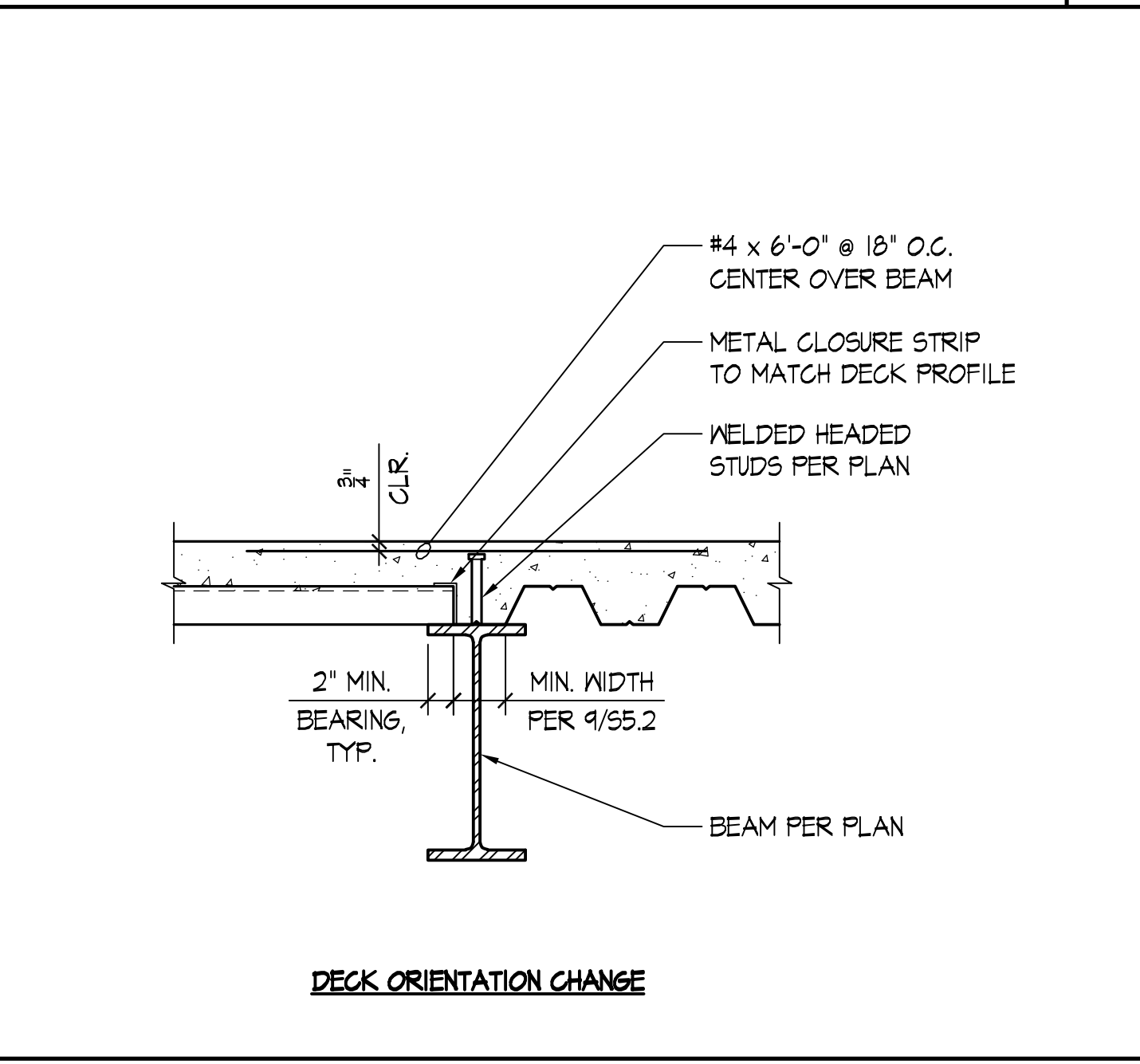
BEAM PER PLAN

TYPICAL COMPOSITE DECK REINFORCEMENT AT OPENINGS ≤ 16" SQUARE SCALE: NONE 4

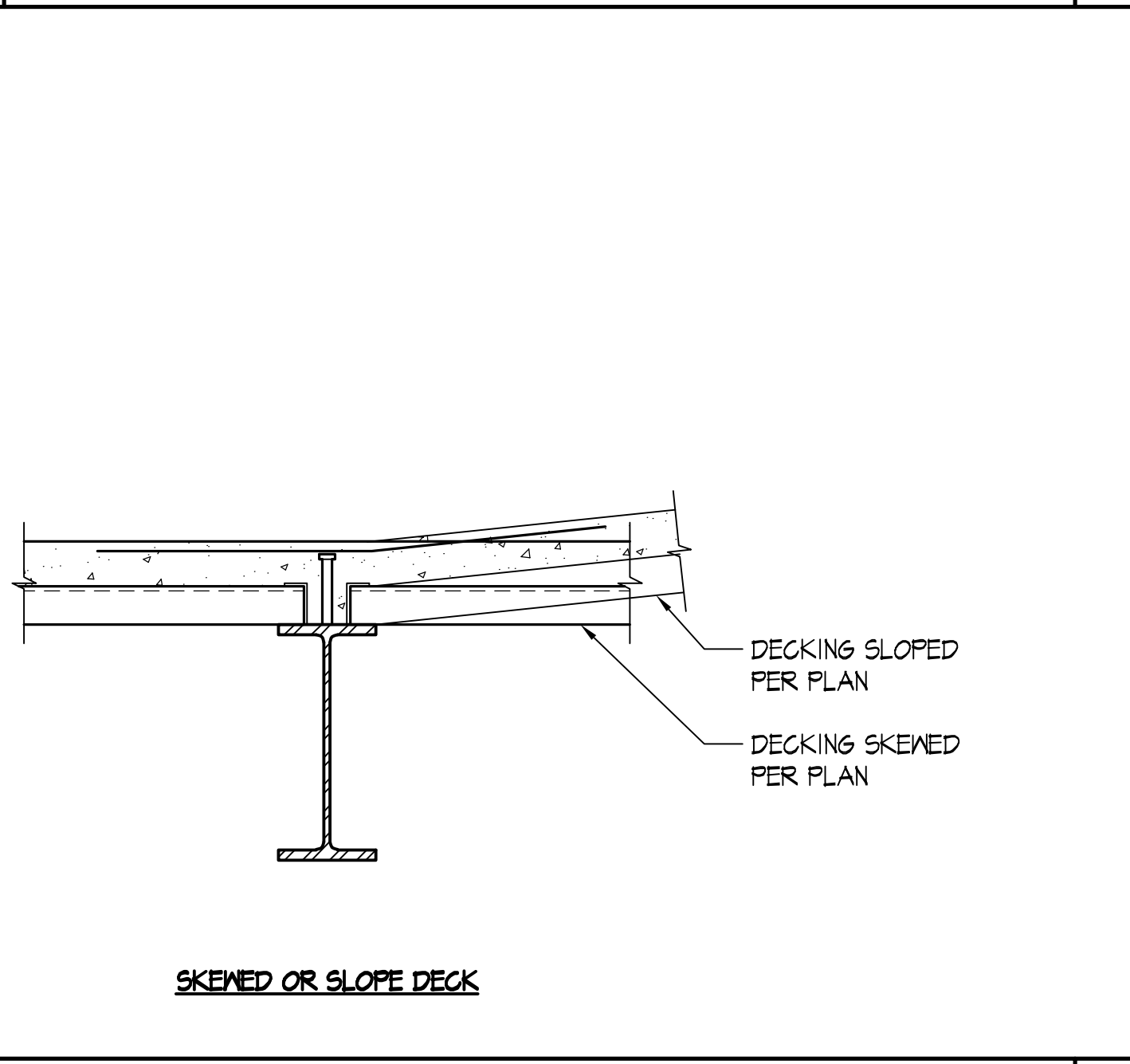


- NOTES:**
1. SEE PLANS FOR EDGE FRAMING AT OPENINGS GREATER THAN 5'-0".
 2. SEE DETAIL 4/55.2 FOR REINF. AT OPENINGS ≤ 16" SQUARE.
 3. LOCATE CHANNELS PARALLEL TO FLUTES AT FIRST LOW FLUTE NEAREST EDGE OF OPENING, TYP.
 4. PROVIDE CORNER BARS AT ALL CORNERS:
(1) #4x3'-0" FOR OPENINGS ≤ 5'-0".
(2) #4x3'-0" FOR OPENINGS > 5'-0".
 5. BLOCK OUT OPENINGS BEFORE PLACING CONCRETE. ONLY CUT DECK AFTER CONCRETE HAS CURED.
 6. CONTRACTOR TO COORDINATE OPENING SIZE AND LOCATION WITH ARCHITECTURAL DRAWINGS AND MECHANICAL / ELECTRICAL SUB-CONTRACTORS.

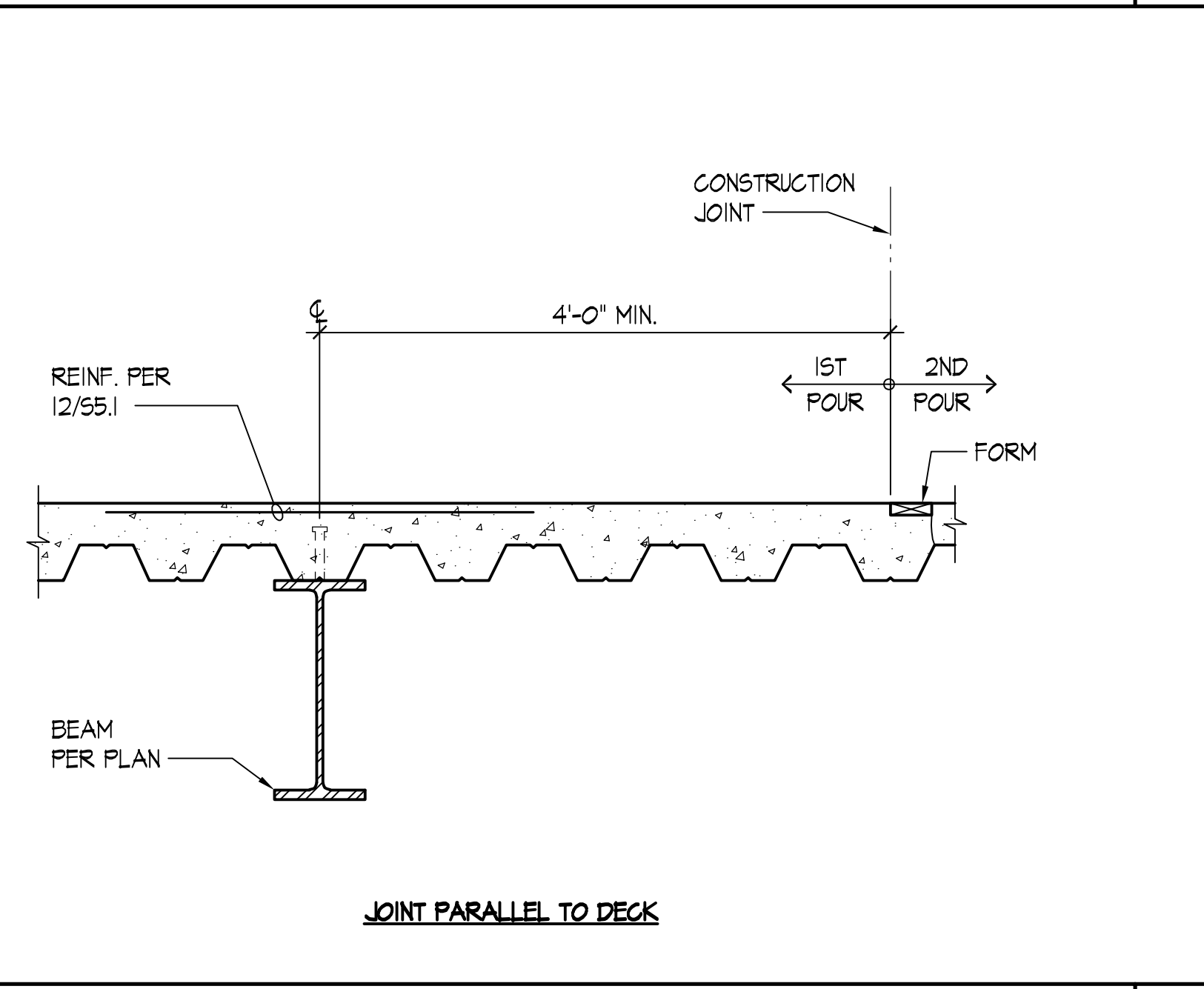
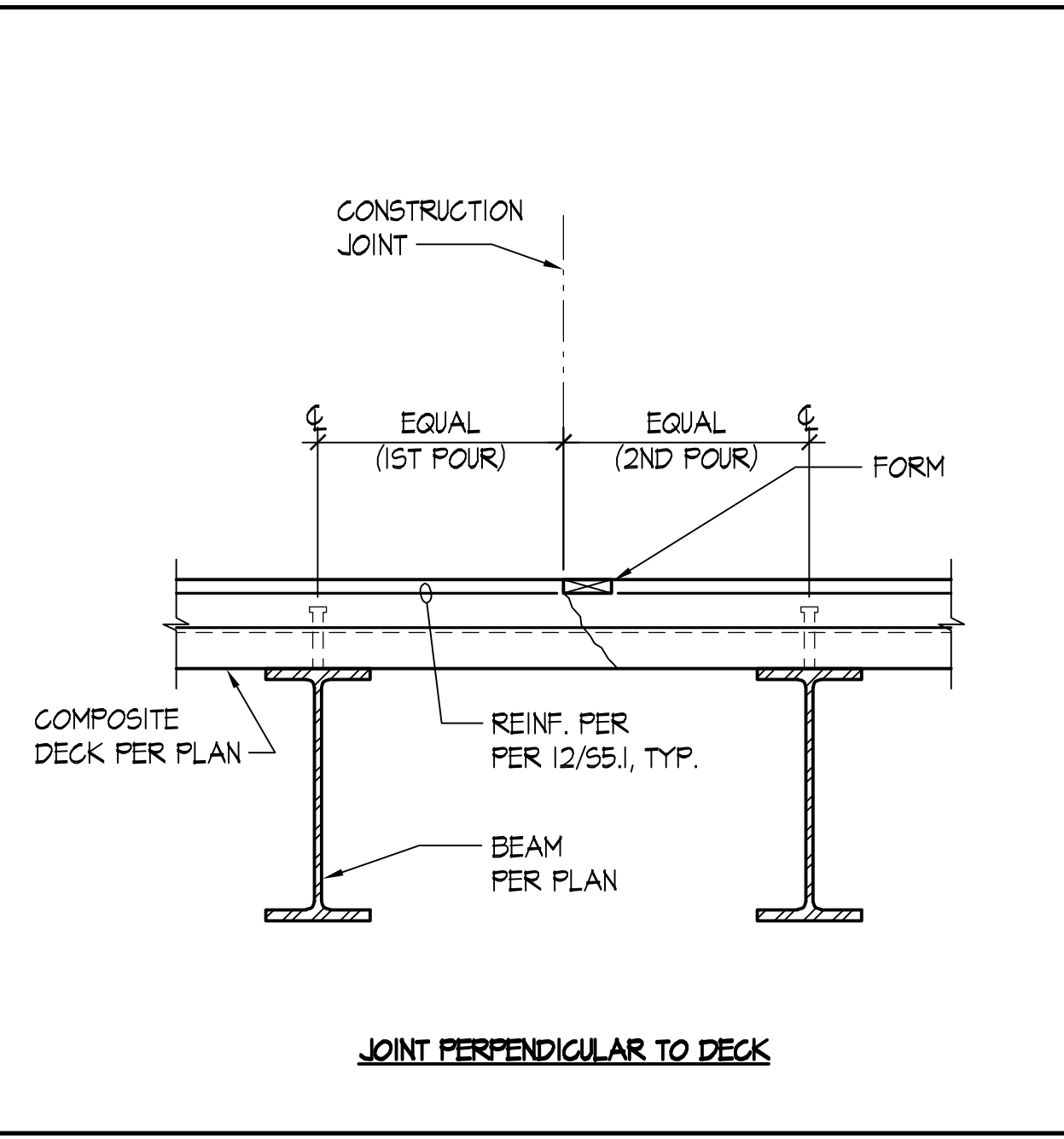
H55 BEAM TO H55 BEAM MOMENT CONNECTION SCALE: NONE 5



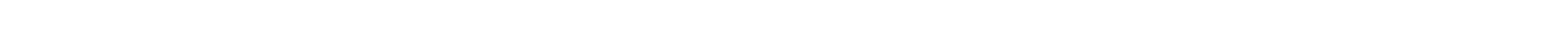
TYPICAL SLAB EDGE AT PERIMETER SCALE: NONE 6



TYPICAL COMPOSITE DECK REINFORCEMENT AT OPENINGS > 16" SQUARE SCALE: NONE 8



TYPICAL DECK DISCONTINUITY SCALE: NONE 10



TYPICAL CONSTRUCTION JOINT AT COMPOSITE DECK SCALE: NONE 12

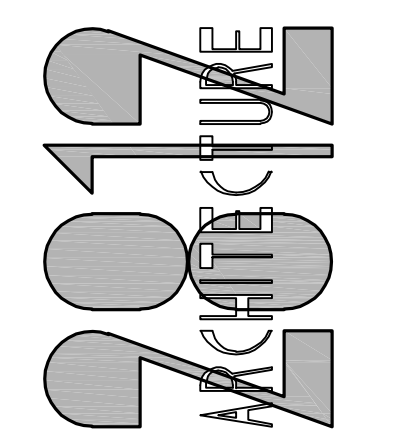


For:	PERMIT SET
Date:	08/08/22



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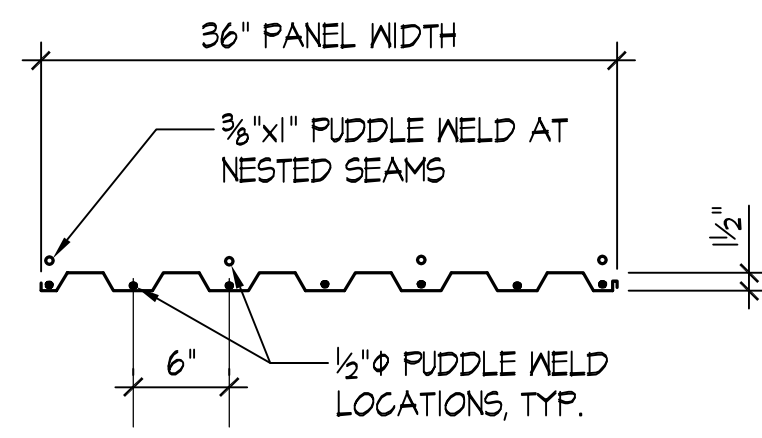
New Auto Dealership for:
KENDALL SUBARU
XXX SMOKEY POINT BLVD.
Marysville, WA 98223

TYPICAL STEEL & COMPOSITE DECK DETAILS

Drawing:
S5.2
Job Number:
22325.01

Date: 08/08/22
 Rev: 01
 Drawn: JHR
 Checked: JHR
 Title: TYPICAL STEEL & COMPOSITE DECK DETAILS

- (4) WELDS
- (7) WELDS



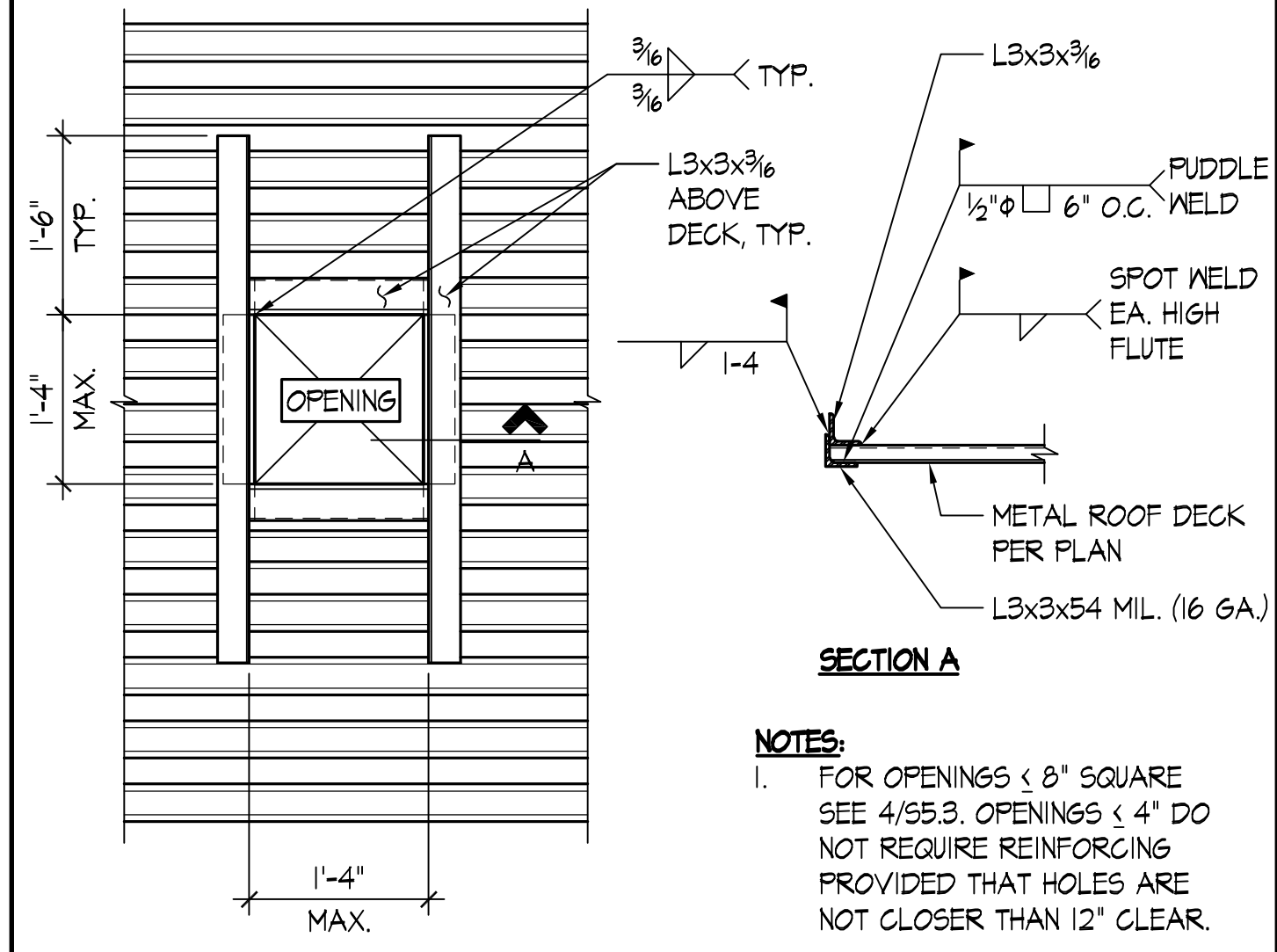
TYPE = B-36, MIN. OF 690 GALVANIZED W/ FOLLOWING MIN. PROPERTIES:

SHEAR CAPACITY REQUIRED - SEE SCHEDULE

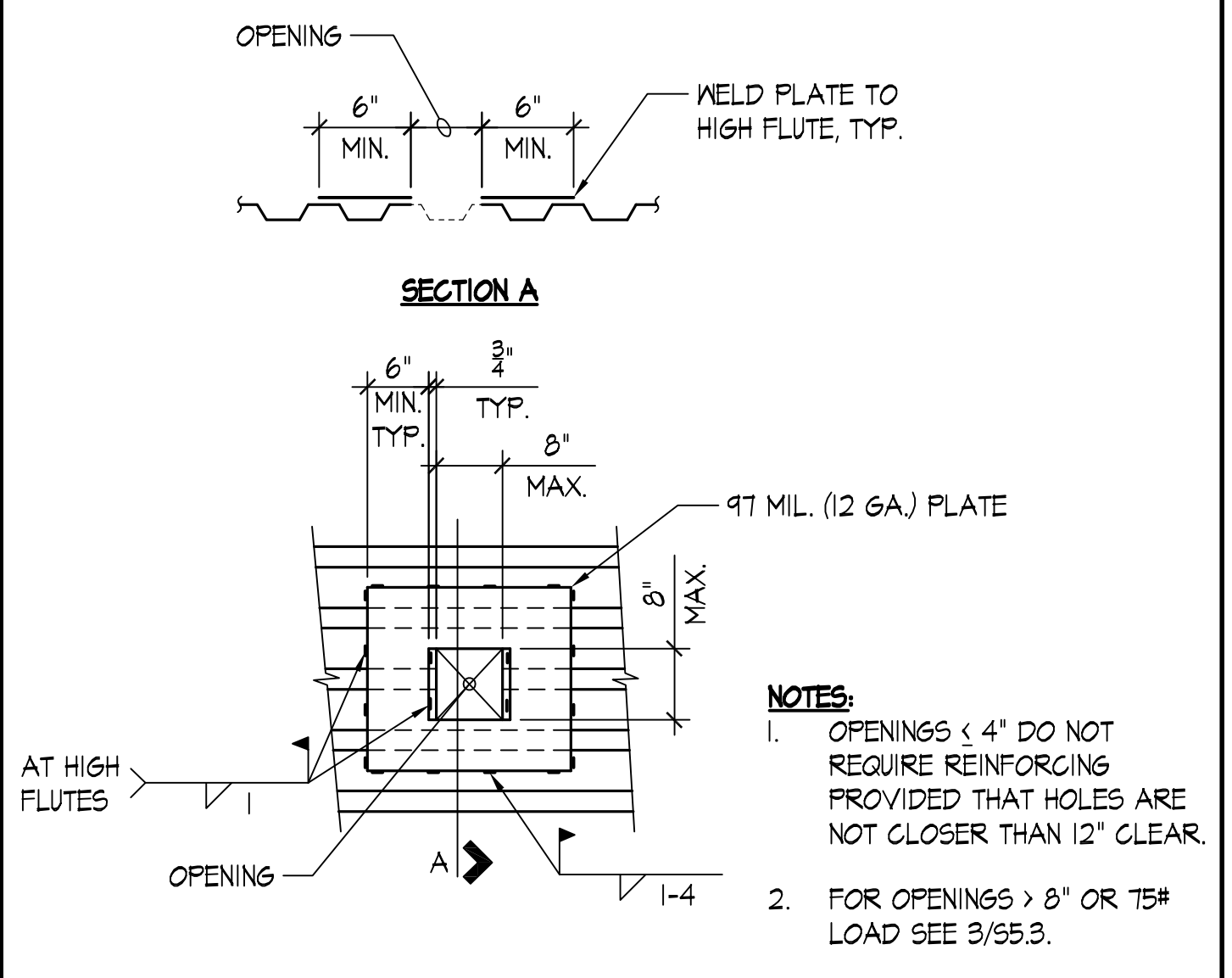
20 GA.
I = 0.216 in.⁴
S = 0.235 in.³
F_y = 38 ksi

ROOF DECK DIAPHRAGM CONNECTION SCHEDULE				
PUDDLE WELDS PER PANEL - ENDS	PUDDLE WELDS PER PANEL - INTERMEDIATE	RUNGLOK/DELTA GRIP SIDE SEAMS	CAPACITY PLF	PLAN SHADING
7	4	24" O.C.	745	
4	4	18" O.C.	747	

- NOTES:**
1. MAXIMUM DECK SPAN = 6'-7" CLEARSPAN (TWO OR MORE CONTINUOUS SPANS).
 2. PROVIDE 1/2" φ PUDDLE WELDS PER PANEL TO ALL SUPPORTS PERPENDICULAR TO DECK FLUTES (PER SCHEDULE), U.O.N.
 3. PROVIDE 1/2" φ PUDDLE WELDS @ 6" O.C. TO ALL BRACED FRAME BEAMS, STRUTS AND LEDGERS PARALLEL TO DECK FLUTES. PROVIDE 1/2" φ PUDDLE WELDS @ 6" O.C. WHERE DECK ORIENTATION CHANGES AND OTHER SUPPORTS PARALLEL TO DECK FLUTES.
 4. DECK TYPE MUST MEET OR EXCEED CRITERIA LISTED, INCLUDING I.C.C. OR IAPMO RESEARCH REPORT ALLOWABLE SHEAR LOADS.
 5. REINFORCE MISC. DECK OPENINGS PER 3 & 4/55.3.

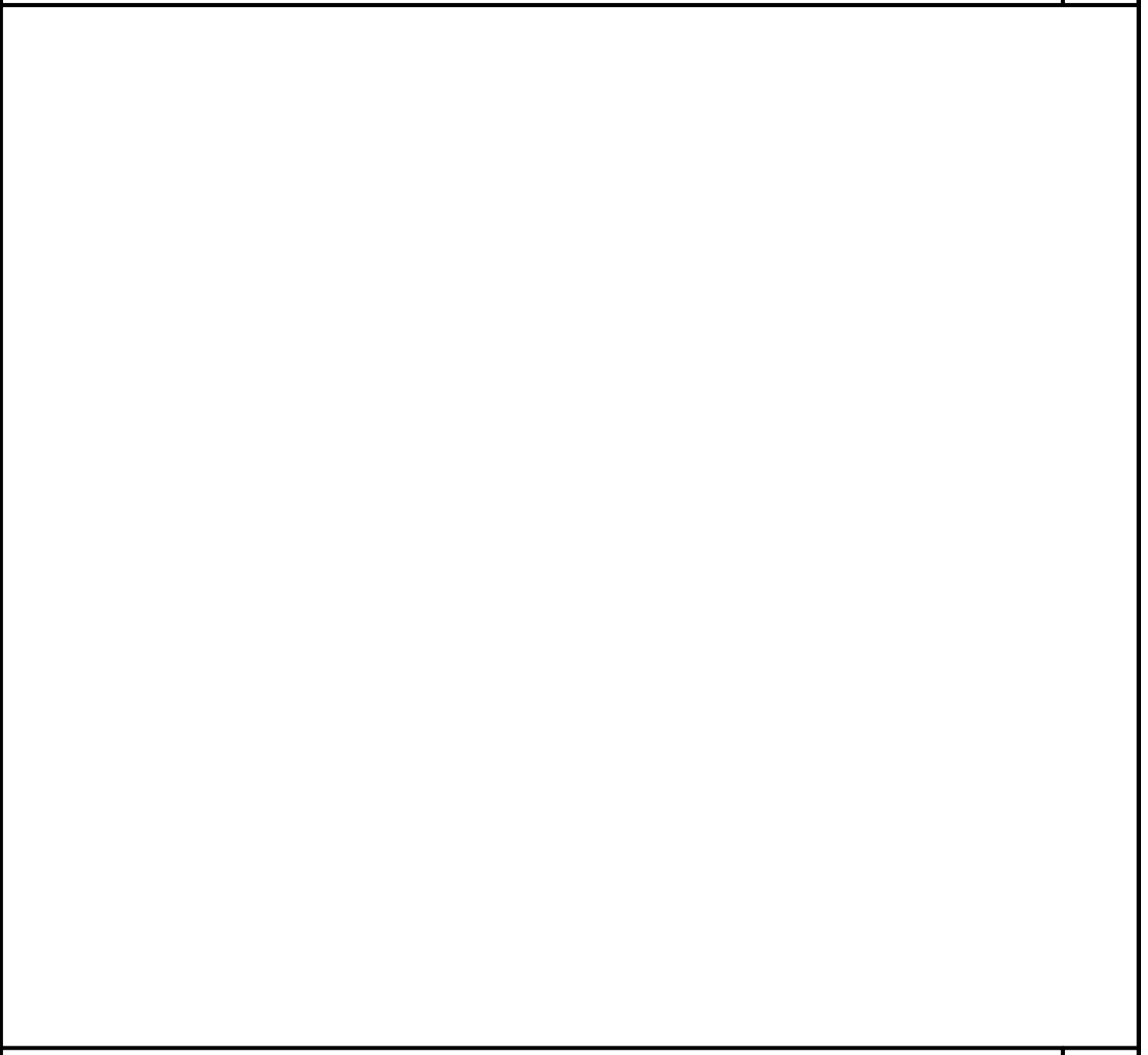
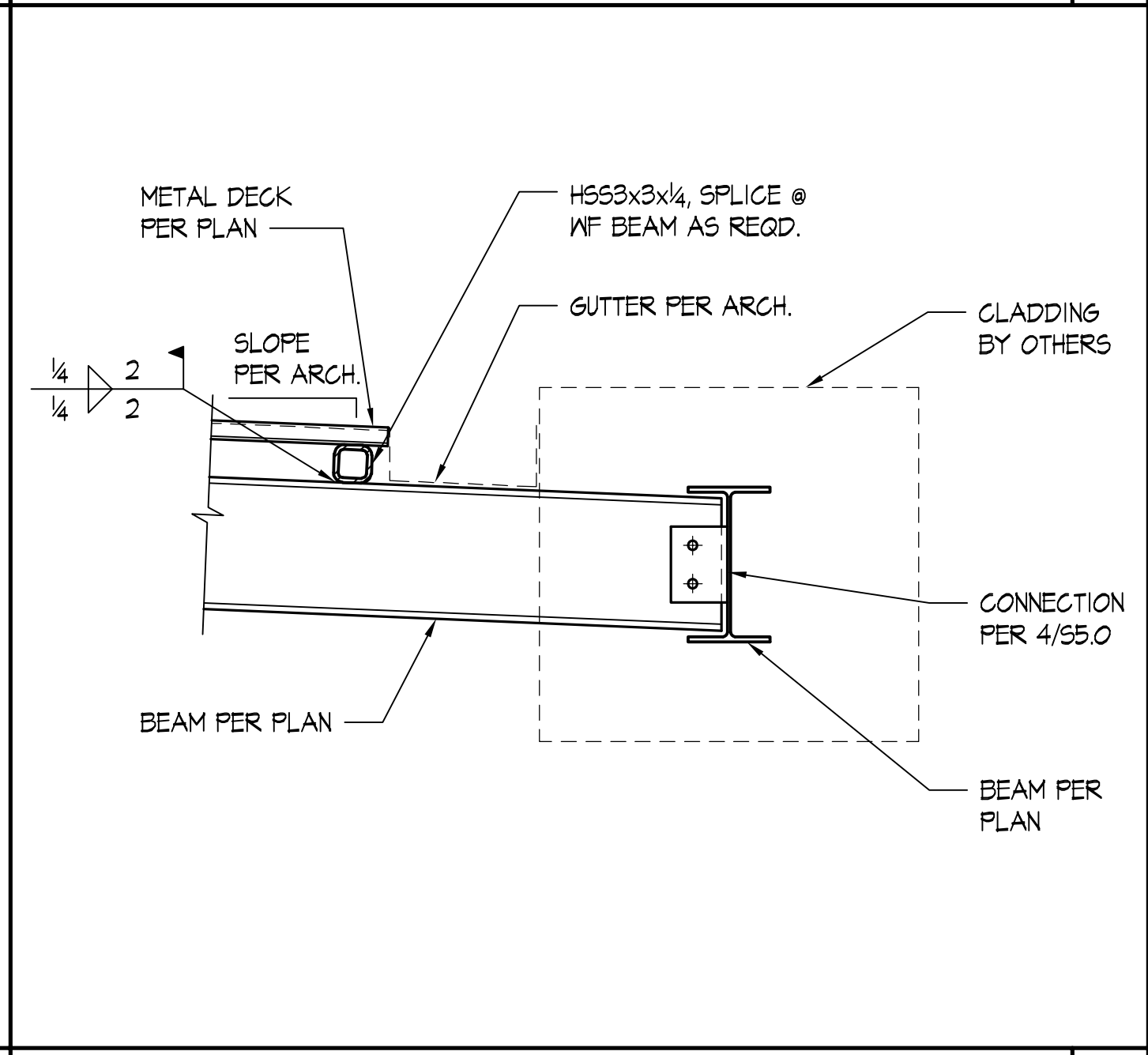
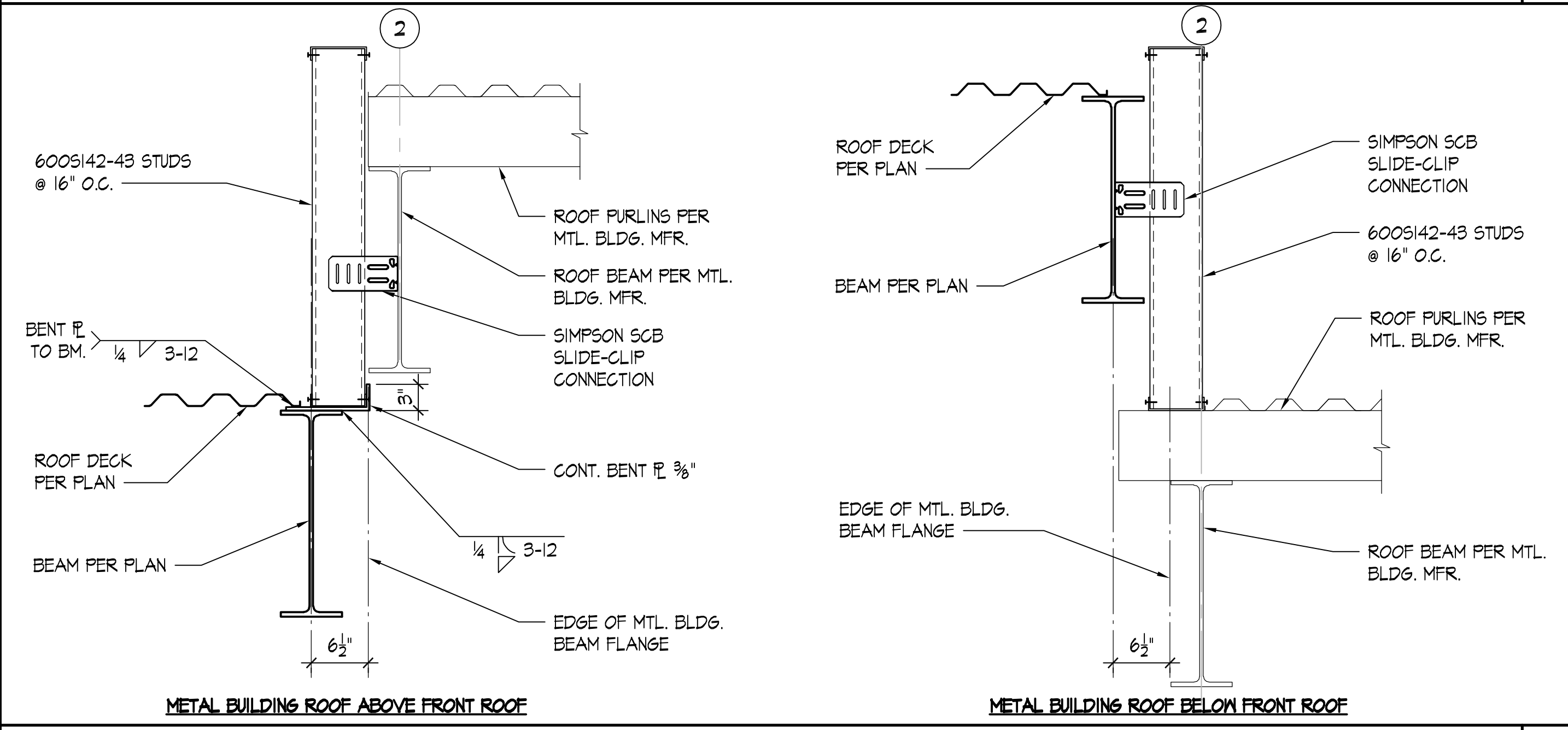


- NOTES:**
1. FOR OPENINGS < 8" SQUARE SEE 4/55.3. OPENINGS < 4" DO NOT REQUIRE REINFORCING PROVIDED THAT HOLES ARE NOT CLOSER THAN 12" CLEAR.
 2. FOR OPENINGS > 16" OR T5# LOAD SEE 3/55.4.

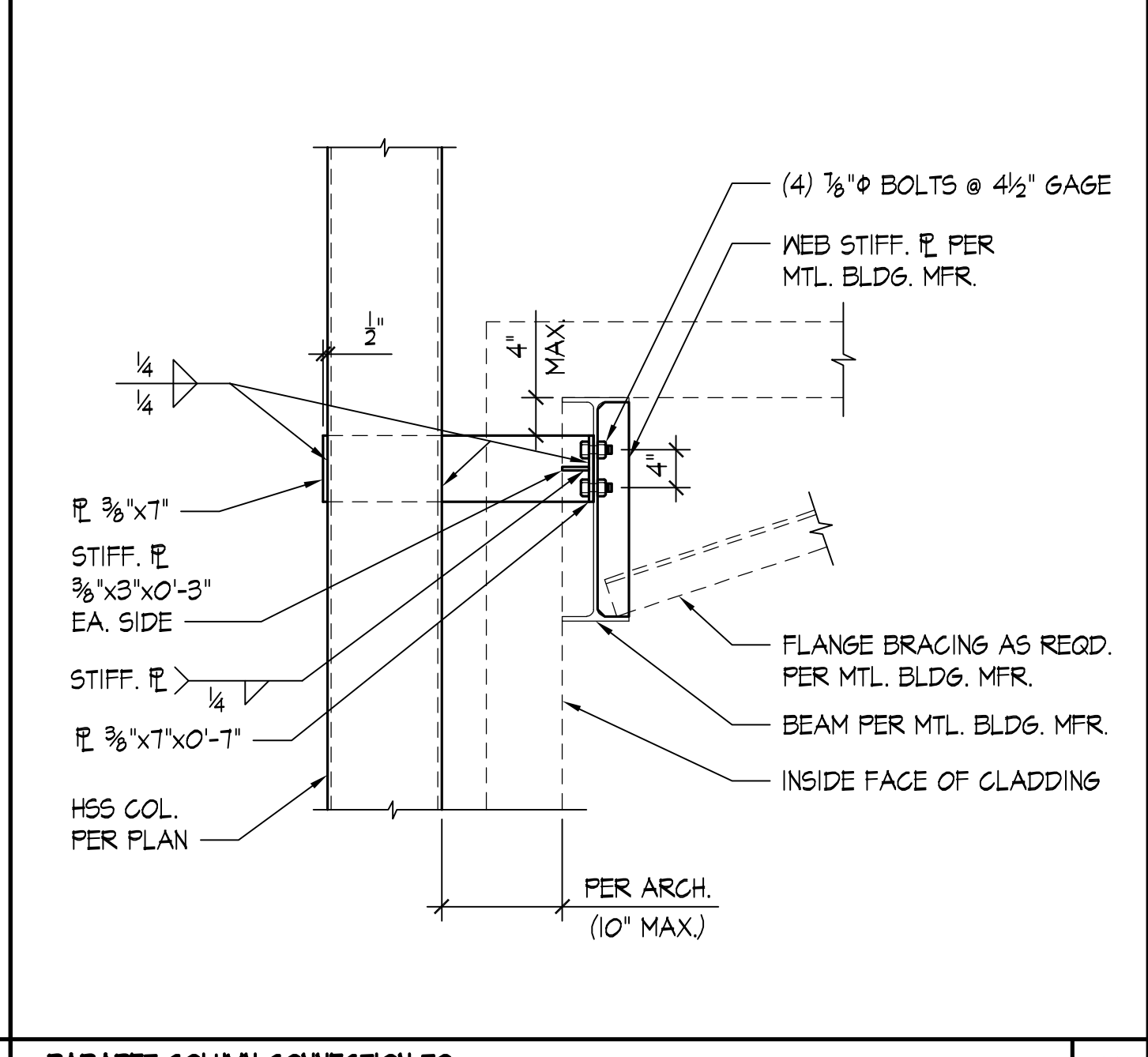
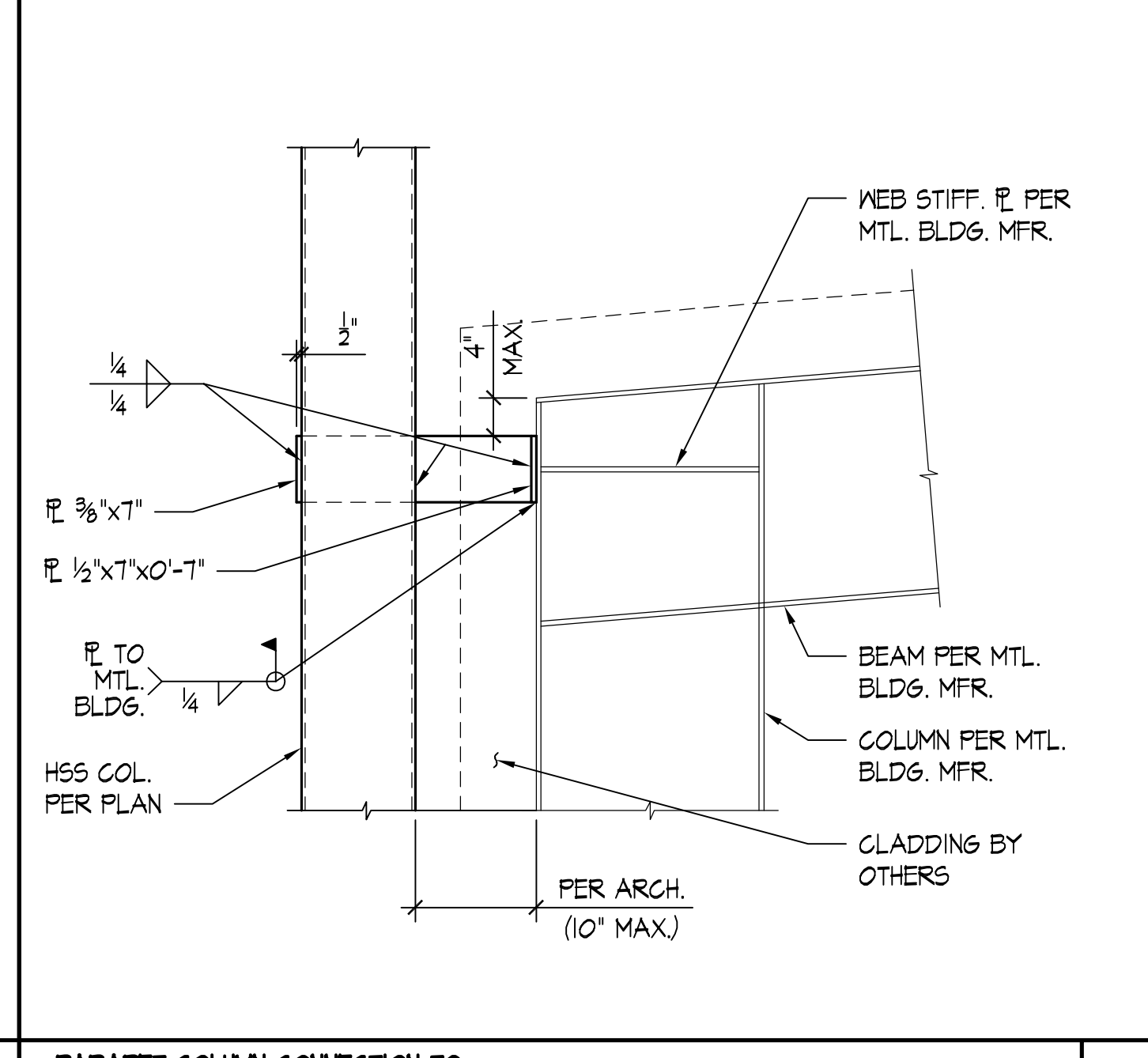
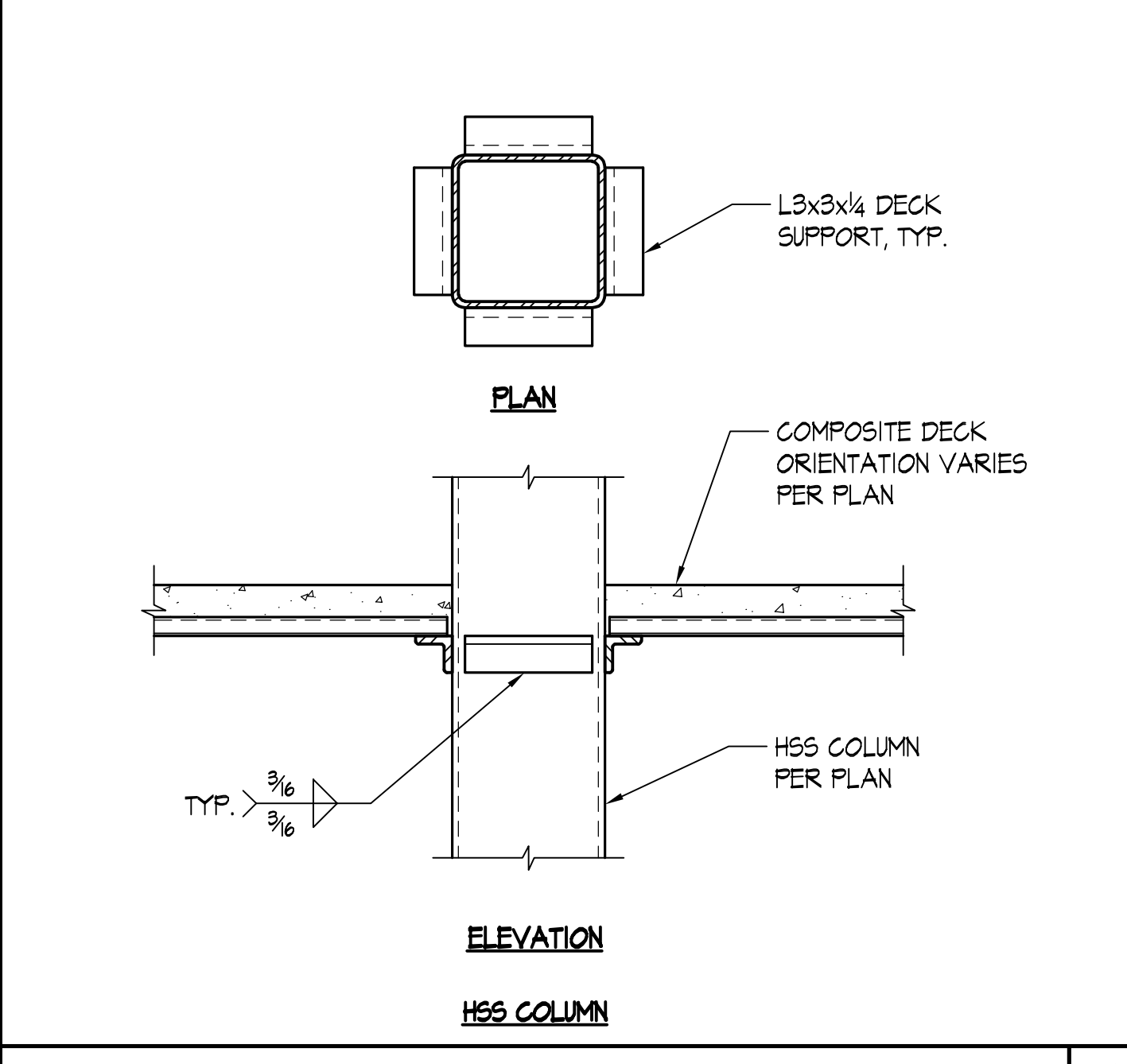


- NOTES:**
1. OPENINGS < 4" DO NOT REQUIRE REINFORCING PROVIDED THAT HOLES ARE NOT CLOSER THAN 12" CLEAR.
 2. FOR OPENINGS > 8" OR T5# LOAD SEE 3/55.3.

TYPICAL 1/2" ROOF DECK SCALE: NONE 2 TYPICAL METAL ROOF DECK OPENINGS <= 16" SQUARE SCALE: NONE 3 TYPICAL METAL ROOF DECK OPENING <= 8" SQUARE SCALE: NONE 4



GRID 2 ROOF STEP SCALE: NONE 6 GRID B CANOPY ROOF SCALE: NONE 7 DETAIL SCALE: NONE 8

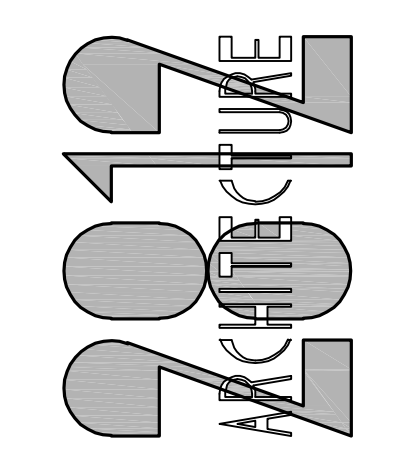


TYPICAL DECK SUPPORT AT COLUMNS SCALE: NONE 9 PARAPET COLUMN CONNECTION TO METAL BUILDING FRAME SCALE: NONE 10 PARAPET COLUMN CONNECTION TO METAL BUILDING ROOF BEAM SCALE: NONE 11 DETAIL SCALE: NONE 12

Date: 08/25/2022 8:47 am
 Plotter: P1, 08/25/2022 8:47 am
 File: 225-5521.dwg

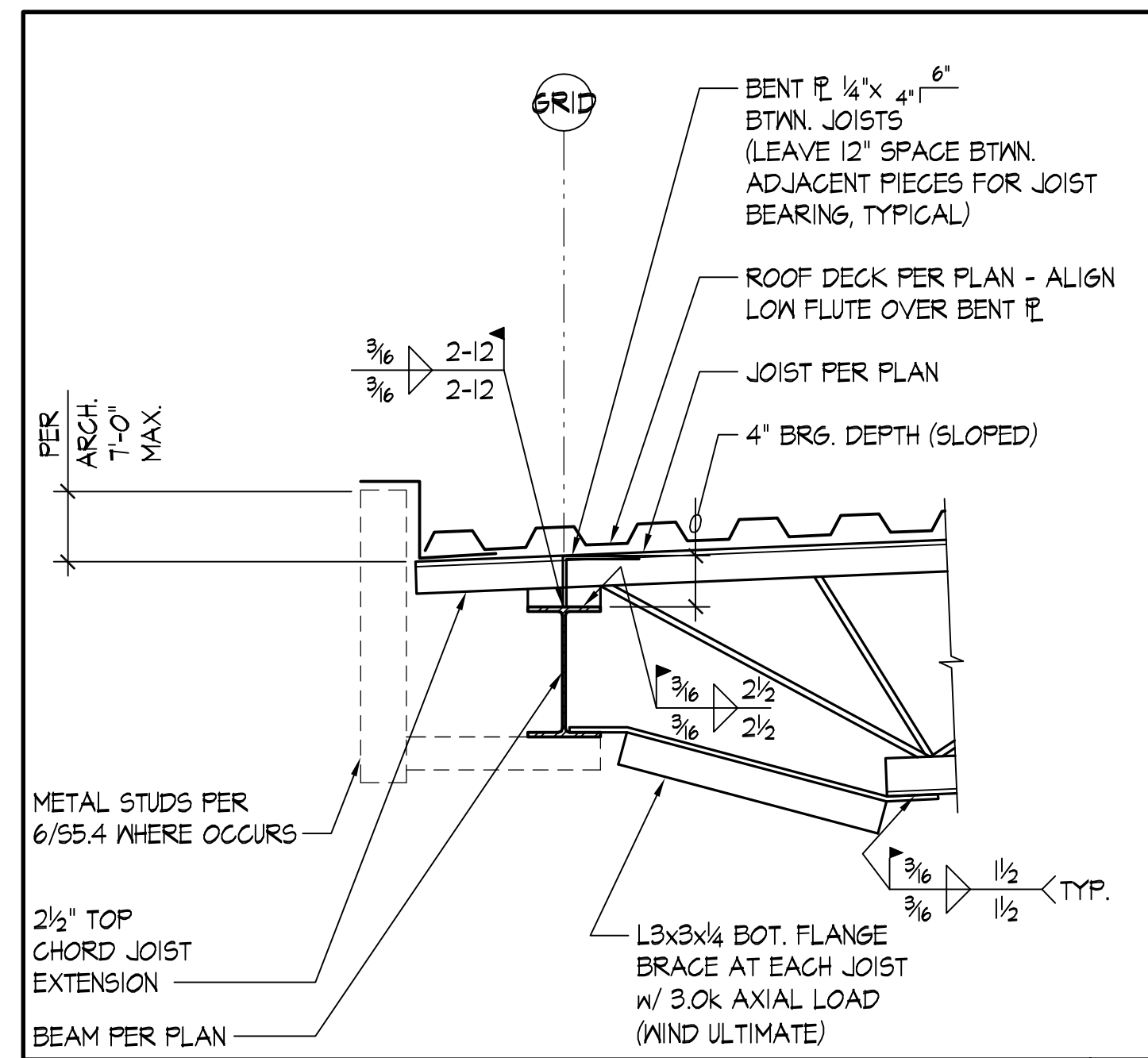


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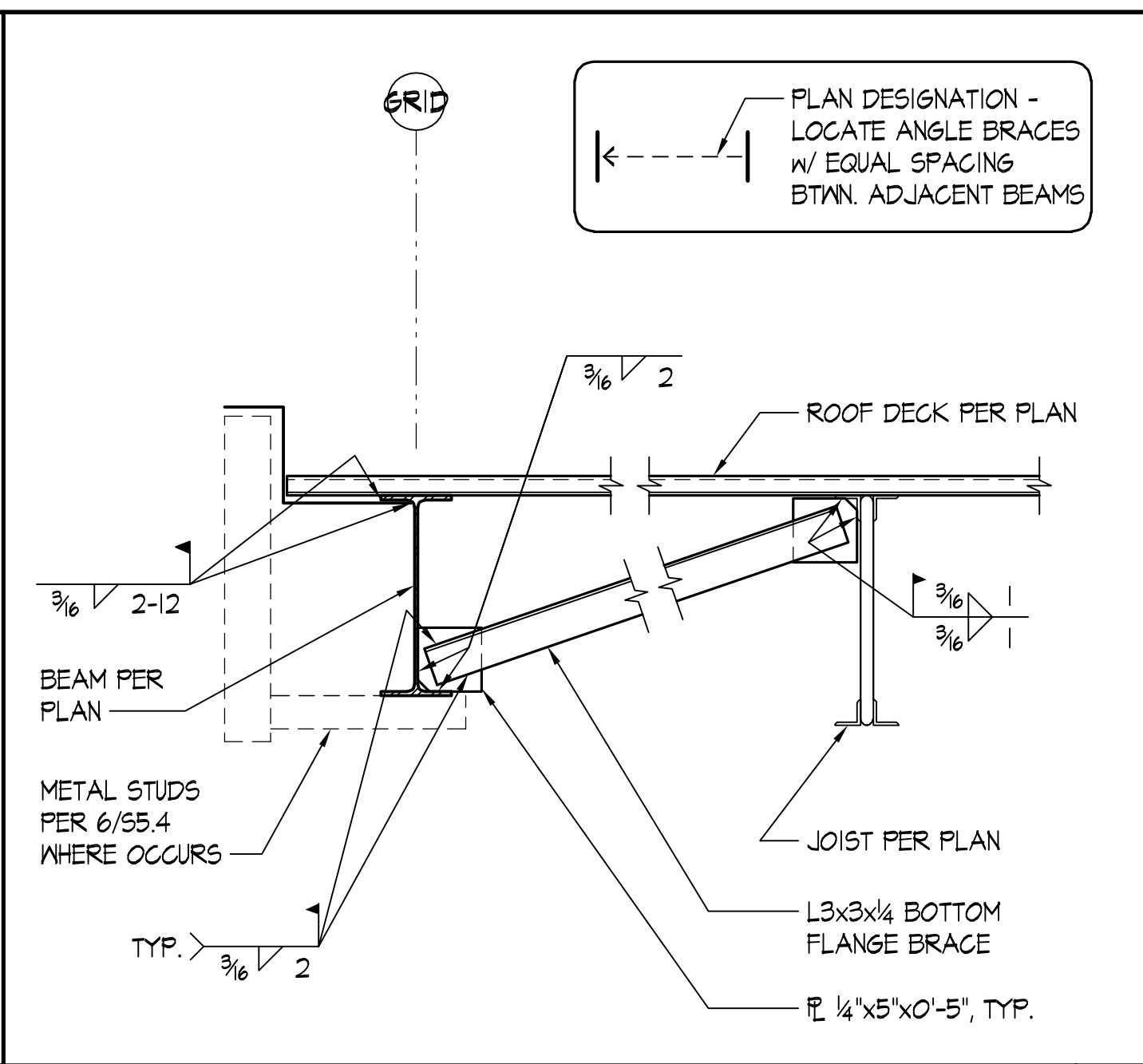


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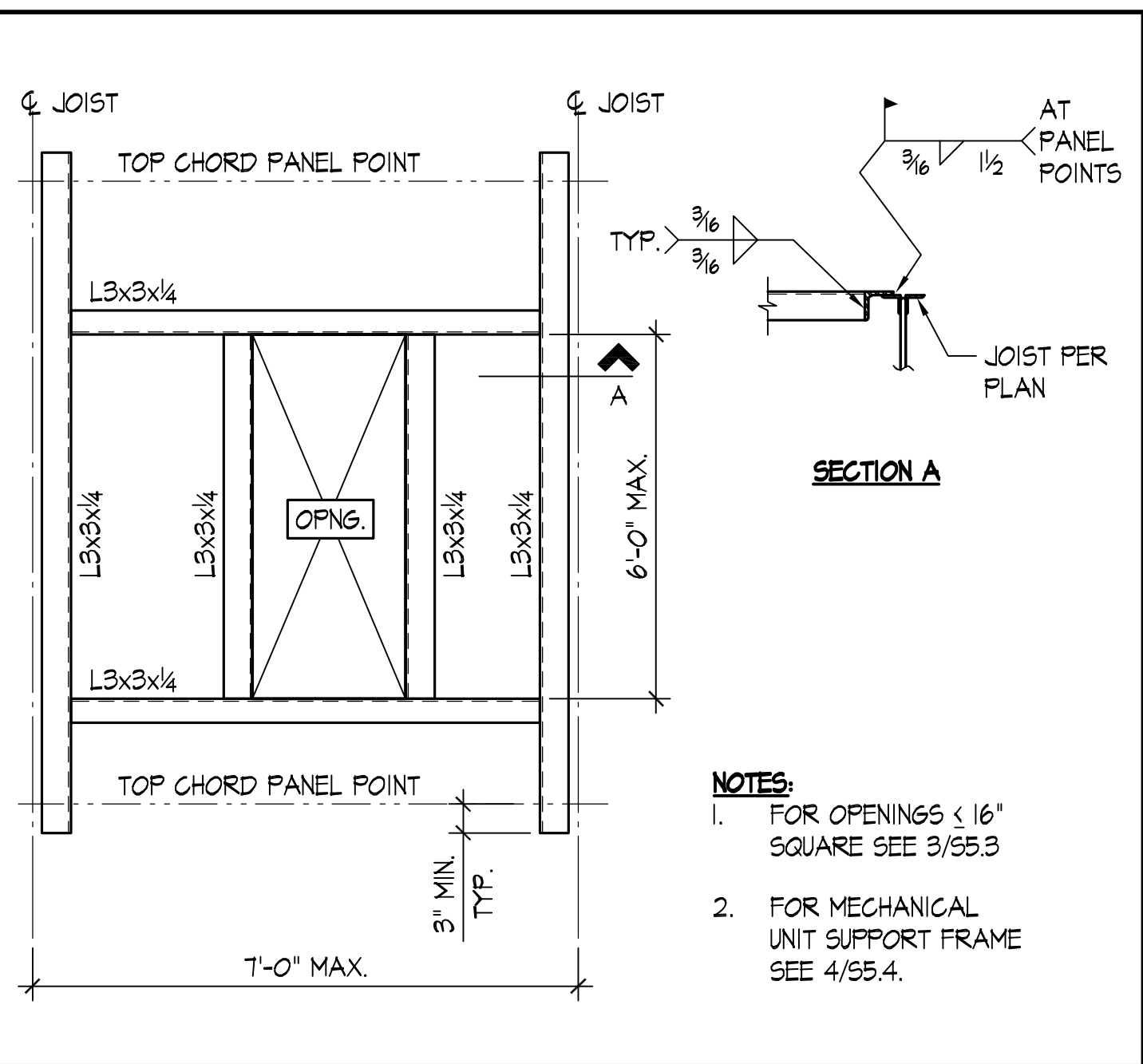
Drawing: **S5.3**
 Job Number: 22325.01



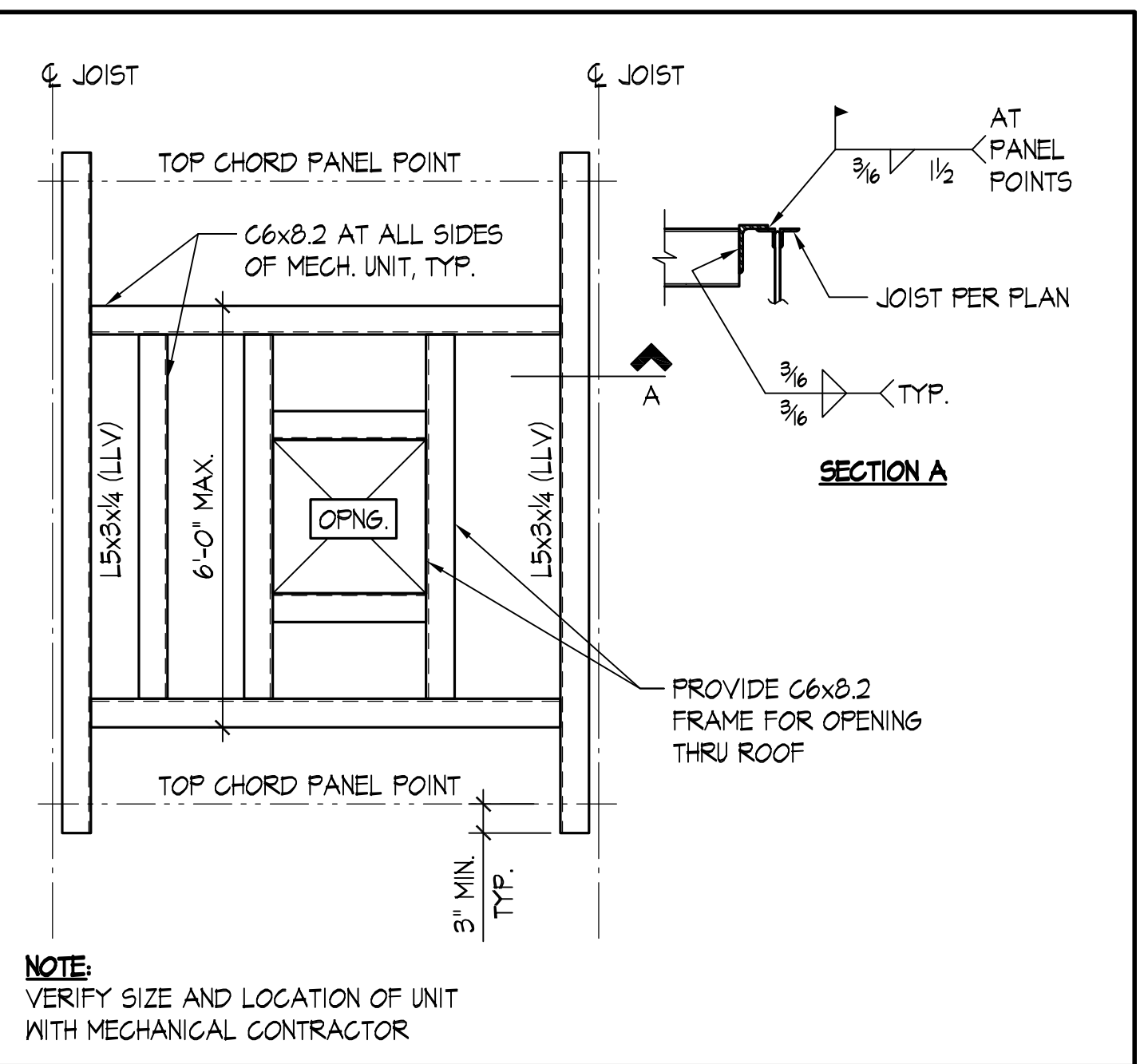
TYPICAL ROOF EDGE - JOISTS PERPENDICULAR SCALE: NONE |



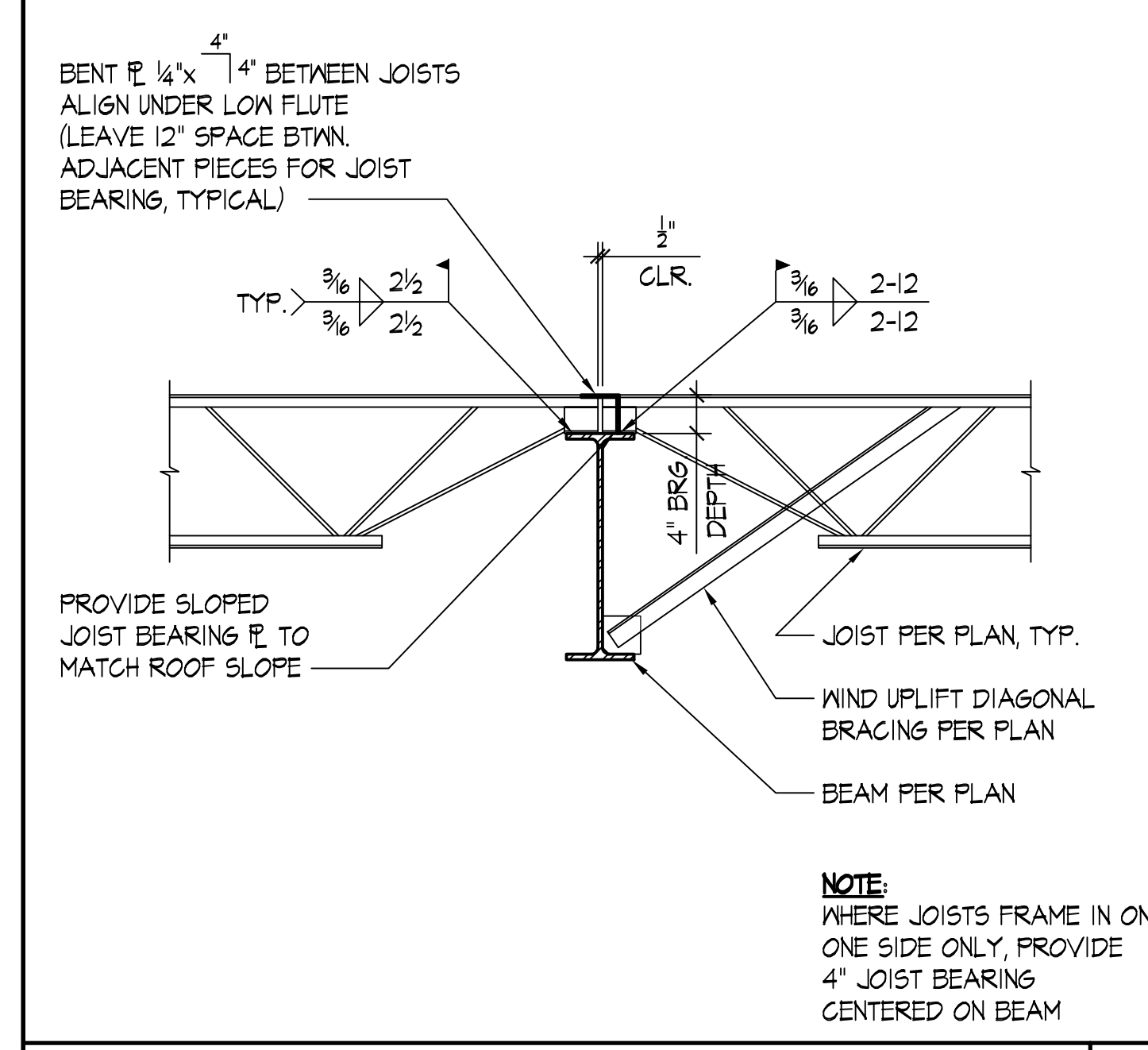
TYPICAL ROOF EDGE - JOISTS PARALLEL SCALE: NONE 2



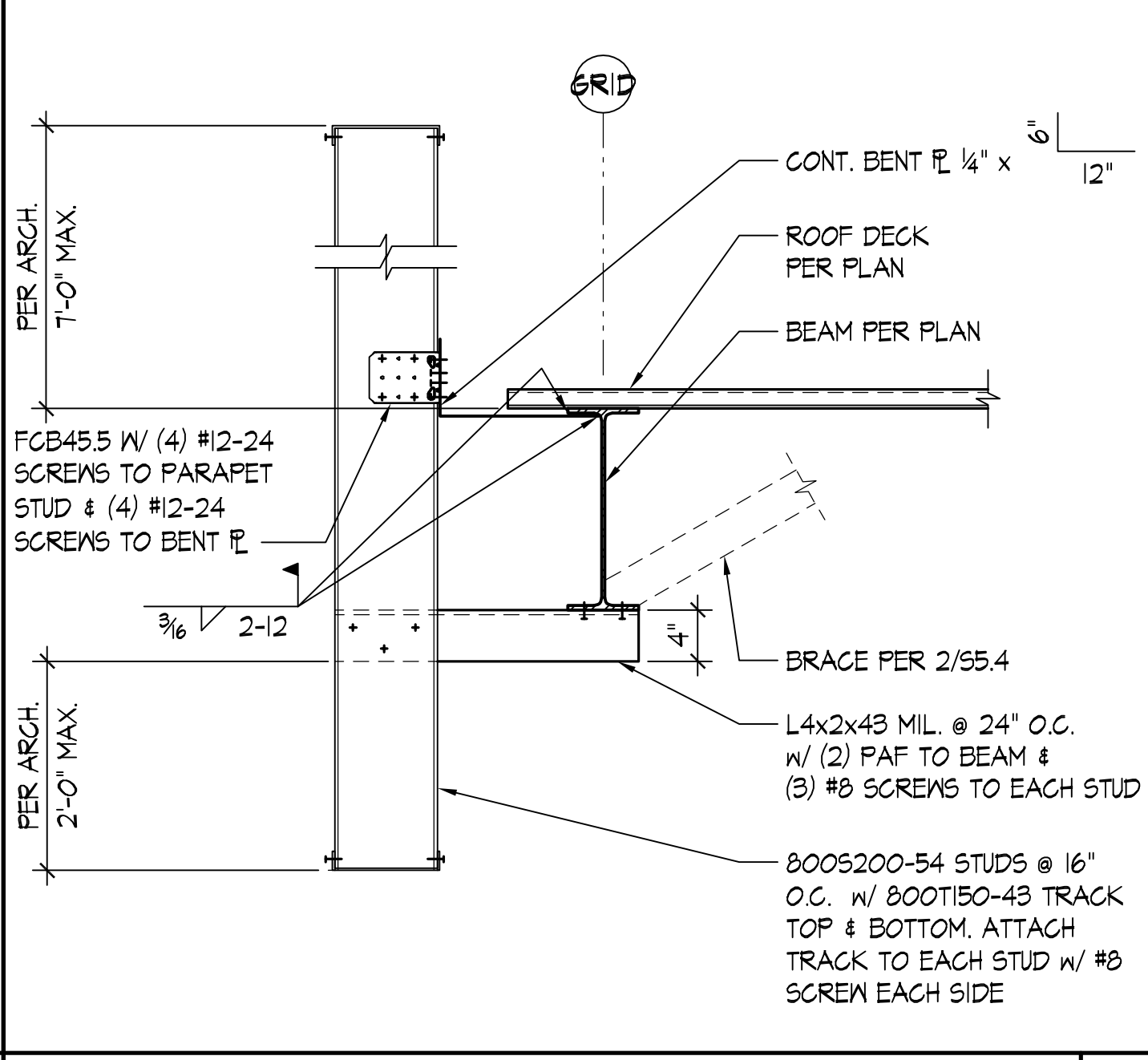
TYPICAL FRAMING AT OPENINGS IN METAL ROOF SCALE: NONE 3



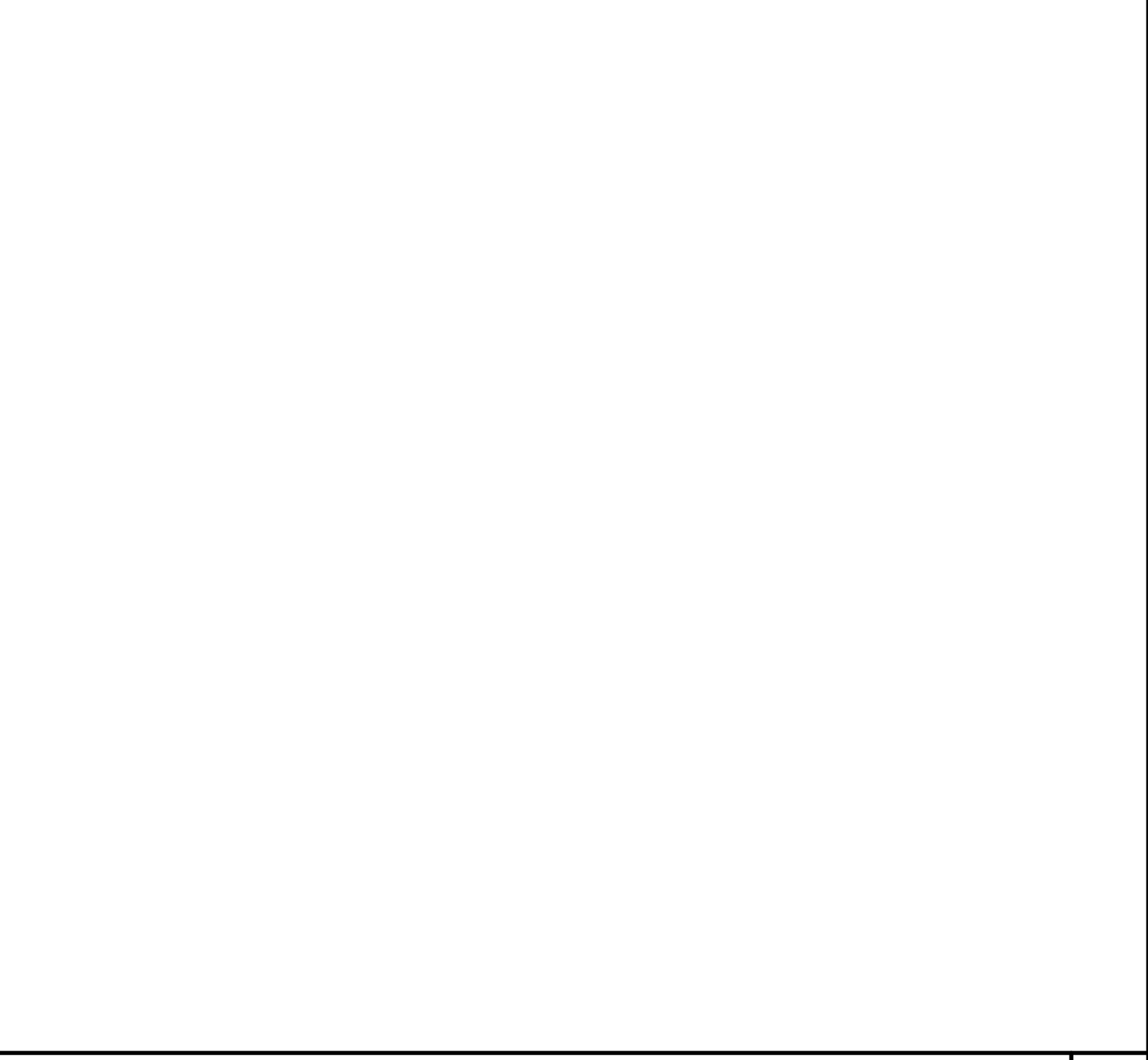
TYPICAL MECHANICAL UNIT SUPPORT FRAME SCALE: NONE 4



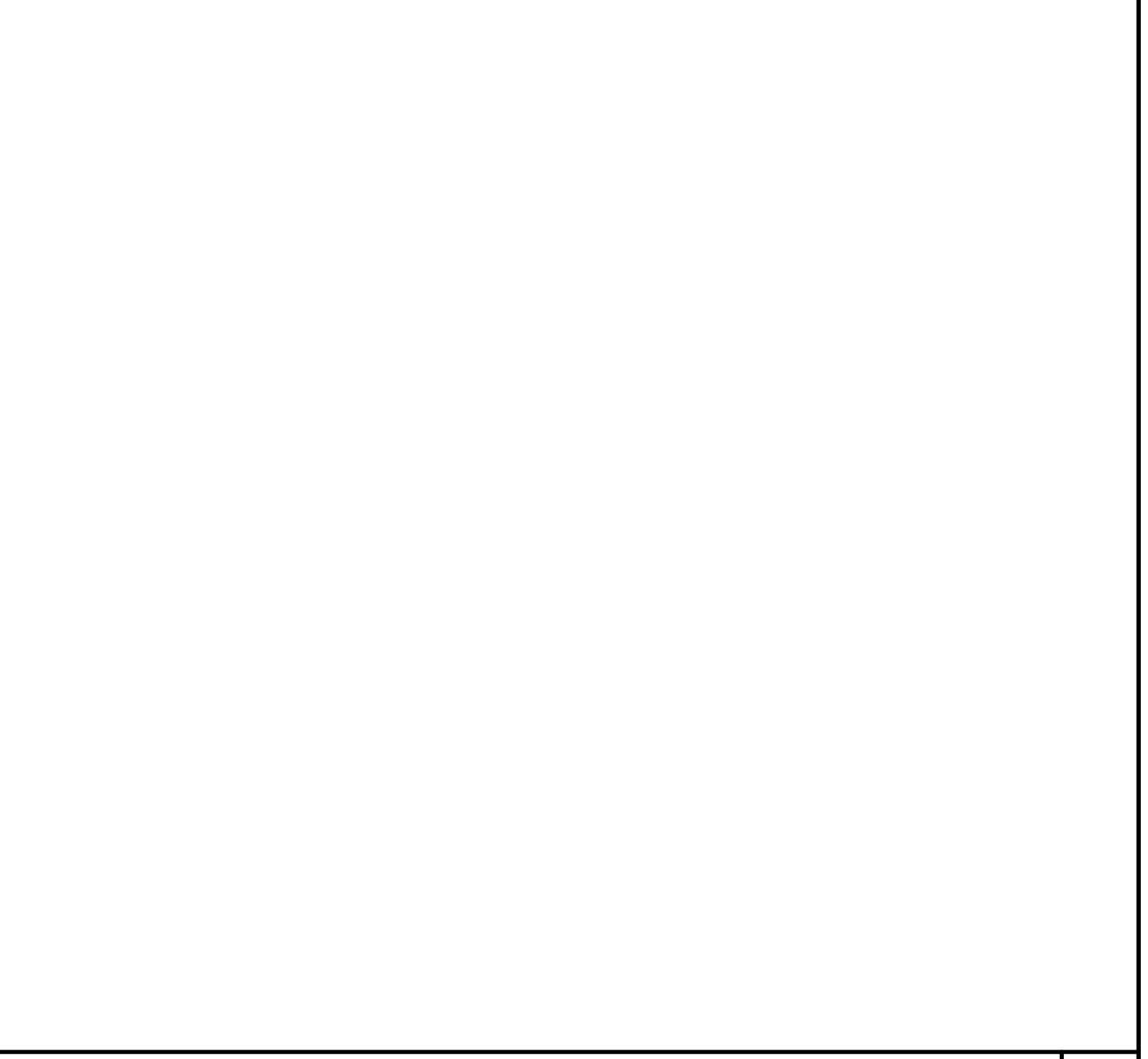
TYPICAL STEEL JOIST TO BEAM GIRDER SCALE: NONE 5



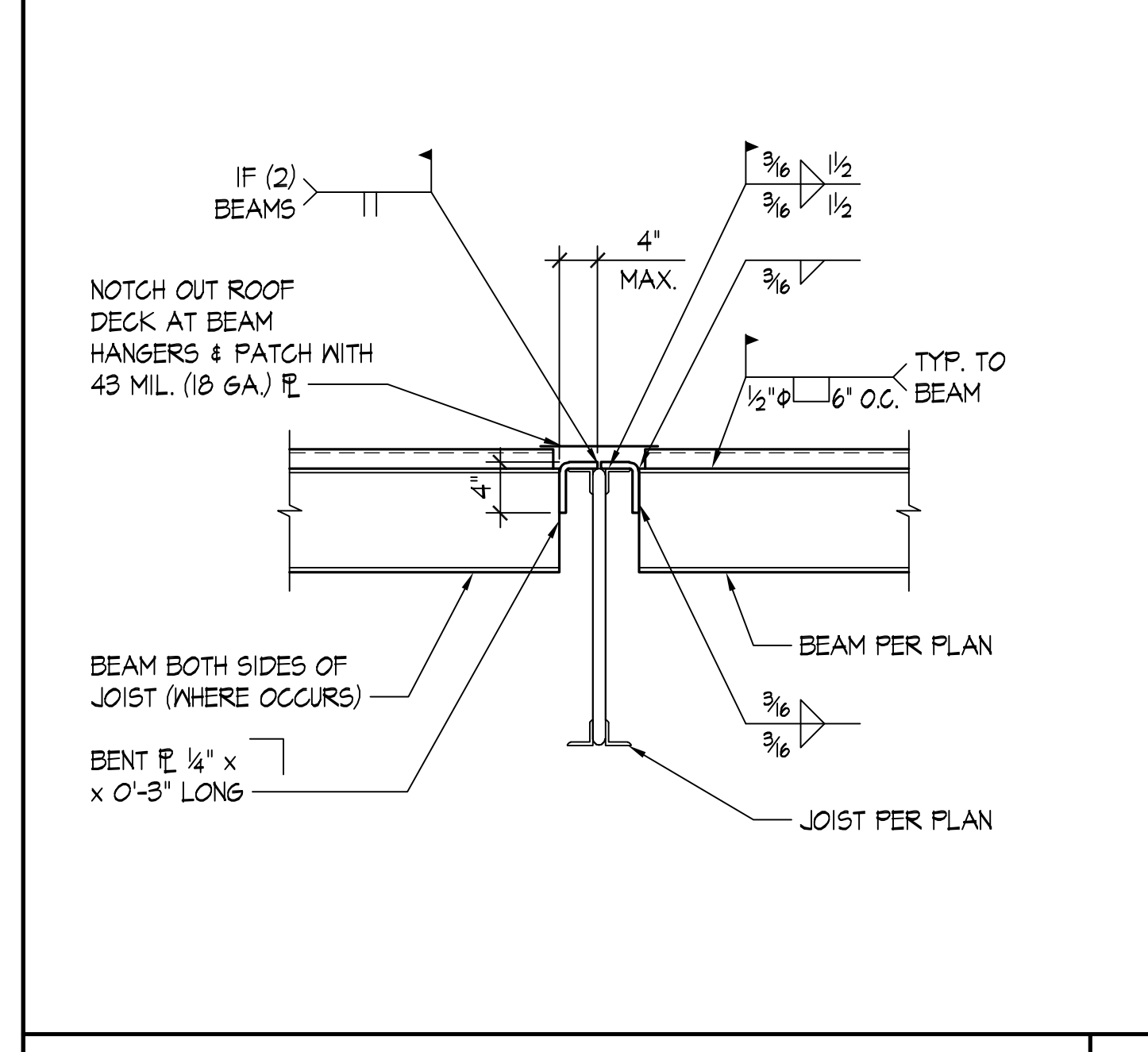
TYPICAL ROOF EDGE WITH CURTAIN WALL SCALE: NONE 6



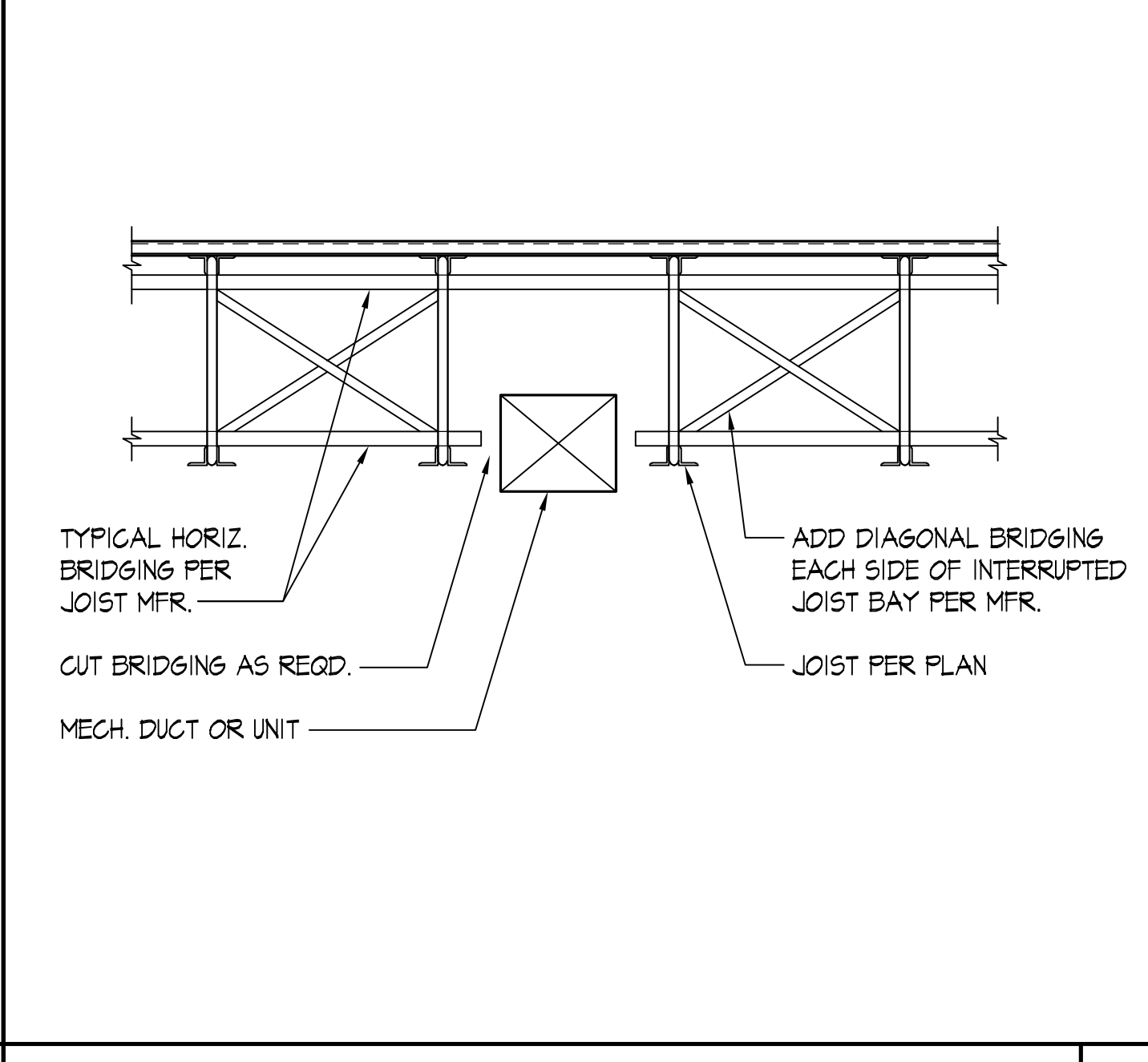
TYPICAL JOIST BRIDGING AT STEEL BEAM SCALE: NONE 7



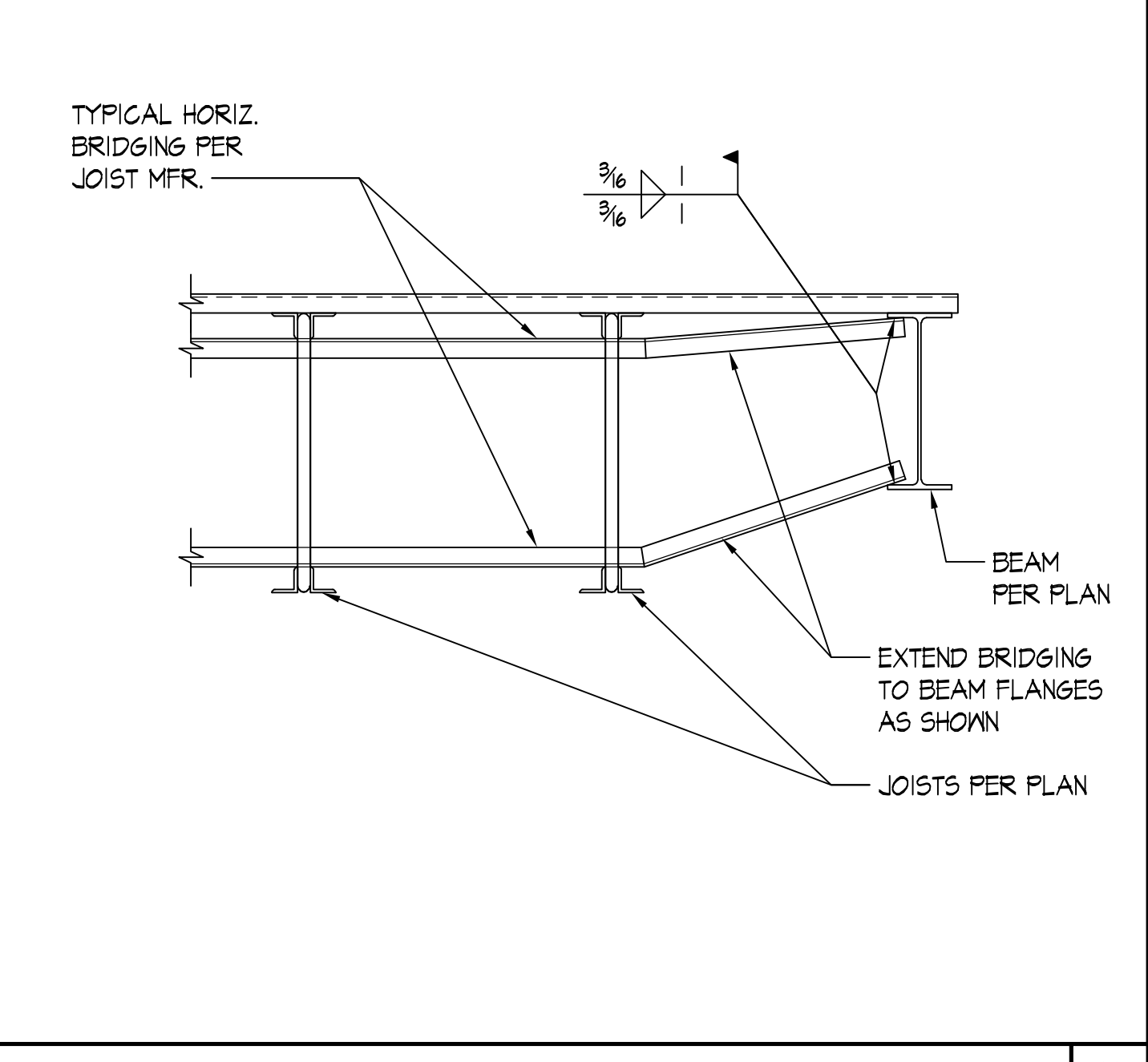
ALLOWABLE METHODS & LOCATIONS FOR HANGING LOADS FROM OPEN WEB STEEL JOIST SCALE: NONE 8



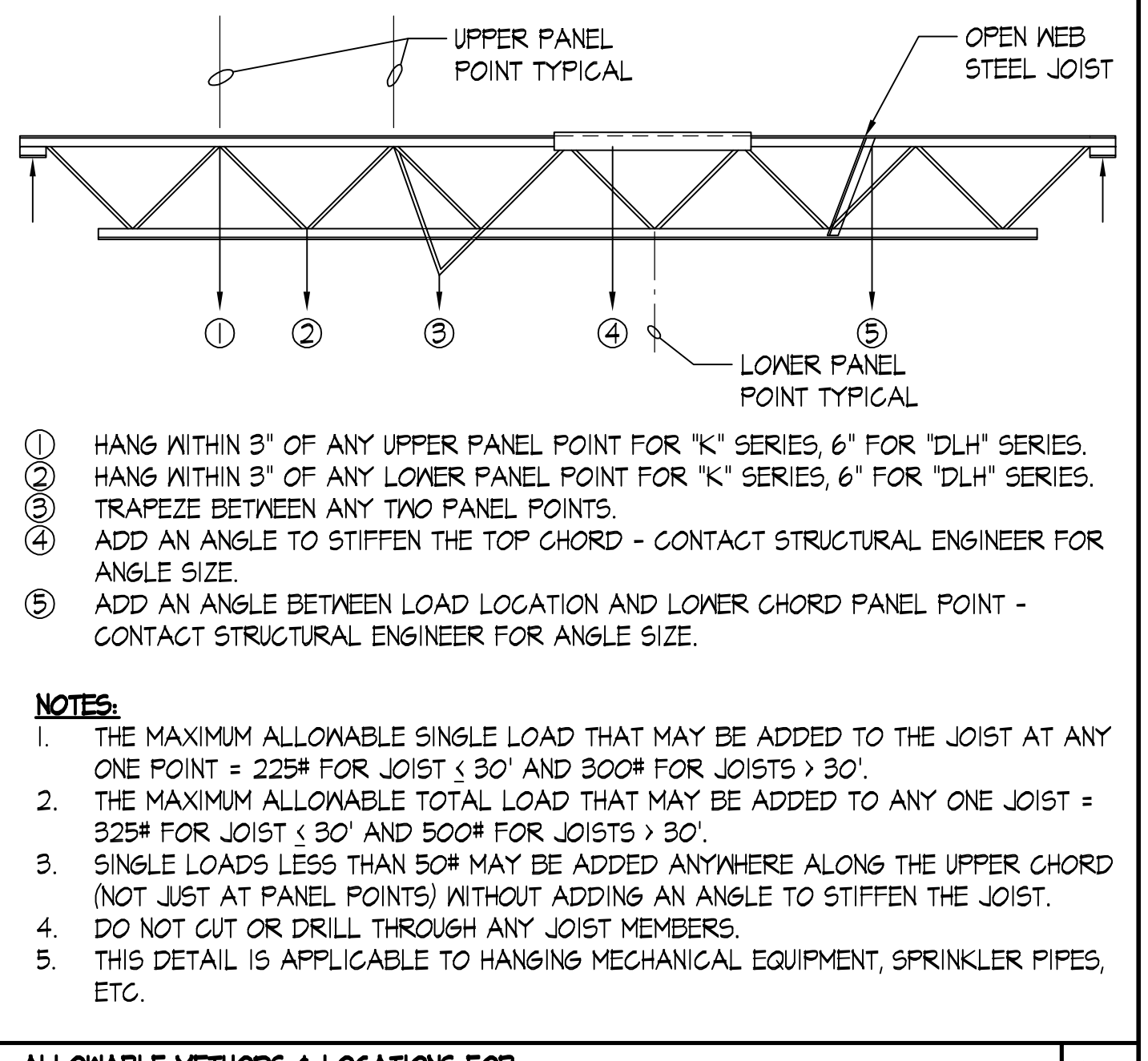
W BEAM TO JOIST CONNECTION SCALE: NONE 9



TYPICAL DISCONTINUOUS JOIST BRIDGING SCALE: NONE 10



TYPICAL JOIST BRIDGING AT STEEL BEAM SCALE: NONE 11

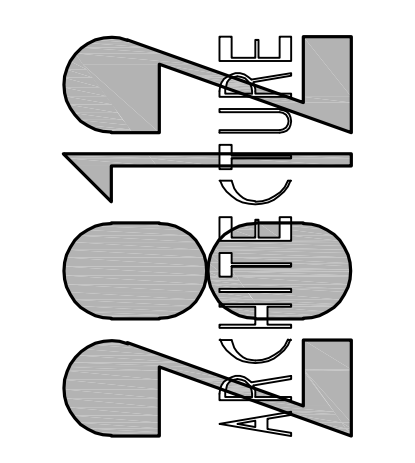


ALLOWABLE METHODS & LOCATIONS FOR HANGING LOADS FROM OPEN WEB STEEL JOIST SCALE: NONE 12

Date:	06/08/22
For:	PERMIT SET



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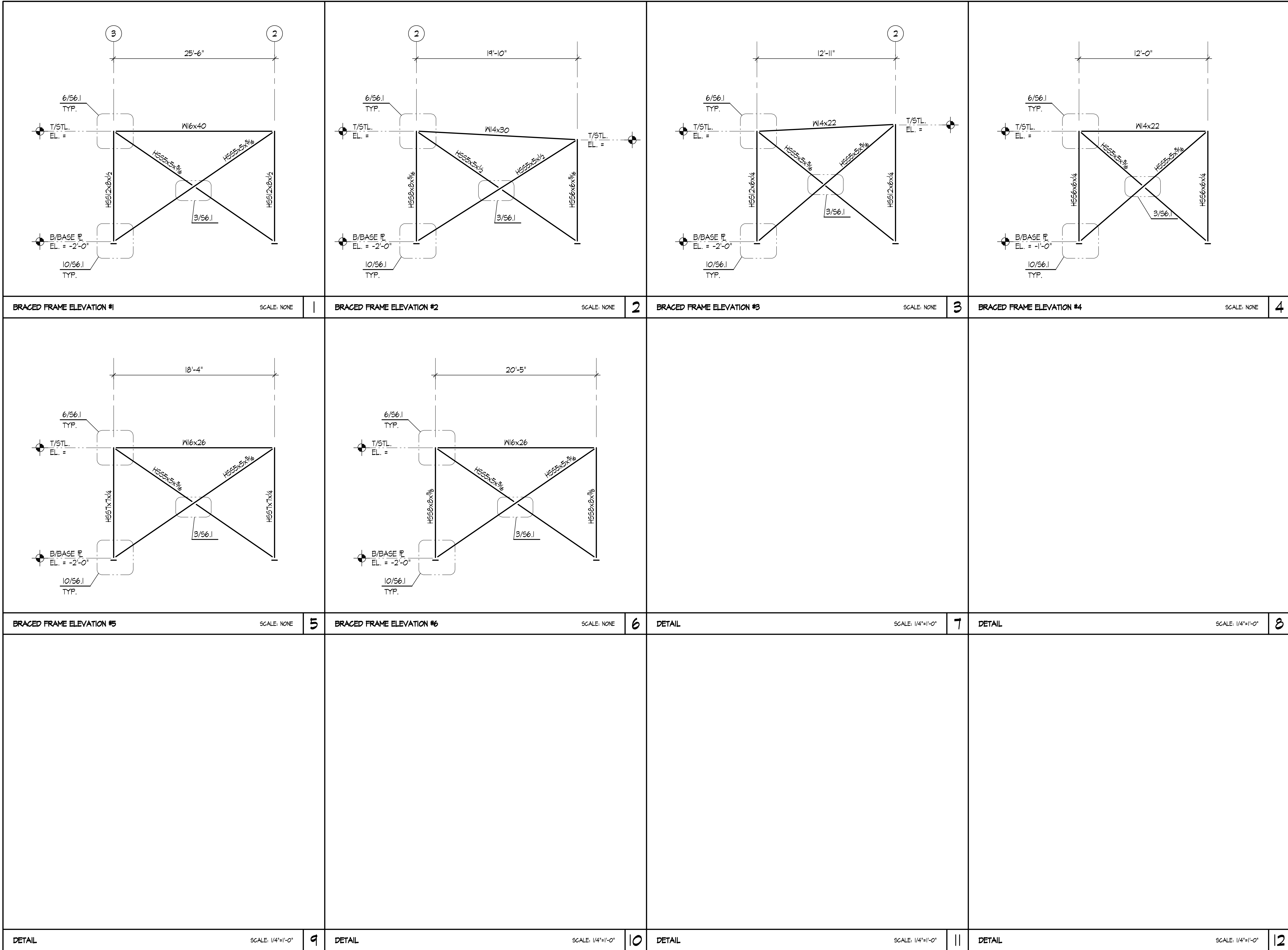


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New Auto Dealership for:
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Marysville, WA 98223
Comments: TYPICAL STEEL ROOF DETAILS

Drawing:
S5.4
Job Number:
22325.01

File: S5-S504.dwg Plotter: F1, 06/05/2022 4:01 pm

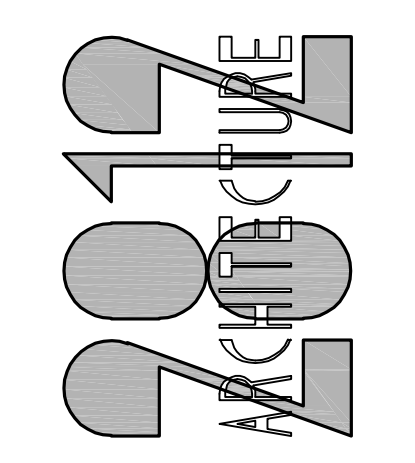


Date:	06/08/22
For:	PERMIT SET



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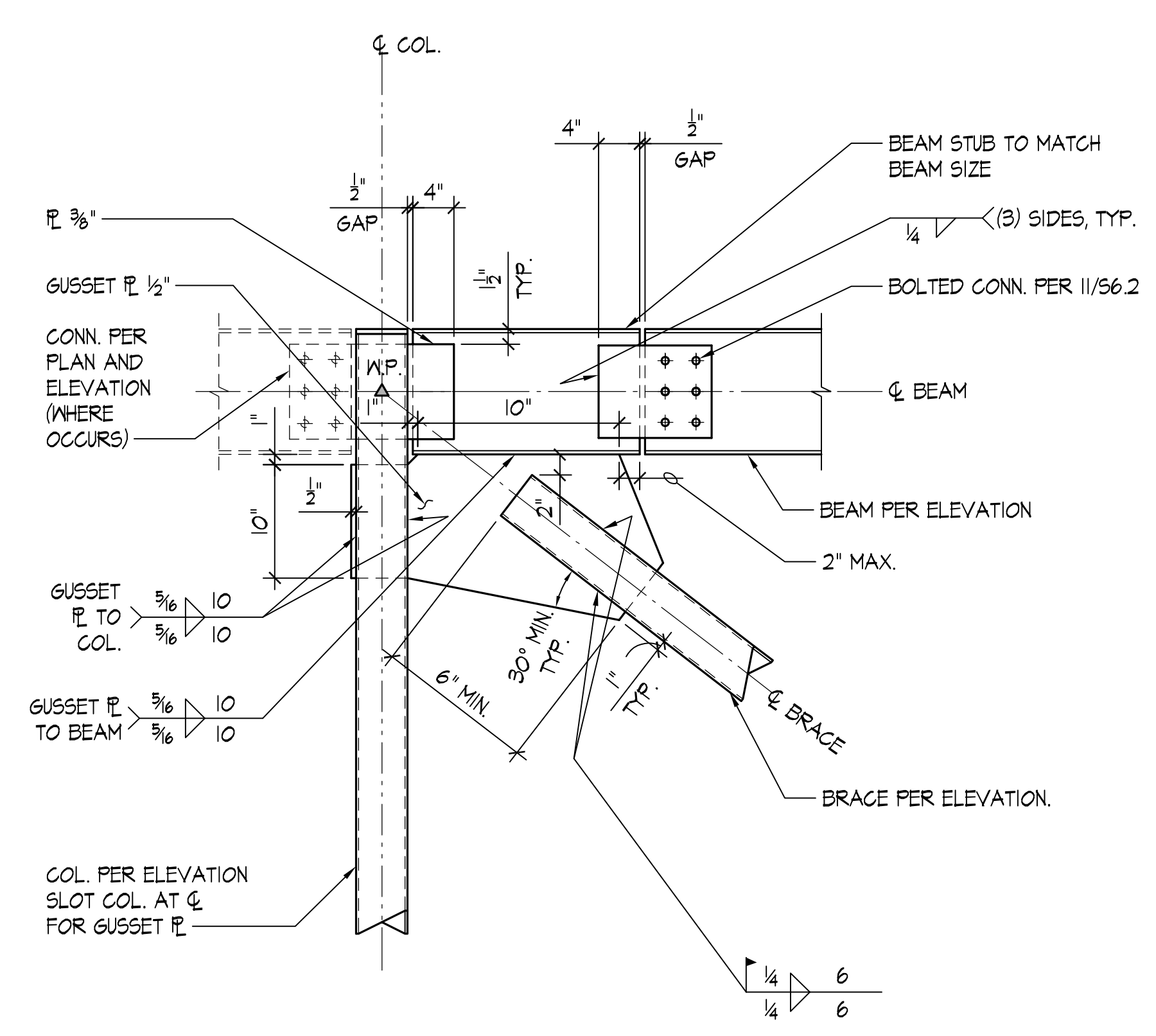
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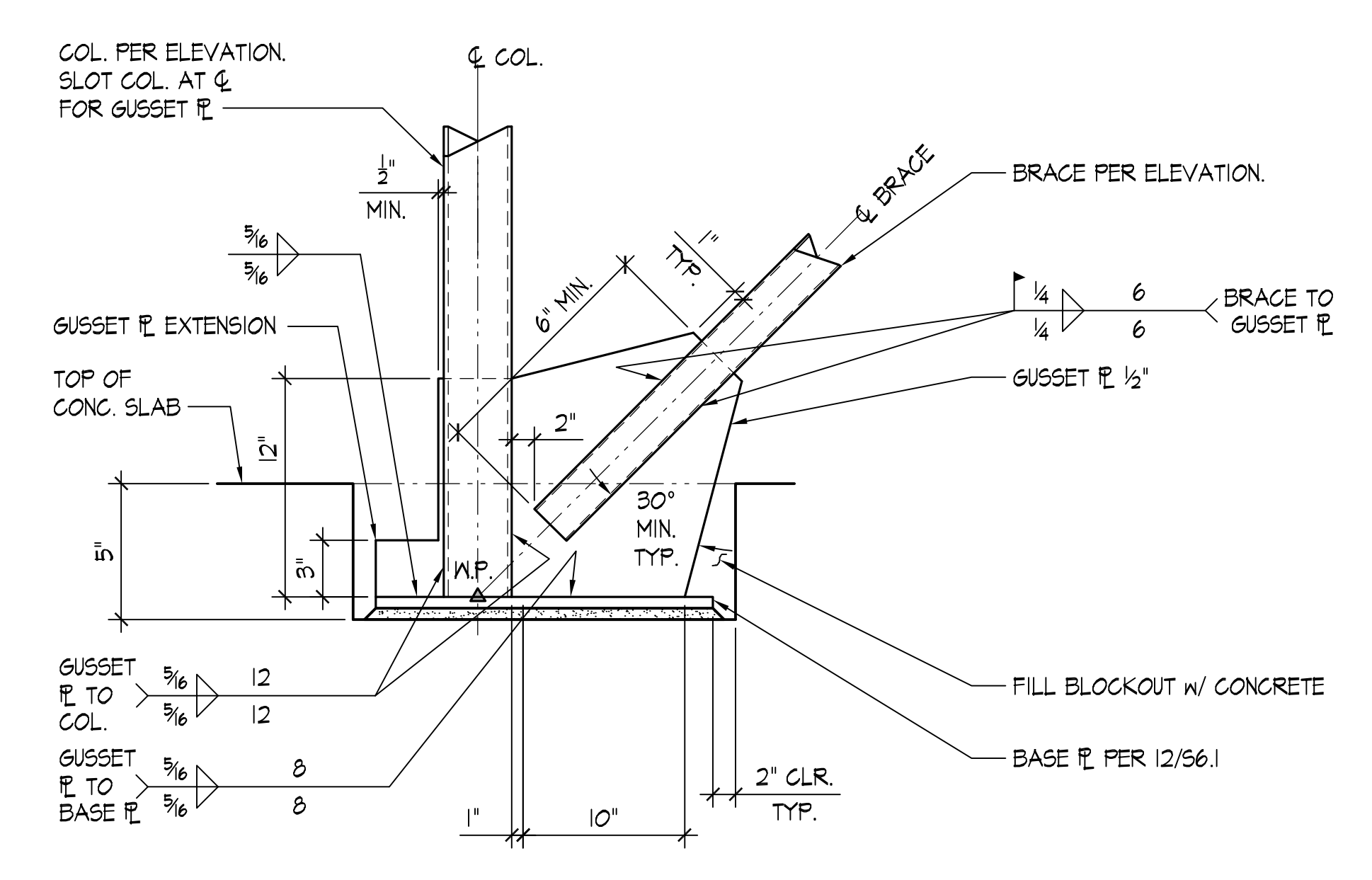
New Auto Dealership for:
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Marysville, WA 98223
Consultant:
BRACED FRAME ELEVATIONS

Drawing:	S6.0
Job Number:	22325.01

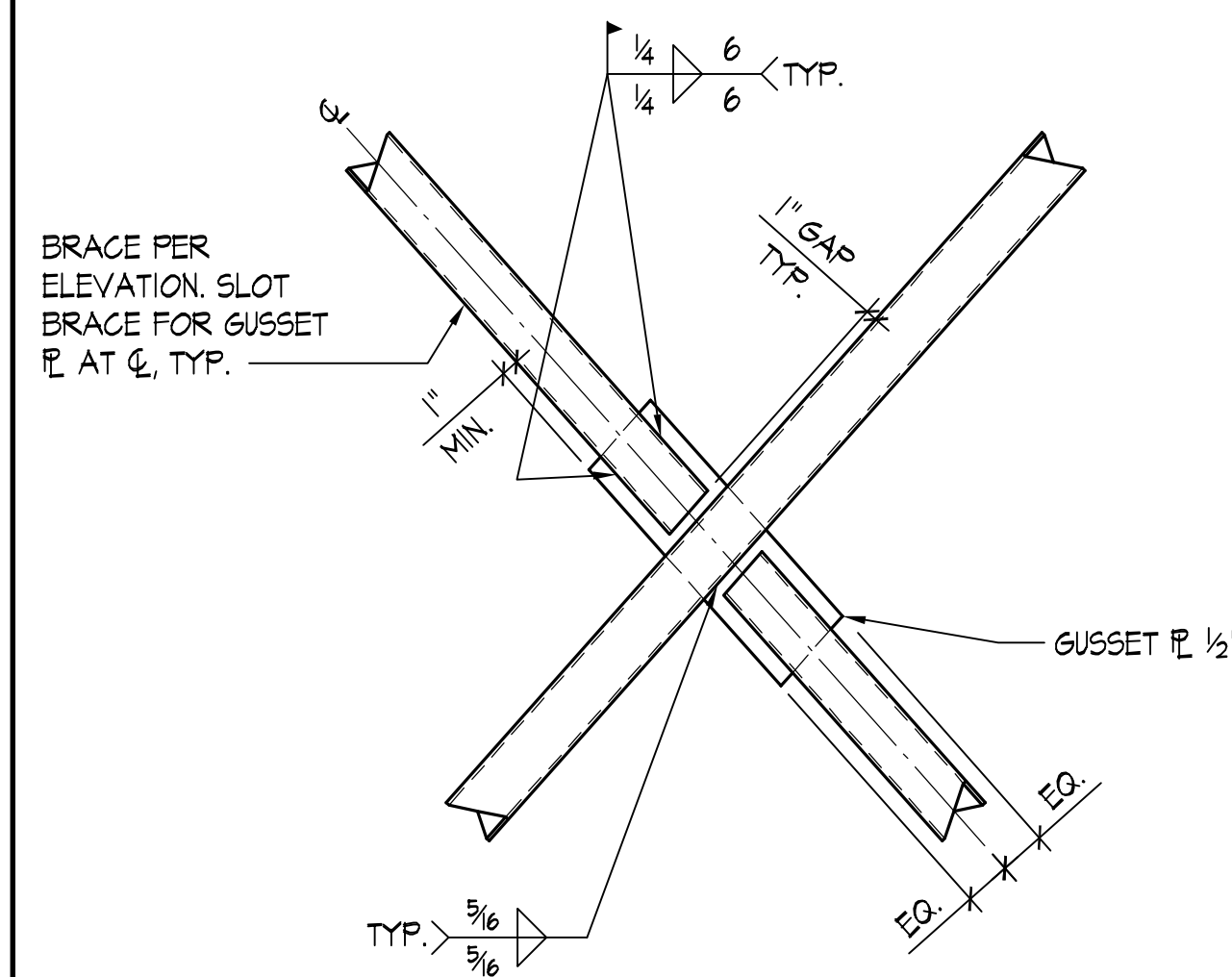
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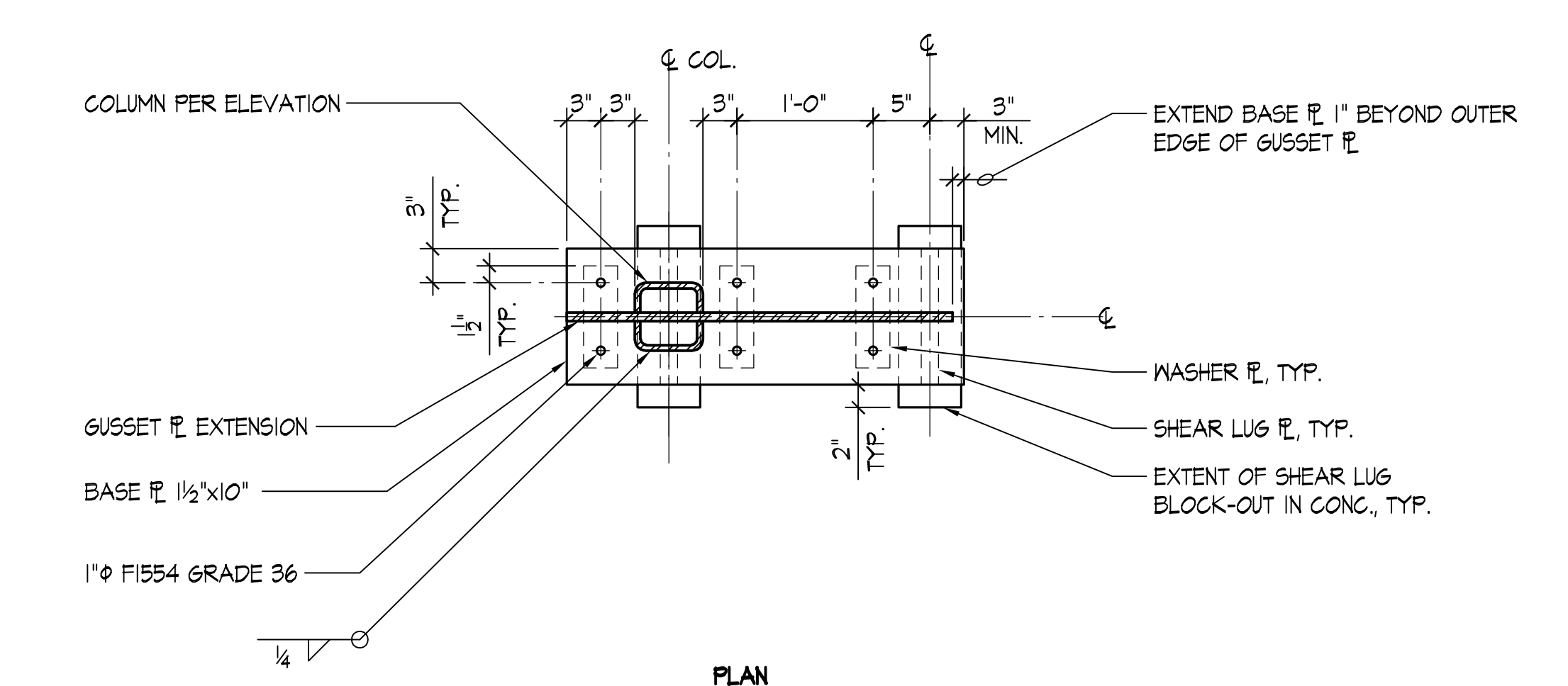
TYPICAL BRACED FRAME GUSSET PL TO COLUMN AND BEAM SCALE: NONE 6



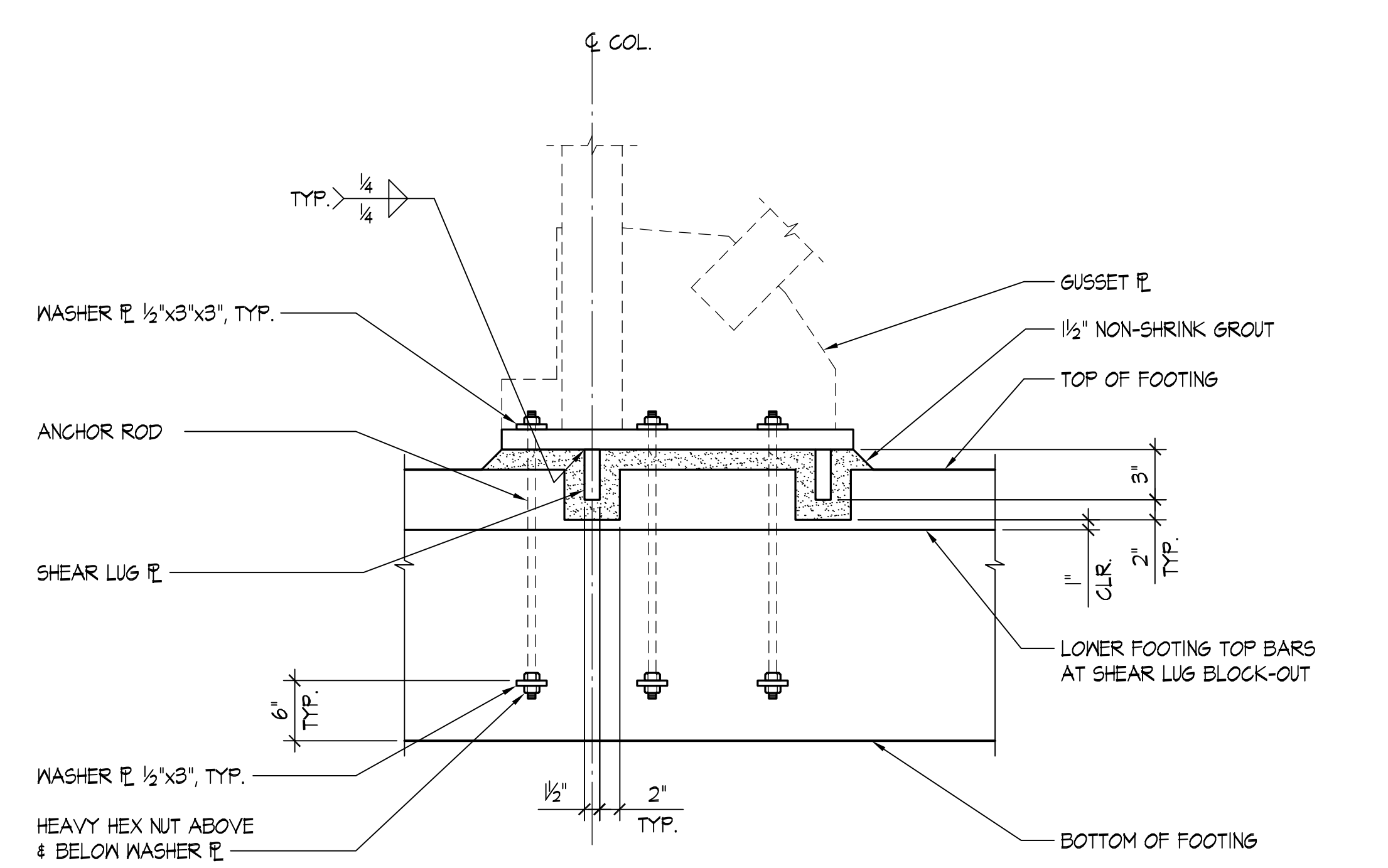
TYPICAL BRACED FRAME GUSSET PL TO COLUMN AND BASE PL SCALE: NONE 10



TYPICAL BRACE INTERSECTION CONNECTION SCALE: NONE 3 DETAIL SCALE: 1"=1'-0" 4



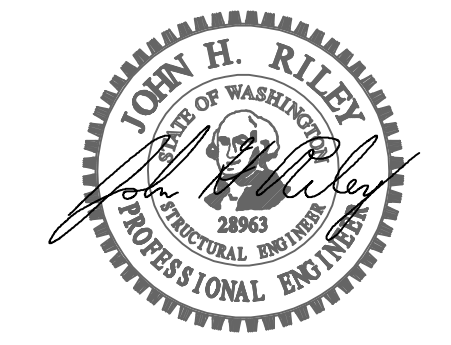
NOTES:
1. SEE 10/56.1 FOR GUSSET PLATE



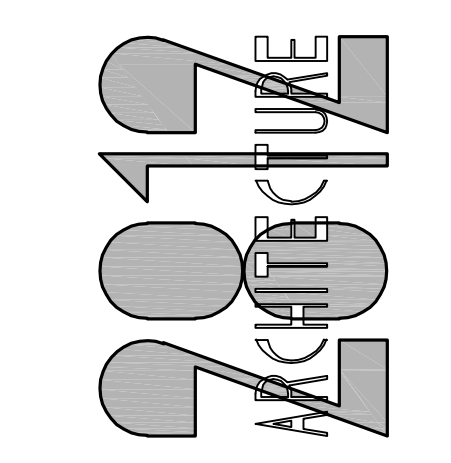
TYPICAL BRACED FRAME BASE PLATE SCALE: NONE 12

File: 225-1001.dwg Plot Date: 08/05/2012 1:06 pm

Date:	08/08/22
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