

**GENERAL STRUCTURAL NOTES**

(The following apply unless shown otherwise on the plans)

**CRITERIA**

- ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, THE 2015 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
- DESIGN LOADING CRITERIA**  

ROOF SNOW LOAD	25 PSF
FLOOR LIVE LOAD (CATWALKS)	40 PSF
GUARDRAILS/BALCONY RAILS (OTHER THAN EXIT FACILITY)	20 PLF OR 200 LBS.
MECHANICAL UNITS	WEIGHTS FURNISHED BY MANUFACTURER

WIND ANALYSIS PROCEDURE: ASCE 7-10 CHAPTER 27 PART II - ENCLOSED SIMPLE DIAPHRAGM RISK CATEGORY II  
 10 MPH EXPOSURE 'B'  
 TOPOGRAPHIC FACTOR Kz = 1.0

CLADDING / WINDOW DESIGN PRESSURE (MAX) 34 PSF  
 ROOFING DESIGN PRESSURE NOT AT A CORNER (MAX) 40 PSF  
 ROOFING DESIGN PRESSURE AT CORNER (MAX) 70 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 30.5-1 IN ASCE 7-10. REDUCED DESIGN PRESSURES MAY BE CALCULATED USING ASCE 7. NOTE THAT THE DESIGN WIND PRESSURES NOTED ABOVE ARE ULTIMATE VALUES PER THE 2015 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 Ie = 1.0 MAPPED MCE Ss = 1.24; Si = 0.40 DESIGN ACCELERATION Sds = 0.83; Sdi = 0.41 SEISMIC RESISTING SYSTEM: STEEL COOLING TOWER, R = 3.5 SEISMIC BASE SHEAR Vs = 4.9 K

SEE PLANS FOR ADDITIONAL LOADING CRITERIA. POST ALL COMMERCIAL OR INDUSTRIAL LIVE LOADS OVER 50 PSF PER IBC SECTION 106.

- 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.
- CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED.
- CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.
- 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.
- 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.
- 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.
- 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.
- SHOP DRAWINGS FOR STRUCTURAL STEEL SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS.
- 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.
- 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.
- MECHANICAL UNIT CONNECTIONS TO THE STRUCTURE 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 REGISTERED PROFESSIONAL ENGINEER, STATE OF WASHINGTON. 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.
- SPECIAL INSPECTION: STRUCTURAL STEEL FABRICATION AND ERECTION (INCLUDING HIGH-STRENGTH FIELD BOLTING), METAL DECK INSTALLATION, EXPANSION BOLTS, SCREEN ANCHORS, AND EPOXY GROUTED INSTALLATIONS SHALL BE SUPERVISED IN ACCORDANCE WITH IBC SECTIONS 1704 & 1705 AND THE PROJECT SPECIFICATIONS BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE OWNER. THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE OWNER, ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR AND BUILDING OFFICIAL. ANY MATERIALS WHICH FAIL TO MEET PROJECT SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

**GEOTECHNICAL**

- FOUNDATION NOTES:** ALLOWABLE SOIL PRESSURE AND LATERAL EARTH PRESSURE ARE ASSUMED (BASED ON THE PREVIOUSLY PERMITTED DRAWINGS: 12-22-1995) AND THEREFORE MUST BE VERIFIED IN THE FIELD. IF SOILS ARE FOUND TO BE OTHER THAN ASSUMED, NOTIFY THE STRUCTURAL ENGINEER FOR POSSIBLE FOUNDATION REDESIGN.
- FOOTINGS SHALL BEAR ON FIRM, 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. 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.
- THE STRUCTURAL DESIGN IS BASED ON THE FOLLOWING ASSUMED VALUES:
- |  |               |
|--|---------------|
| ALLOWABLE SOIL PRESSURE                              | 2,000 PSF     |
| LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED)     | 55 PCF/35 PCF |
| SEISMIC SURCHARGE PRESSURE (RESTRAINED/UNRESTRAINED) | 28 PSF/38 PSF |
| PASSIVE SOIL PRESSURE                                | 350 PCF       |
| SOIL COEFFICIENT OF FRICTION                         | 0.35          |

**CONCRETE**

- CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH ACI 301. CONSTRUCTION TOLERANCES SHALL NOT EXCEED THOSE LISTED IN ACI 117. CONCRETE SHALL ATTAIN A 28 DAY STRENGTH OF Fc = 3,000 PSI AND MIX SHALL CONTAIN NOT LESS THAN 5-1/2 SACKS OF CEMENT PER CUBIC YARD AND SHALL BE PROPORTIONED TO PRODUCE A SLUMP OF 5' OR LESS (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 UNLESS OTHERWISE NOTED.
- 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 CONCRETE 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 SUBSTANTIATING 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.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, fy = 60,000 PSI, AND SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 318 AND 318. LAP ALL CONTINUOUS REINFORCEMENT #5 AND SMALLER 60 BAR DIAMETERS, 2'-0" MINIMUM, PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS #5 AND SMALLER 60 BAR DIAMETERS OR 2'-0" MINIMUM. LAPS OF LARGER BARS SHALL BE MADE IN ACCORDANCE WITH ACI 318, CLASS B. PROVIDE (2) #5 MIN. U.O. TRIM BARS AROUND ALL OPENINGS IN CONCRETE WALLS OR SLABS EXTENDING 2'-6" PAST CORNERS, TYPICAL.
- 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.

- CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:  
 FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3" FORMED SURFACES EXPOSED TO EARTH (i.e. WALLS BELOW GROUND) 2"
- 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**

- 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.G. REPORT NO. ESR-3091 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.G. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR ALL EXPANSION BOLT INSTALLATION.
- SCREEN ANCHORS INTO CONCRETE SHALL BE "TITEN HD", AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH I.C.G. REPORT NO. ESR-2713 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.G. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR ALL SCREEN ANCHOR INSTALLATION.
- 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 IAPMO UES REPORT NO. ER-263, INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.G. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION OF INSTALLATION IS REQUIRED.
- EPOXY-GROUTED ITEMS (THREADED RODS OR REINFORCING BAR) INTO GROUT FILLED CMU SHALL BE INSTALLED USING "ACRYLIC-TIE" (AT-XP) ADHESIVE AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH IAPMO UES REPORT NO. ER-281, INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.G. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION OF INSTALLATION IS REQUIRED.

**STEEL**

- 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, 14TH EDITION  
 B. CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.  
 C. SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A440 BOLTS.
  - STRUCTURAL STEEL, WIDE FLANGE (W AND WT) SHAPES SHALL CONFORM TO ASTM A992, Fy = 50 KSI; ALL OTHER ROLLED SHAPES SHALL CONFORM TO ASTM A36, Fy = 36 KSI. STEEL PLATE SHALL CONFORM TO ASTM A572, Fy = 36 KSI. STEEL PIPE SHALL CONFORM TO ASTM A53, TYPE E OR S, GRADE B, Fy = 35 KSI. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B, Fy = 46 KSI. CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GRADE 36, Fy = 36 KSI.
- STRUCTURAL STEEL AND CONNECTIONS EXPOSED TO WEATHER OR EARTH SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION IN COMPLIANCE WITH ASTM A123. GALVANIZED 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 A180 (Z.R.C. OR EQUIVALENT).
- 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.

- ALL A-325 CONNECTION BOLTS SHALL BE INSTALLED TO THE SNUG-TIGHT CONDITION PER AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A440 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 F434 TYPE 325. ALL BOLT HOLES SHALL BE STANDARD SIZE UNLESS OTHERWISE NOTED.
  - ALL WELDING SHALL BE IN CONFORMANCE WITH A.I.S.C. AND A.W.S. STANDARDS AND SHALL BE PERFORMED BY M.A.B.O. CERTIFIED WELDERS USING E70 XX ELECTRODES. ONLY PREQUALIFIED WELDS (AS DEFINED BY A.W.S.) SHALL BE USED.
- SHOP DRAWINGS SHALL SHOW ALL WELDING WITH AWS A2.4 SYMBOLS. WELDS SHOWN ON DRAWINGS ARE MINIMUM SIZES. INCREASE WELDS SIZE TO AWS 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.
- 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 ET076-K2 OR ET076 WITH A MINIMUM SPECIFIED CHARPY V-NOTCH (CVN) OF 20 FT-LBS AT -20 DEGREES FAHRENHEIT AND 40 FT-LBS AT 70 DEGREES FAHRENHEIT.

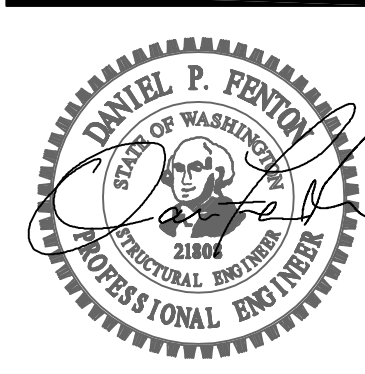
**ABBREVIATIONS**

@	At	L	Angle
d	Ferry (Nails)	LIN.	Linear
Ø	Diameter	LL	Live Load
		LLH	Long Leg Horizontal
		LLV	Long Leg Vertical
A.B.	Anchor Bolt	LONGIT.	Longitudinal
ADD.	Addendum	LT. WT.	Lightweight
ADD'L	Additional		
ALT.	Alternate		
APPROX.	Approximate	MATL.	Material
ARCH.	Architect	MAX.	Maximum
		MB.	Machining Bolt
		MECH.	Mechanical
B.J.	Built-up	MEZZ	Mezzanine
B/	Bottom of	MF	Moment Frame
BF	Braced Frame	MFR.	Manufacturer
BLK.	Block	MIN.	Minimum
BLDG.	Blocking	MISC.	Miscellaneous
BM.	Beam	MK.	Mark
BRG.	Bearing		
B/TWN.	Between	N.	North
		N.S.	Near Side
		NEG.	Negative
C	Centerline	NIC	Not in Contact
G	Camber	NO.	Number
C TO C	Center to Center	NOM.	Nominal
CIP	Cast In Place	NTS	Not to Scale
C.J.	Construction Joint or Control Joint		
CLG.	Ceiling		
CLR	Clear	O.C.	On Center
CMU	Concrete Masonry Unit	O.D.	Outside Diameter
CNTR.	Center	O.F.	Outside Face
COL.	Column	O.H.	Opposite Hand
CONG.	Concrete	OPNS.	Opening
CONN.	Connections	OPF.	Opposite
CONST.	Construction		
CONT.	Continuous	PAF	Powder Activated Fastener
CONTR.	Contractor	PART.	Partition
COORD.	Coordinate	PC	Precast
CJP	Complete Joint Penetration	PERM.	Permanent
CSK.	Countersink	PERP.	Perpendicular
		FL or F	Plate
		FLYND	Plywood
DBA.	Deformed Bar Anchor	FJP	Partial Joint Penetration
DBL.	Double	PREFAB.	Prefabricated
DEG.	Degree	PROJ.	Project
DET.	Detail	PSF	Pound per Square Foot
DF	Doug Fir-Larch	PSI	Pound per Square Inch
DIA.	Diameter	P.T.	Post-Tensioning
DIAG.	Diagonal	P/T	Pressure-Treated
DIAPH.	Diaphragm		
DIM.	Dimension		
DN.	Down	RAD.	Radius
DO	Ditto	RD.	Round
DWS.	Drawing	REF.	Reference
		REINF.	Reinforce or Reinforcement
		REQD.	Required
(E)	Existing	REV.	Revise
E	East	R.O.	Rough Opening
EA.	Each		
E.F.	Each Face	S.	South
EL.	Elevation	SCH. OR SCHED.	Schedule
ELEV.	Elevator	SECT.	Section
EMBED.	Embedment Length	SHT.	Sheet
ENGR.	Engineer	SIM.	Similar
EQUIP.	Equipment	SOG	Slab On Grade
E.V.	Each Way	SPEC.	Specification
EXP.	Expansion	SQ.	Square
EXT.	Exterior	SQ. FT.	Square Feet
		SQ. IN.	Square Inch (Inches)
FAB.	Fabricate	STD.	Standard
F.B.	Flat Bar	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&S	Tongue & Groove
GA.	Gauge	THRU	Through
GALV.	Galvanized	T.O.C.	Top of Concrete
GL.	Glu Laminated	T.O.S.	Top of Steel
GRD.	Grade	T.O.M.	Top of Wall
GRND.	Ground	TRANS.	Transverse
G.W.B.	Gypsum Wall Board	TS	Tube Steel
		TYP.	Typical
HF	Hem Fir		
HGR.	Hanger	UON OR UNO	Unless Otherwise Noted
HORIZ.	Horizontal		
HSS	Hollow Structural Section		
HT.	Height	VERT.	Vertical
		VIF.	Verify in Field
I.D.	Inside Diameter		
I.F.	Inside Face	W	West
IN.	Inch	W or w/	With
INFO.	Information	WD	Wood
INT.	Interior	W.H.S.	Welded Headed Stud
		W/O	Without
JT.	Joint	WP	Work Point
		W.T.S.	Welded Threaded Stud
KSF	Kips per Square Foot	WWF	Welded Wire Fabric
KSI	Kips per Square Inch		
		X SECT.	Cross Section
		X-STR	Extra Strong



**CENTERIS DATA CENTERS - TI**  
 1023 39TH AVENUE SOUTHEAST PUYALLUP WASHINGTON

DESCRIPTION	NO.	DATE
PROJECT START DATE		
PROJECT COMPLETION DATE		
RECORD DRAWINGS		

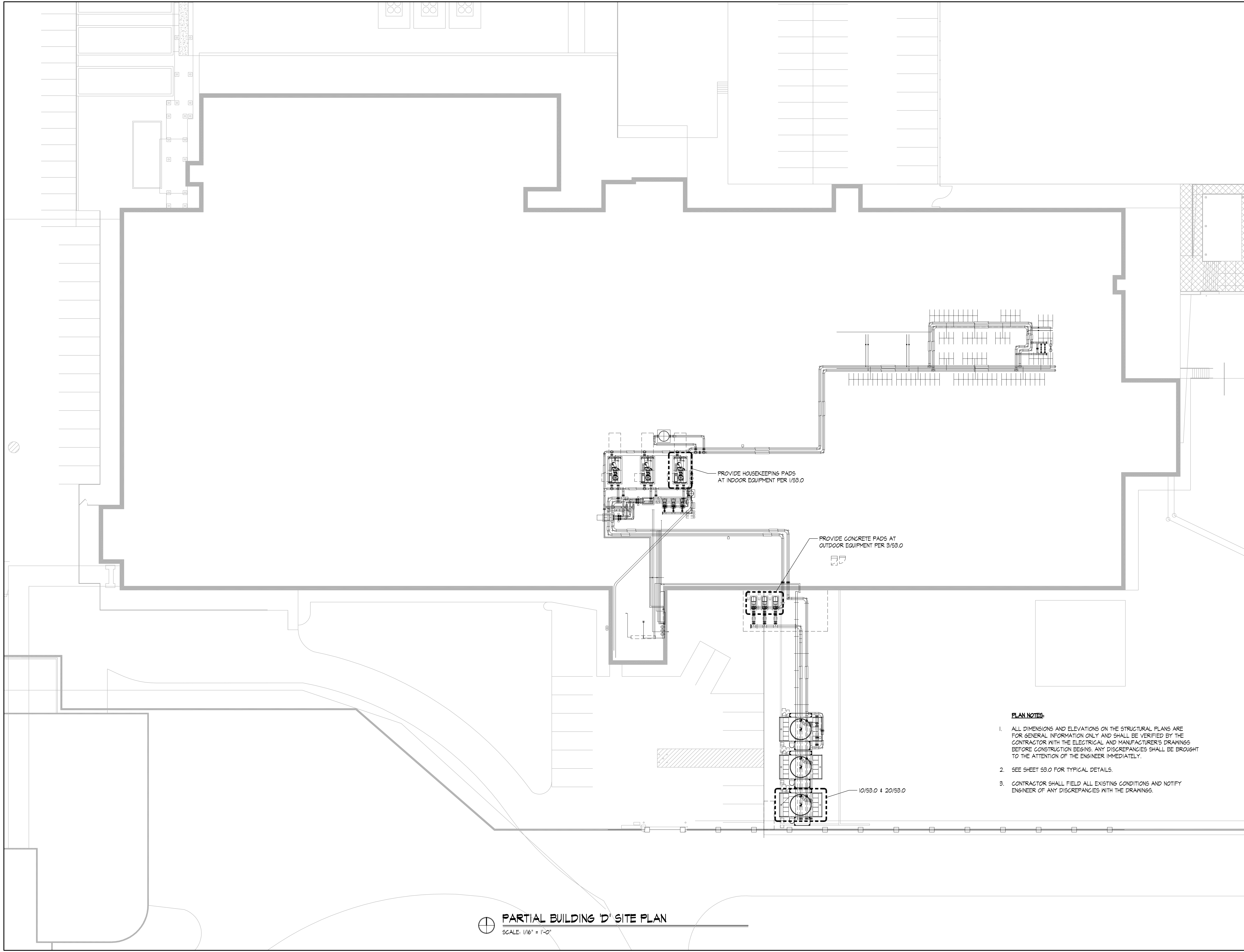


PROJECT NO.: 16461.02  
 PROJECT MGR.: SHT  
 DRAWN BY: SSN  
 CHECKED BY: DFF

GENERAL STRUCTURAL NOTES

**S1.0**





PROVIDE HOUSEKEEPING PADS  
AT INDOOR EQUIPMENT PER 1/53.0

PROVIDE CONCRETE PADS AT  
OUTDOOR EQUIPMENT PER 3/53.0

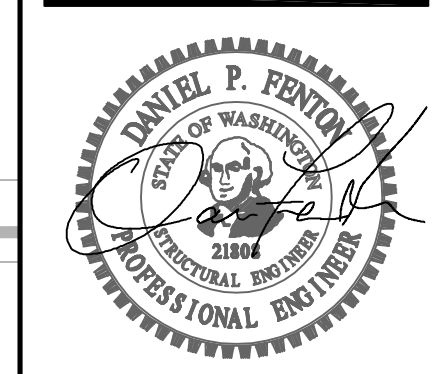
10/53.0 & 20/53.0

**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 ELECTRICAL AND MANUFACTURER'S DRAWINGS BEFORE CONSTRUCTION BEGINS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
2. SEE SHEET 53.0 FOR TYPICAL DETAILS.
3. CONTRACTOR SHALL FIELD ALL EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES WITH THE DRAWINGS.

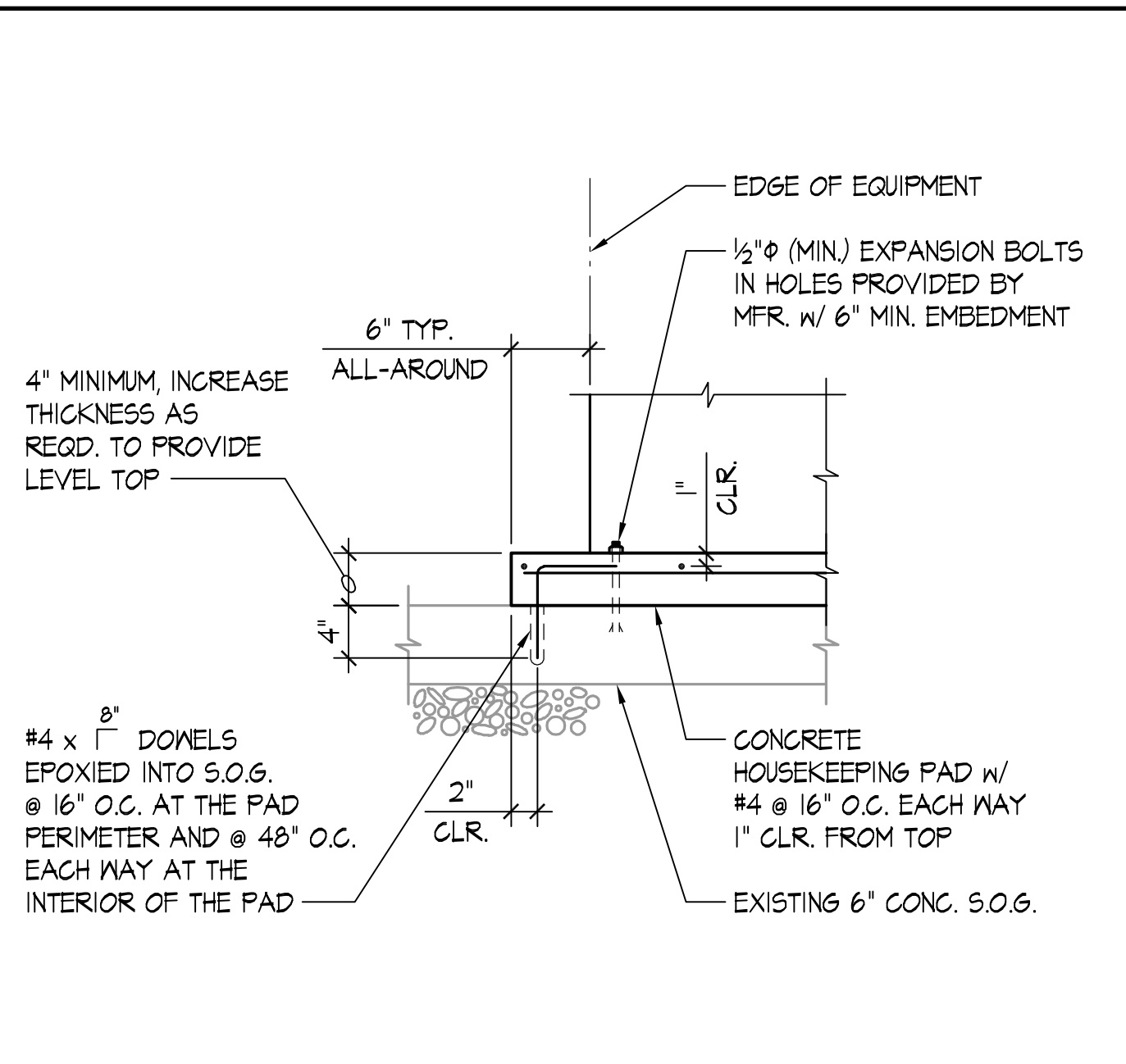
⊕ **PARTIAL BUILDING 'D' SITE PLAN**  
SCALE: 1/16" = 1'-0"

NO.	DESCRIPTION
04/13/18	PROJECT START DATE
09/13/18	PROJECT SUBMIT
09/13/18	RECORD DRAWINGS

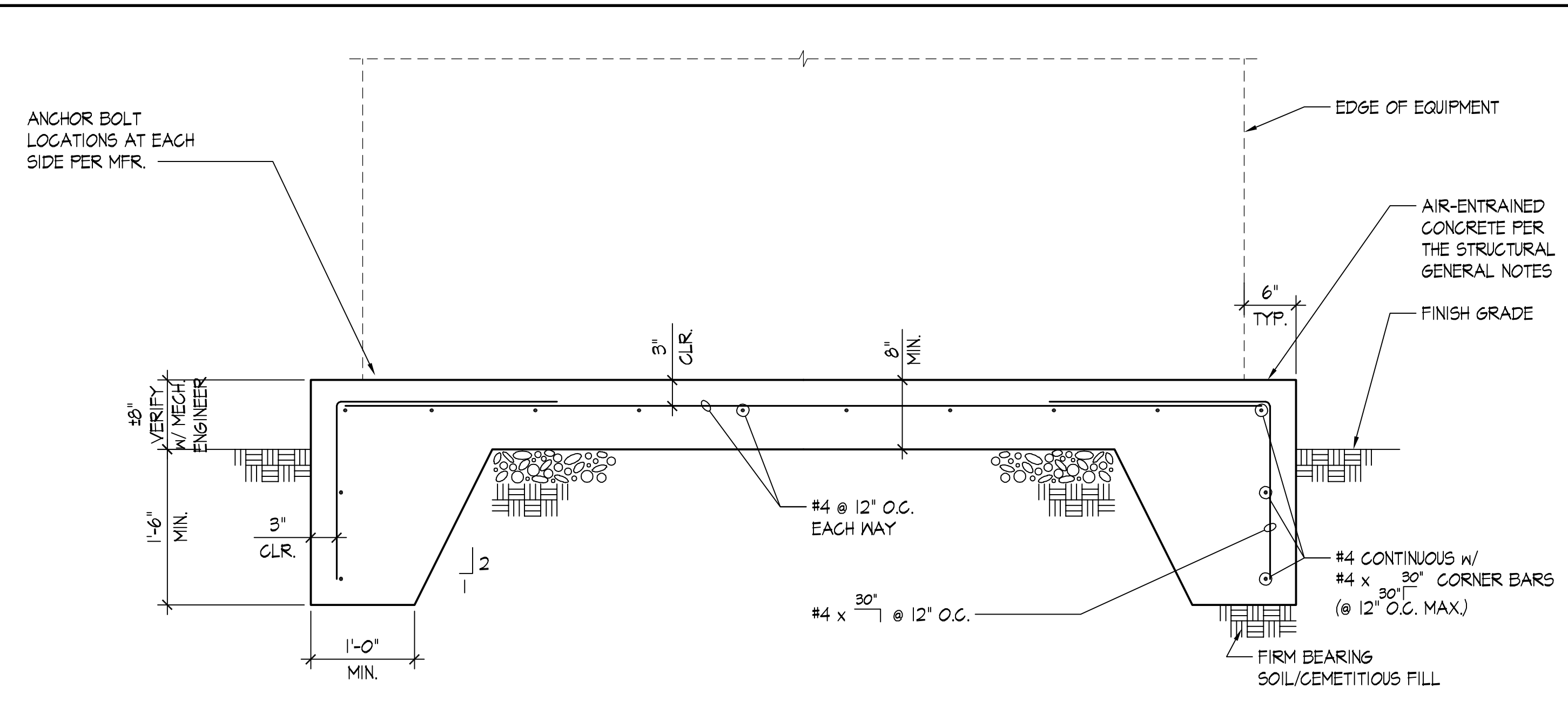


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PROJECT MGR.: SHT  
DRAWN BY: SSN  
CHECKED BY: DPF

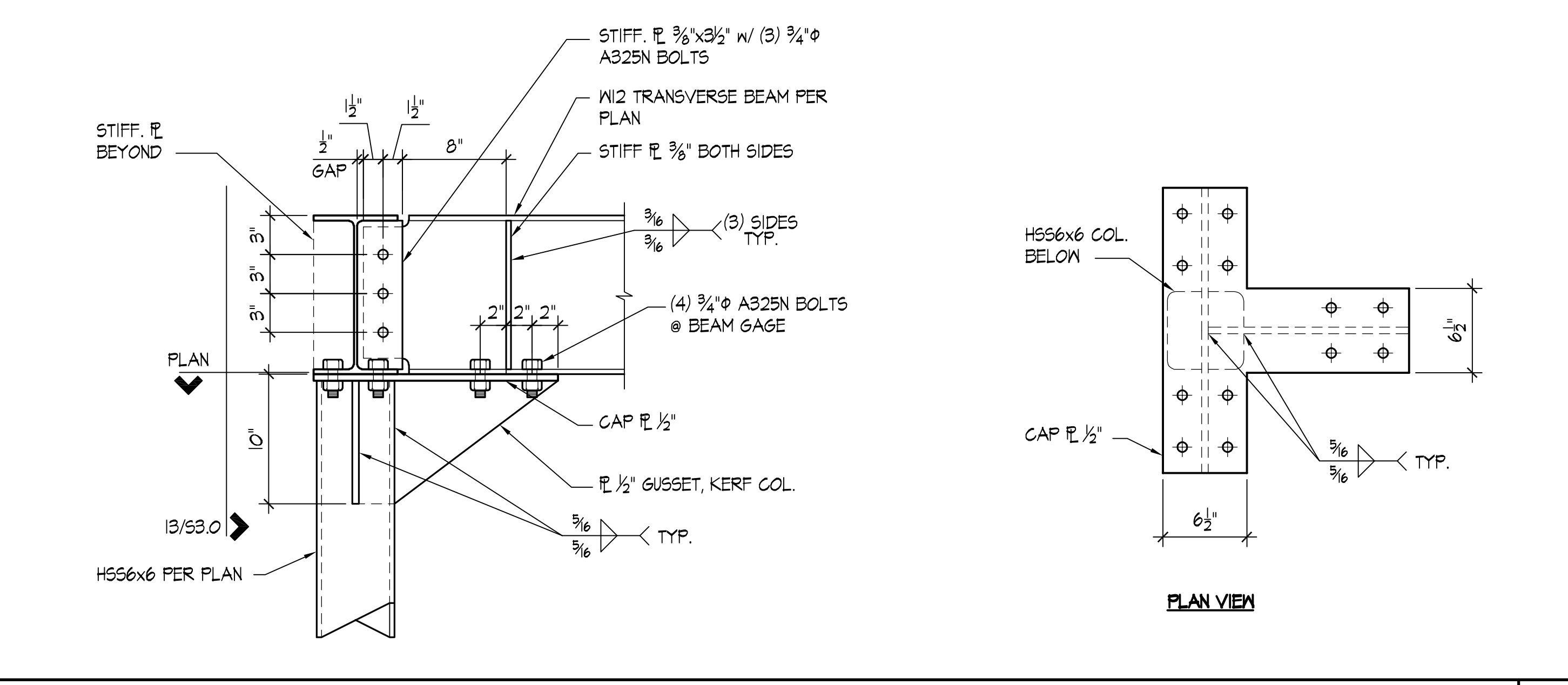




TYPICAL HOUSEKEEPING PAD SCALE: NONE

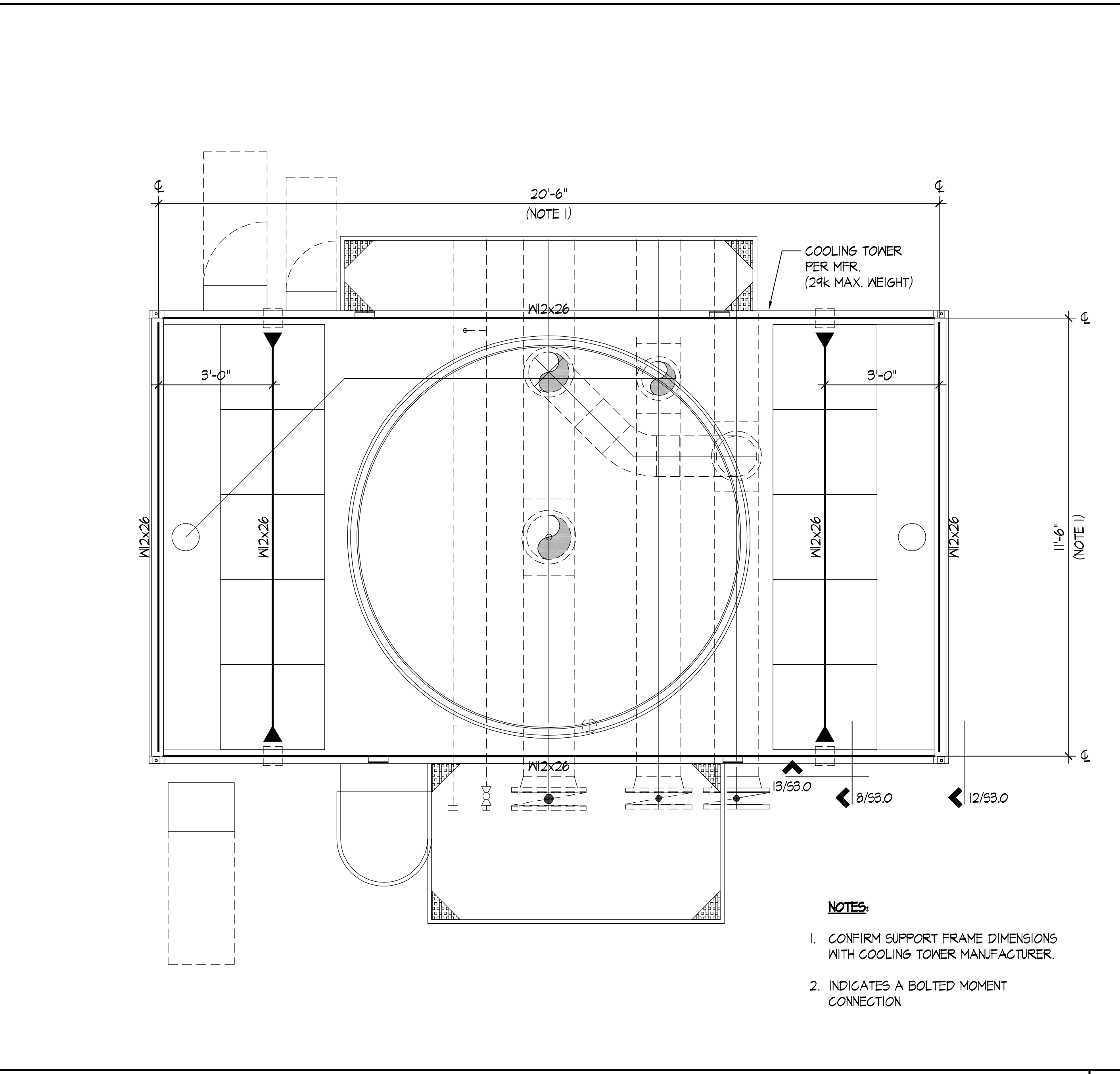


TYPICAL OUTDOOR EQUIPMENT PAD SCALE: 1/4"=1'-0"

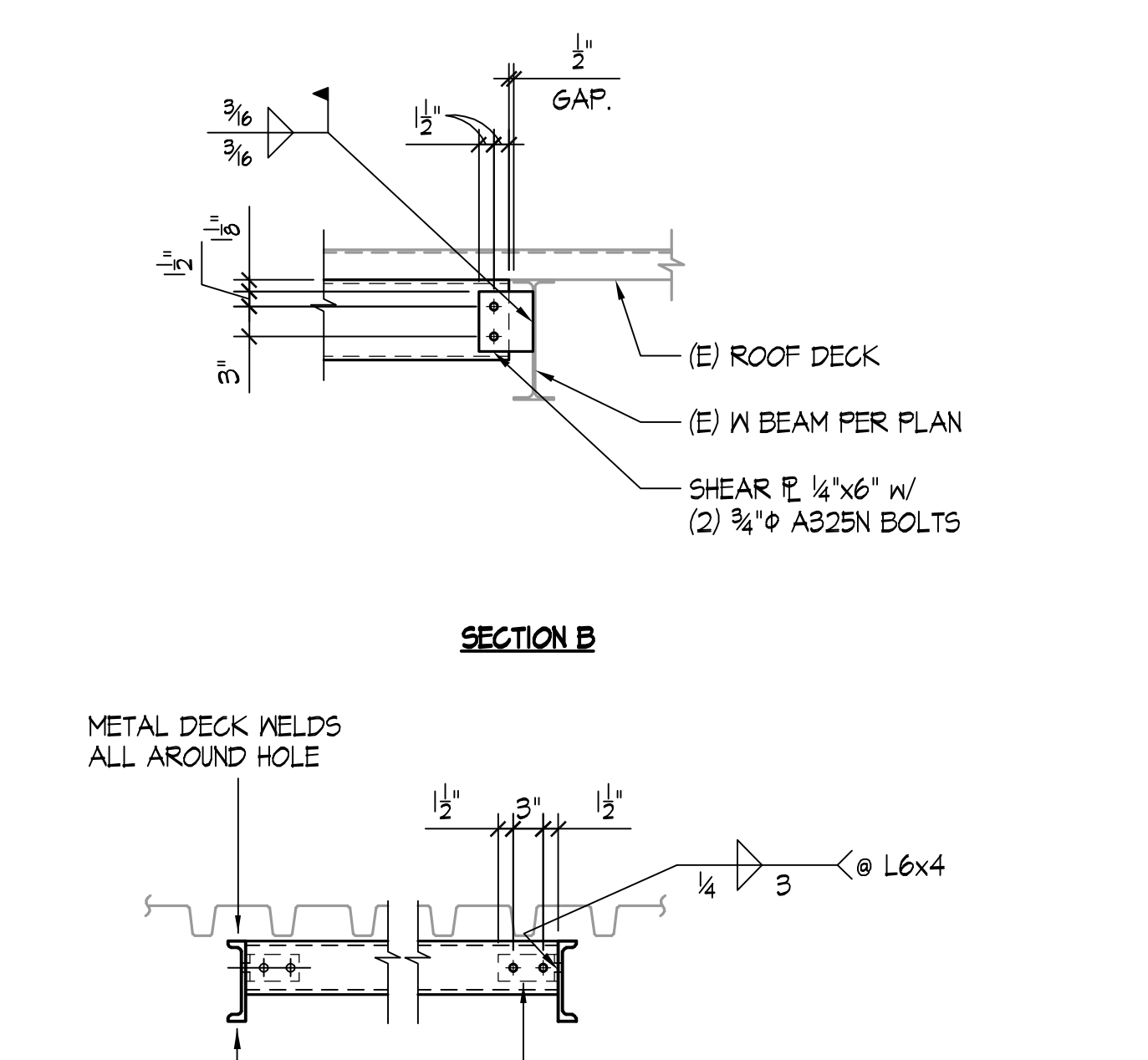


DETAIL SCALE: 1/4"=1'-0"

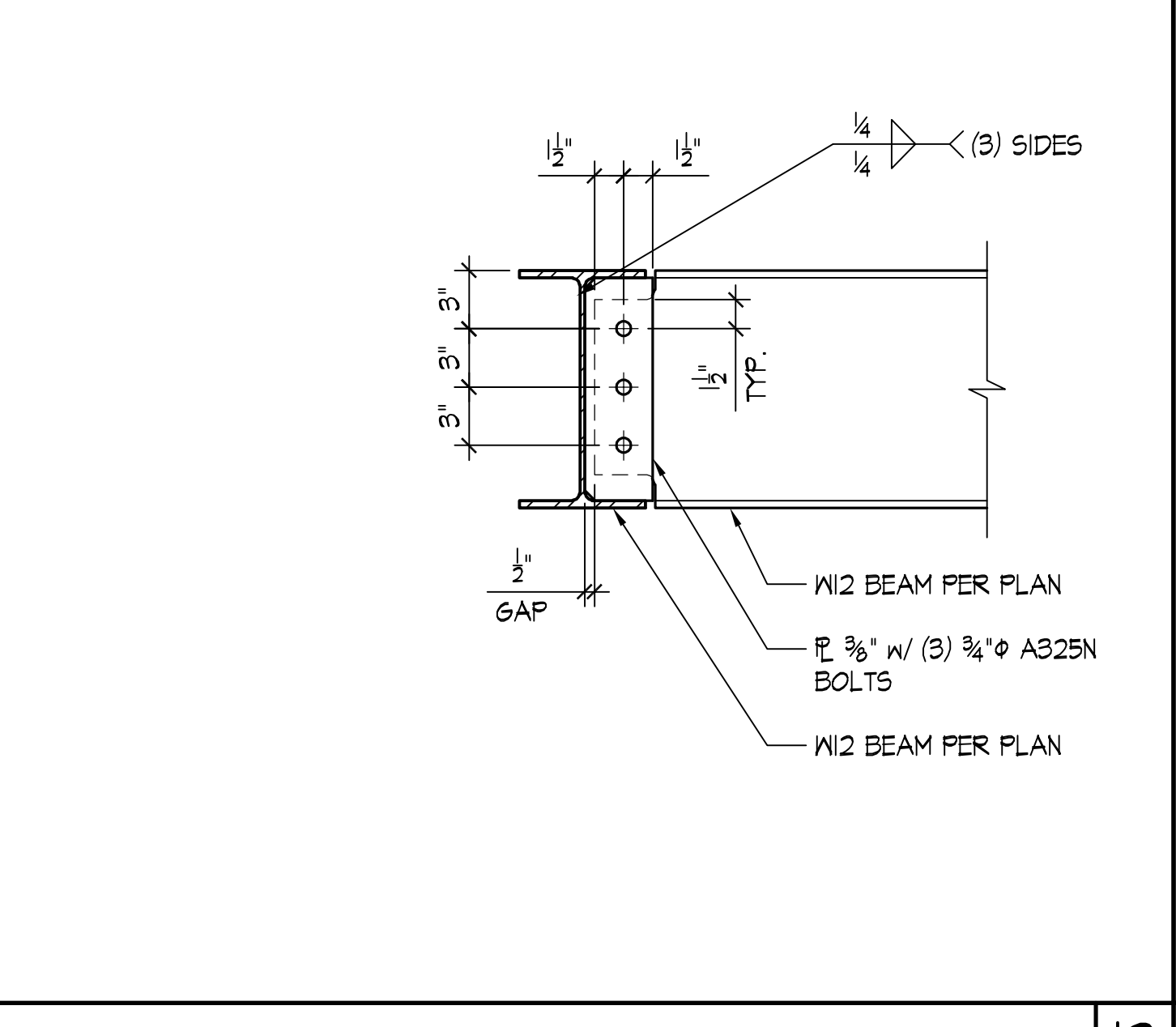
MOMENT CONNECTION AT TRANSVERSE BEAM SCALE: 1/2"=1'-0"



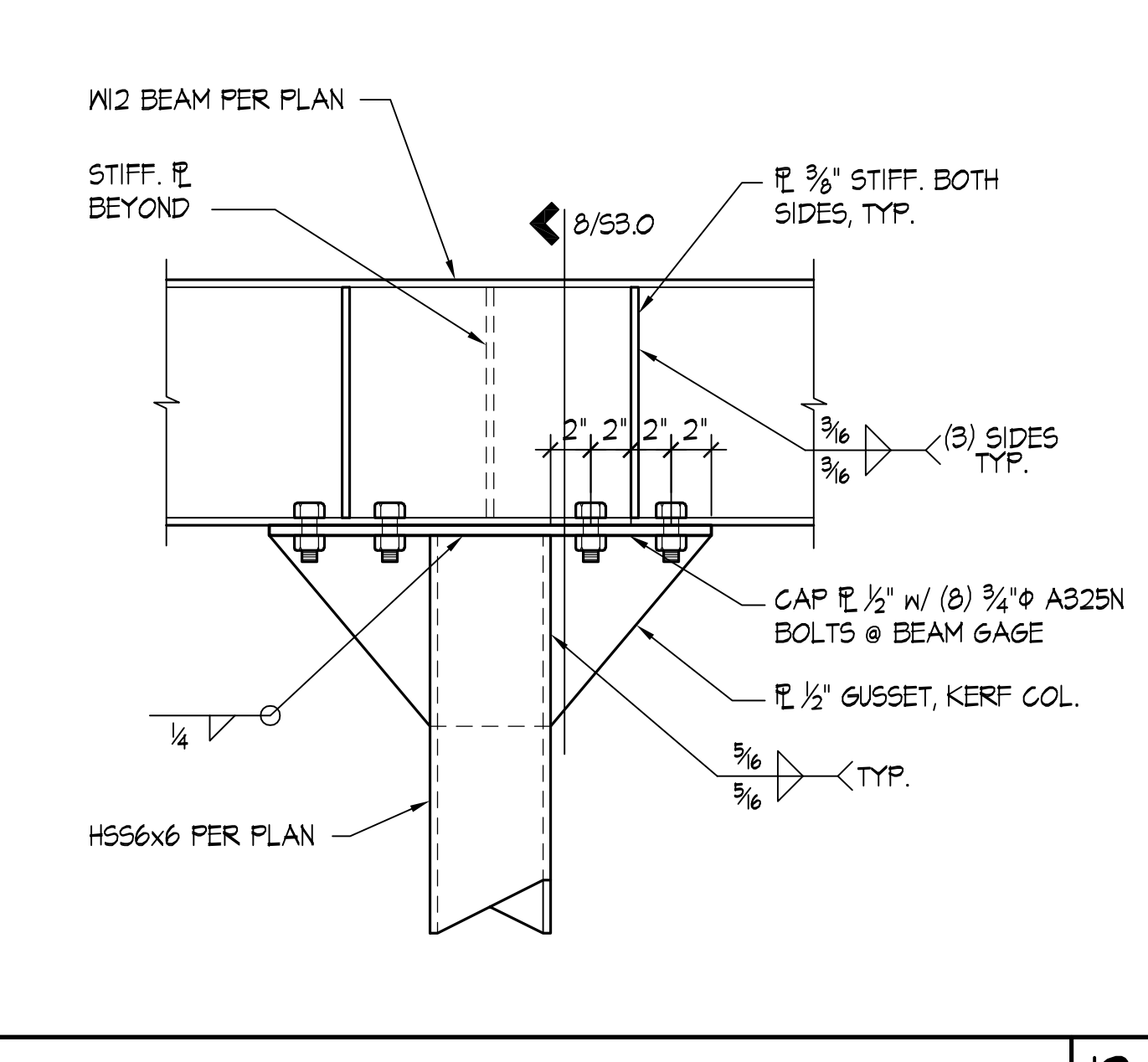
COOLING TOWER SUPPORT FRAMING PLAN SCALE: 1/2"=1'-0"



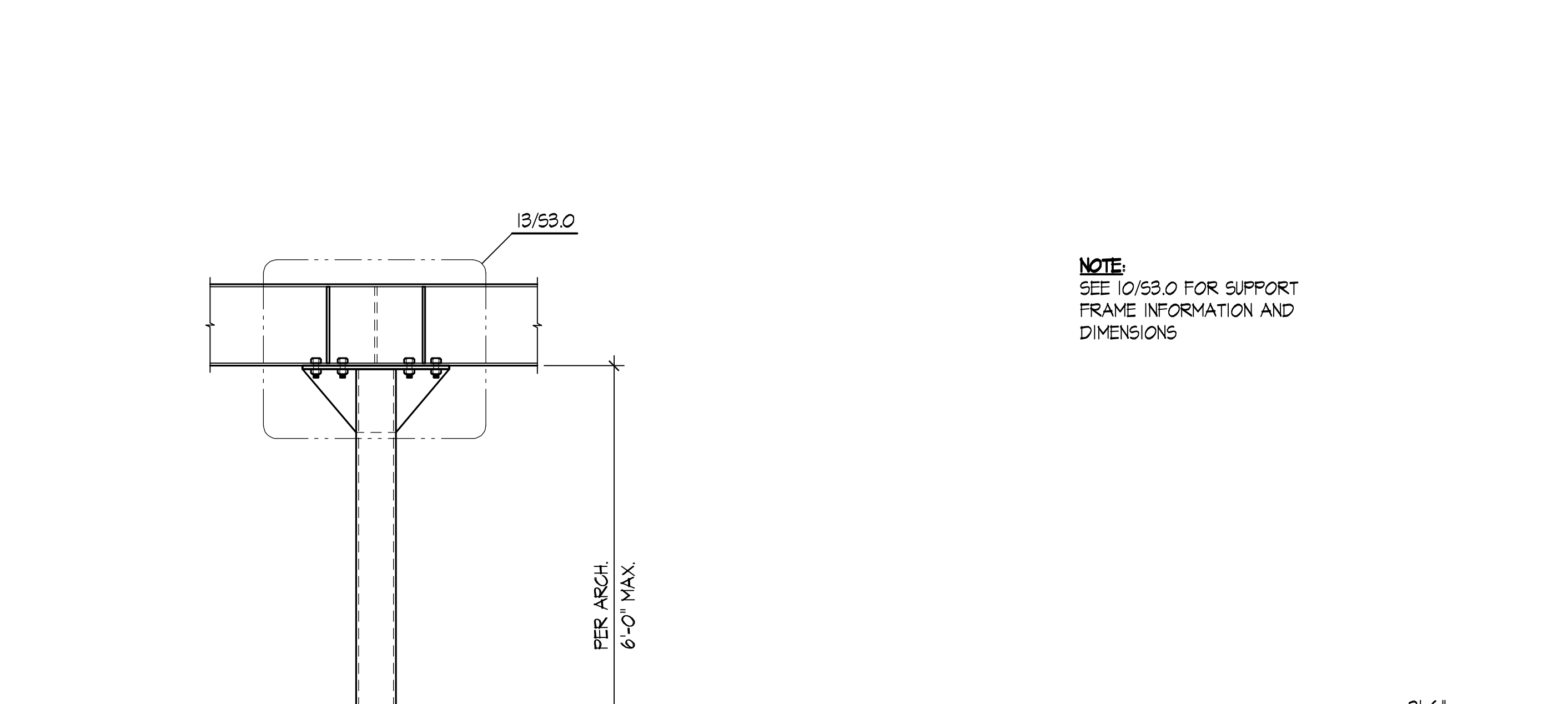
TYPICAL BEAM TO BEAM CONNECTION AT CORNER SCALE: 1/2"=1'-0"



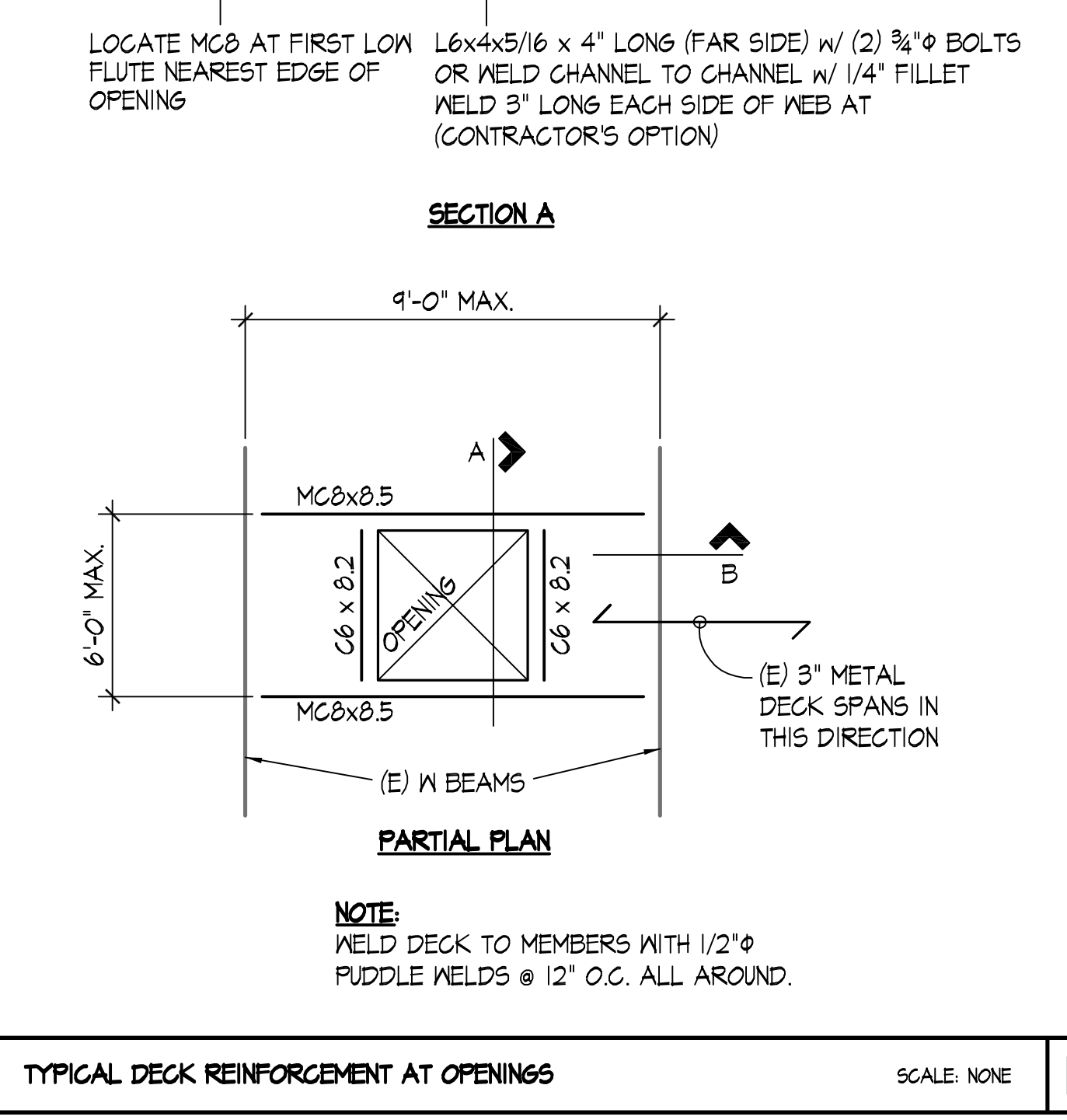
TYPICAL BEAM TO BEAM CONNECTION AT CORNER SCALE: 1/2"=1'-0"



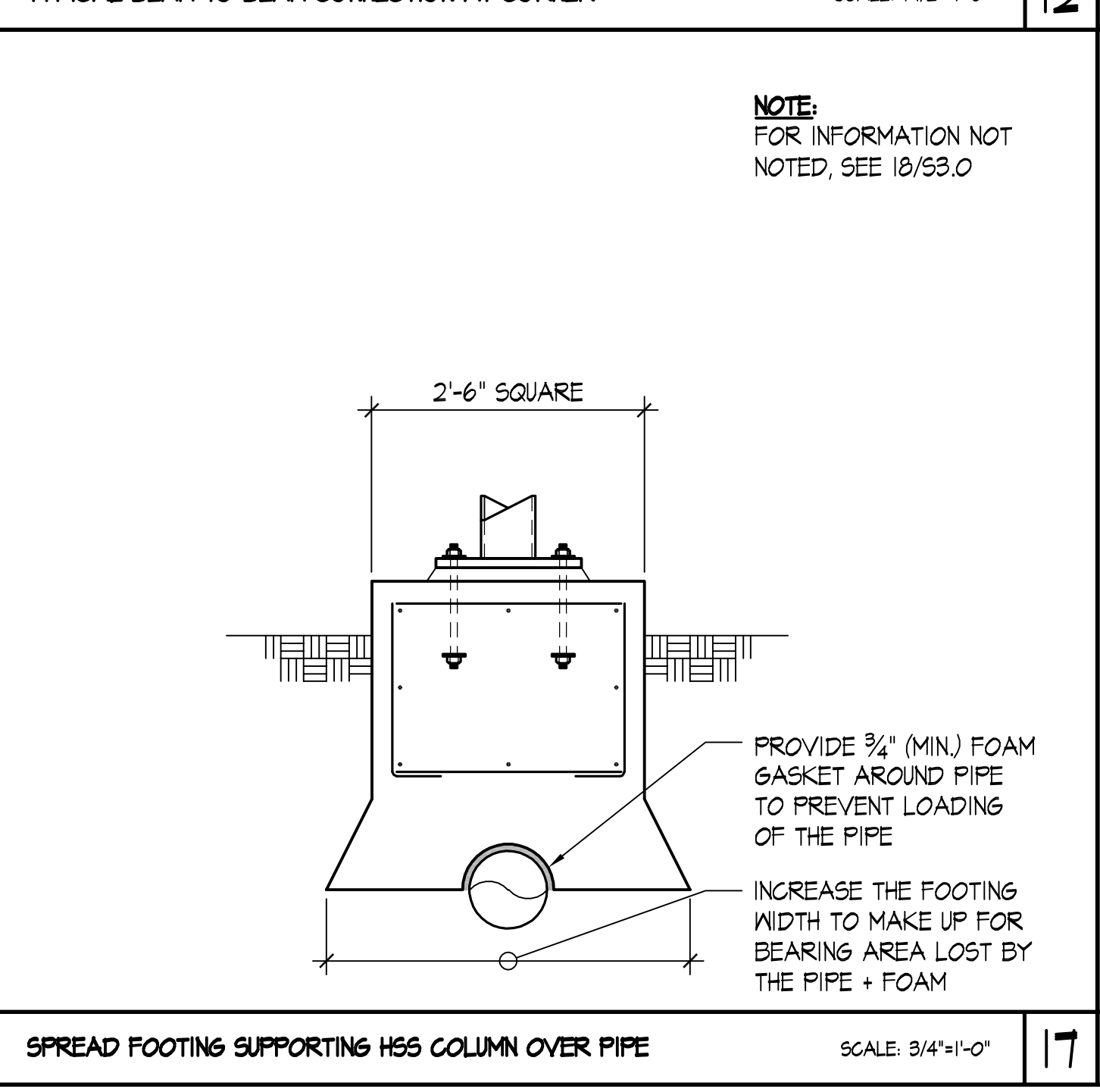
CONTINUOUS BEAM MOMENT CONNECTION TO COLUMN SCALE: 1/2"=1'-0"



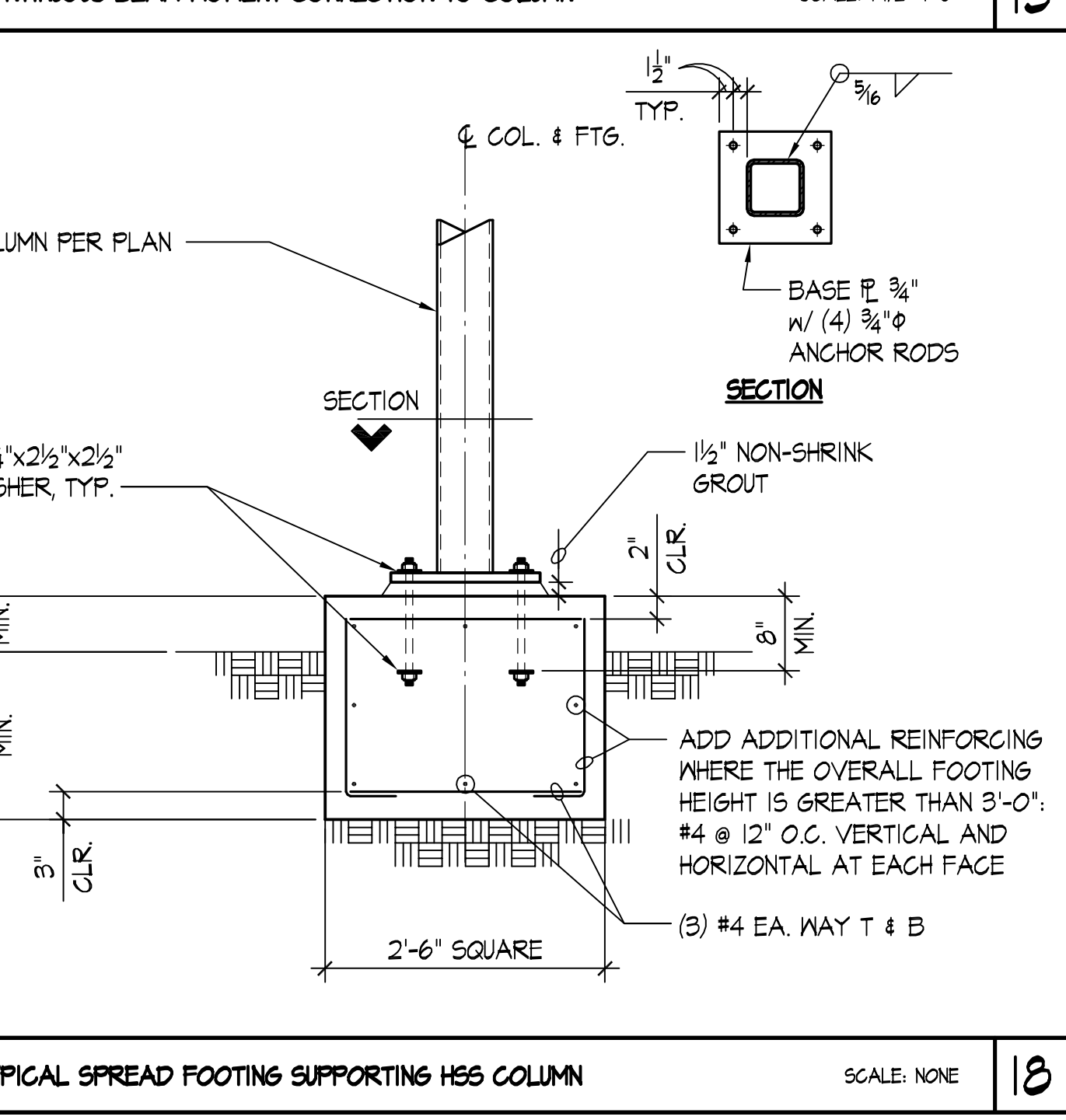
COOLING TOWER SUPPORT FOUNDATION SCALE: NONE



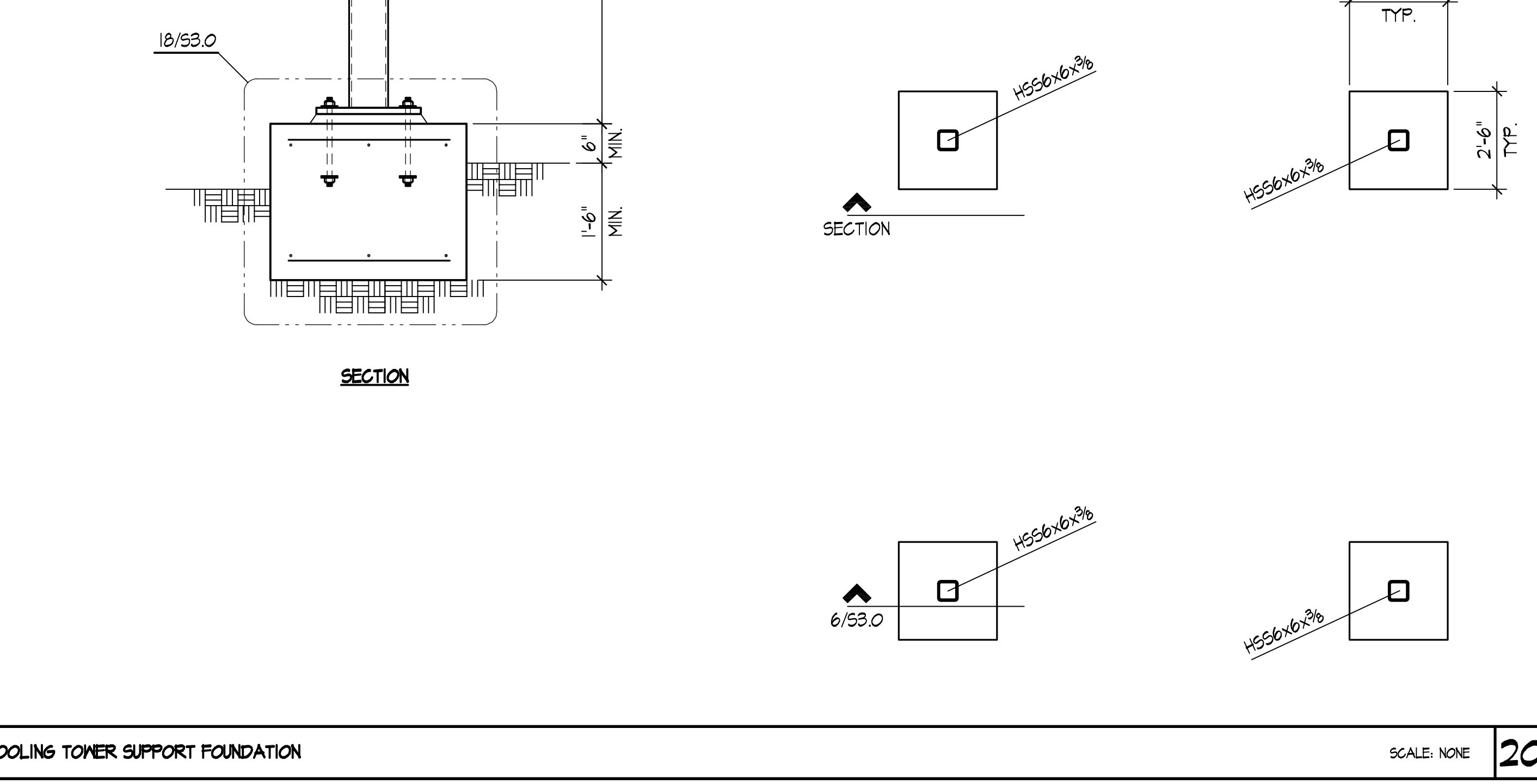
TYPICAL DECK REINFORCEMENT AT OPENINGS SCALE: NONE



SPREAD FOOTING SUPPORTING HSS COLUMN OVER PIPE SCALE: 3/4"=1'-0"

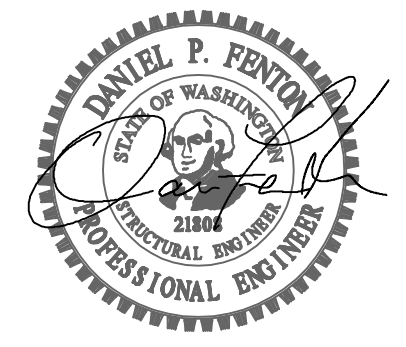


TYPICAL SPREAD FOOTING SUPPORTING HSS COLUMN SCALE: NONE



COOLING TOWER SUPPORT FOUNDATION SCALE: NONE

NO.	DESCRIPTION
04/13/18	PROJECT START DATE
09/13/18	PROJECT END DATE
	RECORD DRAWINGS



PROJECT NO.:	16461.02
PROJECT MGR.:	SHT
DRAWN BY:	SSN
CHECKED BY:	DFP