#### **CONSTRUCTION SAFETY GENERAL NOTE**

#### THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS. METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS, SINCE THESE ARE SOLELY THE CONTRACTOR'S RESPONSIBILITY.

#### Drilled Pier General Notes 2200:

- 1. Drilled pier construction shall conform to the "Specification for the Construction of Drilled Piers" (ACI 336).
- 2. Drilled pier concrete shall develop a 28-day minimum compressive strength of 4,000 psi. This concrete shall have a designed slump of 6" ± 1" and utilize a water-reducing admixture or a high range water reducing admixture.
- 3. Reinforcing steel shall be deformed bars conforming to ASTM A615, grade 60.
- 4. When steel casing is required, the casing shall conform to ASTM A283, grade C or ASTM A36.
- 5. Drilled piers have been designed using an allowable end bearing capacity of 35,000 psf. Drilled piers shall bear in hard limestone. See Soils Report No. 21-1-5-188 dated Dec. 14, 2021 by GTS, Inc.
- 6. Bottom of drilled piers shall bear in hard limestone as called for in the Typical Drilled Pier Detail 5/S1.1. Depth of penetration into the hard limestone shall be as called for in the Typical Drilled Pier Detail 5/S1.1.
- Bottom of drilled pier elevations are estimated from boring logs to extend from 17 ft to 21 ft for bid purposes. Final elevations shall be determined by the contractor's testing laboratory to provide the bearing capacity on the bearing material noted above and the minimum penetration noted in the Typical Pier Detail 5/S1.1. All pier bottoms shall be inspected by the Geotechnical Engineer.
- 8. Temporary casing of piers is anticipated to prevent soil from sloughing off into excavation. Dewatering of excavation may be required before placing of concrete.
- 9. If excessive ground water is encountered, use tremie tube to place concrete for drilled pier. Withdraw casing only as excavation is filled with concrete. Maintain adequate head of concrete to balance outside soil to water pressure above bottom of casing during withdraw.

#### Concrete General Notes 3100:

10. Drilled piers shall have a minimum length of 3 pier diameters.

- 1. All detailing, fabrication and placing of reinforcing steel shall conform to the ACI Standard "Details and Detailing of Concrete Reinforcement" (ACI 315).
- 2. Concrete at slab-on-grade shall develop a 28-day minimum compressive strength of 3,500 psi and have Ultra Fiber 500 manufactured by Solomon Colors, Inc. mixed into the concrete at 2.0 lb/cubic yard. Follow normal mixing time and speed as recommended by ASTM C94.
- 3. All concrete at elevated slab on metal deck shall typically develop a 28-day minimum compressive strength of 3,500 psi.
- 4. All concrete at grade beams, pedestals, pier caps and walls shall typically develop a 28-day minimum compressive strength of 4.000 psi.
- 5. All concrete for grade beams, pier caps, pedestals, elevated slab, walls and slab-on-grade shall have a 5" maximum slump.
- 6. All reinforcing steel shall be deformed bars conforming to ASTM A615. Grade 60.
- 7. All reinforcing bar splices shall be 44 bar diameters for #6 and smaller diameter bars. Reinforcing bar splices shall be 48 bar diameters for #7 and larger bar diameters.
- 8. All reinforcing bar hooks shall be ACI standard 90 degree hook, unless noted otherwise.
- 9. Provide two #4 x 4'-0" long diagonal bars centered in slab, at all re-entrant corners and any other locations designated on the plans.
- 10. Provide corner bars in grade beams, concrete stemwall and turn-down slab same size and spacing as longitudinal reinforcing.
- 11. Provide (1) #4 hoop with 8" lap in slab-on-grade and elevated slab around floor drains, columns and all slab penetrations 3" in diameter or greater. Also install around electrical conduit groupings 3" in diameter or greater.
- 12. Limit the width of conduit groups to 3'-0" as they pass under grade beams. As much as possible, align the conduit perpendicular to the footing as it passes under the footing. Provide a minimum spacing of 2'-0" between conduit groups as the conduit passes under a footing. Do not extend conduits under column footings or spread footings.
- 13. Plate dowel system shall be Diamond Dowel System by PNA Construction Technologies, the Speed Plate System by SIKA Corp. or approved equal. Install plate dowels at slab construction joints at 18" O.C. 14. Welded wire fabric shall conform to ASTM A1064. Provide mesh in flat sheets.
- 15. Wire fabric reinforcing shall lap 6" and be securely wired at each side and end.
- 16. Smooth dowels shall be steel conforming to ASTM A36.

December 14, 2021 by GTS, Inc.

- 17. All slots, sleeves and other embedded items shall be set before concrete is placed. See Architectural, Electrical, Mechanical, and Vendor's drawings for size and locations.
- 18. Bar supports at footings and slabs-on-grade shall be factory made wire bar supports, type "SBU" linear supports.
- 19. Epoxy for doweling reinforcement shall be HY-200 by Hilti, unless noted otherwise.
- 20. Construction joints in grade beams shall occur at mid-span. Continue all longitudinal reinforcement through construction joint and maintain proper bar splice lengths.
- 21. Grade beam reinforcement splices shall be over the drilled piers for the bottom bars and at the center of the span for all other bars. 22. Use of compacted, free-draining pea gravel, crushed stone, or coarse sand underneath the building slab is recommended by TSWE, Inc. Consult Geotechnical Engineer regarding potential substitution of free-draining coarse materials with approved subgrade. Slabs-On-Grade have been designed for a modulus of subgrade reaction (k-value) of 125 psi/in. Slab-on-grade shall be supported on a minimum of 2'-0" of compacted, tested, and approved select fill as described in Soils Report No. 21-1-5-188 dated
- Concrete Masonry General Notes 4100:
- All concrete masonry units shall be lightweight above finished floor and normal weight below grade. All hollow concrete masonry units shall conform to ASTM C90, Grade N, Type 1 with a minimum ultimate compressive prism strength (f'm) of 2000 psi for the masonry assemblage. All concrete masonry shall be laid in Running (Common) Bond. CMU shall also comply with requirements of fire wall rating. See arch. drawings for firewall rating required.
- Mortar at walls shall be Type S mortar and have a minimum compressive strength of 1,800 psi. Mortar at interior non-load-bearing walls not higher than 20'-0" and mortar at masonry veneer shall be Type N mortar and have a minimum compressive strength of 750 psi. All mortar shall conform to ASTM C270. Masonry cement shall not be used for mortar. Mortar shall also comply with requirements of fire wall rating. See arch. drawings for firewall rating required.
- All grout shall be ready-mix concrete, with 3/8" diameter max. aggregate, have a minimum 28-day compressive strength of 2,000 psi and a design slump between 8" to 10" or preblended product (Core Fill Grout, Coarse CF-02, by Spec Mix) with a minimum 28day compressive strength of 2,000 psi and a design slump between 8" to 10".
- All 8" CMU bond beam units shall be reinforced with one bar. See details for size of bars for vertical wall reinforcement and bond beam requirements. Provide corner bars and lap bond beam reinforcing 48 bar diameters.
- 5. All reinforcing steel shall be deformed bars conforming to ASTM A615, Grade 60.
- 6. All bolts, anchors, reinforcement and embedded items shall be grouted in place.
- All reinforcing bar splices shall be 48 bar diameters, U.N.O.
- . At all 8" CMU walls provide (1) vertical bar each cell for the first (2) cells adjacent to control joints in walls, at ends of walls, wall corners and on each side of wall openings, unless noted otherwise. Vertical bars shall match reinforcement for remainder of wall. See details for size of reinforcement. Wall cell fill shall also comply with requirements of fire wall rating. See arch. drawings for firewall rating required.
- Provide control joints in brick veneer where shown on Architectural Drawings.
- 10. Provide control joints in CMU walls where shown on Architectural Drawings. Place joints for CMU walls max. 24'-0" O.C.
- 1. Provide horizontal joint reinforcement at 16" O.C. Reinforcement shall be ladder design, min. 9 gage welded steel wire, hot dipped galvanized to 1.5 oz. width shall be 1 1/2" less than wall thickness.

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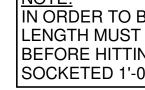
### **TYPICAL STRUCTURAL ABBREVIATIONS**

A.R.	ANCHOR ROD	F.S.	FAR SIDE	PLF	POUNDS PER FOOT
ACI	AMERICAN CONCRETE	FDN	FOUNDATION	PROJ	PROJECTION
AISC	AMERICAN INSTITUTE OF	FIN	FINISH	PSF	POUNDS PER SQUARE FOOT
AISC	STEEL CONSTRUCTION	FLR	FLOOR	PSI	POUNDS PER SQUARE
ARCH	ARCHITECT	FTG	FOOTING	FOI	INCH
ASTM	AMERICAN SOCIETY FOR	GA GALV	GAUGE	R	RADIUS
	TESTING AND MATERIALS	GALV H.S.A.	GALVANIZED HEADED STUD ANCHOR	REINF	REINFORCEMENT
BLDG	BUILDING	н.з.а. НК	HOOK	REQ'D	REQUIRED
BM	BEAM	HORIZ	HORIZONTAL	RTU	ROOF TOP UNIT
BOTT	BOTTOM	J.B.E.	JOIST BEARING	S.O.G.	SLAB ON GRADE
BRG	BEARING	0.D.L.	ELEVATION	SCHED	SCHEDULE
BTWN	BETWEEN	JST	JOIST	SECT	SECTION
CFS	COLD-FORMED STEEL	JT	JOINT	SEOR	STRUCTURAL ENGINEER
CL or ⊈	CENTER LINE	L	ANGLE		OF RECORD
CLR	CLEAR	LG	LONG	SIM	SIMILAR
COL.	COLUMN	LLH	LONG LEG HORIZONTAL	SJI	STEEL JOIST INSTITUTE
CONC	CONCRETE	LLV	LONG LEG VERTICAL	SPA	SPACING
CONN	CONNECTION	LONG	LONGITUDINAL	SPECS	SPECIFICATIONS
CONT	CONTINUOUS	MAX	MAXIMUM	STD	STANDARD
DIA, or Ø	DIAMETER	MBM	METAL BUILDING	STIFF	STIFFENER
DIM	DIMENSION		MANUFACTURER	STL	STEEL
DN	DOWN	MECH	MECHANICAL	TOF	TOP OF FOOTING
do	DITTO	MFR	MANUFACTURER	TOG	TOP OF GRADE BEAM
DTL	DETAIL	MIN	MINIMUM	TOS	TOP OF STEEL
DWG	DRAWING	MISC	MISCELLANEOUS	TOW	TOP OF WALL
E.F.	EACH FACE	MTL	METAL	TRANS TYP	TRANSVERSE
E.W. EA	EACH WAY EACH	N.S.	NEAR SIDE	U.N.O.	TYPICAL UNLESS NOTED
EL	ELEVATION	0.C.	ON CENTER	U.N.U.	OTHERWISE
EQ	EQUAL	O.F.	OUTSIDE FACE	VERT	VERTICAL
EXIST	EXISTING	OPNG	OPENING	W/	WITH
EXIST	EXPANSION	PED	PEDESTAL	WP	WORK POINT
		PL or ₽	PLATE	WWE	



MARK	DI
DP1	
DP2	





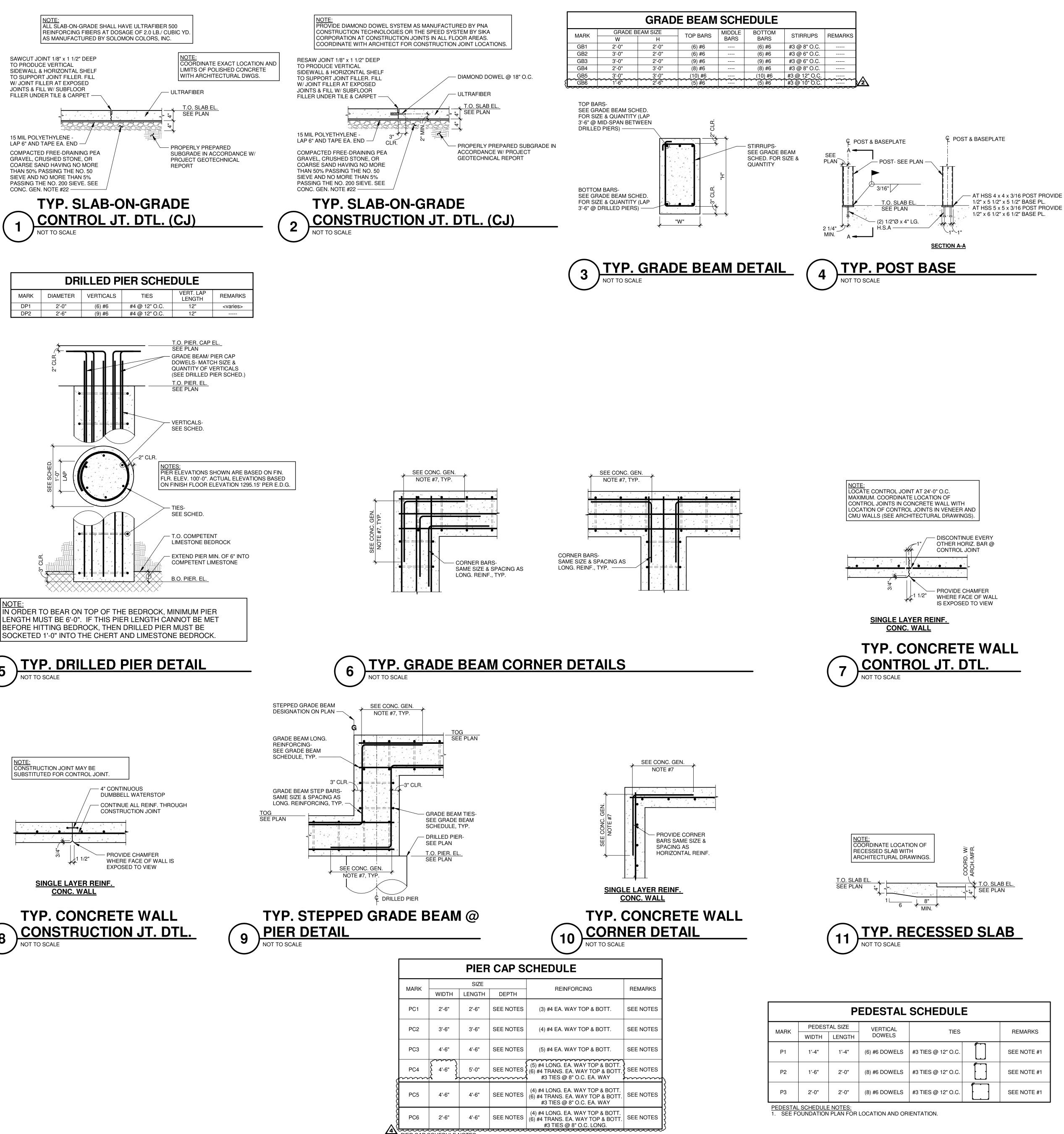


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WWF WELDED WIRE FABRIC



<u>PIER CAP SCHEDULE NOTES</u> SEE FOUNDATION PLAN FOR LOCATION AND ORIENTAT 2. SEE FOUNDATION PLAN FOR PIER CAP DEPTH.

		GRAD	E BEAM	SCHI	EDULE		
MARK	GRADE B W	EAM SIZE H	TOP BARS	MIDDLE BARS	BOTTOM BARS	STIRRUPS	REMARKS
GB1	2'-0"	2'-0"	(6) #6		(6) #6	#3 @ 8" O.C.	
GB2	3'-0"	2'-0"	(6) #6		(6) #6	#3 @ 6" O.C.	
GB3	3'-0"	2'-0"	(9) #6		(9) #6	#3 @ 6" O.C.	
GB4	2'-0"	3'-0"	(8) #6		(8) #6	#3 @ 8" O.C.	
GB5	3'-0"	3'-0"	(10) #6		(10) #6	#3 @ 12" O.C.	
GB6	1'-6"	2'-6"	(5) #6		(5) #6	#3 @ 10" O.C.	

ULE	
REINFORCING	REMARK
EA. WAY TOP & BOTT.	SEE NOT
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NG. EA. WAY TOP & BOTT. NS. EA. WAY TOP & BOTT. ES @ 8" O.C. EA. WAY	SEE NOTI
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NG. EA. WAY TOP & BOTT. ANS. EA. WAY TOP & BOTT. FIES @ 8" O.C. LONG.	SEE NOTI
TION.	

PEDESTAL SCHEDULE							
MARK	PEDESTAL SIZE		VERTICAL	TIES		REMARKS	
	WIDTH	LENGTH	DOWELS	TIES		NEIVIANNO	
P1	1'-4"	1'-4"	(6) #6 DOWELS	#3 TIES @ 12" O.C.		SEE NOTE #1	
P2	1'-6"	2'-0"	(8) #6 DOWELS	#3 TIES @ 12" O.C.		SEE NOTE #1	
P3	2'-0"	2'-0"	(8) #6 DOWELS	#3 TIES @ 12" O.C.		SEE NOTE #1	

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#### **TEN x TEN**

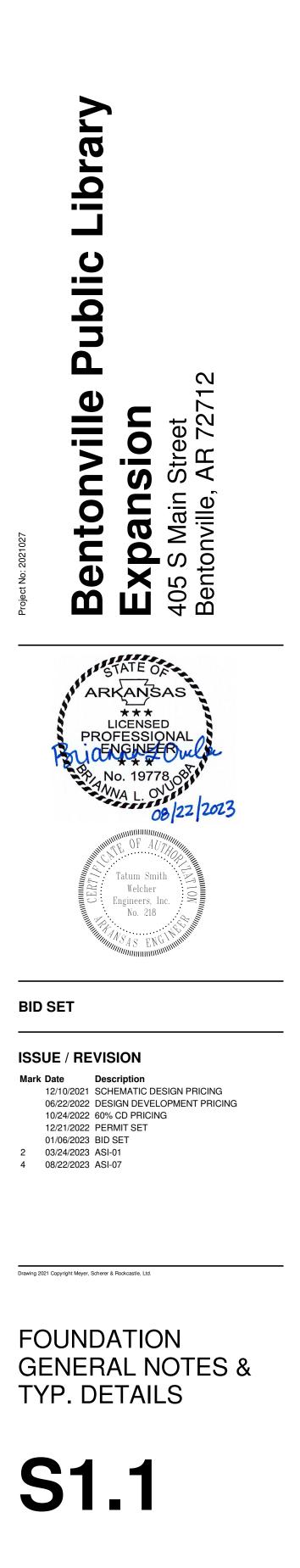
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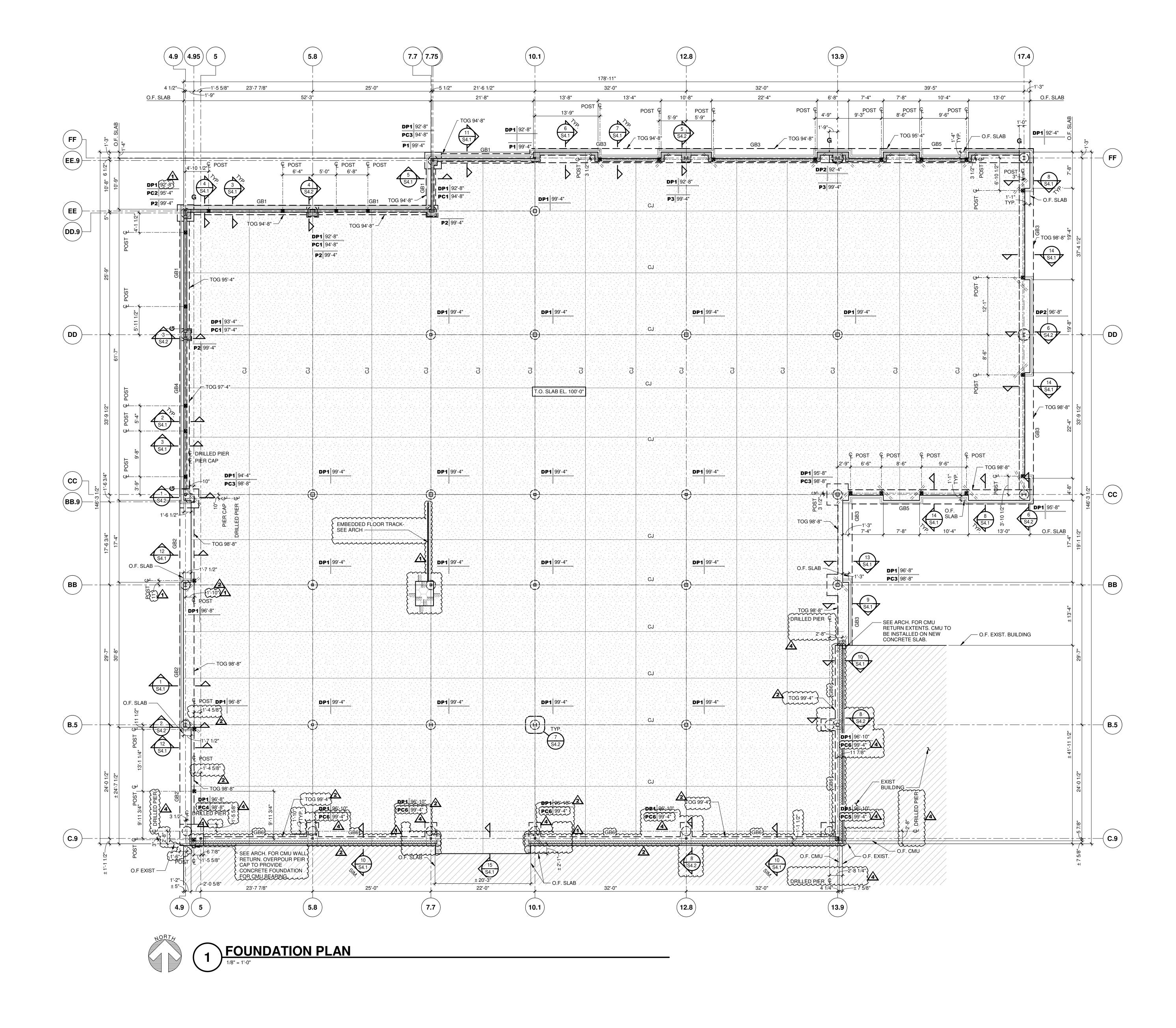
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# LEGEND:

	- DRILLED PIER MARK (SEE DRILLED PIER SCHED.)
	- TOP OF DRILLED PIER EL.
DP1 96'-8" PC1 98'-8"	
	- TOP OF PIER CAP - PIER CAP MARK
	(SEE PIER CAP SCHED.) - T.O. PEDESTAL ELEVATION
<b>P1</b> 100'-0"	T.O. PEDESTAL ELEVATION
	- PEDESTAL MARK (SEE PED. SCHED.)
GB1	DENOTES GRADE BEAM (SEE GRADE BEAM SCHED.)
TOG	DENOTES TOP OF GRADE BEAM
Ģ	DENOTES GRADE BEAM STEP MARK (SEE DTL. 9/S1.1)
O.F.	DENOTES OUTSIDE FACE
±	DENOTES DIMENSION OR ELEVATION TO BE FIELD VERIFIED
	DENOTES LIMITS OF 4" SLAB (T.O. SLAB EL. 100'-0") SEE PLAN NOTES
	DENOTES LIMITS EXISTING SLAB
	DENOTES CONCRETE STEM WALL
100'-0"	DENOTES TOP OF SLAB EL.
*	DENOTES LOCATION OF POST (SEE DTL. 4 / S1.1)
	DENOTES LOCATION OF RE- ENTRANT CORNER BARS (SEE CONC. GEN. NOTE #9)
	DENOTES SLAB ELEVATION CHANGE
	DENOTES LIMITS OF RECESSED 4" CONCRTE SLAB. COORD. LOCATION & ELEV. W/ ARCH.
	DENOTES 8" CMU WALL
<b>PLAN NO</b> 1. 4" S.O.G.	T <b>ES:</b> CONSTRUCTION: 4" CONCRETE SLAB
	CED W/ ULTRA FIBER 500 ON 15 MIL. IYLENE FILM (COORD. W/ ARCH. SPECS.) OVER
2. CENTER	HED STONE. DRILLED PIERS AND PIER CAPS UNDER
3. ALL ELEV	, (U.N.O.). /ATIONS BASED ON FINISH FLOOR EL. 100'-0". FIN. FLR. EL. 1295.15' AS ESTABLISHED BY EDG.
4. TOP OF C	GRADE BEAM ELEVATION 98'-8", TYP. (U.N.O.). PIER CAP ELEVATION 98'-8", TYP. (U.N.O.).
6. SEE ARC	H. DWGS. FOR DIMENSIONS NOT SHOWN. OTES CONTROL OR CONSTRUCTION JOINT.
8. COORDIN	.S. 1/S1.1 & 2/S1.1). JATE LOCATION & LIMITS OF VENEER WITH
	WGS. JATE DOOR LOCATIONS WITH ARCH. DWGS. CH./ PLUMBING DWGS. FOR EXACT LOCATIONS
OF ALL F	LOOR DRAINS, SLOPED & RECESSED SLABS.
ON-GRAD	
TYP. DET	
LOCATIO	H. FLOOR PATTERN PLANS FOR SLAB
	CATIONS SHOW ARE APPROXIMATE. SEE
<u>NOTES:</u> 1. CONTRA(	
	CTOR SHALL FIELD VERIFY
EXISTING	CTOR SHALL FIELD VERIFY CONDITIONS. ANY ANCIES SHALL BE BROUGHT TO

- STRUCTURAL ENGINEER IMMEDIATELY. 2. CONTRACTOR SHALL FIELD VERIFY ALL **ELEVATIONS AND DIMENSIONS PRIOR TO**
- SETTING CONCRETE REINFORCEMENT AND FORM WORK.
- . BEGINNING OF STEEL FABRICATION AND PLACEMENT OF CONCRETE
- CONSTITUTES CONTRACTOR ACCEPTANCE OF EXISTING CONDITIONS.

<u>SLAB-ON-GRADE JOINT NOTE:</u> CONTROL JOINTS AT POLISHED CONCRETE TO BE 14'-0" O.C. MAXIMUM. CONTROL JOINTS AT OTHER AREAS TO BE 16'-0" O.C. MAXIMUM

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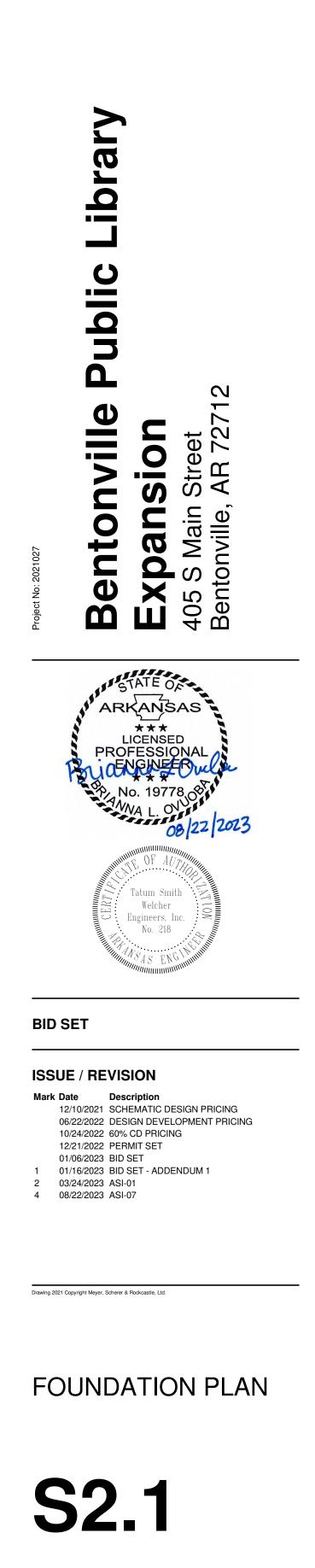
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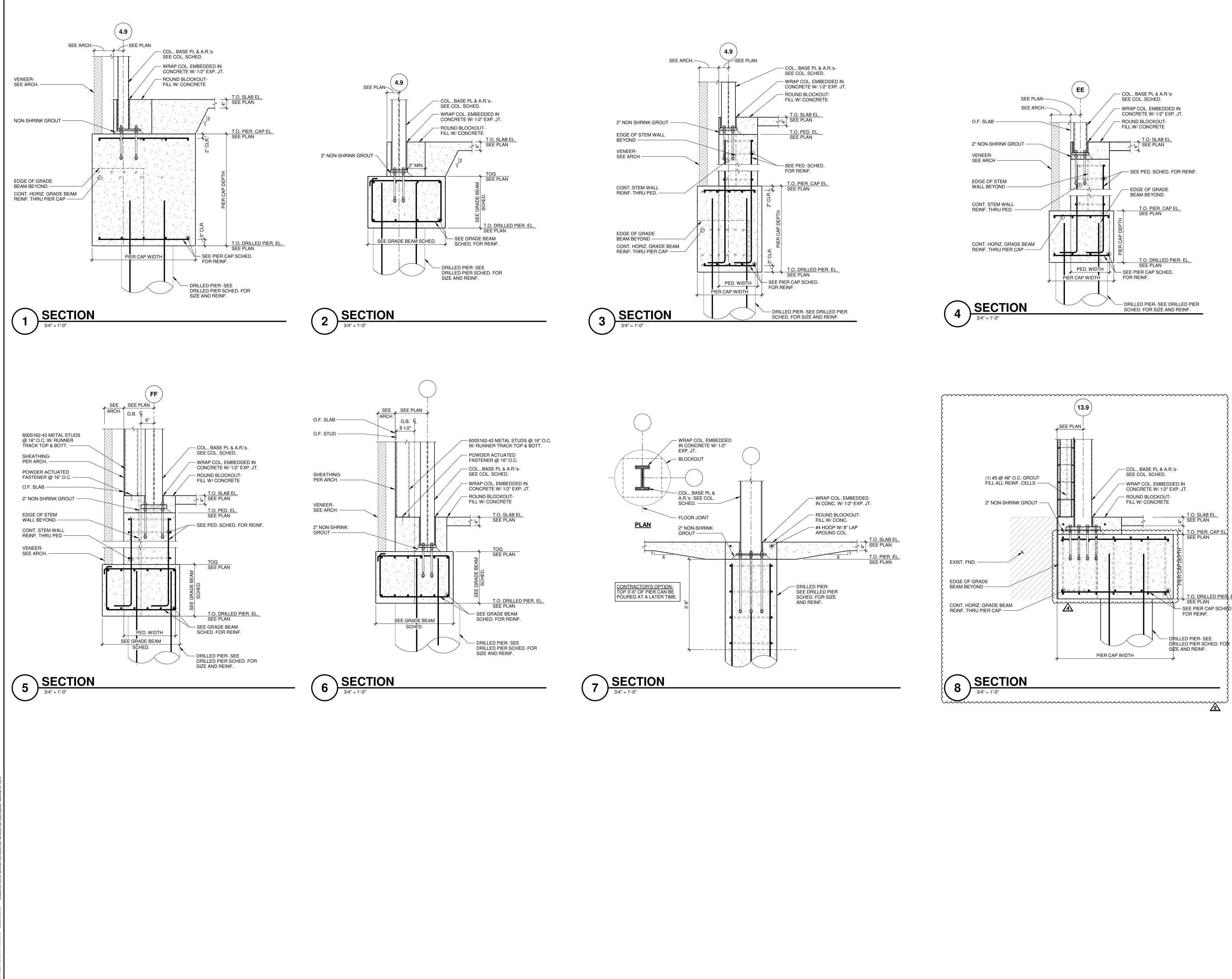
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