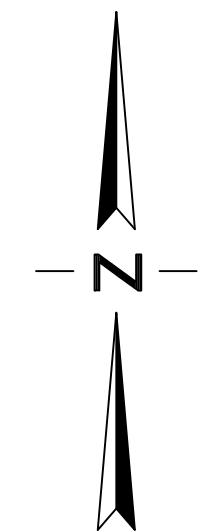


SITE PLAN



PROJECT DATA

- PROJECT DESCRIPTION: UNDERPINNING OF EXISTING RESIDENCE FOR FOUNDATION STABILIZATION
- PROJECT ADDRESS: 9251 SE 46TH ST. MERCER ISLAND, WA 98040
- COUNTY: KING COUNTY
- PARCEL NO: 192300-0320
- BUILDING CODE: 2018 IBC & 2018 SEATTLE BUILDING CODE
- ZONING CODE: MERCER ISLAND CITY CODE
- ZONING: R-15
- SITE AREA: 11,666 SF
- LOT DIMENSIONS: AS SHOWN
- EXISTING BUILDING: 3,230 SF ((2) STORY)
- LEGAL DESCRIPTION: DAWN VISTA TGW AN UND INT IN TRACTS A THRU D PLAT BLOCK: PLAT LOT: 32
- OWNER INFORMATION: RUSTY JOHNSON RUPERIOPROS@GMAIL.COM PHONE: (206) 601-9631

SITE PLAN NOTES

1. ALL WORK AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF MERCER ISLAND DESIGN STANDARDS.
2. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND LICENSES BEFORE STARTING CONSTRUCTION.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER, CITY OF MERCER ISLAND 24 HOURS BEFORE STARTING CONSTRUCTION OR RESUMING WORK AFTER SHUTDOWNS, EXCEPT FOR NORMAL RESUMPTION OF WORK FOLLOWING SUNDAYS OR HOLIDAYS.
4. THE CONTRACTOR SHALL ASSIST THE ENGINEER IN PREPARING AS-CONSTRUCTED DRAWINGS.
5. CONTRACTOR TO SPECIFY EXACT LOCATIONS OF UTILITY STUBS. THE CONTRACTOR ASSUMES ALL LIABILITY AND RESPONSIBILITY FOR ALL UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN AND NOT SHOWN ON THESE DRAWINGS AND IS REQ'D TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES ON SITE
6. ALL EXCAVATION REQ'D FOR PIER INSTALLATION SHALL BE COMPLETED BY HAND
7. ALL CONSTRUCTION VEHICLES SHALL REMAIN ON THE PAVED STREET, DRIVEWAY, OR AUTHORIZED TRAVEL PATH.
8. NO PROPOSED HORIZONTAL OR VERTICAL EXPANSION
9. INDICATES STEEP SLOPE HAZARD BUFFER AREA (75' BUFFER)
10. INDICATES SEISMIC HAZARD AREA
11. ENTIRE SITE IS LOCATED IN AN EROSION HAZARD AREA
12. GRADING MUST BE STABILIZED BY OCTOBER 31st. NO EXCAVATION OR FILL PLACEMENT CAN BE PREFORMED BETWEEN OCTOBER 31st AND APRIL 1st

SEDIMENT FENCE NOTES

1. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2"x2" POSTS AND ATTACH AS SHOWN ON SEDIMENT FENCE DETAIL.
2. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
3. THE FILTER FABRIC FENCE SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6 INCHES. ALL EXCAVATED MATERIAL FROM FILTER FABRIC FENCE INSTALLATION SHALL BE BACKFILLED AND COMPACTED ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY DUTY FILTER FABRIC FENCE SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2x2 POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP HILL SIDE OF THE SLOPED AREA.
5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE. BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
6. FILTER FABRIC FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
7. AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE MORE THAN 1/3 THE HEIGHT OF ANY SEDIMENT CONTROL BARRIER (OR APPROXIMATELY 10") ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.

SOILS ENGINEER CONTACT & CONSIDERATIONS

MUD BAY GEOTECHNICAL SERVICES, LLC
 1001 COOPER PT. RD. SW, SUITE 140, PMB #108
 OLYMPIA, WA 98502
 360-481-9784
 CHEATHMAN@MUDBAYGEOTECH.COM
 PROJECT#: 2267-KIN
 DATED: NOVEMBER 4TH, 2023

THE DRAWINGS AND CALCULATIONS TAKE INTO CONSIDERATION RECOMMENDATIONS FROM MUD BAY GEOTECHNICAL SERVICES, LLC

SFA
Design Group
 STRUCTURAL ENGINEERING
 503.641.8311 | www.sfadg.com

sfa

MATVEY FOUNDATION REPAIR, LLC
 JOHNSON RESIDENCE UNDERPINNING
 9251 SE 46TH ST.
 MERCER ISLAND, WA 98040

SITE PLAN

REVISIONS	
▲	09-05-23
▲	11-02-23

PROJECT NO:
MFR23-021

BY:
JB

DATE:
08.16.2023

SHEET NO:
S1.0

GENERAL REQUIREMENTS

REFER TO SUBSEQUENT PLAN AND DETAIL NOTES FOR VARIATIONS AND REQUIREMENTS SPECIFIC TO REFERENCED PROJECT.

NOTES ON DRAWINGS TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES.

DESIGN CRITERIA

BUILDING CODE CONFORMANCE (MEETS OR EXCEEDS REQUIREMENTS):

- 2021 INTERNATIONAL BUILDING CODE (IBC)
- 2021 INTERNATIONAL RESIDENTIAL CODE (IRC)
- 2021 WASHINGTON BUILDING CODE
- 2021 WASHINGTON RESIDENTIAL CODE

DEAD LOADS:

ROOF DEAD LOAD	15 PSF
FLOOR DEAD LOAD	15 PSF
DECK DEAD LOAD	12 PSF
WOOD WALL DEAD LOAD	12 PSF
INTERIOR WOOD WALL DEAD LOAD	9 PSF
WOOD WALL DEAD LOAD (STUCCO)	18 PSF
WOOD WALL W/ STONE VENEER	60 PSF
BRICK VENEER OVER WOOD WALL DEAD LOAD	50 PSF
CMU WALL DEAD LOAD	81 PSF
CMU WALL DEAD LOAD (STUCCO)	89 PSF
CMU WALL W/ BRICK VENEER DEAD LOAD	120 PSF
CMU WALL W/ STONE VENEER DEAD LOAD	130 PSF
STONE WALL DEAD LOAD	39 PSF
BRICK DEAD LOAD	78 PSF
STRUCTURAL BRICK DEAD LOAD	78 PSF
CONCRETE	150 PCF

LIVE LOADS:

ROOF SNOW LOAD	25 PSF
DECK LIVE LOAD	60 PSF
FLOOR LIVE LOAD (RESIDENTIAL)	40 PSF

DEFLECTIONS:

TOTAL LOAD DEFLECTION LIMIT	L/240
LIVE LOAD DEFLECTION LIMIT	L/360

PUSH PIERS/PIN PILES/HELICAL PIERS

- MATERIALS:**
- BRACKET PLATES – ASTM A36
 - (MIN YIELD STRESS, F_y = 36 KSI / MIN TENSILE STRESS, F_u = 58 KSI)
 - PIER TUBES – ASTM A500 GRADE B OR C
 - (MIN YIELD STRESS, F_y = 46 KSI / MIN TENSILE STRESS, F_u = 58 KSI)
 - EXTERNAL SLEEVE – ASTM A500 GRADE B OR C
 - (MIN YIELD STRESS, F_y = 46 KSI / MIN TENSILE STRESS, F_u = 58 KSI)
 - PIER CAP – ASTM A36
 - (MIN YIELD STRESS, F_y = 36 KSI / MIN TENSILE STRESS, F_u = 58 KSI)
 - COIL ROD – ASTM A193 GRADE B7
 - (MIN YIELD STRESS, F_y = 105 KSI / MIN TENSILE STRESS, F_u = 125 KSI)
 - STEEL ANGLE SHAPES – ASTM A36
 - (MIN YIELD STRESS, F_y = 36 KSI / MIN TENSILE STRESS, F_u = 58 KSI)
 - SHAFT COUPLER – ASTM A513 TYPE 5
 - (MIN YIELD STRESS, F_y = 70 KSI / MIN TENSILE STRESS, F_u = 87 KSI)
 - SHAFT COUPLING HARDWARE – GRADE 8 BOLTS WITH NUTS
 - HELIX PLATES (ROUND SHAFT) – ASTM A572 GRADE 50
 - (MIN YIELD STRESS, F_y = 50 KSI / MIN TENSILE STRESS, F_u = 65 KSI)

WELDING NOTES:
CONFORM TO AWS D1.1. WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH AWS REQUIREMENTS. USE E70 ELECTRODES OF TYPE REQUIRED FOR MATERIALS TO BE WELDED.

CORROSION PROTECTION:
SACRIFICIAL DESIGN THICKNESS – CAPACITIES INCLUDE A SCHEDULED LOSS IN STEEL THICKNESS DUE TO CORROSION FOR BLACK, UNCOATED STEEL. ANCHORS ARE DESIGNED FOR 50-YEAR SCHEDULED SACRIFICIAL THICKNESS LOSS IN ACCORDANCE WITH ICC-ES AC308.

INSTALLATION:
SYSTEM TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS. MINIMUM INSTALLATION PRESSURE IS TO BE DETERMINED BY THE FOLLOWING EQUATION:

PUSH PIER INSTALLATION PRESSURE (PSI): [DESIGN LOAD] X 2 / [AREA OF HYDRAULIC RAM].

PIN PILES ARE TO BE DRIVEN TO REFUSAL. INSTALLATION REFUSAL IS CONSIDERED TO BE REACHED WHEN THE ENERGY FROM A 110 LB PNEUMATIC HAMMER NO LONGER CARRIES A VERTICAL DISPLACEMENT OF ONE INCH MOVEMENT OBSERVED IN A ONE MINUTE TIME SPAN TO THE PILE.

MINIMUM PUSH PIER INSTALLATION DEPTH IS 6'-0"± UNO.
MINIMUM PIN PILE INSTALLATION DEPTH IS 6'-0"± UNO.
MINIMUM HELICAL PIER INSTALLATION DEPTH IS 6'-0"± UNO.

NOTIFY ENGINEER IF MINIMUM INSTALLATION CONDITIONS CANNOT BE ACHIEVED.

EXISTING UTILITY LINES:
CONTRACTOR TO REPAIR UTILITY LINES THAT MAY BE DAMAGED DURING INSTALLATION.

PUSH PIER/PIN PILE SPLICING:
PILES ARE TO BE GRAVITY SPLICED WITH FITTING COUPLERS. BUILDING WEIGHT WILL ENSURE JOINTS DO NOT SEPARATE.

HELICAL PIER SPLICING:
HELICAL LEAD AND EXTENSIONS ARE TO BE MECHANICALLY SPLICED WITH GRADE 8 BOLTS WITH NUTS.

HELICAL TIEBACKS

WELDING NOTES:
CONFORM TO AWS D1.1. WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH AWS REQUIREMENTS. USE E70 ELECTRODES OF TYPE REQUIRED FOR MATERIALS TO BE WELDED.

CORROSION PROTECTION:
SACRIFICIAL DESIGN THICKNESS – CAPACITIES INCLUDE A SCHEDULED LOSS IN STEEL THICKNESS DUE TO CORROSION FOR BLACK, UNCOATED STEEL. ANCHORS ARE DESIGNED FOR 50-YEAR SCHEDULED SACRIFICIAL THICKNESS LOSS IN ACCORDANCE WITH ICC-ES AC308.

INSTALLATION:
SYSTEM TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS. MINIMUM INSTALLATION PRESSURE IS TO BE DETERMINED BY THE FOLLOWING EQUATION:

SQUARE SHAFT HELICAL TIEBACK INSTALLATION TORQUE (FT-LB):
[DESIGN WORKING LOAD] X [FS = 2] / [EMPIRICAL TORQUE CORRELATION FACTOR, KT = 10 FT-LB]

MINIMUM INSTALLATION DEPTH IS 20'-0"± UNO.

NOTIFY ENGINEER IF MINIMUM INSTALLATION CONDITIONS CANNOT BE ACHIEVED.

HELICAL PIER SPLICING:
HELICAL LEAD AND EXTENSIONS ARE TO BE MECHANICALLY SPLICED WITH GRADE 8 BOLTS WITH NUTS.

SAFEBASE CARBON FIBER WALL REINFORCEMENT SYSTEM

- CARBON COMPOSITE:**
- TENSILE STRENGTH: DESIGN VALUE = 711 KSI
 - TENSILE MODULUS: 33,400 Msi
 - EFFECTIVE PLY THICKNESS: 0.036 INCHES
 - STRAP WIDTH: 8 INCHES

- SATURANT EPOXY:**
- TENSILE STRENGTH: 9.1 KSI
 - ELONGATION AT BREAK %: 4.7%
 - FLEXURAL STRENGTH: 14.9 KSI

SAFEBASE WALL ANCHOR SYSTEM

- MATERIALS:**
- WALL R: SIZE= C4x4.5, HD GALV

- EARTH PLATE: SIZE= 16"x24"x7/8" ASTM A1011 CS TY B, HD GALV

THREADED ROD: 3/4"-10x78" ASTM F1554 GRADE 55, HD GALV

LOCKING ROD END: 2 1/8x1.15 NUT 3/4"-10 THREAD ASTM A563/1045, NICKEL PLATED

LOCKING COUPLER: 3x1 3/4"-10 THREAD ASTM A563, NICKEL PLATED

SOCKET WASHER: 2x0.245 ASTM A563, NICKEL PLATED

BALL NUT: 1x1 1/4" NUT 3/4"-10 THREAD ASTM A563, NICKEL PLATED

TESTING & INSPECTION

CONTINUOUS SPECIAL INSPECTION IS REQUIRED DURING INSTALLATION PER 2018 IBC SECTION 1810.4.12. THE SPECIAL INSPECTOR IS RESPONSIBLE FOR VERIFYING AND RECORDING THE FOLLOWING:

- PROJECT DESCRIPTION (ADDRESS, INSTALLATION DATE, PERMIT NUMBER)
- PILE AND BRACKET CONFIGURATION
- PART DESCRIPTION (PRODUCT MANUFACTURER, BRACKET TYPE, PIER TYPE, PIER OUTSIDE DIAMETER, PIER WALL THICKNESS)
- PIER INCLINATION, LOCATION, DEPTH, AND INSTALLATION PRESSURE ACHIEVED

LOAD TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ASTM METHOD D1143 (QUICK METHOD) ON 20 PERCENT OF PIERS AND WILL BE SELECTED BY THE SPECIAL INSPECTOR. AN ALIGNMENT LOAD (AL) SHALL BE APPLIED TO THE PILE PRIOR TO SETTING THE DEFLECTION MEASURING EQUIPMENT TO ZERO OR A REFERENCE POSITION. THE AL SHALL BE NO MORE THAN 10% OF THE DESIGN LOAD. INCREMENTAL LOADING SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE.

TEST LOADING SCHEDULE	HOLD TIME	MAX DEFLECTION
AL (-10 DL MAX)	0 MIN.	
0.25 DL	UNTIL STABLE	
0.50 DL	UNTIL STABLE	
0.75 DL	UNTIL STABLE	
1.00 DL	UNTIL STABLE	
1.25 DL	UNTIL STABLE	
1.50 DL	HOLD FOR CREEP TEST (SEE BELOW)	0.04 INCHES
1.25 DL	UNTIL STABLE	
1.00 DL	UNTIL STABLE	
0.75 DL	UNTIL STABLE	
0.50 DL	UNTIL STABLE	
0.25 DL	UNTIL STABLE	

LOAD TESTING CREEP ACCEPTANCE CRITERIA SHALL BE NO GREATER THAN 0.04 INCHES WITHIN A 10 MINUTE PERIOD. IF MOVEMENT IS OBSERVED GREATER THAN 0.04 INCHES WITHIN THE 10 MINUTE PERIOD THE LOAD TEST SHALL BE HELD FOR AN ADDITIONAL 50 MINUTES. THE PIER IS TO BE DEEPEMED AND RE-TESTED, OR THE PIER IS TO BE ABANDONED AND REPLACED WITH A NEW PIER. IF THE LOAD TEST IS TO BE HELD THE PIER MOVEMENTS SHALL BE MEASURED AT 15, 20, 30, 40, 50, AND 60 MINUTES. THE CREEP VERSUS THE LOGARITHM OF TIME SHALL BE PLOTTED. IF THE CREEP RATE IS LESS THAN 0.080 INCHES BETWEEN 6 AND 60 MINUTES, THE LOAD TEST SHALL BE CONSIDERED SUCCESSFUL.

PUSH PIER TEST PRESSURE (PSI): [DESIGN LOAD] X 1.5 / [AREA OF HYDRAULIC RAM].
HELICAL PIER TEST PRESSURE (PSI): [DESIGN LOAD] X 1.5 / [AREA OF HYDRAULIC RAM].

WOOD FRAMING

- IBC CHAPTER 23 "WOOD".
- NDS – 2018 AND NDS SUPPLEMENT – 2018 "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION".

IDENTIFICATION: ALL SAWN LUMBER AND PRE-MANUFACTURED WOOD PRODUCTS SHALL BE IDENTIFIED BY THE GRADE MARK OR A CERTIFICATE OF INSPECTION ISSUED BY THE CERTIFYING AGENCY.

MATERIALS:

- SAWN LUMBER:** CONFORM TO GRADING RULES OF WMPA, WCLIB OR NLGA.

Member Use	Size	Species	Grade
BEAMS	4x10	DF/L	No. 2

- WOOD FASTENERS:** CONFORM TO IBC SEC 2304.9 "CONNECTIONS AND FASTENERS". UNLESS NOTED OTHERWISE, ALL NAILS SHALL BE COMMON. NAIL SIZES SPECIFIED ON THE DRAWINGS ARE BASED ON THE FOLLOWING SPECIFICATIONS:

SIZE	LENGTH	DIAMETER
10d	3"	0.148"

ALTERNATE NAILS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER. SUBSTITUTION OF STAPLES FOR THE NAILING OF RATED SHEATHING IS SUBJECT TO REVIEW BY THE STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION. TRUSSEP TYPE NAILS ARE RECOMMENDED FOR EASE OF IDENTIFICATION AFTER INSTALLATION.

- MOISTURE CONTENT:** WOOD MATERIAL USED FOR THIS PROJECT SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 19%. REFER TO TESTING & INSPECTIONS FOR THE VERIFICATION OF THESE LIMITS. THE MAXIMUM MOISTURE CONTENT REQUIRED MAY BE LESS THAN 19% IF BASED ON A PARTICULAR CLADDING/INSULATION SYSTEM. REFER TO THE ARCHITECT'S DRAWINGS AND/OR PROJECT SPECIFICATIONS FOR MORE RESTRICTIVE REQUIREMENTS.

CAST-IN-PLACE CONCRETE

REFERENCE STANDARDS: CONFORM TO:

- ALL CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH ACI 318-14.
- ACI 301-16 "SPECIFICATIONS FOR STRUCTURAL CONCRETE".
- CBC CHAPTER 19 "CONCRETE".

FIELD REFERENCE: KEEP IN CONTRACTOR'S FIELD OFFICE A COPY OF ACI FIELD REFERENCE MANUAL, SP-15(10), "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301) WITH SELECTED ACI AND ASTM REFERENCES".

CONCRETE MIXTURES: CONFORM TO ACI 301 SEC 4 "CONCRETE MIXTURES".

MATERIALS: CONFORM TO ACI 301 SEC 4.2.1 "MATERIALS" FOR REQUIREMENTS FOR CEMENTITIOUS MATERIALS, AGGREGATES, MIXING WATER AND ADMIXTURES.

SUBMITTALS: PROVIDE ALL SUBMITTALS REQUIRED BY ACI 301 SEC 4.1.2. SUBMIT MIX DESIGNS FOR EACH MIX IN THE TABLE BELOW.

TABLE OF MIX DESIGN REQUIREMENTS					
MEMBER TYPE/LOCATION	STRENGTH TEST (PSI)	MAX AGE (DAYS)	MAX AGGR. (INCH)	MAX W/C RATIO	AIR CONT. (%)

FORMWORK: CONFORM TO ACI 301 SEC 2 "FORMWORK AND FORM ACCESSORIES". REMOVAL OF FORMS SHALL CONFORM TO SEC 2.3.2 EXCEPT STRENGTH INDICATED IN SEC 2.3.2.5 SHALL BE 0.75 F_c.

MEASURING, MIXING, AND DELIVERY: CONFORM TO ACI 301 SEC 4.3.

HANDLING, PLACING, CONSTRUCTING AND CURING: CONFORM TO ACI 301 SEC 5.

EMBEDDED ITEMS: POSITION AND SECURE IN PLACE EXPANSION JOINT MATERIAL, ANCHORS AND OTHER STRUCTURAL AND NON-STRUCTURAL EMBEDDED ITEMS BEFORE PLACING IN CONCRETE. CONTRACTOR SHALL REFER TO MECHANICAL, ELECTRICAL, PLUMBING, ARCHITECTURAL DRAWINGS AND COORDINATE FOR OTHER EMBEDDED ITEMS.

CONCRETE REINFORCEMENT

REFERENCE STANDARDS: CONFORM TO:

- ACI 301-14 "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE", SECTION 3 "REINFORCEMENT AND REINFORCEMENT SUPPORTS".
- ACI SP-66 "ACI DETAILING MANUAL" INCLUDING ACI 315-99 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT".
- CRSI MSP-1 "MANUAL OF STANDARD PRACTICE".
- ANSI/AWS D1.4 "STRUCTURAL WELDING CODE – REINFORCING STEEL".
- IBC CHAPTER 19, "CONCRETE".
- ACI 318-14 AND ACI 318R-14.

SUBMITTALS: CONFORM TO ACI 301 SEC 3.1.1 "SUBMITTALS DATA AND DRAWINGS". SUBMIT PLACING DRAWINGS SHOWING FABRICATION DIMENSIONS AND LOCATIONS FOR PLACEMENT OF REINFORCEMENT AND REINFORCEMENT SUPPORTS.

MATERIALS:

REINFORCING BARS ASTM A615, GRADE 60, DEFORMED BARS

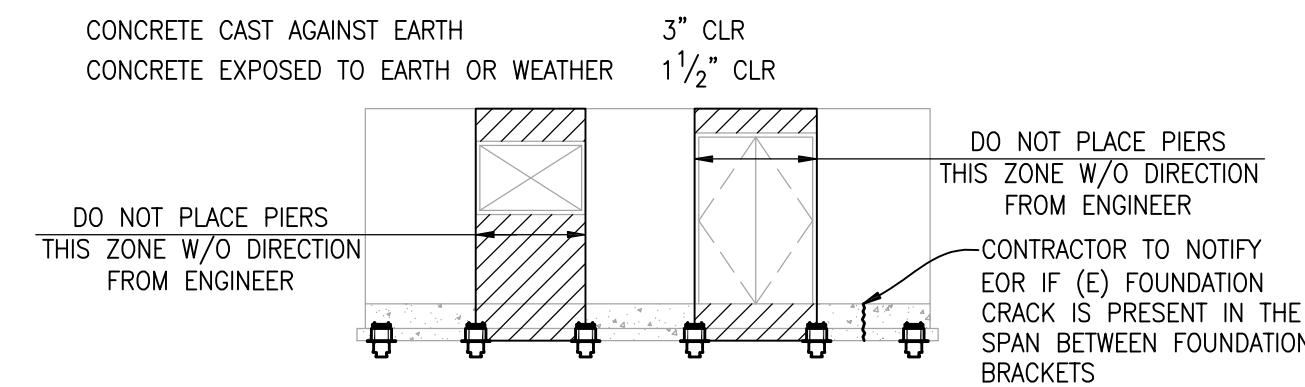
FABRICATION: CONFORM TO:

- ACI 301, SEC 3.2.2 "FABRICATION".
- ACI SP-66 "ACI DETAILING MANUAL".

WELDING: BARS SHALL NOT BE WELDED UNLESS AUTHORIZED. WHEN AUTHORIZED, CONFORM TO ACI 301, SEC 3.2.2.2 "WELDING" AND PROVIDE ASTM A706, GRADE 60 REINFORCEMENT.

PLACING: CONFORM TO ACI 301, SEC 3.3.2 "PLACEMENT". PLACING TOLERANCES SHALL CONFORM TO IBC SEC 1907.5, "PLACING REINFORCEMENT".

CONCRETE COVER: CONFORM TO THE FOLLOWING COVER REQUIREMENTS FROM IBC SEC 1907.7 AND ACI 301, TABLE 3.3.2.3:



NO PIER PLACEMENT ZONE

SCALE: NTS

1

NCFI GEOTECHNICAL - TERRATHANE 24-010 POLYURETHANE FOAM

INSTALLATION SEQUENCE

THE FOLLOWING INSTALLATION STEPS PROVIDE A BROAD OVERVIEW OF TERRATHANE GEOTECHNICAL 24-010 POLYURETHANE FOAM INJECTION BENEATH A CONCRETE SLAB OR PAVEMENT. INTERMEDIATE STEPS, INSTALLATION EQUIPMENT AND TOOLS USED, AND CONSIDERATIONS FOR UNUSUAL CONDITIONS OR APPLICATIONS ARE NOT ADDRESSED.

STEP 1: ACCESS/APPLICATION HOLES ARE DRILLED (3/8") AT STRATEGIC LOCATIONS IN THE SLAB. IN GENERAL, THE HOLES ARE SPACED 5 FEET APART AND 3 FEET FROM THE EDGES OF THE SLAB. LOCATIONS AND SPACING ARE OFTEN MODIFIED IN THE FIELD TO ACHIEVE THE DESIRED RESULT.

STEP 2: INJECTION PORTS ARE PLACED TO SEAL THE HOLES.

STEP 3: TERRATHANE GEOTECHNICAL 24-010 POLYURETHANE FOAM IS INJECTED TO FILL VOIDS AND ALLOW FOR LIFTING. LIFT MAY BE MONITORED WITH SURVEY EQUIPMENT OR STRING LINES.

STEP 4: THE INJECTION PORTS ARE REMOVED AND THE HOLES ARE PATCHED WITH MORTAR MIX, NEXUSPRO SILICONE JOINT SEALANT, OR EPOXY SEALANT.

TERRATHANE GEOTECHNICAL 24-010 POLYURETHANE FOAMS ARE MOST OFTEN USED BENEATH EXTERIOR CONCRETE SIDEWALK AND PAVEMENT SECTIONS FOR STABILIZATION OR RELEVELING, BUT ARE ALSO UTILIZED FOR INTERIOR WORK AND OTHER SPECIALTY APPLICATIONS. TERRATHANE GEOTECHNICAL 24-010 POLYURETHANE FOAM IS OFTEN CONSIDERED AS AN ALTERNATIVE TO MUDJACKING OR REMOVAL AND REPLACEMENT. SETTLEMENT OF RESIDENTIAL SLABS IS TYPICALLY THE RESULT OF CONSOLIDATION OF POORLY COMPACTED FILL SOILS AROUND FOUNDATIONS AND WITHIN UTILITY TRENCHES. SOFTENING OF WEAK NATIVE SOILS AND FILL DUE TO INCREASES IN MOISTURE CONTENT, AND EROSION OR WASHOUT CONDITIONS RESULTING FROM POOR DRAINAGE, CRACKED SLABS, FAULTING BETWEEN SLAB SECTIONS, AND/OR OTHER OBVIOUS DOWNWARD VERTICAL MOVEMENT ARE TYPICALLY THE FIRST OBSERVABLE SYMPTOMS OF SETTLEMENT FROM THE SURFACE, THOUGH VOIDS MAY ALSO BE PRESENT BELOW AS RIGID SLABS CAN SPAN BETWEEN SUPPORT POINTS. WHEN VOIDS ARE PRESENT, USING INERT, HYDROPHOBIC TERRATHANE GEOTECHNICAL 24-010 POLYURETHANE FOAM ALLOWS FOR UNDERSEALING OF THE REGION, PREVENTING ANY FURTHER WASHOUT AND ACTING TO AGAIN PROVIDE UNIFORM SUPPORT TO THE BRIDGED CONCRETE. WHEN SLABS HAVE SETTLED, WITH OR WITHOUT THE PRESENCE OF VOIDS, FOAM CAN BE INJECTED TO CREATE LIFT WITHOUT ADDING SIGNIFICANT WEIGHT TO THE UNDERLYING SOIL.

TERRATHANE GEOTECHNICAL 24-010 POLYURETHANE FOAM IS INSTALLED WITH CUSTOM-BUILT INSTALLATION RIGS AVAILABLE AS TRUCK-MOUNTED OR TRAILER UNITS. THE BASIC COMPONENTS OF THE SYSTEM INCLUDE MATERIAL STORAGE TANKS, A GENERATOR, AN AIR COMPRESSOR, PUMPS, A PROPORTIONER, AND APPLICATOR(S)/ GUN(S). THE PROPORTIONER INCLUDES A MATERIAL HEATER, PRESSURE REGULATOR, STROKE COUNTER, AND INSULATED AND HEATED HOSES. THIS ENSURES THAT THE TWO PARTS ARE DELIVERED TO THE APPLICATOR AT A CONSISTENT PRESSURE AND TEMPERATURE.

TERRATHANE GEOTECHNICAL - 24-010 POLYURETHANE FOAM TABLES

COMPONENT PROPERTIES		
COMPONENT	B-24-010	A2-000
BROOKFIELD VISCOSITY AT 72°F	600 CPS AT 72°F	200 CPS AT 72°F
SPECIFIC GRAVITY	1.08	1.24
WEIGHT PER GAL	8.9 LBS	10.3 LBS
APPEARANCE	CLEAR AMBER LIQUID	CLEAR BROWN LIQUID
STORAGE TEMPERATURE	60°-90°F	60°-90°F

REACTIVITY AT 110°F	
CREAM TIME (SEC)	1
GEL TIME (SEC)	7
TACK FREE TIME (SEC)	12
RISE TIME (SEC)	17

PROCESSING PARAMETERS	
ISO TEMPERATURE	100°-140°F
POLY TEMPERATURE	110°-140°F
MIXING PRESSURE (STATIC)	1000 PSI
MIXING PRESSURE (DYNAMIC)	800 PSI

TERRATHANE GEOTECHNICAL - 24-010 POLYURETHANE FOAM TABLES (CONT.)

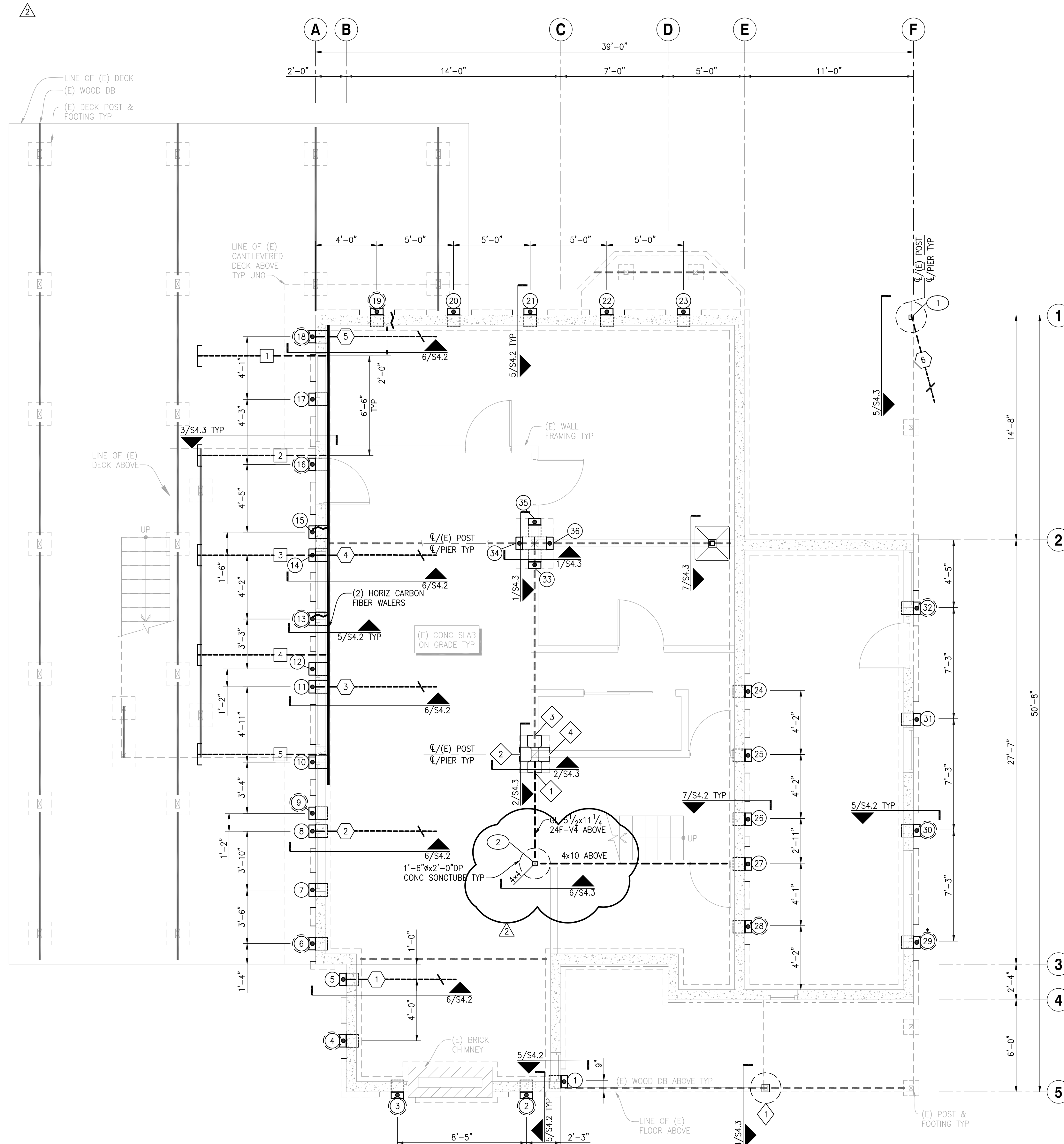
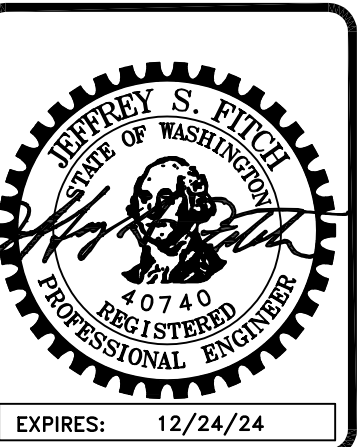
MIX RATIO	
BY WEIGHT	100 PARTS POLY: 116 PARTS ISO
BY VOLUME	100 PARTS POLY: 100 PARTS ISO

NOTE: INSTALL PER MFR RECOMMENDATIONS

PHYSICAL PROPERTIES			
PHYSICAL PROPERTIES	TEST METHOD	FREE RISE	RESTRAINED
DENSITY	ASTM D1622	2.8 PCF	3.9 PCF
COMPRESSIVE STRENGTH	ASTM D1621	25.7 PSI	60.5 PSI
COMPRESSIVE MODULUS	ASTM D1621	695 PSI	1714 PSI
TENSILE STRENGTH	ASTM D1623	64.5 PSI	78 PSI
TENSILE MODULUS	ASTM D1623	96 PSI	-----
WATER ABSORPTION	ASTM D2842	≤ 0.08 % _{ft}	≤ 0.08 % _{ft}
CLOSED CELL CONTENT	-----	> 90%	> 90%
MAX SERVICE TEMP	-----	180°F	180°F
ELONGATION	ASTM D1623	7.0%	-----
SHEAR STRENGTH	ASTM C273	38.7 PSI	-----
SHEAR MODULUS	ASTM C273	486 PSI	-----
FLEXURAL STRENGTH	ASTM D790	57.8 PSI	-----
FLEXURAL MODULUS	ASTM D790	1279 PSI	-----

SAFEBASE STABILIZER SYSTEM INFO

PART	DESCRIPTION	COMMENTS	MIN YIELD STRESS, F _y	MIN TENSILE STRESS, F _u
TOP R	ASTM A36 R _{1/2} x6x0'-6" W/ (4) 3/8" HOLES W/ WELDED 1 1/4"x1 1/2" IPS SCH 40 ASTM A53 PIPE	WOOD BEAM CONDITION	36 KSI 30 KSI	58 KSI 48 KSI
THREADED ROD	1 1/4"x7x12" ASTM A193 GRADE B7 THREADED ROD W/ 1 1/4"x7" ASTM A194 GRADE 2H HEX NUT		75 KSI	125 KSI
THREADED CAP	HSS 4x4x3/16x0'-4" ASTM A500 GRADE B/C HD GALV PER ASTM A123 W/ WELDED R _{3/4} x4x0'-4" ASTM A36 & 1 1/4"x7" ASTM 194 GRADE 2H HEX NUT		46 KSI 36 KSI	58 KSI 58 KSI
BASE	R _{1/2} x6x0'-6" ASTM A36 W/ (2) HOLES W/ WELDED HSS 4x4x3/16x0'-2" ASTM 500 GRADE B/C HD GALV PER ASTM A123		36 KSI 46 KSI	58 KSI 58 KSI
LIGHTFOOT XL BASE	3/16" HIGH DENSITY POLYETHYLENE SHELL (27"SQ BASE) 15 PCF POLYURETHANE (F _c =470-510 PSI) 10 PCF POLYURETHANE (F _c =285-310 PSI) 3.5 PCF POLYURETHANE (F _c =55-60 PSI)	6 KIPS MAX		
MAIN TUBE	ASTM A500, GRADE B/C HD GALV, PER ASTM A123 HSS 3 1/2"x3 1/2"x11GA		46 KSI	58 KSI

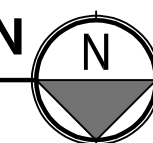


(E) FOUNDATION/(N) PIER/(N) TIEBACK/(N) WALL ANCHOR LAYOUT PLAN NOTES:

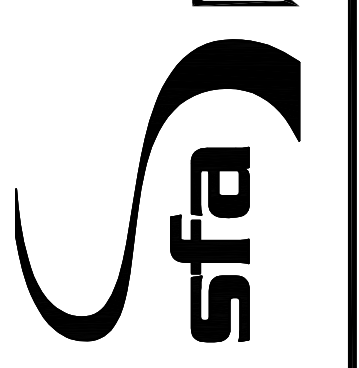
1. REFERENCE S1.1 FOR GENERAL REQUIREMENTS
2. CONTRACTOR TO NOTIFY ENGINEER OF RECORD OF DISCREPANCIES BETWEEN FIELD CONDITIONS & THOSE SHOWN IN THESE DOCUMENTS PRIOR TO WORK TYP
3. [Symbol] INDICATES (E) CONC WALL ON (E) CONC FOOTING (CONTRACTOR TO VERIFY 8"WSL-0"11 TO 8'-0"11 (E) CONC WALL AND 1'-4"WSL-0"11 (E) CONC FOOTING MIN TYP (NOTIFY ENGINEER OF RECORD IF FIELD CONDITIONS DIFFER IN THE AREA OF WORK))
4. [Symbol] INDICATES (E) WOOD POST/COLUMN
5. [Symbol] INDICATES (N) POLYURETHANE BACKFILL PER DETAIL 5/S4.2 & 6/S4.2 ((13) TOTAL)
6. [Symbol] SECTION CUT - DETAIL NUMBER/SHEET NUMBER
7. [Symbol] INDICATES LOCATION OF SAFEbase 288 PUSH PIER W/ LIGHT DUTY OR SABERTOOTH FOUNDATION BRACKET OR PER DETAILS ON S4.1 ((36) TOTAL)
PUSH PIER INSTALLATION NOTES:
 - MAX LOAD TO ANCHOR = 14,063 LBS
 - 2.875" PIPE PILE W/ 0.165" THICK WALL
 - 3.5"X36" LONG PIPE SLEEVE W/ 0.220" WALL
 - MINIMUM 6'-0" INSTALLATION DEPTH
 - MINIMUM 2800 PSI INSTALLATION PRESSURE
 - MINIMUM 1/4" FOUNDATION LIFT DURING INSTALLATION
8. [Symbol] INDICATES LOCATION OF SAFEbase PIN PILE W/ FS238B FOUNDATION BRACKET PER DETAILS ON S4.1 & S4.2 ((4) TOTAL)
PIN PILE INSTALLATION NOTES:
 - MAX LOAD TO ANCHOR = 5,710 LBS
 - 2.875" PIPE PILE W/ 0.218" THICK WALL
 - MINIMUM 6'-0" INSTALLATION DEPTH
 - DRIVE WITH LESS THAN MOVEMENT IS OBSERVED IN A 1 MIN TIME SPAN WITH A 110 LB PNEUMATIC HAMMER
9. [Symbol] INDICATES LOCATION OF SAFEbase PIN PILE W/ FS238NCB NEW CONSTRUCTION BRACKET PER DETAILS ON S4.1 ((2) TOTAL)
PIN PILE INSTALLATION NOTES:
 - MAX LOAD TO ANCHOR = 8,181 LBS
 - 2.875" PIPE PILE W/ 0.218" THICK WALL
 - MINIMUM 6'-0" INSTALLATION DEPTH
 - DRIVE WITH LESS THAN MOVEMENT IS OBSERVED IN A 1 MIN TIME SPAN WITH A 110 LB PNEUMATIC HAMMER
10. [Symbol] INDICATES LOCATION OF SB 288 HELICAL PIER W/ NEW CONSTRUCTION BRACKET ((1) TOTAL)
HELICAL PIER INSTALLATION NOTES:
 - MAX LOAD TO ANCHOR = 8,329 LBS
 - 2.875" PIPE PILE W/ 0.217" THICK WALL
 - 3.5"X36" LONG PIPE SLEEVE W/ 0.220" WALL
 - 0.375 THICK 10/12" HELIX W/ 1/4" FILLET WELDS EA SIDE OF HELIX TO PIPE PILE
 - MINIMUM 6'-0" INSTALLATION DEPTH & 1,900 FT-LB INSTALLATION TORQUE
11. [Symbol] INDICATES TAT-150 HELICAL TIEBACK SYSTEM (PIER SHOWN AT AN ANGLE FOR CLARITY, INSTALL PERPENDICULAR TO STEMWALL) ((6) TOTAL)
LATERAL HELICAL TIEBACK INSTALLATION NOTES:
 - DESIGN LOAD = 4,683 LBS
 - 1.5" SOLID SQUARE SHAFT TIEBACK INSTALLED AT A 15±2° ANGLE FROM HORIZONTAL
 - 0.375 THICK 8/10" HELIX W/ 0.25" FILLET WELDS EA SIDE OF HELIX TO PIPE PILE
 - MINIMUM 20'-0" INSTALLATION DEPTH & 1,500 LB-FT INSTALLATION TORQUE
12. [Symbol] INDICATES LOCATION OF SAFEbase WALL ANCHOR SYSTEM AT 6'-6" OC MAX UNO ON PLAN & INSTALLED PERP TO FOUNDATION WALL ((5) TOTAL)
13. [Symbol] INDICATES LOCATION OF SAFEbase FLOOR STABILIZER W/ LIGHTFOOT STABILIZER BASE ((1) TOTAL)
 MAX LOAD TO STABILIZER = 5,902 LBS
14. PIER SPACING SHALL BE AS INDICATED ON PLAN
15. REPLACE "N-KIND" ALL (E) WOOD MEMBERS (JOISTS, PURLINS, SUBPURLINS, SHEATHING, STUDS, WALL PLATES) WHICH SHOW SIGNS OF DRY ROT OR STRUCTURAL DAMAGE
16. CONTRACTOR TO NOTIFY ENGINEER OF RECORD IF (E) FOUNDATION CRACK IS PRESENT IN THE SPAN BETWEEN FOUNDATION BRACKETS
17. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY SHORING
18. ALL FASTENERS AND HARDWARE IN CONTACT W/ PT WOOD, CONCRETE OR MASONRY SHALL BE HOT-DIPPED ZINC-COATED GALVANIZED STEEL OR STAINLESS STEEL
19. FILL ALL VISIBLE CRACKS IN THE FOUNDATION WALL WITH HYDRAULIC CEMENT OR EPOXY
20. ALL CONSTRUCTION MATERIALS IN THESE DOCUMENTS ARE (N) UNO

PARTIAL (E) FDN/(N) PIER/(N) TIEBACK/ (N) WALL ANCHOR LAYOUT PLAN

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



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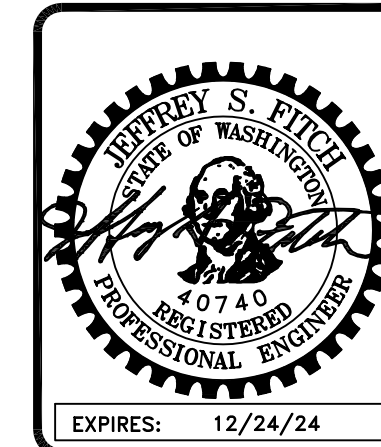
MATVEY FOUNDATION REPAIR, LLC
 JOHNSON RESIDENCE UNDERPINNING
 9251 SE 46TH ST.
 MERCER ISLAND, WA 98040

(E) FDN/(N) PIER/ (N) TIEBACK/(N) WALL ANCHOR LAYOUT PLAN

REVISIONS	
△	09-05-23
△	11-02-23

PROJECT NO:
MFR23-021
 BY:
JB
 DATE:
08.16.2023

SHEET NO:
S2.1



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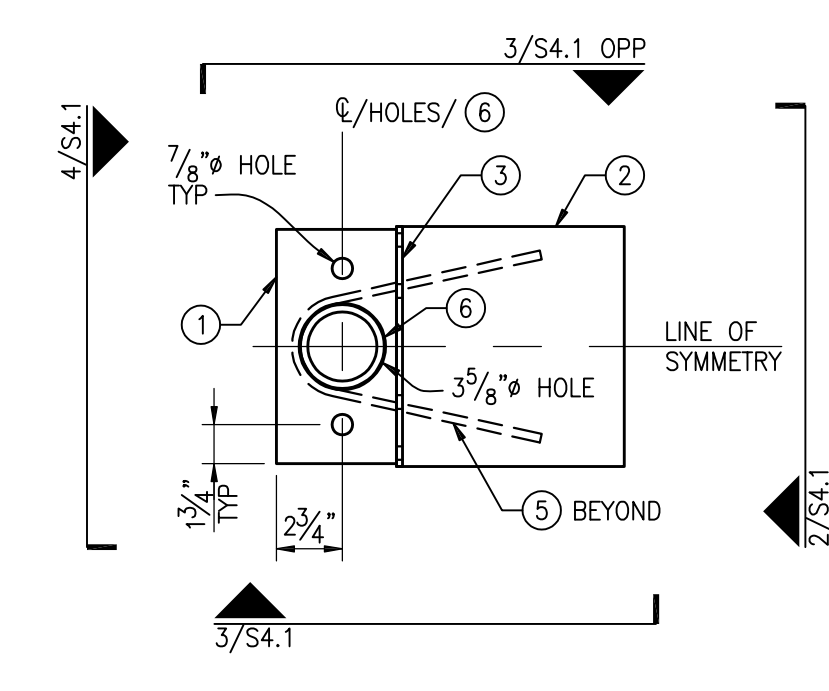
MATVEY FOUNDATION REPAIR, LLC
 JOHNSON RESIDENCE UNDERPINNING
 9251 SE 46TH ST.
 MERCER ISLAND, WA 98040

DETAILS

REVISIONS	
△	09-05-23
△	11-02-23

PROJECT NO:
MFR23-021
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JB
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08.16.2023

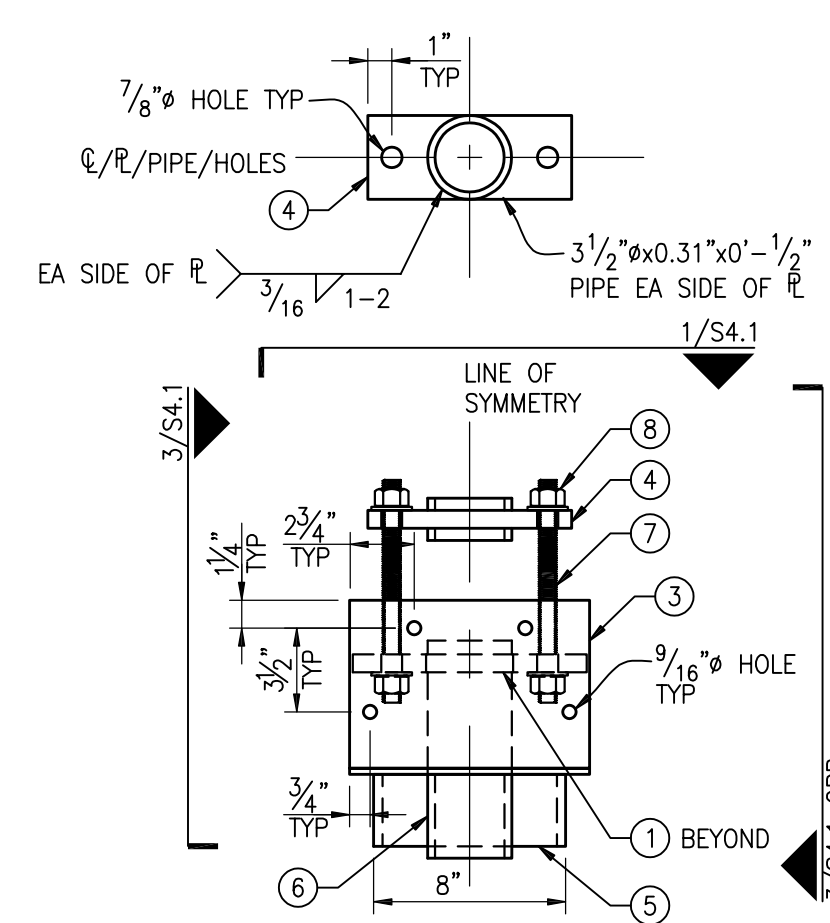
SHEET NO:
S4.1



SAFEBASE-LD FOUNDATION BRACKET MATERIALS LIST

ITEM #	PART DESCRIPTION	DIMENSIONS	GRADE
1	MAIN R	R 3/4x5x0'-9 3/4"	A36
2	SEAT R	R 1/4x10x0'-10"	A36
3	BACK R	R 1/4x7x0'-10"	A36
4	TOP R	R 3/4x4x0'-8 1/2"	A36
5	STRAP	BENT R 3/8x3x2'-0"	A36
6	MAIN TUBE *	PIPE 4"Øx0.188x0'-9"	A500
7	ALL THREADED RODS (2x)	3/4"Øx1'-0"	A193
8	THREADED HEX NUTS (4x)	-	A193
9	PUSH PIER SHAFT *	PIPE 2.875"Øx0.188x4'-0"	A500
10	PUSH PIER EXTERNAL SLEEVE **	PIPE 3.5"Øx0.220x3'-0"	A500
11	CONNECTOR *	PIPE 2.5"Øx0.188x0'-6"	A500
12	FRICTION REDUCER *	PIPE 3"Øx0.188x0'-1"	A53

* DIMENSIONS GIVEN AS OUTER DIAMETER x WALL THICKNESS x LENGTH
 ** EXTERNAL SLEEVE ALSO AVAILABLE IN 48" LENGTH

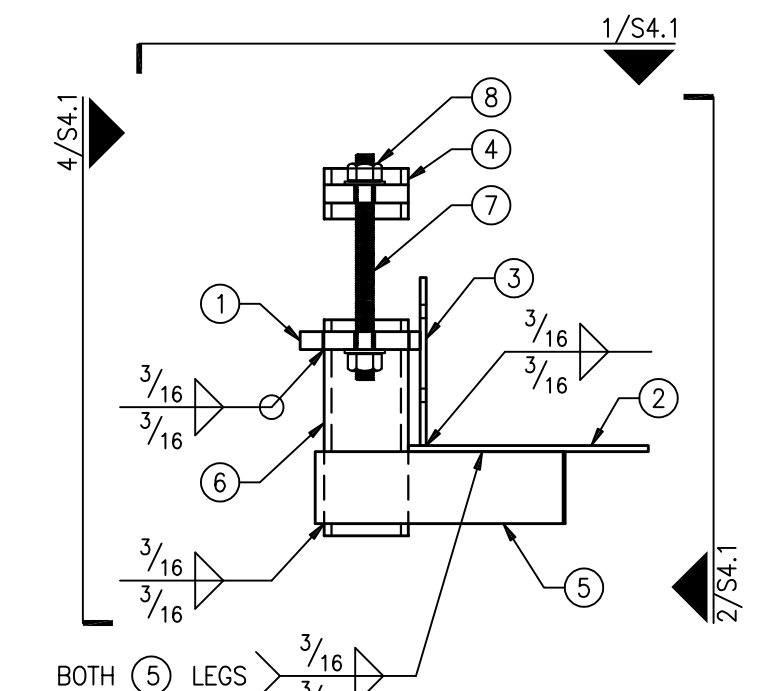


NOTES:
 REF 1/S4.1 FOR MATERIALS LIST

SB-LD BRACKET - FRONT

NOTES:
 REF 1/S4.1 FOR MATERIALS LIST

SB-LD BRACKET - SIDE

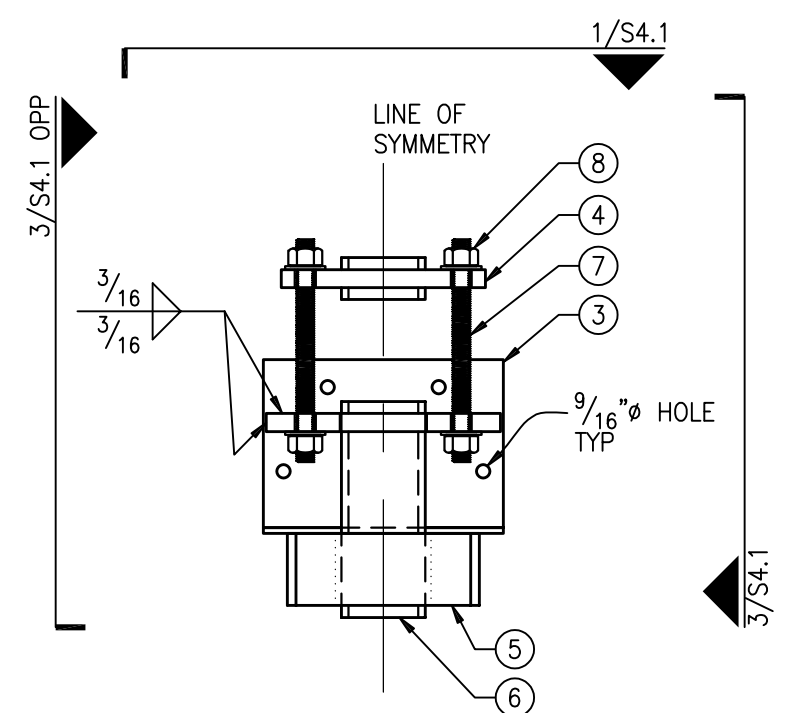


SB-LD BRACKET - TOP

SCALE: 1/2" = 1'-0" 1

SCALE: 1/2" = 1'-0" 2

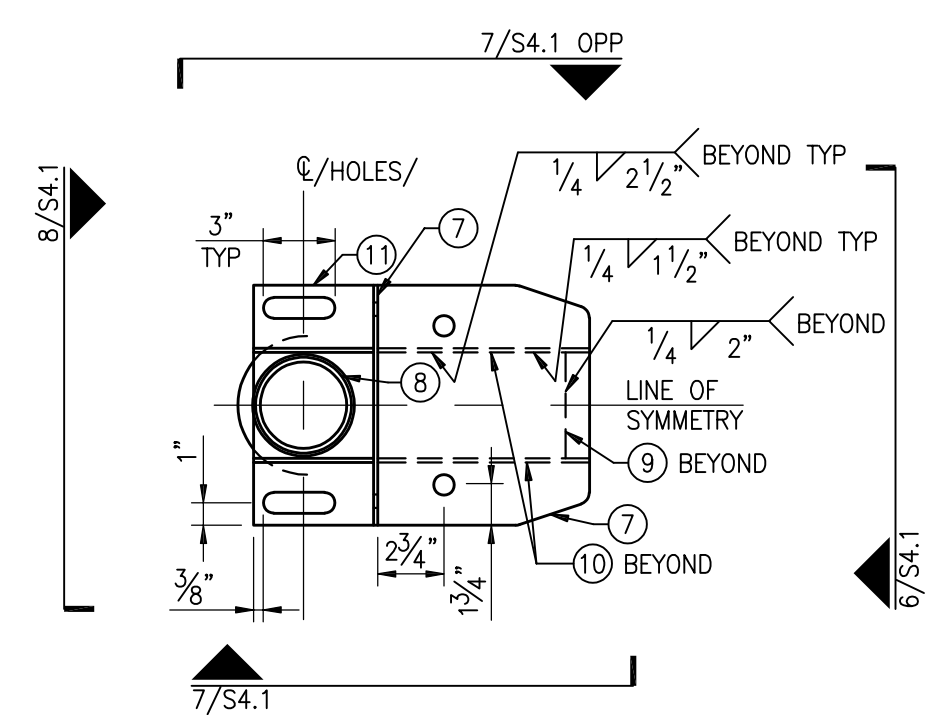
SCALE: 1/2" = 1'-0" 3



NOTES:
 REF 1/S4.1 FOR MATERIALS LIST

SB-LD BRACKET - BACK

SCALE: 1/2" = 1'-0" 4



SB-ST-LD BRACKET - TOP

SCALE: 1/2" = 1'-0" 5

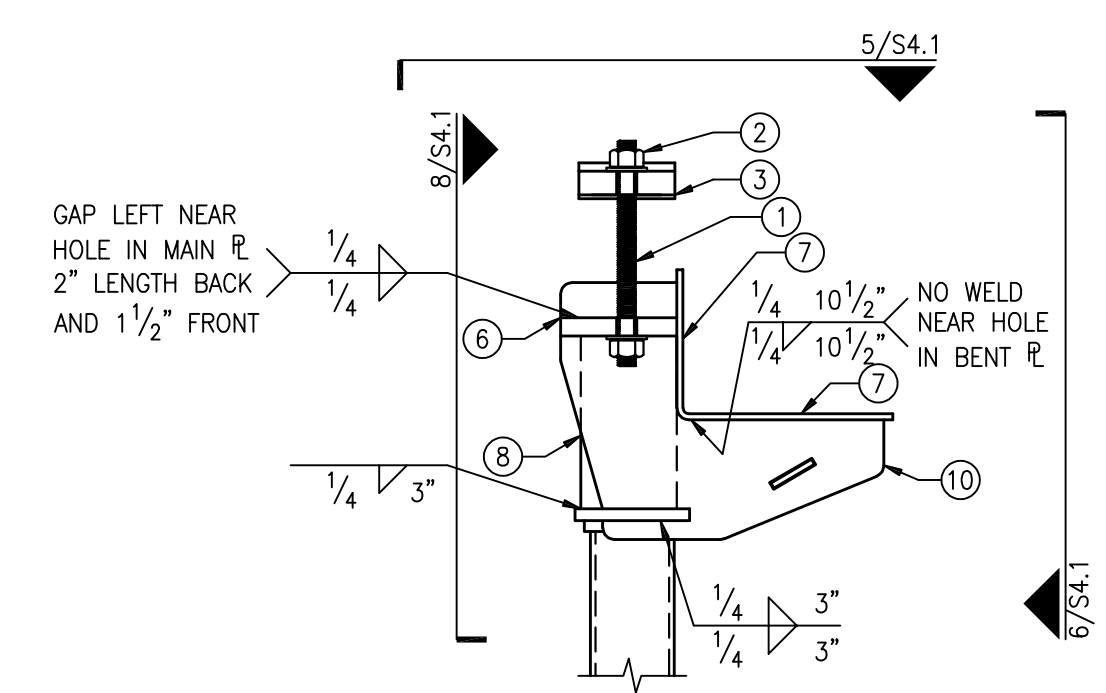
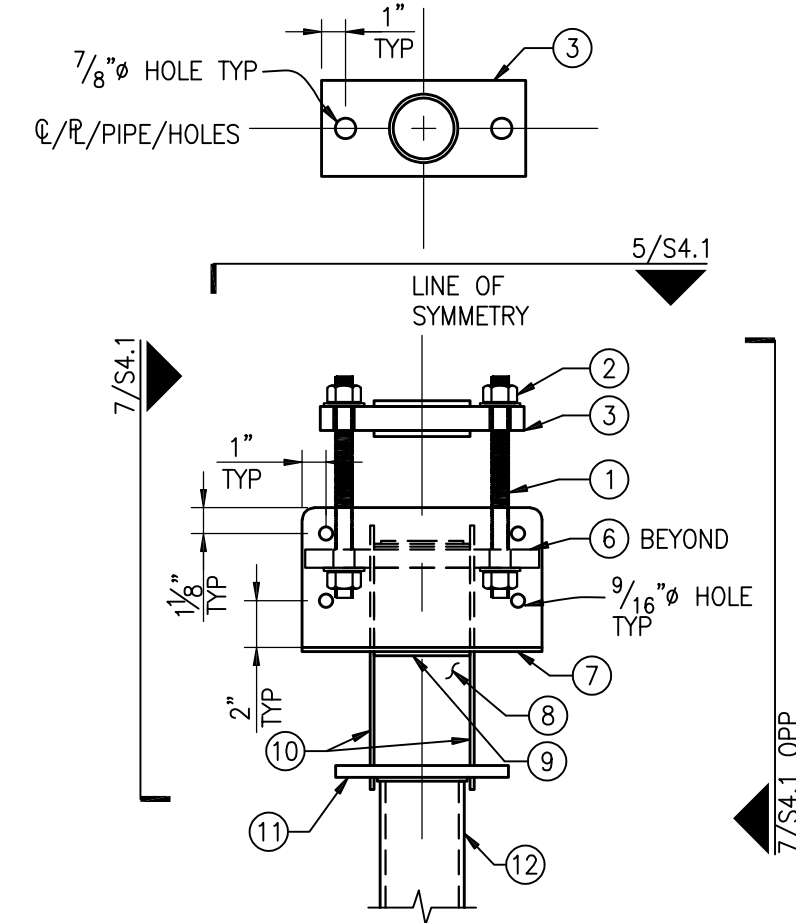
SAFEBASE-SABERTOOTH-LD FOUNDATION BRACKET MATERIALS LIST

ITEM #	PART DESCRIPTION	DIMENSIONS	GRADE
1	THREADED ROD	3/4"-10x12"	A193 GRADE B7
2	HEX NUTS	3/4"-10 HEX	A193 GRADE B7
3	CAP	R 1x8 1/2x4	A36
4	PUSH PIN	2.875"Øx0.165x3'-0"	A500 GRADE B/C
5	LOCKING WEDGE	R 0.120x2 1/4x0.219"	HARDENED STEEL
6	MAIN R	R 3/4x8 3/4x5"	A36
7	ANGLE R	R 0.171x10"	A572 GRADE 50
8	MAIN TUBE	4"Øx0.188x0'-10"	A500 GRADE B/C
9	STIFFENER	R 0.171x8 1/2x4 1/4"	A572 GRADE 50
10	EAR PLATES	R 0.171x10.8x13.7"	A572 GRADE 50
11	LOW R	R 1/2x7.2x5.3"	A36
12	REINFORCING SLEEVE	3 1/2"Øx0.220x3'-0"	A500 GARDE B/C
13	COUPLER	2 1/2"Øx0.188x6"	A500 GRADE B/C

NOTE:
 REF 5/S4.1 FOR MATERIALS LIST

SB-ST-LD BRACKET - FRONT

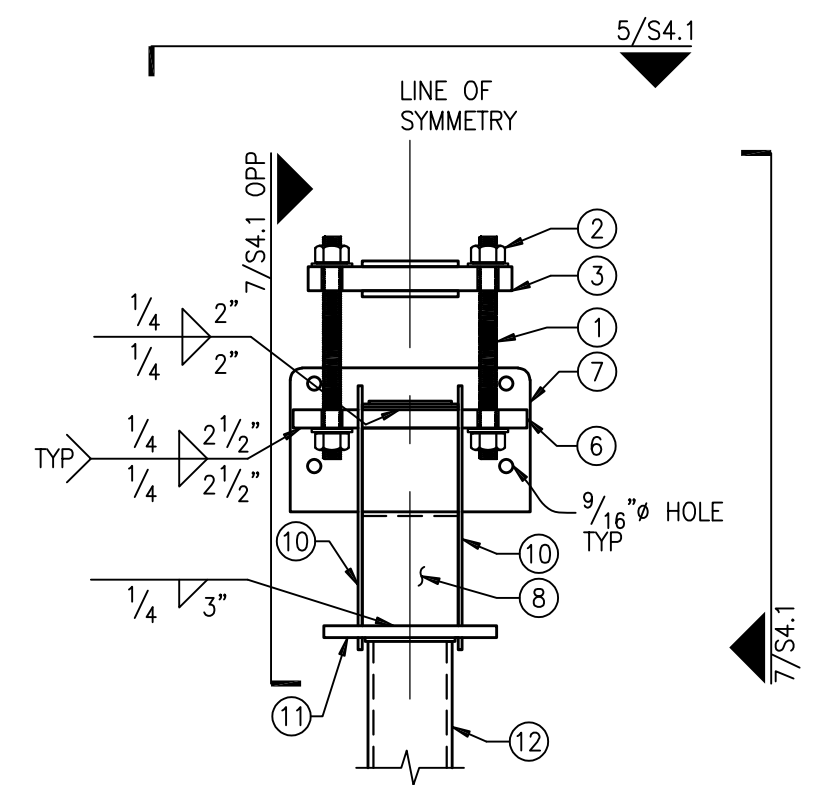
SCALE: 1/2" = 1'-0" 6



NOTE:
 REF 5/S4.1 FOR MATERIALS LIST

SB-ST-LD BRACKET - SIDE

SCALE: 1/2" = 1'-0" 7



NOTE:
 REF 5/S4.1 FOR MATERIALS LIST

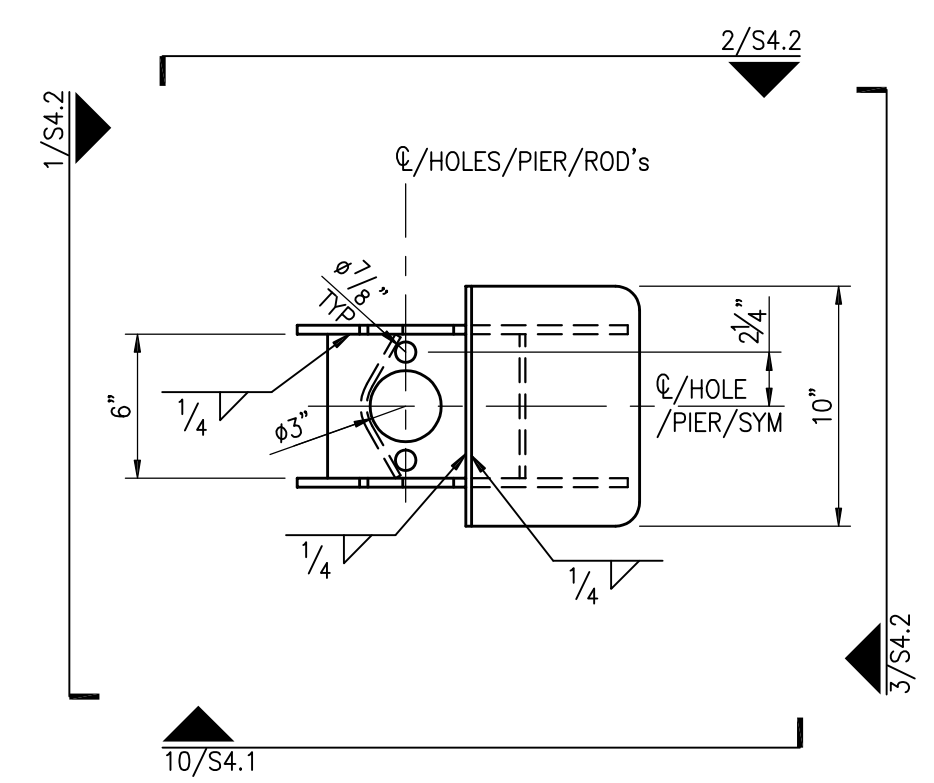
SB-ST-LD BRACKET - BACK

SCALE: 1/2" = 1'-0" 8

CAP R NOT SHOWN FOR CLARITY

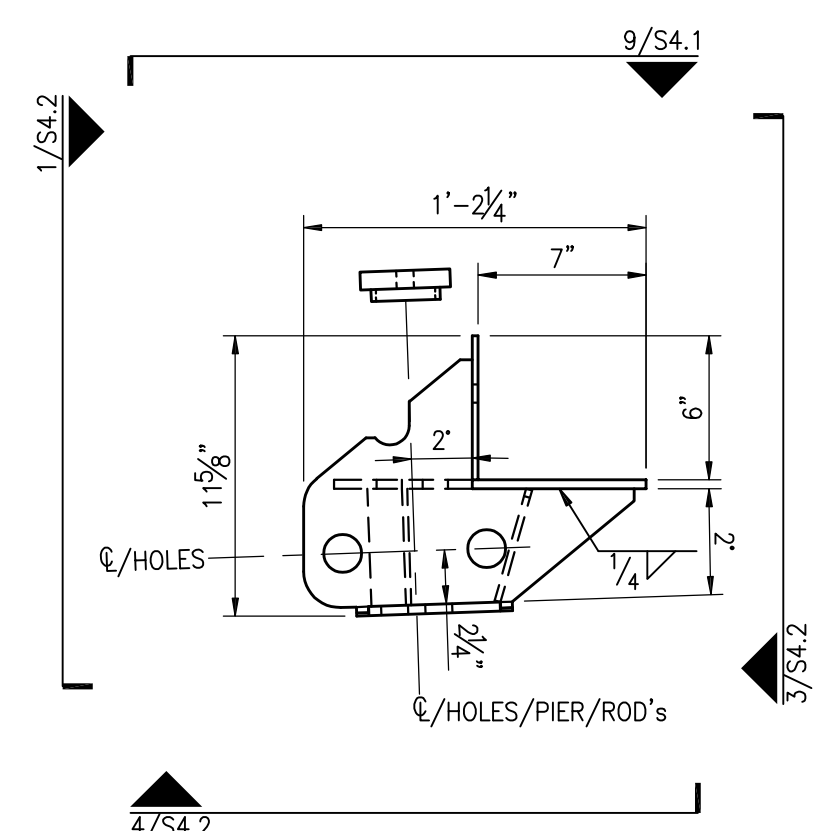
FS238B BRACKET - TOP

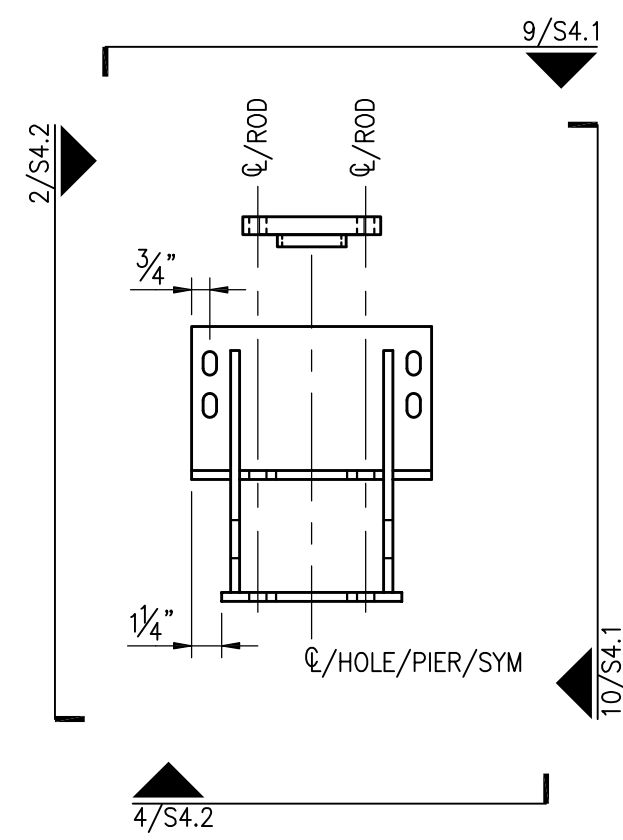
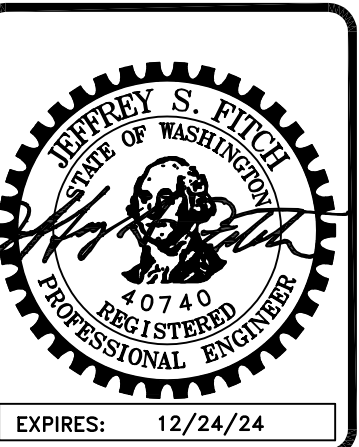
SCALE: 1/2" = 1'-0" 9



FS238B BRACKET - LEFT

SCALE: 1/2" = 1'-0" 10

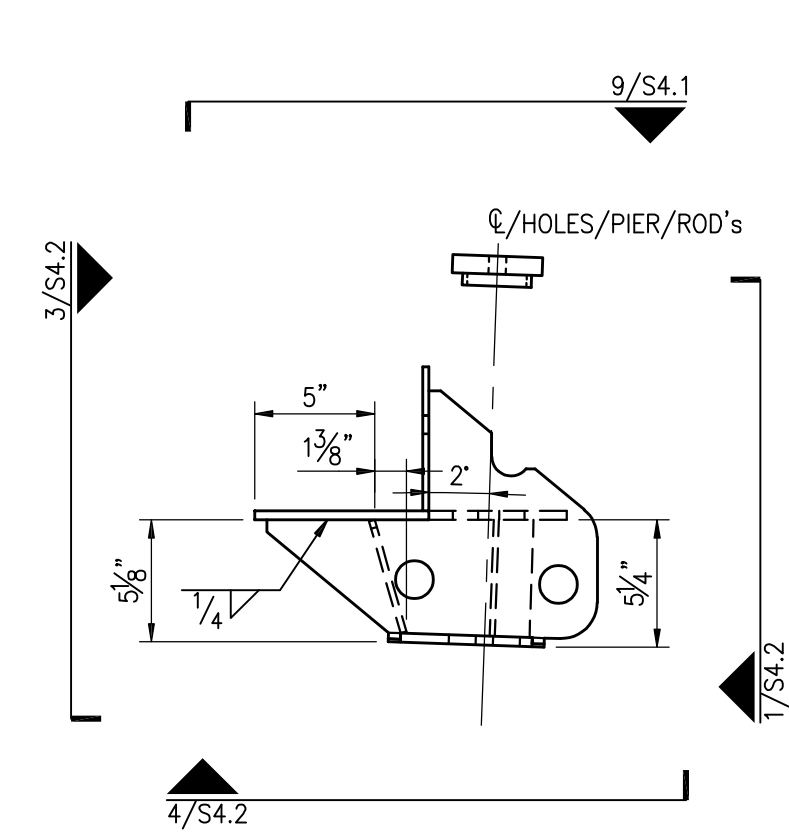




FS238B BRACKET - BACK

SCALE: 1 1/2"=1'-0"

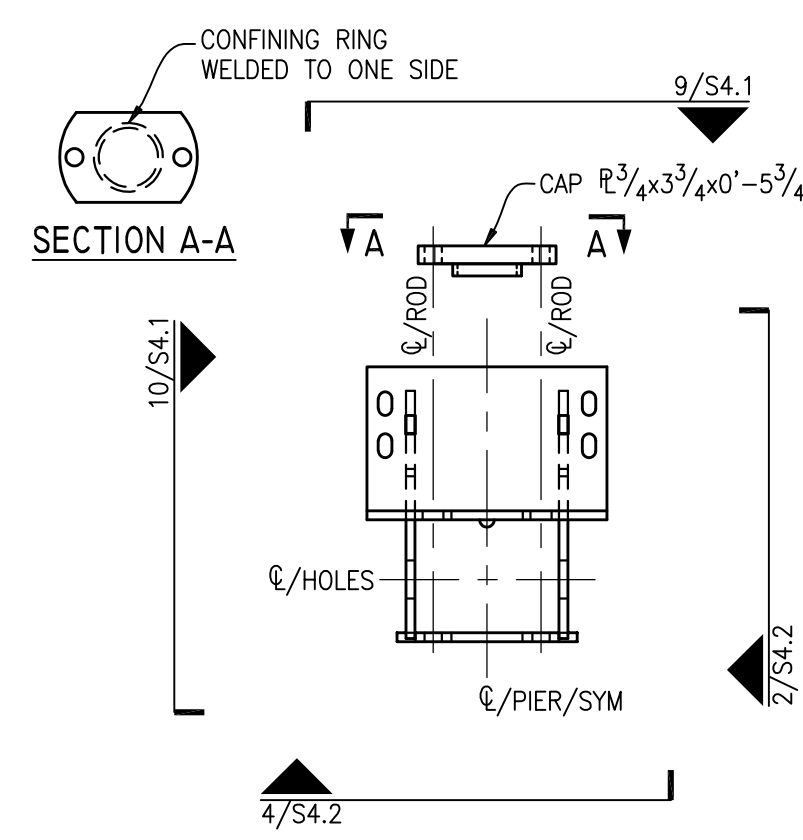
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FS238B BRACKET - RIGHT

SCALE: 1 1/2"=1'-0"

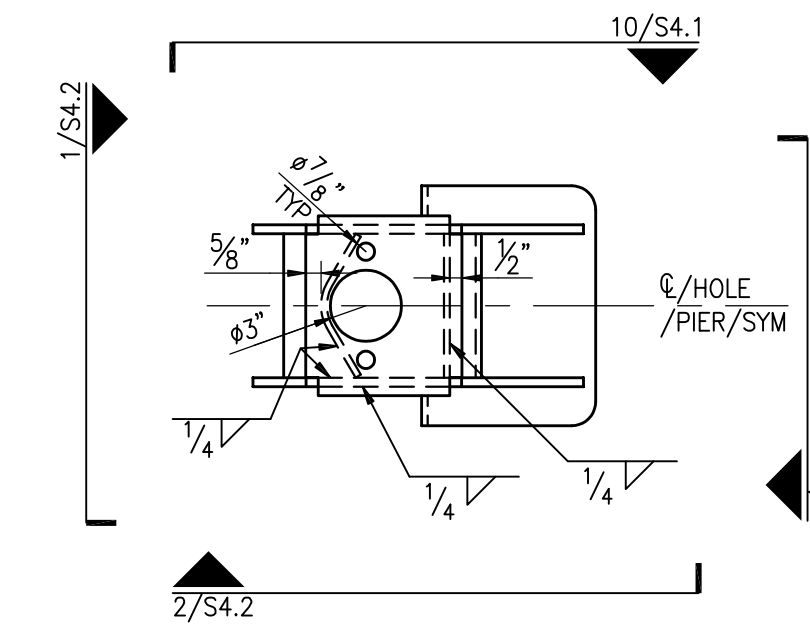
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FS238B BRACKET - FRONT

SCALE: 1 1/2"=1'-0"

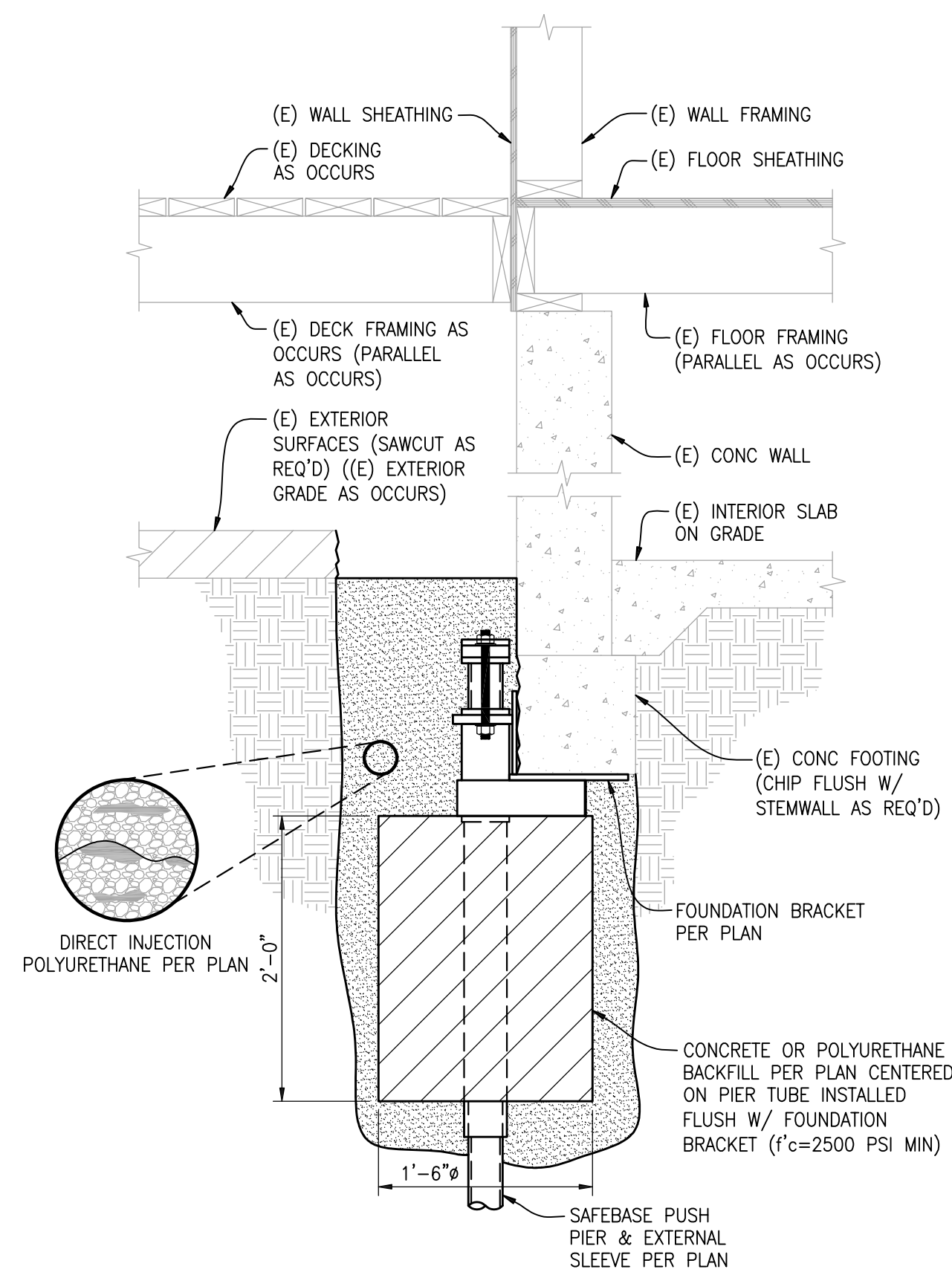
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FS238B BRACKET - BOTTOM

SCALE: 1 1/2"=1'-0"

4

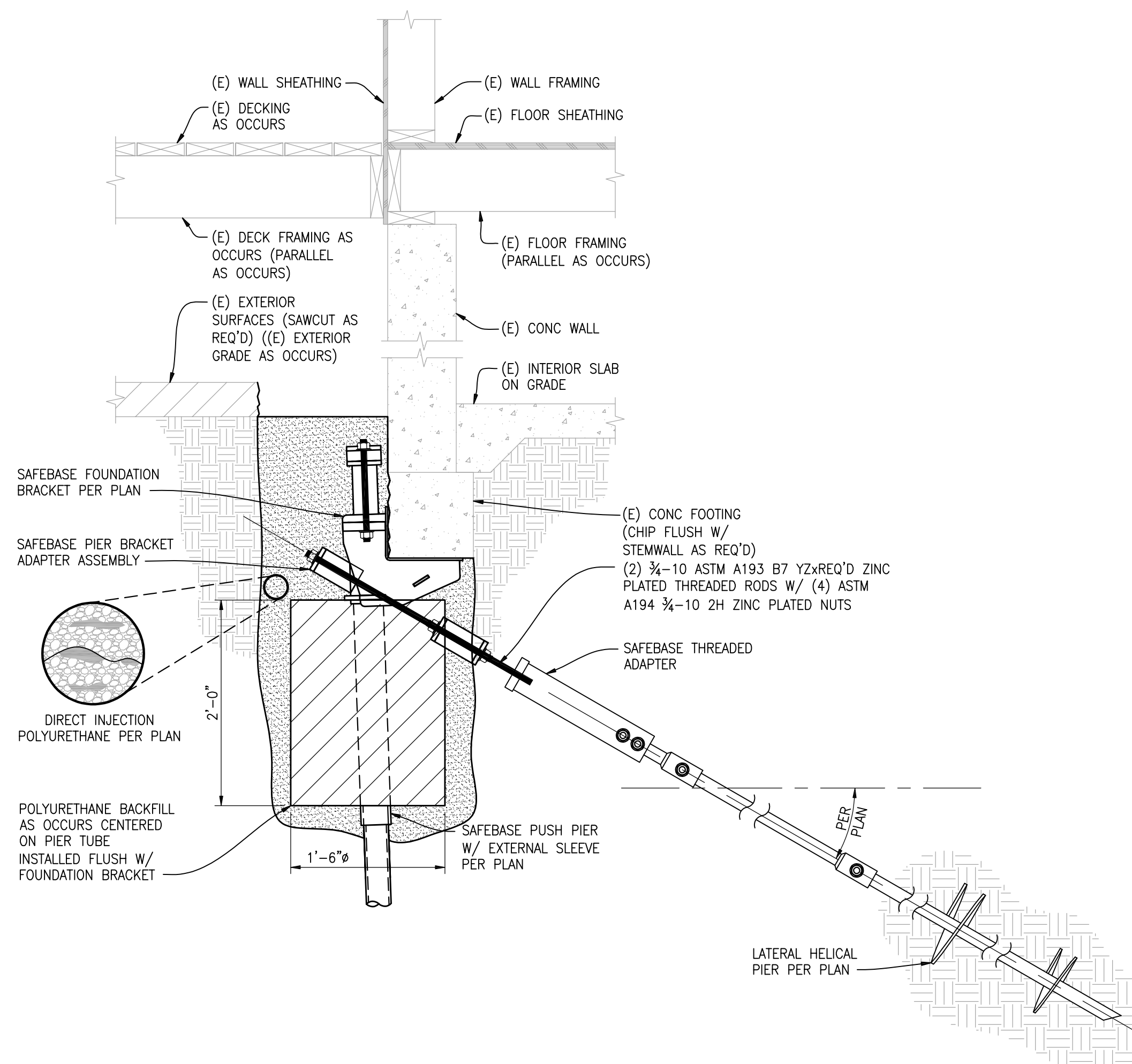


NOTE:
REF PLAN FOR LAYOUT & INSTALLATION REQ'S

(N) PUSH PIER TO (E) FOUNDATION DETAIL

SCALE: 1"=1'-0"

5

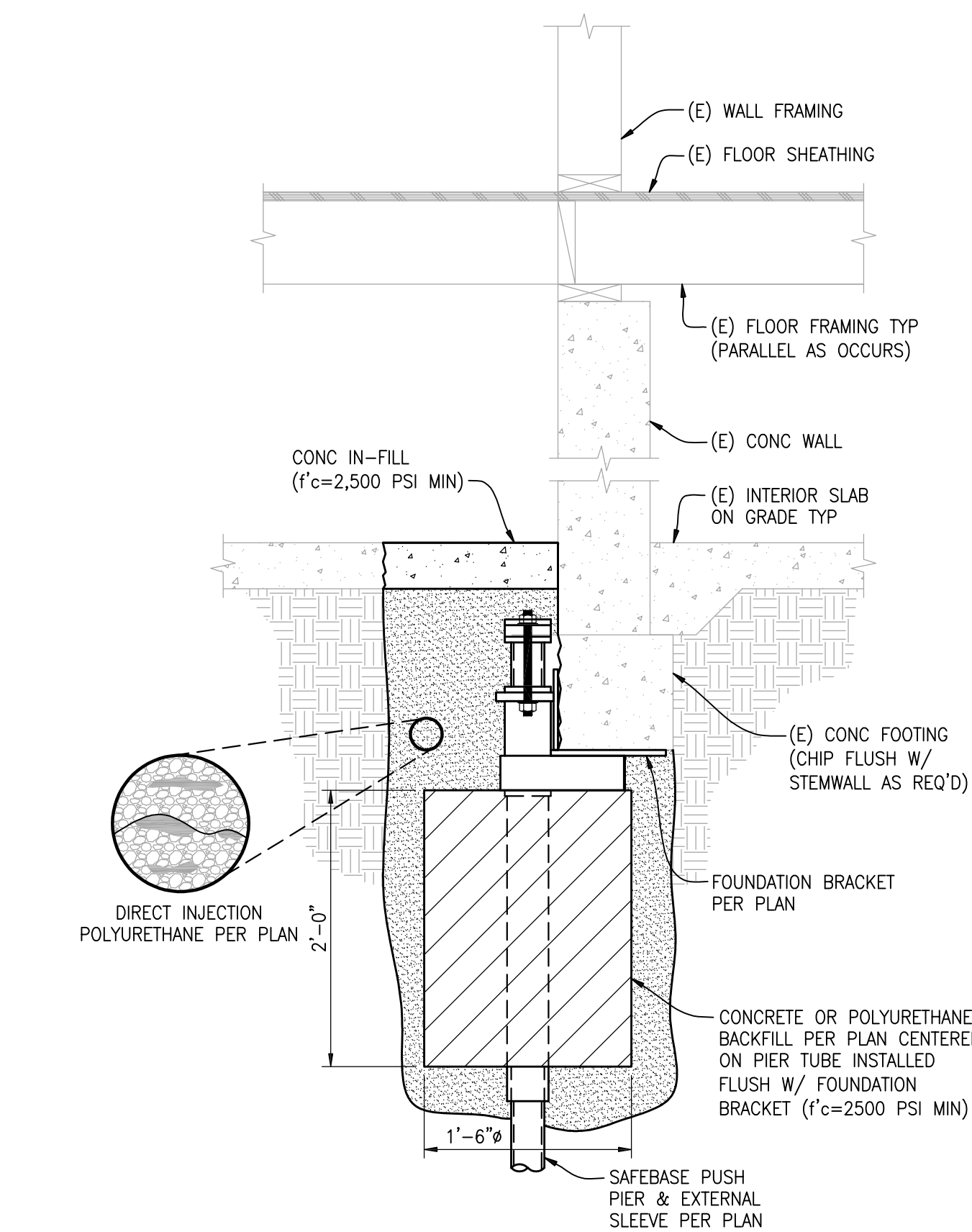


NOTES:
1. REF PLAN FOR LAYOUT & INSTALLATION REQ'S
2. WALL ANCHOR PER PLAN AS OCCURS NOT SHOWN FOR CLARITY

(N) PUSH PIER W/ HELICAL TIEBACK TO (E) FOUNDATION DETAIL

SCALE: 1"=1'-0"

6



NOTE:
REF PLAN FOR LAYOUT & INSTALLATION REQ'S

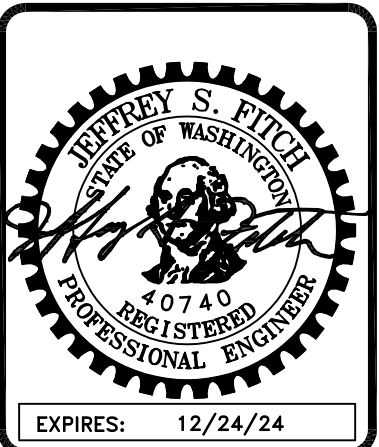
(N) PUSH PIER TO (E) FOUNDATION DETAIL

SCALE: 1"=1'-0"

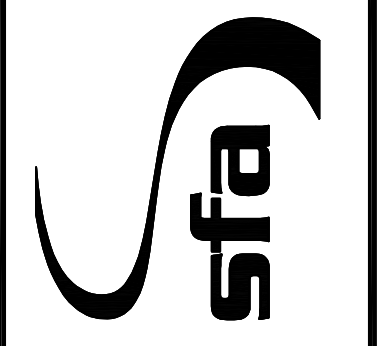
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REVISIONS	
△	09-05-23
△	11-02-23

PROJECT NO:	MFR23-021
BY:	JB
DATE:	08.16.2023



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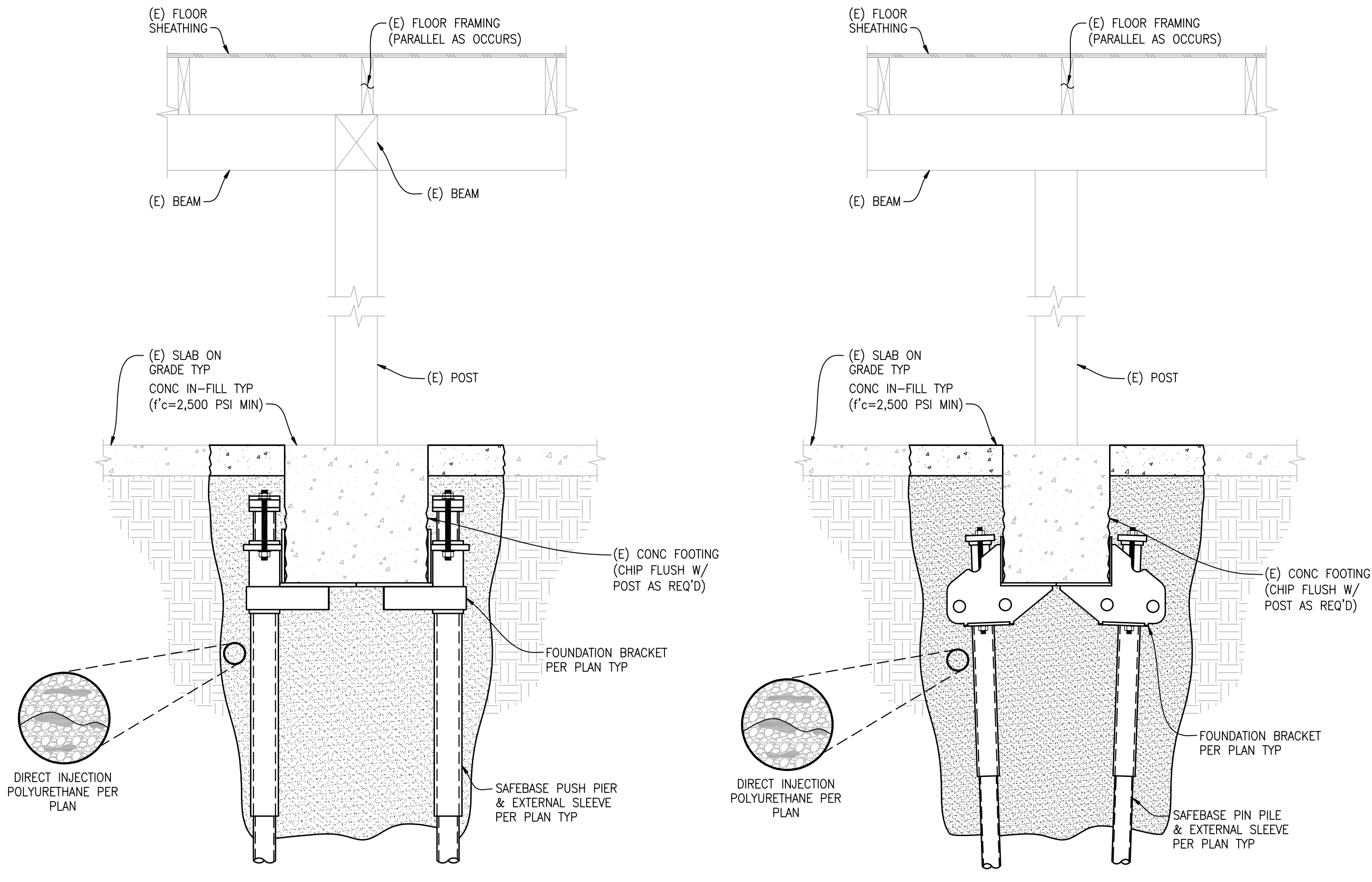
MATVEY FOUNDATION REPAIR, LLC
 JOHNSON RESIDENCE UNDERPINNING
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 MERCER ISLAND, WA 98040

DETAILS

REVISIONS	
1	09-05-23
2	11-02-23

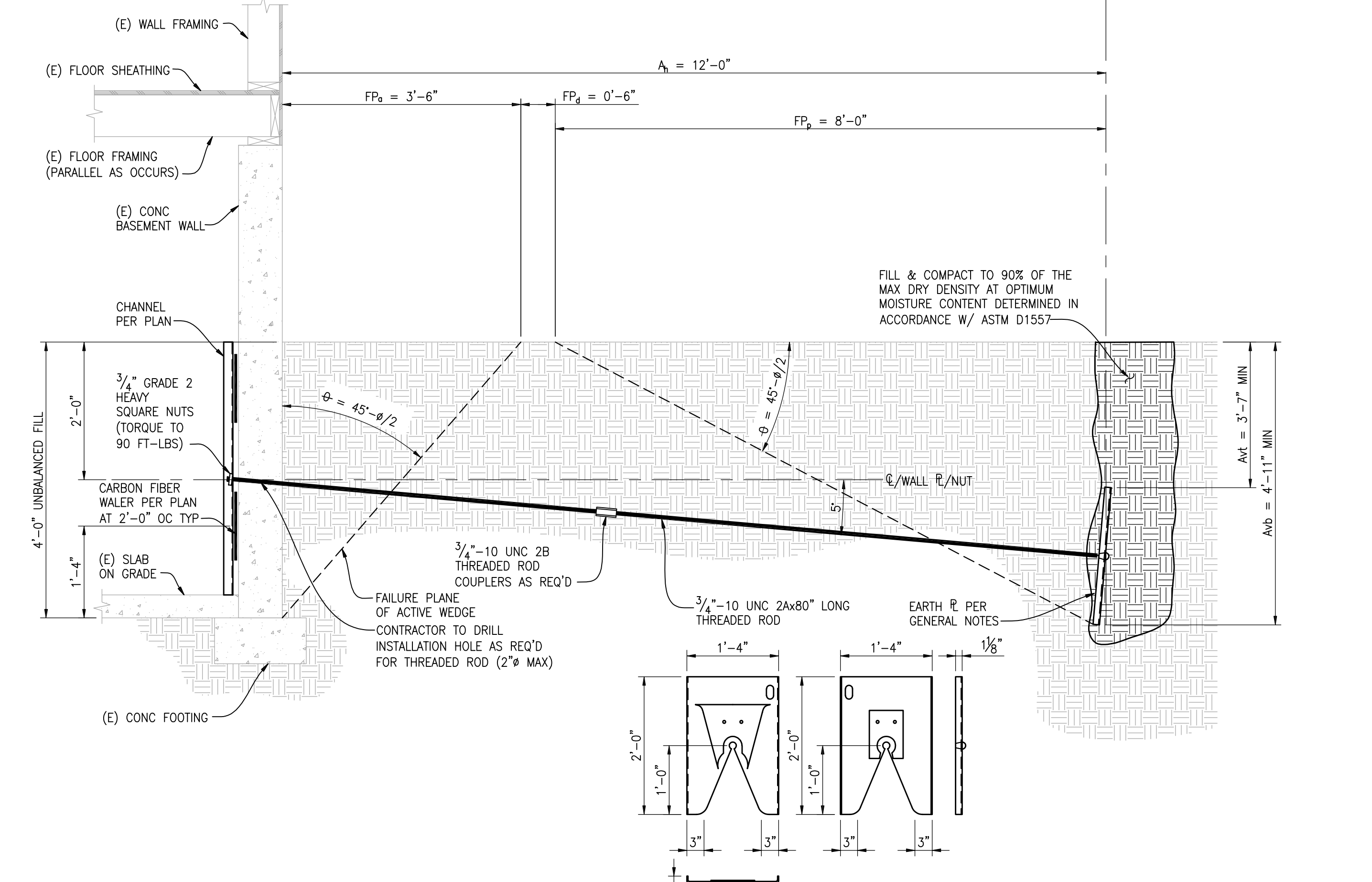
PROJECT NO:
MFR23-021
 BY:
JB
 DATE:
08.16.2023

SHEET NO:
S4.3

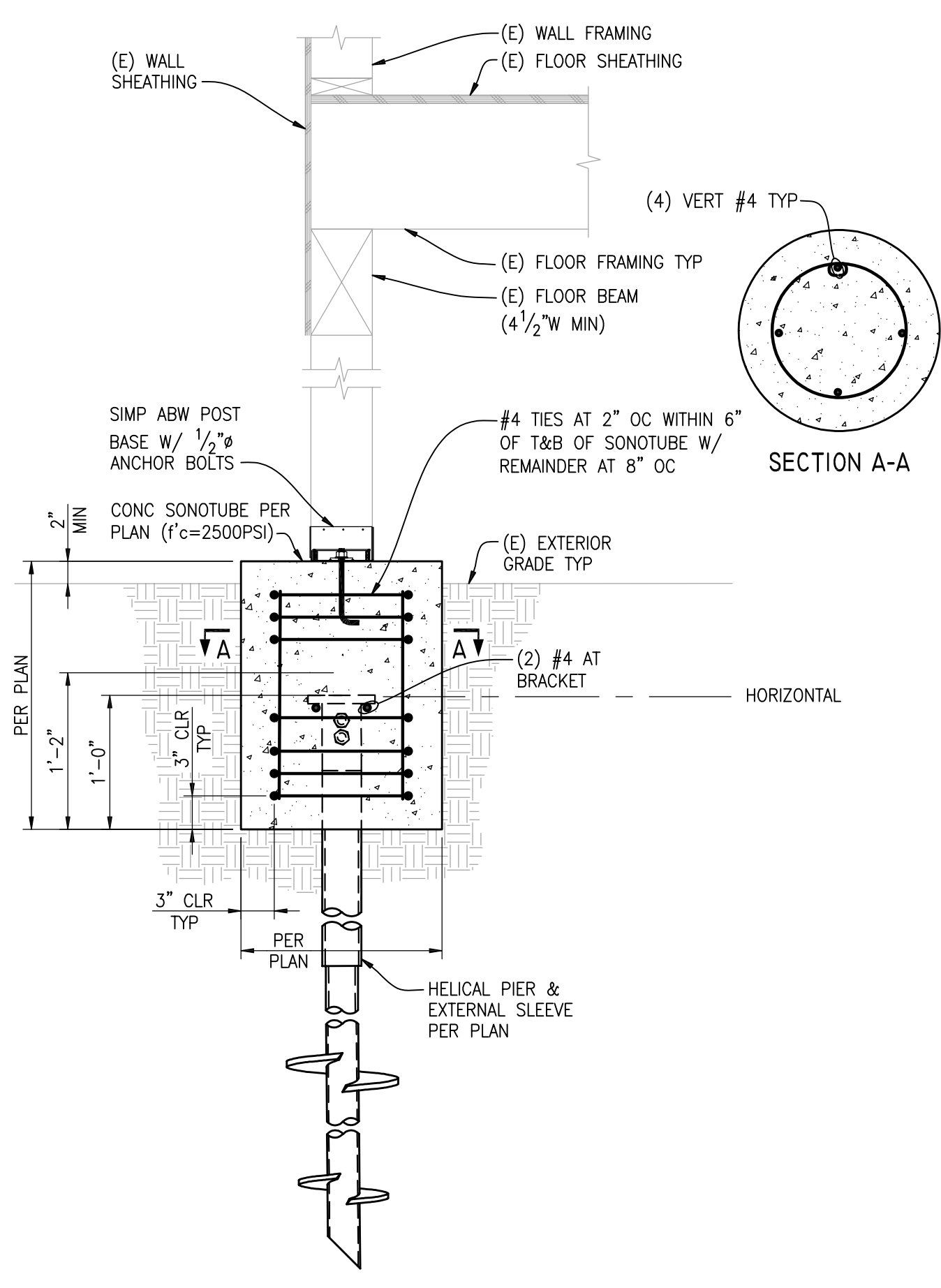


NOTE:
REF PLAN FOR LAYOUT & INSTALLATION REQ'S
(N) PUSH PIER TO (E) FOUNDATION DETAIL
 SCALE: 1"=1'-0" **1**

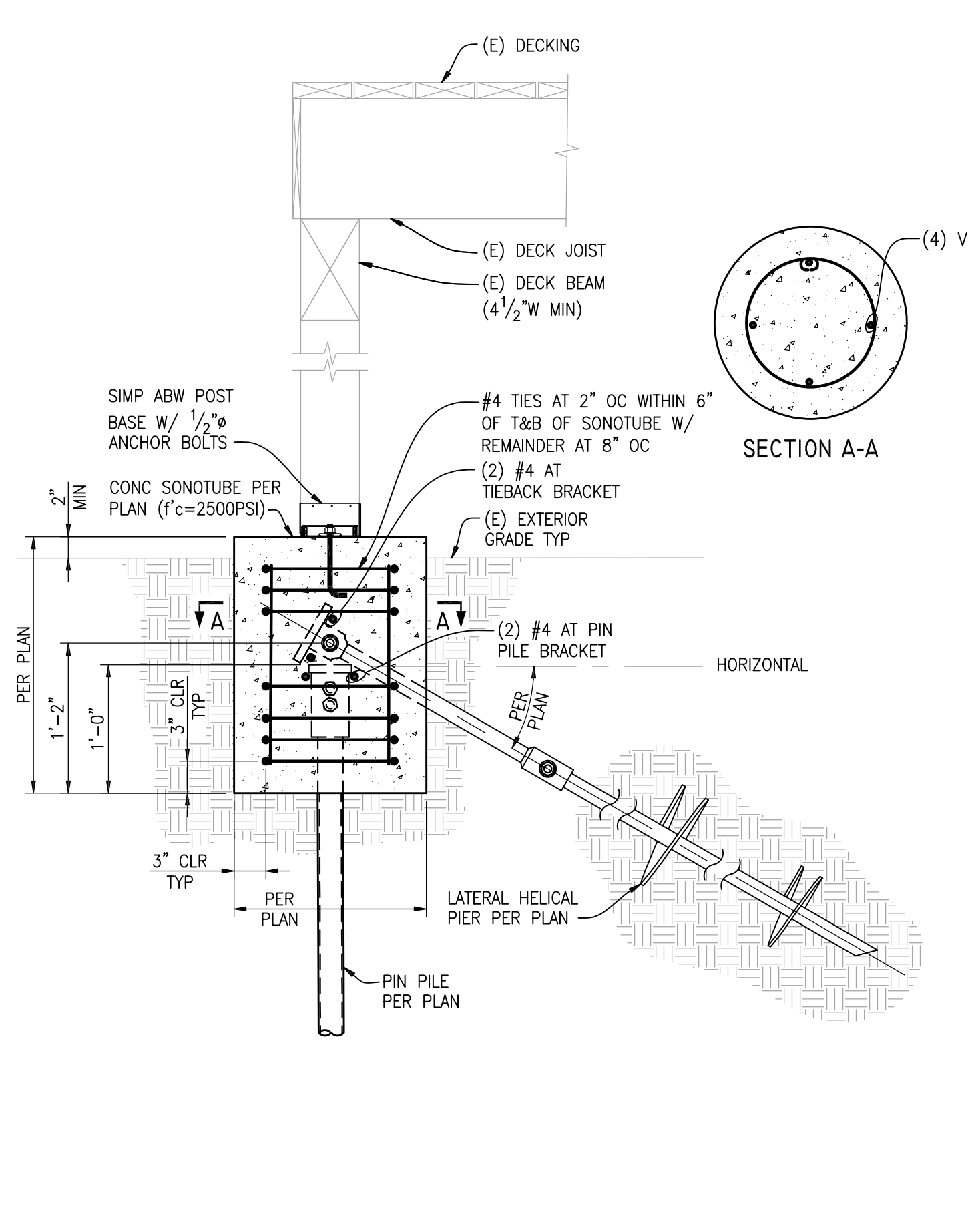
NOTE:
REF PLAN FOR LAYOUT & INSTALLATION REQ'S
(N) PIN PILE TO (E) FOUNDATION DETAIL
 SCALE: 1"=1'-0" **2**



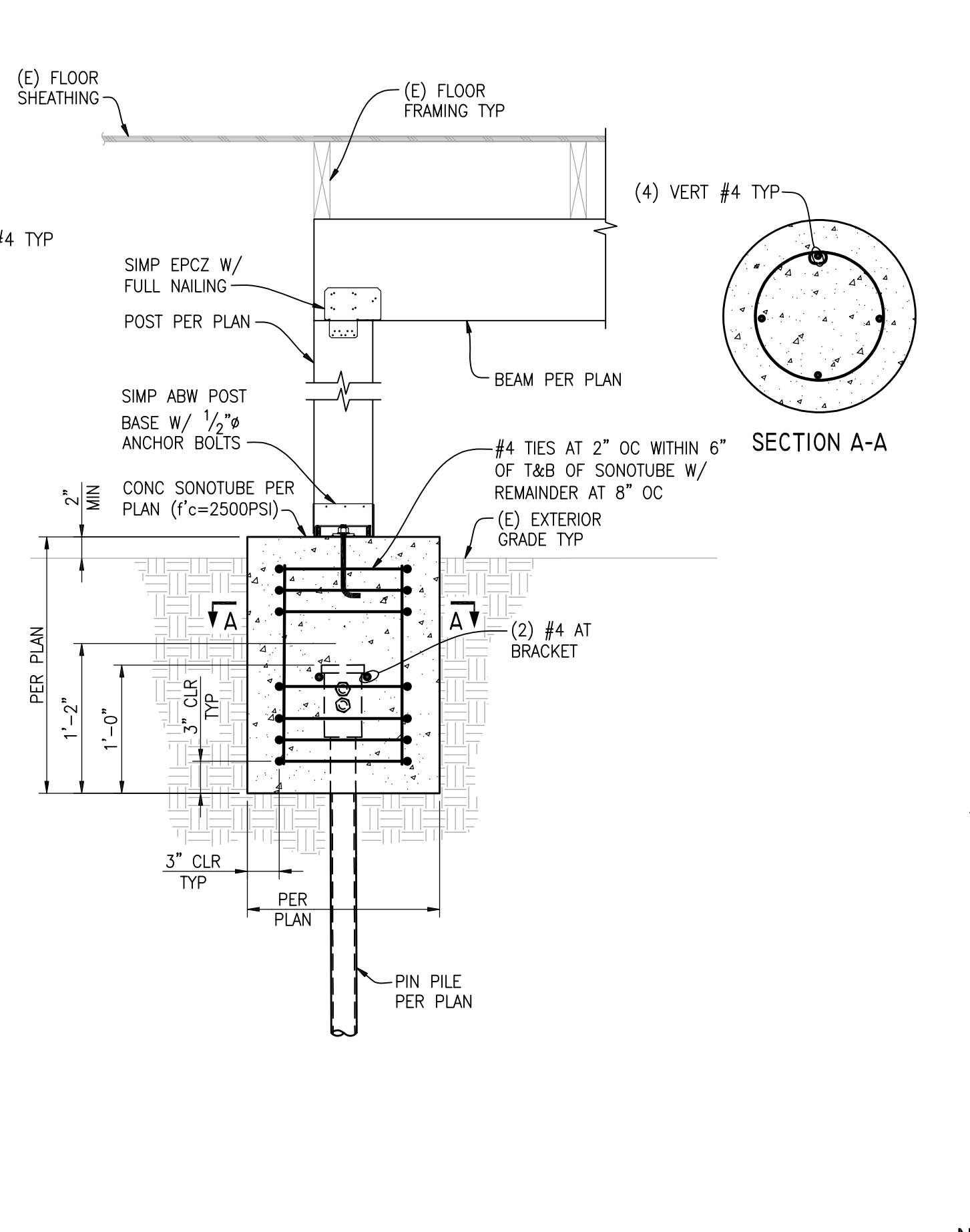
NOTES:
 1. REF PLAN FOR LAYOUT & INSTALLATION REQ'S
 2. ENTIRE ANCHOR ASSEMBLY IS HD GALV
 3. PUSH PIER AND HELICAL TIEBACK PER PLAN NOT SHOWN FOR CLARITY
(E) CONC BASEMENT WALL/(N) WALL ANCHOR SECTION
 SCALE: 3/4"=1'-0" **3**



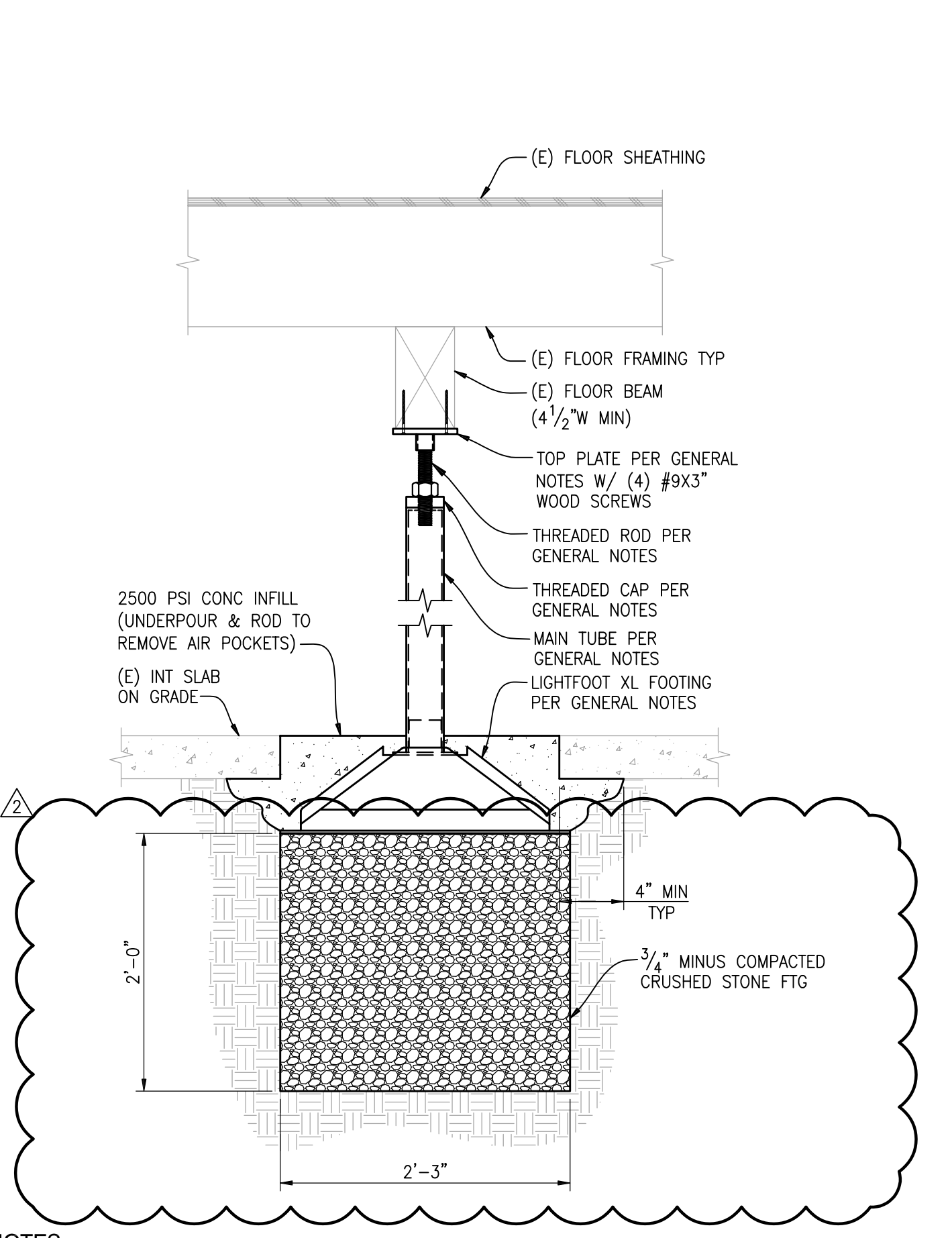
NOTE:
REF PLAN FOR LAYOUT & INSTALLATION REQ'S
(E) FLOOR TO (E) POST/HELICAL PIER/FTG
 SCALE: 1"=1'-0" **4**



NOTE:
REF PLAN FOR LAYOUT & INSTALLATION REQ'S
(E) FLOOR TO (N) POST/PIN PILE/TIEBACK/FTG
 SCALE: 1"=1'-0" **5**



NOTE:
REF PLAN FOR LAYOUT & INSTALLATION REQ'S
(E) FLOOR TO (E) POST/PIN PILE/FTG
 SCALE: 1"=1'-0" **6**



NOTES:
 1. REF PLAN FOR LAYOUT & INSTALLATION REQ'S
 2. INSTALL PER MFR RECOMMENDATIONS
LF STABILIZER IN BASEMENT
 SCALE: 1"=1'-0" **7**