

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):

- 2015 INTERNATIONAL BUILDING CODE (IBC)
- 2015 INTERNATIONAL RESIDENTIAL CODE (IRC)
- 2018 NORTH CAROLINA BUILDING CODE (NCBC)
- 2018 NORTH CAROLINA RESIDENTIAL CODE (NCRC)

DEAD LOADS:

ROOF DEAD LOAD	15 PSF
FLOOR DEAD LOAD	15 PSF
WOOD WALL DEAD LOAD	12 PSF
INTERIOR WOOD WALL DEAD LOAD	9 PSF
STRUCTURAL BRICK DEAD LOAD	78 PSF
CONCRETE	150 PCF

LIVE LOADS:

ROOF LIVE LOAD	20 PSF
FLOOR LIVE LOAD (RESIDENTIAL)	40 PSF

FSI 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, $F_y = 50$ KSI / MIN TENSILE STRESS, $F_u = 55$ KSI)
- EXTERNAL SLEEVE – ASTM A500 GRADE B OR C
(MIN YIELD STRESS, $F_y = 50$ KSI / MIN TENSILE STRESS, $F_u = 62$ KSI)
- PIER CAP – ASTM A529 GRADE 50
(MIN YIELD STRESS, $F_y = 50$ KSI / MIN TENSILE STRESS, $F_u = 65$ 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 AC358.

INSTALLATION:

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

HELICAL PIER INSTALLATION TORQUE (FT-LB):
 $[DESIGN WORKING LOAD] \times [FS = 2] / [EMPIRICAL TORQUE CORRELATION FACTOR, KT = 9 FT^{-1}]$

MINIMUM INSTALLATION DEPTH IS 10'-0"± UNO.

FSI HELICAL PIERS (CONT.)

NOTIFY ENGINEER IF MINIMUM INSTALLATION CONDITIONS CANNOT BE ACHIEVED.

EXISTING UTILITY LINES:

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

HELICAL PIER SPLICING:

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

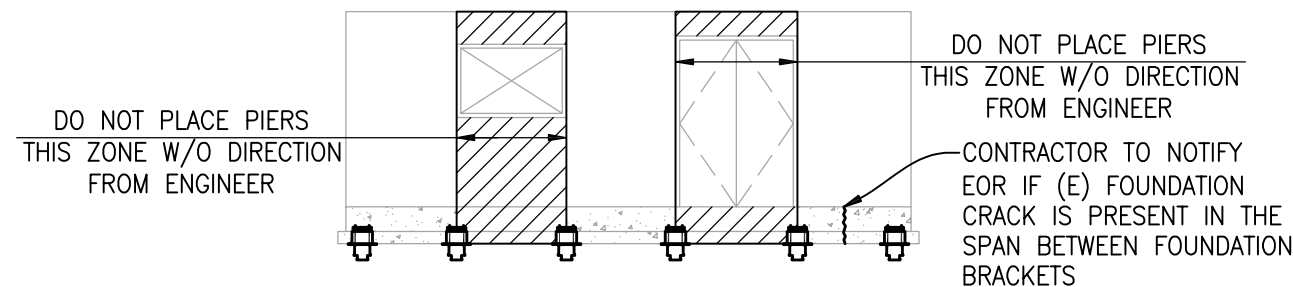
TESTING & INSPECTION

SPECIAL INSPECTION & TESTING PER REVIEWING JURISDICTION.



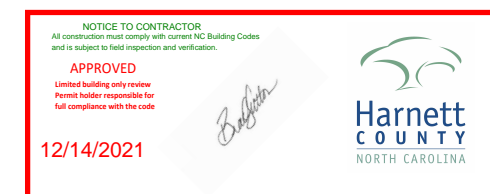
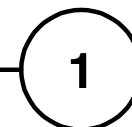
EXPIRES: 12/31/21

DATE SIGNED: 11/30/21



NO PIER PLACEMENT ZONE

SCALE: NTS



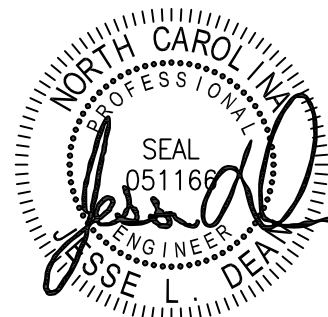
LUETTGER RESIDENCE UNDERPINNING
 2835 BARBECUE CHURCH RD
 SANFORD, NC 27332

GENERAL NOTES

REVISIONS	

PROJECT NO:
SE21-349
 DESIGNED BY:
ST
 DRAWN BY:
ST
 CHECKED BY:
JLD
 DATE:
11-30-2021

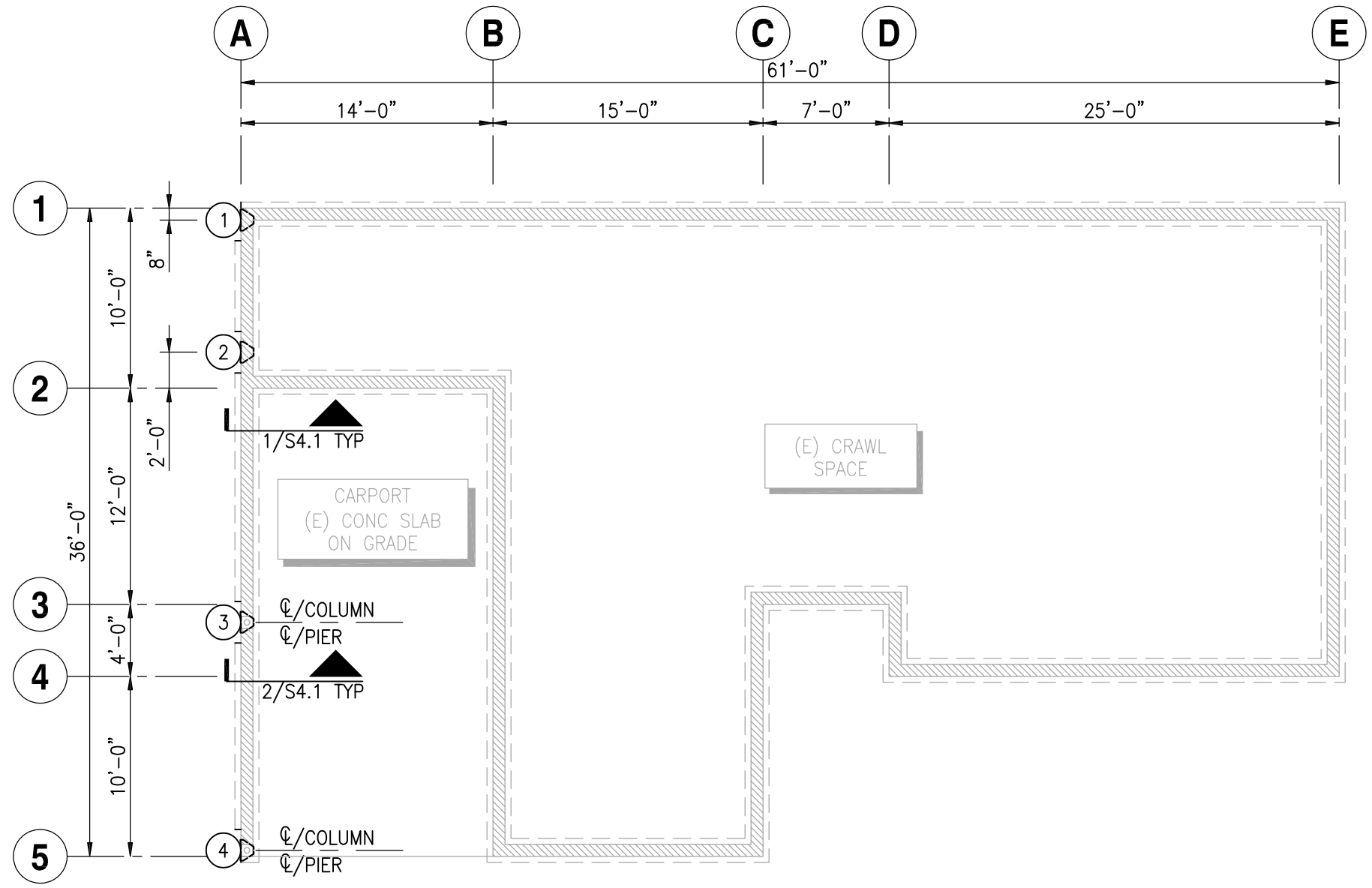
SHEET NO:
S1.1



EXPIRES: 12/31/21
 DATE SIGNED: 11/30/21

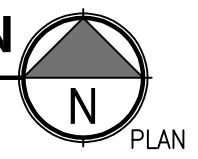


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(E) FOUNDATION/(N) PIER LAYOUT PLAN

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



(E) FOUNDATION/(N) PIER LAYOUT PLAN NOTES:

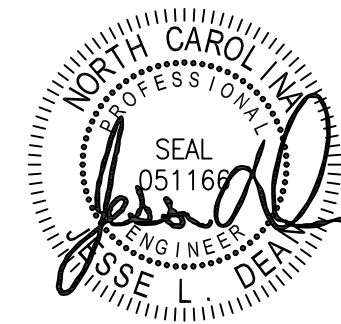
1. REFERENCE S1.1 FOR GENERAL REQUIREMENTS
2. CONTRACTOR TO NOTIFY ENGINEER OF RECORD OF DISCREPANCIES BETWEEN FIELD CONDITIONS & THOSE SHOWN IN THESE DOCUMENTS PRIOR TO WORK TYP
3.  INDICATES (E) BRICK WALL ON (E) CONC FOOTING (CONTRACTOR TO VERIFY 8"Wx4'-6"H (E) BRICK WALL AND 1'-6"Wx10"DP (E) CONC FOOTING MIN TYP (NOTIFY ENGINEER OF RECORD IF FIELD CONDITIONS DIFFER IN THE AREA OF WORK))
4.  SECTION CUT - DETAIL NUMBER/SHEET NUMBER
5.  INDICATES LOCATION OF FSI 288 HELICAL PIER W/ FSI FS288BL FOUNDATION BRACKET ((4) TOTAL)
HELICAL PIER INSTALLATION NOTES:
 - MAX LOAD TO ANCHOR = 10,157 LBS
 - 2.875"Ø PIPE PILE W/ 0.276" THICK WALL
 - 3.5"Øx24" LONG PIPE SLEEVE W/ 0.216" WALL
 - 0.375" THICK 10/12" HELIX W/ 1/4" FILLET WELDS EACH SIDE OF HELIX TO PIER
 - MINIMUM 10'-0" INSTALLATION DEPTH & 2,300 FT-LB INSTALLATION TORQUE
6. PIER SPACING SHALL BE AS INDICATED ON PLAN
7. CONTRACTOR TO NOTIFY ENGINEER OF RECORD IF (E) FOUNDATION CRACK IS PRESENT IN THE SPAN BETWEEN FOUNDATION BRACKETS
8. FILL ALL VISIBLE CRACKS IN THE FOUNDATION WALL WITH HYDRAULIC CEMENT OR EPOXY
9. ALL CONSTRUCTION MATERIALS IN THESE DOCUMENTS ARE (N) UNO

(E) FOUNDATION/(N) PIER LAYOUT PLAN

REVISIONS	

PROJECT NO:
SE21-349
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ST
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ST
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JLD
 DATE:
11-30-2021

SHEET NO:
S2.1



EXPIRES: 12/31/21
DATE SIGNED: 11/30/21



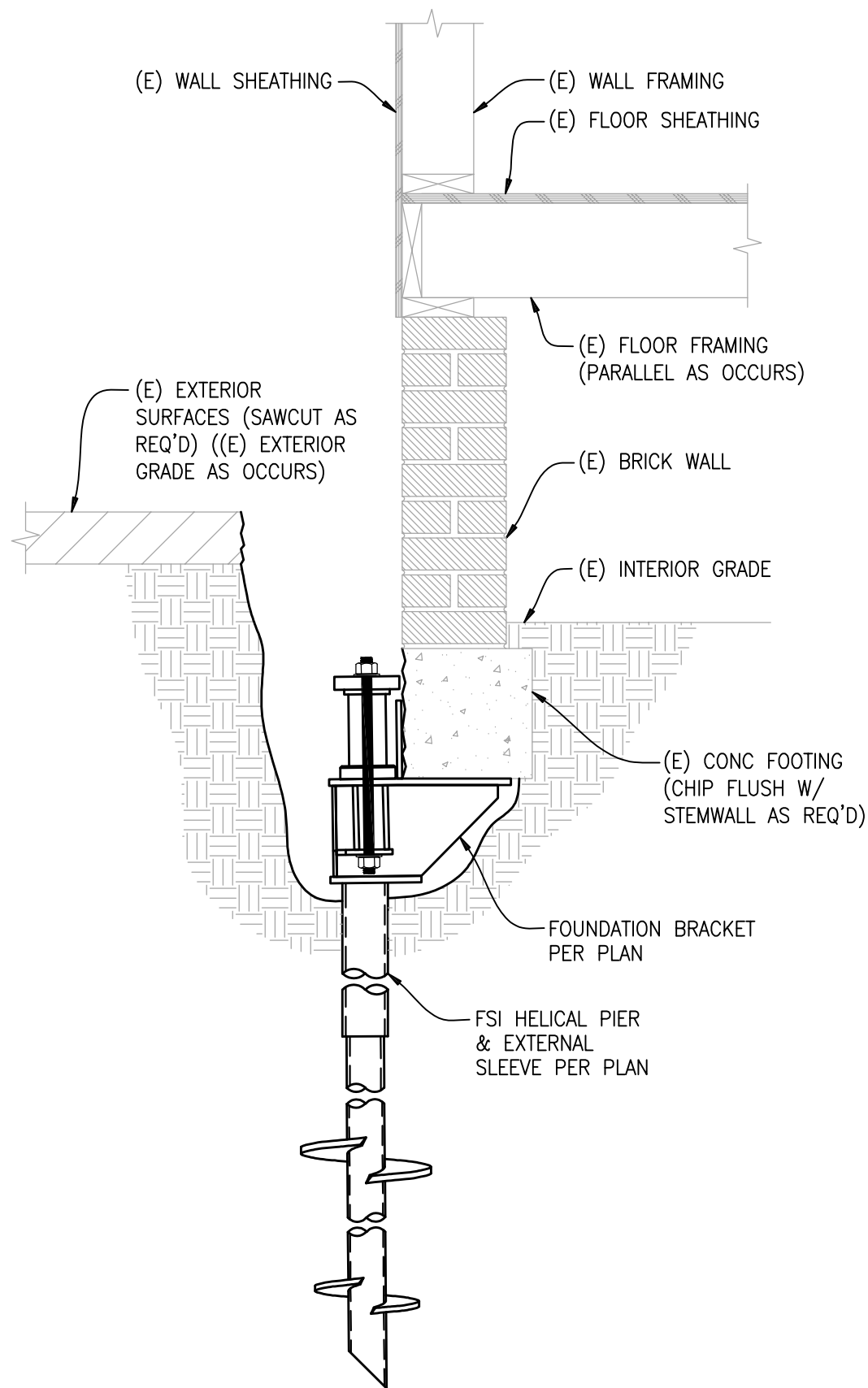
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PIER DETAILS

REVISIONS

PROJECT NO:
SE21-349
DESIGNED BY:
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DRAWN BY:
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11-30-2021

SHEET NO:
S4.1

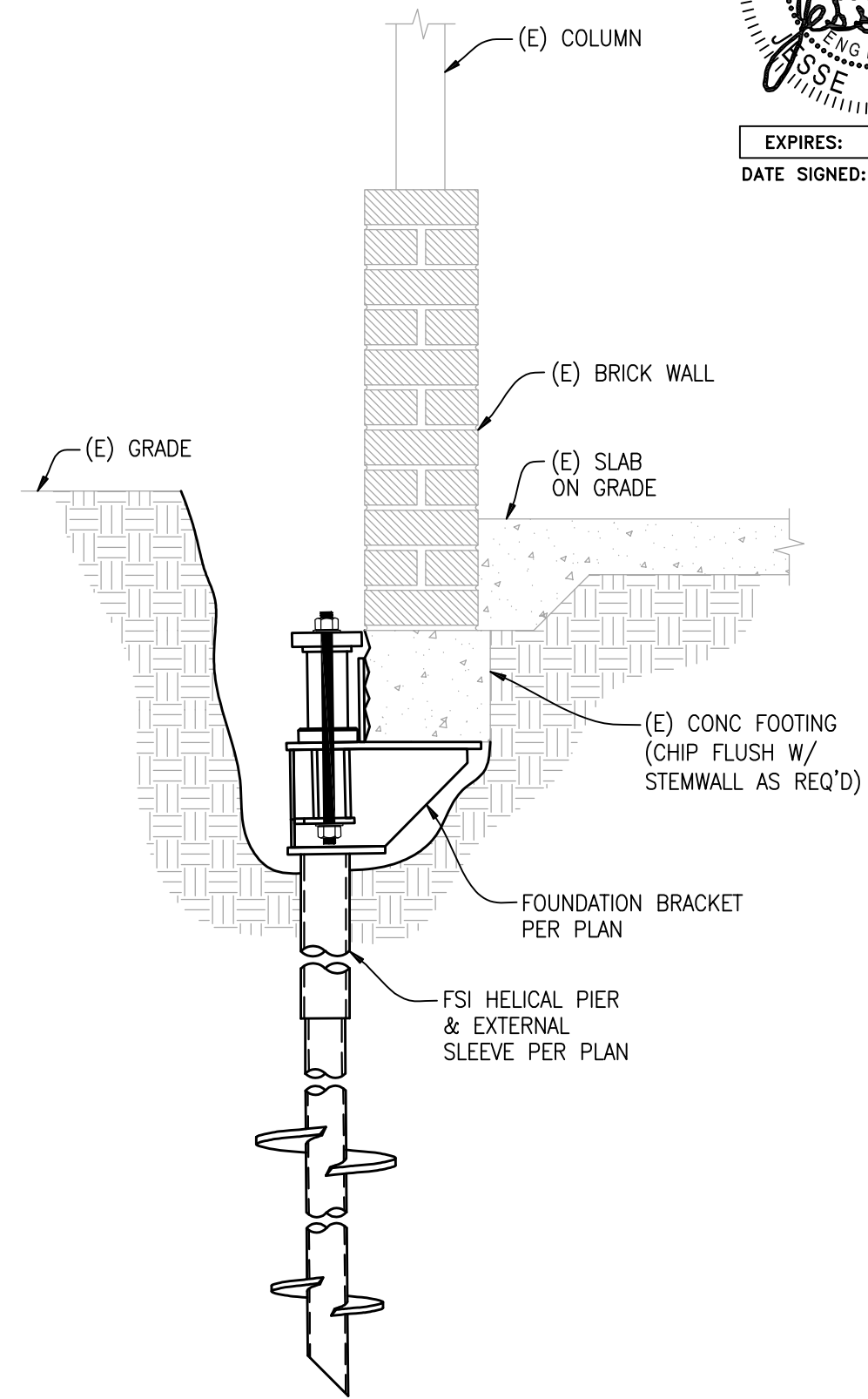


NOTE:
REF PLAN FOR LAYOUT & INSTALLATION REQ'S

(N) HELICAL PIER TO (E) FOUNDATION DETAIL

SCALE: 1"=1'-0"

1



NOTE:
REF PLAN FOR LAYOUT & INSTALLATION REQ'S

(N) HELICAL PIER TO (E) PORCH FDN DETAIL

SCALE: 1"=1'-0"

2