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
BRICK WALL DEAD LOAD	78 PSF
CONCRETE DEAD LOAD	150 PSF

LIVE LOADS:

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

FSI PUSH PIERS

MATERIALS:
BRACKET PLATES – ASTM A36
(MIN YIELD STRESS, Fy = 36 KSI / MIN TENSILE STRESS, Fu = 58 KSI)
PIER TUBES – ASTM A500 GRADE B OR C
(MIN YIELD STRESS, Fy = 50 KSI / MIN TENSILE STRESS, Fu = 55 KSI)
EXTERNAL SLEEVE – ASTM A500 GRADE B
(MIN YIELD STRESS, Fy = 50 KSI / MIN TENSILE STRESS, Fu = 62 KSI)
PIER CAP – ASTM A529 GRADE 50
(MIN YIELD STRESS, Fy = 50 KSI / MIN TENSILE STRESS, Fu = 65 KSI)
COIL ROD – ASTM A193 GRADE B7
(MIN YIELD STRESS, Fy = 105 KSI / MIN TENSILE STRESS, Fu = 125 KSI)
STEEL ANGLE SHAPES – ASTM A36
(MIN YIELD STRESS, Fy = 36 KSI / MIN TENSILE STRESS, Fu = 58 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.

1

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].

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

NOTIFY ENGINEER IF MINIMUM INSTALLATION CONDITIONS CANNOT BE ACHIEVED.

FSI PUSH PIERS

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

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

TESTING & INSPECTION

SPECIAL INSPECTION & TESTING PER REVIEWING JURISDICTION.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 051166 JESSE L. DEA

EXPIRES: 12/31/22
DATE SIGNED: 10/31/22

FSI SMARTJACK SYSTEM INFO

PART	DESCRIPTION	COMMENTS	MIN YIELD STRESS, F_y	MIN TENSILE STRESS, F_u
SJQ350T	ASTM A500 GRADE C HD GALV, PER ASTM 123, HSS 3 1/2x3 1/2x0.095"x'L' SQUARE TUBE		50 KSI	62 KSI
SJQ125ATR	ASTM A108 GRADE 1018 1 1/4"Øx0'-10"L THREADED ROD W/ WELDED HEAVY HEX NUT		54 KSI	64 KSI
SJQ350TP-A	ASTM A36 PL3/8x4 1/2x0'-4 1/2" ASTM A53 GRADE B 1 3/4"Øx1/4"x1 3/8"L CONFINING RING	WOOD BEAM CONDITION	36 KSI 35 KSI	58 KSI 60 KSI
SJQ350TI	ASTM A36 BENT PL0.120" ASTM A572 GRADE 50 PL3/4x3.63x0'-3.63" W/ 1 1/4"Ø THREAD TAP		36 KSI 50 KSI	58 KSI 65 KSI
SJ288T	ASTM A500 GRADE C 2 7/8"Øx0.165x'L' TRIPLE-COATED IN-LINE GALVANIZED TUBE		50 KSI	55 KSI
S4x7.7	ASTM A992 STEEL S SHAPE BEAM (L=120" & 144" – FIELD CUT TO LENGTH)	STEEL BEAM CONDITION	50 KSI	65 KSI
SJ288TBBS4 SJTBTS4	ASTM A36 PL3/8x4 1/2x0'-5" BOTT BEAM SPLICE BRACKET (AT BEAM SPLICE LOCATIONS) ASTM A36 PL3/8x4 1/2x0'-5" TOP BEAM SPLICE BRACKET W/ (4) 1/2"Øx5 1/2" BOLTS W/ NUTS (ASTM A307 MIN) & THREADED ROD W/ NUTS ASTM A53 GRADE B 1 1/2"Øx1/4x1.36"L CONFINING RING (AT BEAM SPLICE & END LOCATIONS)	STEEL BEAM CONDITION	36 KSI 36 KSI 36 KSI 36 KSI MIN	58 KSI 58 KSI 60 KSI 60 KSI MIN
SJ100ATR	ASTM A108 1"ØxREQ'D THREADED ROD WELDED HEAVY HEX NUT		54 KSI	64 KSI
SJ288TI	ASTM A108 3"Øx1" TAPERED THREADED ROD INSERT			64 KSI
IJ-BP	ASTM A36 HRP&O PL1/2x3 1/2x0'-3 1/2" W/ (1) 0.563"Ø HOLE CENTERED ON PL & ASTM A513 3.13"Øx0.188"x1" RING W/ 1/4" INTERNAL FILLET WELD ALL AROUND. CLEAR ZINC ELECTROPLATED TO ASTM B633 TYPE III	ENDUROCRETE FOOTING CONDITION	36 KSI	58 KSI
IJ-SA	ASTM A380/A3380M FINISH 5/8"Øx4 1/4" EMBED SS SLEEVE ANCHOR W/ HEX NUT (COMMERCIALLY AVAILABLE)	ENDUROCRETE FOOTING CONDITION		
IJ-IC	14"Øx6" FIBER REINF PRECAST CONC FTG (ENDURACRETE) W/ 3/4"Ø HOLE AT CENTER & 3/4" CHAMFER AT UPPER CIRCUMFERENCE (5,000 PSI MIN)	ENDUROCRETE FOOTING CONDITION		

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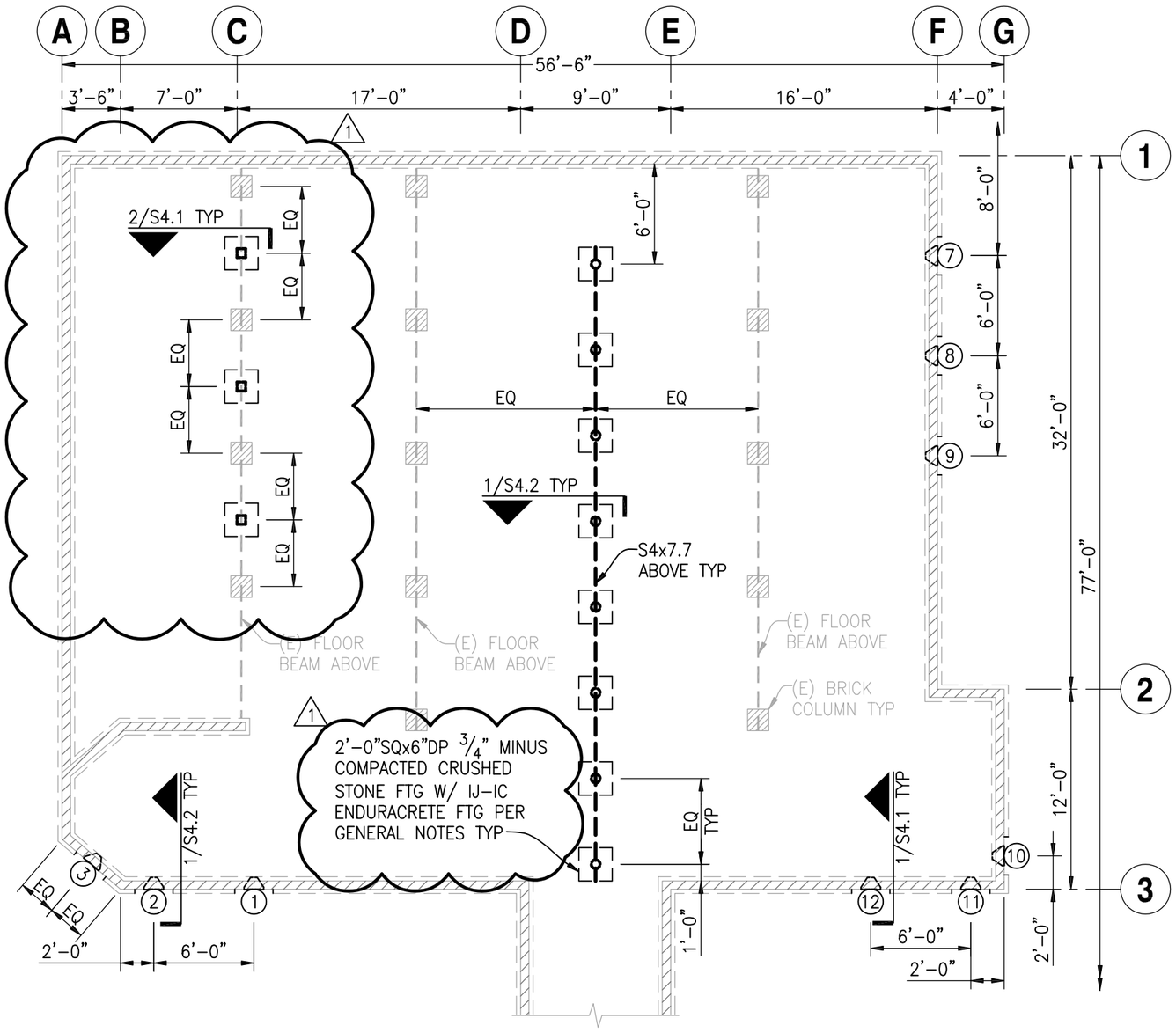
BENNETT RESIDENCE
UNDERPINNING & FLOOR SUPPORT
4105 RED HILL CHURCH RD
COATS, NC 27521

GENERAL NOTES

REVISIONS
1 10-31-2022

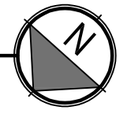
PROJECT NO: RBC22-212
DESIGNED BY: MEK
DRAWN BY: MEK
CHECKED BY: JLD
DATE: 07.15.2022

SHEET NO:
S1.1



(E) FOUNDATION/(N) PIER/SMARTJACK LAYOUT PLAN

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



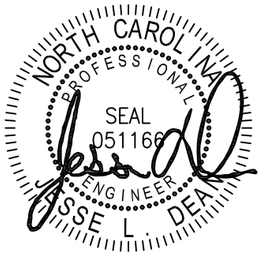
(E) FOUNDATION/(N) PIER/SMARTJACK LAYOUT PLAN NOTES:

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 STEMWALL ON (E) CONC FOOTING (CONTRACTOR TO VERIFY 7"Wx2'-6"H (E) BRICK STEMWALL AND 1'-4"Wx10"DP (E) CONC FOOTING MIN TYP (NOTIFY ENGINEER OF RECORD IF FIELD CONDITIONS DIFFER IN THE AREA OF WORK))
4. X/SX.X SECTION CUT – DETAIL NUMBER/SHEET NUMBER
5. (#) INDICATES LOCATION OF FSI 288 PUSH PIER W/ FSI FS288BL FOUNDATION BRACKET ((9) TOTAL)

   PUSH PIER INSTALLATION NOTES:
   - MAX LOAD TO ANCHOR = 9,100 LBS
   - 2.875"ø PIPE PILE W/ 0.165" THICK WALL
   - 3.5"øx48" LONG PIPE SLEEVE W/ 0.216" WALL
   - MINIMUM 10'-0" INSTALLATION DEPTH
   - MINIMUM 2000 PSI INSTALLATION PRESSURE
   - MINIMUM 1/4" FOUNDATION LIFT DURING INSTALLATION
6. PIER SPACING SHALL BE AS INDICATED ON PLAN TYP UNO
7. CONTRACTOR TO NOTIFY ENGINEER OF RECORD IF (E) FOUNDATION CRACK IS PRESENT IN THE SPAN BETWEEN FOUNDATION BRACKETS
8. INDICATES LOCATION OF FSI SJ288 SMARTJACK ((8) TOTAL)

   MAX LOAD TO SMARTJACK = 3,936 LBS
9. INDICATES LOCATION OF FSI SJQ350 SMARTJACK ((3) TOTAL)

   MAX LOAD TO SMARTJACK = 5,376 LBS
10. REPLACE "IN-KIND" ALL (E) WOOD MEMBERS (JOISTS, PURLINS, SUBPURLINS, SHEATHING, STUDS, WALL PLATES) WHICH SHOW SIGNS OF DRY ROT OR STRUCTURAL DAMAGE
11. ALL WOOD EXPOSED TO CONCRETE, WEATHER, OR WITHIN 6" OF FINISH GRADE SHALL BE PRESSURE-TREATED
12. ALL MULTI-LAM BUILT-UP BEAMS TO HAVE (3) ROWS OF 16d NAILS AT 12" OC EACH 1 1/2" LAM
13. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY SHORING
14. FILL ALL VISIBLE CRACKS IN THE FOUNDATION WALL WITH HYDRAULIC CEMENT OR EPOXY
15. ALL CONSTRUCTION MATERIALS IN THESE DOCUMENTS ARE (N) UNO



EXPIRES: 12/31/22
DATE SIGNED: 10/31/22

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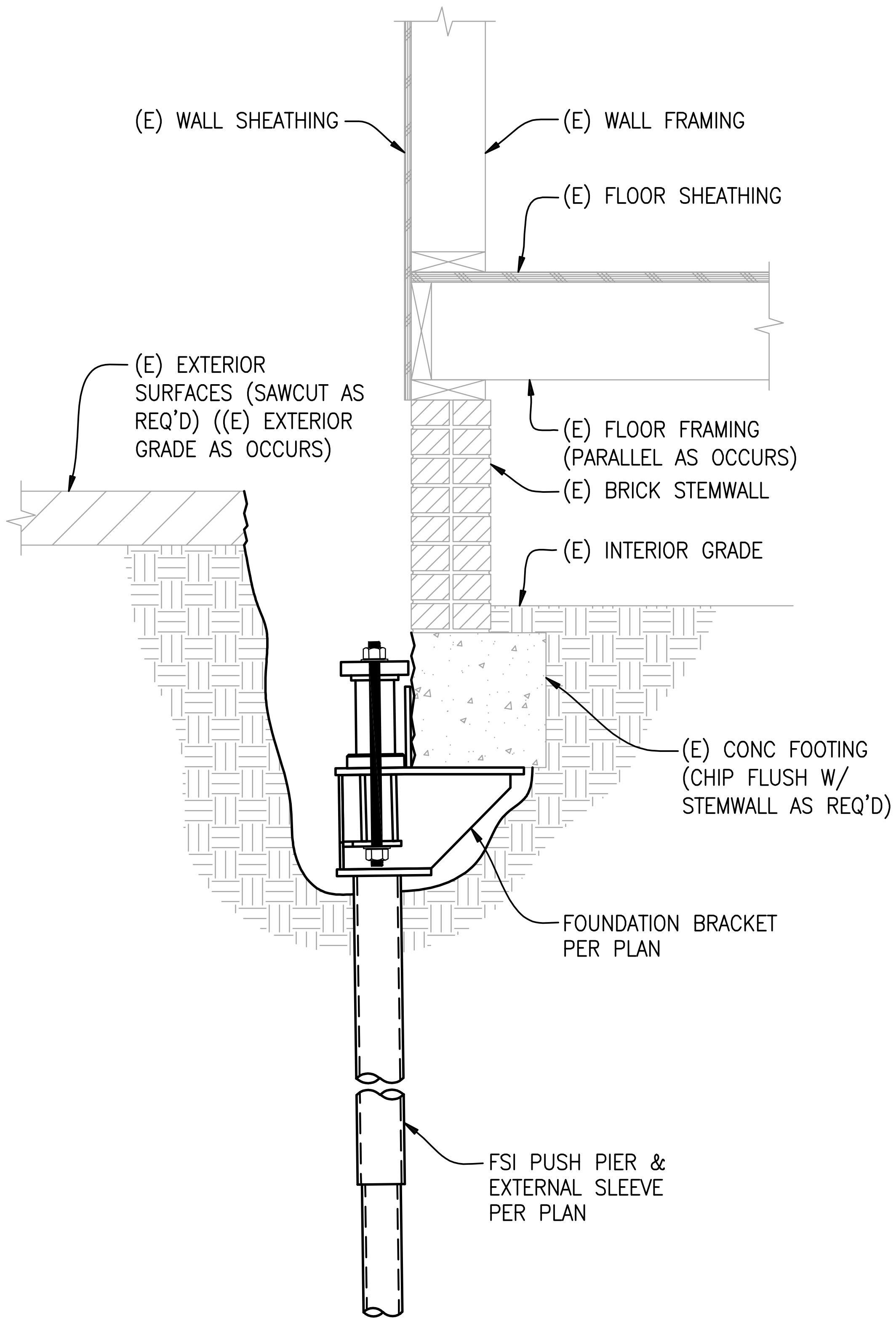
(E) FDN/(N) PUSH PIER/SMARTJACK LAYOUT PLAN

REVISIONS	
1	10-31-2022

PROJECT NO: RBC22-212
DESIGNED BY: MEK
DRAWN BY: MEK
CHECKED BY: JLD
DATE: 07.15.2022

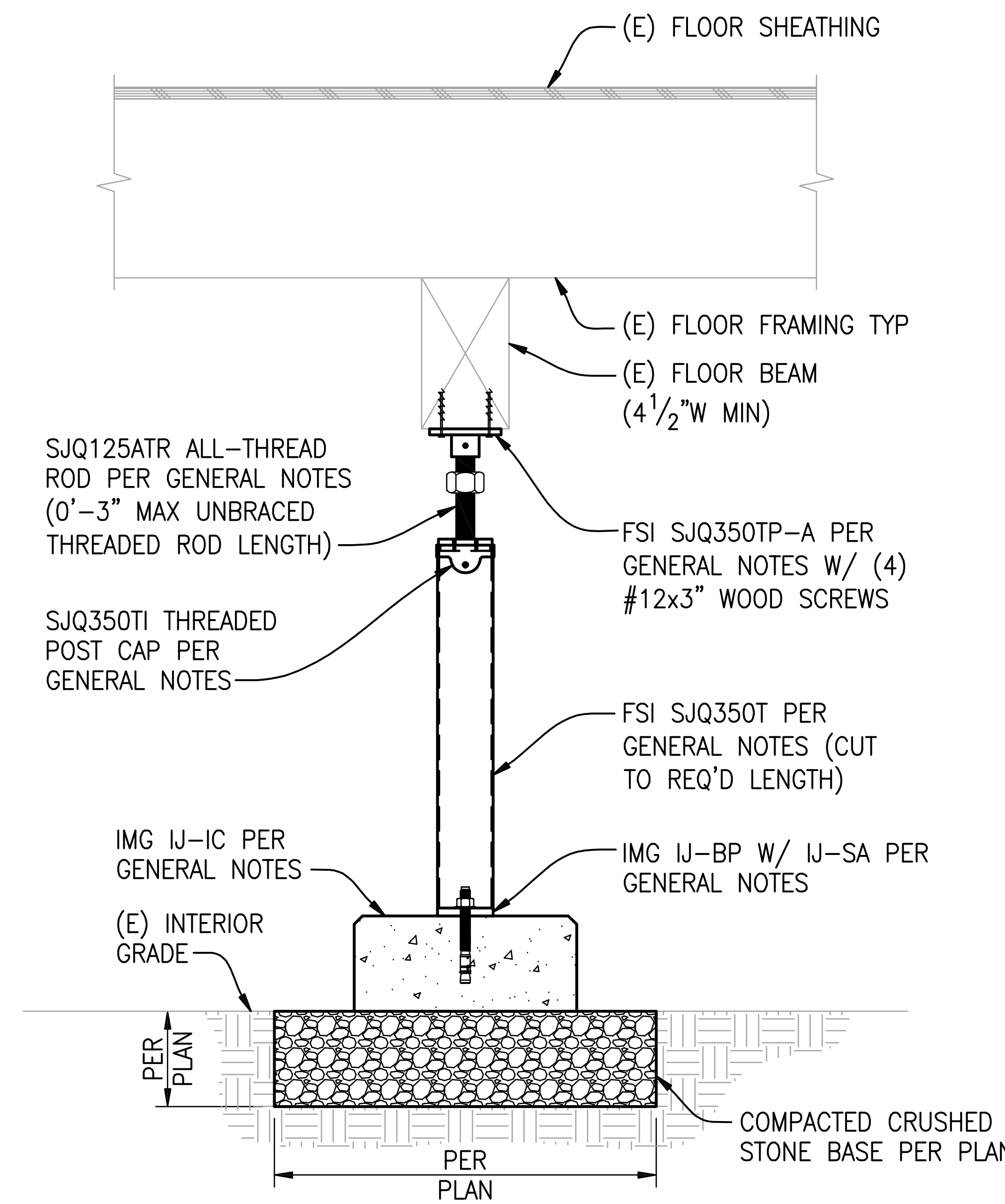
SHEET NO: **S2.1**



NOTE:
REF PLAN FOR LAYOUT & INSTALLATION REQ'S

(N) PUSH PIER TO (E) FOUNDATION DETAIL — 1

SCALE: 1"=1'–0"



NOTES:
1. REF PLAN FOR LAYOUT & INSTALLATION REQ'S
2. INSTALL PER MFR RECOMMENDATIONS

FSI SMARTJACK IN CRAWLSPACE — 2

SCALE: 1"=1'–0"

NORTH CAROLINA PROFESSIONAL SEAL 051166 ENGINEER JESSE L. DEAN

EXPIRES:	12/31/22
DATE SIGNED:	10/31/22

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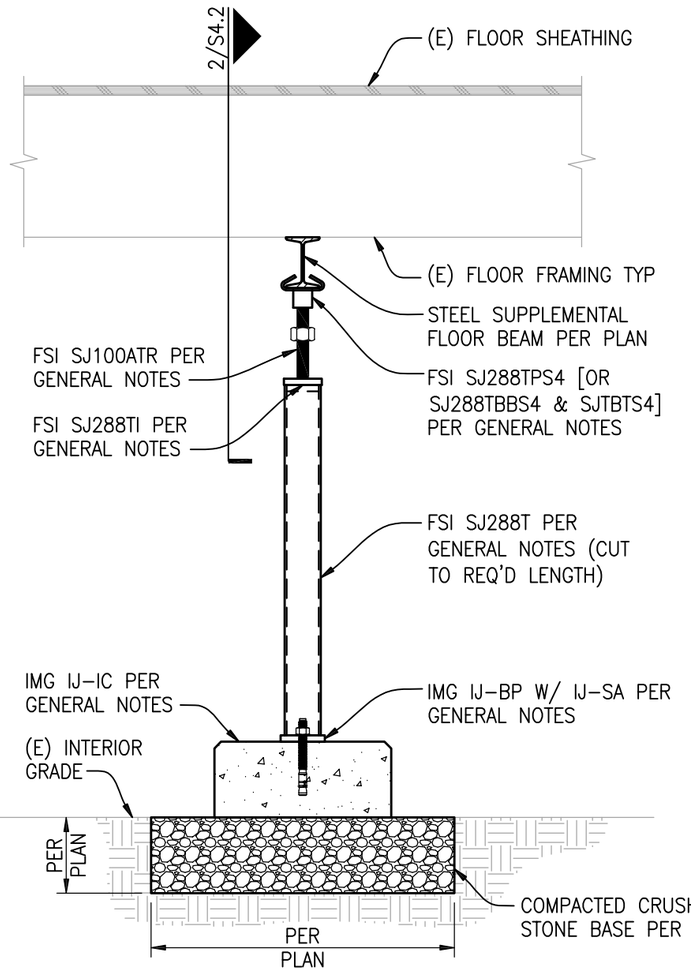
4105 RED HILL CHURCH RD
COATS, NC 27521

DETAILS

REVISIONS	
1	10-31-2022

PROJECT NO: RBC22-212
DESIGNED BY: MEK
DRAWN BY: MEK
CHECKED BY: JLD
DATE: 07.15.2022

SHEET NO: **S4.1**



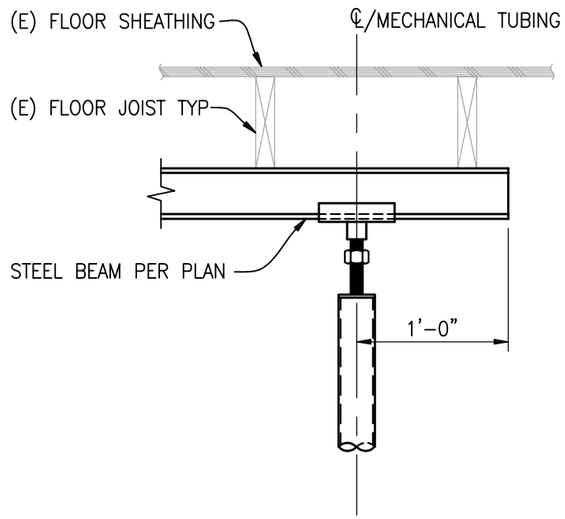
NOTES:

1. REF PLAN FOR LAYOUT & INSTALLATION REQ'S
2. INSTALL PER MFR RECOMMENDATIONS

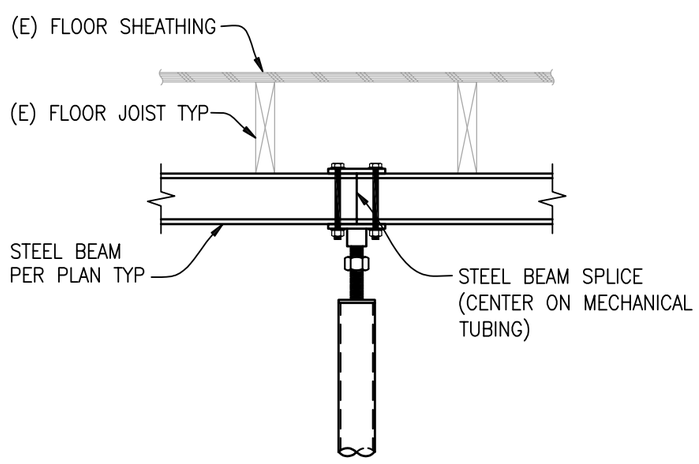
FSI SMARTJACK IN CRAWLSPACE

SCALE: 1"=1'-0"

1



STEEL BEAM END CONDITION



STEEL BEAM SPLICE CONDITION

NOTE:

REF 1/S4.1 FOR CALLOUTS IN COMMON

(N) SMARTJACK W/ SUPPLEMENTAL BEAM

SCALE: 1"=1'-0"

2

NORTH CAROLINA PROFESSIONAL SEAL 051166 ENGINEER JESSE L. DEAN

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DETAILS

REVISIONS

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PROJECT NO: RBC22-212
DESIGNED BY: MEK
DRAWN BY: MEK
CHECKED BY: JLD
DATE: ~~07.15.2022~~ 1

SHEET NO: **S4.2**