

# ALUMINUM STANDS FOR ROOF TOP REFRIGERANT LINES SUPPORT W/ ADJUSTABLE POST HEIGHT.

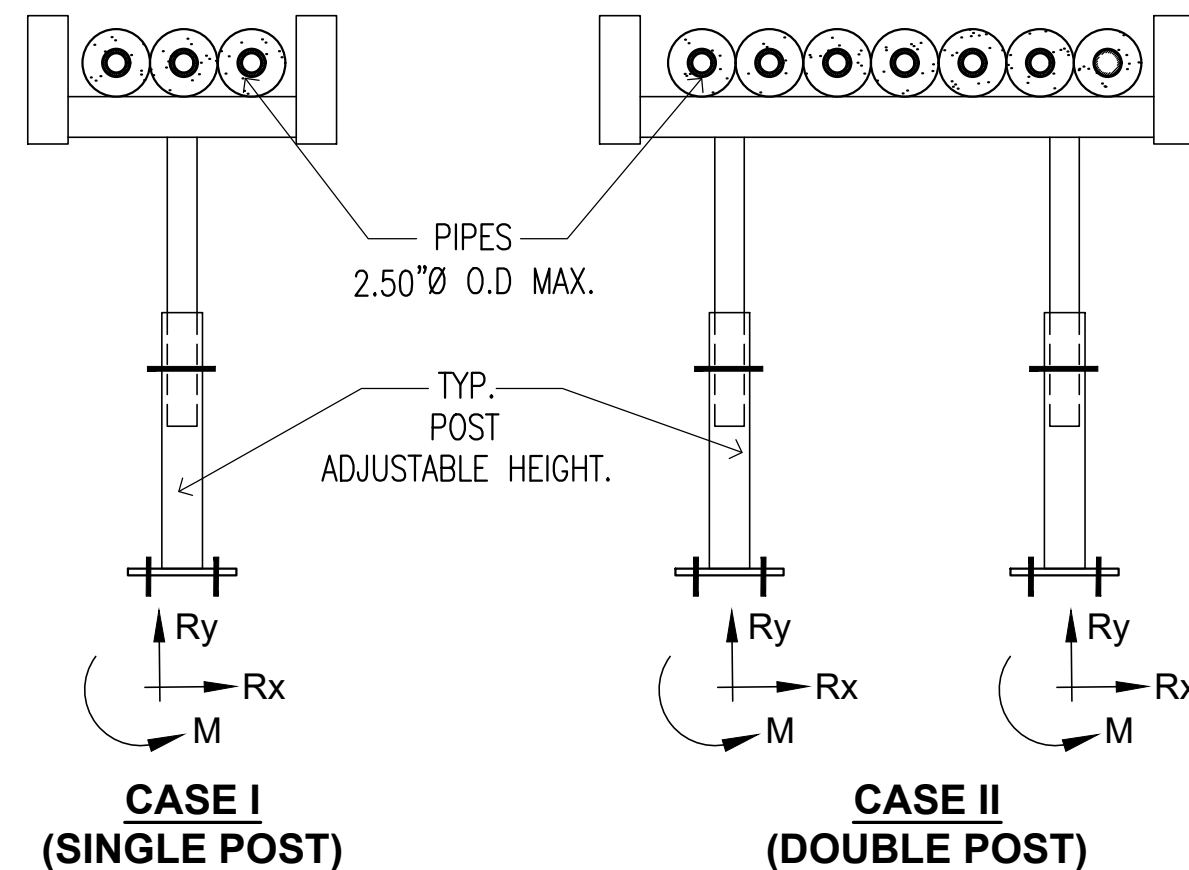
- 1- THESE STANDS FOR ROOF TOP REFRIGERANT LINE SUPPORT SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D) HAVE BEEN VERIFIED FOR CODE COMPLIANCE IN ACCORDANCE WITH THE 2023 (8th EDITION) OF THE FLORIDA BUILDING CODE AND CHAPTER 20 OF SAME, FOR USE WITHIN THE HIGH VELOCITY HURRICANE ZONE (HVHZ) OR OUT OF IT. DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED SEPARATELY ON A JOB-SPECIFIC BASIS IN ACCORDANCE WITH THE GOVERNING CODE USING ASD METHODOLOGY, IN ACCORDANCE WITH ASCE 7-22 AND SECTIONS 1609.1.1, 1616.1.1, 1620.1, 1620.2, 1620.3, 1620.6 & 1620.7 OF THE FLORIDA BUILDING CODE, AND SHALL BE LESS THAN OR EQUAL TO THE LATERAL AND UPLIFT DESIGN PRESSURE CAPACITY VALUES LISTED HEREIN (SHEETS 3 & 4) FOR ANY ASSEMBLY.
- 2- THE ARCHITECT/ENGINEER OF RECORD FOR THE EXISTING STRUCTURE THAT WILL SUPPORT THESE ALUMINUM STANDS SHALL BE RESPONSIBLE FOR ITS INTEGRITY AND SHALL VERIFY THE ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND THE SUPERIMPOSED LOADS (ASD) - REF "REACTION SCHEDULE #1" INDICATED ON THIS SHEET, WHERE REACTION FORCES ARE LISTED FOR USE WITH EXISTING STRUCTURE. DESIGN PROFESSIONAL OF RECORD SHALL VERIFY APPLICABILITY AND/OR ADDITIONAL FACTORS FOR USE WITH EXISTING STRUCTURE VERIFICATION.
- 3- CONNECTION (TIE DOWN) OF REFRIGERANT PIPES STAND IS NOT INCLUDED, AND SHALL BE PERFORMED IN A JOB BY JOB BASIS.
- 4- STAND SHALL BE INSTALLED WITH MINIMUM CLEAR HEIGHT AS SPECIFIED ON THIS P.E.D.
- 5- STRUCTURAL ADEQUACY OF REFRIGERANT PIPES FOR WIND RESISTANCE IS NOT PART OF THIS DOCUMENT AND MUST BE VERIFIED SEPARATELY.
- 6- ELECTRICAL GROUND, WHEN REQUIRED, TO BE DESIGNED & INSTALLED BY OTHERS. ALL MECHANICAL SPECIFICATIONS (CLEAR SPACE, TONNAGE, ETC.) SHALL BE AS PER MANUFACTURER RECOMMENDATIONS AND ARE THE EXPRESS RESPONSIBILITY OF THE CONTRACTOR.
- 7- MAXIMUM DIMENSIONS OF REFRIGERANT PIPES SHALL CONFORM TO SPECIFICATIONS STATED HEREIN, SEE SHEET 2.
- 8- ALL ANCHORS & BOLTS SHALL BE AS SPECIFIED ON THIS DRAWING, AND SHALL COMPLY WITH SECTION 2411.3.3.4 OF THE FLORIDA BUILDING CODE.
- 9- ALL ALUMINUM EXTRUSIONS SHALL BE 6061-T6 ALLOY & TEMPER, UNLESS NOTED OTHERWISE. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D 1.2 REQUIREMENTS, USING 5356 FILLER ALLOYS.
- 10- ALL EXISTING CONCRETE SUBSTRATE SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
- 11- ALL ALUMINUM EXTRUSIONS IN CONTACT WITH DISSIMILAR MATERIALS SHALL COMPLY WITH SECTION III-6 OF THE 2020 ALUMINUM DESIGN MANUAL.
- 12- ENGINEER SEAL AFFIXED HERETO VALIDATE STRUCTURAL DESIGN AS SHOWN ONLY. USE OF THIS SPECIFICATION BY CONTRACTOR, et. al. INDEMNIFIES & SAVES HARMLESS THIS ENGINEER FOR ALL COST & DAMAGES INCLUDING LEGAL FEES & APPELLATE FEES RESULTING FROM MATERIAL FABRICATION, SYSTEM ERECTION, CONSTRUCTION PRACTICES BEYOND THAT WHICH IS CALLED FOR BY LOCAL, STATE, & FEDERAL CODES & FROM DEVIATIONS OF THIS PLAN. EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED ON THIS DOCUMENT.
- 13- WATER-TIGHTNESS OF EXISTING HOST SUBSTRATE SHALL BE THE FULL RESPONSIBILITY OF THE INSTALLING CONTRACTOR. CONTRACTOR SHALL ENSURE THAT ANY REMOVED OR ALTERED WATERPROOFING MEMBRANE IS RESTORED AFTER FABRICATION AND INSTALLATION OF STRUCTURE PROPOSED HEREIN. THIS ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY WATERPROOFING OR LEAKAGE ISSUES WHICH WAY OCCUR AS WATER-TIGHTNESS SHALL BE THE FULL RESPONSIBILITY OF THE INSTALLING CONTRACTOR.

- 14- (a) THIS P.E.D. (PRODUCT EVALUATION DOCUMENT) PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; i.e. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.
- (b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF THIS PRODUCT, BASED ON THIS P.E.D., PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT. CONSTRUCTION SAFETY AT SITE IS THE CONTRACTOR'S RESPONSIBILITY.
- (c) THIS P.E.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.
- (d) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA REGISTERED ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D.
- (e) ORIGINAL P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.

15-THIS PRODUCT SHALL BE SUBJECTED TO A QUALITY CONTROL BY MANUFACTURER.

## SCHEDULE #1 MAX. REACTION (SEE NOTE 2)

REACTIONS @ BASE PLATE		
Rx (Lb)	Ry (Lb)	M (Lb-in)
52	533	1463



FLORIDA BUILDING CODE (High and Non High Velocity Hurricane Zone)

DRAWN BY: W.H  
01/17/2024  
DATE  
23-249  
DRAWING No

ALUMINUM STANDS FOR ROOF TOP REFRIGERANT LINES SUPPORT W/ ADJUSTABLE POST HEIGHT.

F&L ALUMINUM PARTS, INC.

2087 N. POWERLINE RD. SUITE #1  
POMPANO BEACH, FL. 33069

SHEET 1 OF 5

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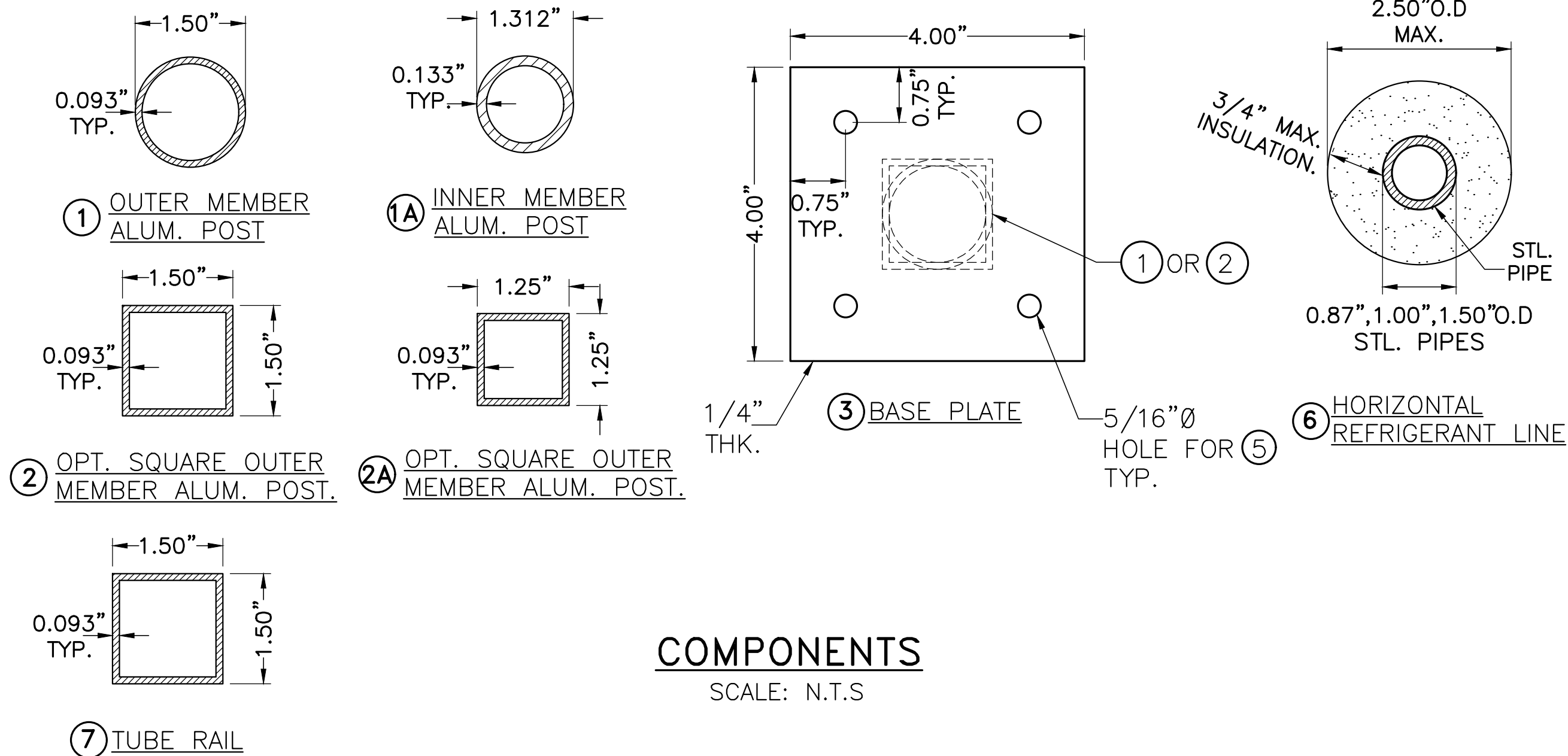
TILLIT TESTING & ENGINEERING COMPANY  
6355 N.W. 36th St. Ste. 305 VIRGINIA GARDENS, FL 33166  
Phone : (305)671-1530 . Fax : (305)671-1531  
e-mail: tilteco@aol.com

WALTER A. TILLIT JR. P.E.  
CA-0006719  
FLORIDA Lic. # 44167

P.E. SEAL/SIGNATURE/DATE

# BILL OF MATERIALS

COMPONENT No.	DESCRIPTION	DIMENSIONS	MATERIAL	MANUFACTURER	NOTES
①	OUTER MEMBER ALUMINUM POST	1.50"Ø & 0.093"THK.	6061-T6 ALLOY.	-	WELDED TO ③, ADJUSTABLE W/ ①A
①A	INNER MEMBER ALUMINUM POST	1.315"Ø & 0.133"THK.	6061-T6 ALLOY.	-	WELDED TO ⑦, ADJUSTABLE W/ ①
②	OPT. SQUARE OUTER MEMBER ALUM. POST	1.50"x1.50"x0.093"THK.	6061-T6 ALLOY.	-	WELDED TO ③, ADJUSTABLE W/ ②A
②A	OPT. SQUARE INNER MEMBER ALUM. POST	1.25"x1.25"x0.093"THK.	6061-T6 ALLOY.	-	WELDED TO ⑦, ADJUSTABLE W/ ②
③	BASE PLATE	4.00" X 4.00" X 1/4"THK.	6061-T6 ALLOY.	-	WELDED TO ①OR ②& ANCHORED W/ ⑤ TO EXISTING STRUCTURE.
④	THRU BOLT	1/4"Ø-20 x 3"MIN.	ASTM A-307 OR 304SS.	-	USE AT CONNECTION BETWEEN ①& ①A OR ②& ②A
⑤	BASE PLATE ANCHOR	1/4"Ø ULTRACON 410 S.	304 SERIES SS.	DEWALT INC.	1 3/4"MIN. EMBEDM. INTO EXISTING CONCRETE SLAB & 2 1/2"E.D
		1/4"Ø POWER STUD+SD4	304 SERIES SS.	DEWALT INC.	2" MIN. EMBEDM. INTO EXISTING CONCRETE SLAB & 3 1/2"MIN. E.D
⑥	HORIZONTAL REFRIGERANT LINE	0.875", 1.00" OR 1.50" O.D W/3/4"MAX INSULATION. TOTAL O.D = 2.50" MAX.	SCHEDULE 40 ASTM A 53 TYPE BLACK STEEL OR EQUAL.	-	SEE NOTE 6 ON SHEET 1.
⑦	TUBE RAIL	1.50"x1.50"x0.093"THK.	6061-T6 ALLOY.	-	SUPPORT FOR PIPES. WELDED TO ①A OR ②A



## COMPONENTS

SCALE: N.T.S

FLORIDA BUILDING CODE (High and Non High Velocity Hurricane Zone)

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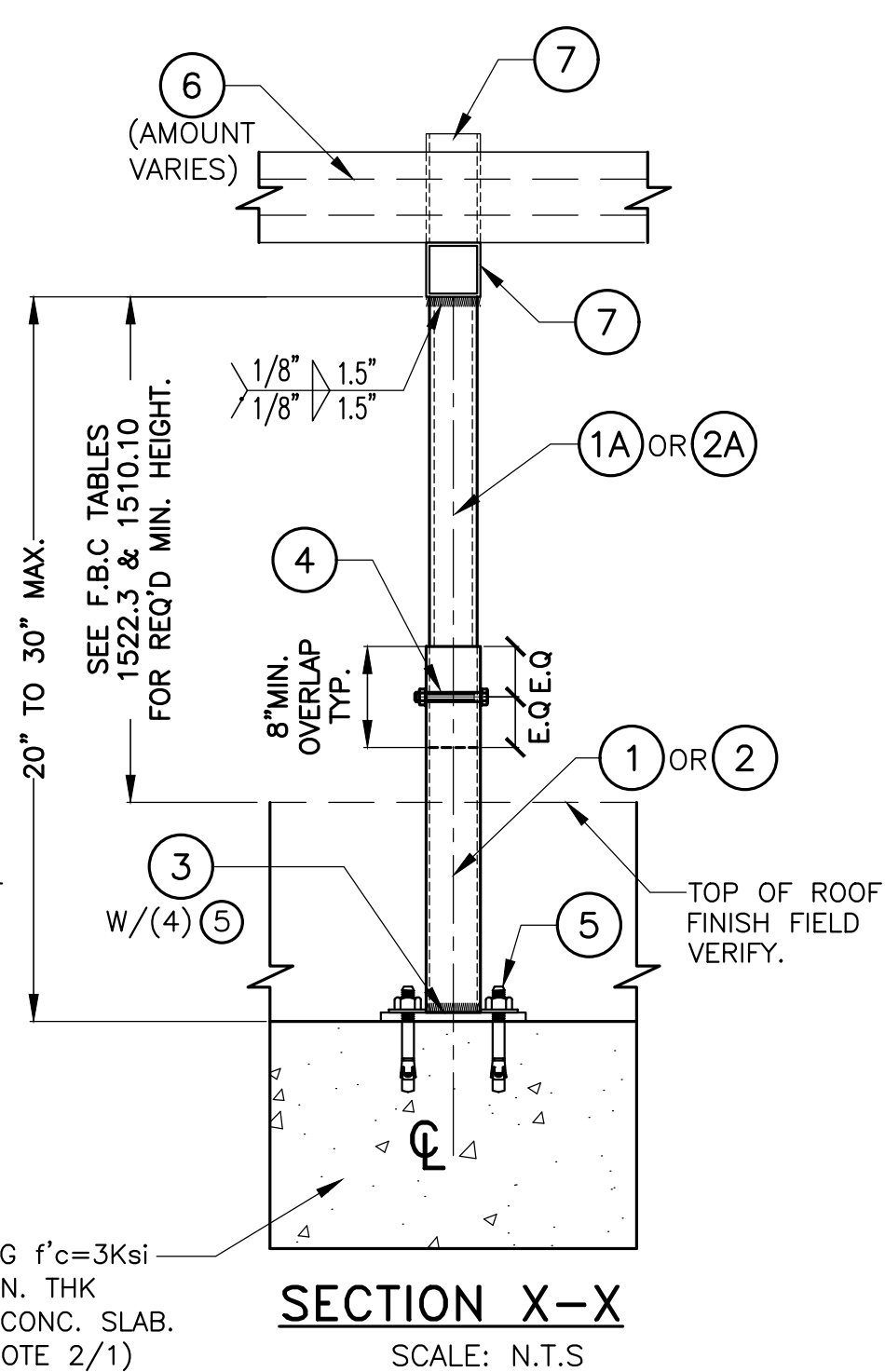
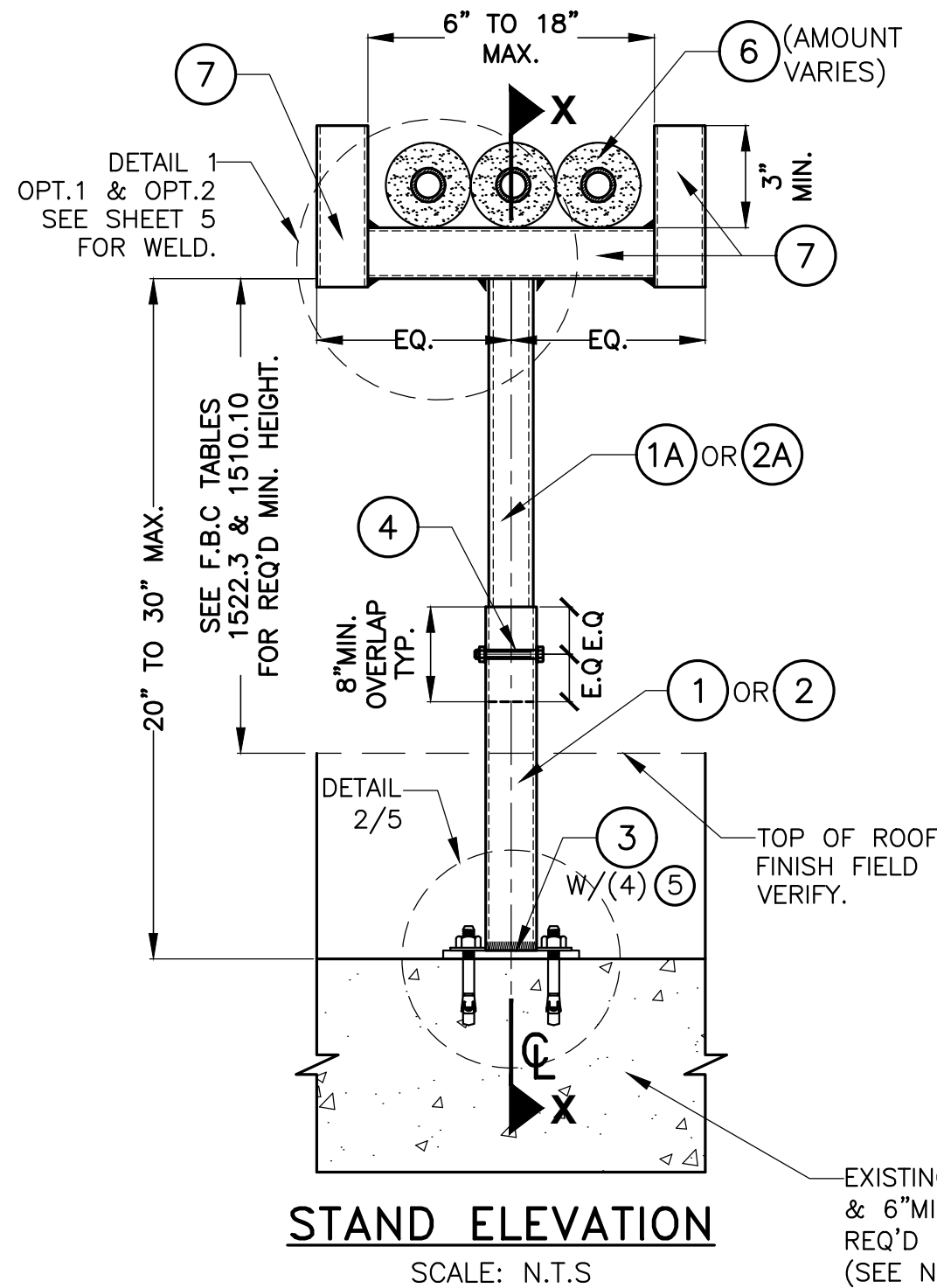
DRAWN BY:  
W.H

DATE  
01/17/2024

DRAWING No  
**23-249**

SHEET 2 OF 5

REV. No	DATE	DESCRIPTION
1	-	-
2	-	-
3	-	-
4	-	-



**SINGLE POST PIPE STAND MAX. SPACING SCHEDULE:**

A.S.D WIND PRESSURE (psf)		STAND CLEAR HEIGHT		
LATERAL	UPLIFT	20"	24"	30"
40	31.6	5'-0"	5'-0"	5'-0"
45	35.5	5'-0"	5'-0"	5'-0"
50	39.5	5'-0"	5'-0"	4'-10"
55	43.4	5'-0"	5'-0"	4'-0"
60	47.4	5'-0"	4'-8"	3'-9"
65	51.3	5'-0"	4'-4"	3'-6"
70	55.3	4'-10"	4'-0"	3'-3"
75	59.2	4'-6"	3'-9"	3'-0"

**CASE I (SINGLE POST)**

FLORIDA BUILDING CODE (High and Non High Velocity Hurricane Zone)

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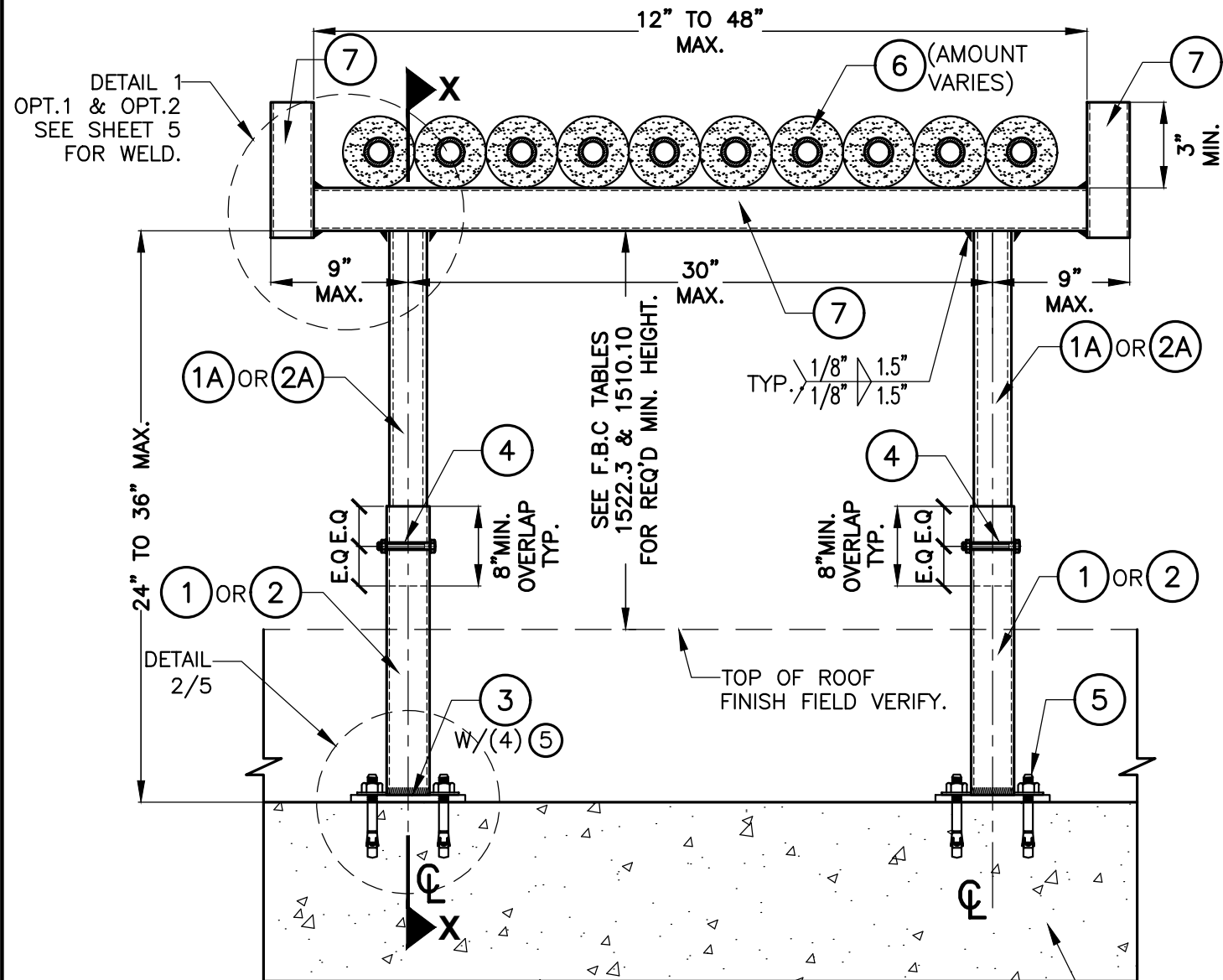
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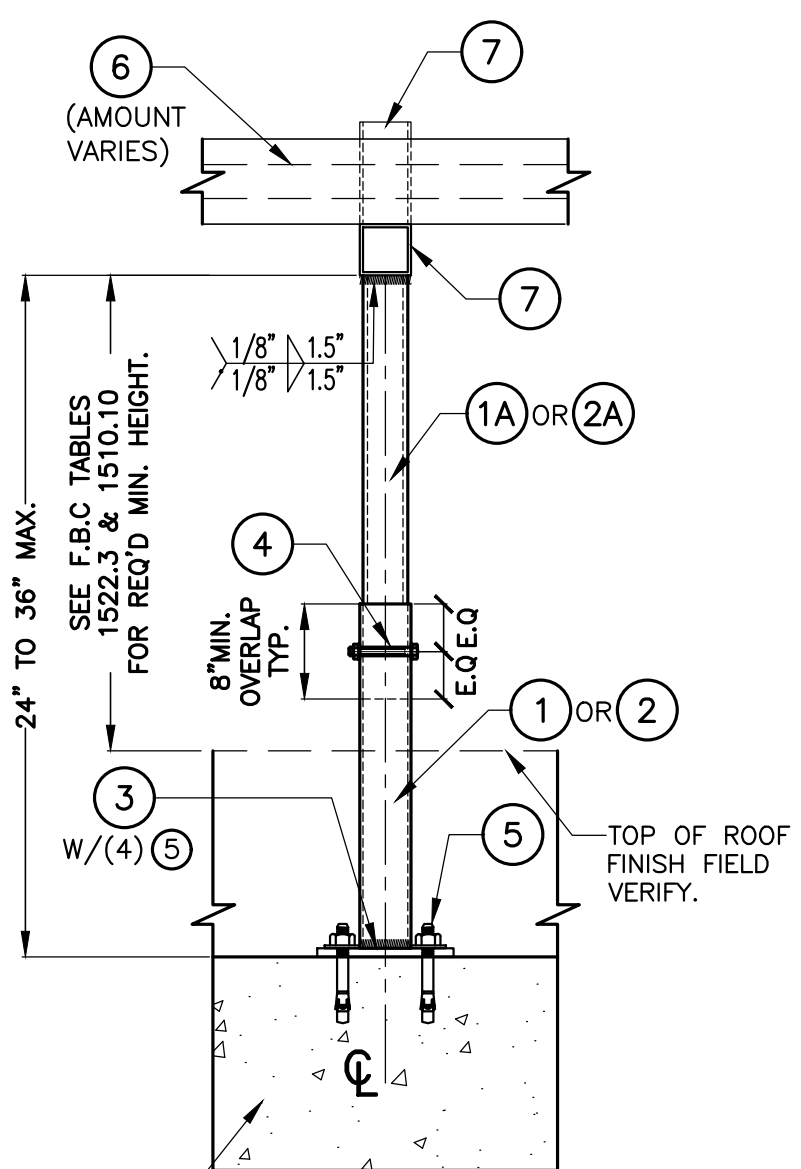
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		01/17/2024	
REV. NO.	DESCRIPTION	DATE	DATE
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**23-249**  
DRAWING No

SHEET 3 OF 5



**STAND ELEVATION**  
SCALE: N.T.S



**SECTION X-X**  
SCALE: N.T.S

EXISTING  $f'_c=3Ksi$   
& 6"MIN. THK.  
REQ'D CONC. SLAB.  
(SEE NOTE 2/1)

**DOUBLE POST PIPE STAND  
MAX. SPACING SCHEDULE:**

A.S.D WIND PRESSURE (psf)		STAND CLEAR HEIGHT		
LATERAL	UPLIFT	24"	30"	36"
40	31.6	5'-0"	5'-0"	5'-0"
45	35.5	5'-0"	5'-0"	5'-0"
50	39.5	5'-0"	5'-0"	5'-0"
55	43.4	5'-0"	5'-0"	5'-0"
60	47.4	5'-0"	5'-0"	5'-0"
65	51.3	5'-0"	5'-0"	5'-0"
70	55.3	5'-0"	5'-0"	4'-10"
75	59.2	5'-0"	5'-0"	4'-6"

**CASE II (DOUBLE POST)**

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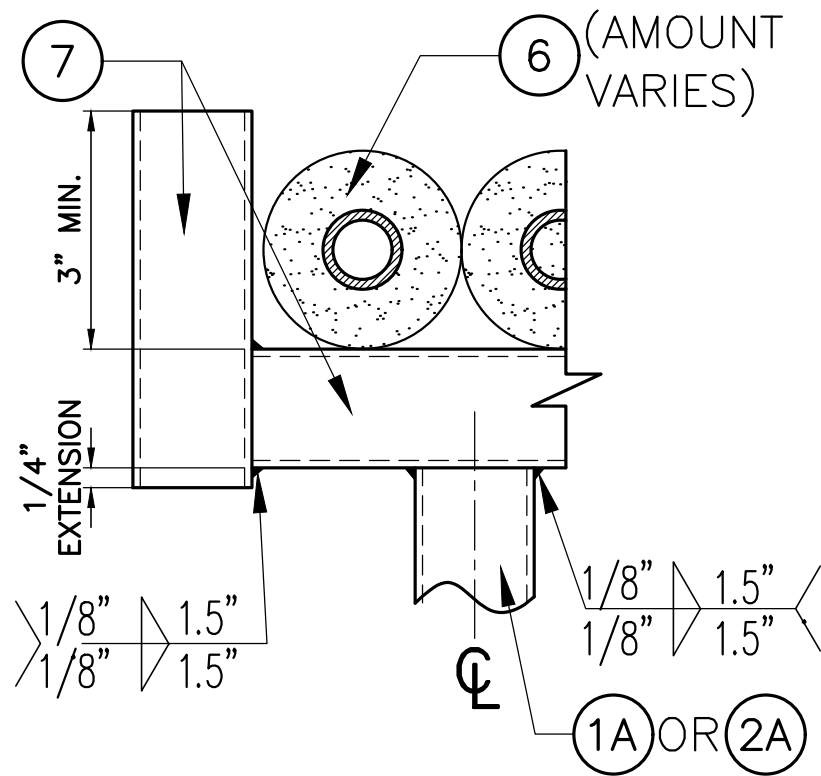
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DATE: 01/17/2024

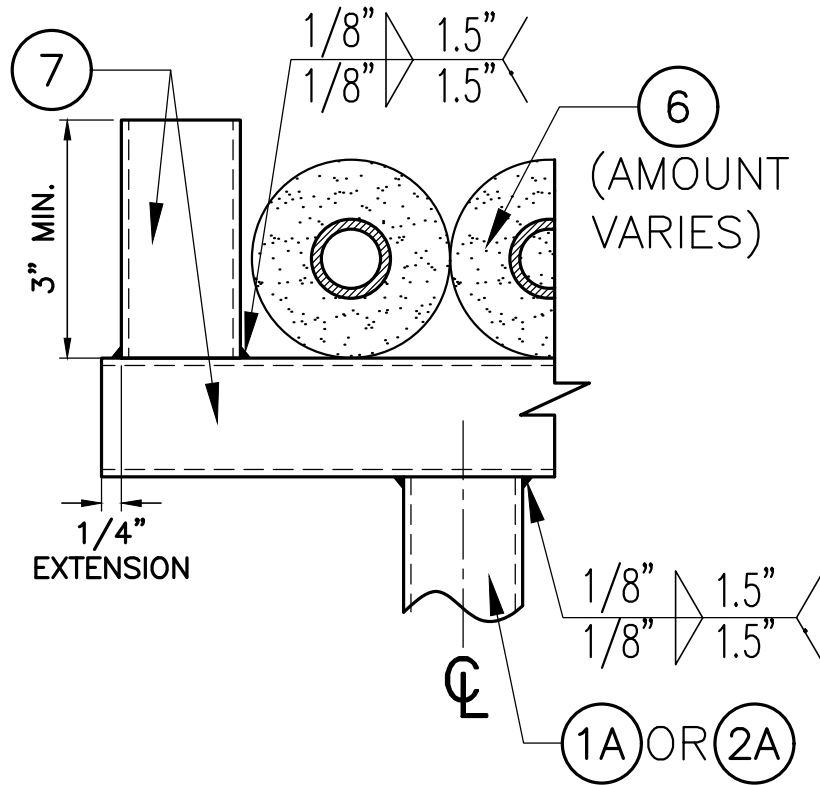
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SHEET 4 OF 5

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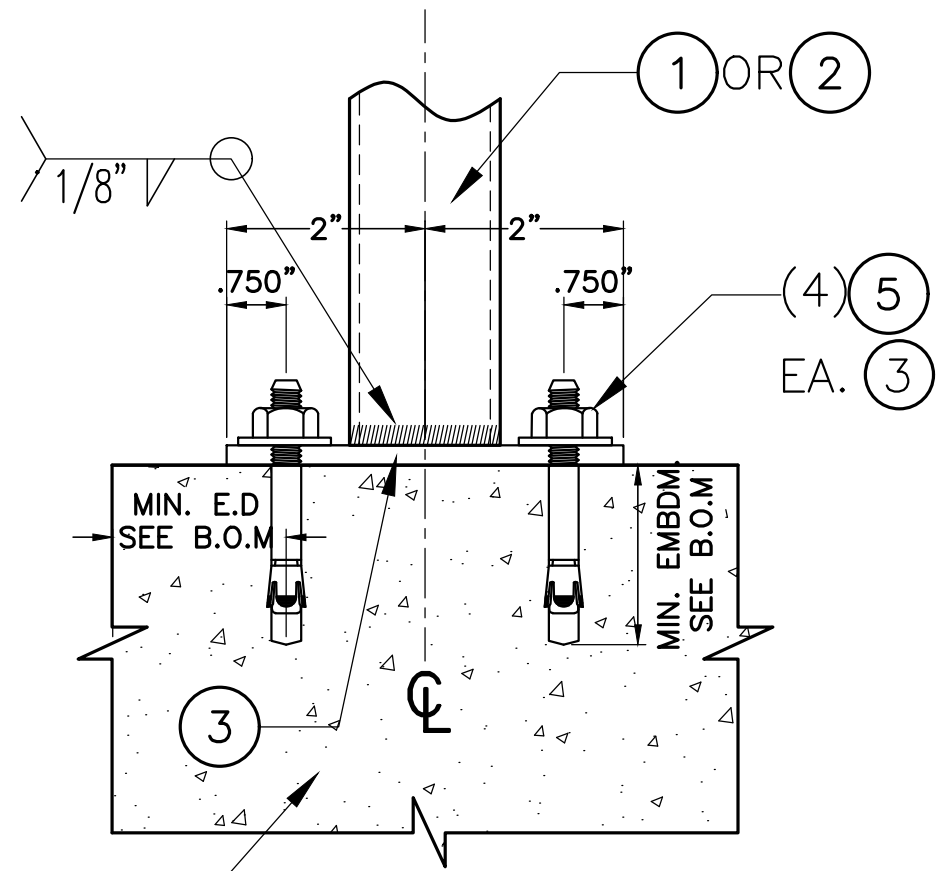
OPTION 1



OPTION 2

**DETAIL 1**  
SCALE: N.T.S

EXISTING  $f'_c=3Ksi$   
& 6"MIN. THK  
REQ'D CONC. SLAB.  
(SEE NOTE 2/1)



**DETAIL 2**  
SCALE: N.T.S

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SHEET	5 OF 5

REV. No	DATE	REV. No	DATE	DESCRIPTION
1	-	3	-	-
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