APPLICABLE CODES AND STANDARDS

1. 2023 FLORIDA BUILDING CODE, BUILDING
2. 2023 FLORIDA BUILDING CODE, RESIDENTIAL
3. ASCE 7-22: MINIMUM DESIGN LOADS ON BUILDINGS AND OTHER STRUCTURES
4. AISC STEEL CONSTRUCTION MANUAL (15TH EDITION)
5. ACI 318-19: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
6. TMS 402-16: BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES
7. AWS D1.1: STRUCTURAL WELDING

DESIGN LOADS

1. DEAD LOAD = 1.5 PSF
2. ROOF LIVE LOAD = 12 PSF
3. WIND LOAD

A. RISK CATEGORY = I
B. WIND EXPOSURE CATEGORY = C
C. ULTIMATE WIND SPEED = 110 MPH TO 140 MPH

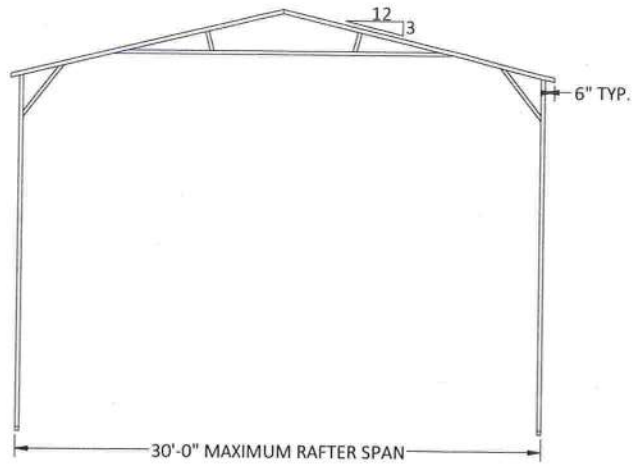
NOMINAL WIND SPEED = 86 MPH TO 108 MPH

INSTALLATION NOTES AND SPECIFICATIONS

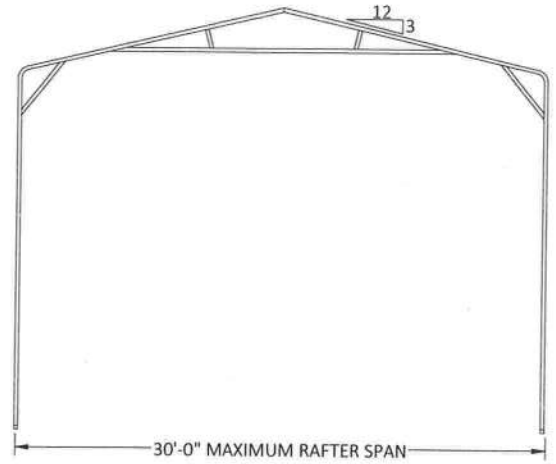
1. THESE PLANS BELONG EXCLUSIVELY TO THE STRUCTURE, INCLUDING MAIN WIND FORCE RESISTING SYSTEM (MWFRS), COMPONENTS AND CLADDING (C&C), AND BASE RAIL ANCHORAGE. OTHER DESIGN ISSUES, INCLUDING BUT NOT LIMITED TO PROPERTY SET-BACKS, ELECTRICAL, PLUMBING, INGRESS/EGRESS, FINISH FLOOR SLOPES AND ELEVATIONS, OR OTHER LOCAL ZONING REQUIREMENTS ARE THE LIABILITY OF OTHERS.
2. THESE STRUCTURES ARE ENGINEERED AS CAPABLE OF SUPPORTING DEAD LOAD OF THE STRUCTURE AND LIVE AND WIND LOADS. UPGRADES NOT SPECIFICALLY ADDRESSED HEREIN, SUCH AS WINDOWS, DOORS, OR ANOTHER COMPONENT NOT LISTED IN THE BUILDING CODE APROVED PRODUCT LIST, AND NOT PROVIDED AND INSTALLED BY THE CONTRACTOR, WHICH CAUSE ADDITIONAL LOADS ON THE STRUCTURE SHALL BE AT THE OWNER'S RISK. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR FAILURE OR STRUCTURAL DAMAGE DUE TO THE EXTRA LOAD.
3. ALL STEEL TUBING SHALL BE 50 KSI GALVANIZED STEEL. ALL FASTENERS SHALL BE ZINC COATED HARDWARE.
4. END WALL COLUMNS (POST) AND SIDE WALL COLUMNS ARE EQUIVALENT IN SIZE AND SPACING U.N.O.
5. SPECIFICATIONS APPLICABLE TO 29 GA METAL PANELS FASTENED DIRECTLY TO 2.5"X2.5"X14 GA TUBE STEEL (TS) FRAMING MEMBERS FOR VERTICAL PANELS. 29 GA METAL PANELS SHALL BE FASTENED DIRECTLY TO 18 GA HAT CHANNELS U.N.O.
6. AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR PURLINS, AND POSTS, INTERIOR = 9" AND END = 6" MAX.
7. FASTENERS CONSIST OF #12-14X3/4" SELF-DRILLING SCREWS (SDS), USE CONTROL SEAL WASHER WITH EXTERIOR FASTENERS. SPECIFICATIONS APPLICABLE ONLY FOR MEAN ROOF HEIGHT OF 20'-0" OR LESS, AND ROOF SLOPES OF 14° (3:12 PITCH) OR LESS. SPACING REQUIREMENTS FOR OTHER ROOF HEIGHTS AND/OR SLOPES MAY VARY.
8. ANCHORS SHALL BE INSTALLED THROUGH THE BASE RAIL WITHIN 6" OF EACH RAFTER COLUMN ALONG SIDES AND ENDS.
9. STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBARS WITH WELDED NUT X 36" LONG AND MAY BE USED IN SUITABLE SOILS. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USED IN UNSUITABLE SOILS AS NOTED. SOIL NAILS MAY BE USED FOR WIND SPEEDS LESS THAN OR EQUAL TO 145 MPH.
10. RAFTER SPACING IS 5'-0" MAX.
11. PURLIN SPACING IS 4'-0" MAX.
12. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:
    SOIL SITE CLASS = D
    RISK CATEGORY I
    R = 3.25 Ie = 1.0 Sds = 0.087 g V = CsW Sdi = 0.084 g

DRAWING INDEX

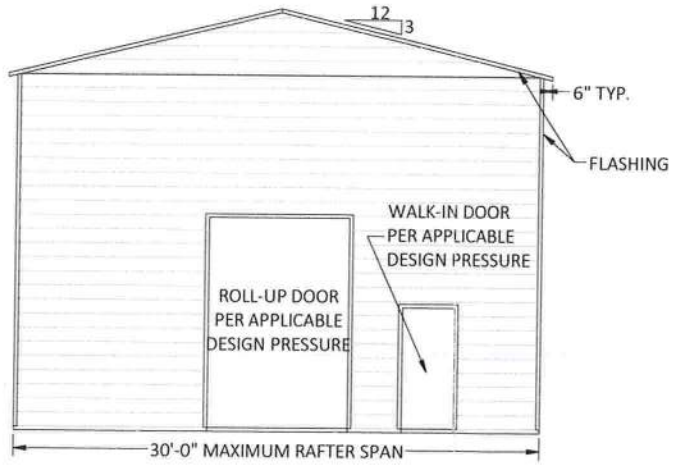
PARTIALLY ENCLOSED (UTILITY) METAL BUILDING DESIGN
MAXIMUM 30'-0" WIDE X 100'-0" LONG X 20'-0" HIGH (EAVE)
BOX EAVE FRAME / BOW EAVE FRAME



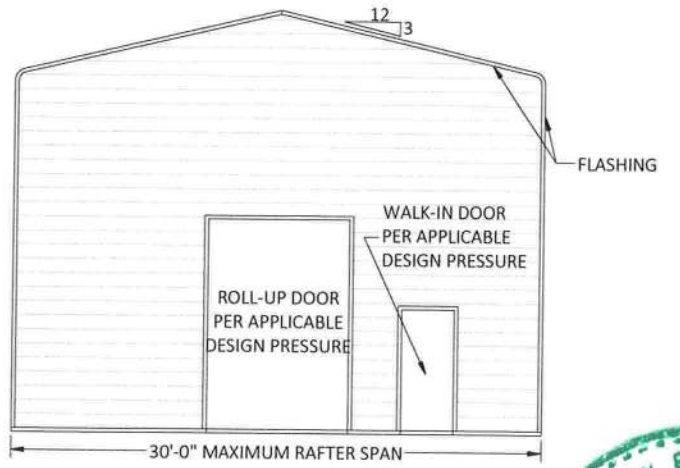
TYPICAL END ELEVATION - BOX EAVE



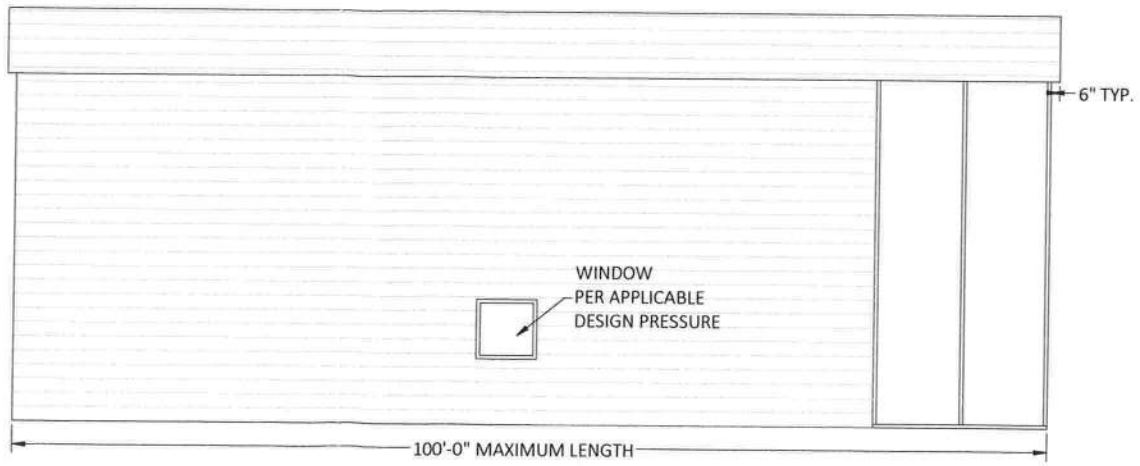
TYPICAL END ELEVATION - BOW EAVE



TYPICAL END ELEVATION - BOX EAVE



TYPICAL END ELEVATION - BOW EAVE



TYPICAL SIDE ELEVATION - HORIZONTAL ROOF

Columbia County Building Department
Reviewed for
File Copy
Code Compliance
Plans Examiner

GENERIC PLANS ARE NOT VALID WITHOUT A RAISED SEAL & RAISED INK SIGNATURE.

(1) SET OF SIGNED AND SEALED GENERIC ENGINEERING IS VALID FOR (1) STRUCTURE ONLY.

Richard E. Walker, P.E. #61240
DATE: 09/05/2024

FLORIDA ENGINEERING LLC
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CA CERT. #30782

PROJECT NO. 24247102

CONTRACTOR:
STEEL BUILDINGS AND STRUCTURES INC.
800PIEDMONT TRIAD WEST DR.,
MOUNT AIRY, NC 27030

PROJECT ADDRESS:
12'-30' WIDE UTILITY
GENERIC PLANS

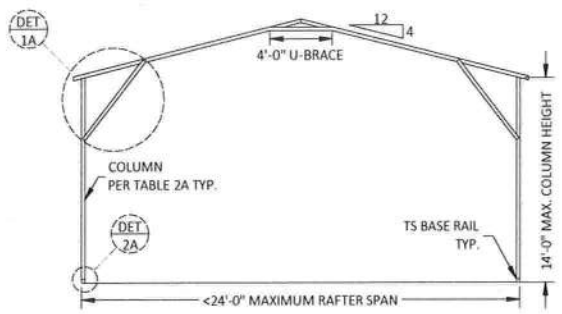
DESIGN DATE:	09/05/2024
REVISION 1:	DATE
REVISION 2:	DATE
DRAWN BY:	JS
SCALE:	NTS

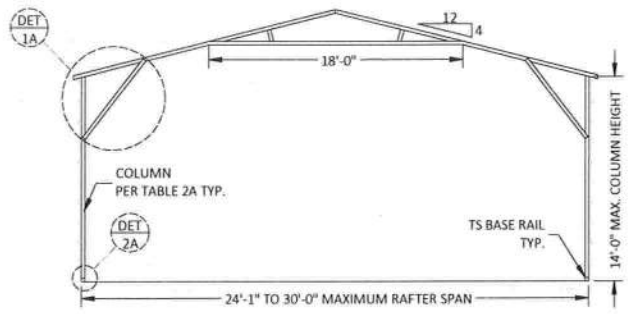
SHEET: 1 OF 13

MEMBER LEGEND:
1. SIDEWALL TS COLUMN = 2.5X2.5X14 GA U.N.O.
2. SIDEWALL TS DOUBLE COLUMN = (2)2.5X2.5X14 GA U.N.O.
3. TRUSS MEMBERS = 2.5X2.5X14 GA U.N.O.
4. KNEE-BRACE = 2.5"X2"X18GA CHANNEL
5. PURLIN = 1.125"X18GA HAT CHANNEL
6. U-BRACE = 2.5"X2"X16GA CHANNEL
7. ENDWALL COLUMN:

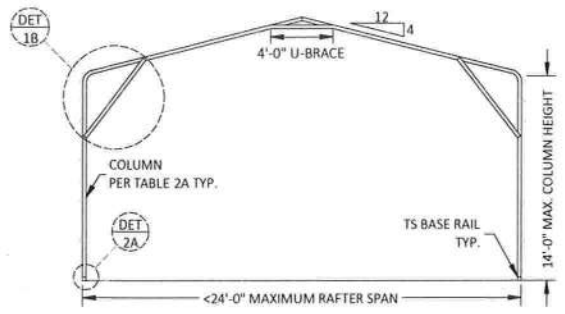
MAX. EAVE HEIGHT	END WALL COLUMN DIMENSIONS
20'	(2) 2.5X2.5X14 GA
14'	2.5X2.5X14 GA

TRUSS LAYOUT- BOX EAVE





TRUSS LAYOUT- BOW EAVE



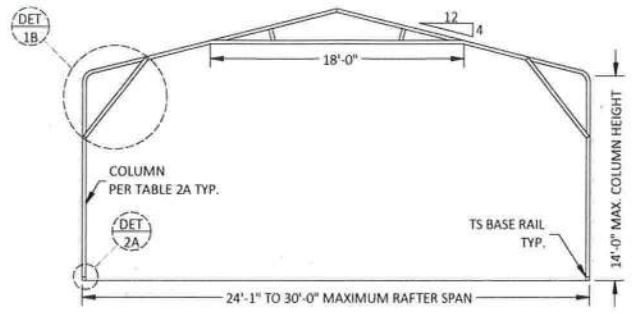
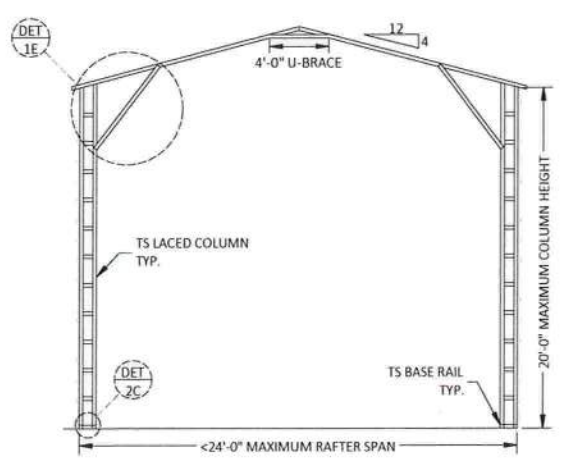
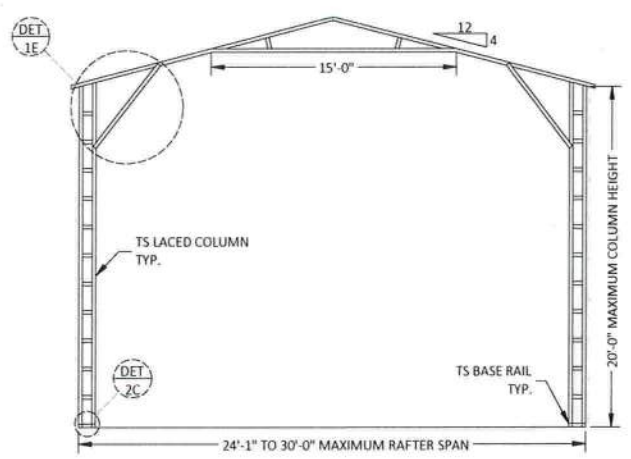


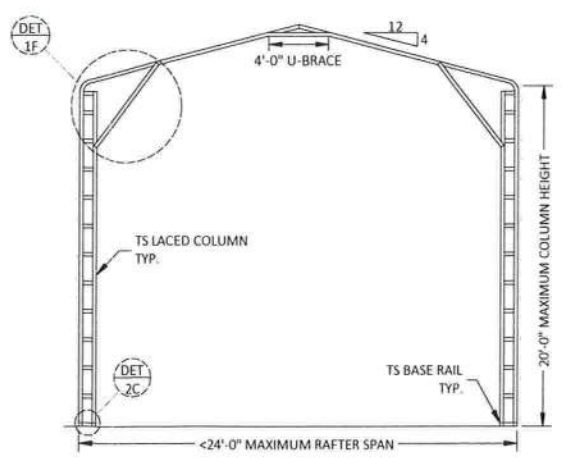
TABLE 2A:

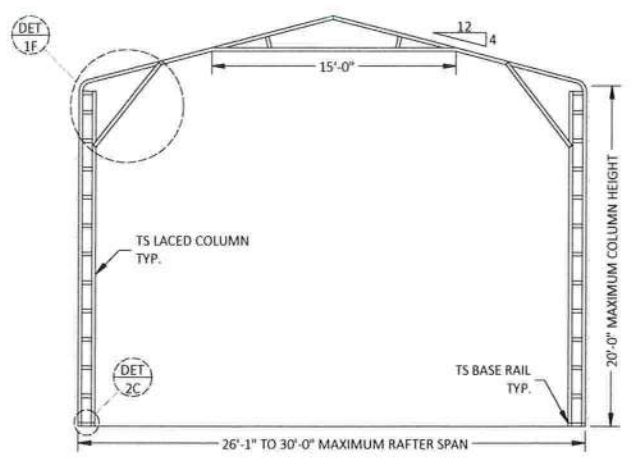
FOR COLUMN HEIGHT OF MAX. 14'-0"	
BUILDING LENGTH	COLUMN DIMENSIONS
< = 60'-0"	ALL COLUMNS TO BE 2.5X2.5X14 GA
60'-1" TO 100'-0"	(N-10) CENTRAL COLUMNS TO BE (2)2.5X2.5X14 GA REST 2.5X2.5X14 GA

*N = NO. OF COLUMNS PER SIDE ELEVATION









Richard E. Walker, P.E. #61240
DATE: 09/05/2024

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PROJECT NO. 2424710

CONTRACTOR:
STEEL BUILDINGS AND STRUCTURES INC.
800PIEDMONT TRIAD WEST DR.,
MOUNT AIRY, NC 27030

PROJECT ADDRESS:
12'-30' WIDE UTILITY GENERIC PLANS

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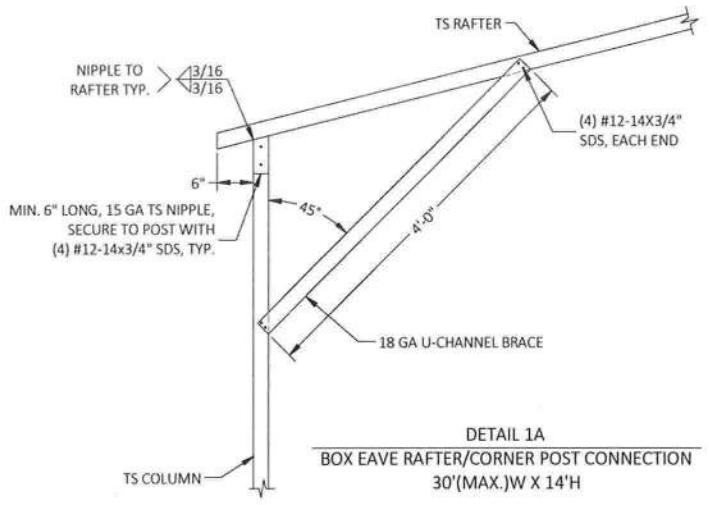
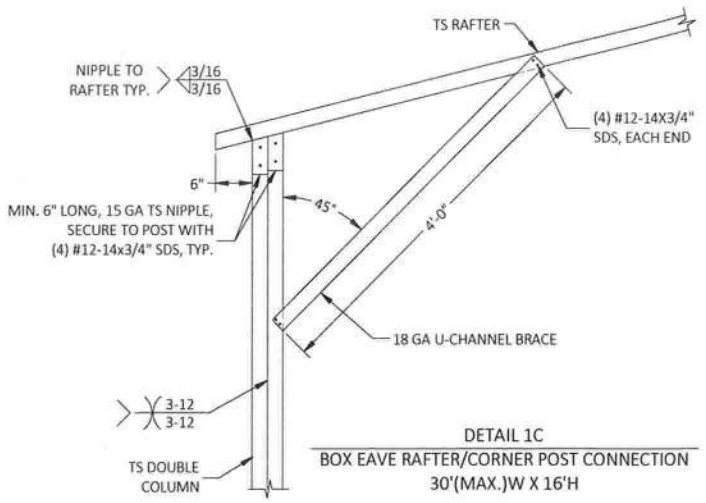
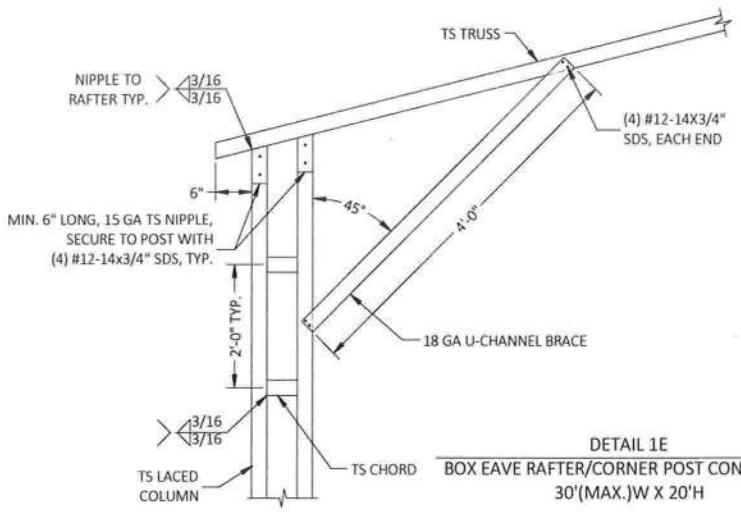


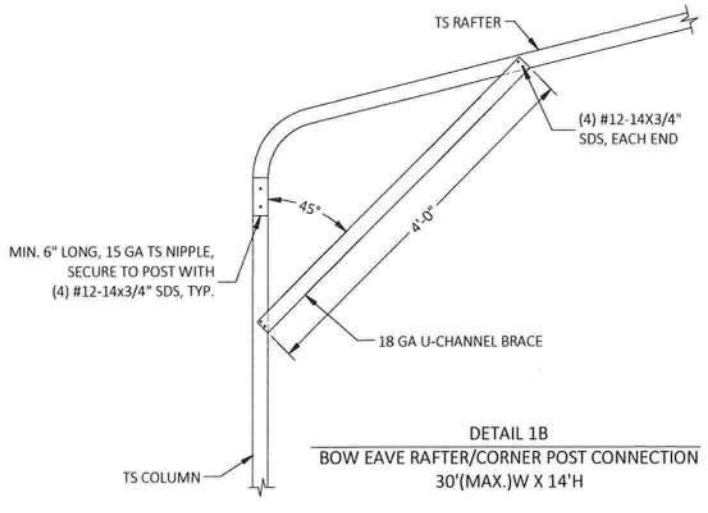
DETAIL 1A
BOX EAVE RAFTER/CORNER POST CONNECTION
30'(MAX.)W X 14'H



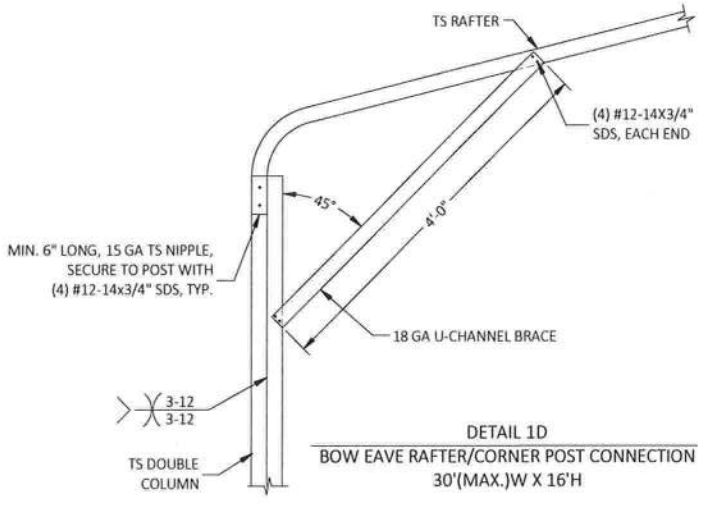
DETAIL 1C
BOX EAVE RAFTER/CORNER POST CONNECTION
30'(MAX.)W X 16'H



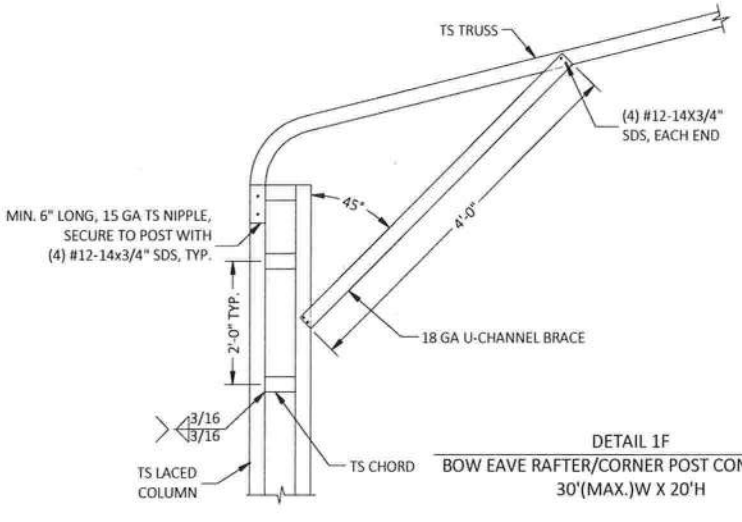
DETAIL 1E
BOX EAVE RAFTER/CORNER POST CONNECTION
30'(MAX.)W X 20'H



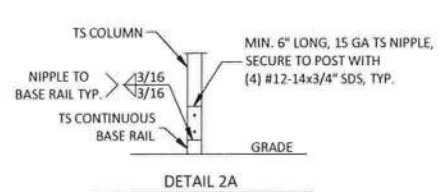
DETAIL 1B
BOW EAVE RAFTER/CORNER POST CONNECTION
30'(MAX.)W X 14'H



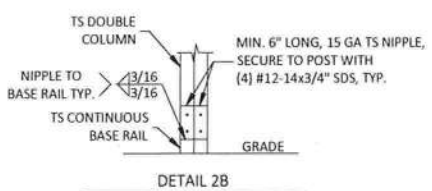
DETAIL 1D
BOW EAVE RAFTER/CORNER POST CONNECTION
30'(MAX.)W X 16'H



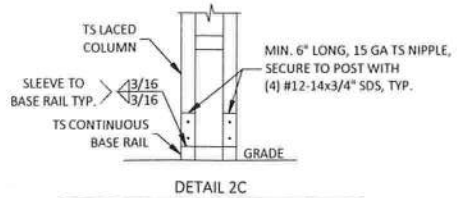
DETAIL 1F
BOW EAVE RAFTER/CORNER POST CONNECTION
30'(MAX.)W X 20'H



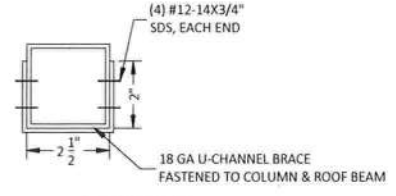
DETAIL 2A
POST/BASE RAIL CONNECTION



DETAIL 2B
POST/BASE RAIL CONNECTION



DETAIL 2C
LACED COLUMN/BASE RAIL CONNECTION



BRACE SECTION

Richard E. Walker, P.E. #61240
DATE: 09/05/2024

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PROJECT NO. 24247102

CONTRACTOR:
STEEL BUILDINGS AND STRUCTURES INC.
800PIEDMONT TRIAD WEST DR.,
MOUNT AIRY, NC 27030

PROJECT ADDRESS:
12'-30' WIDE UTILITY GENERIC PLANS

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REVISION 2:	DATE	SHEET:
DRAWN BY:	JS	3 OF 13
SCALE:	NTS	

GENERAL NOTES

CONCRETE MONOLITHIC SLAB DESIGN IS BASED ON A MINIMUM SOIL BEARING CAPACITY OF 2500 PSF.

CONCRETE

MINIMUM 28-DAY SPECIFIED COMPRESSIVE STRENGTH = 3000 PSI

REINFORCING STEEL

1. TURNDOWN REINFORCING STEEL = ASTM A615 GRADE 60
2. SLAB REINFORCEMENT = WELDED WIRE FABRIC PER ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT
3. REINFORCING STEEL COVER = 3" WHERE CASE AGAINST AND PERMENENTLY EXPOSED TO SOIL OR WATER, 1.5" EVERYWHERE ELSE.
4. REINFORCEMENT IS BENT COLD.
5. MINIMUM INSIDE DIAMETER OF BEND = (6) BAR DIAMETERS
6. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT.

HELIX ANCHOR NOTES

1. FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS, CORALS, MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS AND CLAYS, USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT EVERY 10'.
2. FOR MEDIUM TO VERY LOOSE DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT EVERY 5', OR EVERY POST (LEG).
3. THE UPLIFT/BEARING CAPACITY OF EACH ANCHOR MUST BE EQUAL TO OR GREATER THAN 8.5 KIPS.

HP 9 BARBED DRIVE ANCHOR NOTES

1. ANCHOR TO BE 3/4" DIA (A529 GRADE 50) WITH 30" MIN. EMBEDMENT & (4) MIN. BARBS AS SHOWN IN DETAIL 3C.
2. FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS, CORALS, MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS AND CLAYS, MAXIMUM SPACING TO BE 10'.
2. FOR MEDIUM TO VERY LOOSE DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS, ALLUVIAL FILL, MAX. SPACING TO BE 5' OR EVERY POST (LEG).
3. THE UPLIFT/BEARING CAPACITY OF EACH ANCHOR MUST BE EQUAL TO OR GREATER THAN 8.5 KIPS.

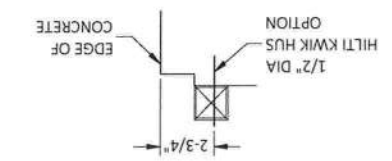
ANCHOR SCHEDULES:

ANCHOR TYPE #1	1/2" DIA WEDGE ANCHOR WITH 5" MIN. EMBEDMENT INTO 3KSI MIN. CONCRETE; 4" MIN. EDGE DISTANCE (e)
ANCHOR TYPE #2	1/2" DIA HILTI KWIK HUS ANCHOR WITH 4.5" MIN. EMBEDMENT INTO 3KSI MIN. CONCRETE; 2.75" MIN. EDGE DISTANCE (e)

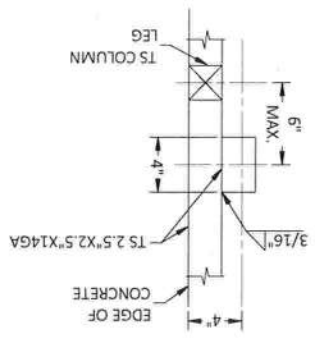
TYPICAL ANCHOR DETAIL WHEN BASE RAIL IS NEAR EDGE OF CONCRETE

BASE RAIL ANCHORAGE OPTION

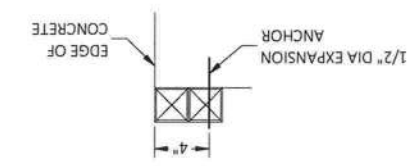
SECTION (OPTION-2)



TOP VIEW (OPTION-1)

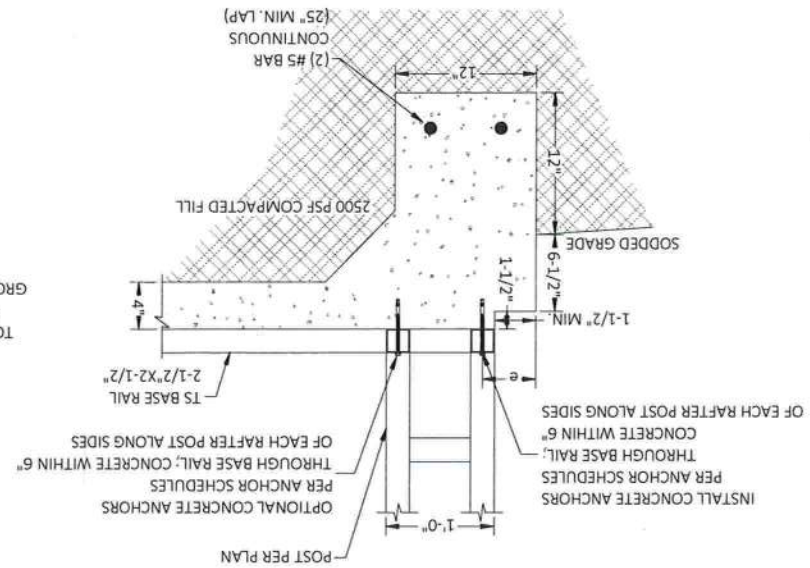


SECTION (OPTION-1)



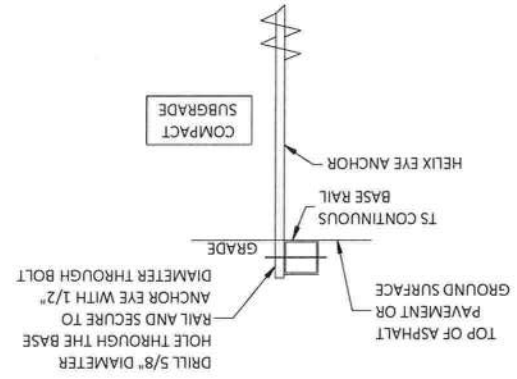
DETAIL 3A-III

CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE



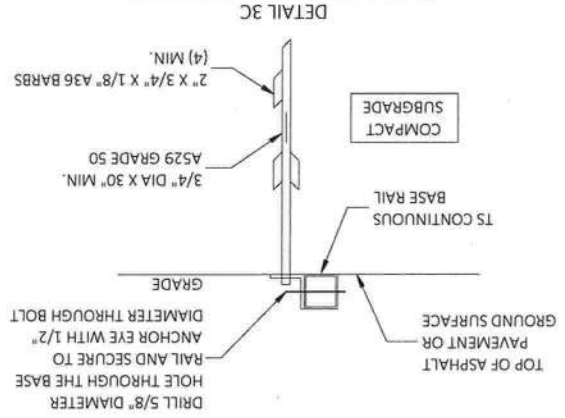
DETAIL 3B

GROUND BASE HELIX ANCHORAGE



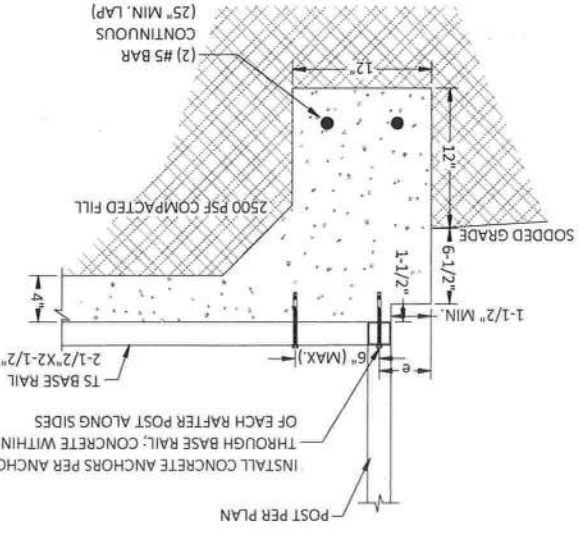
DETAIL 3C

ASPHALT BASE ANCHORAGE (HP 9 BARBED DRIVE ANCHOR)



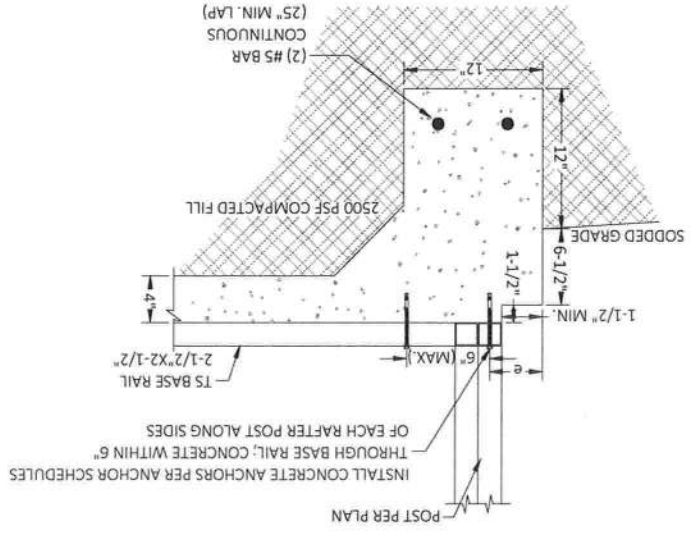
DETAIL 3A-II

CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE



DETAIL 3A-II

CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE



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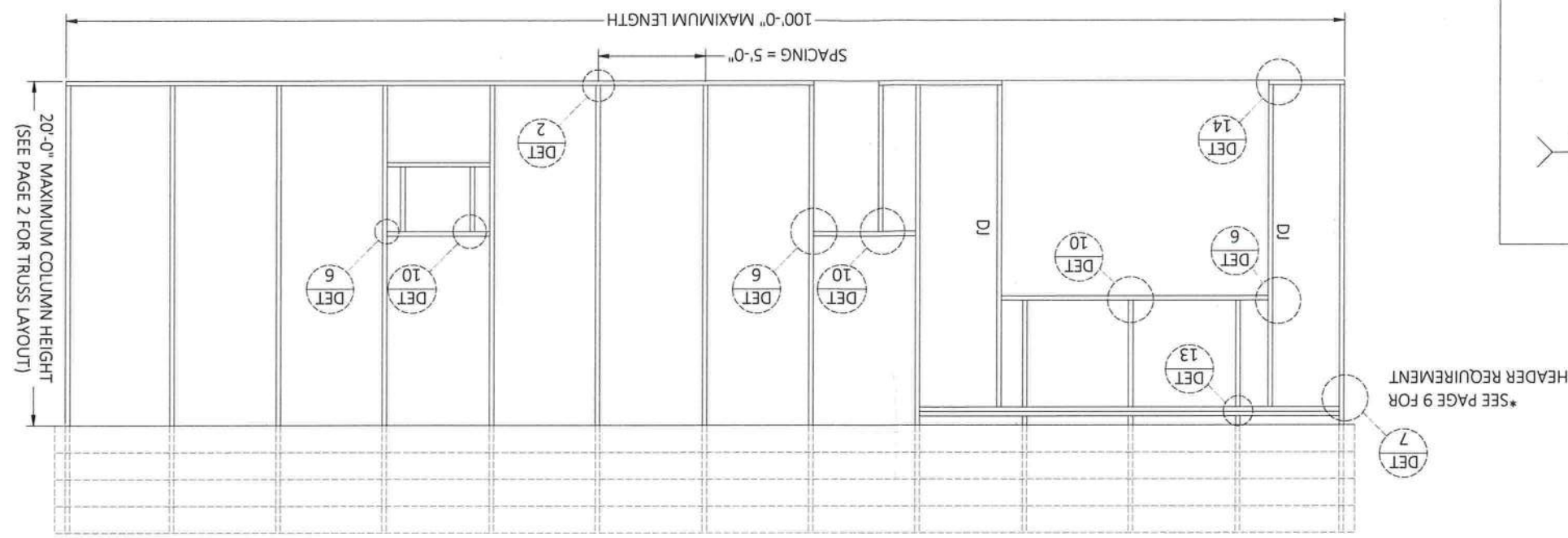

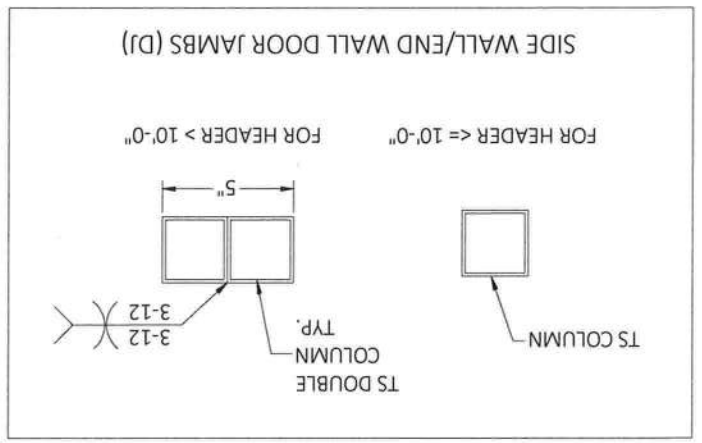

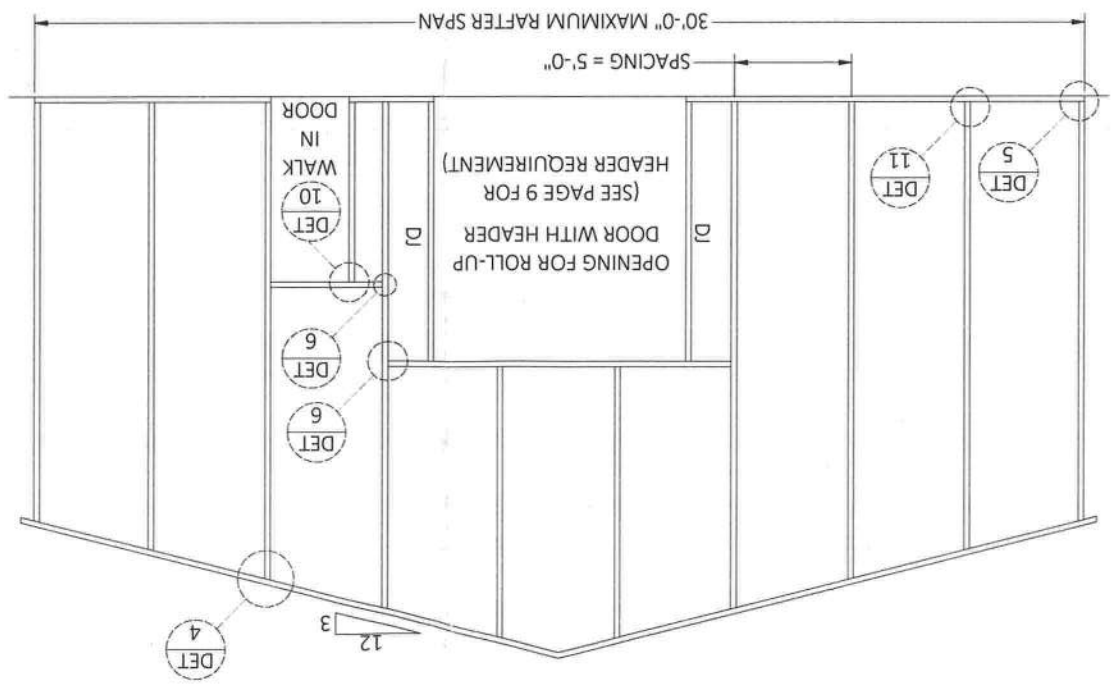

CONTRACTOR:	STEEL BUILDINGS AND STRUCTURES INC. 800PIEDMONT TRIAD WEST DR., MOUNT AIRY, NC 27030
PROJECT ADDRESS:	12'-30' WIDE UTILITY GENERIC PLANS
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SHEET:	5 OF 13

FLORIDA ENGINEERING LLC
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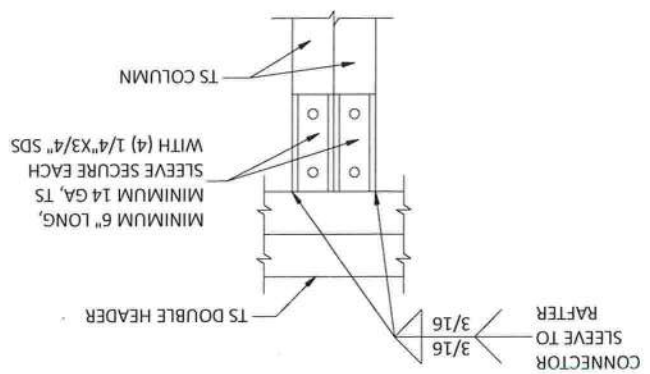
CA CERT.: #30782

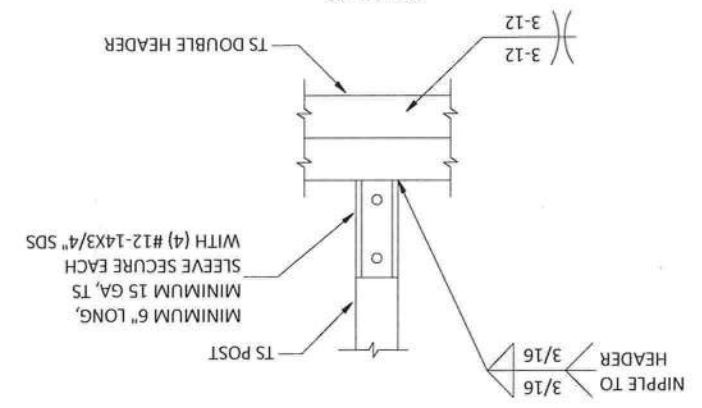
PROJECT NO. 24247102

Richard E. Walker, P.E. #61240
DATE: 09/05/2024

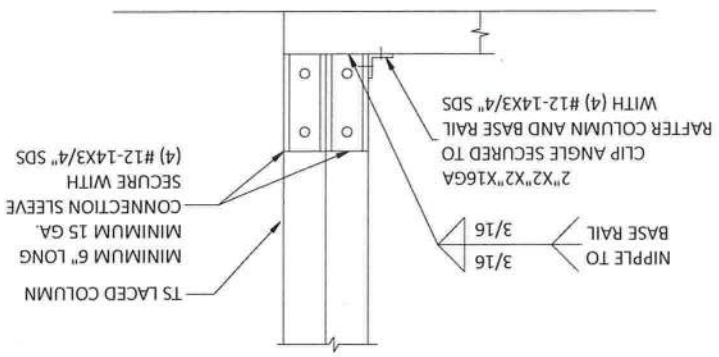
DETAIL 12
DOUBLE HEADER TO COLUMN CONNECTION



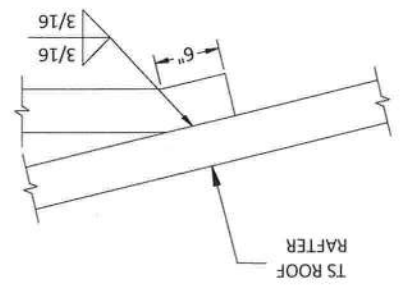
DETAIL 13
POST/DOUBLE HEADER CONNECTION



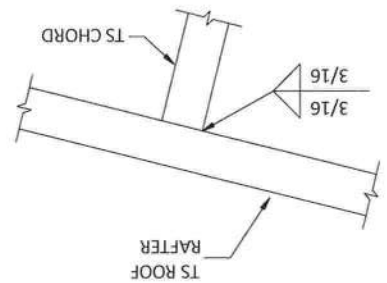
DETAIL 14
POST/BASE RAIL CONNECTION



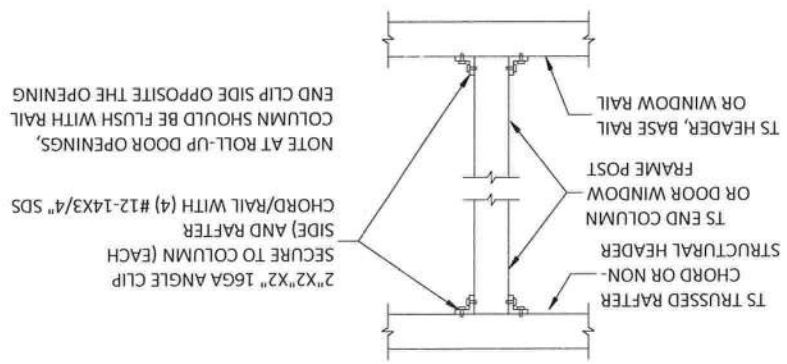
DETAIL 8
COLLAR TIE CONNECTION



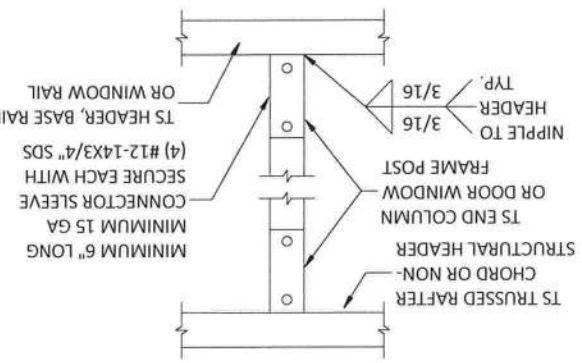
DETAIL 9
RAFTER TO CHORD CONNECTION



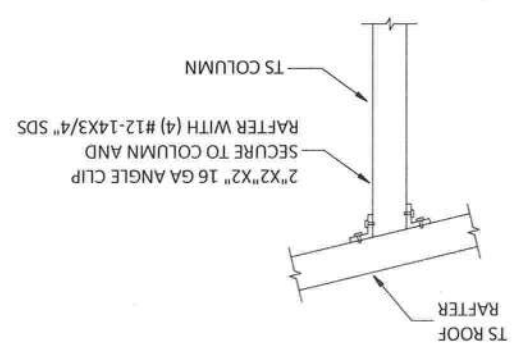
DETAIL 10
POST TO HEADER, BASE RAIL OR WINDOW RAIL CONNECTION (OPTION-1)



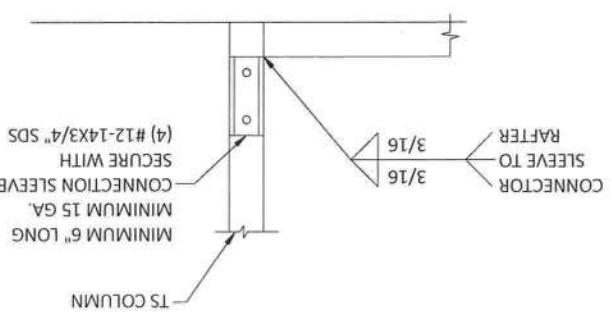
DETAIL 11
POST TO HEADER, BASE RAIL CONNECTION (OPTION-2)



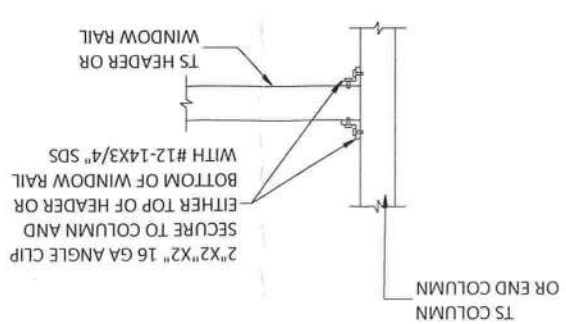
DETAIL 4
END COLUMN/RAFTER CONNECTION



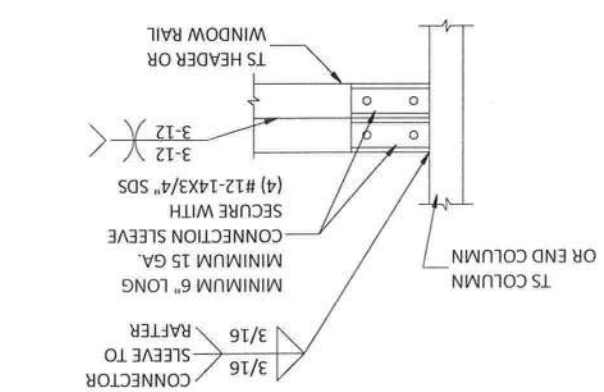
DETAIL 5
END POST/BASE RAIL CONNECTION



DETAIL 6
HEADER TO COLUMN CONNECTION



DETAIL 7
DOUBLE HEADER TO COLUMN CONNECTION



CONNECTION DETAILS

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800PIEDMONT TRIAD WEST DR.,
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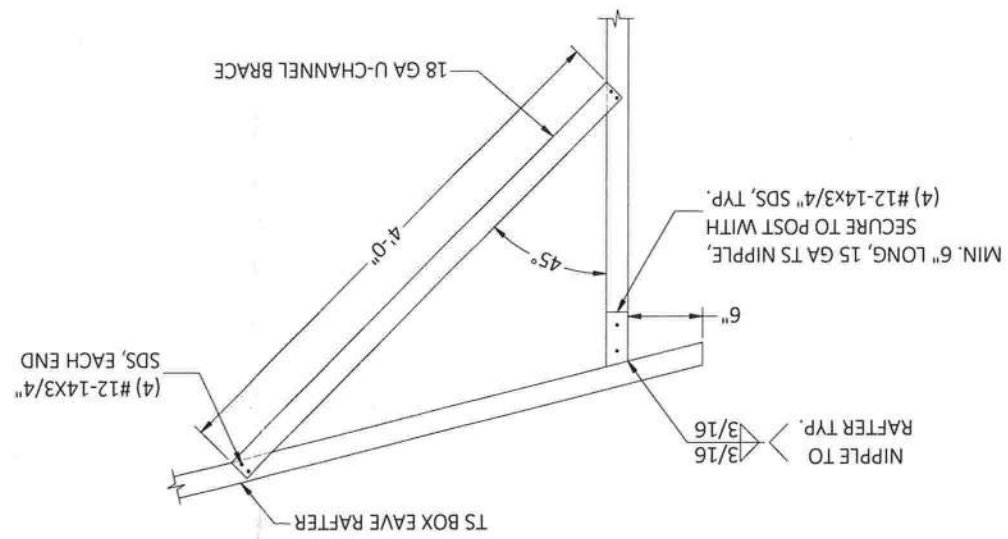
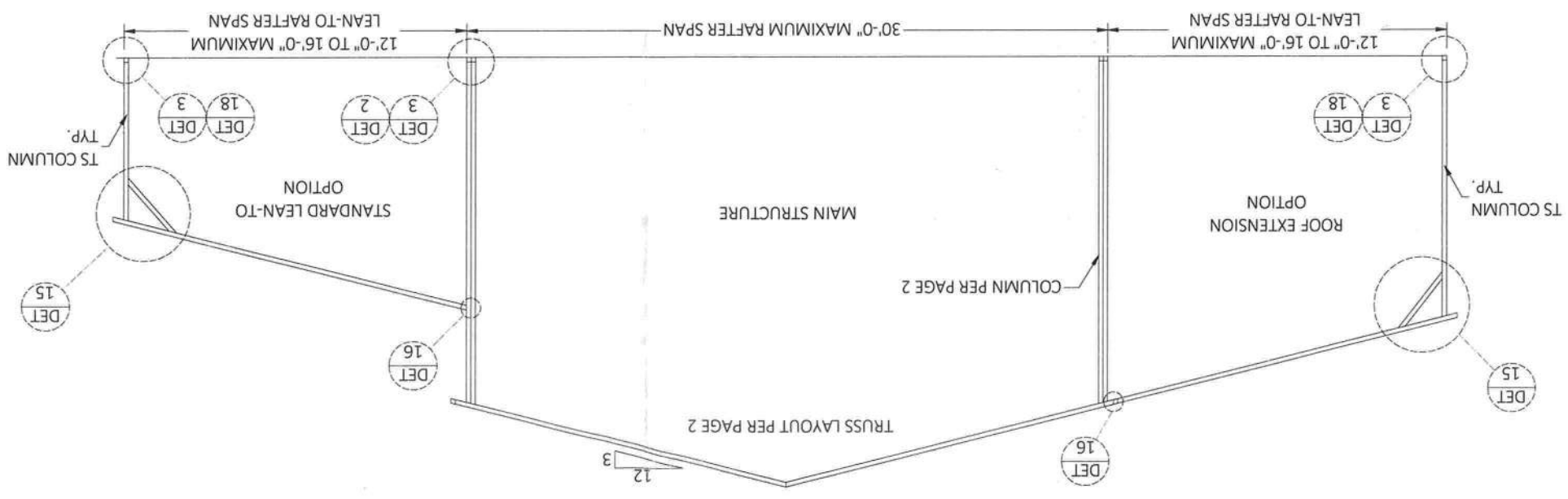
DETAIL 15

LEAN-TO RAFTER/CORNER POST CONNECTION



TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION



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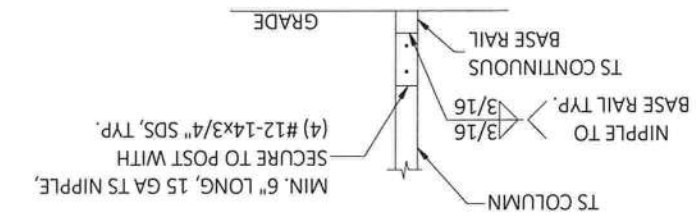
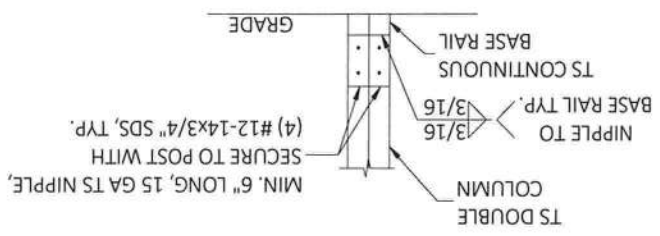
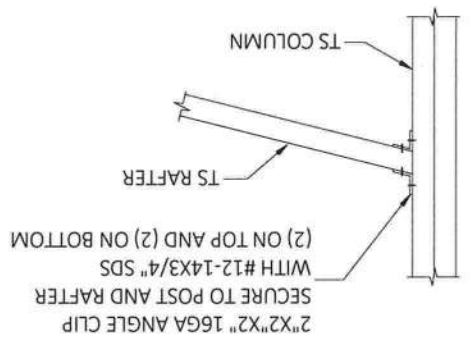
DETAIL 18A
LEAN-TO POST CONNECTION



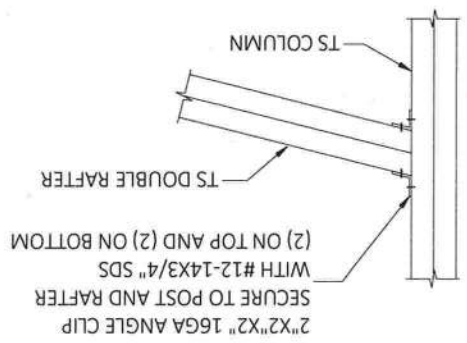
DETAIL 18B
LEAN-TO DOUBLE POST CONNECTION



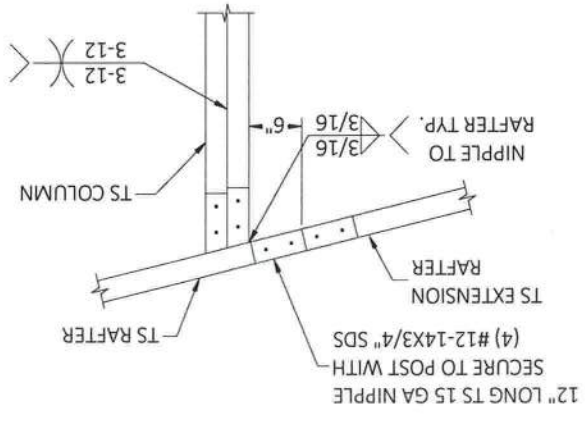
DETAIL 17A
LEAN TO RAFTER/COLUMN CONNECTION
FOR RAFTER SPANS LESS THAN 12'-0"



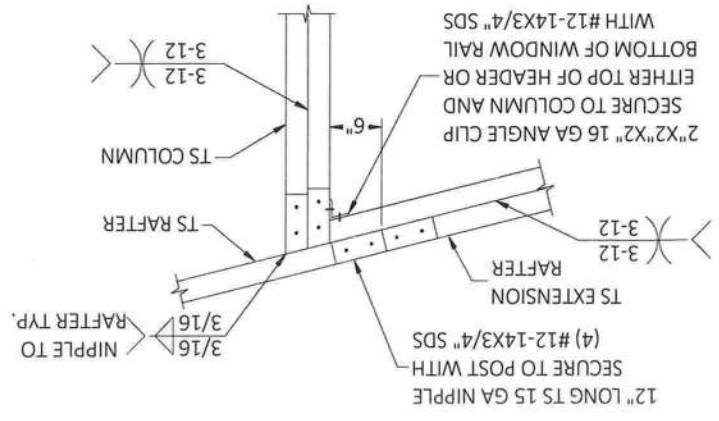
DETAIL 17B
LEAN TO RAFTER/COLUMN CONNECTION
FOR RAFTER SPANS BETWEEN 12'-0" AND 16'-0"



DETAIL 16A
SIDE EXTENSION RAFTER/COLUMN CONNECTION
FOR RAFTER SPANS LESS THAN 12'-0"



DETAIL 16B
SIDE EXTENSION RAFTER/COLUMN CONNECTION
FOR RAFTER SPANS BETWEEN 12'-0" AND 16'-0"



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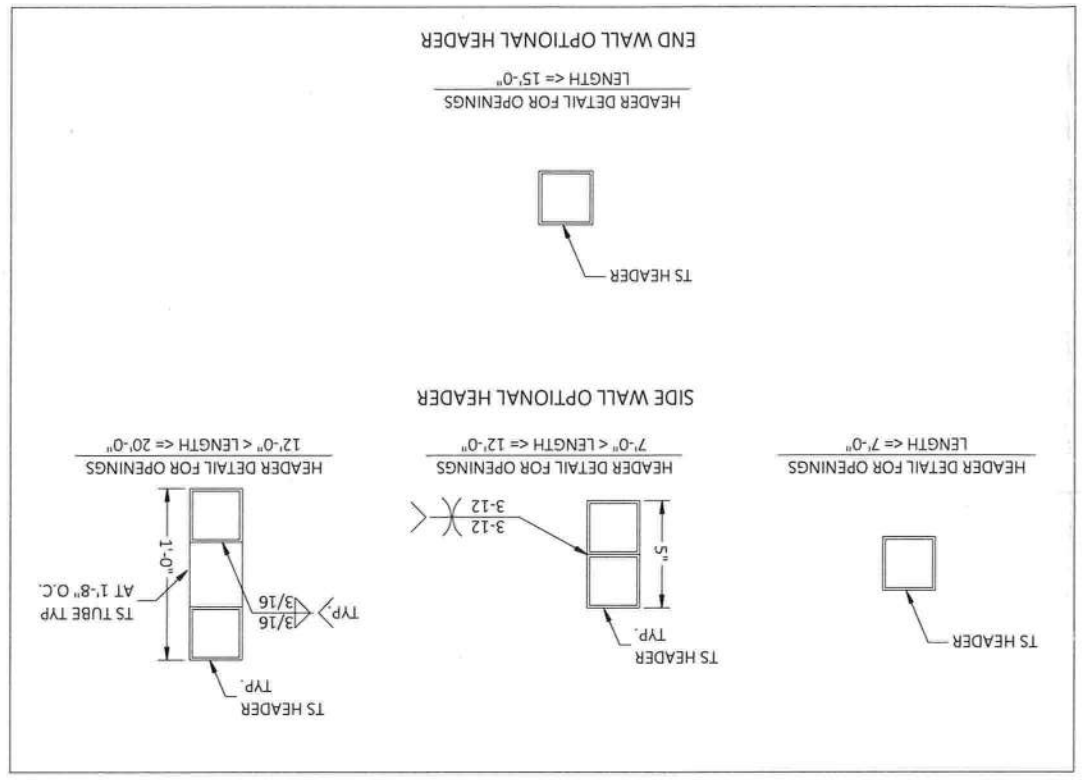
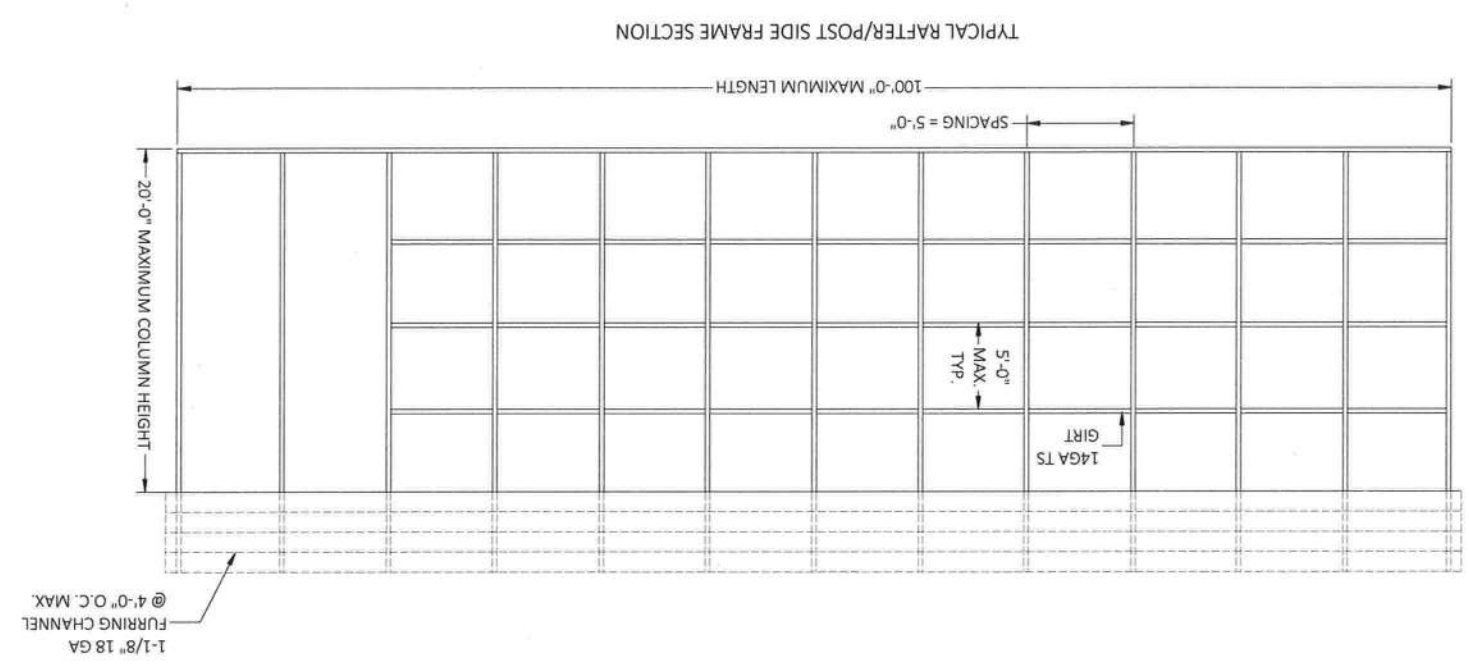
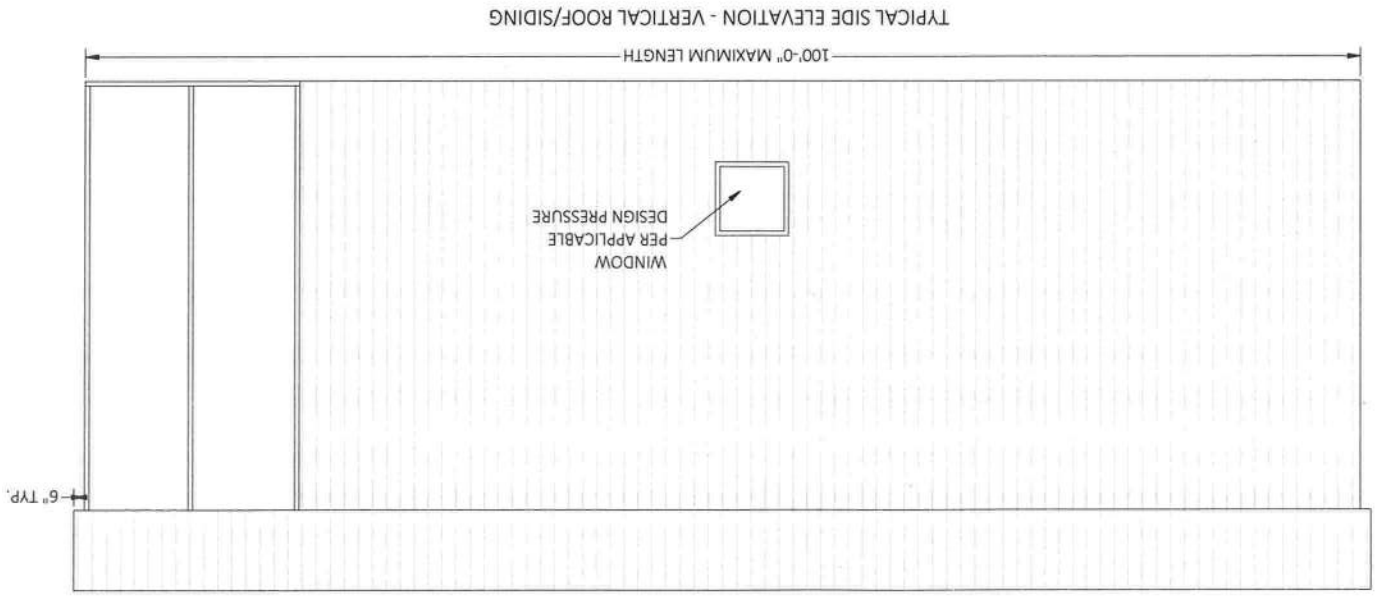
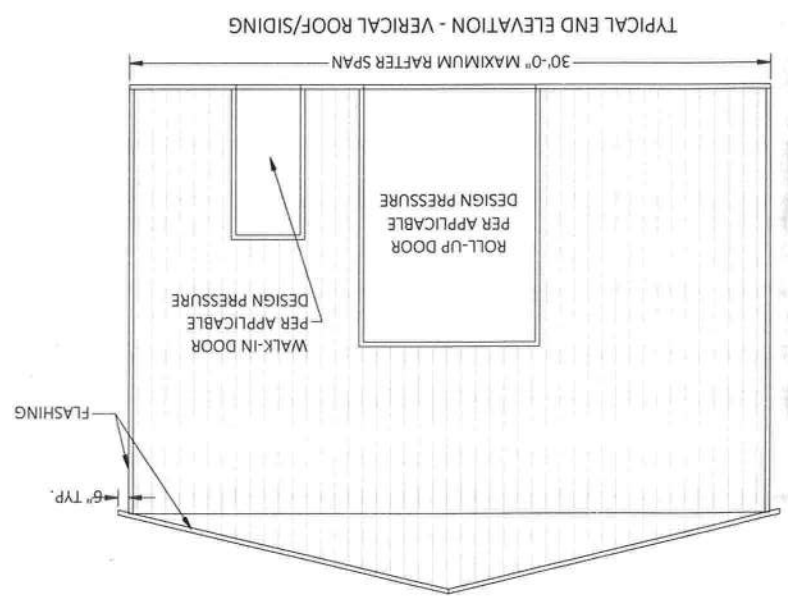




BOX EAVE FRAME RAFTER ENCLOSED BUILDING





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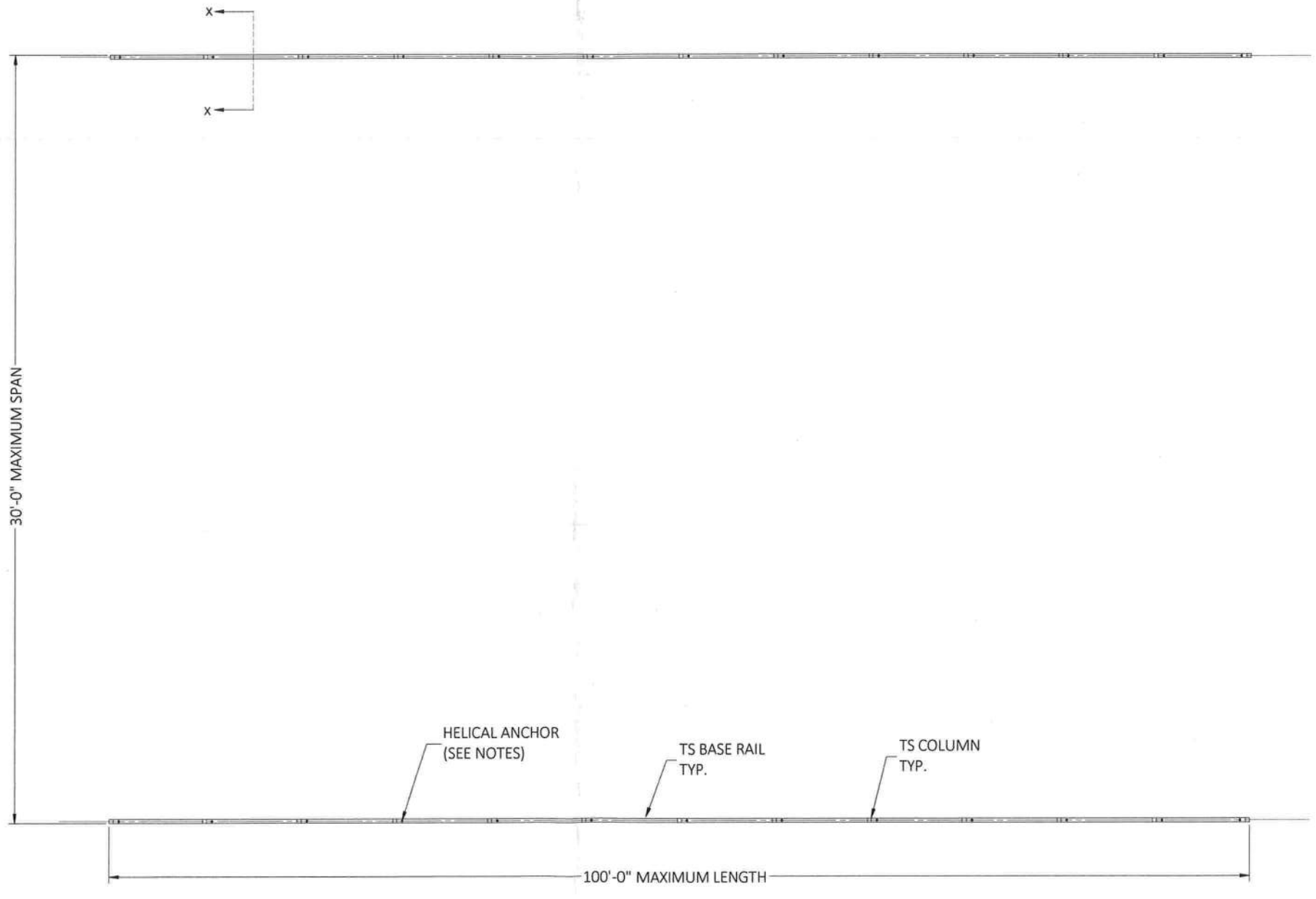
DATE: 09/05/2024

HELIX ANCHOR NOTES

1. FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS, CORALS, MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS AND CLAYS, USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT EVERY 10'.
2. FOR MEDIUM TO VERY LOOSE DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT EVERY 5' OR EVERY POST (LEG).
3. THE UPLIFT/BEARING CAPACITY OF EACH ANCHOR MUST BE EQUAL TO OR GREATER THAN 8.5 KIPS.

OPTIONAL HELICAL ANCHORING ON GRADE DETAIL

SECTION X-X



BASE RAIL PLAN

Richard E. Walker, P.E. #61240
DATE: 09/05/2024

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GENERAL NOTES

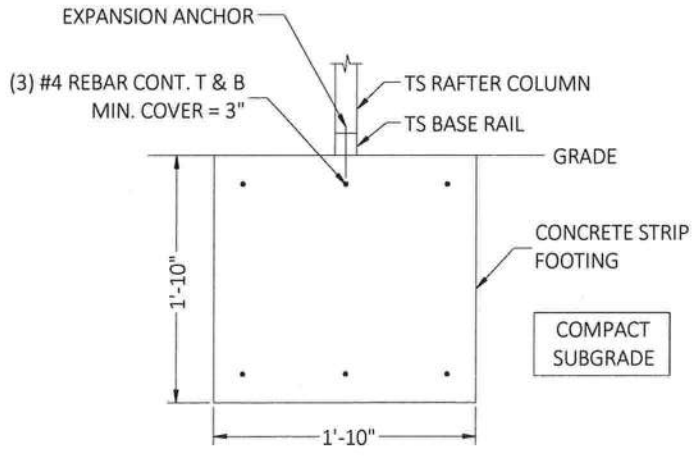
CONCRETE MONOLITHIC SLAB DESIGN IS BASED ON A MINIMUM SOIL BEARING CAPACITY OF 2500 PSF.

CONCRETE

MINIMUM 28-DAY SPECIFIED COMPRESSIVE STRENGTH = 3000 PSI

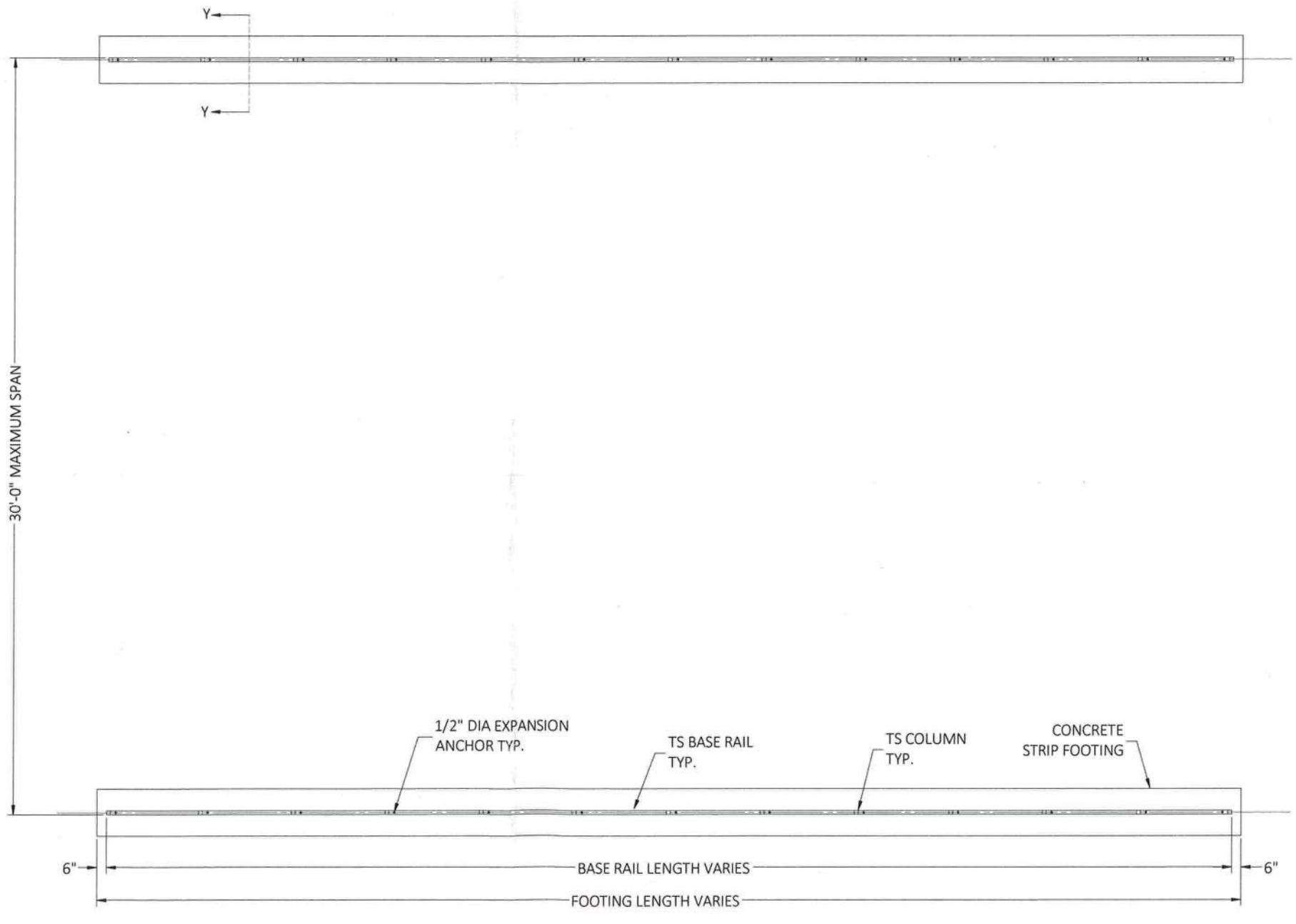
REINFORCING STEEL

1. TURNDOWN REINFORCING STEEL = ASTM A615 GRADE 60
2. SLAB REINFORCEMENT = WELDED WIRE FABRIC PER ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT
3. REINFORCING STEEL COVER = 3" WHERE CASE AGAINST AND PERMENENTLY EXPOSED TO SOIL OR WATER, 1.5" EVERYWHERE ELSE.
4. REINFORCEMENT IS BENT COLD.
5. MINIMUM INSIDE DIAMETER OF BEND = (6) BAR DIAMETERS
6. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT.



SECTION Y-Y

OPTIONAL CONCRETE STRIP FOOTING



CONCRETE STRIP FOOTING PLAN

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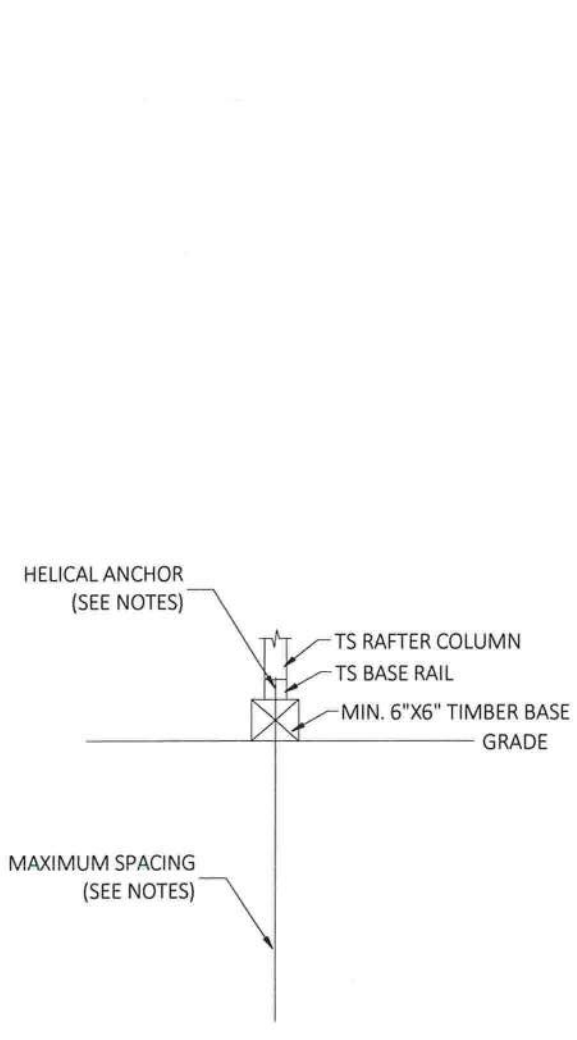
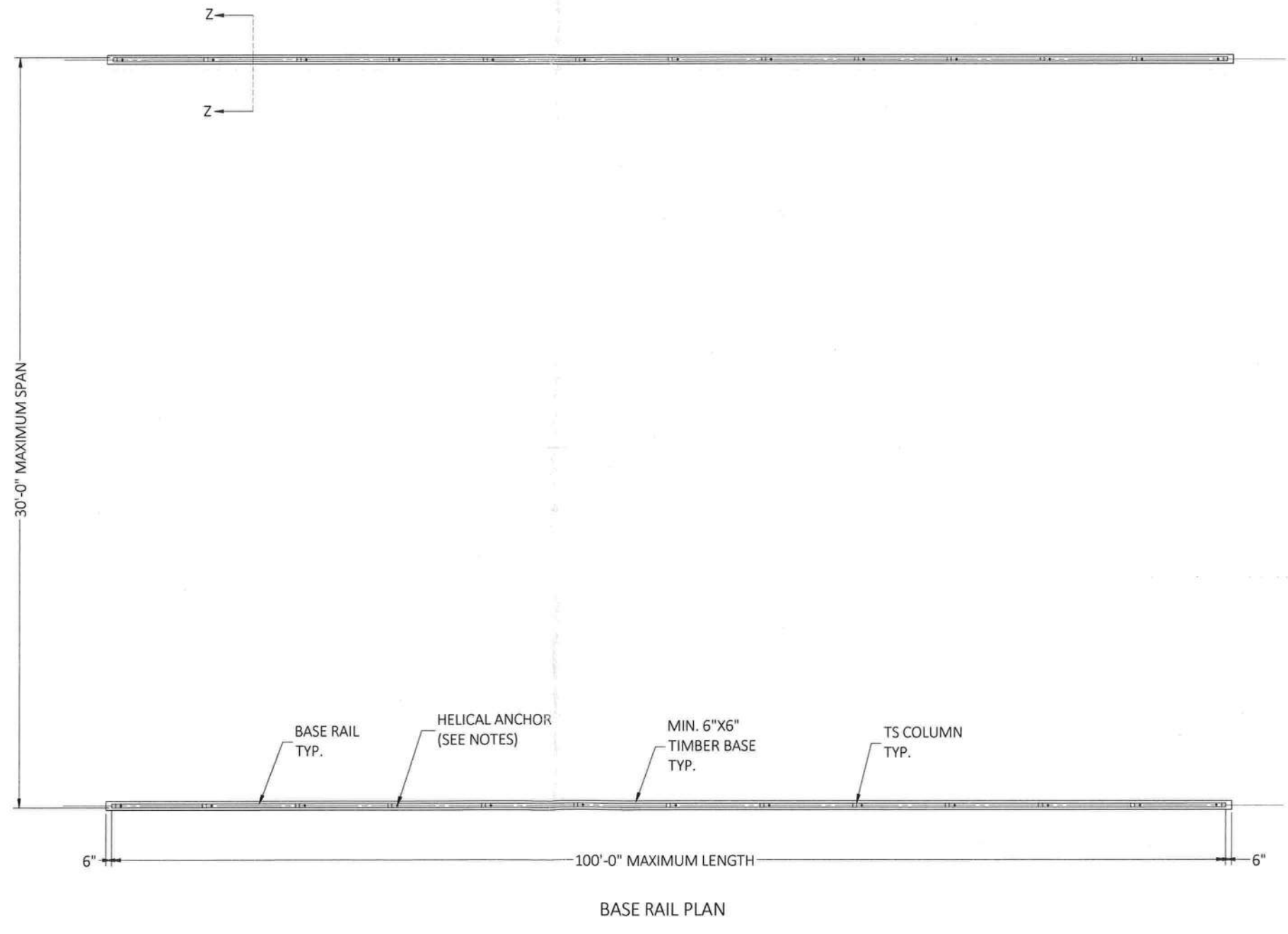
TIMBER NOTES:
1. TIMBER BASE TO BE NO. 2 SYP PT OR EQUIVALENT.

HELIX ANCHOR NOTES
1. FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS, CORALS, MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS AND CLAYS, USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT EVERY 10'.
2. FOR MEDIUM TO VERY LOOSE DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) 4" HELICES WITH MINIMUM 30" EMBEDMENT EVERY 5' OR EVERY POST (LEG).
3. THE UPLIFT/BEARING CAPACITY OF EACH ANCHOR MUST BE EQUAL TO OR GREATER THAN 8.5 KIPS.

OPTIONAL HELICAL ANCHORING ON TIMBER BEAM DETAIL



SECTION Z-Z



BASE RAIL PLAN

Richard E. Walker, P.E. #61240
DATE: 09/05/2024

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FLOOD SOLUTIONS STATIC FLOOD VENTS FL #17588.1-R4				
VENT MODEL	VENT SIZE (WIDHT x HEIGHT) (in.)	ROUGH OPENING SIZE (Width x Height) (in.)	ENCLOSED AREA COVERAGE (sq. ft.)	NET FREE AREA (sq. in.)
FS-1608	$18\frac{1}{2}$" X $10\frac{1}{2}$"	16 X 8	97	80.7
FS-1616	$18\frac{1}{2}$" X $18\frac{1}{2}$"	16 X 16	191	158.2
FS-1412	$17\frac{1}{2}$" X $14\frac{1}{2}$"	$14\frac{1}{2}$" X 12"	129	106.7
FS-1608-HEX	$18\frac{1}{2}$" X $10\frac{1}{2}$"	16 X 8	110	91.4

FLOOD VENTS PROVISION IN FLOOD HAZARD AREAS (FLOOD ZONE A/V):

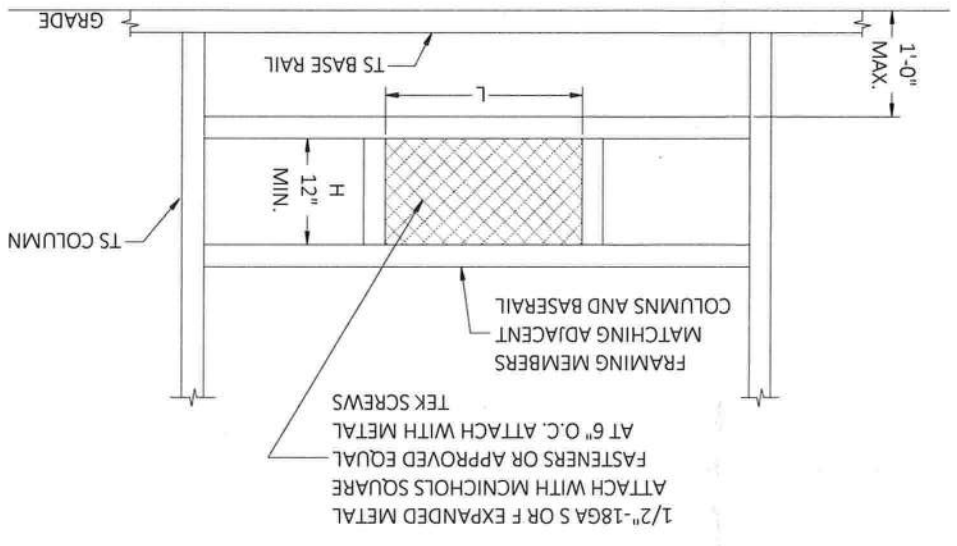
1. THE STRUCTURE SHALL BE CONSTRUCTED SUCH THAT THE FINISHED FLOOR IS ABOVE DESIGN FLOOD ELEVATION (DFE = BASE FLOOD ELEVATION + 1' FREEBOARD). IF THE CONSTRUCTION IS BELOW DFE, FLOOD VENTS SHALL BE INSTALLED PER 2023 FLORIDA BUILDING CODE, RESIDENTIAL (8TH EDITION), SECTION R322.2.2.

2. CONTRACTOR TO VERIFY ELEVATIONS IN THE FIELD.

FLOOD VENT INSTALLATION NOTES:

1. MINIMUM VENT SPACE REQUIRED = 1 SQ. IN. OF OPEN VENT AREA PER SQ. FT. OF ENCLOSED AREA.
2. PROVIDE A MINIMUM OF TWO OPENINGS ON DIFFERENT SIDES OF EACH ENCLOSED AREA.
3. APPLY A 1.3 FACTOR WHEN CALCULATING TOTAL OPEN AREA WHEN USING 1/2"-18GA S OR F EXPANDED METAL.
4. TOTAL OPEN AREA OF VENT = L X H (MIN. 12").
5. FLOOD VENT DETAIL COMPLIES WITH FEMA/NFIP.
6. PREFABRICATED FLOOD VENTS MEETING THE REQUIREMENTS OF FEMA/NFIP MAY BE INSTALLED.

TYPICAL FLOOD VENT DETAIL



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