

APPLICABLE CODES AND STANDARDS

- 2020 FLORIDA BUILDING CODE (7TH EDITION)
- 2018 INTERNATIONAL BUILDING CODE
- ASCE 7-16: MINIMUM DESIGN LOADS ON BUILDINGS AND OTHER STRUCTURES
- AISC STEEL CONSTRUCTION MANUAL (15TH EDITION)
- ACI 318-14: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
- TMS 402-16: BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES
- AWS D1.1: STRUCTURAL WELDING

DESIGN LOADS

- DEAD LOAD = 15 PSF
- LIVE LOAD = 20 PSF
- WIND LOAD (SEE TABLE 1)

A. RISK CATEGORY = II

- WIND EXPOSURE CATEGORY = C
- ULTIMATE WIND SPEED = 120 MPH
- NOMINAL WIND SPEED = 93 MPH

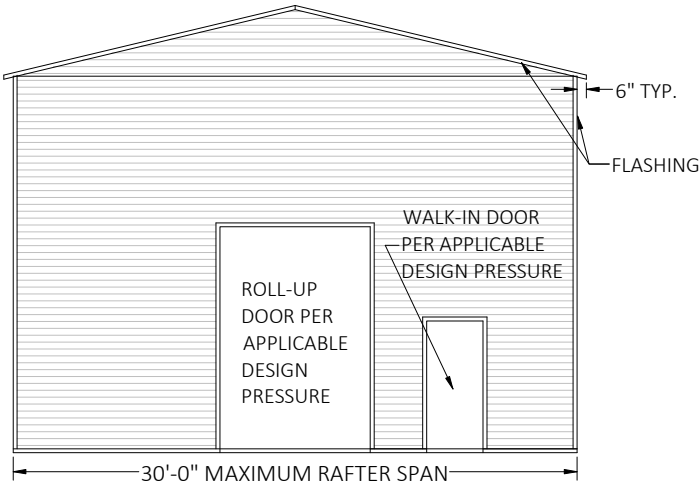
INSTALLATION NOTES AND SPECIFICATIONS

- END WALL COLUMNS (POST) AND SIDE WALL COLUMNS ARE EQUIVALENT IN SIZE AND SPACING U.N.O.
- 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.
- AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR PURLINS, AND POSTS, INTERIOR = 9” AND END = 6” MAX.
- 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 18° (4:12 PITCH) OR LESS. SPACING REQUIREMENTS FOR OTHER ROOF HEIGHTS AND/OR SLOPES MAY VARY.
- ANCHORS SHALL BE INSTALLED THROUGH THE BASE RAIL WITHIN 6” OF EACH RAFTER COLUMN ALONG SIDES AND ENDS.
- STANDARD GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBARS WITH WELDED NUT X 30” 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.
- RAFTER SPACING IS 5'-0" FOR WIND SPEEDS BETWEEN 110 MPH AND 140 MPH AND 4'-0" FOR WIND SPEEDS BETWEEN 140 MPH AND 180 MPH.

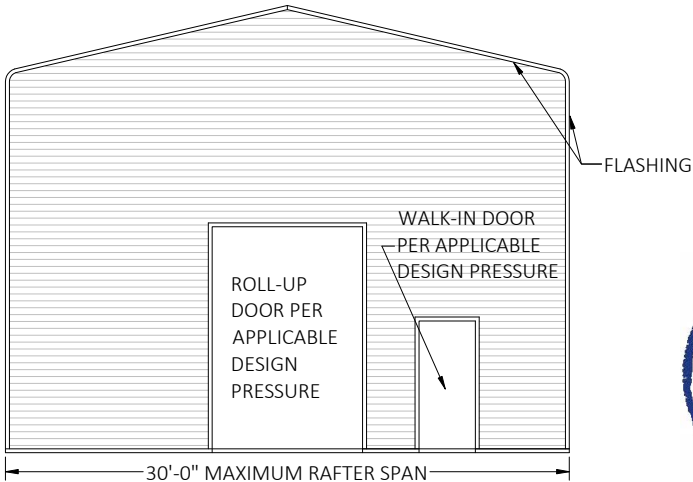
DRAWING INDEX

| PAGE NO. | DESCRIPTION                                             |
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| 3        | CONNECTION DETAILS (1-2)                                |
| 4        | BASE RAIL AND FOUNDATION ANCHORAGE                      |
| 5        | BOX EAVE RAFTER END WALL, SIDE WALL AND OPENING FRAMING |
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| 11       | OPTIONAL CONCRETE STRIP FOOTING                         |
| 12       | OPTIONAL HELICAL ANCHORING DETAIL                       |

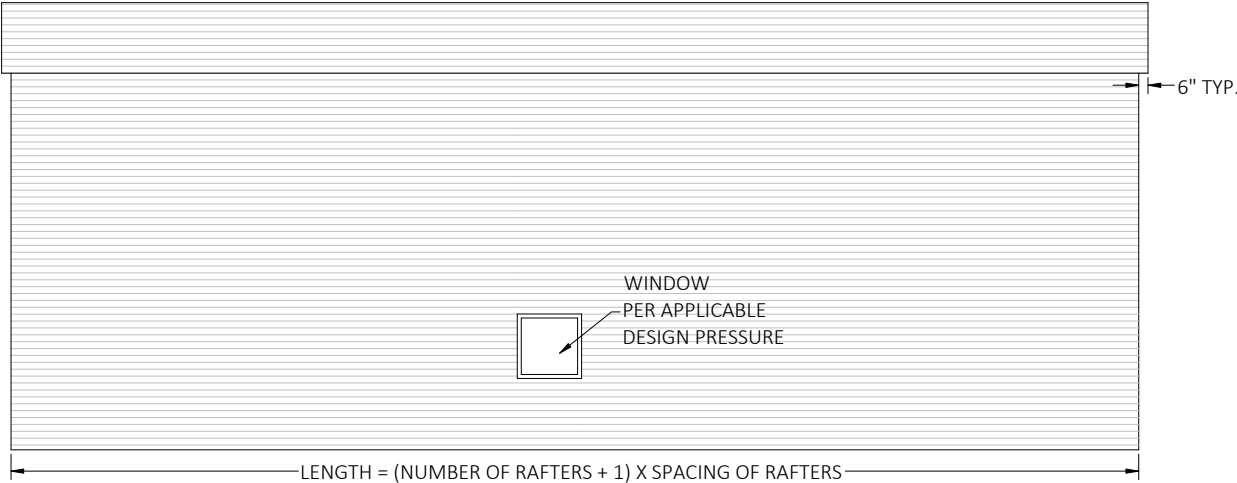
ENCLOSED METAL BUILDING DESIGN  
MAXIMUM 30'-0" WIDE X 20'-0" EAVE HEIGHT  
BOX EAVE FRAME AND BOW EAVE FRAME



TYPICAL END ELEVATION - BOX EAVE



TYPICAL END ELEVATION - BOW EAVE



TYPICAL SIDE ELEVATION - HORIZONTAL ROOF

TABLE 1

| MEMBER       | PRODUCT APPROVAL NUMBER | WIND DESIGN PRESSURES |
|--------------|-------------------------|-----------------------|
| ROOF PANELS  | FL39466                 | +12.1 PSF / -40.2 PSF |
| WALL PANELS  | FL39594                 | +16.8 PSF / -21.3 PSF |
| GARAGE DOOR  | CTP                     | +16.8 PSF / -21.3 PSF |
| WALK-IN DOOR | CTP                     | +16.8 PSF / -21.3 PSF |

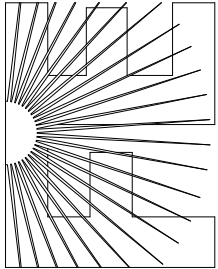
CTP = CONTRACTOR TO PROVIDE 2020 FBC APPROVED PRODUCTS THAT MEET OR EXCEED DESIGN PRESSURES AS TABULATED.

| DESIGN WIND PRESSURES | 120 MPH               |
|-----------------------|-----------------------|
| ZONE 1                | +12.1 PSF / -21.2 PSF |
| ZONE 2                | +12.1 PSF / -34.5 PSF |
| ZONE 3                | +12.1 PSF / -40.2 PSF |
| ZONE 4                | +16.8 PSF / -18.4 PSF |
| ZONE 5                | +16.8 PSF / -21.3 PSF |

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PORT CHARLOTTE, FLORIDA 33952  
(941) 391-5980  
www.flengineeringllc.com



PROJECT NO. 2217228

CA CERT. #30782

CONTRACTOR:  
ELITE METAL  
MANUFACTURING

PROJECT ADDRESS:  
12'-30' WIDE PLANS  
10121 88TH TRACE,  
LIVE OAK FL 32060

DESIGN DATE: 06/24/2022

REVISION 1: DATE

REVISION 2: DATE

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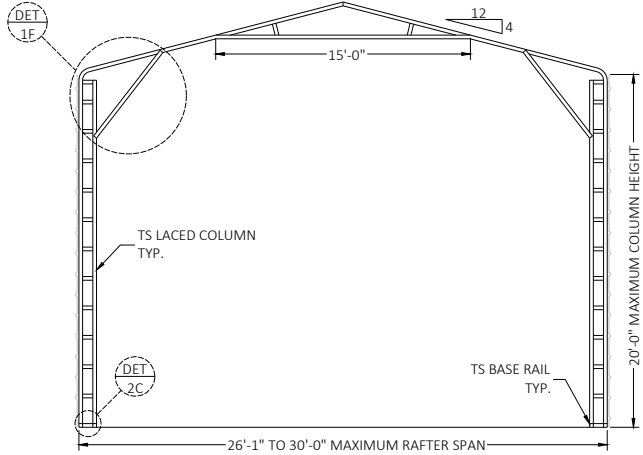
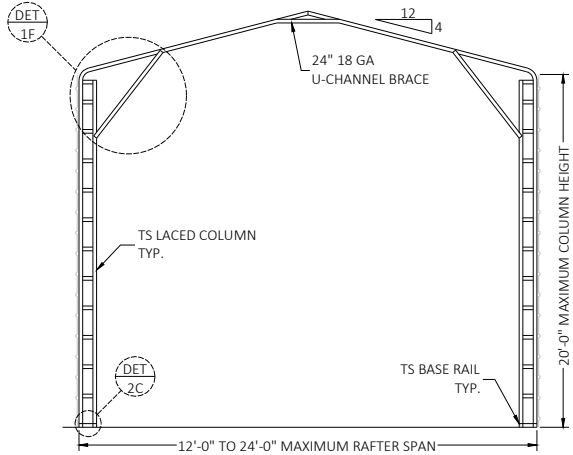
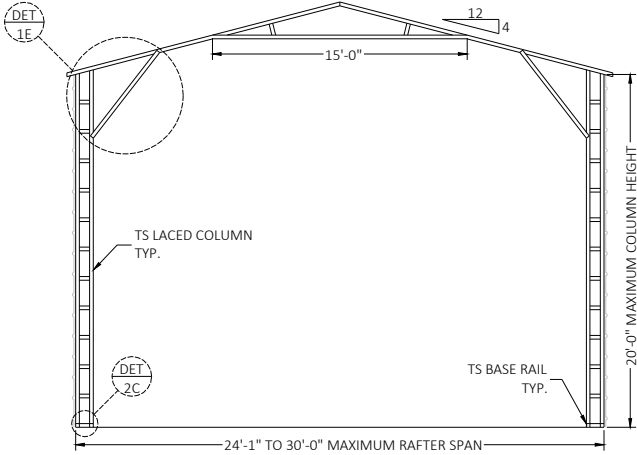
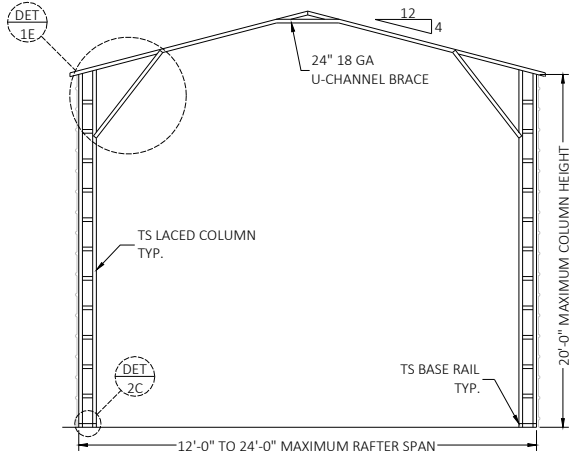
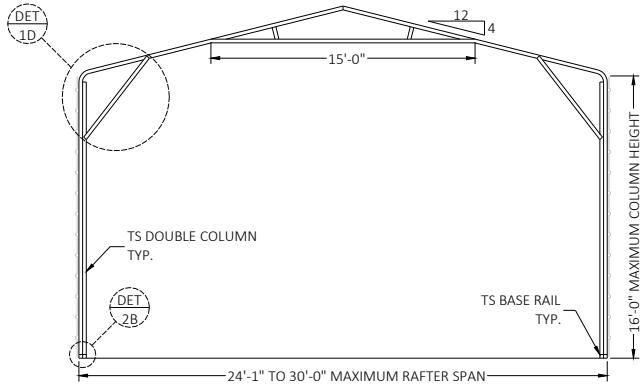
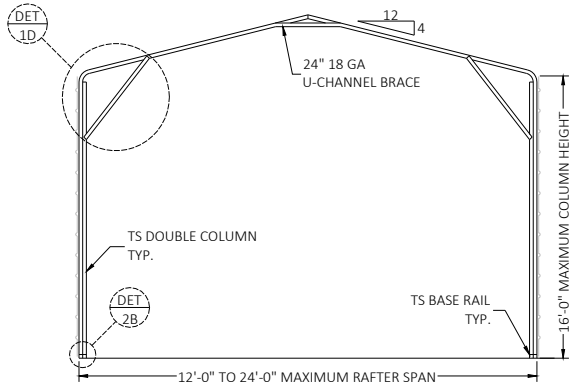
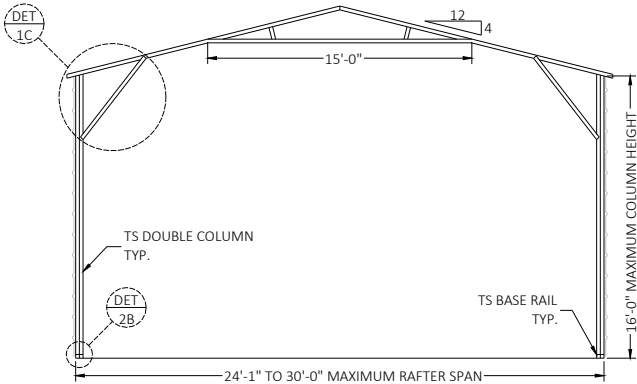
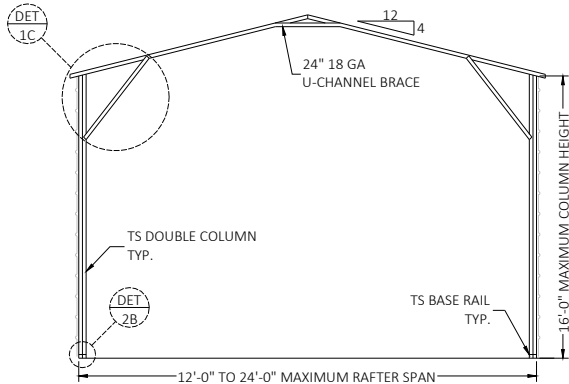
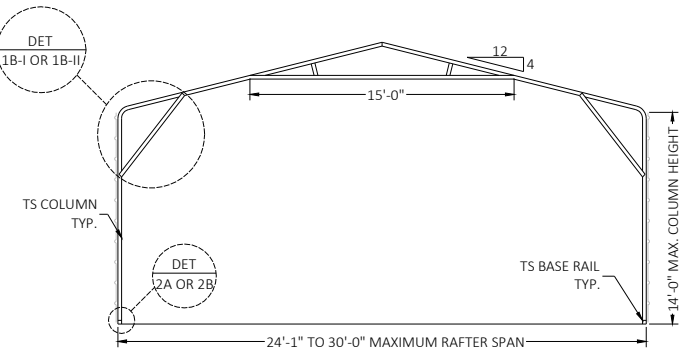
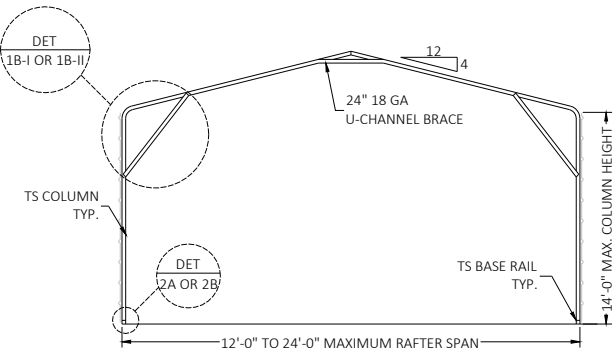
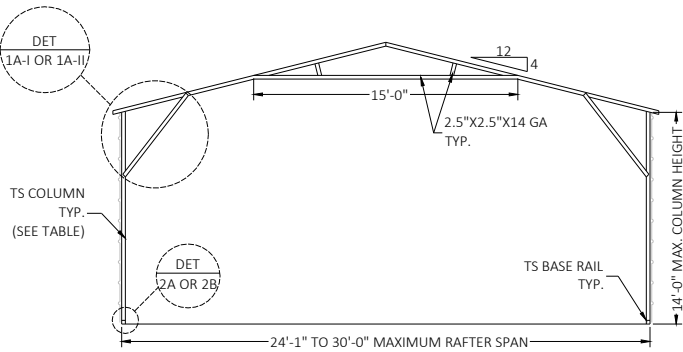
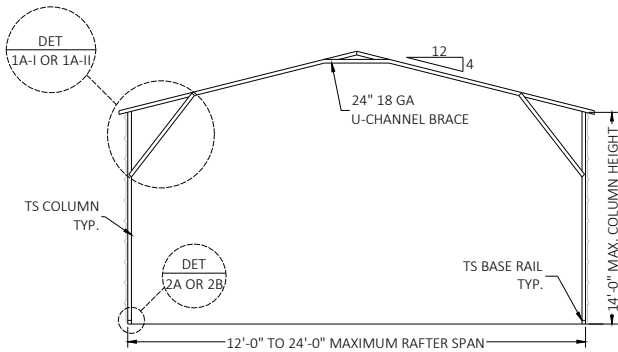
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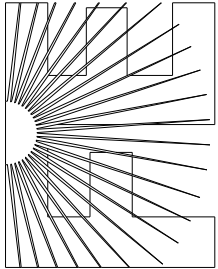
| FOR 14'-0" MAX. POST HEIGHT |                                                                                          |
|-----------------------------|------------------------------------------------------------------------------------------|
| BUILDING LENGTH             | POST DIMENSIONS                                                                          |
| <= 56'-0"                   | ALL POSTS 2.5X2.5X14 GA                                                                  |
| 56'-1" TO 60'-0"            | (2) CENTRAL POSTS 2.5X2.5X14 GA OR (4) CENTRAL POSTS 2.5X2.5X12 GA<br>REST 2.5X2.5X14 GA |



BOX EAVE FRAME

BOW EAVE FRAME

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MANUFACTURING

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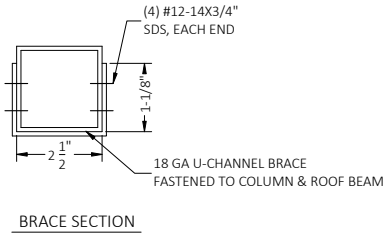
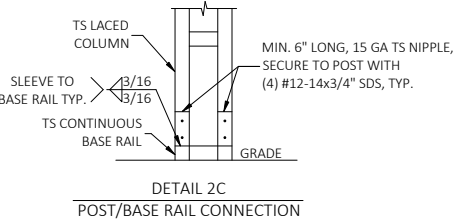
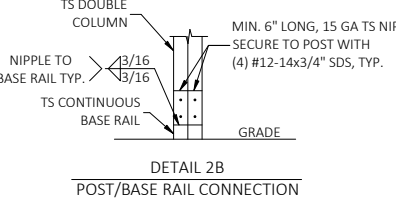
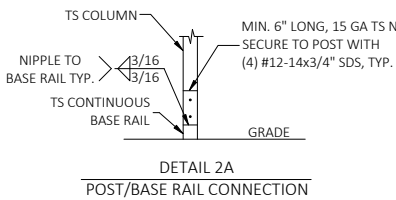
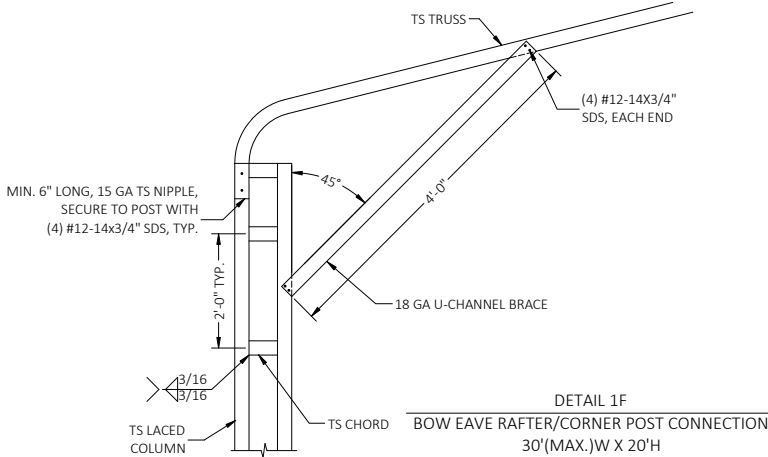
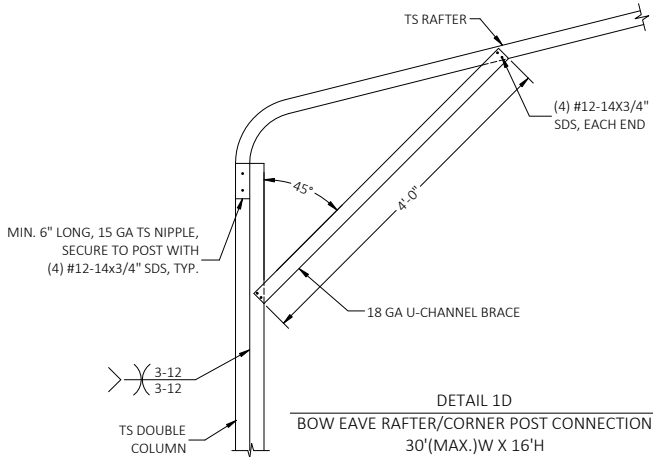
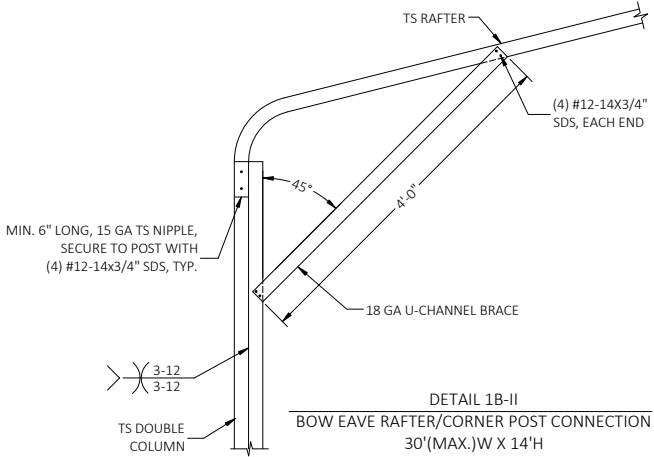
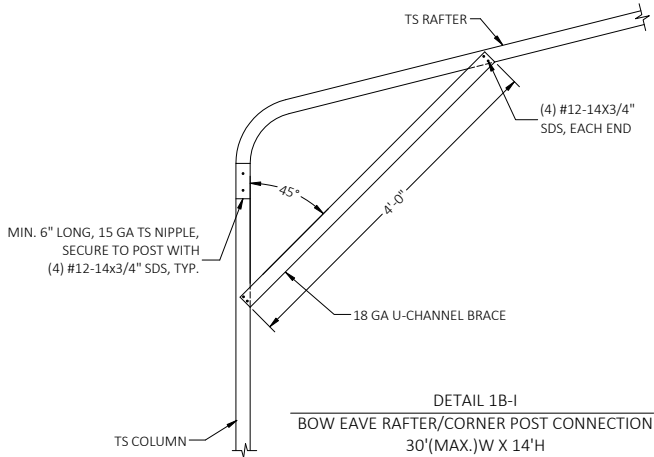
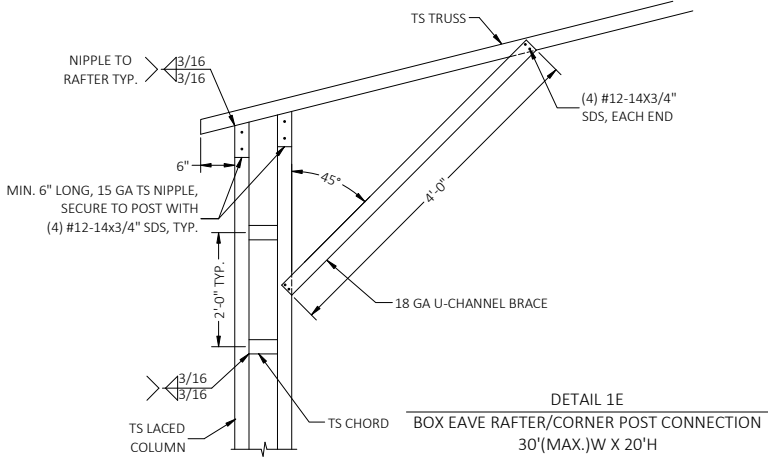
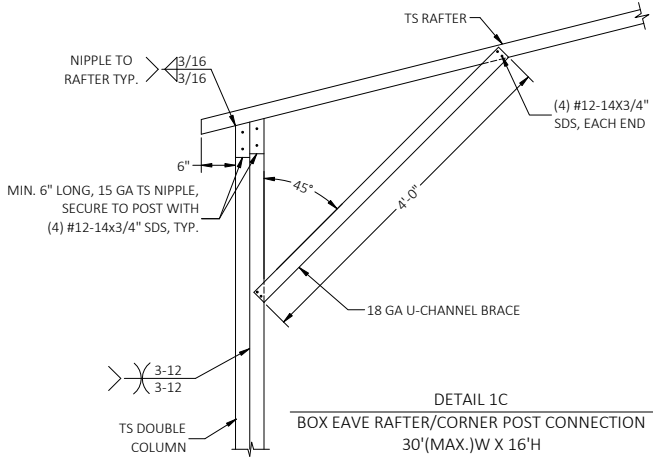
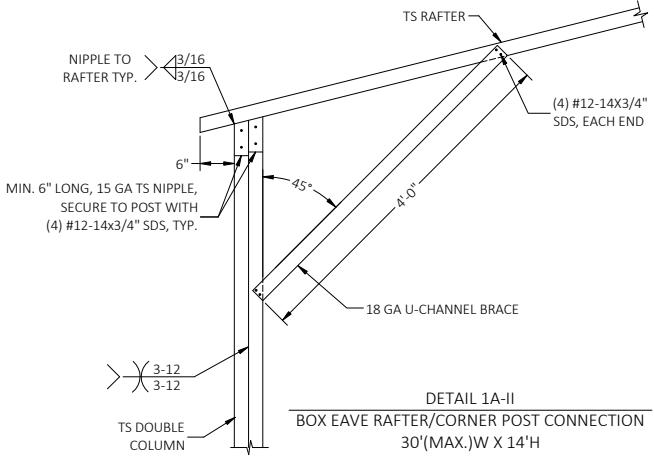
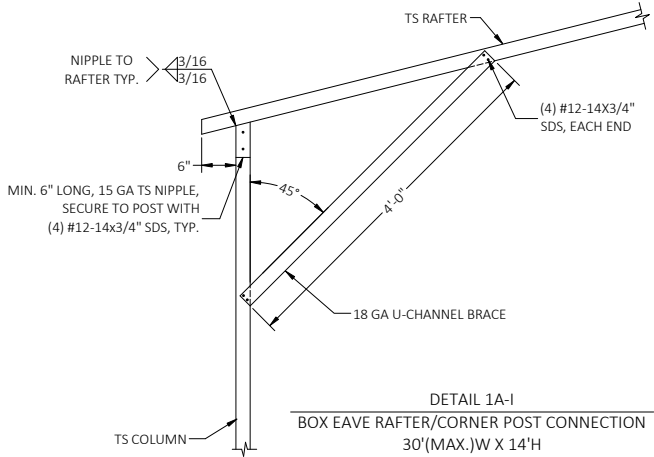
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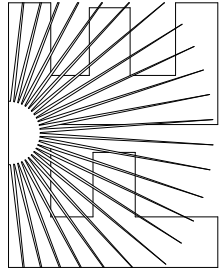
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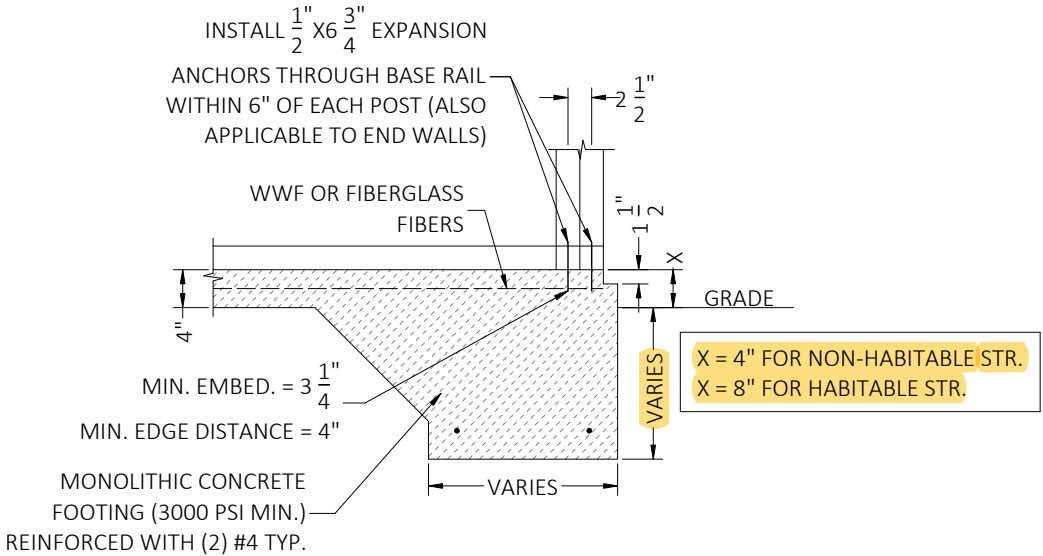
GENERAL NOTES  
CONCRETE MONOLITHIC SLAB DESIGN IS BASED ON A MINIMUM SOIL BEARING CAPACITY OF 1500 PSF.

CONCRETE  
MINIMUM 28-DAY SPECIFIED COMPRESSIVE STRENGTH = 3000 PSI

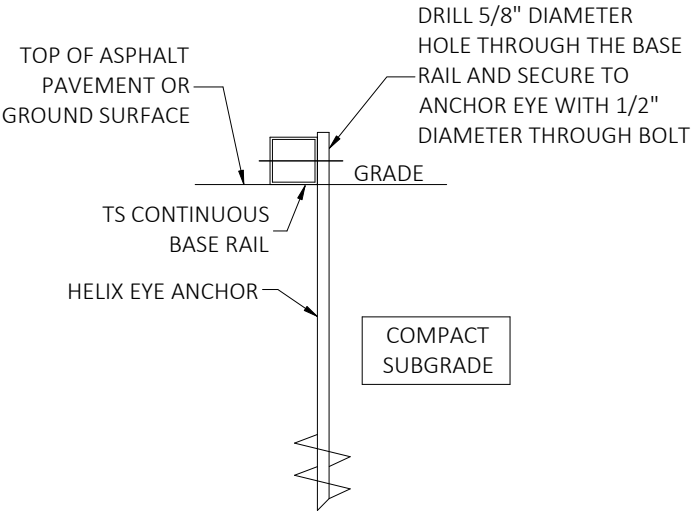
- REINFORCING STEEL
1. TURNDOWN REINFORCING STEEL = ASTM A615 GRADE 60
  2. SLAB REINFORCEMENT = WELDED WIRE FABRIC PER ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT
  3. REINFORCING STEEL COVER = 3" WHERE CASE AGAINST AND PERMANENTLY EXPOSED TO SOIL OR WATER, 1.5" EVERYWHERE ELSE.
  4. REINFORCEMENT IS 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.
  2. FOR LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) 6" HELICES WITH MINIMUM 50" EMBEDMENT.
  3. FOR VERY LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) 8" HELICES WITH MINIMUM 60" EMBEDMENT.

| MONOLITHIC FOOTER SIZE |                  |
|------------------------|------------------|
| 110 C - 140 C          | 8"X8" - (2) #4   |
| ABOVE 140 C            | 12"X12" - (2) #4 |

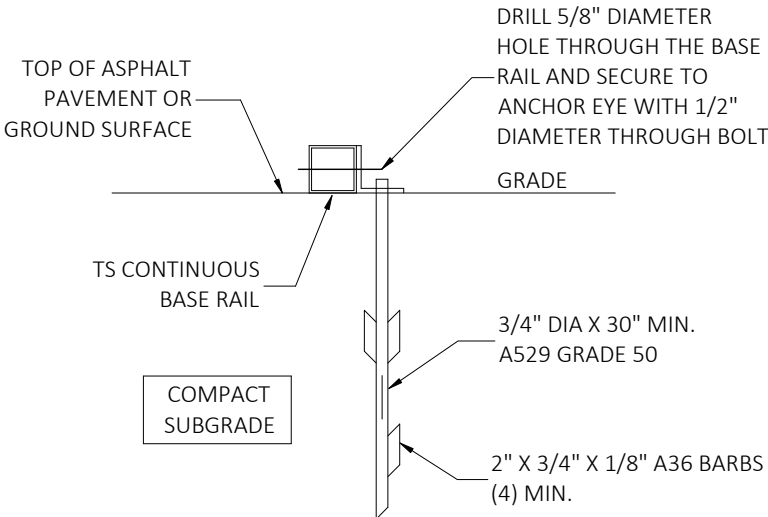


DETAIL 3A  
CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE

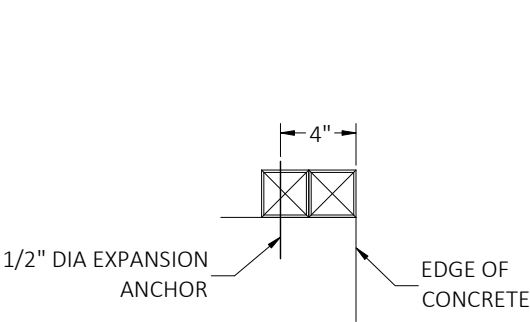


DETAIL 3B  
GROUND BASE HELIX ANCHORAGE

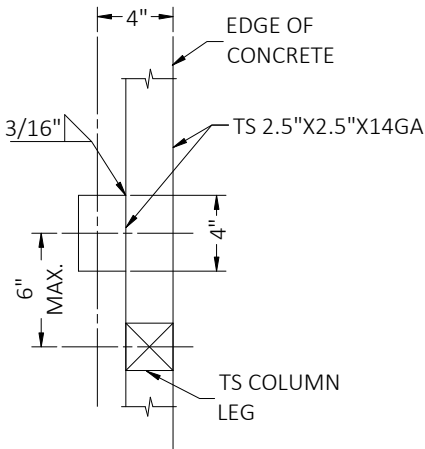
BASE RAIL ANCHORAGE OPTIONS



DETAIL 3C  
ASPHALT BASE ANCHORAGE  
(HP 9 BARBED DRIVE ANCHOR)

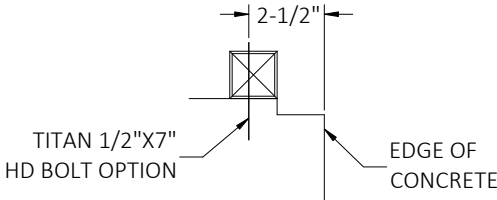


SECTION  
(OPTION-1)



TOP VIEW  
(OPTION-1)

TYPICAL ANCHOR DETAIL WHEN BASE  
RAIL IS NEAR EDGE OF CONCRETE

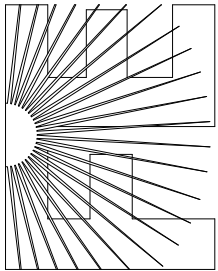


SECTION  
(OPTION-2)

BASE RAIL ANCHORAGE OPTION

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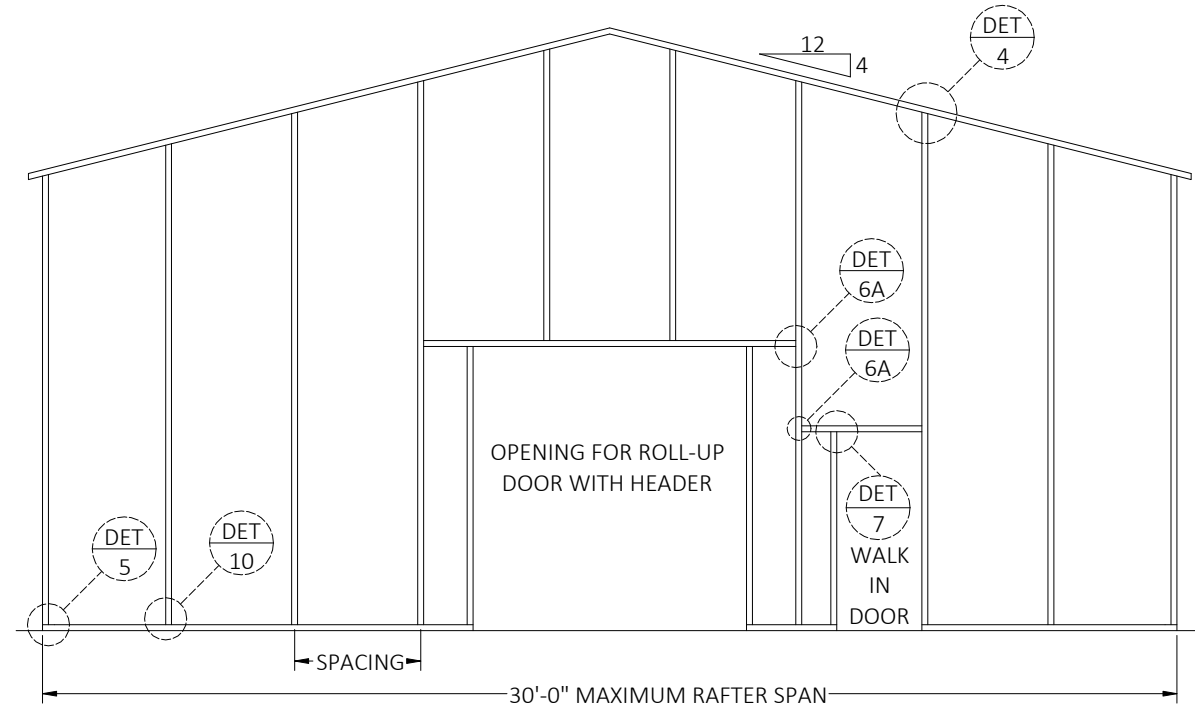
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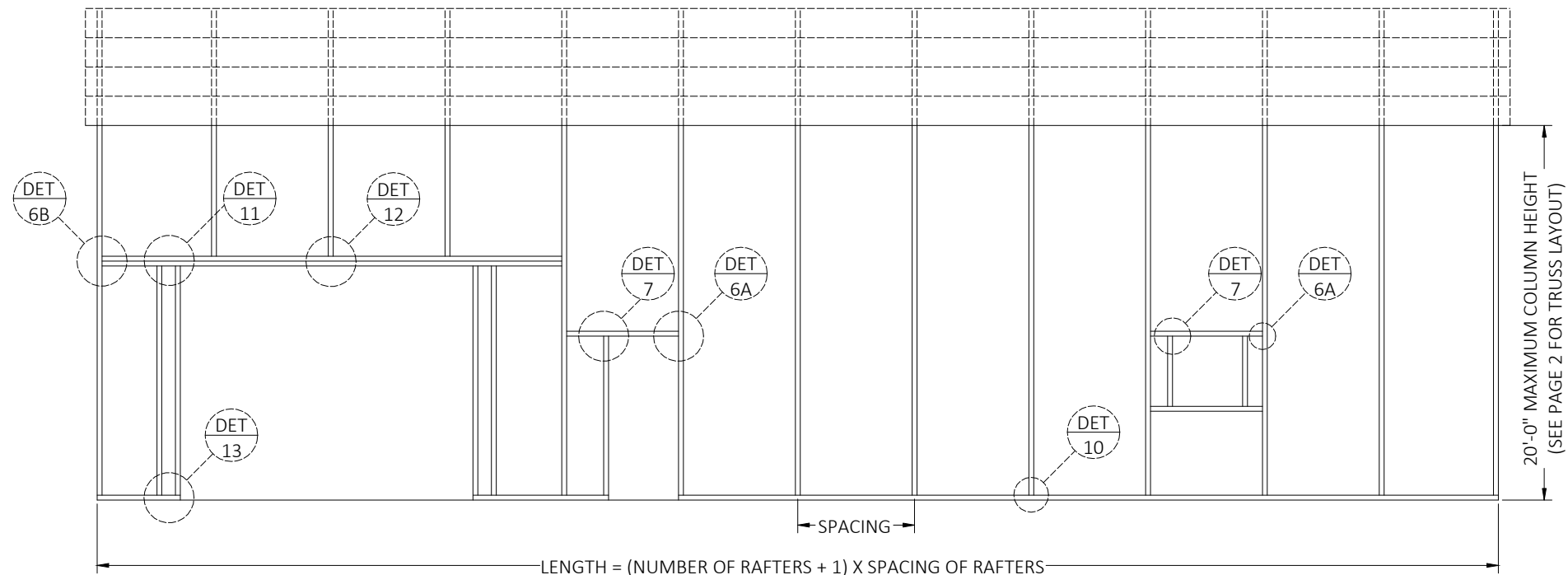
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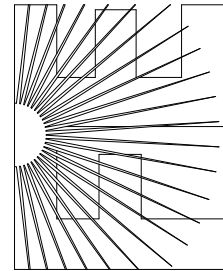
SPACING = 5'-0" FOR WIND SPEEDS BETWEEN 110 MPH AND 140 MPH  
SPACING = 4'-0" FOR WIND SPEEDS BETWEEN 140 MPH AND 180 MPH

TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION



SPACING = 5'-0" FOR WIND SPEEDS BETWEEN 110 MPH AND 140 MPH  
SPACING = 4'-0" FOR WIND SPEEDS BETWEEN 140 MPH AND 180 MPH

TYPICAL BOX EAVE RAFTER SIDE WALL FRAMING SECTION



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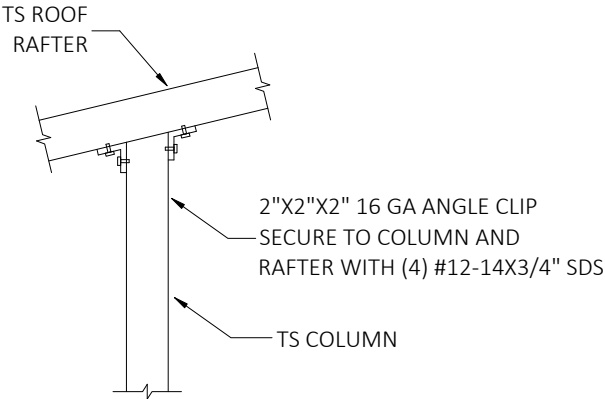
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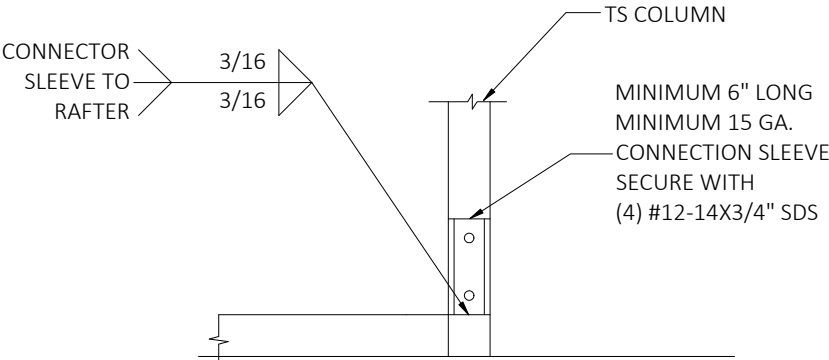
## CONNECTION DETAILS



DETAIL 4

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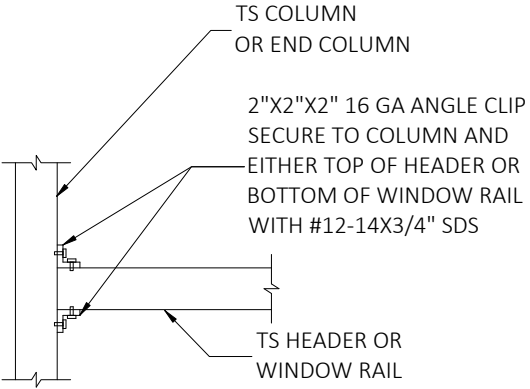
END COLUMN/RAFTER CONNECTION



DETAIL 5

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END POST/BASE RAIL CONNECTION

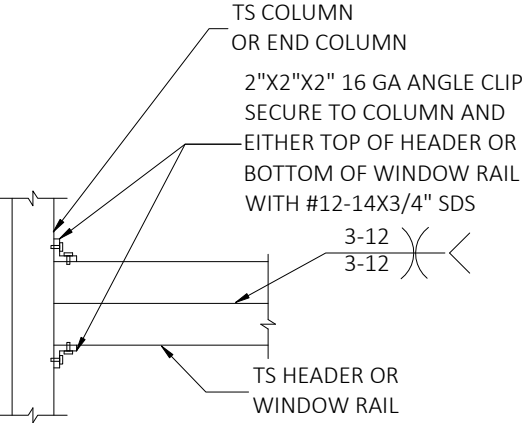


DETAIL 6A

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HEADER TO COLUMN CONNECTION

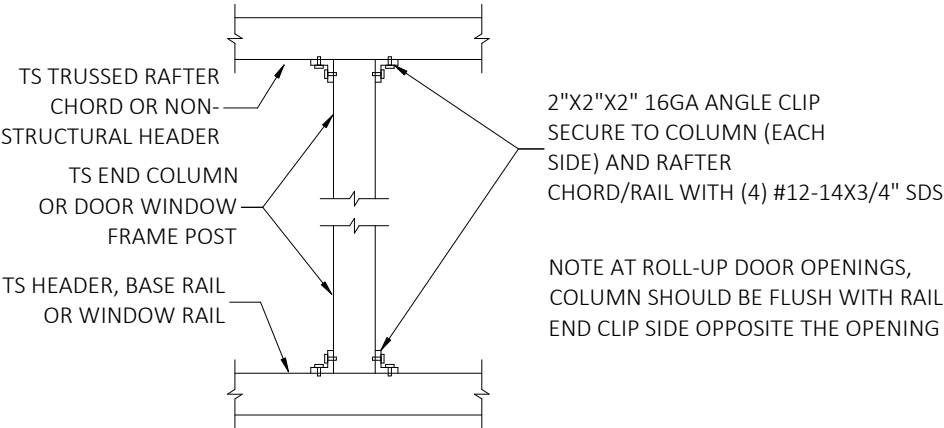
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DETAIL 6B

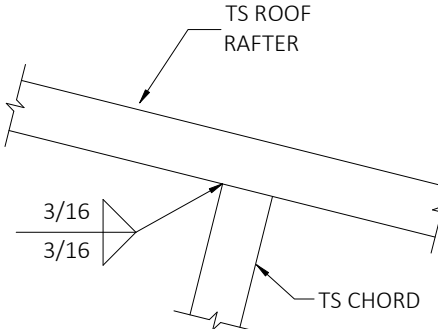
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DOUBLE HEADER TO COLUMN CONNECTION



DETAIL 7

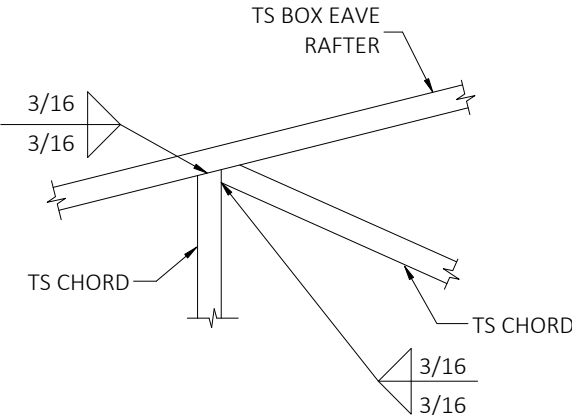
POST TO HEADER, BASE RAIL OR WINDOW RAIL CONNECTION



DETAIL 8

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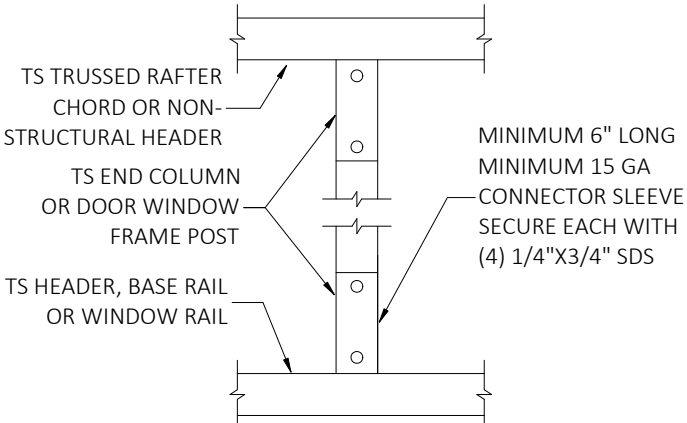
RAFTER TO CHORD CONNECTION



DETAIL 9

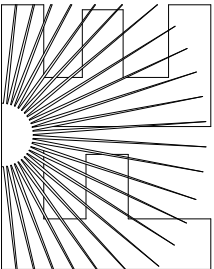
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TRUSS POST AND CHORD TO RAFTER CONNECTION



DETAIL 10

POST TO HEADER, BASE RAIL CONNECTION



FLORIDA ENGINEERING LLC  
4161 TAMAMI TRAIL, UNIT 101  
PORT CHARLOTTE, FLORIDA 33952  
(941) 391-5980  
[www.flengineeringllc.com](http://www.flengineeringllc.com)

CACERT. #30782

PROJECT NO. 2217228

CONTRACTOR:  
ELITE METAL  
MANUFACTURING

PROJECT ADDRESS:

12'-30' WIDE PLANS  
10121 88TH TRACE,  
LIVE OAK FL 32060

DESIGN DATE: 06/24/2022

REVISION 1:                      DATE

|             |      |      |
|-------------|------|------|
| REVISION 2: | DATE | PAGE |
|-------------|------|------|

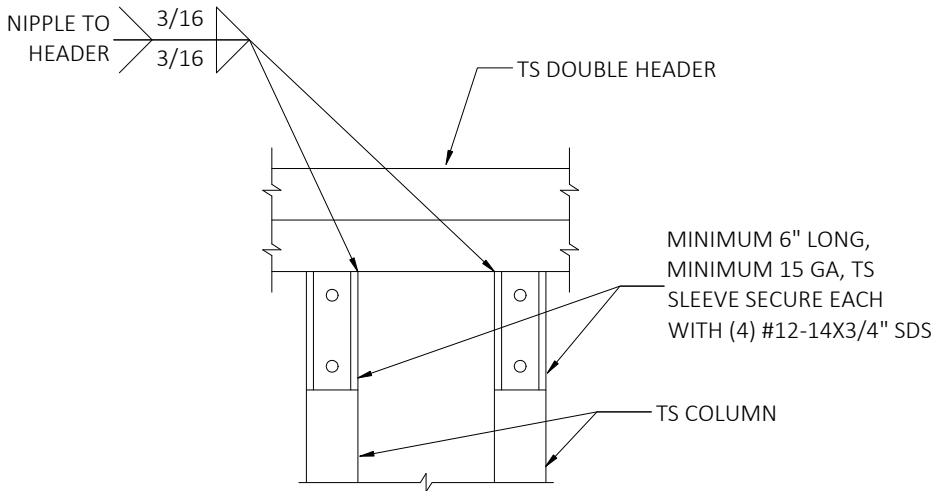
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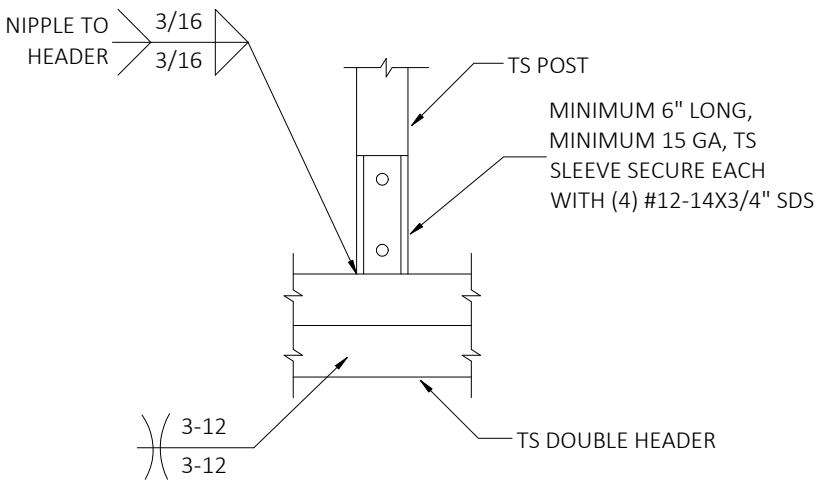
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CONNECTION DETAILS

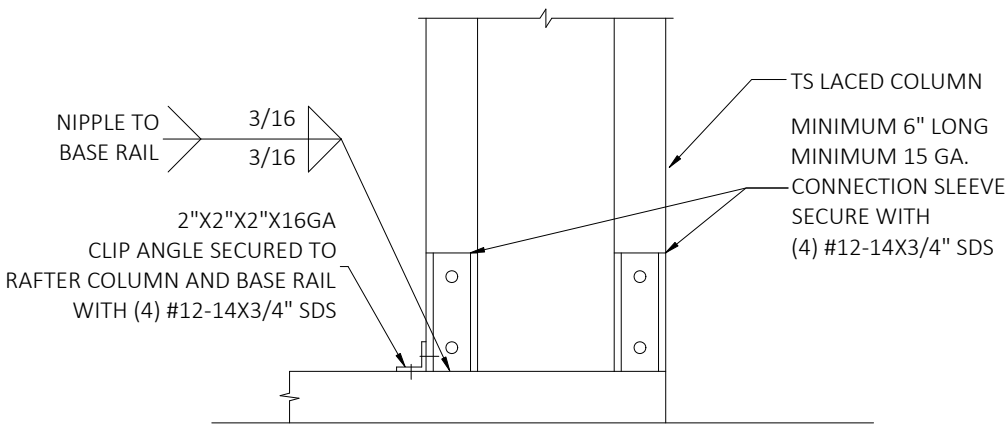
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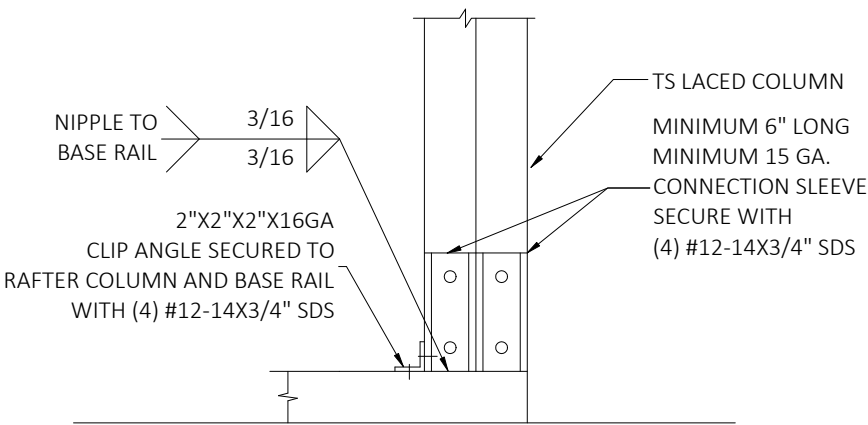
DETAIL 11  
DOUBLE HEADER TO POST CONNECTION



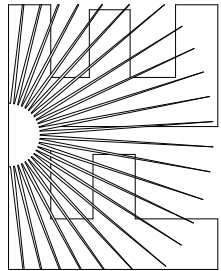
DETAIL 12  
POST/DOUBLE HEADER CONNECTION



DETAIL 13A  
POST/BASE RAIL CONNECTION



DETAIL 13B  
POST/BASE RAIL CONNECTION



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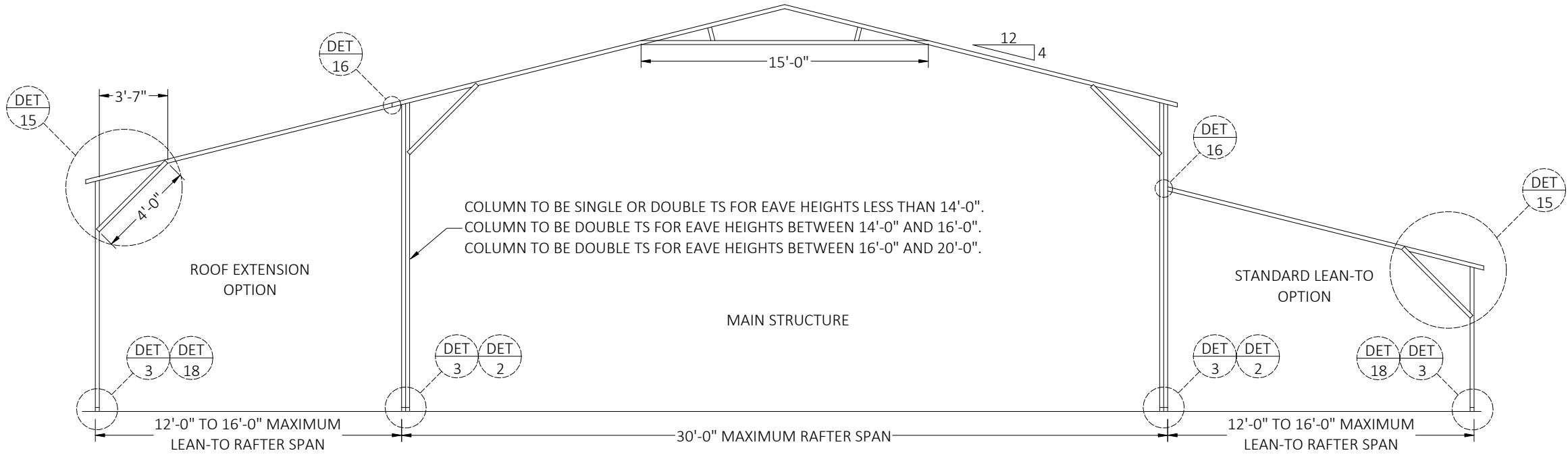
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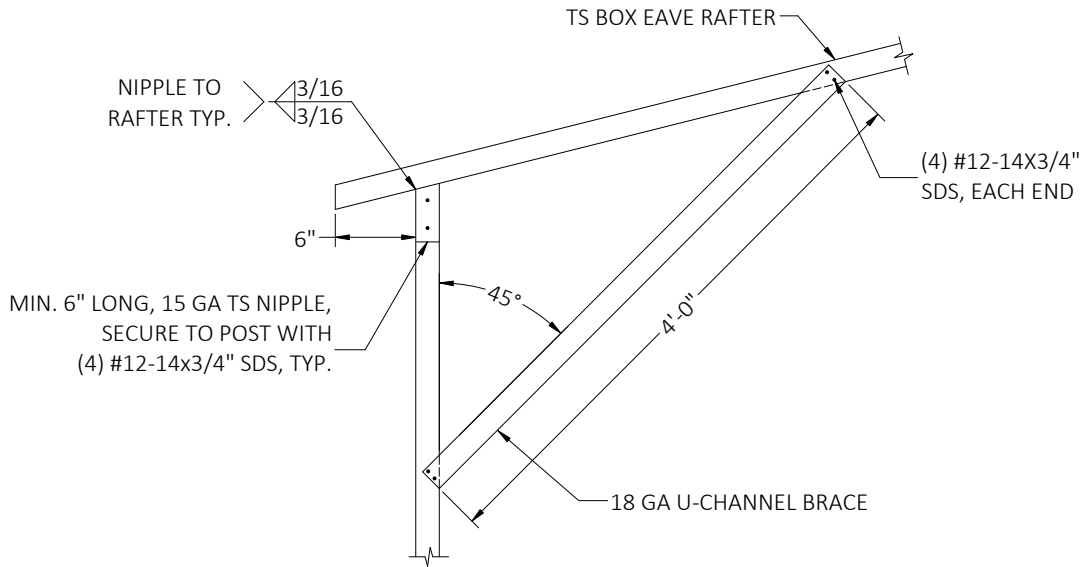
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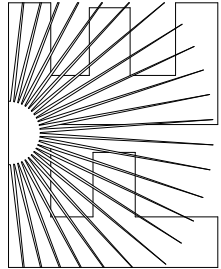


TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION



DETAIL 15  
LEAN-TO RAFTER/CORNER POST CONNECTION

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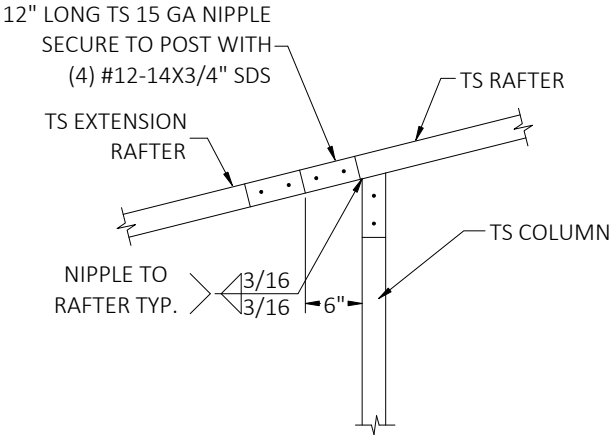
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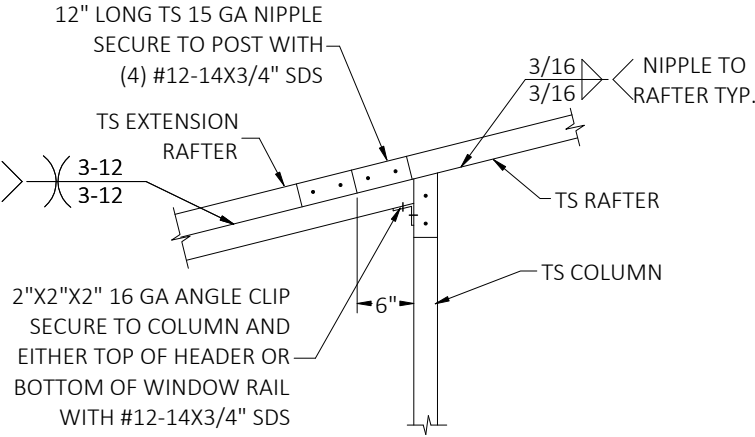
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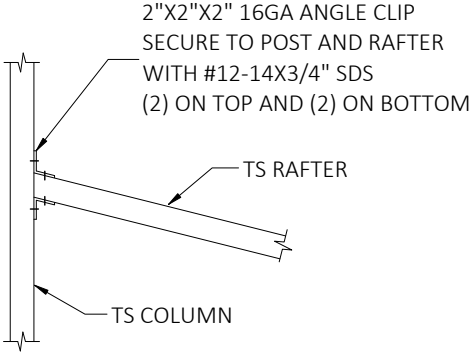
CONNECTION DETAILS



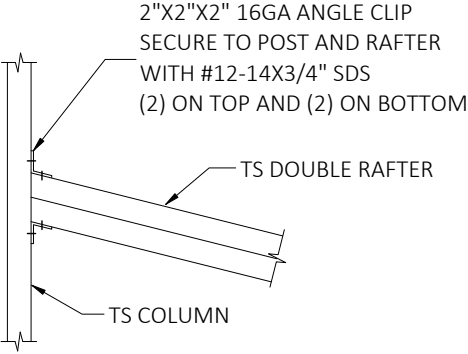
DETAIL 16A  
SIDE EXTENSION RAFTER/COLUMN CONNECTION  
FOR RAFTER SPANS LESS THAN 12'-0"



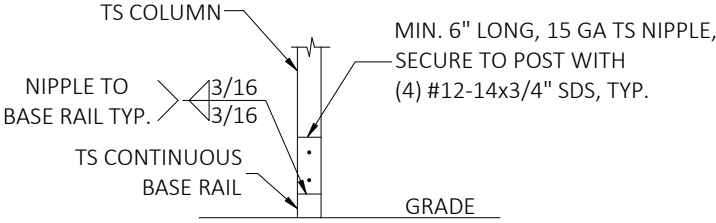
DETAIL 16B  
SIDE EXTENSION RAFTER/COLUMN CONNECTION  
FOR RAFTER SPANS BETWEEN 12'-0" AND 16'-0"



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

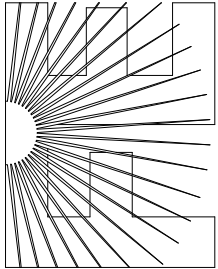


DETAIL 17B  
LEAN TO RAFTER/COLUMN CONNECTION  
FOR RAFTER SPANS BETWEEN 12'-0" AND 16'-0"



DETAIL 18  
LEAN-TO POST CONNECTION

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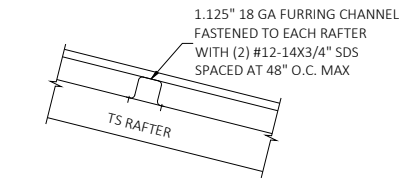
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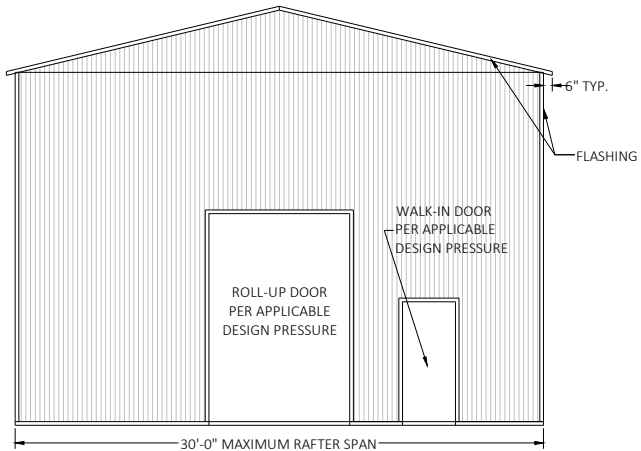
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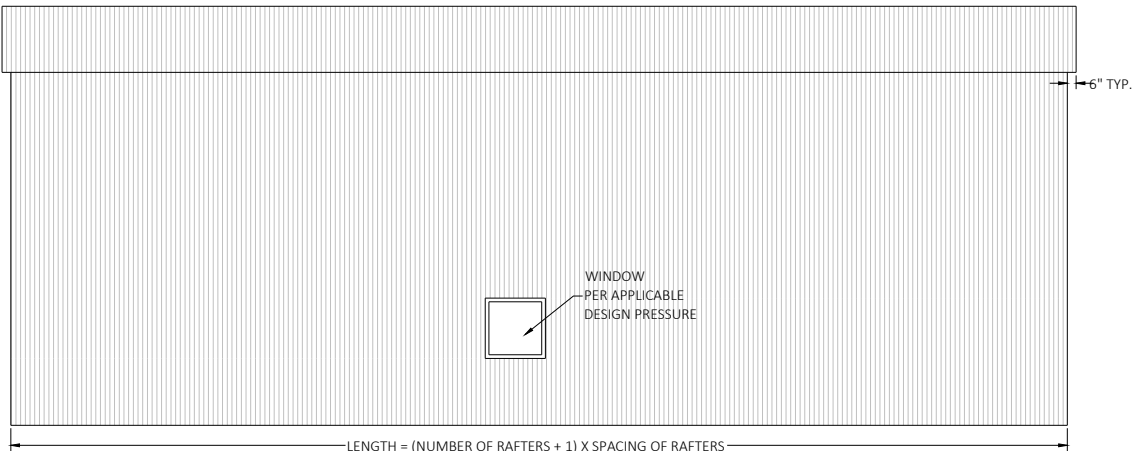
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PANEL ATTACHMENT  
(ALTERNATE FOR VERTICAL ROOF PANELS)



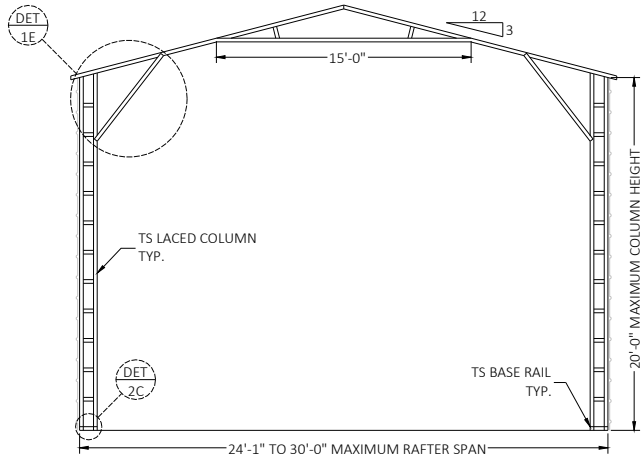
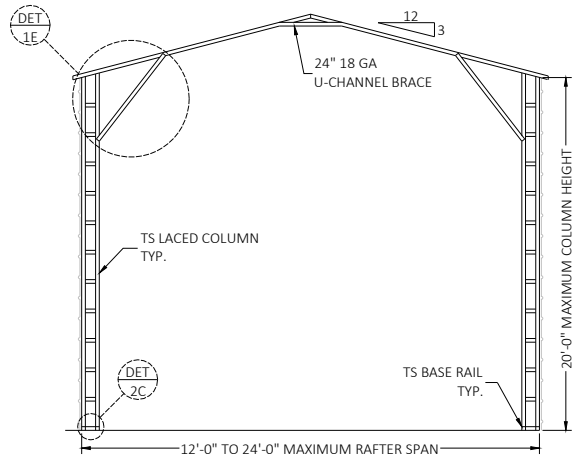
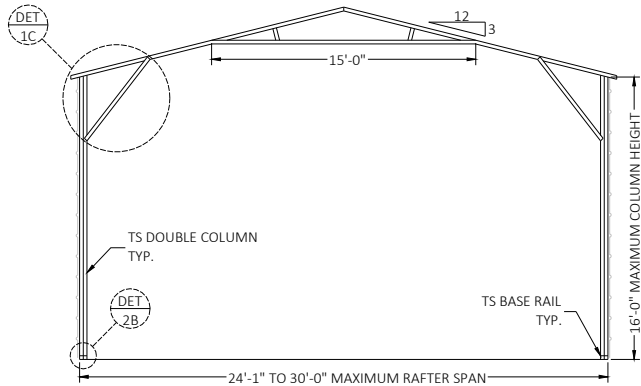
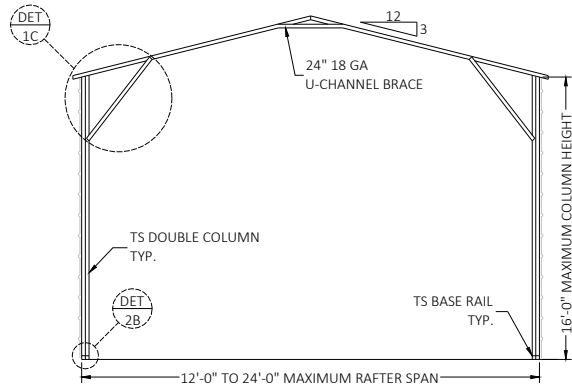
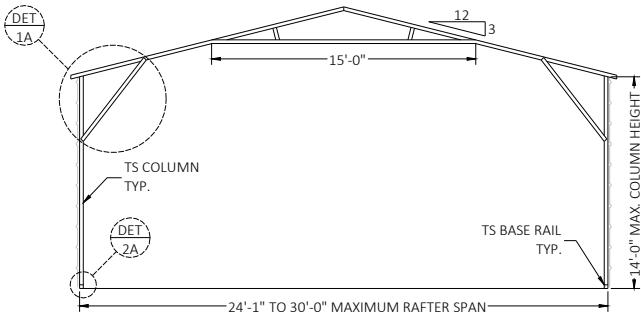
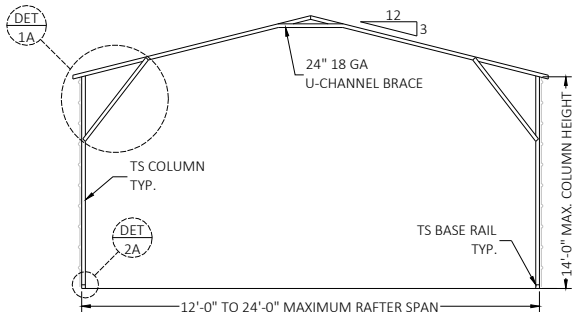
TYPICAL END ELEVATION - VERICAL ROOF/SIDING



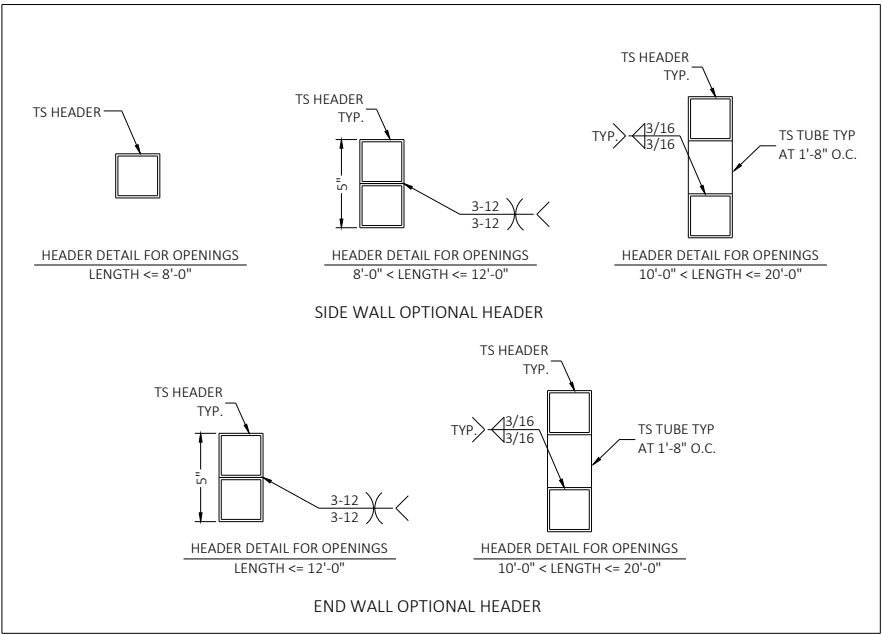
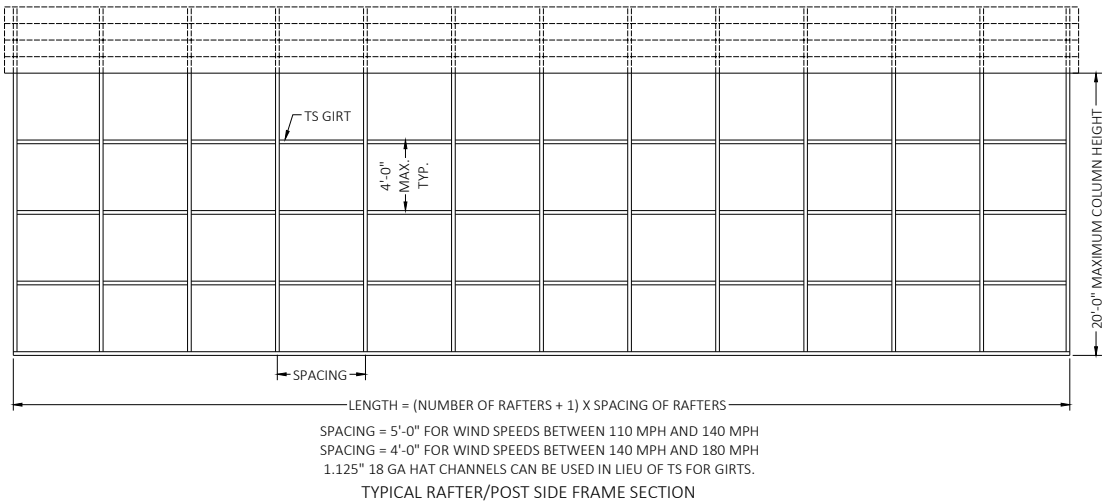
TYPICAL SIDE ELEVATION - VERTICAL ROOF/SIDING

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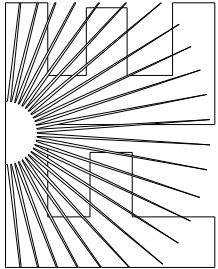
BOX EAVE FRAME RAFTER ENCLOSED BUILDING



BOX EAVE FRAME



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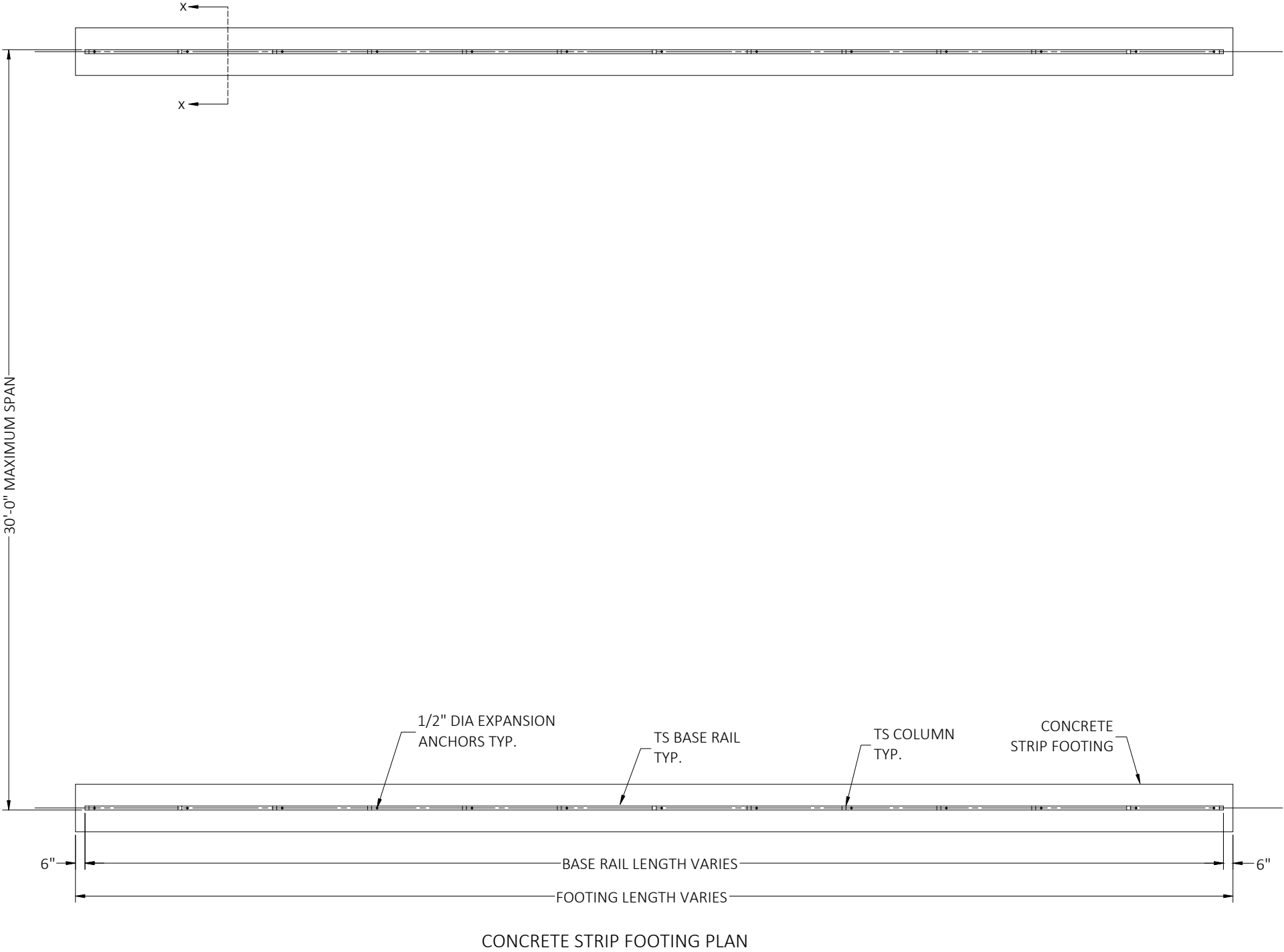
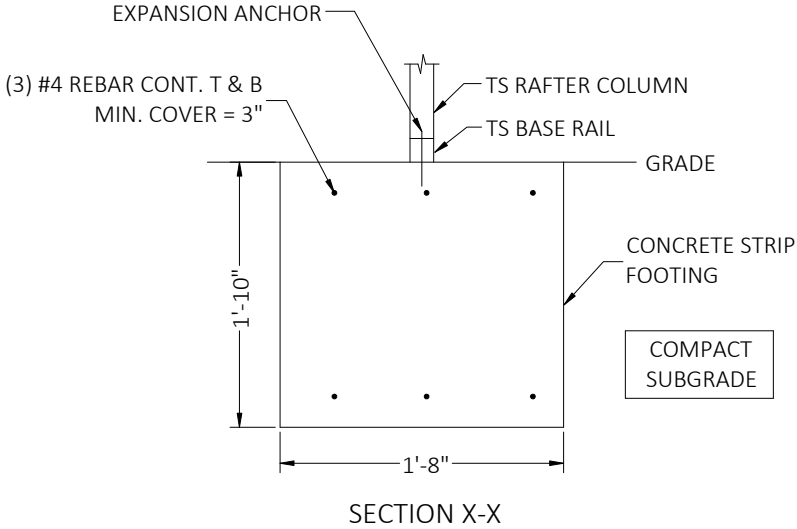
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GENERAL NOTES  
CONCRETE MONOLITHIC SLAB DESIGN IS BASED ON A MINIMUM SOIL BEARING CAPACITY OF 1500 PSF.

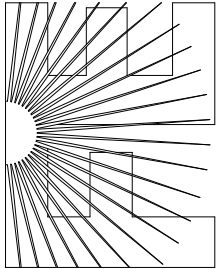
CONCRETE  
MINIMUM 28-DAY SPECIFIED COMPRESSIVE STRENGTH = 3000 PSI

- 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 PERMENTLY 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.



OPTIONAL CONCRETE STRIP FOOTING

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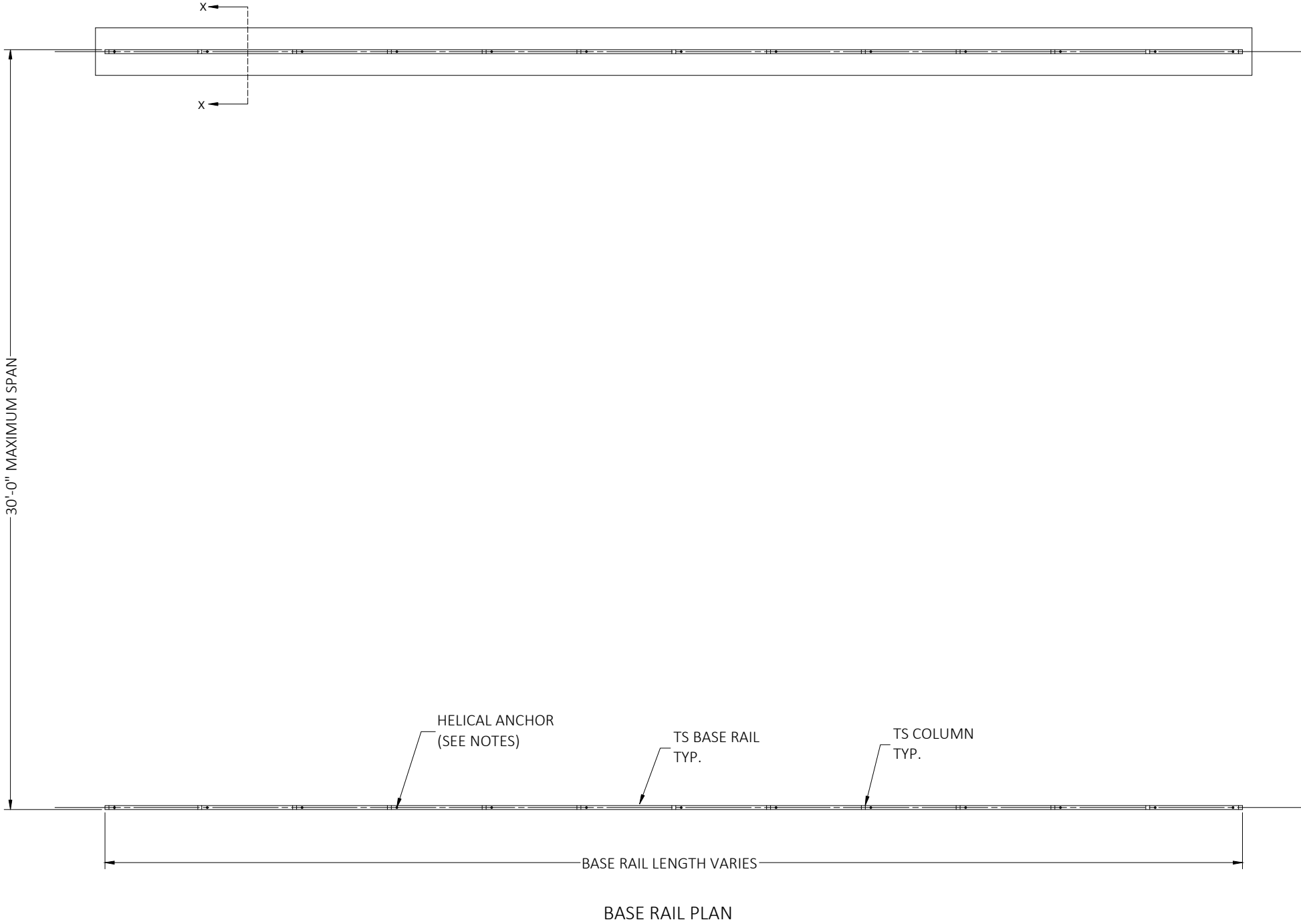
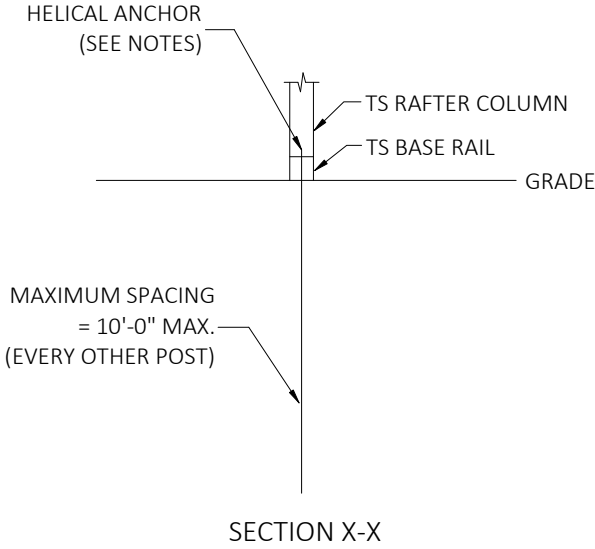
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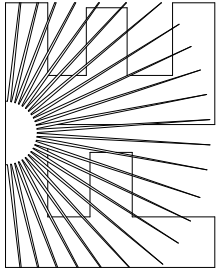
11

- 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.
  2. FOR LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) 6” HELICES WITH MINIMUM 50” EMBEDMENT.
  3. FOR VERY LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS AND SILTS, ALLUVIAL FILL, USE MINIMUM (2) 8” HELICES WITH MINIMUM 60” EMBEDMENT.

OPTIONAL HELICAL ANCHORING DETAIL

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