STRUCTURAL NOTES

GENERAL

1. DESIGN CODE DATA
   2018 INTERNATIONAL BUILDING CODE
   ASCE 7-16: MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
   AISC 360-05: SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS

2. DESIGN LOADS:
   ROOF DEAD LOADS: 10 PSF
   ROOF LIVE LOADS: 20 PSF

3. WIND DESIGN CRITERIA
   WIND LOAD: 150 MPH 3 SECOND GUST
   NOMINAL DESIGN WIND SPEED: 116 MPH
   INTERNAL PRESSURE COEFFICIENT: 0.0 (OPEN)
   RISK CATEGORY 1 BUILDING (THIS STRUCTURE IS DESIGNED AS AN UNINHABITABLE STRUCTURE AND SHALL NOT BE CONVERTED TO A HABITABLE WITHOUT PRIOR APPROVAL FROM ENGINEER OF RECORD)
   EXPOSURE CATEGORY B
   BASE VELOCITY PRESSURE: 34.3 PSF

4. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON OR EXISTING STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.

COMPONENTS AND CLADDING				
ROOFS	DESIGN PRESSURE (ULT)		DESIGN PRESSURE (ASD)	
TRIBUTARY AREA 10 SF	POSITIVE (PSF)	NEGATIVE (PSF)	POSITIVE (PSF)	NEGATIVE (PSF)
ZONE 1max	33.4	30.7	20.0	18.4
ZONE 2 max	61.6	47.6	30.9	28.5
ZONE 3max	66.8	61.5	40.1	36.9
TRIBUTARY AREA 100 SF	POSITIVE (PSF)	NEGATIVE (PSF)	POSITIVE (PSF)	NEGATIVE (PSF)
ZONE 1 max	33.4	30.7	20.0	18.4
ZONE 2 max	33.4	47.6	20.0	28.5
ZONE 3max	33.4	47.6	20.0	28.5
WALLS	DESIGN PRESSURE		DESIGN PRESSURE	
TRIBUTARY AREA 10 SF	POSITIVE (PSF)	NEGATIVE (PSF)	POSITIVE (PSF)	NEGATIVE (PSF)
ZONE 4	34.3	37.7	20.6	22.6
ZONE 5	34.3	48.0	20.6	28.8
TRIBUTARY AREA 100 SF	POSITIVE (PSF)	NEGATIVE (PSF)	POSITIVE (PSF)	NEGATIVE (PSF)
ZONE 4	28.2	31.7	16.9	19.0
ZONE 5	28.2	35.9	16.9	21.5

BUILDING RISK CATEGORY 1 - AGRICULTURAL STORAGE STRUCTURES INTENDED ONLY FOR INCIDENTAL HUMAN OCCUPANCY, OR A DETACHED ONE & TWO FAMILY DWELLING ASSIGNED SDC A, B, OR C, OR WITH A Ss, IS LESS THAN 0.4g.

5. SNOW LOAD (S)
19.00psf = Roof Snow Load **25psf** = Ground Snow Load
Thermal Factor = **1.00** Snow Exposure Factor = **1.00** Snow Importance Factor = **0.80**

6. SEISMIC LOAD (E)
Equivalent Lateral Force Procedure
0.35 = 0.2s Short Period Spectral Response Acceleration S(s)
0.12 = 1.0s Spectral Response Acceleration S(1)
Site Classification =**D**
Seismic Importance Factor =**1.00**
Seismic Design Category = **C**
Seismic Design Short Period Acceleration, Sds = 0.355
Seismic Design 1 Sec Period Acceleration, SD1 = 1.189
Cantilever Columns for Timber Frames, R=1.5 Transverse & Longitudinal.

Analysis Procedure: Under Section 1613 of the IBC 2018,
Earthquake Loads are not required
to be considered for a Risk Category 1 Structure.

NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.
APPROVED
Limited building only review
Permit holder responsible for full compliance with the code
02/15/2024
Harnett COUNTY NORTH CAROLINA

7. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING AND FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES. THE STRUCTURAL ENGINEER ASSUMES NO LIABILITY FOR THE STRUCTURE DURING CONSTRUCTION.

8. THE CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS OF CONSTRUCTION AND ALL JOB SITE SAFETY.

9. VERIFY ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION - DO NOT SCALE DRAWINGS.

10. CONCRETE

FOOTING AND FOUNDATION WALL	3,000 PSI @ 28 DAYS
SLAB ON GRADE	3,000 PSI @ 28 DAYS
ALL OTHER CIP CONCRETE	3,000 PSI @ 28 DAYS
CONCRETE REINFORCING STEEL	60 KSI, ASTM A615

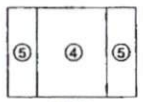
11. FOUNDATION
1. ALLOWABLE SOIL BEARING CAPACITY = 2,000 PSF FOR FOOTINGS (PRESUMPTIVE)
2. GRADE AREAS IN ACCORDANCE WITH ELEVATIONS AND GRADES SHOWN ON THE SITE DRAWINGS AND AS REQUIRED FOR DRAINAGE.
3. ALL SLAB ON GRADE AREAS SHALL BE PROOF ROLLED. ALL SOFT SPOTS SHALL BE REMOVED AND REPLACED WITH COMPACTABLE FILL.
4. SLAB ON GRADE TO BE CONSTRUCTED ON A MINIMUM OF 6" OF COMPACTED GRANULAR FILL.
5. ALL FILL MATERIAL USED IN GRADING OPERATIONS SHALL CONSIST OF EARTH, WHICH IS FREE OF DEBRIS, BOULDERS OR ORGANIC MATERIAL. FILL SHALL BE PLACED IN MAXIMUM OF 12" LIFTS AND COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY.
6. ALL FOOTINGS SHALL BEAR ON UNDISTURBED SOIL OR COMPACTED FILL HAVING A MINIMUM ALLOWABLE BEARING CAPACITY AS INDICATED ABOVE.
7. THE ENGINEER SHALL BE NOTIFIED IF ACTUAL FIELD CONDITIONS DO NOT MEET BEARING REQUIREMENTS OR, IF QUESTIONABLE SOIL CONDITIONS ARE DISCOVERED INCLUDING BUT NOT LIMITED TO PEAT AND OTHER HIGH ORGANIC SOILS.
8. ANY FOUNDATION UNDER THE BASE FLOOD ELEVATION SHALL COMPLY W/ R322.2.2 OF THE FLORIDA BUILDING CODE & WILL PROVIDE FLOOD VENTS TO MEET THESE REQUIREMENTS.

12. STEEL

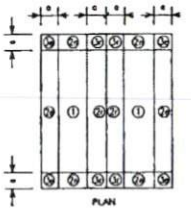
ANGLES, PLATES, AND CHANNELS	36 KSI, ASTM A36
SQUARE AND RECTANGULAR HSS	46 KSI, ASTM A500 GRADE B,
BOLTS @ RIDGE (PEAK):	(2) GRADE A5, 5/8" W/ A325 BOLTS (4) FLAT & (2) LOCK WASHERS
BOLTS @ TRUSS TO POST CONN.	(2) 5/8" X 12" CARRIAGE BOLTS & (4) 2"x2"x1/8" FLAT & LOCK WASHERS
WELDING ELECTRODES	E70XX (ALL WELDS ARE FULL PENETRATION WELDS U.N.O.)

13. WOOD
2x8 AND SMALLER SYP NO. 2 OR BETTER
MINIMUM DESIGN VALUES
Fb 1,500 PSI
Ft 825 PSI
Fv 175 PSI
Fc⊥ 565 PSI
Fcll 1,600 PSI
E 1,600,000 PSI
Emin 580,000 PSI

WIND ZONES



WALL
*3'-0" EDGE DISTANCE



Gable and Flat Roofs 7° < Ø < 45°

6x6, 8X8 OR 10X10 WD POST TREATED SOUTHERN YELLOW PINE (SYP)
MINIMUM DESIGN VALUES
Fb 1,350 PSI
E 1,500,000 PSI

14. ROOF & WALL SHEATHING
ROOF METAL PANELS SHALL BE 26 GA. x 3'-0" WIDE w/ 5 RIBS (RECOMMENDED)
OR 29 GA. x 3'-0" WIDE w/ 5 RIBS

BLACKWATER TRUSS SYSTEMS
www.blackwatertruss.com

MK WEBER
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043557 MICHAEL K. WEBER

EOR: MICHAEL K. WEBER P.E.
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12'-50' HSS Tube Truss Drawings for:
Blackwater Truss Systems
8736 Hwy 87 N.
Milton, FL 32570

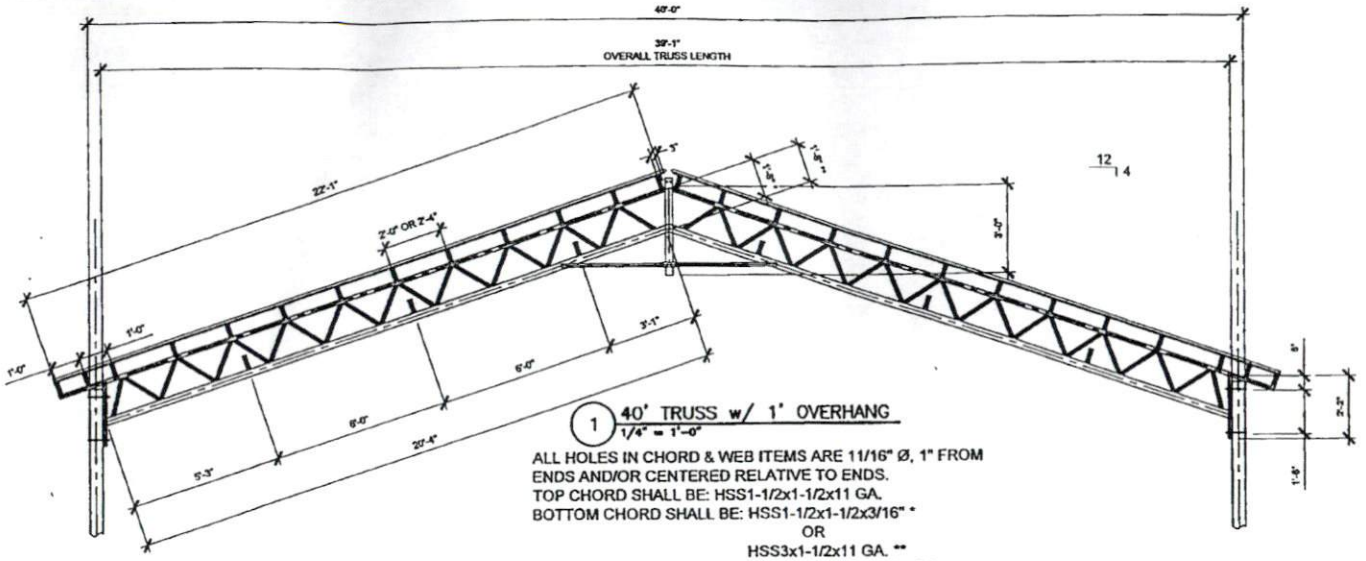
REV.	DESCRIPTION	DATE

JOB NUMBER:	22007-40
DRAWN BY:	DAW
CHECKED BY:	MKW
PLOT DATE:	8/17/2022

SHEET TITLE: GENERAL NOTES

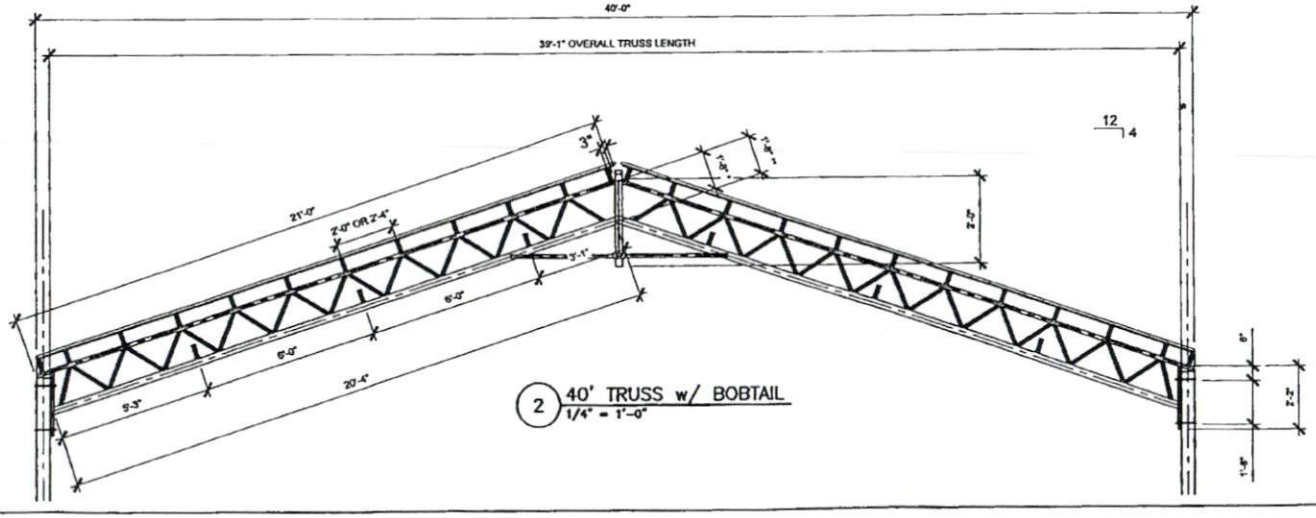
DRAWING NUMBER: S100

THIS BUILDING MAY BE USED FOR RESIDENTIAL USE ONLY



1 40' TRUSS w/ 1' OVERHANG
1/4" = 1'-0"

ALL HOLES IN CHORD & WEB ITEMS ARE 11/16" Ø, 1" FROM ENDS AND/OR CENTERED RELATIVE TO ENDS.
TOP CHORD SHALL BE: HSS1-1/2x1-1/2x11 GA.
BOTTOM CHORD SHALL BE: HSS1-1/2x1-1/2x3/16" *
OR
HSS3x1-1/2x11 GA. **
DIAGONAL WEB MEMBERS SHALL BE: HSS1x1x14 GA.
VERTICAL ENDS SHALL BE: L1-1/2x1-1/2x1/4"
RIDGE COLLAR-TIE SHALL BE: L1-1/2x1-1/2x11 GA.



2 40' TRUSS w/ BOBTAIL
1/4" = 1'-0"

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JOB NUMBER:	22007-40
DRAWN BY:	DAW
CHECKED BY:	MKW
PLOT DATE:	8/17/2022

SHEET TITLE
40' TRUSS PLAN

DRAWING NUMBER
S111

GENERAL NOTES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE AND TO CROSS-CHECK DETAILS AND DIMENSIONS ON THE STRUCTURAL DRAWINGS WITH RELATED REQUIREMENTS ON THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS. FLOOR AND WALL OPENINGS, SLEEVES AND OTHER ARCHITECTURAL, MECHANICAL AND ELECTRICAL REQUIREMENTS MUST BE COORDINATED BEFORE THE CONTRACTOR PROCEEDS WITH CONSTRUCTION.
2. ALL ENGINEERING DESIGN, CONSTRUCTION AND SITING SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (IBC 2015), NORTH CAROLINA STATE BUILDING CODE (MECSE 2018), NORTH CAROLINA STATE RESIDENTIAL CODES (NCRC 2018)
3. THESE DOCUMENTS DO NOT INCLUDE THE NECESSARY CONSTRUCTION FOR CONSTRUCTION SAFETY. SAFETY, CARE OF ADJACENT PROPERTIES DURING CONSTRUCTION AND COMPLIANCE WITH LOCAL REGULATIONS REGARDING SAFETY ALL AND SHALL BE, THE CONTRACTOR'S RESPONSIBILITY.
4. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
5. ALL DIMENSION OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.

EXCAVATION AND INSTALLATION

1. WHEN EXCAVATING FOR NEW FOUNDATIONS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE PROPER SHORING CONFORMING TO ALL FEDERAL, STATE AND LOCAL CODES AND LAWS AS REQUIRED.
2. DURING ANY EXCAVATION OR CONSTRUCTION, FIELD PERSONNEL SHALL TAKE PRECAUTION NOT TO DISTURB OR CUT EXISTING CONDUIT OR UTILITIES. LOCATION OF UTILITY LINES SHOWN ARE APPROXIMATE ONLY.
3. COMPACTED FILL SHALL BE PLACED IN 8 INCH LOOSE LAYERS FOR USING HAND OPERATED TAMPERS, AND IN 8 INCH LOOSE LAYERS FOR USING VIBRATORY ROLLERS. ASSURE MOISTURE CONTENT OF FILL MATERIAL TO BE NEAR O-MAX OPTIMUM ± 2%. COMPACT FILL SHALL BE 95% OF MAXIMUM DENSITY, DETERMINED BY USING STANDARD PROCTOR (ASTM D-698). THE EXCAVATION CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND SERVICE UTILITIES PRIOR TO BEGINNING CONSTRUCTION WORK.
4. NON-EXPANSIVE COMPACTED GRANULAR FILL SHALL BE DEPOSITED IN DEPTHS OF 8" BELOW ALL CONCRETE MATS, SLABS, AND PIPS, AND 16" BEHIND ALL CONCRETE WALLS, UNLESS NOTED OTHERWISE.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING BUILDING, FOUNDATIONS AND EQUIPMENT FROM VERTICAL AND LATERAL MOVEMENT DURING AND AFTER EXCAVATION AND INSTALLATION OF FOUNDATIONS. THE MEANS AND DESIGN OF PROTECTION SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
6. INSTALLATION SHALL BE PER THE LATEST APPLICABLE LOCAL CODES AND LAWS.
7. FOR FOUNDATIONS WHERE THE SUB-BASE NEED REQUIREMENTS, ANY GROUND WATER IS PRESENT AND CANNOT BE CONTROLLED BY GRAVITY OR SUMP PUMPS, A WIDE MAT MAY BE USED. THE WIDE MAT SHALL CONSIST OF 2500 PSI CONCRETE AND SHALL BE A MINIMUM OF 12" THICK.
8. ASSUMED ALLOWABLE SOIL BEARING PRESSURE OR FOOTINGS IS 1,500 PSF (0.75 TSF (PER))
9. GENERAL CONTRACTOR SHALL INSTALL FOUNDATION ON OTHER SOIL IF A RECOMMENDED THAT THE GENERAL CONTRACTOR IS HAVE A LICENSED GEOTECHNICAL ENGINEER CONDUCT A SOIL TEST AND SUBMIT A WRITTEN REPORT PRIOR TO STARTING THE FOUNDATION.

FOUNDATION NOTES:

1. ALL FOOTINGS SHALL BE ESTABLISHED ON PROPERLY UNDISTURBED SOIL OR PROPERLY COMPACTED ENGINEERED FILL IN ACCORDANCE WITH CHAPTER 18 OF THE CODE.
2. ALL FOUNDATION BEARING AND FILL MATERIALS SHALL BE INSPECTED AND APPROVED BY THE BUILDING INSPECTOR PRIOR TO PLACING CONCRETE.
3. EXCAVATION, GRADING AND FILL/BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 1804 OF THE CODE. ALL FILL AND BACKFILL MATERIALS SHALL BE NON-EXPANSIVE SOILS COMPACTED TO 95% MAXIMUM DENSITY PER ASTM D 1557 METHOD. THE UPPER 8" OF SUB GRADE SHALL BE SCARIFIED, MOISTURE CONDITIONED AND COMPACTED.
4. ASSUMED ALLOWABLE SOIL BEARING CAPACITY OF 1,500PSF AND USE FOR THE DESIGN OF THE FOUNDATION.
5. ALL ORGANIC TOP SOILS SHALL BE STRIPPED FROM THE AREA UPON WHICH THE PROPOSED STRUCTURE IS TO BE LOCATED.
6. ALL EXCAVATION FOR STRUCTURES SHALL BE KEPT DEWATERED UNTIL BACKFILL IS IN PLACE. EXCAVATION FOR STRUCTURES SHALL INCLUDE ALL NECESSARY SHEETING AND SHORING.
7. WHERE THE FOUNDATION IS OVER EXCAVATED, REMOVE ALL DISTURBED FOUNDATION SOIL AND REPLACE WITH GRANULAR MATERIAL PROPERLY COMPACTED AS SPECIFIED.

ANCHOR RODS AND BOLTS

1. ALL ANCHOR RODS SHALL BE ASTM F1554 GRADE "A" WITH ASTM A-563 GRADE "A" HEAVY HEX NUTS AND ASTM F-436 HARDENED FLAT STEEL WASHERS. (ANCHOR PLATE) SHALL BE ASTM A36 STEEL, UNLESS NOTED OTHERWISE.
2. ALL ANCHOR BOLTS MUST BE SET WITH A TEMPLATE. INSTALLATION OF ANCHOR BOLTS AND EMBEDDED ITEMS SHALL BE IN STRICT ACCORDANCE WITH A.C.I. CODE OF STANDARD PRACTICE.
3. SLEEVES MAY BE USED AT CONTRACTOR'S OPTION IF USED, CONTRACTOR MUST PROTECT CONCRETE FROM CRACKING DUE TO WATER FREEZING IN THE SLEEVE OPENINGS.
4. ANCHOR RODS SHALL BE "HILTI HIT HY 150" INJECTION ADHESIVE SYSTEM WITH "HILTI" STANDARD BOLTS OR ASTM F1554, GR. 36 THREADED RODS. SIZE, EMBEDMENT AND PROJECTION AS INDICATED ON STRUCTURAL DRAWINGS.
5. ANCHOR RODS/BOLTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
6. FOR DRILLED IN DOWELS, USE SIKA® ONE EMBEDDED COMPANY'S "CONCRETE TO CONCRETE"

CONCRETE NOTES:

1. ALL READY MIX CONCRETE SHALL CONFORM TO ASTM C 94.
2. ALL REINFORCING STEEL SHALL BE PLACED IN CONFORMANCE WITH THE LATEST EDITION OF "THE MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION", PUBLISHED BY CRSI.
3. ALL REINFORCING BARS, DOWELS, ANCHOR BOLTS AND OTHER INSERTS SHALL BE SECURELY IN POSITION PRIOR TO PLACING OF CONCRETE.
4. ALL HORIZONTAL BARS IN CONCRETE WALLS AND GRADE BEAMS SHALL BE CONTINUOUS AND BENT AT ALL CORNERS AND INTERSECTIONS. PRE-MADE "CORNER" BARS SUBSTITUTED FOR CONTINUOUS (BENT BARS) SHALL BE OF SAME SPACING AS HORIZONTAL BARS AND SHALL BE OF SUFFICIENT LENGTH TO PROVIDE REQUIRED LAP SPLICE LENGTHS.
5. DETAILING, BENDING AND PLACING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH LATEST EDITION OF ENG. AD CODE.
6. ALL CONCRETE FORM WORK SHALL BE ADEQUATELY TIED TOGETHER AND BRACED TO FORM TRUE LINES, SQUARE CORNERS AND PLUMB WALLS.
7. ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO CHAPTER 19 OF THE CODE.
8. MIX DESIGN SHALL BE BASED ON PERFORMANCE TEST AND SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AND GENERAL CONTRACTOR.
9. USE AIR-ENTRAINED CONCRETE FOR ALL AREAS EXPOSED TO WEATHER.
10. ALL CONCRETE SHALL DEVELOP THE FOLLOWING COMPRESSIVE STRENGTHS AT 28 DAYS (U.N.O.):
    CONCRETE FOUNDATION AND WALLS = 4000 PSI
    CONCRETE SLABS = 4000 PSI
11. NO CONCRETE SHALL BE POURED SUBJECT TO FREEZING CONDITIONS OR ON FROZEN GROUND.
12. LOCATE ALL SLEEVES, OPENINGS, EMBEDDED ITEMS, ETC., WHICH ARE INDICATED ON ALL OTHER DRAWINGS. CHECK WITH OTHER TRADES TO VERIFY THAT ALL SLEEVES, OPENINGS AND EMBEDDED ITEMS ARE IN PLACE AND LOCATED CORRECTLY PRIOR TO PLACING OF CONCRETE.
13. REFER TO ARCHITECTURAL DRAWINGS FOR HOUSE, CHASES, DOWNSPOUTS OR ACCESSORIES REQUIRED TO BE CAST IN CONCRETE AND FOR LOCATIONS OF FLOOR FINISHES AND SLAB DEPRESSIONS.
14. FASCIAS SHALL BE MITERED ON THE CORNER LINE OF WALLS, PIERS, OR COLUMNS, UNLESS NOTED OTHERWISE.
15. PROCEDURES FOR PLACEMENT OF CONCRETE SHALL BE IN STRICT CONFORMANCE WITH ACI 304, "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE."
16. BEAMS AND SLABS SHALL BE POURED MONOLITHICALLY, SO FAR AS PRACTICABLE. CONSTRUCTION JOINTS ARE PERMITTED.
17. PIPE MAY PASS THROUGH STRUCTURAL CONCRETE IN SLEEVES, BUT SHALL NOT BE EMBEDDED THEREIN. SLEEVES SHALL BE GROUTED INTO EXPANSION JOINT FILLER MATERIAL TO ALLOW CONCRETE TO CURE. WHERE WATERPROOF PIPES OR CONDUITS EXCEEDING ONE SHARE THE SLAB OR WALL THICKNESS SHALL NOT BE IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED. SEE MECHANICAL AND/OR ELECTRICAL DRAWINGS FOR LOCATIONS OF SLEEVES, ACCESSORIES, ETC.
18. CONCRETE SLABS ON GRADE SHALL BE POURED ON COMPACTED SUBSTRATE OR UNDISTURBED SOIL. SLAB SURFACES SHALL BE SMOOTH AND LEVEL OR SHALL HAVE SMOOTH EVEN SLOPE. CONCRETE FINISH SHALL BE SMOOTH TOP WHERE FLOOR SLABS ARE ENCLOSED FOR EXTERIOR WALLS.
19. THE SURFACE OF ALL CONSTRUCTION JOINTS SHALL BE CLEANED TO REMOVE ALL LOOSE CHIPS OF CEMENT POWDER WHICH MAY TO PLACING THE SUBSEQUENT CONCRETE.
20. SLAB CONTROL JOINTS SHALL BE INSTALLED WITH JOINT FORMERS WHERE THE SLAB IS POURED. OR SAWCUT AS SOON AS THE CONCRETE WILL ALLOW WITHOUT DAMAGE.
21. ALL REINFORCING STEEL TO BE GRADE 60 (U.N.O.).

WOOD:

1. ALL WOOD CONSTRUCTION SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH AISC AND THE LATEST EDITION OF THE AISC TIMBER CONSTRUCTION MANUAL.
2. ALL LUMBER SHALL BE MINIMUM NO. 1/ NO.2 SPF UNLESS INDICATED OTHERWISE.
3. ALL WOOD IN CONTACT WITH CONCRETE, MASONRY OR EXPOSED SHALL BE SOUTHERN PINE, PRESSURE TREATED FOR .50CAP AS FOLLOWS:
    0.60 FOR IN-GROUND USE
    0.40 FOR ABOVE GROUND AND IN CONTACT W/GROUND
    0.40 FOR WOOD IN CONTACT WITH CONCRETE
    RETENTION SHALL BE PER MANUFACTURER'S SPECIFICATIONS FOR THE PARTICULAR USE.
4. ALL FASTENERS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE GALVANIZED WITH A MINIMUM G185 COATING.
5. ALL PLYWOOD DESIGNATED ON THE STRUCTURAL DRAWINGS SHALL BE DOUGLAS FIR, CONFORMING TO THE LATEST NATIONAL BUREAU OF STANDARDS "U.S. PRODUCT STANDARDS PS 1". PLYWOOD SHALL BE GRADE STAMPED C/D, WITH EXTERIOR GLUE AND PANEL INDEX 24/16 UNLESS NOTED OTHERWISE.
6. STRUCTURAL PLYWOOD SHALL CONFORM TO U.S. PRODUCT STANDARD PS 1-95. STRUCTURAL USE PANELS SHALL CONFORM TO ACR-108 (APA TEP-108). A.P.A. GRADE STAMP SHALL BE PROVIDED ON ALL SHEATHING ROOF AND FLOOR SHEATHING AND SHEAR WALL PANELS SHALL BE IN PLACE AND INSPECTED BY THE BUILDING OFFICIAL PRIOR TO SHEATHING INSTALL WITH FACE GRAIN ACROSS SUPPORTS EXCEPT WHERE NOTED ON PLANS OR DETAILS. PROVIDE CLIPS AT ALL EDGES AS SPECIFIED BY A.P.A.
7. PLYWOOD SHALL BE A.P.A. PERFORMANCE STAMPED, AS SPECIFIED ABOVE, SHEET STAMPED C-D, EXPOSURE.
8. ALL SOLID LAMINATED MEMBERS AS SHOWN ON PLANS SHALL BE IN ACCORDANCE WITH A.N.S.I. A190.1, A.I.T.C. OR A.P.A. INSPECTION CERTIFICATES SHALL BE FURNISHED WITH EACH SOLID SAWN SHIPMENT. SHALL BE SUBMITTED FOR REVIEW. SOLID LAMINATED MEMBERS SHALL BE OF MATCHING APPEARANCE WITH EXTERIOR SIDE.
9. ALL WOOD MEMBER SHALL BE CUT, NOTCHED OR BORED, EXCEPT AS DETAILED OR PERMITTED BY THIS CODE.
10. ALL TOPS OF COLUMNS AND WALLS SHALL BE ADEQUATELY ANCHOR UNTIL THE ROOF SHEATHING IS COMPLETELY NAILED IN PLACE.
11. MINIMUM STUD HEIGHT AND SPACING PER TABLE 2308.9.3 OF THE 6TH MINIMUM CEILING JOIST SPANS SHALL BE PER IRC 2018 UNLESS PROVIDE BLOCKING AT 8'-0" O.C.
12. BUILDING DEPARTMENT INSPECTION OF THE ROOF AND FLOOR SYSTEMS IS REQUIRED PRIOR TO PLACING ANY MATERIAL ON OR SUSPENDING ANY LOADS FROM THE ROOF OR FLOOR SYSTEMS.
13. FRAMING HARDWARE SHALL BE SIMPSON "STRONG TIE" OR EQUAL SUBSTITUTIONS SHALL HAVE U.C.B.I. APPROVAL. ALL FLOOR WORK TO WOOD CONNECTORS SHALL BE MADE WITH SIMPSON ACTUAL HANGERS AS REQUIRE, UNLESS NOTED OTHERWISE.
    2 x 6, 8 AND 8 MEMBERS = "A" SERIES
    2 x 10, 12, 14, AND 16 MEMBERS = "HU" SERIES
    4 x 4 AND LARGER = "MIT" SERIES
    POST TO BEAM MEMBERS = "PC" SERIES
14. NAILING - UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE QUANTITY AND SIZE OF FASTENERS CONNECTING WOOD FRAME MEMBERS, END/EDGE AND SPACINGS MATERIALS TO WOOD FRAME MEMBERS SHALL NOT BE LESS THAN THAT SPECIFIED IN TABLE 2304.9.1 OF THE CODE AND PER MANUFACTURERS SPECIFICATIONS.
    A. ALL NAILS EXPOSED TO THE WEATHER SHALL BE GALVANIZED.
    B. TOE NAILS SHALL BE DRIVEN AT AN ANGLE OF 30 DEGREES TO THE FACE SURFACE AND BE STARTED AT 1/3 THE LENGTH OF THE NAIL FROM THE EDGE OF THE PIECE.
15. WOOD SIDING SHALL BE IN CONFORMANCE WITH A.N.S.I. A108.1.
16. BOLTS AND LAG SCREWS SHALL CONFORM TO A.N.S.I. B18.2.1. ALL BOLTS THROUGH WOOD SHALL HAVE STANDARD CUT WASHERS EXCEPT WHERE METAL SIDE PLATES ARE SPECIFIED. BOLT HOLES SHALL BE BORED 1/32" TO 1/16" LARGER THAN THE BOLT DIAMETER UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE RETIGHTENED PRIOR TO APPLICATION OF PLASTER, STUCCO, ETC.

STRUCTURAL STEEL NOTES:

1. ALL STRUCTURAL STEEL SHALL BE CONFORM TO THE LATEST EDITION "STEEL CONSTRUCTION MANUAL" OF THE AISC.
2. UNLESS OTHERWISE NOTED (UNO), ALL MATERIAL SHALL BE IN ACCORDANCE WITH THE FOLLOWING ASTM SPECIFICATIONS:
    ASTM A 992, WIDE FLANGE
    ASTM A 500, GRADE B, HSS HOLLOW STRUCTURAL SHAPE
    ASTM A 36, PLATES, BARS, RODS, AND ANGLES
    ASTM A 501, TYPE
    ASTM A 325N, OR A325 OR A490 FOR HIGH STRENGTH BOLTS
    ASTM F 1554 GRADE ANCHOR BOLTS
    ASTM A 307, GRADE A, ANCHOR BOLTS
    ASTM A 563, HEAVY HEX NUTS.
    ASTM A 436, HARDENED STEEL WASHERS.
    ASTM B193 ET, THREADED ROD
3. ALL CONNECTIONS SHALL BE SHEAR TYPE CONNECTIONS AND DESIGNED BY THE FABRICATOR FOR THE FACTORED SHEAR FORCES INDICATED ON PLANS IN ACCORDANCE FACTOR DESIGN. MINIMUM BOLT DIAMETER SHALL BE ¾" UNO. ALL BOLTS SHALL BE SNUG-TIGHTENING TYPE BOLTS AND "SNUG TIGHT"
4. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 USING E70XX ELECTRODES AND PROVIDE CONTINUOUS MINIMUM SIZED FILLET WELD PER AISC REQUIREMENTS. ALL FILLER MATERIAL SHALL HAVE MINIMUM YIELD STRENGTH OF 58KSI.
5. WHERE "CONTINUOUS CHORD" ANGLES ARE INDICATED, PROVIDE A CONTINUOUS BUTT WELD OF FULL PENETRATION WELD AT THE SPLICE POINTS. THE STEEL FABRICATOR MAY SUBMIT AN ALTERNATE BOLTED CONNECTION DETAILS FOR APPROVAL.
6. ALL BEAM CONNECTIONS ARE NOTED SHAR [ ] ON PLAN. SEE TYPICAL DETAILS.
7. WHERE STEEL BEAMS DEAR ACROSS BUILDING EXPANSION JOINTS OR AT WALL CONTROL JOINTS, PROVIDE A "SLIP" CONNECTION PER TYPICAL DETAIL.
8. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED.
9. UNLESS OTHERWISE NOTED, ALL STRUCTURAL STEEL PERMANENTLY EXPOSED TO VIEW SHALL BE SHOP PRIMED WITH ONE COAT OF CISC 15-66, TYPE 1 RED OXIDE PAINT.
10. THE STRUCTURAL STEEL ERECTOR SHALL PROVIDE ALL TEMPORARY GUYING AND BRACING.
11. UNLESS OTHERWISE NOTED, ALL STRUCTURAL STEEL PERMANENTLY EXPOSED TO THE WEATHER INCLUDING ALL BRICK SHELF ANGLE SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A-153 OR ASTM A123/A153M

STRUCTURAL STEEL FABRICATION NOTES:

SHOP FABRICATION DETAILS ARE TO BE MADE FROM ISSUED FOR CONSTRUCTION DESIGN DRAWINGS ONLY.

1. FABRICATOR IS RESPONSIBLE FOR:
    a. CERTIFIED SHOP DETAILS.
    b. CONNECTIONS NOT SHOWN ON THE DESIGN DRAWINGS.
    c. PROVIDING ENGINEER SHOPPING WEIGHTS (LISTED UNDER THE PIECE OR IN THE BILL OF MATERIAL).
    d. FIELD ERECTED FOR STRUCTURAL STEEL TO STRUCTURAL STEEL FIELD CONNECTIONS, INCLUDING BOLT TOLERANCE.
    e. CANTILEVER BEAM WITH WIDE FLANGE SHAPES AND PROVIDING NECESSARY REINFORCEMENT, IF REQUIRED.
    f. PAINTING CONSISTENT WITH FABRICATION SPECIFICATION. FIELD PAINTING TO BE MINIMIZED WHILE NOT AFFECTING DESIGN OF BOLTED CONNECTIONS.
    g. COORDINATING OF DETAILING WITH SUBCONTRACTOR'S APPROVAL PACKAGE DRAWINGS.

CRAMER ENGINEERING, LLC
[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 042722 ENGINEER JAMES J. CRAMER

DATE: 09-13-2023

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STANDARD FOUNDATION FOR THE STATE OF NORTH CAROLINA FOR BLACKWATER TRUSS SYSTEM
8736 FL-87
MILTON, FL. 32570

No. 23-245-02

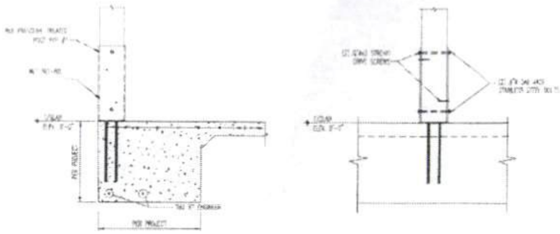
REVISIONS:

NO.	DESCRIPTION	DATE
1	[illegible]	[illegible]

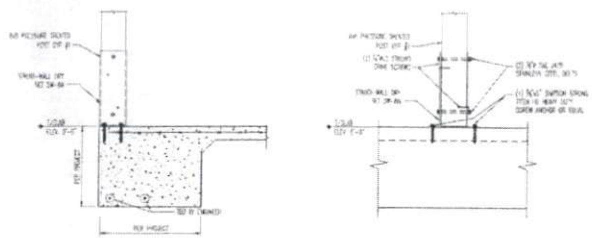
DWG DATE: 09-13-2023 DRAWN BY: E. HEART
CHECKED BY: 09-13-2023 READY BY: J. CRAMER
APPROVAL DATE: 09-13-2023 APPROVED BY: J. CRAMER

STRUCTURAL NOTES

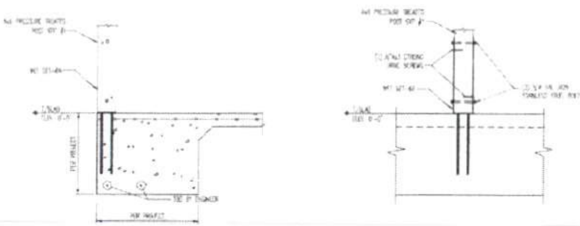
S0.1



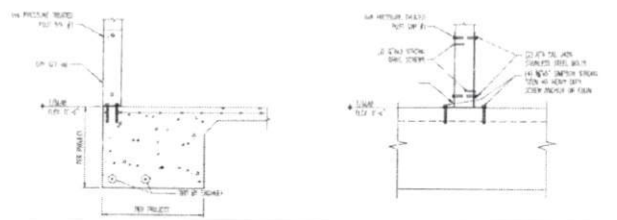
BLACKWATER TRUSS SYSTEM
ANCHOR BRACKET (C / S1.1)



BLACKWATER TRUSS SYSTEM
ANCHOR BRACKET (D / S1.1)



BLACKWATER TRUSS SYSTEM
ANCHOR BRACKET (D / S1.1)



BLACKWATER TRUSS SYSTEM
ANCHOR BRACKET (D / S1.1)

FOOTING GUIDELINES FOR ENCLOSED WET SET POST ANCHORS

EAVE HEIGHT	POST SIZE (MIN)	TYPE	INSIDE DIMENSION STD.
10'-0"	6x6	BWP66	5⅝"
12'-0"	6x6	BWP66	5⅝"
14'-0"	8x8	BWP88	7⅝"
16'-0"	8x8	BWP88	7⅝"
18'-0"	8x8	BWP88	7⅝"

ENGINEER NOTES:
1. MAXIMUM SPACING OF POST IS 12'-0" O.C., ALL SPACING OVER 12'-0" MAX. REQUIRES ADDITIONAL ENGINEERING BY LICENSED ENGINEER.

MAXIMUM GUIDELINES FOR ENCLOSED WET SET POST ANCHORS

EAVE HEIGHT	MAXIMUM SPAN	TYPE	POST SIZE (MIN)
10'-0"	40'	BWP66	6x6
12'-0"	40'	BWP66	6x6
14'-0"	40'	BWP88	8x8
16'-0"	30'	BWP88	8x8
18'-0"	25'	BWP88	8x8

ENGINEER NOTES:
1. MAXIMUM SPACING OF POST IS 12'-0" O.C., ALL SPACING OVER 12'-0" MAX. REQUIRES ADDITIONAL ENGINEERING BY LICENCED ENGINEER.

FOOTING GUIDELINES FOR ENCLOSEDDRY SET POST ANCHORS

EAVE HEIGHT	POST SIZE (MIN)	TYPE	INSIDE DIMENSION STD.
10'-0"	6x6	BW66	5⅝"
12'-0"	6x6	BW66	5⅝"
14'-0"	8x8	BW88	7⅝"
16'-0"	8x8	BW88	7⅝"
18'-0"	8x8	BW88	7⅝"

ENGINEER NOTES:
1. MAXIMUM SPACING OF POST IS 12'-0" O.C., ALL SPACING OVER 12'-0" MAX. REQUIRES ADDITIONAL ENGINEERING BY LICENSED ENGINEER.

MAXIMUM GUIDELINES FOR ENCLOSED DRY SET POST ANCHORS

EAVE HEIGHT	MAXIMUM SPAN	TYPE	POST SIZE (MIN)
10'-0"	40'	BW66	6x6
12'-0"	40'	BW66	6x6
14'-0"	40'	BW88	8x8
16'-0"	30'	BW88	8x8
18'-0"	25'	BW88	8x8

ENGINEER NOTES:
1. MAXIMUM SPACING OF POST IS 12'-0" O.C., ALL SPACING OVER 12'-0" MAX. REQUIRES ADDITIONAL ENGINEERING BY LICENSED ENGINEER.

CRAMER
ENGINEERING, LLC

NORTH CAROLINA PROFESSIONAL SEAL 049289 ENGINEER JAMES J CRAMER

DATE: 09-13-2023

STANDARD FOUNDATION FOR THE
STATE OF NORTH CAROLINA
FOR BLACKWATER TRUSS SYSTEM
8736 FL-87
MILTON, FL. 32570

No. 23-245-02

REVISION

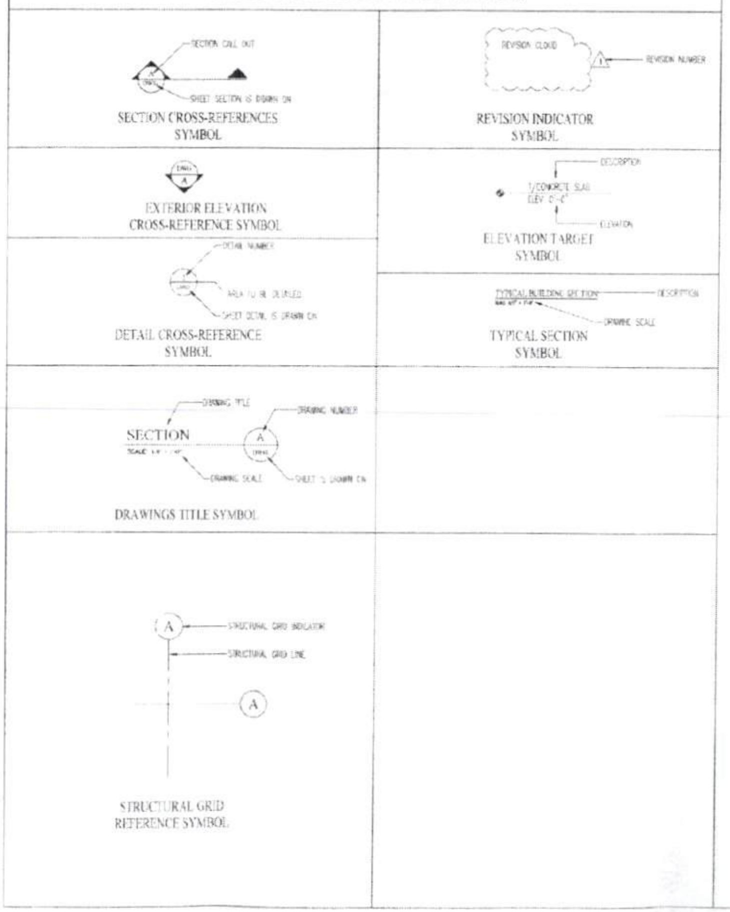
VERIFY ALL DIMENSIONS IN FIELD

BLACKWATER TRUSS
SYSTEM ANCHOR BRACKETS

S1.1

STANDARD FOUNDATION FOR THE STATE OF NORTH CAROLINA
FOR BLACKWATER TRUSS SYSTEM
8736 FL-87
MILTON, FL. 32570

STRUCTURAL GRAPHICS SYMBOLS



ABBREVIATIONS

TYPE	DESCRIPTION	TYPE	DESCRIPTION
A.B.	ANCHOR BOLT	L.	LENGTH
ALT	ALTERNATE	L.L.H.	LONG LEG HORIZONTAL
ARCH	ARCHITECTURAL	L.L.V.	LONG LEG VERTICAL
AVG	AVERAGE	L.P.	LOW POINT
BCDL	BOTTOM CHORD DEAD LOAD	MAX.	MAXIMUM
BCLL	BOTTOM CHORD LIVE LOAD	MECH.	MECHANICAL
BFF	BELOW FINISH FLOOR	MEZZ.	MEZZANINE
BLDG	BUILDING	MFR.	MANUFACTURER
BM	BEAM	MIN.	MINIMUM
B.O.	BOTTOM OF	MISC	MISCELLANEOUS
BOT	BOTTOM	MWFRS	MAIN WIND FORCE RESISTING SYSTEM
BRG.	BEARING	M.O.	MASONRY OPENING
C.J.	CONTROL JOINT		
CLR.	CLEAR	N.S.	NEAR SIDE
C.M.U.	CONCRETE MASONRY UNIT		
CONC	CONCRETE	O.C.	ON CENTER
CONST. JT	CONSTRUCTION JOINT	O.D.	OUTSIDE DIAMETER
CONT	CONTINUOUS	O.H.	OVER HEAD
		O/O	OUT TO OUT
D	DEPTH		
DET.	DETAIL	P.S.F.	POUNDS PER SQUARE FOOT
DIA.	DIAMETER	P.S.I.	POUNDS PER SQUARE INCH
ELEV	ELEVATION	R.	RADIUS
EQ.	EQUAL	REINF.	REINFORCEMENT
E.W.	EACH WAY		
EXIST	EXISTING	SIM.	SIMILAR
FIN.	FINISH	T&B	TOP AND BOTTOM
FLR.	FLOOR	TCDL	TOP CHORD DEAD LOAD
FND.	FOUNDATION	TCLL	TOP CHORD LIVE LOAD
F.S.	FAR SIDE	T.O.	TOP OF
FTG.	FOOTING	T.O.S.	TOP OF STEEL
		TYP.	TYPICAL
GA.	GAUGE		
		U.N.O.	UNLESS NOTED OTHERWISE
HORIZ	HORIZONTAL		
H.P.	HIGH POINT	VERT.	VERTICAL
		V.I.F.	VERIFY IN FIELD
INSUL.	INSULATION		
I.L.O.	IN LIEU OF	W.W.F.	WELDED WIRE FABRIC
		W	WIDTH
		W/	WITH

STRUCTURAL DRAWING LIST:

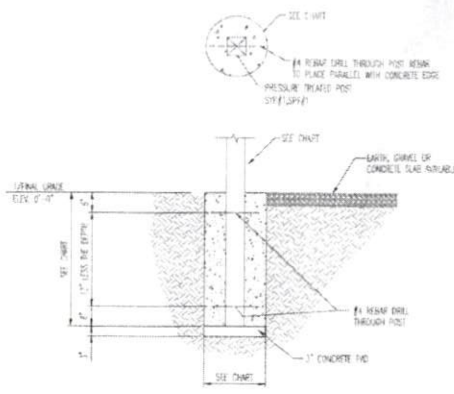
CRAMER ENGINEERING, LLC

DATE: 09-13-2023

No. 23-245-02

COVER SHEET

C0.1



TYPICAL FOUNDATION SECTION

SCALE: 3/4" = 1'-0"

POST GUIDELINES FOR OPEN OR ENCLOSED GABLES/LEAN-TO POLE BARN

EAVE HEIGHT	POST SIZE (MIN)	POST DEPTH (MIN)*	
10'-0"	6x6	3'-2"	
12'-0"	6x6	3'-6"	
14'-0"	8x8	4'-0"	
16'-0"	8x8	4'-8"	
18'-0"	8x8	5'-5"	
20'-0"	10x10	6'-0"	

NOTE:
MAXIMUM SPACING OF POST SEE CHARTS BELOW
DESIGN DATA
ALLOWABLE SOIL BEARING: 2,500 PSF
SNOW LOAD: 15 PSF
DEAD LOAD: 5 PSF

FOOTING GUIDELINES FOR OPEN OR ENCLOSED GABLES/LEAN-TO POLE BARN

BUILDING WIDTH (SPAN)	POST HOLE DIAMETER	
20'-0"	16"ø	
30'-0"	16"ø	
40'-0"	16"ø	
50'-0"	19"ø	
60'-0"	20"ø	

NOTE:
MAXIMUM SPACING OF POST IS 8'-0" O.C.
DESIGN DATA:
ALLOWABLE SOIL BEARING: 2,500 PSF
SNOW LOAD: 15 PSF
DEAD LOAD: 5 PSF

FOOTING GUIDELINES FOR OPEN OR ENCLOSED GABLES/LEAN-TO POLE BARN

BUILDING WIDTH (SPAN)	POST HOLE DIAMETER	
20'-0"	15"ø	
30'-0"	16"ø	
40'-0"	15"ø	
50'-0"	20"ø	
60'-0"	21"ø	

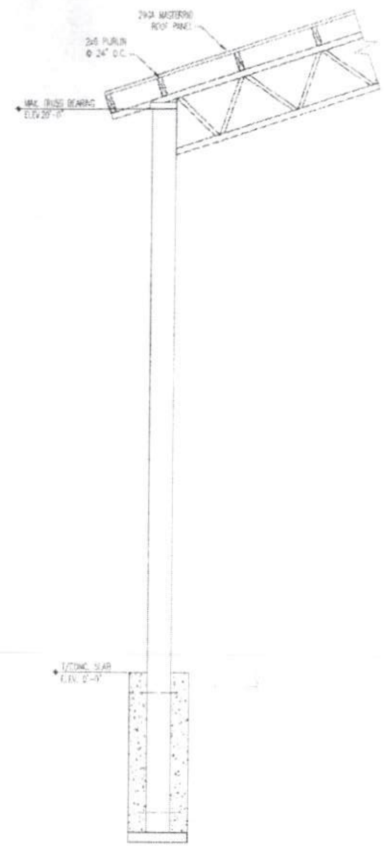
NOTE:
MAXIMUM SPACING OF POST IS 10'-0" O.C.
DESIGN DATA
ALLOWABLE SOIL BEARING: 2,500 PSF
SNOW LOAD: 15 PSF
DEAD LOAD: 5 PSF

FOOTING GUIDELINES FOR OPEN OR ENCLOSED GABLES/LEAN-TO POLE BARN

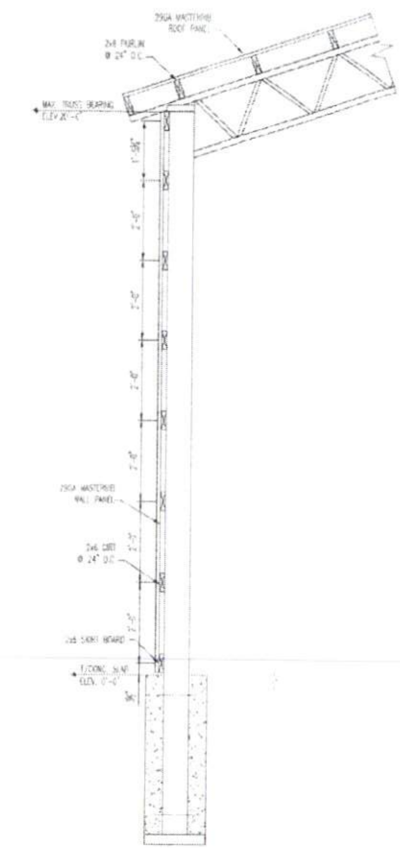
BUILDING WIDTH (SPAN)	POST HOLE DIAMETER	
20'-0"	16"ø	
30'-0"	18"ø	
40'-0"	18"ø	
50'-0"	24"ø	
60'-0"	24"ø	

NOTE:
MAXIMUM SPACING OF POST IS 12'-0" O.C., ALL SPACING OVER 12'-0" MAY REQUIRES ADDITIONAL ENGINEERING BY LICENSED ENGINEER

DESIGN DATA
ALLOWABLE SOIL BEARING: 2,500 PSF
SNOW LOAD: 15 PSF
DEAD LOAD: 5 PSF



TYPICAL WALL SECITON (A / S1.0)



TYPICAL WALL SECITON (B / S1.0)

CRAMER ENGINEERING, LLC

DATE: 09-13-2023

STANDARD FOUNDATION FOR THE STATE OF NORTH CAROLINA FOR BLACKWATER TRUSS SYSTEM
8736 FL-87
MILTON, FL. 32570

No. 23-245-02

REVISION

VERIFY ALL DIMENSIONS IN FIELD

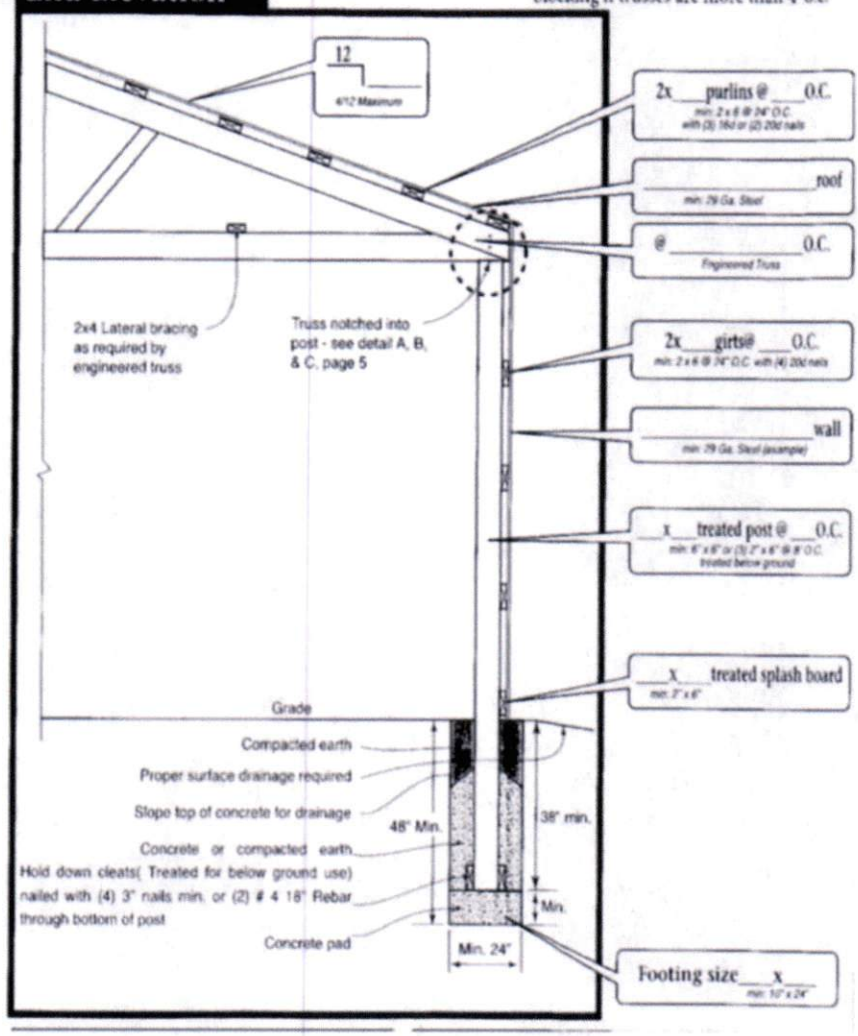
FOUNDATION SECTIONS & DETAILS

S1.0

Pole Barn Construction

End Elevation

Note: Purlins must be on edge with roll blocking if trusses are more than 4' o.c.

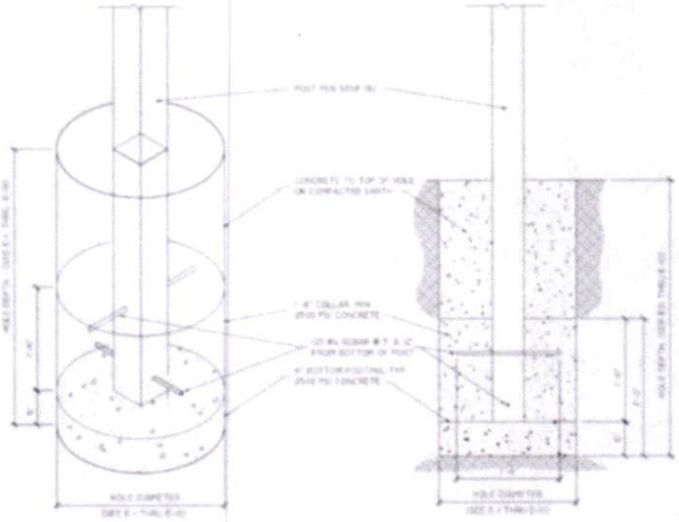


SECTION F: FOUNDATION REQUIREMENTS

Bottom of Footing shall be excavated to depth required, and inspected. Inspection will be measuring physical depth of hole and width across to ensure holes meet requirements of this manual. Pour 6" Concrete footing at bottom of hole, allow 7 days before applying loads to concrete footing. Pour collar section once post is plumb & square. The post may be within 4" of edge of hole (out of plane center) for up to 6" x 6" Posts, and within 3" for 8" X 8" Post.

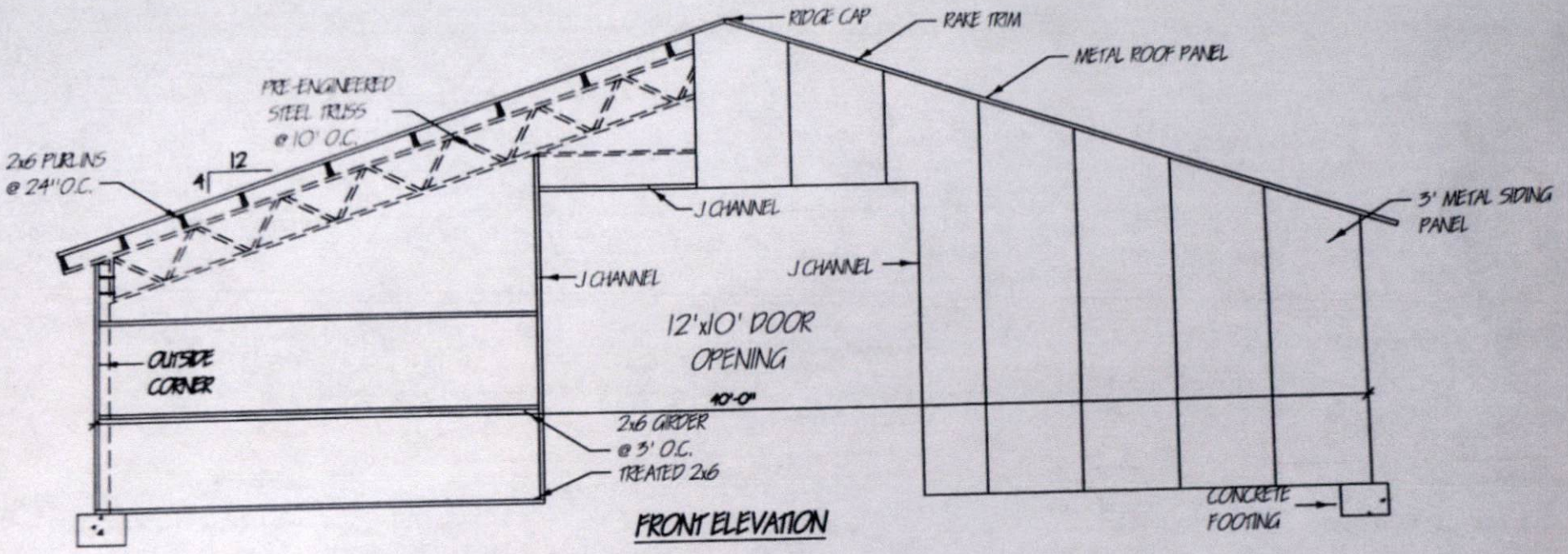
Refer to Tables E-1 thru E-10 for sizing of posts and foundation holes.

Figure F-1: Typical Hole Diagram

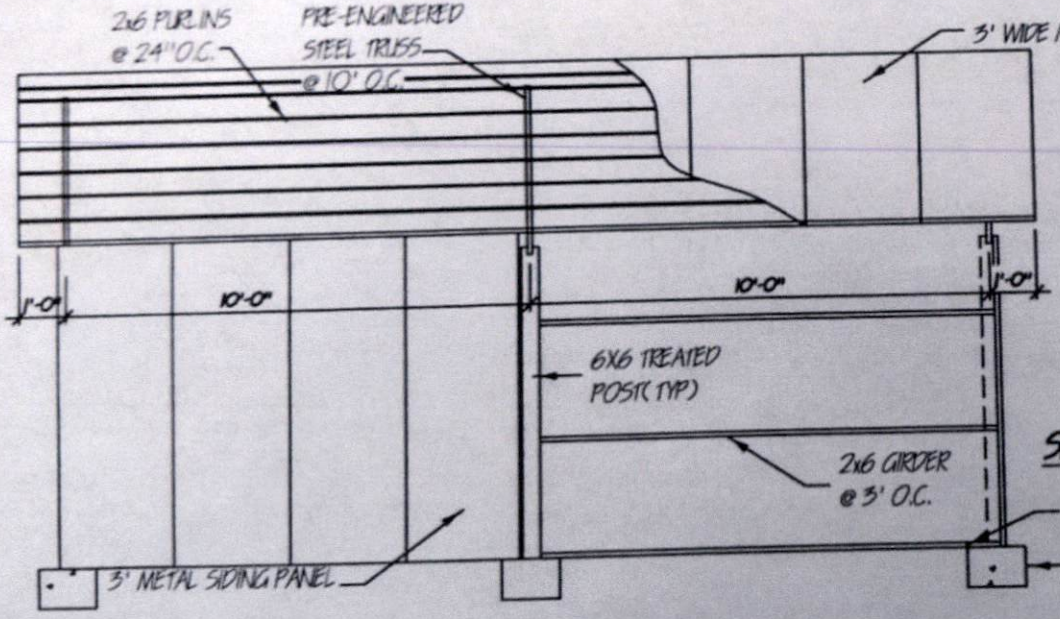


Required Inspections:

1. Holes only no concrete
2. 6" concrete fully cured, with post braced in place. No additional concrete poured prior to this inspection.



FRONT ELEVATION

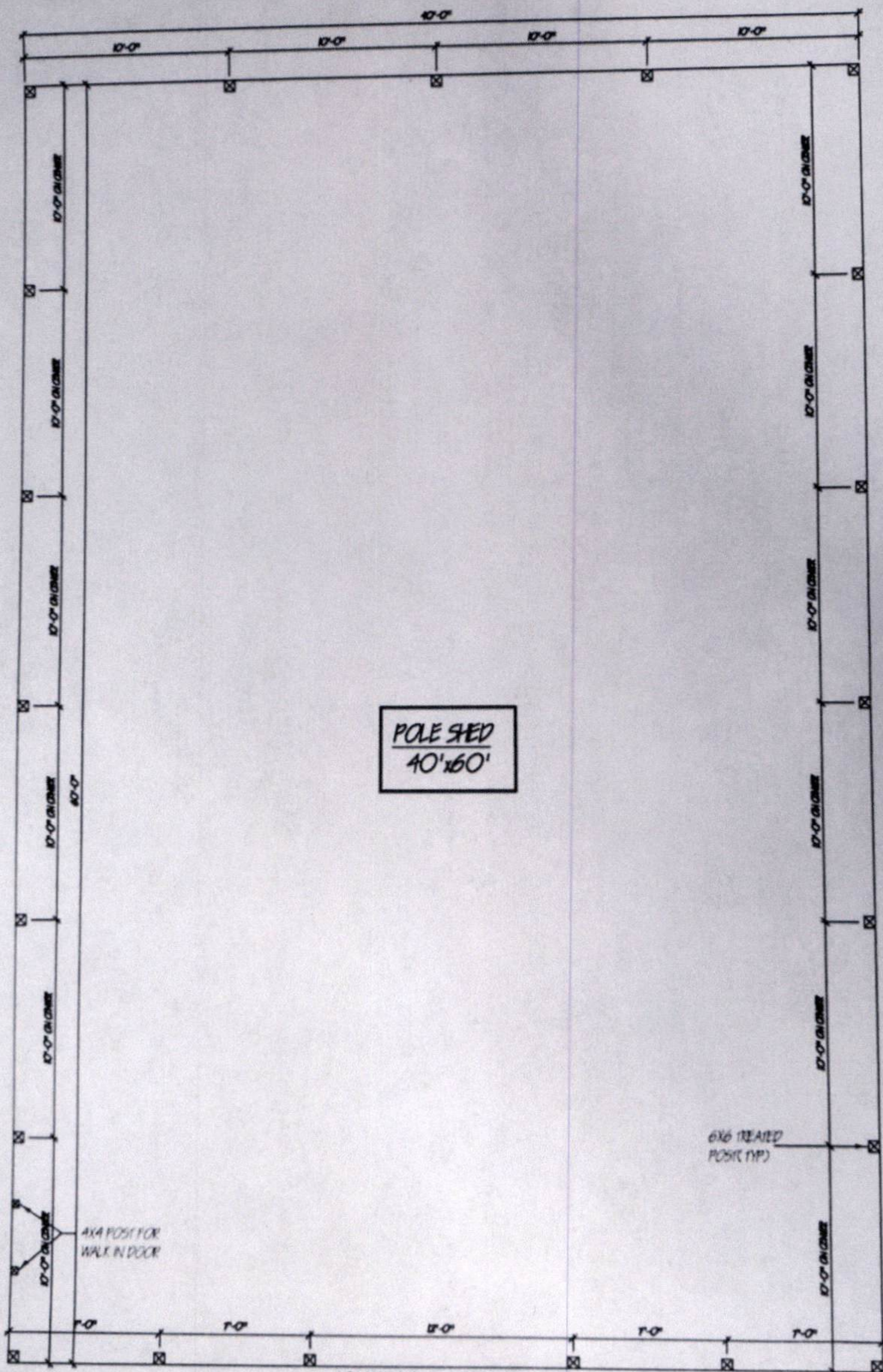


SIDE ELEVATION

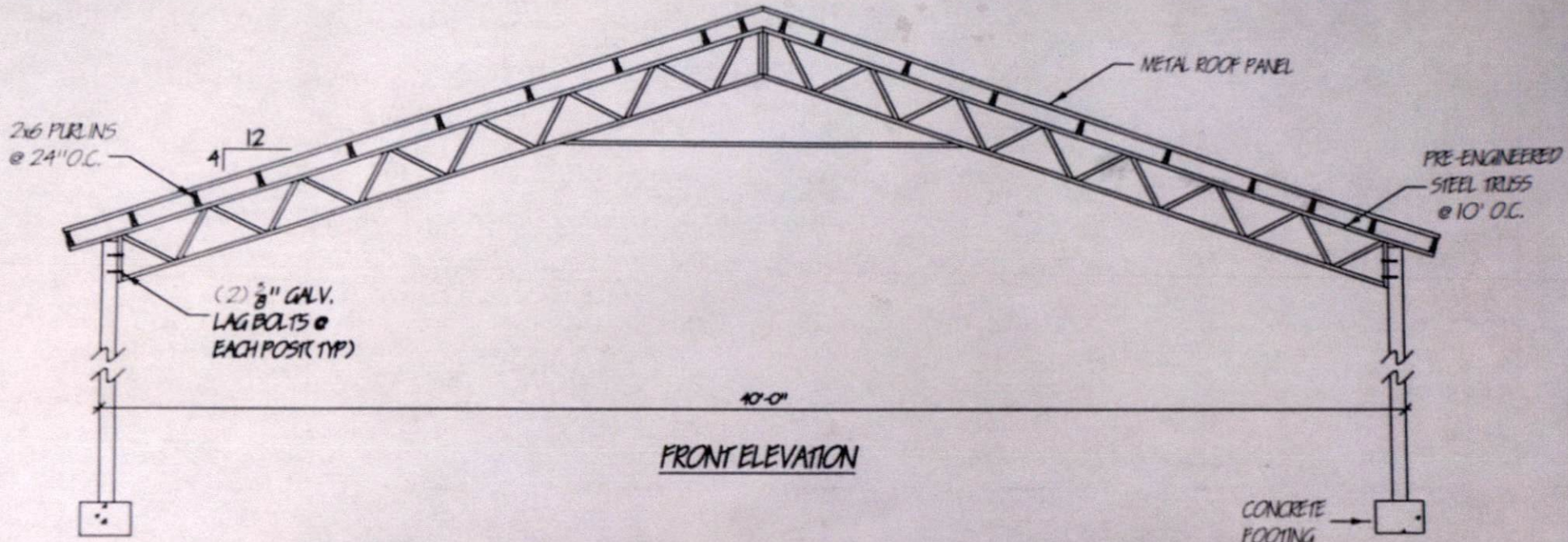
NOTE: BUILDING IS NOT DESIGNED TO MEET A SPECIFIC BUILDING CODE. CUSTOMER IS RESPONSIBLE FOR MEETING THEIR LOCAL BUILDING CODE.

NOTE: ADDITIONAL MATERIAL MAY BE NEEDED, SUCH AS LUMBER FOR TEMPORARY BRACING.

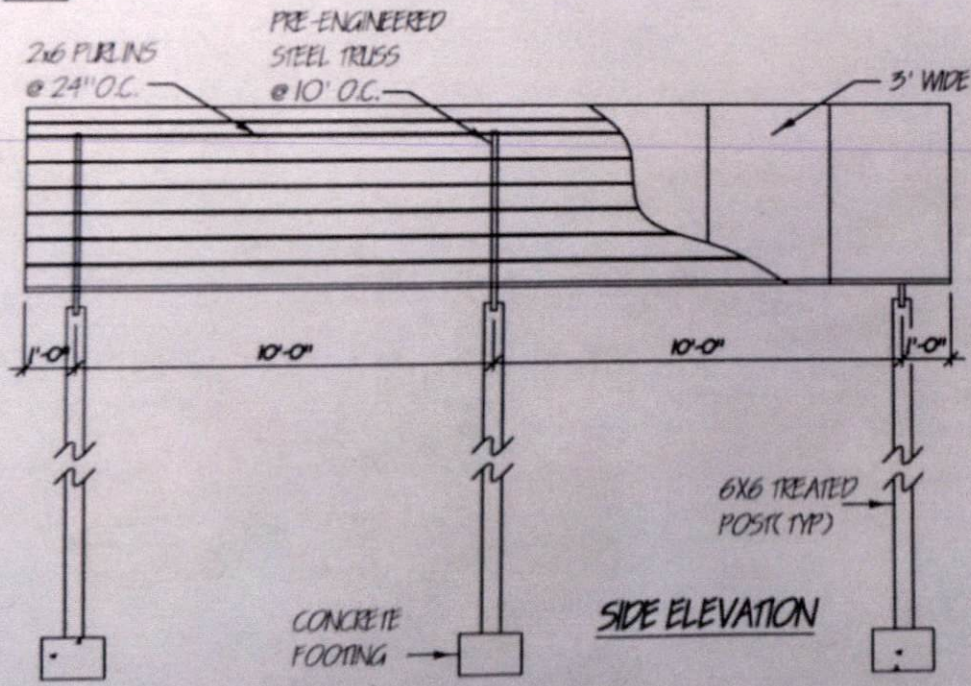
POLE SHED
40'x60'



40' WIDE ENCLOSED POLE SHED
POST PLACEMENT



FRONT ELEVATION



SIDE ELEVATION

NOTE:
BUILDING IS NOT DESIGNED TO MEET A SPECIFIC BUILDING CODE. CUSTOMER IS RESPONSIBLE FOR MEETING THEIR LOCAL BUILDING CODE.

NOTE:
ADDITIONAL MATERIAL MAY BE NEEDED, SUCH AS LUMBER FOR TEMPORARY BRACING.

POLE SHED
40'x60'