

STRUCTURAL DESIGN CRITERIA

Residential Design



RANDOLPH WIGGINS, P.E.

STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE
2020 FLORIDA RESIDENTIAL BUILDING CODE.
SIGNATURE/SEAL ON ANY SHEET IS VALID ONLY
FOR THE STRUCTURAL DESIGN

RANDOLPH W.
LICENSE
No. 1572
STATE OF
FLORIDA
PROFESSIONAL E

Randolph
Wiggins
2021.06.1
0
07:36:55

Building Homes, Building Relationships

07:31 AM

PROJECT:
Ruark Pole Barn
232 SW Dana Gln
Fort White, FL
Columbia County

SHEET NO.

UPLIFT CONNECTORS

1. WOOD CONSTRUCTION SHALL CONFORM TO THE NDS "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION", 2018 EDITION.
2. ALL EXTERIOR WOOD STUD WALLS, BEARING WALLS, SHEAR WALLS AND MISC. STRUCTURAL WOOD FRAMING MEMBERS, (I.E. BLOCKING OR GABLE END BRACING) SHALL BE EITHER SOUTHERN PINE, OR S.P.F. NUMBER 2 GRADE OR BETTER SHALL BE USED REGARDLESS OF SPECIES.
3. ANY EXISTING OR NEW BEARING WALL STUDS THAT HAVE HOLES IN THE CENTER OF THE STUD UP TO 1" IN DIA. SHALL HAVE STUD PROTECTION SHIELDS FOR ALL HOLES OVER 1" IN DIA. FOR PLUMBING LINES, ETC. SHALL BE REPAIRED WITH SIMPSON HSS2 STUD SHOES,TYP., U.N.O..
4. FASTENERS FOR PRESSURE PRESERVATIVE AND FIRE-RETARDANT-TREATED WOOD SHALL BE OF HOT-DIPPED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER.

1. ALL PREFABRICATED WOOD TRUSSES SHALL BE SECURELY FASTENED TO THEIR SUPPORTING WALLS OR BEAMS WITH HURRICANE CLIPS OR ANCHORS.
2. PREFABRICATED WOOD TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF THE "NATIONAL DESIGN SPECIFICATION FOR STRESS-GRADE LUMBER AND ITS FASTENERS" AS RECOMMENDED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION.
3. TRUSS MEMBERS AND CONNECTIONS SHALL BE PROPORTIONED (WITH A MAXIMUM ALLOWABLE STRESS INCREASE FOR LOAD DURATION OF 20%) TO WITHSTAND THE LIVE LOADS GIVEN IN THE NOTES AND TOTAL DEAD LOAD.
4. BRIDGING FOR PRE-ENGINEERED TRUSSES SHALL BE AS REQUIRED BY THE TRUSS MANUFACTURER UNLESS NOTED ON THE PLANS.
5. TRUSS ELEVATIONS AND SECTIONS ARE FOR GENERAL CONFIGURATION OF TRUSSES ONLY. WEB MEMBERS ARE NOT SHOWN, BUT SHALL BE DESIGNED BY THE TRUSS MANUFACTURER IN ACCORDANCE WITH THE FOLLOWING DESIGN LOADS:
6. DESIGN SPECIFICATIONS FOR LIGHT WEIGHT METAL PLATE CONNECTED WOOD TRUSSES PER THE TRUSS PLATE INSTITUTE TPI LATEST EDITION.
7. PRE-ENGINEERED WOOD TRUSSES SHALL BE DESIGNED BY THE MANUFACTURER IN ACCORDANCE WITH SPECIFIED LOADS AND GOVERNING CODES. SUBMITTALS SHALL INCLUDE TRUSS FRAMING PLANS AND DETAILS SHOWING MEMBER SIZES, BRACING, ANCHORAGE CONNECTIONS, TRUSS LOCATIONS, AND PERMANENT BRACING AND/OR BRACING AS REQUIRED FOR ERECTION AND FOR THE PERMANENT STRUCTURE. EACH SUBMITTAL SHALL BE SIGNED AND SEALED BY A FLORIDA REGISTERED STRUCTURAL ENGINEER. SUBMIT 2 COPIES FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
8. THE TRUSS MANUFACTURER SHALL DETERMINE ALL SPANS WORKING POINTS, BEARING POINTS, AND SIMILAR CONDITIONS. TRUSS SHOP DRAWINGS SHALL SHOW ALL TRUSSES, ALL BRACING MEMBERS, AND ALL TRUSS TO TRUSS HANGERS.

ALL REINFORCING STEEL SHALL BE NEW DEFORMED BARS FREE FROM RUST, SCALE & OIL & SHALL MEET ASTM A-615 REINFORCING FOR FOOTING SHALL BE SUPPORTED ON PRE-CAST CONCRETE PADS, TOP REINFORCING SHALL BE SUPPORTED BY TEMPORARY STRONG FLOORS. ALL REINFORCING FOR COLUMNS & FILLED CELLS SHALL BE SECURED IN PLACE, BY USING ADDITIONAL CROSS-REINFORCING TIED TO FOOTING REINFORCING. SPLICES IN REINFORCING WHERE PERMITTED SHALL BE THE FOLLOWING MINIMUM, UNLESS OTHERWISE INDICATED ON THE DRAWINGS:

FTGS, WALLS, COLUMNS, BEAMS, SLABS:	36 DIA. OR 2'-0" MIN.
ALL OTHER REINFORCING:	48 DIA. OR 2'-1" MIN.
TEMPERATURE REINFORCING:	48 DIA. OR 1'-0" MIN.
WELDED WIRE MESH:	8" LAP

1. HOLLOW LOAD BEARING UNITS SHALL BE NORMAL WEIGHT, GRADE N, TYPE 2, CONFORMING TO ASTM C90, WITH A MINIMUM NET COMPRESSIVE STRENGTH OF 1900 PSI ($f_m = 1500$ PSI)
2. MORTAR SHALL BE TYPE "S", CONFORMING TO ASTM C270.
3. COARSE GROUT SHALL CONFORM TO ASTM C476 WITH A MAXIMUM AGGREGATE SIZE OF 3/8" AND A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 3000 PSI SLUMP 8" TO 11".
4. VERTICAL REINFORCEMENT SHALL BE AS NOTED ON THE DRAWINGS WITH THE CELLS FILLED WITH COARSE GROUT.
5. VERTICAL REINFORCEMENT SHALL BE HELD IN POSITION AT THE TOP AND BOTTOM AND AT A MAXIMUM SPACING OF 192 BAR DIAMETERS. REINFORCEMENT SHALL BE PLACED IN THE CENTER OF THE MASONRY CELL TYPICAL UNLESS OTHERWISE NOTED.
6. REINFORCING STEEL SHALL BE LAPPED A MINIMUM OF 40 BAR DIAMETERS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
7. GROUT STOPS SHALL BE PROVIDED BELOW BOND BEAM, PLASTIC SCREEN, METAL LATH STRIP OR CAVITY CAPS MAY BE USED TO PREVENT THE FLOW GROUT INTO CELLS BELOW. THE USE OF FELT PAPER AS A STOP IS PROHIBITED.

E AFTER COMPACTION:
 NS FOR COMPACTION
 OJECT DO NOT MEET
 ACTOR SHALL
 POUR FOR VERIFICATION
 ED TO AT LEAST 95% OF
 01557

SECTION R318 PROTECTION AGAINST TERMITES

TERMITE PROTECTION SHALL BE PROVIDED BY REGISTERED TERMITICIDES, INCLUDING SOLI APPLIED PESTICIDES, BAITING SYSTEMS, AND PESTICIDES APPLIED TO WOOD, OR OTHER APPLIED METHYL METHYL TERMITES. PESTICIDES SHALL BE APPLIED TO ALL FIVE TREATMENT TO NEW CONSTRUCTION (SEE SECTION 24 - REGISTERED TERMITICIDE), UPON COMPLETION OF THE APPLICATION OF THE TERMITE PROTECTIVE TREATMENT, A CERTIFICATE OF COMPLIANCE SHALL BE ISSUED TO THE BUILDING DEPARTMENT BY A LICENSED PEST CONTROL COMPANY THAT CONTAINS THE FOLLOWING STATEMENT: "THE BUILDING HAS BEEN PROTECTED FROM TERMITES IN ACCORDANCE WITH THE SUBTERNEAN TERMITES TREATMENT IS IN ACCORDANCE WITH RULES AND LAWS ESTABLISHED BY THE BUILDING DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES."

WHERE PROJECT IS TO BE LOCATED IN KNOWN RADON GAS PREVALENT AREAS, APPENDIX "F" OF THE 2017 FLORIDA RESIDENTIAL BUILDING CODE IS TO BE IMPLEMENTED. CONCRETE STRENGTH IN THESE AREAS ARE TO BE A MINIMUM OF 3000 P.S.I.. THEREFORE, ANY AND ALL NOTES ON THESE PLANS THAT INDICATE 2500 PSI SHALL BE REPLACED WITH 3000 P.S.I. FOR THE CONCRETE STRENGTH.

[illegible]

20 FLORIDA BUILDING CODE RESIDENTIAL
20 FLORIDA FIRE PREVENTION CODE
20 FLORIDA ACCESSIBILITY CODE
ICC NFPA 70 & FCEB
318.19 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
31.1-31.19 SPECIFICATIONS FOR STRUCTURAL CONCRETE
530-19 BUILDING CODE REQUIREMENTS FOR MASS WOOD
18 NATIONAL DESIGN SPECIFICATION FOR WOOD COMPRESSION
18 WOOD FRAMED CONSTRUCTION MANUAL
18 PLYWOOD DESIGN SPECIFICATION
A/SEI 7-16 AMERICAN SOCIETY OF CIVIL ENGINEERS

OF	20 PSF (REDUCIBLE)
SIDENTIAL FLOOR, UNLESS OTHERWISE INDICATED	40 PSF
CONCRETE	60 PSF
AIRS	40 PSF
IGHT PARTITIONS (DEAD LOAD), U.N.O.	20 PSF
	10 PSF ATTIC FLOOR

ALL CONCRETE UNLESS OTHERWISE INDICATED
IS GRAVEL CONCRETE FOR MASONRY CELLS ONLY
(DO NOT USE FOR CONCRETE COLUMNS OR TIE BEAMS)

WELDED WIRE FABRIC SHALL CONFORM TO	ASTM A1064/A1064M
LONGITUDINAL REINFORCING BARS	ASTM A615-40 40,000 PSI
TRANSVERSE REINFORCING BARS	ASTM A615-40 40,000 PSI
STIRRUPS AND TIES	
POLYPROPYLENE FIBERS FOR SLABS ON GRADE	MINIMUM 1.5 LBS. OF FIBERS PER CUBIC YARD

CM C90-01, STANDARD WEIGHT UNITS, fm=1500 PSI
 PORTER TYPE "S" 1800 PSI
 CONCRETE GROUT 3000 PSI
 CONTINUOUS MASONRY INSPECTION IS REQUIRED DURING CONSTRUCTION
 ALL STRUCTURAL AND MISCELLANEOUS STEEL A36 36,000 PSI, U.N.O
 WELD AND FIELD WELDS: E70XX ELECTRODES
 ALL BOLTS CAST IN CONCRETE: ASTM A36 OR ASTM A-307

RAMS, RAFTERS, JOIST, PLATES, ETC. U.N.O.
 D. 2 SOUTHERN YELLOW PINE (19% M.C.)
 ROOF DECK: PLYWOOD C-C/C-D, EXTERIOR, OR OSB
 ROOF SHEATHING: T&G A-C GROUP 1 APA RATED (48/24)
 WALL SHEATHING: PLYWOOD C-C/C-D, EXTERIOR OR OSB
 2X4 LAM BEAM Fb = 2900 PSI (2.0E)
 ROOF COLS. PARALLAM 2.0E U.N.O.

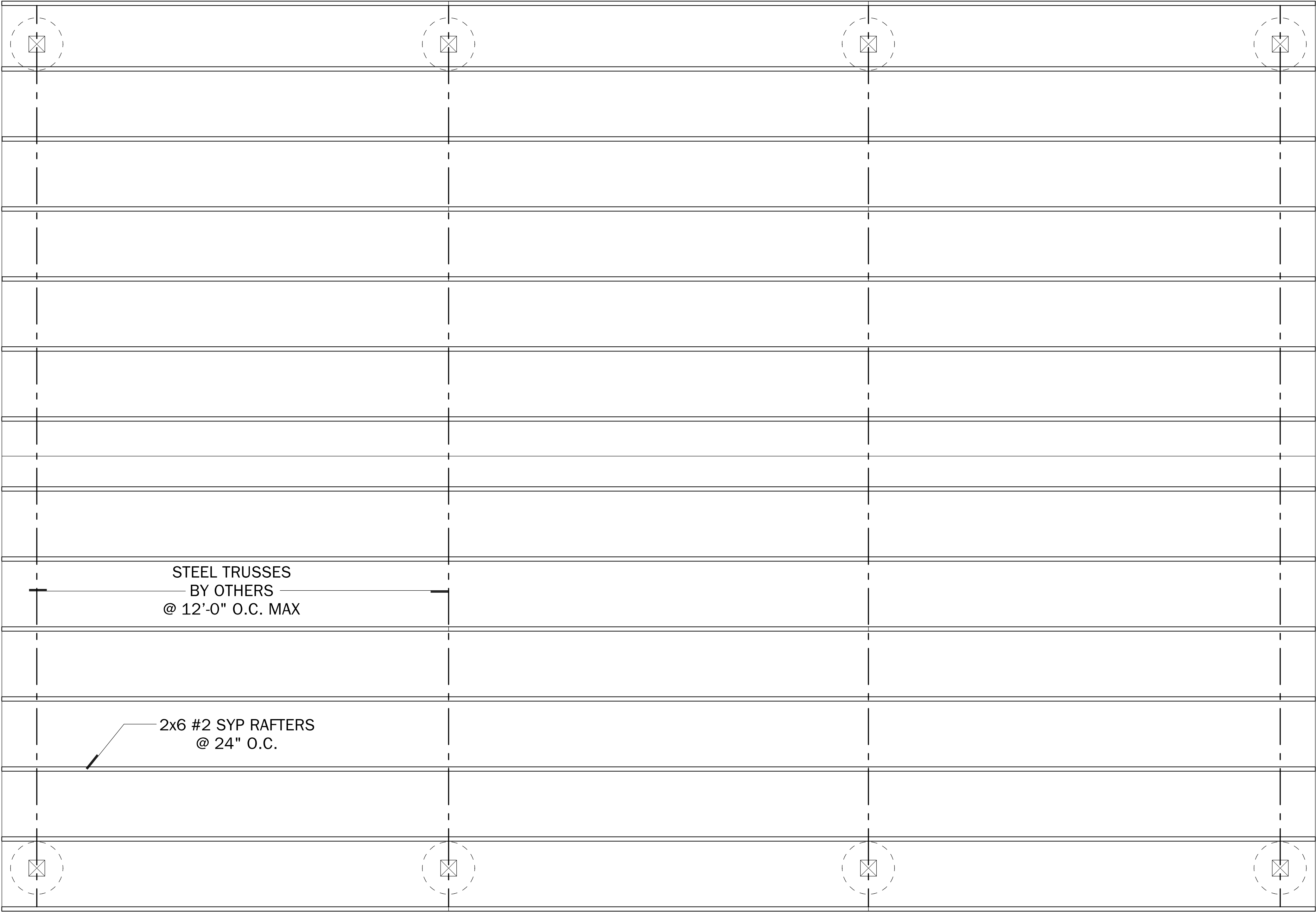
DESIGN LOADS:	SHINGLE ROOF
TOP CHORD LIVE LOAD:	20 PSF
TOP CHORD DEAD LOAD:	10 PSF
BOTTOM CHORD DEAD LOAD:	<u>10 PSF</u>
	<u>40 PSF</u>
BOTTOM CHORD ATTIC LIVE LOAD:	10 PSF

SEE DRAWINGS FOR SPECIAL CONCENTRATED LOADS. DESIGN FOR NEW WIND UPLIFT AS PER SPECIFIED CODES, DEDUCTING A MAXIMUM OF 5 P.S.F. DEAD LOAD, BUT NOT EXCEEDING ACTUAL DEAD LOAD.

WIND SPEED (ULTIMATE)	130 MPH
WIND SPEED (ALLOWABLE)	101 MPH
EXPOSURE CATEGORY	B
BUILDING CATEGORY	II
BUILDING TYPE	V
ENCLOSURE CLASSIFICATION	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	+/- 0.18

**THIS DRAWING AND DESIGN IS VALID
FOR 12 MONTHS AFTER THE DATE IT
IS SIGNED AND SEALED OR WHILE
CURRENT CODE IS VALID**

IT IS THE INTENT OF THIS DESIGNER THAT THESE PLANS ARE ACCURATE AND ARE CLEAR ENOUGH FOR THE LICENSED PROFESSIONAL TO CONSTRUCT THIS PROJECT. IN THE EVENT THAT SOMETHING IS UNCLEAR OR NEEDS CLARIFICATION...STOP...AND CALL THE DESIGNER LISTED IN THIS TITLE PAGE. IT IS THE RESPONSIBILITY OF THE LICENSED PROFESSIONAL THAT CONSTRUCTS THIS PROJECT TO FULLY REVIEW THESE DOCUMENTS BEFORE CONSTRUCTION BEGINS AND ANY AND ALL CORRECTIONS, IF NEEDED, TO BE MADE BEFORE ANY WORK IS DONE. *DO NOT SCALE DRAWINGS FOR CRITICAL DIMENSIONS. INSTEAD CALL THE DESIGNER LISTED IN TITLE PAGE.*

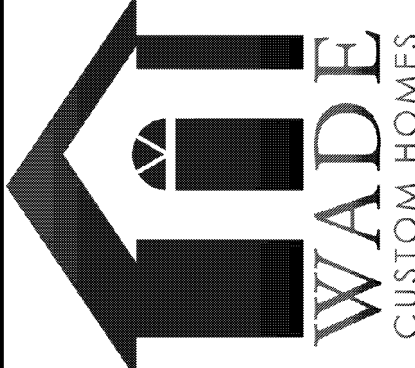


RAFTER PLAN

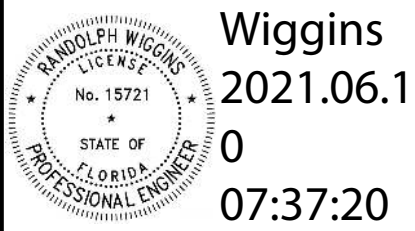
SCALE: 1/4" = 1'-0"

PROJECT:
Ruark Pole Barn
232 SW Dana Gln
Fort White, FL
Columbia County

LAST PLOT DATE: June 10, 2021
07:34 AM



Building Homes,
Building Relationships
1431 E. Wade St.
Trenton, FL 32693
352-949-3795
CRC1331070
www.wadecustomhomes.com



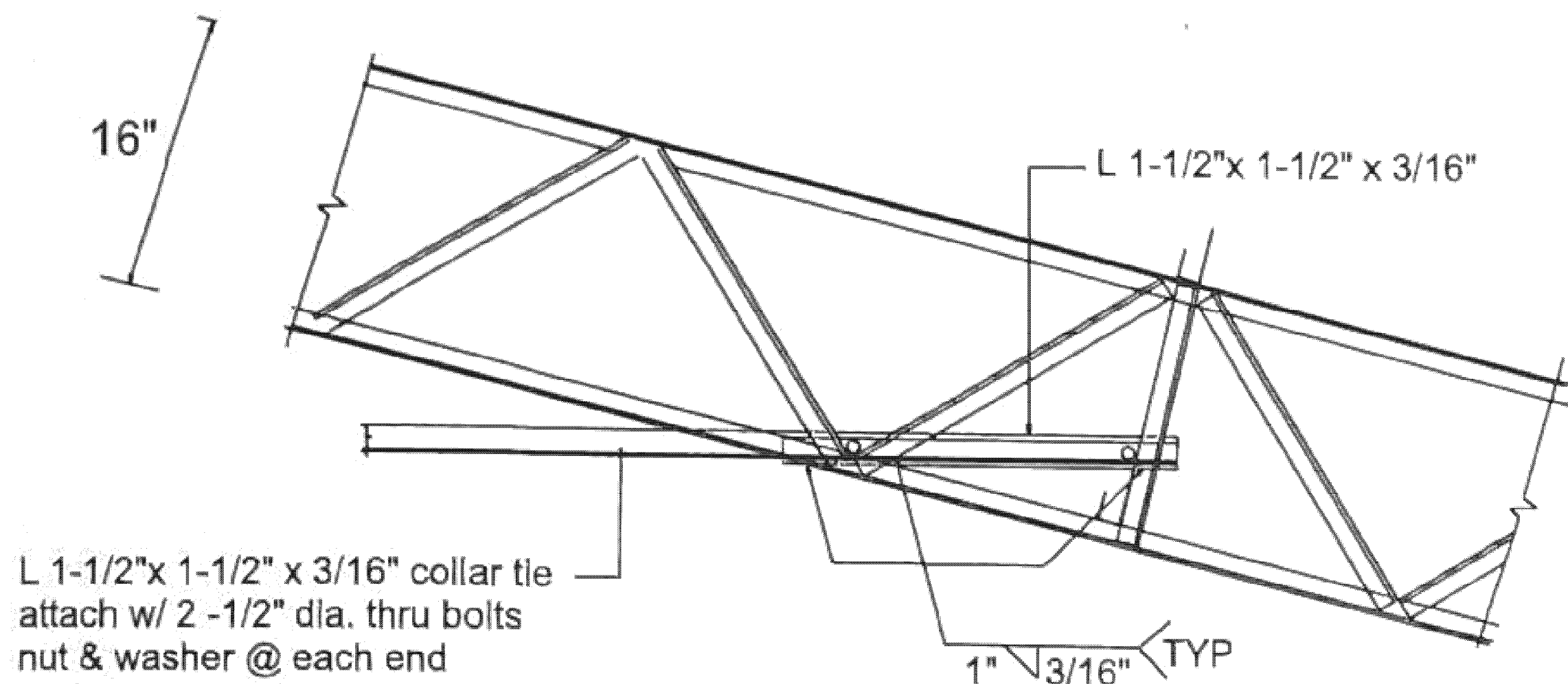
Randolph
Wiggins
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-04'00'

RANDOLPH WIGGINS, P.E.
1431 E. Wade Street, Suite B Trenton, FL 32693
STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE
FLORIDA BUILDING CODE (FBC) AND THE
INTERNATIONAL RESIDENTIAL CODE (IRC)
FOR THE STRUCTURAL DESIGN
RANDOLPH WIGGINS, P.E. FL # 15721
04/14/2012 11:45:21

Residential Design
1431 E. Wade Street
Trenton, FL 32693
352-274-3006
tchdesigns@gmail.com | ©CUSTOM DESIGNS

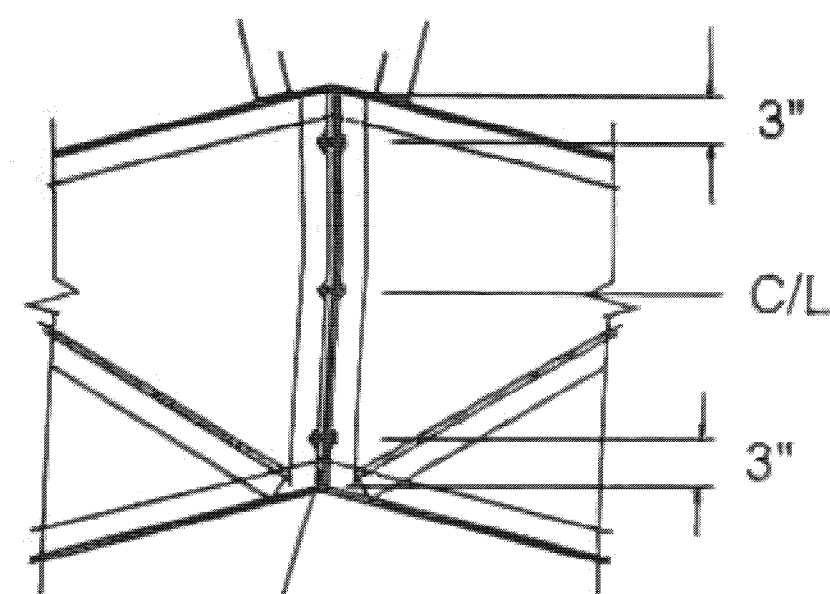
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COLLAR TIE SECTION

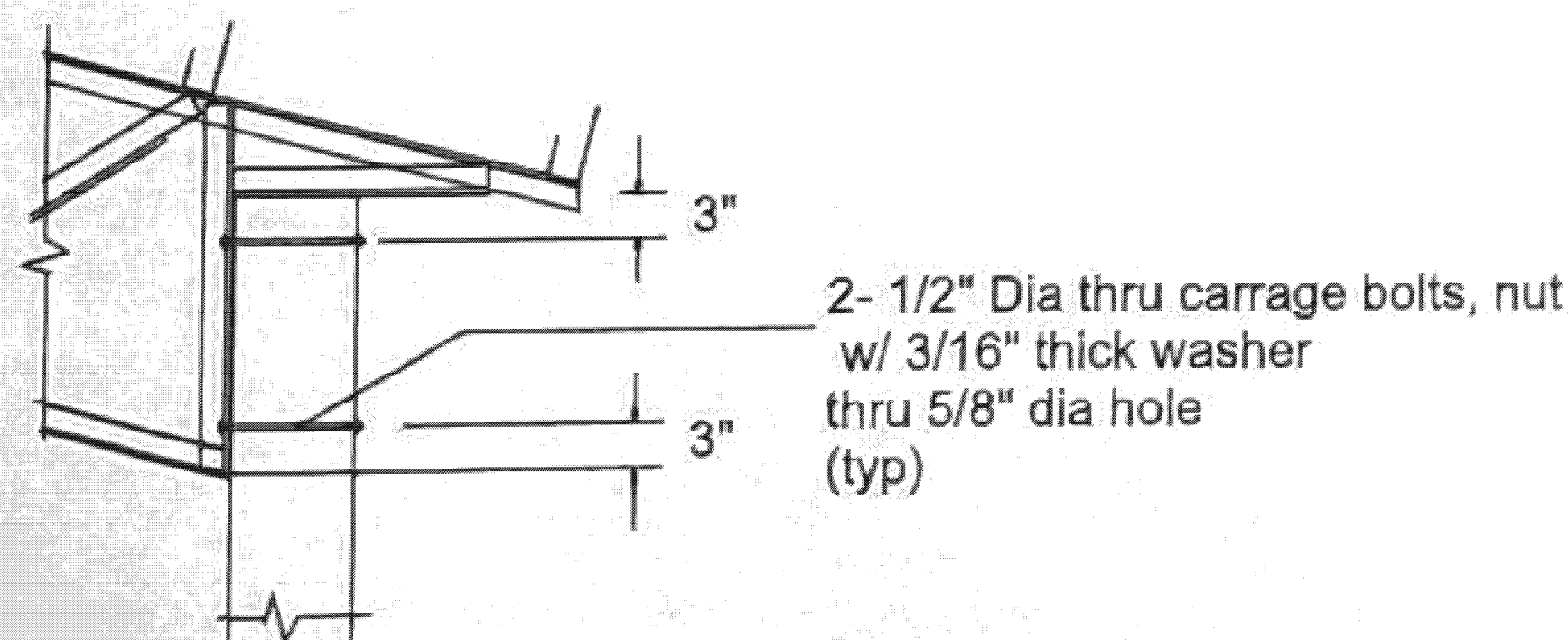
SCALE: N.T.S.



3- 1/2" Dia thru bolts nut
w/ 3/16" thick washer
thru 5/8" dia hole
(typ)

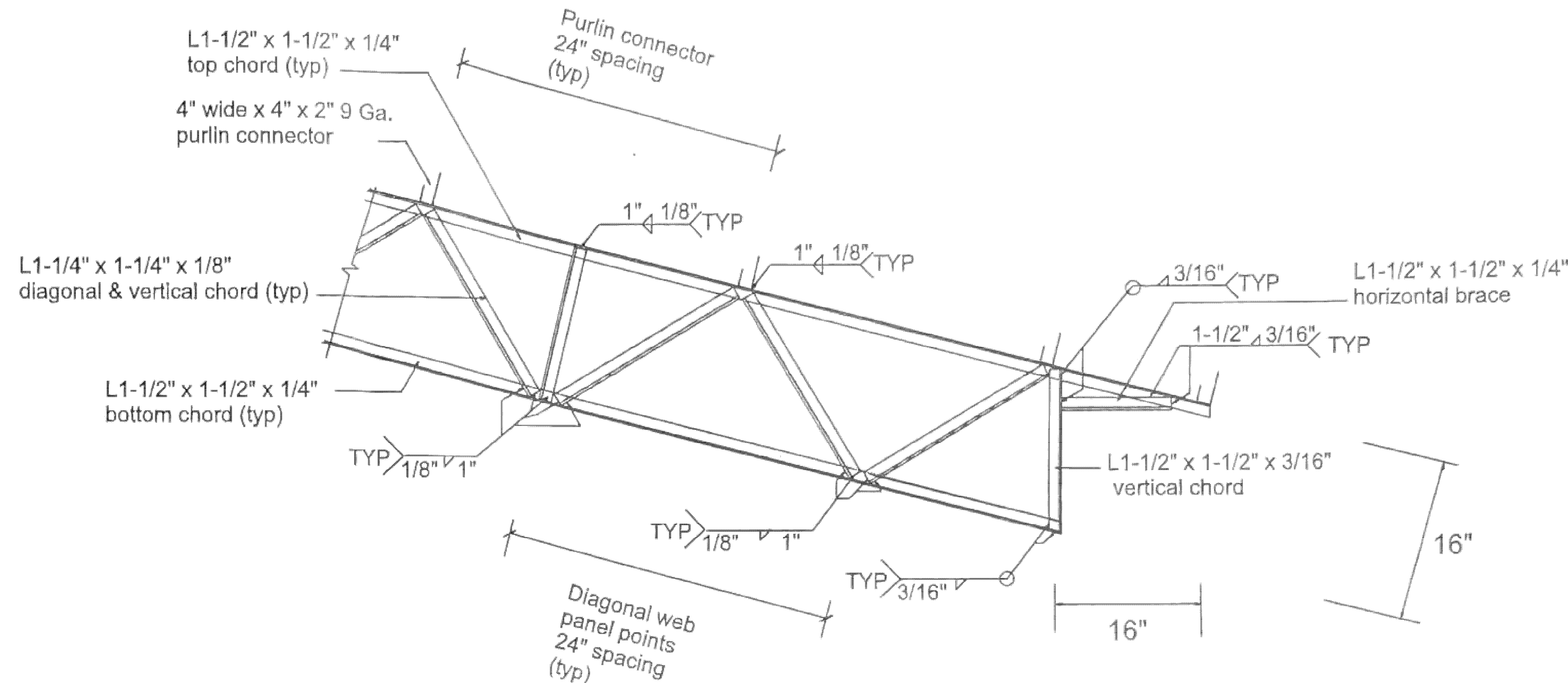
CENTER RIDGE CONNECTION

SCALE: N.T.S.



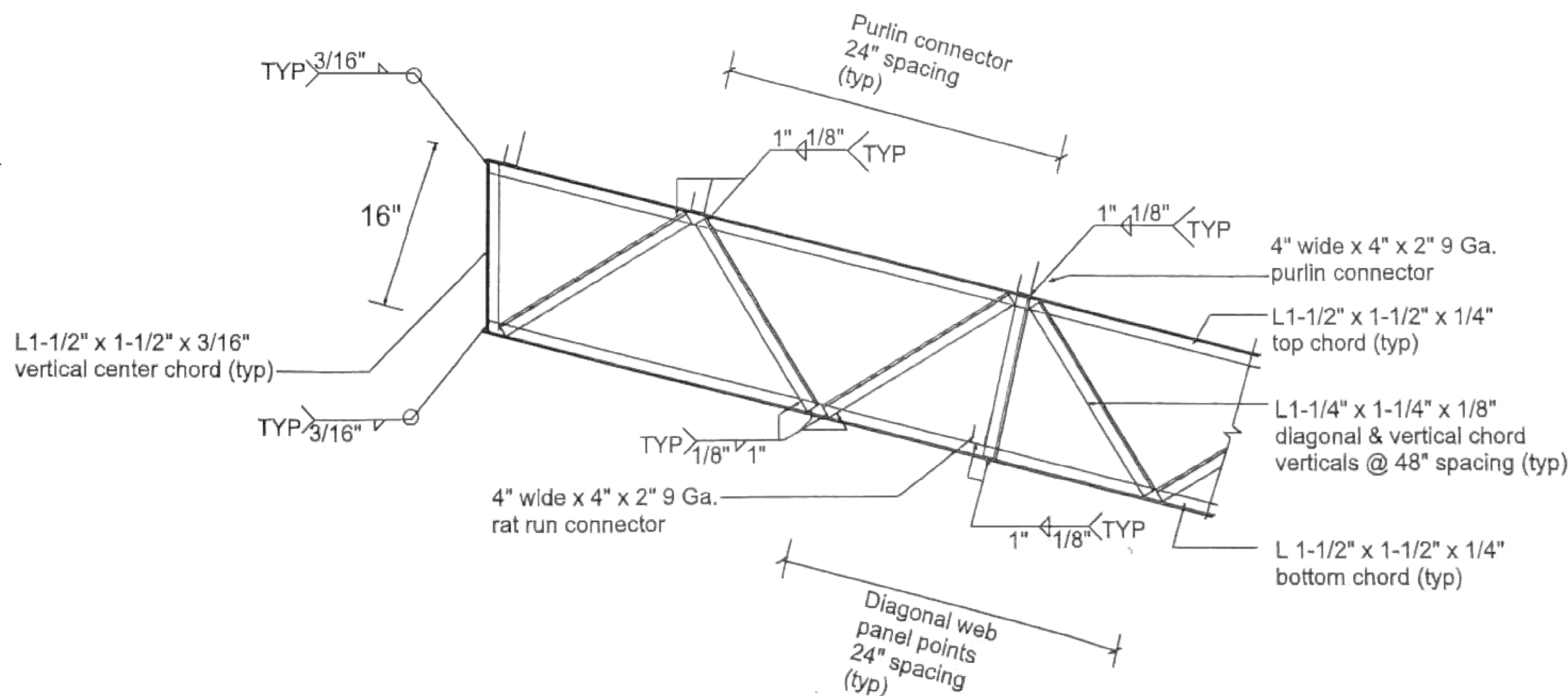
POST CONNECTION

SCALE: N.T.S.



TRUSS END SECTION

SCALE: N.T.S.



TRUSS CENTER SECTION

SCALE: N.T.S.

Residential Design

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Trenton, FL 32693
352-274-3006
tchdesigns@gmail.com

CAD PLAN ENTRY
PLAN REVISIONS
CUSTOM DESIGNS

RANDOLPH WIGGINS, P.E.

1431 E. Wade Street, Suite B Trenton, FL 32693
No. 15721
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Randolph Wiggins, P.E. FL # 15721
04/16/2010-11/15/2021

Randolph Wiggins
2021.06.10
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Building Homes,
Building Relationships

1431 E. Wade St.
Trenton, FL 32693
352-949-3785
CRC1331070
www.wadecustomhomes.com

WADE
CUSTOM HOMES

PROJECT:
Ruark Pole Barn
232 SW Dana Gln
Fort White, FL
Columbia County

LAST PLOT DATE: June 10, 2021

SHEET NO.

5
OF
6

