Columbia County New Building Permit Application

For Office Use Only Application # 1901-113 Date Received 1/31 By JW Permit # 37803/27755

Zoning Official Date 2-27-19 Flood Zone X Land Use A Zoning A-3

FEMA Map # Elevation MFE 1' above River Plans Examiner TC Date 2-19-19

Comments

☑ NOC ☑ EH ☐ Deed or PA ☑ Site Plan ☐ State Road Info ☑ Well letter ☑ 911 Sheet ☐ Parent Parcel #

☐ Dev Permit # ☐ In Floodway ☐ Letter of Auth. from Contractor ☐ F W Comp. letter

☐ Owner Builder Disclosure Statement ☑ Land Owner Affidavit ☐ Ellisville Water ☐ App Fee Paid ☐ Sub VF Form

Septic Permit No. 19-0120 OR City Water ☐ Fax

Applicant (Who will sign/pickup the permit) Dale Mowry Phone 386-288-4889

Address 1776 SW King Street, LAKE City, FL 32024

Owners Name Dale Mowry Phone 386 288 4889

911 Address 6028 SW Country Road 242, LAKE City FL 32024

Contractors Name N/A (Owner Builder) Phone N/A

Address N/A

Contractor Email N/A ***Include to get updates on this job.

Fee Simple Owner Name & Address

Bonding Co. Name & Address

Architect/Engineer Name & Address Tuboylor Building Systems / Moore, Wayne PE Associates Engineering & Consulting Inc

Mortgage Lenders Name & Address

Circle the correct power company ☐ FL Power & Light ☒ Clay Elec. ☐ Suwannee Valley Elec. ☐ Duke Energy

Property ID Number 30-4S-16-03245-000 Estimated Construction Cost $60,000.00

Subdivision Name N/A Lot ___ Block ___ Unit ___ Phase ___

Driving Directions from a Major Road Hwy 247 S to CR 242, take right. Property 2-3 miles on left.

Construction of New Home ___ Commercial OR ✓ Residential

Proposed Use/Occupancy Residence Number of Existing Dwellings on Property 1

Is the Building Fire Sprinkled? No If Yes, blueprints included ___ Or Explain

Circle Proposed ✓ Culvert Permit or ☐ Culvert Waiver or ☐ D.O.T. Permit or ☐ Have an Existing Drive

Actual Distance of Structure from Property Lines - Front 520' Side 140' Side 550' Rear 745'

Number of Stories 1 w/loft Heated Floor Area 840 Total Floor Area 1680 Acreage ~~20~~ 38.83

Zoning Applications applied for (Site & Development Plan, Special Exception, etc.)

~~Called~~ TC
~~Date~~ 2-12-19
no other Info. Needed

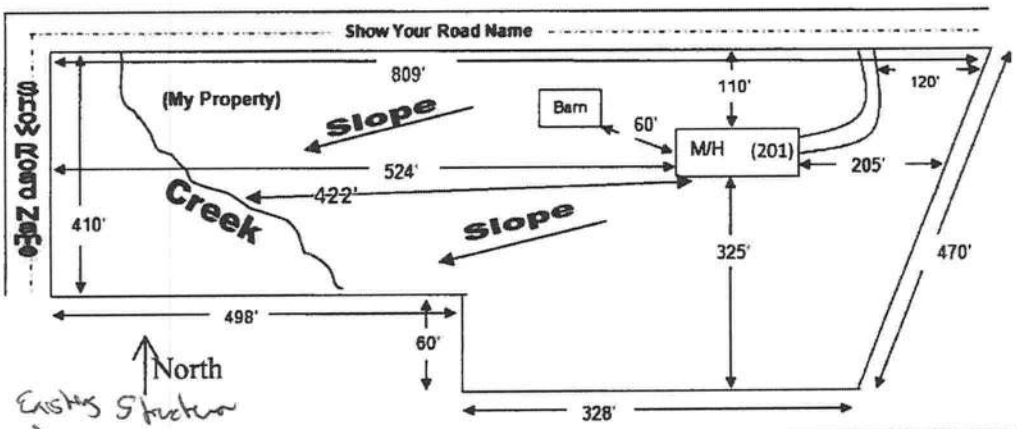
SITE PLAN CHECKLIST

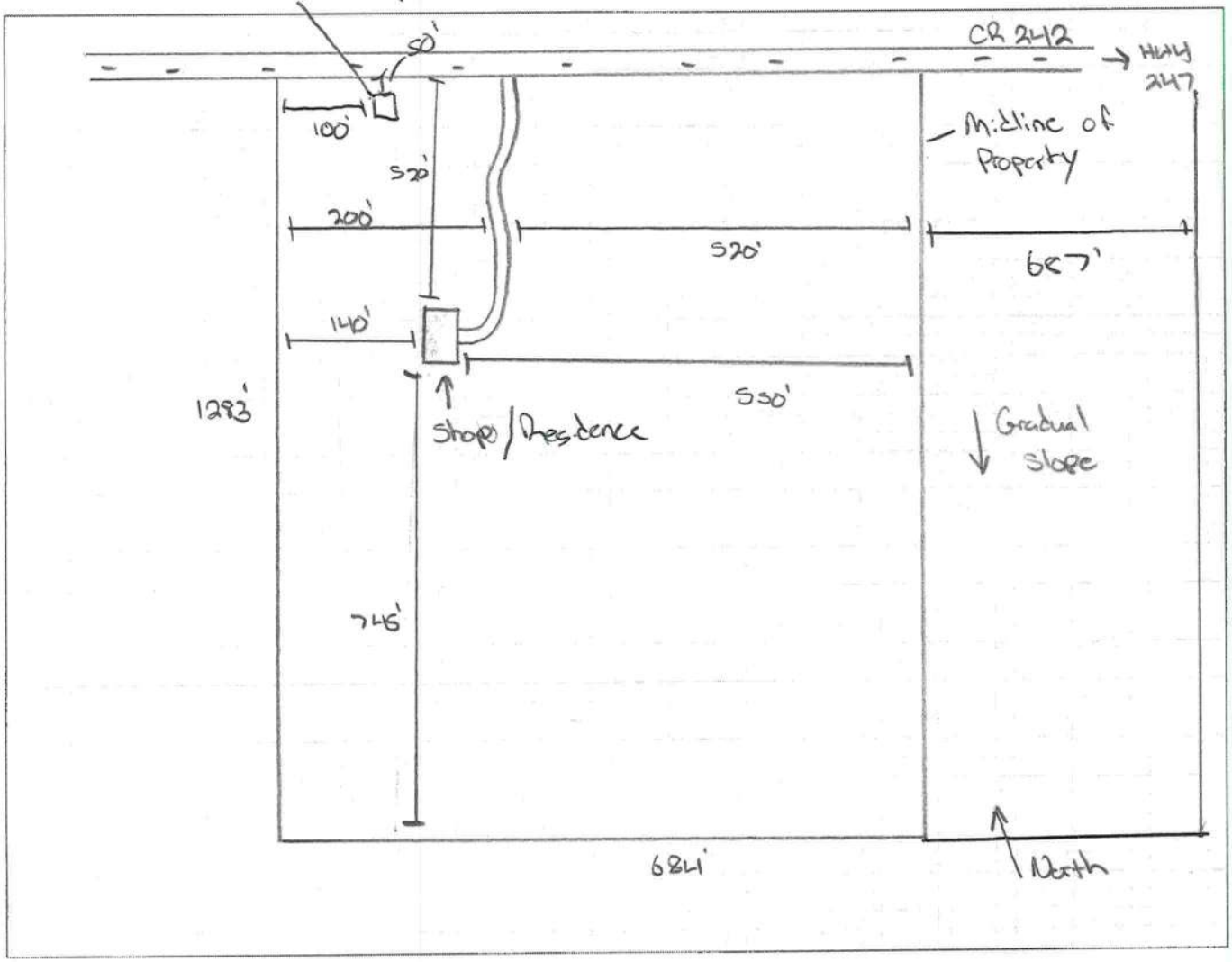
__✓__1) Property Dimensions
__✓__2) Footprint of proposed and existing structures (including decks), label these with existing addresses
__✓__3) Distance from structures to all property lines
__✓__4) Location and size of easements
__✓__5) Driveway path and distance at the entrance to the nearest property line
__✓__6) Location and distance from any waters; sink holes; wetlands; and etc.
__✓__7) Show slopes and or drainage paths
__✓__8) Arrow showing North direction

SITE PLAN EXAMPLE

Revised 7/1/15

NOTE:
This site plan can be copied and used with the 911 Addressing Dept. application forms.





CODE: Florida Building Code 2017 and the 2014 National Electrical Code.

Application is hereby made to obtain a permit to do work and installations as indicated. I certify that no work or installation has commenced prior to the issuance of a permit and that all work be performed to meet the standards of all laws regulating construction in this jurisdiction.

TIME LIMITATIONS OF APPLICATION : An application for a permit for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, unless pursued in good faith or a permit has been issued.

TIME LIMITATIONS OF PERMITS: Every permit issued shall become invalid unless the work authorized by such permit is commenced within 180 days after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the time work is commenced. A valid permit receives an approved inspection every 180 days. Work shall be considered not suspended, abandoned or invalid when the permit has received an approved inspection within 180 days of the previous approved inspection.

FLORIDA'S CONSTRUCTION LIEN LAW: Protect Yourself and Your Investment: According to Florida Law, those who work on your property or provide materials, and are not paid-in-full, have a right to enforce their claim for payment against your property. This claim is known as a construction lien. If your contractor fails to pay subcontractors or material suppliers or neglects to make other legally required payments, the people who are owed money may look to your property for payment, even if you have paid your contractor in full. This means if a lien is filed against your property, it could be sold against your will to pay for labor, materials or other services which your contractor may have failed to pay.

NOTICE OF RESPONSIBILITY TO CONTRACTOR AND AGENT: ***YOU ARE HEREBY NOTIFIED*** as the recipient of a building permit from Columbia County, Florida, you will be held responsible to the County for any damage to sidewalks and/or road curbs and gutters, concrete features and structures, together with damage to drainage facilities, removal of sod, major changes to lot grades that result in ponding of water, or other damage to roadway and other public infrastructure facilities caused by you or your contractor, subcontractors, agents or representatives in the construction and/or improvement of the building and lot for which this permit is issued. No certificate of occupancy will be issued until all corrective work to these public infrastructures and facilities has been corrected.

WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOU PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

OWNERS CERTIFICATION: I CERTIFY THAT ALL THE FOREGOING INFORMATION IS ACCURATE AND THAT ALL WORK WILL BE DONE IN COMPLIANCE WITH ALL APPLICABLE LAWS REGULATING CONSTRUCTION AND ZONING.

NOTICE TO OWNER: There are some properties that may have deed restrictions recorded upon them. These restrictions may limit or prohibit the work applied for in your building permit. You must verify if your property is encumbered by any restrictions or face possible litigation and or fines.

Dale Massy _____

Print Owners Name **Owners Signature**

****Property owners must sign here before any permit will be issued.**

****If this is an Owner Builder Permit Application then, ONLY the owner can sign the building permit when it is issued.**

CONTRACTORS AFFIDAVIT: By my signature I understand and agree that I have informed and provided this written statement to the owner of all the above written responsibilities in Columbia County for obtaining this Building Permit including all application and permit time limitations.

_____ Owner builder

Contractor's Signature

Contractor's License Number_____

Columbia County

Competency Card Number_____

Affirmed under penalty of perjury to by the Contractor and subscribed before me this ____ day of _____ 20___.

Personally known_____ **or Produced Identification**_____

_____ **SEAL:**

State of Florida Notary Signature (For the Contractor)

SUBCONTRACTOR VERIFICATION

APPLICATION/PERMIT # 1901-113 JOB NAME Mowry House

THIS FORM MUST BE SUBMITTED BEFORE A PERMIT WILL BE ISSUED

Columbia County issues combination permits. One permit will cover all trades doing work at the permitted site. It is REQUIRED that we have records of the subcontractors who actually did the trade specific work under the general contractors permit.

NOTE: *It shall be the responsibility of the general contractor to make sure that all of the subcontractors are licensed with the Columbia County Building Department.*
Use website to confirm licenses: http://www.columbiacountyfla.com/PermitSearch/ContractorSearch.aspx

NOTE: If this should change prior to completion of the project, it is your responsibility to have a corrected form submitted to our office, before that work has begun.

Violations will result in stop work orders and/or fines. Owner Builder

ELECTRICAL ☐ CC#_____	Print Name_____ Signature_____ Company Name:_____ License #:_____ Phone #:_____	Need ☐ Lic ☐ Liab ☐ W/C ☐ EX ☐ DE
MECHANICAL/ A/C ☐ CC#_____	Print Name_____ Signature 1/31/19 Company Name:_____ License #:_____ Phone #:_____	Need ☐ Lic ☐ Liab ☐ W/C ☐ EX ☐ DE
PLUMBING/ GAS ☐ CC#_____	Print Name_____ Signature_____ Company Name:_____ License #:_____ Phone #:_____	Need ☐ Lic ☐ Liab ☐ W/C ☐ EX ☐ DE
ROOFING ☐ CC#_____	Print Name_____ Signature_____ Company Name:_____ License #:_____ Phone #:_____	Need ☐ Lic ☐ Liab ☐ W/C ☐ EX ☐ DE
SHEET METAL ☐ CC#_____	Print Name_____ Signature_____ Company Name:_____ License #:_____ Phone #:_____	Need ☐ Lic ☐ Liab ☐ W/C ☐ EX ☐ DE
FIRE SYSTEM/ SPRINKLER ☐ CC#_____	Print Name_____ Signature_____ Company Name:_____ License#:_____ Phone #:_____	Need ☐ Lic ☐ Liab ☐ W/C ☐ EX ☐ DE
SOLAR ☐ CC#_____	Print Name_____ Signature_____ Company Name:_____ License #:_____ Phone #:_____	Need ☐ Lic ☐ Liab ☐ W/C ☐ EX ☐ DE
STATE SPECIALTY ☐ CC#_____	Print Name_____ Signature_____ Company Name:_____ License #:_____ Phone #:_____	Need ☐ Lic ☐ Liab ☐ W/C ☐ EX ☐ DE

Ref: F.S. 440.103; ORD. 2016-30

Prepared by and return to:
Ralph Robert Deas

The Law Office of Ralph R. Deas
227 SE Hernando Ave
Lake City, FL 32025
386-754-0771
File Number: **177**
Will Call No.:

Inst: 201812012987 Date: 06/25/2018 Time: 3:43PM
Page 1 of 2 B: 1363 P: 383, P.DeWitt Cason, Clerk of Court
Columbia, County, By: BD
Deputy ClerkDoc Stamp-Deed: 1190.00

[Space Above This Line For Recording Data]

Warranty Deed

This Warranty Deed made this 21st day of **June, 2018** between **Naaman Franklin Faile, Jr** whose post office address is **265 SW Maryland Lane, Lake City, FL 32025**, grantor, and **Corey Williams and Randi Williams, husband and wife, and Dale A Mowry and Whitney W Mowry, husband and wife**
whose post office address is **1074 SW Jamestown Glen, Lake City, FL 32025**, grantee:

(Whenever used herein the terms "grantor" and "grantee" include all the parties to this instrument and the heirs, legal representatives, and assigns of individuals, and the successors and assigns of corporations, trusts and trustees)

Witnesseth, that said grantor, for and in consideration of the sum of ONE HUNDRED SEVENTY THOUSAND AND NO/100 DOLLARS ($170,000.00) and other good and valuable considerations to said grantor in hand paid by said grantee, the receipt whereof is hereby acknowledged, has granted, bargained, and sold to the said grantee, and grantee's heirs and assigns forever, the following described land, situate, lying and being in **Columbia County, Florida** to-wit:

Begin at the NW corner of the NE ¼ of NW ¼, Section 30, Township 4 South, Range 16 East, Columbia County, Florida, and run thence S 00 degrees 09 minutes 41 seconds West, along the West line of said NE ¼ of NW ¼, 40.69 feet to the South right-of-way of CR 242 and to the POINT OF BEGINNING; thence continue S 00 degrees 09 minutes 41 seconds W, along said West line, 1281.24 feet to the South line of said NE ¼ of NW ¼; thence S 88 degrees 50 minutes 43 seconds E, along said South line, 1433.54 feet to the East line of said NE ¼ of NW ¼; thence N 00 degrees 15 minutes 19 seconds W, along said East line, 1075.63 feet to the South line of lands described in Official Records Book 398, page 635; thence N 88 degrees 51 minutes 48 seconds W, along said South line, 330.94 feet; thence N 00 degrees 15 minutes 19 seconds W, 205.34 feet to the aforesaid South right-of-way of CR 242; thence N 88 degrees 48 minutes 57 seconds W, along said South right-of-way, 1093.29 feet to the POINT OF BEGINNING.

Parcel Identification Number: 30-4S-16-03244-000

Together with all the tenements, hereditaments and appurtenances thereto belonging or in anywise appertaining.

To Have and to Hold, the same in fee simple forever.

And the grantor hereby covenants with said grantee that the grantor is lawfully seized of said land in fee simple; that the grantor has good right and lawful authority to sell and convey said land; that the grantor hereby fully warrants the title to said land and will defend the same against the lawful claims of all persons whomsoever; and that said land is free of all encumbrances, except taxes accruing subsequent to **December 31, 2017**.

In Witness Whereof, grantor has hereunto set grantor's hand and seal the day and year first above written.

Signed, sealed and delivered in our presence:

Witness Name: Heather Craig

Witness Name: Sherly Jorge

Naaman Franklin Faile Jr (Seal)

State of Florida
County of Columbia

The foregoing instrument was acknowledged before me this 21st day of June, 2018 by Naaman Franklin Faile Jr, who [ ] is personally known or [X] has produced a driver's license as identification.

[Notary Seal]

NOTARY PUBLIC STATE OF FLORIDA
ASHLEY D JOINER
Commission # GG 119004
Expires September 12, 2020
Bonded Thru Budget Notary Services

Notary Public

Printed Name: Ashley Joiner

My Commission Expires: 9/12/2020

District No. 1 - Ronald Williams
District No. 2 - Rocky Ford
District No. 3 - Bucky Nash
District No. 4 - Toby Witt
District No. 5 - Tim Murphy

BOARD OF COUNTY COMMISSIONERS • COLUMBIA COUNTY

Address Assignment and Maintenance Document

To maintain the county wide Addressing Policy you must make application for a 9-1-1 Address at the time you apply for a building permit. The established standards for addressing and posting numbers to all principal buildings, dwellings, businesses and industries are contained in Columbia County Ordinance 2001-9. The addressing system is to enable Emergency Services Agencies to locate you in an emergency, and to assist the United States Postal Service and the public in the timely and efficient provision of services to residents and businesses of Columbia County

Date/Time Issued:	**1/31/2019 1:14:45 PM**
Address:	**6028 SW COUNTY ROAD 242**
City:	**LAKE CITY**
State:	**FL**
Zip Code	**32024**
Parcel ID	**03244-000**

REMARKS: Address Verification.

NOTICE: THIS ADDRESS WAS ISSUED BASED ON LOCATION AND ACCESS INFORMATION RECEIVED FROM THE REQUESTER. SHOULD, AT A LATER DATE, THE LOCATION AND/OR ACCESS INFORMATION BE FOUND TO BE IN ERROR OR CHANGED, THIS ADDRESS IS SUBJECT TO CHANGE.

Address Issued By: **Signed:/ Matt Crews**

Columbia County GIS/911 Addressing Coordinator

COLUMBIA COUNTY
911 ADDRESSING / GIS DEPARTMENT

263 NW Lake City Ave., Lake City, FL 32055 Telephone: (386) 758-1125
Email: gis@columbiacountyfla.com

STATE OF FLORIDA
COUNTY OF COLUMBIA

LAND OWNER AFFIDAVIT

This is to certify that I, (We), Corey Williams / Randi Williams,

as the owner of the below described property:

Property tax Parcel ID number 30-4S-16-03244-000

Subdivision (Name, lot, Block, Phase) N/A

Give my permission for Dale Mabry / Whitney Mabry to place a

Circle one - Mobile Home / Travel Trailer / Utility Pole Only / (Single Family Home)
Barn – Shed – Garage / Culvert / Other _____

I (We) understand that the named person(s) above will be allowed to receive a building permit on the property number I (we) have listed above and this could result in an assessment for solid waste and fire protection services levied on this property.

Corey Williams — 1-31-19
Owner Signature — Date

Randi Williams — 1/31/19
Owner Signature — Date

_____ — _____
Owner Signature — Date

Sworn to and subscribed before me this 31st day of Jan, 2019. This

(These) person(s) are (personally known to me) or produced ID _____.
(Type)

Suzanne Stewart — Suzanne Stewart
Notary Public Signature — Notary Printed Name

Notary Stamp/

NOTARY PUBLIC STATE OF FLORIDA
SUZANNE STEWART
MY COMMISSION # FF 936523
EXPIRES: November 16, 2019
Bonded Thru Budget Notary Services

NOTICE OF COMMENCEMENT

Clerk's Office Stamp
Inst: 201912002472 Date: 01/31/2019 Time: 11:32AM
Page 1 of 1 B: 1377 P: 1308, P.DeWitt Cason, Clerk of Court
Columbia, County, By: BD
Deputy Clerk

Tax Parcel Identification Number:

30-4S-16-03244-000

THE UNDERSIGNED hereby gives notice that improvements will be made to certain real property, and in accordance with Section 713.13 of the Florida Statutes, the following information is provided in this **NOTICE OF COMMENCEMENT**.

1. Description of property *(legal description)*: 30-45-16-03244-000
   a) Street *(job)* Address: 6023 SW County Road 242
2. General description of improvements: Metal Shop
3. Owner Information or Lessee information if the Lessee contracted for the improvements:
   a) Name and address: Dale Mowry 1776 SW King St Lake City FL 32024
   b) Name and address of fee simple titleholder (if other than owner) ~~N/A~~ Drummond Bank holds Property title
   c) Interest in property
4. Contractor Information
   a) Name and address: N/A
   b) Telephone No.:
5. Surety Information (if applicable, a copy of the payment bond is attached):
   a) Name and address: N/A
   b) Amount of Bond:
   c) Telephone No.:
6. Lender
   a) Name and address: N/A
   b) Phone No.
7. Person within the State of Florida designated by Owner upon whom notices or other documents may be served as provided by Section 713.13(1)(a)7., Florida Statutes:
   a) Name and address: Whitney Mowry
   b) Telephone No.: 386-397-3247
8. In addition to himself or herself, Owner designates the following person to receive a copy of the Lienor's Notice as provided in Section 713.13(l)(b), Florida Statutes:
   a) Name: Whitney Mowry OF
   b) Telephone No.: 386-397-3247
9. Expiration date of Notice of Commencement **(the expiration date will be 1 year from the date of recording unless a different date is specified)**:

WARNING TO OWNER: ANY PAYMENTS MADE BY THE OWNER AFTER THE EXPIRATION OF THE NOTICE OF COMMENCEMENT ARE CONSIDERED IMPROPER PAYMENTS UNDER CHAPTER 713, PART I, SECTION 713.13, FLORIDA STATUTES, AND CAN RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY; A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT YOUR LENDER OR AN ATTORNEY BEFORE COMMENCING WORK OR RECORDING YOUR NOTICE OF COMMENCEMENT.

STATE OF FLORIDA
COUNTY OF COLUMBIA

10.
Signature of Owner or Lessee, or Owner's or Lessee's Authorized Office/Director/Partner/Manager

Dale Mowry
Printed Name and Signatory's Title/Office

The foregoing instrument was acknowledged before me, a Florida Notary, this 31ST day of Jan, 2019, by:

Suzanne Stewart as notary for Dale Mowry.
(Name of Person) (Type of Authority) (name of party on behalf of whom instrument was executed)

Personally Known ✓ OR Produced Identification ____ Type

Notary Signature Suzanne Stewart Notary Stamp or Seal:

NOTARY PUBLIC STATE OF FLORIDA
SUZANNE STEWART
MY COMMISSION # FF 936523
EXPIRES: November 16, 2019
Bonded Thru Budget Notary Services

A&B Well Drilling, Inc.

5673 NW Lake Jeffery Road
Lake City, FL 32055
Telephone: (386) 758-3409
Cell: (386) 623-3151
Fax: (386) 758-3410
Owner: Bruce Park

January 31, 2019

To: Columbia County Building Department

Description of Well to be installed for Customer __Dale Mowry_____

Located @ Address: ____6028 SW CR 242 _____

1.5 HP 20 GPM submersible pump, 11/4" drop pipe, 85 gallon captive tank, and backflow prevention. With SRWMD permit.

_BRUCE PARK_____

Sincerely,
Bruce N. Park
President

Brandon Stubbs

From: Dale Mowry <dale.mowry33@gmail.com>
Sent: Wednesday, February 27, 2019 11:02 AM
To: Brandon Stubbs
Subject: Re: Permit Application 1901-113 - Mowry

Dear Mr. Stubbs, I confirm everything in your email regarding the house that has been demolished and the other that is dilapidated and will be demolished in the near future.

Thank you,

Dale Mowry

Sent from IPhone

On Feb 27, 2019, at 10:59 AM, Brandon Stubbs <bstubbs@columbiacountyfla.com> wrote:

> Dear Mr. Mowry,
>
> Per our conversation regarding Tax Parcel 03244-000, one of the old residential structures has been demolished and the other old residential structure is dilapidated and shall be demolished in the near future. Can you please confirm this is correct?
>
> Sincerely,
> Brandon M. Stubbs
> County Planner/LDR Admin.
> Building & Zoning
> Columbia County
> 135 NE Hernando Ave
> Lake City, Fl 32055
> Ph: (386) 754-7119
> Fx: (386) 758-2160
> <image003.jpg>

COLUMBIA COUNTY BUILDING DEPARTMENT
135 NE Hernando Ave., Suite B-21
Lake City, FL 32055
Office: 386-758-1008 Fax: 386-758-2160

OWNER BUILDER DISCLOSURE STATEMENT

I understand that state law requires construction to be done by a licensed contractor and have applied for an owner-builder permit under an exemption from the law. The exemption specifies that I, as the owner of the property listed, may act as my own contractor with certain restrictions even though I do not have a license.

I understand that building permits are not required to be signed by a property owner unless he or she is responsible for the construction and is not hiring a licensed contractor to assume responsibility.

I understand that, as an owner-builder, I am the responsible party of record on a permit. I understand that I may protect myself from potential financial risk by hiring a licensed contractor and having the permit filed in his or her name instead of my own name. I also understand that a contractor is required by law to be licensed and bonded in Florida and to list his or her license numbers on permits and contracts.

I understand that I may build or improve a one-family or two-family residence or farm outbuilding. I may also build or improve a commercial building if the costs do not exceed $75,000. The building or residence must be for my own use or occupancy. It may not be built or substantially improved for sale or lease. If a building or residence that I have built or substantially improved myself is sold or leased with in 1 year after the construction is complete, the law will presume that I built or substantially improved it for sale or lease, which violates the exemption.

I understand that, as the owner-builder, I must provide direct, onsite supervision of the construction.

I understand that I may not hire an unlicensed person to act as my contractor or to supervise persons working on my building or residence. It is my responsibility to ensure that the persons whom I employ have the licenses required by law and by county or municipal ordinance.

I understand that it is frequent practice of unlicensed persons to have the property owner obtain an owner-builder permit that erroneously implies that the property owner is providing his or her own labor and materials. I, as an owner-builder, may be held liable and subjected to serious financial risk for any injuries sustained by an unlicensed person or his or her employees while working on my property. My homeowner's insurance may not provide coverage for those injuries. I am willfully acting as an owner-builder and am aware of the limits of my insurance coverage for injuries to workers on my property.

I understand that I may not delegate the responsibility for supervising work to a licensed contractor who is not licensed to perform the work being done. Any person working on my building who is not licensed must work under my direct supervision and must be employed by me, which means that I must comply with laws requiring the withholding of federal income tax and social security contributions under the Federal Insurance Contributions Act (FICA) and must provide workers' compensation for the employee. I understand that my failure to follow these laws may subject me to serious financial risk.

I agree that, as the party legally and financially responsible for this proposed construction activity, I will abide by all applicable laws and requirements that govern owner-builders as well as employers. I also understand that the construction must comply with all applicable laws, ordinances, building codes, and zoning regulations.

I understand that I may obtain more information regarding my obligations as an employer from the Internal Revenue Service, the United States Small Business Administration, the Florida Department of Financial Services, and the Florida Department of Revenue. I also understand that I may contact the Florida Construction Industry Licensing Board at 850-487-1395 or Internet website address http://www.myfloridalicense.com/dbpr/for more information about licensed contractors.

I am aware of, and consent to, an owner-builder building permit applied for in my name and understand that I am the party legally and financially responsible for the proposed construction activity at the following address:

6028 SW CR 242.

I agree to notify Columbia County Building Department immediately of any additions, deletions, or changes to any of the information that I have provided on this disclosure. Licensed contractors are regulated by laws designed to protect the public. If you contract with a person who does not have a license, the Construction Industry Licensing Board and Department of Business and Professional Regulation may be unable to assist you with any financial loss that you sustain as a result of a complaint. Your only remedy against an unlicensed contractor may be in civil court. It is also important for you to understand that, if an unlicensed contractor or employee of an individual of firm is injured while working on your property, you may be held liable for damages. If you obtain an owner-builder permit and wish to hire a licensed contractor, you will be responsible for verifying whether the contractor is properly licensed and the status of the contractor's workers' compensation coverage.

I understand that if I hire subcontractors they must be licensed for that type of work in Columbia County, ex: framing, stucco, masonry, and state registered builders. Registered Contractors must have a minimum of $300,000.00 in General Liability insurance coverage and the proper workers' compensation. Specialty Contractors must have a minimum of $100,000.00 in General Liability insurance coverage and the proper workers' compensation coverage.

Before a building permit can be issued, this disclosure statement must be completed and signed by the property owner and returned to Columbia County Building Department.

TYPE OF CONSTRUCTION

(✓) Single Family Dwelling ( ) Two-Family Residence ( ) Farm Outbuilding

( ) Addition, Alteration, Modification or other Improvement

( ) Commercial, Cost of Construction_____ for construction of_____

( ) Other_____

I Dale Mabry, have been advised of the above disclosure statement for exemption from contractor licensing as an owner/builder. I agree to comply with all requirements provided for in Florida Statutes allowing this exception for the construction permitted by Columbia County Building Permit.

Owner Builder Signature Date 1/31/19

NOTARY OF OWNER BUILDER SIGNATURE

The above signer is personally known to me or produced identification _____

Notary Signature Suzanne Stewart Date 1/31/19 (Seal)

SUZANNE STEWART
MY COMMISSION # FF 936523
EXPIRES: November 16, 2019
Bonded Thru Budget Notary Services

FOR BUILDING DEPARTMENT USE ONLY

I hereby certify that the above listed owner builder has been given notice of the restriction stated above.

Building Official/Representative_____

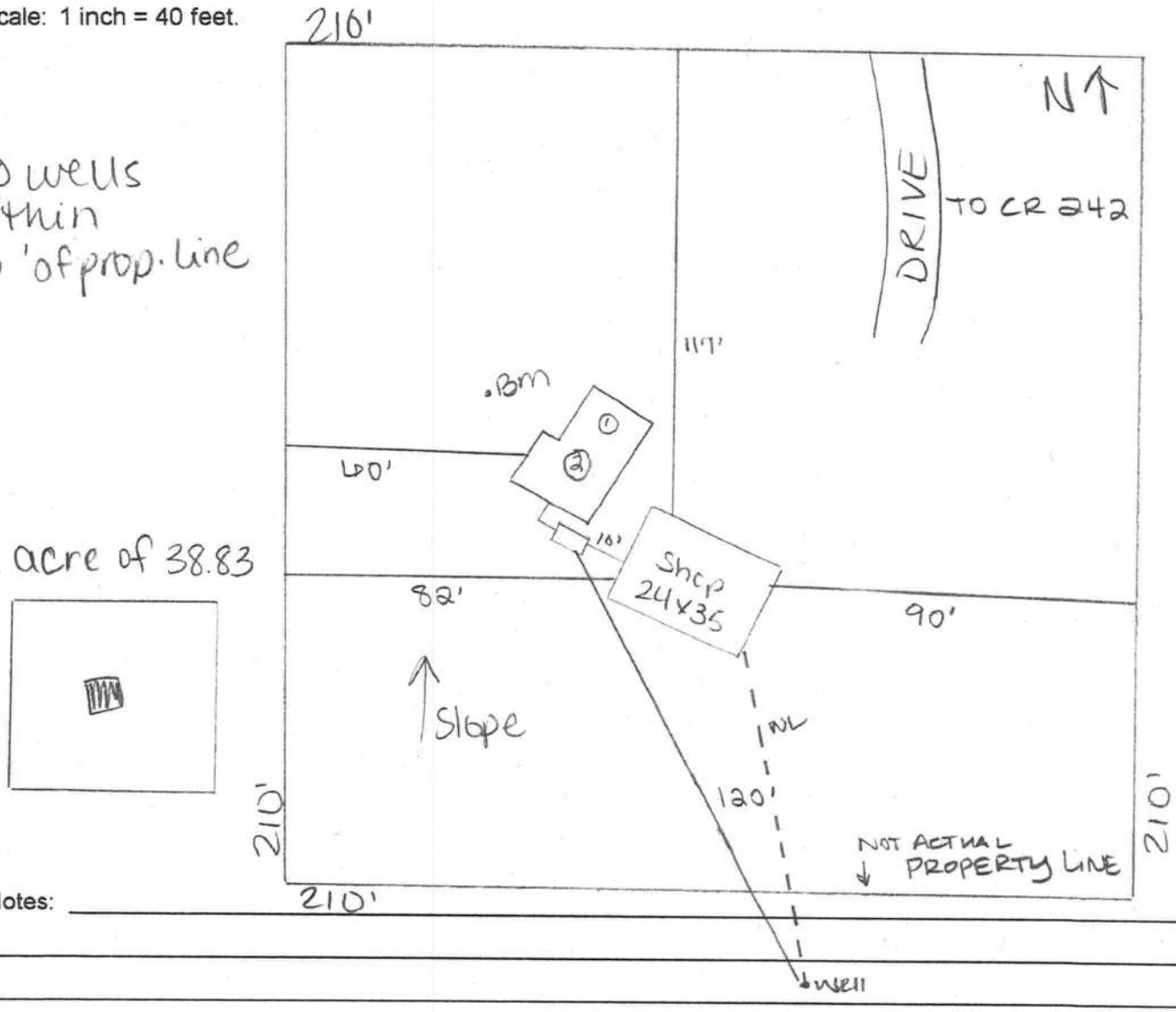
STATE OF FLORIDA
DEPARTMENT OF HEALTH
APPLICATION FOR ONSITE SEWAGE DISPOSAL SYSTEM CONSTRUCTION PERMIT

Permit Application Number 19-0120

Mowry

PART II - SITEPLAN

Scale: 1 inch = 40 feet.



Notes: _____

Site Plan submitted by: Rod D 2-1-19 MASTER CONTRACTOR

Plan Approved ✓ Not Approved _____ Date _____

By _____ EST Columbia County Health Department

ALL CHANGES MUST BE APPROVED BY THE COUNTY HEALTH DEPARTMENT

STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
APPLICATION FOR CONSTRUCTION PERMIT

PERMIT NO. 19-0128
DATE PAID: 2/1/19
FEE PAID: 314.00
RECEIPT #: 1395473

APPLICATION FOR:
[X] New System [ ] Existing System [ ] Holding Tank [ ] Innovative
[ ] Repair [ ] Abandonment [ ] Temporary [ ] ______

APPLICANT: Dale Mowry

AGENT: ROCKY FORD, A & B CONSTRUCTION TELEPHONE: 386-497-2311

MAILING ADDRESS: 546 SW Dortch Street, FT. WHITE, FL, 32038

TO BE COMPLETED BY APPLICANT OR APPLICANT'S AUTHORIZED AGENT. SYSTEMS MUST BE CONSTRUCTED BY A PERSON LICENSED PURSUANT TO 489.105(3)(m) OR 489.552, FLORIDA STATUTES. IT IS THE APPLICANT'S RESPONSIBILITY TO PROVIDE DOCUMENTATION OF THE DATE THE LOT WAS CREATED OR PLATTED (MM/DD/YY) IF REQUESTING CONSIDERATION OF STATUTORY GRANDFATHER PROVISIONS.

PROPERTY INFORMATION

LOT: NA BLOCK: NA SUB: NA PLATTED: ______

PROPERTY ID #: 30-4S-16-03244-000 ZONING: ______ I/M OR EQUIVALENT: [Y / N]

PROPERTY SIZE: 38.83 ACRES WATER SUPPLY: [X] PRIVATE PUBLIC [ ]<=2000GPD [ ]>2000GPD

IS SEWER AVAILABLE AS PER 381.0065, FS? [Y / (N)] DISTANCE TO SEWER: NA FT

PROPERTY ADDRESS: 6028 SW County Road 242, Lake City

DIRECTIONS TO PROPERTY: 247 South Left on CR 252 approx 1 1/2 mile on Left.

BUILDING INFORMATION [X] RESIDENTIAL [ ] COMMERCIAL

Unit No	Type of Establishment	No. of Bedrooms	Building Area Sqft	Commercial/Institutional System Design Table 1, Chapter 64E-6, FAC
1	Shop	7	840	
2				
3				

[ ] Floor/Equipment Drains [ ] Other (Specify) ______

SIGNATURE: Rocky Ford DATE: 2/1/2019

DH 4015, 08/09 (Obsoletes previous editions which may not be used)
Incorporated 64E-6.001, FAC

COLUMBIA COUNTY BUILDING DEPARTMENT
RESIDENTIAL CHECK LIST

MINIMUM PLAN REQUIREMENTS: FLORIDA BUILDING CODE RESIDENTIAL 2017 EFFECTIVE 1 JANUARY 2018 AND THE NATIONAL ELECTRICAL 2014 EFFECTIVE 1 JANUARY 2018

ALL REQUIREMENTS ARE SUBJECT TO CHANGE

ALL BUILDING PLANS MUST INDICATE COMPLIANCE WITH THE CURRENT FLORIDA BUILDING CODES RESIDENTIAL AND THE NATIONAL ELECTRICAL CODE. ALL PLANS OR DRAWINGS SHALL PROVIDE CALCULATIONS AND DETAILS THAT HAVE THE SEAL AND SIGNATURE OF A CERTIFIED ARCHITECT OR ENGINEER REGISTERED IN THE STATE OF FLORIDA, OR ALTERNATE METHODOLOGIES, APPROVED BY THE STATE OF FLORIDA BUILDING COMMISSION FOR ONE-AND-TWO FAMILY DWELLINGS, FBC 1609.3.1 THRU 1609.3.3.

FOR DESIGN PURPOSES THE FOLLOWING BASIC WIND SPEEDS ARE PER FLORIDA BUILDING CODE FIGURE 1609-A THROUGH 1609-C ULTIMATE DESIGN WIND SPEEDS FOR RISK CATEGORY AND BUILDINGS AND OTHER STRUCTURES

Revised 7/1/18

Website: http://www.columbiacountyfla.com/BuildingandZoning.asp

	GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL	Items to Include- Each Box shall be Circled as Applicable		
		Select From Drop down		
1	Two (2) complete sets of plans containing the following:	✓		
2	All drawings must be clear, concise, drawn to scale, details that are not used shall be marked void	✓		
3	**Condition space (Sq. Ft.)** 840 wo loft 1128 w/ **Total (Sq. Ft.) under roof** 1680	(Yes)	No	NA

Designers name and signature shall be on all documents and a licensed architect or engineer, signature and official embossed seal shall be affixed to the plans and documents as per the FLORIDA BUILDING CODES RESIDENTIAL 107.1.

Site Plan information including:

4	Dimensions of lot or parcel of land	- ✓		
5	Dimensions of all building set backs	- ✓		
6	Location of all other structures (include square footage of structures) on parcel, existing or proposed well and septic tank and all utility easements.	- ✓		
7	Provide a full legal description of property.	- ✓		

Wind-load Engineering Summary, calculations and any details are required.

	GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL	Items to Include- Each Box shall be Circled as Applicable		
8	**Plans or specifications must show compliance with FBCR Chapter 3**	(Yes)	No	NA
		Select From Drop down		
9	Basic wind speed (3-second gust), miles per hour	- ✓		
10	(Wind exposure – if more than one wind exposure is used, the wind exposure and applicable wind direction shall be indicated)	- ✓		
11	Wind importance factor and nature of occupancy	- ✓ ✓		
12	The applicable internal pressure coefficient, Components and Cladding	- ✓		
13	The design wind pressure in terms of psf (kN/m²), to be used for the design of exterior component, cladding materials not specifally designed by the registered design professional.	-		

Elevations Drawing including:

14	All side views of the structure	- ✓		
15	Roof pitch	- ✓		
16	Overhang dimensions and detail with attic ventilation	- ✓		
17	Location, size and height above roof of chimneys	- ✓		
18	Location and size of skylights with Florida Product Approval	- ✓		
19	Number of stories	- ✓		
20	Building height from the established grade to the roofs highest peak	- ✓		

Floor Plan Including:

21	Dimensioned area plan showing rooms, attached garage, breeze ways, covered porches, deck, balconies	- /		
22	Raised floor surfaces located more than 30 inches above the floor or grade	- /		
23	All exterior and interior shear walls indicated	- /		
24	Shear wall opening shown (Windows, Doors and Garage doors)	- /		
25	Show compliance with Section FBCR 310 Emergency escape and rescue opening shown in each bedroom (net clear opening shown) and Show compliance with Section FBC 1405.13.2 where the opening of an operable window is located more than 72 inches above the finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches above the finished floor of the room in which the window is located. Glazing between the floor and 24 inches shall be fixed or have openings through which a 4-inch-diameter sphere cannot pass.	- /		
26	Safety glazing of glass where needed	-		/
27	Fireplaces types (gas appliance) (vented or non-vented) or wood burning with Hearth (see chapter 10 and chapter 24 of FBCR)	-		/
28	Show stairs with dimensions (width, tread and riser and total run) details of guardrails, Handrails	- /		
29	Identify accessibility of bathroom (see FBCR SECTION 320)	- /		

All materials placed within opening or onto/into exterior walls, soffits or roofs shall have Florida product approval number and mfg. installation information submitted with the plans
(see Florida product approval form)

GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL	Items to Include- Each Box shall be Circled as Applicable

FBCR 403: Foundation Plans

Select From Drop down

30	Location of all load-bearing walls footings indicated as standard, monolithic, dimensions, size and type of reinforcing.	- /		
31	All posts and/or column footing including size and reinforcing	- /		
32	Any special support required by soil analysis such as piling.	- /		
33	Assumed load-bearing valve of soil Pound Per Square Foot	-		
34	Location of horizontal and vertical steel, for foundation or walls (include # size and type) For structures with foundation which establish new electrical utility companies service connection a Concrete Encased Electrode will be required within the foundation to serve as an grounding electrode system. Per the National Electrical Code article 250.52.3	/ -		

FBCR 506: CONCRETE SLAB ON GRADE Monc Slab Reinforced Footers

35	Show Vapor retarder (6mil. Polyethylene with joints la ed 6 inches and sealed)	- /		
36	Show control joints, synthetic fiber reinforcement or welded fire fabric reinforcement and Supports	- /		

FBCR 318: PROTECTION AGAINST TERMITES Florida Pest Pre Treat

37	Indicate on the foundation plan if soil treatment is used for subterranean termite prevention or Submit other approved termite protection methods. **Protection shall be provided by registered termiticides**	- /		

FBCR 606: Masonry Walls and Stem walls (load bearing & shear Walls)

38	Show all materials making up walls, wall height, and Block size, mortar type	-		/
39	Show all Lintel sizes, type, spans and tie-beam sizes and spacing of reinforcement	-		/

Metal frame shear wall and roof systems shall be designed, signed and sealed by Florida Prof. Engineer or Architect

Floor Framing System: First and/or second story

40	Floor truss package shall including layout and details, signed and sealed by Florida Registered Professional Engineer	-		/
41	Show conventional floor joist type, size, span, spacing and attachment to load bearing walls, stem walls and/or priers	-		/
42	Girder type, size and spacing to load bearing walls, stem wall and/or priers	-		/
43	Attachment of joist to girder	-		/
44	Wind load requirements where applicable	-		/
45	Show required under-floor crawl space	-		
46	Show required amount of ventilation opening for under-floor spaces	-		/
47	Show required covering of ventilation opening	-		/
48	Show the required access opening to access to under-floor spaces	-		
49	Show the sub-floor structural panel sheathing type, thickness and fastener schedule on the edges & intermediate of the areas structural panel sheathing	-		/
50	Show Draftstopping, Fire caulking and Fire blocking	-		/
51	Show fireproofing requirements for garages attached to living spaces, per FBCR section 302.6	-		/
52	Provide live and dead load rating of floor framing systems (psf).	-		/

FBCR CHAPTER 6 WOOD WALL FRAMING CONSTRUCTION

	GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL	Items to Include- Each Box shall be Circled as Applicable

Select from Drop down

53	Stud type, grade, size, wall height and oc spacing for all load bearing or shear walls	-		
54	Fastener schedule for structural members per table FBC-R602.3.2 are to be shown	-		
55	Show wood structural panel's sheathing attachment to studs, joist, trusses, rafters and structural members, showing fastener schedule attachment on the edges & intermediate of the areas structural panel sheathing	-		
56	Show all required connectors with a max uplift rating and required number of connectors and oc spacing for continuous connection of structural walls to foundation and roof trusses or rafter systems	-		
57	Show sizes, type, span lengths and required number of support jack studs, king studs for shear wall opening and girder or header per FBC-R602.7.	-		
58	Indicate where pressure treated wood will be placed	-		
59	Show all wall structural panel sheathing, grade, thickness and show fastener schedule for structural panel sheathing edges & intermediate areas	-		
60	A detail showing gable truss bracing, wall balloon framing details or/ and wall hinge bracing detail	-		

FBCR :ROOF SYSTEMS:

61	Truss design drawing shall meet section FBC-R 802.10. 1 Wood trusses	-		/
62	Include a layout and truss details, signed and sealed by Florida Professional Engineer	- /		
63	Show types of connector's assemblies' and resistance uplift rating for all trusses and rafters	- /		
64	Show gable ends with rake beams showing reinforcement or gable truss and wall bracing details	- /		
65	Provide dead load rating of trusses	- /		

FBCR 802:Conventional Roof Framing Layout

66	Rafter and ridge beams sizes, span, species and spacing	-		/
67	Connectors to wall assemblies' include assemblies' resistance to uplift rating	-		/
68	Valley framing and support details	-		/
69	Provide dead load rating of rafter system	-		

FBCR 803 ROOF SHEATHING

70	Include all materials which will make up the roof decking, identification of structural panel sheathing, grade, thickness	- /		
71	Show fastener Size and schedule for structural panel sheathing on the edges & intermediate areas	- /		

ROOF ASSEMBLIES FRC Chapter 9

72	Include all materials which will make up the roof assembles covering	-		
73	Submit Florida Product Approval numbers for each component of the roof assembles covering	-		

FBCR Chapter 11 Energy Efficiency Code for Residential Building

Residential construction shall comply with this code by using the following compliance methods in the FBCR Chapter 11 Residential buildings compliance methods. **Two of the required forms are to be submitted,** *N1100.1.1.1 As an alternative to the computerized Compliance Method A, the Alternate Residential Point System Method hand calculation, Alternate Form 600A, may be used. All requirements specific to this calculation are located in Sub appendix C to Appendix G. Buildings complying by this alternative shall meet all mandatory requirements of this chapter. Computerized versions of the Alternate Residential Point System Method shall not be acceptable for code compliance.*

	GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL	Items to Include- Each Box shall be Circled as Applicable		
		Select from Drop Down		
74	Show the insulation R value for the following areas of the structure	-		
75	Attic space	-		
76	Exterior wall cavity	-		
77	Crawl space	-		

HVAC information

78	Submit two copies of a Manual J sizing equipment or equivalent computation study	-		
79	Exhaust fans shown in bathrooms **Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous required**	-		
80	Show clothes dryer route and total run of exhaust duct	-		

Plumbing Fixture layout shown

81	All fixtures waste water lines shall be shown on the foundationplan	-		
82	Show the location of water heater	-		

Private Potable Water

83	Pump motor horse power	-		
84	Reservoir pressure tank gallon capacity	-		
85	Rating of cycle stop valve if used	-		

Electrical layout shown including

86	Show Switches, receptacles outlets, lighting fixtures and Ceiling fans	-		
87	Show all 120-volt, single phase, 15- and 20-ampere branch circuits outlets required to be protected by **Ground-Fault Circuit Interrupter (GFCI) Article 210.8 A**	-		
88	Show the location of smoke detectors & Carbon monoxide detectors	-		
89	Show service panel, sub-panel, location(s) and total ampere ratings	-		
90	On the electrical plans identify the electrical service overcurrent protection device for the main electrical service. This device shall be installed on the exterior of structures to serve as a disconnecting means for the utility company electrical service. Conductors used from the exterior disconnecting means to a panel or sub panel shall have four-wire conductors, of which one conductor shall be used as an equipment ground. Indicate if the utility company service entrance cable will be of the overhead or underground type. **For structures** with foundation which establish new electrical utility companies service connection a Concrete Encased Electrode will be required within the foundation to serve as an Grounding electrode system. Per the National Electrical Code article 250.52.3	-		
91	Appliances and HVAC equipment and disconnects	-		
92	Show all 120-volt, single phase, 15- and 20-ampere branch circuits supplying outlets installed in dwelling unit family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, or similar rooms or areas shall be protected by a listed **Combination arc-fault circuit interrupter,** Protection device.	-		

Notice Of Commencement:

A notice of commencement form RECORDED in the Columbia County Clerk Office is required to be filed with the Building Department BEFORE ANY INSPECTIONS can be performed.

GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL	Items to Include- Each Box shall be Circled as Applicable

****ITEMS 95, 96, & 98 Are Required After APPROVAL from the ZONING DEPT.****

Select from Drop down

93	**Building Permit Application** A current Building Permit Application is to be completed, by following the Checklist all supporting documents must be submitted. There is a **$15.00** application fee. The completed application with attached documents and application fee can be mailed.	-		
94	**Parcel Number** The parcel number (Tax ID number) from the Property Appraisers Office (386) 758-1083 is required. A copy of property deed is also required. www.columbiacountyfla.com	-		
95	**Environmental Health Permit or Sewer Tap Approval** A copy of a approved Columbia County Environmental Health (386) 758-1058	-		
96	**City of Lake City** A City Water and/or Sewer letter. Call 386-752-2031	-		
97	**Toilet facilities shall be provided for all construction sites**	-		
98	**Town of Fort White** (386) 497-2321 If the parcel in the application for building permit is within the Corporate city limits of Fort White, an approval land use development letter issued by the Town of Fort is required to be submitted with the application for a building permit.	-		
99	**Flood Information:** All projects within the Floodway of the Suwannee or Santa Fe Rivers shall require permitting through the Suwannee River Water Management District, before submitting a application to this office. Any project located within a flood zone where the base flood elevation (100 year flood) has been established shall meet the requirements of Section 8.5.2 of the Columbia County Land Development Regulations. Any project located within a flood zone where the base flood elevation has not been established (Zone A) shall meet the requirements of Section 8.5.3 of the Columbia County Land Development Regulations (Municode.com)	-		
100	**CERTIFIED FINISHED FLOOR ELEVATIONS** will be required on any project where the approved FIRM Flood Maps show the property is in a AE, Floodway, and AH flood zones. Additionally One Foot Rise letters are required for AE and AH zones. In the Floodway Flood zones a Zero Rise letter is required.	-		
101	A Flood development permit is also required for AE, Floodway & AH. Development permit cost is **$50.00**	-		
102	**Driveway Connection:** If the property does not have an existing access to a public road, then an application for a culvert permit (**$25.00**) must be made. County Public Works Dept. determines the size and length of every culvert before instillation and completes a final inspection before permanent power is granted. If the applicant feels that a culvert is not needed, they may apply for a culvert waiver (**$50.00**) Separate Check when issued. If the project is to be located on an F.D.O.T. maintained road, then an F.D.O.T. access permit is required.	-		
103	**911 Address:** An application for a 911address must be applied for and **received** through the Columbia County Emergency Management Office of 911 Addressing Department (386) 758-1125.	-		

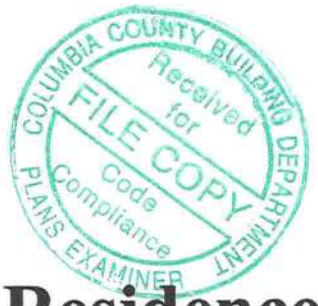
Ordinance Sec. 90-75. - Construction debris. (e) It shall be unlawful for any person to dispose of or discard solid waste, including construction or demolition debris at any place within the county other than on an authorized disposal site or at the county's solid waste facilities. The temporary storage, not to exceed seven days of solid waste (excluding construction and demolition debris) on the premises where generated or vegetative trash pending disposition as authorized by law or ordinance, shall not be deemed a violation of this section. The temporary storage of construction and demolition debris on the premises where generated or vegetative trash pending disposition as authorized by law or ordinance shall not be deemed in violation of this section; provided, however, such construction and demolition debris must be disposed of in accordance with this article prior to the county's issuance of a certificate of occupancy for the premises. The burning of lumber from a construction or demolition project or vegetative trash when done so with legal and proper permits from the authorized agencies and in accordance with such agencies' rules and regulations, shall not be deemed a violation of this section. No person shall bury, throw, place, or deposit, or cause to be buried, thrown, placed, or deposited, any solid waste, special waste, or debris of any kind into or on any of the public streets, road right-of-way, highways, bridges, alleys, lanes, thoroughfares, waters, canals, or vacant lots or lands within the county. No person shall bury any vegetative trash on any of the public streets, road right-of-way, highways, bridges, lanes, thoroughfares, waters, canals, or lots less than ten acres in size within the county.

As required by Florida Statute 553.842 and Florida Administrative Code 9B-72, please provide the information and approval numbers on the building components listed below if they will be utilized on the construction project for which you are applying for a building permit. We recommend you contact your local product supplier should you not know the product approval number for any of the applicable listed products. Statewide approved products are listed online @ www.floridabuilding.org See attached

Category/Subcategory	Manufacturer	Product Description	Approval Number(s)
1. EXTERIOR DOORS			
A. SWINGING	Therma-Tru	Exterior Hinged Door	FL 5891-R3
B. SLIDING			
C. SECTIONAL/ROLL UP		Garage Door	FL 5678-R2
D. OTHER			
2. WINDOWS			
A. SINGLE/DOUBLE HUNG	Kolbe	Kolbe Forgent Series	FL 22235
B. HORIZONTAL SLIDER			
C. CASEMENT			
D. FIXED			
E. MULLION			
F. SKYLIGHTS			
G. OTHER			
3. PANEL WALL			
A. SIDING			
B. SOFFITS			
C. STOREFRONTS			
D. GLASS BLOCK			
E. OTHER			
4. ROOFING PRODUCTS			
A. ASPHALT SHINGLES			
B. NON-STRUCT METAL			
C. ROOFING TILES			
D. SINGLE PLY ROOF			
E. OTHER			
5. STRUCT COMPONENTS			
A. WOOD CONNECTORS			
B. WOOD ANCHORS			
C. TRUSS PLATES			
D. INSULATION FORMS			
E. LINTELS			
F. OTHERS			
6. NEW EXTERIOR			
ENVELOPE PRODUCTS			

The products listed below did not demonstrate product approval at plan review. I understand that at the time of inspection of these products, the following information must be available to the inspector on the jobsite; 1) copy of the product approval, 2) performance characteristics which the product was tested and certified to comply with, 3) copy of the applicable manufacturers installation requirements.
Further, I understand these products may have to be removed if approval cannot be demonstrated during inspection.

NOTES: _____



Dale Mowry
Evaluation of Proposed Residence
Columbia County, Florida
(In Compliance with the 2017 Florida Building Code)

Prepared By: Marty J. Humphries, P.E. # 51976
7932 240th St., O'Brien, FL 32071
(386)362-9169

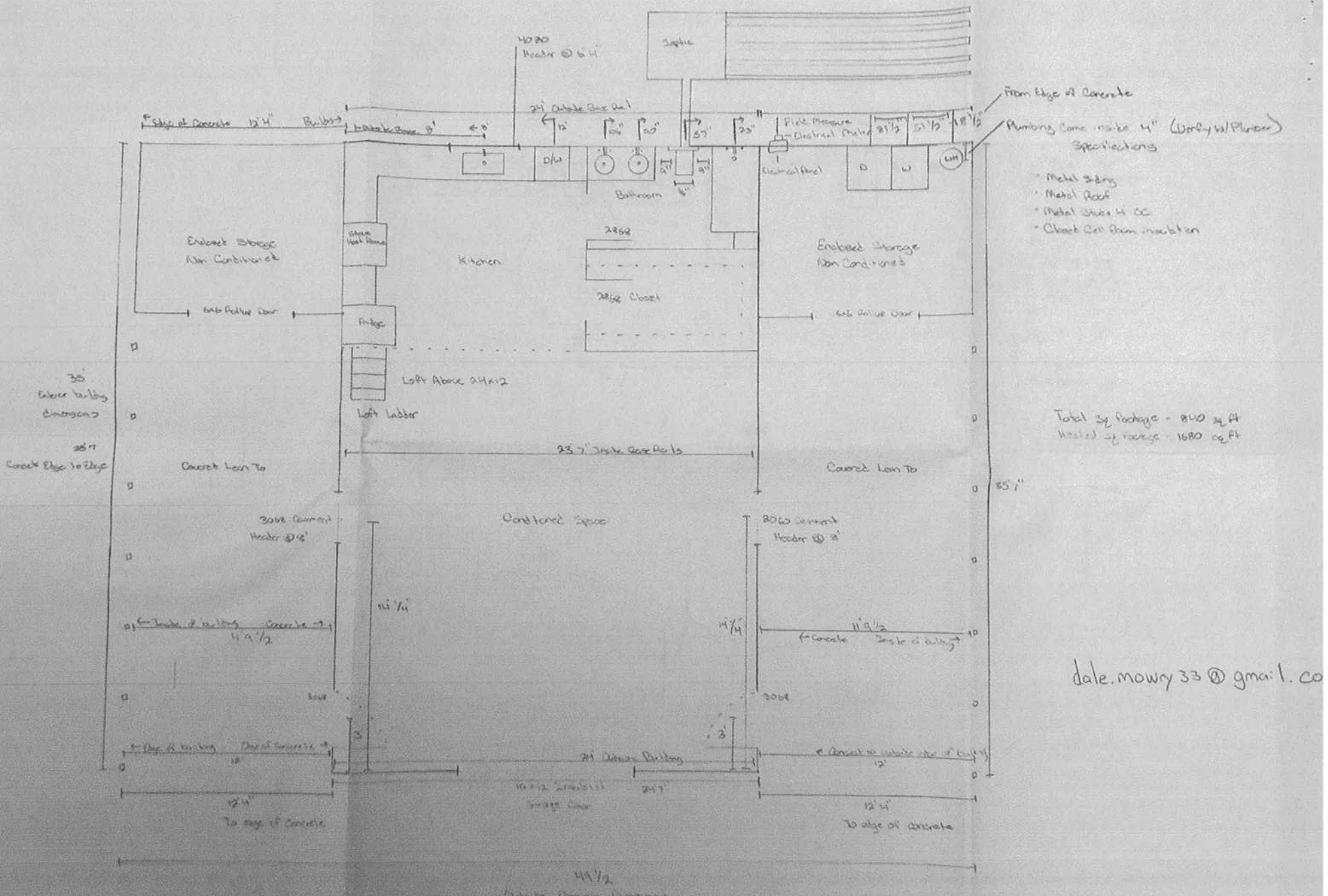
Description of Project:

The purpose of this document is to evaluate a proposed residence for compliance with the Florida Building code. The proposal is to use a prefabricated/ engineered tubular metal building as a residence. I have attached the proposed sketch by the owner and the engineering packet for the tubular metal building. The overall dimensions of the building, including porch areas, is 49'6" wide by 35'7" deep with a middle portion that is 24'7" wide for the proposed living area (see sketch).

My evaluation of the submitted sketch and the engineering for the metal building indicates the proposed building is structurally adequate and the project is in compliance with the Florida Building Code with the following requirements:

1.) deletion of the proposed loft/ladder
2.) add a smoke/carbon monoxide detector just outside bathroom door.
3.) minimum insulation for walls shall be R-13 and for ceiling shall be R-38
4.) install framing/stud wall between metal frames to support sheetrock for walls.
5.) for the ceiling the following options may be used:
   a.) suspended ceiling with tiles, with insulation batts above or foam insulation(underside of roof)
   b.) metal hat-track applied to frames with gypsum wall board attached (foam insulation)
   c.) exposed insulation, if allowed by manufacturer
6.) all plumbing and electrical shall be installed per code
7.) egress as shown is compliant

2-19-19



dale.mowry33@gmail.com

STRUCTURAL DESIGN

ENCLOSED BUILDING
EXPOSURE B

MAXIMUM 30'-0" WIDE X 20'-0" EAVE HEIGHT- BOX EAVE FRAME AND BOW FRAME

18 December 2017
Revision 4
M&A Project No. 16022S/17300S

Prepared for:

Tubular Building Systems, LLC
631 SE Industrial Circle
Lake City, Florida 32025

Prepared by:

Moore and Associates Engineering and Consulting, Inc.
1009 East Avenue
North Augusta, SC 29841

401 S. Main Street, Suite 200
Mount Airy, NC 27030

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

DRAWN BY: LT
CHECKED BY: PDH

TUBULAR BUILDING SYSTEMS
30'-0"x20'-0" ENCLOSED BUILDING EXP. B
PE SEAL COVER SHEET

PROJECT MGR: VSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/172005
CLIENT: TBS	SHT. 1	DWG. NO: SK-3	REV.: 4

DRAWING INDEX

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

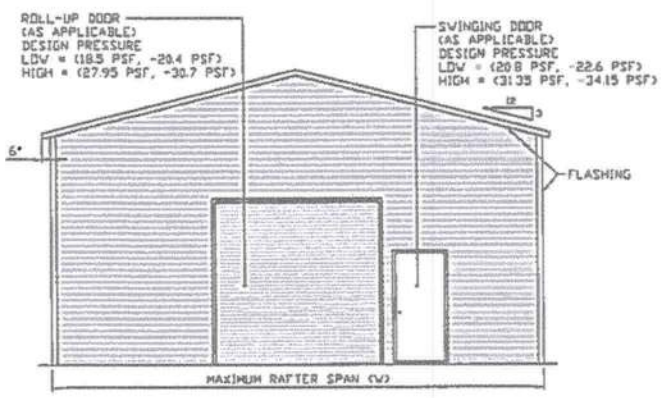
DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B			
CHECKED BY: PDH				
PROJECT MGR: WSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 16822S/17300S	
CLIENT: TBS	SHT. 2	DWG. NO: SK-3	REV: 4	

INSTALLATION NOTES AND SPECIFICATIONS

1. DESIGN IS FOR A MAXIMUM 30'-0" WIDE x 20'-0" EAVE HEIGHT ENCLOSED STRUCTURES.
2. DESIGN WAS DONE IN ACCORDANCE WITH THE 2017 FLORIDA BUILDING CODE (FBC) 6TH EDITION, 2012 INTERNATIONAL BUILDING CODE (IBC), AND 2015 IBC.
3. DESIGN LOADS ARE AS FOLLOWS:
   A) DEAD LOAD = 1.5 PSF
   B) LIVE LOAD = 12 PSF
   C) GROUND SNOW LOAD = 10 PSF
4. LOW ULTIMATE WIND SPEED 105 TO 140 MPH (NOMINAL WIND SPEED 81 TO 108 MPH): MAXIMUM RAFTER/POST AND END POST SPACING = 5.0 FEET.
5. HIGH ULTIMATE WIND SPEED 141 TO 170 MPH (NOMINAL WIND SPEED 109 TO 132 MPH): MAXIMUM RAFTER/POST AND END POST SPACING = 4.0 FEET.
6. LOW HAZARD RISK CATEGORY I (WIND).
7. WIND EXPOSURE CATEGORY B
8. SPECIFICATIONS APPLICABLE TO 29 GAUGE METAL PANELS FASTENED DIRECTLY TO 2 1/2" x 2 1/2" - 14 GAUGE TUBE STEEL (TS) FRAMING MEMBERS. FOR VERTICAL PANELS, 29 GAUGE METAL PANELS SHALL BE FASTENED TO 18 GAUGE HAT CHANNELS (UNLESS OTHERWISE NOTED).
9. AVERAGE FASTENER SPACING ON-CENTERS ALONG RAFTERS OR PURLINS, AND POSTS, INTERIOR = 9" OR END = 6", (MAX.)
10. FASTENERS CONSIST OF #12-14x3/4" SELF-DRILLING FASTENER (SDF), USE CONTROL SEAL WASHER WITH EXTERIOR FASTENERS SPECIFICATIONS APPLICABLE ONLY FOR MEAN ROOF HEIGHT OF 20 FEET OR LESS, AND ROOF SLOPES OF 14° (3:12 PITCH) OR LESS SPACING REQUIREMENTS FOR OTHER ROOF HEIGHTS AND/OR SLOPES MAY VARY.
11. GROUND ANCHORS SHALL BE INSTALLED THROUGH BASE RAIL WITHIN 6" OF EACH RAFTER COLUMN ALONG SIDES
12. GROUND ANCHORS (SOIL NAILS) CONSIST OF #4 REBAR W/WELDED NUT x 30" LONG IN SUITABLE SOIL CONDITIONS MAY BE USED FOR LOW ($\leq$ 108 MPH NOMINAL) WIND SPEEDS ONLY. OPTIONAL ANCHORAGE MAY BE USED IN SUITABLE SOILS AND MUST BE USE IN UNSUITABLE SOILS AS NOTED.
13. OPTIONAL BASE RAIL ANCHORAGE MAY BE USED FOR LOW AND MUST BE USED FOR HIGH WIND SPEEDS.
14. WIND FORCES GOVERN OVER SEISMIC FORCES. SEISMIC PARAMETERS ANALYZED ARE:
    SOIL SITE CLASS = D
    RISK CATEGORY I/II/III
    R= 3.25 I_E= 1.0
    S_{DS}= 1.522 V= C_SW
    S_{D1}= 0.839

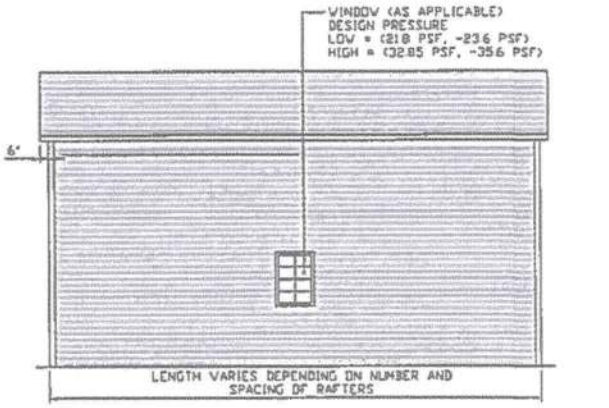
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT CHECKED BY: PDH	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	PROJECT MGR: WSH	DATE: 12-18-17	SCALE: NTS	JOB NO: 16022S/17300S
	CLIENT: TBS	SHT. 3	DWG. NO: SX-3	REV: 4

☐ BOX EAVE FRAME RAFTER ENCLOSED BUILDING



TYPICAL END ELEVATION-HORIZONTAL ROOF

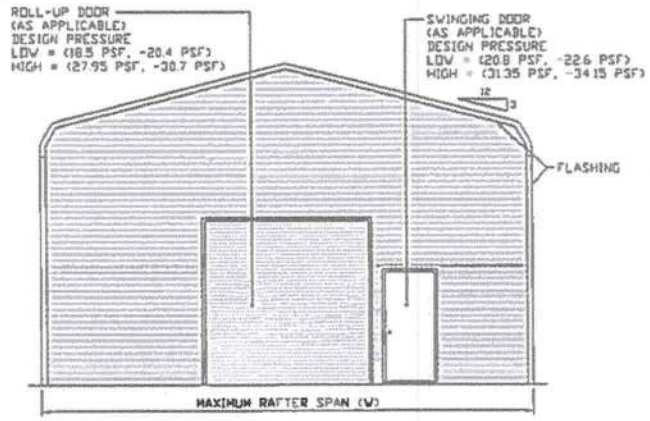
SCALE: NTS



TYPICAL SIDE ELEVATION-HORIZONTAL ROOF

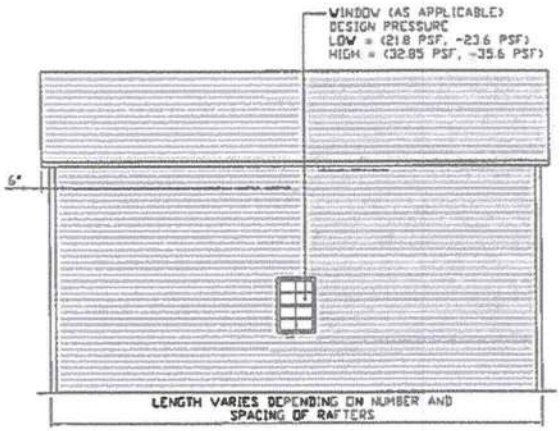
SCALE: NTS

☐ BOW FRAME RAFTER ENCLOSED BUILDING



TYPICAL END ELEVATION

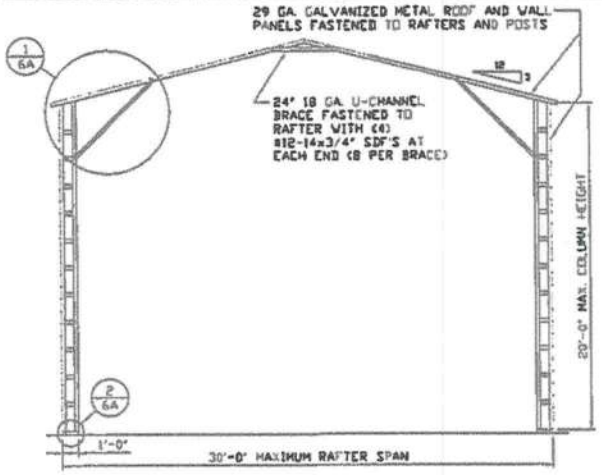
SCALE: NTS



TYPICAL SIDE ELEVATION

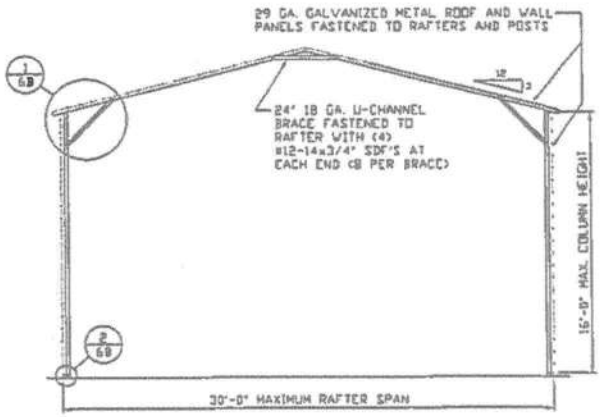
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PDH			
	PROJECT MGR: WSH	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/173005
	CLIENT: TBS	SHT. 4	DWG. NO: SK-3	REV: 4



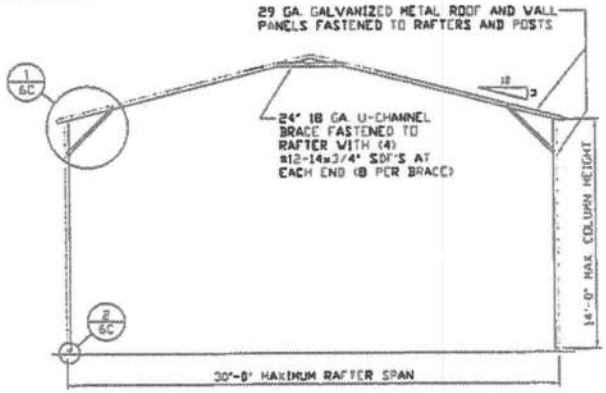
TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



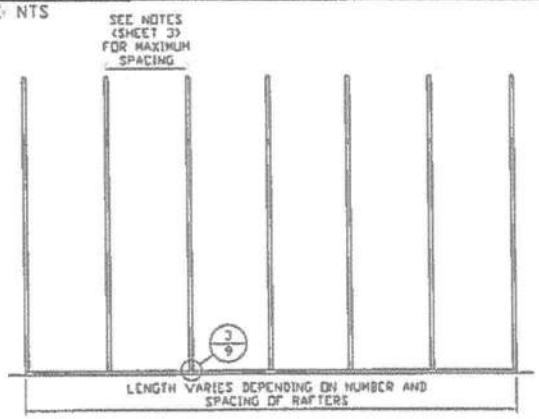
TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION

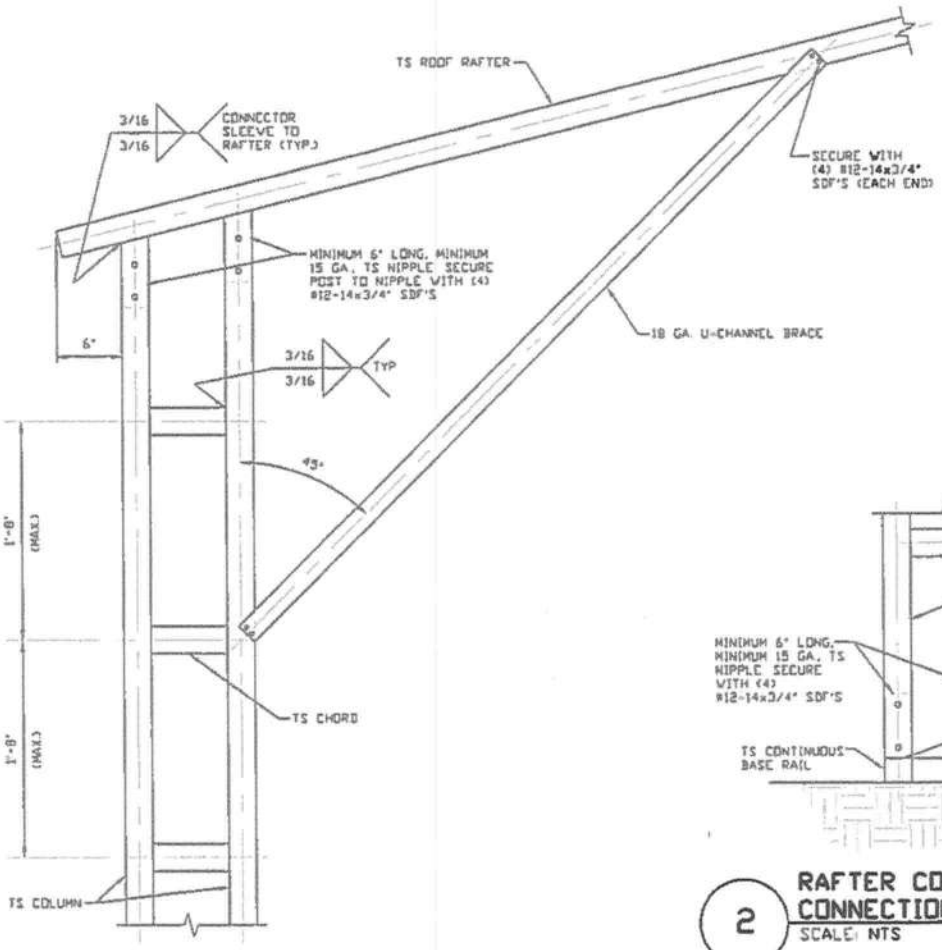
SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

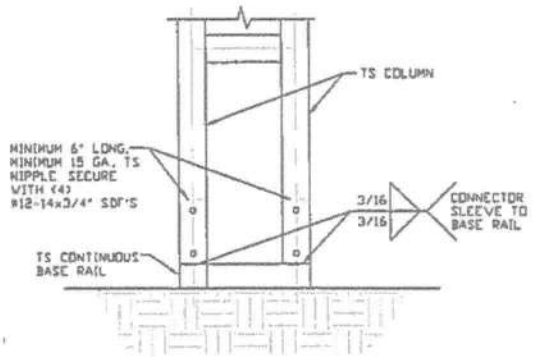
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B	
	CHECKED BY: PDH		
	PROJECT MGR: WSH	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/173005
	CLIENT: TBS	SHT. 5	DWG. NO: SK-3	REV.: 4



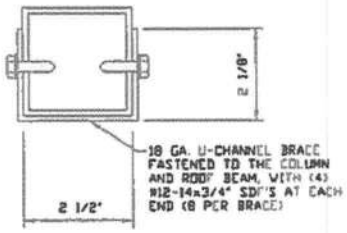
BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 16'-0" < TO ≤ 20'-0"

1 SCALE: NTS



RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

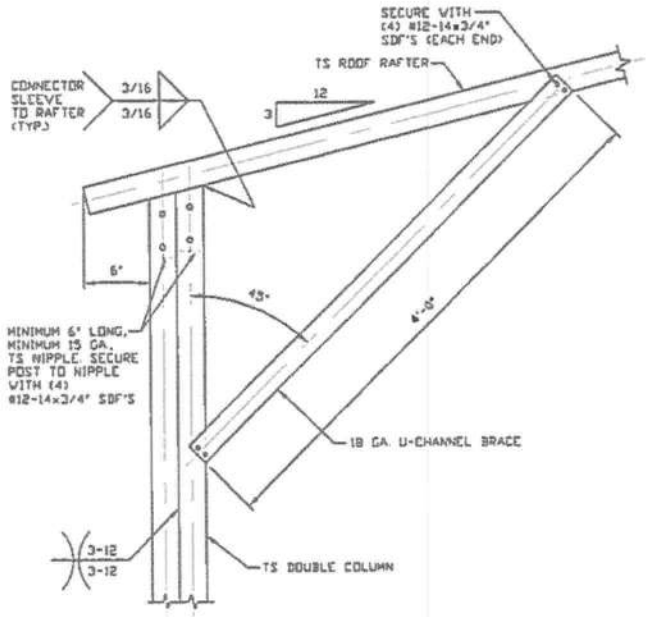
2 SCALE: NTS



BRACE SECTION

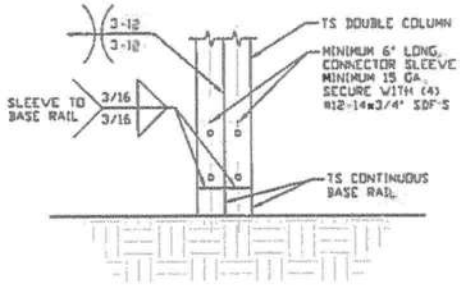
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PBH			
	PROJECT MGR: WSH	DATE: 12-18-17	SCALE: NTS	JOB NO: 160228/173005
	CLIENT: TBS	SHT. 6A	DWG. NO: SK-3	REV.: 4



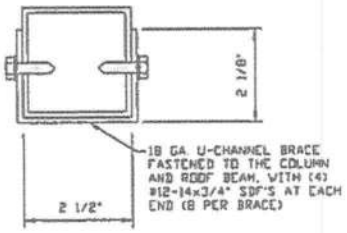
1 BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0" < TO ≤ 16'-0"

SCALE: NTS



2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

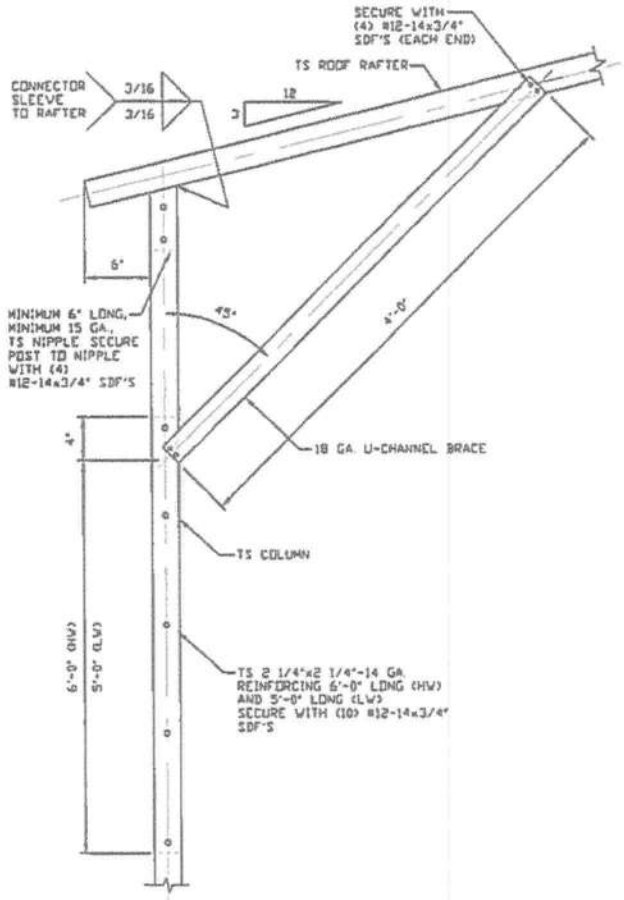
SCALE: NTS



BRACE SECTION

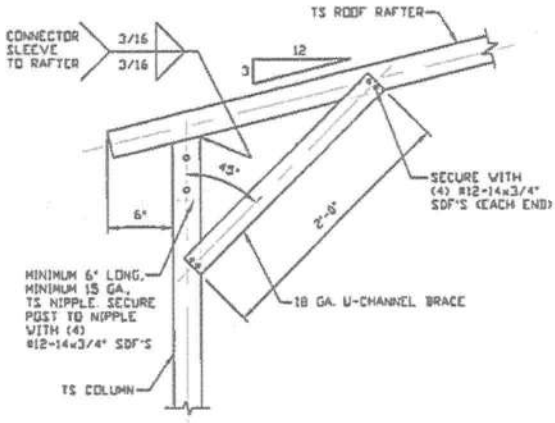
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B	
	CHECKED BY: PDH		
	PROJECT MGR: WSH	DATE: 12-18-17	SCALE: NTS	JOB NO: 16022S/17300S
	CLIENT: TBS	SHT. 6B	DWG. NO: SK-3	REV.: 4



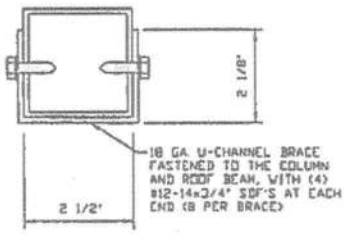
1A BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 14'-0"

SCALE: NTS



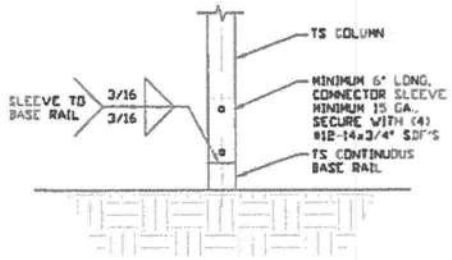
1B BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 10'-0"

SCALE: NTS



BRACE SECTION

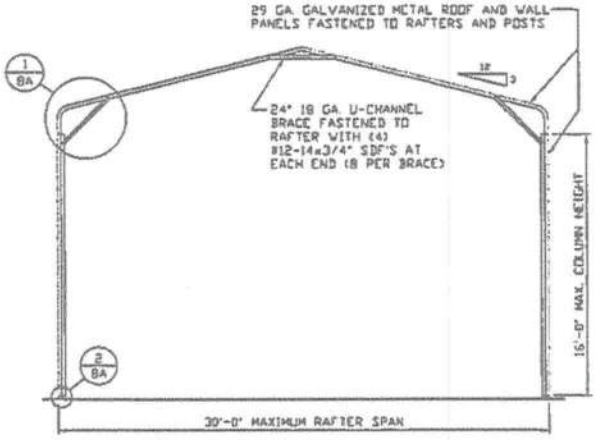
SCALE: NTS



2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

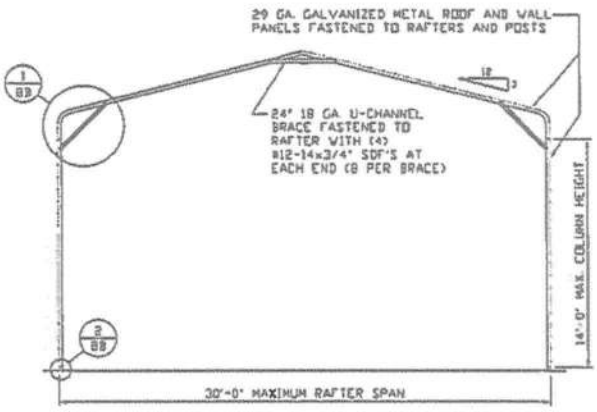
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 160228/173005
	CLIENT: TBS	SHT. 6C	DWG. NO: SK-3	REV: 4



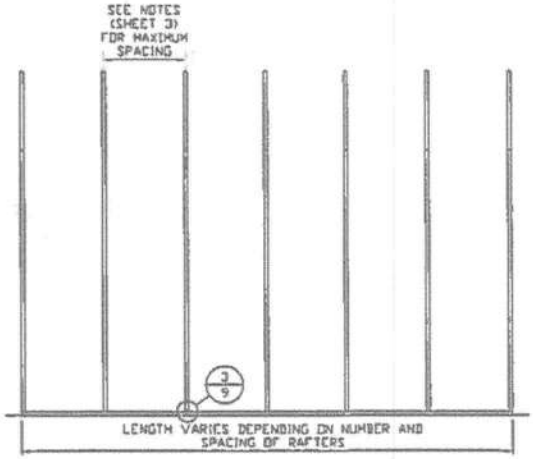
TYPICAL RAFTER/COLUMN END FRAME SECTION

SCALE: NTS



TYPICAL RAFTER/COLUMN END FRAME SECTION

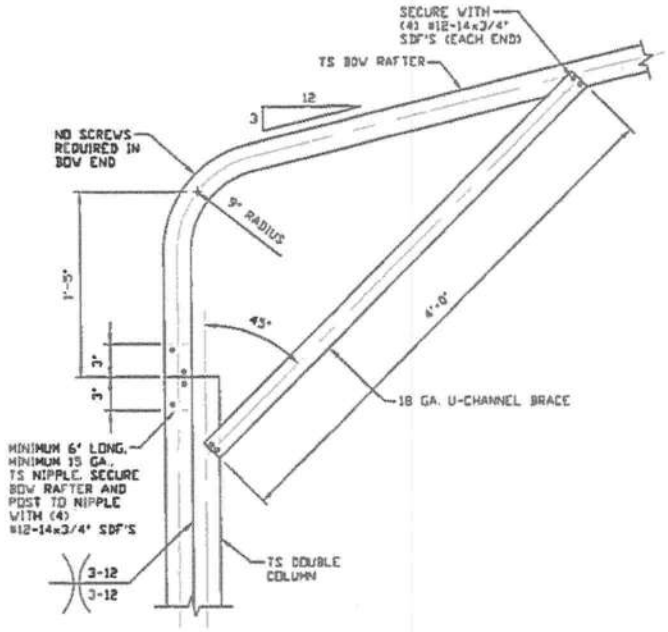
SCALE: NTS



TYPICAL RAFTER/COLUMN SIDE FRAMING SECTION

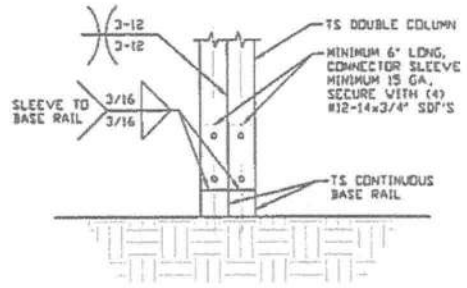
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/173005
	CLIENT: TBS	SHT. 7	DWG. NO: SK-3	REV: 4



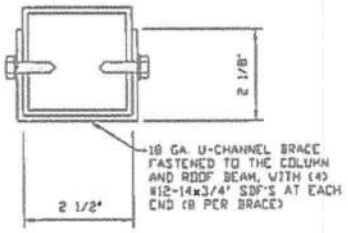
1 BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 14'-0" < TO ≤ 16'-0"

SCALE: NTS



2 RAFTER COLUMN/BASE RAIL CONNECTION DETAIL

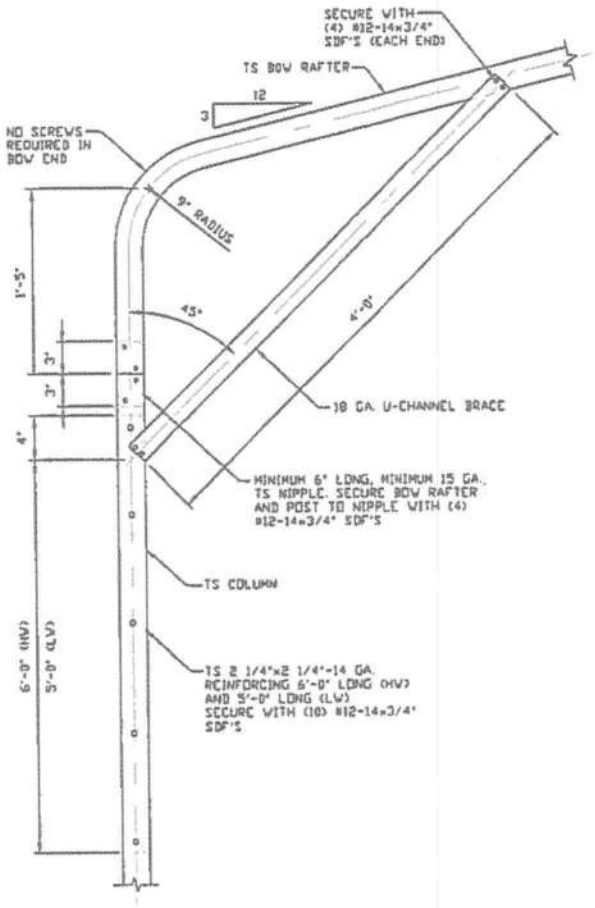
SCALE: NTS



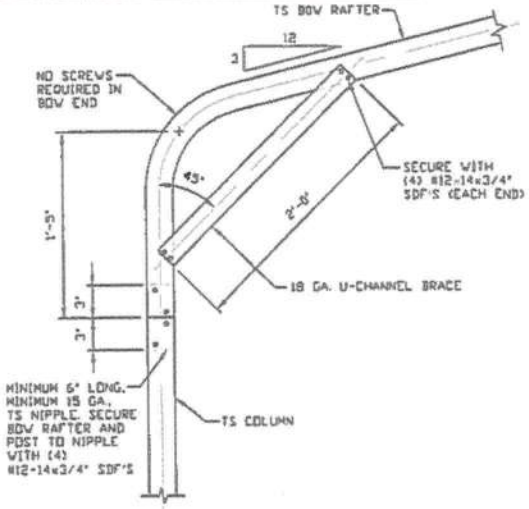
BRACE SECTION

SCALE: NTS

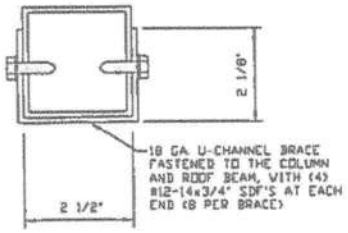
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PDH			
	PROJECT MGR: WSH	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/17300S
	CLIENT: TBS	SHT. 8A	DWG. NO: SK-3	REV: 4



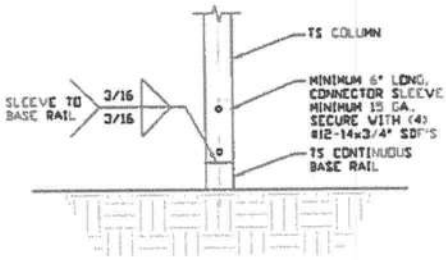
1A **BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS 10'-0" < TO ≤ 14'-0"**
SCALE: NTS



1B **BOX EAVE RAFTER COLUMN CONNECTION DETAIL FOR HEIGHTS ≤ 10'-0"**
SCALE: NTS



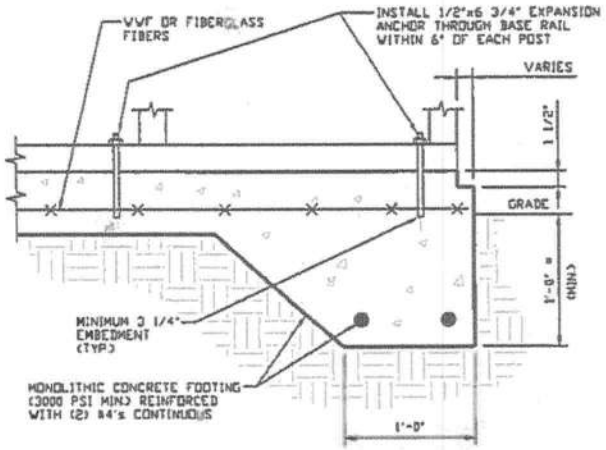
BRACE SECTION
SCALE: NTS



2 **RAFTER COLUMN/BASE RAIL CONNECTION DETAIL**
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B	
	CHECKED BY: PDH		
	PROJECT MGR: WSN	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/17300S
	CLIENT: TBS	SHT. 8B	DWG. NO: SK-3	REV.: 4

BASE RAIL ANCHORAGE OPTIONS FOR LOW AND HIGH WIND SPEED

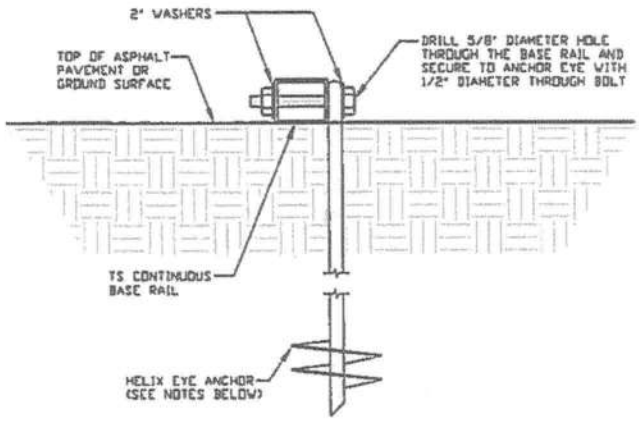


3A **CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE**

SCALE: NTS

(MINIMUM ANCHOR EDGE DISTANCE IS 4")

* COORDINATE WITH LOCAL CODES/ORD.



3B **GROUND BASE HELIX ANCHORAGE**

SCALE: NTS (CAN BE USED FOR ASPHALT)

GENERAL NOTES

CONCRETE:

CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.

COVER OVER REINFORCING STEEL:

FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318:
3 INCHES IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER, AND 1 1/2 INCHES ELSEWHERE.

REINFORCING STEEL:

THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT.

REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED:

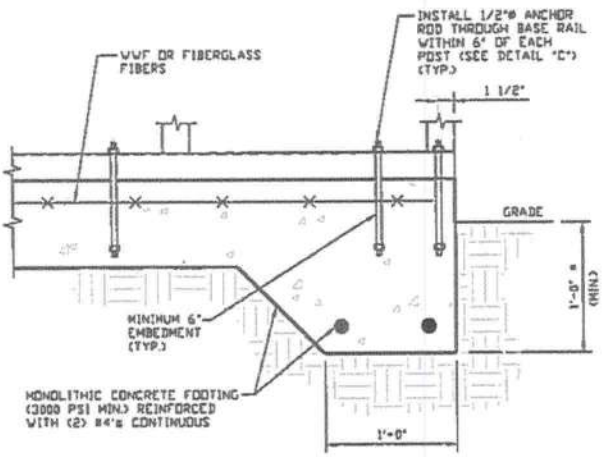
1. REINFORCEMENT IS BENT COLD.
2. THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS.
3. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT.

HELIX ANCHOR NOTES:

1. FOR VERY DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL AND COBBLES, CALICHE, PRELOADED SILTS AND CLAYS USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT.
2. FOR CORAL USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT.
3. FOR MEDIUM DENSE COARSE SANDS, SANDY GRAVELS, VERY STIFF SILTS, AND CLAYS USE MINIMUM (2) 4" HELICES WITH MINIMUM 30 INCH EMBEDMENT.
4. FOR LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS ALLUVIAL FILL USE MINIMUM (2) 6" HELICES WITH MINIMUM 50 INCH EMBEDMENT.
5. FOR VERY LOSE TO MEDIUM DENSE SANDS, FIRM TO STIFFER CLAYS AND SILTS, ALLUVIAL FILL USE MINIMUM (2) 8" HELICES WITH MINIMUM 60 INCH EMBEDMENT.

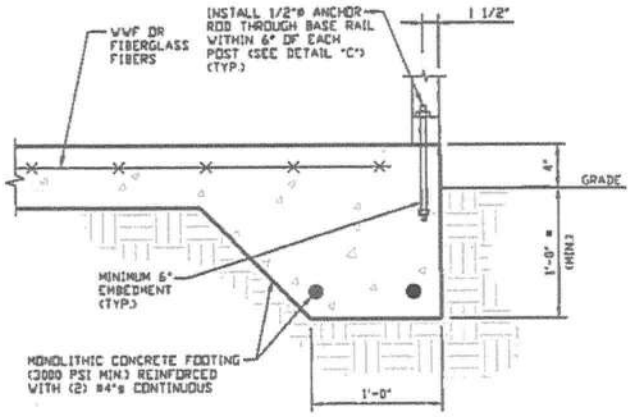
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PDM			
	PROJECT MGR: WSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/17300S
	CLIENT: TBS	SHT. 9A	DWG. NO: SK-3	REV: 4

OPTIONAL FOUNDATION ANCHORAGE FOR LOW & HIGH WIND SPEED



1A **CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE**

SCALE: NTS
(MINIMUM ANCHOR EDGE DISTANCE IS 1 1/2")
* COORDINATE WITH LOCAL CODES/ORD.



1B **CONCRETE MONOLITHIC SLAB BASE RAIL ANCHORAGE**

SCALE: NTS
(MINIMUM ANCHOR EDGE DISTANCE IS 1 1/2")
* COORDINATE WITH LOCAL CODES/ORD.

GENERAL NOTES

CONCRETE:

CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS

COVER OVER REINFORCING STEEL:

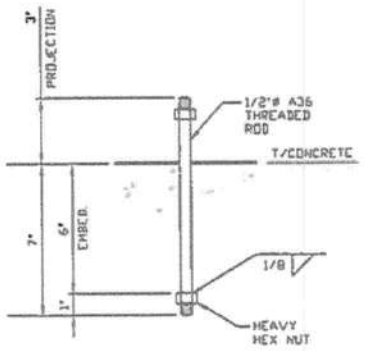
FOR FOUNDATIONS, MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL BE PER ACI-318:
3 INCHES IN FOUNDATIONS WHERE THE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH THE EARTH OR EXPOSED TO THE EARTH OR WEATHER, AND 1 1/2 INCHES ELSEWHERE.

REINFORCING STEEL:

THE TURNDOWN REINFORCING STEEL SHALL BE ASTM A615 GRADE 60. THE SLAB REINFORCEMENT SHALL BE WELDED WIRE FABRIC MEETING ASTM A185 OR FIBERGLASS FIBER REINFORCEMENT.

REINFORCEMENT MAY BE BENT IN THE SHOP OR THE FIELD PROVIDED:

1. REINFORCEMENT IS BENT COLD.
2. THE DIAMETER OF THE BEND, MEASURED ON THE INSIDE OF THE BAR, IS NOT LESS THAN SIX-BAR DIAMETERS
3. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT.

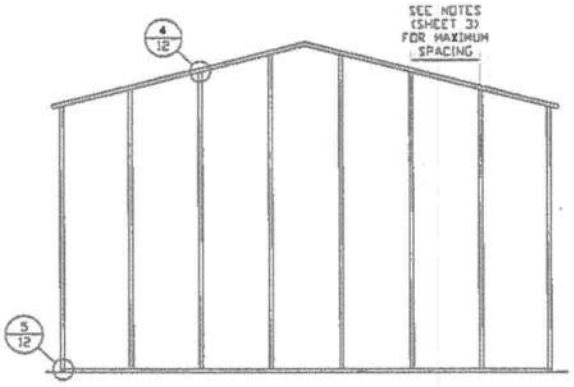


1C **ANCHOR ROD THROUGH BASE RAIL DETAIL**

SCALE: NTS

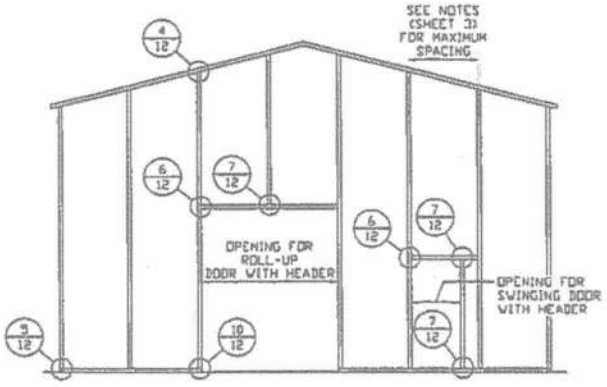
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/172005
	CLIENT: TBS	SHT. 9B	DWG. NO: SK-3	REV.: 4

BOX EAVE RAFTER END WALL AND SIDE WALL OPENINGS



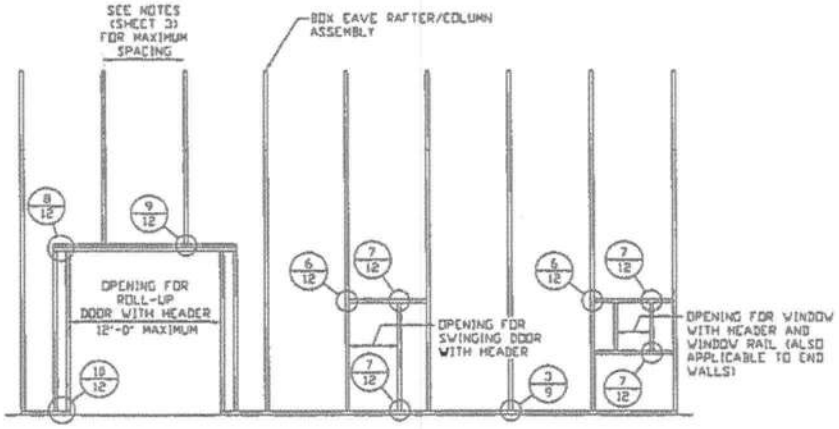
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS

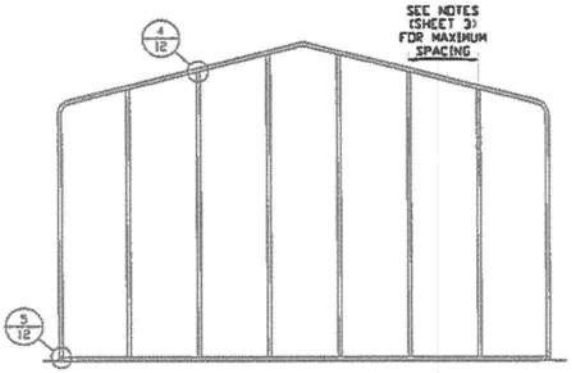


TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

SCALE: NTS

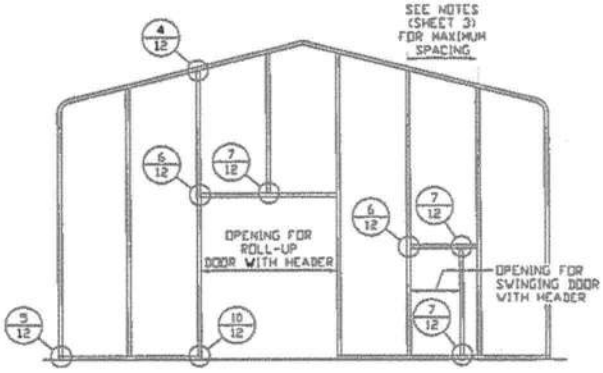
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PDH			
	PROJECT MGR: WSN	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/17300S
	CLIENT: TBS	SHT. 10	DWG. NO: SK-3	REV: 4

BOW RAFTER END WALL AND SIDE WALL OPENINGS



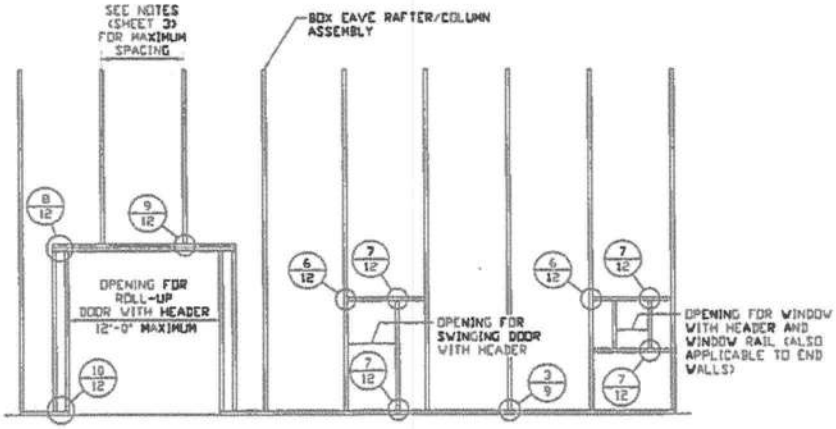
TYPICAL BOX EAVE RAFTER END WALL FRAMING SECTION

SCALE: NTS



TYPICAL BOX EAVE RAFTER END WALL OPENINGS FRAMING SECTION

SCALE: NTS

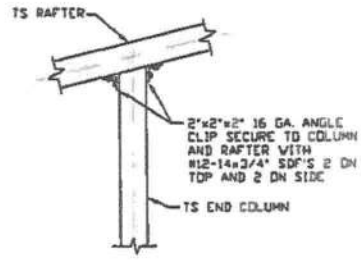


TYPICAL BOX EAVE RAFTER SIDE WALL OPENINGS FRAMING SECTION

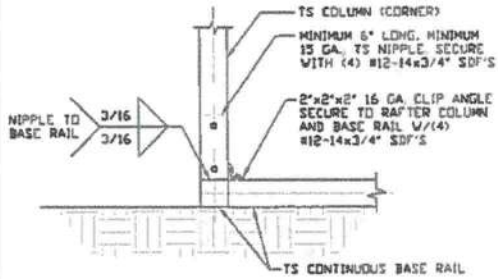
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 16022S/17300S
	CLIENT: TBS	SHT. 11	DWG. NO: SK-3	REV.: 4

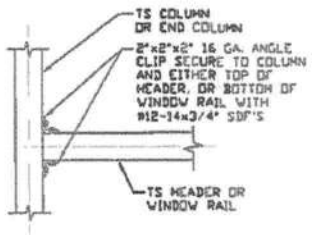
BOW AND BOX EAVE RAFTER WALL OPENING DETAILS



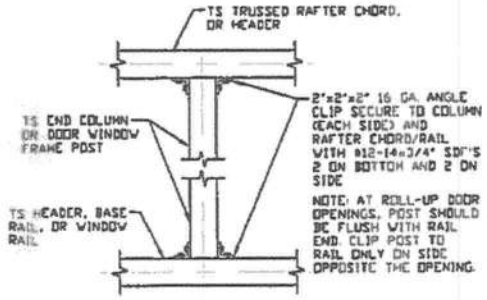
4 END COLUMN/RAFTER CONNECTION DETAIL
SCALE: NTS



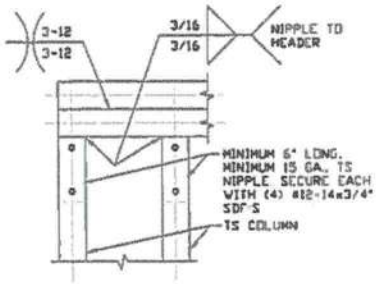
5 END COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS



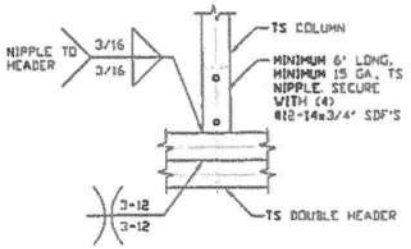
6 HEADER OR WINDOW RAIL TO COLUMN CONNECTION DETAIL
SCALE: NTS



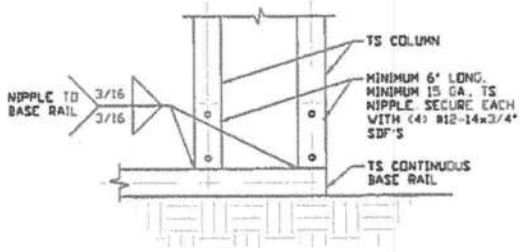
7 COLUMN TO HEADER, BASE RAIL, OR WINDOW RAIL CONNECTION DETAIL
SCALE: NTS



8 DOUBLE HEADER/COLUMN CONNECTION DETAIL
SCALE: NTS



9 COLUMN/DOUBLE HEADER CONNECTION DETAIL
SCALE: NTS

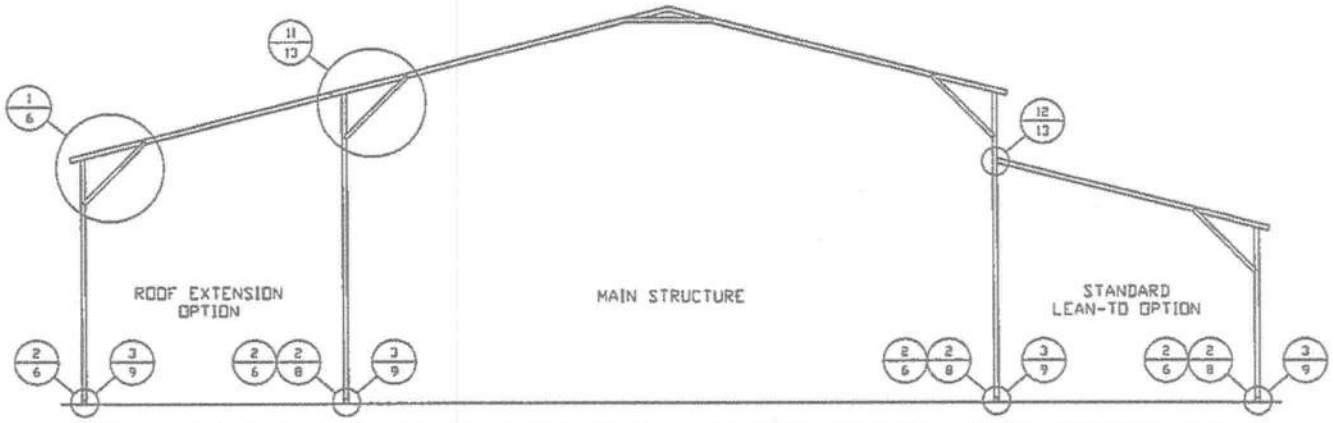


10 COLUMN/BASE RAIL CONNECTION DETAIL
SCALE: NTS

MOORE AND ASSOCIATES
ENGINEERING AND CONSULTING, INC.

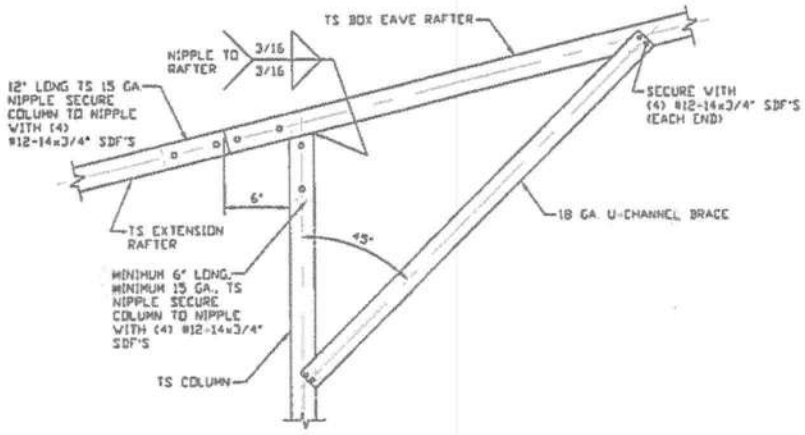
DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
CHECKED BY: PDH			
PROJECT MGR: WSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/17300S
CLIENT: TBS	SHT. 12	DWG. NO: SK-3	REV: 4

BOX EAVE RAFTER LEAN-TO OPTIONS

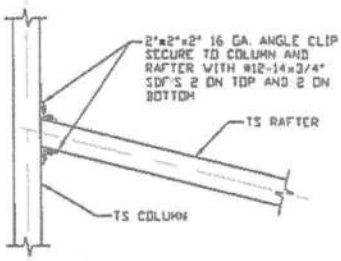


TYPICAL BOX EAVE RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

SCALE: NTS
MAXIMUM WIDTH OF SINGLE MEMBER RAFTER LEAN-TO IS 16'-0".



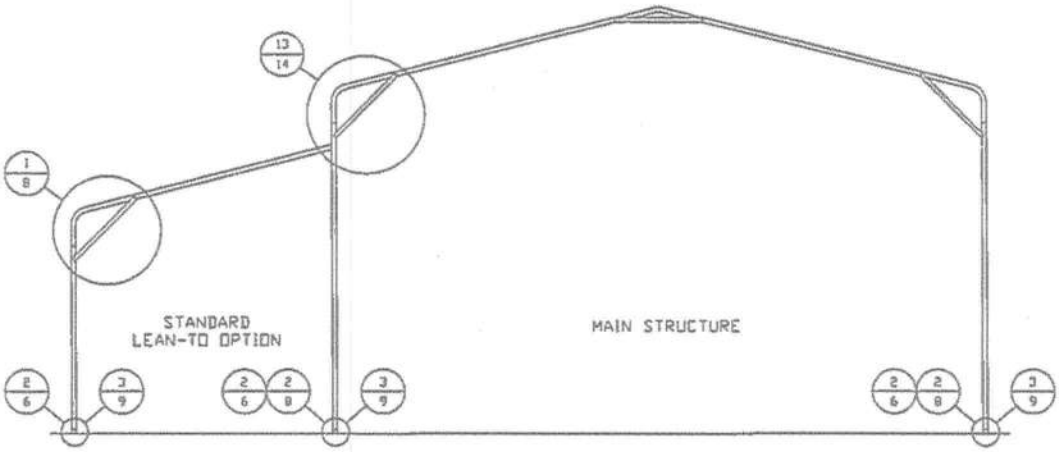
11A **SIDE EXTENSION RAFTER/COLUMN DETAIL**
SCALE: NTS



12 **LEAN-TO RAFTER TO RAFTER COLUMN CONNECTION DETAIL**
SCALE: NTS

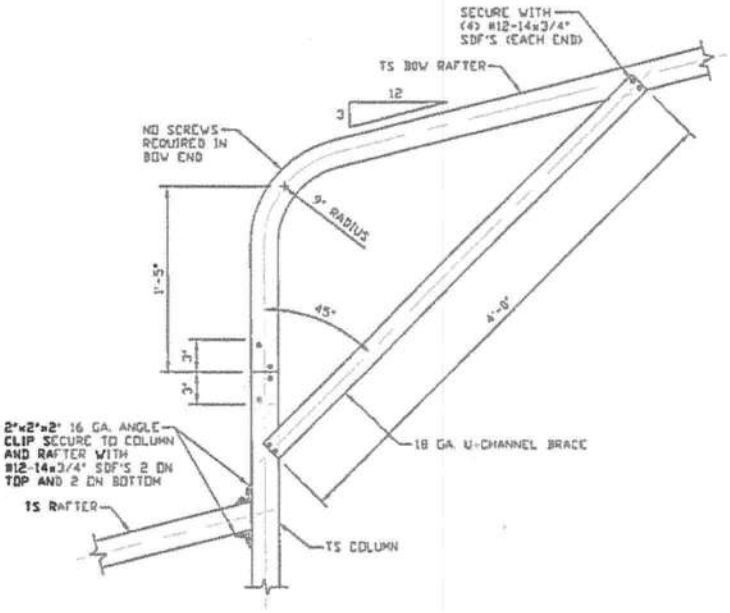
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/17300S
	CLIENT: TBS	SHT. 13	DWG. NO: SK-3	REV: 4

BOW RAFTER LEAN-TO OPTIONS



TYPICAL BOW RAFTER LEAN-TO OPTIONS FRAMING SECTION (BOTH OPTIONS SHOWN)

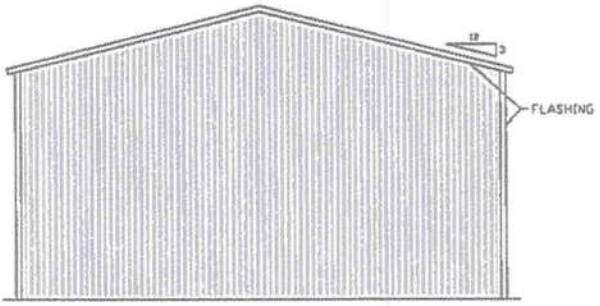
SCALE: NTS
MAXIMUM WIDTH OF SINGLE MEMBER RAFTER LEAN-TO IS 16'-0".



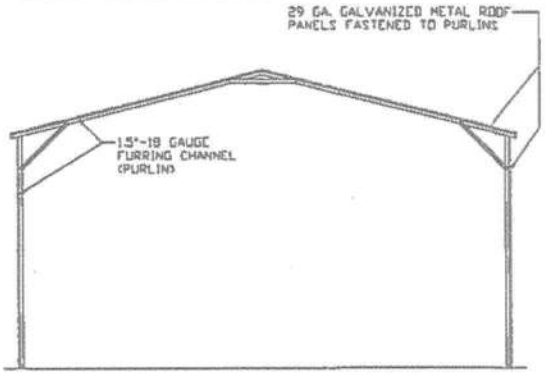
13 SIDE EXTENSION RAFTER/COLUMN DETAIL
SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 160225/17300S
	CLIENT: TBS	SHT. 14	DWG. NO: SK-3	REV: 4

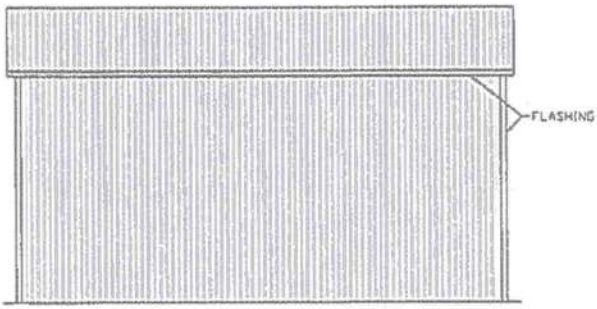
BOX EAVE RAFTER VERTICAL ROOF/SIDING OPTION



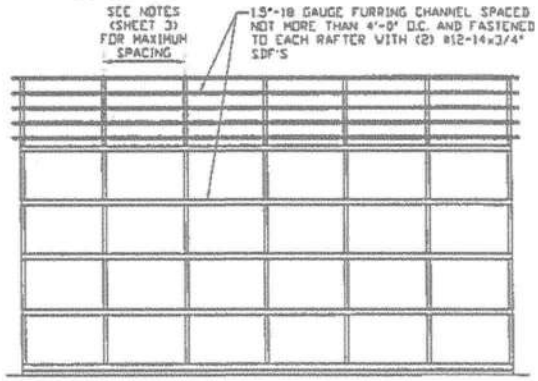
TYPICAL END ELEVATION
VERTICAL ROOF/SIDING OPTION
SCALE: NTS



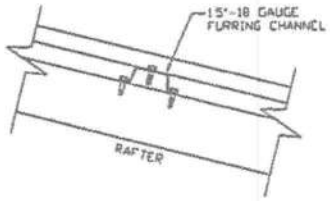
TYPICAL SECTION VERTICAL
ROOF/SIDING OPTION
SCALE: NTS



TYPICAL SIDE ELEVATION
VERTICAL ROOF/SIDING OPTION
SCALE: NTS



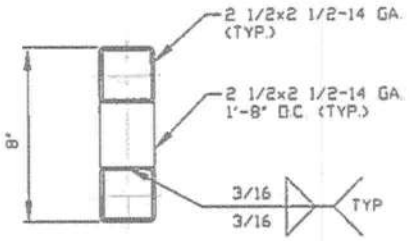
TYPICAL FRAMING SECTION
VERTICAL ROOF/SIDING OPTION
SCALE: NTS



ROOF PANEL ATTACHMENT
(ALTERNATE FOR VERTICAL ROOF PANELS)
SCALE: NTS

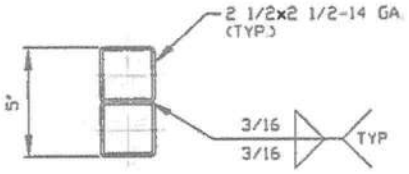
MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 16022S/17300S
	CLIENT: TBS	SHT. 15	DWG. NO: SK-3	REV: 4

OPTIONAL DOOR HEADER



HEADER DETAIL FOR DOOR OPENINGS 12'-0" < LENGTH ≤ 15'-0"

SCALE: NTS



HEADER DETAIL FOR DOOR OPENINGS LENGTH ≤ 12'-0"

SCALE: NTS

MOORE AND ASSOCIATES ENGINEERING AND CONSULTING, INC.	DRAWN BY: LT	TUBULAR BUILDING SYSTEMS 30'-0"x20'-0" ENCLOSED BUILDING EXP. B		
	CHECKED BY: PDH			
	PROJECT MGR: WSM	DATE: 12-18-17	SCALE: NTS	JOB NO: 16022S/17300S
	CLIENT: TBS	SHT. 16	DWG. NO: SK-3	REV: 4

RESIDENTIAL ENERGY CONSERVATION CODE DOCUMENTATION CHECKLIST

Florida Department of Business and Professional Regulation
Simulated Performance Alternative (Performance) Method

Applications for compliance with the 2017 Florida Building Code, Energy Conservation via the residential Simulated Performance Method shall include:

- ☐ *This checklist*
- ☐ *A Form R405 report that documents that the Proposed Design complies with Section R405.3 of the Florida Energy Code. This form shall include a summary page indicating home address, e-ratio and the pass or fail status along with summary areas and types of components, whether the home was simulated as a worst-case orientation, name and version of the compliance software tool, name of individual completing the compliance report (one page) and an input summary checklist that can be used for field verification (usually four pages/may be greater).*
- ☐ *Energy Performance Level (EPL) Display Card (one page)*
- ☐ *HVAC system sizing and selection based on ACCA Manual S or per exceptions provided in Section R403.7*
- ☐ *Mandatory Requirements (five pages)*

Required prior to CO for the Performance Method:

- ☐ *Air Barrier and Insulation Inspection Component Criteria checklist (Table R402.4.1.1 - one page)*
- ☐ *A completed Envelope Leakage Test Report (usually one page)*
- ☐ *If Form R405 duct leakage type indicates anything other than "default leakage", then a completed Form R405 Duct Leakage Test Report (usually one page)*

FORM R405-2017

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	190122 Mowry	Builder Name:	
Street:		Permit Office:	
City, State, Zip:	Lake City , FL ,	Permit Number:	
Owner:	Mowry Res.	Jurisdiction:	
Design Location:	FL, Gainesville	County:	Columbia (Florida Climate Zone 2)

1. New construction or existing	New (From Plans)
2. Single family or multiple family	Single-family
3. Number of units, if multiple family	1
4. Number of Bedrooms	1
5. Is this a worst case?	Yes
6. Conditioned floor area above grade (ft²)	1128
Conditioned floor area below grade (ft²)	0

7. Windows(172.7 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0.35	172.67 ft²
SHGC:	SHGC=0.25	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
d. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		5.494 ft.
Area Weighted Average SHGC:		0.250

8. Floor Types (1128.0 sqft.)	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	840.00 ft²
b. Floor Over Other Space	R=0.0	288.00 ft²
c. N/A	R=	ft²

9. Wall Types (1488.0 sqft.)	Insulation	Area
a. Frame - Steel, Exterior	R=12.0	1328.00 ft²
b. Frame - Steel, Adjacent	R=12.0	160.00 ft²
c. N/A	R=	ft²
d. N/A	R=	ft²

10. Ceiling Types (864.0 sqft.)	Insulation	Area
a. Cathedral/Single Assembly (Unvented)	R=0.0	864.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

11. Ducts	R	ft²

12. Cooling systems	kBtu/hr	Efficiency
a. PTAC and Room Unit	27.0	EER:14.00

13. Heating systems	kBtu/hr	Efficiency
a. Window/Wall Heat Pump	27.0	HSPF:8.00

14. Hot water systems	
a. Electric	Cap: 40 gallons
	EF: 0.950
b. Conservation features	
None	
15. Credits	Pstat

Glass/Floor Area: 0.153

Total Proposed Modified Loads: 34.84

Total Baseline Loads: 37.39

PASS

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code.

PREPARED BY: Evan Beamsley

DATE: 2019-01-31

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: _____

DATE: _____

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

BUILDING OFFICIAL: _____

DATE: _____

- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.3.2.1.

- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires an envelope leakage test report with envelope leakage no greater than 7.00 ACH50 (R402.4.1.2).

FORM R405-2017

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	190122 Mowry	Bedrooms:	1	Address Type:	Street Address
Building Type:	User	Conditioned Area:	1128	Lot #	
Owner Name:	Mowry Res.	Total Stories:	2	Block/Subdivision:	
# of Units:	1	Worst Case:	Yes	PlatBook:	
Builder Name:		Rotate Angle:	45	Street:	
Permit Office:		Cross Ventilation:		County:	Columbia
Jurisdiction:		Whole House Fan:		City, State, Zip:	Lake City , FL ,
Family Type:	Single-family				
New/Existing:	New (From Plans)				
Comment:					

CLIMATE

√	Design Location	TMY Site	Design Temp 97.5 %	Design Temp 2.5 %	Int Design Temp Winter	Int Design Temp Summer	Heating Degree Days	Design Moisture	Daily Temp Range
_____	FL, Gainesville	FL_GAINESVILLE_REGI	32	92	70	75	1305.5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	1128	11340

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	840	9324	Yes	4	0	1	Yes	Yes	Yes
2	loft	288	2016	No	2	1	1	Yes	Yes	Yes

FLOORS

√	#	Floor Type	Space	Perimeter	Perimeter R-Value	Area	Joist R-Value	Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulatio	Main	118 ft	0	840 ft²	---	1	0	0
_____	2	Floor Over Other Space	loft	---	---	288 ft²	0	0	0	1

ROOF

√	#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
_____	1	Gable or shed	Composition shingles	866 ft²	104 ft²	Dark	0.92	No	0.9	No	19	14

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full cathedral ceilin	Unvented	0	840 ft²	N	N

INPUT SUMMARY CHECKLIST REPORT

CEILING

√	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
	1	Cathedral/Single Assembly (Unvented	loft	0	Blown	296 ft²	0	Metal
	2	Cathedral/Single Assembly (Unvented	Main	0	Blown	568 ft²	0	Metal

WALLS

√	#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
	1	N=>NE	Exterior	Frame - Steel	Main	12	24		8		192.0 ft²		0.23	0.75	0
	2	E=>SE	Garage	Frame - Steel	Main	12	10		8		80.0 ft²		0.23	0.75	0
	3	E=>SE	Exterior	Frame - Steel	Main	12	25		12		300.0 ft²		0.23	0.75	0
	4	S=>SW	Exterior	Frame - Steel	Main	12	24		13.5		324.0 ft²		0.23	0.75	0
	5	W=>NW	Exterior	Frame - Steel	Main	12	25		12		300.0 ft²		0.23	0.75	0
	6	W=>NW	Exterior	Frame - Steel	Main	12	10		8		80.0 ft²		0.23	0.75	0
	7	N=>NE	Exterior	Frame - Steel	loft	12	24		5.5		132.0 ft²		0.23	0.75	0
	8	E=>SE	Garage	Frame - Steel	loft	12	10		4		40.0 ft²		0.23	0.75	0
	9	W=>NW	Garage	Frame - Steel	loft	12	10		4		40.0 ft²		0.23	0.75	0

DOORS

√	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
	1	E=>SE	Insulated	Main	None	.4	1		6	8	6.7 ft²
	2	S=>SW	Insulated	Main	None	.4	2		10		20 ft²
	3	W=>NW	Insulated	Main	None	.4	1		6	8	6.7 ft²

WINDOWS

Orientation shown is the entered orientation (=>) changed to Worst Case.

√	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Area	Overhang Depth	Overhang Separation	Int Shade	Screening
	1	N=>NE	1	Metal	Low-E Double	Yes	0.35	0.25	N	8.0 ft²	1 ft 0 in	8 ft 0 in	None	None
	2	E=>SE	3	Metal	Low-E Double	Yes	0.35	0.25	N	18.0 ft²	13 ft 0 in	3 ft 0 in	None	None
	3	E=>SE	3	Metal	Low-E Double	Yes	0.35	0.25	N	13.3 ft²	13 ft 0 in	3 ft 0 in	None	None
	4	S=>SW	4	Metal	Low-E Double	Yes	0.35	0.25	N	100.0 ft²	1 ft 0 in	5 ft 0 in	None	None
	5	W=>NW	5	Metal	Low-E Double	Yes	0.35	0.25	N	13.3 ft²	13 ft 0 in	4 ft 0 in	None	None
	6	W=>NW	5	Metal	Low-E Double	Yes	0.35	0.25	N	20.0 ft²	13 ft 0 in	4 ft 0 in	None	None

GARAGE

√	#	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
	1	240 ft²	240 ft²	68 ft	12 ft	1

FORM R405-2017

INPUT SUMMARY CHECKLIST REPORT

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000447	1323	72.63	136.59	.4506	7

HEATING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Block	Ducts
_____	1	Window/Wall Heat Pump/	None	HSPF:8	27 kBtu/hr	1	Ductless

COOLING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
_____	1	PTAC and Room Unit/	Split	EER: 14	27 kBtu/hr	810 cfm	0.75	1	Ductless

HOT WATER SYSTEM

√	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
_____	1	Electric	None	Garage	0.95	40 gal	40 gal	120 deg	None

SOLAR HOT WATER SYSTEM

√	FSEC Cert #	Company Name	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
_____	None	None			ft²		

TEMPERATURES

Programable Thermostat: Y

Ceiling Fans:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cooling	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[X]	[X]	[ ]	[ ]	[ ]
Heating	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]
Venting	[ ]	[ ]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[ ]

Thermostat Schedule: HERS 2006 Reference

Schedule Type		Hours 1	2	3	4	5	6	7	8	9	10	11	12
Cooling (WD)	AM	78	78	78	78	78	78	78	78	80	80	80	80
	PM	80	80	78	78	78	78	78	78	78	78	78	78
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78
	PM	78	78	78	78	78	78	78	78	78	78	78	78
Heating (WD)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66
Heating (WEH)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66

MASS

Mass Type	Area	Thickness	Furniture Fraction	Space
Default(8 lbs/sq.ft.	0 ft²	0 ft	0.3	Main
Default(8 lbs/sq.ft.	0 ft²	0 ft	0.3	loft

Name: no

Signature: _____

Rating Compant: no

Date: _____

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 93

The lower the Energy Performance Index, the more efficient the home.

1. New home or, addition	1. New (From Plans)
2. Single-family or multiple-family	2. Single-family
3. No. of units (if multiple-family)	3. 1
4. Number of bedrooms	4. 1
5. Is this a worst case? (yes/no)	5. Yes
6. Conditioned floor area (sq. ft.)	6. 1128
7. Windows, type and area	
a) U-factor:(weighted average)	7a. 0.350
b) Solar Heat Gain Coefficient (SHGC)	7b. 0.250
c) Area	7c. 172.7
8. Skylights	
a) U-factor:(weighted average)	8a. NA
b) Solar Heat Gain Coefficient (SHGC)	8b. NA
9. Floor type, insulation level:	
a) Slab-on-grade (R-value)	9a. 0.0
b) Wood, raised (R-value)	9b.
c) Concrete, raised (R-value)	9c.
10. Wall type and insulation:	
A. Exterior:	
1. Wood frame (Insulation R-value)	10A1. 12.0
2. Masonry (Insulation R-value)	10A2.
B. Adjacent:	
1. Wood frame (Insulation R-value)	10B1. 12.0
2. Masonry (Insulation R-value)	10B2.
11. Ceiling type and insulation level	
a) Under attic	11a.
b) Single assembly	11b. 0.0
c) Knee walls/skylight walls	11c.
d) Radiant barrier installed	11d. No

12. Ducts, location & insulation level	
a) Supply ducts	R
b) Return ducts	R
c) AHU location	
13. Cooling system:	Capacity 27.0
a) Split system	SEER
b) Single package	SEER
c) Ground/water source	SEER/COP
d) Room unit/PTAC	EER 14.0
e) Other	
14. Heating system:	Capacity 27.0
a) Split system heat pump	HSPF
b) Single package heat pump	HSPF
c) Electric resistance	COP
d) Gas furnace, natural gas	AFUE
e) Gas furnace, LPG	AFUE
f) Other	8.00
15. Water heating system	
a) Electric resistance	EF 0.95
b) Gas fired, natural gas	EF
c) Gas fired, LPG	EF
d) Solar system with tank	EF
e) Dedicated heat pump with tank	EF
f) Heat recovery unit	HeatRec%
g) Other	
16. HVAC credits claimed (Performance Method)	
a) Ceiling fans	
b) Cross ventilation	No
c) Whole house fan	No
d) Multizone cooling credit	
e) Multizone heating credit	
f) Programmable thermostat	Yes

*Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

I certify that this home has complied with the Florida Building Code, Energy Conservation, through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL display card will be completed based on installed code compliant features.

Builder Signature: _____ Date: _____

Address of New Home: _____ City/FL Zip: Lake City, FL

Florida Building Code, Energy Conservation, 6th Edition (2017)
Mandatory Requirements for Residential Performance, Prescriptive and ERI Methods

ADDRESS:	Permit Number:
Lake City , FL ,	

MANDATORY REQUIREMENTS See individual code sections for full details.

√

SECTION R401 GENERAL

☐ **R401.3 Energy Performance Level (EPL) display card (Mandatory).** The building official shall require that an energy performance level (EPL) display card be completed and certified by the builder to be accurate and correct before final approval of the building for occupancy. Florida law (Section 553.9085, Florida Statutes) requires the EPL display card to be included as an addendum to each sales contract for both presold and nonpresold residential buildings. The EPL display card contains information indicating the energy performance level and efficiencies of components installed in a dwelling unit. The building official shall verify that the EPL display card completed and signed by the builder accurately reflects the plans and specifications submitted to demonstrate code compliance for the building. A copy of the EPL display card can be found in Appendix RD.

☐ **R402.4 Air leakage (Mandatory).** The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.5.

Exception: Dwelling units of R-2 Occupancies and multiple attached single family dwellings shall be permitted to comply with Section C402.5.

☐ **R402.4.1 Building thermal envelope.** The building thermal envelope shall comply with Sections R402.4.1.1 and R402.4.1.2. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.

☐ **R402.4.1.1 Installation.** The components of the building thermal envelope as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table R402.4.1.1, as applicable to the method of construction. Where required by the code official, an approved third party shall inspect all components and verify compliance.

☐ **R402.4.1.2 Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding seven air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8. Testing shall be conducted in accordance with ANSI/RESNET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7), Florida Statutes, or individuals licensed as set forth in Section 489.105(3)(f), (g) or (i) or an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

Exception: Testing is not required for additions, alterations, renovations, or repairs, of the building thermal envelope of existing buildings in which the new construction is less than 85 percent of the building thermal envelope.

During testing:
1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

☐ **R402.4.2 Fireplaces.** New wood-burning fireplaces shall have tight-fitting flue dampers or doors, and outdoor combustion air. Where using tight-fitting doors on factory-built fireplaces listed and labeled in accordance with UL 127, the doors shall be tested and listed for the fireplace. Where using tight-fitting doors on masonry fireplaces, the doors shall be listed and labeled in accordance with UL 907.

☐ **R402.4.3 Fenestration air leakage.** Windows, skylights and sliding glass doors shall have an air infiltration rate of no more than 0.3 cfm per square foot (1.5 L/s/m2), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m2), when tested according to NFRC 400 or AAMA/ WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled by the manufacturer.

Exception: Site-built windows, skylights and doors.

MANDATORY REQUIREMENTS - (Continued)

☐ **R402.4.4 Rooms containing fuel-burning appliances.** In Climate Zones 3 through 8, where open combustion air ducts provide combustion air to open combustion fuel burning appliances, the appliances and combustion air opening shall be located outside the building thermal envelope or enclosed in a room, isolated from inside the thermal envelope. Such rooms shall be sealed and insulated in accordance with the envelope requirements of Table R402.1.2, where the walls, floors and ceilings shall meet not less than the basement wall R-value requirement. The door into the room shall be fully gasketed and any water lines and ducts in the room insulated in accordance with Section R403. The combustion air duct shall be insulated where it passes through conditioned space to a minimum of R-8.

Exceptions:

1. Direct vent appliances with both intake and exhaust pipes installed continuous to the outside.
2. Fireplaces and stoves complying with Section R402.4.2 and Section R1006 of the Florida Building Code, Residential.

☐ **R402.4.5 Recessed lighting.** Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires shall be IC-rated and labeled as having an air leakage rate not more than 2.0 cfm (0.944 L/s) when tested in accordance with ASTM E283 at a 1.57 psf (75 Pa) pressure differential. All recessed luminaires shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.

SECTION R403 SYSTEMS

R403.1 Controls.

☐ **R403.1.1 Thermostat provision (Mandatory).** At least one thermostat shall be provided for each separate heating and cooling system.

☐ **R403.1.3 Heat pump supplementary heat (Mandatory).** Heat pumps having supplementary electric-resistance heat shall have controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can meet the heating load.

☐ **R403.3.2 Sealing (Mandatory)** All ducts, air handlers, filter boxes and building cavities that form the primary air containment passageways for air distribution systems shall be considered ducts or plenum chambers, shall be constructed and sealed in accordance with Section C403.2.9.2 of the Commercial Provisions of this code and shall be shown to meet duct tightness criteria below.

Duct tightness shall be verified by testing in accordance with ANSI/RESNET/ICC 380 by either individuals as defined in Section 553.993(5) or (7), Florida Statutes, or individuals licensed as set forth in Section 489.105(3)(f), (g) or (i), Florida Statutes, to be "substantially leak free" in accordance with Section R403.3.3.

☐ **R403.3.2.1 Sealed air handler.** Air handlers shall have a manufacturer's designation for an air leakage of no more than 2 percent of the design airflow rate when tested in accordance with ASHRAE 193.

☐ **R403.3.3 Duct testing (Mandatory).** Ducts shall be pressure tested to determine air leakage by one of the following methods:

1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the mai air handler enclosure if installed at the time of the test. All registers shall be taped or otherwise sealed during the test.
2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

Exceptions:

1. A duct air leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope.
2. Duct testing is not mandatory for buildings complying by Section 405 of this code.

A written report of the results of the test shall be signed by the party conducting the test and provided to the code official.

☐ **R403.3.5 Building cavities (Mandatory).** Building framing cavities shall not be used as ducts or plenums.

☐ **R403.4 Mechanical system piping insulation (Mandatory).** Mechanical system piping capable of carrying fluids above 105°F (41°C) or below 55°F (13°C) shall be insulated to a minimum of R-3.

☐ **R403.4.1 Protection of piping insulation.** Piping insulation exposed to weather shall be protected from damage, including that caused by sunlight, moisture, equipment maintenance and wind, and shall provide shielding from solar radiation that can cause degradation of the material. Adhesive tape shall not be permitted.

☐ **R403.5.1 Heated water circulation and temperature maintenance systems (Mandatory)** Heated water circulation systems shall be in accordance with Section R403.5.1.1. Heat trace temperature maintenance systems shall be in accordance with Section R403.5.1.2. Automatic controls, temperature sensors and pumps shall be accessible. Manual controls shall be readily accessible.

☐ **R403.5.1.1 Circulation systems.** Heated water circulation systems shall be provided with a circulation pump. The system return pipe shall be a dedicated return pipe or a cold water supply pipe. Gravity and thermosiphon circulation systems shall be prohibited. Controls for circulating hot water system pumps shall start the pump based on the identification of a demand for hot water within the occupancy. The controls shall automatically turn off the pump when the water in the circulation loop is at the desired temperature and when there is no demand for hot water.

☐ **R403.5.1.2 Heat trace systems.** Electric heat trace systems shall comply with IEEE 515.1 or UL 515. Controls for such systems shall automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping in accordance with the times when heated water is used in the occupancy.

MANDATORY REQUIREMENTS - (Continued)

☐ **R403.5.5 Heat traps (Mandatory).** Storage water heaters not equipped with integral heat traps and having vertical pipe risers shall have heat traps installed on both the inlets and outlets. External heat traps shall consist of either a commercially available heat trap or a downward and upward bend of at least 3 ½ inches (89 mm) in the hot water distribution line and cold water line located as close as possible to the storage tank.

R403.5.6 Water heater efficiencies (Mandatory).

☐ **R403.5.6.1.1 Automatic controls.** Service water-heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use. The minimum temperature setting range shall be from 100°F to 140°F (38°C to 60°C).

☐ **R403.5.6.1.2 Shut down.** A separate switch or a clearly marked circuit breaker shall be provided to permit the power supplied to electric service systems to be turned off. A separate valve shall be provided to permit the energy supplied to the main burner(s) of combustion types of service water-heating systems to be turned off.

☐ **R403.5.6.2 Water-heating equipment.** Water-heating equipment installed in residential units shall meet the minimum efficiencies of Table C404.2 in Chapter 4 of the Florida Building Code, Energy Conservation, Commercial Provisions, for the type of equipment installed. Equipment used to provide heating functions as part of a combination system shall satisfy all stated requirements for the appropriate water-heating category. Solar water heaters shall meet the criteria of Section R403.5.6.2.1.

☐ **R403.5.6.2.1 Solar water-heating systems.** Solar systems for domestic hot water production are rated by the annual solar energy factor of the system. The solar energy factor of a system shall be determined from the Florida Solar Energy Center Directory of Certified Solar Systems. Solar collectors shall be tested in accordance with ISO Standard 9806, Test Methods for Solar Collectors, and SRCC Standard TM-1, Solar Domestic Hot Water System and Component Test Protocol. Collectors in installed solar water-heating systems should meet the following criteria:

1. Be installed with a tilt angle between 10 degrees and 40 degrees of the horizontal; and
2. Be installed at an orientation within 45 degrees of true south.

☐ **R403.6 Mechanical ventilation (Mandatory).** The building shall be provided with ventilation that meets the requirements of the Florida Building Code, Residential, or Florida Building Code, Mechanical, as applicable, or with other approved means of ventilation including: Natural, Infiltration or Mechanical means. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

☐ **R403.6.1 Whole-house mechanical ventilation system fan efficacy.** When installed to function as a whole-house mechanical ventilation system, fans shall meet the efficacy requirements of Table R403.6.1.

Exception: Where whole-house mechanical ventilation fans are integral to tested and listed HVAC equipment, they shall be powered by an electronically commutated motor.

☐ **R403.6.2 Ventilation air.** Residential buildings designed to be operated at a positive indoor pressure or for mechanical ventilation shall meet the following criteria:

1. The design air change per hour minimums for residential buildings in ASHRAE 62.2, Ventilation for Acceptable Indoor Air Quality, shall be the maximum rates allowed for residential applications.
2. No ventilation or air-conditioning system make-up air shall be provided to conditioned space from attics, crawlspaces, attached enclosed garages or outdoor spaces adjacent to swimming pools or spas.
3. If ventilation air is drawn from enclosed space(s), then the walls of the space(s) from which air is drawn shall be insulated to a minimum of R-11 and the ceiling shall be insulated to a minimum of R-19, space permitting, or R-10 otherwise.

R403.7 Heating and cooling equipment (Mandatory).

☐ **R403.7.1 Equipment sizing.** Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on the equipment loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies, based on building loads for the directional orientation of the building. The manufacturer and model number of the outdoor and indoor units (if split system) shall be submitted along with the sensible and total cooling capacities at the design conditions described in Section R302.1. This Code does not allow designer safety factors, provisions for future expansion or other factors that affect equipment sizing. System sizing calculations shall not include loads created by local intermittent mechanical ventilation such as standard kitchen and bathroom exhaust systems. New or replacement heating and cooling equipment shall have an efficiency rating equal to or greater than the minimum required by federal law for the geographic location where the equipment is installed.

TABLE R403.6.1
WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM FAN EFFICACY

FAN LOCATION	AIRFLOW RATE MINIMUM (CFM)	MINIMUM EFFICACY [a] (CFM/WATT)	AIRFLOW RATE MAXIMUM (CFM)
Range hoods	Any	2.8 cfm/watt	Any
In-line fan	Any	2.8 cfm/watt	Any
Bathroom, utility room	10	1.4 cfm/watt	<90
Bathroom, utility room	90	2.8 cfm/watt	Any

For SI: 1 cfm = 28.3 L/min.

a. When tested in accordance with HVI Standard 916

MANDATORY REQUIREMENTS - (Continued)

☐ **R403.7.1.1 Cooling equipment capacity.** Cooling only equipment shall be selected so that its total capacity is not less than the calculated total load but not more than 1.15 times greater than the total load calculated according to the procedure selected in Section 403.7, or the closest available size provided by the manufacturer's product lines. The corresponding latent capacity of the equipment shall not be less than the calculated latent load.

The published value for AHRI total capacity is a nominal, rating-test value and shall not be used for equipment sizing. Manufacturer's expanded performance data shall be used to select cooling-only equipment. This selection shall be based on the outdoor design dry-bulb temperature for the load calculation (or entering water temperature for water-source equipment), the blower CFM provided by the expanded performance data, the design value for entering wet-bulb temperature and the design value for entering dry-bulb temperature.

Design values for entering wet-bulb and dry-bulb temperatures shall be for the indoor dry bulb and relative humidity used for the load calculation and shall be adjusted for return side gains if the return duct(s) is installed in an unconditioned space.

Exceptions:

1. Attached single- and multiple-family residential equipment sizing may be selected so that its cooling capacity is less than the calculated total sensible load but not less than 80 percent of that load.
2. When signed and sealed by a Florida-registered engineer, in attached single- and multiple-family units, the capacity of equipment may be sized in accordance with good design practice.

R403.7.1.2 Heating equipment capacity.

☐ **R403.7.1.2.1 Heat pumps.** Heat pump sizing shall be based on the cooling requirements as calculated according to Section R403.7.1.1, and the heat pump total cooling capacity shall not be more than 1.15 times greater than the design cooling load even if the design heating load is 1.15 times greater than the design cooling load.

☐ **R403.7.1.2.2 Electric resistance furnaces.** Electric resistance furnaces shall be sized within 4 kW of the design requirements calculated according to the procedure selected in Section R403.7.1.

☐ **R403.7.1.2.3 Fossil fuel heating equipment.** The capacity of fossil fuel heating equipment with natural draft atmospheric burners shall not be less than the design load calculated in accordance with Section R403.7.1.

☐ **R403.7.1.3 Extra capacity required for special occasions.** Residences requiring excess cooling or heating equipment capacity on an intermittent basis, such as anticipated additional loads caused by major entertainment events, shall have equipment sized or controlled to prevent continuous space cooling or heating within that space by one or more of the following options:

1. A separate cooling or heating system is utilized to provide cooling or heating to the major entertainment areas.
2. A variable capacity system sized for optimum performance during base load periods is utilized.

☐ **R403.8 Systems serving multiple dwelling units (Mandatory).** Systems serving multiple dwelling units shall comply with Sections C403 and C404 of the IECC—Commercial Provisions in lieu of Section R403.

☐ **R403.9 Snow melt and ice system controls (Mandatory)** Snow- and ice-melting systems, supplied through energy service to the building, shall include automatic controls capable of shutting off the system when the pavement temperature is above 50°F (10°C), and no precipitation is falling and an automatic or manual control that will allow shutoff when the outdoor temperature is above 40°F (4.8°C).

☐ **R403.10 Pools and permanent spa energy consumption (Mandatory).** The energy consumption of pools and permanent spas shall be in accordance with Sections R403.10.1 through R403.10.5.

☐ **R403.10.1 Heaters.** The electric power to heaters shall be controlled by a readily accessible on-off switch that is an integral part of the heater mounted on the exterior of the heater, or external to and within 3 feet (914 mm) of the heater. Operation of such switch shall not change the setting of the heater thermostat. Such switches shall be in addition to a circuit breaker for the power to the heater. Gas-fired heaters shall not be equipped with continuously burning ignition pilots.

☐ **R403.10.2 Time switches.** Time switches or other control methods that can automatically turn off and on according to a preset schedule shall be installed for heaters and pump motors. Heaters and pump motors that have built-in time switches shall be in compliance with this section.

Exceptions:

1. Where public health standards require 24-hour pump operation.
2. Pumps that operate solar- and waste-heat-recovery pool heating systems.
3. Where pumps are powered exclusively from on-site renewable generation.

☐ **R403.10.3 Covers.** Outdoor heated swimming pools and outdoor permanent spas shall be equipped with a vapor-retardant cover on or at the water surface or a liquid cover or other means proven to reduce heat loss.

Exception: Where more than 70 percent of the energy for heating, computed over an operation season, is from site-recovered energy, such as from a heat pump or solar energy source, covers or other vapor-retardant means shall not be required.

☐ **R403.10.4 Gas- and oil-fired pool and spa heaters.** All gas- and oil-fired pool and spa heaters shall have a minimum thermal efficiency of 82 percent for heaters manufactured on or after April 16, 2013, when tested in accordance with ANSI Z 21.56. Pool heaters fired by natural or LP gas shall not have continuously burning pilot lights.

☐ **R403.10.5 Heat pump pool heaters.** Heat pump pool heaters shall have a minimum COP of 4.0 when tested in accordance with AHRI 1160, Table 2, Standard Rating Conditions-Low Air Temperature. A test report from an independent laboratory is required to verify procedure compliance. Geothermal swimming pool heat pumps are not required to meet this standard.

☐ **R403.11 Portable spas (Mandatory).** The energy consumption of electric-powered portable spas shall be controlled by the requirements of APSP-14.

SECTION R404

ELECTRICAL POWER AND LIGHTING SYSTEMS

☐ **R404.1 Lighting equipment (Mandatory).** Not less than 75 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps or not less than 75 percent of the permanently installed lighting fixtures shall contain only high-efficacy lamps.

Exception: Low-voltage lighting.

R404.1.1 Lighting equipment (Mandatory) Fuel gas lighting systems shall not have continuously burning pilot lights.

2017 - AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA

TABLE 402.4.1.1
AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA

				CHECK
Project Name:	190122 Mowry	Builder Name:		
Street:		Permit Office:		
City, State, Zip:	Lake City , FL ,	Permit Number:		
Owner:	Mowry Res.	Jurisdiction:		
Design Location:	FL, Gainesville			

COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA	
General requirements	A continuous air barrier shall be installed in the building envelope. The exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed.	Air-permeable insulation shall not be used as a sealing material.	
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier shall be sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.	
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of R-3 per inch minimum. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.	
Windows, skylights and doors	The space between window/door jambs and framing, and skylights and framing shall be sealed.		
Rim joists	Rim joists shall include the air barrier.	Rim joists shall be insulated.	
Floors (including above-garage and cantilevered floors)	The air barrier shall be installed at any exposed edge of insulation.	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking, or floor framing cavity insulation shall be permitted to be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.	
Crawl space walls	Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	Where provided instead of floor insulation, insulation shall be permanently attached to the crawlspace	
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.		
Narrow cavities		Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity spaces.	
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.		
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be sealed to the drywall.	Recessed light fixtures installed in the building thermal envelope shall be air tight and IC rated.	
Plumbing and wiring		Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.	
Shower/tub on exterior wall	The air barrier installed at exterior walls adjacent to showers and tubs shall separate them from the showers and tubs.	Exterior walls adjacent to showers and tubs shall be insulated.	
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.		
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the sub-floor or drywall.		
Concealed sprinklers	When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.		

a. In addition, inspection of log walls shall be in accordance with the provisions of ICC-400.

Envelope Leakage Test Report (Blower Door Test)

Residential Prescriptive, Performance or ERI Method Compliance
2017 Florida Building Code, Energy Conservation, 6th Edition

Jurisdiction:	Permit #:

Job Information

Builder:	Community:	Lot: NA
Address:		
City: Lake City	State: FL	Zip:

Air Leakage Test Results *Passing results must meet either the Performance, Prescriptive, or ERI Method*

○ **PRESCRIPTIVE METHOD**-The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 7 air changes per hour at a pressure of 0.2 inch w.g. (50 Pascals) in Climate Zones 1 and 2.

○ **PERFORMANCE or ERI METHOD**-The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding the selected ACH(50) value, as shown on Form R405-2017 (Performance) or R406-2017 (ERI), section labeled as infiltration, sub-section ACH50.

ACH(50) specified on Form R405-2017-Energy Calc (Performance) or R406-2017 (ERI): 7.000

_____ x 60 ÷ 11340 = _____
CFM(50) Building Volume ACH(50)

☐ **PASS**

☐ When ACH(50) is less than 3, Mechanical Ventilation installation must be verified by building department.

Method for calculating building volume:

○ Retrieved from architectural plans

● Code software calculated

○ Field measured and calculated

R402.4.1.2 Testing. Testing shall be conducted in accordance with ANSI/RESNET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7), *Florida Statues.*or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i) or an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the*code official.* Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope.*

During testing:
1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, back draft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

Testing Company

Company Name: _____ Phone: _____

I hereby verify that the above Air Leakage results are in accordance with the 2017 6th Edition Florida Building Code Energy Conservation requirements according to the compliance method selected above.

Signature of Tester: _____ Date of Test: _____

Printed Name of Tester: _____

License/Certification #: _____ Issuing Authority: _____

Residential System Sizing Calculation

Summary

Mowry Res.

Lake City, FL

Project Title:
190122 Mowry

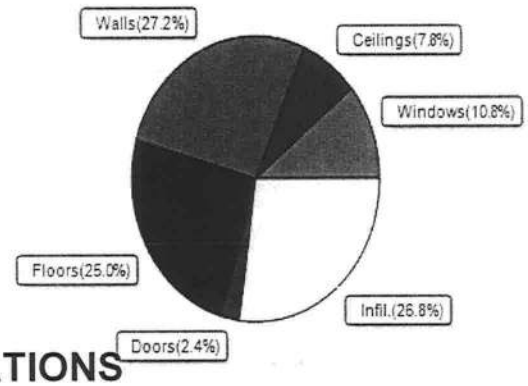
2019-01-31

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)						
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(51gr.)						
Winter design temperature(TMY3 99%)	30	F		Summer design temperature(TMY3 99%)	94	F
Winter setpoint	70	F		Summer setpoint	75	F
Winter temperature difference	40	F		Summer temperature difference	19	F
Total heating load calculation	**22292**	**Btuh**		**Total cooling load calculation**	**22706**	**Btuh**
Submitted heating capacity	% of calc	Btuh		Submitted cooling capacity	% of calc	Btuh
Total (Window/Wall Heat Pump)	121.1	27000		Sensible (SHR = 0.75)	112.6	20250
Heat Pump + Auxiliary(0.0kW)	121.1	27000		Latent	142.8	6750
				Total (Window/Wall Heat Pump)	118.9	27000

WINTER CALCULATIONS

Winter Heating Load (for 1128 sqft)

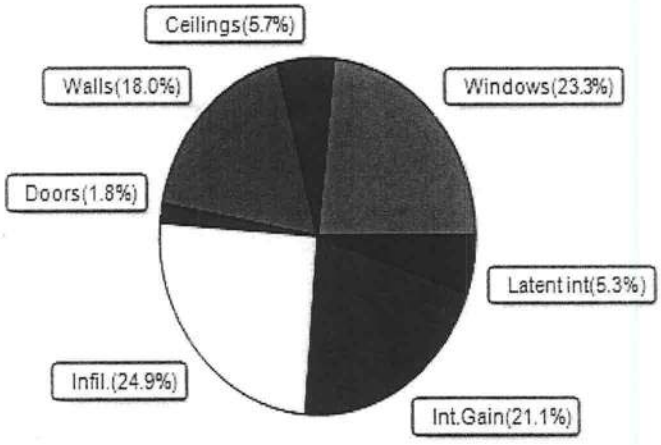
Load component			Load	
Window total	173	sqft	2417	Btuh
Wall total	1282	sqft	6069	Btuh
Door total	33	sqft	533	Btuh
Ceiling total	864	sqft	1737	Btuh
Floor total	See detail report		5570	Btuh
Infiltration	136	cfm	5967	Btuh
Duct loss			0	Btuh
Subtotal			**22292**	**Btuh**
Ventilation	0	cfm	0	Btuh
TOTAL HEAT LOSS			**22292**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 1128 sqft)

Load component			Load	
Window total	173	sqft	5280	Btuh
Wall total	1282	sqft	4091	Btuh
Door total	33	sqft	400	Btuh
Ceiling total	864	sqft	1303	Btuh
Floor total			0	Btuh
Infiltration	102	cfm	2126	Btuh
Internal gain			4780	Btuh
Duct gain			0	Btuh
Sens. Ventilation	0	cfm	0	Btuh
Blower Load			0	Btuh
Total sensible gain			**17979**	**Btuh**
Latent gain(ducts)			0	Btuh
Latent gain(infiltration)			3527	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			1200	Btuh
Total latent gain			**4727**	**Btuh**
TOTAL HEAT GAIN			**22706**	**Btuh**



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EnergyGauge® System Sizing
PREPARED BY: Evan Beamsley
DATE: 2019-01-31

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Mowry Res.

Lake City, FL

Project Title:
190122 Mowry
Building Type: User

2019-01-31

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 F (TMY3 99%)
This calculation is for Worst Case. The house has been rotated 90 degrees.

Component Loads for Whole House

Window	Panes/Type	Frame	U	Orientation	Area(sqft) X	HTM=	Load
1	2, NFRC 0.25	Metal	0.35	E	8.0	14.0	112 Btuh
2	2, NFRC 0.25	Metal	0.35	S	18.0	14.0	252 Btuh
3	2, NFRC 0.25	Metal	0.35	S	13.3	14.0	187 Btuh
4	2, NFRC 0.25	Metal	0.35	W	100.0	14.0	1400 Btuh
5	2, NFRC 0.25	Metal	0.35	N	13.3	14.0	187 Btuh
6	2, NFRC 0.25	Metal	0.35	N	20.0	14.0	280 Btuh
	Window Total				172.7(sqft)		2417 Btuh

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Steel	- Ext	(0.118)	12.0/0.0	184	4.73	871 Btuh
2	Frame - Steel	- Adj	(0.118)	12.0/0.0	80	4.73	379 Btuh
3	Frame - Steel	- Ext	(0.118)	12.0/0.0	262	4.73	1240 Btuh
4	Frame - Steel	- Ext	(0.118)	12.0/0.0	204	4.73	966 Btuh
5	Frame - Steel	- Ext	(0.118)	12.0/0.0	260	4.73	1231 Btuh
6	Frame - Steel	- Ext	(0.118)	12.0/0.0	80	4.73	379 Btuh
7	Frame - Steel	- Ext	(0.118)	12.0/0.0	132	4.73	625 Btuh
8	Frame - Steel	- Adj	(0.118)	12.0/0.0	40	4.73	189 Btuh
9	Frame - Steel	- Adj	(0.118)	12.0/0.0	40	4.73	189 Btuh
	Wall Total				1282(sqft)		6069 Btuh

Doors	Type	Storm	Ueff.	Area X	HTM=	Load
1	Insulated - Exterior,	n	(0.400)	7	16.0	107 Btuh
2	Insulated - Exterior,	n	(0.400)	20	16.0	320 Btuh
3	Insulated - Exterior,	n	(0.400)	7	16.0	107 Btuh
	Door Total			33(sqft)		533Btuh

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Cathedral/D/Shing	(0.050)	0.0/19.0	296	2.0	595 Btuh
2	Cathedral/D/Shing	(0.050)	0.0/19.0	568	2.0	1142 Btuh
	Ceiling Total			864(sqft)		1737Btuh

Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	118.0 ft(perim.)	47.2	5570 Btuh
2	Interior	(1.180)	0.0	288.0 sqft	0.0	0 Btuh
	Floor Total			1128 sqft		5570 Btuh

				Envelope Subtotal:		16326 Btuh

Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural		0.72	11340	1.00	136.3	5967 Btuh

Duct load	NA, R0.0, Supply(), Return()	(DLM of 0.000)	0 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Mowry Res.
Lake City, FL

Project Title:
190122 Mowry
Building Type: User

2019-01-31

All Zones		Sensible Subtotal All Zones	22292 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	22292 Btuh 0 Btuh 22292 Btuh

EQUIPMENT

1. Window/Wall Heat Pump	#	27000 Btuh

Key: Window types - NFRC (Requires U-Factor and Shading coefficient(SHGC) of glass as numerical values)
or - Glass as 'Clear' or 'Tint' (Uses U-Factor and SHGC defaults)
U - (Window U-Factor)
HTM - (ManualJ Heat Transfer Multiplier)

Version 8

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Mowry Res.

Project Title:
190122 Mowry

Lake City, FL

2019-01-31

Reference City: Gainesville, FL Temperature Difference: 19.0F(TMY3 99%) Humidity difference: 51gr.

This calculation is for Worst Case. The house has been rotated 90 degrees.

Component Loads for Whole House

Window	Type* Panes	SHGC	U	InSh	IS	Ornt	Overhang Len	Hgt	Window Area(sqft) Gross	Shaded	Unshaded	HTM Shaded	Unshaded	Load
1	2 NFRC	0.25, 0.35	No	No	E	1.0ft.	8.0ft.	8.0	0.0	8.0	12	31	246	Btuh
2	2 NFRC	0.25, 0.35	No	No	S	13.0f	3.0ft.	18.0	18.0	0.0	12	14	214	Btuh
3	2 NFRC	0.25, 0.35	No	No	S	13.0f	3.0ft.	13.3	13.3	0.0	12	14	159	Btuh
4	2 NFRC	0.25, 0.35	No	No	W	1.0ft.	5.0ft.	100.0	0.0	100.0	12	31	3075	Btuh
5	2 NFRC	0.25, 0.35	No	No	N	13.0f	4.0ft.	13.3	0.0	13.3	12	12	159	Btuh
6	2 NFRC	0.25, 0.35	No	No	N	13.0f	4.0ft.	20.0	0.0	20.0	12	12	238	Btuh
	Excursion												1188	Btuh
	Window Total								173 (sqft)				5280	Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load
1	Frame - Steel - Ext	0.12	12.0/0.0	184.0	3.3	612 Btuh
2	Frame - Steel - Adj	0.12	12.0/0.0	80.0	2.2	180 Btuh
3	Frame - Steel - Ext	0.12	12.0/0.0	262.0	3.3	871 Btuh
4	Frame - Steel - Ext	0.12	12.0/0.0	204.0	3.3	678 Btuh
5	Frame - Steel - Ext	0.12	12.0/0.0	260.0	3.3	865 Btuh
6	Frame - Steel - Ext	0.12	12.0/0.0	80.0	3.3	266 Btuh
7	Frame - Steel - Ext	0.12	12.0/0.0	132.0	3.3	439 Btuh
8	Frame - Steel - Adj	0.12	12.0/0.0	40.0	2.2	90 Btuh
9	Frame - Steel - Adj	0.12	12.0/0.0	40.0	2.2	90 Btuh
	Wall Total			1282 (sqft)		4091 Btuh

Doors	Type	Area (sqft)	HTM	Load
1	Insulated - Exterior	6.7	12.0	80 Btuh
2	Insulated - Exterior	20.0	12.0	240 Btuh
3	Insulated - Exterior	6.7	12.0	80 Btuh
	Door Total	33 (sqft)		400 Btuh

Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load
1	Cath/Sngl Assem/DarkShingle	0.050	0.0/19.0	296.0	1.51	446 Btuh
2	Cath/Sngl Assem/DarkShingle	0.050	0.0/19.0	568.0	1.51	856 Btuh
	Ceiling Total			864 (sqft)		1303 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	840 (ft-perimeter)	0.0	0 Btuh
2	Interior	0.0	288 (sqft)	0.0	0 Btuh
	Floor Total		1128.0 (sqft)		0 Btuh

		Envelope Subtotal:	11073 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Mowry Res.

Project Title: 190122 Mowry

Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL

2019-01-31

Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio		CFM=	Load	
	Natural	0.54	11340	1		102.2	2126	Btuh
Internal gain		Occupants	Btuh/occupant			Appliance	Load	
		6	X 230	+		3400	4780	Btuh
					Sensible Envelope Load:		17979	Btuh
Duct load	NA, Supply(R0.0-None), Return(R0.0-None)				(DGM of 0.000)		0	Btuh
					Sensible Load All Zones		**17979**	**Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

Mowry Res.

Project Title: 190122 Mowry

Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL

2019-01-31

WHOLE HOUSE TOTALS

	Sensible Envelope Load All Zones	**17979 Btuh**
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	**17979 Btuh**
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
Whole House	**Total sensible gain**	**17979 Btuh**
Totals for Cooling	Latent infiltration gain (for 51 gr. humidity difference)	3527 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	**4727 Btuh**
	TOTAL GAIN	**22706 Btuh**

EQUIPMENT

1. PTAC and Room Unit	#	27000 Btuh

*Key: Window types (Panes - Number and type of panes of glass)
(SHGC - Shading coefficient of glass as SHGC numerical value)
(U - Window U-Factor)
(InSh - Interior shading device: none(No), Blinds(B), Draperies(D) or Roller Shades(R))
- For Blinds: Assume medium color, half closed
For Draperies: Assume medium weave, half closed
For Roller shades: Assume translucent, half closed
(IS - Insect screen: none(N), Full(F) or Half(½))
(Ornt - compass orientation)

Version 8