

Wayne R. Dashfield, PE

421-B South Bright Leaf Blvd. Smithfield, NC 27577

(919) 934-0961

March 5, 2024

Re: Metal Building
12 Sand Creek Lane
Lillington, NC 28334

To: Harnett County Inspections

Dear Sir- Madam:

On February 21, 2024 I made an on site visit to the residence at 12 Sand Creek Lane in Lillington, NC. The purpose of the visit was to investigate the 34'x35' Metal Building with a 10' x 35' garage wide attachment that was built without obtaining a building permit. The "2018 Edition of the State of North Carolina Building Code was used for my recommendation.

Foundation

The existing foundation for this building has a turn down monolithic concrete slab. The existing 35'x44" metal building foundation satisfies the 2018 Building Codes. (See footing Detail #2 on the attached sheet)

Exterior Walls and Roof panels

The exterior walls consist of 2.25" x2.25" 12 GA tube steel spaced at 5' O.C. The roof and wall metal panels are fastened to the tube steel with #12 screws. The wall and roof panels meet the manufacture's specifications. (See Detail #3 on the attached sheet)

I will certify that the existing metal building has been constructed in accordance with the 2018 North Carolina State Building Codes. If can be of any more assistance, please feel free to contact me.

Yours truly,

Wayne R. Dashfield, PE



Wayne R. Dashfield
03/05/24

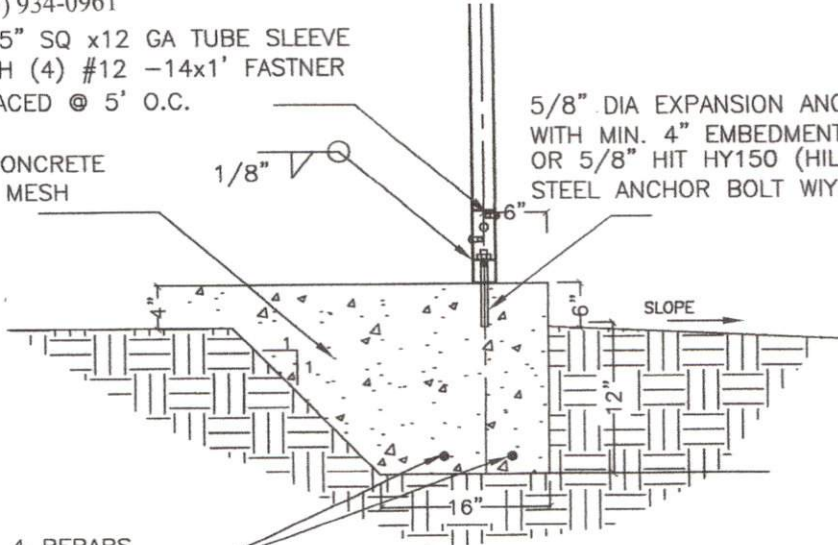
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2.25" SQ x12 GA TUBE SLEEVE
WITH (4) #12 -14x1' FASTNER
SPACED @ 5' O.C.

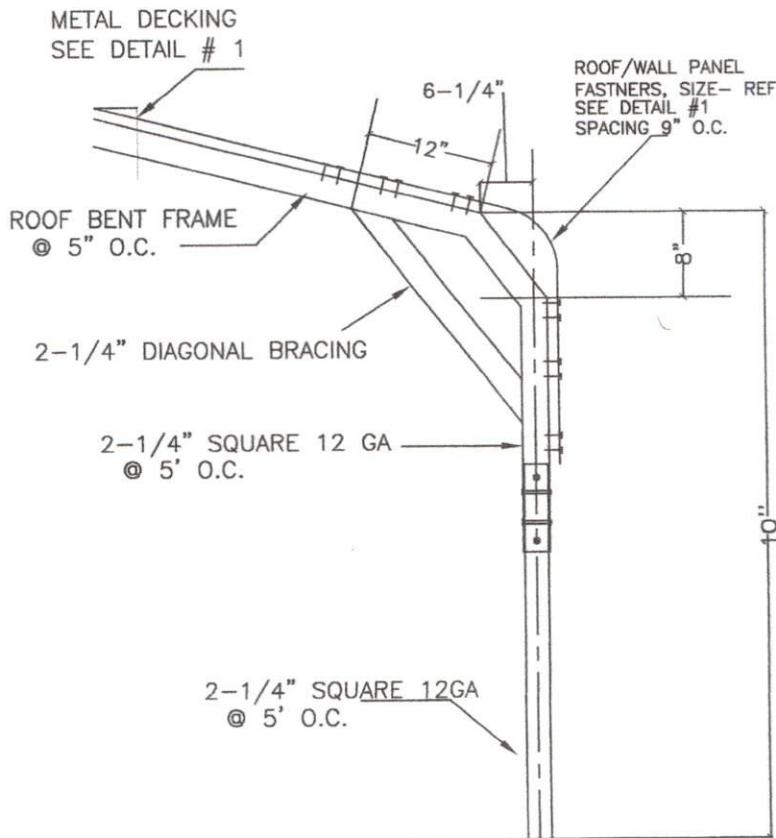
3000 PSI CONCRETE
WITH FIBER MESH



5/8" DIA EXPANSION ANCHOR BOLTS
WITH MIN. 4" EMBEDMENT @ EACH POST
OR 5/8" HIT HY150 (HILTI) EXPOXIED
STEEL ANCHOR BOLT WITH MIN4" EMBED

(2) # 4 REBARS

TYPICAL FOOTING DETAIL #2



METAL DECKING
SEE DETAIL # 1

ROOF/WALL PANEL
FASTNERS, SIZE- REF
SEE DETAIL #1
SPACING 9' O.C.

ROOF BENT FRAME
@ 5' O.C.

2-1/4" DIAGONAL BRACING

2-1/4" SQUARE 12 GA
@ 5' O.C.

2-1/4" SQUARE 12GA
@ 5' O.C.

DETAIL #3

SCALE: NST

SCALE NTS



03/05/24

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TYPICAL STRUCTURAL DESIGN

DESIGN LOADS

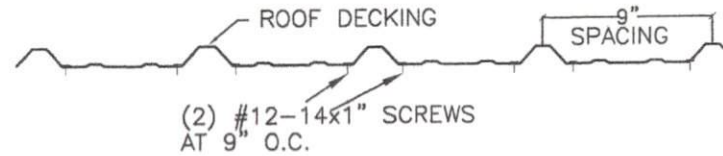
Importance Factors: Wind (Iw) 1.0
 Snow (Is) 1.0
 Seismic (Ie) 1.0

Live Loads: Roof 20 psf
 Mezzanine N/A psf
 Floor 100 psf

Snow Load: 10 psf

Wind Load: Basic Wind Speed 120 mph (ASCE-7-98)
 Exposure Category B
 Wind Base Shears (for MWFRS) $V_x = 1.6 K$ $V_y = 1.4 K$

TYPICAL ROOF AND CEILING DECKING



DECKING ATTACHED TO BEAMS IN ACCORDANCE TO MANUFACTORY'S SPECIFICATIONS
 DECKING HAS A MINIMUM CAPACITY OF 20 LBS. /SQ. FT.

DETAIL # 1

SCALE : NOT TO SCALE

NOTE:

DIMENSIONS MAY VARY

SEISMIC DESIGN CATEGORY A

Compliance with Section 1616.4 only? Yes No

SEISMIC DESIGN CATEGORY B, C, & D

Provide the following Seismic Design Parameters

Seismic Use Group I
 Spectral Response Acceleration $S_s = 0.2120$ $S_1 = 0.0997$
 Site Classification B

Basic structural system (check one)

Bearing Wall Dual w / Special Moment Frame
 Building Frame Dual w / Intermediate R/C or Special Steel
 Moment Frame Inverted Pendulum

Seismic base shear $V_x = 1.2K$ $V_y = 0.59 K$

Analysis Procedure Simplified Equivalent Lateral Force

Architectural, Mechanical, Components anchored? YES

LATERAL DESIGN CONTROL: Earthquake Wind

SOIL BEARING CAPACITIES:

Field Test (provide copy of test report) N/A psf
 Presumptive Bearing capacity 2000 psf
 Pile size, type, and capacity N/A

STRUCTURAL NOTES

- ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL SYSTEMS AND COMPONENTS INCLUDING ROOF SYSTEMS, FLOORS, WALLS, BEAMS AND HEADERS, COLUMNS, CANTILEVERS, OFFSET LOAD BEARING WALLS, PIER & GIRDER SYSTEM AND FOUNDATIONS.
 - ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE 2018 EDITION OF THE "INTERNATIONAL BUILDING CODE PLUS ALL LOCAL CODES AND REGULATIONS.
 - DESIGN LOADS

	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (DL+LL)
FLOOR (PRIMARY DWELLING)	100	20	N/A
ROOF	20	10	L/240
WIND	33.8 (BASED ON 120 MPH WIND VELOCITY)		
 - ALLOWABLE SOIL PRESSURE = 2000 PSF.
 - CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF 4-INCHES UNLESS OTHER WISE NOTED (UNO)
- ALL BEAMS, GIRDERS SHALL HAVE A MINIMUM BEARING LENGTH OF 1-3/4-INCHES.
 ALL STRUCTURAL TUBING SHALL BE GRADE B TUBING AND SHALL COMPLY TO ASTM A500 STANDARDS



Handwritten signature and date: *Wayne R. Dashfield* 03/5/24