

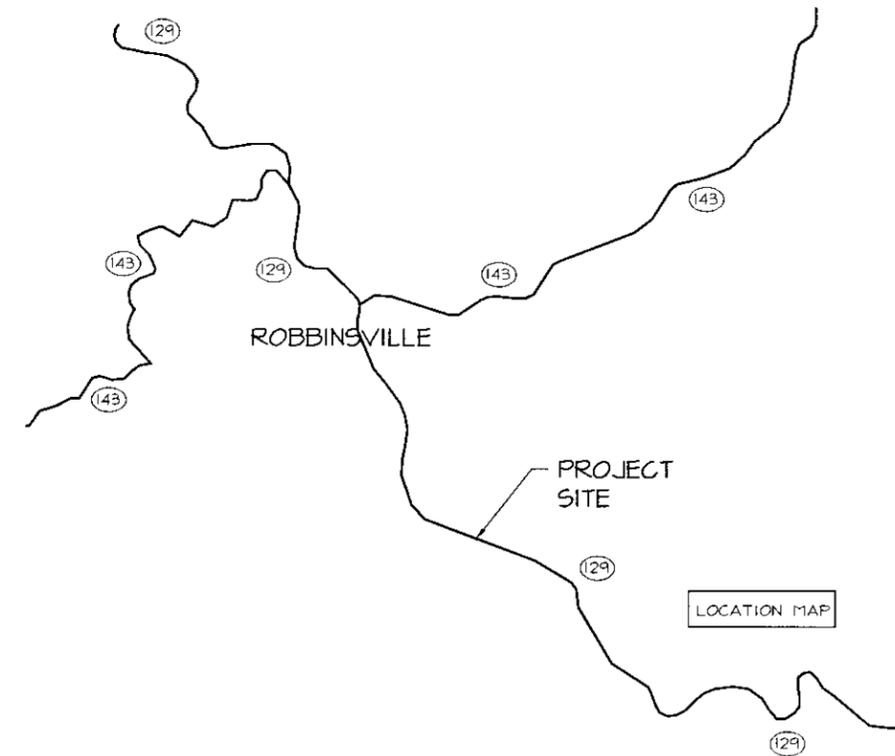
# THREE BAY SALT STORAGE BUILDING

**SCO ID# 12-09423-01A**  
**HIGHWAY DIVISION 14, NCDOT**  
**GRAHAM COUNTY, NC**



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**FACILITIES DESIGN**  
**ARCHITECTS & ENGINEERS**  
**GENERAL SERVICES DIVISION, NCDOT**  
 1 SOUTH WILMINGTON STREET  
 919/715-0400 FAX: 919/715-0399  
 RALEIGH, NORTH CAROLINA 27601



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 HIGHWAY DIVISION 14, NCDOT  
 GRAHAM COUNTY, NORTH CAROLINA

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**T1**  
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2012 APPENDIX B  
BUILDING CODE SUMMARY

Name of Project: THREE BAY SALT STORAGE BUILDING  
 Address: 2447 TULLALAH ROAD, ROBBINSVILLE, NC 28771  
 Proposed Use: STORAGE  
 Owner or Authorized Agent: HIGHWAY DIVISION 14 Phone # 919-707-4551  
 Owned By:  STATE OF NORTH CAROLINA  City/County  Private  State  
 Code Enforcement Jurisdiction:  City  County

LEAD DESIGN PROFESSIONAL:  
 DESIGNER FIRM NAME LICENSE # TELEPHONE # E-MAIL  
 Architectural FACILITIES DESIGN, NCDOT  
 SITE "Civil"  
 Electrical  
 Plumbing  
 Mechanical  
 Sprinkler-Standpipe  
 Structural NCDOT MIKE MOUNTCASTLE 17326 (919) 707-4547 mdmountcastle@ncdot.gov

2012 EDITION OF NC CODE FOR:  New Construction  Addition  Upfit  
 EXISTING:  Reconstruction  Alteration  Repair  
 CONSTRUCTED ORIGINAL USE RENOVATED CURRENT USE

BUILDING DATA

Construction Type:  I-A  II-A  III-A  IV  V-A  
 I-B  II-B  III-B  V-B  
 Mixed construction:  No  Yes Types \_\_\_\_\_  
 Sprinklers:  No  Partial  Yes  NFPA 13  NFPA 13R  NFPA 13D  
 Standpipes:  No  Yes Class  I  II  III  Wet  Dry  
 Fire District:  No  Yes Flood Hazard Area:  No  Yes  
 Building Height: Feet 24'-6" Number of Stories 1  
 Mezzanine:  No  Yes  
 Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
1st Floor		2645	2645
TOTAL		2645	2645

ALLOWABLE AREA

Primary Occupancy:  Assembly  A-1  A-2  A-3  A-4  A-5  
 Business  Educational  Factory  F-1 Moderate  F-2 Low  
 Hazardous  H-1 Detonate  H-2 Deflagrate  H-3 Combust  H-4 Health  H-5 HPM  
 Institutional  I-1  I-2  I-3  I-4  
 Mercantile  Residential  R-1  R-2  R-3  R-4  
 Storage  S-1 Moderate  S-2 Low  High-piled  
 Utility and Miscellaneous  Parking Garage  Open  Enclosed  Repair Garage  
 Secondary Occupancy: N/A  
 Mixed Occupancy:  No  Yes Separation: \_\_\_\_\_ Hr. Exception: \_\_\_\_\_

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 503 AREA	(C) AREA FOR OPEN SPACE INCREASE	(D) AREA FOR SPRINKLER INCREASE	(E) ALLOWABLE AREA OR UNLIMITED	(F) MAXIMUM BUILDING AREA
1	Storage(S-1)	2645	9000	NOT USED	NOT USED	9000	9000

ALLOWABLE HEIGHT

TYPE:	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
II-B	Feet <u>40'</u>	Feet=H+20'= <u>N/A</u>	Feet <u>24'-6"</u>	503
Building height in feet	Feet <u>40'</u>	Feet=H+20'= <u>N/A</u>	Feet <u>24'-6"</u>	503
Building Height in Stories	Stories <u>1</u>	Stories+1= <u>N/A</u>	Stories <u>1</u>	503

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING		DETAIL & SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
		REQ'D	PROVIDED W/ REDUCT				
Structural frame, including columns, girders, & trusses	10'	0	0	-	-	-	-
Exterior walls	10'	0	0	-	-	-	-
Interior Walls and partitions	10'	0	0	-	-	-	-
Roof construction	10'	0	0	-	-	-	-

\* Indicate section number permitting reduction

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting:  No  Yes  
 Exit Signs:  No  Yes  
 Fire Alarm:  No  Yes  
 Smoke Detection Systems:  No  Yes  
 Panic Hardware:  No  Yes

EXIT REQUIREMENTS N/A

STRUCTURAL DESIGN

DESIGN LOADS:

Importance Factors: Wind ( $I_w$ ) 1.0 Live Loads: Roof 20 psf  
 Snow ( $I_s$ ) 1.0 Mezzanine N/A psf  
 Seismic ( $I_E$ ) 1.0 Floor 750 psf  
 Snow Load: 15 psf  
 Wind Load: Basic Wind Speed 90 mph (ASCE-7-05)  
 Exposure Category B  
 Wind Base Shears (for MWFRS)  $V_x =$  \_\_\_\_\_  $V_y =$  \_\_\_\_\_

SEISMIC DESIGN:

Compliance with Section 1616.4 only?  YES  NO  
 SEISMIC DESIGN CATEGORY  A  B  C  D  
 Provide the following Seismic Design Parameters:

Spectral Response Acceleration  $S_s$  47.6 %g  $S_1$  11.4 %g  
 Site Classification D  Field Test  Presumptive

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  $V_x =$  \_\_\_\_\_  $V_y =$  \_\_\_\_\_  
 Analysis Procedure \_\_\_\_\_ Simplified  Equivalent Lateral Force \_\_\_\_\_ Modal  
 Architectural, Mechanical, Components anchored? N/A

LATERAL DESIGN CONTROL: Earthquake \_\_\_\_\_ Wind

SOIL BEARING CAPACITIES: \_\_\_\_\_ psf Special Inspections Required?  Yes  No  
 Field Test (presumptive) 2000 psf

PLUMBING, ENERGY, ELECTRICAL, & MECHANICAL SUMMARIES - NOT APPLICABLE



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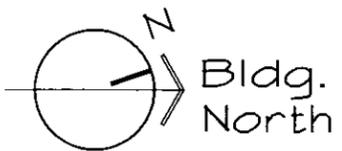
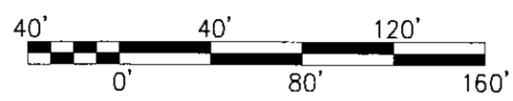
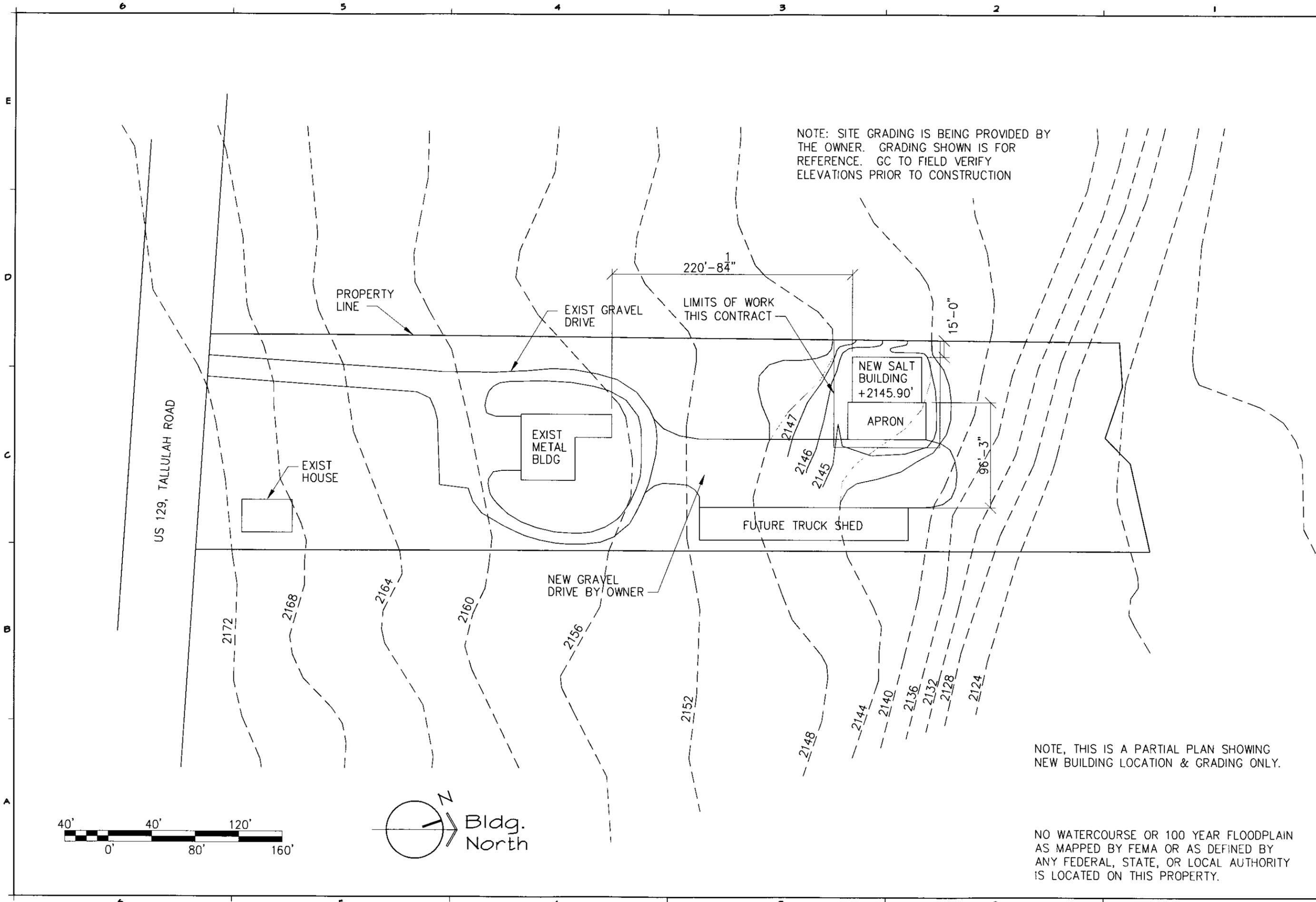
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NOTE: SITE GRADING IS BEING PROVIDED BY THE OWNER. GRADING SHOWN IS FOR REFERENCE. GC TO FIELD VERIFY ELEVATIONS PRIOR TO CONSTRUCTION

NOTE, THIS IS A PARTIAL PLAN SHOWING NEW BUILDING LOCATION & GRADING ONLY.

NO WATERCOURSE OR 100 YEAR FLOODPLAIN AS MAPPED BY FEMA OR AS DEFINED BY ANY FEDERAL, STATE, OR LOCAL AUTHORITY IS LOCATED ON THIS PROPERTY.

17326  
 ENGINEER  
 MICHAEL D. MOUNTCASTLE  
 10-16-12

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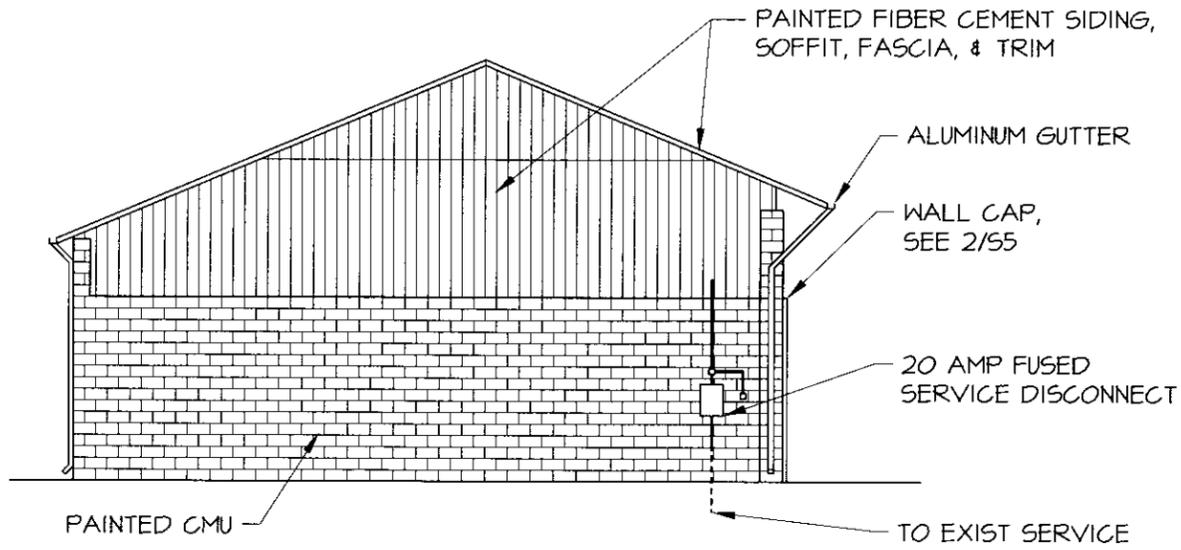
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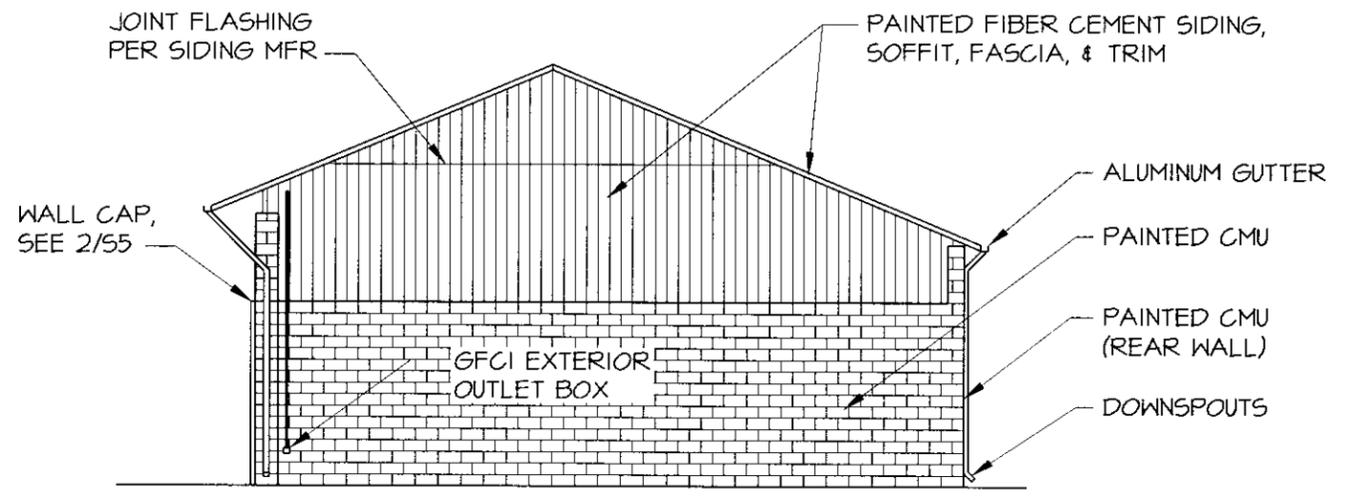
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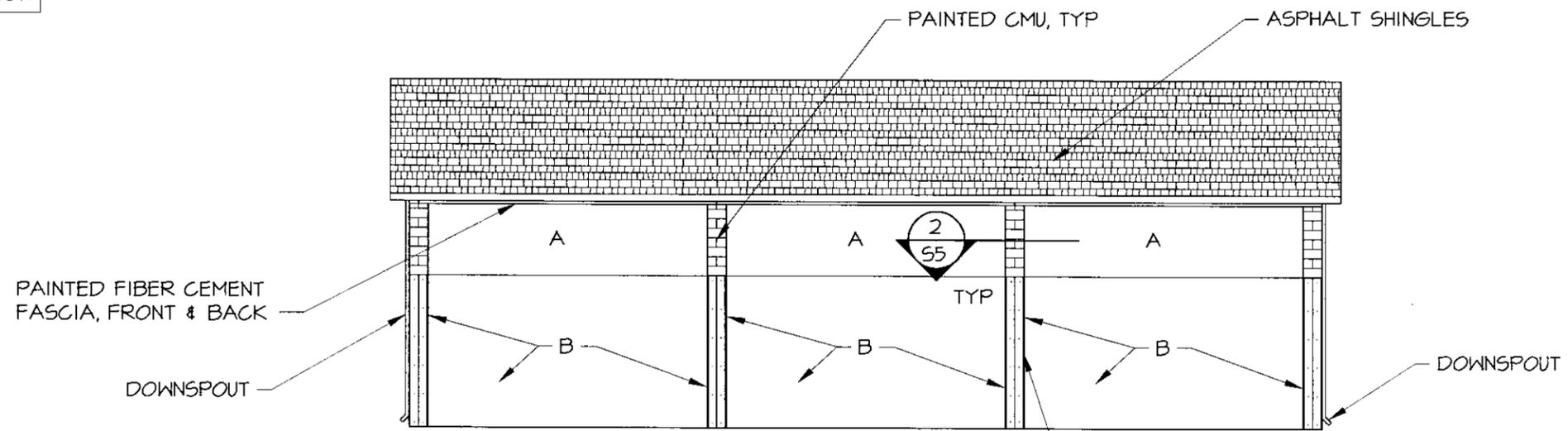
1. SEE SPECIFICATIONS FOR FURTHER INFORMATION.
2. INSTALL ALL ROOFING, SIDING, & OTHER FINISHES IN ACCORDANCE W/ MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. ELECTRICAL LIGHTING WILL BE FURNISHED & INSTALLED BY THE OWNER. SEE S3.
4. MAXIMUM BUILDING STORAGE CAPACITY IS APPROXIMATELY 960 TONS OF SALT.



LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION



FRONT ELEVATION  
(REAR ELEVATION SIMILAR)

A = EXPOSED CMU  
B = ASPHALT COATED CMU

**BUILDING ELEVATIONS**  
SCALE: 3/32" = 1'-0"



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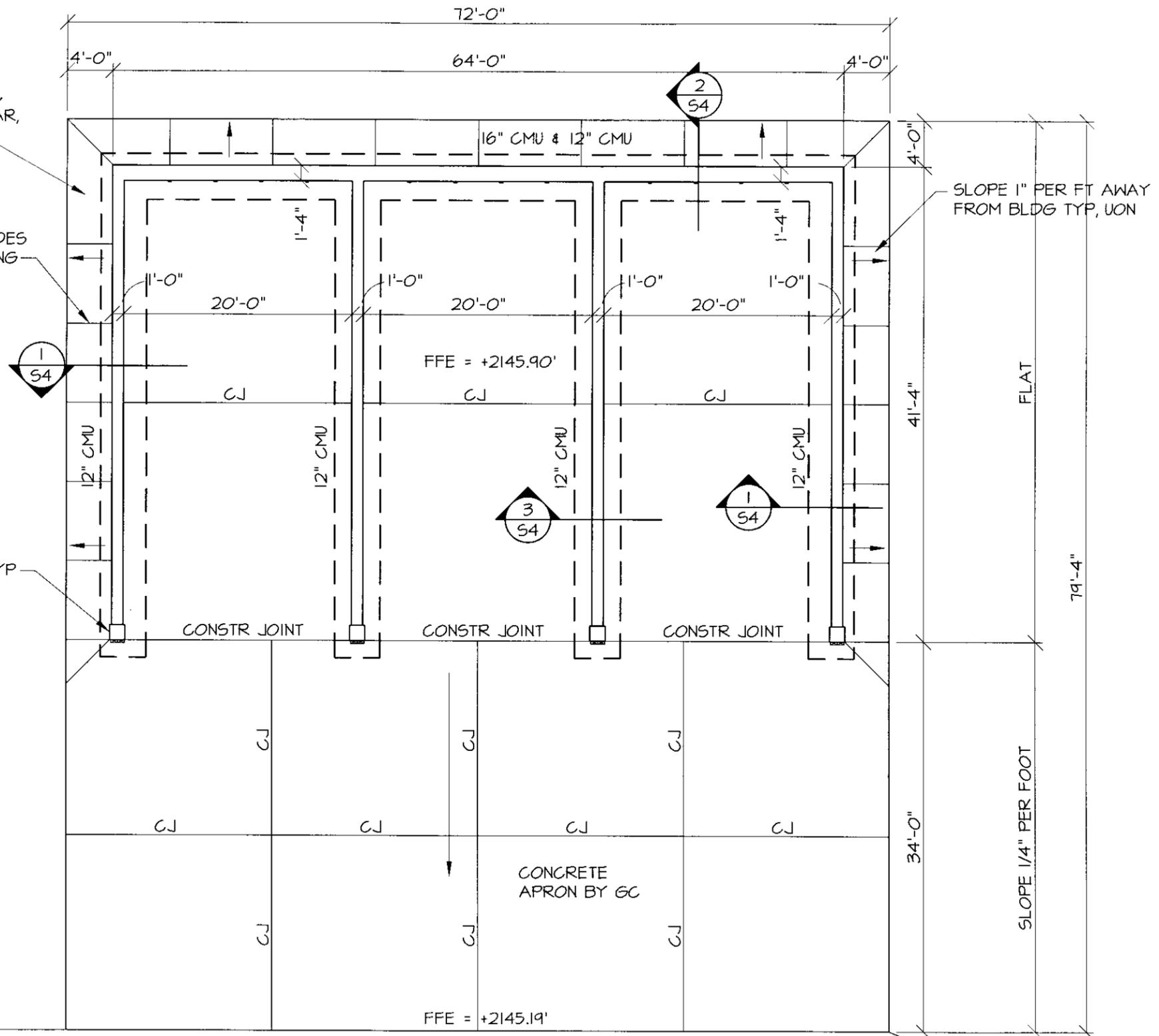
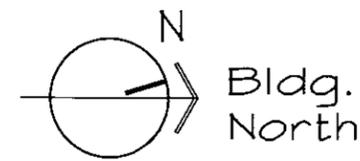
**S1**  
1 OF 5

1. ALL 12" & 16" CMU SHALL BE IVANY BLOCK IN THICKNESS SHOWN ON PLAN, W/ COMPRESSIVE STRENGTH = 3000 PSI.
2. 8" CMU SHALL BE STANDARD UNITS W/ 1900 PSI COMPRESSIVE STRENGTH.
3. GROUT ALL WALLS SOLID W/ 3000 PSI, ASTM C476 GROUT.
4. ALL REINF STEEL SHALL BE ASTM A 615, GR 60. LAP ALL SPLICES 48 X BAR DIAMETER.
5. BUILDING & APRON SLAB SHALL BE 6" 4000 PSI CONG REINF W/ #4 @ 16" OC EW ON 4" COMPACTED STONE BASE. USE EPOXY COATED REINF IN SLAB.
6. WOOD STUD WALL SHEATHING SHALL BE 7/8" OSB OR PLYWOOD ATTACHED W/ 8D NAILS @ 6" O.C. ON PANEL EDGES & 8" O.C. AT INTERIOR, UON. PANELS SHALL BE 24/16 RATED EXPOSURE 1. PROVIDE BLOCKING AT ALL PANEL EDGES ON EXTERIOR WALLS.
7. PT DENOTES PRESSURE TREATED IN ACCORDANCE W/ AWPA STANDARDS.
8. PROVIDE CONT 2X4 OR PAINTED STRIPE AS DIRECTED BY OWNER AT +10'-0" TO INDICATE MAX DEPTH OF SALT AGAINST WALL.
9. COORDINATE LOCATION & INSTALLATION OF ELECTRICAL WORK W/ OWNER.
10. GRADING TO FLOOR SUBGRADE TO BE PROVIDED BY OWNER.
11. GC RESPONSIBLE FOR BUILDING LAYOUT.
12. OWNER WILL PROVIDE COMPACTION & CONCRETE TESTING.

4" 4000 PSI CONG SLAB SIDES & REAR, SLOPE 1/4"/FOOT

TOOLED CONTROL JOINTS, TYP ON SIDES & REAR OF BUILDING

16" X 16" CMU PIER, SEE 1/55 & 2/55, TYP



GRAVEL DRIVE BY OWNER

1 FDN & PAVING PLAN  
52 SCALE: 3/32" = 1'-0"



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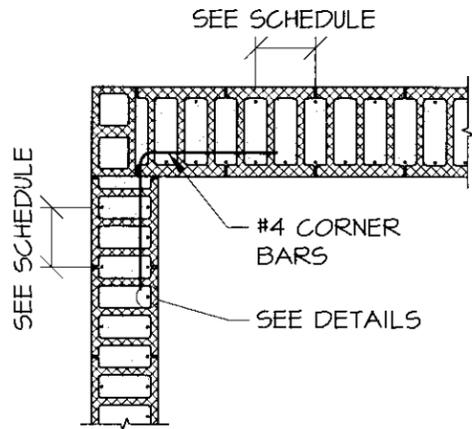


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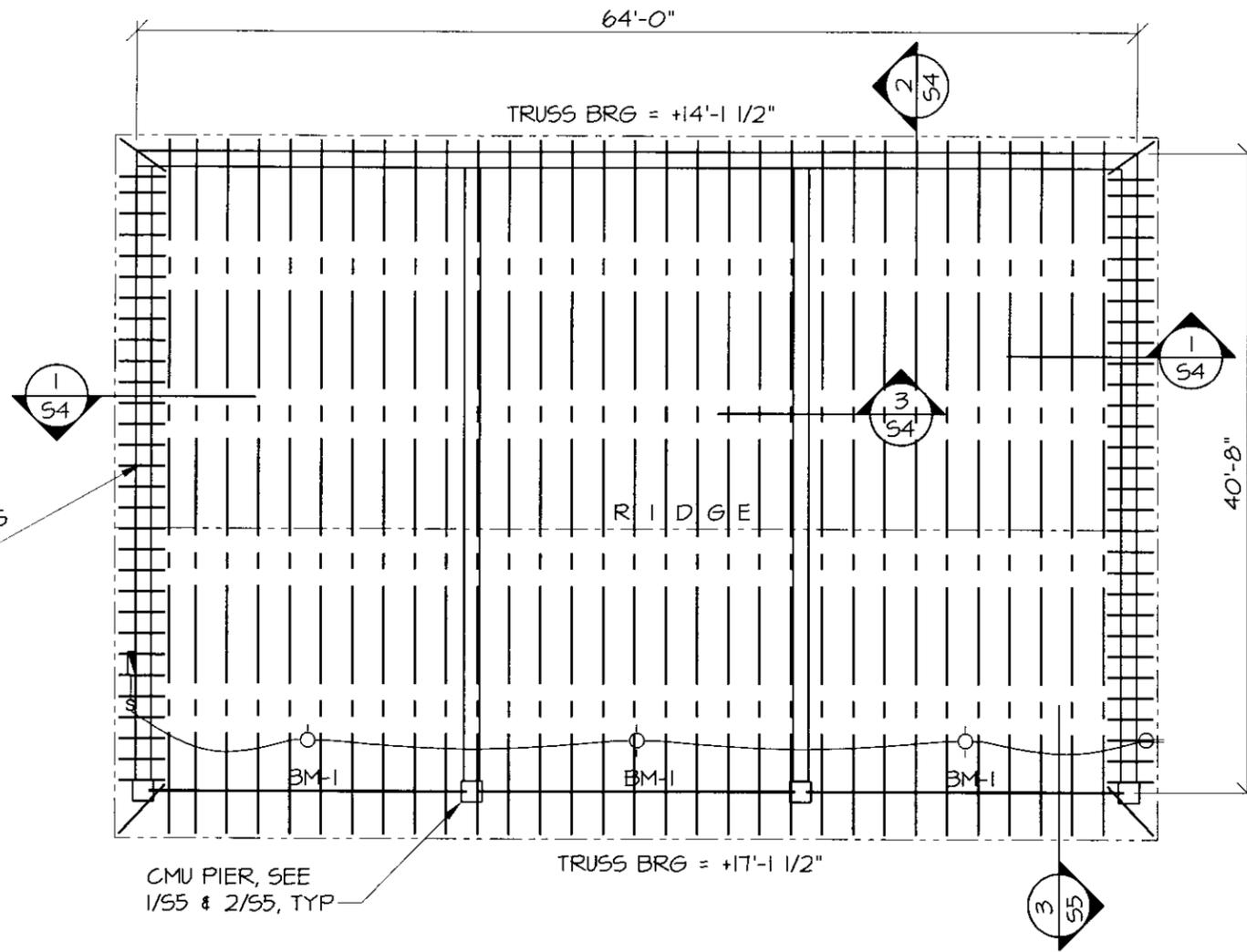
**S2**  
2 OF 5

1. PROVIDE TRUSS SHOP DRAWINGS SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NC, SHOWING TRUSS LAYOUT, TRUSS DESIGNS, & REQUIRED BRACING.
2. INSTALL 2X4 BOTT CHORD BRACING AT SPACING PER TRUSS MFR.
3. ROOF SHEATHING SHALL BE 5/8" OSB OR PLYWOOD, ATTACHED W 10D NAILS @ 6" O.C. ON PANEL EDGES, & @ 8" O.C. AT INTERIOR.
4. SIDING, VENTED SOFFIT, & FASCIA SHALL BE PAINTED FIBER-CEMENT BOARD, COLOR SELECTION BY OWNER.
5. BM-1 = 5" X 16" GLULAM, 24F-V4, BALANCED.

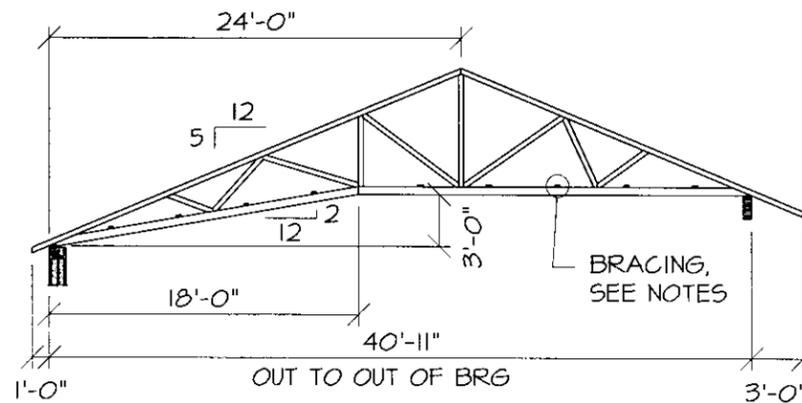


SPACING SCHEDULE	
WIND SPEED	BAR SPACING
90 MPH	24" OC
110 MPH	16" OC
130 MPH	8" OC

3 REINF DETAILS  
53 SCALE: 3/8" = 1'-0"



1 ROOF FRMG PLAN  
53 SCALE: 3/32" = 1'-0"



2 TRUSS PROFILE  
53 SCALE: 3/32" = 1'-0"

**ELECTRICAL NOTES:**

1. ELECTRICAL LIGHTING WILL BE PROVIDED BY OWNER.
2. PROVIDE FUSED SERVICE DISCONNECT. ALL WIRING TO BE ENCASED IN PVC. PROVIDE EXTERIOR GFCI OUTLET.
3. LIGHTS SHALL BE 50W HIGH PRESSURE SODIUM, MODEL HPCT-50, 120V-LL-U, BY LUMARK LIGHTING, OR EQUAL.
4. MINIMUM LIGHTING SHOWN, ACTUAL WORK MAY VARY.
5. COORDINATE ALL ELECTRICAL WORK W/ THE STATE CONSTRUCTION OFFICE, 919-807-4127.



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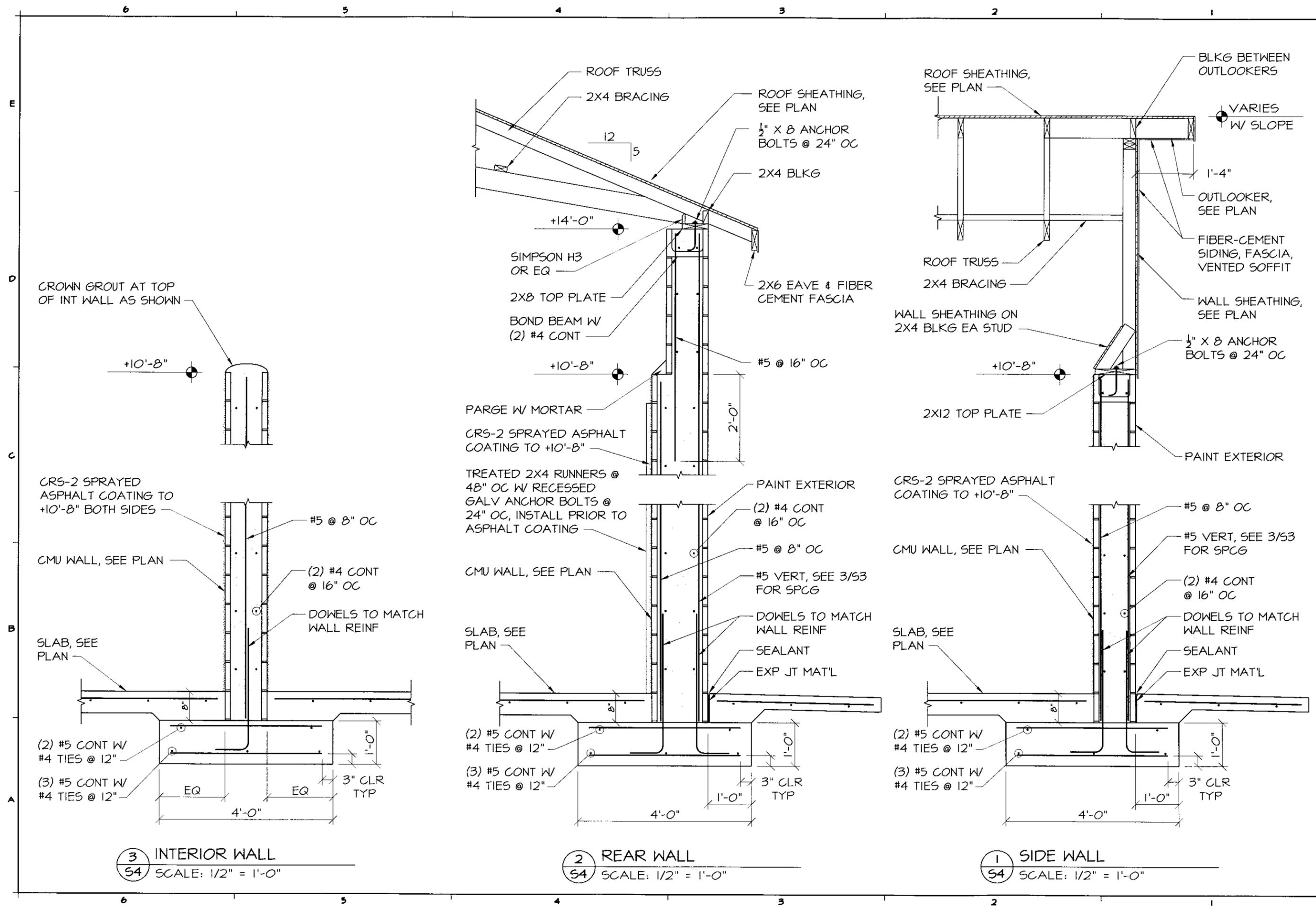
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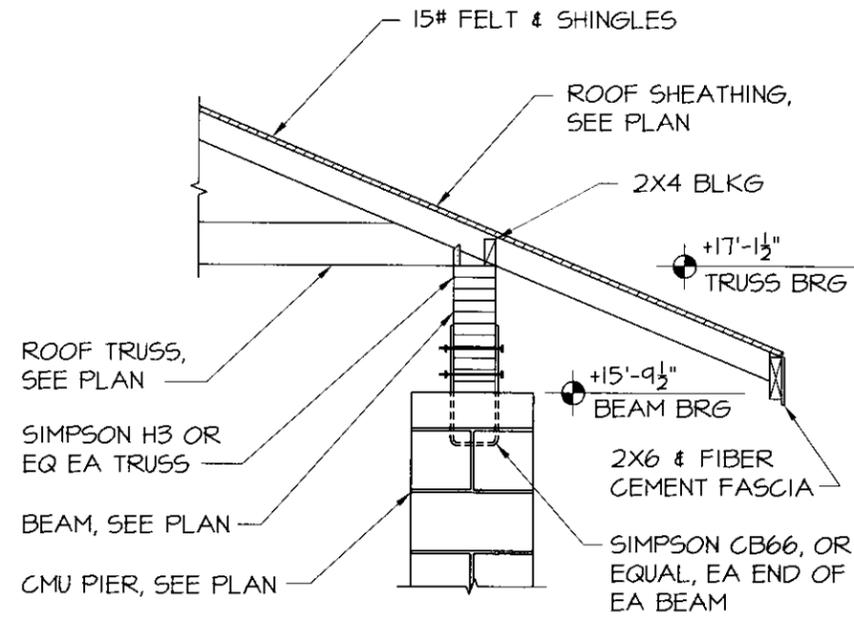
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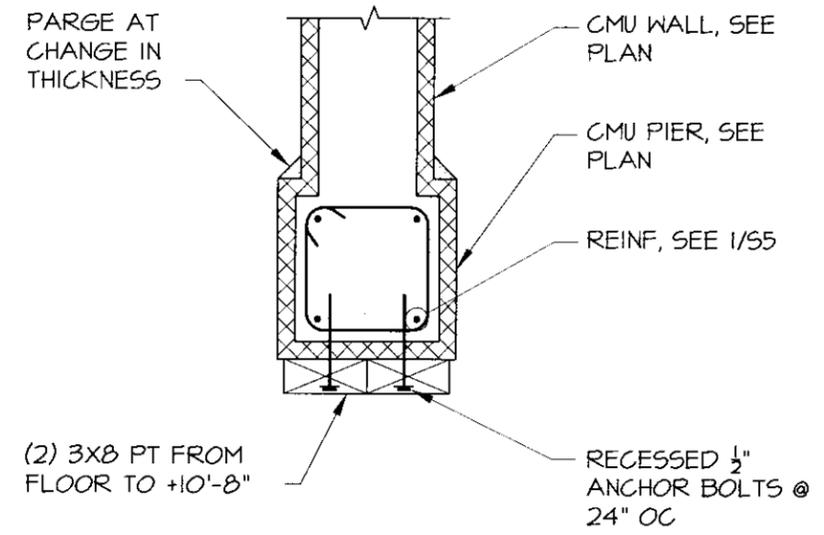
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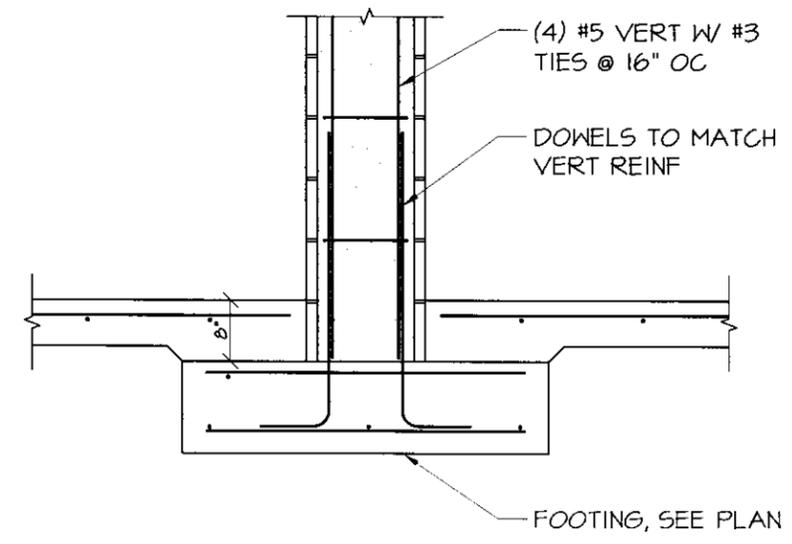
**S4**  
4 OF 5



3 TRUSS BRG AT BEAM  
 S5 SCALE: 1/2" = 1'-0"



2 CMU PIER, PLAN VIEW  
 S5 SCALE: 3/4" = 1'-0"



1 CMU PIER  
 S5 SCALE: 1/2" = 1'-0"



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