ROOF REPAIR & REPLACEMENT FOR DURHAM COUNTY SALT DOME

DocuSigned by: Michael Mountcastle 2ADEBE9B635C49A...

BID DOCUMENTS

2012 APPENDIX B
BUILDING CODE SUMMARY

Name of Project: DURHAM COUNTY SALT DOME RE-ROOF
Address: 1069 PRISON CAMP ROAD, DURHAM, NC 27704
Proposed Use: UTILITY
Owner or Authorized Agent: HIGHWAY DIVISION 5 Phone # 919-477-0953
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 1989 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 38'-0" Number of Stories 1
Mezzanine: ☒No ☐Yes
Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
1st floor	5278	0	5278
TOTAL	5278	0	5278

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
I-3 Condition ☐1 ☐2 ☐3 ☐4 ☐5
☐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	Utility & Misc.	5278	5500	NOT USED	NOT USED	5500	5500

ALLOWABLE HEIGHT

TYPE: V-B	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
Building height in feet	Feet 40	Feet=H+20'= N/A	Feet 38'-1"	503
Building Height in Stories	Stories 1	Stories+1= N/A	Stories 1	503

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED W/ REDUCT	DETAIL & SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural frame, including columns, girders, & trusses	>10	0	0				
Exterior walls		0	0				
Interior Walls and partitions	–	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 800 psf
Snow Load: 15 psf
Wind Load: Basic Wind Speed 90 mph (ASCE-7-05)
Exposure Category B
Wind Base Shears (for MWFRS) Vx = _____ Vy = _____
SEISMIC DESIGN:
Compliance with Section 1616.4 only? ☐YES ☒NO
SEISMIC DESIGN CATEGORY ☐A ☒B ☐C ☐D
Provide the following Seismic Design Parameters:
Occupancy Category: ☐I ☒II ☐III ☐IV
Spectral Response Acceleration S_S 19.6 %g S_1 7.7 %g
Site Classification D ☐Field Test ☒Presumptive
Basic structural system (check one)
X Bearing Wall _____ Dual w/Special Moment Frame
_____ Building Frame _____ Dual w/Intermediate R/C or Special Steel
_____ Moment Frame _____ Inverted Pendulum
Seismic base shear Vw= _____ Vy= _____
Analysis Procedure _____ Simplified X Equivalent Lateral Force _____ Modal
Architectural, Mechanical, Components anchored? N/A
LATERAL DESIGN CONTROL: Earthquake _____ Wind X
Special Inspection Required? ☐Yes ☒No
SOIL BEARING CAPACITIES:
☒Field Test ☐Presumptive N/A psi

PLUMBING, ENERGY, & MECHANICAL SUMMARIES – NOT APPLICABLE

SUMMARY OF WORK:

The Contractor shall provide the work required for a complete, first-class roof replacement and roof framing repair in accordance with plans and specifications. The work shall proceed in, but not be limited to, the following sequence:

1. Retrofit the dome entrance with the new gable roof.
2. Remove and dispose of the existing asphalt shingles and roofing material. (Note: Removal, repair, and replacement work may be done in stages.)
3. Call for an inspection by the Owner's on-site representative to determine how much of the existing roof sheathing and other components need replacement. Complete roof substrate repair work as required to properly receive new roofing. Verify and document with the Owner's on-site representative in writing and with digital photography all unit price work.
4. Install new asphalt shingle roofing system with all roof vents, flashing, edge trim, and other necessary components.
5. Call for final inspection by the project administrator and Owner's representative.

The Contractor is responsible for weatherproofing the building from precipitation during the life of the contract. The Contractor shall use tarps, plastic, or other suitable materials to weatherproof the building. The Contractor shall be responsible for repairing any damages incurred to the building caused by water intrusion as a result of the work or failure to protect the structure during construction.

All exposed existing interior roof and side wall framing lumber that is damaged shall be removed and replaced in kind. The extent and exact manner of repair or replacement shall be agreed upon in advance and approved by the Engineer.

Contractor is responsible for removal and off-site disposal of all roofing materials.

After removal of the old roofing material, the Contractor shall call for an inspection by the Owner representative to determine how much of the existing roof structure, if any, must be removed and replaced.

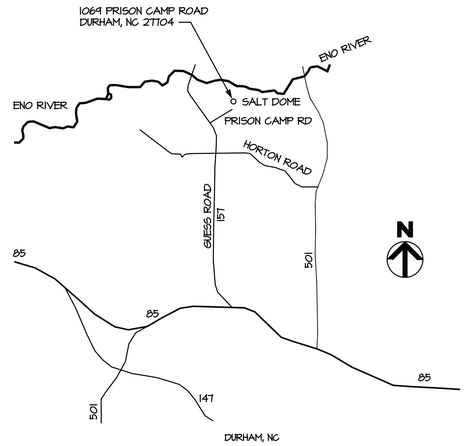
Rotted sheathing shall be removed back to the nearest rafter or framing member. Replacement sheathing shall match thickness of existing sheathing.

The roof geometry is unusual. The dome is comprised of sheathing panels that are wider at the base, tapering to the peak. The sheathing panels will likely be trapezoidal in shape, depending on the rafters to which they are attached. There are parallel rafters and rafters that taper toward the peak, so that the number of rafters decreases toward the peak. The roof area is estimated as 9000 SF. The exact area and dimensions of the roof shall be verified by the Contractor to the extent that they affect his work.

All existing metal roof vents shall be replaced with similar aluminum roof vents of equal or greater capacity approved by the Designer. Vents are estimated at approximately 51 sq. in. of net free area each (field verify). Submit catalog cut sheets with specifications of proposed new vents to Designer for approval.

The Contractor will remove and replace all flashing around all vertical and horizontal intersections of exterior finish material.

DRAWING INDEX



3 T1 VICINITY MAP
NOT TO SCALE

FRONT ENTRY

REAR ELEVATION

2 T1 EXISTING SALT DOME
NOT TO SCALE

NOTE: PHOTO OF SIMILAR DOME FOR REFERENCE USE ONLY.

1 T1 TYPICAL SALT DOME - AFTER
NOT TO SCALE

SEALED NORTH CAROLINA PROFESSIONAL 17326 ENGINEER MICHAEL D. MOUNTCASTLE

DESIGNED BY:
FACILITIES DESIGN
ARCHITECTS & ENGINEERS
FACILITIES MANAGEMENT DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
PHONE 919/707-4540 FAX 919/715-0369

CONSULTANT:

DRAWING TITLE / DISCRIPTION:

PROJECT TITLE:
DURHAM COUNTY
SALT DOME REROOF
HIGHWAY DIVISION 5, NCDOT
DURHAM COUNTY, NORTH CAROLINA

STATE CONSTRUCTION ID.# 15-11515-01A

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32 - 07 - 35

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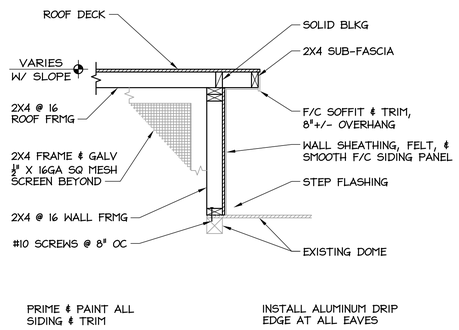
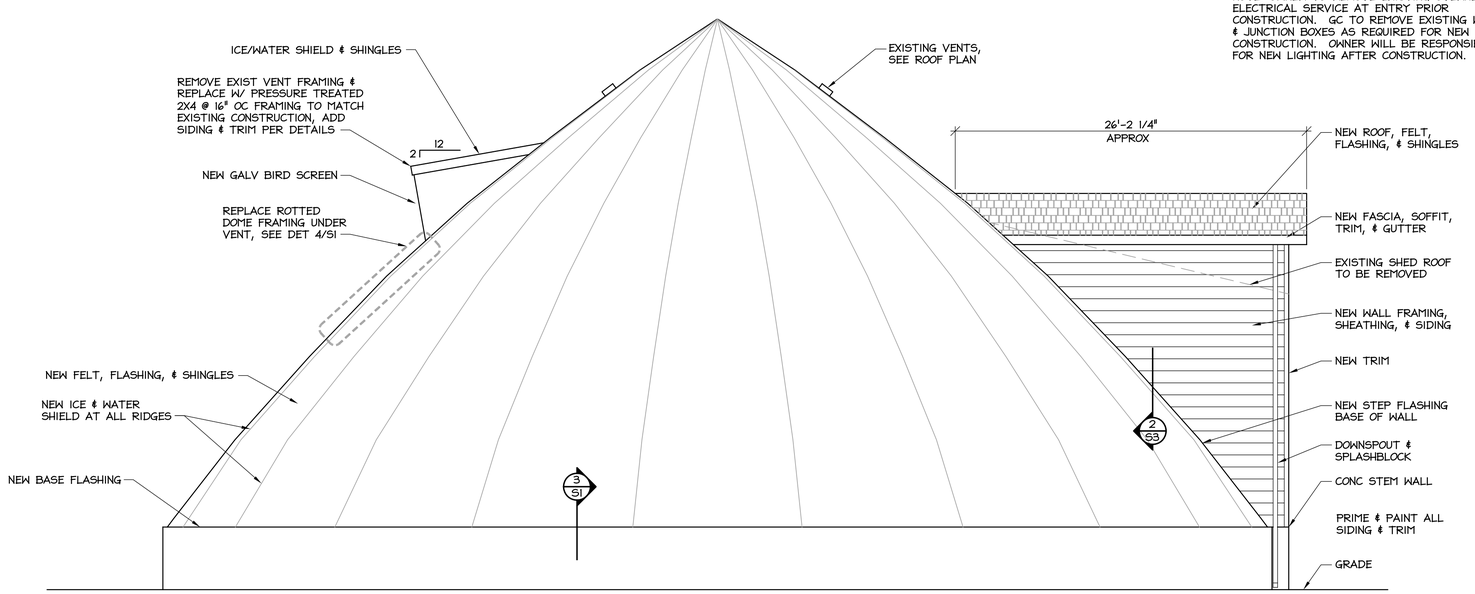
SHEET NO.
T1



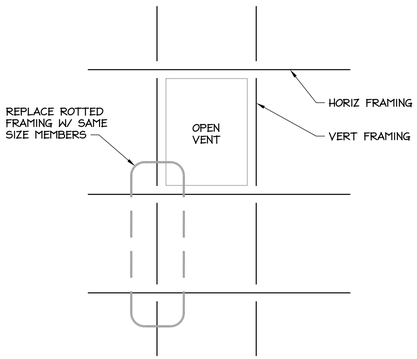
5/S1 VENT FRAMING

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



2/S1 SIDE ELEVATION

SCALE: 3/16" = 1'-0"

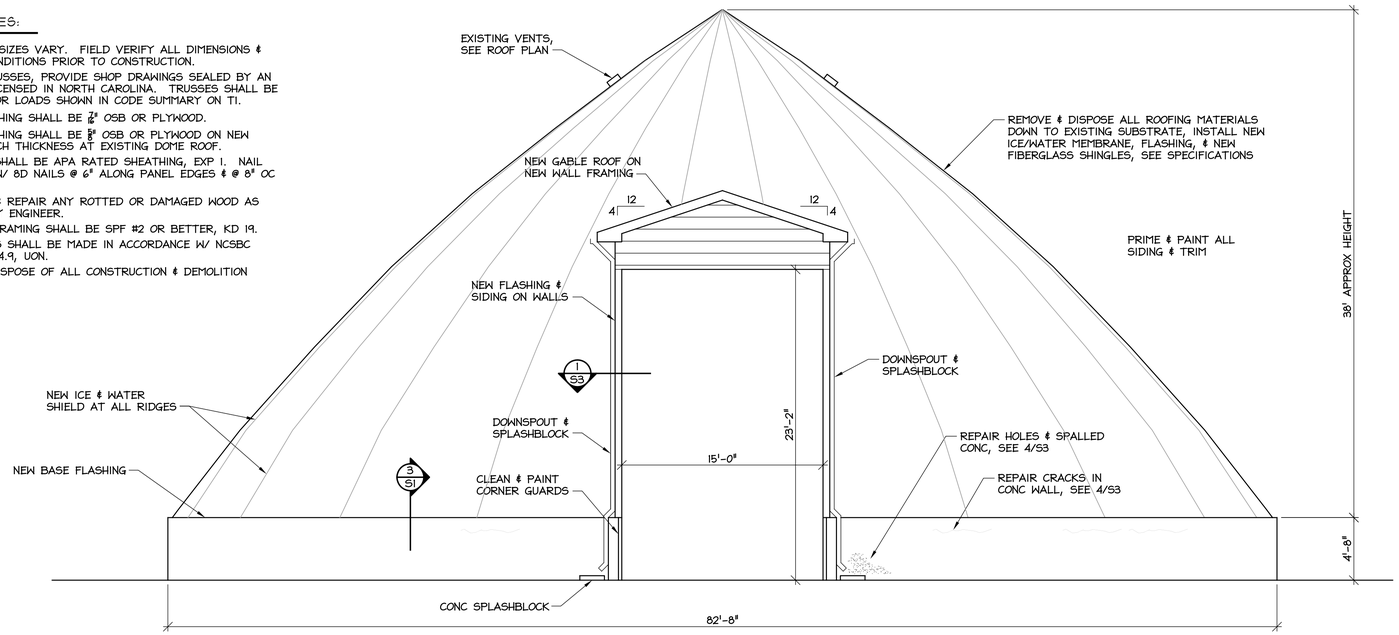


4/S1 INTERIOR VIEW OF VENT

NO SCALE

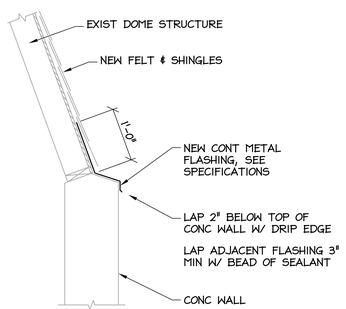
NOTES:

1. SALT DOME SIZES VARY. FIELD VERIFY ALL DIMENSIONS & EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. IF USING TRUSSES, PROVIDE SHOP DRAWINGS SEALED BY AN ENGINEER LICENSED IN NORTH CAROLINA. TRUSSES SHALL BE DESIGNED FOR LOADS SHOWN IN CODE SUMMARY ON T1.
3. WALL SHEATHING SHALL BE 7/16" OSB OR PLYWOOD.
4. ROOF SHEATHING SHALL BE 3/8" OSB OR PLYWOOD ON NEW ROOF. MATCH THICKNESS AT EXISTING DOME ROOF.
5. SHEATHING SHALL BE APA RATED SHEATHING, EXP 1. NAIL SHEATHING W/ 8D NAILS @ 6" ALONG PANEL EDGES & @ 8" OC OTHERWISE.
6. CHECK FOR & REPAIR ANY ROTTED OR DAMAGED WOOD AS DIRECTED BY ENGINEER.
7. NEW WOOD FRAMING SHALL BE SPF #2 OR BETTER, KD 19.
8. CONNECTIONS SHALL BE MADE IN ACCORDANCE W/ NCSBC SECTION 2304.9, UON.
9. REMOVE & DISPOSE OF ALL CONSTRUCTION & DEMOLITION DEBRIS.



1/S1 FRONT ELEVATION

SCALE: 3/16" = 1'-0"



3/S1 BASE FLASHING

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

BID DOCUMENTS

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17326 MICHAEL D. MONTEVERDE

DocuSigned by: Michael Monteverde 2ADEBE9B635C49A...

DESIGNED BY:
FACILITIES DESIGN ARCHITECTS & ENGINEERS
FACILITIES MANAGEMENT DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
PHONE 919/707-6040 FAX 919/715-0369

CONSULTANT:

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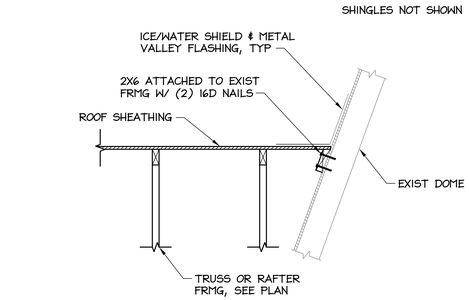
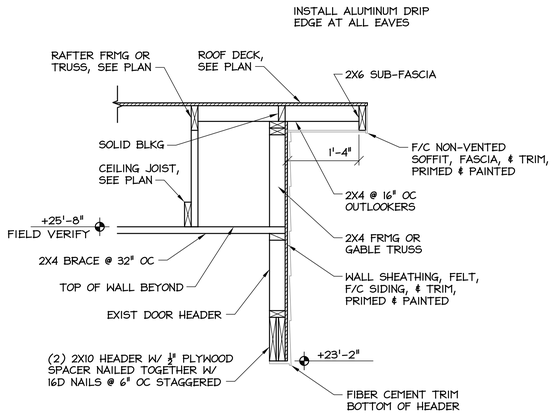


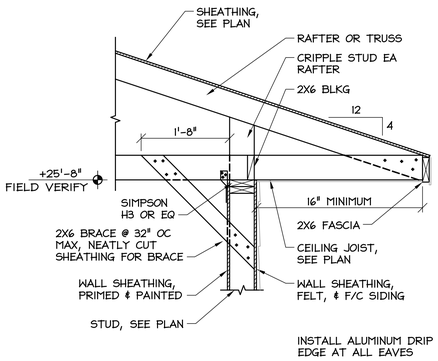
4/S2 ROOF BEARING AT DOME

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



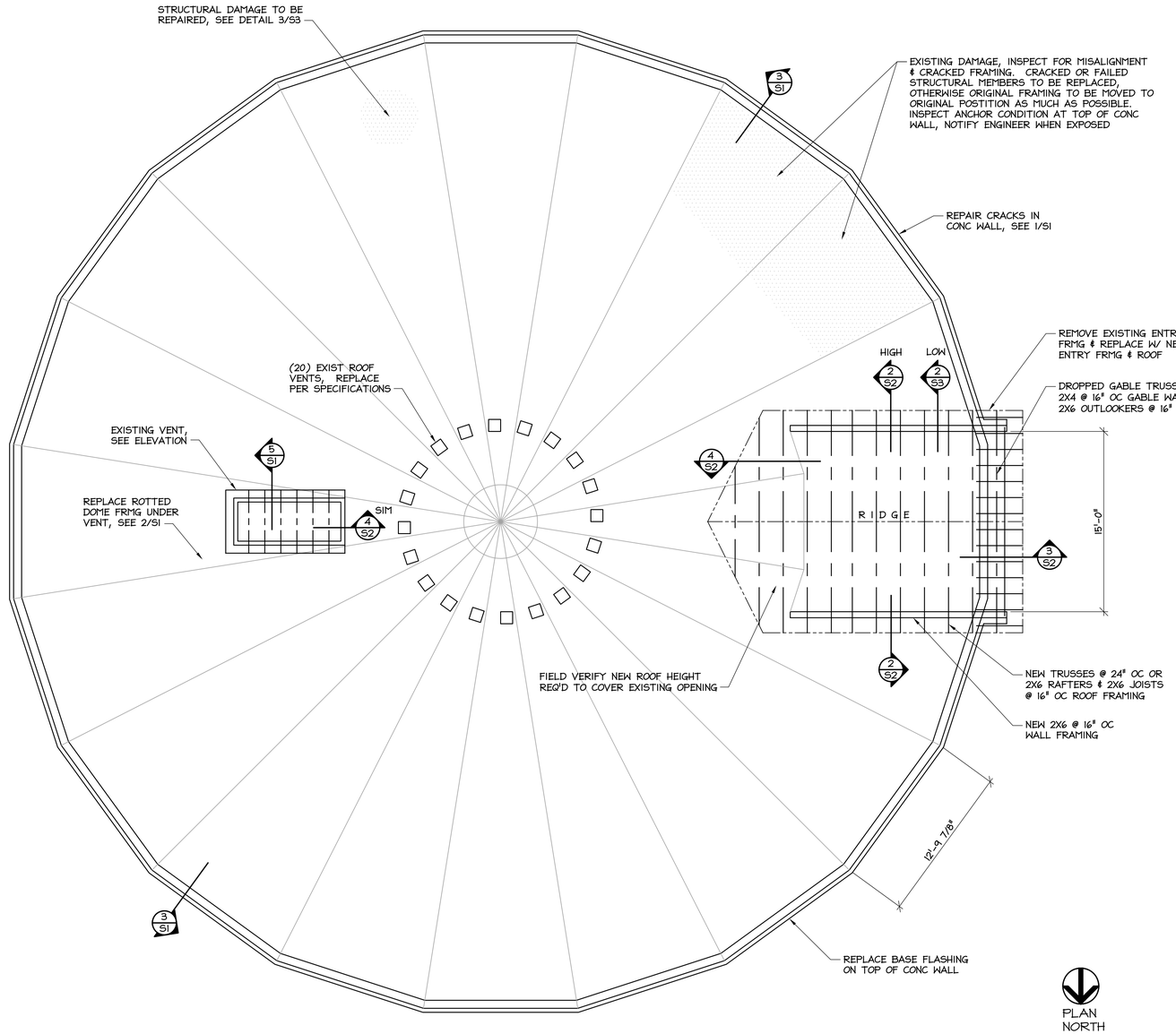
3/S2 GABLE END FRAMING

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



2/S2 ROOF BEARING

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



1/S2 ROOF PLAN

SCALE: 3/16" = 1'-0"

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SEALED

NORTH CAROLINA PROFESSIONAL 17326 ENGINEER SEAL D. MOMTAZI

DocuSigned by: Michael Momtazi 2ADEBE9B635C49A...

DESIGNED BY:

FACILITIES DESIGN
ARCHITECTS & ENGINEERS
FACILITIES MANAGEMENT DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
PHONE 919/707-4040 FAX 919/715-0369

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S2

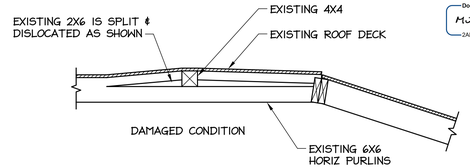
GENERAL NOTES:

A. GENERAL

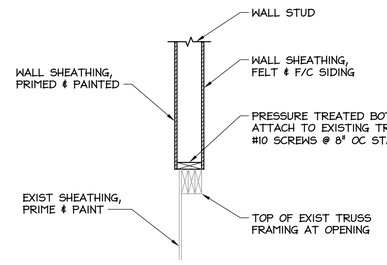
1. See specifications for further information. in case of conflict between specifications & drawings, contact engineer for resolution.
2. Contractor is responsible for coordination & distribution of all changes in contract documents to all subcontractors.
3. Contractor shall verify all field conditions, elevations, & dimensions prior to construction. Do not scale from plans.
4. Means & methods of construction, including temporary bracing, shoring, & jobsite safety, are the responsibility of the contractor.
5. Structural frame shall be braced until erection is complete & permanent connections & bracing are installed.

B. WOOD

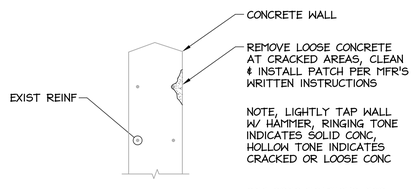
1. Structural lumber shall be SPF #2 or better, UON. Wood for fabricated trusses shall be SYP #2 or better, except that webs may be SYP #3.
2. Wood in contact with concrete or masonry shall be treated.
3. Straps, ties, hangers, & other connection hardware shall be galvanized.
4. Connections not otherwise detailed shall be in accordance with Tables 2304.9.1.1 thru 2304.9.1.6 of the NC State Building Code.
5. Trusses shall be designed for the full dead & live loads specified in the contract. Submit truss shop drawings bearing the seal of a registered professional engineer licensed in the state of NC. Show truss layout & truss designs including required bracing. Bracing design is the truss designer's responsibility.
6. Contractor shall install both temporary and permanent bracing. Note that permanent bracing is often shown on individual truss calculation pages instead of the truss layout sheet, especially where there is no hard ceiling applied to truss.
7. Additional bracing may be required by engineer of record as indicated on plans for support of gable walls or other items.
8. Install blocking in walls & ceiling where required for partitions, fixtures, & other misc items. Coordinate with all trades.



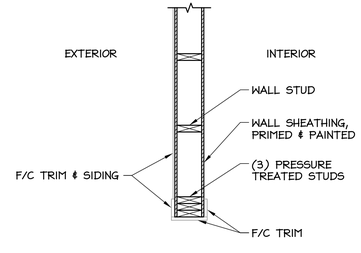
3 / S3 REPAIR AT DAMAGED PURLIN
SCALE: 3/4" = 1'-0"



2 / S3 NEW WALL AT ENTRY
SCALE: 3/4" = 1'-0"



4 / S3 CONCRETE WALL REPAIR
SCALE: 3/4" = 1'-0"



1 / S3 JAMB AT ENTRY
SCALE: 3/4" = 1'-0"

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ARCHITECTS & ENGINEERS
FACILITIES MANAGEMENT DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27601
PHONE 919/707-4840 FAX 919/715-0369

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