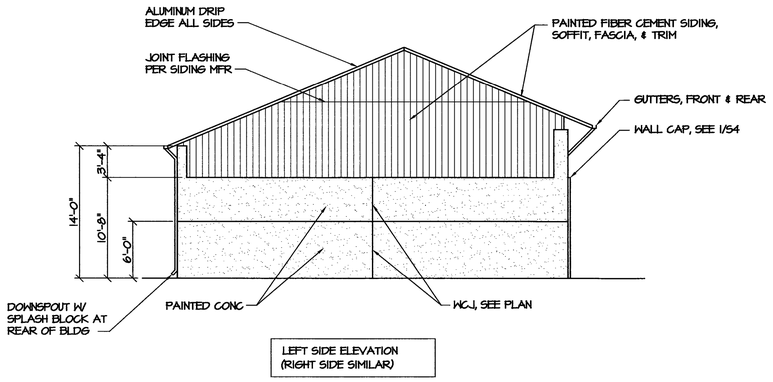
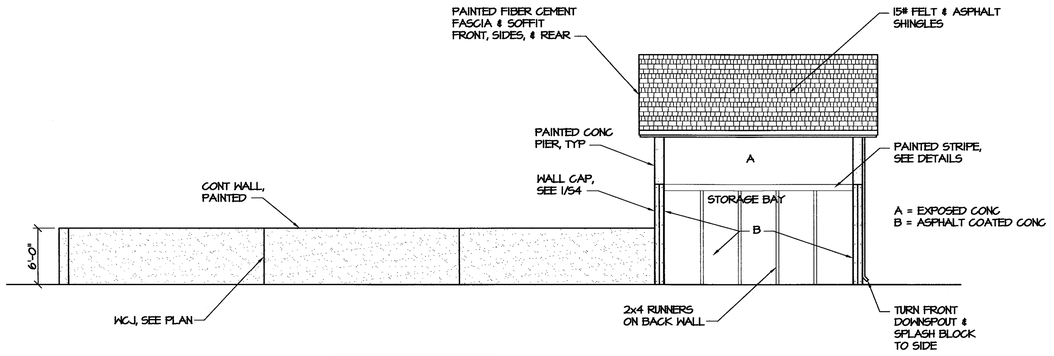
ONE-BAY SAND BLASTING SHED

FERRY DIVISION, NCDOT
DARE COUNTY, NC
SCO ID# 14-00000-01A



LEFT SIDE ELEVATION
(RIGHT SIDE SIMILAR)

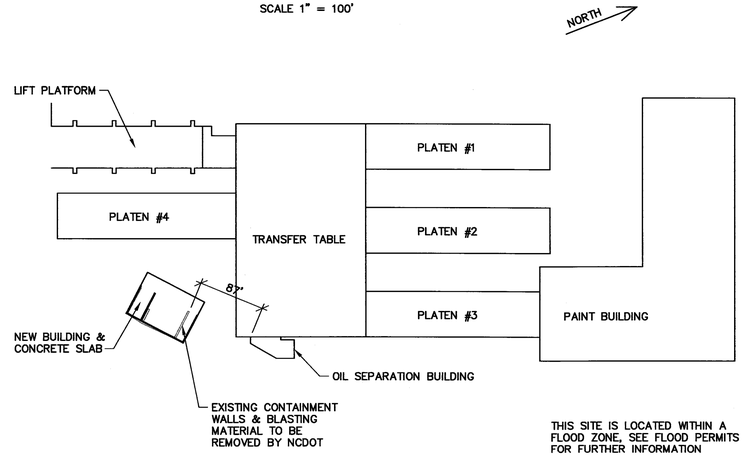


FRONT ELEVATION
(REAR SIMILAR)

1 / S1 ELEVATIONS
SCALE: 1/8" = 1'-0"

SITE LAYOUT

SCALE 1" = 100'



THIS SITE IS LOCATED WITHIN A FLOOD ZONE, SEE FLOOD PERMITS FOR FURTHER INFORMATION

INDEX OF DRAWINGS

2012 APPENDIX B
BUILDING CODE SUMMARY

Name of Project: ONE-BAY STORAGE BUILDING FOR SAND BLASTING MATERIAL
Address: 8550 SHIPYARD ROAD, MANNS HARBOR, NC 27953
Proposed Use: CONTAINMENT OF SAND BLASTING MATERIAL
Owner or Authorized Agent: HIGHWAY DIVISION 1 Phone # 252-473-3481
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	17328	(919) 707-4547	md mountcastle@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 20'-0" Number of Stories 1
Mezzanines: ☒No ☐Yes
Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
1st Floor		902	902
TOTAL		902	902

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.	902	5500	NOT USED	NOT USED	5500	5500

ALLOWABLE HEIGHT

TYPE: II-B	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
Building height in feet	Feet 40	Feet+H+20'= N/A	Feet 20'-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 Snow (I_s) 1.0 Seismic (I_E) 1.0
Live Loads: Roof 20 psf Mezzanine N/A psf Floor 800 psf
Snow Load: 10 psf
Wind Load: Basic Wind Speed 130 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 10.0 %g S_1 4.8 %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 Vx=_____ Vy=_____
Analysis Procedure X Simplified ____ 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) 1500 psf

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17328 MICHAEL D. MOUNTCASTLE
7-30-14

FERRY DIVISION CONTRACT ID# 11407920

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

PROJECT:
ONE BAY SAND BLASTING SHED
FERRY DIVISION, NCDOT
DARE COUNTY, NC

SCO ID#: 13-10648-01A

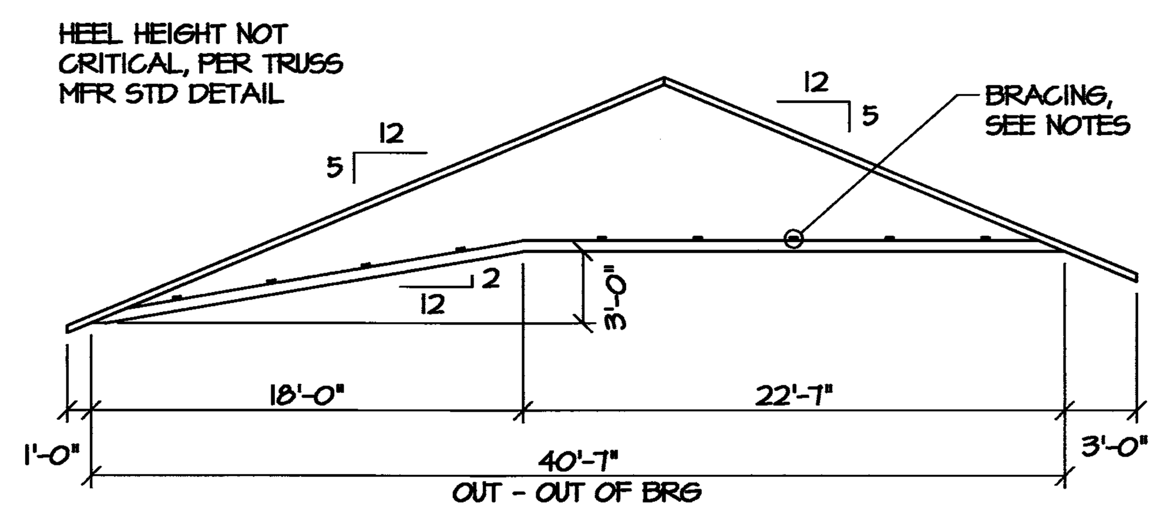
REVISIONS

NO.	DATE

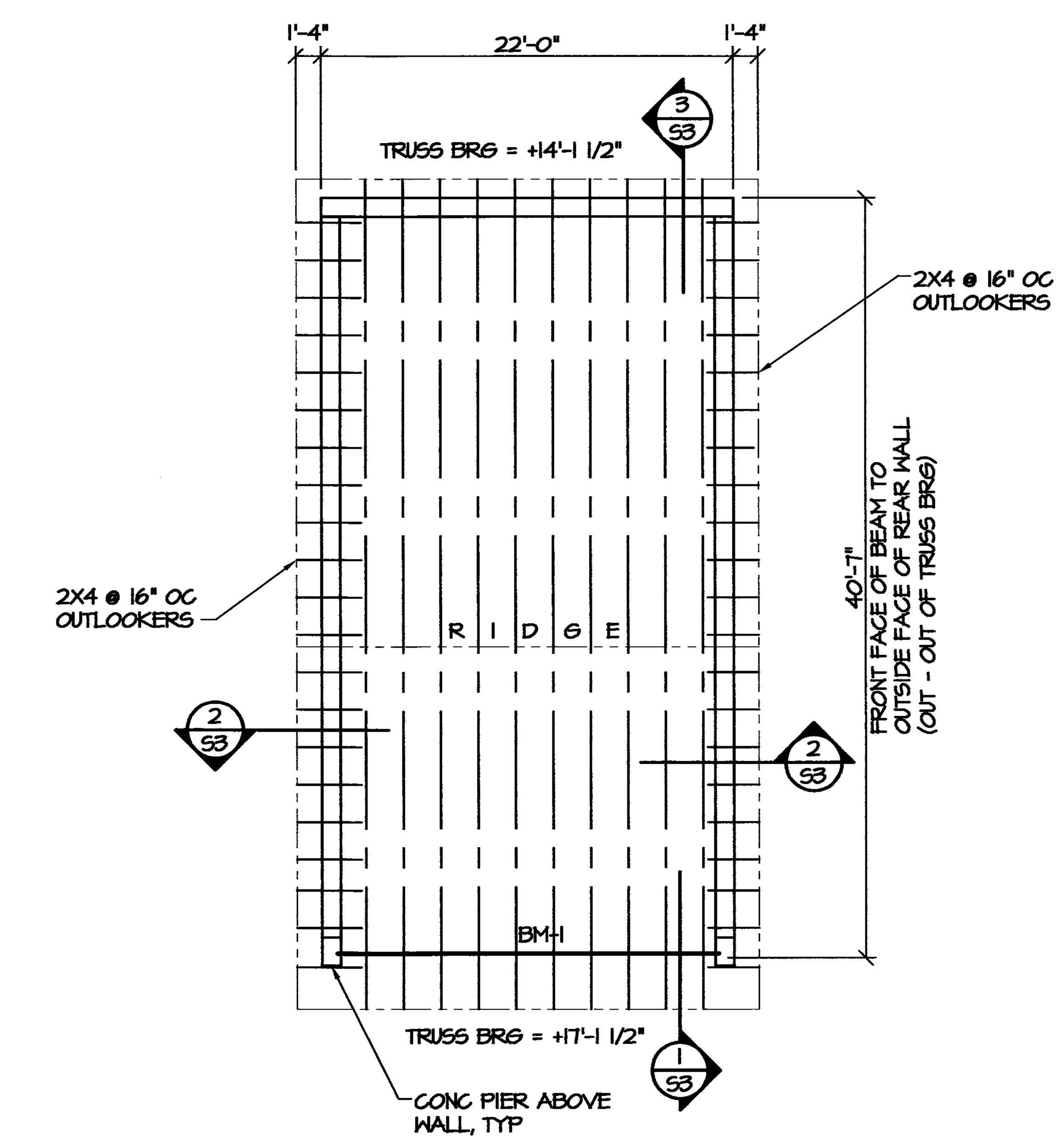
DATE ISSUED: 07-29-14
DRAWN BY: MDM
CHECKED BY: MDM
SHEET NO. S1
1 OF 4

NOTES:

1. PROVIDE TRUSS SHOP DRAWINGS SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NC, SHOWING TRUSS LAYOUT, TRUSS DESIGNS, & REQUIRED BRACING.
2. TRUSS MFR NOTE THERE IS NO CEILING & BOTTOM CHORD BRACING MAY BE REQUIRED. GC NOTE BOTTOM CHORD BRACING IS SHOWN ON TRUSS CALCULATION SHEET & IS IN ADDITION TO THE TEMPORARY BRACING.
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 = PRESSURE TREATED 5-1/2" X 16" GLULAM, 24F-V4, BALANCED.



TRUSS PROFILE

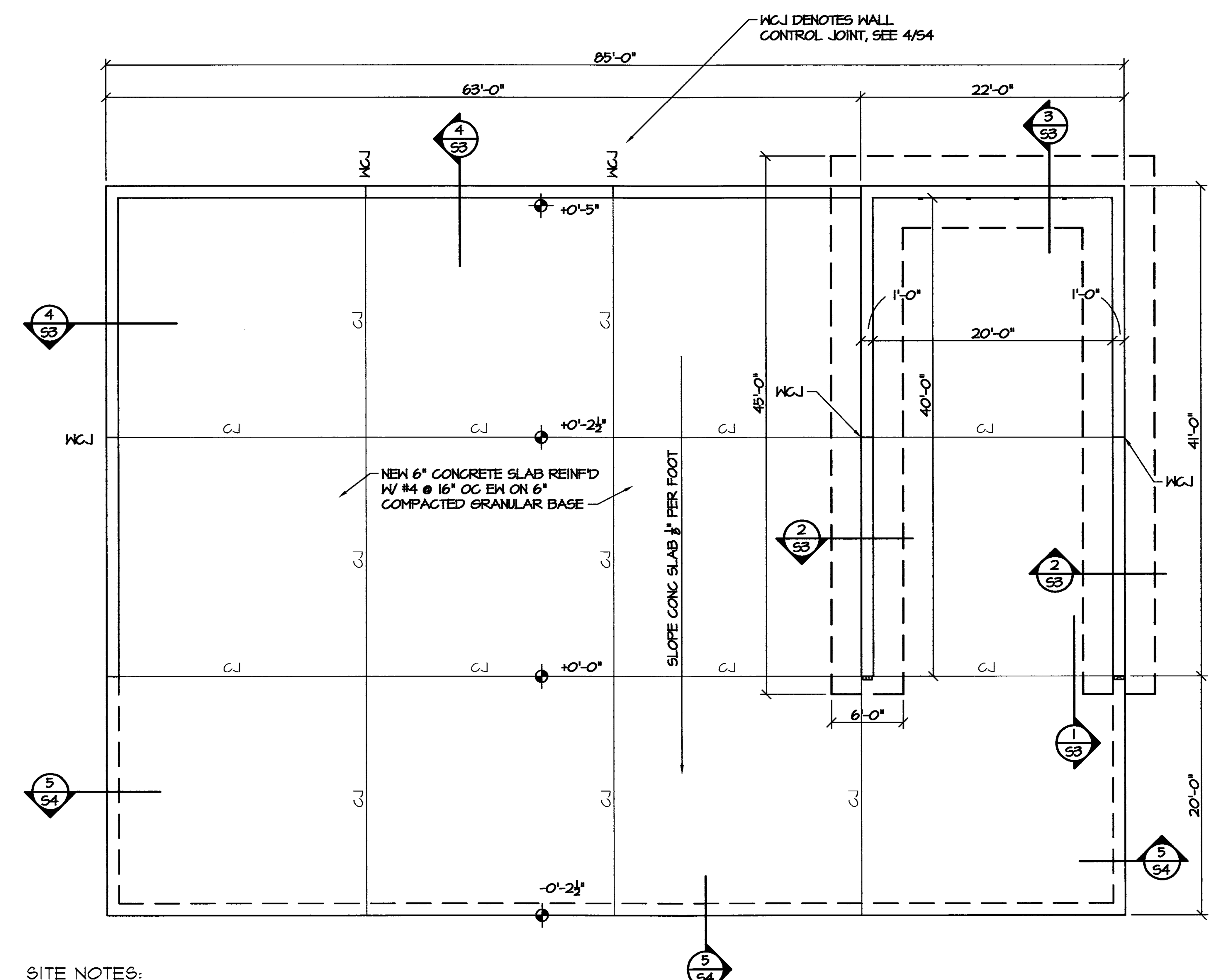


2 FRAMING PLAN
S2 SCALE: 1/8" = 1'-0"

NOTES:

1. COMPRESSIVE STRENGTH OF CONCRETE FOR FOOTINGS = 4000 PSI.
2. CONCRETE FOR WALLS SHALL HAVE 0.40 MAXIMUM W/C RATIO, & MINIMUM 5000 PSI COMPRESSIVE STRENGH (TABLE 4.2.2 OF ACI 318-05).
3. EXPOSED CONCRETE SHALL BE AIR ENTRAINED.
4. ALL REINF STEEL SHALL BE ASTM A 615, GR 60. LAP ALL SPLICES 48 X BAR DIAMETER.
5. ELEVATIONS SHOWN ARE ABOVE REFERENCE FLOOR ELEVATION = +0'-0" AS SHOWN ON PLAN.
6. UNLESS OTHERWISE NOTED, TOP OF FOOTING = -1'-0" BELOW TOP OF SLAB.
7. WOOD STUD WALL SHEATHING SHALL BE 1/2" OSB OR PLYWOOD, ATTACHED W/ 8D NAILS @ 6" O.C. ON PANEL EDGES & 8" O.C. AT INTERIOR, UON. PANELS SHALL BE APA RATED SHEATHING, EXPOSURE 1. PROVIDE BLOCKING AT ALL PANEL EDGES ON EXTERIOR WALLS.
8. PT DENOTES PRESSURE TREATED IN ACCORDANCE W/ AWPA STANDARDS.

PROVIDE SMOOTH FINISH ON ALL EXPOSED CONCRETE SURFACES. AFTER FORM REMOVAL, PATCH TIE HOLES, BUG HOLES, & OTHER DEFECTS. REMOVE FINS FLUSH WITH SURFACE. TEXTURE IMPARTED BY FORMS MAY REMAIN PROVIDED THE CONCRETE IS SOUND & FREE OF VOIDS.



SITE NOTES:

1. NO PLUMBING OR ELECTRICAL WORK IS INCLUDED IN THIS CONTRACT. ANY UNFORESEEN UTILITY WORK MUST BE COORDINATED W/ NCDOT.
2. NCDOT IS RESPONSIBLE FOR REMOVING ANY STORED MATERIAL FROM BUILDING LOCATION PRIOR TO CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR BUILDING LAYOUT. COORDINATE BUILDING LOCATION W/ NCDOT. VERIFY BUILDING LOCATION W/ NCDOT PRIOR TO CONSTRUCTION.
4. REFERENCE SLAB ELEVATION OF 0'-0" SHOWN ON FDN PLAN WILL BE APPROXIMATELY +6'-0" TRUE ELEVATION. CONTRACTOR TO FIELD VERIFY W/ OWNER & EXISTING GRADE PRIOR TO CONSTRUCTION.

1 FOUNDATION PLAN
S2 SCALE: 1/8" = 1'-0"

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER MICHAEL D. MOUNTCASTLE
7-30-14

FERRY DIVISION CONTRACT ID# 11407920

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

PROJECT:
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DARE COUNTY, NC

SCO ID#: 13-10648-01A

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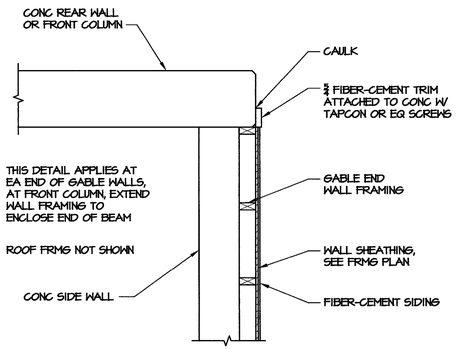
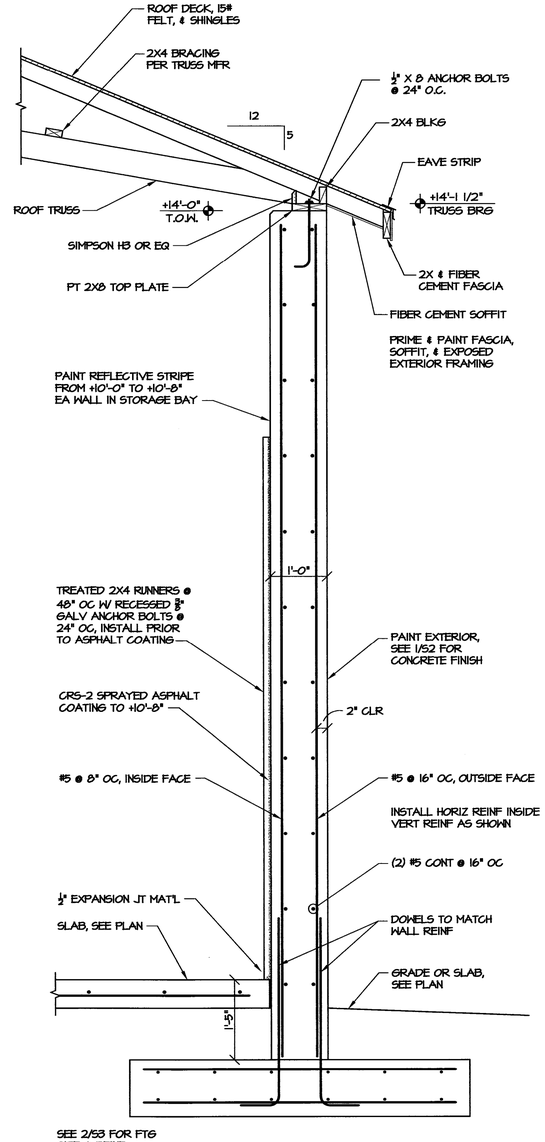
S2



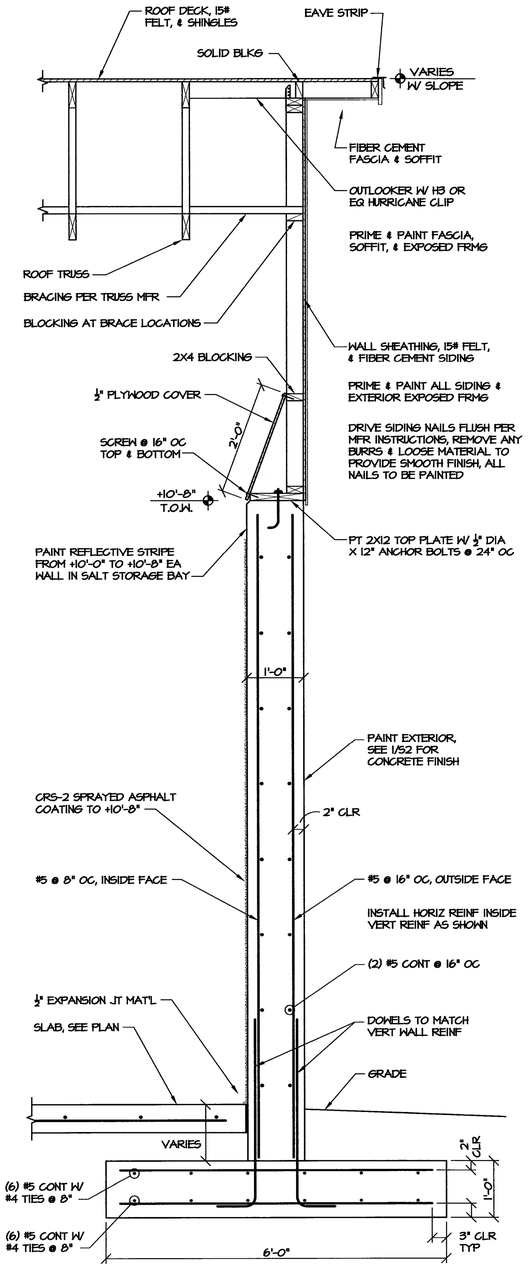
5/S4 GABLE WALL TRIM DETAIL

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



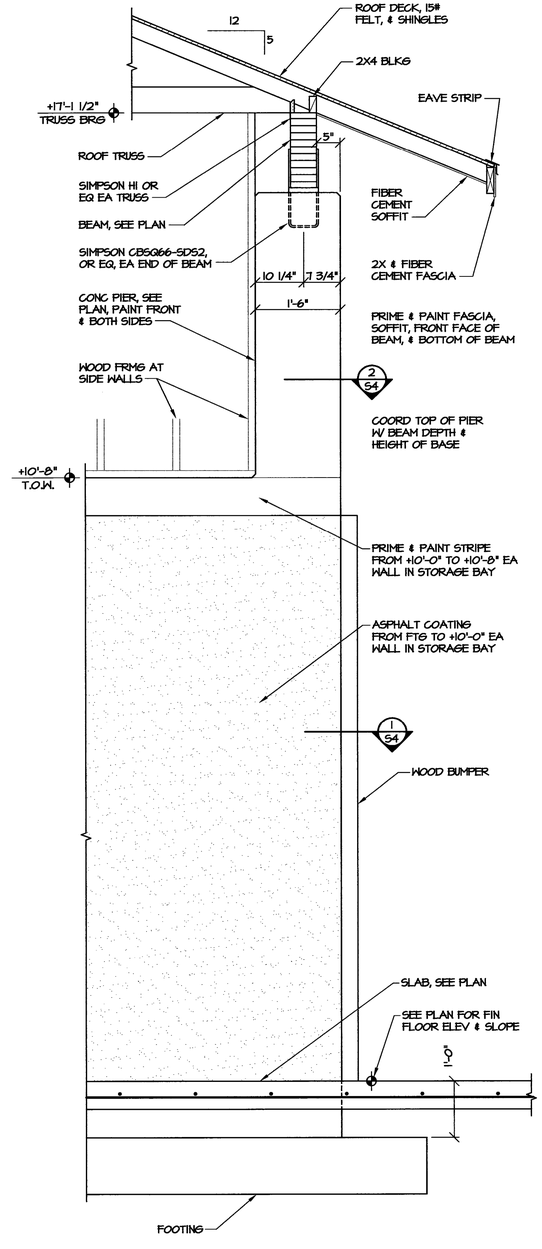
3/S3 SECTION AT REAR WALL

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



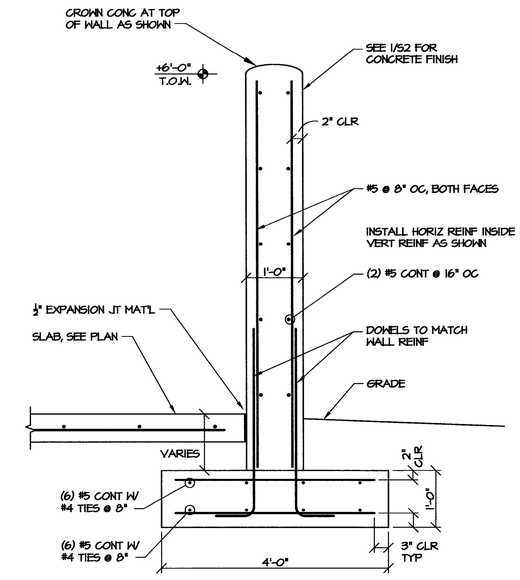
2/S3 SECTION AT SIDE WALL

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



1/S3 SECTION AT FRONT OF BUILDING

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



4/S3 SECTION AT LOW WALL

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

NORTH CAROLINA PROFESSIONAL 17326 ENGINEER SEAL M. D. MOORE
7-30-14
FERRY DIVISION CONTRACT ID# 11407920
FACILITIES DESIGN
ARCHITECTS & ENGINEERS
GENERAL SERVICES DIVISION, NCDOT
1 SOUTH WILMINGTON STREET
919/715-0400 FAX: 919/715-0399
RALEIGH, NORTH CAROLINA 27601

PROJECT:
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S3
3 OF 4

GENERAL NOTES:

A. GENERAL

1. See specifications for further information. in case of conflict between specifications & drawings, contact architect 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.
6. Provide silt fence or other erosion & sediment control measures as required.
7. If demolition is included in project, sawcut all edges of existing slab and asphalt to remain adjacent to new construction.

B. FOUNDATION

1. Footing excavations shall be reviewed by a geotechnical engineer or construction testing agency approved by the architect or engineer.
2. Footing depths shown are based on geotechnical investigation or presumptive soil properties. Soft or unsuitable soils shall be removed & replaced with suitable fill as specified.
3. Under slabs & footings, remove all topsoil, trash, & organic material, & replace with select fill compacted to 95% maximum density as measured by the Standard Proctor Method (ASTM 698) in 12 inch maximum lifts. The top 12" shall be compacted to 98% maximum density.
4. Contractor is responsible for shoring while excavating near existing structures.

C. CONCRETE

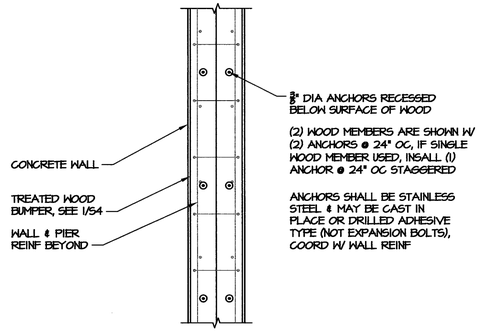
1. See plans for required compressive strength of concrete. All exposed concrete shall be air entrained per Table 4.2.1 of ACI 318-05.
2. Coordinate floor slopes and depressions with arch and plumbing plans. Maintain specified slab thickness below depressed or sloped areas.
3. If not specified on plans, provide sawed slab control joints in slabs on grade spaced at not more than 48 times the slab thickness.
4. Reinforcing steel shall meet ASTM A 615, Grade 60.
5. Welded wire reinforcement shall conform to ASTM A 185 & A 82.
6. Grout under all columns & beam bearing plates with non-shrink, non-metallic grout which meets ASTM C 1107.
7. Clear distance from face of concrete to main reinforcing:

Suspended slabs and joists:	1"
Grade beams, pedestals, columns, walls:	2"
Footings & walls cast against earth:	3"

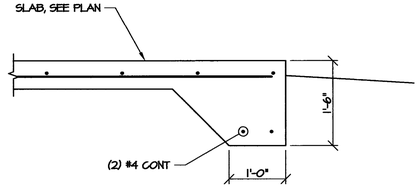
8. Provide (2) #4 x 48" diagonal corner bars at center of slab at all corners of floor slab openings.
9. Lap all reinforcement splices 48 bar diameters, UON.
10. Detailing, fabrication, & installation of reinforcing steel shall conform to ACI "Manual of Standard Practice for Detailing Reinforced Concrete Structures" (ACI 315).
11. Workmanship, tolerances, & concrete placement shall conform to "Standard Specifications for Structural Concrete" (ACI 301).
12. Chamfer exposed edges of concrete 3/4", UON.
13. Anchor bolts shall conform to ASTM F 1554, Grade 36, & galvanized.
14. See architectural plans for floor finishes. Coordinate slab curing & sealing compounds with flooring materials.

F. WOOD

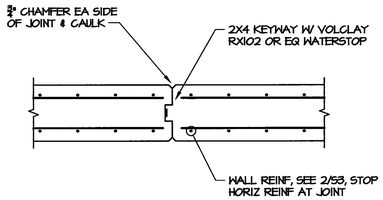
1. Structural lumber shall be SPF #2 or better, UON. Wood for fabricated trusses shall be SYP #2 or better, except that webs may be SYP #3.
2. Wood in contact with concrete or masonry shall be treated.
3. Straps, ties, hangers, & other connection hardware shall be galvanized.
4. Connections not otherwise 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.



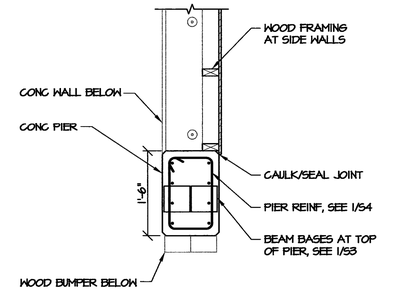
3/S4 WOOD BUMPER ATTACHMENT
SCALE: 3/4" = 1'-0"



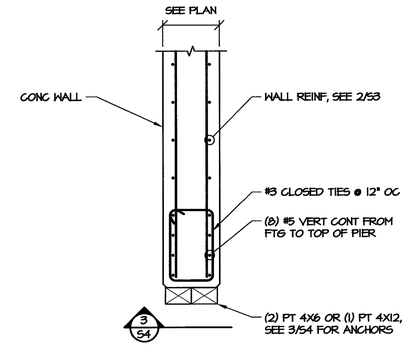
5/S4 THICKENED SLAB EDGE
SCALE: 3/4" = 1'-0"



4/S4 WALL CONTROL JOINT
SCALE: 3/4" = 1'-0"



2/S4 CONCRETE PIER
SCALE: 3/4" = 1'-0"



1/S4 WALL REINFORCEMENT
SCALE: 3/4" = 1'-0"

NORTH CAROLINA PROFESSIONAL SEAL 17326 ENGINEER MICHAEL D. MOUNTFORD
7-30-14

FERRY DIVISION
CONTRACT ID#
11407920

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

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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