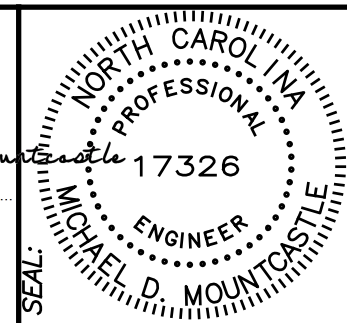


FOUR-BAY SALT STORAGE SHED

Designed by:
Michael D. Mountcastle
17326
ZADEBER@GSCA.NC

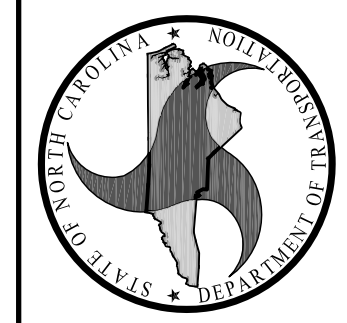


**HIGHWAY DIVISION 12
GASTON COUNTY, NC
SCO ID# 15-12617-01A**

INDEX OF DRAWINGS

- T1 COVER SHEET / CODE SUMMARY / ELEVATIONS
- S1 FOUNDATION & FRAMING PLANS
- S2 WALL SECTIONS / DETAILS
- S3 DETAILS & GENERAL NOTES
- E1 NOTES, SPECS, DETAILS, SCHEDULES
- E2 ELECTRICAL PLANS, RISERS, PANELS

DESIGNED BY:
**FACILITIES DESIGN
ARCHITECTS & ENGINEERS**
FACILITIES MANAGEMENT DIVISION, NCDOT
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RALEIGH, NORTH CAROLINA 27601
PHONE 919/707-4640 FAX 919/707-4089



CONSULTANT:

DRAWING TITLE / DESCRIPTION:
COVER SHEET
CODE SUMMARY
ELEVATIONS
BID SET

PROJECT TITLE:
**NEW FOUR-BAY SALT
STORAGE BUILDING**
HIGHWAY DIVISION 12, NCDOT
GASTON COUNTY, NORTH CAROLINA

STATE CONSTRUCTION
ID# 00-12617-01A

ASSET NUMBER:
CO.# SITE# BLDG.#
00 - 00 - 00

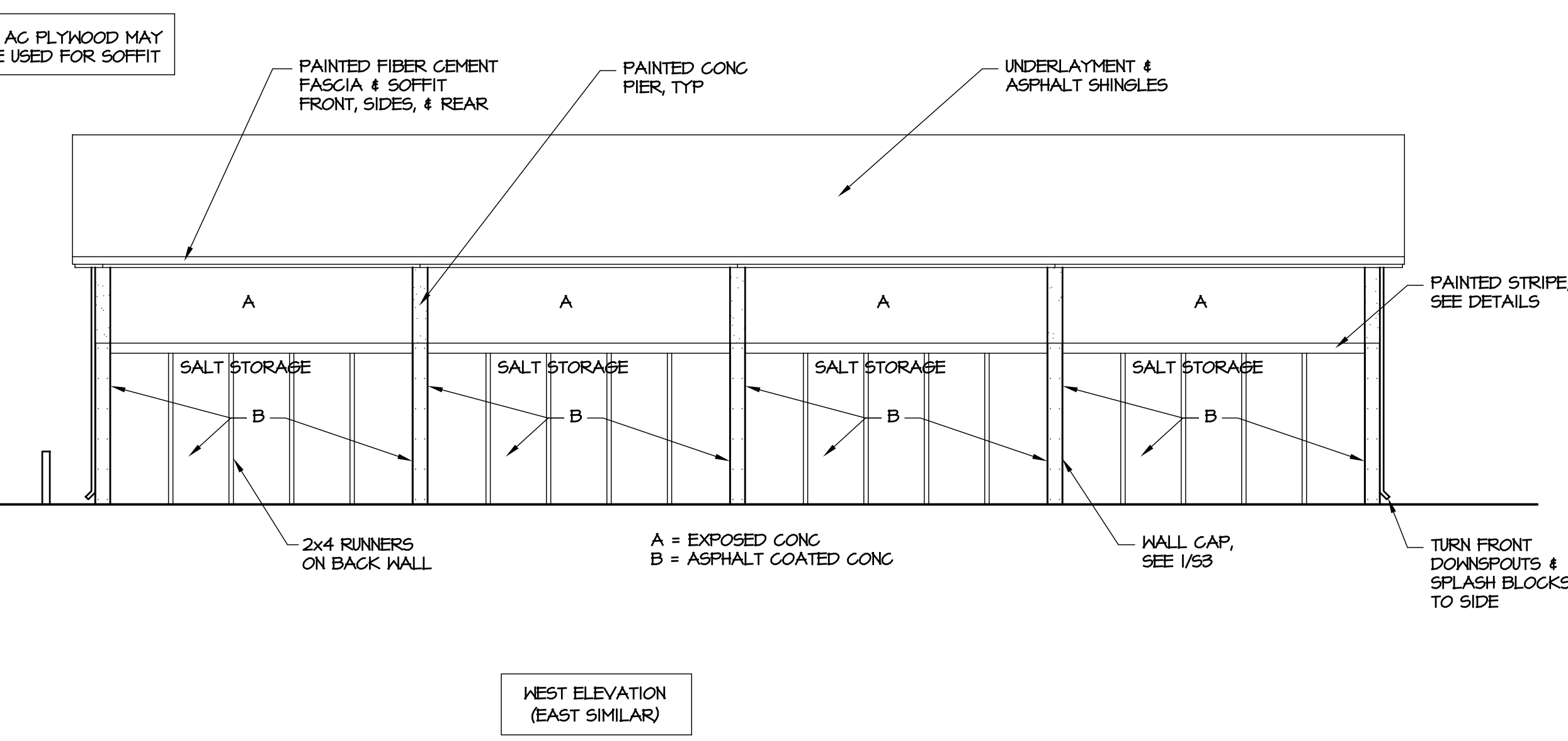
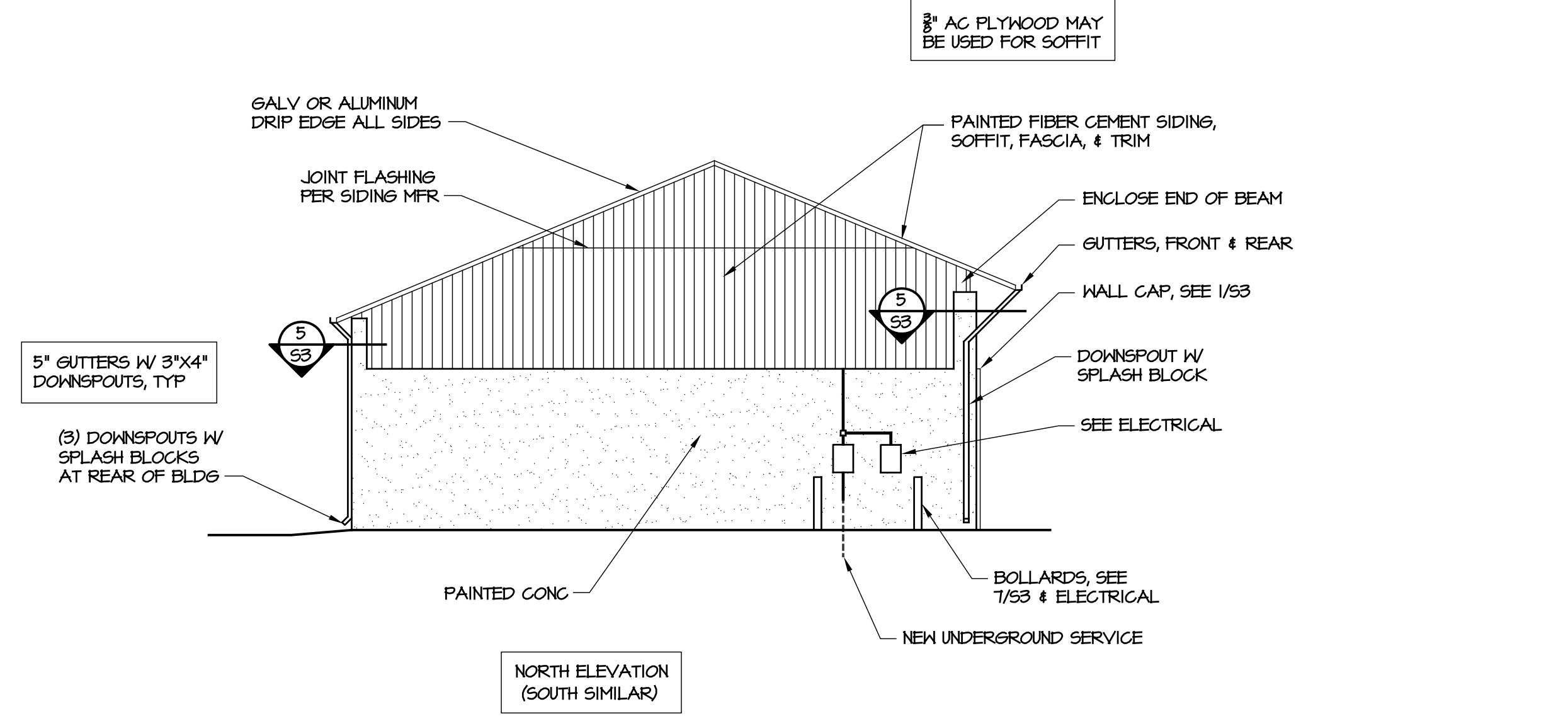
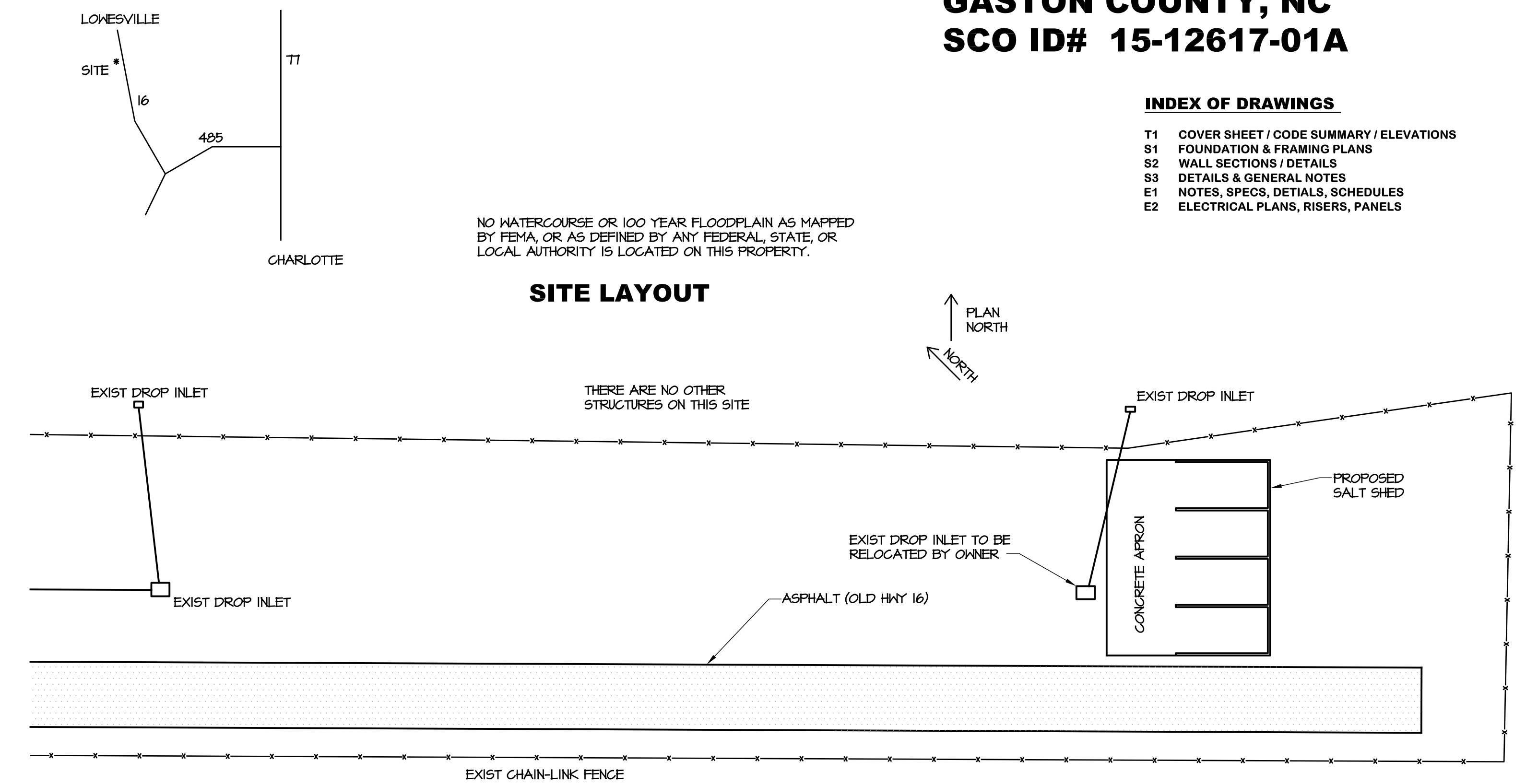
REVISIONS
NO. DATE

DATE ISSUED: 01-08-18
DRAWN BY: MDM
CHECKED BY: MDM

SHEET NO.
T1
OF 1

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.

SITE LAYOUT



ELEVATIONS
SCALE: 1/8\"/>

**2012 APPENDIX B
BUILDING CODE SUMMARY**

Name of Project: GASTON COUNTY FOUR-BAY SALT SHED
Address: HWY 12, LOWESVILLE, NC
Proposed Use: STORAGE
Owner or Authorized Agent: HIGHWAY DIVISION 12 Phone # 704-480-9047
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	BURKE DESIGN GROUP	BEN BURKE	22038	(919) 771-1916	ben@bdc-nc.com
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 Other
CONSTRUCTED: ORIGINAL USE RENOVATED CURRENT USE

BUILDING DATA

Construction Type: I-A I-B II-A II-B III-A III-B IV V-A V-B
Mixed construction: No Yes Types: _____
Sprinklers: No Partial Yes NFPA 13 NFPA 13R NFPA 130
Standpipes: No Yes Class I II III Wet Dry
Fire District: No Yes Flood Hazard Area: No Yes
Building Height: Feet 25'-0" Number of Stories 1
Mezzanine: No Yes
Gross Building Area:
FLOOR EXISTING (SQ FT) NEW (SQ FT) SUB-TOTAL
1st Floor 3485 3485
TOTAL 3485 3485

ALLOWABLE AREA

Primary Occupancy: Assembly A-1 A-2 A-3 A-4 A-5
 Business Educational Factory F-1 Moderate F-2 Low F-3
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.	3485	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 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	DETAIL # FOR RATED PENETRATION	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

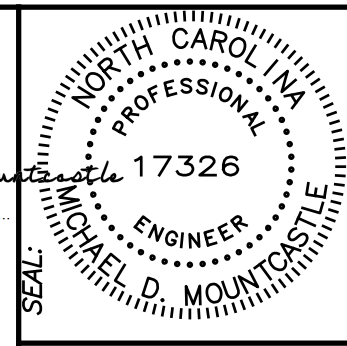
STRUCTURAL DESIGN

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_s) 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) V_x = _____ V_y = _____

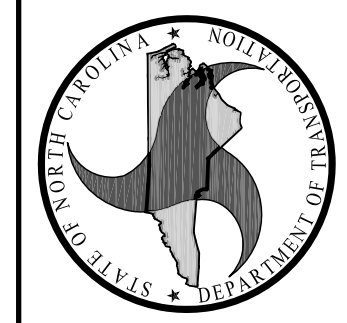
SEISMIC DESIGN:
Compliance with Section 1616.4 only? YES NO
SEISMIC DESIGN CATEGORY: A B C D
Provide the following Seismic Design Parameters:
Occupancy Category: I II III IV 10.2 psf
Spectral Response Acceleration S_s 29.8 %g S₁ 10.2 %g
Site Classification: D Field Test Presumptive
Basic structural system (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_s = _____ V_w = _____
Analysis Procedure: Simplified _____ Equivalent Lateral Force _____ Modal
Architectural, Mechanical, Components anchored? N/A
LATERAL DESIGN CONTROL: Earthquake _____ Wind _____ Special Inspection Required?
SOIL BEARING CAPACITIES: _____
 Field Test Presumptive 2000 _____

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

DocuSigned by:
Michael M...
2AD8E9B83C4A



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RALEIGH, NORTH CAROLINA 27601
PHONE 919/707-4640 FAX 919/707-0089



DESIGNED BY:

CONSULTANT:

PROJECT TITLE / DESCRIPTION:
FOUNDATION PLAN
FRAMING PLAN

STATE CONSTRUCTION
ID# 00-12617-01A

ASSET NUMBER:
CO.# SITE# BLDG.#
00 - 00 - 00

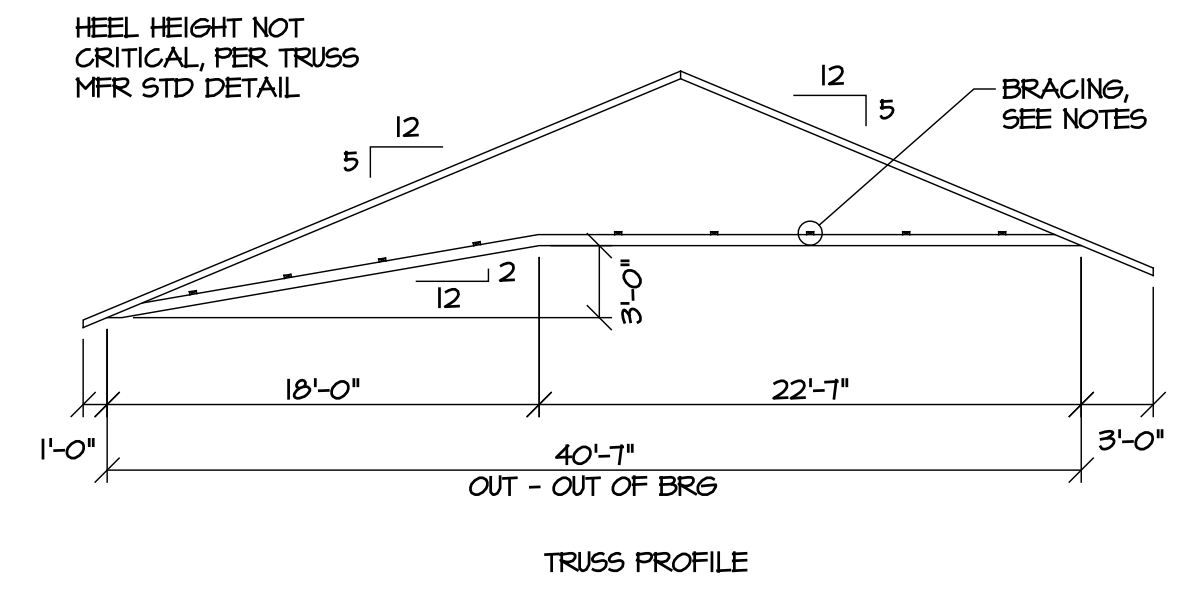
REVISIONS
NO. DATE

DATE ISSUED: 01-08-18
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CHECKED BY: MDM

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S1
1 OF 3

NOTES:

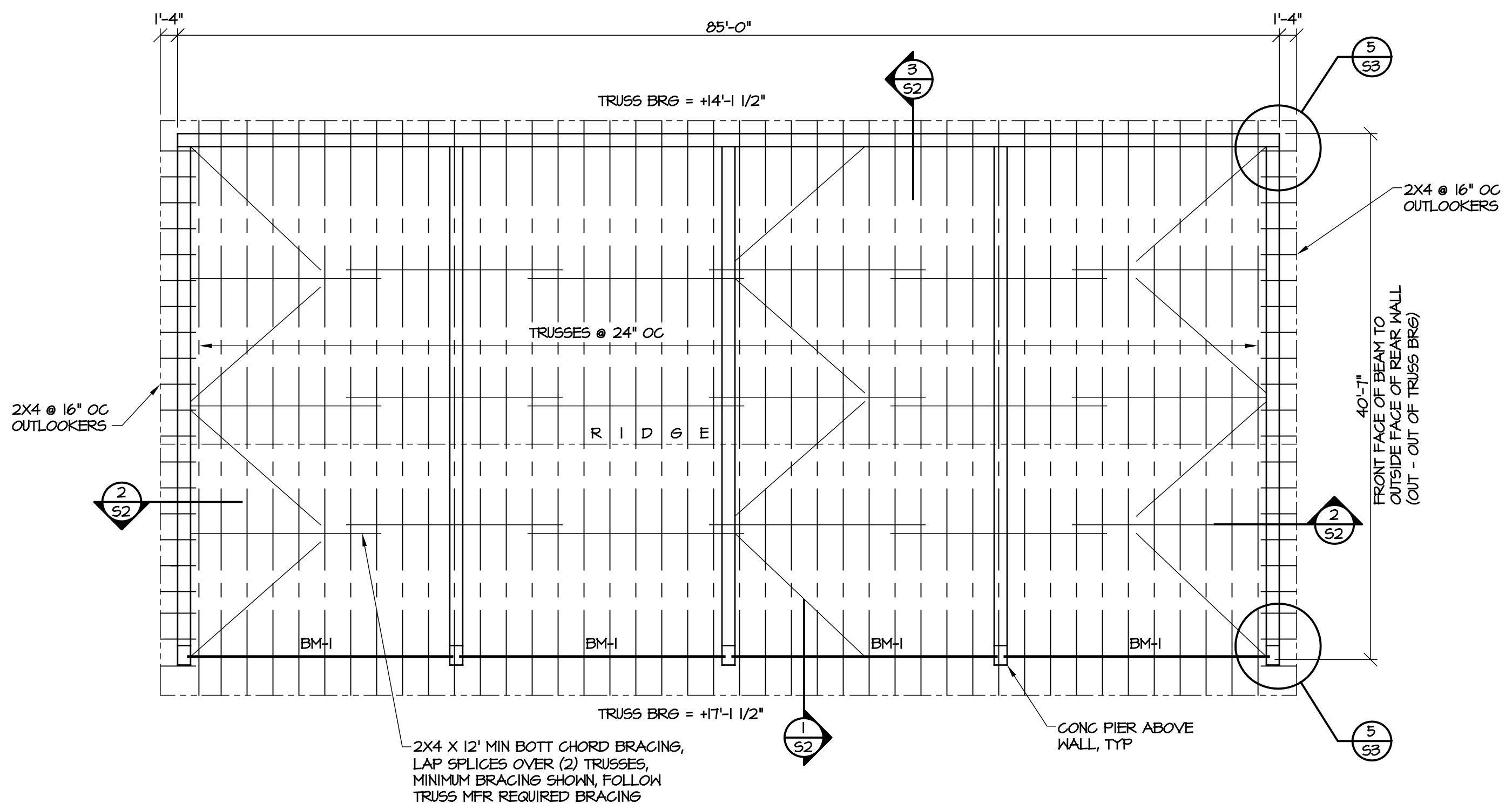
1. PROVIDE TRUSS SHOP DRAWINGS SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NC, SHOWING TRUSS LAYOUT, TRUSS DESIGNS, & REQUIRED BRACING.
2. TRUSS MFR NOTE THERE IS NO CEILING & BOTTOM CHORD BRACING MAY BE REQUIRED. GC NOTE BOTTOM CHORD BRACING IS SHOWN ON TRUSS CALCULATION SHEET # 15 IN ADDITION TO THE TEMPORARY BRACING.
3. ROOF SHEATHING SHALL BE 3/8" 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 = 5-1/2" X 16" GLULAM, 24F-V4, BALANCED, & PRESSURE TREATED.



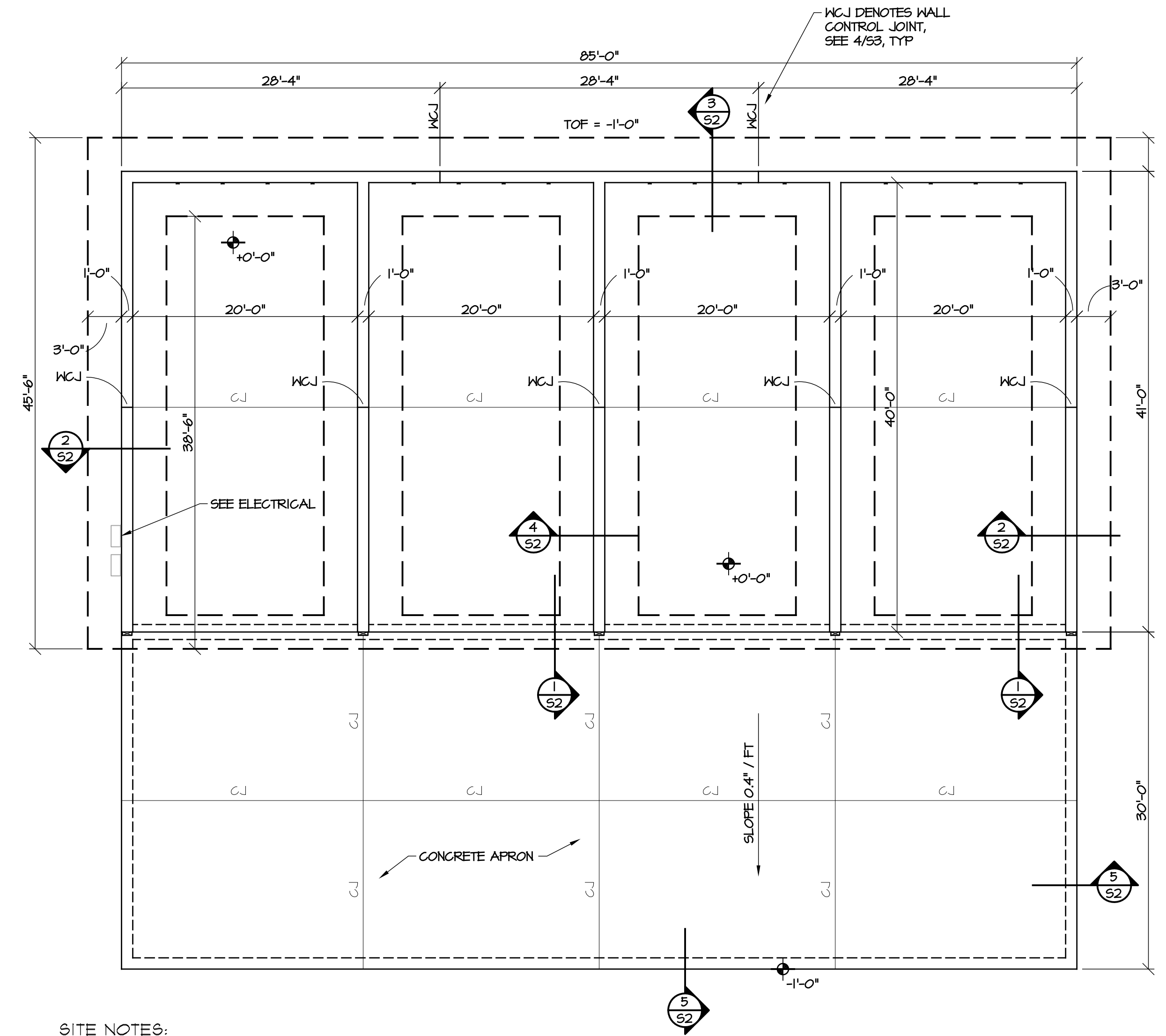
NOTES:

1. COMPRESSIVE STRENGTH OF CONCRETE FOR FOOTINGS = 4000 PSI.
2. CONCRETE FOR WALLS & SLABS SHALL HAVE 0.40 MAXIMUM W/C RATIO, & MINIMUM 5000 PSI COMPRESSIVE STRENGTH.
3. CONCRETE FOR SLABS SHALL INCLUDE 5% ENTRAINED AIR.
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".
6. COORDINATE LOCATION OF CONDUIT & GROUND ROD W/ OWNER PRIOR TO PLACEMENT OF CONCRETE FOR FOOTINGS & SLABS, SEE 6/53.
7. FLOOR SLAB SHALL BE 6" THICK CONG REINF'D W/ EPOXY COATED #4 @ 16" OC, EM, ON 6" THICK #51 STONE BASE.
8. WOOD STUD WALL SHEATHING SHALL BE 1/2" APA RATED SHEATHING 32/16 SPAN RATINGS, EXPOSURE 1, ATTACHED W/ 8D NAILS @ 6" OC ON PANEL EDGES & 8" OC ALONG INTERMEDIATE SUPPORTS, UN. PROVIDE BLOCKING AT ALL PANEL EDGES ON EXTERIOR WALLS.
9. PT DENOTES PRESSURE TREATED IN ACCORDANCE W/ ANPA STANDARDS.

PREPARE CONCRETE WALL SURFACES AS FOLLOWS:
INTERIOR - PATCH TIE HOLES & DEFECTS, REMOVE FINS FLUSH W/ SURFACE.
EXTERIOR - PATCH TIE HOLES, BUG HOLES, & OTHER DEFECTS. REMOVE FINS FLUSH WITH SURFACE. PATCH HOLES THAT CANNOT BE SEALED W/ BLOCK FILLER & PAINT. NOTE, RUBBING MAY BE REQ'D DEPENDING ON CONDITION OF CONCRETE SURFACE AFTER REMOVAL OF FORMS.



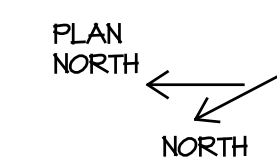
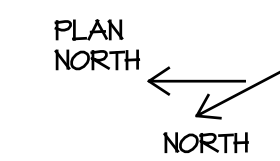
2 FRAMING PLAN
SCALE: 1/8" = 1'-0"



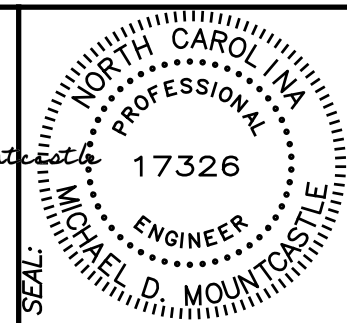
SITE NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR BUILDING LAYOUT. COORDINATE BUILDING LOCATION W/ NCDOT. AFTER LAYOUT, VERIFY BUILDING LOCATION W/ NCDOT PRIOR TO CONSTRUCTION.
2. ROUGH GRADING HAS BEEN PROVIDED BY NCDOT. GC IS RESPONSIBLE FOR FOOTING EXCAVATION & FINAL GRADING AROUND BUILDING. SLOPE SOIL AROUND BUILDING FOR DRAINAGE AWAY FROM WALL.
3. FINISH SLAB ELEVATION WILL BE PROVIDED BY OWNER.
4. SEEDING WILL BE PROVIDED BY THE OWNER.
5. PROVIDE & COORDINATE EROSION CONTROL MEASURES W/ LOCAL NCDOT PERSONNEL.

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



DocuSigned by:
Michael Mountcastle
ZADBE98635CA9A



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CONSULTANT:

DRAWING TITLE / DESCRIPTION: WALL SECTIONS / DETAILS

NEW FOUR-BAY SALT STORAGE BUILDING
HIGHWAY DIVISION 12, NCDOT
GASTON COUNTY, NORTH CAROLINA

STATE CONSTRUCTION ID# 00-12617-01A

ASSET NUMBER: CO.# SITE.# BLDG.#
00 - 00 - 00

REVISIONS NO.	DATE

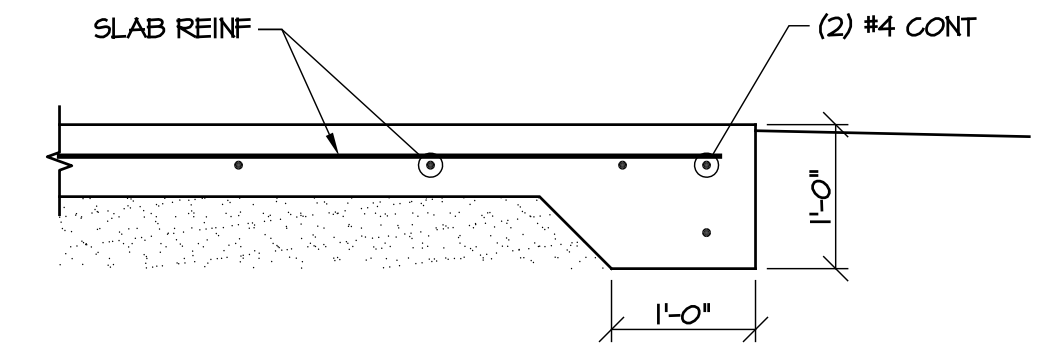
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DRAWN BY: MDM
CHECKED BY: MDM

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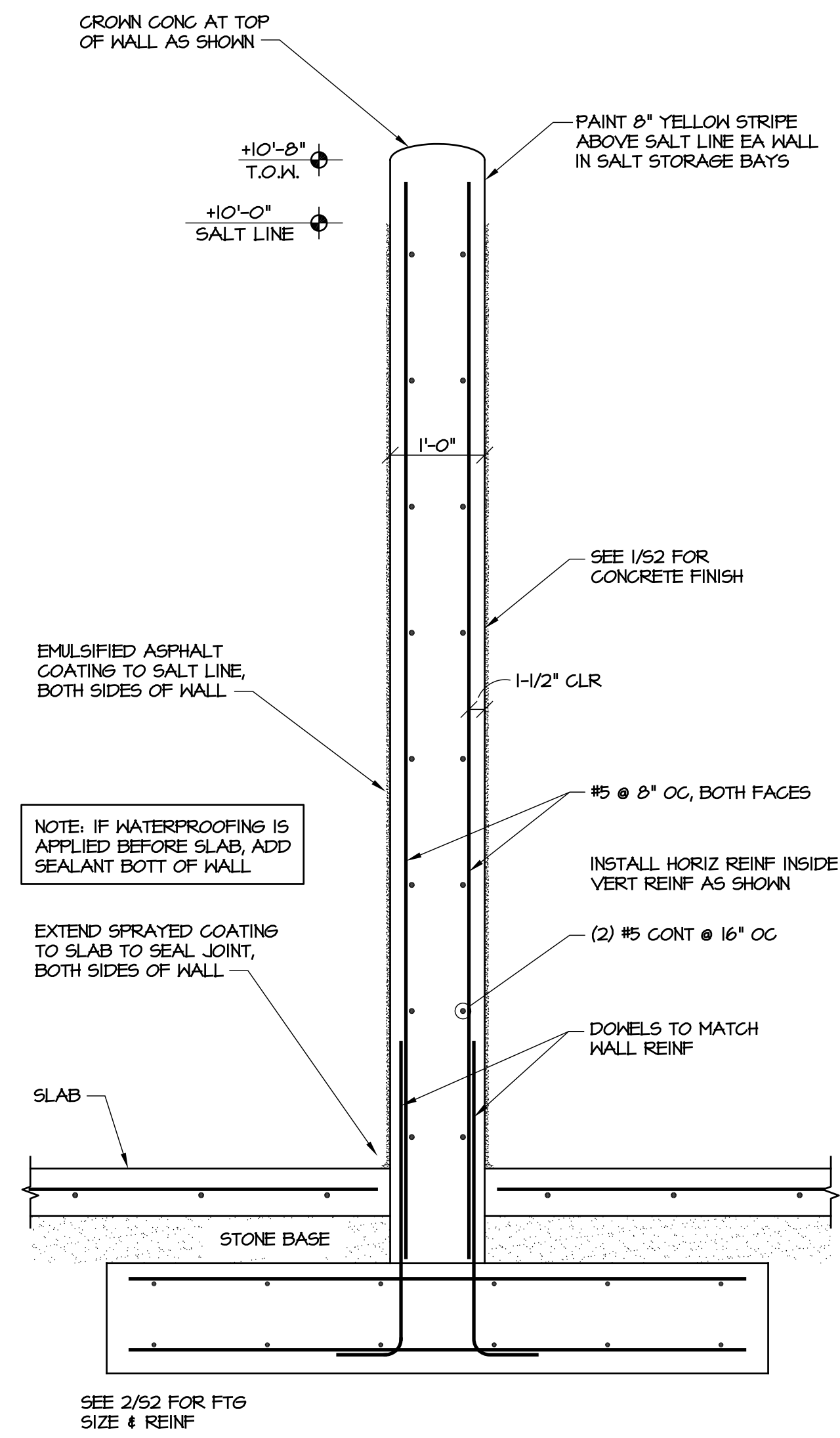
S2

2 OF 3

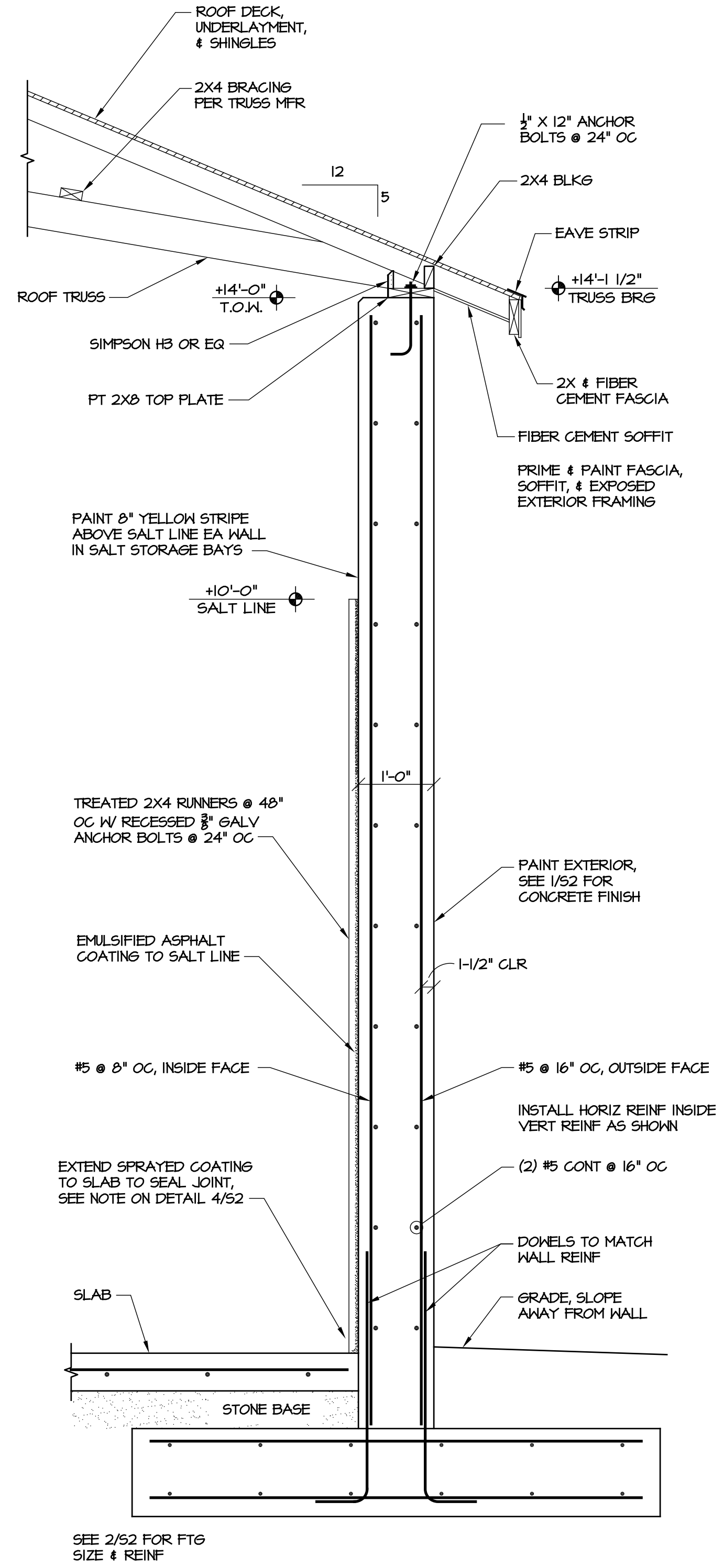
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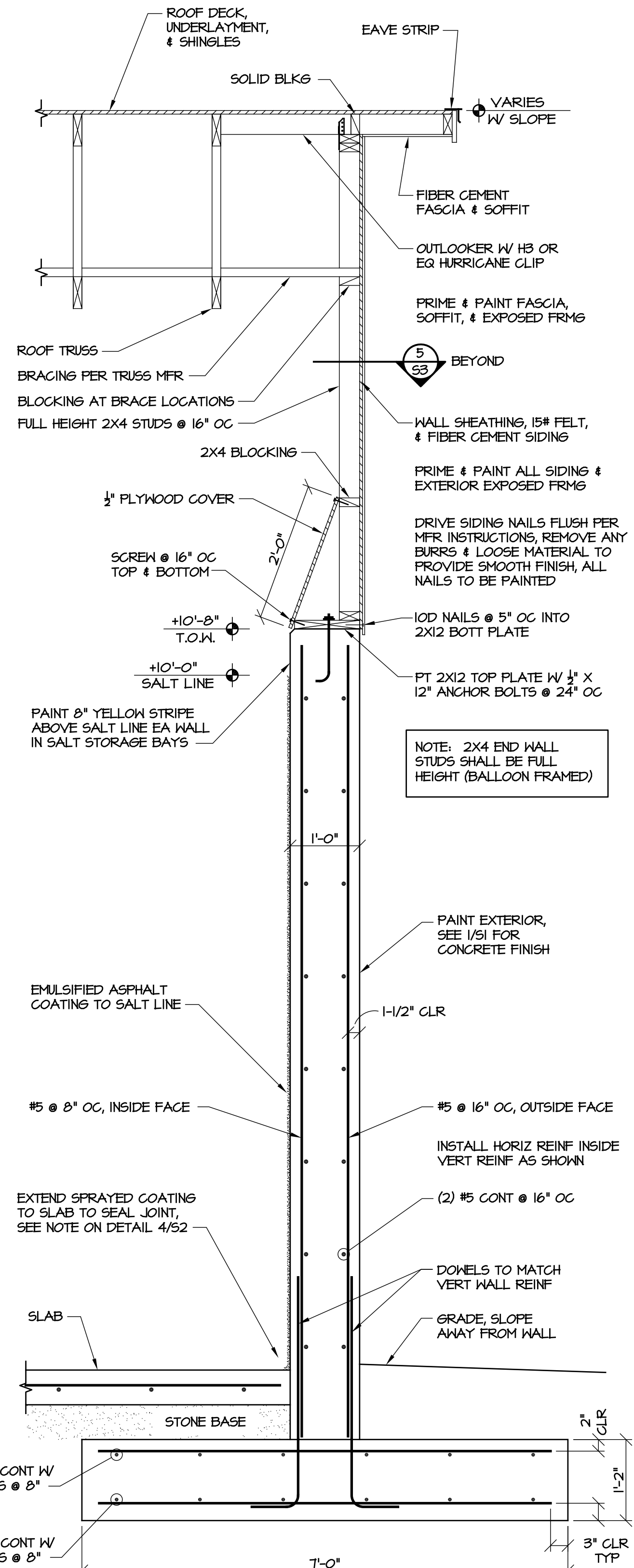
5 APRON SLAB EDGE
SCALE: 3/4" = 1'-0"



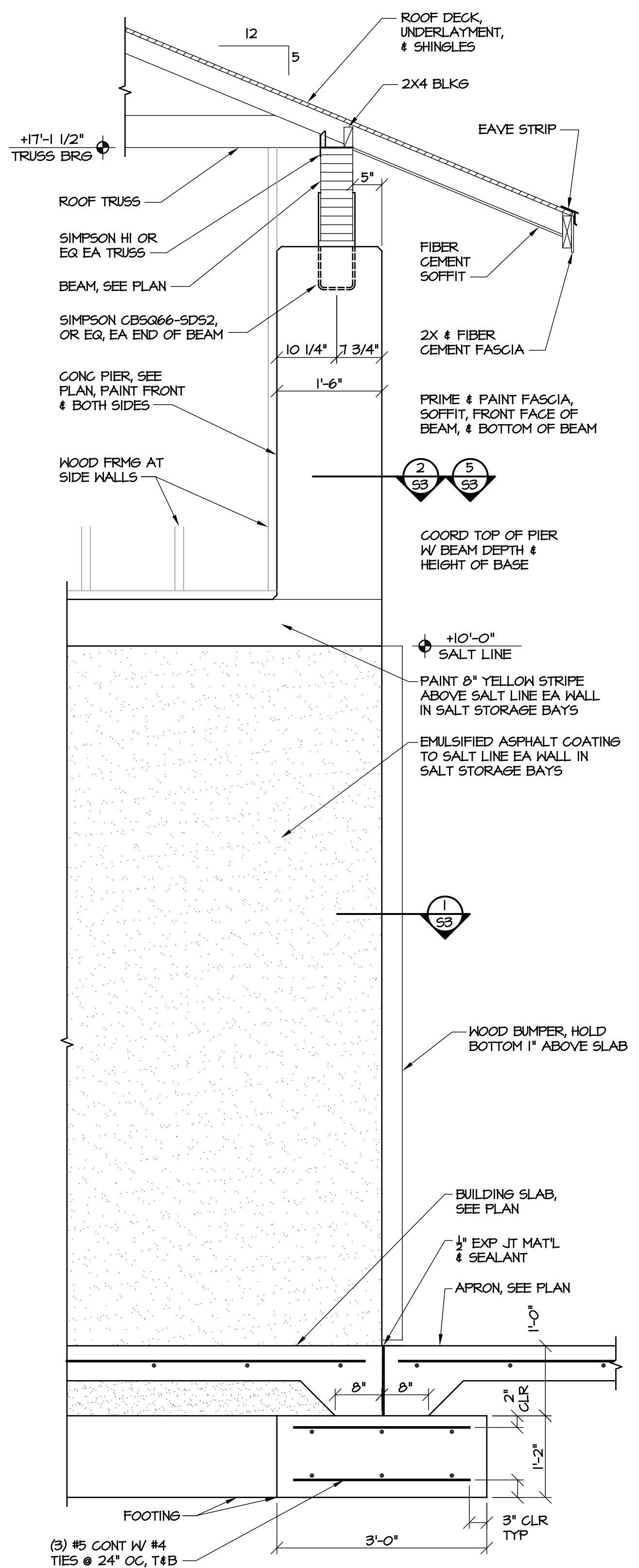
4 SECTION AT INTERIOR WALL
SCALE: 3/4" = 1'-0"



3 SECTION AT REAR WALL
SCALE: 3/4" = 1'-0"



2 SECTION AT SIDE WALL
SCALE: 3/4" = 1'-0"



1 SECTION AT FRONT OF BUILDING
SCALE: 3/4" = 1'-0"

GENERAL NOTES:

A. GENERAL

- See specifications for further information. In case of conflict between specifications & drawings, contact architect for resolution.
- Contractor is responsible for coordination & distribution of all changes in contract documents to all subcontractors.
- Contractor shall verify all field conditions, elevations, & dimensions prior to construction. Do not scale from plans.
- Means & methods of construction, including temporary bracing, shoring, & jobsite safety, are the responsibility of the contractor.
- Structural frame shall be braced until erection is complete & permanent connections & bracing are installed.
- Provide silt fence or other erosion & sediment control measures as required. Coordinate with local NCDOT personnel.

B. FOUNDATION

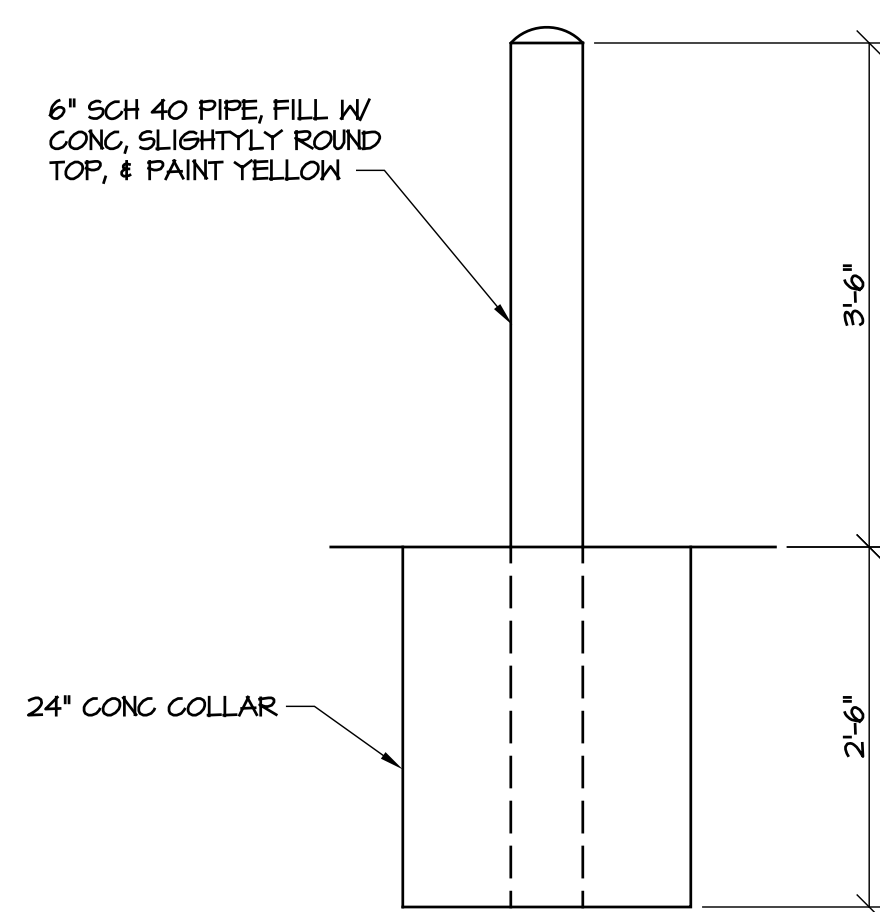
- Footing excavations shall be reviewed by a geotechnical engineer or construction testing agency approved by the architect or engineer.
- Footing depths shown are based on geotechnical investigation or presumptive soil properties. Soft or unsuitable soils shall be removed & replaced with suitable fill as specified.
- 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.

C. CONCRETE

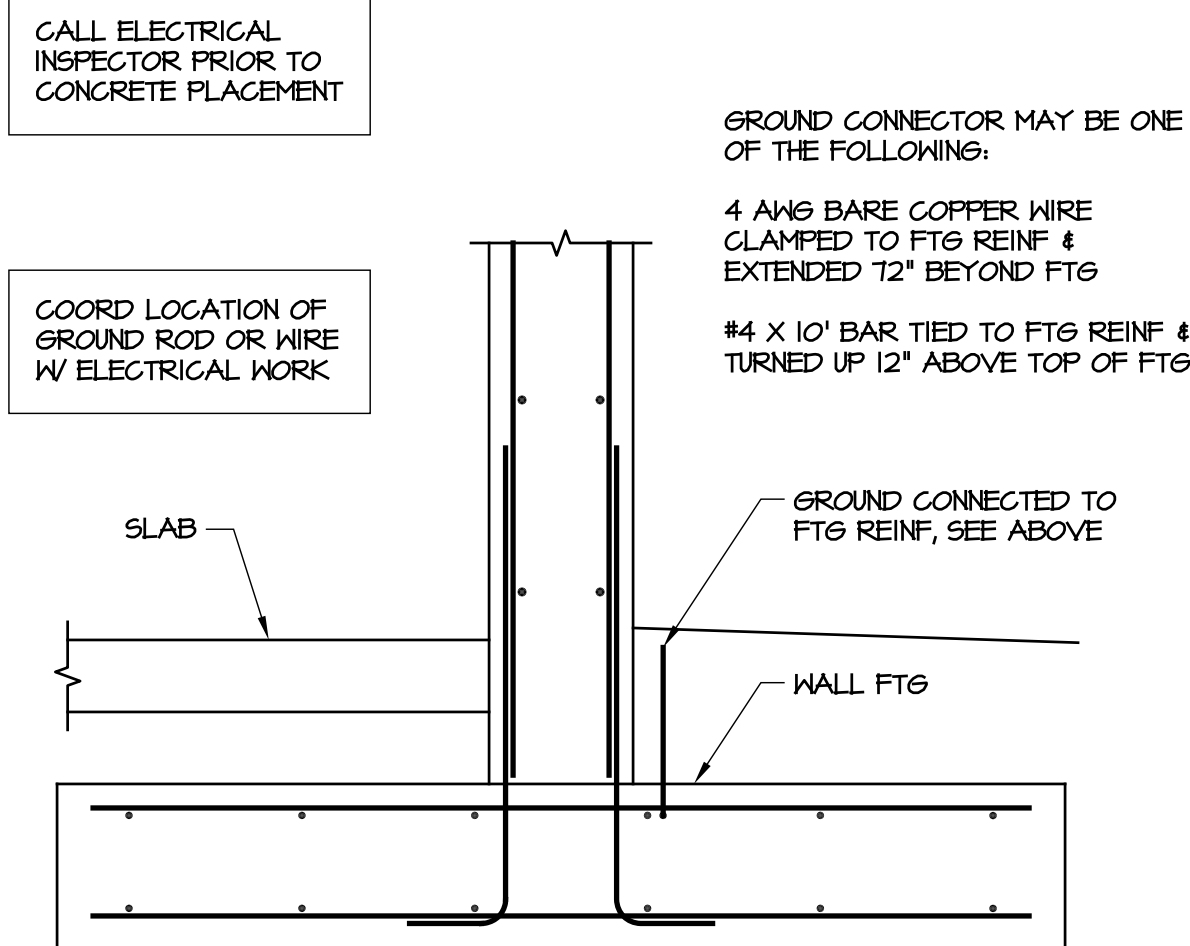
- See plans for required compressive strength of concrete.
- If not specified on plans, provide sawed slab control joints in slabs on grade spaced at not more than 48 times the slab thickness.
- Reinforcing steel shall meet ASTM A 615, Grade 60.
- Clear distance from face of concrete to main reinforcing:
 - Suspended slabs and joists: 1"
 - Grade beams, pedestals, columns, walls: 2"
 - Footings & walls cast against earth: 3"
- Lap all reinforcement splices 48 bar diameters, UON.
- Detailing, fabrication, & installation of reinforcing steel shall conform to ACI "Manual of Standard Practice for Detailing Reinforced Concrete Structures" (ACI 315).
- Workmanship, tolerances, & concrete placement shall conform to "Standard Specifications for Structural Concrete" (ACI 301).
- Chamfer exposed edges of concrete 3/4", UON.
- Anchor bolts shall conform to ASTM F 1554, Grade 36. Anchor bolts, nuts, & washers shall be galvanized.

D. WOOD

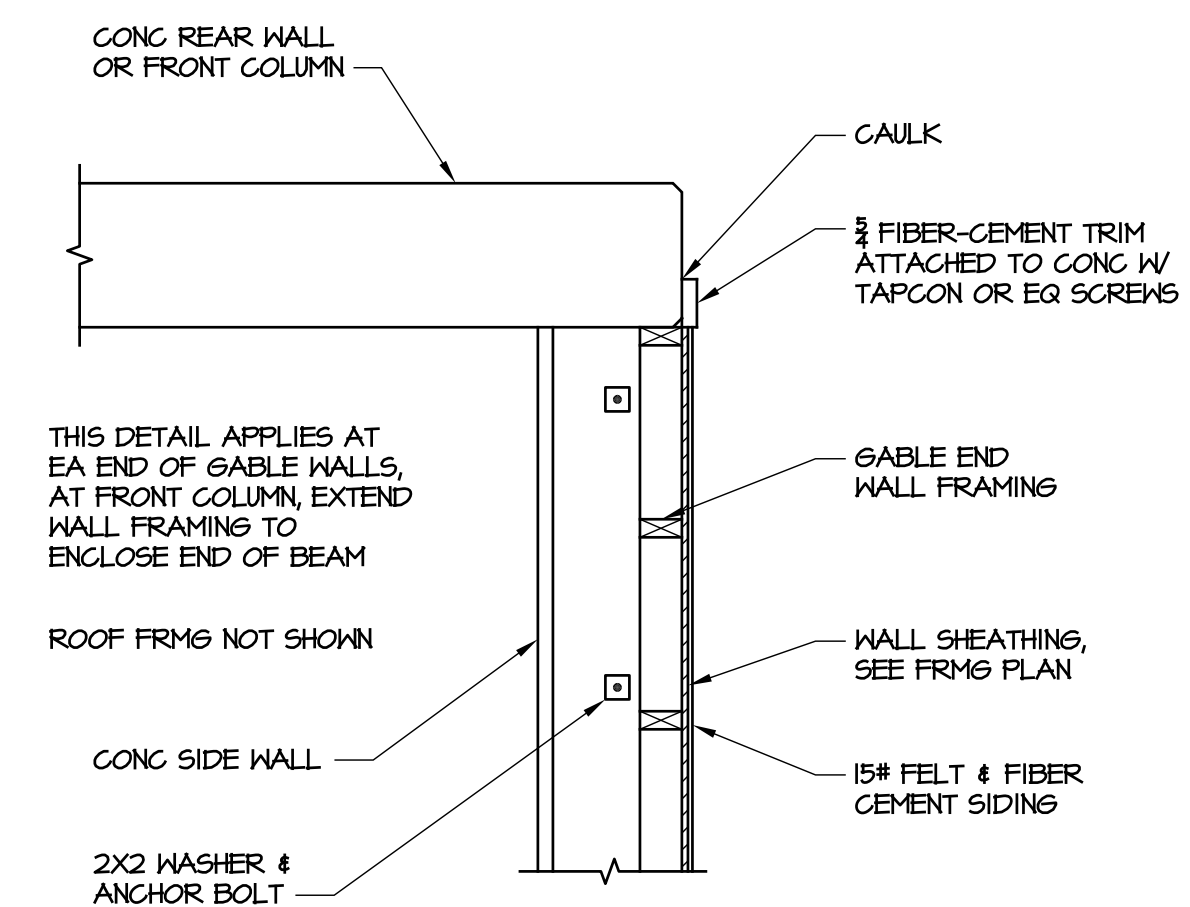
- Structural lumber shall be SPF #2 or better, UON. Wood for fabricated trusses shall be SYP #2 or better, except that webs may be SYP #3.
- Wood in contact with concrete or masonry shall be treated.
- Straps, ties, hangers, & other connection hardware shall be galvanized.
- Connections not otherwise detailed shall be in accordance with Tables 2304.9.1.1 thru 2304.9.1.6 of the NC State Building Code.
- 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.
- 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.
- Additional bracing may be required by engineer of record as indicated on plans for support of gable walls or other items.



7 PIPE BOLLARD
SCALE: 3/4" = 1'-0"



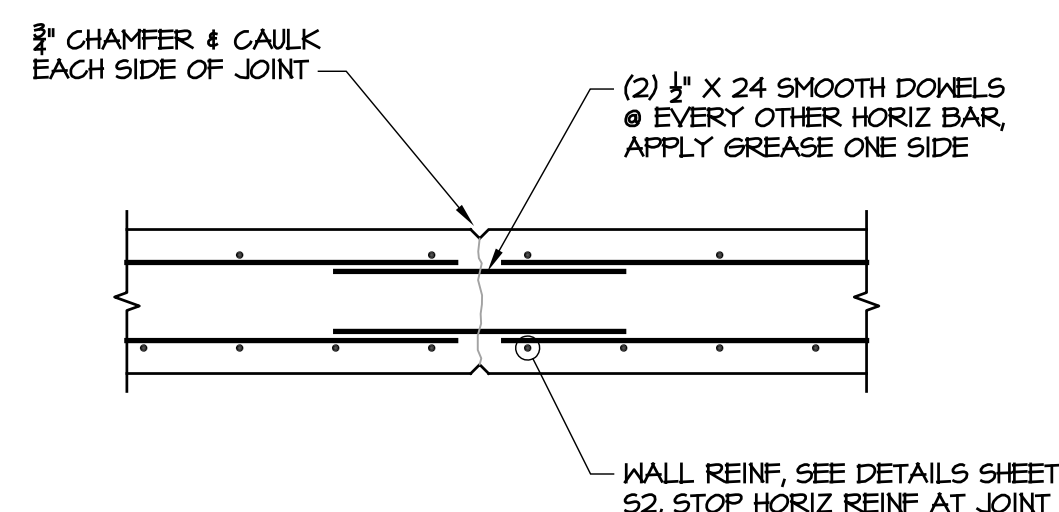
6 ELECTRICAL GROUNDING ROD
SCALE: 3/4" = 1'-0"



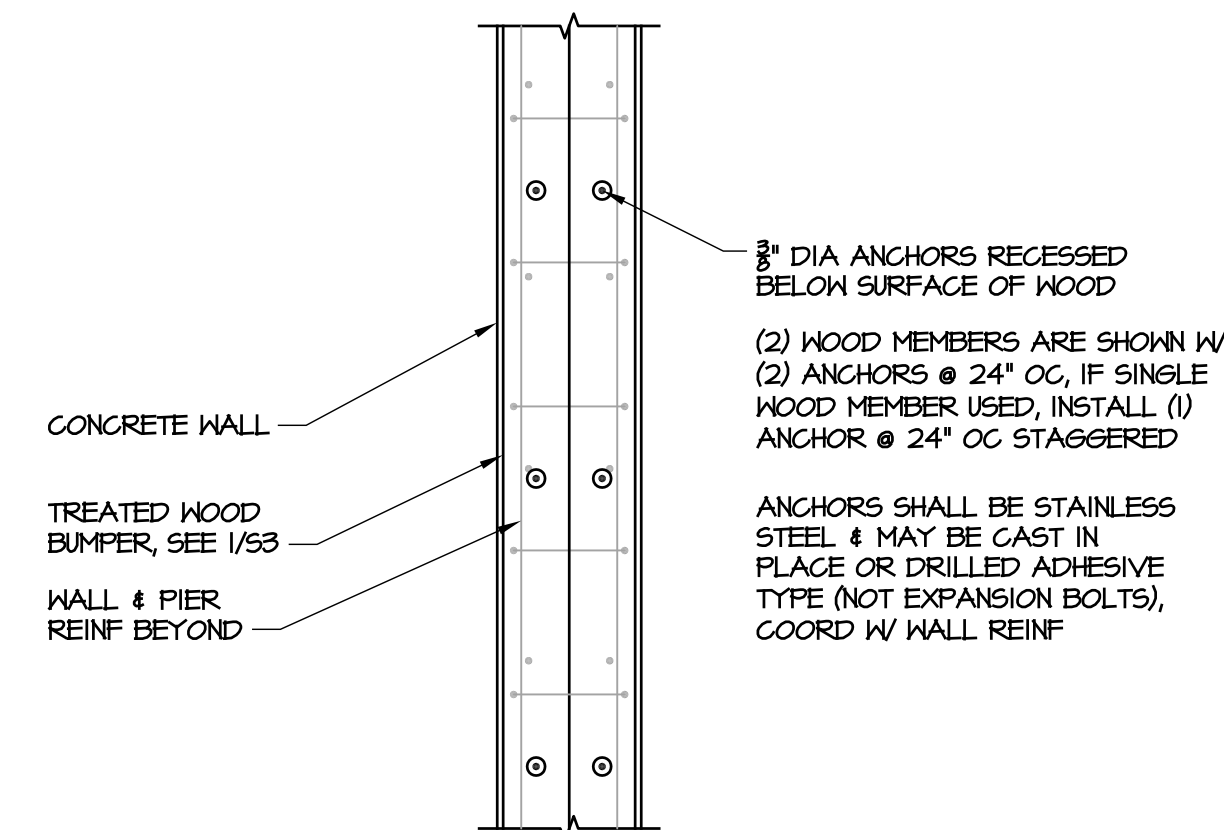
5 GABLE WALL TRIM DETAIL
SCALE: 3/4" = 1'-0"

NOTES:

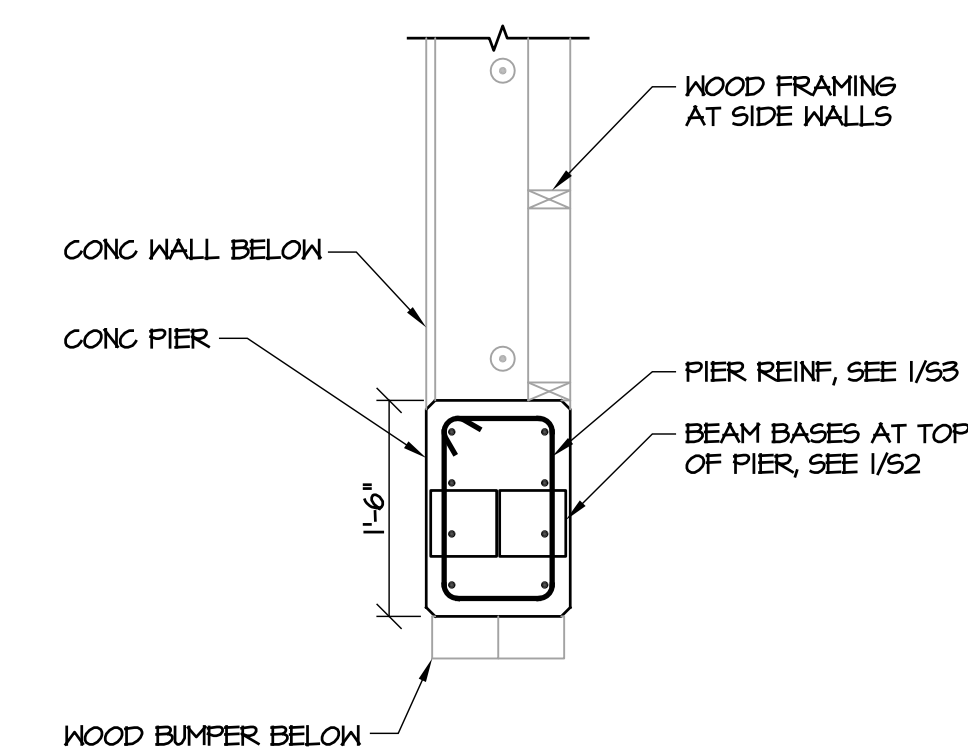
- CONCRETE MAY BE PLACED CONTINUOUSLY OR STOPPED TO PROVIDE COLD JOINT.
- SAW CUT JOINTS INSTEAD OF CHAMFERS ARE AN ACCEPTABLE OPTION.
- IF PARGING IS APPLIED TO EXTERIOR WALL, DO NOT APPLY CONTINUOUSLY ACROSS WALL CONTROL JOINTS. STOP PARGE COAT EA SIDE OF JOINT & APPLY SEALANT.



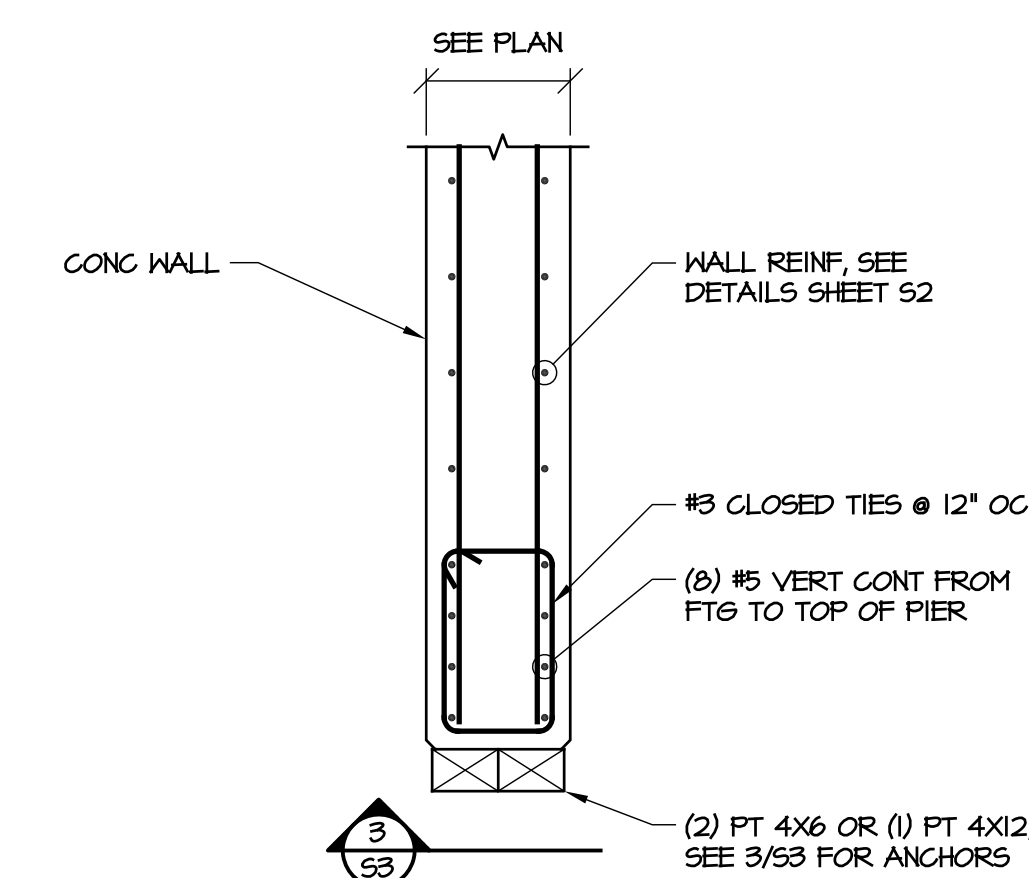
4 WALL CONTROL JOINT
SCALE: 3/4" = 1'-0"



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

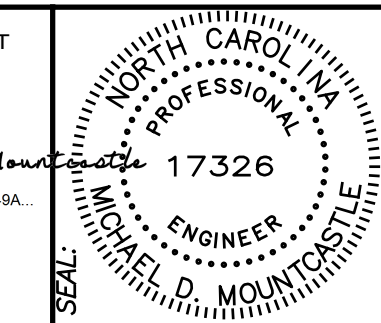


2 CONCRETE PIER
SCALE: 3/4" = 1'-0"

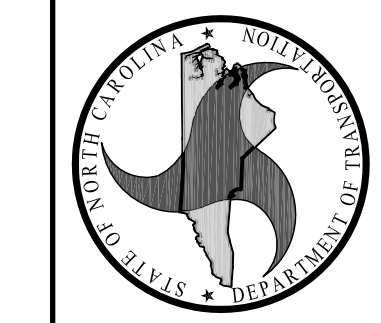


1 FRONT EDGE OF WALL
SCALE: 3/4" = 1'-0"

DocuSigned by:
Michael Mountcastle
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CONSULTANT:

DRAWING TITLE / DESCRIPTION:
DETAILS
GENERAL NOTES

PROJECT TITLE:
NEW FOUR-BAY SALT STORAGE BUILDING
HIGHWAY DIVISION 12, NCDOT
GASTON COUNTY, NORTH CAROLINA

STATE CONSTRUCTION ID#	00-12617-01A
ASSET NUMBER:	
CO.#	00
SITE.#	00
BLDG.#	00
REVISIONS NO.	DATE

DATE ISSUED: 01-08-18
DRAWN BY: MDM
CHECKED BY: MDM

SHEET NO.
S3
3 OF 3

BID SET

DIVISION 16 - ELECTRICAL

PART 1 - GENERAL

1.1 DESCRIPTION OF THE WORK

- A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:
- Lighting and power distribution system.
 - Provide lighting fixtures per light fixture schedule with lamps to match.
 - Wiring devices, boxes, cover plates, etc.
 - Source of power for all items of equipment.
 - Grounding.
 - Other requirements and/or systems where shown.

- B. All work shall be complete and items, equipment, etc., shall be electrically connected for proper and correct operation.

- C. All work under this contract shall be installed in accordance with the latest edition of the following codes and standards insofar as they apply:
- The 2014 National Electrical Code.
 - The National Electrical Safety Code.
 - Underwriter's Laboratories, Inc., Standards and approved listings or other approved 3rd party listing agency.
 - Electrical Testing Laboratories standards.
 - 2012 North Carolina State Building Code.
 - 2012 North Carolina State Energy Code.

- D. The Electrical Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.
- E. Local permits are not required. All work must be inspected by the Office of State Construction state electrical inspector and the Engineer of Record. Provide certificate of inspection and approval from the state electrical inspector prior to the final inspection. The electrical contractor is responsible for contacting the state electrical inspector for all required inspections.

- F. All work shall be done by skilled mechanics and shall present a neat, trim, workmanlike condition when complete.

1.2 INTENT

- A. The intent of these specifications and the accompanying drawings is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The Electrical Contractor shall take this into consideration and include in his base bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner.

1.3 COORDINATION

- A. Coordinate work with other contractors. Notify Architect of apparent conflicts early to separate construction. If structural damage appears imminent, stop work and notify Architect for a decision before resuming operations.
- B. Locations shown are approximate. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required. Coordinate all locations with architect before any rough-in.

1.4 SHOP DRAWINGS

- A. Shop drawings shall be submitted for panels and service equipment, lighting, wiring devices, and cover plates. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified.

PART 2 - PRODUCTS AND MATERIALS

2.1 GENERAL

- A. All material shall be new and shall bear the manufacturer's name, trade name, and be third party acceptable to NCCOI listed and labeled where such standard has been established for the particular material. Materials shall be the standard products of manufacturer's regularly engaged in the manufacturer of the required type of equipment and the manufacturer's latest approved design.
- Boxes installed in concealed locations shall be set flush with the finished surfaces.
 - Provide rated boxes in all fire barriers & walls installed per code.

2.2 CONDUCTORS

- A. Conductors shall be color coded, sizes #4 and larger may be color taped on the job. Color coding shall comply with 2011 NEC 200.6.
- 200/120V, 3 phase
Phase A- Black
Phase B- Red
Phase C- Blue
Neutral- White
Ground- Green
- 480/277V, 3 phase
Phase A- Brown
Phase B- Orange
Phase C- Yellow
Neutral- Natural Gray
Ground- Green

- B. Conductors shall be manufactured by Dodge, Southwire or approved equal. Conductors shall meet the latest requirements of NEMA and IPCEA and shall be third party acceptable to NCCOI approved.

- C. Conductors shall be spliced and taped as follows:
- Size #10 and #12, use Ideal "Wing Nuts" or T&B "Piggys" connectors. Connectors shall be rated for 150 degrees C for use in recessed lighting fixtures.
 - Size #8 and larger shall be solderless screw and screw-clamping type, smoothly covered and shaped with rubber gum type with final cover vinyl plastic electrical type. In lieu of rubber gum and vinyl plastic type, factory fabricated approved preformed insulating covers may be used. All connectors shall be UL approved.
 - No split-bolt type connectors may be used.

- D. All branch wire and connections shall be copper and sized per National Electric Code.

- E. All conductors shall be continuous without splice between junction, outlet, device boxes, etc. No splicing will be permitted in panelboard cabinets, safety switches, etc.

- F. All wiring in mechanical spaces shall be plenum rated.

- G. Provide GFI protection within 6'-0" of any sink.

- H. All multi-wire branch circuits shall comply with 2014 NEC, 210.4(B).

2.3 PANELBOARDS, SAFETY SWITCHES

- A. Panelboards shall comply with NEMA Standard PB 1 - Latest Edition and as manufactured by Square D or ITE-Siemens.
- All panel boards must have copper buses and bolt-in breakers.
- B. Safety switches shall be heavy duty type, size and rating as required for load service. Safety switches shall be fused or unfused as shown and/or as required. Safety switches serving motor loads shall be horsepower rated for load served.

2.4 WIRING DEVICES

- A. Wiring devices shall be commercial grade by Bryant, Leviton, Cooper or approved equal. With matching cover. Color by Architect.
- B. Wiring devices installed under a Kitchen Hood shall have stainless steel covers.
- C. Wiring devices installed over counters shall comply with ANSI A117.1.

2.7 CONDUIT

- A. PVC conduit will be allowed under slab. Provide rigid turn-ups.
- B. All exposed conduit shall be rigid steel where exposed to the elements, located less than 8'-0" above grade or where exposed to hazardous conditions.
- C. EMT conduit, above slab, concealed or exposed above 8'-0" shall be used through out the project.
- D. Metallic sheathed "MC" cable should not be used for this project, without designer authorization. MC cable is allowed for light wires 6'-0" or less and where concealed with-in existing construction to minimize demolition work. If used, MC cable shall be 1/2" with minimum #12 AWG copper wire and green insulated copper ground.

PART 3 - EXECUTION

3.1 CIRCUIT GROUNDING

- A. All circuits shall contain an insulated, green, copper grounding conductor, sized in accordance with Table 250-122 of the NEC. Grounding conductors shall be connected to equipment grounding bus in panelboard and securely attached and grounded to the device or enclosure at the other end.

3.2 GROUNDING TYPE CONVENIENCE OUTLETS AND SWITCHES

- A. Outlets and switches shall be solidly grounded to equipment grounding system with a green colored insulated conductor. Electrical connections shall be continuous from equipment ground bus in panelboard to the hex nut on the convenience outlet or switch.

3.3 MOTORS

- A. All motors shall be connected to conduit system with short length (minimum length 24" and maximum length 36") of flexible liquidtight conduit.

3.4 EQUIPMENT LABELING

- A. Provide permanent plastic name plates for all panelboards, safety switches, wiring troughs, etc., for identification of equipment controlled, services, etc. Nameplates shall be securely and permanently attached to equipment with stainless steel screws. Nameplates shall include the name of the equipment and where it is fed from.
- Color Coding-
Blue surface with white core- 120/200v equipment
Black surface with white core- 277/480v equipment
Bright red surface with white core- fire alarm systems
Dark red surface with white core- security systems
Green surface with white core- "emergency" systems
Orange surface with white core- telephone systems
Brown surface with white core- data systems
White surface with black core- piping systems
Purple surface with white core- TV systems
- B. All switch plates, receptacle plates and outlet covers shall be labeled with machine printed vinyl labels identifying the circuit(s) within.
- C. All empty conduit runs shall be identified and indicated where they terminate.
- D. Provide typewritten directory in each panelboard to clearly identify each circuit, service, etc.

3.5 JUNCTION AND/OR PULL BOXES

- A. Boxes shall be installed where necessary to avoid excessive runs and/or too many bends between outlets.

3.6 PULL WIRE

- A. Leave pull wire in each empty conduit run.

3.7 GROUNDING

- A. All grounding shall be in accordance with Article 250 of the NEC. In addition, the following requirements shall be met:
- Grounding conductors shall be installed as to permit the shortest and most direct path from equipment to ground. All connections to grounding conductors shall be accessible.
 - Equipment ground continuity shall be maintained through flexible metal conduit.
 - All wiring devices equipped with grounding connection shall be solidly grounded to ground system with grounding conductors.
 - The frame of all lighting fixtures shall be securely grounded to the equipment ground system with grounding conductors.
 - All equipment enclosures, and non-current-carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.
 - All equipment enclosures, and non-current-carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.
 - The raceway system shall not be relied on for ground continuity. A green grounding conductor, properly sized per NEC table 250-122, shall be run in all power raceways.

3.8 ELECTRICAL WORK IN CONNECTION WITH OTHER WORK

- A. The trade(s) furnishing equipment will provide disconnect switches, motor starters, and make final equipment connections. ELECTRICAL CONTRACTOR will make line side connections to disconnect switches or motor starters.

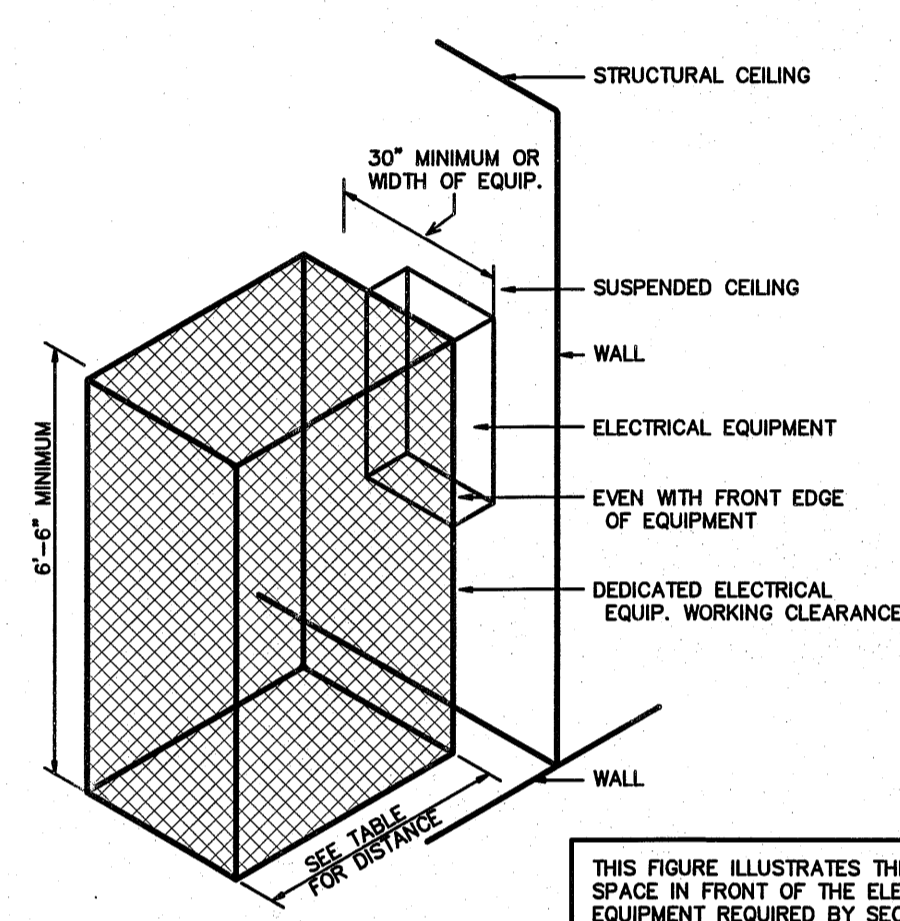
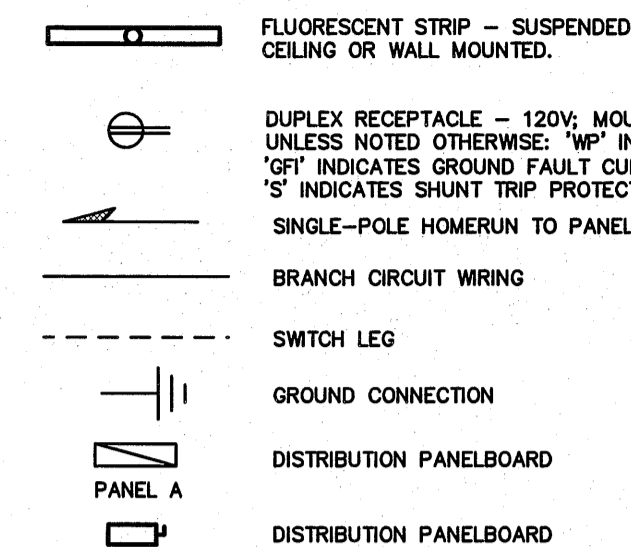
3.9 CLEAN UP

- A. During construction, keep the site clean of debris. Upon completion, and before final inspection, clean up the premises to remove all evidence of work. In addition upon completion of construction leave equipment clean.

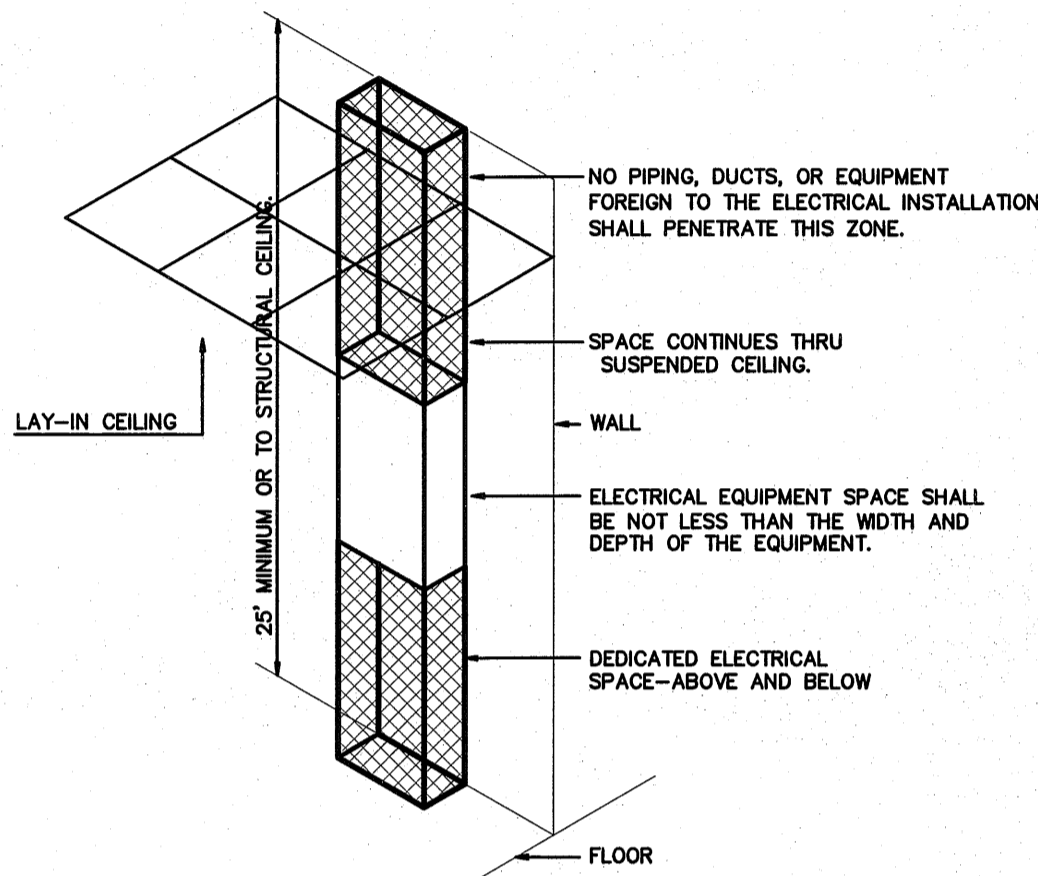
3.10 GUARANTEE

- A. Guarantee all materials and labor included in the electrical work for a period of one year from date of final acceptance by the Owner. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the Owner.

GENERAL LEGEND



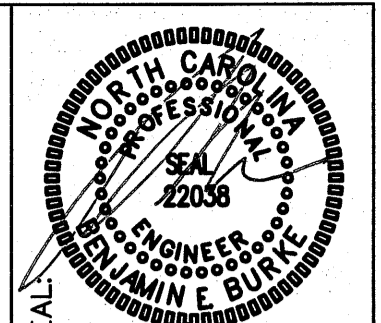
2 ELECTRICAL CLEARANCES
NOT TO SCALE



ELECTRICAL EQUIPMENT DEDICATED SPACE
PER ARTICLE 110.26.F.1 OF N.E.C.

1 DEDICATED SPACE
NOT TO SCALE

2012 NC ENERGY CODE ELECTRICAL SUMMARY	
ELECTRICAL SYSTEM AND EQUIPMENT	
Method of Compliance:	
Energy Code:	<input checked="" type="checkbox"/> Prescriptive <input type="checkbox"/> Performance
ASHRAE 90.1:	<input checked="" type="checkbox"/> Prescriptive <input type="checkbox"/> Performance
Lighting schedule (each fixture type)	
lamp type required in fixture	See Light Fixture Schedule
number of lamps in fixture	
number of ballasts in fixture	
total wattage per fixture	
total interior wattage specified vs allowed (whole building or space by space)	2116 va / 384 va
total exterior wattage specified vs allowed	
Additional Prescriptive Compliance (Existing Building)	
<input type="checkbox"/> 506.2.1 More Efficient Mechanical Equipment	
<input type="checkbox"/> 506.2.2 Reduced Lighting Power Density	
<input type="checkbox"/> 506.2.3 Energy Recovery Ventilation Systems	
<input type="checkbox"/> 506.2.4 Higher Efficiency Service Water Heating	
<input type="checkbox"/> 506.2.5 On-Site Supply of Renewable Energy	
<input type="checkbox"/> 506.2.6 Automatic Daylighting Control Systems	



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email: benburke@bdcrr.com
Corp. License# C-2682

DRAWING TITLE / DISCUSSION:
NOTES, SPECS, DETAILS
SCHEDULES

PROJECT TITLE:
NEW FOUR-BAY SALT
STORAGE BUILDING
DIVISION 12, NCCOI
GASTON COUNTY, NC

STATE CONSTRUCTION
ID.# 15-12617-01A

ASSET NUMBER:
CO.# SITE.# BLDG.#

REVISIONS	
NO.	DATE

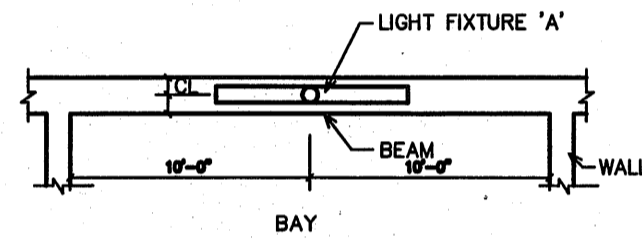
DATE ISSUED: 12/16/17
DRAWN BY: BEB
CHECKED BY: BEB

SHEET NO.
E1

SALT STORAGE - GASTON CITY, NC NEW PANEL - 'A'		MAKE: CUTLER HAMMER		RATING: 120/240 1 PHASE 3 WIRE		100A MAIN CIRCUIT BREAKER		
NEMA 4X		TYPE: PRL1a		MOUNTING SURFACE		EQUIPMENT GROUND BUS		
OR APPROVED EQUAL *		MINIMUM AIC: 22,000		SERVICE ENTRY RATED		YES <input type="checkbox"/> NO <input type="checkbox"/>		
LOAD SERVICE	CKT BRKR	WATTS PER PHASE A B	CKT NO	NEUTRAL A B	CKT NO	WATTS PER PHASE A B	CKT BRKR	LOAD SERVICE
(S) LIGHTS	20A	1152	1	1	2	---	---	20A SPARE
RECEPTACLES	20A	---	3	---	4	---	---	20A SPARE
SPARE	20A	---	5	---	6	---	---	20A SPARE
SPARE	20A	---	7	---	8	---	---	20A SPARE
SPARE	20A	---	9	---	10	---	---	20A SPARE
SPACE	20A	---	11	---	12	---	---	SPACE
NOTES	SUB-TOTALS 'B'		1152	180	100A BUS	---	---	SUB-TOTALS 'A'
(S) SWITCH RATED BREAKER	100A LUGS		1152	180	100A FEED	1152	180	SUB-TOTALS 'B'
	VERIFY SIZE		10a	2A	GRAND TOTAL	---	---	TOTAL CONNECTED LOAD

NEC ALLOWABLE DEMAND FACTORS		DIVERSIFIED LOAD SUMMARY				
① DEMAND FACTORS PER NEC 220		LOAD TYPE	DEMAND FACTOR	A	B	TOTAL DIVERSIFIED LOAD
② LARGEST OF: NEC TABLE 220.12 OR CONNECTED LOAD		GENERAL LIGHTING	125%	1440	---	1440
③ NEC TABLE 220.56		TRACK LIGHTING	125%	---	---	---
④ NEC 220.51		GENERAL USE RECEPTACLES	100%	---	180	180
⑤ NEC 220.43A, 200 VA/LINEAR FT		MOTORS AND EQUIPMENT	125%	---	---	---
⑥ NON-COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED		WATER HEATERS	100%	---	---	---
		KITCHEN EQUIPMENT	100%	---	---	---
		FIX. ELEC. SPACE HEAT.	100%	---	---	---
		SNOW WINDOW LIGHTS	125%	---	---	---
		SIGN	100%	---	---	---
		MISC	100%	---	---	---
		PHASE (TOTAL VA)		1440	180	1620
		TOTAL AMPS		12A	2A	14A

* OR APPROVED EQUAL BY SQUARE D OR GE.

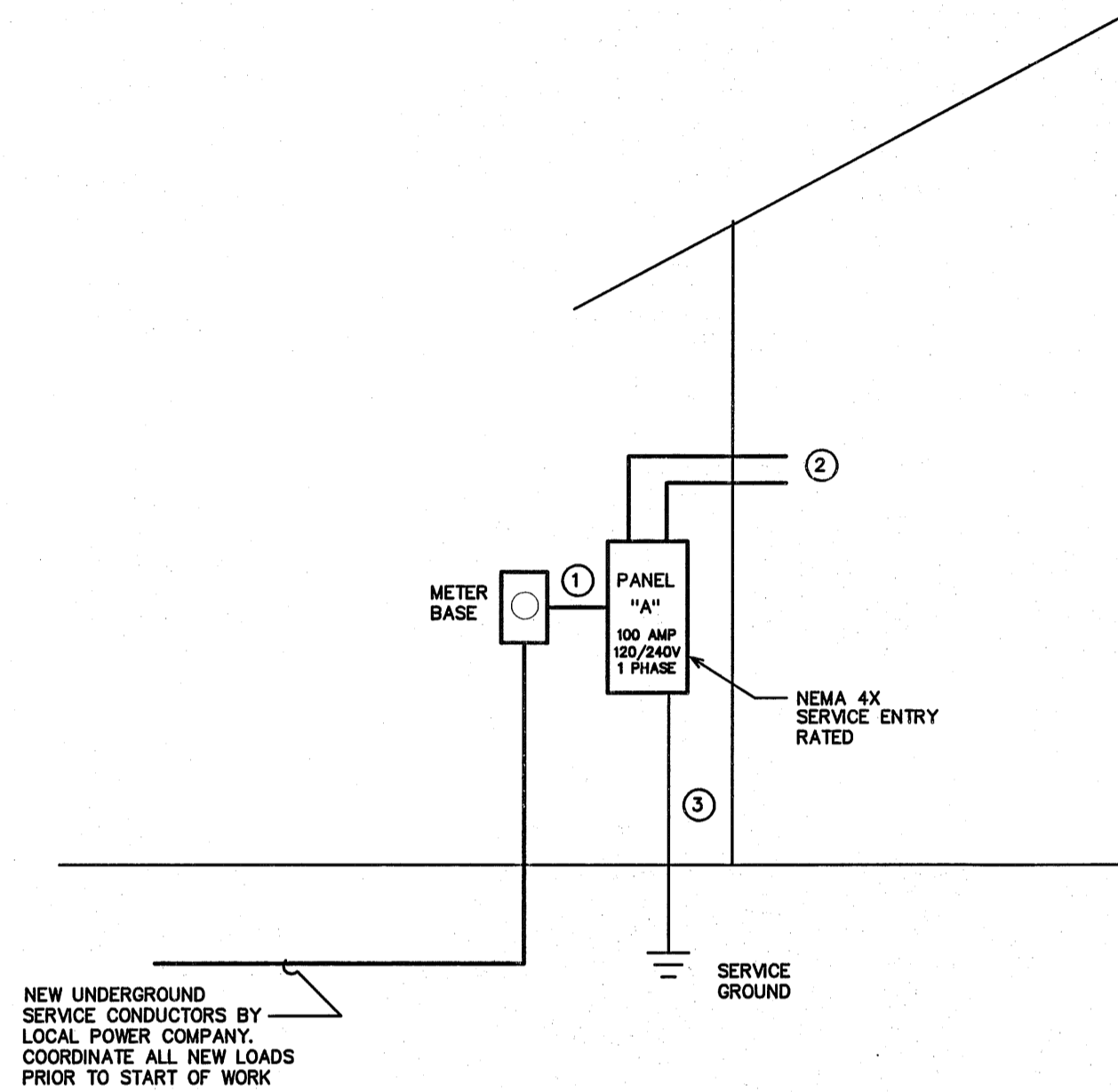


- NOTES:
1. SURFACE MOUNT LIGHT FIXTURE TO BEAM WITH LENS FACING INTO BAY.
 2. CENTER LIGHT FIXTURE ON BEAM.
 3. TYPICAL OF FOUR (4) FIXTURES.

3 FIXTURE MOUNTING DETAIL
NOT TO SCALE

SALT STORAGE - GASTON CITY, NC LIGHTING SCHEDULE *									
MARK	MANUFACTURER	CATALOG NO.	VOLT.	LAMPS NO.	LAMPS TYPE	W	BALLAST TYPE	W/FIXTURE	REMARKS
A	LITHONIA	DMV-332-AR-1120-EB	120	3	T8	32	EB	96	WALL MOUNT STRIP, WEATHER TIGHT, SINGLE BALLAST, FIBERGLASS HOUSING, GASKETED COVER **
C	COOPER	VT2-332-LEX-120V-EB-WL							
D	DAY BRIGHT	DWE-332-120-1/2-EB-LT							

* OR APPROVED EQUAL. PROVIDE CUT SHEETS FOR OWNER APPROVAL PRIOR TO ORDERING FIXTURES. FOR FLUORESCENT FIXTURES CONTROLLED BY MOTION SENSOR, PROVIDE "PROGRAMMED RAPID START" BALLASTS. CATALOG NUMBERS ARE FOR REFERENCE ONLY, ACTUAL NUMBERS MAY VARY. 'EB' DENOTES ELECTRONIC BALLAST.
** VERIFY FIXTURE HAS INTEGRAL LOCAL DISCONNECTING MEANS PER NEC 410.130 (G) (2011).

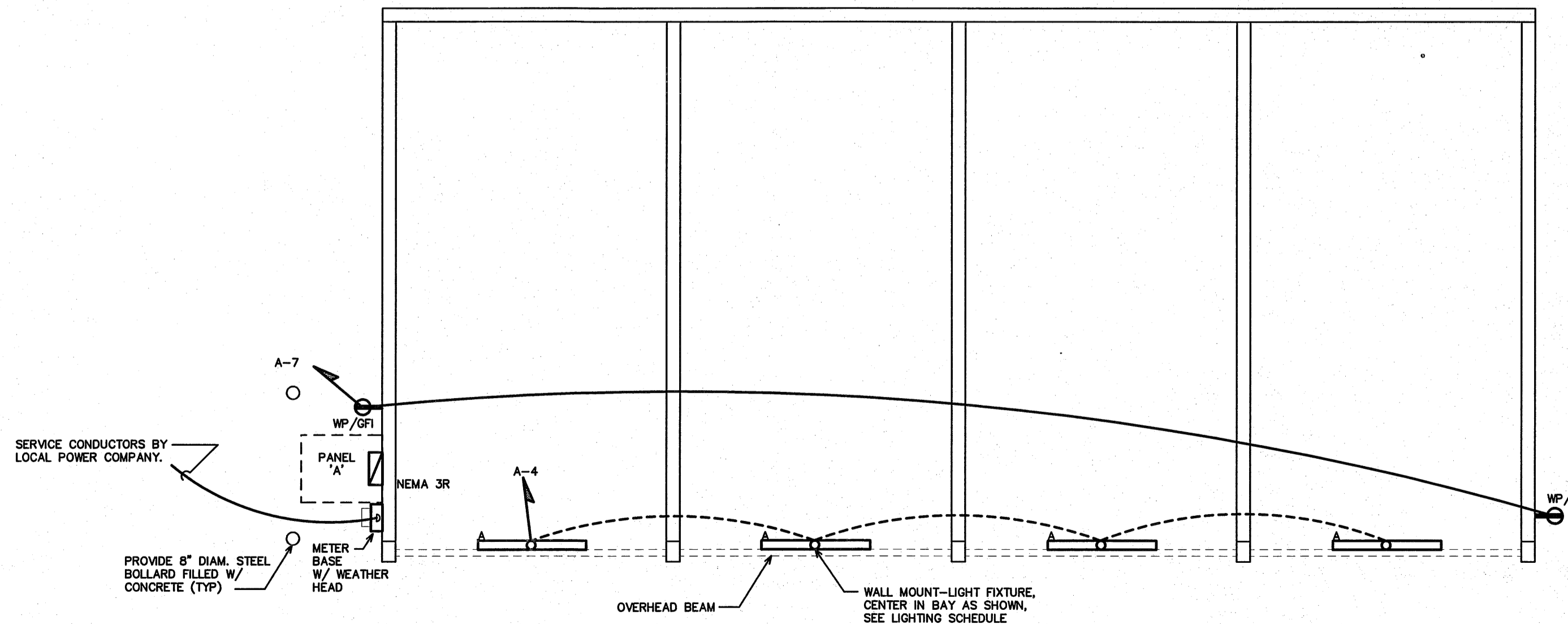


2 ELECTRICAL SERVICE RISER
NOT TO SCALE

- 1 100A: 3-#3 IN 1" CONDUIT
- 2 20A: 2-#12, 1-#12 CU GND, IN 1/2" CONDUIT
(2) CIRCUITS, LIGHT CIRCUIT, RECEPTACLE CIRCUIT
- 3 #6 CU GND TO BUILDING STEEL, FOUNDATION STEEL AND #6 CU GND TO 10' X 5/8" DRIVEN GROUND ROD

NOTE: UNLESS OTHERWISE NOTED ALL OTHER CIRCUITS ARE 20A, 120VOLT. PROVIDE 2-#12, 1-#12 CU GND IN 1/2" CONDUIT.

VERIFY AVAILABLE FAULT CURRENT AT SERVICE LOCATION WITH LOCAL POWER COMPANY. PROVIDE INFORMATION TO ENGINEER TO CALCULATE MINIMUM PANEL AIC RATING. EC SHALL PROVIDE LABELING INDICATING FAULT CURRENT AT SERVICE ENTRY AND ON ALL PANELS PRIOR TO ENERGIZING.



1 ELECTRICAL POWER & LIGHTING PLAN
SCALE: 1/8" = 1'-0"



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DRAWING TITLE / DESCRIPTION:
**ELECTRICAL PLANS
RISERS, PANELS**

PROJECT TITLE:
NEW FOUR-BAY SALT STORAGE BUILDING
DIVISION 12, NCDOT
GASTON COUNTY, NC

STATE CONSTRUCTION ID.# 15-12617-01A

ASSET NUMBER:
CO.# SITE.# BLDG.#

REVISIONS NO.	DATE

DATE ISSUED: 12/16/17
DRAWN BY: RM
CHECKED BY: BEB

SHEET NO.

E2