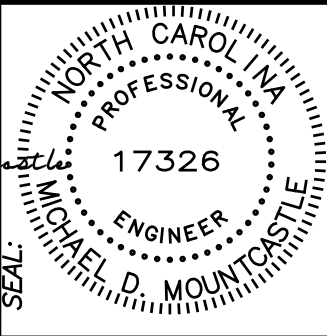


# FOUR-BAY SALT STORAGE SHED NORTHAMPTON COUNTY

DocuSigned by:  
Michael Mountcastle  
2A0E8E96354A...



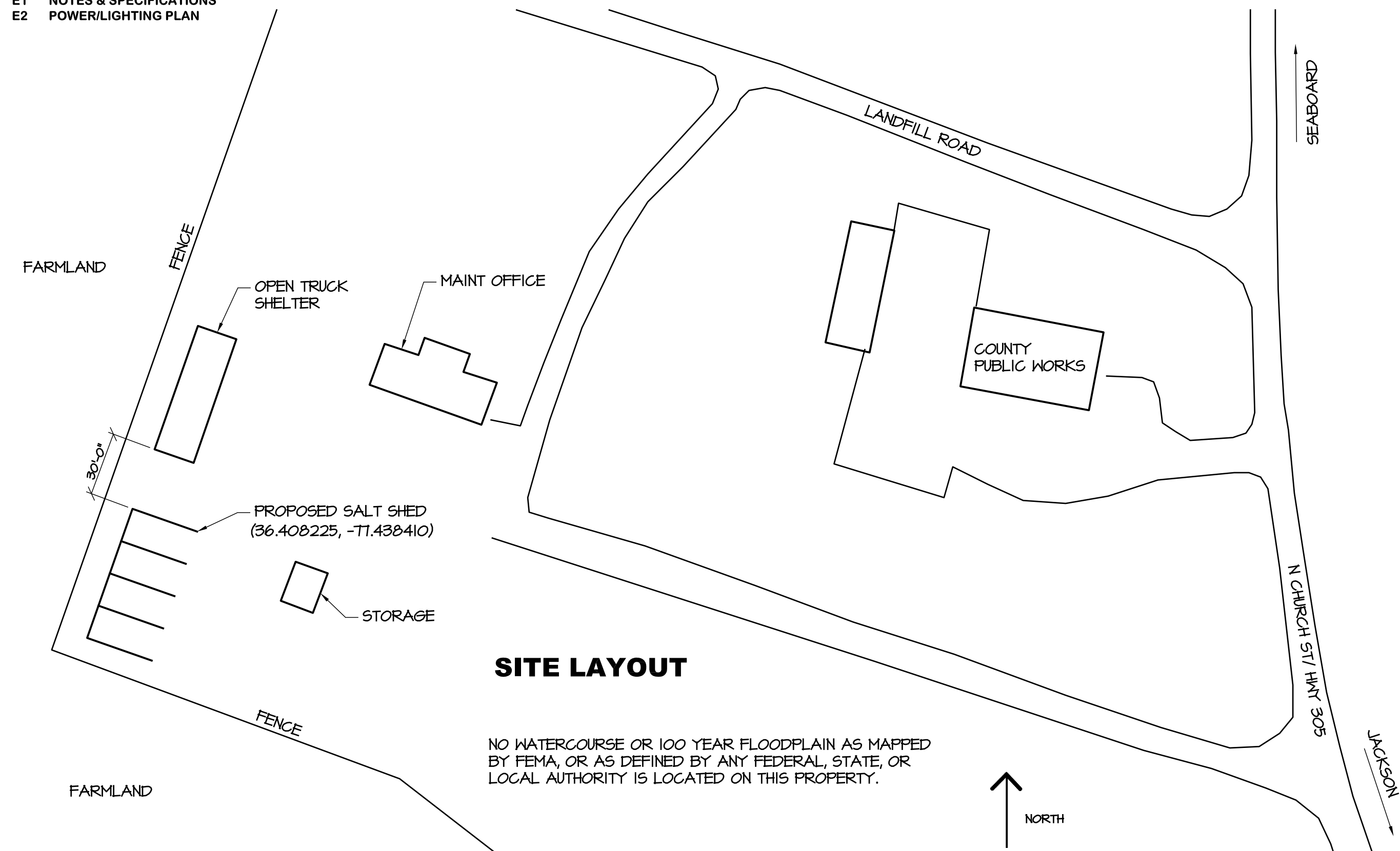
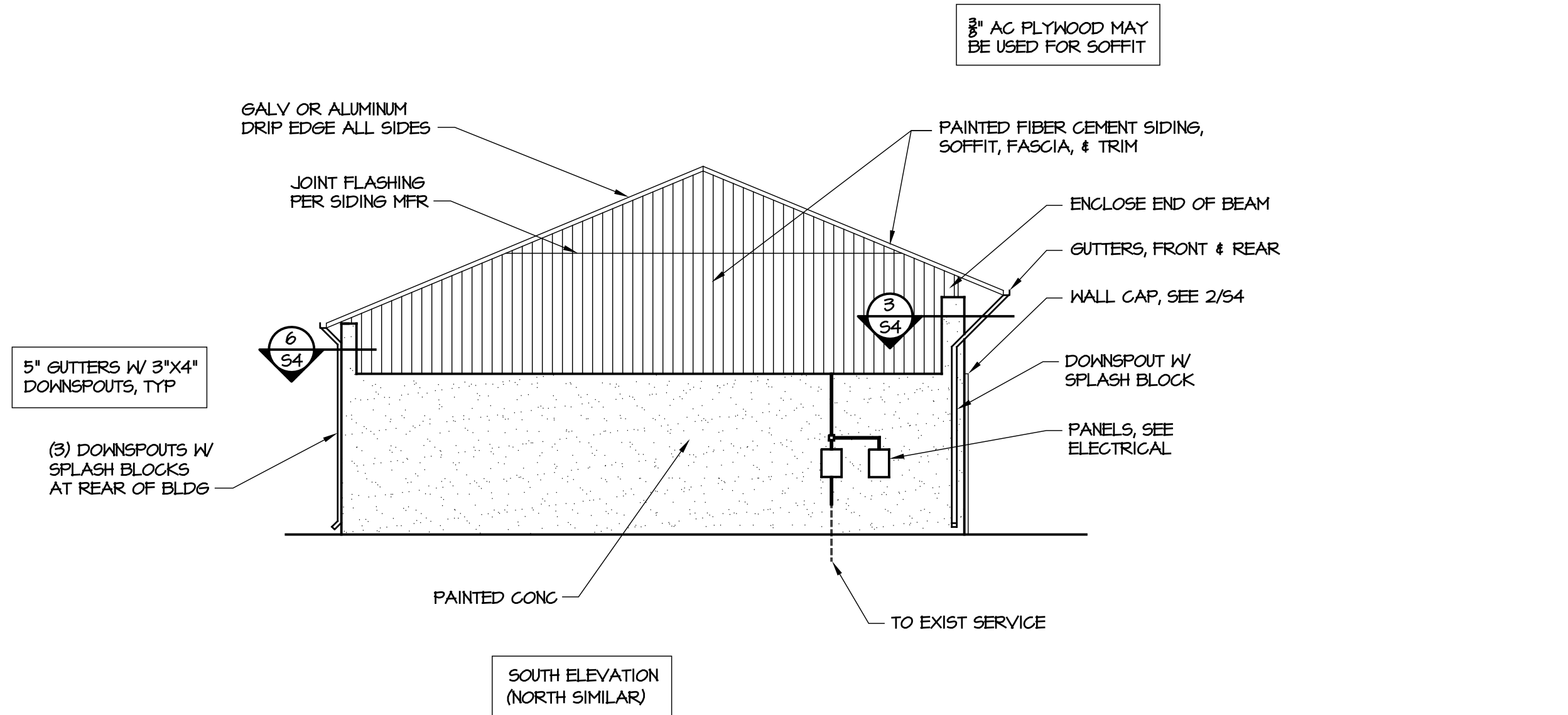
DESIGNED BY:  
**FACILITIES DESIGN  
ARCHITECTS & ENGINEERS**  
FACILITIES MANAGEMENT UNIT, NCDOT



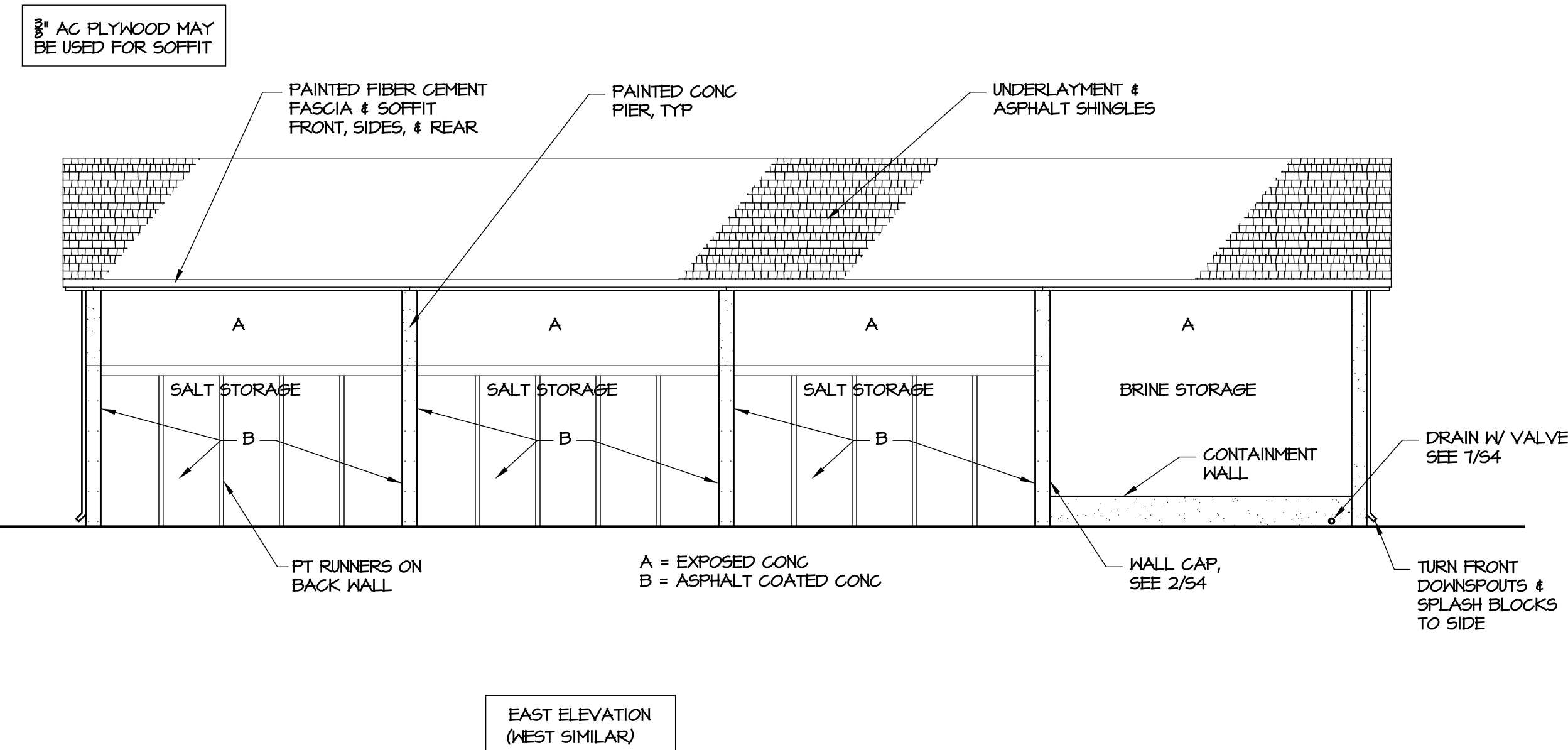
**HIGHWAY DIVISION 1  
JACKSON, NC  
SCO ID# 17-17967-01A**

### INDEX OF DRAWINGS

- S1 ELEVATIONS, BUILDING CODE SUMMARY
- S2 FOUNDATION & FRAMING PLANS
- S3 DETAILS
- S4 DETAILS & GENERAL NOTES
- E1 NOTES & SPECIFICATIONS
- E2 POWER/LIGHTING PLAN



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.



### 2012 APPENDIX B BUILDING CODE SUMMARY

Name of Project: NORTHAMPTON COUNTY FOUR-BAY SALT SHED  
Address: 9339 HWY 305 N, JACKSON, NC 27845  
Proposed Use: STORAGE  
Owner or Authorized Agent: HIGHWAY DIVISION 1 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: BURKE DESIGN GROUP BEN BURKE 22036 (919) 771-1916 ben@bdg-n.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  
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: 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  
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 AREA OR UNLIMITED	(E) ALLOWABLE AREA OR UNLIMITED	(F) MAXIMUM BUILDING AREA
1	Utility & Misc.	3485	5500	458	NOT USED	5958	5958

**ALLOWABLE HEIGHT**

TYPE:	V-B	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE	
Building height in feet	Feet	40	Feet+1/2"=	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	PROVIDED w/ REDUCT	DETAIL & 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	0	-	-	-
Interior walls and partitions	0	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<sub>w</sub>) 1.0 Live Loads: Roof 20 psf  
Snow (I<sub>s</sub>) 1.0 Mezzanine N/A psf  
Seismic (I<sub>s</sub>) 1.0 Floor 800 psf  
Snow Load: 15 psf  
Wind Load: Basic Wind Speed 95 mph (ASCE-7-05)  
Exposure Category B  
Wind Base Shears (for MWFRS) V<sub>x</sub> = \_\_\_\_\_ V<sub>y</sub> = \_\_\_\_\_

**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<sub>s</sub> 14.9 % S<sub>1</sub> 6.0 %  
Site Classification:  I  II  III  IV  Presumptive  
Basic structural system (check one):  
 Bearing Wall  Dual w/Special Moment Frame  
 Building Frame  Dual w/Intermediate R/C or Special Steel  
 Moment Resisting  Inverted Pendulum  
Seismic base shear: V<sub>s</sub> = \_\_\_\_\_ V<sub>w</sub> = \_\_\_\_\_  
Analysis Procedure:  Simplified  Equivalent Lateral Force Model  
Architectural, Mechanical, Components anchored? N/A  
LATERAL DESIGN CONTROL: Earthquake Wind X Special Inspection Required?  Yes  No  
SOIL BEARING CAPACITIES:  Field Test  Presumptive 1500

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

### ELEVATIONS

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

CONSULTANT:  
ELEVATIONS  
BUILDING CODE SUMMARY  
BID DRAWINGS

## FOUR-BAY SALT STORAGE BUILDING

HIGHWAY DIVISION 1, NCDOT  
NORTHAMPTON COUNTY, NORTH CAROLINA

STATE CONSTRUCTION  
ID# 17-17967-01A

ASSET NUMBER:  
CO.# SITE# BLDG.#  
66 - 02 - 00

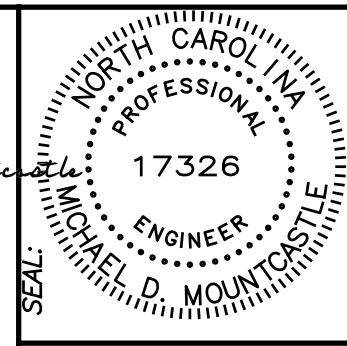
REVISIONS  
NO. DATE

DATE ISSUED: 2-15-2019  
DRAWN BY: MDM  
CHECKED BY: MDM

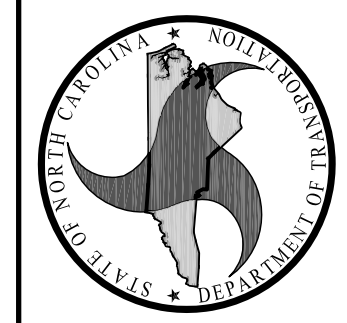
SHEET NO.  
**S1**  
1 OF 4



DocuSigned by:  
Michael Monte  
2A0EBE8935C4A



DESIGNED BY:  
**FACILITIES DESIGN ARCHITECTS & ENGINEERS**  
FACILITIES MANAGEMENT UNIT, NCDOT  
1 SOUTH WILMINGTON STREET  
RALEIGH, NORTH CAROLINA 27601  
PHONE 919/707-4640 FAX 919/707-0089



CONSULTANT:

DRAWING TITLE / DESCRIPTION:  
**FOUNDATION & FRAMING PLANS**

PROJECT TITLE:  
**FOUR-BAY SALT STORAGE BUILDING**  
HIGHWAY DIVISION 1, NCDOT  
NORTHAMPTON COUNTY, NORTH CAROLINA

STATE CONSTRUCTION ID# 17-17967-01A

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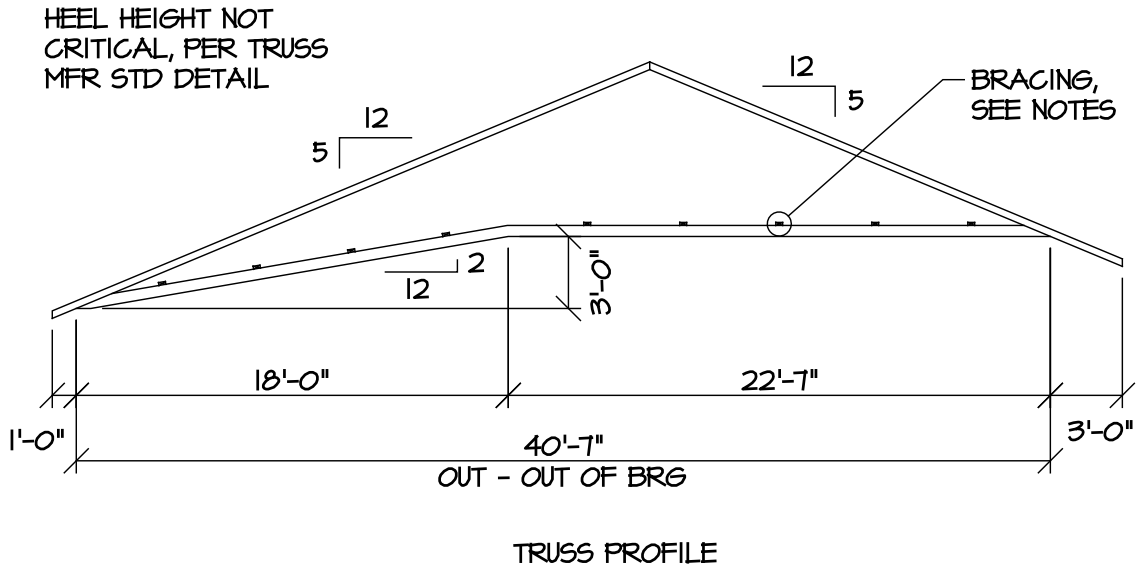
DATE ISSUED: 2-15-2019  
DRAWN BY: MDM  
CHECKED BY: MDM

SHEET NO.

**S2**  
2 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 # 15 IN ADDITION TO THE TEMPORARY BRACING.
3. THIS BUILDING MEETS CRITERIA FOR PARTIALLY ENCLOSED PER ASCE T-05 WIND REQUIREMENTS.
4. WALL SHEATHING SHALL BE 1/2" APA RATED SHEATHING, 32/16 SPAN RATING, EXPOSURE 1, ATTACHED W/ 8D NAILS @ 6" OC ON PANEL EDGES & 8" OC ALONG INTERMEDIATE SUPPORTS, UON. PROVIDE BLOCKING AT ALL PANEL EDGES ON EXTERIOR WALLS.
5. ROOF SHEATHING SHALL BE 3/8" APA RATED SHEATHING, ATTACHED W/ 10D NAILS @ 6" O.C. ON PANEL EDGES, & @ 8" O.C. AT INTERIOR.
6. FT DENOTES PRESSURE TREATED IN ACCORDANCE W/ ANPA STANDARDS.
7. SIDING, VENTED SOFFIT, & FASCIA SHALL BE PAINTED FIBER-CEMENT BOARD, COLOR SELECTION BY OWNER.
8. BM-1 = 5-1/2" X 16" GLULAM, 24F-V4, BALANCED, & PRESSURE TREATED.

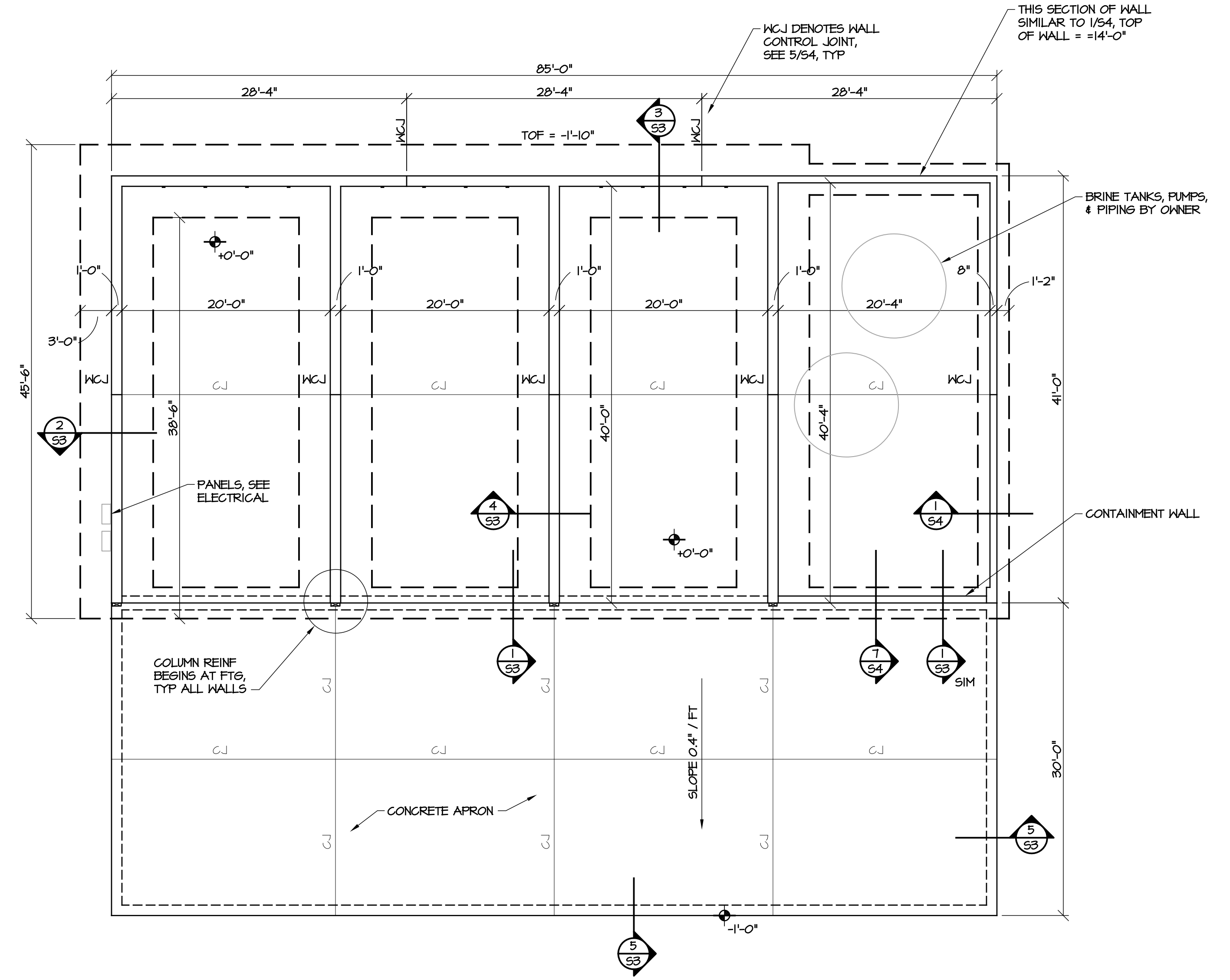
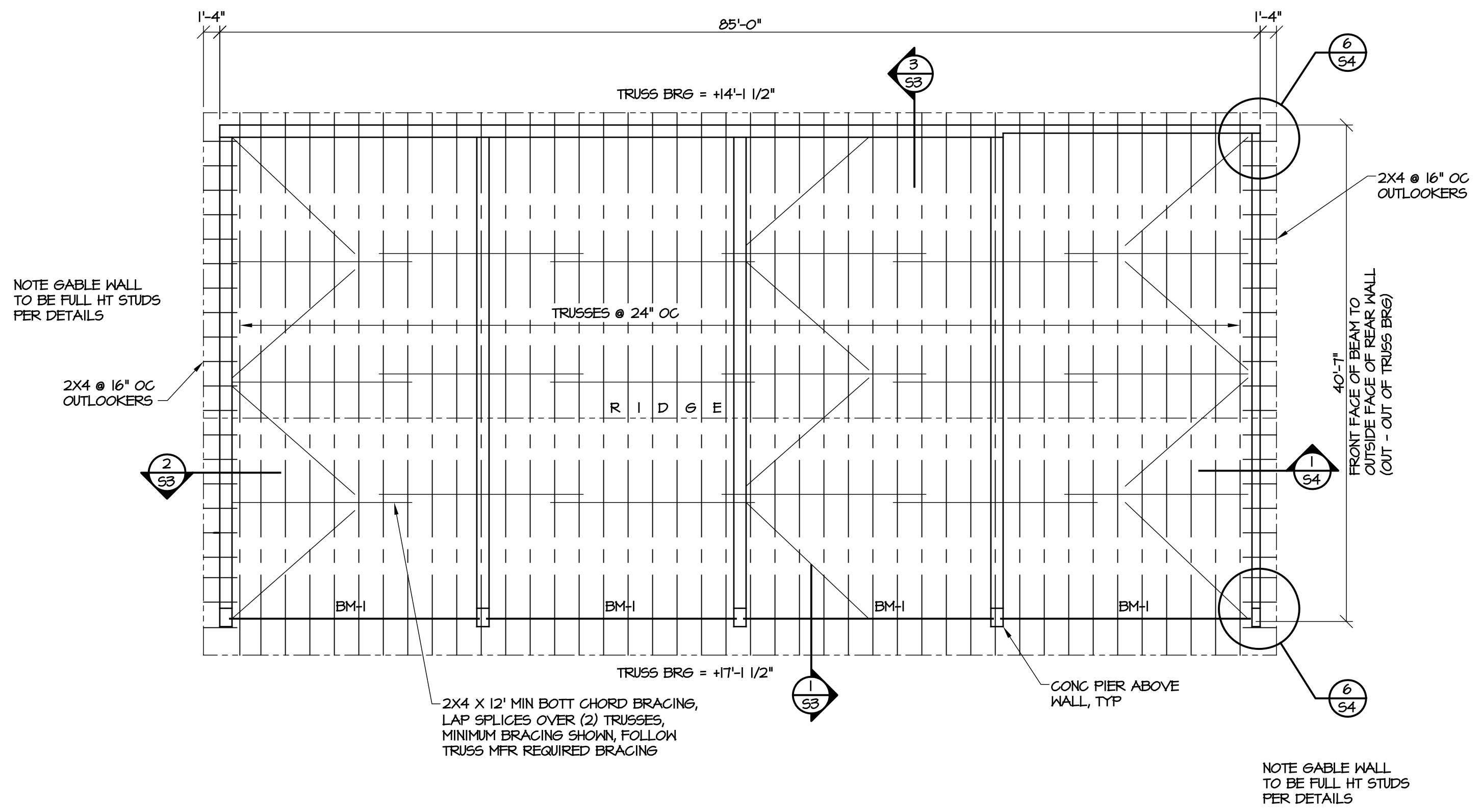


**NOTES:**

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. RETARDING ADMIXTURE MAY BE USED AT GC OPTION, SEE SPECIFICATIONS.
3. EXPOSED CONCRETE SHALL INCLUDE 5% ENTRAINED AIR.
4. ALL REINF STEEL SHALL BE ASTM A 615, GR 60. LAP ALL SPLICES 40 X BAR DIAMETER.
5. ELEVATIONS SHOWN ARE ABOVE REFERENCE FLOOR ELEVATION = +0'-0".
6. COORDINATE LOCATION & INSTALLATION OF ELECTRICAL WORK W/ OWNER.
7. ELECTRICAL GROUND TO BE ATTACHED TO FOOTING REINFORCEMENT, SEE ELECTRICAL PLANS.

PREPARE CONCRETE WALL SURFACES AS FOLLOWS:  
INTERIOR - PATCH TIE HOLES & DEFECTS, REMOVE FINIS FLUSH W/ SURFACE.  
EXTERIOR - PATCH TIE HOLES, BUG HOLES, & OTHER DEFECTS. REMOVE FINIS FLUSH WITH SURFACE. PATCH HOLES THAT CANNOT BE SEALED W/ BLOCK FILLER & PAINT.

INTERIOR FLOOR & APRON SHALL BE 6" CONC SLAB REINF W/ EPOXY COATED #4 @ 16" OC, EN OVER 6" #51 STONE BASE.

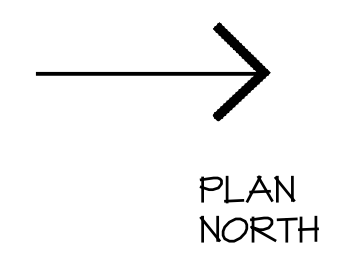
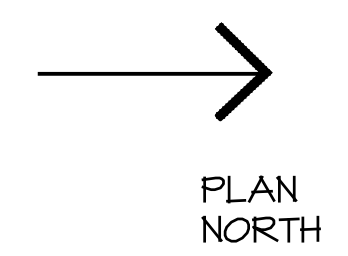


**SITE NOTES:**

1. OWNER WILL PROVIDE ROUGH GRADING UP TO THE BUILDING SUB-GRADE.
2. OWNER WILL PROVIDE LOCATION OF BUILDING & ORIENTATION, BUT CONTRACTOR IS RESPONSIBLE FOR BUILDING LAYOUT. AFTER LAYOUT, VERIFY BUILDING LOCATION W/ NCDOT PRIOR TO CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR FOOTING EXCAVATION, & MINOR GRADING AROUND OUTSIDE OF BUILDING. SOIL REMOVED DURING EXCAVATION MAY BE STORED ON SITE, COORDINATE LOCATION W/ OWNER.

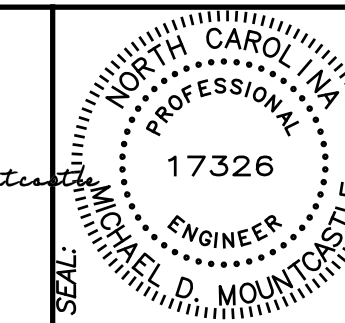
**2** FRAMING PLAN  
SCALE: 1/8" = 1'-0"

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





DocuSigned by:  
Michael Mountcastle  
JADCEB98935CA9A



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**FACILITIES DESIGN ARCHITECTS & ENGINEERS**  
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CONSULTANT:

DRAWING TITLE / DESCRIPTION:

**DETAILS**  
**BID DRAWINGS**  
**FOUR-BAY SALT STORAGE BUILDING**  
HIGHWAY DIVISION 1, NCDOT  
NORTHAMPTON COUNTY, NORTH CAROLINA

PROJECT TITLE:

STATE CONSTRUCTION ID# 17-17967-01A

ASSET NUMBER:

CO.# SITE.# BLDG.#

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REVISIONS

NO. DATE

DATE ISSUED: 2-15-2019

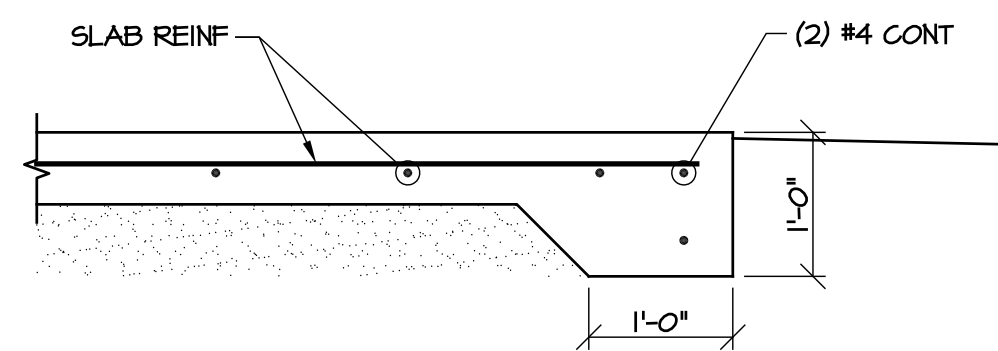
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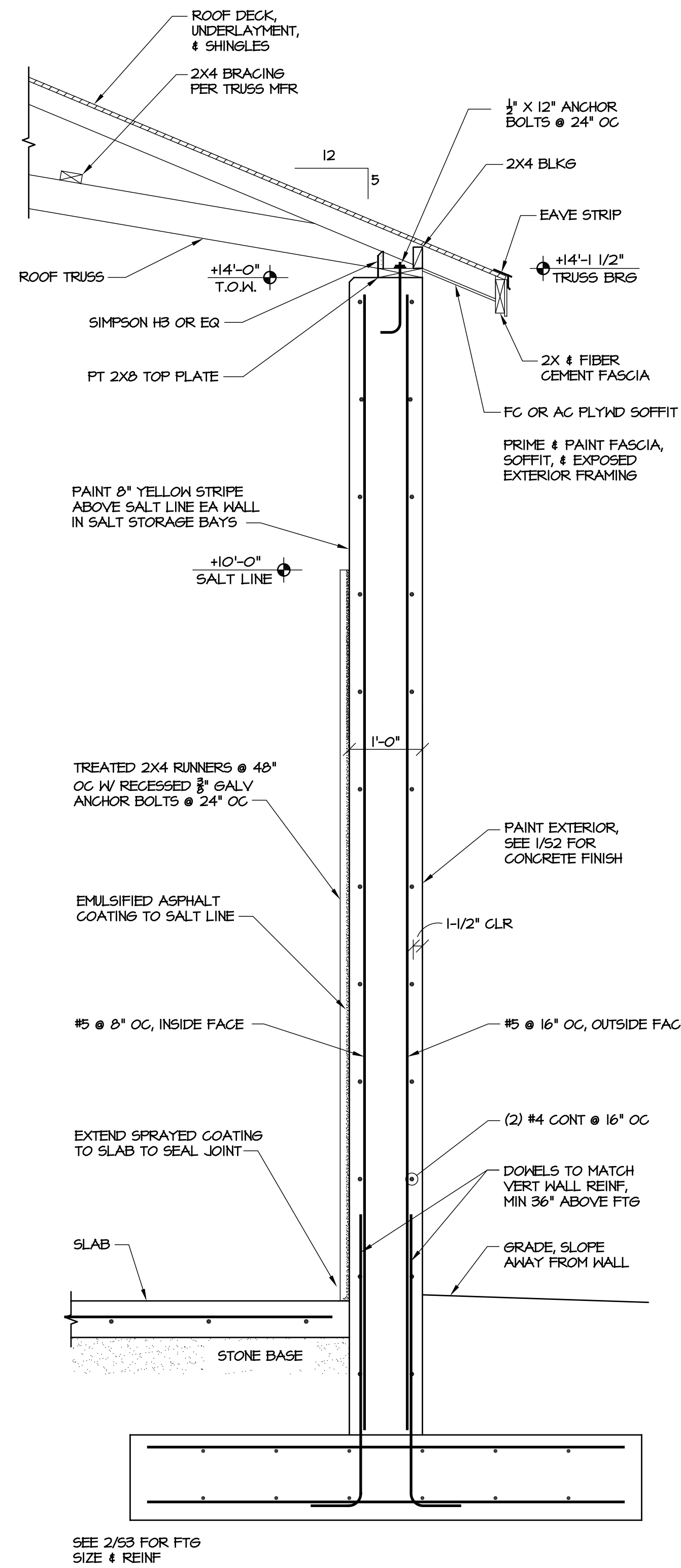
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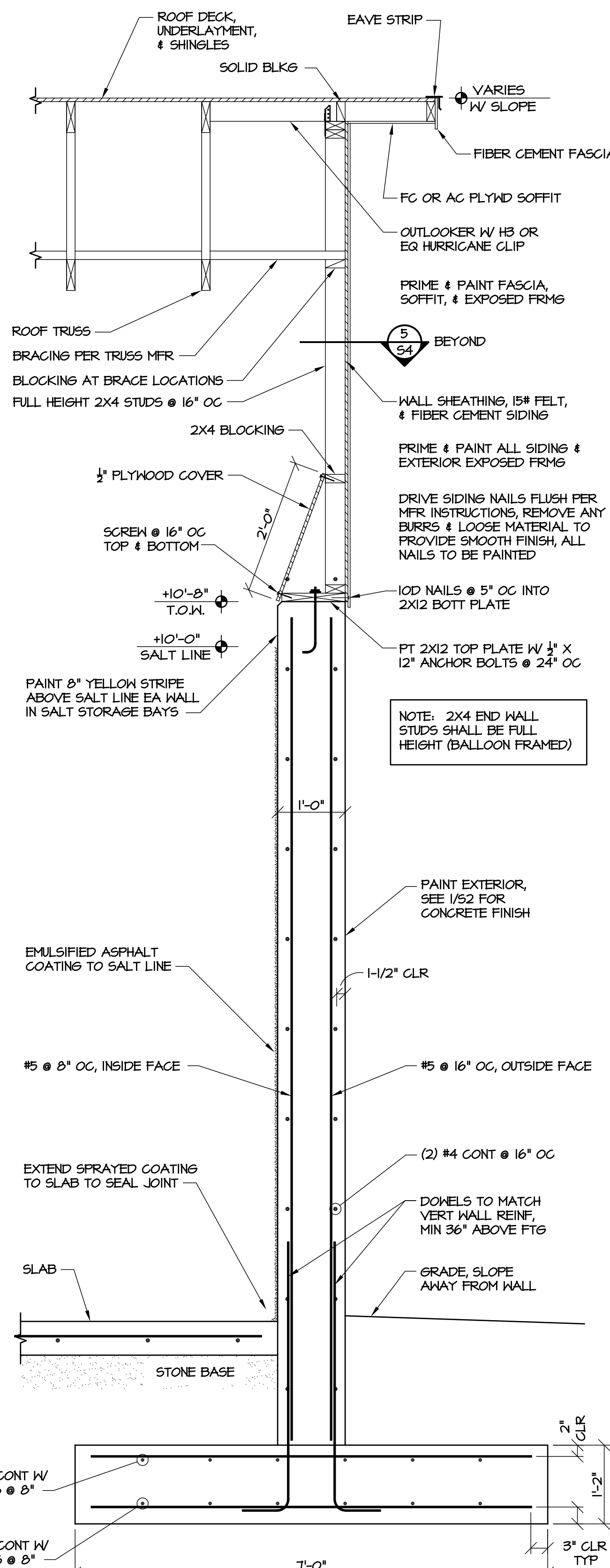
3 OF 4



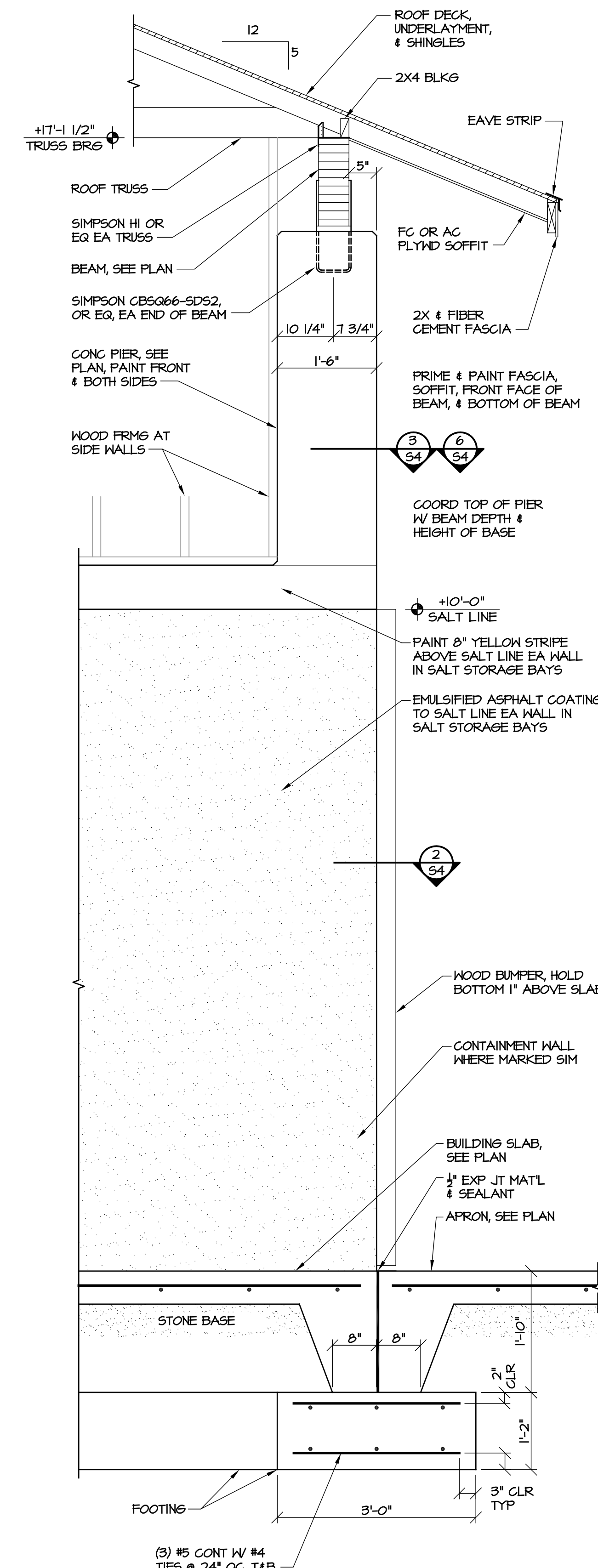
**5** APRON SLAB EDGE  
SCALE: 3/4" = 1'-0"



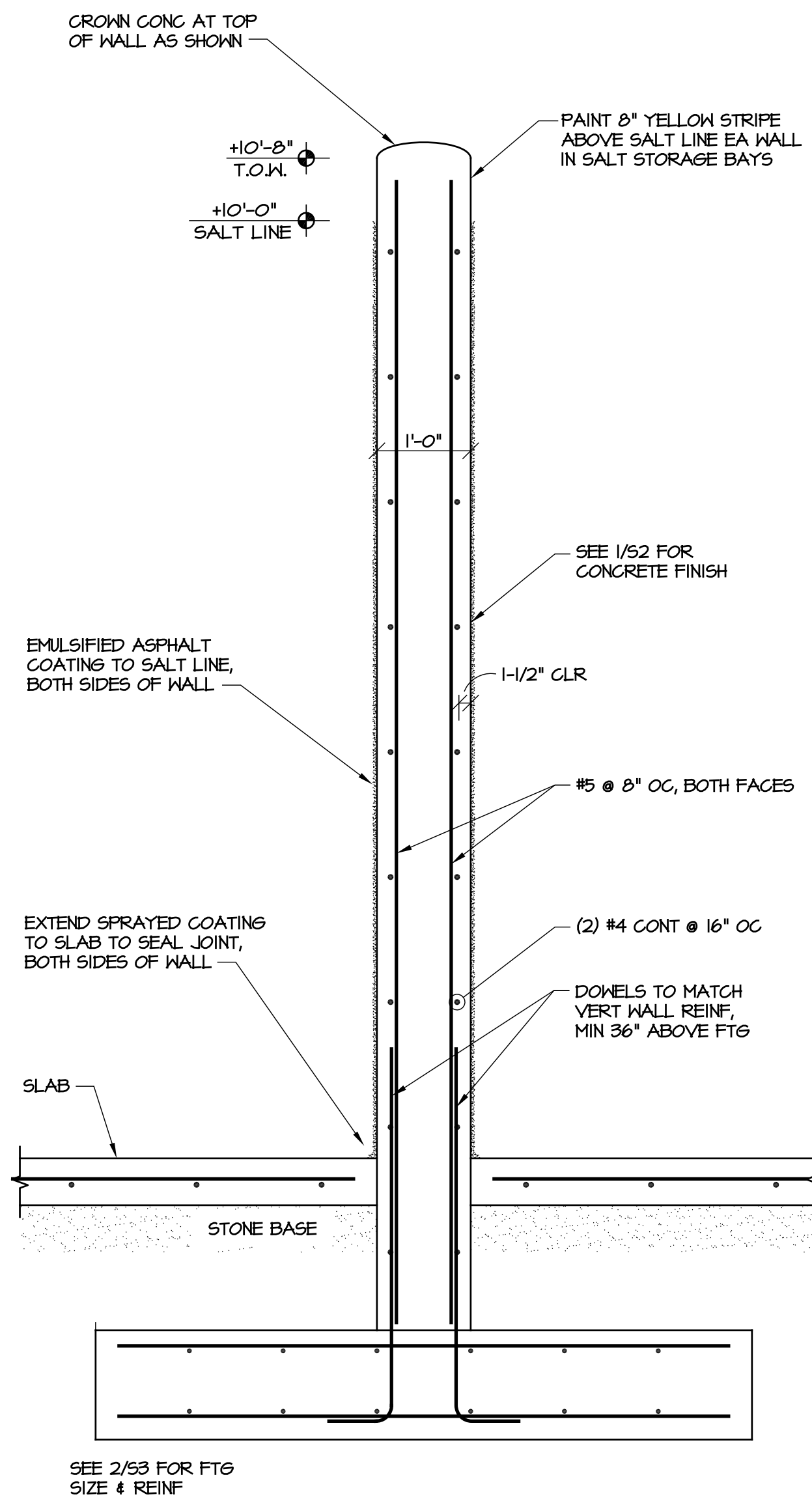
**3** SECTION AT REAR WALL  
SCALE: 3/4" = 1'-0"



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



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



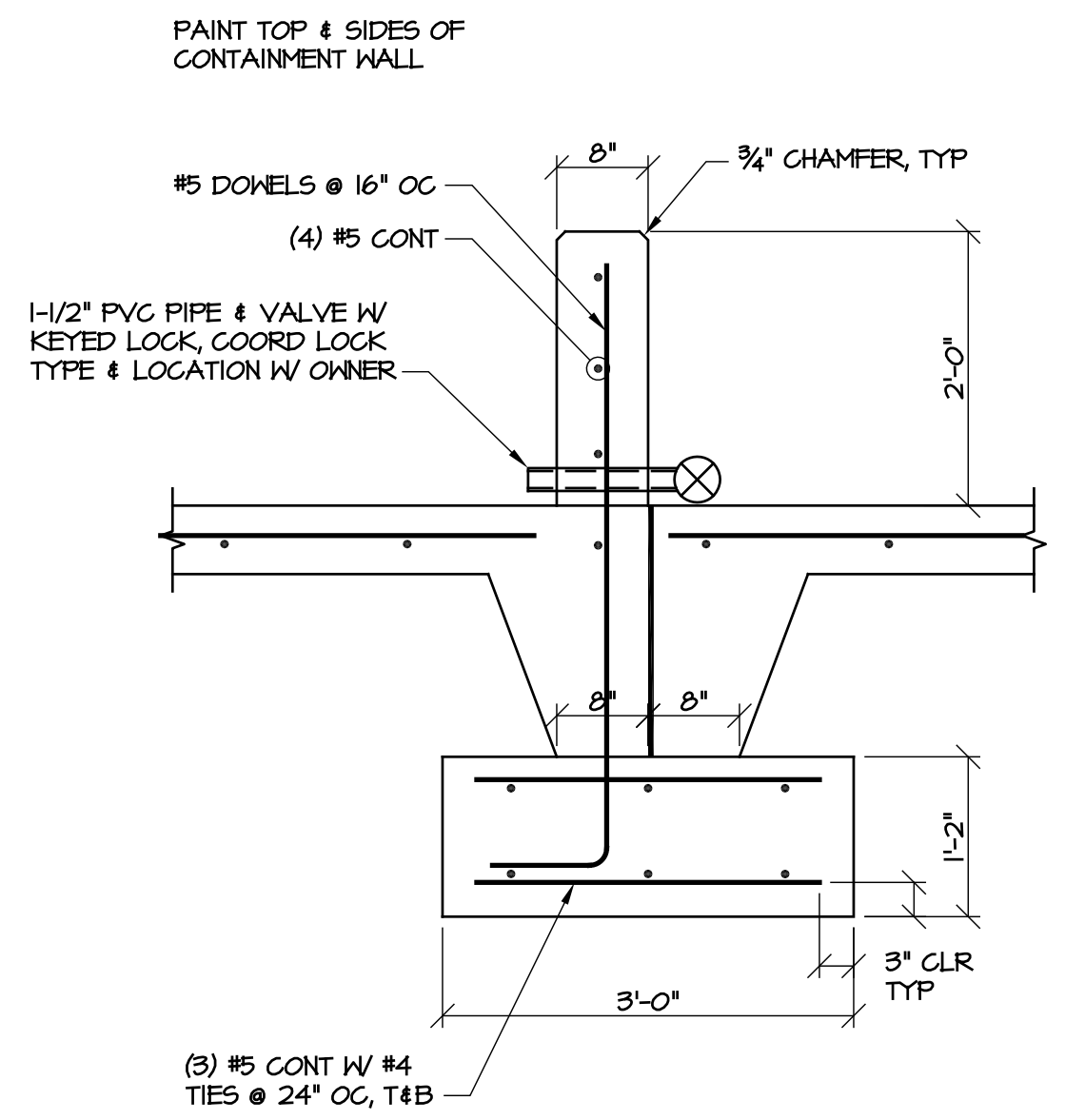
**4** SECTION AT INTERIOR WALL  
SCALE: 3/4" = 1'-0"



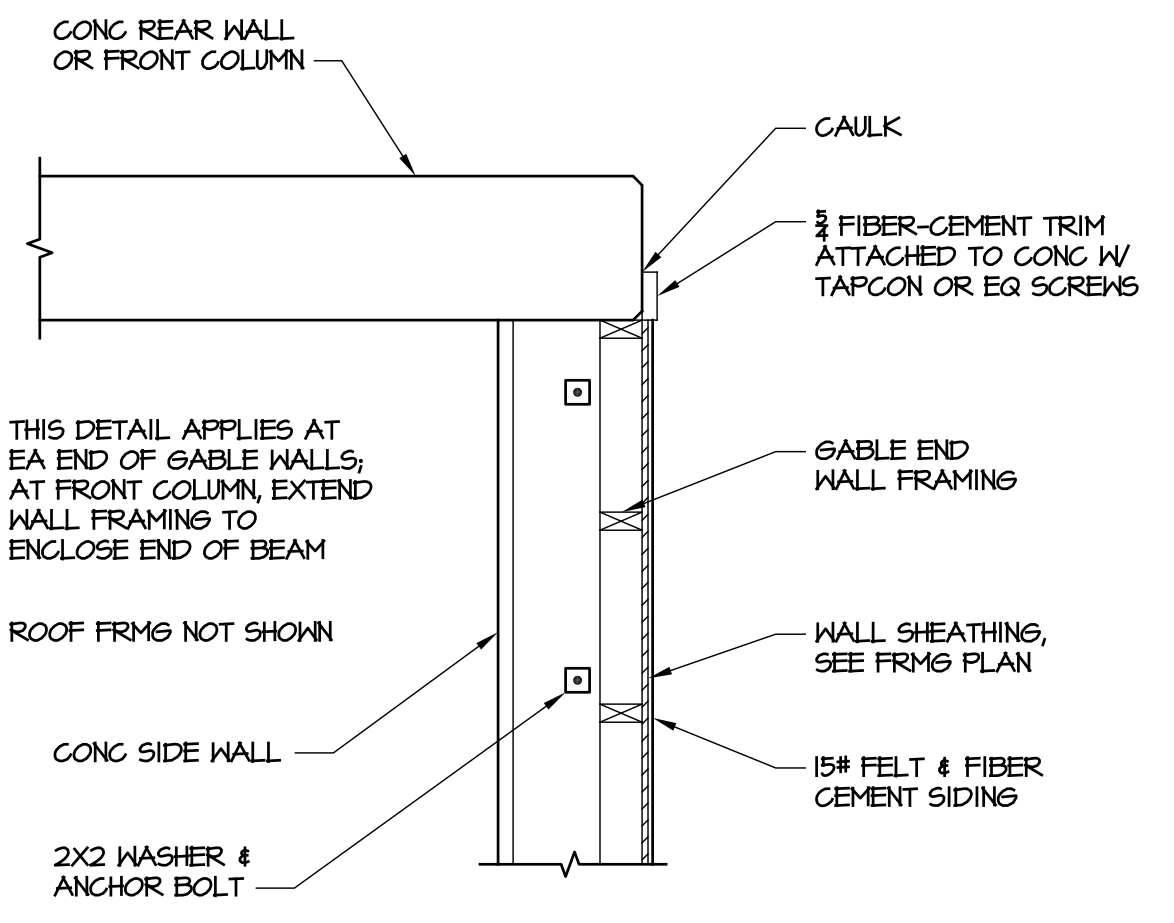
# GENERAL NOTES:

- 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.
  - If demolition is included in project, sawcut all edges of existing slab and asphalt to remain adjacent to new construction.
- 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.
  - Contractor is responsible for shoring while excavating near existing structures.
- C. CONCRETE**
- See plans for required compressive strength of concrete.
  - Coordinate floor slopes and depressions with arch and plumbing plans. Maintain specified slab thickness below depressed or sloped areas.
  - 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.
  - Welded wire reinforcement shall conform to ASTM A 185 & A 82.
  - Grout under all columns & beam bearing plates with non-shrink, non-metallic grout which meets ASTM C 1107.
  - 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"
  - Provide (2) #4 x 48" diagonal corner bars at center of slab at all corners of floor slab openings.
  - 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.

- F. 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.
  - Install blocking in walls & ceiling where required for partitions, fixtures, & other misc items. Coordinate with all trades.

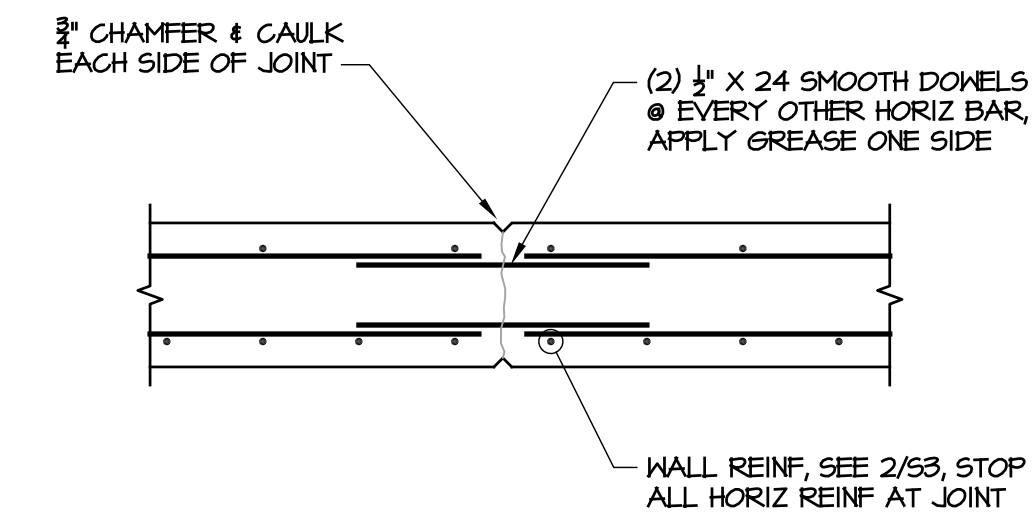


**7** CONTAINMENT WALL  
SCALE: 3/4" = 1'-0"

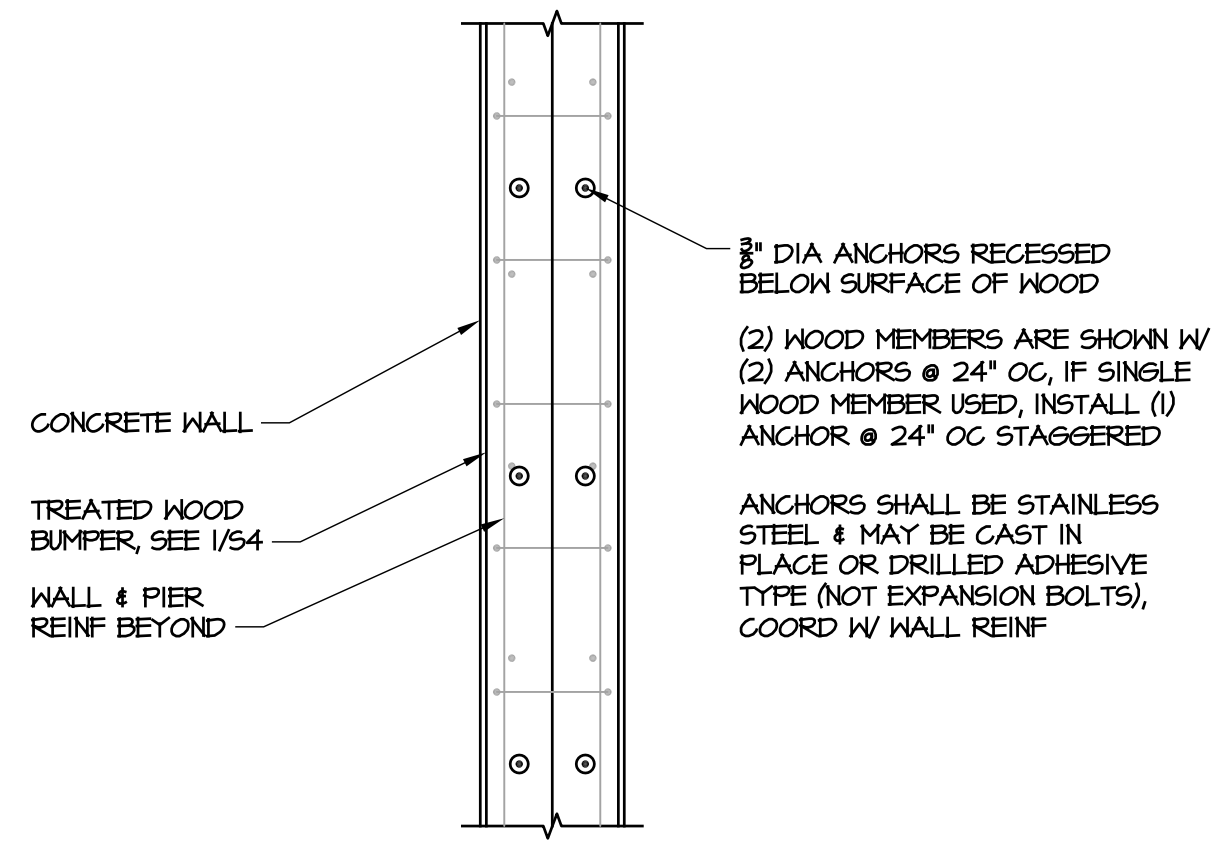


**6** GABLE WALL TRIM DETAIL  
SCALE: 3/4" = 1'-0"

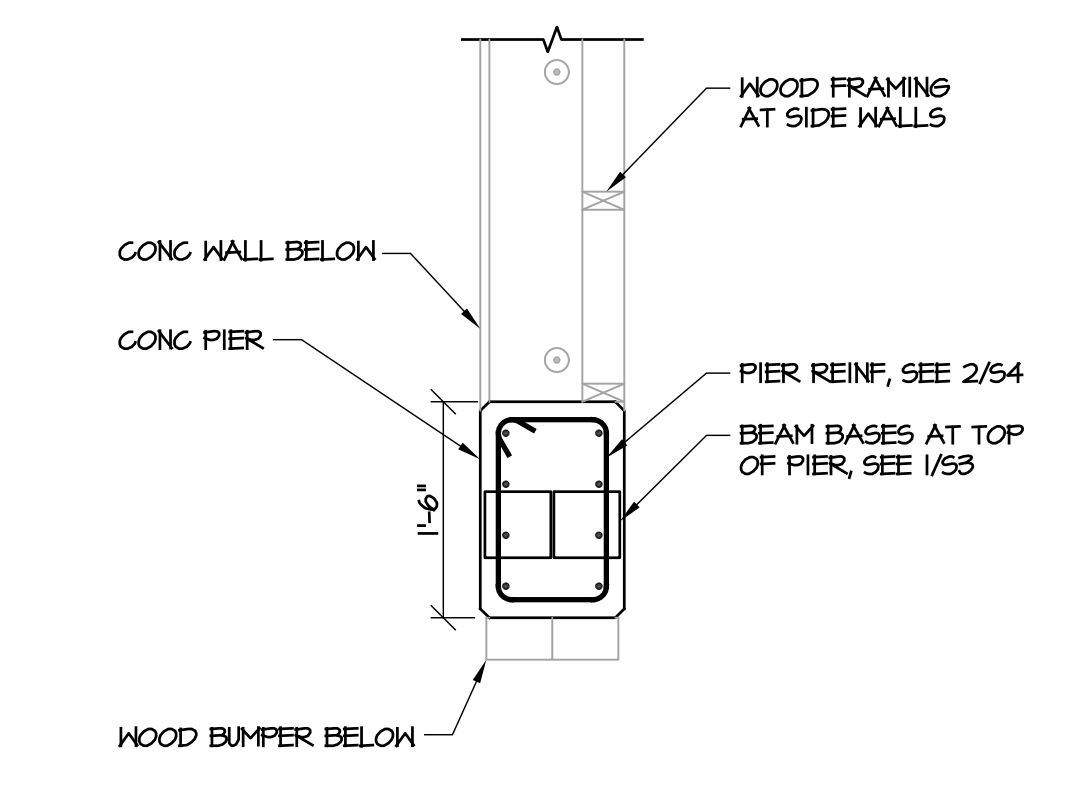
- NOTES:**
- CONCRETE MAY BE PLACED CONTINUOUSLY OR STOPPED TO PROVIDE COLD JOINT.
  - SAW CUT JOINTS INSTEAD OF CHAMFERS ARE AN ACCEPTABLE OPTION.
  - IF PARGING IS APPLIED TO EXTERIOR WALL, DO NOT APPLY CONTINUOUSLY ACROSS WALL CONTROL JOINTS. STOP PARGE COAT EA SIDE OF JOINT & APPLY SEALANT.



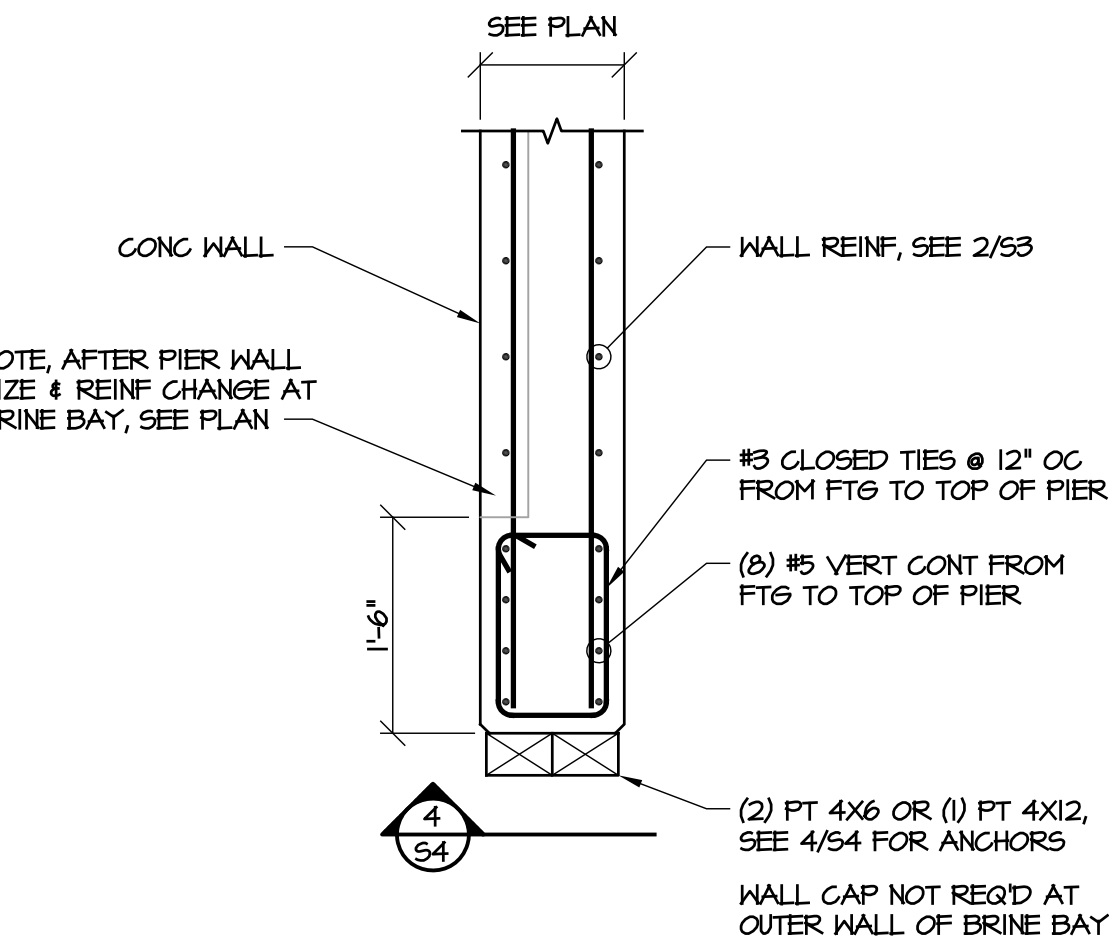
**5** WALL CONTROL JOINT  
SCALE: 3/4" = 1'-0"



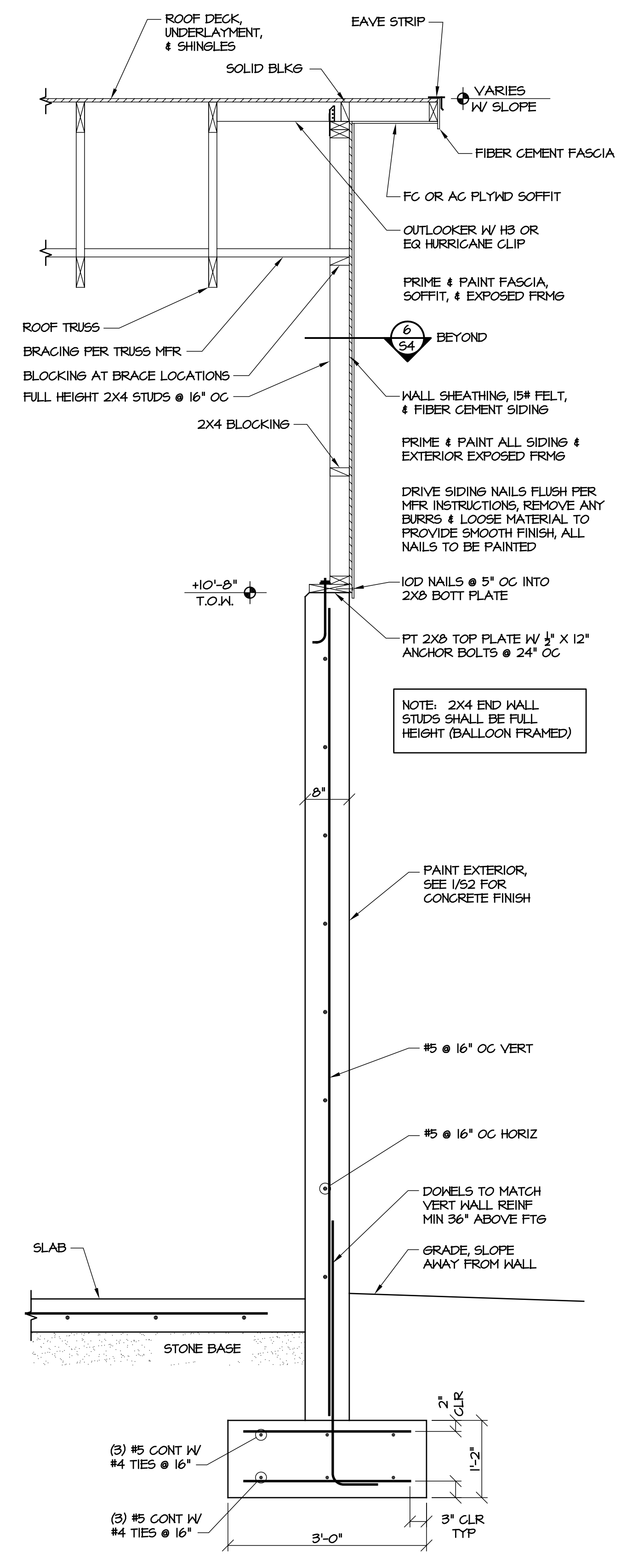
**4** WOOD BUMPER ATTACHMENT  
SCALE: 3/4" = 1'-0"



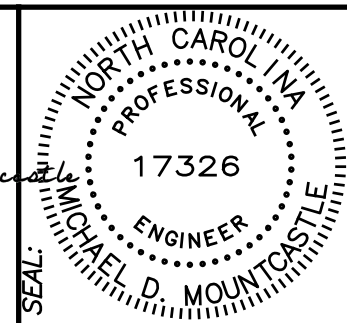
**3** CONCRETE PIER  
SCALE: 3/4" = 1'-0"



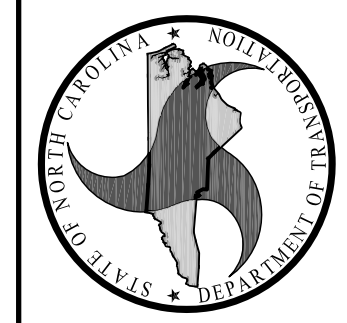
**2** FRONT EDGE OF WALL  
SCALE: 3/4" = 1'-0"



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



DESIGNED BY:  
**FACILITIES DESIGN ARCHITECTS & ENGINEERS**  
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RALEIGH, NORTH CAROLINA 27601  
PHONE 919/707-4600 FAX 919/707-0080



CONSULTANT:  
**DETAILS & GENERAL NOTES**

DRAWING TITLE / DESCRIPTION:  
**DETAILS & GENERAL NOTES**

PROJECT TITLE:  
**FOUR-BAY SALT STORAGE BUILDING**  
HIGHWAY DIVISION 1, NCDOT  
NORTHAMPTON COUNTY, NORTH CAROLINA

STATE CONSTRUCTION ID# 17-17967-01A

ASSET NUMBER:  
CO.# SITE.# BLDG.#  
66 - 02 - 00

REVISIONS NO.	DATE

DATE ISSUED: 2-15-2019  
DRAWN BY: MDM  
CHECKED BY: MDM

SHEET NO.  
**S4**  
4 OF 4



**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:
  1. Lighting and power distribution system.
  2. Provide lighting fixtures per light fixture schedule with lamps to match.
  3. Wiring devices, boxes, cover plates, etc.
  4. Source of power for all items of equipment.
  5. Grounding.
  6. 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:
  1. The 2017 National Electrical Code.
  2. The National Electrical Safety Code.
  3. Underwriter's Laboratories, Inc. Standards and approved listings or other approved 3rd party listing agency.
  4. Electrical Testing Laboratories standards.
  5. 2018 North Carolina State Building Code.
  6. 2018 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 expedite 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 NCDOT 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.
  1. Boxes installed in concealed locations shall be set flush with the finished surfaces.
  2. 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 2017 NEC 200.6.
  - 208/120V, 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 NCDOT approved.

**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 with 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.
- C. Wiring devices installed over counters shall comply with ANSI A117.1.

**2.4 WRING 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.

**2.5 CONDUIT**

- A. PVC conduit will be allowed under slab. Provide rigid turn-ups.
- B. All exposed conduit shall be rigid 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 whip 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 penicil 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- 120/208v 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- paging 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:
  1. Grounding conductors shall be installed so as to permit the shortest and most direct path from equipment to ground. All connections to grounding conductors shall be accessible.
  2. Equipment ground continuity shall be maintained through flexible metal conduit.
  3. All wiring devices equipped with grounding connection shall be solidly grounded to ground system with grounding conductors.
  4. The frame of all lighting fixtures shall be securely grounded to the equipment ground system with grounding conductors.
  5. All equipment enclosures, and non-current-carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.
  6. All equipment enclosures, and non-current-carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.
  7. 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.

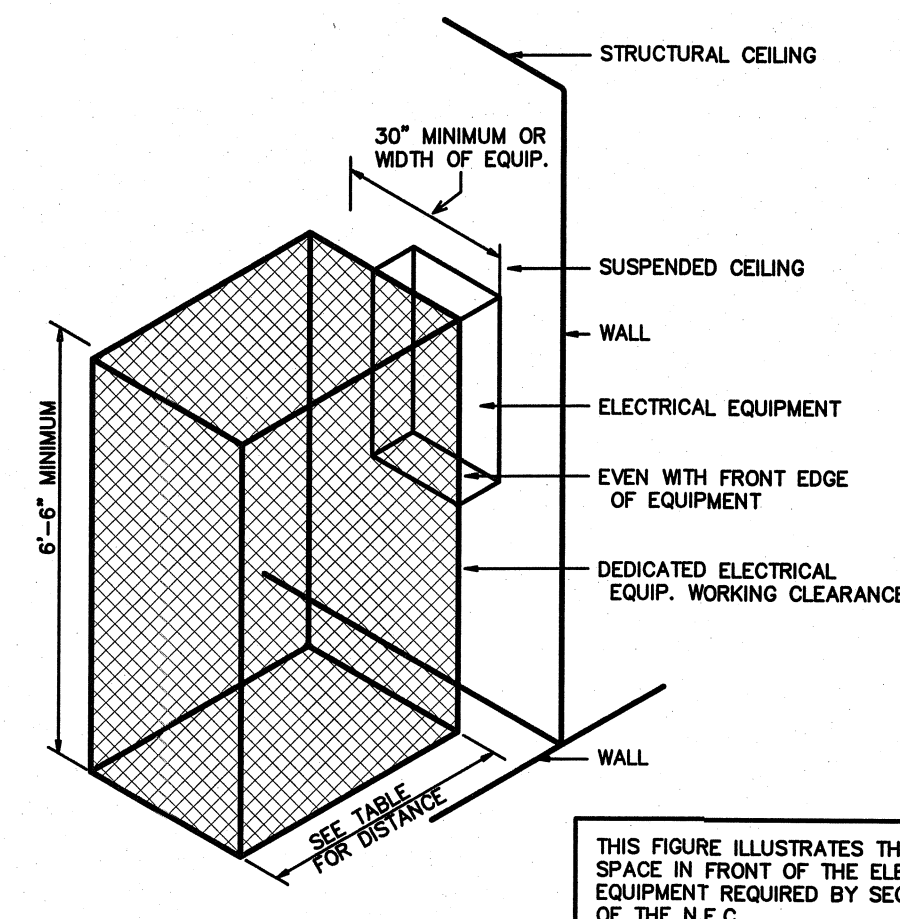
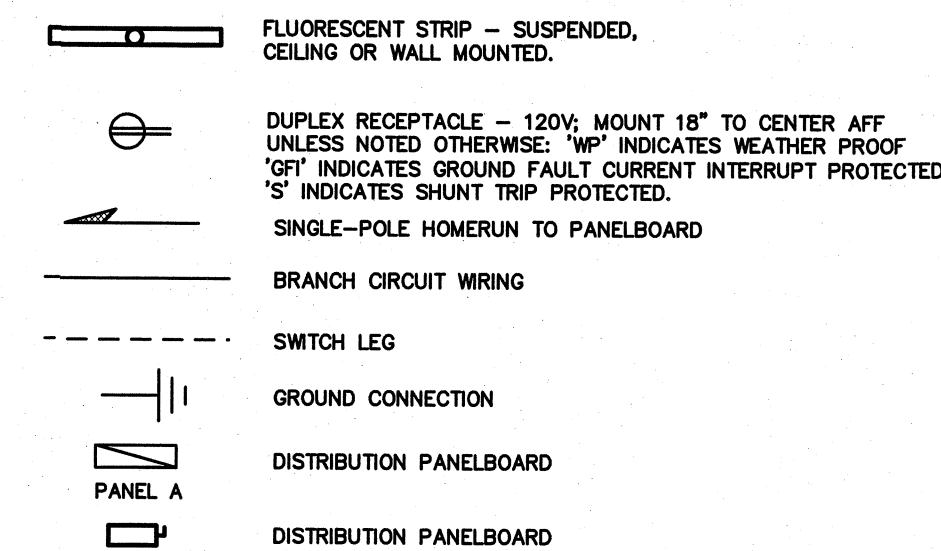
**3.9 CLEAN UP**

- 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.

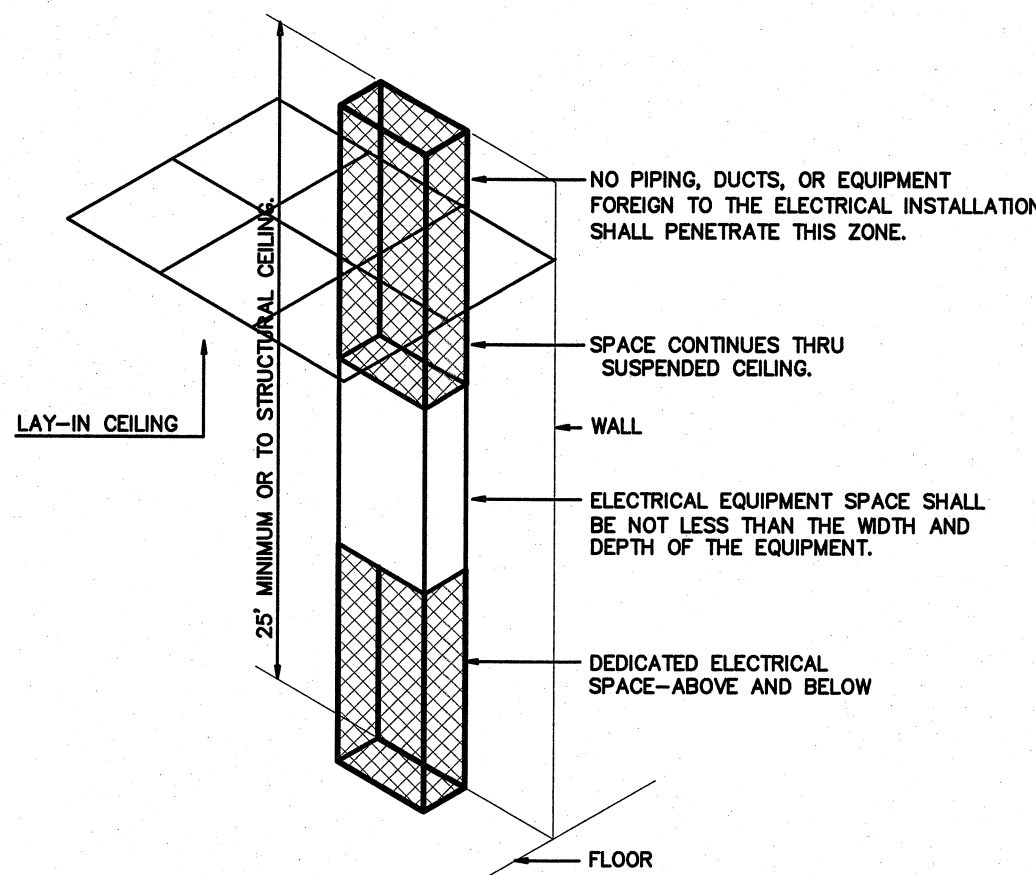
**3.10 GUARANTEE**

- 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**

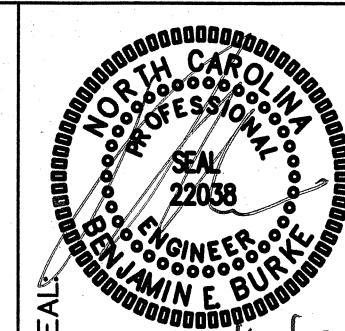


**2 ELECTRICAL CLEARANCES**  
NOT TO SCALE



**1 DEDICATED SPACE**  
NOT TO SCALE

2018 NC ENERGY CODE ELECTRICAL SUMMARY	
<b>ELECTRICAL SYSTEM AND EQUIPMENT</b>	
<b>Method of Compliance:</b>	
Energy Code:	<input checked="" type="checkbox"/> Prescriptive <input type="checkbox"/> Performance
ASHRAE 90.1:	<input type="checkbox"/> Prescriptive <input type="checkbox"/> Performance
<b>Lighting schedule(each fixture type)</b>	
lamp type required in fixture	See Light Fixture Schedule
number of lamps in fixture	
ballast type used in the 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	
<b>Additional Prescriptive Compliance(Existing Building)</b>	
<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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DRAWING TITLE / DESCRIPTION:  
**NOTES, SPECS, DETAILS SCHEDULES**

PROJECT TITLE:  
**NEW FOUR-BAY SALT STORAGE BUILDING**  
DIVISION 1, NCDOT  
NORTHAMPTON COUNTY, NC

STATE CONSTRUCTION ID.# 17-17967-01A

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

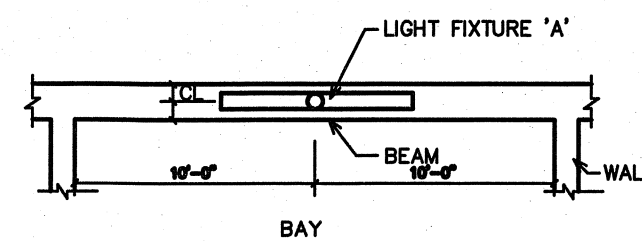
REVISIONS NO.	DATE

DATE ISSUED: 02/16/19  
DRAWN BY: BEB  
CHECKED BY: BEB

SHEET NO.  
**E1**

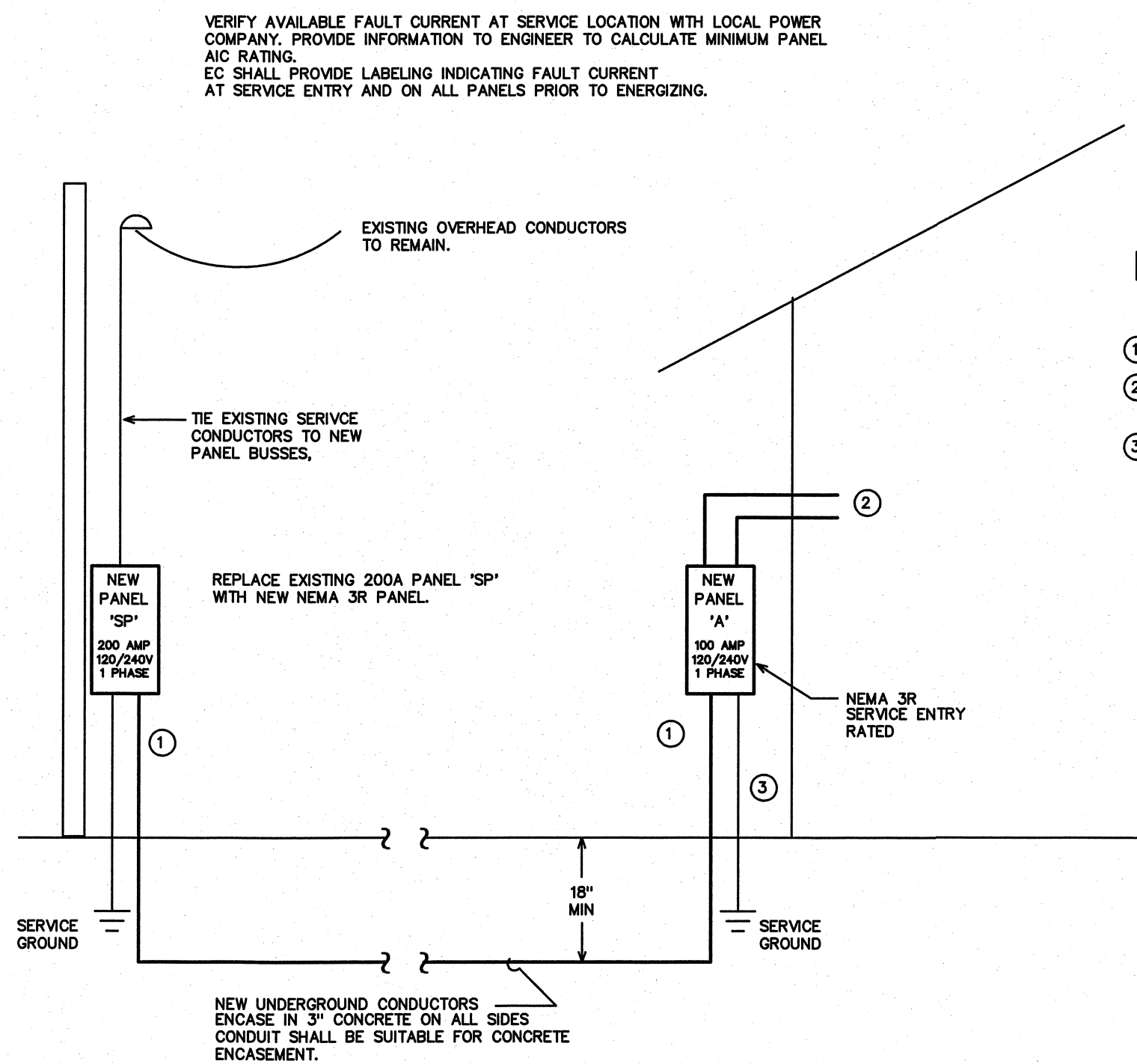


SALT STORAGE - NORTHAMPTON, CITY #2		MAKE: SQUARE D		RATING: 120/240 - 1 PHASE 3 WIRE		200A MAIN CIRCUIT BREAKER	
EXISTING PANEL - 'SP'		MOUNTING: SURFACE		EQUIPMENT GROUND BUS		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	
NEMA 3R		MINIMUM AIC: VERIFY		SERVICE ENTRY RATED		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	
LOAD SERVICE	CKT BRKR	WATTS PER PHASE	CKT NO	NEUTRAL	CKT NO	WATTS PER PHASE	CKT BRKR
REC 1 - GRADER	20A	180	1	A B	2	180	20A
REC 2 - GRADER	20A	180	3	A B	4	180	20A
REC - SPREADER	?	---	5	A B	6	---	?
NOTES		SUB-TOTALS 'B'		1152 180		100A BUS	
						100A LUGS 1152 180	
						100A FEED 1152 180	
						VERIFY SIZE 100 2A	
						AMPS/PHASE	
						SUB-TOTALS 'A'	
						SUB-TOTALS 'B'	
						GRAND TOTAL	
						TOTAL CONNECTED LOAD	



- 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



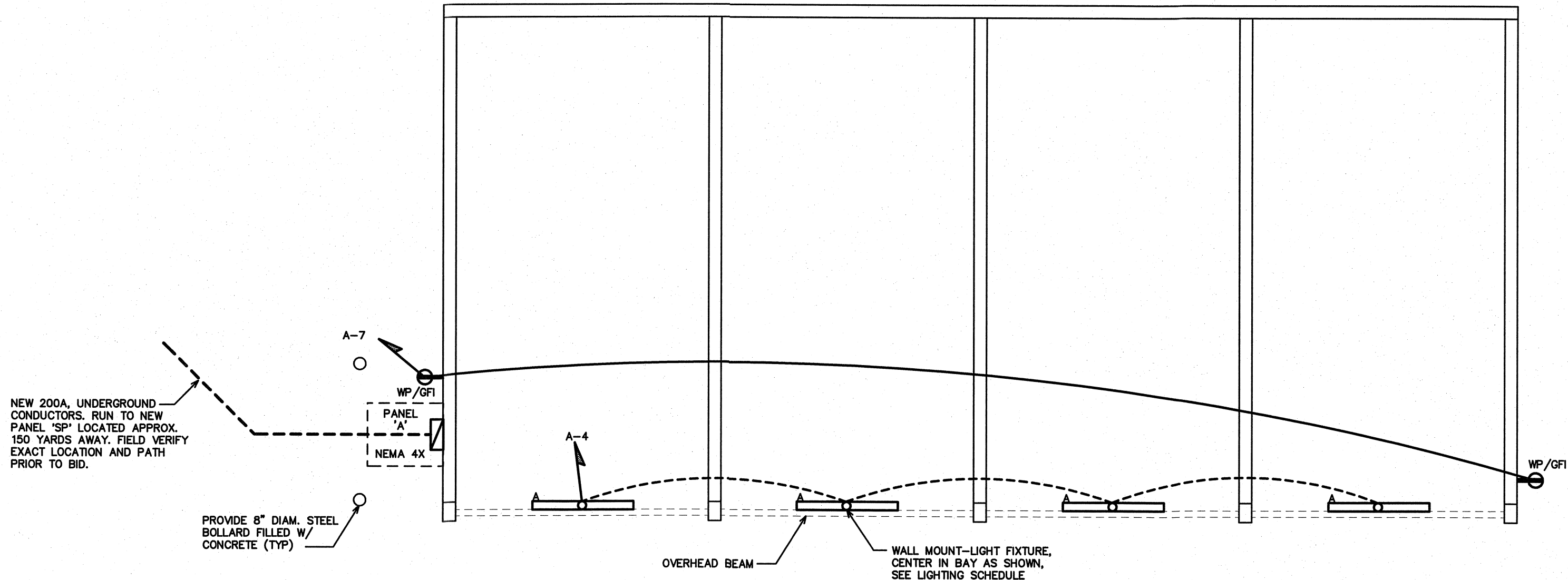
**2** ELECTRICAL SERVICE RISER  
NOT TO SCALE

**RISER WIRING SCHEDULE**

- 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.

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



(PROVIDE LED FIXTURE PRICING AS AN ADD ALTERNATE)

MARK	MANUFACTURER	CATALOG NO.	VOLT.	LAMPS	BALLAST	W/	REMARKS
				NO. TYPE   W	TYPE	FIXTURE	
A	LITHONIA	DMV-332-AR-1120-EB	120	3	TB	32	EB 96 WALL MOUNT STRIP, WEATHER TIGHT, SINGLE BALLAST, FIBERGLASS HOUSING, GASKETED COVER **
C	COOPER	VT2-332-LEX-120V-EB8-WL					
D	DAY BRIGHT	DWE-332-120-1/2-EB-LT					

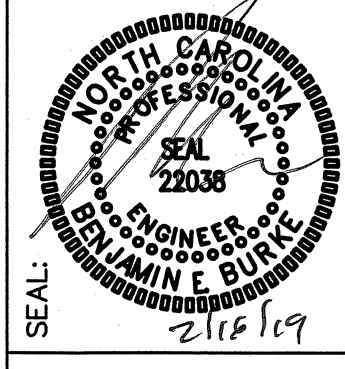
- \* OR APPROVED EQUAL. PROVIDE CUT SHEETS FOR OWNER APPROVAL PRIOR TO ORDERING FIXTURES. FOR FLUORESCENT FIXTURES CONTROLLED BY MOTION SENSOR, PROVIDE "PROGRAMMED RAPID START" BALLASTS. CATALOG NUMBERS ARE FOR REFERENCE ONLY, ACTUAL NUMBERS MAY VARY. 'EB' DENOTES ELECTRONIC BALLAST.
- \*\* VERIFY FIXTURE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

SALT STORAGE - NORTHAMPTON, CITY #2		MAKE: CUTLER HAMMER		RATING: 120/240 - 1 PHASE 3 WIRE		200A MAIN CIRCUIT BREAKER	
NEW PANEL - 'SP'		MOUNTING: SURFACE		EQUIPMENT GROUND BUS		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	
NEMA 3R		OR APPROVED EQUAL *		MINIMUM AIC: 22,000A		SERVICE ENTRY RATED	
LOAD SERVICE	CKT BRKR	WATTS PER PHASE	CKT NO	NEUTRAL	CKT NO	WATTS PER PHASE	CKT BRKR
REC 1 - GRADER	20A	180	1	A B	2	180	20A
REC 2 - GRADER	20A	180	3	A B	4	180	20A
REC - SPREADER	?	---	5	A B	6	---	?
NOTES		SUB-TOTALS 'B'		1152 180		100A BUS	
						100A LUGS 1152 180	
						100A FEED 1152 180	
						VERIFY SIZE 100 2A	
						AMPS/PHASE	
						SUB-TOTALS 'A'	
						SUB-TOTALS 'B'	
						GRAND TOTAL	
						TOTAL CONNECTED LOAD	

\* OR APPROVED EQUAL BY SQUARE D OR GE.

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

\* OR APPROVED EQUAL BY SQUARE D OR GE.



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

PROJECT TITLE:  
**NEW FOUR-BAY SALT STORAGE BUILDING**  
DIVISION 1, NCDOT  
NORTHAMPTON COUNTY, NC

STATE CONSTRUCTION ID.# 17-17967-01A

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**E2**