ADDENDUM 2 September 26, 2023

North Carolina National Guard Hamlet Readiness Center Renovation

SCO#: 16-14395-01A NCNG ID#: 3720170175

**LOCATION:** NCNG North Wilkesboro Readiness Center

191 Armory Road

North Wilkesboro, NC 28659

**OWNER:** North Carolina National Guard

Construction & Facility Management Office

1636 Gold Star Drive Raleigh, NC 27607

**ARCHITECT:** Smith Sinnett Architecture, P.A.

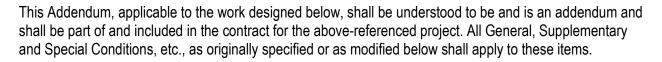
4600 Lake Boone Trail, Suite 205

Raleigh, NC 27607 Phone: (919) 781-8582 Fax: (919) 781-3979

BIDS DUE: October 3, 2023, 2:00pm Base Bid, 3:00pm Alternates

North Carolina National Guard Joint Force Headquarters Cafeteria

1636 Gold Star Drive Raleigh, NC 27607



#### General:

- 1. **GENERAL:** Note the Electrical Site Plan, E1-01 is the last sheet of the Site drawings, directly in front of the Readiness Center drawings.
- 2. <u>GENERAL:</u> ADDENDUM 1: Delete item 2. <u>"2. GENERAL: Background checks will be required for this project. All personnel that will be working onsite will be required to undergo a background check performed by the NCNG. Only approved personnel will be allowed to work on the project. All contractors shall submit the required background check form a minimum of 4 weeks prior to being onsite."</u>

#### **Specifications:**

- <u>ADD:</u> 00 01 10: Add specification section 32 32 23 Segmental Retaining Wall System to the Table of Contents
- 2. <u>ADD:</u> 03 30 00: The manufacture/product Sinak/VC-5 to 03 30 00 Cast-in-Place Concrete, 2.8 Curing Materials provided the Contractor confirms in writing the compatibility with floor finish.
- 3. <u>ADD:</u> 07 26 19: The manufacture/product Sinak/VECT-R to 07 26 91 Topical Moisture Vapor Mitigation System to 2.1 Topical Moisture Mitigation System, Part A., 1. Acceptable Products. The Contractor shall confirm in writing the compatibility with floor finish.
- 4. <u>ADD:</u> 07 95 13: The manufacturer, Erie Metal Specialties, Inc. to 07 95 13 Interior Expansion Joint Control, 2.1 Manufacturer, A. Manufacturers.

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5. <u>ADD:</u> 07 95 16: The manufacturer/model, Erie Metal Specialties, Inc/CSS-Series, to 07 95 16 Exterior Expansion Joint Control, 2.2 Joint System, A. Basis of Design as an acceptable substitution to the basis-of-design.

6. <u>ADD:</u> 10 51 13: Metal Lockers the manufacturer/product Scranton Products/Duralife Lockers (solid plastic) as an acceptable substitution to knocked-down, standard duty metal lockers.

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- <u>REPLACE:</u> 23 23 00 Refrigerant Piping, replace the section in its entirety. Adds condensate piping material and joints spec.
- 8. **REPLACE:** 23 74 00 High Percentage Outside Air Packaged DX, replace the section in its entirety. Adds Valent as an acceptable manufacture.
- 9. <u>ADD:</u> 32 32 23 Segmental Retaining Wall System specification section. Refer to the specification attached to this addendum. Note: RidgeRock II by RidgeRock Retaining Walls, Inc is an acceptable retaining wall system. As with all acceptable retaining wall systems, account for premium color block in the bid. Color choice to be determined by the architect prior to construction.

#### **Drawings:**

- 1. **REVISE:** S-G0-01, added RC-P1-03 to the Index of Drawings, Readiness Center (RC). Refer to the revised sheet S-G0-01 attached to this addendum.
- 2. **REVISE:** C1.0, C5.0, C5.3:
  - a. On sheet C1.0, the tree clearing around the stream has been reduced to match the tree clearing on sheets C5.1 and C5.2. The tree clearing labels beyond the limits of disturbance "DO NOT DISTURB" on sheets C5.1 and C5.2 have been removed.
  - b. On sheet C1.0, a note has been added to refer to the stream stabilization plans for the limits of clearing.
  - c. On sheets C5.0 and C5.3, notes have been added to refer to sheets C5.1 and C5.2 for the erosion control requirements in the stream restoration area.
  - d. Refer to revised sheets, C1.0, C5.0, C5.3, attached to this addendum.
- 3. **REVISE:** C1.0, CS1.0, CS2.0:
  - a. On sheets CS1.0 and CS2.0, references to replacement/relocation of existing fence are removed.
  - b. On sheet C1.0, added additional existing fence and the label "APPROXIMATE LOCATION OF EX. PARTIALLY COLLAPSED CHAIN LINK FENCE".
  - c. On sheet C1.0, added additional chain link fence demolition to match sheets CS1.0 and CS2.0. Refer to new keynote F.
  - d. On sheet C1.0, a note is added deferring to Stream and Bank Stabilization plans for demolition limits and debris removal.
  - e. Refer to revised sheets, C1.0, CS1.0, CS2.0, attached to this addendum.

#### 4. **REVISE:** C9.2:

- a. On the Plan, the pump station wiring diagram note has been revised to: "THE ELECTRICIAN WILL RUN A SECOND CIRCUIT TO THE 10 A CIRCUIT BREAKER IN THE PANEL JUST FOR THE ALARM. THE ELCTRICIAN WILL REMOVE A JUMPER WIRE THAT COMES INSTALLED BETWEEN THE TWO CIRCUIT BREAKERS IN THE PANEL."
- b. Refer to revised sheet, C9.2, attached to this addendum.
- 5. **REVISE:** C2.0, C6.0:
  - a. On sheet C2.0, the river rock landscaping and concrete edging has been adjusted in the front eastern corner of the Readiness Center building. The concrete edging now lines up

with corresponding landscaping area edge on opposite side of the courtyard, and the river rock landscaping area has increased accordingly.

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- b. On sheet C6.0, the grass vegetation area has been reduced slightly due to the slightly enlarged river rock landscaping area.
- c. Refer to revised sheets, C2.0, C6.0, attached to this addendum.
- 6. **REVISE:** RC-G0-01, added RC-P1-03 to the Index of Drawings, Readiness Center (RC). Refer to the revised sheet, RC-P1-03, attached to this addendum.
- 7. **REVISE:** RC-A4-03: 6/RC-A4-03 and 8/RC-A4-03. Clarification of waste receptacle casework. Refer to the revised sheet, RC-A4-03, attached to this addendum.
- 8. **REVISE:** RC-A4-04: Revise casework legend. Refer to the revised sheet, RC-A4-04, attached to this addendum.
- 9. **REVISE:** 1/RC-A7-01: Change the sign type designation L for the Display Board at Drill Hall 100 to sign type designation V. Refer to revised sheet RC-A7-01 attached to this addendum
- 10. **REVISE:** RC-A7-02: Drawings indicate duplicate sign type designation L, for Fire Alarm and Display Board. Revise Sign type L (policy memo board) to be sign type V. Refer to revised sheet RC-A7-02 attached to this addendum.
- 11. **REVISE:** 1/RC-A9-07
  - a. Delete one (1) sign type E (shown in base bid area) directly adjacent to Break Room 114. This sign is indicated at the west end of Corridor 116A and therefore is not required if Alternate 1 is accepted. Note the sign remains in the base bid condition if Alternate 1 is not accepted. Refer to revised sheet RC-A9-07 attached to this addendum.
  - b. Delete (1) sign type L (shown in base bid area) directly adjacent to Break Room 114. This sign is indicated at the west end of Corridor 116A and therefore is not required if Alternate 1 is accepted. Note the sign remains in the base bid condition if Alternate 1 is not accepted. Refer to revised sheet RC-A9-07 attached to this addendum.
  - c. Change the sign type designation L (shown in base bid area) for the Policy Memo Board at Drill Hall 100 to sign type designation V. Refer to revised sheet RC-A9-07 attached to this addendum.
  - d. Add BL (horizontal louver blind) tag to side lite at doors: 121A, 121B, 122. Refer to revised drawing 1/RC-A9-07 attached to this addendum.
- 12. **REVISE:** RC-P1-03: Issue sheet for Gas Piping Roof Plan, previously not issued.
- 13. **REVISE:** RC-M2-01: Moved thermostat for IWU-2 and relocated some condensate piping. Refer to revised drawing RC-M2-01 attached to this addendum.
- 14. **REVISE:** RC-M3-01: Revised location of VRF-1 on roof. Move VRF-1 north of exterior face of Drill Hall wall.
- 15. **REVISE:** UTB-A4-02: 6/UTB-A4-02, clarification of waste receptacle casework. Refer to the revised sheet, UTB-A4-02, attached to this addendum.
- 16. **REVISE:** UTB-A7-01: The ceiling at UTB Break Area 201 shall be exposed, Type J, per sheet UTB-A1-02. Refer to revised drawing 1/UTB-A7-01, changing the ceiling from ACTA to exposed, attached to this addendum.
- 17. **REVISE:** G-E2-03: Removed fixtures J, JE, K and KE as not used. Refer to revised sheet G-E2-03 attached to this addendum.

#### Plan holder questions:

18. **QUESTIONS:** General Note #13 on RC-A1-01 (and other sheets): "All exterior windows to have roller shade blinds unless otherwise noted, refer to specifications."

A) What is meant by "Roller shade blinds"? There can be either a roller shade or a blind. The project manual includes section 12 21 13 for horizontal blinds AND section 12 24 13 for roller shades.

**RESPONSE:** The window treatment is either a horizontal louver blind or a roller window shade. Refer the finish plan. BL = horizontal louver blind. RS = roller window shade. Horizontal louver blinds occur at a door side lites, such as RC door 120A (base bid) and the sliding service window at UTB. Note this addendum item 9., d. revising RC-A9-07, adding BL to side lite at door 121A, 121B, 122.

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Please confirm that the exterior window get shades and the interior windows get blinds as noted on the finish plans with a RS or BL.

**RESPONSE:** Windows tagged RS receive roller window shades. Windows tagged with BL receive horizontal louver blinds.

- B) There are 4 windows type AL8 located in the 200 Unit Training Bay and an additional 3 in the 200B, C, E Storage Rooms. They are shown only on the RCP drawing 1/UTB-A1-02 The finish plan UTB-A7-01 does not show these windows and therefore does not identify the window treatments requirements. Do these windows get shades or blinds as per note #13 or are they excluded?
  - **RESPONSE**: The seven (7) AL8 windows at Unit Training Bay 200 do not receive roller window shades. Note the three (3) windows are above Tool Storage 200 B, C, and E in Unit Training Bay 200 (Storage Rooms terminate with a concrete ceiling below the window elevation). Refer to 9/UTB-A4-02.
- C) Room 300 Unheated storage has a single exterior window. This window is not noted for window treatments. Does this window get a shade or blind as per note #13 or is it excluded? RESPONSE: The single window AL10 at Unheated Storage 300 does not receive window treatment.
- 19. **QUESTION:** The bid package is missing plan RC-P1.03, this plan is spelled out on RC-P1.02 detail 5. Please advise.

**RESPONSE:** Refer to sheet RC-P1-03 attached to this addendum.

#### 20. **QUESTIONS**:

Pls ask the following RFIs for the soldier pile retaining wall:

Are the piles plain steel?

**RESPONSE:** The piles shall meet the requirements set forth in the structural notes on CS6.0. The structural steel piles shall be hot dipped galvanized and meet any specifications found in ASTM A992.

Can the grout between the piles and panels be eliminated? I don't think we can access those spaces.

**RESPONSE:** Grout may be replaced with NO. 57 Stone to allow for proper drainage.

Can you offer a larger pile size that embeds the entire length to eliminate the need for #8 bars? le HP10x42, HP12x53, etc.

**RESPONSE:** The #8 bars are to protect the concrete from cracking/failure. A larger pile size would still require bars within the pile.

Are the panels plain faced concrete?

**RESPONSE:** The panels are plain faced concrete.

#### End of Addendum 2

#### Attachments:

<u>Specifications – total 18 pages:</u>

23 23 00 Refrigerant Piping – 5 pages

23 74 00 High Percentage Outside Air Packaged Dx Unit – 6 pages

32 32 23 Segmental Retaining Wall System - 7 pages.

<u>Drawings – total 21 sheets:</u>

Site (S): S-G0-01, C1.0, C2.0, C5.0, C5.3, C6.0, C9.2, CS1.0, CS2.0 – 9 sheets.

Readiness Center (RC): RC-G0-01, RC-A4-03, RC-A4-04, RC-A7-01, RC-A7-02, RC-A9-07, RC-P1-03, RC-M2-01, RC-M3-01 - 9 sheets

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Unit Training Bay (UTB): UTB-A4-02, UTB-A7-01 – 2 sheet

General (G): G-E2-03 - 1 sheet

#### SECTION 23 23 00 REFRIGERANT PIPING

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SCO ID#: 16-14395-01

#### **PART 1 GENERAL**

#### 1.01 SECTION INCLUDES

- A. Piping.
- B. Moisture and liquid indicators.
- C. Valves.
- D. Strainers.
- E. Check valves.
- F. Filter-driers.
- G. Flexible connections.

#### 1.02 REFERENCE STANDARDS

- A. ASME BPVC-IX Boiler and Pressure Vessel Code, Section IX Qualification Standard for Welding, Brazing, and Fusing Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators 2023.
- B. ASME B16.22 Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings 2021.
- C. ASME B31.5 Refrigeration Piping and Heat Transfer Components 2022.
- D. ASME B31.9 Building Services Piping 2020.
- E. ASTM A123/A123M Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- F. AWS A5.8M/A5.8 Specification for Filler Metals for Brazing and Braze Welding 2019.
- G. MSS SP-58 Pipe Hangers and Supports Materials, Design, Manufacture, Selection, Application, and Installation 2018, with Amendment (2019).

#### 1.03 SYSTEM DESCRIPTION

- A. Provide pipe hangers and supports in accordance with ASME B31.5 unless indicated otherwise.
- B. Filter-Driers:
  - 1. Use a filter-drier immediately ahead of liquid-line controls, such as thermostatic expansion valves, solenoid valves, and moisture indicators.

#### 1.04 SUBMITTALS

- A. Product Data: Provide general assembly of specialties, including manufacturers catalogue information. Provide manufacturers catalog data including load capacity.
- B. Shop Drawings: Indicate schematic layout of system, including equipment, critical dimensions, and sizes.
- C. Design Data: Submit design data indicating pipe sizing. Indicate load carrying capacity of trapeze, multiple pipe, and riser support hangers.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- Deliver and store piping and specialties in shipping containers with labeling in place.
- B. Protect piping and specialties from entry of contaminating material by leaving end caps and plugs in place until installation.
- C. Dehydrate and charge components such as piping and receivers, seal prior to shipment, until connected into system.

#### **PART 2 PRODUCTS**

#### 2.01 REGULATORY REQUIREMENTS

- A. Comply with ASME B31.9 for installation of piping system.
- Welding Materials and Procedures: Comply with ASME BPVC-IX and applicable state labor regulations.

C. Products Requiring Electrical Connection: Listed and classified by UL, as suitable for the purpose indicated.

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#### 2.02 REFRIGERANT PIPING

- A. Copper Tube: ASTM B280, H58 hard drawn only. Soft annealed copper tube will not be accepted.
  - Fittings: ASME B16.22 wrought copper.
  - 2. Joints: Braze, AWS A5.8M/A5.8 BCuP silver/phosphorus/copper alloy.

#### 2.03 CONDENSATE PIPING AND EQUIPMENT DRAINS

- A. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), drawn; using one of the following joint types:
  - 1. Solder Joints: ASME B16.18 cast brass/bronze or ASME B16.22 solder wrought copper fittings; ASTM B32 lead-free solder, HB alloy (95-5 tin-antimony) or tin and silver. (ADD 02)

#### 2.04 PIPE SUPPORTS AND ANCHORS:

- A. Provide hangers and supports that comply with MSS SP-58.
- B. Pipe Hangers for pipe 6" and smaller: Cooper B3100, Anvil Fig. 260, or equivalent.
- C. Riser Clamps: Cooper B3373, Anvil Fig. 40, or equivalent.
- D. Beam Clamps: Cooper B3050, Anvil Fig. 134, or equivalent.
- E. Offset Clamps: Cooper B3148, Anvil Fig. 103, or equivalent
- F. Ceiling Plate: Cooper B3199, Anvil Fig. 610, or equivalent
- G. Wall Brackets: Cooper B3067, Anvil Fig. 199, or equivalent.
- H. Rod Ceiling Plate: Cooper, Anvil Fig. 610, or equivalent.
- I. Concrete Inserts: Cooper B2500, Anvil Fig. 95 or equivalent.
- J. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- K. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.
- L. Rooftop Supports for Low-Slope Roofs: Steel pedestals with bases that rest on top of roofing membrane, not requiring any attachment to the roof structure and not penetrating the roofing assembly, with support fixtures as specified; and as follows:
  - 1. Bases: High density, UV tolerant, polypropylene or reinforced PVC.
  - 2. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
  - 3. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.
  - 4. Attachment/Support Fixtures: As recommended by manufacturer, same type as indicated for equivalent indoor hangers and supports; corrosion resistant material.
  - 5. Height: Provide minimum clearance of 6 inches under pipe to top of roofing.
  - Manufacturers:
    - a. PHP Systems/Design
    - b. Portals Plus
    - c. Miro
    - d. Caddy
    - e. Bigfoot Systems

#### 2.05 MOISTURE AND LIQUID INDICATORS

- A. Manufacturers:
  - 1. Henry Technologies
  - 2. Parker Hannifin/Refrigeration and Air Conditioning
  - 3. Sporlan, a Division of Parker Hannifin
  - Or Approved Equal
- B. Indicators: Single port type, UL listed, with copper or brass body, flared or solder ends, sight glass, color coded paper moisture indicator with removable element cartridge and plastic cap; for maximum temperature of 200 degrees F and maximum working pressure of 500 psi.

#### 2.06 VALVES

#### North Wilkesboro Readiness Center Renovation

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#### A. Manufacturers:

- 1. Hansen Technologies Corporation
- 2. Henry Technologies
- 3. Flomatic Valves
- 4. Or Approved Equal

#### B. Diaphragm Packless Valves:

 UL listed, globe or angle pattern, forged brass body and bonnet, phosphor bronze and stainless steel diaphragms, rising stem and handwheel, stainless steel spring, nylon seat disc, solder or flared ends, with positive backseating; for maximum working pressure of 500 psi and maximum temperature of 275 degrees F.

#### C. Packed Angle Valves:

 Forged brass or nickel plated forged steel, forged brass seal caps with copper gasket, rising stem and seat with backseating, molded stem packing, solder or flared ends; for maximum working pressure of 500 psi and maximum temperature of 275 degrees F.

#### D. Ball Valves:

 Two piece bolted forged brass body with teflon ball seals and copper tube extensions, brass bonnet and seal cap, chrome plated ball, stem with neoprene ring stem seals; for maximum working pressure of 500 psi and maximum temperature of 300 degrees F.

#### E. Service Valves:

 Forged brass body with copper stubs, brass caps, removable valve core, integral ball check valve, flared or solder ends, for maximum pressure of 500 psi.

#### 2.07 STRAINERS

#### A. Manufacturers:

- 1. Hansen Technologies Corporation
- Parker Hannifin/Refrigeration and Air Conditioning
- 3. Sporlan, a Division of Parker Hannifin

#### B. Straight Line or Angle Line Type:

1. Brass or steel shell, steel cap and flange, and replaceable cartridge, with screen of stainless steel wire or monel reinforced with brass; for maximum working pressure of 430 psi.

#### 2.08 CHECK VALVES

#### A. Manufacturers:

- 1. Hansen Technologies Corporation
- 2. Parker Hannifin/Refrigeration and Air Conditioning
- 3. Sporlan, a Division of Parker Hannifin
- 4. Or Approved Equal

#### B. Globe Type:

 Cast bronze or forged brass body, forged brass cap with neoprene seal, brass guide and disc holder, phosphor-bronze or stainless steel spring, teflon seat disc; for maximum temperature of 300 degrees F and maximum working pressure of 425 psi.

#### 2.09 FILTER-DRIERS

#### A. Manufacturers:

- 1. Alco
- 2. Cash
- 3. Flow Controls Division of Emerson Electric
- 4. Henry
- 5. Parker Hannifin/Refrigeration and Air Conditioning
- 6. Sporlan, a Division of Parker Hannifin
- 7. Or Approved Equal
- B. Cores: Molded or loose-fill molecular sieve desiccant compatible with refrigerant, activated alumina, activated charcoal, and filtration to 40 microns, with secondary filtration to 20 microns; of construction that will not pass into refrigerant lines.

C. Construction: UL listed.

#### North Wilkesboro Readiness Center Renovation

North Carolina National Guard: #3720170175

1. Sealed Type: Copper shell.

2. Connections: Soldered.

#### 2.10 FLEXIBLE CONNECTORS

- A. Manufacturers:
  - 1. Circuit Hydraulics, Ltd
  - 2. Flexicraft Industries
  - 3. Penflex
  - 4. Or Approved Equal
- B. Corrugated stainless steel hose with single layer of stainless steel exterior braiding, minimum 9 inches long with copper tube ends; for maximum working pressure of 500 psi.

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#### PART 3 EXECUTION

#### 3.01 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

#### 3.02 INSTALLATION

- A. Install refrigeration specialties in accordance with manufacturer's instructions.
- B. Space refrigerant piping far enough apart to allow for field installed insulation of thickness specified.
- C. The installation of piping and related items shall be made neatly and in such a manner as not to interfere with access to valves or equipment. Expansion, drainage and maintenance of installed piping shall be possible.
- D. Route piping in orderly manner, with plumbing parallel to building structure, and maintain gradient.
- E. Install piping to conserve building space and avoid interference with use of space.
- F. Group piping whenever practical at common elevations and locations. Slope piping one percent in direction of oil return.
- G. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- H. Sleeves shall be provided wherever pipes pass through walls, floors and ceilings. Sleeves shall be Schedule 40, black steel, one-half inch in diameter larger than the pipe or insulation on the pipe. Sleeves through walls and ceilings shall be flush. Sleeves through floors shall extend one inch above finished floor. Sleeves through exterior walls shall be caulked and made watertight.
- I. Pipe Hangers and Supports:
  - 1. Install in accordance with ASME B31.5.
  - 2. Support horizontal piping as indicated.
  - 3. Place hangers within 12 inches of each horizontal elbow.
  - Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
  - 5. Provide copper plated hangers and supports for copper piping.
- J. Arrange piping to return oil to compressor. Provide traps and loops in piping, and provide double risers as required. Slope horizontal piping 0.40 percent in direction of flow.
- K. Provide clearance for installation of insulation and access to valves and fittings.
- L. Flood piping system with nitrogen when brazing.
- M. Fully charge completed system with refrigerant after testing.

#### 3.03 FIELD QUALITY CONTROL

- A. Test refrigeration system in accordance with ASME B31.5.
- B. All refrigerant equipment not tested at the factory shall be shut off from the rest of the system and tested under a vacuum with no evidence of leakage. Piping systems shall be tested after installation, and before any insulation is applied. All controls and other apparatus that may be

damaged by the test pressure shall be removed before tests are made.

- C. Refrigerant piping leak testing shall be as follows, unless equipment manufacturer mandates or recommends or more stringent procedure:
  - 1. Connect the refrigerant manifold gauge hoses to the liquid side and gas side service ports on the equipment and connect the center hose to a nitrogen tank fitted with a pressure regulator.

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- 2. Fill the lines with nitrogen to 590 psi but no more than 595 psi.
- 3. Monitor the pressure periodically for a minimum of 24 hours. If the pressure drops, use soapy water to check for leaks. Bubbles will occur if joints are not tight.
- 4. Repair leaks. Repeat the previous steps until the pressure remains constant for 24 hours.
- 5. Maintain 145 psi of pressure for 15 minutes and check for further leakage. If the pressure drops, check for leaks and repair. Repeat this step until 145 psi of pressure is maintained for 15 minutes.
- 6. Remove hoses from service ports.
- D. Evacuation Procedure. After performing leak test, use a vacuum pump to triple evacuate the system as described below:
  - Use a vacuum pump with a check valve to prevent pump oil from flowing backward while the vacuum pump is closed. Completely close the liquid-vapor line service valves of the outdoor unit
  - 2. Using vacuum-rated hoses, connect the manifold gauges to the liquid and suction (and high pressure, if applicable) gas pipes.
  - 3. Evacuate the system to 750 microns, hold for 5 minutes, and check for leaks. Repair and repeat as necessary until vacuum holds.
  - 4. Break the vacuum by applying 10 psi of nitrogen.
  - 5. Evacuate the system to 500 microns, hold for 5 minutes, and check for leaks. Repair and repeat as necessary until vacuum holds.
  - 6. Break the vacuum by applying 10 psi of nitrogen.
  - 7. Evacuate the system to 200 microns. Wait for 15 minutes. A rise of no more than 200 microns is acceptable. If over 400 microns, check for leaks, repair, and repeat.
  - 8. If under 400 microns, continue holding vacuum for 2.5 hours. If vacuum exceeds 400 microns at end of period, check for leaks, repair, and repeat.
  - 9. If system holds under 400 microns for 2.5 hours, system is ready for charging.

#### 3.04 SCHEDULES

- A. Hanger Spacing for Copper Tubing.
  - 1. 1/2 inch, 5/8 inch, and 7/8 inch OD: Maximum span, 5 feet; minimum rod size, 1/4 inch.
  - 2. 1-1/8 inch OD: Maximum span, 6 feet; minimum rod size, 1/4 inch.
  - 3. 1-3/8 inch OD: Maximum span, 7 feet; minimum rod size, 3/8 inch.
  - 4. 1-5/8 inch OD: Maximum span, 8 feet; minimum rod size, 3/8 inch.
  - 5. 2-1/8 inch OD: Maximum span, 8 feet; minimum rod size, 3/8 inch.

**END OF SECTION 23 23 00** 

# SECTION 23 74 00 HIGH PERCENTAGE OUTSIDE AIR PACKAGED DX UNIT

#### **PART 1 GENERAL**

#### 1.01 GENERAL DESCRIPTION

A. This section includes the design, controls and installation requirements for packaged rooftop units / outdoor air handling units.

#### 1.02 REFERENCE STANDARDS

A. AHRI Standard 920 (I-P) 2015 - Standard for Performance Rating of DX - Dedicated Outdoor Air System Units

#### 1.03 QUALITY ASSURANCE

- A. Packaged air-cooled condenser units shall be certified in accordance with ANSI/AHRI Standard 340/360 performance rating of commercial and industrial unitary air-conditioning and heat pump equipment.
- B. Packaged air-cooled condenser units shall be certified in accordance with AHRI Standard 920 performance rating of DX Dedicated Outdoor Air System Units.
- C. Unit shall be certified in accordance with UL Standard 1995/CSA C22.2 No. 236, Safety Standard for Heating and Cooling Equipment.
- Unit and refrigeration system shall comply with ASHRAE 15, Safety Standard for Mechanical Refrigeration.
- E. Unit Energy Efficiency Ratio (EER) shall be equal to or greater that prescribed by ASHRAE 90.1, Energy Efficient Design of New Buildings except Low-Rise Residential Buildings.
- F. Unit shall be safety certified by ETL and ETL US listed. Unit nameplate shall include the ETL/ETL Canada label.

#### 1.04 SUBMITTALS

- A. Product Data: Literature shall be provided that indicates dimensions, operating and shipping weights, capacities, ratings, fan performance, filter information, factory supplied accessories, electrical characteristics and connection requirements. Installation, Operation, and Maintenance manual with startup requirements shall be provided.
- B. Shop Drawings: Unit drawings shall be provided that indicate assembly, unit dimensions, construction details, clearances and connection details. Computer generated fan curves for each fan shall be submitted with specific design operation point noted. Wiring diagram shall be provided with details for both power and control systems and differentiate between factory installed and field installed wiring.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Unit shall be shipped with doors screwed shut and outside air hood closed to prevent damage during transport and thereafter while in storage awaiting installation.
- B. Follow Installation, Operation, and Maintenance manual instructions for rigging, moving, and unloading the unit at its final location.
- C. Unit shall be stored in a clean, dry place protected from construction traffic in accordance with the Installation, Operation, and Maintenance manual.

#### 1.06 WARRANTY

A. Manufacturer shall provide a limited "parts only" warranty for a period of 12 months from the date of equipment startup or 18 months from the date of original equipment shipment from the factory, whichever is less. Warranty shall cover material and workmanship that prove defective, within the specified warranty period, provided manufacturer's written instructions for Installation, Operation, and maintenance have been followed. Warranty excludes parts associated with routine maintenance, such as belts and filters.

#### **PART 2 PRODUCTS**

#### 2.01 MANUFACTURERS:

HIGH PERCENTAGE OUTSIDE AIR PACKAGED DX UNIT

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- A. AAON
- B. Addison
- C. Captive-Aire
- D. Greenheck
- E. Trane

#### F. Valent (ADD 02)

- G. Or Approved Equal
- H. Substitute equipment may be considered for approval that includes at a minimum:
  - 1. R-410A refrigerant
  - 2. Variable capacity compressor with 15-100% capacity control
  - 3. Direct drive supply fans
  - 4. Double wall cabinet construction
  - 5. Insulation with a minimum R-value of 13.0
  - 6. Stainless steel drain pans

#### 2.02 ROOFTOP UNITS

#### A. General Description

- Packaged rooftop unit shall include compressors, evaporator coils, filters, supply fans, dampers, air-cooled condenser coils, condenser fans, reheat coil, exhaust fans, and unit controls.
- 2. Unit shall be factory assembled and tested including leak testing of the DX coils, pressure testing of the refrigeration circuit, and run testing of the completed unit. Run test report shall be supplied with the unit in the service compartment's literature pocket.
- 3. Unit shall have decals and tags to indicate lifting and rigging, service areas and caution areas for safety and to assist service personnel.
- 4. Unit components shall be labeled, including refrigeration system components and electrical and controls components.
- 5. Estimated sound power levels (dB) shall be shown on the unit ratings sheet.
- 6. Installation, Operation, and Maintenance manual shall be supplied within the unit.
- 7. Laminated color-coded wiring diagram shall match factory installed wiring and shall be affixed to the interior of the control compartment's hinged access door.
- 8. Unit nameplate shall be provided in two locations on the unit, affixed to the exterior of the unit and affixed to the interior of the control compartment's hinged access door.

#### B. Performance

- 1. Refer to Schedule on Drawings for equipment capacities, ambient conditions, etc.
- 2. Unit performance shall be rated in accordance with AHRI 920. Manufacturer shall provide the Integrated Seasonal Moisture Removal Efficiency (ISMRE). Efficiency shall comply with ASHRAE 90.1-2016.

#### C. Construction

- All cabinet walls, access doors, and roof shall be fabricated of double wall, impact resistant, rigid polyurethane foam panels.
- 2. Unit insulation shall have a minimum thermal resistance R-value of 13. Foam insulation shall have a minimum density of 2 pounds/cubic foot and shall be tested in accordance with ASTM D1929-11.
- 3. Unit construction shall be double wall with G90 galvanized steel on both sides and a thermal break. Double wall construction with a thermal break prevents moisture accumulation on the insulation, provides a cleanable interior, prevents heat transfer through the panel, and prevents exterior condensation on the panel.
- 4. Unit shall be designed to reduce air leakage and infiltration through the cabinet. Cabinet leakage shall not exceed 1% of total airflow when tested at 3 times the minimum external static pressure provided in AHRI Standard 340/360. Panel deflection shall not exceed L/240 ratio at 125% of design static pressure, at a maximum 8 inches of positive or negative static pressure, to reduce air leakage. Deflection shall be measured at the midpoint of the panel

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height and width. Continuous sealing shall be included between panels and between access doors and openings to reduce air leakage. Piping and electrical conduit through cabinet panels shall include sealing to reduce air leakage.

- 5. Roof of the air tunnel shall be sloped to provide complete drainage. Cabinet shall have rain break overhangs above access doors.
- Access to filters, dampers, cooling coils, reheat coil, exhaust fans, energy recovery wheels, compressors, and electrical and controls components shall be through hinged access doors with quarter turn, zinc cast, lockable handles. Full length stainless steel piano hinges shall be included on the doors.
- 7. Exterior paint finish shall be capable of withstanding at least 2,500 hours, with no visible corrosive effects, when tested in a salt spray and fog atmosphere in accordance with ASTM B 117-95 test procedure.
- 8. Units with cooling coils shall include double sloped 304 stainless steel drain pans.
- 9. Unit shall be provided with horizontal discharge and return air openings. All openings through the base pan of the unit shall have upturned flanges of at least 1/2 inch in height around the opening.
- 10. Unit shall include lifting lugs on the top of the unit.

#### D. Electrical

- 1. Unit shall be provided with factory installed and factory wired, non-fused disconnect switch.
- 2. Unit shall be provided with a factory installed and factory wired 115V, 12 amp GFI outlet disconnect switch in the unit control panel.
- 3. Unit shall be provided with phase and brown out protection which shuts down all motors in the unit if the electrical phases are more than 10% out of balance on voltage, the voltage is more than 10% under design voltage or on phase reversal.

#### E. Motorized Dampers

- 1. Frame shall be constructed of a 16 gage galvanized steel hat-channel.
- 2. Blades shall be constructed of 16 gage galvanized steel strengthened by three longitudinal 1 inch deep "vee" grooves.
- 3. Blades shall be symmetrical relative to its axle pivot point.
- Axle bearings shall be synthetic sleeve-type and rotate inside extruded holes in the damper frame.
- 5. Blade seals shall be extruded vinyl permanently bonded to the appropriate blade edges.
- 6. Frame shall include flexible stainless steel compression-type jamb seals.
- 7. Modulating spring-return actuators shall be provided by the factory, installed on the damper, and wired to the control center. Each damper shall have a dedicated actuator. Single actuators with gear trains are not acceptable.
- 8. Damper leakage shall be no more than 3 cfm/sq.ft. at 1 in.wg static pressure.

#### F. Supply Fans (VFD)

- 1. Unit shall include direct drive, unhoused, backward curved, plenum supply fans.
- 2. Blowers and motors shall be dynamically balance and mounted on rubber isolators.
- 3. Motors shall be premium efficiency ODP with ball bearings rated for 200,000 hours service with external lubrication points.
- 4. Variable frequency drives shall be factory wired and mounted in the unit. Fan motors shall be premium efficiency.
- 5. Fan wheel shall be tested in accordance to AMCA 210.

#### G. Cooling Coils

- 1. DX Evaporator Coils
  - Coil shall be rated in accordance to AHRI standards, designed to withstand 250 psig working pressure at 300 degrees F, and pressure tested to 600 psig.
  - b. Coils shall be designed for use with R-410A refrigerant and constructed of copper tubes with aluminum fins mechanically bonded to the tubes and galvanized steel end casings. Fin design shall be sine wave rippled.
  - c. Coils shall have interlaced circuitry and shall be standard capacity.
  - Coils shall have interlaced circuitry and shall be minimum 6 row high capacity.
  - e. Coils shall be hydrogen or helium leak tested.

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f. Coils shall be furnished with factory installed expansion valves.

#### H. Gas Heating:

- 1. Unit shall be provided with AGA-certified, induced-draft, 3:1 or 6:1 or 5:1 or 10:1 turndown indirect gas furnace. Unit shall be provided with AGA-certified, induced-draft, 10:1 turndown indirect gas furnace.
- 2. Furnace assembly shall include the following items:
  - a. Electronic modulating gas valve.
  - b. Two-speed combustion fan.
  - c. Stainless steel heat exchanger.

#### I. Hot Gas Reheat Coil

- 1. Hot-gas reheat coil shall be separated from the evaporator coil by a minimum of 6" in the direction of airflow to prevent the re-evaporation of condensate, provide room for coil cleaning, and allow control system to monitor evaporator coil leaving dew point temperature.
- 2. Coil shall be rated in accordance to AHRI standards, designed to withstand 250 psig working pressure at 300 degrees F, and pressure tested to 600 psig.
- 3. Coil casing shall be constructed of 16 gage galvanized steel or 304 stainless steel.
- 4. Coil tubes shall be constructed of 5/16" diameter, 0.012" thick seamless copper tubing.
- 5. Coil fins shall be constructed of 0.0060" thick aluminum fins.
- 6. Hot-gas reheat shall be controlled through a factory-supplied and controlled modulating 3-way valve.
- 7. Coil shall be hydrogen or helium leak tested.

#### J. Refrigeration System

- 1. Unit shall be factory charged with R-410A refrigerant.
- 2. Compressors shall be scroll type with thermal overload protection and carry a 5 year non-prorated warranty, from the date of original equipment shipment from the factory.
- 3. Compressors shall be mounted in an isolated service compartment which can be accessed without affecting unit operation. Lockable hinged compressor access doors shall be fabricated of double wall, rigid polyurethane foam injected panels to prevent the transmission of noise outside the cabinet.
- 4. Compressors shall be isolated from the base pan with the compressor manufacturer's recommended rubber vibration isolators, to reduce any transmission of noise from the compressors into the building area.
- 5. Each refrigeration circuit shall be equipped with expansion valve type refrigerant flow control.
- 6. Each refrigeration circuit shall be equipped with automatic reset low pressure and manual reset high pressure refrigerant safety controls, Schrader type service fittings on both the high pressure and low pressure sides and a factory installed replaceable core liquid line filter driers.
- 7. Unit shall include a variable capacity scroll compressor on the lead refrigeration circuit which shall be capable of modulation from 10-100% of its capacity.
- 8. Lead refrigeration circuit shall be provided with hot gas reheat coil, modulating valves, electronic controller, supply air temperature sensor and a control signal terminal which allow the unit to have a dehumidification mode of operation, which includes supply air temperature control to prevent supply air temperature swings and overcooling of the space.
- 9. Unit shall be configured as an air-source heat pump. Each refrigeration circuit shall be equipped with a factory installed liquid line filter drier with check valve, reversing valve, accumulator, and expansion valves on both the indoor and outdoor coils. Reversing valve shall energize during the heat pump cooling mode of operation.

#### K. Condensers

- 1. Air-Cooled Condenser
  - a. Condenser fans shall be a vertical discharge, axial flow, direct drive fans.
  - Coils shall be designed for use with R-410A refrigerant. Coils shall be multi-pass and fabricated from aluminum microchannel tubes.
  - c. Heat pump outdoor coil shall be constructed of copper tubes with aluminum fins mechanically bonded to the tubes and aluminum end casings. Fin design shall be sine wave rippled.

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d. Coils shall be designed for a minimum of 10°F of refrigerant sub-cooling.

- e. Coils shall be hydrogen or helium leak tested.
- f. Condenser coils shall include corrosion-resistant, electrostatically-applied coating rated for 5,000 hours in accordance with ASTM B117.
- g. Condenser fans shall be high efficiency electrically commutated motor driven with factory installed head pressure control module. Condenser airflow shall continuously modulate based on head pressure and cooling operation shall be allowed down to 35°F with adjustable compressor lockout.
- h. Condenser fans shall be VFD driven variable speed for condenser head pressure control. Factory provided and factory programmed VFDs shall continuously modulate the fan air flow to maintain head pressure at acceptable levels. Cooling operation shall be allowed down to 35°F with adjustable compressor lockouts.

#### L. Filters

- 1. Outdoor air hood shall have a aluminum mesh filter section.
- 2. Unit shall include 2 inch thick, pleated panel filters with an ASHRAE efficiency of 30% and MERV rating of 13, upstream of the cooling coil.
- 3. Unit shall include motor operated outside air damper assembly constructed of extruded aluminum, hollow core, airfoil blades with rubber edge seals and aluminum end seals. Damper blades shall be gear driven and designed to have no more than 20 cfm of leakage per sq ft. at 4 in. w.g. air pressure differential across the damper. Low leakage dampers shall be Class 2 AMCA certified, in accordance with AMCA Standard 511. Damper assembly shall be controlled by spring return enthalpy activated fully modulating actuator. Unit shall include outside air opening bird screen, outside air hood, and barometric relief dampers.
- 4. Economizer shall be furnished with return air CO2 override.

#### M. Controls

- 1. Factory Installed Controller
  - a. The unit shall come with a factory programmed and supplied controller that provide all programming and functionality for the unit to operate, including internal safeties.
  - b. All sensors required for the operation of the unit shall be factory furnished. This includes outside air temperature and humidity sensors, supply air temperature and humidity sensors, coil suction pressure and temperature sensors, space temperature and humidity sensors, preheat discharge temperature sensor, and other sensors as required to implement the sequence of operations. Refer to sequence on Drawings.
  - c. Provide BACnet gateway for future connection/integration to BAS.

#### N. Accessories

 Unit shall be provided with a smoke detector in the supply of the unit, wired to shut off the unit's control circuit.

#### **2.03 CURBS**

- A. Curbs shall to be fully gasketed between the curb top and unit bottom with the curb providing full perimeter support, cross structure support and air seal for the unit. Curb gasket shall be furnished within the control compartment of the rooftop unit to be mounted on the curb immediately before mounting of the rooftop unit.
- B. Height of curb shall be at least the minimum required to accommodate the horizontal discharge openings.
- C. Solid bottom curb shall be factory assembled and fully lined with 1 inch neoprene coated fiberglass insulation and include a wood nailer strip. Curb shall be adjustable up to 3/4 inch per foot to allow for sloped roof applications.

#### **PART 3 EXECUTION**

#### 3.01 INSTALLATION, OPERATION, AND MAINTENANCE

- A. Installation, Operation, and Maintenance manual shall be supplied with the unit.
- B. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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- C. Examine casing insulation materials and filter media before air-to-air energy recovery equipment installation. Reject insulation materials and filter media that do not comply, or are wet, moisture damaged, or mold damaged.
- D. Install units with clearances for service and maintenance.
- E. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- F. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain air-to-air energy recovery units.
- G. Installing contractor shall install unit, including field installed components, in accordance with Installation, Operation, and Maintenance manual instructions.
- H. Start up and maintenance requirements shall be complied with to ensure safe and correct operation of the unit.

#### 3.02 OWNER TRAINING

- A. Provide 16 (sixteen) hours of training for two (2) people on Owner's maintenance staff.
- B. Location: Project Site
- C. Manufacturer's authorized representative to conduct training sessions.

**END OF SECTION 23 74 00** 

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#### SECTION 32 32 23 - SEGMENTAL RETAINING WALL SYSTEM

#### PART 1 - GENERAL

#### 1.1 DESCRIPTION

- A. Work includes designing, furnishing and installing a concrete modular block and geogrid retaining wall system to the lines and grades shown on the construction drawings and as specified herein.
  - 1. This specification section does not apply to the soldier pile retaining wall. Refer to the drawings for the soldier pile wall specifications.
- B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit fill and backfill to the lines and grades shown on the construction drawings.
- C. Work includes furnishing and installing all related materials required for construction of the retaining wall as shown on the construction drawings and the wall unit manufacturer's written instructions. Wall system design shall be based on using imported wall backfill material or actual soil conditions of the project site if on-site material is proposed for wall backfill. Refer to Geotechnical Report.

#### 1.2 RELATED SECTIONS

A. Division 31 Section Earth Moving.

#### 1.3 DELIVERY, STORAGE AND HANDLING

- A. Contractor shall check the materials upon delivery to assure that proper materials have been received.
- B. Contractor shall prevent excessive mud, wet cement, epoxy, and similar materials (which may affix themselves) from coming in contact with the materials.
- C. Contractor shall protect the materials from damage. Damaged materials shall not be incorporated into the retaining wall structure.

#### 1.4 SUBMITTALS

- A. Samples of all products used in the work of this section. Provide mock-up.
- B. Manufacturer's specifications (latest edition) for proposed materials, method of installation and list of materials proposed for use.
- C. Final design of wall and geogrid system establishing the stability of the proposed structure(s), including signed and sealed construction drawings and specifications by a professional engineer, registered in the state of North Carolina.
  - 1. The design and construction of the wall and all necessary materials and equipment shall be included in the base bid.
  - Wall system design shall be based on using imported wall backfill material or actual soil conditions of the project site if on-site material is proposed for wall backfill. Refer to the Geotechnical Engineering Report NORTH CAROLINA NATIONAL GUARD NORTH WILKESBORO REDINESS CENTER RENOVATION by Timmons Group, dated January 18, 2023, for additional information.

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3. Wall design shall include all applicable details including, but not limited to, fence, guardrail and storm drainage structures installations adjacent to the wall.

- 4. Wall design shall take into account existing site features to remain, proposed improvements shown on the drawings as well as site conditions to be reasonably expected throughout construction. The design shall include accommodation and coordination of site features including but not limited to existing trees or improvements indicated to remain and new utility and storm drainage systems, pavements, curbs, fences, guardrails, etc. By submittal of a wall design, the Contractor and Wall Designer accept that the existing and planned features of the site are compatible with the design.
- D. Final inspection report certified by the wall designer of record.

#### 1.5 PROJECT CONDITIONS

- A. The conditions existing at the time of inspection for bidding purposes will be maintained by the Owner to the extent practical. However, minor variations may occur due to natural occurrences prior to the start of work.
- B. The location of existing underground utilities indicated are approximate only. Field locate all existing underground utilities in the area of work, regardless of whether or not they are indicated on the drawings.
  - 1. Hire a private utility locating company and /or utilize "NC one call" by calling 1-800-632-4949 prior to the start of work for assistance in the location of existing underground utilities.

#### 1.5 QUALITY ASSURANCE

- A. Contractor shall submit certification, prior to start of work, that the retaining wall system (modular concrete units and specific geogrid):
  - 1. Has been successfully utilized on a minimum of five (5) similar projects, i.e., height, soil fill types, erection tolerances, etc.; and
  - 2. Has been successfully installed on a minimum 500,000 square feet of retaining walls.
- B. Contractor shall submit a list of five (5) previously constructed projects of similar size and magnitude by the wall installer where the specific retaining wall system has been constructed successfully. Contact names and telephone numbers shall be listed for each project.
- C. Contractor shall provide evidence that the design engineer has a minimum of five years of documentable experience in the design for reinforced soil structures. The design engineer shall provide proof of current professional liability insurance with an aggregate coverage limit of not less than \$1,000,000.
- D. Owner shall provide soil testing and quality control inspection during earthwork and wall construction operations. Retests, due to failed tests shall be paid for by the contractor. Contractor shall provide any quality control testing or inspection not provided by the Owner. Owner's quality assurance program does not relieve the contractor of responsibility for quality assurance and wall performance.
- E. Retaining Wall Designer shall review Owner's Quality Control Inspection reports and provide a Final Inspection Report to confirm compliance of the installed structural system with the plans

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and specifications. Final inspection report shall be signed and sealed by the wall designer of record.

#### PART 2 - PRODUCTS

#### 2.1 DEFINITIONS

- A. Modular Concrete Units: Modular concrete units, machine made from portland cement, water and mineral aggregates.
- B. Structural Geogrid: Structural geogrid formed by a regular network of integrally connected tensile elements with apertures of sufficient size to allow interlocking with surrounding soil, rock, or earth and function primarily as reinforcement.
- C. Unit Fill: Drainage aggregate which is placed within and immediately behind the modular concrete units.
- D. Reinforced Backfill: Compacted soil which is within the reinforced soil volume as shown on the plans, shall meet the design criteria as set forth by the wall engineer and additional requirements specified in Section 02200 Earthwork. Any borrow or imported fill material required for proper backfilling of the wall shall be provided by the Contractor in the base bid contract. There will be no additional compensation for materials needed to meet the backfill requirements of the wall design.

#### 2.2 MODULAR CONCRETE WALL UNITS

- A. Units shall concrete with a minimum 28-day compressive strength of 3000-psi in accordance with ASTM C-140. Each unit shall have 0.75-sq.ft. to 1.0-sq.ft. of face area. Exterior dimensions may vary in accordance with ASTM C-90. Units shall be positively interlocked with pins, bars, lugs or lips and setback at 1" per 8" height.
- B. The concrete shall have adequate freeze/thaw protection with maximum water absorption of 8% in accordance with ASTM C-140.
- C. Face Finish: Units shall have straight, split face exterior face.
- D. Color: As selected by Architect from manufacturer's full range. Basis of Design Color is Anchor Diamond Pro "Plantation".
- E. Units shall have angled sides capable of concave and convex alignment curves with a minimum radius of 7 feet and 90-deg corners.
- F. Cap Units: Provide cap units with smooth top surfaces without holes or lugs.
- G. Special Units: Provide corner units, end units, and other shapes as needed to produce segmental retaining walls of dimensions and profiles indicated and to provide texture on exposed surfaces matching face.
- H. Products of the following manufacturers will be considered, providing their products equal or exceed the quality specified; and they can provide products of the type, size, function, and arrangement required:
  - 1. Anchor Wall Systems: Diamond Pro (Basis of Design)
  - 2. Ridgerock II

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#### 3. Rockwood

#### 2.3 CONSTRUCTION ADHESIVE

A. Material shall conform to ASTM 2339 and shall be supplied by the wall unit supplier.

#### 2.4 STRUCTURAL GEOGRID

A. Geogrid shall be a regular grid of high-density polyethylene (HDPE) or polyester. Geogrid shall be a horizontal layer of high strength high modulus grid capable or creating a composite soil/geogrid mass that acts as a monolithic gravity structure. Geogrid shall be as specified by segmental retaining wall design engineer.

#### B. Acceptable manufacturers:

- 1. Tensar
- 2. Mirafi
- Versa-Lok
- 4. Synteen
- 5. Approved equal

#### 2.5 BASE LEVELING AND PAD MATERIAL

A. Material shall consist of compacted crushed stone or unreinforced concrete. "Pea gravel" or any other poorly graded stone shall not be permitted.

#### 2.6 UNIT FILL

A. Fill for units shall be free draining crushed stone or gravel, 1/2" to 3/4", with no more than 5% passing the No. 50 sieve and conforming to ASTM D448. Gradation of the fill shall be approved by the engineer. "Pea gravel" shall not be used.

#### 2.7 BACKFILL

- A. The retaining wall design engineer shall refer to the Subsurface Evaluation or contact the Geotechnical engineer to obtain design soil perimeters for recommended design parameters of on-site soils.
- B. Material may be site excavated soils when approved by the Engineer or otherwise specified in the design drawings. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the backfill or in the reinforced soil mass.
- C. Where borrow or imported fill is used, contractor shall submit samples and material specifications to the Engineer for approval. Borrow or imported fill material used for proper backfilling of the wall shall be included by the Contractor in the base bid contract.

#### 2.8 FENCE POST FOUNDATION SYSTEM

A. System specifically designed to anchor fence posts within the reinforced soil zone of segmental retaining walls or other approved fence post anchoring system shall be utilized. System shall be designed to resist a non-concurrent loads of 50 plf and a concentrated load of 200 lbs applied in any direction to the top of the fence anchored by the system. The system shall be the Sleeve-It system by Strata Systems or approved equal.

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#### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for excavation tolerances, condition of subgrades, and other conditions affecting performance of segmental retaining walls.
  - 1. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Coordinate design and construction of walls with other existing and proposed conditions and improvements including but not limited to existing trees or improvements indicated to remain and new underground utility and storm drainage systems, pavements, curbs, fences, guardrails, etc.

#### 3.2 RETAINING WALL INSTALLATION

- A. General: Place units according to NCMA's "Segmental Retaining Wall Installation Guide" and segmental retaining wall unit manufacturer's written instructions. Lay units in running bond.
  - 1. Form corners and ends by using special units.
- B. Leveling Base: Place and compact base material to thickness indicated and with not less than 95 percent maximum dry unit weight according to ASTM D 698.
  - 1. At Contractor's option, unreinforced lean concrete may be substituted for upper 1 to 2 inches (25 to 50 mm) of base. Compact and screed concrete to a smooth, level surface.
- C. First Course: Place first course of segmental retaining wall units on leveling base for full length of wall. Place units in firm contact with each other, properly aligned and level.
  - 1. Tamp units into leveling base as necessary to bring tops of units into a level plane.
  - 2. Place and compact fill either drainage or soil fill as indicated, to top of first course. Place fill on both sides of wall at same time without disturbing alignment of units. Fill voids between and within units with drainage fill.
- D. Subsequent Courses: Remove excess fill and debris from tops of units in course below. Place units in firm contact, properly aligned, and directly on course below.
  - 1. For units with lugs designed to fit into holes in adjacent units, lay units so lugs are accurately aligned with holes, and bedding surfaces are firmly seated on beds of units below.
  - 2. For units with lips at front of units, slide units as far forward as possible for firm contact with lips of units below.
  - 3. Place fill on both sides of wall at same time, where both sides are indicated to be filled.
  - 4. Fill voids between and within units with drainage fill.
  - 5. Coordinate and install fence post anchoring systems per manufacturer's instructions.
  - 6. Top of wall shall match finish grades of fill behind wall. Exposed backside of wall units shall be covered with back-to-back blocks or other approved method to conceal exposed unit backs.
- E. Cap Units: Place cap units and secure with cap adhesive according to manufacturer's written instructions. Do not secure cap units until the as-built wall top elevations have been verified in the field by the Architect.

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F. Wall Drain: Install wall drains as indicated on shop drawings. Wall drains shall not discharge onto paved surfaces. Extend drains to nearby storm inlets, lawn or landscaped area.

#### 3.3 FILL PLACEMENT

- A. General: Comply with requirements in Division 2 Section "Earthwork," NCMA's "Segmental Retaining Wall Installation Guide," and segmental retaining wall unit manufacturer's written instructions.
- B. Place, spread, and compact fill in uniform lifts for full width and length of embankment as wall is laid. Begin at back of wall and place and spread fill toward embankment.
  - 1. Use only hand-operated compaction equipment within 48 inches (1200 mm) of wall, or one-half of height above bottom of wall, whichever is greater.
  - 2. Compact drainage fill to not less than 95 percent maximum dry unit weight according to ASTM D 698.
  - 3. Compact reinforced soil fill to not less than 95 percent maximum dry unit weight according to ASTM D 698.
  - 4. In areas where only hand-operated compaction equipment is allowed, compact to not less than 90 percent maximum dry unit weight according to ASTM D 698.
  - 5. Compact nonreinforced soil fill to comply with Division 2 Section "Earthwork."
- C. Place filter fabric against back of wall and place layer of drainage fill at least 12 inches (300 mm) deep behind filter fabric to within 12 inches (300 mm) of finished grade. Place another layer of filter fabric between drainage fill and soil fill.
  - 1. Place perforated drainage pipe in drainage fill as indicated, sloped to drain.
- D. Place a drainage composite between the reinforced and retained soils where cuts are being performed.
- E. Place soil reinforcement in horizontal joints of retaining wall where indicated and according to soil reinforcement manufacturer's written instructions. Embed reinforcement a minimum of 8 inches (200 mm) into retaining wall and stretch tight over compacted backfill. Anchor soil reinforcement before placing fill on it.
  - 1. Place additional soil reinforcement at corners and curved walls to provide continuous reinforcement and to comply with manufacturer's written instructions.
  - 2. Place geosynthetics with seams, if any, oriented perpendicular to segmental retaining walls
  - 3. Do not dump fill material directly from trucks onto geosynthetics.
  - 4. Place at least 6 inches (150 mm) of fill over reinforcement before compacting with tracked vehicles or 4 inches (100 mm) before compacting with rubber-tired vehicles.
  - 5. Do not turn vehicles on fill until first layer of fill is compacted, and second layer is placed over each soil-reinforcement layer.

#### 3.4 SUBMERGED CONDITION APPLICATIONS

- A. General: Comply with requirements in Division 2 Section "Earthwork," NCMA's "Segmental Retaining Wall Installation Guide," and segmental retaining wall unit manufacturer's written instructions.
- B. Provide special wall backfill, geotextile, wall toe protection, and other devices and construction

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methods as specified by the wall designer for locations where walls are subject to submergence in water (such as adjacent to ponds, etc.).

#### 3.5 CONSTRUCTION TOLERANCES

- Variation from Level: For bed-joint lines along walls, do not exceed 1-1/4 inches in 10 feet (32 A. mm in 3 m), 3 inches (75 mm) maximum,
- Variation from Indicated Wall Line: For walls indicated as straight, do not vary from straight line B. by more than 1-1/4 inches in 10 feet (32 mm in 3 m).

#### 3.6 FIELD QUALITY CONTROL

- Testing Agency: Owner will engage a qualified independent geotechnical engineering testing Α. agency to perform field quality-control testing.
- В. Comply with requirements in Division 2 Section "Earthwork" for in-place compaction testing.
  - 1. All backfilling operations shall be observed by the Owner's Independent Testing Agency.
  - In each compacted backfill layer, perform at least 1 field in-place compaction test for each 150 feet (50 m) or less of segmental retaining wall length.

#### ADJUSTING AND CLEANING 3.7

- Remove and replace segmental retaining wall construction of the following description: Α.
  - Broken, chipped, stained, or otherwise damaged units. Units may be repaired if methods and results are approved by Architect.
  - Segmental retaining walls that do not match approved Samples and mockups.
  - Segmental retaining walls that do not comply with other requirements indicated.
  - Remove wall units that extend completely above final fill grades.
- Replace units so segmental retaining wall matches approved Samples and mockups, complies B. with other requirements, and shows no evidence of replacement.
- C. Protection Throughout Construction: Walls shall be protected from all damage during construction but not limited to erosion, drainage, inappropriate loads, etc. Any damage to the wall system shall be repaired immediately at no additional cost.

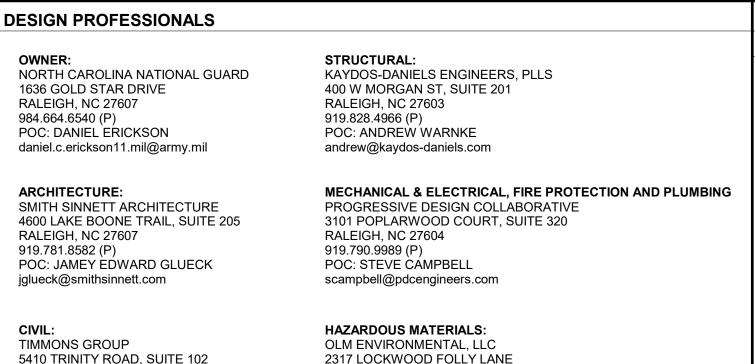
END OF SECTION 32 32 23

# NORTH CAROLINA NATIONAL GUARD CONSTRUCTION FACILITY MANAGEMENT OFFICE

# NORTH WILKESBORO READINESS CENTER ADDITION AND RENOVATION

191 ARMORY RD, NORTH WILKESBORO, NC 28659

NCNG #3720170175 SCO #16-14395-01A



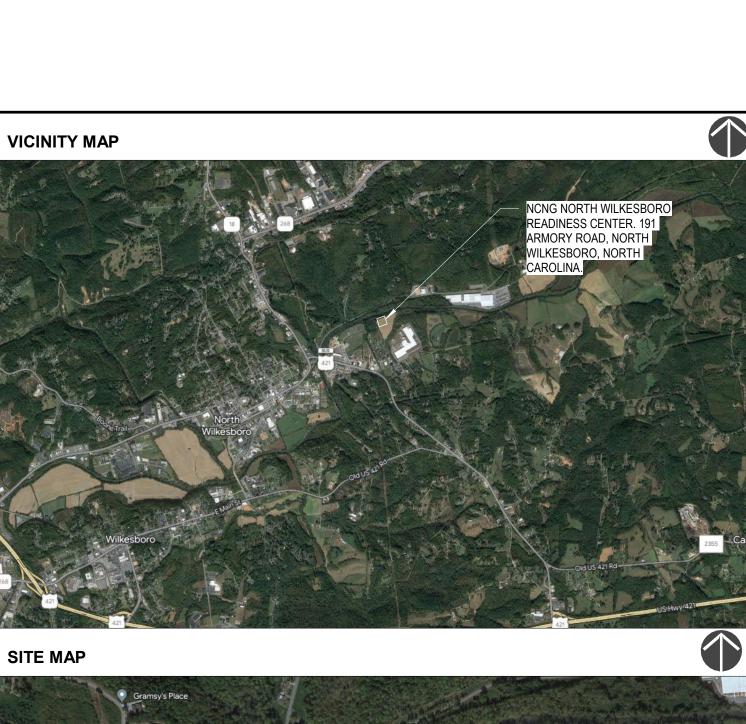
RALEIGH, NC 27607

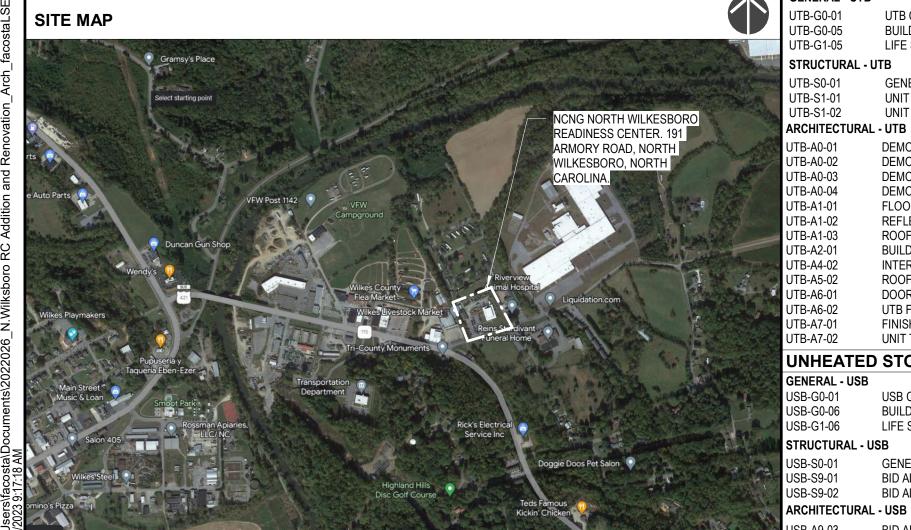
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| GENERAL - RC               |   |                              | - RC - CONTINUED   | This project              |
| RC-G0-01                   | READINESS CENTER COVER SHEET  | RC-A7-01                     | FINISH PLAN  | North Wilke<br>SF) of the |
| RC-G0-04<br>RC-G1-03       | BUILDING CODE SUMMARY<br>LIFE SAFETY PLAN                                     | RC-A7-02<br>RC-A7-03         | READINESS CENTER SIGNAGE TYPES READINESS CENTER SIGNAGE TYPES  | mechanica                 |
| RC-G1-04                   | ALTERNATE 1 LIFE SAFETY PLAN  | RC-A8-01                     | EQUIPMENT PLAN   | concrete from includes a  |
| STRUCTURAL- RC             |   | RC-A9-01<br>RC-A9-02         | ALTERNATE 1 - DEMOLITION PLAN AND ELEVATION ALTERNATE 1 - DIMENSION PLAN   | painting the              |
| RC-S0-01<br>RC-S0-02       | GENERAL NOTES SPECIAL INSPECTIONS   | RC-A9-03                     | ALTERNATE 1 - ANNOTATION PLAN  | service rep               |
| RC-S1-01                   | READINESS CENTER FOUNDATION PLAN  | RC-A9-04                     | ALTERNATE 1 - REFLECTED CEILING PLAN   | constructio<br>and paving |
| RC-S1-02<br>RC-S9-01       | READINESS CENTER ROOF PLAN BID ALTERNATE 1 FOUNDATION PLAN                    | RC-A9-05<br>RC-A9-06         | ALTERNATE 1 - ROOF PLAN ALTERNATE 1 - ELEVATIONS   | project incl              |
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| RC-A0-03<br>RC-A0-04       | DEMO BUILDING ELEVATIONS  | RC-A9-14                     | ALTERNATE 6 - ELEVATIONS   | ACOUS                     |
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| RC-A1-21                   | HEAD OF WALL IMPROVEMENT PLAN -   | PLUMBING- RC                 | (ADDITION:   | ALB<br>ALT                |
| RC-A1-30                   | READINESS CENTER ROOF PLAN  | RC-P0-01<br>RC-P1-01         | READINESS CENTER DEMOLITION PLAN  1. SHEET READINESS CENTER WASTE AND VENT PLAN  1. SHEET READINESS CENTER WASTE AND VENT PLAN  1. SHEET | ALUM                      |
| RC-A1-30<br>RC-A2-01       | BUILDING ELEVATION- READINESS CENTER  | _R6 <sub>v</sub> P1-02~~~    | READINESS, CENTER, DOMESTIC WATER PLAN ADDED TO  | ANOD                      |
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| RC-A4-04<br>RC-A4-05       | INTERIOR ELEVATIONS INTERIOR ELEVATIONS                                       | RC-M1-01<br>RC-M2-01         | READINESS CENTER DUCTWORK FLOOR PLAN READINESS CENTER PIPING FLOOR PLAN  |                           |
| RC-A5-01                   | DETAILS   | RC-M3-01                     | READINESS CENTER PIPING FLOOR PLAN READINESS CENTER ROOF PLAN  | BL<br>BLDG                |
| RC-A5-02                   | ROOF DETAILS  | ELECTRICAL- RC               |  | BLKG                      |
| RC-A5-03<br>RC-A6-01       | ROOF DETAILS DOOR SCHEDULE, DETAILS & WINDOW                                  | RC-E0-01<br>RC-E1-01         | READINESS CENTER DEMOLITION PLAN READINESS CENTER LIGHTING PLAN  | B.O.                      |
|                            | ELEVATIONS  | RC-E2-01                     | READINESS CENTER POWER PLAN  | BFG<br>BN                 |
| RC-A6-02<br>RC-A6-03       | READINESS CENTER FRAME DETAILS READINESS CENTER FRAME DETAILS                 | RC-E2-02                     | READINESS CENTER ROOF POWER PLAN   | CEM                       |
| RC-A6-04                   | READINESS CENTER FRAME DETAILS  | RC-E3-01<br>RC-E4-01         | READINESS CENTER TECHNOLOGY PLAN READINESS CENTER FIRE ALARM PLAN  | CF<br>CFCI                |
|                            | ING BAY (UTB)   |                              |  |                           |
| GENERAL - UTB              | LITE COVER CLIEFT   |                              | - UTB - CONTINUED  | CFT<br>CG                 |
| UTB-G0-01<br>UTB-G0-05     | UTB COVER SHEET BUILDING CODE SUMMARY   | UTB-A8-02<br>UTB-A9-04       | EQUIPMENT PLAN<br>ALTERNATE 7d FURNITURE PLAN  | CI                        |
| UTB-G1-05                  | LIFE SAFETY PLAN  |                              |  | CI#<br>CJ                 |
| STRUCTURAL - UT            | ГВ  | PLUMBING - UTB<br>UTB-P0-01  | UNIT TRAINING BAY DEMOLITION PLAN  | CLG                       |
| UTB-S0-01                  | GENERAL NOTES   | UTB-P1-01                    | UNIT TRAINING BAY DOMESTIC WATER AND GAS PLAN  | CL<br>CMU                 |
| UTB-S1-01<br>UTB-S1-02     | UNIT TRAINING BAY FOUNDATION PLAN UNIT TRAINING BAY ROOF PLAN                 | UTB-P1-02<br>UTB-P2-01       | UNIT TRAINING BAY WASTE AND VENT PLAN ENLARGED PLAN  | CO                        |
| ARCHITECTURAL -            |   | UTB-P3-03                    | UNIT TRAINING BAY SANITARY WASTE AND VENT RISER  | COL<br>CONC               |
|                            | DEMO PLAN - MAINTENANCE   | UTB-P3-04<br>UTB-P3-05       | UNIT TRAINING BAY DOMESTIC WATER RISER UNIT TRAINING BAY GAS RISER   | CONC                      |
|                            | DEMO RCP - MAINTENANCE BUILDING DEMO ROOF PLAN                                | MECHANICAL - U               | ТВ   | CONTR                     |
| UTB-A0-04                  | DEMO BUILDING ELEVATIONS  | UTB-M0-01<br>UTB-M1-01       | UNIT TRAINING BAY DEMOLITION PLAN UNIT TRAINING BAY DUCTWORK PLAN  | CORR<br>CPT               |
|                            | FLOOR PLAN AND ENLARGED TOILET PLAN- UTB REFLECTED CEILING PLAN - MAINTENANCE | UTB-M2-01                    | UNIT TRAINING BAY PIPING PLAN  | CPTT                      |
| UTB-A1-03                  | ROOF PLAN   | UTB-M3-01                    | UNIT TRAINING BAY ROOF PLAN  | CTB<br>CRC                |
|                            | BUILDING ELEVATIONS - MAINTENANCE   | ELECTRICAL - UT<br>UTB-E0-01 | B UNIT TRAINING BAY DEMOLITION PLAN  | CRF                       |
|                            | INTERIOR ELEVATIONS AND SECTIONS ROOF DETAILS                                 | UTB-E1-01                    | UNIT TRAINING BAY LIGHTING PLAN  | CS                        |
| UTB-A6-01                  | DOOR SCHEDULES AND DETAILS  | UTB-E2-01                    | UNIT TRAINING BAY POWER PLAN   | CWT<br>DET                |
|                            | UTB FRAME DETAILS<br>FINISH PLAN  | UTB-E3-01<br>UTB-E4-01       | UNIT TRAINING BAY TECHNOLOGY PLAN UNIT TRAINING BAY FIRE ALARM PLAN  | DEPT                      |
|                            | UNIT TRAINING BAY SIGNAGE TYPES   | UTB-E5-02                    | UNIT TRAINING BAY ROOF POWER PLAN  | DIA<br>DISP               |
|                            | STORAGE BUILDING (USB)  |                              |  | DN<br>DP                  |
| GENERAL - USB<br>USB-G0-01 | USB COVER SHEET   | ARCHITECTURAL<br>USB-A9-04   | - USB CONTINUED ALTERNATE 3 - REFLECTED CEILING PLAN AND ROOF PLAN   | DD                        |

USB-A9-05

USB-A9-06

USB-A9-07

USB-A9-08

**MECHANICAL - USB** 

LIFE SAFETY PLAN

**BUILDING CODE SUMMARY** 

BID ALTERNATE 3 ROOF PLAN

BID ALTERNATE 3 FOUNDATION PLAN

BID ALTERNATE 3 - FLOOR PLAN AND FINISH PLAN

FINISH SYSTEM

ALTERNATE 3 - BUILDING ELEVATIONS AND SECTIONS

ALTERNATE 3 - DOOR SCHEDULE

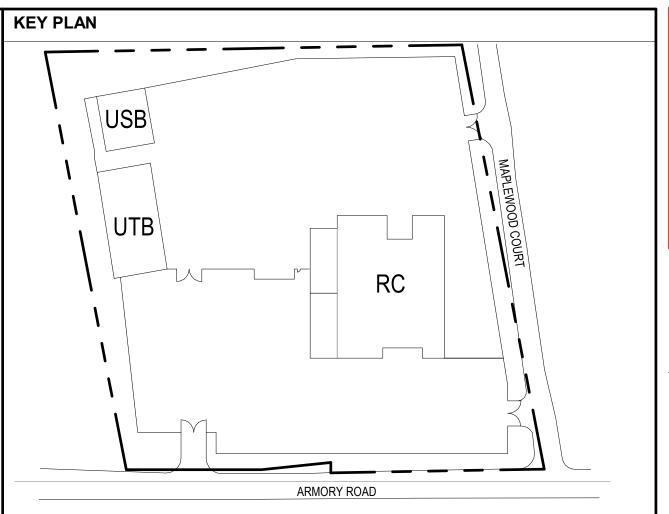
BID ALTERNATE 7e HEAVY FURNITURE PLAN

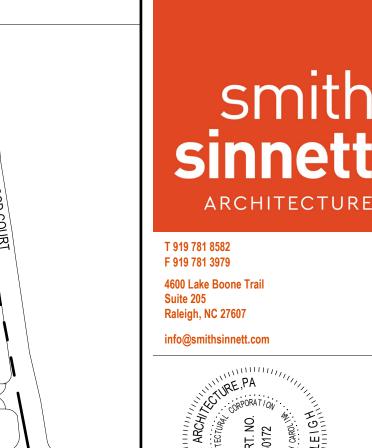
UNHEATED STORAGE BUILDING MECHANICAL PLAN

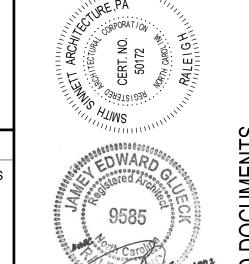
UNHEATED STORAGE BUILDING ELECTRICAL PLAN

ALTERNATE 3 - FRAME DETAILS

|                           |  |                 |   |                    |  |            |   |                             |                   | Y                   |                                   |  |   |
|---------------------------|--|-----------------|---|--------------------|--|------------|---|-----------------------------|-------------------|---------------------|-----------------------------------|--|---|
|                           |  |                 |   |                    |  |            |   |                             |                   |                     | ARMORY                            | ROAD   |   |
| INDE                      | X OF DRAWINGS CO   | NTINU           | JED                                     |                    |  |            |   | BID ALTERNA                 | TES               |                     |                                   |  |   |
| GENE                      | RAL  |                 |   |                    |  |            |   | ALTERNATE 1:                |                   | ESS CENT            |                                   | NATE 8: OWNER PREF                                   | FERED MANUFACTURERS                       |
| <b>GENERA</b><br>G-G0-01  | -<br>GENERAL COVER SHE   | FT.             |   |                    | IICAL - GENERAL                            |            |   | ALTERNATE 2:                |                   | TIVE FEN            |                                   | <b>Chatsworth Products</b>                           |   |
| STRUCTU                   | JRAL - GENERAL   | _ <b>_</b>      |   | G-M0-00<br>G-M1-01 | LEAD SHEET<br>DETAILS                      |            |   | ALTERNATE 2:                | (AROUN            | D POV LO            | T) WITH                           | a. Cube-iT Plus Cabine<br>ELS Kit 1000 keypad        | •   |
| G-S0-01<br>G-S0-02        | TYPICAL DETAILS TYPICAL DETAILS  |                 |   | G-M1-02<br>G-M1-03 | DETAILS<br>DETAILS                         |            |   |                             |                   |                     | ICLE GATE                         | Optional Accessories 40970-711 vertical ca           | abling section                            |
| G-S0-03<br>G-S3-01        | TYPICAL DETAILS SECTIONS   |                 |   | G-M1-04<br>G-M2-01 | UL DETAILS<br>CONTROLS & SCHI              | EMATI      | CS  | ALTERNATE 3:                | UNHEAT<br>BUILDIN | ED STOR<br>G (USB)  |                                   | 40971-E72 Vertical L<br>12820-706 Power str          | ipe                                       |
| G-S3-02<br><b>ARCHITE</b> | SECTIONS<br>CTURAL - GENERAL   |                 |   | G-M2-02<br>G-M2-03 | CONTROLS<br>MISCELLANEOUS (                | CONTR      | ROLS  | ALTERNATE 4:                | MOTOR             | POOL CO             | NCRETE                            | <b>b.</b> Thinline II wall mount with.               | ed cabinet 13050-723                      |
| G-A1-00                   | WALL TYPES   |                 |   | G-M3-01<br>G-M3-02 | SCHEDULES<br>SCHEDULES                     |            | .0_0  |                             |                   | EAST SID            |                                   | Optional Accessories<br>ELS Kit 1000 keypad          |   |
| G-A1-00A<br>G-A1-01       | WALL TYPES<br>UL DETAILS   |                 |   | G-M3-03            | OUTSIDE AIR CALC                           | CULAT      | IONS  | ALTERNATE 5:                |                   |                     | NCRETE                            | Cooling fan Surge-suppressed du                      |   |
| G-A1-02<br>G-A1-03        | UL DETAILS<br>UL DETAILS   |                 |   | G-E0-00            | ICAL - GENERAL<br>LEAD SHEET               |            |   | ALTERNATE 5.                | PAVING            | (BETWEE             | N THE RC B. B                     | Building Automation Syst                             |   |
| G-A1-04<br>G-A5-01        | UL DETAILS<br>GENERAL DETAILS  |                 |   | G-E0-01            | ENERGY FORM, DE                            |            | <u> </u>  |                             | AND UT            | ,                   | C. B                              | Tridium<br>Building Automation Syst                  |   |
| G-A5-02                   | GENERAL DETAILS  |                 |   | E1-01<br>G-E2-01   | DETAILS                                    | PLAN       | (REFER TO SITE INDEX)                           | ALTERNATE 6:                | BRICK F           |                     | D. E                              | Hoffman Building Tec<br>energy Meter: Manufactu      |   |
| <b>PLUMBIN</b><br>G-P0-00 | G - GENERAL<br>LEAD SHEET  |                 |   | G-E2-02<br>G-E2-03 | DETAILS<br>DETAILS, FIXTURE                | SCHE       | DULE  | ALTERNATE 7:                | FURNITU           | IRE PACK            |                                   | <b>Square D</b><br>Building Signage Manufa           | cturer:                                   |
| G-P1-01<br>G-P1-02        | DETAILS<br>DETAILS   |                 |   | G-E2-04<br>G-E3-01 | FIRE ALARM RISEF<br>PANEL SCHEDULE         |            | RIX   |                             | A. RC BA          | SE BID<br>ITURE PA  |                                   | Vista Signs & Snap Signerator: Manufacturer          |   |
| G-P1-03                   | DETAILS  |                 |   | G-E3-02<br>G-E3-03 | PANEL SCHEDULE:<br>POWER RISERS            |            |   |                             |                   | SE BID H            |                                   | Caterpillar  | remote fire alarm control                 |
| G-P2-01<br>SCOP           | SCHEDULES E OF WORK  |                 |   | 2 LU-00            | I OWLINIOENS                               |            |   | 1                           | DUTY              | FURNITU             | JRE pa                            | anel, cellular modem (C                              | ELL-MOD GSM Central                       |
| This proje                | ct consists of the renovation (12,34   |                 |   |                    |  |            |   | 1                           | PACK              |                     | Н                                 | ommander Station) and<br>Ioneywell FireWarden 10     | associated components:<br>00X (NFW-100SX) |
| SF) of the                | esboro, NC original drawings dated<br>Unheated Storage Building (USB).       | The scop        | e of the project consists of buildin    | g renovation       | ons, additions, new construction           | includ     | ing new plumbing,                               |                             |                   | TERNATE<br>ITURE PA |                                   | NATE 9: GENERATOR                                    |   |
| mechanic                  | al, electrical, fire alarm, communica<br>raming/structure and deck. All haza | itions, and     | finishes throughout. The existing       | buildings a        | are primarily masonry load-beari           | ng con     | struction with steel and                        |                             | <b>D</b> . UTB F  | URNITUR             | RE ALTERN                         | NATE 10: SPECIALTY S                                 | SIGNAGE                                   |
| includes a                | complete reroof, complete window roughout. All new plumbing, mecha           | repair, re      | sinous flooring throughout, comple      | ete lay-in c       | eiling replacement, interior and           | exterio    | r door replacement, and                         | 1                           | PACK              |                     |                                   | A. Terrazzo flooring insi<br>B. MEB painted insignia | gnia Lobby 101                            |
| service re                | olacement, generator, new LED ligh<br>on are primarily masonry load-beari    | ht fixtures,    | complete fire alarm replacement,        | and comp           | lete network wiring replacement            | . The I    | ouilding additions and new                      |                             |                   | EAVY DU             | JTY                               | C. Workhorse painted in D. (15) 24x36 and (3) 1      | nsignia Drill Hall 100                    |
| and pavin                 | g for private and military vehicles, s                                       | sidewalk re     | placement, new fencing, and new         | water, sev         | wer, electrical, gas, and commu            | nicatio    | ns service to the building. The                 |                             | i UKIN            | ONL PA              |                                   | E. 5'x5' grided magnetic                             |   |
| project inc               | ludes all other work as shown, indic   | cated, or r     | easonably implied on the drawing        | s and/or sp        | Decilications for a complete, first        | -ciass     | Jun.  |                             |                   |                     |                                   | marker ready surface                                 |   |
| ABBF                      | EVIATIONS  |                 |   |                    |  |            |   | SYMBOL LEG                  | END               |                     |                                   |  |   |
| @<br>AB                   | AT<br>AREA DRAIN   | EIP<br>ELEV     | EXISTING IRON PIPE<br>ELEVATION         | MTD<br>MTL         | MOUNTED<br>METAL                           | SS         | STAINLESS STEEL<br>STAINED SEALED               |                             |                   |                     |                                   |  |   |
| ACC                       | ACCENT COLOR   | EJ              | EXPANSION JOINT                         | MWM                | METAL WALK-OFF MAT                         |            | CONCRETE  | DRAWING NO. ——              |                   |                     | — DRAWING NAM                     | E 🕞  | DOOD MADIC                                |
| ACT<br>ACOUS              | ACOUSTICAL CEILING TILE ACOUSTIC   | EN<br>EPT       | ENAMEL<br>HIGH PERFORMANCE              | MWT                | MARBLE WALL TILE                           | SR         | STEEL   | DIVAVVING NO.               | +                 | \/:                 |                                   | E (1001)   | DOOR MARK                                 |
| ACW<br>ADJ                | ACOUSTICAL WALL PANELS ADJUSTABLE  | EQ              | EPOXY PAINT<br>EQUAL                    | NIC<br>NOM         | NOT IN CONTRACT<br>NORMAL                  | ST8        | R STAIR TREADS AND<br>RISERS                    |                             | 1<br>RC           |                     | <b>Name</b>                       |  |   |
| AE<br>AFF                 | APPROVED EQUAL<br>ABOVE FINISH FLOOR   | EST<br>EXT      | EXISTING<br>EXTERIOR                    | OC                 | ON CENTER                                  | STE        |   | 1                           | A1-01             | 1/8" =              | 1'-0"                             | W1   | WINDOW MARK                               |
| AFL<br>AHU                | ATHLETIC FLOORING AIR HANDLING UNIT  | EXP<br>EWC      | EXPOSED CEILING ELECTRIC WATER COOLER   | OD<br>OFOI         | OUTSIDE DIAMETER<br>OWNER FURNISHED.       | TC         | TERRA COTTA                                     | SHEET NO.                   |                   |                     | SCALE                             | ~  |   |
| ALB                       | ALUMINUM BASE  | FC              | FIRECODE                                |                    | OWNER INSTALLED                            | T&0        | TONGUE AND                                      | DETAIL NO. ———              |                   |                     |                                   | B1   | CASEWORK MARK                             |
| ALT<br>ALUM               | ALUMINUM TILE<br>ALUMINUM  | FD<br>FEB       | FLOOR DRAIN<br>FIRE EXSTINGUISHER       |                    | OWNER FURNISHED,<br>CONTRACTOR INSTALLED   | TCA        |   |                             | 2                 | 3                   | SECTION MARK                      |  |   |
| ANOD<br>ANSI              | ANODIZED<br>AMERICAN NATIONAL  | FEC             | BRACKET<br>FIRE EXSTINGUISHER           | OPP<br>OZ          | OPPOSITE<br>OUNCE                          | TEL        |   | SHEET NO. —                 | 72-0              | 7                   |                                   | 45   | EQUIPMENT MARK                            |
| ATTEN                     | STANDARDS INSTITUTE ATTENUATION  | FF              | CABINET<br>FINISH FLOOR                 | P-LAM              | PLASTIC LAMINATE                           | TEN<br>TEX |   | 1                           |                   | _                   |                                   |  |   |
| AWP                       | ACRYLIC WALL PANELS  | FH<br>FLU       | FIRE HYDRANT<br>FLOURESCENT             |                    | VD PLASTIC LAMINATE WOOD DOORS             | TFT        |   | DOOR MARK                   | _                 | _                   |                                   | В  | WALL MARK                                 |
| BBT                       | BIOBASED TILE  | FOF<br>FOM      | FACE OF FRAME                           | PC                 | POLISHED CONCRETE                          | T.0        | . TOP OF  | MAXIMUM ————<br>EGRESS LOAD | Door 180M 1       |                     |                                   |  |   |
| BF<br>BFC                 | BLOCK FILL<br>BROOMED FINISHED   | FTG             | FACE OF MASONRY<br>FOOTING              | PERF<br>PFT        | PERFORATED PORCELAIN FLOOR TILE            | TOS        | S TOP OF STEEL                                  | EGRESS WIDTH —              |                   | 30"                 | EGRESS<br>CALCULATION M           | ARK 1i   | ACCESSORIES MARK                          |
| BL                        | CONCRETE<br>BLINDS   | GC<br>GCT       | GENERAL CONTRACTOR GRANITE COUNTERTOP   | PIV<br>PL          | POST INDICATOR VALVE PLATE                 | TP<br>TVE  |   | REQUIRED WIDTH -            |                   | <u> </u>            | OALOOLA HON W.                    | AINT   | ACCESSORIES WARK                          |
| BLDG<br>BLKG              | BUILDING<br>BLOCKING   | GA<br>GALV      | GAGE<br>GALVANIZED                      | PLYWD<br>PNT       | PLYWOOD<br>PAINT                           | TYF        | MOUNTING BRACKET TYPICAL                        | ANTICIPATED EGRES           | S LOAD —          |                     |                                   | $\wedge$   |   |
| B.O.<br>BFG               | BOTTOM OF<br>BULLET PROOF GLASS  | GEN<br>GFT      | GENERATOR<br>GRANITE FLOOR TILE         | POV                | PRIVATELY OWNED VEHICLE                    | UL         | UNDERWRITERS                                    |                             |                   |                     |                                   | <b>_#</b> \  | DEMO MARK                                 |
| BN                        | BULL NOSE  | GL              | GLASS                                   | PP<br>DD           | POWER POLE                                 |            | LABORATORY                                      | DETAIL NO.                  |                   | <u> </u>            | <b></b> .                         |  |   |
| CEM<br>CF                 | CEMENTIOUS SIDING CORK FLOORING  | GMT<br>GT       | GLASS MOSAIC TILE<br>GROUT              | PR<br>PTB          | PAIR PORCELAIN TILE BASE                   | U/L<br>UOI |   | A                           | -03               | ار                  | CALLOUT DETAIL                    | -  |   |
| CFCI                      | CONTRACTOR FURNISHED,<br>CONTRACTOR INSTALLED                                | GYP<br>HB       | GYPSUM BOARD<br>HOSE BIB                | PTD<br>PTP         | PAINTED<br>PLASTIC TOILET                  | USE        |   | SHEET NO.                   |                   |                     |                                   | A 1 ('-0")   | CEILING TYPE / HEIGHT                     |
| CFT<br>CG                 | CERAMIC FLOOR TILE<br>CURVED CEILING GRID                                    | HC<br>H/C       | HOLLOW CORE<br>HANDICAP ACCESSIBLE      | PWT                | PARTITIONS<br>PORCELAIN WALL TILE          | UTE        | BUILDING  | DETAIL NO.                  |                   |                     |                                   |  |   |
| CI<br>CI#                 | CAST IRON CURB INLET   | HDWD<br>HM      | HARDWOOD<br>HOLLOW METAL                | PVC                | POLYVINYL CHLORIDE                         | VAC        |   | 1                           | A2-0              | 3                   | EXTERIOR<br>ELEVATION MAR         | к Е  | DEVISION ADEA / NUMBER                    |
| CJ                        | CONTROL JOINT  | HORZ            | HORIZONTAL                              | QS                 | QUARTZ SURFACE                             | VB         | VAPOR BARRIER                                   | SHEET NO.                   | <del>/</del>      | •                   | LLLVATION WAR                     | 1  | REVISION AREA / NUMBER                    |
| CLG<br>CL                 | CEILING<br>CENTERLINE  | HR<br>ICF       | HOUR INFECTION CONTROL                  | QT<br>QZT          | QUARRY TILE<br>QUARTZ TILE                 | VC         | TILE  |                             |                   |                     |                                   | _  |   |
| CMU<br>CO                 | CONCRETE MASONRY UNIT<br>CLEAN OUT   | ID              | FLOORING<br>INSIDE DIAMETER             | R                  | RADIUS                                     | VEF<br>VIF | VERIFY IN FIELD                                 | DETAIL NO.                  |                   | 1,                  | INTERIOR                          |  |   |
| COL<br>CONC               | COLUMN<br>CONCRETE   | INSTAL<br>INSUL | INSTALLATION<br>INSULATION              | R&S<br>RB          | ROD AND SHELF<br>RUBBER BASE               | VW         | C VINYL WALL<br>COVERING                        | OUEET NO                    | A2-               | 13 -                | ELEVATION MAR                     | К  | NORTH ARROW                               |
| CONST                     | R CONSTRUCTION<br>CONTRACTOR   | INT             | INTERIOR<br>INVERT                      | RBT<br>RCP         | RUBBER TILE REINFORCED CONCRETE            | W/         | WITH  | SHEET NO.                   |                   |                     |                                   |  |   |
| CORR<br>CPT               | CORRUGATED<br>CARPET   | JB              | JOIST BEARING                           | RC<br>RD           | READINESS CENTER ROOF DRAIN                | WC<br>WD   | WATER CLOSET<br>WOOD                            | ELEVATION VALUE             |                   |                     |                                   | Room name<br><u>101A</u>                             | ROOM NAME/NUMBER                          |
| CPTT                      | CARPET TILE  | JB#             | JUNCTION BOX                            | RDL                | ROOF DRAIN LEADER                          | WF         | WOOD FLOORING                                   | 1                           | 15' -             | 4"                  | CONTROL /                         |  |   |
| CTB<br>CRC                | CERAMIC TILE BASE<br>COLD ROLLED CHANNEL                                     | JT<br>L         | JOINT<br>LONG                           | RECYF              | RECEPTACLE RECYCLED FLOORING               | WW         | FABRIC  | REFERENCE<br>DESCRIPTION —— | AF                | Γ                   | ELEVATION MAR                     | n.   |   |
| CRF<br>CS                 | CORK RUBBER FLOORING COUNTERSUNK   | LFT<br>LP       | LINOLEUM FLOOR TILE<br>LIGHT POLE       | REQD<br>RES        | REQUIRED<br>RESILIENT                      | WW         |   |                             |                   |                     |                                   |  |   |
| CWT<br>DET                | CERAMIC WALL TILE<br>DETAIL  | LST             | LINOLEUM SHEET<br>FLOORING              | RM<br>ROW          | RUBBER MAT<br>RIGHT OF WAY                 | SF         | IEET NUMBERING LE                               | EGEND                       |                   |                     |                                   |  |   |
| DEPT                      | DRY FOG PAINT  | LVT             | LUXURY VINYL TILE                       | RSF                | RESINOUS FLOORING                          | Q.F        |   | חופטום ואיי                 |                   | )EEIV               |                                   |  | <u> </u>                                  |
| DIA<br>DISP               | DIAMETER<br>DISPENSER  | MATL            | MATERIAL                                | RTF                | RESILENT TILE FLOORING                     | SE         | ECTION  DEMOLITION / GENERAL                    | <b>DISCIPLINI</b> G GENERAL | : Ph<br>S         | REFIX SITE          |                                   | PAGE NUMBER  |   |
| DN<br>DP                  | DOWN<br>DEEP   | MAX<br>MC       | MAXIMUM<br>METAL CANOPY                 | SAT                | SPRAYED ACOUSTICAL TREATMENT               | 1 2        | PLANS EXTERIOR ELEVATIONS                       | C CIVIL<br>L LANDSCAPE      | R                 | C READI             | NESS CENTER<br>FRAINING BAY       |  |   |
| DR<br>DS                  | DOOR<br>DOWNSPOUT  | MCT<br>MB       | METAL CEILING TILE<br>MASONRY - BRICK   | SC<br>SCH          | SEALED CONCRETE<br>SCHEDULE                | 3          | BUILDING / WALL SECTIONS                        | S STRUCTURA                 | _ U               | SB UNHEA            | ATED STORAGE BUIL                 |  | -A1-01                                    |
| E/W                       | EACH WAY   | MECH<br>MFR     | MECHANICAL<br>MANUFACTURER              | SCW<br>SDT         | SOLID CORE WOOD<br>STATIC DISSIPATIVE TILE | 4          | ELARGED PLANS, CASEWORK, INTERIOR ELEVATIONS &  | A ARCHITECTI<br>Q EQUIPMENT | RAL G             |                     |                                   |  |   |
| EDG                       | EDGE BANDING   | MFT             | MARBLE FLOOR TILE                       | SF                 | SQUARE FEET                                | 5          | RELATED DETAILS<br>DETAILS                      | P PLUMBING M MECHANICA      |                   |                     | PREFIX FOR SITE OR<br>ERAL SHEETS |  |   |
| EES                       | EMERGENCY EYE WASH AND SHOWER  | MO              | MINIMUM MASONRY OPENING                 | SIM<br>SLS         | SIMILAR<br>SOLID SURFACE                   | 6 7        | WINDOW & DOOR SCHEDULES FINISH PLAN & SCHEDULES |                             |                   |                     |                                   |  |   |
| EFC<br>EIFS               | EPOXY FLOOR COATING EXTERIOR INSULATION                                      | MOV<br>MTB      | MILITARY OWNER VEHICLE MARBLE TILE BASE | SP<br>SQ           | SPACES<br>SQUARE                           | 8          | VERTICAL CIRCULATION BID ALTERNATES             | X MISCELLANE                |                   |                     |                                   |  |   |



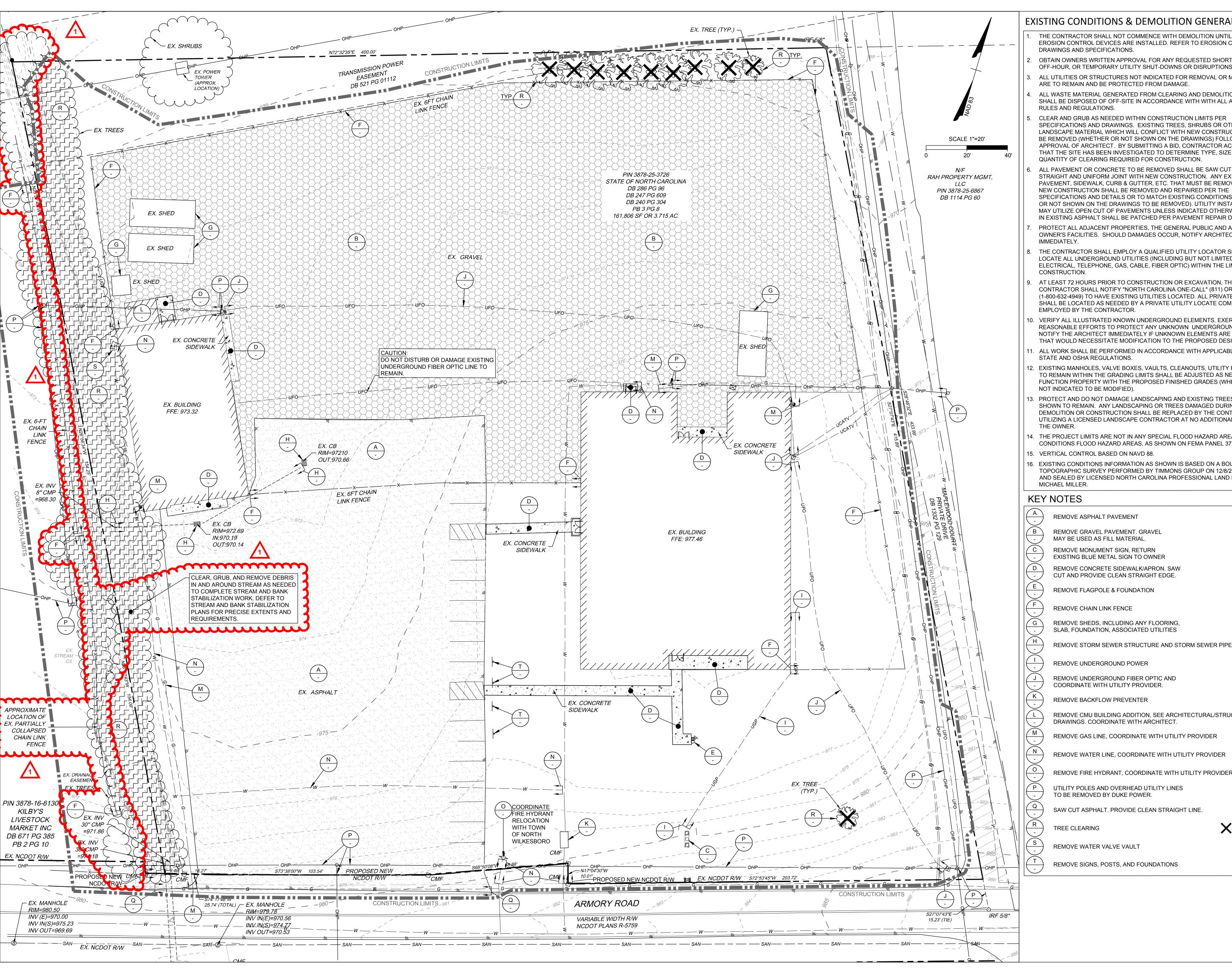




09/25/2023 | ADDENDUM 2 DATE DESCRIPTION

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### **EXISTING CONDITIONS & DEMOLITION GENERAL NOTES**

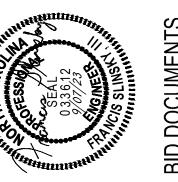
- 1. THE CONTRACTOR SHALL NOT COMMENCE WITH DEMOLITION UNTIL PERIMETER EROSION CONTROL DEVICES ARE INSTALLED. REFER TO EROSION CONTROL DRAWINGS AND SPECIFICATIONS.
- OBTAIN OWNERS WRITTEN APPROVAL FOR ANY REQUESTED SHORT-TERM, OFF-HOUR, OR TEMPORARY UTILITY SHUT-DOWNS OR DISRUPTIONS.
- 3. ALL UTILITIES OR STRUCTURES NOT INDICATED FOR REMOVAL OR MODIFICATION ARE TO REMAIN AND BE PROTECTED FROM DAMAGE.
- 4. ALL WASTE MATERIAL GENERATED FROM CLEARING AND DEMOLITION ACTIVITIES SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH WITH ALL APPLICABLE RULES AND REGULATIONS.
- CLEAR AND GRUB AS NEEDED WITHIN CONSTRUCTION LIMITS PER SPECIFICATIONS AND DRAWINGS. EXISTING TREES, SHRUBS OR OTHER LANDSCAPE MATERIAL WHICH WILL CONFLICT WITH NEW CONSTRUCTION SHALL BE REMOVED (WHETHER OR NOT SHOWN ON THE DRAWINGS) FOLLOWING APPROVAL OF ARCHITECT. BY SUBMITTING A BID, CONTRACTOR ACKNOWLEDGES THAT THE SITE HAS BEEN INVESTIGATED TO DETERMINE TYPE, SIZE AND QUANTITY OF CLEARING REQUIRED FOR CONSTRUCTION.
- ALL PAVEMENT OR CONCRETE TO BE REMOVED SHALL BE SAW CUT TO PROVIDE A STRAIGHT AND UNIFORM JOINT WITH NEW CONSTRUCTION. ANY EXISTING PAVEMENT, SIDEWALK, CURB & GUTTER, ETC. THAT MUST BE REMOVED TO ALLOW NEW CONSTRUCTION SHALL BE REMOVED AND REPAIRED PER THE SPECIFICATIONS AND DETAILS OR TO MATCH EXISTING CONDITIONS (WHETHER OR NOT SHOWN ON THE DRAWINGS TO BE REMOVED). UTILITY INSTALLATIONS MAY UTILIZE OPEN CUT OF PAVEMENTS UNLESS INDICATED OTHERWISE. TRENCH IN EXISTING ASPHALT SHALL BE PATCHED PER PAVEMENT REPAIR DETAIL.
- PROTECT ALL ADJACENT PROPERTIES, THE GENERAL PUBLIC AND ALL OF THE OWNER'S FACILITIES. SHOULD DAMAGES OCCUR, NOTIFY ARCHITECT
- 8. THE CONTRACTOR SHALL EMPLOY A QUALIFIED UTILITY LOCATOR SERVICE TO LOCATE ALL UNDERGROUND UTILITIES (INCLUDING BUT NOT LIMITED TO ELECTRICAL, TELEPHONE, GAS, CABLE, FIBER OPTIC) WITHIN THE LIMITS OF CONSTRUCTION.
- 9. AT LEAST 72 HOURS PRIOR TO CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL NOTIFY "NORTH CAROLINA ONE-CALL" (811) OR (1-800-632-4949) TO HAVE EXISTING UTILITIES LOCATED. ALL PRIVATE UTILITIES SHALL BE LOCATED AS NEEDED BY A PRIVATE UTILITY LOCATE COMPANY EMPLOYED BY THE CONTRACTOR.
- 10. VERIFY ALL ILLUSTRATED KNOWN UNDERGROUND ELEMENTS. EXERCISE REASONABLE EFFORTS TO PROTECT ANY UNKNOWN UNDERGROUND ELEMENTS. NOTIFY THE ARCHITECT IMMEDIATELY IF UNKNOWN ELEMENTS ARE DISCOVERED THAT WOULD NECESSITATE MODIFICATION TO THE PROPOSED DESIGN.
- 11. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND OSHA REGULATIONS.
- 12. EXISTING MANHOLES, VALVE BOXES, VAULTS, CLEANOUTS, UTILITY POLES ETC. TO REMAIN WITHIN THE GRADING LIMITS SHALL BE ADJUSTED AS NEEDED TO FUNCTION PROPERTY WITH THE PROPOSED FINISHED GRADES (WHETHER OR NOT INDICATED TO BE MODIFIED).
- 13. PROTECT AND DO NOT DAMAGE LANDSCAPING AND EXISTING TREES & SHRUBS SHOWN TO REMAIN. ANY LANDSCAPING OR TREES DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR UTILIZING A LICENSED LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO
- 14. THE PROJECT LIMITS ARE NOT IN ANY SPECIAL FLOOD HAZARD AREAS OR FUTURE CONDITIONS FLOOD HAZARD AREAS, AS SHOWN ON FEMA PANEL 3710387800J.
- 15. VERTICAL CONTROL BASED ON NAVD 88.
- 16. EXISTING CONDITIONS INFORMATION AS SHOWN IS BASED ON A BOUNDARY & TOPOGRAPHIC SURVEY PERFORMED BY TIMMONS GROUP ON 12/8/2022, SIGNED AND SEALED BY LICENSED NORTH CAROLINA PROFESSIONAL LAND SURVEYOR,

| KEY      | NOTES   |                |
|----------|---|----------------|
| A -      | REMOVE ASPHALT PAVEMENT   |                |
| B -      | REMOVE GRAVEL PAVEMENT. GRAVEL MAY BE USED AS FILL MATERIAL.  |                |
| C        | REMOVE MONUMENT SIGN, RETURN<br>EXISTING BLUE METAL SIGN TO OWNER   |                |
| D -      | REMOVE CONCRETE SIDEWALK/APRON. SAW<br>CUT AND PROVIDE CLEAN STRAIGHT EDGE.   | 7 <sub>4</sub> |
| E -      | REMOVE FLAGPOLE & FOUNDATION  |                |
| F<br>-   | REMOVE CHAIN LINK FENCE   |                |
| G<br>-   | REMOVE SHEDS, INCLUDING ANY FLOORING, SLAB, FOUNDATION, ASSOCIATED UTILITIES  |                |
| H        | REMOVE STORM SEWER STRUCTURE AND STORM SEWER PIPE   |                |
|          | REMOVE UNDERGROUND POWER  |                |
| J        | REMOVE UNDERGROUND FIBER OPTIC AND COORDINATE WITH UTILITY PROVIDER.  |                |
| K -      | REMOVE BACKFLOW PREVENTER   |                |
| L<br>·   | REMOVE CMU BUILDING ADDITION, SEE ARCHITECTURAL/STRUC DRAWINGS. COORDINATE WITH ARCHITECT.  | TURAL          |
| M -      | REMOVE GAS LINE, COORDINATE WITH UTILITY PROVIDER   |                |
| N<br>-   | REMOVE WATER LINE, COORDINATE WITH UTILITY PROVIDER   |                |
| <b> </b> | DEMONES FIRE LINER AND AGO DEPARTMENT AND AGO DE LA CONTRACTOR AND AGO |                |

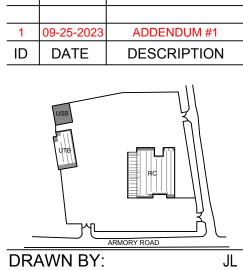


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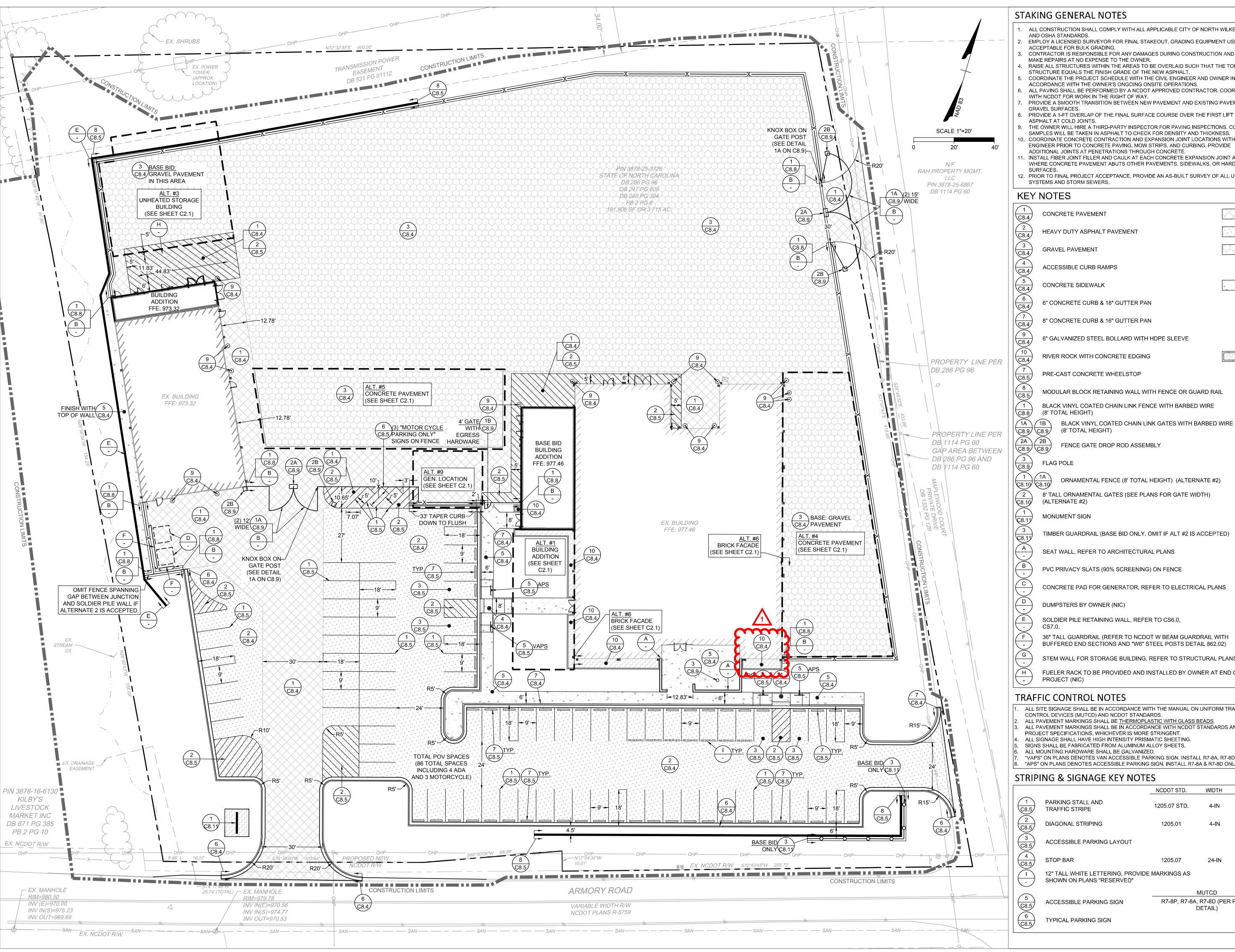
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# STAKING GENERAL NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE CITY OF NORTH WILKESBORO AND OSHA STANDARDS. 2. EMPLOY A LICENSED SURVEYOR FOR FINAL STAKEOUT. GRADING EQUIPMENT USING GPS IS ACCEPTABLE FOR BULK GRADING. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES DURING CONSTRUCTION AND SHALL

MAKE REPAIRS AT NO EXPENSE TO THE OWNER. 4. RAISE ALL STRUCTURES WITHIN THE AREAS TO BE OVERLAID SUCH THAT THE TOP OF THE

STRUCTURE EQUALS THE FINISH GRADE OF THE NEW ASPHALT. COORDINATE THE PROJECT SCHEDULE WITH THE CIVIL ENGINEER AND OWNER IN ACCORDANCE WITH THE OWNER'S ONGOING ONSITE OPERATIONS. ALL PAVING SHALL BE PERFORMED BY A NCDOT APPROVED CONTRACTOR. COORDINATE

WITH NCDOT FOR WORK IN THE RIGHT OF WAY. PROVIDE A SMOOTH TRANSITION BETWEEN NEW PAVEMENT AND EXISTING PAVEMENT / GRAVEL SURFACES. PROVIDE A 1-FT OVERLAP OF THE FINAL SURFACE COURSE OVER THE FIRST LIFT OF

ASPHALT AT COLD JOINTS. THE OWNER WILL HIRE A THIRD-PARTY INSPECTOR FOR PAVING INSPECTIONS. CORE SAMPLES WILL BE TAKEN IN ASPHALT TO CHECK FOR DENSITY AND THICKNESS. 10. COORDINATE CONCRETE CONTRACTION AND EXPANSION JOINT LOCATIONS WITH THE

ADDITIONAL JOINTS AT PENETRATIONS THROUGH CONCRETE. INSTALL FIBER JOINT FILLER AND CAULK AT EACH CONCRETE EXPANSION JOINT AND WHERE CONCRETE PAVEMENT ABUTS OTHER PAVEMENTS, SIDEWALKS, OR HARD

12. PRIOR TO FINAL PROJECT ACCEPTANCE, PROVIDE AN AS-BUILT SURVEY OF ALL UTILITY SYSTEMS AND STORM SEWERS.

| ΞY            | NOTES  |   |
|---------------|--|---|
| 4             | CONCRETE PAVEMENT                                    |   |
| 4             | HEAVY DUTY ASPHALT PAVEMENT                          |   |
| 4             | GRAVEL PAVEMENT                                      |   |
| 4             | ACCESSIBLE CURB RAMPS                                |   |
| 4             | CONCRETE SIDEWALK                                    | \rightarrow \righ |
| 4             | 6" CONCRETE CURB & 18" GUTTER PAN                    |   |
| 4             | 8" CONCRETE CURB & 16" GUTTER PAN                    |   |
| 4             | 6" GALVANIZED STEEL BOLLARD WITH HDPE SLEEVE         |   |
| 4             | RIVER ROCK WITH CONCRETE EDGING                      |   |
| 5             | PRE-CAST CONCRETE WHEELSTOP                          |   |
| 5             | MODULAR BLOCK RETAINING WALL WITH FENCE OR GUARD RA  | IL  |
| $\rightarrow$ | BLACK VINYL COATED CHAIN LINK FENCE WITH BARBED WIRE |   |

FENCE GATE DROP ROD ASSEMBLY

ORNAMENTAL FENCE (8' TOTAL HEIGHT) (ALTERNATE #2) 2 8' TALL ORNAMENTAL GATES (SEE PLANS FOR GATE WIDTH)

MONUMENT SIGN

TIMBER GUARDRAIL (BASE BID ONLY. OMIT IF ALT #2 IS ACCEPTED)

SEAT WALL, REFER TO ARCHITECTURAL PLANS

PVC PRIVACY SLATS (90% SCREENING) ON FENCE

CONCRETE PAD FOR GENERATOR, REFER TO ELECTRICAL PLANS

DUMPSTERS BY OWNER (NIC)

SOLDIER PILE RETAINING WALL, REFER TO CS6.0,

36" TALL GUARDRAIL (REFER TO NCDOT W BEAM GUARDRAIL WITH

STEM WALL FOR STORAGE BUILDING, REFER TO STRUCTURAL PLANS

FUELER RACK TO BE PROVIDED AND INSTALLED BY OWNER AT END OF

# TRAFFIC CONTROL NOTES

ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC WITH GLASS BEADS. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH NCDOT STANDARDS AND THE

PROJECT SPECIFICATIONS, WHICHEVER IS MORE STRINGENT. ALL SIGNAGE SHALL HAVE HIGH INTENSITY PRISMATIC SHEETING. SIGNS SHALL BE FABRICATED FROM ALUMINUM ALLOY SHEETS.

ALL MOUNTING HARDWARE SHALL BE GALVANIZED.

"VAPS" ON PLANS DENOTES VAN ACCESSIBLE PARKING SIGN. INSTALL R7-8A, R7-8D, & R7-8P. "APS" ON PLANS DENOTES ACCESSIBLE PARKING SIGN. INSTALL R7-8A & R7-8D ONLY.

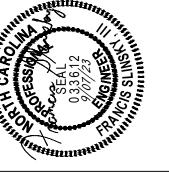
# STRIPING & SIGNAGE KEY NOTES

|               |  | NCDOT STD.   | WIDTH                   | COLOR  |  |  |  |  |
|---------------|--|--------------|-------------------------|--------|--|--|--|--|
| (1)<br>(C8.5) | PARKING STALL AND<br>TRAFFIC STRIPE                            | 1205.07 STD. | 4-IN                    | WHITE  |  |  |  |  |
| 2<br>C8.5     | DIAGONAL STRIPING  | 1205.01      | 4-IN                    | WHITE  |  |  |  |  |
| 3<br>C8.5     | ACCESSIBLE PARKING LAYOUT                                      |              |                         |        |  |  |  |  |
| (4)<br>(C8.5) | STOP BAR   | 1205.07      | 24-IN                   | WHITE  |  |  |  |  |
|               | 12" TALL WHITE LETTERING, PROVIDE<br>SHOWN ON PLANS "RESERVED" | MARKINGS AS  |                         |        |  |  |  |  |
|               | MUTCD  |              |                         |        |  |  |  |  |
| (5)<br>(C8.5) | ACCESSIBLE PARKING SIGN  | R7-8P, R7-8A | , R7-8D (PER<br>DETAIL) | PLAN & |  |  |  |  |
| / 6 \         |  |              |                         |        |  |  |  |  |

ARCHITECTURE

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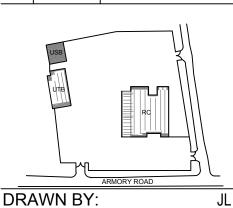




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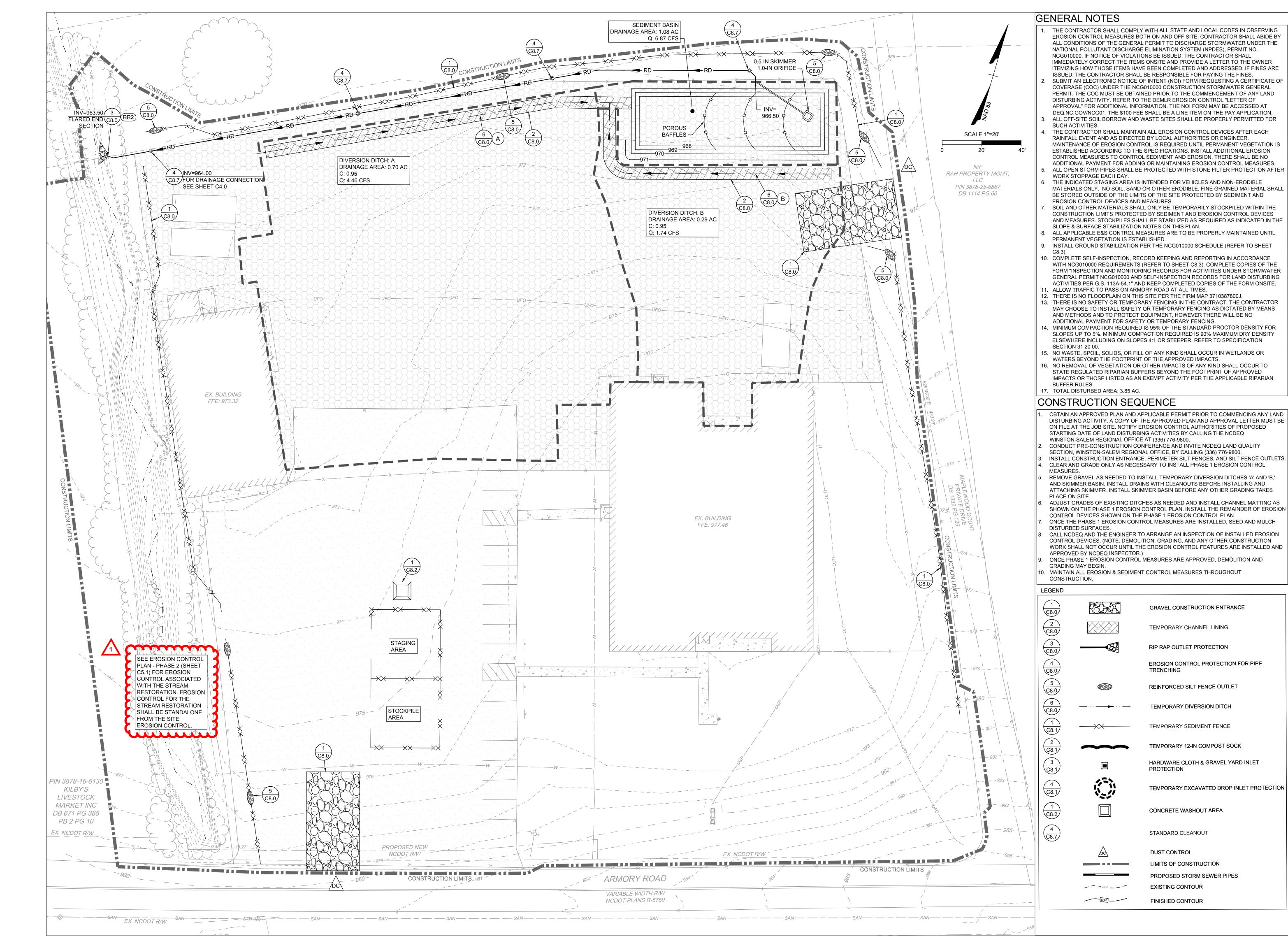
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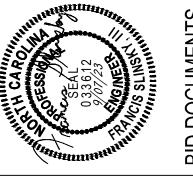
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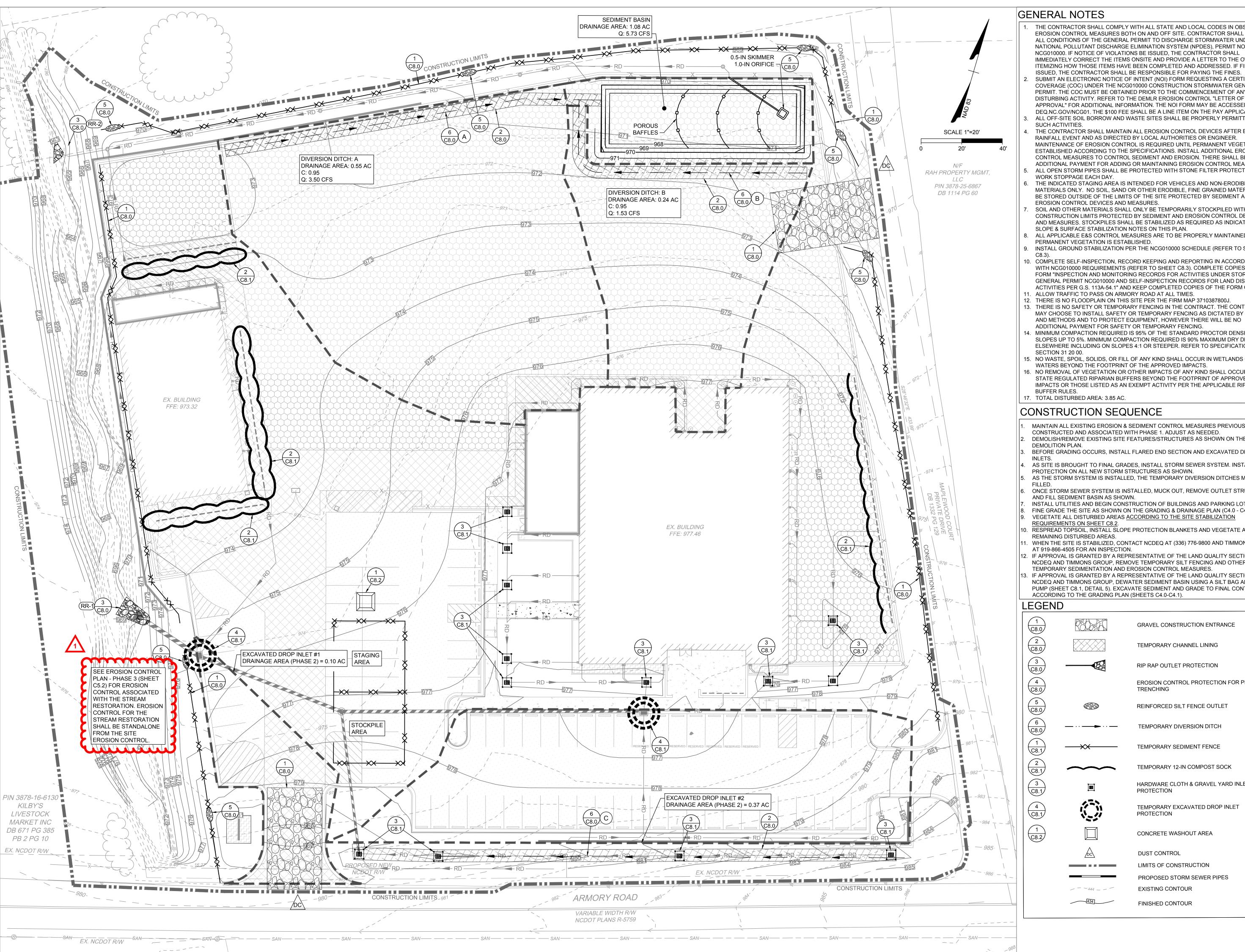
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**EROSION CONTROL PLAN - PHASE 1** 

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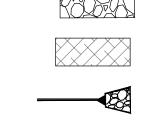


# GENERAL NOTES

- THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. CONTRACTOR SHALL ABIDE BY ALL CONDITIONS OF THE GENERAL PERMIT TO DISCHARGE STORMWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES), PERMIT NO. NCG010000. IF NOTICE OF VIOLATIONS BE ISSUED, THE CONTRACTOR SHALL IMMEDIATELY CORRECT THE ITEMS ONSITE AND PROVIDE A LETTER TO THE OWNER
- SUBMIT AN ELECTRONIC NOTICE OF INTENT (NOI) FORM REQUESTING A CERTIFICATE OF DISTURBING ACTIVITY. REFER TO THE DEMLR EROSION CONTROL "LETTER OF APPROVAL" FOR ADDITIONAL INFORMATION. THE NOI FORM MAY BE ACCESSED AT
- DEQ.NC.GOV/NCG01. THE \$100 FEE SHALL BE A LINE ITEM ON THE PAY APPLICATION. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES.
- THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT AND AS DIRECTED BY LOCAL AUTHORITIES OR ENGINEER. MAINTENANCE OF EROSION CONTROL IS REQUIRED UNTIL PERMANENT VEGETATION IS ESTABLISHED ACCORDING TO THE SPECIFICATIONS. INSTALL ADDITIONAL EROSION CONTROL MEASURES TO CONTROL SEDIMENT AND EROSION. THERE SHALL BE NO ADDITIONAL PAYMENT FOR ADDING OR MAINTAINING EROSION CONTROL MEASURES. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY.
- THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND
- EROSION CONTROL DEVICES AND MEASURES. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE
- SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN. ALL APPLICABLE E&S CONTROL MEASURES ARE TO BE PROPERLY MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED.
- INSTALL GROUND STABILIZATION PER THE NCG010000 SCHEDULE (REFER TO SHEET
- COMPLETE SELF-INSPECTION, RECORD KEEPING AND REPORTING IN ACCORDANCE WITH NCG010000 REQUIREMENTS (REFER TO SHEET C8.3). COMPLETE COPIES OF THE FORM "INSPECTION AND MONITORING RECORDS FOR ACTIVITIES UNDER STORMWATER GENERAL PERMIT NCG010000 AND SELF-INSPECTION RECORDS FOR LAND DISTURBING ACTIVITIES PER G.S. 113A-54.1" AND KEEP COMPLETED COPIES OF THE FORM ONSITE.
- 11. ALLOW TRAFFIC TO PASS ON ARMORY ROAD AT ALL TIMES.
- 12. THERE IS NO FLOODPLAIN ON THIS SITE PER THE FIRM MAP 3710387800J 13. THERE IS NO SAFETY OR TEMPORARY FENCING IN THE CONTRACT. THE CONTRACTOR MAY CHOOSE TO INSTALL SAFETY OR TEMPORARY FENCING AS DICTATED BY MEANS
- 4. MINIMUM COMPACTION REQUIRED IS 95% OF THE STANDARD PROCTOR DENSITY FOR SLOPES UP TO 5%. MINIMUM COMPACTION REQUIRED IS 90% MAXIMUM DRY DENSITY ELSEWHERE INCLUDING ON SLOPES 4:1 OR STEEPER. REFER TO SPECIFICATION SECTION 31 20 00.
- 15. NO WASTE, SPOIL, SOLIDS, OR FILL OF ANY KIND SHALL OCCUR IN WETLANDS OR
- WATERS BEYOND THE FOOTPRINT OF THE APPROVED IMPACTS. 16. NO REMOVAL OF VEGETATION OR OTHER IMPACTS OF ANY KIND SHALL OCCUR TO STATE REGULATED RIPARIAN BUFFERS BEYOND THE FOOTPRINT OF APPROVED IMPACTS OR THOSE LISTED AS AN EXEMPT ACTIVITY PER THE APPLICABLE RIPARIAN
- 17. TOTAL DISTURBED AREA: 3.85 AC.

## **CONSTRUCTION SEQUENCE**

- MAINTAIN ALL EXISTING EROSION & SEDIMENT CONTROL MEASURES PREVIOUSLY CONSTRUCTED AND ASSOCIATED WITH PHASE 1. ADJUST AS NEEDED. DEMOLISH/REMOVE EXISTING SITE FEATURES/STRUCTURES AS SHOWN ON THE
- DEMOLITION PLAN. BEFORE GRADING OCCURS, INSTALL FLARED END SECTION AND EXCAVATED DROP
- AS SITE IS BROUGHT TO FINAL GRADES, INSTALL STORM SEWER SYSTEM. INSTALL INLET
- PROTECTION ON ALL NEW STORM STRUCTURES AS SHOWN. AS THE STORM SYSTEM IS INSTALLED, THE TEMPORARY DIVERSION DITCHES MAY BE
- ONCE STORM SEWER SYSTEM IS INSTALLED, MUCK OUT, REMOVE OUTLET STRUCTURE, AND FILL SEDIMENT BASIN AS SHOWN.
- INSTALL UTILITIES AND BEGIN CONSTRUCTION OF BUILDINGS AND PARKING LOTS.
- FINE GRADE THE SITE AS SHOWN ON THE GRADING & DRAINAGE PLAN (C4.0 C4.1). VEGETATE ALL DISTURBED AREAS ACCORDING TO THE SITE STABILIZATION
- RESPREAD TOPSOIL, INSTALL SLOPE PROTECTION BLANKETS AND VEGETATE ANY REMAINING DISTURBED AREAS.
- WHEN THE SITE IS STABILIZED, CONTACT NCDEQ AT (336) 776-9800 AND TIMMONS GROUF
- AT 919-866-4505 FOR AN INSPECTION.
- NCDEQ AND TIMMONS GROUP, REMOVE TEMPORARY SILT FENCING AND OTHER TEMPORARY SEDIMENTATION AND EROSION CONTROL MEASURES
- IF APPROVAL IS GRANTED BY A REPRESENTATIVE OF THE LAND QUALITY SECTION OF NCDEQ AND TIMMONS GROUP, DEWATER SEDIMENT BASIN USING A SILT BAG AND SUMP PUMP (SHEET C8.1, DETAIL 5). EXCAVATE SEDIMENT AND GRADE TO FINAL CONTOURS ACCORDING TO THE GRADING PLAN (SHEETS C4.0-C4.1).



GRAVEL CONSTRUCTION ENTRANCE

TEMPORARY CHANNEL LINING

RIP RAP OUTLET PROTECTION EROSION CONTROL PROTECTION FOR PIPE TRENCHING

REINFORCED SILT FENCE OUTLET TEMPORARY DIVERSION DITCH

TEMPORARY SEDIMENT FENCE

HARDWARE CLOTH & GRAVEL YARD INLET PROTECTION

TEMPORARY EXCAVATED DROP INLET PROTECTION

CONCRETE WASHOUT AREA DUST CONTROL

**EXISTING CONTOUR** 

LIMITS OF CONSTRUCTION PROPOSED STORM SEWER PIPES

TEMPORARY 12-IN COMPOST SOCK

FINISHED CONTOUR

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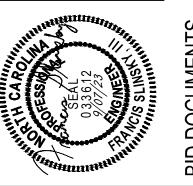
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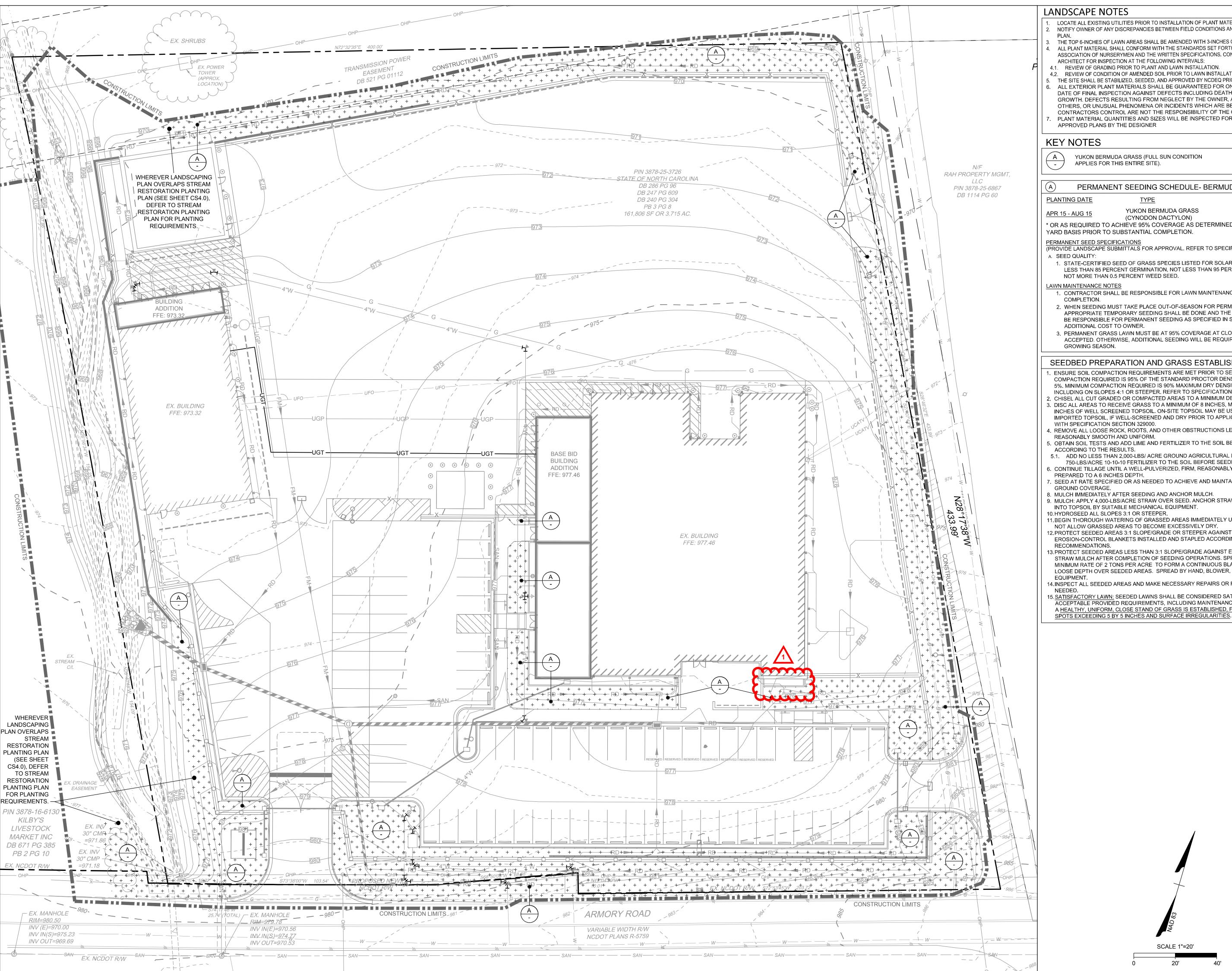
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**PLAN - PHASE 4** 

**EROSION CONTROL** 

C5.3



### LANDSCAPE NOTES

- LOCATE ALL EXISTING UTILITIES PRIOR TO INSTALLATION OF PLANT MATERIAL.
- NOTIFY OWNER OF ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND THOSE SHOWN ON THE THE TOP 6-INCHES OF LAWN AREAS SHALL BE AMENDED WITH 3-INCHES OF TOPSOIL.
  - ALL PLANT MATERIAL SHALL CONFORM WITH THE STANDARDS SET FORTH BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND THE WRITTEN SPECIFICATIONS. CONTACT THE LANDSCAPE ARCHITECT FOR INSPECTION AT THE FOLLOWING INTERVALS:
  - 4.1. REVIEW OF GRADING PRIOR TO PLANT AND LAWN INSTALLATION. 4.2. REVIEW OF CONDITION OF AMENDED SOIL PRIOR TO LAWN INSTALLATION.
  - THE SITE SHALL BE STABILIZED, SEEDED, AND APPROVED BY NCDEQ PRIOR TO FINAL ACCEPTANCE. 6. ALL EXTERIOR PLANT MATERIALS SHALL BE GUARANTEED FOR ONE FULL YEAR AFTER DATE OF FINAL INSPECTION AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH. DEFECTS RESULTING FROM NEGLECT BY THE OWNER, ABUSE OR DAMAGE BY OTHERS, OR UNUSUAL PHENOMENA OR INCIDENTS WHICH ARE BEYOND THE
  - CONTRACTORS CONTROL ARE NOT THE RESPONSIBILITY OF THE CONTRACTOR. PLANT MATERIAL QUANTITIES AND SIZES WILL BE INSPECTED FOR COMPLIANCE WITH APPROVED PLANS BY THE DESIGNER

YUKON BERMUDA GRASS (FULL SUN CONDITION APPLIES FOR THIS ENTIRE SITE).

PLANTING RATE

PERMANENT SEEDING SCHEDULE- BERMUDA SEED

<u>TYPE</u> YUKON BERMUDA GRASS

200 LBS/ACRE \* (CYNODON DACTYLON) \* OR AS REQUIRED TO ACHIEVE 95% COVERAGE AS DETERMINED ON A PER SQUARE

YARD BASIS PRIOR TO SUBSTANTIAL COMPLETION. PERMANENT SEED SPECIFICATIONS

(PROVIDE LANDSCAPE SUBMITTALS FOR APPROVAL. REFER TO SPECIFICATIONS)

1. STATE-CERTIFIED SEED OF GRASS SPECIES LISTED FOR SOLAR EXPOSURE, WITH NOT LESS THAN 85 PERCENT GERMINATION, NOT LESS THAN 95 PERCENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED.

# LAWN MAINTENANCE NOTES

- 1. CONTRACTOR SHALL BE RESPONSIBLE FOR LAWN MAINTENANCE UNTIL FINAL 2. WHEN SEEDING MUST TAKE PLACE OUT-OF-SEASON FOR PERMANENT GRASS,
- APPROPRIATE TEMPORARY SEEDING SHALL BE DONE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERMANENT SEEDING AS SPECIFIED IN SEASON AT NO ADDITIONAL COST TO OWNER.
- 3. PERMANENT GRASS LAWN MUST BE AT 95% COVERAGE AT CLOSE OUT TO BE ACCEPTED. OTHERWISE, ADDITIONAL SEEDING WILL BE REQUIRED IN THE FOLLOWING

## SEEDBED PREPARATION AND GRASS ESTABLISHMENT

- ENSURE SOIL COMPACTION REQUIREMENTS ARE MET PRIOR TO SEEDING. MINIMUM COMPACTION REQUIRED IS 95% OF THE STANDARD PROCTOR DENSITY FOR SLOPES UP TO 5%. MINIMUM COMPACTION REQUIRED IS 90% MAXIMUM DRY DENSITY ELSEWHERE INCLUDING ON SLOPES 4:1 OR STEEPER. REFER TO SPECIFICATION SECTION 31 20 00.
- 2. CHISEL ALL CUT GRADED OR COMPACTED AREAS TO A MINIMUM DEPTH OF 8". . DISC ALL AREAS TO RECEIVE GRASS TO A MINIMUM OF 8 INCHES, MIX AND AMEND WITH 3 INCHES OF WELL SCREENED TOPSOIL. ON-SITE TOPSOIL MAY BE USED IN PLACE OF IMPORTED TOPSOIL, IF WELL-SCREENED AND DRY PRIOR TO APPLICATION IN ACCORDANCE
- REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
- 5. OBTAIN SOIL TESTS AND ADD LIME AND FERTILIZER TO THE SOIL BEFORE SEEDING ACCORDING TO THE RESULTS.
- 5.1. ADD NO LESS THAN 2,000-LBS/ ACRE GROUND AGRICULTURAL LIMESTONE AND 750-LBS/ACRE 10-10-10 FERTILIZER TO THE SOIL BEFORE SEEDING.
- 6. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED TO A 6 INCHES DEPTH.
- 2. SEED AT RATE SPECIFIED OR AS NEEDED TO ACHIEVE AND MAINTAIN A THICK HEALTHY GROUND COVERAGE.
- 8. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH. 9. MULCH: APPLY 4,000-LBS/ACRE STRAW OVER SEED. ANCHOR STRAW MULCH BY CRIMPING
- INTO TOPSOIL BY SUITABLE MECHANICAL EQUIPMENT. 10. HYDROSEED ALL SLOPES 3:1 OR STEEPER
- 11.BEGIN THOROUGH WATERING OF GRASSED AREAS IMMEDIATELY UPON INSTALLATION. DO NOT ALLOW GRASSED AREAS TO BECOME EXCESSIVELY DRY.
- 12. PROTECT SEEDED AREAS 3:1 SLOPE/GRADE OR STEEPER AGAINST EROSION BY PROVIDING
- 13.PROTECT SEEDED AREAS LESS THAN 3:1 SLOPE/GRADE AGAINST EROSION BY SPREADING STRAW MULCH AFTER COMPLETION OF SEEDING OPERATIONS. SPREAD UNIFORMLY AT A MINIMUM RATE OF 2 TONS PER ACRE TO FORM A CONTINUOUS BLANKET 1-1/2 INCHES
- LOOSE DEPTH OVER SEEDED AREAS. SPREAD BY HAND, BLOWER, OR OTHER SUITABLE

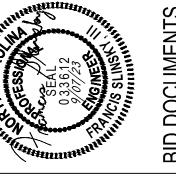
SCALE 1"=20"

- 14.INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS AS
- 15. SATISFACTORY LAWN: SEEDED LAWNS SHALL BE CONSIDERED SATISFACTORY/ ACCEPTABLE PROVIDED REQUIREMENTS, INCLUDING MAINTENANCE, HAVE BEEN MET AND A HEALTHY, UNIFORM, CLOSE STAND OF GRASS IS ESTABLISHED, FREE OF WEEDS, BARE



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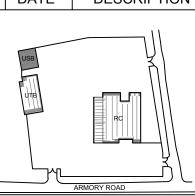
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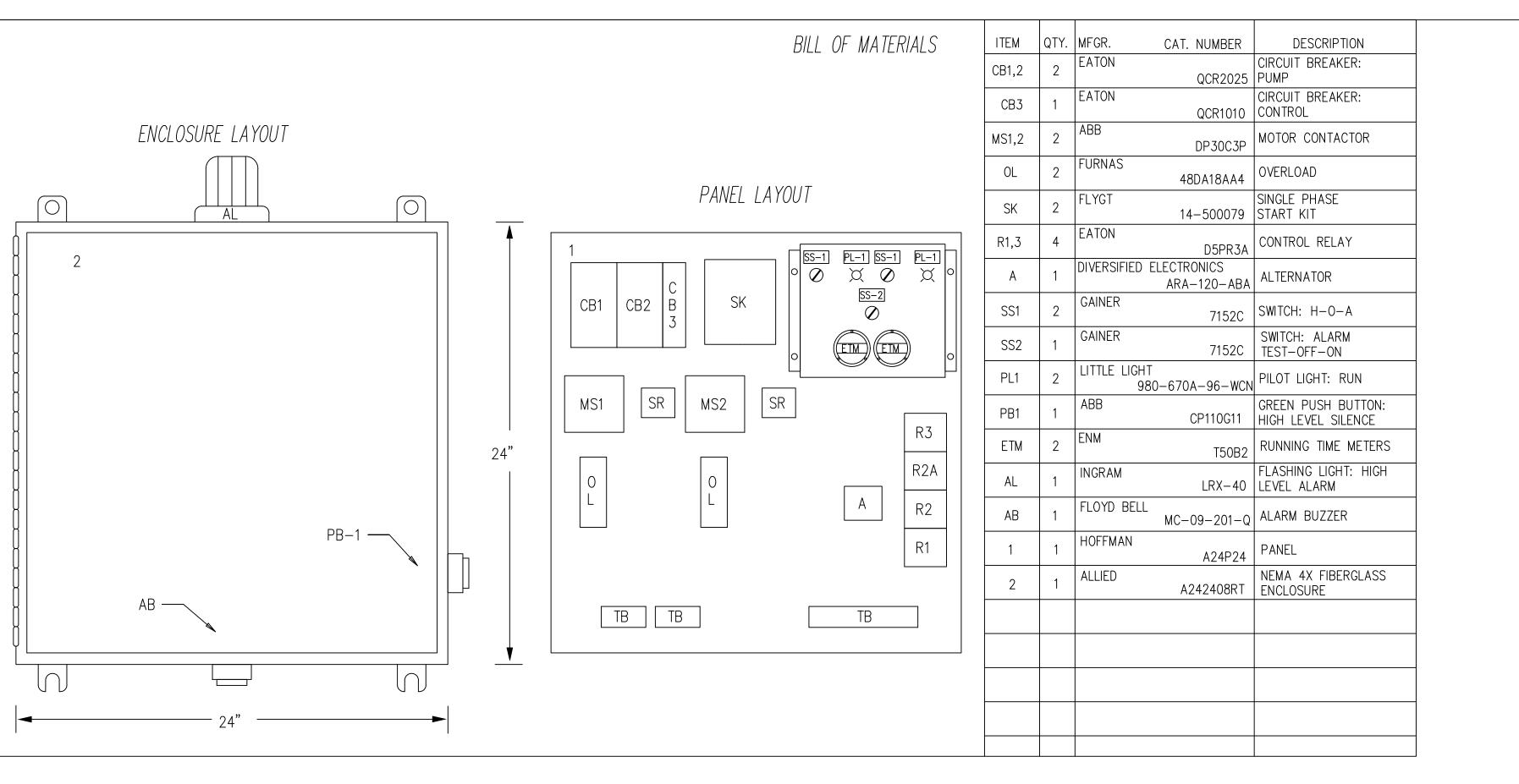


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**VEGETATION PLAN** 

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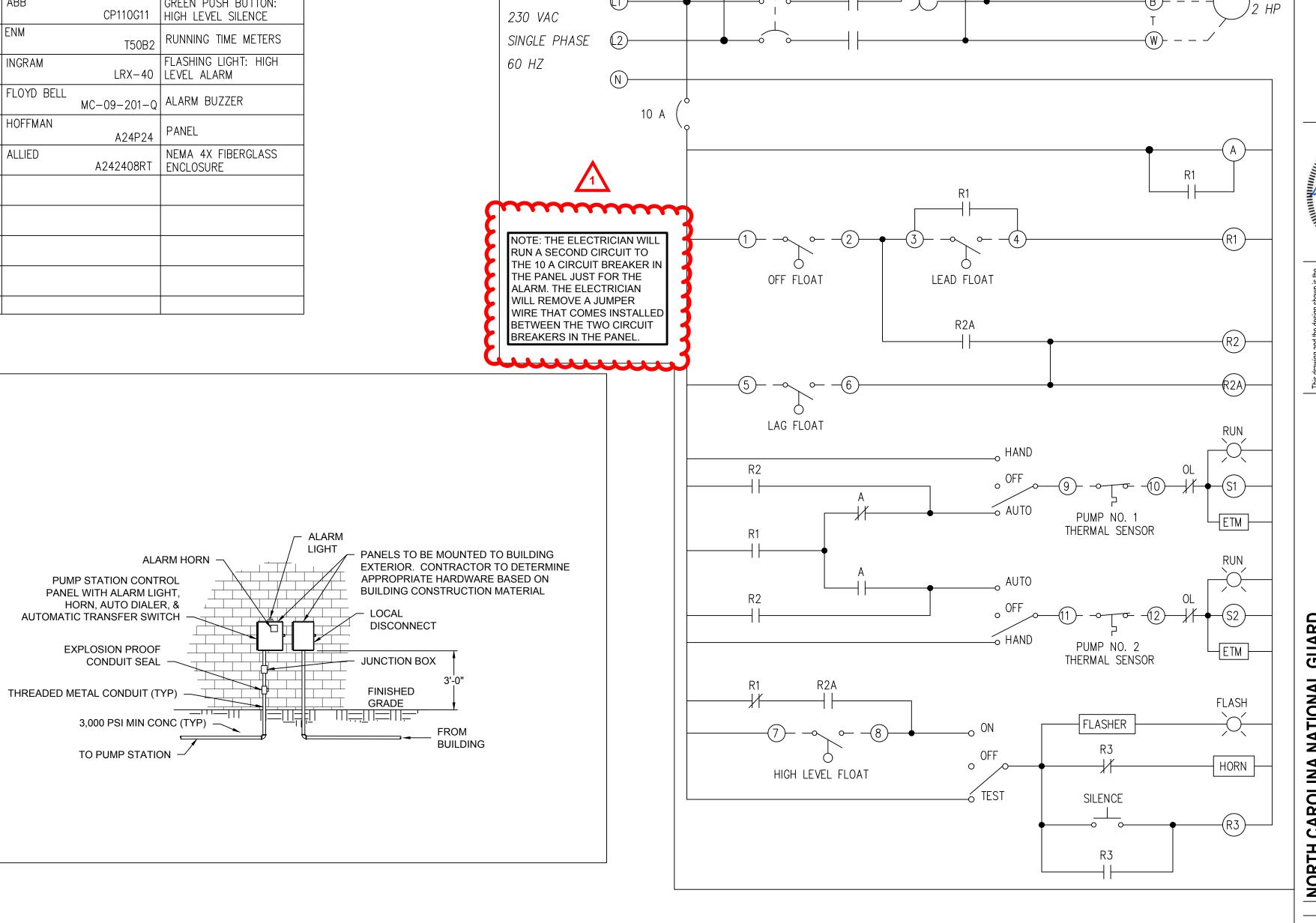
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# DUPLEX PUMP CONTROL PANEL

#### PLIMP STATION SPECIFICATIONS:

- 1. Pump Model Pump shall be of the progressive cavity type, with an integrally built-in grinder unit and submersible type motor.
- 2. Operating Conditions The pump shall have a non-overloading maximum capacity of 18 GPM, a maximum total dynamic head of 31.4 feet, and shall use a motor rated at 1 HP and 1750 RPM. The grinder unit shall be capable of macerating all material in typical domestic and commercial sewage, including reasonable amounts of foreign objects such as sanitary napkins, disposable diapers, thin rubber, sanitary wipes, floor pads, small wood, plastic and the like to fine slurry that will easily pass through the pump and 1-1/4" NPT discharge.
- 3. Construction Major pump castings shall be of gray cast iron, ASTM A-48, Class 35, with smooth surfaces devoid of blowholes or other irregularities. All exposed nuts or bolts shall be 304 stainless steel. All metal surfaces coming into contact with the pumpage, other than stainless steel, shall be protected by a factory applied baked on, powder coat paint finish to the exterior of the pump.
- 4. Sealing design shall incorporate metal-to-metal contact between machined surfaces. Critical mating surfaces where watertight sealing is required shall be machined and fitted with O-rings. Fittings will be the result of controlled compression of rubber O-rings in two planes and O-ring contact of four sides (rabbet joint construction) without the requirement of a specific torque limit. No secondary sealing compounds, elliptical O-rings, grease or other devices shall be used.
- 5. Rotor Progressive cavity full lobe rotor to be hardened and polished stainless steel construction.
- 6. Stator Progressive cavity design stator that has a full lobe. Material shall be ethylene propylene synthetic blend. Stator material to be acceptable for wastewater, having good resistance properties to heat, weather, grease, detergents, and abrasive materials.
- 7. Stator Liner Stator to be encapsulated by stator liner. Liner material shall be high density polyethylene. Liner to stabilize stator when in use, allowing for improved wear resistance and longer stator life.
- 8. Slicer Grinder Construction Maceration is accomplished by a combination of a rotary slicer and stationary slicer plate. Rotary slicer shall consist of (3) blades which protrude away from the inlet. Rotary slicer shall be bolted to shaft within close tolerance of grinding slicer plate. The stationary slicer plate shall consist of engineered-shaped holes for optimum cutting of debris. A slicer plate shall contain grooved slots to eject pump media away from underside of rotary cutter. Slicer plate shall be fastened with countersunk head screws that are flush with surface of plate. Pumps with protruded or exposed head fasteners shall be considered not equal. Both rotary slicer and slicer plate shall be 440C stainless steel hardened to 58-60 Rockwell C.
- 9. Seals Type 21, domestic manufactured, dual mechanical seal construction mounted in tandem, shall protect the motor. Standard construction of primary seal shall be silicon / carbide with Viton® elastomers. The seal face shall be lapped to a flatness of one light band. For remote start/run capacitor pumps ONLY, an electrode shall be mounted in the seal chamber to detect water entering the chamber through the lower seal. Water in the chamber shall cause a red light to turn on at the control box. This signal shall not stop the motor, but shall act as a warning only, indicating service is required. Lip seal arrangements shall not be considered equal.
- 10. Motor The pump motor construction shall be per NEMA MG-1 1.15 standard and shall be of the submersible type, rated 1 HP, 1750 RPM. The motor shall be for 60 Hz, 208 volt, single-phase operation. Single-phase motors shall be capacitor start, capacitor run type for high starting torque. Start and run capacitors, and starting switch will be found remotely in a control box for standard pump model. Major motor operating temperature must not exceed Class B ratings. The stator winding shall be of the open type with Class F insulation. Any other construction shall not be considered equal. The stator shall be pressed into the cast iron motor housing. Winding housing shall be filled with clean, high dielectric oil that lubricates bearings and seals, transferring heat from windings and rotor to the outer cast housing. Single phase motors shall have automatic reset overload protection attached to the top end of the motor windings to stop the motor if the motor winding temperature reaches 130 degrees C. The high temperature shut-off will cause the pump to cease operation should a control failure cause the pump to run in a dry wet well or any condition that may cause the pump to run outside of the specified operating temperature range.
- 11. Bearings / Shaft The motor shall have two heavy-duty ball bearings and one sleeve bearing to support the pump shaft, taking radial and thrust loadings. Bearings shall be designed to an ABEC® System 1 or better. The upper bearing shall be a Conrad type, single-row, deep groove ball bearing designed to adequately handle the required radial loads. The lower bearing shall be a single-row deep groove ball bearing designed to adequately compensate for the axial loads and radial forces. Bearings shall be designed to deliver a minimum L-10 bearing life of 100,000 hours when operation is within the limitations of the manufacturer's performance curve. The bearings shall be lubricated in oil and will not require maintenance as described in ANSI/HI 1.4-2010 A.6.
- 12. Power Cord The motor power cord shall be 14 Ga. Type SOOW, UL listed, CSA approved cable. The cable jacket shall be sealed at the motor entrance by means of an agency-approved rubber compression washer and compression nut. An epoxy-filled cord cap seals the outer cable jacket and individual leads to prevent water from entering the motor housing. Cord shall withstand a pull strain to meet FM requirements.



A FUSED DISCONNECT OR CIRCUIT BREAKER

MUST BE PROVIDED BY INSTALLER. PROVIDE

DISCONNECT SIZING PER NEC 430-53(C)

PUMP STATION CONTROL PANEL

DUPLEX PUMP CONTROL PANEL

START RELAY

START RELAY

START

RUN



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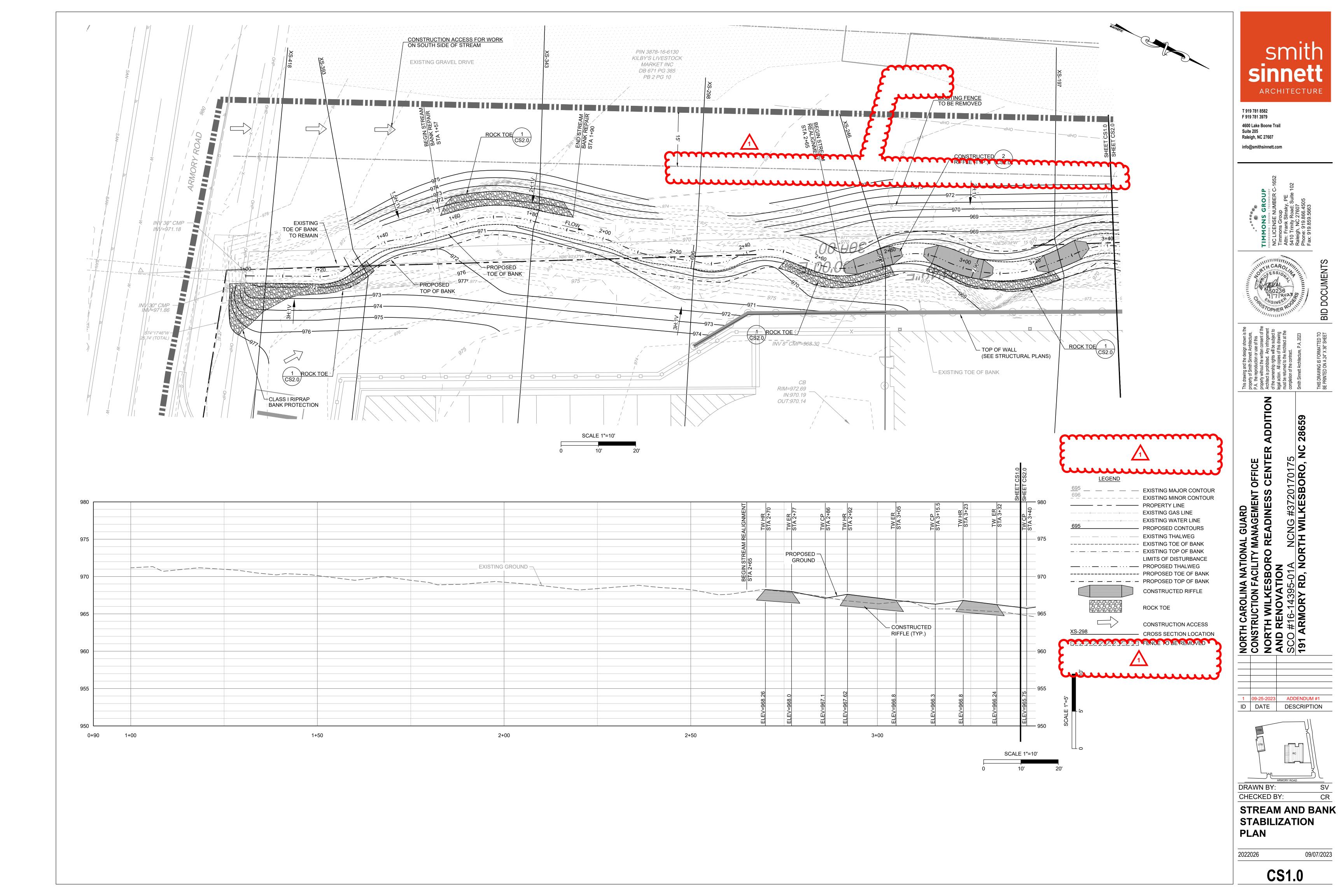
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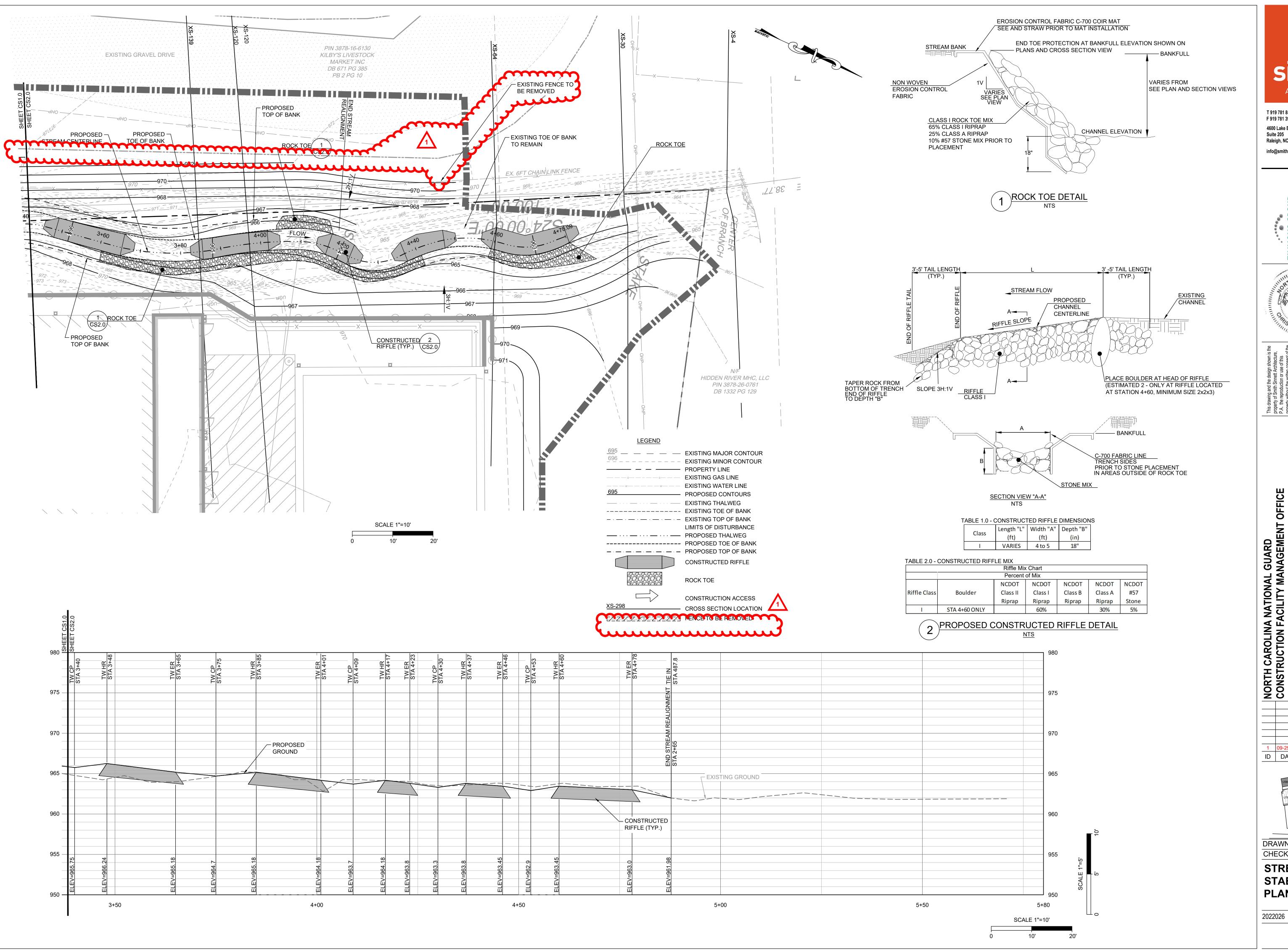
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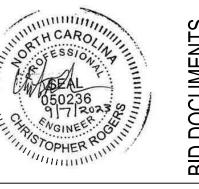




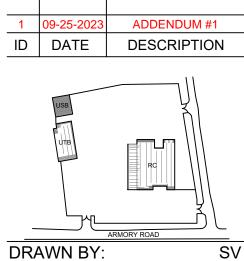


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**PLAN** 09/07/2023

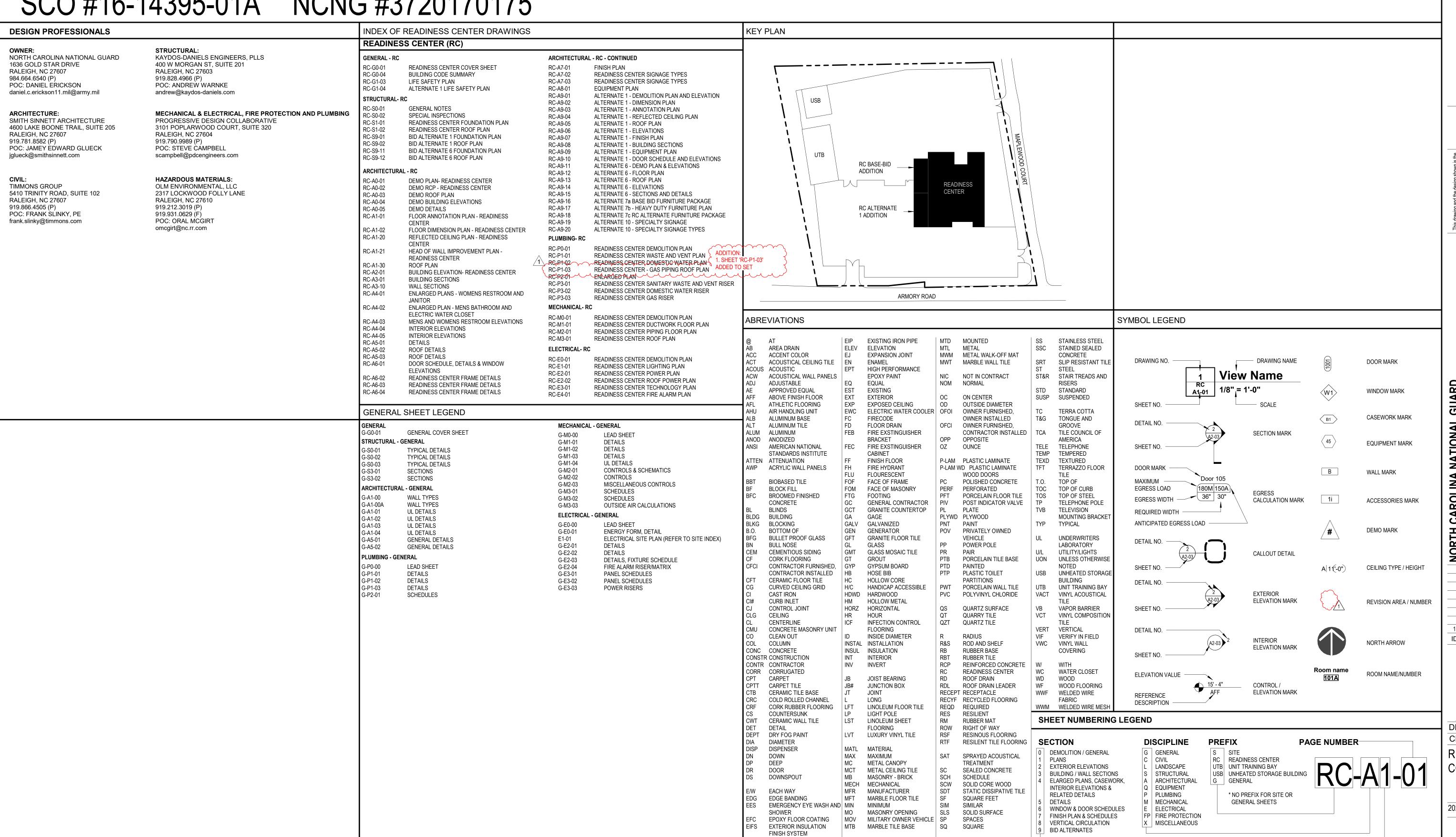
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# NORTH CAROLINA NATIONAL GUARD CONSTRUCTION FACILITY MANAGEMENT OFFICE

# READINESS CENTER (RC)

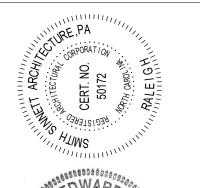
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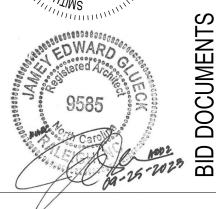
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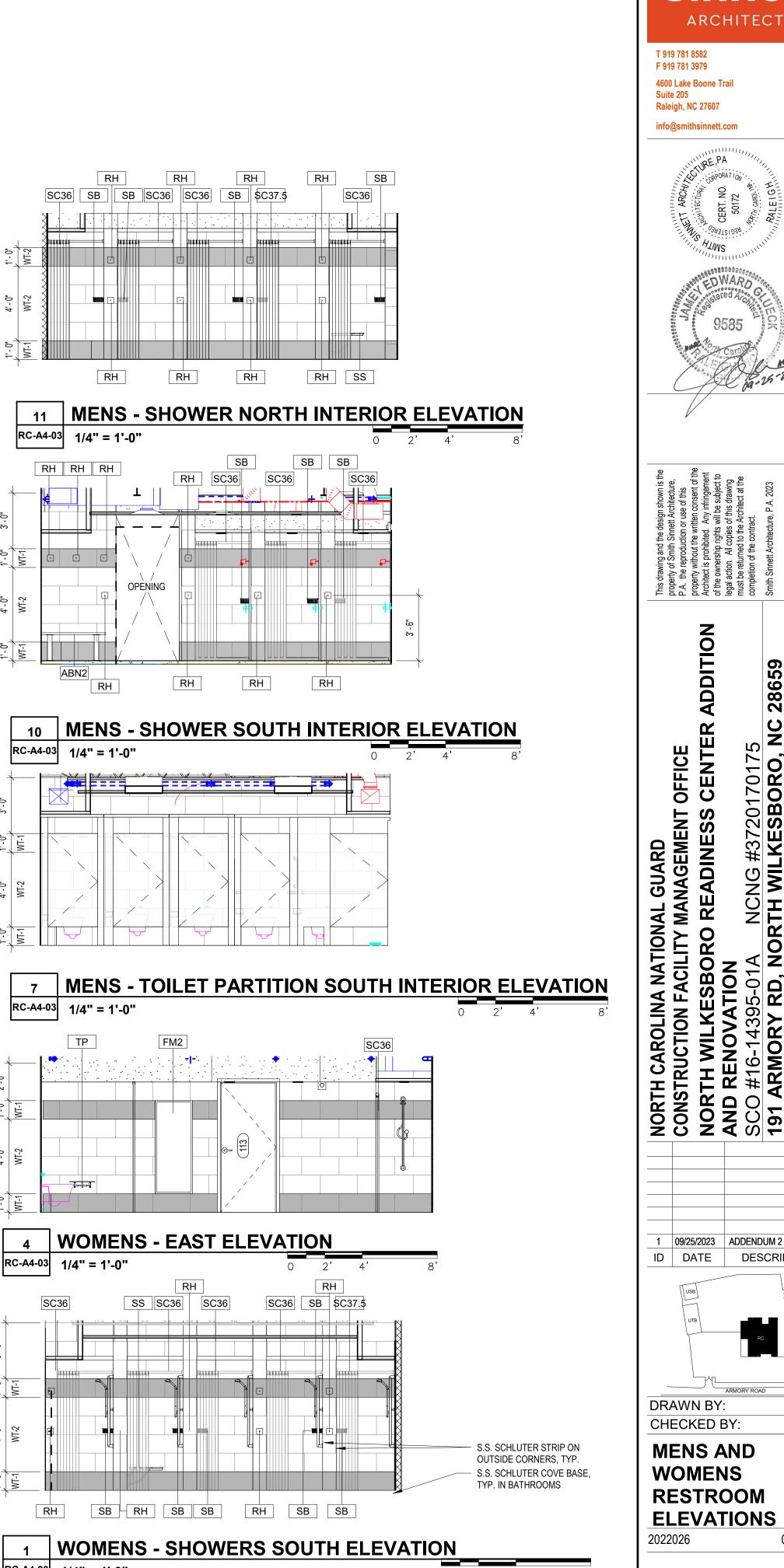
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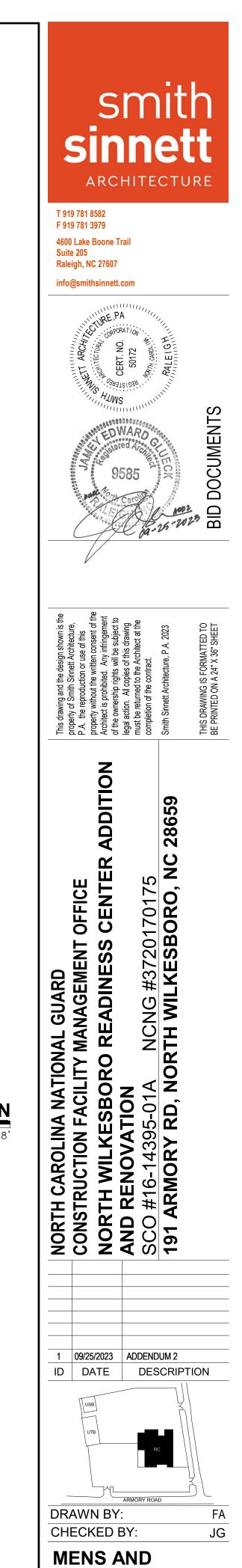
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| ACCESSO   | RY SCHEDULE                           |   |                           |  |  |        |
|-----------|---------------------------------------|---|---------------------------|--|--|--------|
| MARK      | MODEL                                 | DESCRIPTION   | FURNISHED BY/INSTALLED BY | MOUNTING HEIGHT  | MANUFACTURER RE  | EMARKS |
|           |                                       | AMERICANS WITH DISBILITIES ACT (ADA) COMPLIANT. 20" DEEP  AMERICANS WITH DISBILITIES ACT (ADA) COMPLIANT. 24" DEEP  CFC         |                           |  | REFER TO SPECIFICATIONS DIV 102800                                     |        |
|           |                                       | AMERICANS WITH DISBILITIES ACT (ADA) COMPLIANT. 24" DEEP  72 Inches Wide  CFC   |                           |  | REFER TO SPECIFICATIONS DIV 102800  REFER TO SPECIFICATIONS DIV 102800 |        |
| BN2       | 77785                                 | 60 Inches Wide CFC  | Cl                        |  | REFER TO SPECIFICATIONS DIV 102800                                     |        |
|           |                                       | GLASS CHANNEL FRAME MIRROR, 18" X 30"  CLASS CHANNEL FRAME MIRROR, 24" X 60"  |                           |  | REFER TO SPECIFICATIONS DIV 102800                                     |        |
|           | B-165 24X60<br>B-6806                 | GLASS CHANNEL FRAME MIRROR, 24" X 60"  1 1/2" DIA. X 18" S.S. VERTICAL GRAB BAR - PEENED  CFC                                   |                           |  | REFER TO SPECIFICATIONS DIV 102800  REFER TO SPECIFICATIONS DIV 102800 |        |
|           | B-6806                                | 1 1/2" DIA. X 36" S.S. GRAB BAR - PEENED CFC  |                           | 34" A.F.F. TO CENTER OF FIXTURE  | REFER TO SPECIFICATIONS DIV 102800                                     |        |
|           | B-6806                                | 1 1/2" DIA. X 42" S.S. GRAB BAR - PEENED CFC  |                           | 34" A.F.F. TO CENTER OF FIXTURE  | REFER TO SPECIFICATIONS DIV 102800                                     |        |
| LR<br>M3  | 12X12X72                              | Personal Storage Locker - Single Door  TEMPERED GLASS CHANNEL FRAME MIRROR, 60" X 72"  CFC                                      |                           | 12" A.F.F. TO BOTTOM OF REFLECTIVE SURFACE   | Spacesaver Corp REFER TO SPECIFICATIONS DIV 102800                     |        |
|           | B-224-36                              | UTILITY SHELF WITH RAG HOOKS AND BROOM HOLDERS CFO  |                           | 54" AFF TO TOP OF SHELF  | REFER TO SPECIFICATIONS DIV 105113                                     |        |
|           | <u> </u>                              | JANITOR SHELVES  CFC  |                           | SEE ELEVATION DWG. 9/RC-A4-01  | REFER TO SPECIFICATIONS DIV 064023                                     |        |
|           | B-4262<br>304                         | BOBRICK B-4262 CONTURA SERIES SURFACE MOUNTED PAPER TOWEL DISPENSER  VANDAL RESISTANCE S.S. TYPE 304 CLOTHES HOOK  CFC          |                           | 40" A.F.F. TO CENTER OF HOOK FOR H/C, 66" TYP.   | Bobrick Washroom Equipment, Inc.  REFER TO SPECIFICATIONS DIV 102800   |        |
|           |                                       | S.S. SOAP DISH BASKET CFC   |                           | 40" A.F.F. TO TOP OF SOAP DISH   | KOHLER   |        |
|           | ·                                     | 36" HEAVY DUTY S.S. SHOWER CURTAIN ROD, VINYL CURTAIN, AND S.S. HOOKS  CFC  |                           | 78" A.F.F. TO CENTER LINE  | REFER TO SPECIFICATIONS DIV 102800                                     |        |
|           | · · · · · · · · · · · · · · · · · · · | 36" HEAVY DUTY S.S. SHOWER CURTAIN ROD, VINYL CURTAIN, AND S.S. HOOKS  S.S. SURFACE MOUNTED VERTICAL LIQUID SOAP DISPENSER  CFC |                           | 78" A.F.F. TO CENTER LINE 36" A.F.F. TO POINT OF DISPENSION  | REFER TO SPECIFICATIONS DIV 102800  REFER TO SPECIFICATIONS DIV 102800 |        |
|           | B-295                                 | 5" x 16" SHELF  |                           | 44" A.F.F. TO TOP OF FIXTURE FOR H/C, 60" TYP.   | REFER TO SPECIFICATIONS DIV 102800                                     |        |
|           |                                       | S.S. SURFACE MOUNTED SANITARY NAPKIN RECEPTACLE  REVERSIBLE FOLDING SHOWER SEAT  CFC  |                           | 20" A.F.F. TO TOP OF UNIT<br>17"-19" A.F.F. TO TOP OF UNIT   | REFER TO SPECIFICATIONS DIV 102800                                     |        |
|           |                                       | SURFACE MOUNTED TOILET TISSUE SISPENSER WITH UTILITY SHELF  CFC   |                           | 20" TO POINT OF DISPENSION   | REFER TO SPECIFICATIONS DIV 102800  BOBRICK                            |        |
|           |                                       | 35 GALLON SQUARE RUBBERMAID WASTE RECEPTACLE-TAN CFC  |                           |  | REFER TO SPECIFICATIONS DIV 102800                                     |        |
| HD        |                                       | SURFACE MOUNTED HIGH SPEED HAND DRYER - NICKEL CFO  | Cl                        | 40" A.F.F. TO POINT OF DISPENSION  | REFER TO SPECIFICATIONS DIV 102800                                     |        |
| NOTES:    | TO RC-A4-01 FOR PLUM                  | MBING FIXTURE LEGEND  |                           |  |  |        |
| I. NLI LN | TO NO-A4-011 ON FLOR                  | WIDING LIXTORE LEGEND   |                           |  |  |        |
|           |                                       |   |                           | EMO LUD DED  |  |        |
|           |                                       | PTD HD  |                           | FM2 HD PTD   |  |        |
|           |                                       |   |                           |  |  |        |
|           | 3'-0"<br>WT-2                         |   | 5                         | _  |  |        |
|           | 11-0"<br>WT-1                         |   | 1-0-1                     | <u>\$</u>  |  |        |
|           | = = =                                 |   | ٥.                        |  |  |        |
|           | 4' - 0"<br>WT-2                       | PROVIDE UNDERLAVATORY GUARD, TYP.   | 4' - 0"                   |  | OOLID OLIDEA OF BAOMODI AOLI   |        |
|           | 4   \                                 | SOLID SURFACE BACKSPLASH  S.S. SCHLUTER COVE BASE,  |                           |  | SOLID SURFACE BACKSPLASH S.S. SCHLUTER COVE BASE,                      |        |
|           | 11-0"<br>WT-1                         | TYP. IN BATHROOMS   | =                         |  | TYP. IN BATHROOMS  |        |
|           | <u> </u>                              |   |                           |  |  |        |
|           |                                       | OMENS TOILET- WEST ELEVATION  |                           | VOMENS TOILET -EAST ELEV   | ATION  |        |
|           | RC-A4-03 1/4                          | <b>4" = 1'-0"</b>   | RC-A4-03 1                | /4" = 1'-0"  | 0 2' 4' 8'   |        |
|           |                                       | 2   |                           | HD HD  | <u></u>  |        |
|           |                                       | RC-A5-01  |                           | 5.   | **************************************                                 |        |
|           | FM1                                   |   |                           | ÷ 1  |  |        |
|           |                                       |   |                           |  | 2.2.6  |        |
|           | · · · · · · · · · · · · · · · · · · · | SOLID SURFACE   |                           |  |  |        |
|           | 1-0"<br>WT-1                          | COUNTERTOP  |                           | Obenino Obenin | SOLID SURFACE COUNTERTOP  SOLID SURFACE BACKSPLASH                     |        |
|           |                                       | 4" SOLID SURFACE BACKSPLASH AND SIDE SPLASH   |                           | <u> </u>   | S.S. SCHLUTER COVE BASE,   |        |
|           | WT-2                                  | SIDE SPLASH PROVIDE UNDERLAVATORY   |                           | 0, 0,  | TYP. IN BATHROOMS ADDITION:  |        |
|           | -                                     | GUARD, TYP.   |                           | B14 B5 B14 B5 B14 B14 B17 B18 B19  | SYMBOLS AND 'SOLID SURFACE )   |        |
|           | "0-1-WI-1-0-1                         | S.S. SCHLUTER COVE BASE, TYP. IN BATHROOMS  |                           |  | COUNTERTOP' NOTE ADDED   |        |
|           | ,<br>                                 |   |                           |  |  |        |
|           | <del> </del>                          | ENS - LAVATORIES EAST ELEVATION   |                           | 8 MENS - HAND DRY  | ER WALL  |        |
|           | RC-A4-03 1/4                          | 4" = 1'-0"  |                           | <b>RC-A4-03 1/4" = 1'-0"</b> 0 2'  | 4' 8'  |        |
|           |                                       |   |                           | <u> </u>   | <u> </u>   |        |
|           | 32"                                   | S.S. SCHLUTER STRIP ON OUTSIDE CORNERS, TYP.  | 3 0.                      |  |  |        |
|           |                                       | SOLID SURFACE COUNTERTOP  | <b>1</b> 0                | 7  |  |        |
|           | 1- 1- 0                               | PENING FM1  | <del>-</del>              | THE STATE OF THE S |  |        |
|           |                                       | BACKSPLASH AND SIDE SPLASH  | .0                        | 2  |  |        |
|           | 4'-0"<br>WT-2                         | PROVIDE UNDERLAVATORY GUARD, TYP.   | .4                        |  |  |        |
|           | 50 7.7                                | S.S. SCHLUTER COVE BASE, TYP. IN BATHROOMS  | .0-                       | <u> </u>   | S.S. SCHLUTER COVE BASE,<br>TYP. IN BATHROOMS                          |        |
|           | ÷ M / _                               |   | =-                        | <u> </u>   |  |        |
|           | /1 (1. (<br>- DIM                     | VISION: CASEWORK MENSIONS AND 1'-10" SD SD SD SD  |                           |  |  |        |
|           | \syl                                  | MENSIONS AND 1'-10"   MBOL ADDED  |                           | 5 WOMENS - TOILETS NOI   | RTH  |        |
|           | G W                                   | OMENS - SINKS SOUTH   | R                         | C-A4-03 1/4" = 1'-0"   | 4' 8'  |        |
|           | RC-A4-03 1/4                          |   |                           | RH RH RH RH RH   |  |        |
|           |                                       | SC36  |                           | RH RH RH RH RH   |  |        |
|           | SB                                    |   |                           |  |  |        |
|           | + +                                   |   |                           |  | 2  |        |
|           | 20"                                   |   |                           |  | MT-1 - 0"  |        |
|           | 1-0-1<br>MT-1-0                       |   |                           |  |  |        |
|           |                                       |   |                           |  | MT-2   |        |
|           | WT-2                                  |   |                           |  | S.S. SCHLUTER COVE BASE,<br>TYP. IN BATHROOMS                          |        |
|           |                                       |   |                           |  | 1-1-W  |        |
|           | -1-WT-1-                              |   |                           | BN RH RH ABN   | I  |        |
|           | ı                                     |   |                           |  |  |        |
|           | 3 W                                   | OMENS - WEST ELEVATION  |                           | 2 WOMENS - SHOWERS   |  |        |
|           | RC-A4-03 1/4                          |   |                           | RC-A4-03 1/4" = 1'-0"  | 0 2' 4' 8'   |        |

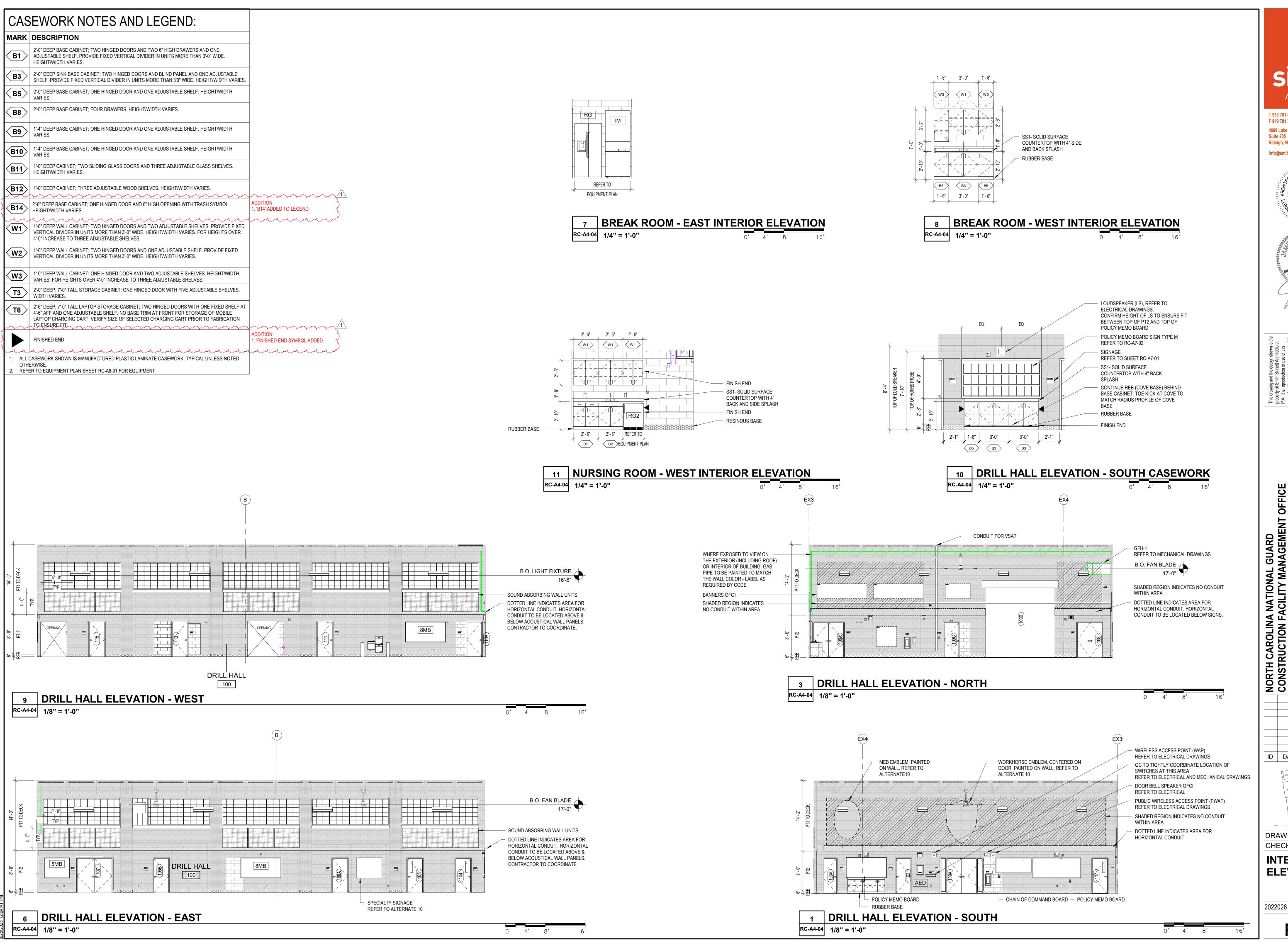


RC-A4-03 1/4" = 1'-0"



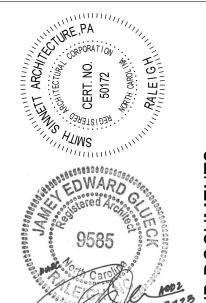
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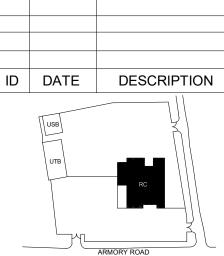


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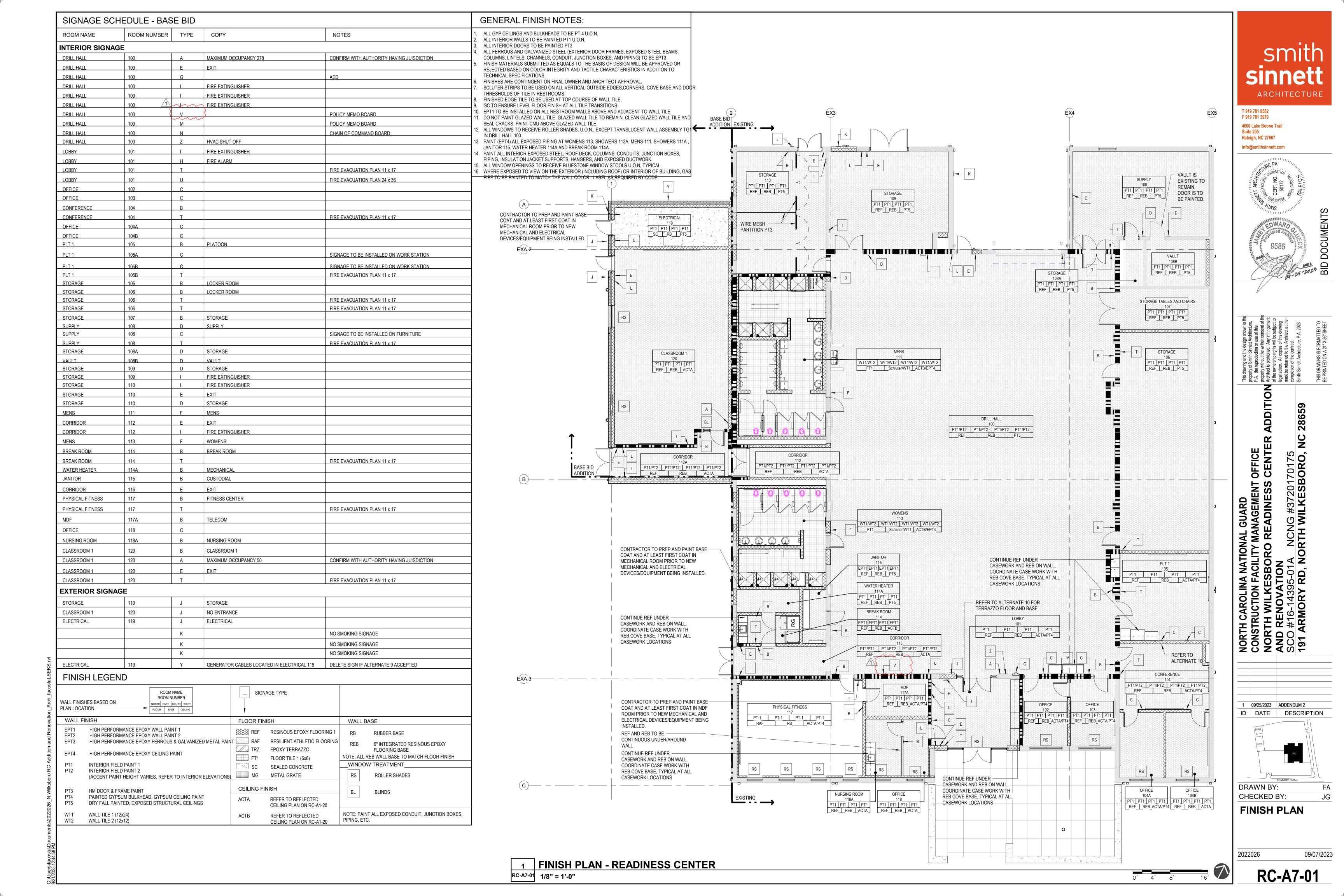
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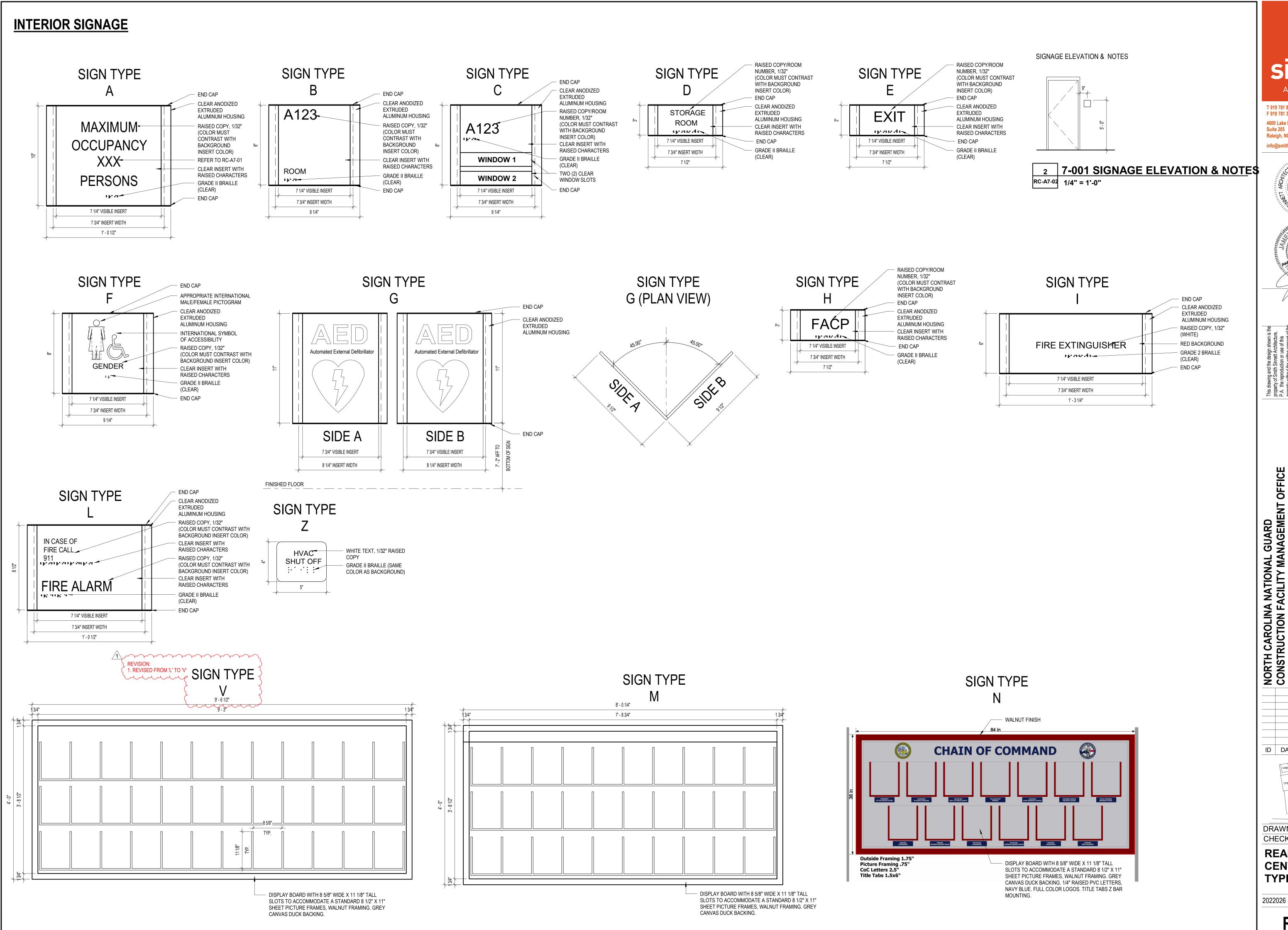


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**ELEVATIONS** 

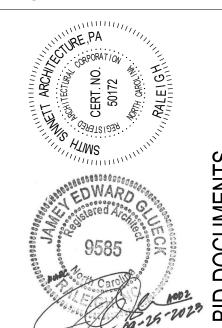
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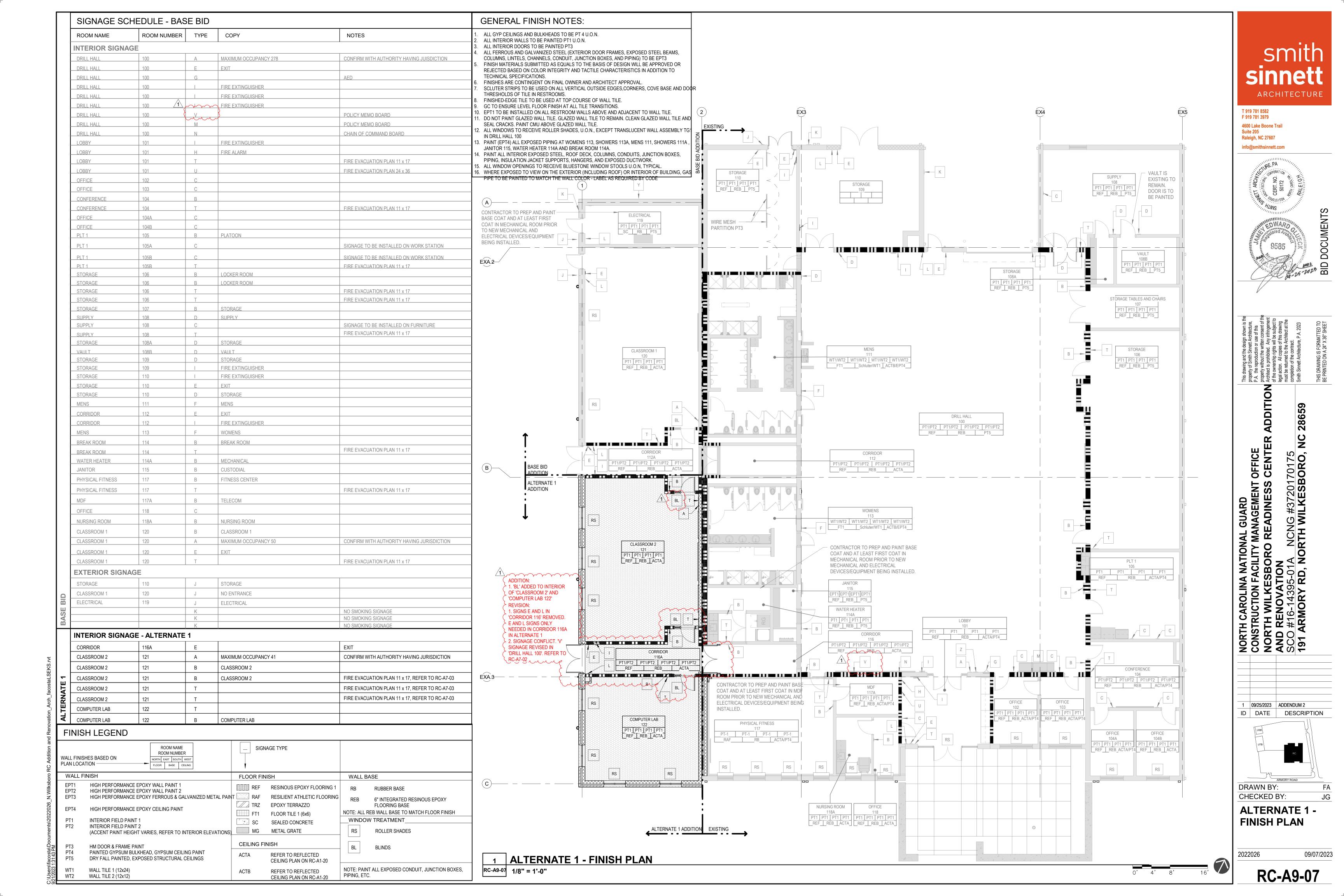
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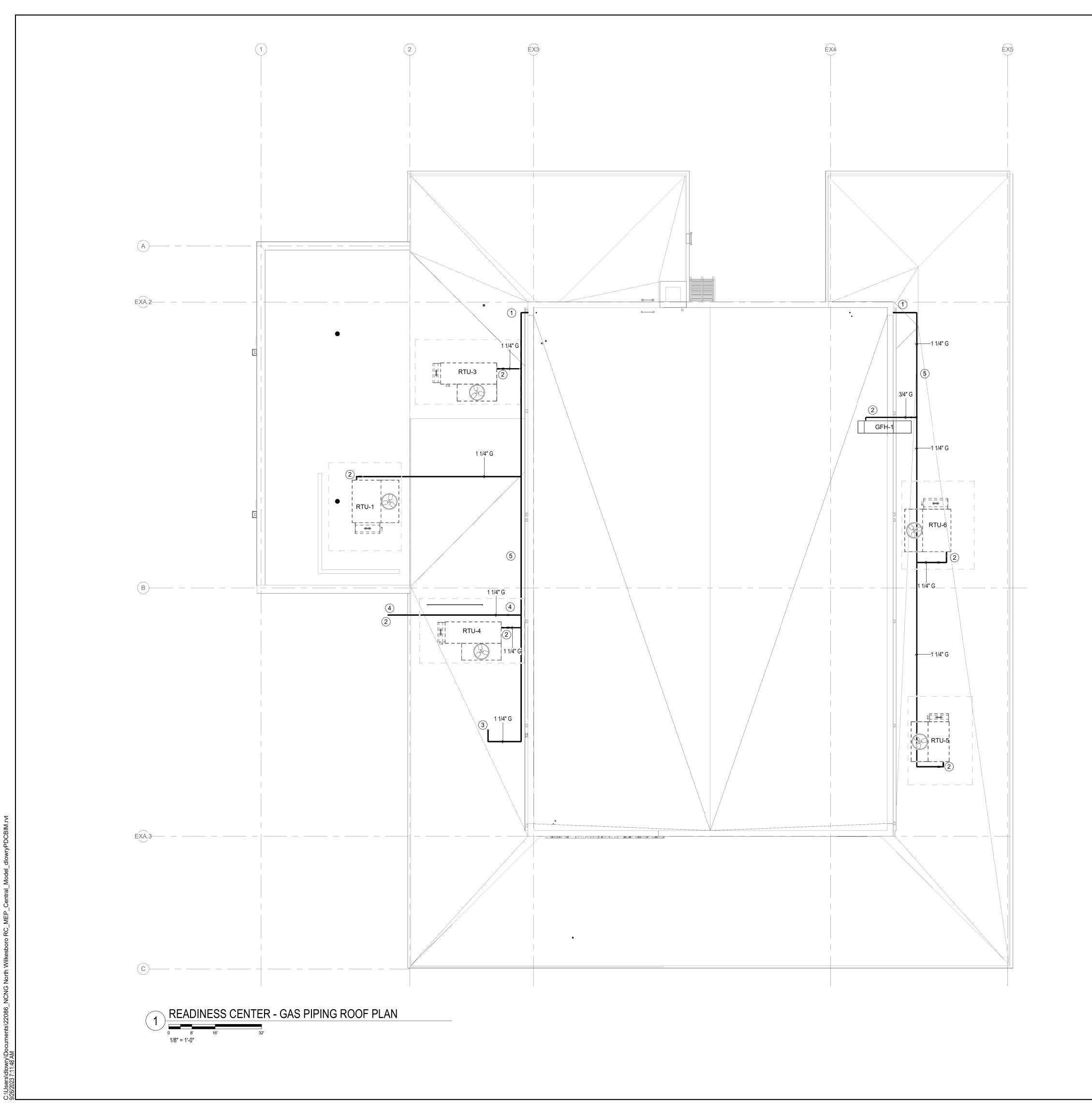
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**TYPES** 

RC-A7-02





# **WALL RATINGS LEGEND**

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2 HR RATED WALL

1 HR RATED WALL

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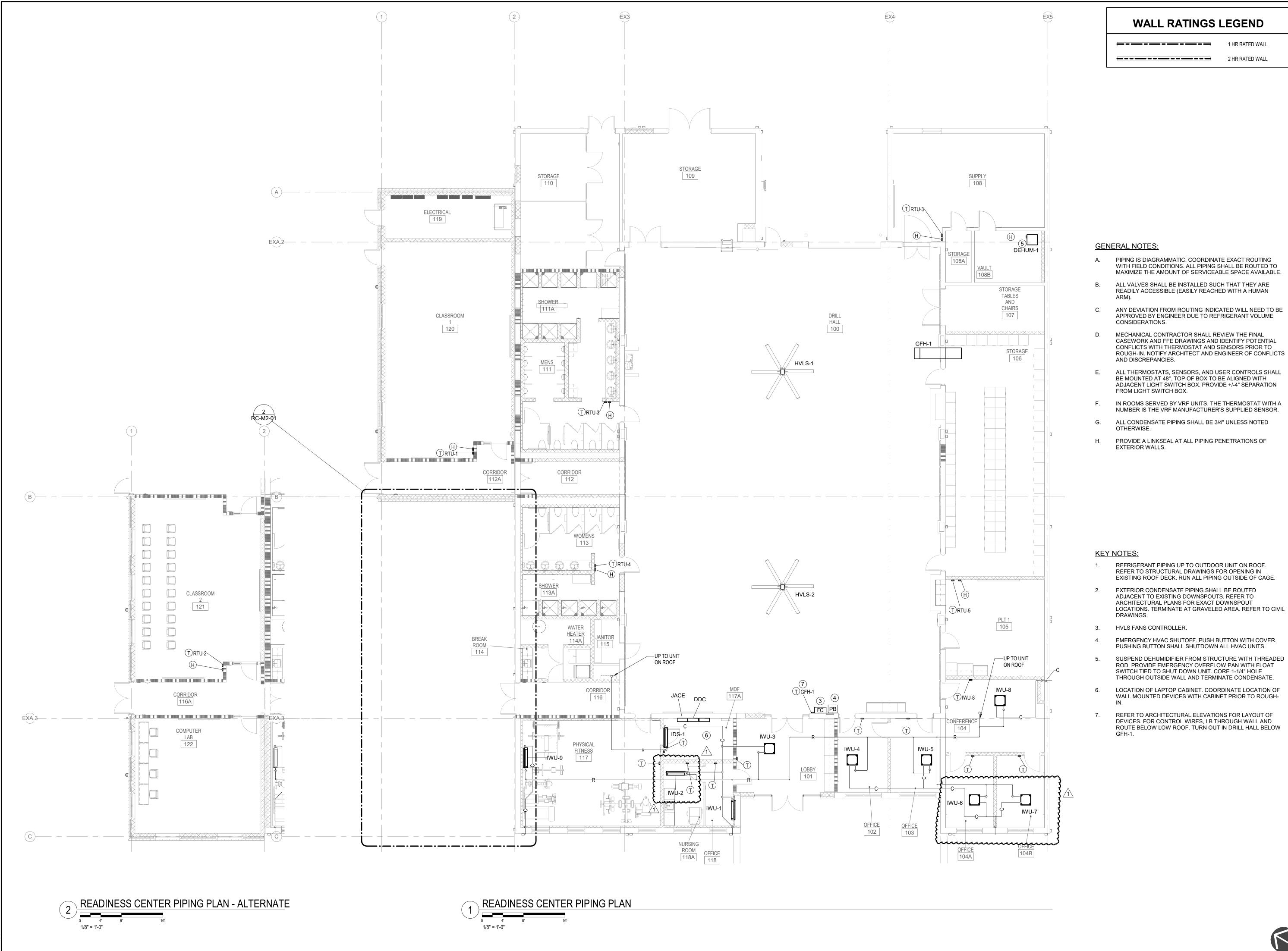
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**READINESS CENTER - GAS PIPING ROOF PLAN** 

07 SEPT 2023 RC-P1-03

# KEYNOTES:

- GAS PIPING ROUTED THROUGH WALL FROM INTERIOR. GAS PIPING TO BE ROUTED ON ROOF TO HVAC EQUIPMENT AS SHOWN. (SEE DETAIL 8 G-P1-01 FOR SUPPORT OF GAS PIPING.)
- 2. PROVIDE NEW DRIP LEG, GAS SHUT-OFF VALVE, AND GAS REGULATOR WHERE NOTED.
- CONTRACTOR tTO ROUTE GAS PIPING DN. THRU ROOF AND TO WATER HEATER SYSTEM BELOW.
- 4. PIPING TO BE INSTALLED ONLY IF ALTERNATE 1 IS TAKEN. THIS PIPING WILL BE ROUTED TO RTU-2.
- 5. GAS PIPING TO BE PAINTED AND LABELED AS PER CODE.



# WALL RATINGS LEGEND

\_----

1 HR RATED WALL

2 HR RATED WALL

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09/25/2023

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ARCHITECTURE

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- REFRIGERANT PIPING UP TO OUTDOOR UNIT ON ROOF. REFER TO STRUCTURAL DRAWINGS FOR OPENING IN EXISTING ROOF DECK. RUN ALL PIPING OUTSIDE OF CAGE.
- EXTERIOR CONDENSATE PIPING SHALL BE ROUTED ADJACENT TO EXISTING DOWNSPOUTS. REFER TO ARCHITECTURAL PLANS FOR EXACT DOWNSPOUT LOCATIONS. TERMINATE AT GRAVELED AREA. REFER TO CIVIL
- 3. HVLS FANS CONTROLLER.
- EMERGENCY HVAC SHUTOFF. PUSH BUTTON WITH COVER. PUSHING BUTTON SHALL SHUTDOWN ALL HVAC UNITS.
- SUSPEND DEHUMIDIFIER FROM STRUCTURE WITH THREADED ROD. PROVIDE EMERGENCY OVERFLOW PAN WITH FLOAT SWITCH TIED TO SHUT DOWN UNIT. CORE 1-1/4" HOLE THROUGH OUTSIDE WALL AND TERMINATE CONDENSATE.
- LOCATION OF LAPTOP CABINET. COORDINATE LOCATION OF WALL MOUNTED DEVICES WITH CABINET PRIOR TO ROUGH-
- REFER TO ARCHITECTURAL ELEVATIONS FOR LAYOUT OF DEVICES. FOR CONTROL WIRES, LB THROUGH WALL AND ROUTE BELOW LOW ROOF. TURN OUT IN DRILL HALL BELOW

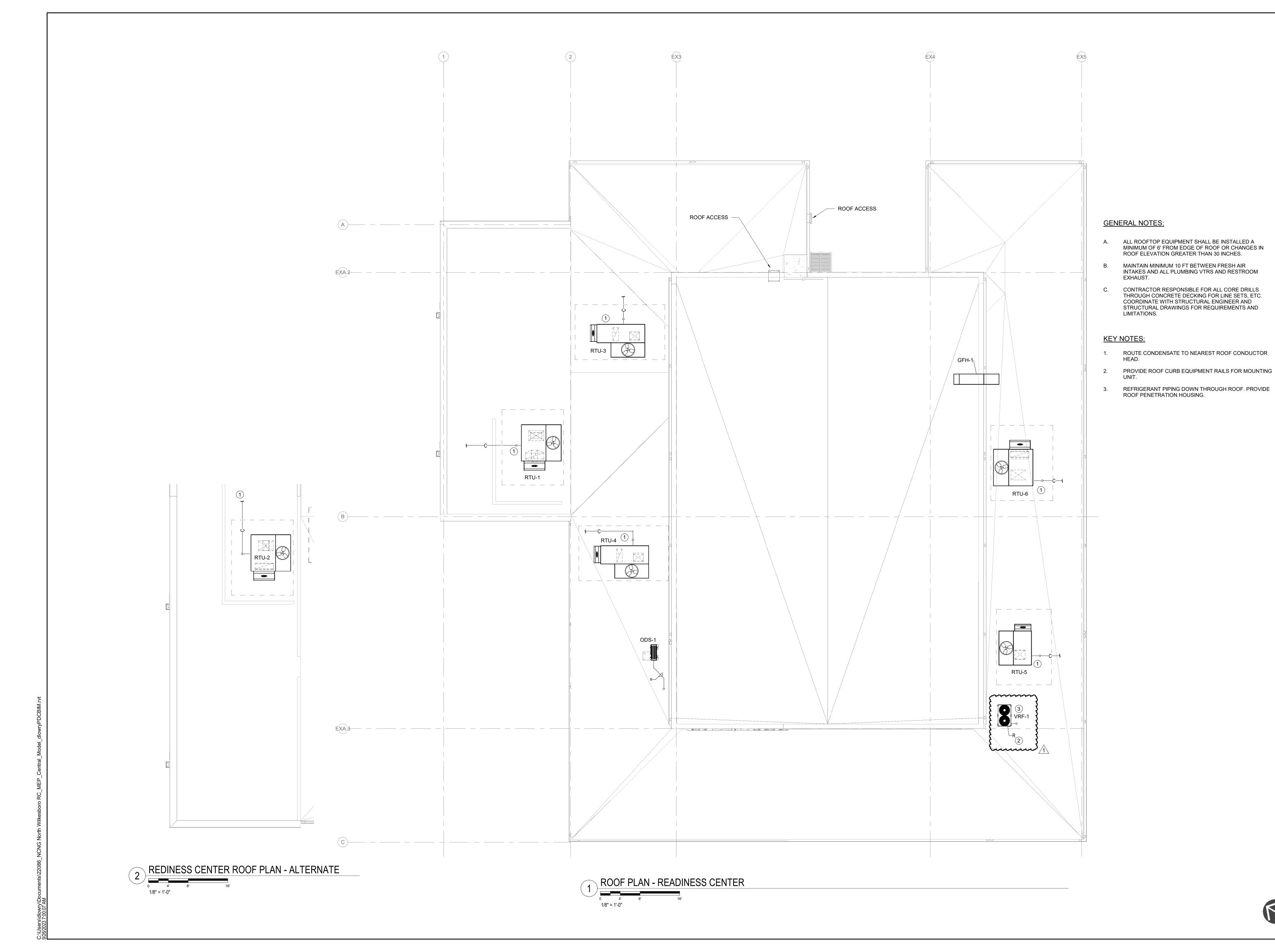
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1 09-26-2023 Addendum 2

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**READINESS CENTER PIPING FLOOR PLAN** 

07 SEPT 2023 RC-M2-01





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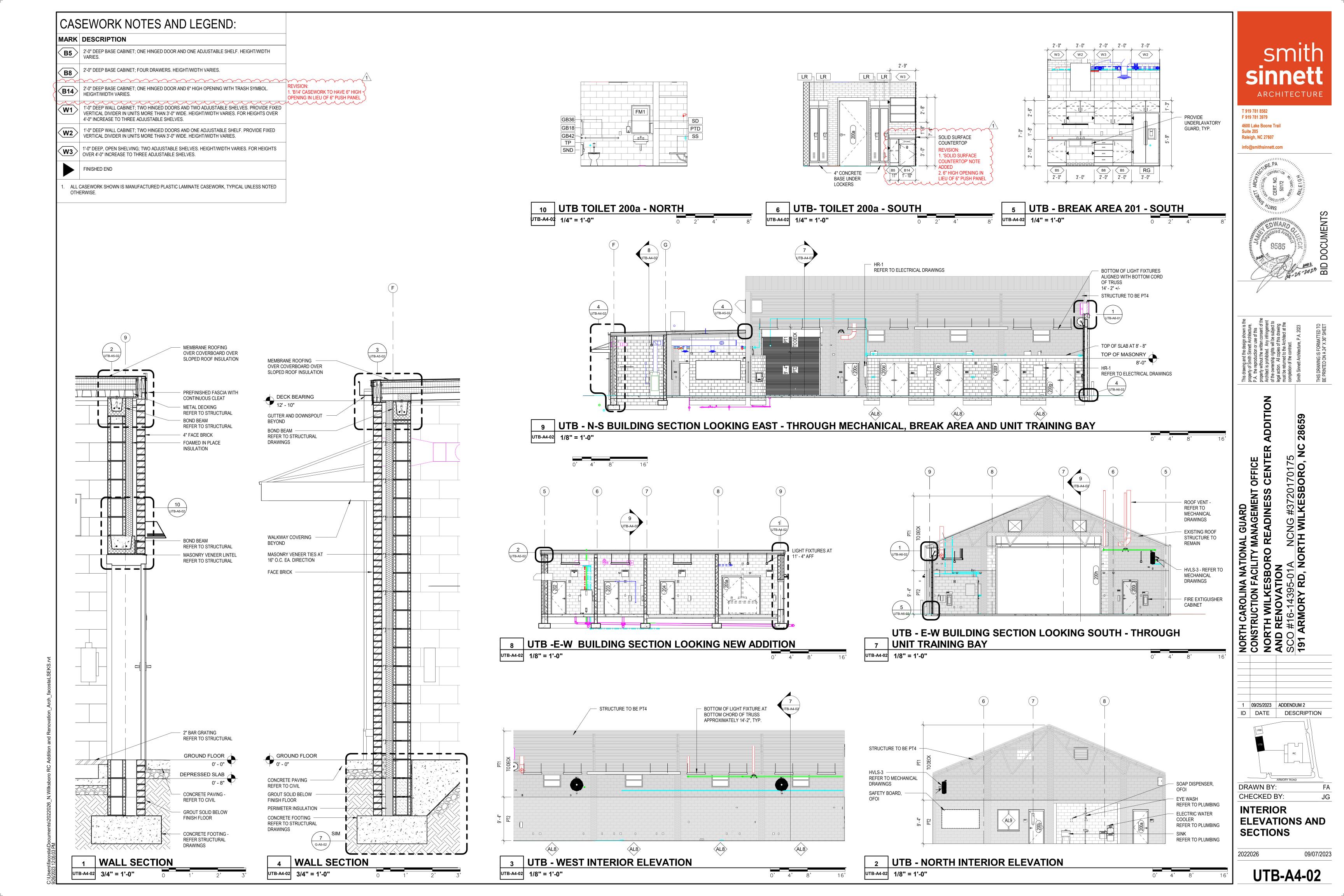
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**READINESS CENTER ROOF PLAN** 

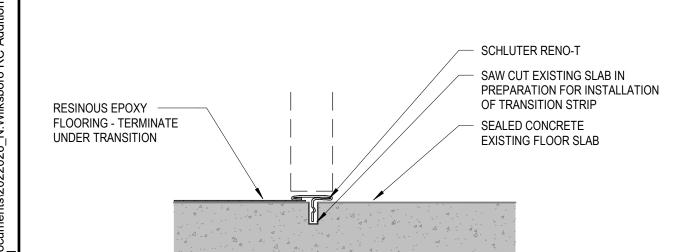
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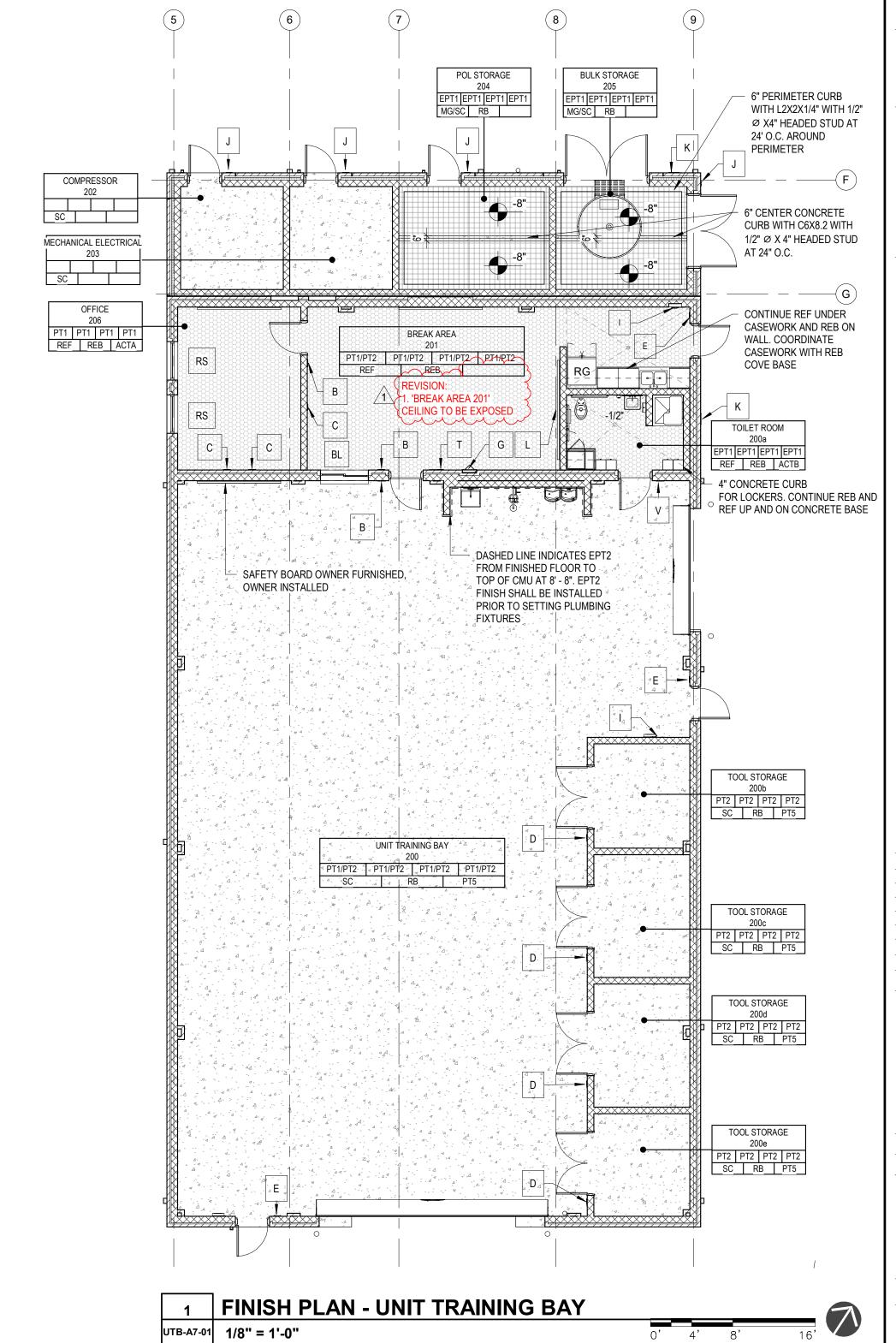
| SIGNAGE SCHE                                |  |                |               |             |  |          |  |
|---|--|----------------|---------------|-------------|--|----------|--|
| ROOM NAME                                   | ROOM NUMBER  | TYPE           | COPY          |             |  | NOT      | ES   |
| INTERIOR SIGNAGE                            |  |                |               |             |  |          |  |
| UNIT TRAINING BAY                           | 200  | E              | EXIT          |             |  |          |  |
| UNIT TRAINING BAY                           | 200  | E              | EXIT          |             |  |          |  |
| UNIT TRAINING BAY                           | 200  | [              | FIRE EXTIN    | CUICUED     |  |          |  |
|   |  |                | FIRE EXTIN    | GUISHER     |  | 455      |  |
| UNIT TRAINING BAY UNIT TRAINING BAY         | 200  | G<br>B         | OFFICE        |             |  | AED      |  |
| TOILET ROOM                                 | 200A   | V              | LATRINE       |             |  |          |  |
|   | 200A   | D              | STORAGE F     | 2004        |  |          |  |
| TOOL STORAGE TOOL STORAGE                   | 200C   | D              | STORAGE F     |             |  |          |  |
| TOOL STORAGE                                | 200C   | D              | STORAGE F     |             |  |          |  |
| TOOL STORAGE                                | 200D   | D              | STORAGE F     |             |  |          |  |
| BREAK AREA                                  | 201  | В              | MAINTENAN     |             |  |          |  |
|   | 201  | F              | INICIINIEINAI | NOL DAT     |  |          |  |
| BREAK AREA                                  |  |                | EIDE EVTIN    | CHICHED     |  |          |  |
| BREAK AREA<br>BREAK AREA                    | 201  | т              | FIRE EXTIN    | GUIONEK     |  | EIDE EV  | /ACUATION PLAN 11 x 17   |
| BREAK AREA                                  | 201  | N N            |               |             |  |          | MEMO BOARD   |
| BREAK AREA                                  | 201A   | C              |               |             |  | 92A DES  |  |
| OFFICE                                      | 206  | В              |               |             |  | JZA DEC  | JIV.   |
| OFFICE                                      | 206A   | С              |               |             |  | CICNIAC  | SE TO BE MOUNTED ON FURNITURE. REFER TO UTB-A9-04              |
| OFFICE                                      | 206B   | С              |               |             |  |          | SE TO BE MOUNTED ON FURNITURE. REFER TO UTB-A9-04              |
| EXTERIOR SIGNAGE                            | 1  |                |               |             |  | SIGNAG   | E TO BE MODIVIED ON FORMITORE. REFER TO 01B-A3-04              |
| COMPRESSOR                                  | 202  | J              |               |             |  |          |  |
| MECHANICAL/ELECTRICAL                       | 203  | 1              |               |             |  |          |  |
| POL STORAGE                                 | 203  | J              |               |             |  |          |  |
|   | 204  | J              |               |             |  |          |  |
| BULK STORAGE                                | 205  |                |               |             |  | 110 0140 | NAME OF THE PROPERTY OF  |
|   |  | K              |               |             |  |          | OKING SIGNAGE  |
|   |  | K              |               |             |  | NO SMC   | OKING SIGNAGE  |
| FINISH LEGEND                               | )  |                |               |             |  |          |  |
|   | ROOM   | NAME           |               | _ SIGNA     | AGE TYPE                                       |          |  |
| WALL FINISHES BASED ON                      | ROOM N   |                |               |             | 102 111 2                                      |          |  |
| PLAN LOCATION —                             | _ — —  | SOUTH WEST     |               |             |  |          |  |
| WALL FINIOLI                                |  |                |               | <u>'</u>    |  |          |  |
| WALL FINISH                                 |  |                |               | FLOOR FINIS | SH   |          | WALL BASE  |
| EPT2 HIGH PERFORMA                          | ANCE EPOXY WALL PAIN ANCE EPOXY WALL PAIN                | T 2            | ACTAL DAINT   | REF         | RESINOUS EPOXY FLOORING                        |          | RB RUBBER BASE   |
| EPT3 HIGH PERFORMA                          | ANCE EPOXY FERROUS                                       | x GALVANIZED I | VIETAL PAINT  | RAF<br>TRZ  | RESILIENT ATHLETIC FLOOR                       | KING     | REB 4" INTEGRATED RESINOUS EPOXY                               |
| EPT4 HIGH PERFORMA                          | ANCE EPOXY CEILING PA                                    | AINT           |               |             | EPOXY TERRAZZO                                 | ١,       | FLOORING BASE<br>NOTE: ALL REB WALL BASE TO MATCH FLOOR FINISH |
| PT1 INTERIOR FIELD                          | PAINT 1  |                |               | FT1         | FLOOR TILE 1 (6x6)                             | <u> </u> |  |
| PT2 INTERIOR FIELD                          | PAINT 2  |                |               | SC SC       | SEALED CONCRETE                                |          | WINDOW TREATMENT   |
| (ACCENT PAINT F                             | HEIGHT VARIES, REFER                                     | TO INTERIOR EL | EVATIONS)     | MG          | METAL GRATE                                    |          | DC DOLLED CHADEC   |
| PT3 HM DOOR & FRAI                          | ME DAINT   |                |               | CEILING FIN | IIOH   |          | RS ROLLER SHADES   |
| PT4 PAINTED GYPSUI                          | ME PAINT<br>M BULKHEAD, GYPSUM (<br>ED, EXPOSED STRUCTUI |                |               | ACTA        | REFER TO REFLECTED<br>CEILING PLAN ON RC-A1-20 |          | BL BLINDS  |
| WT1 WALL TILE 1 (12x2 WT2 WALL TILE 2 (12x- |  |                |               | ACTB        | REFER TO REFLECTED<br>CEILING PLAN ON RC-A1-20 |          | NOTE: PAINT ALL EXPOSED CONDUIT, JUNCTION BOXES, PIPING, ETC.  |
| GENERAL FINIS                               | SH NOTES:  |                |               | 1           |  |          |  |
|   |  |                |               |             | -  |          |  |

- ALL GYP CEILINGS AND BULKHEADS TO BE PT 4 U.O.N. ALL INTERIOR WALLS TO BE PAINTED PT1 U.O.N.
- ALL EXTERIOR FERROUS AND GALVANIZED STEEL (EXTERIOR DOOR FRAMES, EXPOSED STEEL BEAMS, COLUMNS, LINTELS, CHANNELS, CONDUIT, JUNCTION BOXES, AND PIPING) TO BE EPT3
- FINISH MATERIALS SUBMITTED AS EQUALS TO THE BASIS OF DESIGN WILL BE APPROVED OR REJECTED BASED ON COLOR INTEGRITY AND TACTILE CHARACTERISTICS IN ADDITION TO TECHNICAL SPECIFICATIONS.
- COLOR SELECTIONS WILL NOT BE MADE UNTIL ALL COLOR RELATED PRODUCTS AND MATERIALS ARE SUBMITTED.
- METAL TRANSITIONS STRIPS TO BE USED ON ALL VERTICAL OUTSIDE EDGES & CORNERS OF WALL TILE.
- FINISHED-EDGE TILE TO BE USED AT TOP COURSE OF WALL TILE.
   GC TO ENSURE LEVEL FLOOR FINISH AT ALL TILE TRANSITIONS.
   WALL TILE TO BE INSTALLED ON RESTROOM WALLS UP TO CEILING.
- 11. ALL WINDOWS TO RECEIVE ROLLER SHADES, U.O.N.
- 12. PAINT ALL INTERIOR EXPOSED STEEL, ROOF DECK, COLUMNS, CONDUITS, JUNCTION BOXES, PIPING, INSULATION JACKET SUPPORTS, HANGERS, AND EXPOSED DUCTWORK. MATCH THE ADJACENT SURFACE PAINT COLOR.



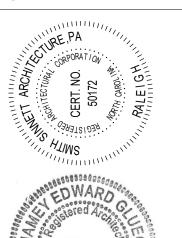
2 UTBT6 - EPOXY TO SEALED CONCRETE

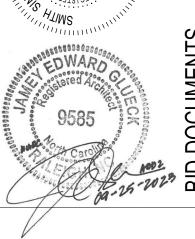
UTB-A7-01 3" = 1'-0"





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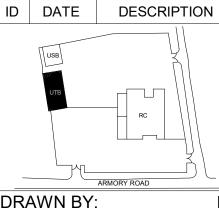


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1 09/25/2023 ADDENDUM 2



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**FINISH PLAN** 

09/07/2023

UTB-A7-01

| SYMBOL | MOUNTING                  | VOLT | ACCEPTABLE MANUFACTURERS                   | MANUFACTURER AND MODEL NO.   | SBORO FIXTURE SCHEDULE  DESCRIPTION  | LAMP                                    | WATTS   |
|--------|---------------------------|------|--|--|--|---|---------|
| A      | RECESSED<br>(GRID)        | 120  | WILLIAMS<br>LITHONIA                       | COLUMBIA<br>LJT24-40HL-G-FS-A12125-EDD-U                                   | 24" X 48"X 3-1/8" RECESSED LED LUMINAIRE, DLC CERTIFIED, DIE FORMED COLD ROLLED STEEL, END CAPS, LEAK PROTECTION ON ALL FOUR SIDES, 60,000HR LED AT L80, 80CRI, DIMMABLE TO DARK   | LED 4000K<br>5441 LUMEN                 | 45      |
| AE     | RECESSED (GRID)           | 120  | SIGNIFY WILLIAMS LITHONIA                  | COLUMBIA LJT24-40HL-G-FS-A12125-EDD-U-ELL14                                | SAME AS TYPE A WITH A 1400 LUMEN EMERGENCY BATTERY BACKUP  | LED 4000K<br>5441 LUMEN                 | 45      |
| A2     | RECESSED (GRID)           | 120  | SIGNIFY WILLIAMS LITHONIA                  | COLUMBIA LJT24-40ML-G-FS-A12125-EDD-U                                      | 24" X 48"X 3-1/8" RECESSED LED LUMINAIRE, DLC CERTIFIED, DIE FORMED COLD ROLLED STEEL, END CAPS, LEAK PROTECTION ON ALL FOUR SIDES, 60,000HR LED AT L80, 80CRI, DIMMABLE TO DARK   | LED 4000K<br>4268 LUMEN                 | 38      |
| A2E    | RECESSED (GRID)           | 120  | SIGNIFY WILLIAMS LITHONIA                  | COLUMBIA LJT24-40ML-G-FS-A12125-EDD-U-ELL14                                | SAME AS TYPE A2 WITH A 1400 LUMEN EMERGENCY BATTERY BACKUP   | LED 4000K<br>4268 LUMEN                 | 38      |
| AV     | RECESSED (GRID)           | 120  | SIGNIFY WILLIAMS LITHONIA                  | COLUMBIA<br>LCAT24-40-HL-G-EDD-U   | 24" X 48"X 4" RECESSED LED LUMINAIRE, DIRECT/INDIRECT, DLC CERTIFIED, HIGH EFFICIENCY, ACRYLIC CENTER LENS, MATTE WHITE REFLECTOR, DIE FORMED STEEL, END CAPS, INDIRECT ILLUMINATION,  | LED 4000K<br>5612 LUMEN                 | 44      |
| AVE    | RECESSED (GRID)           | 120  | SIGNIFY WILLIAMS LITHONIA                  | COLUMBIA LCAT24-40-HL-G-EDD-U-ELL14  | SAME AS TYPE AV WITH A 1400 LUMEN EMERGENCY BATTERY BACKUP   | LED 4000K<br>5612 LUMEN                 | 44      |
| С      | SURFACE                   | 120  | SIGNIFY WILLIAMS LITHONIA                  | HE WILLIAMS<br>39W-4-L52/840-A-UNV-DIM-AC/D48-DRV-                         | 4'-0", 12" WIDTH, SURFACE OR PENDANT MOUNT WRAP, DIFFUSER, FLAT ENDCAP, PROVIDE AIRCRAFT CABLING AND ASSOCIATED MOUNTING HARDWARE, DIMMING DRIVER, POWER CORD, COLOR SELECTED  | LED 4000K<br>5206 LUMEN                 | 38      |
| CE     | SURFACE                   | 120  | SIGNIFY WILLIAMS LITHONIA                  | S4838D/X  HE WILLIAMS 39W-4-L52/840-A-UNV-DIM-EM/10WLP-SWS-                | BY ARCHITECT, DAMP LOCATION LISTED, SUSPENSION LEN. SELECTED BY ARCHITECT  SAME AS TYPE C WITH EMERGENCY BATTERY BACKUP  | LED 4000K<br>5206 LUMEN                 | 38      |
| C2     | SUSPENDED                 | 120  | SIGNIFY WILLIAMS LITHONIA                  | XXUNV  HE WILLIAMS 75S-4-L65/840-RA-75-DIM-UNV-DIM-                        | 4'-0", SURFACE OR PENDANT MOUNT WRAP, DIFFUSER, FLAT ENDCAP, PROVIDE AIR CRAFT CABLE AND ASSOCIATED MOUNTING HARDWARE, DIMMING DRIVER, POWER CORD, COLOR SELECTED BY ARCHITECT. DAMP LOCATION LISTED, PROVIDED WITH WIREGUARD, SUSPENSION LEN. SELECTED BY | LED 4000K<br>6500 LUMEN                 | 42      |
| C2E    | SUSPENDED                 | 120  | SIGNIFY WILLIAMS LITHONIA                  | WG-75ACF/D48-S4838D/X  HE WILLIAMS  75S-4-L65/840-DIM-UNV-DIM-EM/10WLP-    | ARCHITECT, DAMP LOCATION LISTED, PROVIDED WITH WIREGUARD, SUSPENSION LEN. SELECTED BY ARCHITECT.  SAME AS TYPE C2 WITH EMERGENCY BATTERY BACKUP  | LED 4000K                               | 42      |
| D      | RECESSED                  | 120  | SIGNIFY SIGNIFY COLUMBIA                   | WG-75ACF/D48  HE WILLIAMS  4PR-TL-L15/840 DIM UNV-LM-OF-CS                 | 4.5" LED DOWNLIGHT WITH TRIMIOCK REFLECTOR, SPUN HOUSING WITH FORGED ALUMINUM HEAT SINK, NEW CONSTRUCTION (N) OR REMODEL KIT (R)-SELECT BASED ON LOCATION, WET LOCATION (WET/CC)   | LED 4000K                               | 16.7    |
| E      | RECESSED                  | 120  | LITHONIA  SIGNIFY LITHONIA                 | N/R/WET/CC LITON LIGHTING  | FOR OUTDOOR APLICATIONS, INCLUDE F1, BA1, OR CA1 MOUNTING HARDWARE APPLICABLE TO THE LOCATION  6" SUPER LOW GLARE LED DOWNLIGHT, WET LOCATION LISTED, 0-10V DIMMING DRIVER, ARCHITECT TO SELECT FINISH - DO NOT EXCEED 3-7/16" HEIGHT                      | 1,636 LUMEN<br>LED 4000K<br>1,000 LUMEN | 10.7    |
| EE     | RECESSED                  | 120  | SIGNIFY<br>LITHONIA                        | LITON LIGHTING CH6SHL-CH6SHL10UE-D10EM-XX-TS40-                            | SAME AS TYPE E WITH 10-WATT EMERGENCY BATTERY BACKUP   | LED 4000K                               | 10      |
| F      | SUSPENDED                 | 120  | WILLIAMS<br>LITHONIA                       | LENS60  HE WILLIAMS 80R-4-L72-8-40-WG-80R11-DIM-UNV CHAIN                  | LED CHAIN HUNG INDUSTRIAL FIXTURE, ROUND LENS, WITH 11-GAUGE WHITE WIRE GUARD, 22 GAUGE  | LED 4000K                               | 55      |
| FE     | SUSPENDED                 | 120  | SIGNIFY WILLIAMS LITHONIA                  | LENGTH AS NEEDED  HE WILLIAMS  80R-4-I 72-8-40-FM/10W-WG-80R11-DIM-UNV     | COLD ROLLED STEEL, 80CRI, NON-DIMMING DRIVER, PROVIDE HANGERS AND CHAIN  SAME AS TYPE F WITH EMERGENCY BATTERY BACKUP  | 7,291 LUMENS<br>LED 4000K               | 55      |
| FP     | ABOVE GROUND              | 120  | SIGNIFY  GARDCO SIGNIFY                    | CHAIN LENGTH AS NEEDED  KIM KFL2-24L-45-4K8-N-UNV-Y-CC-CD-F-HS-            | LED FLAG POLE LIGHT, SET BACK DISTANCE FOR FIXTURE PLACEMENT IS 1/3-1/2 THE SIZE OF THE FLAG. GLARE SHIELD, COLOR SELECTED BY ARCHITECT, MOUNT ON ROUND 12" SONOTUBE BASE, 18" DEEP,   | LED 4000K                               | 45      |
| GE     | WALL MOUNT                | 120  | LITHONIA  GARDCO DECO                      | JB1<br>LITHONIA  | PROTRUDE 4" ÅBOVE GRADE, NOTE: FLAG POLE HEIGHT - 30FT, WET LOCATION LISTED  ARCHITECTECTURAL WALL SCONCE, WALL MOUNTED, FORWARD THROW, 80CRI, WET LOCATION  | LED 4000K                               | 30      |
|        | YOKE WITH                 |      | TRACELITE  PHILLIPS                        | WSTLED-P2-40K-VF-MVOLT-PBBW-E20WC  KIM  KFL3-80-175-4K8-WF-120-K-CC-SF-WM2 | LISTED, WITH EMERGENCY BATTERY BACKUP  ARCHITECTECTURAL FLOOD LIGHT, YOKE AND PROVIDE WITH WIDE AIMING RANGE / SWIVEL  | 3469 LUMEN  LED 4000K                   |         |
| G2     | SWIVEL                    | 120  | AAL  | RFL3-80-173-4R8-WF-120-R-CC-SF-WMZ   | MOUNTING, WIDE FLOOD, 80CRI, ADJUSTABLE, WET LOCATION LISTED  NOT USED   | 20,913                                  | 175<br> |
| J<br>  |                           |      |  |  | NOT USED   |   |         |
| JE<br> |                           |      |  |  | NOT USED   |   |         |
| K<br>  |                           |      |  |  | NOT USED   |   |         |
| KE     |                           |      |  |  | TRECESSED MOUNTED CANOPY PIXTURE, LOW GLARE, DLC COMPLIANT CERTIFICATION, CRY 1, WEY-  | مسسس                                    | ·····   |
| LE     | RECESSED                  | 120  | CREE<br>LUMINAIRE                          | BARRON-TRACELITE<br>SCP-R-20-LG-VS-4K-CC                                   | LABEL LISTED, PREMIUM METALLIC COLORS. PROVIDE 250 WATT EMERGENCY LIGHTING INVERTER FOR ALL TYPE LE FIXTURES. REFER TO PLANS.  | 2352 LUMENS                             | 20      |
| М      | SURFACE<br>SUSPEND        | 120  | SIGNIFY<br>LITHONIA                        | COLUMBIA<br>PEL4-40MH-FP-W-ED-U  | LED PERFORMANCE HIGH BAY 2 MODULE FIXTURE, 48" X 15"WIDE DISTRIBUTION, WITH SURFACE MOUNT KIT AND CAST IRON HUB WITH MOUNTING 3/4"C AND SAFETY CABLES  | LED 4000K<br>24,000 LUMEN               | 154     |
| ME     | SURFACE<br>SUSPEND        | 120  | SIGNIFY<br>LITHONIA                        | COLUMBIA PEL4-40MH-FP-W-ED-U-ELL40-LHVQM10                                 | SAME AS TYPE M WITH (4256 LUMEN) EMERGENCY BATTERY BACKUP  LINEAR LIGHT FOR WALL SIGN LIGHTING, ONE PIECE ALUMINUM WITH DIE CAST ALUMINUM ENDS, SEMI   | LED 4000K<br>24,000 LUMEN               | 154     |
| MS     | ABOVE GROUND              | 120  | GARDCO<br>SIGNIFY<br>LITHONIA              | KIM<br>4336P70-24L-4KUV-BL   | DIFFUSED FLAT ACRYLIC, FULLY ACRYLIC LENS, WET LOCATION, -40 DEGREES C DRIVER-FIXTURE IS SPECIFIED BLACK-CONFIRM WITH ARCHITECT, MOUNT ON ROUND 12" SONOTUBE BASE, 18" DEEP, PROTRUDE 4" ABOVE GRADE.  | LED 4000K<br>3,450 LUMEN                | 56      |
| MT     | ABOVE GROUND              | 120  | GARDCO<br>SIGNIFY<br>LITHONIA              | KIM<br>EL218-F-5-8L-4K-UV-BL   | GRADE MOUNTED LED MICRO FLOOD LIGHT, ALUMINUM WITH DIE CAST ALUMINUM ENDS, FULLY ACRYLIC LENS, WET LOCATION, -40 DEGREES C DRIVER-FIXTURE IS SPECIFIED BLACK-CONFIRM WITH ARCHITECT, 18" DEEP, PROTRUDE 4" ABOVE GRADE.                                    | LED 4000K<br>1,389 LUMEN                | 16      |
| P8     | PENDANT<br>AIRCRAFT CABLE | 120  | LEDALITE<br>LITECONTROL<br>HE WILLIAMS     | FINELITE S16-LED-ID-DCO-96"-3E-S-<br>V-840-120V-SC-FA-FE-C4                | 8FT LED PENDANT, DIRECT/INDIRECT, AIRCRAFT CABLE SUSPENSION, 80CRI, SINGLE CIRCUIT, 0-10V-1% DIMMABLE  | LED 4000K<br>8052 LUMEN                 | 68      |
| UC     | SURFACE                   | 120  | LITHONIA<br>ALKCO<br>PHILLIPS              | HE WILLIAMS 1SF-4-L24-8-30-AF12125WRS-<br>DIM-120                          | 4FT UNDERCOUNTER LED FIXTURE, PROVIDE LENGTH NEEDED AS SHOWN ON PLANS, 0-10V DIMMABLE, ROCKER SWITCH   | LED 3000K<br>2435 LUMENS                | 21      |
| P20    | PENDANT<br>AIRCRAFT CABLE | 120  | LEDALITE<br>LITECONTROL<br>HE WILLIAMS     | FINELITE S16-LED-ID-DCO-240"-3E-S-<br>V-840-20U80D-120V-SC-FA-FE-C4        | 20FT LED PENDANT, DIRECT/INDIRECT, AIRCRAFT CABLE SUSPENSION, 80CRI, SINGLE CIRCUIT, 0-10V-1% DIMMABLE   | LED 4000K<br>20130 LUMEN                | 168     |
| S      | RECESSED                  | 120  | LITHONIA<br>WILLIAMS<br>SIGNIFY            | PRESCOLITE<br>LTR-6RD-H-SL-15L-LTR-6RD-T-SH-SL-40K-8-<br>WT-AML-AM         | 6" LED SHOWER FIXTURE, 80CRI, IP66 WET LABEL LISTED, NON CONDUCTIVE FRONT TRIM, TEXTURED LENS  | LED 4000K 960<br>LUMEN                  | 19      |
| X1     | UNIVERSAL                 | 120  | SIGNIFY<br>LITHONIA<br>CHLORIDE<br>SIGNIFY | EMERGILITE AA-PXN-1-R  | SINGLE FACE LED EXIT SIGN, BRUSHED ALUMINUM BODY AND FACE, 90 MINUTE MINIMUM NICAD BATTERY BACKUP, SELF POWERED ADVANCE DIAGNOSTICS, RED LEGEND COLOR, UL924 LISTED  | LED                                     | 5       |
| X2     | UNIVERSAL                 | 120  | SIGNIFY<br>LITHONIA<br>CHLORIDE            | EMERGILITE AA-PXN-2-R  | SINGLE FACE LED EXIT SIGN, BRUSHED ALUMINUM BODY AND FACE, 90 MINUTE MINIMUM NICAD BATTERY BACKUP, SELF POWERED ADVANCE DIAGNOSTICS, RED LEGEND COLOR, UL924 LISTED  | LED                                     | 5       |

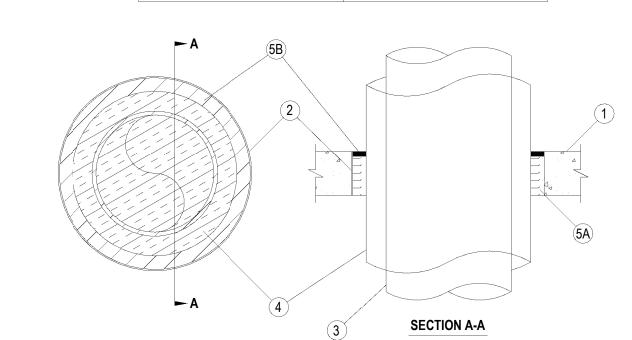
\*\*ALL OUTDOOR LIGHT FIXTURES ARE TO BE RATED FOR 10KA SURGE PROTECTION MINIMUM. \*\*\*ARCHITECT TO APPROVE ALL FIXTURE COLORS AND FINISHES.

System No. C-AJ-5091

ANSI/UL1479 (ASTM E814) CAN/ULC S115 F Rating — 2 Hr F Rating — 2 Hr T Ratings — 0 and 1 Hr (See Items 2 FT Ratings — 0 and 1 Hr (See Items 2 L Rating At Ambient — 4 CFM/sq ft FH Rating — 2 Hr L Rating At 400 F — Less Than 1 FTH Ratings — 0 and 1 Hr (See Items

> L Rating At Ambient —4 CFM/sq ft L Rating At 400 F —Less Than 1

CFM/sq ft



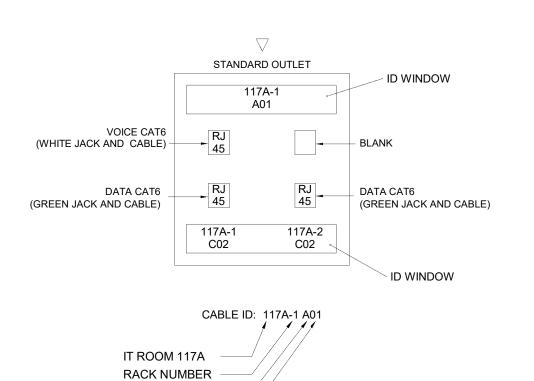
- 1. Floor or Wall Assembly Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified Concrete Blocks\*. Max diam of opening is 29 in. (737 mm).
- See Concrete Blocks (CAZT) category in the Fire Resistance directory for names of manufacturers. 2. Metallic Sleeve — (Optional) — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces or extending a max of 3 in. (76 mm) above floor or beyond both surfaces of wall. If the steel sleeve extends beyond the top surface of the floor or both surfaces of the wall, the T Rating of the firestop system is 0 hr. 2A. Sheet Metal Sleeve — (Optional) - Max 6 in. (152 mm) diam, min 26 ga galv steel provided with a 26 ga galv steel square flange spot welded to the sleeve at approximately mid- height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. (51 mm) larger than the sleeve diam. The sleeve is to be cast in place flush with bottom surface of floor and may extend a max of 1 in. (25 mm) above the top surface of the
- 2B. Sheet Metal Sleeve (Optional) Max 12 in. (305 mm) diam, min 24 ga galv steel provided with a 24 ga galv steel square flange spot welded to the sleeve at approximately mid- height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. (51 mm) larger than the sleeve diam. The sleeve is to be cast in place flush with bottom surface of floor and may extend a max of 1 in. (25 mm) above the top surface of the floor. 3. Through Penetrants — One metallic pipe or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or tubing may be used:
- B. Iron Pipe Nom 12 in. (305 mm) diam (or smaller) cast or ductile iron pipe. C. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

- D. Copper Tubing Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing. 4. Pipe Covering — Min 1/2 in. (13 mm) to max 2 in. (51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m³) glass fiber units
- jacketed on the outside with an all-service jacket. Longitudinal joints sealed with metal fasteners or factory-applied, self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space between the insulated pipe and the edge of the periphery of the opening shall be min 1/2 in. (13 mm) to max 12 in. (305 mm). When thickness of pipe covering is less than 2 in. (51 mm), the T Rating for the firestop system is 0 hr.
- See Pipe Equipment Covering Materials (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
- 4A. Pipe Covering (Not Shown) As an alternate to Item 4, max 2 in. (51 mm) thick cylindrical calcium silicate (min 14 pcf or 224 kg/m³) units sized to the outside diam of the pipe or tube may be used. Pipe insulation secured with stainless steel bands or min 18 AWG stainless steel wire spaced max 12 in. (305 mm) OC. The annular space shall be min 1/2 in. (13 mm) to max 12 in. (305 mm).
- 5. Firestop System The firestop system shall consist of the following: A. Packing Material — Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.
- B. Fill, Void or Cavity Material\* Sealant Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of
- HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC FS-One Sealant or FS-ONE MAX Intumescent Sealant \* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

# 2 HR BLOCK PENETERATION

NOT TO SCALE



**GENERAL NOTES:** 

- A. FACEPLATE SHALL BE STAINLESS STEEL.
- B. AT EACH NETWORK DROP LOCATION SHOWN ON PLANS PROVIDE (3) CAT-6 PLENUM RATED CABLES. (2) SHALL BE GREEN FOR DATA AND (1) SHALL BE WHITE FOR VOICE.
- C. LABELING SCHEME SHALL BE COORDINATED WITH NCNG PRIOR TO ANY LABELING.

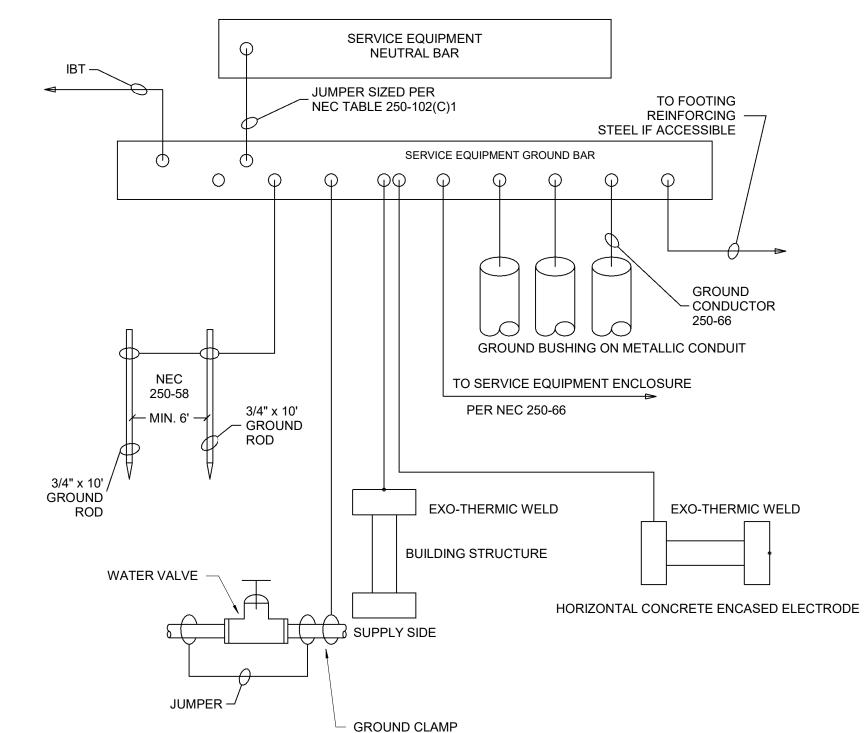
PATCH PANEL ID

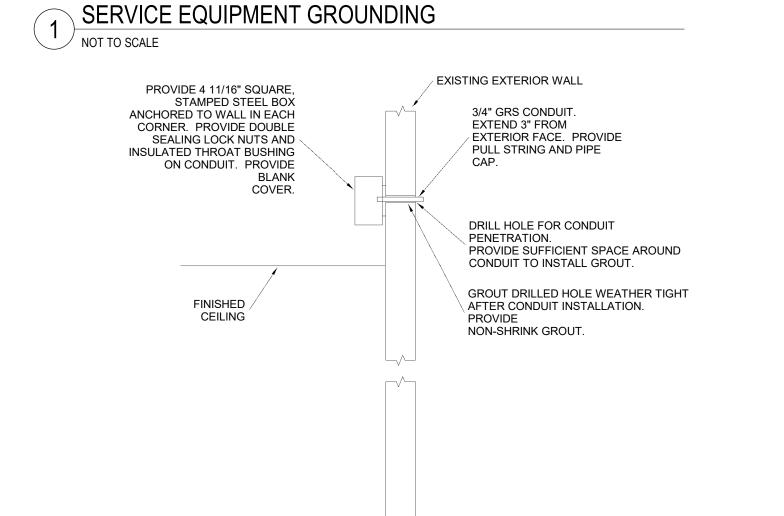
PORT NUMBER

- D. ALL TELECOM OUTLET BOXES MOUNTED ON STUDDED SHEET ROCK WALLS SHALL BE NEW SINGLE GANG OUTLET BOX MOUNTED +18" AFF WITH A 1" CONDUIT CONCEALED AND STUBBED ABOVE
- E. ALL TELECOM OUTLET BOXES MOUNTED ON MASONRY OR BLOCK WALLS SHALL BE NEW TWO GANG OUTLET BOX MOUNTED +18" AFF WITH A 1" CONDUIT AFFIXED TO WALL TO THE NEAREST ACCESSIBLE CEILING J-HOOK SYSTEM.
- F. ALL CAT-6 PLENUM RATED CABLING ROUTED ABOVE ACCESSIBLE CEILINGS SHALL BE ROUTED IN J-HOOK SUPPORTS MOUNTED NO MORE THAN 36" APART.
- G. ALL RF45 JACKS SHALL BE KEYSTONE STYLE, UNIVERSAL. COLOR SHALL BE GREEN FOR DATA/WAP AND WHITE FOR VOICE.
- H. ALL CAT-6 PLENUM RATED CABLES SHALL BE WIRED PER EIA/TIA 568C TO AN RJ45 CONFIGURED JACK (T568B PIN OUT) AND PLACED IN A SINGLE FACEPLATE WHEREVER POSSIBLE AT EACH END USER LOCATION.
- I. ALL PLENUM RATED VOICE AND DATA/WAP CAT-6 CABLES SHALL BE TERMINATED ON SEPARATE PATCH PANELS.
- J. ALL CABLING SHALL BE LABELED AND TESTED WITH TEST RESULTS FURNISHED TO THE NATIONAL GUARD FOR INSPECTION/VERIFICATION.

# **OUTLET FACEPLATE DIAGRAMS**

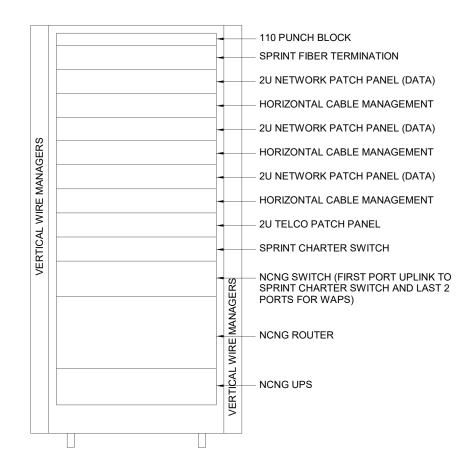






# CAMERA CONDUIT DIAGRAM

CAMERA NOT TO SCALE



PRIOR TO EQUIPMENT PURCHASE, COORDINATE WITH OWNER'S IT REPRESENTATIVE AND ENGINEER. NCNG WALL CABINET: CHATSWORTH CPI 72" HIGH WALL AND FLOOR SUPPORTED CUBE IT. PROVIDE WITH NCNG PREFERRED KEYPAD.

> TYPICAL TELECOM RACK **SECTION** <u>VIEW</u>

TELECOM RACK

**ADDITION** OFFIC CEN STH CAROLINA NATIONAL GUARD
ISTRUCTION FACILITY MANAGEMENT OF
RTH WILKESBORO READINESS CONTROLICES OF THE STATION

ARCHITECTURE

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PDC #22086

CHECKED BY: JTB **DETAILS, FIXTURE SCHEDULE** 

2022026 07 SEPT 2023

1 09-26-2023 Addendum 2

DESCRIPTION

JPT

ID DATE

DRAWN BY:

G-E2-03