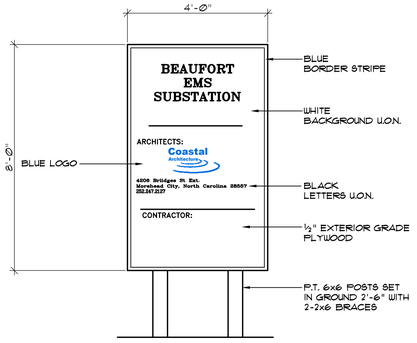
BEAUFORT EMS

STEEL TANK ROAD SUBSTATION

BEAUFORT, NORTH CAROLINA



1 / CS-1 PROJECT SIGN

NOT TO SCALE

NOTE: SUBMIT SHOP DRAWING FOR COORDINATION OF LETTER HEIGHTS SPECIFIC SIGN COLORS.

DRAWING LIST

CS-1	COVER SHEET
G-1	GENERAL DATA
G-2	LIFE SAFETY PLAN
G-3	UL DETAILS
G-3.1	UL DETAILS
C000	COVER SHEET
C001	NOTES & LEGEND
C100	EXISTING CONDITIONS
C200	SITE PLAN
C300	EROSION & SEDIMENT CONTROL PLAN (PHI)
C301	EROSION & SEDIMENT CONTROL PLAN (PHII)
C302	EROSTION & SEDIMENT CONTROL PLAN (PHIII)
C350	GRADING & PAVING PLAN
C400	EXISTING DRAINAGE MAP
C401	PROPOSED DRAINAGE MAP
C500	DRIVEWAY PLAN : STEEL TANK ROADS (SR-1162)
C600	WATER UTILITY PLAN
C601	SEWER UTILITY PLAN
C700	NCG-01 NOTES
C701	ESC NOTES & DETAILS
C702	ESC DETAILS
C703	ESC DETAILS
C704	STORMWATER DETAILS
C705	SITE & UTILITY DETAILS
A-1	FLOOR PLAN
A-1.1	ROOF PLAN
A-2	REFLECTED CEILING PLAN
A-3	DOOR, WINDOW, AND ROOM FINISH SCHEDULES
A-3.1	DOOR AND WINDOW ELEVATIONS
A-4	EXTERIOR ELEVATIONS
A-5	BUILDING SECTIONS
A-5.1	WALL SECTIONS
A-5.2	WALL SECTIONS
A-6	ENLARGED PLANS
A-7	INTERIOR ELEVATIONS
S1.1	GENERAL NOTES
S2.1	FOUNDATION PLAN
S3.1	FRAMING PLAN
S4.1	WALL SECTIONS
S4.2	WALL SECTIONS
S5.1	FOUNDATION DETAILS
S5.2	FRAMING DETAILS
P-1	PLUMBING SPECIFICATIONS
P-2	DWV PLAN
P-3	WATER PLAN
P-4	LP GAS PLAN
P-5	DWV RISER
P-6	WATER RISER
P-7	LP GAS RISER
M1	HVAC SCHEDULES, NOTES, LEGEND
M2	HVAC PLAN
M3	HVAC SPEC, DETAILS
E1	ELECTRICAL SPECIFICATIONS
E2	LIGHTING PLAN
E3	POWER PLAN
E4	ELEC. PANEL & RISER

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Coastal Architecture PLLC

- Architectural Design
- Planning
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AIA

Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557

www.CoastalArchitecture.net

BEAUFORT EMS
STEEL TANK ROAD SUBSTATION
BEAUFORT, NORTH CAROLINA

NORTH CAROLINA BOARD OF ARCHITECTURE AND INTERIOR DESIGN — CERT. NO. C-5782 — REGISTERED ARCHITECTURAL CORPORATION

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COVER SHEET

25003

ISSUED: 01-30-2026
DWG BY: BLS
CKD BY: LDD

REVISIONS

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APPENDIX B

2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

(EXCEPT ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES)

Name of Project: BEAUFORT EMS
Address: STEEL TANK ROAD, BEAUFORT, NC Zip Code 28516
Owner/Authorized Agent: Chief William Willis, III Phone # (252) 728 . 3255 E-Mail
Owned By: ☐ City/County ☒ Private ☐ State
Code Enforcement Jurisdiction: ☐ City ☒ County CARTERET ☐ State

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	Coastal Architecture	Lee Dixon	6419	(252) 247-2127	lee@coastalarchitecture.net
Civil	Stroud	John Foley	C-0647	(252)247-1479	-
Electrical	Burke Design Group	Ben Burke	22038	(919)771-1916	benburke@ncrr.com
Fire Alarm				( )	
Plumbing	Burke Design Group	Ben Burke	22038	(919)771-1916	benburke@ncrr.com
Mechanical	Burke Design Group	Ben Burke	22038	(919)771-1916	benburke@ncrr.com
Sprinkler-Standpipe				( )	
Structural	FDR	Heath Hendrick		(919)427-0501	HHendrick@fdr-eng.com
Retaining Walls > 5 feet High				( )	
Other				( )	

("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: ☒ New Building ☐ Addition ☐ Shell/Core ☐ Phased Construction—Shell Core ☐ 1st Time Interior Completions

2018 NC EXISTING BUILDING CODE: (check all that apply) ☐ Prescriptive ☐ Repair ☐ Chapter 14 ☐ Alteration Level I ☐ Alteration Level II ☐ Alteration Level III ☐ Historic Property ☐ Change of Use

CONSTRUCTED: (date) _____ CURRENT USE(S) (Ch. 3): _____
RENOVATED: (date) _____ PROPOSED USE(S) (Ch. 3): _____
OCCUPANCY CATEGORY (Table 1604.5): Current: _____ Proposed: _____

BASIC BUILDING DATA

Construction Type: (check all that apply) ☐ I-A ☐ I-B ☐ II-A ☒ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ☒ V-B
Sprinklers: ☐ No ☐ Partial ☒ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☐ No Class ☒ I ☐ II ☐ III ☐ Wet ☐ Dry
Primary Fire District: ☐ No ☐ Yes **Flood Hazard Area:** ☐ No ☐ Yes
Special Inspections Required: ☐ No ☐ Yes

GROSS BUILDING AREA TABLE

Floor	Existing (sq ft)	New (sq ft)	Subtotal
3rd Floor			
2nd Floor			
Mezzanine			
1st Floor		4,472 (INCLUDING COVERED ENTRY)	4,472
Basement			
TOTAL		4,472 (INCLUDING COVERED ENTRY)	4,472

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design versus the annual energy cost for the proposed design.

Existing building envelope complies with code: ☐ (If checked, the remainder of this section is not applicable.)

Exempt Building: ☐ Provide code or statutory reference: _____

Climate Zone: ☒ 3A ☐ 4A ☐ 5A

Method of Compliance:
Energy Code: ☐ Performance ☒ Prescriptive
ASHSAE 90.1: ☐ Performance ☐ Prescriptive
Other: ☐ Performance (specify source) _____

THERMAL ENVELOPE: (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
- Description of assembly: _____
- U-Value of total assembly: _____
- R-Value of insulation: R-34
- Skylights in each assembly: _____
- U-Value of skylight: _____
- total square footage of skylights in each assembly: _____

Exterior Walls (each assembly)
- Description of assembly QUIK BRICK, METAL STUD, GWB, R-15 BATT INS.
- U-Value of total assembly: _____
- R-Value of insulation: R-15
- Openings (windows or doors with glazing)
  - U-Value of assembly: _____
  - Solar heat gain coefficient: _____
  - projection factor: _____
  - Door R-Values: _____

Walls below grade (each assembly)
- Description of assembly: N/A
- U-Value of total assembly: _____
- R-Value of insulation: _____

Floors over unconditioned space (each assembly)
- Description of assembly: _____
- U-Value of total assembly: _____
- R-Value of insulation: _____

Floors slab on grade
- Description of assembly: 4" CONC. SLAB ON VAPOR BARRIER ON COMPACTED FILL
- U-Value of total assembly: _____
- R-Value of insulation: N/A
- Horizontal/vertical requirement: _____
- slab heated: _____

ALLOWABLE AREA

Primary Occupancy Classification(s):
- Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
- Business ☐
- Educational ☐
- Factory ☐ F-1 Moderate ☐ F-2 Low
- Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
- Institutional ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4
  - I-3 Condition ☐ 1 ☐ 2
  - I-2 Condition ☐ 1 ☐ 2
  - I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Mercantile ☐
- Residential ☐ R-1 ☒ R-2 ☐ R-3 ☐ R-4
- Storage ☐ S-1 Moderate ☒ S-2 Low ☐ High-piled ☒ Parking Garage ☒ Open ☐ Enclosed ☐ Repair Garage
- Utility and Miscellaneous ☐

Accessory Occupancy Classification(s): _____
Incidental Uses (Table 509): _____
This separation is not exempt as a Nonseparated Use (see exceptions).
Special Uses (Chapter 4 – List Code Sections): _____
Special Provisions: (Chapter 5 – List Code Sections): _____
Mixed Occupancy: ☐ No ☒ Yes Separation: 1 Hr. Exception: _____
Non-separated Use (508.3)

✖ Separated Use (508.4)—See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

Select one

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

_____ + _____ = _____ ≤ 1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.24 AREA	(C) AREA FOR FRONTAGE INCREASE1, 5	(D) ALLOWABLE AREA PER STORY OR UNLIMITED2, 3
1	BUSINESS	-	92,000	33,480	87,480
1	R-2	-	64,000	33,480	87,480
1	S-2	-	104,000	33,480	87,480

1. Frontage area increases from Section 506.2 are computed thus:
   a. Perimeter which fronts a public way or open space having 20 feet minimum width = 385 (F)
   b. Total Building Perimeter = 441 (P)
   c. Ratio (F/P) = _____ (F/P)
   d. W = Minimum width of public way = 30 (W) I=0.62
2. Unlimited area applicable under conditions of Section 507.
3. Maximum Building Area = total number of stories in the building × D (maximum 3 stories) (506.2).
4. The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1.
5. Frontage increase is based on the unsprinklered area value in Table 506.2.

STRUCTURAL DESIGN

DESIGN LOADS:
Importance Factors: Wind (IW) _____
Snow (IS) _____
Seismic (IE) _____

Live Loads: Roof _____ psf
Mezzanine _____ psf
Floor _____ psf

Ground Snow Load: _____ **psf**

Wind Load: Ultimate Design Speed _____ mph (ASCE 7-10)
Risk Category _____

SEE STRUCTURAL

SEISMIC DESIGN CATEGORY: ☐ A ☐ B ☐ C ☐ D

Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) ☐ I ☐ II ☐ III ☐ IV
Spectral Response Acceleration SS _____ %g S1 _____ %g
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F
Data Source: ☐ Field Test ☐ Presumptive ☐ Historical Data
Basic structural system (check one)
☐ Bearing Wall ☐ Dual w/Special Moment Frame
☐ Building Frame ☐ Dual w/Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☐ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☐ **Yes** ☐ **No**

LATERAL DESIGN CONTROL: ☐ Earthquake ☐ Wind

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) _____ psf
Presumptive Bearing capacity _____ psf
Pile size, type, and capacity _____

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	60	53'-6"	T504.3
Building Height in Stories (Table 504.4)	R2=3 / S2=3	3+1	T504.4

1. Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4. T504.2, 508.4.2

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (feet)	RATING REQ'D	RATING PROVIDED (W/ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame Including columns, girders, trusses	——	Ø	Ø				
Bearing Walls							
Exterior							
North	> 30	Ø	Ø				
East	> 30	Ø	Ø				
West	> 30	Ø	Ø				
South	> 30	Ø	Ø				
Nonbearing walls and partitions							
Exterior walls							
North	——	——	——				
East	——	——	——				
West	——	——	——				
South	——	——	——				
Interior walls and partitions	——	——	——				
Floor Construction Including supporting beams and joists		Ø	Ø				
Floor Ceiling Assembly		1, 1/2	1, 1/2	G5	U301 L528		
Columns Supporting Floors		Ø	Ø				
Roof Construction, including supporting beams and joists		Ø	Ø				
Roof Ceiling Assembly		Ø	Ø				
Columns Supporting Roof		Ø	Ø				
Shaft Enclosures—Exit		N/A	N/A				
Shaft Enclosures—Other		2	2	G5	U305		
Corridor Separation		N/A	N/A				
Occupancy/Fire Barrier Separation		1	1	G5	L528		
Party/Fire Wall Separation		——	——				
Smoke Barrier Separation		-					
Smoke Partition		-					
Tenant/Dwelling Unit/ Sleeping Unit Separation		1/2	1/2	G5	U305		
Incidental Use Separation		-					

* Indicate section number permitting reduction

MECHANICAL DESIGN

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb: _____
summer dry bulb: _____

Interior design conditions
winter dry bulb: _____
summer dry bulb: _____
summer humidity: _____

SEE MECHANICAL

Building heating load: _____

Building cooling load: _____

Mechanical Spacing Conditioning System
Unitary
- description of unit _____
- heating efficiency: _____
- cooling efficiency: _____
- size category of unit: _____

Boiler
- Size category. If oversized, state reason.: _____

Chiller
- Size category. If oversized, state reason.: _____

List equipment efficiencies: _____

ELECTRICAL DESIGN

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:
Energy Code: ☐ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☐ Performance

Lighting schedule (each fixture type)
- lamp type required in fixture
- number of lamps in fixture
- ballast type used in fixture
- number of ballasts in fixture
- total wattage per fixture
- total interior wattage specified versus allowed (whole building or space by space)
- total exterior wattage specified versus allowed

SEE ELECTRICAL

Additional Prescriptive Compliance
- ☐ 506.2.1 More Efficient Mechanical Equipment
- ☐ 506.2.2 Reduced Lighting Power Density
- ☐ 506.2.3 Energy Recovery Ventilation Systems
- ☐ 506.2.4 Higher Efficiency Service Water Heating
- ☐ 506.2.5 On-Site Supply of Renewable Energy
- ☐ 506.2.6 Automatic Daylighting Control Systems

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (feet) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
> 30	UP. 8	NO LIMIT	——

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: ☒ Yes ☐ No
Exit Signs: ☒ Yes ☐ No
Fire Alarm: ☒ Yes ☐ No
Smoke Detection Systems: ☒ Yes ☐ No
Carbon Monoxide Detection: ☒ Yes ☐ No

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: G-2

N/A Fire and/or smoke rated wall locations (Chapter 7)
☒ Assumed and real property line locations (if not on the site plan)
☒ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☒ Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
☒ Occupant loads for each area
☒ Exit access travel distances (1017)
☒ Common path of travel distances [Tables 1006.2.1 & 1006.3.2(1)]
☒ Dead end lengths (1020.4)
☒ Clear exit widths for each exit door
☒ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☒ Actual occupant load for each exit door
N/A A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☒ Location of doors with panic hardware (1010.1.10)
N/A Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
N/A Location of doors with electromagnetic egress locks (1010.1.9.9)
N/A Location of doors equipped with hold-open devices
N/A Location of emergency escape windows (1030)
N/A The square footage of each fire area (202)
N/A The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
☒ Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS (SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
		NOT APPLICABLE					

ACCESSIBLE PARKING (SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 5' ACCESS AISLE	
		SEE SITE/CIVIL				
TOTAL						

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE	WATERCLOSETS			URINALS	LAVATORIES			SHOWERS/ TUBS	DRINKING FOUNTAINS	
	Male	Female	Unisex		Male	Female	Unisex		Regular	Accessible
REQ'D	1	1	Ø	-	1	1	-	-	-	1
PROVIDED	2	2	1	-	2	2	1	2	-	1

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, ICC, etc., describe below)

NOT APPLICABLE

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- Interiors

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BEAUFORT EMS
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COASTAL ARCHITECTURE, P.L.L.C. CERTIFICATE OF AUTHORIZATION NO. C-0647 NORTH CAROLINA BOARD OF EXAMINERS FOR ENGINEERS AND SURVEYORS

LEE DIXON 6419 REGISTERED ARCHITECT NORTH CAROLINA

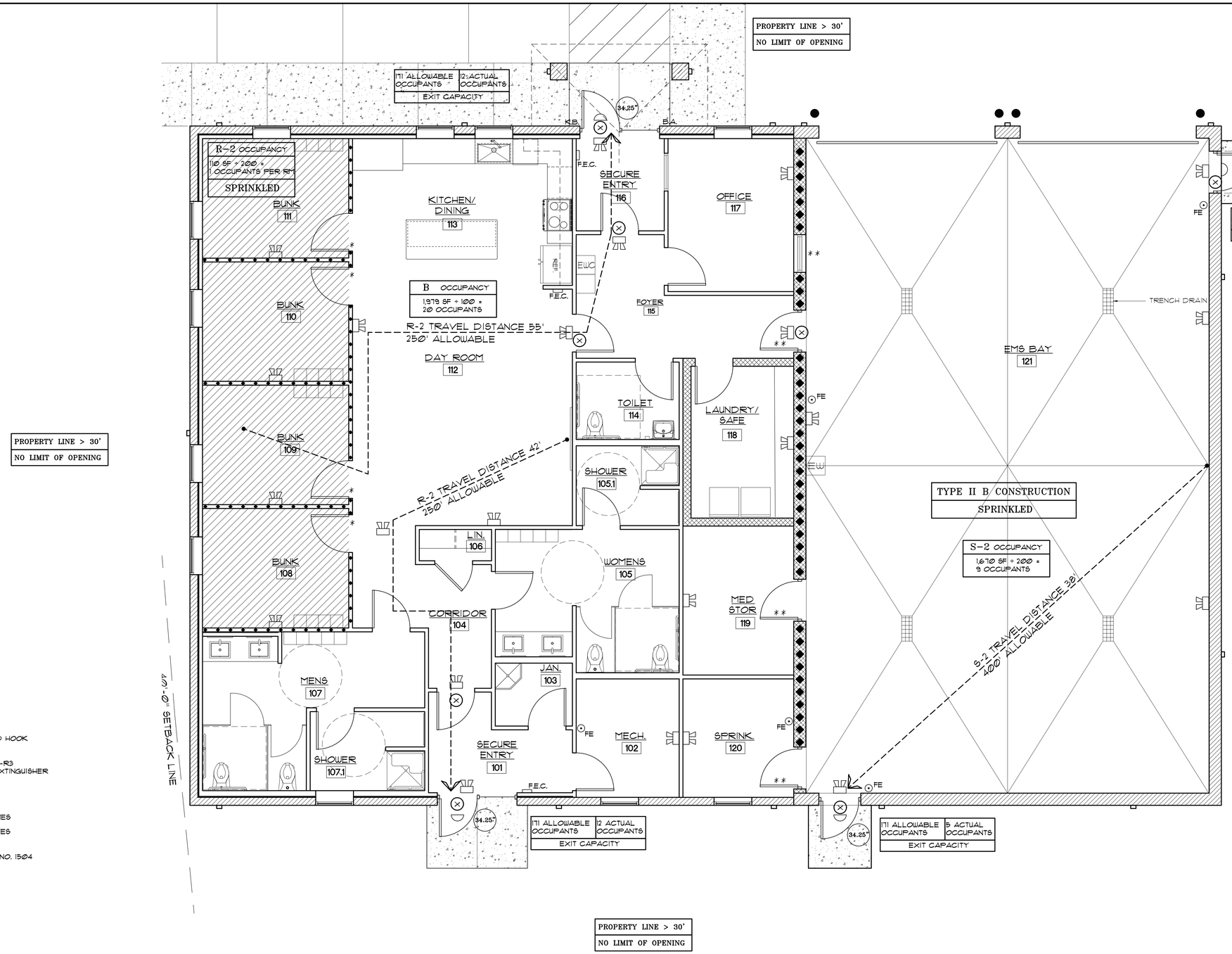
GENERAL DATA

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OCCUPANCY/LOAD TYPE KEYING:

B = BUSINESS
R-2 = RESIDENTIAL
S-2 = STORAGE

LEGEND:

FE ⊙	= FIRE EXTINGUISHER ON STANDARD HOOK
F.E.C.	= FIRE EXTINGUISHER AND CABINET LARSEN SEMI-RECESSED FS 2409-R3 BRUSHED CHROME W/ MP5 FIRE EXTINGUISHER
	1 HR RATED WALL (U.L. U419)
	1 HR RATED WALL (U.L. U905)
*	20 MINUTE RATED DOOR AND FRAMES
**	45 MINUTE RATED DOOR AND FRAMES
	1 HOUR RATED CEILING U.L. DESIGN NO. I504
34.25"	=CLEAR EXIT WIDTH
⊗	=EXIT
	=EMERGENCY LIGHT EXIT
	=EGRESS LIGHT
B.A.	=BUILDING ADDRESS- 6" MIN. HEIGHT, ON CONTRASTING BACKGROUND, READILY VISIBLE FROM STREET
K.B.	=KNOX BOX, FIRE DEPARTMENT KEY LOCK BOX CONFIRM LOCATION W/ FIRE DEPARTMENT
P.H.	PANIC HARDWARE

1/G-2 LIFE SAFETY PLAN
SCALE: 1/4"=1'-0"

WALL LEGEND

- 8" CMU BLOCK WALL
- 12" CMU BLOCK WALL
- 12" ECHELON MASONRY QUIK BRICK

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LICENSED ARCHITECTURE PRACTICE CORPORATION OF NORTH CAROLINA CERT. NO. C-2762

LICENSED PROFESSIONAL ENGINEER 6419 LEE D. DIXON, JR. NORTH CAROLINA

LIFE SAFETY PLAN

25003

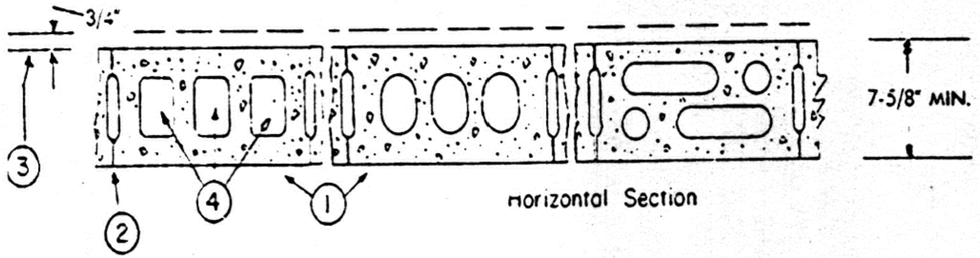
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Design No. U905

Bearing Wall Rating — 2 HR.
Nonbearing Wall Rating — 2 HR



Horizontal Section

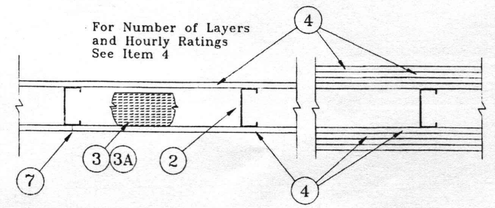
1. **Concrete Blocks*** — Various designs. Classification D-2 (2 hr). See **Concrete Blocks** category for list of eligible manufacturers.
2. **Mortar** — Blocks laid in full bed of mortar, nom. 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.
3. **Portland Cement Stucco or Gypsum Plaster** — Add 1/2 hr to classification if used. Where combustible members are framed in wall, plaster or stucco must be applied on the face opposite framing to achieve a max. Classification of 1-1/2 hr. Attached to concrete blocks (Item 1).
4. **Loose Masonry Fill** — If all core spaces are filled with loose dry expanded slag, expanded clay or shale (Rotary Kiln Process), water repellant vermiculite masonry fill insulation, or silicone treated perlite loose fill insulation add 2 hr to classification.
5. **Foamed Plastic*** — (Optional-Not Shown) — 1-1/2 in. thick max, 4 ft wide sheathing attached to concrete blocks (Item 1).

CELOTEX CORP —Type Thermax

*Bearing the UL Classification Marking

Design No. U419

Non Bearing Wall Ratings — 1, 2, 3 or 4 Hr (See Items 3 & 4)



1. **Floor and Ceiling Runners** — (Not shown) — Channel shaped, fabricated from min 25 MSG (min 20 MSG when Item 4A is used) corrosion-protected steel, min width to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.
2. **Steel Studs** — Channel shaped, fabricated from min 25 MSG (min 20 MSG when Item 4A is used) corrosion-protected steel, min width as indicated under Item 4, min 1-1/4 in. flanges and 1/4 in. return, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
3. **Batts and Blankets*** — (Required as indicated under Item 4) — Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 4. See **Batts and Blankets (BKNV or BZJZ) Categories** for names of Classified companies.

3A. **Batts and Blankets*** — (Optional) — Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See **Batts and Blankets (BKNV or BZJZ) Categories** for names of Classified companies.

4. **Wallboard, Gypsum*** — Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Wallboard Protection on Each Side of Wall

Rating	Min Stud Depth	No. of Layers & Thkns of Panel	Min Thkns of Insulation (Item 3)
1	3-1/2	1 layer, 5/8 in. thick	Optional
1	2-1/2	1 layer, 1/2 in. thick	1-1/2 in.
1	1-5/8	1 layer, 3/4 in. thick	Optional
2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
2	3-1/2	1 layer, 3/4 in. thick	3 in.
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	2 layers, 3/4 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional
4	2-1/2	2 layers, 3/4 in. thick	2 in.

CANADIAN GYPSUM COMPANY —1/2 in. thick Type C, WRC or IP-X2; 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC or IP-X2; 3/4 in. thick ULTRACODE or Type IP-X3
UNITED STATES GYPSUM CO —1/2 in. thick Type C, WRC or IP-X2; 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC, FRX-G or IP-X2; 3/4 in. thick ULTRACODE or Type IP-X3
YESO PANAMERICANO S A DE C V —1/2 in. thick Type C, WRC or IP-X2; 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC or IP-X2; 3/4 in. thick ULTRACODE or Type IP-X3.

4A. **Wallboard, Gypsum*** — (As an alternate to Item 4) — 5/8 in. thick gypsum panels, installed as described in Item 4 with Type S-12 steel screws. The length and spacing of the screws as specified under Item 5.
CANADIAN GYPSUM COMPANY —Type FRX
UNITED STATES GYPSUM CO —Type FRX

4B. **Wallboard, Gypsum*** — (As an alternate to Items 4 and 4A) — 5/8 in. thick, 2 ft. wide, tongue and groove edge, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 5. Joint covering (Item 7) not required.
UNITED STATES GYPSUM CO —Type SCX.

5. **Fasteners** — (Not shown) — Type S or S-12 steel screws used to attach panels to studs (Item 2) or furring channels (Item 6). **Single layer systems:** 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 12 in. OC when panels are applied vertically. Two layer systems: First layer- 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC with screws offset 8 in. from first layer. **Three-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. **Four-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 24 in. OC. Fourth layer- 2-5/8 in. long for 1/2 in. thick panels or 3 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.

6. **Furring Channels** — (Optional, not shown, for single or double layer systems) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws. Not for use with Item 4A.
7. **Joint Tape and Compound** — Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer panels.
8. **Siding, Brick or Stucco** — (Optional, not shown) — Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies, installed over gypsum panels. Brick veneer attached to studs with corrugated metal wall ties attached to each stud with steel screws, not more than each sixth course of brick.
9. **Caulking and Sealants*** — (Optional, not shown) — A bead of acoustical sealant applied around the partition perimeter for sound control.
UNITED STATES GYPSUM CO —Type AS

*Bearing the UL Classification Marking

2/G-3 DETAIL
SCALE: N.T.S.

1/G-3 DETAIL
SCALE: N.T.S.

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Coastal Architecture PLLC
• Architectural Design
• Planning
• Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
STEEL TANK ROAD SUBSTATION
BEAUFORT, NORTH CAROLINA

UL DETAILS

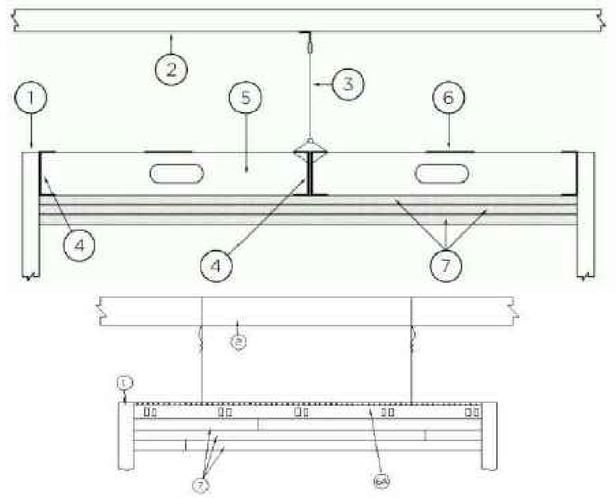
25003
ISSUED: 01-30-2026
DWG BY: MSG
CKD BY: LDD
REVISIONS

SHEET NO.
G-3
OF

Design No. **I504**

Ceiling Membrane Rating – 1 Hr.
Load Restriction – Limited to the Dead Weight of the Assembly
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

1 Hour System



1. **Supporting Structure #1 —** Fire-resistance rated. Suitable point of attachment of C-Channels (Item 4).

2. **Supporting Structure #2 —** If necessary - Suitable point of attachment of hanger wire (Item 3).

3. **Hanger Wire —** If necessary – Min. 8 gauge steel wire, hung from holes punched in C-Channel (Item 4). Hanger wire spaced nominally 24 in. OC.

4. **C-Channels —** Used to support steel studs at both ends. Min. 3-5/8 in. deep with min. 1-1/4 in. legs and formed from min. No. 20 MSG galv. steel. Perimeter channels attached to a fire-resistance rated supporting structure (Item 1) with fasteners spaced not greater than 24 in. O.C. at both the top and bottom of the vertical leg. When used with Items 2 and 3, C-Channel secured back to back with 1/2 in. Type S screws spaced 24 in. OC along centerline of C-Channels. Where C-Channels form a butt joint, screws placed at both top and bottom of both sides of butt joint.

5. **Steel Studs —** Min. 3-5/8 in. wide with min. 1-5/8 in. legs containing folded back flanges and formed from min. No. 20 MSG galv. Steel. Studs to be cut 3/8 in. to 5/8 in. less than the clear span between the vertical legs of the perimeter channels. Studs spaced a max. 16 in. OC. At each end of the stud, the top and bottom legs shall be secured to the perimeter channel with one 3/8 in. long pan-head steel screw. Studs are used at each end of the horizontal barrier to terminate the assembly at the adjoining wall. These end studs shall be secured to the adjoining wall in the same manner as the perimeter channels (Item 4). Maximum unsupported length of studs not to exceed 8 ft. 1 in.

6. **Steel Strap —** Min 4 in. wide formed from min. No. 20 MSG galv. Steel. Secured perpendicular to the studs at the centerline of the span using one 3/8 in. long pan-head steel screw. Strips to overlap one full stud bay at splice locations. As an alternate to the steel strap, C-Channels (Item 4) may be substituted and installed in the same manner as the steel straps. If a continuous piece is not used, abut channels on each side of the centerline of the span and overlap one full stud bay.

6A. **Framing Members* —** As an alternate to items 3, 4, 5, and 6 – Main runners, cross tees, cross channels and wall angle as listed below:
a. **Main Runners —** Nom 10 or 12 ft long , 15/16 in. or 1-1/2 in. wide face, spaced 4 ft OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 24 in. OC, twist tied to supporting structure.

b. **Cross Tees —** Nom 4 ft long, 1-1/2 in. wide face, installed perpendicular to the main runners, spaced 16 in. OC. The cross tees or cross channels may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.

c. **Cross Channels —** Nom 4 ft long, installed perpendicular to main runners, spaced 16 in. OC.

d. **Wall Angle or Channel —** — Painted or galv steel angle with 1 in. legs or channel with 1 in. legs, 1-9/16 in. deep attached to walls at perimeter of ceiling with fasteners 16 in. OC. To support steel framing member ends and for screw-attachment of the gypsum panel.
ARMSTRONG WORLD INDUSTRIES INC — Type DFR-8000.

7. **Gypsum Board* —** Three layers of nom. 5/8 in. thick gypsum board installed with long dimension perpendicular to the steel studs or Framing Members*. Base secured to studs and perimeter channels with 1 in. long Type S steel screws spaced max. 16 in. OC. Middle layer secured to the studs or Framing Members* and perimeter supports with 1-5/8 in. long Type S steel screws spaced max. 16 in. OC. Middle layer edge and end joints staggered a min. 16 in. from base layer joints. Face layer secured to the studs or Framing Members* and perimeter supports with 2-1/4 in. long Type S steel screws spaced max. 12 in. OC. Face layer edge and end joints staggered a min. 16 in. from middle layer joints.
NATIONAL GYPSUM CO — Type FSW

8. **Joint Tape and Compound —** Not Shown — (Optional, Not Required On Joints or Screw Heads) — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw heads; paper tape, nom. 2 in. wide, embedded in first layer of compound over all joints.

1 / G-3.1 DETAIL
SCALE: N.T.S.

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AIA
Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
STEEL TANK ROAD SUBSTATION
BEAUFORT, NORTH CAROLINA

UL DETAILS

25003

ISSUED: 01-30-2026
DWG BY: MSG
CKD BY: LDD
REVISIONS

SHEET NO.
G-3.1
OF

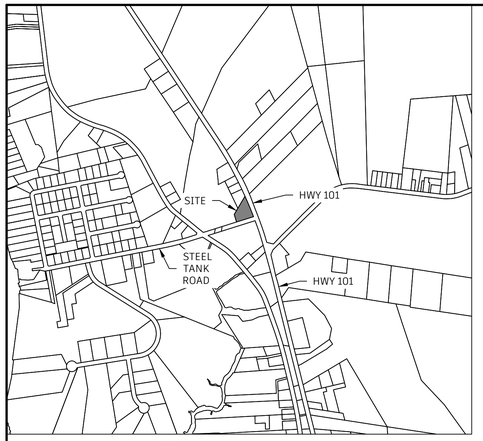
SITE / CIVIL DRAWINGS FOR:
BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

LOCATED IN
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

DRAFT SET RELEASED FOR BID PURPOSES 12/9/2025

SHOULD A CONFLICT ARISE BETWEEN EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS SHOWN ON THESE DRAWINGS, CONTRACTOR SHALL CONTACT THE ENGINEER FOR DIRECTION PRIOR TO PROCEEDING WITH WORK WHERE A CONFLICT HAS BEEN NOTED.

IN THE EVENT THAT A DISCREPANCY IS NOTED BETWEEN ANY PORTIONS OF THESE DRAWINGS, CONTRACTOR IS ADVISED TO CONTACT THE ENGINEER FOR CLARIFICATION PRIOR TO PROCEEDING WITH WORK FOR WHICH A DISCREPANCY IS NOTED.

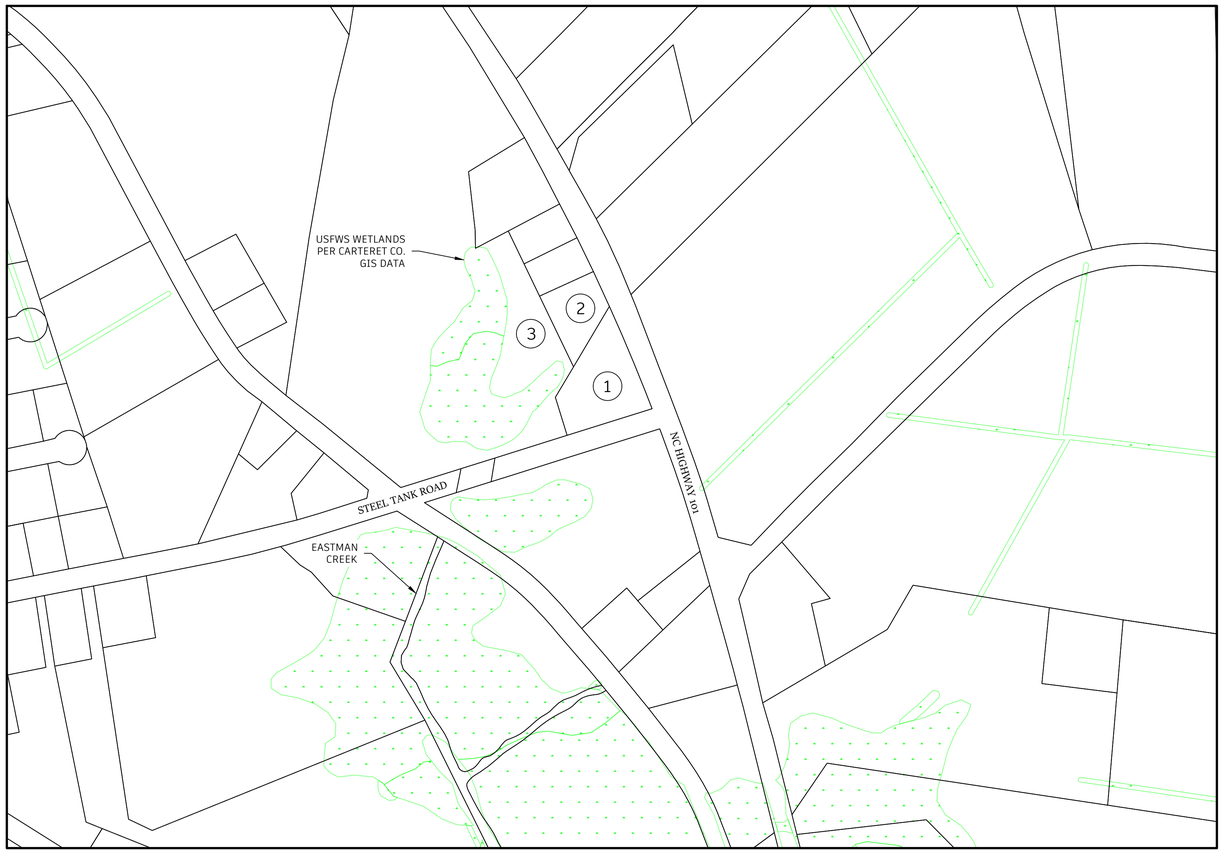


LOCATION MAP
N.T.S

INDEX OF DRAWINGS	
SHEET	TITLE
C000	COVER SHEET
C001	NOTES & LEGEND
C100	EXISTING CONDITIONS
C200	SITE PLAN
C300	EROSION & SEDIMENT CONTROL PLAN (PH I)
C301	EROSION & SEDIMENT CONTROL PLAN (PH II)
C302	EROSION & SEDIMENT CONTROL PLAN (PH III)
C350	GRADING & PAVING PLAN
C400	EXISTING DRAINAGE MAP
C401	PROPOSED DRAINAGE MAP
C500	DRIVEWAY PLAN: STEEL TANK ROAD (SR-1162)
C600	WATER UTILITY PLAN
C601	SEWER UTILITY PLAN
C700	NCG-01 NOTES
C701	ESC NOTES & DETAILS
C702	ESC DETAILS
C703	ESC DETAILS
C704	STORMWATER DETAILS
C705	SITE & UTILITY DETAILS

SUPPLEMENTAL DRAWINGS & SPECIFICATIONS	
AGENCY	DOCUMENT TITLE
NCDOT	STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES
NCDOT	ROADWAY STANDARD DRAWINGS
USDOT FHWA	MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
NCDOT	SUPPLEMENT TO THE MUTCD
NCDOT	SUBDIVISION ROADS, MINIMUM CONSTRUCTION STANDARDS
CAROLINA WATER SERVICE OF NC	STANDARD SPECIFICATIONS & DETAILS FOR WATER & SEWER CONSTRUCTION
TOWN OF BEAUFORT	MANUAL FOR DESIGN AND CONSTRUCTION OF STREETS, WATER AND WASTEWATER SYSTEMS

THE MOST RECENT VERSION OF LISTED PUBLICATIONS AND ASSOCIATED DRAWINGS / SPECIFICATIONS ARE INCORPORATED BY REFERENCE. FOR CONSTRUCTION MATERIALS OR METHODS NOT OTHERWISE ADDRESSED, REFER TO THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.



TRACT MAP
NOT TO SCALE

CONTIGUOUS PROPERTIES		
MAP ID	PARCEL ID	OWNER
1	639904748004000	BEAUFORT RESCUE & EMS, INC.
2	639904747231000	REYNOSO SONIA
3	639904618472000	NABIL & KRISTIE CHAANINE

PARCEL DATA SOURCE: CARTERET COUNTY GIS WEBSITE

NOTES

1. THESE DRAWINGS HAVE BEEN PREPARED USING FIELD SURVEY DATA COLLECTED BY STROUD ENGINEERING, PA SOLELY FOR THE STATED PURPOSES AND ARE NOT INTENDED FOR ANY OTHER USE.
2. THIS DRAWING PACKAGE IS INTENDED TO DEPICT SITE GRADING, STORMWATER, EROSION CONTROL AND UTILITY INFORMATION AS NECESSARY FOR OBTAINING APPLICABLE PERMITS. DRAWINGS HAVE BEEN CERTIFIED AS "FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION" UNTIL ALL APPLICABLE PERMITS HAVE BEEN OBTAINED, AT WHICH TIME FINAL DRAWINGS FOR CONSTRUCTION WILL BE ISSUED.
3. BUILDING FOOTPRINT HAS BEEN SHOWN FOR THE PURPOSE OF ILLUSTRATING AMOUNT AND LOCATION OF IMPERVIOUS SURFACES FOR PERMITTING. FINAL BUILDING CONFIGURATION AND MATERIALS ARE SUBJECT TO CHANGE BASED UPON ARCHITECTURAL DESIGN (BY OTHERS). ANY INCREASE IN BUILT UPON AREA, OR SIGNIFICANT CHANGES IN SITE LAYOUT SHALL BE SUBJECT TO CAMA AND NCDEQ REVIEW AND APPROVAL.
4. PRIOR TO CONSTRUCTING ANY BUILDINGS OR ASSOCIATED UTILITY CONNECTIONS, THE OWNER / DEVELOPER SHALL OBTAIN ALL NECESSARY STATE AND LOCAL PERMITS.
5. NO GEOTECHNICAL BORINGS OR SUBSURFACE SOIL EVALUATION HAS BEEN COMPLETED WITH THE EXCEPTION OF SHWT AND INFILTRATION EVALUATIONS.
6. DESIGN OF BUILDINGS / FOUNDATIONS SHALL BE BY OTHERS ACCORDING TO APPLICABLE CODE(S).
7. ALL BUILDING DIMENSIONS, LAYOUT AND CONSTRUCTION INFORMATION SHALL BE OBTAINED FROM ARCHITECTURAL PLANS (BY OTHERS).

OWNER / DEVELOPER

BEAUFORT RESCUE & EMS, INC
AKA BEAUFORT EMS, INC

C/O CHIEF WILLIAM H. WILLIS, III
PO BOX 950
BEAUFORT, NC 28516
(252) 728-3255

ENGINEERING & SURVEY CONSULTANT

STROUD ENGINEERING, PA
422 HWY 24
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(252) 247-7479

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REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	1	6/13/2025	NCDEQ COMMENTS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

COVER SHEET

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 639904748004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

OWNER: BEAUFORT RESCUE & EMS, INC
ADDRESS: 683 W. BEAUFORT ROAD
BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

DESIGNED:	JAF
DRAWN:	JAF
APPROVED:	JAF
DATE:	6/13/2025
SCALE:	AS SHOWN
SHEET:	C000

PROJECT NO.: PM3171-001
DRAWING NO.: CS-C000

M:\Master\Projects\PM3100\3\PM3171-001 Beaufort EMS Substation\CAD\design\pm3171-001 CS-C000.dwg 12/9/2025 11:36:40 AM

EXISTING FEATURES LEGEND

- COMPUTED POINT
- EXISTING CONCRETE MONUMENT
- EXISTING IRON PIPE
- EXISTING IRON ROD
- EXISTING MAGNETIC NAIL
- SET IRON ROD
- BOUNDARY LINE
- RIGHT OF WAY LINE
- NON-SURVEYED LINE (PLATTED BY DEED)
- MAJOR CONTOUR LINE
- MINOR CONTOUR LINE
- DITCH/TOP OF BANK
- NORMAL HIGH WATER LINE
- EASEMENT LINE
- CAMA LINE
- VEGETATION LINE
- FORCE MAIN SEWER LINE
- WATER LINE
- ELECTRIC METER
- HYDRANT
- POWER POLE
- GUY WIRE
- TELECOM PEDESTAL
- POTENTIAL 404/401 WETLANDS
- POTENTIAL COASTAL WETLANDS

ABBREVIATIONS

DIP= DUCTILE IRON PIPE

EIP= EXISTING IRON PIPE

EIR= EXISTING IRON ROD

EX.= EXISTING

N/F= NOW OR FORMERLY

OHE= OVERHEAD ELECTRIC

PROP.= PROPOSED

PVC= POLYVINYL CHLORIDE PIPE

RCP= REINFORCED CONCRETE PIPE

R/W= RIGHT OF WAY

TBR= TO BE REMOVED

TYP.= TYPICAL

PROPOSED FEATURES LEGEND

- GRADING CONTOUR LINE
- SPOT ELEVATION/GRADE
- BUILDING SETBACK LINE
- LANDSCAPE BUFFER (ZONING)
- LIMITS OF DISTURBANCE LINE
- SILT FENCE LINE
- CONSTRUCTION ENTRANCE/EXIT
- TEMPORARY DIVERSION
- RUNOFF FLOW
- WATTLE
- BAFFLE
- STORM INLET STRUCTURE & ID #
- STORM MANHOLE / JUNCTION BOX & ID #
- STORM PIPE OR CULVERT & ID #
- OUTLET PROTECTION & ID #
- RIPRAP
- CLEANOUT
- ROOF DRAIN LATERAL
- ASPHALT PAVEMENT
- CONCRETE SIDEWALK
- S.T.E.P. SYSTEM TANK
- FORCE MAIN SEWER LINE
- WATER LINE
- HYDRANT
- WATER METER
- WATER VALVE
- COORDINATE / GEOMETRY POINT
- GRADING HIGH OR LOW POINT
- PERMANENT WETLAND IMPACT

GRADING AND EARTHWORK REQUIREMENTS:

1. IN GENERAL, ALL EARTHWORK SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 2 OF NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES UNLESS APPROVED OTHERWISE.
2. SITE ACTIVITIES SHALL FOLLOW THE SEQUENCE PROVIDED ON CIVIL DRAWINGS. NO LAND DISTURBING ACTIVITIES SHALL BE INITIATED UNTIL APPROPRIATE EROSION AND SEDIMENT CONTROLS HAVE BEEN INSTALLED.
3. ALL SITE WORK SHALL BE CONFINED TO THE DESIGNATED LIMITS OF DISTURBANCE. DO NOT REMOVE TREES OR VEGETATION OUTSIDE OF THE DESIGNATED DISTURBANCE AREA. ACTIVITIES OUTSIDE PROPOSED CUT/FILL LIMITS SHALL BE COMPLETED IN A MANNER WHICH MINIMIZES THE OVERALL DISTURBANCE AREA TO THE EXTENT PRACTICAL. VEHICLE AND EQUIPMENT TRAFFIC SHOULD BE ROUTED TO MINIMIZE SOIL COMPACTION IN AREAS PROPOSED FOR VEGETATIVE RESTORATION.
4. PROPERTIES OF MATERIALS INTENDED FOR USE AS STRUCTURAL FILL SHOULD BE ESTABLISHED BY A GEOTECHNICAL ENGINEERING FIRM PRIOR TO THE INITIALIZATION OF EARTHWORK. ALL CUT/FILL MATERIALS SHALL BE SUITABLE CLEAN FILL, FREE OF ORGANIC AND OTHER DELETERIOUS MATERIALS UNSUITABLE FOR STABLE FILL.
5. AVAILABLE ONSITE MATERIALS WHICH ARE SUITABLE FOR CONSTRUCTION SHOULD BE RE-UTILIZED TO THE EXTENT PRACTICAL. ANY MATERIALS IMPORTED FROM OFFSITE SHALL MEET THE SPECIFICATIONS PROVIDED.
6. NO WASTE MATERIALS SHALL BE BURIED OR BURNED ON SITE. REMOVE ALL WASTE MATERIALS FROM THE SITE AND PROPERLY DISPOSE ACCORDING TO FEDERAL, STATE AND LOCAL REGULATIONS.
7. IF ANY MATERIALS ARE UNCOVERED DURING EARTH DISTURBANCE ACTIVITIES WHICH HAVE THE POTENTIAL TO CAUSE POLLUTION, THE MATERIALS SHALL BE MANAGED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS/REGULATIONS. A LICENSED GEOTECHNICAL ENGINEER SHOULD BE CONSULTED FOR ADDITIONAL RECOMMENDATIONS WHENEVER QUESTIONABLE CONDITIONS ARE ENCOUNTERED.
8. REMOVE TOPSOIL FROM AREAS TO BE GRADED AND FILLED. PRESERVE SUITABLE TOPSOIL FOR REUSE. TOPSOIL, ORGANIC AND DELETERIOUS MATERIAL SHALL BE STOCKPILED IN UPLAND AREAS WITHIN THE SPECIFIED LIMITS OF DISTURBANCE UNTIL REUSED OR REMOVED FROM SITE.
9. PRIOR TO THE PLACEMENT OF FILL MATERIALS OR SURFACE AGGREGATES, THE SUBGRADE SHOULD BE PROOF-ROLLED TO DETERMINE THE STABILITY OF MATERIALS. PROOF-ROLLING SHALL BE COMPLETED USING A LOADED TANDEM-AXLE DUMP TRUCK OR OTHER SUITABLE EQUIPMENT. WHERE SOFT, WET, OR UNSUITABLE SOIL MATERIALS EXHIBITING INSTABILITY, PUMPING, OR RUTTING ARE IDENTIFIED, THEY SHALL BE UNDERCUT AND REPLACED WITH SUITABLE CLEAN FILL. A LICENSED GEOTECHNICAL ENGINEER SHOULD BE CONSULTED FOR ADDITIONAL RECOMMENDATIONS WHENEVER UNSUITABLE OR UNSTABLE CONDITIONS ARE ENCOUNTERED.
10. FILL SHALL BE PLACED ON A REASONABLY LEVEL SURFACE. WHERE WORK IS BEING PERFORMED ON A SLOPED SURFACE, BENCHING OF THE SUBGRADE MAY BE REQUIRED. WHEN FILL HEIGHT EXCEEDS 4 FT AND SLOPES ARE 5:1 OR STEEPER, BENCHING SHOULD BE CONDUCTED UNLESS OTHERWISE DIRECTED BY A GEOTECHNICAL ENGINEER.
11. MAXIMUM EXCAVATION SLOPES, SLOPE ADJUSTMENTS, BENCHING, AND SHORING SHALL BE DETERMINED IN THE FIELD BASED UPON REVIEW BY A "COMPETENT PERSON" ACCORDING TO OSHA REG 1926 SUBPART P.
12. FILL SHALL BE PLACED SO THAT THE COMPACTED THICKNESS DOES NOT EXCEED 9 INCHES UNLESS OTHERWISE SHOWN. COMPACT TO AT LEAST 90% OF THE STANDARD PROCTOR (ASTM D 698) WITHIN NON-LOAD BEARING AREAS UNLESS SHOWN OTHERWISE.
13. COMPACTION SHALL BE MADE TO 100% OF THE STANDARD PROCTOR BELOW PROPOSED STRUCTURES AND TRAFFIC AREAS. SOILS SHALL BE -3% TO +2% OF THE OPTIMUM MOISTURE CONTENT, AS DETERMINED BY THE STANDARD PROCTOR METHOD. SOILS NOT MEETING THE COMPACTION OR MOISTURE CONTENT REQUIREMENTS SHALL BE SUFFICIENTLY DRIED/WETTED AND/OR RECOMPACTED TO THE REQUIRED PARAMETERS.
14. IN AREAS WHERE PROPOSED SLOPES ARE 3: 1 OR STEEPER AND GREATER THAN 10 FT LONG, SURFACE ROUGHENING PRACTICES SHOULD BE UTILIZED TO REDUCE RUNOFF VELOCITY AND POTENTIAL FOR EROSION UNTIL FINISHED GRADES ARE ESTABLISHED AND STABILIZATION METHODS ARE IN PLACE. SURFACE ROUGHENING PRACTICES MAY CONSIST OF GROOVING OR TRACKING DEPENDING ON EQUIPMENT AVAILABILITY. REFER TO NC ESC MANUAL PRACTICE 6.03 FOR ADDITIONAL INFORMATION.
15. CONTRACTOR SHALL COMPLETE GRADING AND EARTHWORK IN A MANNER WHICH LIMITS THE DURATION BETWEEN INITIAL DISTURBANCE AND STABILIZATION TO THE EXTENT PRACTICAL. UPON COMPLETION OR TEMPORARY CESSATION OF EARTHWORK ACTIVITIES, THAT AREA SHALL BE STABILIZED IN ACCORDANCE WITH THE NOTES AND DETAILS PROVIDED.
16. UPON REACHING FINISH GRADE ELEVATION, ALL DISTURBED AREAS SHALL BE STABILIZED WITH VEGETATION, CRUSHED STONE, RIPRAP OR OTHER NON-EROSIVE GROUND COVER. REFER TO THE ESC PLAN NOTES FOR ADDITIONAL STABILIZATION REQUIREMENTS.
17. AREAS BEING TOPSOILED FOR VEGETATION SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 2-INCES BEFORE PLACING TOPSOIL.
18. UNLESS EXPLICITLY IDENTIFIED ON DRAWINGS, NO PERMANENT WETLAND IMPACTS ARE INTENDED. WHERE WETLAND IMPACTS ARE IDENTIFIED, THEY SHALL BE COMPLETED IN ACCORDANCE WITH ASSOCIATED PERMIT APPROVAL.
19. DUST CONTROL SHALL BE PROVIDED AS NEEDED TO MINIMIZE THE POTENTIAL FOR CREATING OFFSITE NUISANCE CONDITIONS AND /OR SEDIMENT DEPOSITS TO SURFACE WATERS. ACCEPTABLE PRACTICES TO ACCOMPLISH DUST CONTROL INCLUDE WATER SPRINKLING, MULCHING, WIND BREAKS, AND SPRAY-ON CHEMICAL SOIL TREATMENTS. IF CHEMICAL DUST SUPPRESSANTS ARE UTILIZED, THEY SHALL CONSIST OF MATERIALS WHICH ARE NOT HARMFUL TO THE ENVIRONMENT AND BE APPLIED ACCORDING TO MANUFACTURER RECOMMENDATIONS. BIODEGRADABLE, WATER-SOLUBLE CHEMICALS ARE PREFERRED.

FINAL CERTIFICATION AND AS-BUILT INFORMATION

VARIOUS PERMITS OBTAINED FOR THIS PROJECT REQUIRE THE ENGINEER AND / OR PERMITTEE TO CERTIFY THAT PROJECT HAS BEEN COMPLETED IN ACCORDANCE WITH APPROVED DRAWINGS. IF PROPER CERTIFICATIONS ARE NOT SUBMITTED, REGULATORY AGENCIES MAY DEEM THE PROJECT TO BE OUT OF COMPLIANCE AND ISSUE A NOTICE OF VIOLATION. COMPLIANCE ISSUES COULD DELAY USE OF THE FACILITY, OCCUPANCY APPROVAL, OR RESULT IN CIVIL PENALTY (FINES).

THE FOLLOWING INFORMATION IS PROVIDED TO MINIMIZE POTENTIAL COMPLIANCE ISSUES AND FACILITATE FINAL PERMIT CERTIFICATIONS.

CONTRACTOR RECORD DRAWINGS

1. SITE CONTRACTOR IS REQUESTED TO MAINTAIN A CURRENT SET OF PLANS WITH APPROVED FIELD CHANGES NOTATED FOR DURATION OF THE PROJECT.
2. CONTRACTOR MARK UPS SHALL REFLECT SIGNIFICANT DEVIATIONS FROM APPROVED DRAWINGS TO INCLUDE:

   STORMWATER
   - CHANGES TO STORMWATER STRUCTURES
   - CHANGES TO PIPE ROUTING ALIGNMENT OR GRADES
   - CHANGES TO PIPE MATERIAL OR SIZE

   UTILITIES
   - DEVIATIONS FROM UTILITY SPECIFICATIONS SUCH AS PUMPS OR CONTROLS
   - CHANGES IN PIPE MATERIALS, SIZES, COVER DEPTH, OR ENCASEMENT
   - CHANGES IN TAP LOCATIONS, VALVES, OR ANCILLARY ITEMS

AS-BUILT SURVEY

THE OWNER / DEVELOPER SHALL BE RESPONSIBLE FOR CONTRACTING WITH A PROFESSIONALLY LICENSED SURVEYOR TO PROVIDE A SURVEY OF COMPLETED CONSTRUCTION. "AS-BUILT" DRAWING(S) SHALL BE PROVIDED TO THE CERTIFYING ENGINEER IN DIGITAL AND HARD COPY FORMAT. MINIMUM INFORMATION SHALL INCLUDE:

SITE AND STORMWATER INFORMATION (AS APPLICABLE)
- TOPOGRAPHIC DATA OF SUFFICIENT DETAIL TO DETERMINE THE DIRECTION OF SURFACE RUNOFF FROM AREA OF DEVELOPMENT.
- LOCATION OF PAVING, CURBS AND SIDEWALKS
- FINISH FLOOR ELEVATION AND BUILDING LOCATION
- SIGNAGE - LOCATION AND TYPE
- GRADES FOR STORMWATER CONTROL MEASURES (SCMS) - BOTTOM / FOOTPRINT ELEVATION AND DIMENSIONS. TOP OF BANK AREA AND ELEVATION.
- STORMWATER STRUCTURES - ELEVATION DATA INCLUDING TOP, BOTTOM, GRATE, WEIR, ORIFICE, PIPE INVERTS, PIPE SIZE / LENGTH / MATERIAL.
- LOCATION AND DIMENSIONS FOR EMERGENCY SPILLWAYS AND RIPRAP APRONS.

SITE UTILITY INFORMATION (AS APPLICABLE)
- LOCATION OF GRAVITY SEWER PIPING, CLEAN OUTS, SEWER MANHOLES WITH DIMENSIONS AND PIPE INVERTS.
- LOCATION OF PUMP STATION WITH TOP / BOTTOM ELEVATIONS, WETWELL DIMENSIONS, PIPE INVERTS, AND FLOAT ELEVATIONS.
- LOCATION OF FORCE MAIN CONNECTION AND VALVES.
- LOCATION OF WATER SERVICE CONNECTION, TAP, METER, RPZ, VALVES, FIRE DEPARTMENT CONNECTION, AND FIRE HYDRANTS.

STORMWATER PERMIT COMPLIANCE NOTES:

THESE GENERAL INSTRUCTIONS ARE PROVIDED TO THE PERMITTEE AND CONTRACTOR FOR INFORMATIONAL PURPOSES. REFER TO THE APPROVED NCDEQ STORMWATER PERMIT FOR SPECIFIC COMPLIANCE INSTRUCTIONS.

1. INSPECTION AND EVALUATION OF COMPLETED CONSTRUCTION SHALL BE CONDUCTED ACCORDING TO PERMIT CONDITIONS. CONTRACTOR SHALL COORDINATE WITH THE PERMITTEE'S CONSULTANT FOR REQUIRED INSPECTIONS AND AS-BUILT SURVEY PRIOR TO COVERING / BURIAL OF SUBSURFACE FEATURES REQUIRING INSPECTION.
2. STORMWATER CONTROL MEASURES (SCMS) SHALL BE INSPECTED AND / OR CHECKED BY FIELD SURVEY FOR COMPLIANCE WITH DESIGN PARAMETERS PRIOR TO STABILIZATION.
3. AT THE COMPLETION OF CONSTRUCTION, THE PERMITTEE SHALL ENSURE PROPER CERTIFICATIONS ARE SUBMITTED TO NCDEQ.
4. THE PERMITTEE IS BE RESPONSIBLE FOR PROPER OPERATION AND MAINTENANCE (O&M) OF STORMWATER MANAGEMENT SYSTEM COMPONENTS.
5. O&M INCLUDES ROUTINE INSPECTIONS, RECORD KEEPING AND MAINTENANCE TO ENSURE PROPER FUNCTION OF THE STORMWATER SYSTEM. REFER TO APPROVED SITE / CIVIL PLAN DRAWINGS FOR INSPECTION AND MAINTENANCE REQUIREMENTS.
6. THE PERMITTEE IS RESPONSIBLE FOR PERMIT RENEWAL(S) ACCORDING TO PERMIT CONDITIONS.

UTILITY TESTING

INSTALLATION AND TESTING OF WATER AND SEWER SERVICES SHALL COMPLY WITH APPLICABLE PORTIONS OF NORTH CAROLINA PLUMBING / BUILDING CODES, NCDEQ REQUIREMENTS, AND ADDITIONAL SPECIFICATIONS OF LOCAL UTILITY OWNER(S).

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	1	6/13/2025	NCDEQ COMMENTS
JAF	3	8/28/2025	MISC ENGINEER EDITS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

NOTES & LEGEND

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 639904748004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

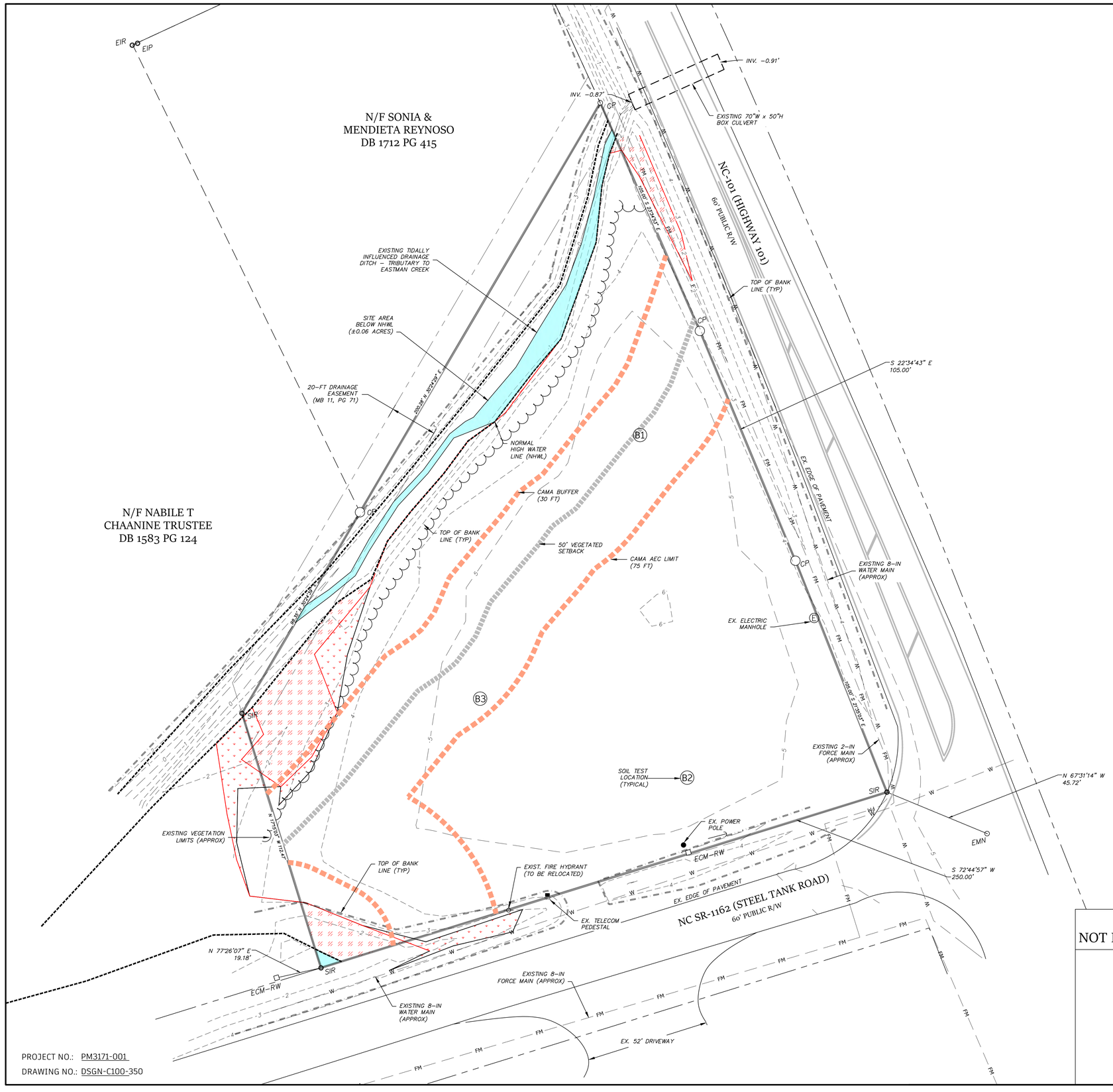
OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: 683 W. BEAUFORT ROAD
BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

DESIGNED:	JAF
DRAWN:	JAF
APPROVED:	JAF
DATE:	6/13/2025
SCALE:	AS SHOWN
SHEET:	C001

PROJECT NO.: PM3171-001
DRAWING NO.: CS-C000

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EXISTING FEATURE NOTES

1. THIS DRAWING HAS BEEN CREATED USING FIELD SURVEY DATA COLLECTED BY STROUD ENGINEERING, PA FOR ENGINEERING DESIGN AND PERMITTING OF PROPOSED SITE IMPROVEMENTS AND IS NOT INTENDED FOR ANY OTHER USE.
2. OFFSITE DATA HAS BEEN AUGMENTED USING CARTERET COUNTY AERIAL IMAGERY.
3. ALL BEARINGS AND COORDINATES ARE BASED ON NC STATE PLANE COORDINATE SYSTEM, NAD 83 (2011).
4. VERTICAL DATUM IS BASED ON NAVD '88. CONTOUR INTERVAL IS 1.0'.
5. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES. UNITS: US SURVEY FOOT.
6. SUBSURFACE UTILITIES LOCATION CLASSIFICATION: LEVEL C.

SITE INFORMATION:

ADDRESS:	110 STEEL TANK ROAD, BEAUFORT, NC 28516
LEGAL DESCRIPTION:	L1 2 BRYANWOOD AND ADJ LOT ON
DEED REFERENCE:	DB 1829 PG 0304;
PLAT REFERENCE:	MB 11 PG 71
PARCEL AREA:	±1.19 ACRES
PROJECT AREA:	±1.04 ACRES OF DISTURBANCE
EXISTING USE:	CLEARED, VACANT

RECEIVING WATER CLASSIFICATION

RUNOFF FROM PROJECT AREA ULTIMATELY DRAINS TO EASTMAN CREEK, WHICH IS PART OF THE WHITE OAK RIVER BASIN. NCDEQ SURFACE WATER CLASSIFICATION WEBSITE LISTS THE RECEIVING WATER CLASSIFICATION AS SA; HQW

SITE DOES NOT DISCHARGE TO ORW SURFACE WATER.

CAMA INFORMATION

EXISTING TIDALLY INFLUENCED DITCH ABUTTING PROJECT AREAS HAS BEEN DETERMINED TO MEET CRITERIA FOR ESTUARINE SHORELINE. CAMA AREA OF ENVIRONMENTAL CONCERN (AEC) EXTENDS 75-FT FROM NORMAL HIGH WATER OF ESTUARINE SHORELINE.

A FIELD REVIEW WAS PERFORMED BY NCDEQ COASTAL MANAGEMENT STAFF ON 10 JULY 2024 (RICHARD MAHONEY) TO CONFIRM NORMAL HIGH WATER LINE (NHWL) WHERE THIS FEATURE ABUTS PROJECT AREA. FIELD ESTABLISHED NHWL HAS BEEN SHOWN ON THESE DRAWINGS.

FLOOD ZONE INFORMATION

THIS SITE FALLS WITHIN FLOOD HAZARD AREA AE 7 (BASE FLOOD ELEV = 7 FT) ACCORDING TO FEMA FIRM MAP NO. 3720 6388003 DATE 7/16/2003.

SOIL INFORMATION

NRCS DATA REFLECTS ON-SITE SOILS ARE COMPRISED OF Tm, Ag AND Hb SOILS. REFER TO SHEET C400 FOR ADDITIONAL INFORMATION.

SOIL TESTING

A SOIL EVALUATION WAS PERFORMED BY GROUND TRUTH SOIL CONSULTING, PLLC (SEPTEMBER 2024) TO DETERMINE SEASONAL HIGH WATER TABLE (SHWT) AND INFILTRATION RATE FOR STORMWATER DESIGN PURPOSES. THE LOCATION OF SOIL BORINGS HAVE BEEN INDICATED ON THIS PLAN.

WETLAND INFORMATION

POTENTIAL WETLAND AREAS HAVE BEEN DEPICTED ACCORDING TO WETLAND DELINEATION PERFORMED BY CZR ENVIRONMENTAL CONSULTANTS INC. DATED MAY 2025. EVALUATION INDICATES THE POTENTIAL PRESENCE OF 404 AND COASTAL WETLANDS ON THE PROPERTY. A PJD PACKAGE (SAW-2025-01255) WAS SUBMITTED TO USACE ON 6/19/25 AND CONFIRMATION ACTION WAS RECEIVED ON 8/1/2025.

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	1	6/13/2025	NCDEQ COMMENTS
JAF	3	8/28/2025	MISC ENGINEER EDITS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

EXISTING CONDITIONS

BEAUFORT RESCUE & EMS, INC. STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 639904748004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

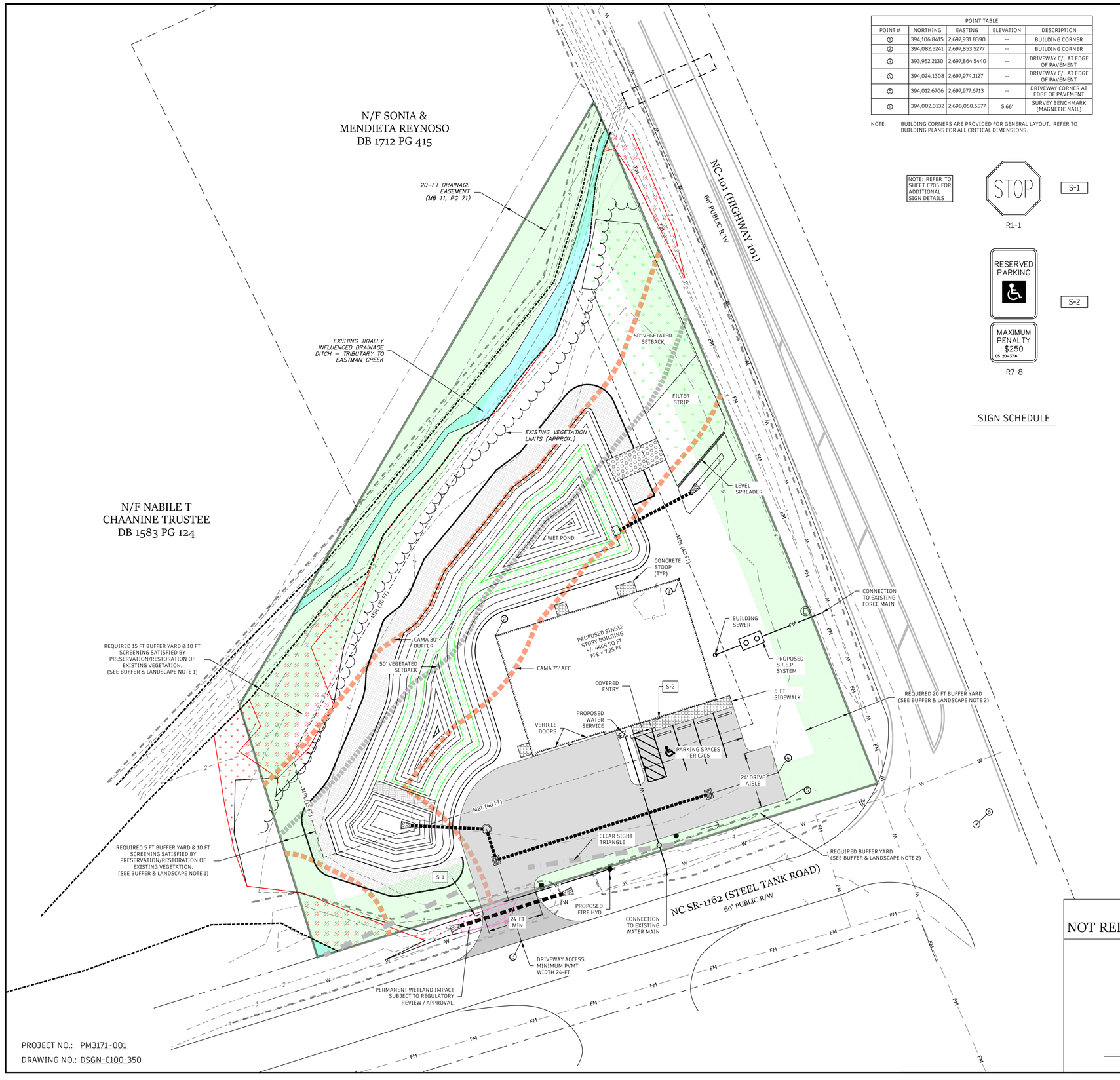
OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: 683 W. BEAUFORT ROAD BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

DESIGNED:	JAF
DRAWN:	JAF
APPROVED:	JAF
DATE:	6/13/2025
SCALE:	1"=20'
SHEET:	C100

PROJECT NO.: PM3171-001
DRAWING NO.: DSGN-C100-350

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POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
①	394,106.8415	2,697,931.8390	--	BUILDING CORNER
②	394,082.5241	2,697,853.5277	--	BUILDING CORNER
③	393,952.2130	2,697,864.5440	--	DRIVEWAY C/L AT EDGE OF PAVEMENT
④	394,024.1308	2,697,974.1127	--	DRIVEWAY C/L AT EDGE OF PAVEMENT
⑤	394,012.6706	2,697,977.6713	--	DRIVEWAY CORNER AT EDGE OF PAVEMENT
⑥	394,002.0132	2,698,058.6577	5.66'	SURVEY BENCHMARK (MAGNETIC NAIL)

NOTE: BUILDING CORNERS ARE PROVIDED FOR GENERAL LAYOUT. REFER TO BUILDING PLANS FOR ALL CRITICAL DIMENSIONS.

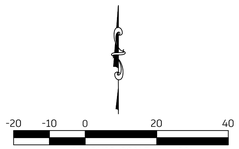
NOTE: REFER TO SHEET C705 FOR ADDITIONAL SIGN DETAILS

R1-1 S-1

S-2

R7-8

SIGN SCHEDULE



SITE INFORMATION

ADDRESS:	110 STEEL TANK ROAD, BEAUFORT, NC 28516
LEGAL DESCRIPTION:	L1 2 BRYANWOOD AND ADJ LOT ON
DEED REFERENCE:	DB 1829 PG 0304;
PLAT REFERENCE:	MB 11 PG 71
PARCEL AREA:	51,997 SF (±1.19 AC) PER MARCH 2024 BOUNDARY SURVEY BY STROUD ENGINEERING, PA, CALCULATED BY COORDINATE GEOMETRY.
AREA OF DISTURBANCE:	±1.04 ACRES
EXISTING USE:	CLEARED, VACANT
PROPOSED USE:	FIRE / RESCUE STATION

ZONING INFORMATION

DISTRICT:	B-1 (GENERAL BUSINESS)
MIN. LOT SIZE:	10,000 SF
FRONT SETBACK:	40 FT
REAR SETBACK:	30 FT
SIDE SETBACK:	15 FT
MAX HEIGHT:	60 FT
SCREENING REQUIREMENTS:	10 FT (REAR & SIDE PROPERTY LINE)
BUFFER REQUIREMENTS:	20 FT (PUBLIC STREET FRONTAGE) 5 FT (SIDE PROPERTY LINE) 15 FT (REAR PROPERTY LINE) REF: CARTERET COUNTY ZONING ORDINANCE, SECT 1601 FOR SCREENING & BUFFERING.
PARKING REQUIREMENTS:	1 PER EMPLOYEE (2) PLUS 2 VISITOR SPACES = 4 SPACES TOTAL INCLUDES 3 STANDARD SPACES AT 9' X 20' PLUS 1 ADA ACCESSIBLE SPACE REF: CARTERET COUNTY ZONING ORDINANCE, SECT 2000 FOR FIRE / RESCUE FACILITY

RECEIVING WATER CLASSIFICATION

RUNOFF FROM PROJECT AREA ULTIMATELY DRAINS TO EASTMAN CREEK, WHICH IS PART OF THE WHITE OAK RIVER BASIN. NCDEQ SURFACE WATER CLASSIFICATION WEBSITE LISTS THE RECEIVING WATER CLASSIFICATION AS SA; HQW

SITE DOES NOT DISCHARGE TO ORW SURFACE WATER.

CAMA & WETLAND INFORMATION

EXISTING TIDALLY INFLUENCED DITCH ABUTTING PROJECT AREAS HAS BEEN DETERMINED TO MEET CRITERIA FOR ESTUARINE SHORELINE. CAMA AREA OF ENVIRONMENTAL CONCERN (AEC) EXTENDS 75-FT FROM NORMAL HIGH WATER OF ESTUARINE SHORELINE.

A FIELD REVIEW WAS PERFORMED BY NCDEQ COASTAL MANAGEMENT STAFF ON 10 JULY 2024 (RICHARD MAHONEY) TO CONFIRM NORMAL HIGH WATER LINE (NHWL) WHERE THIS FEATURE ABUTS PROJECT AREA. IN ADDITION, A WETLAND DELINEATION WAS COMPLETED BY CZR IN MAY 2025. NHWL AND POTENTIAL WETLANDS IDENTIFIED BY CZR ARE DEPICTED ON THIS PLAN. POTENTIAL WETLAND BOUNDARIES ARE SUBJECT TO REGULATORY REVIEW. ANY IMPACTS TO WATERS OF THE US (OR STATE) ARE SUBJECT TO APPROVAL BY REGULATING AGENCY HAVING JURISDICTION.

FLOOD ZONE INFORMATION

THIS SITE FALLS WITHIN FLOOD HAZARD AREA AE 7 (BASE FLOOD ELEV = 7 FT) ACCORDING TO FEMA FIRM MAP NO. 3720 6388003 DATE 7/16/2003.

UTILITY INFORMATION (WATER / SEWER)

WATER PROVIDER:	CAROLINA WATER SERVICE
WATER USE:	35 GAL/PERSON/SHIFT 2 PERSONS PER SHIFT X 2 SHIFTS PER DAY = 140 GPD REF: 15A NCAC 18C .0409 (BUSINESS, OFFICE, FACTORY, WITH SHOWERS)
SEWER PROVIDER:	TOWN OF BEAUFORT
SEWER USE:	50 GAL/PERSON/SHIFT 2 PERSONS PER SHIFT X 2 SHIFTS PER DAY = 200 GPD REF: 15A NCAC 02T .0114 (FIRE, RESCUE AND EMERGENCY RESPONSE FACILITIES, WITH ON-SITE STAFF)

BUSINESS SIGN INFORMATION

BUSINESS SIGNAGE (IF DESIRED) SHALL COMPLY WITH LOCAL REGULATORY REQUIREMENTS AND WILL BE SUBJECT TO REVIEW / APPROVAL BY CARTERET COUNTY

LAND DEVELOPMENT PERMITTING INFORMATION

REQUIRED APPROVALS SHALL INCLUDE THE FOLLOWING:

NCDEQ DIVISION OF ENERGY, MINERAL & LAND RESOURCES:	HIGH DENSITY STORMWATER PERMIT
NCDEQ DIVISION OF ENERGY, MINERAL & LAND RESOURCES:	EROSION & SEDIMENT CONTROL PERMIT
NCDEQ DIVISION COASTAL MANAGEMENT:	CAMA MAJOR PERMIT
NC DEPT OF TRANSPORTATION:	DRIVEWAY PERMIT(S)
NC DEPT OF TRANSPORTATION:	UTILITY ENCROACHMENT PERMIT(S)
NCDEQ DIVISION OF WATER RESOURCES:	ALTERNATIVE SEWER EXTENSION PERMIT
US ARMY CORPS OF ENGINEERS:	JURISDICTIONAL BOUNDARY(IES) AND IMPACTS
CARTERET COUNTY	ZONING PERMIT FLOODPLAIN DEVELOPMENT PERMIT

BUFFER & LANDSCAPE NOTES

1. EXISTING NATURAL VEGETATION WITHIN REQUIRED BUFFER YARD & REQUIRED SCREENING TO REMAIN ALONG SIDE AND REAR PROPERTY LINE. VEGETATION SHALL BE RESTORED SO AS TO MATERIALLY SCREEN THE LAND USE.
2. 20 FT WIDE GRASSED OR LANDSCAPED BUFFER YARD SHALL BE PROVIDED ALONG PUBLIC STREET FRONTAGE EXCEPT WHERE DEVIATIONS ARE APPROVED BY CARTERET COUNTY.
3. REF: CARTERET COUNTY ZONING ORDINANCE, SECT 1601 FOR SCREENING & BUFFERING.

NCDOT NOTES:

1. ALL WORK PERFORMED WITHIN NCDOT RIGHT-OF-WAY SHALL CONFORM TO APPROVED DRIVEWAY AND UTILITY ENCROACHMENT PERMITS.
2. ALL AREAS IN THE NCDOT ROW DISTURBED DURING CONSTRUCTION SHALL BE RESTORED WITH VEGETATIVE STABILIZATION PER APPLICABLE PORTIONS OF NCDOT SPECIFICATION, DIVISION 16 UNLESS SPECIFICALLY SHOWN OTHERWISE.
3. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL CONFORMING TO NCDOT STANDARD DRAWINGS DIVISION 11, APPLICABLE SUPPLEMENTARY PUBLICATIONS, AND APPROVED PERMIT CONDITIONS.
4. PAVEMENT MARKINGS SHALL COMPLY WITH NCDOT STANDARD DRAWINGS DIVISION 12 AND STANDARD SPECIFICATION SECTION 1205.
5. PROPOSED SIGNS SHALL COMPLY WITH MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
6. PRECONSTRUCTION MEETING, SUBSEQUENT INSPECTIONS AND FINAL INSPECTION ACCEPTANCE SHALL BE IN ACCORDANCE WITH APPROVED PERMIT CONDITIONS.
7. REFER TO SHEET C600 AND C601 FOR UTILITY ENCROACHMENT INFORMATION.

PER NCDOT ONLINE "NORTH CAROLINA SPEED LIMITS" MAP:
HIGHWAY 101 (NC-101) SPEED LIMIT = 55 MPH
STEEL TANK ROAD (SR-1162) SPEED LIMIT = 55 MPH

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	1	6/13/2025	NCDEQ COMMENTS
JAF	2	7/17/2025	NCDEQ COMMENTS
JAF	3	8/28/2025	MISC ENGINEER EDITS
JAF	4	9/24/2025	ESC COMMENTS
JAF	5	12/9/2025	BLDG FOOTPRINT EDITS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

SITE PLAN

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 639904748004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

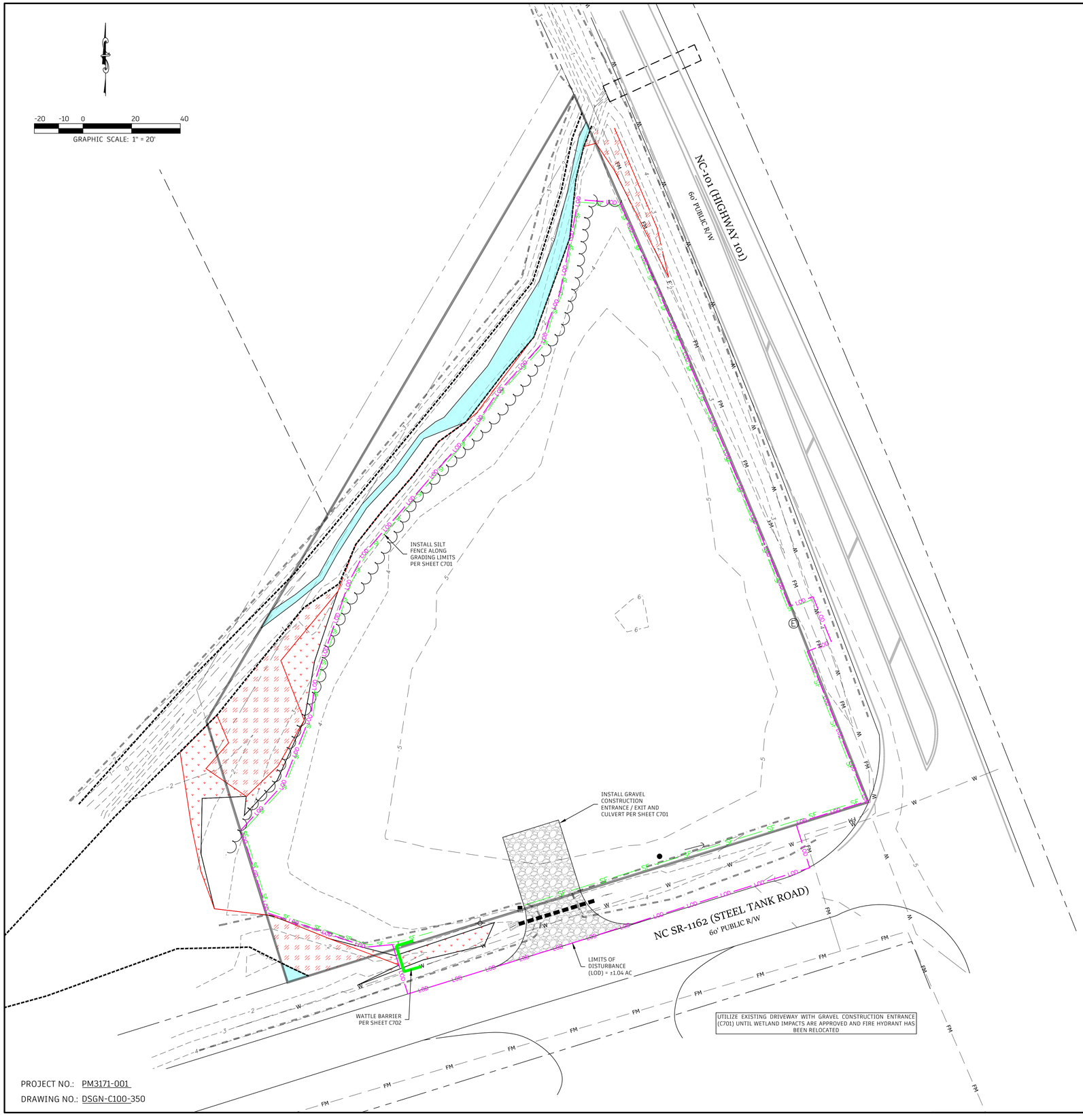
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ADDRESS: 683 W. BEAUFORT ROAD
BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

DESIGNED:	JAF
DRAWN:	JAF
APPROVED:	JAF
DATE:	6/13/2025
SCALE:	1"=20'
SHEET:	C200

PROJECT NO.: PM3171-001
DRAWING NO.: DSGN-C100-350

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E&S PLAN

REGULATORY CRITERIA

REF: NORTH CAROLINA EROSION AND SEDI`MENT CONTROL PLANNING AND DESIGN MANUAL.

LAND DISTURBING ACTIVITIES ASSOCIATED WITH CONSTRUCTION ARE GOVERNED BY THE NORTH CAROLINA SEDIMENTATION POLLUTION CONTROL ACT OF 1973. THIS LAW REQUIRES LAND DEVELOPERS TO PLAN AND IMPLEMENT EFFECTIVE TEMPORARY AND PERMANENT CONTROL MEASURES TO PREVENT ACCELERATED EROSION AND OFF-SITE SEDIMENTATION. IF INSTALLED MEASURES DO NOT WORK, ADDITIONAL MEASURES MUST BE TAKEN.

DISTURBANCE AREAS SHALL BE NON-EROSIVE AND STABLE WITHIN DESIGNATED TIMEFRAMES AFTER COMPLETING CONSTRUCTION. TIMEFRAMES TO ACHIEVE STABILIZATION VARY ACCORDING TO THE CLASSIFICATION OF RECEIVING WATER.

FOR PROJECTS EXCEEDING 1 ACRE OF DISTURBANCE, AN EROSION AND SEDIMENTATION CONTROL (ESC) PLAN MUST BE SUBMITTED TO THE DEPARTMENT OF ENVIRONMENTAL QUALITY AT LEAST 30 DAYS PRIOR TO INITIATING LAND DISTURBANCE ACTIVITIES. PROJECTS DISTURBING LESS THAN 1 ACRE MAY BE SUBJECT TO LOCAL ORDINANCES PERTAINING TO EROSION AND SEDIMENT CONTROL.

PURPOSE

THE ESC PLAN PROVIDES INFORMATION PERTAINING TO PROPOSED CONSTRUCTION INVOLVING LAND DISTURBING ACTIVITIES AND MEASURES TO PREVENT EROSION AND OFFSITE SEDIMENTATION. THIS PLAN INCLUDES GUIDANCE FOR IMPLEMENTATION OF ESC PRACTICES TO COMPLY WITH THE NORTH CAROLINA SEDIMENTATION POLLUTION CONTROL ACT OF 1973 AND NCAC TITLE 15A - ENVIRONMENTAL QUALITY - CHAPTER 4. CONTRACTORS PERFORMING LAND DISTURBING ACTIVITIES ARE ENCOURAGED TO REFERENCE THE NCDEQ EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (2013) FOR ADDITIONAL INFORMATION.

E&S PLAN COMPONENTS

REQUIREMENTS OF ESC PLANS MAY VARY DEPENDING ON PROJECT SIZE AND COMPLEXITY. AT A MINIMUM, THE PLAN MUST CONTAIN SUFFICIENT INFORMATION TO DESCRIBE PROPOSED EARTH DISTURBING ACTIVITIES AND METHODS FOR INSTALLING, OPERATING AND MAINTAINING MEASURES TO PREVENT OFF-SITE DAMAGE FROM SEDIMENTATION. IN ADDITION TO DRAWINGS, THE PLAN MAY INCLUDE A SEPARATE NARRATIVE AND CALCULATIONS DETAILING THE METHODS USED TO SELECT AND SIZE APPROPRIATE ESC PRACTICES. A COPY OF THE APPROVED ESC PLAN MUST BE MAINTAINED ON-SITE AT ALL TIMES UNTIL THE PROJECT IS COMPLETE.

PRACTICES AND SPECIFICATIONS

TEMPORARY EROSION CONTROL PRACTICES ARE EXPECTED TO CONSIST OF THE FOLLOWING:

- PERIMETER SEDIMENT CONTROL (SILT FENCE) DOWN-GRADIENT FROM DISTURBED AREAS.
- GRAVEL CONSTRUCTION ENTRANCE / EXIT
- TEMPORARY SEEDING / STABILIZATION
- COIR FIBER WATTLE
- TEMPORARY DIVERSIONS
- INLET PROTECTION
- SKIMMER SEDIMENT BASIN

PERMANENT EROSION CONTROL PRACTICES SHALL CONSIST OF:

- RIPRAP
- PERMANENT VEGETATION

DO NOT APPLY LIME OR FERTILIZER WITHIN, OR IMMEDIATELY ADJACENT TO ANY SURFACE WATER / WETLAND.

SEQUENCE

THE FOLLOWING SEQUENCE IS PROVIDED AS GUIDANCE FOR IMPLEMENTATION OF ESC MEASURES. OVERALL CONSTRUCTION ACTIVITIES MAY BE CONDUCTED AS NECESSARY FOR COMPLETING THE PROJECT IN A MANNER WHICH IS CONSISTENT WITH ESC AND WATER RESOURCE PROTECTION REQUIREMENTS. MINOR DEVIATIONS TO THE SEQUENCE ARE ACCEPTABLE SO LONG AS THERE IS NO REDUCTION IN PROTECTION TO WATERS WHICH RECEIVE RUNOFF FROM THE PROJECT AREA.

PHASE I: ACCESS AND PERIMETER CONTROLS

1. A PROFESSIONALLY LICENSED SURVEYOR SHOULD FIELD STAKE THE INTENDED LIMITS OF DISTURBANCE AND ANY SPECIFIC AREAS OF PRESERVATION (I.E. WETLANDS) WHICH ARE ADJACENT TO PROPOSED DISTURBANCE.
2. INSTALL WATTLE BARRIER IN SWALES ALONG STEEL TANK ROAD AND HWY 101. INSTALL THE GRAVEL CONSTRUCTION ENTRANCE / EXIT.
3. INSTALL PERIMETER ESC MEASURES (SILT FENCE) PER DETAIL(S).

REFER TO SHEET C301 FOR PHASE II ESC REQUIREMENTS. ESC MAINTENANCE INSTRUCTIONS ARE COVERED ON SHEET C302.

GENERAL ESC NOTES

1. THIS PLAN IS INTENDED TO DEPICT EROSION AND SEDIMENT CONTROL (ESC) INFORMATION AS NECESSARY FOR COMPLIANCE WITH THE NC SEDIMENT POLLUTION CONTROL ACT OF 1973 AND ASSOCIATED ADMINISTRATIVE CODES.
2. THE DISTURBANCE AREA FOR THIS PROJECT IS EXPECTED TO EXCEED 1 ACRE; THEREFORE, EROSION AND SEDIMENT CONTROL PERMITTING WILL BE REQUIRED.
3. SILT FENCE HAS BEEN SHOWN OFFSET FROM THE LOD FOR CLARITY. IN GENERAL, SILT FENCE SHALL BE PLACED AS CLOSE TO LOD LINE AS POSSIBLE WITHOUT CREATING ANY DISTURBANCE OUTSIDE THE DESIGNATED CONSTRUCTION LIMITS.
4. SILT FENCE LABELED AS TEMPORARY IS EXPECTED TO BE REMOVED UPON COMPLETING CONSTRUCTION OF A SPECIFIC UPSTREAM FEATURE, OR WHEN THE FENCE IS IN CONFLICT WITH A NEW PHASE OF CONSTRUCTION.
5. RECP SHALL BE UTILIZED ON ALL SLOPES STEEPER THAN 3:1, WITHIN SWALES / CHANNELS, AND ANY OTHER AREAS DEEMED NECESSARY FOR SEED PROTECTION.
6. ALL DISTURBED AREAS SHALL BE PROPERLY STABILIZED AT THE COMPLETION OF CONSTRUCTION.
7. SEE SHEET C700 FOR ADDITIONAL NOTES RELATED TO ESC PERMIT COMPLIANCE.

STANDARD ESC AND WASTE MANAGEMENT NOTES

1. A SEQUENCE FOR IMPLEMENTING ESC MEASURES IS PROVIDED AS PART OF THE ESC PLAN. EARTH DISTURBING ACTIVITIES SHALL PROCEED ACCORDING TO THIS SEQUENCE UNLESS APPROVED OTHERWISE BY THE REGULATORY AUTHORITY HAVING JURISDICTION.
2. NO EARTH DISTURBANCE ACTIVITIES MAY COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE SPECIFIED ESC MEASURES HAVE BEEN INSTALLED AND ARE FUNCTIONING PROPERLY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND PROPERLY MAINTAINING PROPOSED ESC MEASURES. IN THE EVENT THAT ANY ESC MEASURE FAILS TO PERFORM AS INTENDED, THE CONTRACTOR SHALL INSTALL REPLACEMENT(S) TO CONTROL EROSION AND PREVENT THE OFFSITE MIGRATION OF SEDIMENT.
4. NO EARTH DISTURBANCE SHALL OCCUR OUTSIDE THE SPECIFIED WORK LIMITS.
5. ANY SEDIMENT DEPOSITED ON ROADWAYS BY CONSTRUCTION ACTIVITIES SHALL BE CLEANED DAILY AND RETURNED TO THE SITE OR PROPERLY DISPOSED OF. NO SEDIMENT MAY BE SWEPT, WASHED, SHOVELED OR OTHERWISE DEPOSITED IN SURFACE WATERS / WETLANDS OR DITCHES CONNECTING TO SURFACE WATERS. AT NO TIME SHALL SEDIMENT BE ALLOWED TO LEAVE THE CONSTRUCTION SITE AND ENTER SURFACE WATERS / WETLANDS.
6. WHEN STOCKPILES ARE USED, THEY SHALL BE LOCATED AT LEAST 50-FT FROM SURFACE WATERS UNLESS NO OTHER OPTION IS AVAILABLE. PROVIDE SILT FENCE A MINIMUM OFFSET OF 5-FT FROM TOE OF STOCKPILE.
7. EXCESS CONCRETE AND CONCRETE WASHOUT MUST BE CONTROLLED AND MANAGED TO AVOID CONTACT WITH SURFACE WATERS, WETLANDS AND BUFFERS. NO CONCRETE OR SLURRY SHALL BE DISCHARGED TO A STORMDRAIN, DITCH OR SURFACE WATER.
8. FAILURE TO PROPERLY CONTROL EROSION AND/OR SEDIMENT DISCHARGE SHALL BE SUBJECT TO ENFORCEMENT ACTION ACCORDING TO STATE AND LOCAL REGULATIONS.
9. THE CONTRACTOR SHALL PROPERLY MAINTAIN VEHICLES AND EQUIPMENT TO PREVENT THE RELEASE OF POTENTIALLY HAZARDOUS SUBSTANCES. DRIP PANS SHALL BE USED WHEN REFUELING OR WHEN LEAKS ARE DISCOVERED. REPAIR LEAKING EQUIPMENT OR REMOVE FROM THE SITE AS SOON AS POSSIBLE. COLLECT SPENT FLUIDS AND PROPERLY DISPOSE OR RECYCLE.
10. DO NOT STORE HAZARDOUS OR POTENTIALLY HAZARDOUS MATERIALS (INCLUDING HERBICIDES, PESTICIDES, RODENTCIDES) IN AREAS SUBJECT TO FLOODING, OR WHERE THEY MAY SPILL / LEAK INTO WELLS, STORM DRAINS, GROUND WATER OR SURFACE WATER. THESE MATERIALS SHOULD BE STORED UNDER COVER OR IN SECONDARY CONTAINMENT. IF A SPILL SHOULD OCCUR, CLEAN AREA IMMEDIATELY. HANDLE AND DISPOSE ACCORDING TO SAFETY DATA SHEET.
11. NO WASTE MATERIALS SHALL BE BURIED OR BURNED ON SITE. WASTE MATERIALS SHALL BE PROPERLY CONTAINERIZED TO PREVENT ACCIDENTAL RELEASE. WASTE CONTAINERS AND PORTABLE TOILETS SHALL BE PLACED AT LEAST 50 FEET AWAY FROM STORM DRAINS AND SURFACE WATERS. WHEN SPACE LIMITATIONS PREVENT A 50-FOOT OFFSET, PROVIDE SECONDARY MEASURE(S) TO PROTECT SURFACE WATER(S). COVER WASTE CONTAINERS AT THE END OF EACH WORKDAY AND BEORE STORM EVENTS OR PROVIDE SECONDARY CONTAINMENT. REMOVE ALL WASTE MATERIALS FROM THE SITE AND PROPERLY DISPOSE ACCORDING TO FEDERAL, STATE AND LOCAL REGULATIONS.
12. DO NOT DUMP PAINT AND OTHER LIQUID WASTE INTO STORM DRAINS, SURFACE WATERS, OR WETLANDS. PREVENT THE DISCHARGE OF SOAPS, SOLVENTS, DETERGENTS AND OTHER LIQUID WASTES FROM CONSTRUCTION SITES. CONTAIN LIQUID WASTES IN A CONTROLLED AREA AND PROPERLY DISPOSE.
13. IN THE EVENT OF UNFORESEEN OR INADVERTENT DISCHARGES, THE CONTRACTOR SHALL IMPLEMENT ACTIONS TO MINIMIZE THE POTENTIAL FOR ACCELERATED EROSION AND SEDIMENTATION. OCCURRENCES OF SEDIMENT DEPOSIT TO SURFACE WATERS (STREAM / WETLAND) SHALL BE REPORTED TO THE APPROPRIATE NCDEQ REGIONAL OFFICE.

TRAFFIC CONTROL

THE CONTRACTOR SHALL PROVIDE APPROPRIATE TRAFFIC CONTROL AS SPECIFIED IN MUTCD CHAPTER 6 AND / OR AS DIRECTED BY THE OWNER OF PUBLICLY ACCESSIBLE ROADWAY(S) IMPACTED BY PROPOSED ACTIVITIES.

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	4	9/24/2025	ESC COMMENTS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

EROSION & SEDIMENT CONTROL PLAN (PHASE I)

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 639904748004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

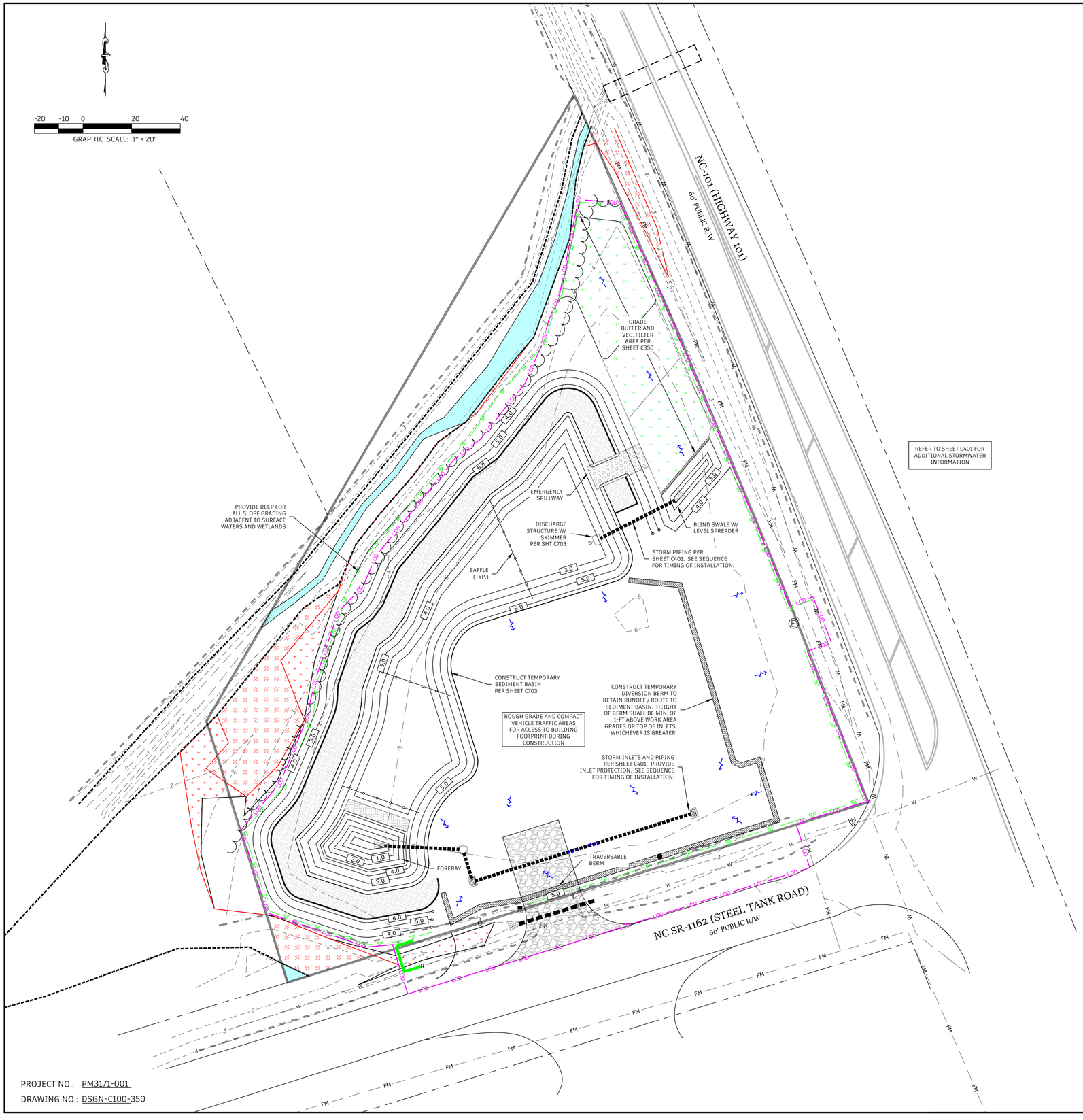
OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: 683 W. BEAUFORT ROAD BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

DESIGNED:	JAF
DRAWN:	JAF
APPROVED:	JAF
DATE:	8/28/2025
SCALE:	1"=20'
SHEET:	C300

PROJECT NO.: PM3171-001
DRAWING NO.: DSGN-C100-350

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PROJECT NO.: PM3171-001

DRAWING NO.: DSGN-C100-350

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GENERAL ESC NOTES

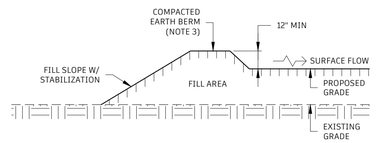
1. THIS PLAN IS INTENDED TO DEPICT EROSION AND SEDIMENT CONTROL (ESC) INFORMATION AS NECESSARY FOR COMPLIANCE WITH THE NC SEDIMENT POLLUTION CONTROL ACT OF 1973 AND ASSOCIATED ADMINISTRATIVE CODES.
2. THE DISTURBANCE AREA FOR THIS PROJECT IS EXPECTED TO EXCEED 1 ACRE; THEREFORE, EROSION AND SEDIMENT CONTROL PERMITTING WILL BE REQUIRED.
3. SILT FENCE HAS BEEN SHOWN OFFSET FROM THE LOD FOR CLARITY. IN GENERAL, SILT FENCE SHALL BE PLACED AS CLOSE TO LOD LINE AS POSSIBLE WITHOUT CREATING ANY DISTURBANCE OUTSIDE THE DESIGNATED CONSTRUCTION LIMITS.
4. SILT FENCE LABELED AS TEMPORARY IS EXPECTED TO BE REMOVED UPON COMPLETING CONSTRUCTION OF A SPECIFIC UPSTREAM FEATURE, OR WHEN THE FENCE IS IN CONFLICT WITH A NEW PHASE OF CONSTRUCTION.
5. RECP SHALL BE UTILIZED ON ALL SLOPES STEEPER THAN 3:1, WITHIN SWALES / CHANNELS, AND ANY OTHER AREAS DEEMED NECESSARY FOR SEED PROTECTION.
6. ALL DISTURBED AREAS SHALL BE PROPERLY STABILIZED AT THE COMPLETION OF CONSTRUCTION.
7. SEE SHEET C700 FOR ADDITIONAL NOTES RELATED TO ESC PERMIT COMPLIANCE.

ESC PLAN SEQUENCE CONTINUED

PHASE II: SEDIMENT BASIN, ROUGH GRADING, BLDG CONSTRUCTION

1. IDENTIFY STOCKPILE NEEDS AND PROVIDE ESC MEASURES FOR STOCKPILE LOCATIONS AS NECESSARY.
2. CLEAR, GRUB AND STRIP TOPSOIL FROM CONSTRUCTION AREAS. STOCKPILE SUITABLE TOPSOIL FOR REUSE. DISPOSE OF UNSUITABLE MATERIALS OFFSITE.
3. GRADE AND STABILIZE VEGETATED BUFFER AND FILTER STRIP AREA PER SHEET C350. NO STORMWATER SHALL DISCHARGE FROM BASIN THROUGH BUFFER AND FILTER STRIP UNTIL THE AREA IS STABILIZED.
4. CONSTRUCT SEDIMENT BASIN IN ACCORDANCE WITH PROVIDED DETAILS. INSTALL OUTLET STRUCTURE AND DISCHARGE PIPING.
5. ROUGH GRADE VEHICLE TRAFFIC AREAS AND BUILDING FOOTPRINT. INSTALL INLETS, PIPING AND DIVERSION BERM SO RUNOFF IS ROUTED TO SEDIMENT BASIN. INSTALL INLET PROTECTION (DS-1 AND DS-2) PER DETAIL PROVIDED. IT IS RECOMMENDED THAT WATER SERVICE LINE RUNNING BELOW STORM PIPE 1 BE INSTALLED AND CAPPED PRIOR TO PLACING PIPE 1.
6. PREPARE FOR FOUNDATION / FOOTING / SLAB CONSTRUCTION WITH FILL AND COMPACTION PER BUILDING PLAN REQUIREMENTS.
7. RELOCATE EXISTING FIRE HYDRANT. ONCE HYDRANT IS RELOCATED, CONSTRUCTION ENTRANCE MAY BE MOVED TO PERMANENT DRIVEWAY LOCATION.
8. REMOVE EXISTING DRIVEWAY AND GRADE CONTINUOUS SWALE ALONG STEEL TANK ROAD.
9. CONTINUE TO OPERATE / MAINTAIN ESC FEATURES DURING BUILDING CONSTRUCTION AS SPECIFIED ON SHEET C302 - ESC PHASE III INSTRUCTIONS.

ESC MAINTENANCE INSTRUCTIONS ARE COVERED ON SHEET C302.



NOTES:

1. DETAIL APPLIES TO DIVERSION BERM USED TO RETAIN AND ROUTE RUNOFF TO SEDIMENT BASIN. GRADING SHALL PROVIDE POSITIVE SLOPE TOWARDS PROPOSED INLETS.
2. MINIMUM TOP WIDTH OF BERM SHALL BE 2-FEET. SIDE SLOPES SHOULD NOT EXCEED 2:1.
3. WHEN DIVERSION SHALL REMAIN IN PLACE FOR 30 DAYS OR MORE, ALL SLOPES SHALL RECEIVE TEMPORARY STABILIZATION PER ESC MANUAL.

DIVERSION BERM DETAIL

NOT TO SCALE

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	4	9/24/2025	ESC COMMENTS
JAF	5	12/9/2025	BLDG FOOTPRINT EDITS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

EROSION & SEDIMENT CONTROL PLAN (PHASE II)

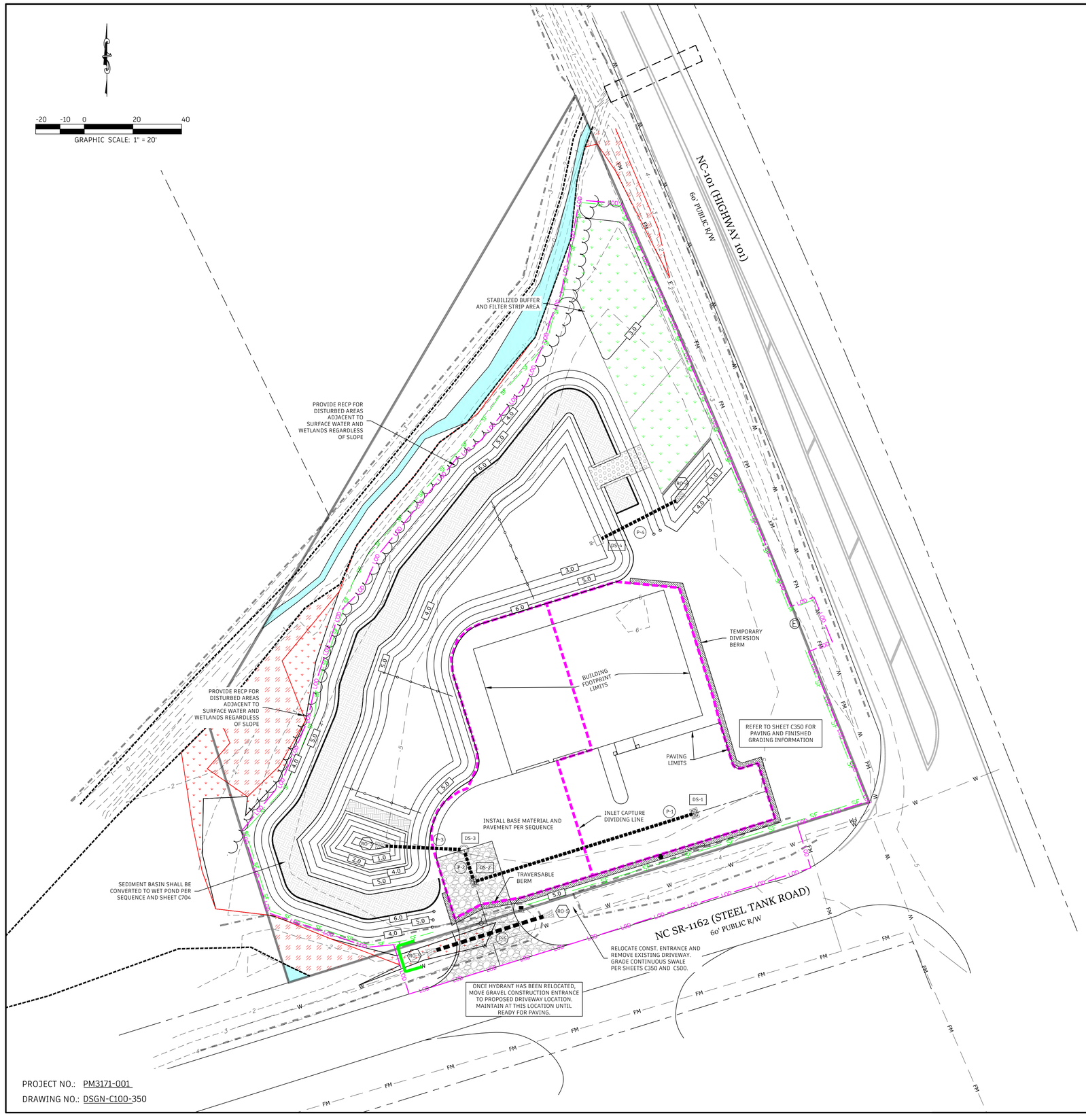
BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 639904748004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: 683 W. BEAUFORT ROAD
BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

DESIGNED:	JAF
DRAWN:	JAF
APPROVED:	JAF
DATE:	8/28/2025
SCALE:	1"=20'
SHEET:	C301



PROJECT NO.: PM3171-001

DRAWING NO.: DSGN-C100-350

GENERAL ESC NOTES

1. THIS PLAN IS INTENDED TO DEPICT EROSION AND SEDIMENT CONTROL (ESC) INFORMATION AS NECESSARY FOR COMPLIANCE WITH THE NC SEDIMENT POLLUTION CONTROL ACT OF 1973 AND ASSOCIATED ADMINISTRATIVE CODES.
2. THE DISTURBANCE AREA FOR THIS PROJECT IS EXPECTED TO EXCEED 1 ACRE; THEREFORE, EROSION AND SEDIMENT CONTROL PERMITTING WILL BE REQUIRED.
3. SILT FENCE HAS BEEN SHOWN OFFSET FROM THE LOD FOR CLARITY. IN GENERAL, SILT FENCE SHALL BE PLACED AS CLOSE TO LOD LINE AS POSSIBLE WITHOUT CREATING ANY DISTURBANCE OUTSIDE THE DESIGNATED CONSTRUCTION LIMITS.
4. SILT FENCE LABELED AS TEMPORARY IS EXPECTED TO BE REMOVED UPON COMPLETING CONSTRUCTION OF A SPECIFIC UPSTREAM FEATURE, OR WHEN THE FENCE IS IN CONFLICT WITH A NEW PHASE OF CONSTRUCTION.
5. RECP SHALL BE UTILIZED ON ALL SLOPES STEEPER THAN 3:1, WITHIN SWALES / CHANNELS, AND ANY OTHER AREAS DEEMED NECESSARY FOR SEED PROTECTION.
6. ALL DISTURBED AREAS SHALL BE PROPERLY STABILIZED AT THE COMPLETION OF CONSTRUCTION.
7. SEE SHEET C700 FOR ADDITIONAL NOTES RELATED TO ESC PERMIT COMPLIANCE.

ESC PLAN SEQUENCE CONTINUED

PHASE III: UTILITIES, PAVING, FINAL STABILIZATION, PERMIT TERMINATION

1. CONSTRUCT FOUNDATION / FOOTING / SLAB PER BUILDING PLANS.
2. BEGIN BUILDING CONSTRUCTION. CONTINUE TO OPERATE / MAINTAIN ESC FEATURES DURING BUILDING CONSTRUCTION.
3. INSTALL UTILITY SERVICES TO WITHIN 5-FT OF BUILDING. ALL UNDERGROUND PIPING (WATER, SEWER, STORM, ETC) SHOULD BE INSTALLED PRIOR TO PLACEMENT OF BASE MATERIAL, PAVING AND FINISHED GRADING. WHEN APPROPRIATE, COMPLETE UTILITY SERVICE CONNECTIONS TO BUILDING.
4. COMPLETE SUBGRADE AND BASE MATERIAL INSTALLATION FOR AREAS TO BE PAVED UTILIZING PROPER COMPACTION METHODS TO BOTTOM OF PAVEMENT ELEVATION.
5. REMOVE TEMPORARY BERM AND GRAVEL CONSTRUCTION ENTRANCE. REMOVE HARDWARE CLOTH AND GRAVEL INLET PROTECTION. INSTALL ASPHALT PAVING AND CONSTRUCT SIDEWALKS. INSTALL FILTER BAG INLET PROTECTION (DS-1 AND DS-2).
6. COMPLETE FINISHED GRADING AND SIGN INSTALLATION. ONCE FINISHED GRADE IS ACHIEVED, COMPLETE FINAL STABILIZATION OF ANY REMAINING DISTURBED AREAS USING PERMANENT SEED, MULCH, RECP AND LANDSCAPE MATERIALS.
7. CLEAN SEDIMENT FROM INLETS AND PIPING. SEDIMENT ACCUMULATED BEHIND TEMPORARY ESC MEASURES SHALL BE REMOVED AND DISPERSED ON SITE OR PROPERLY DISPOSED OF OFF SITE.
8. ONCE PERMANENT SEED HAS ADEQUATELY GERMINATED, CONVERT SEDIMENT BASIN TO WET POND PER SHEET C704 AND COMPLETE PLANTINGS. REMOVE INLET FILTER BAGS.
9. INSPECT ALL SITE WORK AND REPAIR ANY DEFICIENCIES NOTED.
10. CONTACT NCDEQ WILMINGTON OFFICE REGARDING PERMIT CLOSE OUT. WHEN NCDEQ PERMISSION IS RECEIVED, REMOVE SILT FENCE, WATTLE BARRIERS AND REPAIR DISTURBANCES. ALL LAND DISTURBING ACTIVITIES SHOULD NOW BE COMPLETE.
11. ONCE NCDEQ HAS COMPLETED A SATISFACTORY SITE INSPECTION, PERMITTEE SHALL SUBMIT A *NOTICE OF TERMINATION* TO CLOSE OUT THE ESC PERMIT.
12. ANY REMAINING ANCILLARY SITE WORK THAT DOES NOT REQUIRE EARTH DISTURBANCE (I.E. PAVEMENT STRIPING) MAY BE COMPLETED AT CONTRACTOR'S DISCRETION.

ESC MAINTENANCE

THE FOLLOWING OPERATION AND MAINTENANCE (O&M) PLAN IS INTENDED TO PROVIDE A GENERAL MEANS FOR COMPLIANCE WITH REGULATIONS PERTAINING TO EROSION AND SEDIMENT CONTROL. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT THESE METHODS (PLUS ANY ADDITIONAL METHODS) AS MAY BE NECESSARY BECAUSE OF CONDITIONS CREATED BY LOCALIZED SITE CONDITIONS AND / OR CONSTRUCTION PROCEDURES IN ORDER TO ASSURE COMPLIANCE WITH APPLICABLE LAWS OR ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION, OPERATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL FEATURES UNTIL PROPER STABILIZATION HAS BEEN ACHIEVED. OPERATION AND MAINTENANCE SHALL INCLUDE ROUTINE INSPECTIONS, MONITORING, CLEANING, REPAIR AND REPLACEMENT OF ALL ESC MEASURES IN ACCORDANCE WITH THIS PLAN.

INSPECTION FREQUENCY:
ALL ESC MEASURES SHALL BE CHECKED FOR PROPER OPERATION AND SERVICEABILITY AT LEAST ONCE EVERY 7 DAYS AND AFTER ANY RAINFALL EVENT GREATER THAN OR EQUAL TO 1-INCH.

STONE CONSTRUCTION ENTRANCE / EXIT
MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP-DRESSING WITH 2-INCH STONE. AFTER EACH RAINFALL, INSPECT AND CLEAN AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS.

SILT FENCE
REMOVE ACCUMULATED SEDIMENT WHEN DEPTH REACHES 0.5-FT. AVOID UNDERMINING THE FENCE WHEN REMOVING SEDIMENT. REPLACE DAMAGED OR INEFFECTIVE FABRIC OR POSTS IN THE EVENT OF COLLAPSE, TEARING OR DECOMPOSITION.

ROLLED EROSION CONTROL PRODUCT (RECP)
MONITOR AND REPAIR RECP AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED. REFER TO RECP DETAIL FOR ADDITIONAL REQUIREMENTS.

WATTLE BARRIERS
REMOVE ACCUMULATED SEDIMENT WHEN DEPTH REACHES 1/2 OF WATTLE HEIGHT. AVOID UNDERMINING THE BARRIER WHEN REMOVING SEDIMENT. REPLACE DAMAGED OR INEFFECTIVE FABRIC OR POSTS IN THE EVENT OF COLLAPSE, TEARING OR DECOMPOSITION. REFER TO WATTLE DETAIL FOR ADDITIONAL REQUIREMENTS.

SEDIMENT BASIN
REMOVE SEDIMENT AND RESTORE BASIN TO ORIGINAL DIMENSIONS WHEN IT ACCUMULATES TO CLEAN-OUT ELEVATION. CHECK THE EMBANKMENT FOR SETTLING OR EROSION DAMAGE. CHECK OUTLET FOR DAMAGE OR TRASH / DEBRIS THAT WOULD IMPEDE OPERATION. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. PROPERLY DISPOSE OF TRASH / DEBRIS THAT WAS ACCUMULATED.

INLET PROTECTION DEVICES
REMOVE ACCUMULATED SEDIMENT AND MAKE REPAIRS ACCORDING TO DETAILS PROVIDED.

SEDIMENT THAT HAS BEEN REMOVED FROM ESC MEASURES MAY BE REUSED ON SITE. MATERIALS DEEMED UNSUITABLE FOR CONSTRUCTION SHALL BE SEGREGATED AND PROPERLY DISPOSED OF OFF-SITE.

SPECIAL ESC NOTES

1. WHEN INSTALLING SOIL SUPPLEMENTS FOR VEGETATIVE STABILIZATION, DO NOT APPLY LIME OR FERTILIZER WITHIN, OR IMMEDIATELY ADJACENT TO SURFACE WATERS / WETLANDS.
2. CHANNEL / SWALE GRADING SHALL BE COMPLETED ON A DRY DAY WITH NO RAINFALL FORECAST.

COMPLIANCE NOTES

1. PERMITTEE / CONTRACTOR SHALL COMPLETE ALL SITE ACTIVITIES, INSPECTIONS AND MONITORING IN ACCORDANCE WITH THE NCG01 ESC PERMIT AUTHORIZATION.
2. ONCE SITE WORK IS COMPLETE AND DISTURBANCE AREAS HAVE BEEN PROPERLY STABILIZED, CONTACT THE RESPONSIBLE NCDEQ OFFICE TO REQUEST PERMISSION FOR ESC PERMIT CLOSEOUT.
3. UPON RECEIPT OF PERMISSION, TYPICALLY IN THE FORM OF A SATISFACTORY NCDEQ INSPECTION REPORT, PERMITTEE (OR DESIGNEE) SHALL SUBMIT A NOTICE OF TERMINATION TO NCDEQ .

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	4	9/24/2025	ESC COMMENTS
JAF	5	12/9/2025	BLDG FOOTPRINT EDITS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

EROSION & SEDIMENT CONTROL PLAN (PHASE III)

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

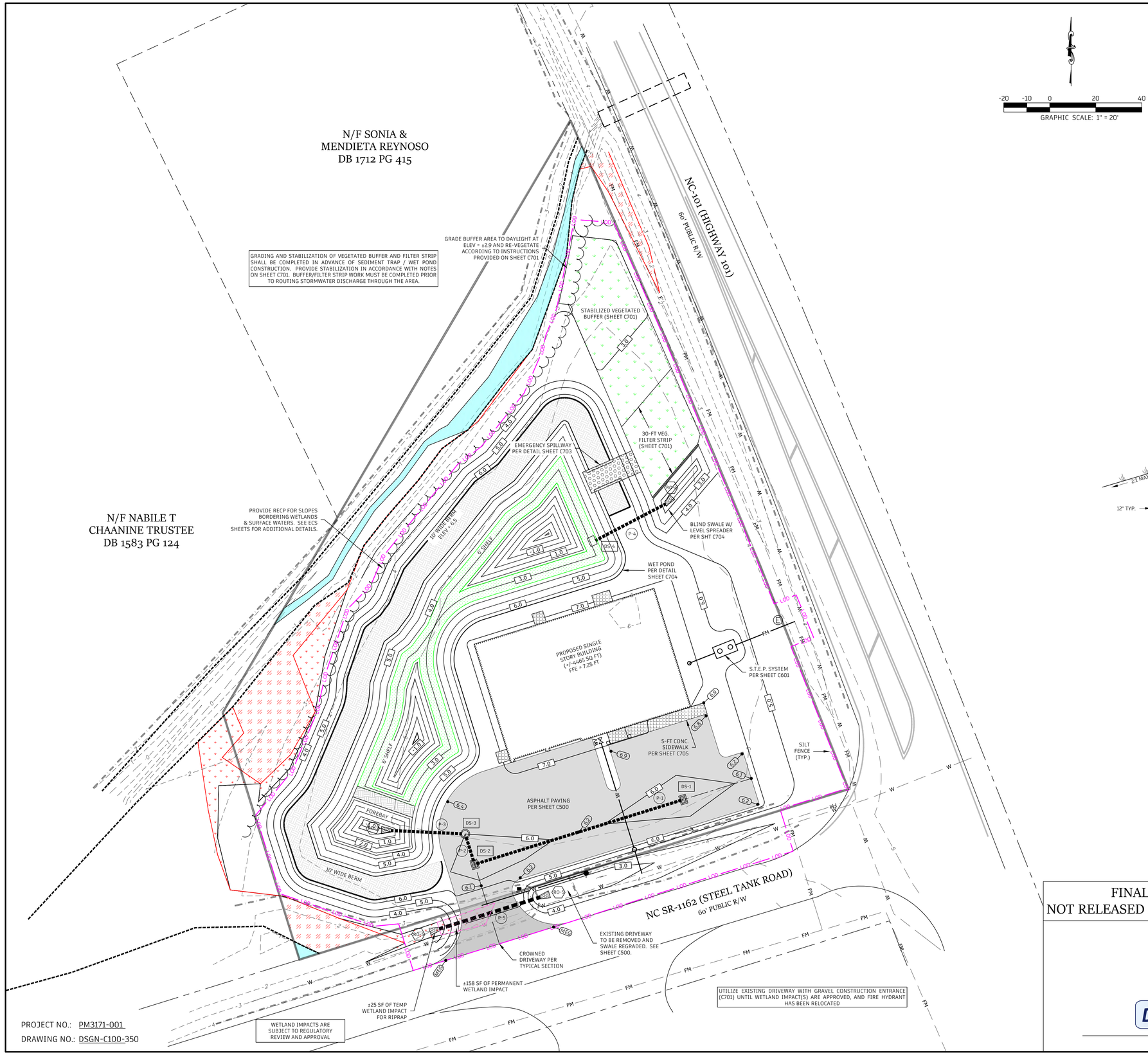
REFERENCE PIN: 6399047480004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: 683 W. BEAUFORT ROAD
BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

DESIGNED:	JAF
DRAWN:	JAF
APPROVED:	JAF
DATE:	8/28/25
SCALE:	1"=20'
SHEET:	C302

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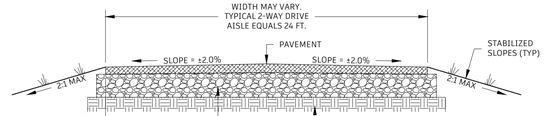


GENERAL GRADING AND EARTHWORK NOTES

1. THIS PLAN IS INTENDED TO ILLUSTRATE PROPOSED SITE GRADING AND PAVING. NOT ALL DESIGN FEATURES ARE SHOWN ON THIS DRAWING.
2. EARTH DISTURBANCE SHALL BE LIMITED TO THE APPROVED LOD.
3. GRADING AND EARTHWORK SHALL BE COMPLETED IN ACCORDANCE WITH REQUIREMENTS SPECIFIED ON SHEET C001.
4. NO GRADING OR EARTHWORK MAY BE INITIATED UNTIL PROPER EROSION AND SEDIMENT CONTROLS ARE IN PLACE. REFER TO SHEETS C300-C302 FOR APPROVED SEQUENCE OF SITE ACTIVITIES.
5. ALL DISTURBED AREAS SHALL BE PROPERLY STABILIZED TO PREVENT EROSIVE CONDITIONS USING GRASS OR OTHER LANDSCAPE MATERIALS UNLESS SHOWN OTHERWISE. REFER TO EROSION AND SEDIMENT CONTROL SHEETS FOR ADDITIONAL INFORMATION.
6. PROPOSED BUILDING INFORMATION IS PROVIDED FOR SCHEMATIC REPRESENTATION ONLY. ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DESIGN SHALL BE BY OTHERS.
7. REFER TO ARCHITECTURAL PLANS (BY OTHERS) FOR ALL CRITICAL BUILDING DIMENSIONS.
8. PIPE LENGTHS ARE APPROXIMATE. ADJUST AS NEEDED BASED ON FIELD PLACEMENT OF ASSOCIATED STRUCTURES.
9. CONTRACTOR SHALL VERIFY ALL DOORWAY DETAILS WITH BUILDING PLANS (BY OTHERS) PRIOR TO INSTALLING SIDEWALKS OR PAVING.
10. DRAINAGE STRUCTURE AND PIPE INFORMATION IS PROVIDED ON SHEET C401.
11. SEE SHEET C200 FOR PAVEMENT MARKING & SIGNAGE.
12. REFER TO SHEET C500 FOR ADDITIONAL DRIVEWAY AND PAVING DETAILS.
13. WET POND AND LEVEL SPREADER DETAILS ARE PROVIDED ON SHEET C704.
14. SEE SHEET C702 FOR OUTLET PROTECTION DETAILS.

NOTES:

1. PAVEMENT SECTION FOR CROWNED DRIVEWAY IS SHOWN. CONSTRUCT REMAINING ASPHALT PAVEMENT ACCORDING TO GRADES SHOWN ON SITE PLANS.
2. REFER TO TYPICAL PAVEMENT SECTION FOR ADDITIONAL INFORMATION (SHEET C500).



CROWNED DRIVEWAY TYPICAL SECTION

NOT TO SCALE

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	1	6/13/2025	NCDEQ COMMENTS
JAF	2	7/17/2025	NCDEQ COMMENTS
JAF	3	8/28/2025	MISC ENGINEER EDITS
JAF	4	9/24/2025	ESC COMMENTS
JAF	5	12/9/2025	BLDG FOOTPRINT EDITS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

GRADING & PAVING PLAN

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 639904748004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

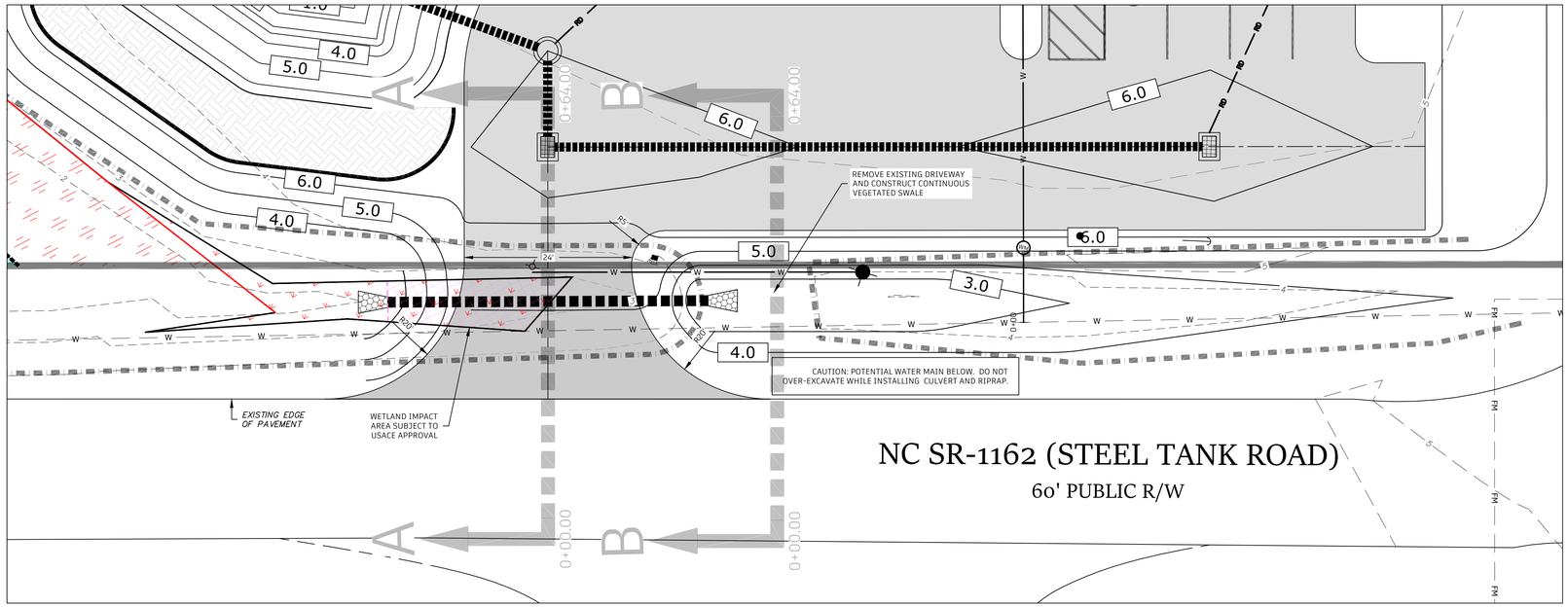
OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: 683 W. BEAUFORT ROAD
BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

DESIGNED: JAF
DRAWN: JAF
APPROVED: JAF
DATE: 6/13/2025
SCALE: 1"=20'
SHEET: C350

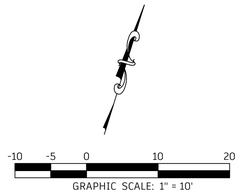
PROJECT NO.: PM3171-001
DRAWING NO.: DSGN-C100-350

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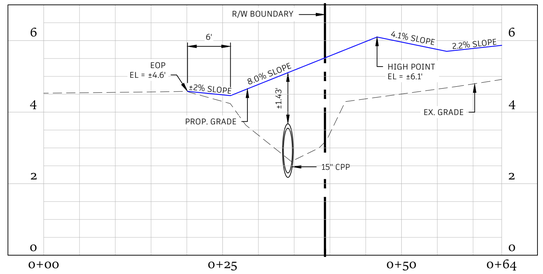
PLAN VIEW
SCALE: 1"=10'

PROVIDE PERMANENT VEGETATIVE STABILIZATION FOR ALL DISTURBED AREAS WITHIN NCDOT R/W UNLESS SPECIFICALLY SHOWN OTHERWISE.

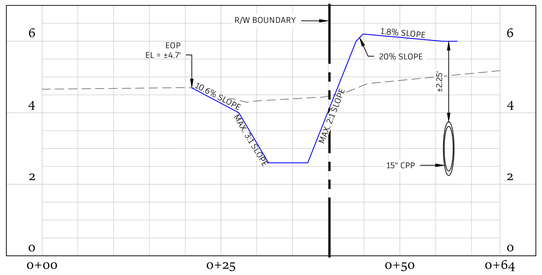


GENERAL NOTES:

1. THIS DRAWING IS INTENDED TO DEPICT PROPOSED CONSTRUCTION WITHIN THE NCDOT ROW AS NECESSARY FOR SATISFYING DRIVEWAY PERMIT APPROVAL.
2. ALL WORK WITHIN NCDOT RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH APPROVED DRIVEWAY OR ENCROACHMENT PERMIT.
3. CONSTRUCTION MATERIALS SHALL COMPLY WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
4. PRECONSTRUCTION MEETING, SUBSEQUENT INSPECTIONS AND FINAL INSPECTION ACCEPTANCE SHALL BE IN ACCORDANCE WITH APPROVED PERMIT CONDITIONS.
5. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH NCDOT ROADWAY STANDARD DRAWINGS, MUTCD NCDOT SUPPLEMENT, AND NCDOT PERMIT CONDITIONS.



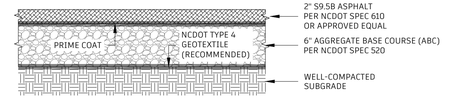
SECTION A-A
HORIZONTAL: 1"=10'
VERTICAL: 1"=2'



SECTION B-B
HORIZONTAL: 1"=10'
VERTICAL: 1"=2'

NOTES:

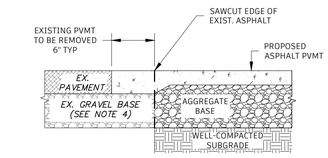
1. MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH RELEVANT PORTIONS OF NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
2. APPLY APPROPRIATE TACK COAT BETWEEN LIFTS WHEN MULTIPLE ASPHALT LAYERS ARE UTILIZED.



TYPICAL PAVEMENT SECTION
NOT TO SCALE

NOTES:

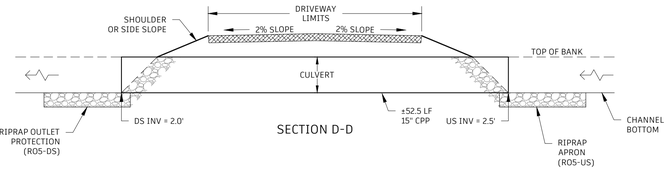
1. DETAIL APPLIES WHERE NEW PAVEMENT TIES-IN TO EXISTING PAVEMENT.
2. CREATE SMOOTH, STRAIGHT EDGE FOR TIE-IN UTILIZING MECHANICAL SAWCUT.
3. TYPICAL VERTICAL CUT SHALL BE MADE AT A DISTANCE NOT LESS THAN 6" FROM THE EXISTING EDGE; HOWEVER, DISTANCE MAY BE REDUCED TO AVOID DAMAGING PAVEMENT STRIPE WHEN NECESSARY.
4. EXISTING GRAVEL BASE SHALL BE EXPOSED AND CLEANED TO REMOVE LOOSE PARTICLES. EXPOSED EXISTING GRAVEL SHALL BE PRIME COATED NOT MORE THAN THREE DAYS PRIOR TO THE SCHEDULED PAVING.



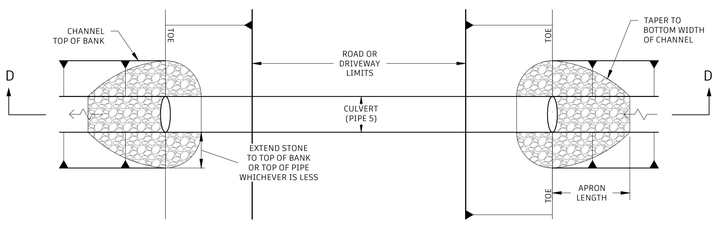
PAVEMENT TIE-IN DETAIL
NOT TO SCALE

CULVERT NOTES

1. UTILIZE SMOOTH LINED CORRUGATED HDPE PIPE WITH WATER-TIGHT JOINTS - ADS N-12 OR APPROVED EQUAL, REFER TO DIVISION 3 OF NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR ADDITIONAL REQUIREMENTS.
2. RIPRAP MATERIALS AND PLACEMENT SHALL COMPLY WITH NCDOT SPEC SECTION 1042.
3. REFER TO NCDOT STANDARD SPEC SECTION 1056 FOR GEOTEXTILE REQUIREMENTS.
4. RIPRAP APRON SIZING:
   - RO5-US LENGTH = 4 FT, MIN WIDTH MATCH CHANNEL, CLASS A, 9-IN MIN DEPTH
   - RO5-DS LENGTH = 6 FT, TERMINAL WIDTH = 4 FT, CLASS A, 9-IN MIN DEPTH
5. REFER TO SHEET C702 FOR ADDITIONAL RIPRAP APRON INFORMATION.

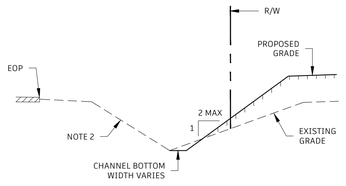


SECTION D-D



PLAN VIEW

PROPOSED CULVERT SECTION
HORIZONTAL: 1"=10'
VERTICAL: 1"=2'



NOTES:

1. INTENT OF DETAIL IS TO SHOW GENERAL GRADING AND STABILIZATION REQUIREMENTS FOR MODIFICATION AND RESTORATION OF EXISTING ROADSIDE SWALES.
2. IN GENERAL, SHAPE OF SWALE SHALL BE MAINTAINED TO THE EXTENT PRACTICAL. SWALE SIDE SLOPES ADJACENT TO ROADWAY SHOULD REMAIN RELATIVELY UNCHANGED. IN AREAS WHERE GRADING IS REQUIRED, MAXIMUM SIDE SLOPE SHALL BE 3:1. TYPICAL SWALE SIDE SLOPE ADJACENT TO BEAUFORT EMS SITE SHALL BE 2:1, WITH A MAXIMUM SIDE SLOPE OF 2:1.
3. SWALE GRADES SHALL BE SMOOTH, UNIFORM, AND FREE FROM FLOW OBSTRUCTIONS.
4. PERMANENT STABILIZATION SHALL BE PROVIDED FOR ALL DISTURBED AREAS USING RIPRAP OR VEGETATION ACCORDING TO NOTES AND DETAILS.
5. WHERE SWALE IS TO BE VEGETATED, PROVIDE MATTING PER RECP DETAIL.

TYPICAL SWALE DETAIL
NOT TO SCALE

NC SR-1162 (STEEL TANK ROAD)
60' PUBLIC R/W

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	1	6/13/2025	NCDEQ COMMENTS
JAF	3	8/28/2025	MISC ENGINEER EDITS
JAF	5	12/9/2025	BLDG FOOTPRINT EDITS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

DRIVEWAY PLAN: STEEL TANK ROAD (SR-1162)

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 639904748004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

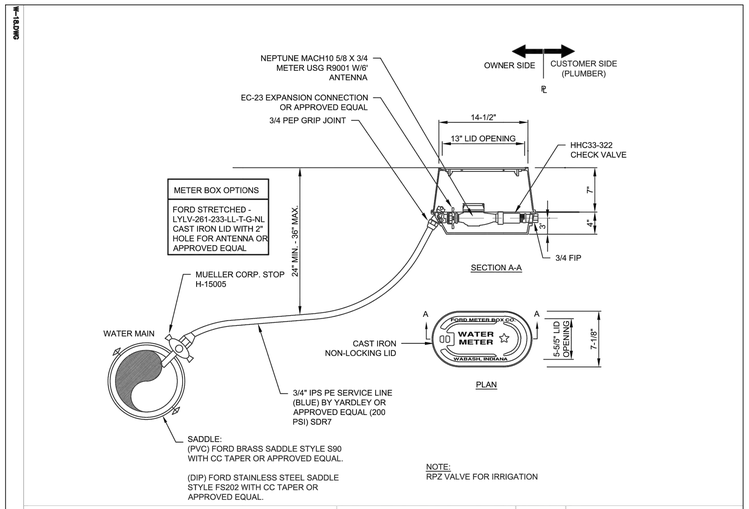
OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: PO BOX 950, BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

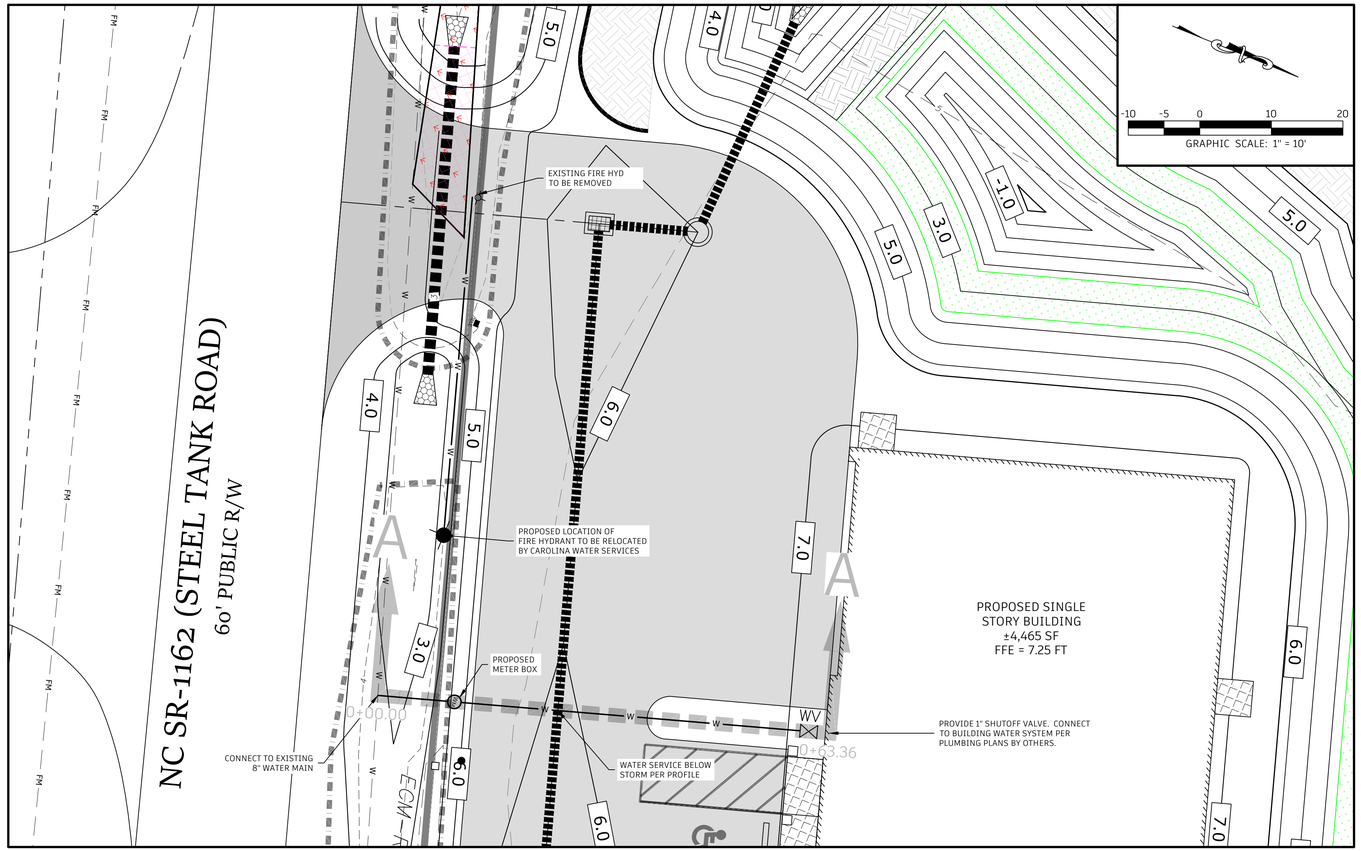
DESIGNED: JAF
DRAWN: JAF
APPROVED: JAF
DATE: 6/13/2025
SCALE: AS SHOWN
SHEET: C500

PROJECT NO.: PM3171-001
DRAWING NO.: DSGN-C500-602

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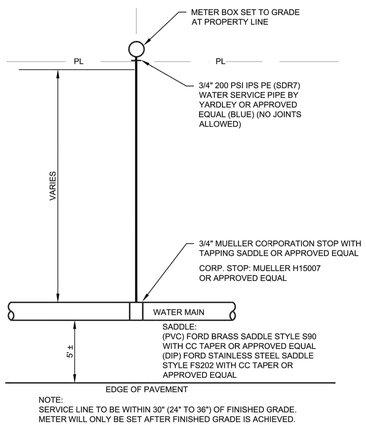


TYPICAL 3/4" RESIDENTIAL WATER SERVICE	CAROLINA WATER SERVICE OF NC	DATE: 11/02/22
	APPROVED BY: DRAWN BY: HCR	SHEET NO. W-18



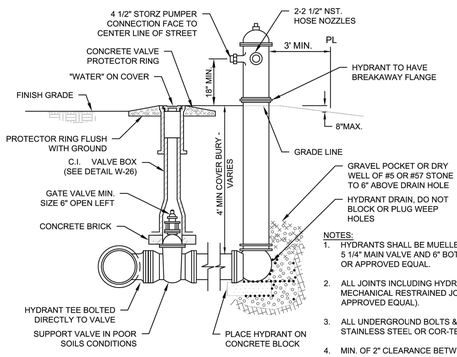
PLAN VIEW
SCALE: 1"=10'

NOTE: 3/4" SERVICE LINE TO EACH METER. METER BOX PER SPECIFIC SYSTEM REQUIREMENTS. PROVIDE APPROVED BPD PER LOCAL REGULATIONS.



NOTE:
SERVICE LINE TO BE WITHIN 30" (24" TO 36") OF FINISHED GRADE.
METER WILL ONLY BE SET AFTER FINISHED GRADE IS ACHIEVED.

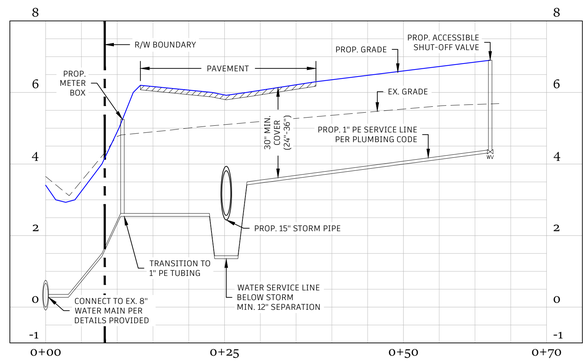
TYPICAL SINGLE WATER SERVICE	CAROLINA WATER SERVICE OF NC	DATE: 11/02/22
	APPROVED BY: DRAWN BY: HCR	SHEET NO. W-16



*ALL HYDRANTS SHALL BE FACTORY PRIMED AND PAINTED. COLOR DETERMINED PER SUBMITTAL.

NOTES:
1. HYDRANTS SHALL BE MUELLER SUPER CENTURION A423, WITH 5 1/4" MAIN VALVE AND 6" BOTTOM OPENING AND OPENS LEFT, OR APPROVED EQUAL.
2. ALL JOINTS INCLUDING HYDRANT ASSEMBLY SHALL UTILIZE MECHANICAL RESTRAINED JOINTS, (INCLUDES MEGA LUGS OR APPROVED EQUAL).
3. ALL UNDERGROUND BOLTS & FASTENERS TO BE 304 STAINLESS STEEL OR COR-TEN IRON.
4. MIN. OF 2" CLEARANCE BETWEEN VALVE BOX COVER AND LOWER SECTION OF VALVE BOX, CUT LOWER SECTION IF NECESSARY.
5. HYDRANT DRAIN MUST NOT BE CONNECTED TO OR LOCATED WITHIN 10' OF SEWER SYSTEMS.

FIRE HYDRANT WITH GATE VALVE IN UNPAVED AREA	CAROLINA WATER SERVICE OF NC	DATE: 11/02/22
	APPROVED BY: DRAWN BY: HCR	SHEET NO. W-2



SECTION A-A
HORIZONTAL: 1"=10'
VERTICAL: 1"=2'

WATER CONSTRUCTION NOTES:

1. WATER SERVICE CONSTRUCTION WITHIN RIGHT-OF-WAY SHALL BE SUBJECT TO CONDITIONS OF NCDOT ENCROACHMENT PERMIT.
2. THE CONTRACTOR IS CAUTIONED THAT THE LOCATION OF EXISTING UTILITIES (WHERE SHOWN) IS APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ACTUAL FIELD LOCATIONS FROM THE RESPECTIVE UTILITY COMPANY AND TO COORDINATE WITH AFFECTED UTILITY COMPANY IN ADVANCE OF BEGINNING ANY WORK.
3. ALL WATER SERVICE CONSTRUCTION SHALL COMPLY WITH APPLICABLE PORTIONS OF STANDARD SPECIFICATIONS & DETAILS FOR WATER & SEWER CONSTRUCTION (MARCH 2023) BY CAROLINA WATER SERVICE OF NORTH CAROLINA (CWS).
4. TESTING AND INSPECTIONS OF WATER SERVICE COMPONENTS SHALL COMPLY WITH CWS SPECIFICATIONS AND NC PLUMBING CODE. CONTRACTOR SHALL COORDINATE TAP AND CONSTRUCTION WITH WITH CWS STAFF AS NECESSARY.
5. ONCE CONSTRUCTED AND ACCEPTED AS COMPLETE, WATER SERVICE LINE BETWEEN MAIN AND METER SHALL BE OWNED AND MAINTAINED BY CWS. WATER SERVICE FROM METER BOX TO BUILDING SHALL BE OWNED AND MAINTAINED BY BEAUFORT RESCUE & EMS, INC.
6. ALL COMPONENTS OF WATER SERVICE SHALL BE ANSI / NSF 61 CERTIFIED FOR POTABLE WATER USE.
7. ALL UTILITIES SHALL BE KEPT IN OPERATION EXCEPT WITH THE EXPRESS WRITTEN CONSENT OF UTILITY OWNER.
8. NO IRRIGATION IS PROPOSED FROM THE POTABLE SERVICE LINE. IF AN IRRIGATION SYSTEM IS DESIRED IN THE FUTURE, CONTACT CWS TO DETERMINE ADDITIONAL SERVICE LINE AND BACKFLOW PROTECTION REQUIREMENTS.
9. REFER TO SHEET C601 FOR PRESSURE PIPE TRENCH DETAIL.
10. CONNECTION BETWEEN SERVICE LINE AND BUILDING DISTRIBUTION SYSTEM SHALL BE MADE BY APPROPRIATELY LICENSED PLUMBER AND CONFORM TO NC PLUMBING CODE.

REVISIONS

BY	NO.	DATE	DESCRIPTION

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

WATER UTILITY PLAN

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 639904748004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

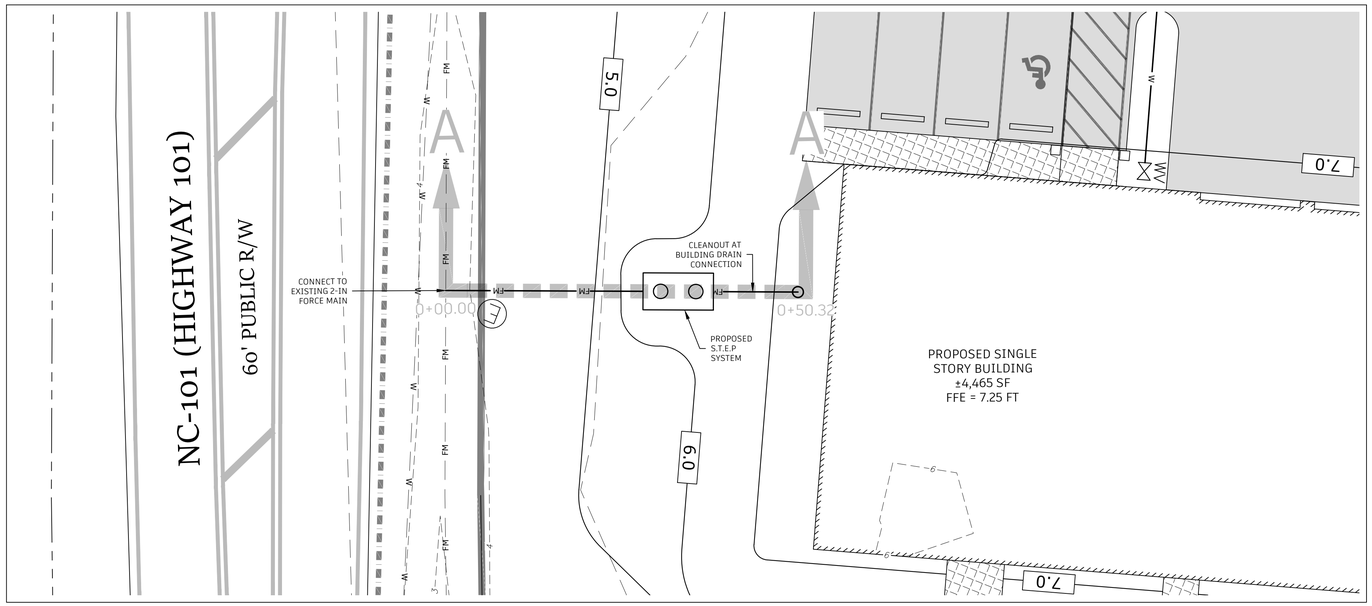
OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: PO BOX 950 BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

DESIGNED:	JAF
DRAWN:	JAF
APPROVED:	JAF
DATE:	9/10/2025
SCALE:	AS SHOWN
SHEET:	C600

PROJECT NO.: PM3171-001
DRAWING NO.: DSGN-C500-602

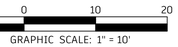
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PLAN VIEW

SCALE: 1"=10'

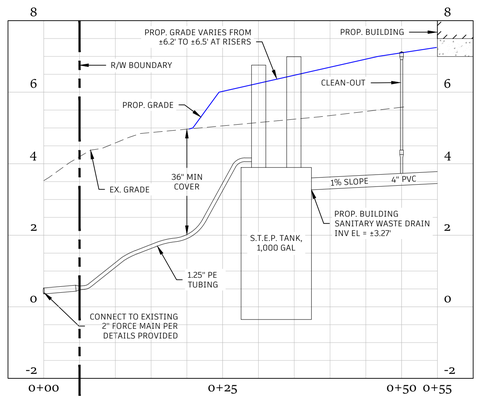




GRAPHIC SCALE: 1" = 10'

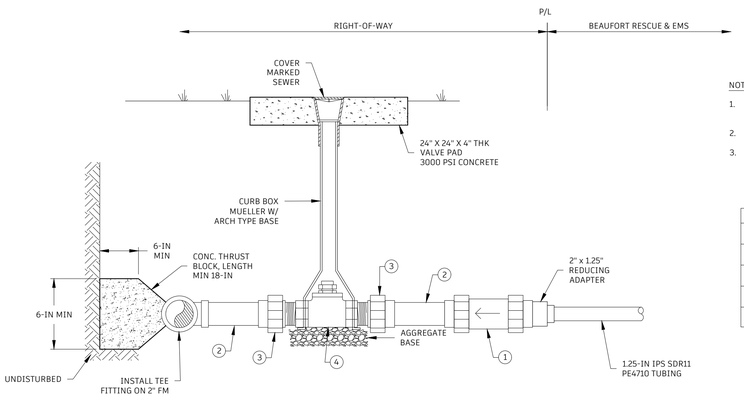
SEWER CONSTRUCTION NOTES:

1. SEWER LINE CONSTRUCTION WITHIN RIGHT-OF-WAY SHALL BE SUBJECT TO CONDITIONS OF NCDOT ENCROACHMENT PERMIT.
2. THE S.T.E.P. SYSTEM AND DISCHARGE PIPE TO CONNECTION WITH EXISTING FORCE MAIN ARE SUBJECT TO CONDITIONS OF ALTERNATIVE SEWER EXTENSION PERMIT FROM NCDEQ.
3. THE CONTRACTOR IS CAUTIONED THAT THE LOCATION OF EXISTING UTILITIES (WHERE SHOWN) IS APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ACTUAL FIELD LOCATIONS FROM THE RESPECTIVE UTILITY COMPANY AND TO COORDINATE WITH AFFECTED UTILITY COMPANY IN ADVANCE OF BEGINNING ANY WORK.
4. ALL SEWER CONSTRUCTION WITHIN SHALL COMPLY WITH APPLICABLE SECTIONS OF 15A NCAC 18.1900 (SEWAGE TREATMENT AND DISPOSAL SYSTEMS), 15A NCAC 02T.0300 (SEWER EXTENSIONS), AND CONDITIONS OF THE ALTERNATIVE SEWER EXTENSION PERMIT FROM NCDEQ.
5. SEWER CONSTRUCTION WITHIN NCDOT RIGHT-OF-WAY SHALL COMPLY WITH APPLICABLE PORTIONS OF *MANUAL FOR DESIGN AND CONSTRUCTION OF STREETS, WATER AND WASTEWATER SYSTEMS* (FEBRUARY 2008) BY TOWN OF BEAUFORT (BEAUFORT), AND CONDITIONS OF NCDOT ENCROACHMENT PERMIT.
6. CONTRACTOR SHALL COORDINATE WITH THE TOWN OF BEAUFORT PUBLIC WORKS DEPARTMENT TO SCHEDULE CONNECTION AND TEMPORARY SHUT-DOWN OF FLOWS IN 2-INCH FORCE MAIN.
7. TESTING AND INSPECTIONS OF ALL SEWER SYSTEM COMPONENTS SHALL COMPLY WITH CONDITIONS OF THE ALTERNATIVE SEWER EXTENSION PERMIT FROM NCDEQ AND / OR NC PLUMBING CODE AS APPROPRIATE.
8. ONCE CONSTRUCTED AND ACCEPTED AS COMPLETE, SEWER FORCE MAIN WITHIN RIGHT-OF-WAY SHALL BE OWNED AND MAINTAINED BY THE TOWN OF BEAUFORT. THE REMAINING COMPONENTS OF SEWER SERVICE SHALL BE OWNED AND MAINTAINED BY BEAUFORT RESCUE & EMS, INC.
9. REFER TO SHEET C705 FOR SEPTIC TANK EFFLUENT PUMP (STEP) SYSTEM DETAILS.



SECTION A-A

HORIZONTAL: 1"=10'
VERTICAL: 1"=2'



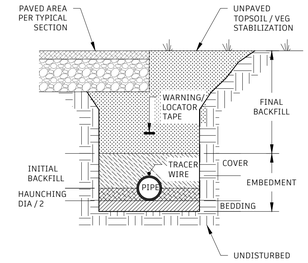
FORCE MAIN CONNECTION DETAIL

NOT TO SCALE

NOTES:

1. ONCE ACCEPTED, COMPONENTS WITHIN RIGHT-OF-WAY SHALL BE OWNED, OPERATED AND MAINTAINED BY THE TOWN OF BEAUFORT.
2. IT IS ANTICIPATED THAT ALL 2-INCH FITTINGS AND PIPING SHALL FIT WITHIN RIGHT-OF-WAY.
3. THRUST BLOCK TO BE POURED AGAINST FIRM, UNDISTURBED EARTH, USING 3,000 PSI (MIN) CONCRETE.

NO.	DESCRIPTION
1	2-IN TRUE UNION CHECK VALVE, ASTM D1784, SLIP X SLIP, HAYWARD TC SERIES OR EQUAL
2	SCH 80 PVC PIPE, ASTM D1785, LENGTH AS NECESSARY
3	2-IN PVC UNION, ASTM D1784, SLIP X MIPT
4	2-IN BRONZE CURB STOP, FIPT X FIPT, LEGEND VALVE OR EQUAL

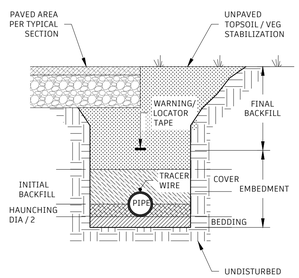


PRESSURE PIPE TRENCH

NOT TO SCALE

NOTES:

1. TRENCH SHALL BE DRY DURING PIPE INSTALLATION.
2. BACKFILL MATERIALS & METHODS: REFERENCE ASTM D2321, ASTM D2274 AND ASTM F1668.
3. TRENCH WIDTH: AS NECESSARY TO ENSURE HAUNCHING CAN BE PLACED AND COMPACTED. TYPICALLY 12" EACH SIDE OF PIPE (MIN) UNLESS DEPTH REQUIRES TRENCH BOX WHICH WILL DICTATE WIDTH.
4. TRENCHES SHALL BE EXCAVATED TO PROVIDE VERTICAL AND HORIZONTAL CURVES WHICH WILL NOT EXCEED THE PERMISSIBLE LONGITUDINAL DEFLECTION OF THE PIPE.
5. EMBEDMENT MATERIAL: UTILIZE CLASS I, II, OR III MATERIALS. FOR PIPES LESS THAN 6-INCHES IN DIAMETER LIMIT PARTICLE SIZE TO 1/2 INCHES OR LESS. FOR PIPES 6-INCHES AND LARGER, LIMIT PARTICLE SIZE TO 3/4 INCHES OR LESS.
6. BEDDING: PROVIDE UNIFORM SURFACE TO SUPPORT PIPE AT DESIGN ELEVATION. TYPICAL 4-INCH THICKNESS, LEVELED BY HAND AND COMPACTED.
7. HAUNCHING: MATERIALS TO BE WORKED IN AROUND PIPE BY HAND AND COMPACTED IN 4 TO 6-INCH LIFTS.
8. INITIAL BACKFILL: PLACE IN 4 TO 6-INCH LIFTS AND COMPACT. PREFERRED PIPE COVER IS 12-INCHES; HOWEVER, DEPTH REQUIRES ADJUSTMENT TO ACCOMMODATE PAVEMENT AND BASE MATERIALS.
9. FINAL BACKFILL: IN UNPAVED AREAS UTILIZE NATIVE EMBANKMENT FREE OF UNSUITABLE MATERIALS (ORGANICS, WASTE / DEBRIS, BOULDERS). IN PAVED AREAS, ADJUST AS NECESSARY TO ACCOMMODATE PAVEMENT AND BASE MATERIALS.
10. COMPACTION: UTILIZE MECHANICAL TAMPER (I.E. JUMPING JACK). IN AREAS OF PROPOSED PAVEMENT, COMPACT TO 95% OF STANDARD PROCTOR TO BOTTOM OF BASE MATERIAL, THEN FOLLOW PAVEMENT DETAILS. IN UNPAVED AREAS, EMBEDMENT SHOULD BE COMPACTED TO 95% OF STANDARD PROCTOR, AND FINAL BACKFILL TO AT LEAST 85% STANDARD PROCTOR AS NECESSARY TO PREVENT SETTLING. TRENCHES IN UNPAVED AREAS SHOULD BE OVERFILLED AND THEN COMPACTED PRIOR TO PLACEMENT OF TOPSOIL.
11. TRACER WIRE AND WARNING / LOCATOR TAPE: COMPLY WITH SPECIFICATIONS OF UTILITY OWNER WHEN PLACED IN RIGHT OF WAY. COMPLY WITH BUILDING CODE WHEN PLACED ON PRIVATE PROPERTY.



GRAVITY SEWER PIPE TRENCH

NOT TO SCALE

NOTES:

1. TRENCH SHALL BE DRY DURING PIPE INSTALLATION.
2. PIPE DEPTH: TYPICAL COVER FOR GRAVITY SEWER SHALL BE AT LEAST 36-INCHES UNLESS SPECIFIED OTHERWISE BY UTILITY OWNER.
3. BACKFILL MATERIALS & METHODS: REFERENCE ASTM D2321.
4. TRENCH WIDTH: AS NECESSARY TO ENSURE HAUNCHING CAN BE PLACED AND COMPACTED. TYPICALLY 12" EACH SIDE OF PIPE (MIN) UNLESS DEPTH REQUIRES TRENCH BOX WHICH WILL DICTATE WIDTH.
5. TRENCHES SHALL BE EXCAVATED TO PROVIDE VERTICAL AND HORIZONTAL CURVES WHICH WILL NOT EXCEED THE PERMISSIBLE LONGITUDINAL DEFLECTION OF THE PIPE.
6. EMBEDMENT MATERIAL: UTILIZE CLASS I, II, OR III MATERIALS. LIMIT PARTICLE SIZE TO 1.5 INCHES OR LESS.
7. BEDDING: PROVIDE UNIFORM SURFACE TO SUPPORT PIPE AT DESIGN ELEVATION. TYPICAL 4-INCH THICKNESS, LEVELED BY HAND AND COMPACTED.
8. HAUNCHING: MATERIALS TO BE WORKED IN AROUND PIPE BY HAND AND COMPACTED IN 4 TO 6-INCH LIFTS.
9. INITIAL BACKFILL: PLACE IN 4 TO 6-INCH LIFTS AND COMPACT. PREFERRED PIPE COVER IS 12-INCHES; HOWEVER, DEPTH REQUIRES ADJUSTMENT TO ACCOMMODATE PAVEMENT AND BASE MATERIALS.
10. FINAL BACKFILL: IN UNPAVED AREAS UTILIZE NATIVE EMBANKMENT FREE OF UNSUITABLE MATERIALS (ORGANICS, WASTE / DEBRIS, BOULDERS). IN PAVED AREAS, ADJUST AS NECESSARY TO ACCOMMODATE PAVEMENT AND BASE MATERIALS.
11. COMPACTION: UTILIZE MECHANICAL TAMPER (I.E. JUMPING JACK). IN AREAS OF PROPOSED PAVEMENT, COMPACT TO 95% OF STANDARD PROCTOR TO BOTTOM OF BASE MATERIAL, THEN FOLLOW PAVEMENT DETAILS. IN UNPAVED AREAS, EMBEDMENT SHOULD BE COMPACTED TO 95% OF STANDARD PROCTOR, AND FINAL BACKFILL TO AT LEAST 85% STANDARD PROCTOR AS NECESSARY TO PREVENT SETTLING. TRENCHES IN UNPAVED AREAS SHOULD BE OVERFILLED AND THEN COMPACTED PRIOR TO PLACEMENT OF TOPSOIL.
12. TRACER WIRE AND WARNING / LOCATOR TAPE: COMPLY WITH SPECIFICATIONS OF UTILITY OWNER WHEN PLACED IN RIGHT OF WAY. COMPLY WITH BUILDING CODE WHEN PLACED ON PRIVATE PROPERTY.

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	1	6/13/2025	NCDEQ COMMENTS
JAF	5	12/9/2025	BLDG FOOTPRINT EDITS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

SEWER UTILITY PLAN

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 6399047480004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: PO BOX 950 BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

DESIGNED:	JAF
DRAWN:	JAF
APPROVED:	JAF
DATE:	4/2/2025
SCALE:	AS SHOWN
SHEET:	C601

PROJECT NO.: PM3171-001

DRAWING NO.: DSGN-C500-602

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Date:

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SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10 feet or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
· Temporary grass seed covered with straw or other mulches and tackifiers. · Hydroseeding · Rolled erosion control products with or without temporary grass seed · Appropriately applied straw or other mulch · Plastic sheeting	· Permanent grass seed covered with straw or other mulches and tackifiers · Geotextile fabrics such as permanent soil reinforcement matting · Hydroseeding · Shrubs or other permanent plantings covered with mulch · Uniform and evenly distributed ground cover sufficient to restrain erosion · Structural methods such as concrete, asphalt or retaining walls · Rolled erosion control products with grass seed

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants.*
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

NORTH CAROLINA Environmental Quality

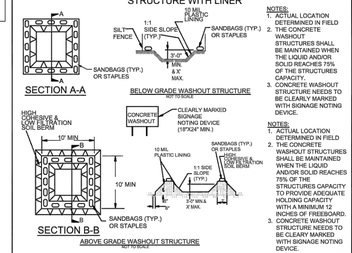
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NCG-01 GROUND COVER

Date:

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ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

NORTH CAROLINA Environmental Quality

EFFECTIVE DATE: 11/12/2020

NCG-01 MATERIALS HANDLING

Date:

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PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,

(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,

(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,

(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,

(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and

(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING
SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record. See Self Inspection Timeframes table to the right for guidelines on frequency of inspections and required aspects of records.

Self Inspection Timeframes

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend on holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (this will determine if a site inspection is needed). days on which no rainfall occurred shall be recorded as "Zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected 2. Date and Time of the inspection 3. Name of the person performing the inspection 4. Indication of whether the measures were operating properly 5. Description of maintenance needs for the measure 6. Description, Evidence, and date of corrective actions taken
(3) Stormwater discharge outfalls(SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected 2. Date and Time of the inspection 3. Name of the person performing the inspection 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration 5. Indication of visible sediment leaving the site 6. Description, Evidence, and date corrective actions taken
(4) Perimeter of Site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible Sedimentation is found outside site limits, then record of the following shall be made: 1) Actions taken to clean up or stabilize sediment that has left the site limits 2) Description, Evidence and date of corrective actions taken 3) An explanation as to the actions taken to control future releases
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or has visible increased turbidity from the construction activity, then a record of the following shall be made: 1) Description, Evidence and date of corrective actions taken 2)Records of required reports to the appropriate Division Regional Office per Part III, Section C, Item(2)(a) of this permit
(6) Ground Stabilization Measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover) 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or assurance that they will be provided as soon as possible

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

NORTH CAROLINA Environmental Quality

EFFECTIVE DATE:11/12/2020

NCG-01 SELF INSPECTION

Date:

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PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING
SECTION B: RECORDKEEPING

Item to Document	Document Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locantions, dimensions and relative elevations shown on the approved E&SC plan	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) the maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action

1. E&SC Plan Documentation
The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

2. Additional Documentation to be Kept on Site
In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:
(a) This General Permit as well as the Certificate of Coverage, after it is received.
(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years
All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING
SECTION C: REPORTING

1. Occurrences that Must be Reported
Permittees shall report the following occurrences:
(a) Visible sediment deposition in a stream or wetland.
(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
(d) Anticipated bypasses and unanticipated bypasses.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements
After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframe (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• Within 24 hours, an oral or electronic notification. • Within 7 Calendar Days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related caused, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• Within 24 Hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• Within 24 Hours, an oral or electronic notification • Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)]	• Within 24 Hours, an oral or electronic notification • Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

NORTH CAROLINA Environmental Quality

EFFECTIVE DATE: 11/12/2020

NCG-01 RECORDKEEPING AND REPORTING

PERSON(S) / ENTITY RESPONSIBLE FOR ESC OPERATION, MAINTENANCE, MONITORING AND RECORD KEEPING:

NAME: WILLIAM H. WILLIS III
CHIEF. BEAUFORT RESCUE & EMS, INC.

ADDRESS: 683 W. BEAUFORT ROAD
BEAUFORT, NC 28516

PHONE: (252) 728-3255

DESIGNEE NAME & SIGNATURE: _____

IF ANOTHER INDIVIDUAL HAS BEEN DESIGNATED TO COMPLETE ROUTINE INSPECTIONS, MAINTENANCE AND RECORD KEEPING, PRINT NAME ABOVE, SIGN / DATE, AND PROVIDE CONTACT INFORMATION BELOW. PLANS SHALL BE MAINTAINED ON SITE UNTIL NCG01 PERMIT COVERAGE IS TERMINATED.

THE PERMITTEE SHALL ULTIMATELY BE RESPONSIBLE FOR ENSURING COMPLIANCE WITH PERMIT REQUIREMENTS.

REVISIONS

BY	NO.	DATE	DESCRIPTION

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

NCG-01 NOTES

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 639904748004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

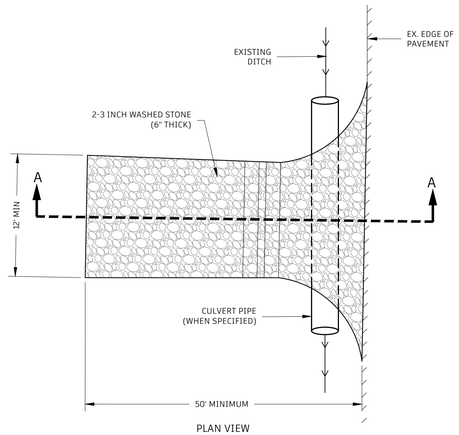
OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: 683 W. BEAUFORT ROAD BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

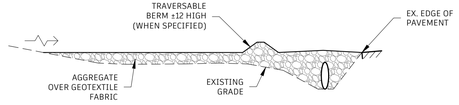
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DRAWN:	JAF
APPROVED:	JAF
DATE:	8/28/25
SCALE:	AS SHOWN
SHEET:	C700

PROJECT NO.: PM3171-001
DRAWING NO.: DTLS-C700

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PLAN VIEW



SECTION A-A

GENERAL NOTES:

1. GRAVEL CONSTRUCTION ENTRANCE / EXIT SHALL BE USED TO MINIMIZE MUD AND SEDIMENT FROM VEHICLE TRAFFIC BEING DEPOSITED ON PUBLIC ROADWAYS.
2. MONITOR CONNECTION TO PUBLIC ROAD FOR SEDIMENT CARRYOVER AND CLEAN AS NEEDED.
3. AT NO TIME SHALL SEDIMENT BE WASHED, SHOVELED, SWEPT OR OTHERWISE DISCHARGED TO DITCHES OR SURFACE WATERS.
4. WHEN SPECIFIED IN ESC PLAN, A TRAVERSABLE BERM SHALL BE USED TO DIRECT RUNOFF TOWARDS SEDIMENT STORAGE AREA. BERM GRADE SHALL BE AS NEEDED FOR RUNOFF DIVERSION AND ALLOW CONSTRUCTION VEHICLES TO CROSS.

INSTALLATION NOTES:

1. WHERE ENTRANCE WILL BE CONVERTED TO PERMANENT DRIVEWAY / STREET, REMOVE TOPSOIL AND COMPACT PRIOR TO INSTALLING GEOTEXTILE AND AGGREGATE.
2. AGGREGATE SIZE - USE 2-3 INCH WASHED STONE.
3. LENGTH - AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.
4. THICKNESS - NOT LESS THAN 6".
5. WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS. MINIMUM OF 12'.
6. INSTALL NCDOT TYPE 2 GEOTEXTILE FABRIC UNDER ENTIRE FOOTPRINT OF CONSTRUCTION ENTRANCE.
7. WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE, WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SANDBAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
8. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN-OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED INTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED.

TYPICAL GRAVEL CONSTRUCTION ENTRANCE / EXIT

NOT TO SCALE

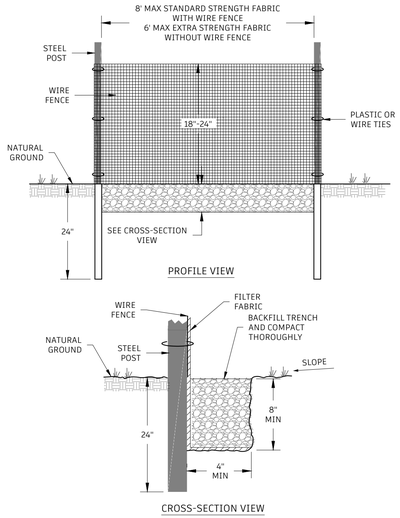


TABLE 6.62b SPECIFICATIONS FOR SEDIMENT FENCE FABRIC NC DEQ EROSION AND SEDIMENTATION MANUAL

	TEST MATERIALS	UNITS	SUPPORTED SILT FENCE	UNSUPPORTED SILT FENCE	TYPE OF VALVE
GRAB STRENGTH	ASTM D 4632	N(lbs)			
MACHINE DIRECTION			400	550	MARV
			(90)	(90)	
X-MACHINE DIRECTION			400	450	MARV
			(90)	(90)	
PERMITTIVITY	ASTM D 4491	sec^{-1}	0	0	MARV
APPARENT OPENING SIZE[2]	ASTM D 4751	mm	1	1	Max.ARV[3]
		(US Sieve#)	(30)	(30)	
ULTRAVIOLET STABILITY	ASTM D 4355	% Retained Strength	70% after 500th of exposure	70% after 500th of exposure	Typical

1. SILT FENCE SHALL CONSIST OF 14 GAUGE STEEL WIRE WITH A MESH SPACING OF 6 INCHES, OR PREFABRICATED POLYMER MESH OF EQUIVALENT STRENGTH.
2. DEFAULT VALUES ARE BASED ON EMPIRICAL EVIDENCE WITH A VARIETY OF SEDIMENT.
3. AS MEASURED IN ACCORDANCE WITH TEST METHOD D 46.32.

INSTALLATION NOTES:

1. SYNTHETIC FILTER FABRIC TO BE INSTALLED AS SHOWN ON PLAN.
2. SYNTHETIC FILTER FABRIC TO BE AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER CONFORMING TO ASTM D 6461. SYNTHETIC STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT TEMPERATURE RANGING OF 0 TO 120° F.
3. STEEL POSTS ARE TO BE 1.25 Lb/LINEAR FT. MINIMUM STEEL WITH A MINIMUM LENGTH OF 5 FEET. STEEL POSTS ARE TO HAVE PROJECTIONS TO FACILITATE FASTENING OF THE FABRIC.
4. WIRE FENCE SHALL HAVE A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.
5. SILT FENCES SHALL HAVE AN 18" OVERLAP FOR SPLICE AT END OF SECTION. 6. SILT FENCES SHALL NOT BE STAPLED/NAILED TO TREES.

MAINTENANCE NOTES:

1. INSPECT SILT FENCE AT LEAST ONCE A WEEK AND AFTER EACH MAJOR RAINFALL EVENT (1-INCH OR MORE).
2. REPLACE FENCE IMMEDIATELY IF THE FABRIC OF THE SILT FENCE COLLAPSES, TEARS, DECOMPOSES OR BECOMES INEFFECTIVE.
3. AS NECESSARY, DEPOSITS OF SEDIMENT SHALL BE REMOVED TO ENSURE ADEQUATE STORAGE VOLUME FOR THE NEXT RAINFALL AND TO REDUCE PRESSURE ON THE FENCE. FENCE IS NOT TO BE UNDERMINED DURING CLEAN OUT.
4. UPON COMPLETION OF WORK AND ADEQUATE VEGETATION GROWTH AS PER THE PLANS. ALL FENCING MATERIAL SHALL BE REMOVED, INCLUDING SEDIMENT. THE AREA SHALL BE GRADED AND STABILIZED AND VEGETATED ACCORDINGLY.

TYPICAL SILT FENCE DETAIL

NOT TO SCALE

SEEDING SCHEDULE:

SEED BED PREPARATION
LIME ---------- 2 TONS/AC
10-10-10 ---------- 1,000 LBS/AC
SURFACE ROUGHENING: IF RECENT TILLAGE OPERATIONS HAVE RESULTED IN A LOOSE SURFACE, ADDITIONAL ROUGHENING MAY NOT BE REQUIRED EXCEPT TO BREAK UP LARGE CLODS. IF RAINFALL CAUSES THE SURFACE TO BECOME SEALED OR CRUSTED, LOOSEN IT JUST PRIOR TO SEEDING BY DISKING, RAKING OR HARROWING. GROOVE OR FURROW SLOPES STEEPER THAN 3:1 ON THE CONTOUR BEFORE SEEDING.

TEMPORARY SEEDING MIXTURE
(DECEMBER 1 - APRIL 15)
RYE (GRAIN) ---------- 120 LBS/AC
KOBE LESPEDEZA (SCARIFIED) ---------- 50 LBS/AC
OMIT ANNUAL KOBE LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.

(APRIL 15 -AUGUST 15)
GERMAN MILLET ---------- 40 LBS/AC

(AUGUST 15- DECEMBER 30)
RYE (GRAIN) ---------- 25 LBS/AC
IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50LB/AC KOBE LESPEDEZA.

PERMANENT SEEDING MIXTURE
TALL FESCUE ---------- 60 LBS/AC
PENSACOLA BAHIAGRASS ---------- 50 LBS/AC
SERICEA LESPEDEZA ---------- 30 LBS/AC
KOBE LESPEDEZA ---------- 10 LBS/AC
1. FROM SEPTEMBER 1 - MARCH 1, USE UNSCARIFIED SERICEA SEED.
2. ON POORLY DRAINED SITES OMIT SERICEA AND INCREASE KOBE
3. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND INCREASE KOBE TO 40 LBS/AC.
4. BETWEEN APRIL 15 AND AUGUST 15, ADD 10 LB/AC GERMAN MILLET OR 15 LB/AC SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG 15, ADD 25 LB/AC RYE (GRAIN).

PERMANENT SEEDING MIXTURE (SWALES & DITCHES)
COMMON BERMUDAGRASS ---------- 80 LBS/AC

MULCHING

STRAW (WHEAT, OATS, BARLEY, RYE) ---------- 1-2 TONS/AC (AFTER SEEDING)
STRAW QUALITY SHALL BE DRY, UNCHOPPED & UNWEATHERED.
ASPHALT TACK ---------- 200 GAL./TON OF MULCH

1. APPLY 4000 LB/AC STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.
2. A CHANNEL LINING MATERIAL (SEE DETAIL BELOW) SHALL COVER THE BOTTOM OF SWALES & DITCHES. THE LINING SHALL EXTEND ABOVE THE HIGHEST DEPTH OF FLOW WITHIN GIVEN CHANNEL. ON CHANNEL SIDE SLOPES ABOVE THIS HEIGHT APPLY STRAW AS PREVIOUSLY INSTRUCTED.

MAINTENANCE

IF GROWTH IS LESS THAN FULLY ADEQUATE, REFERTILIZE IN THE SECOND YEAR WITH 500 LB/AC 10-10-10 FERTILIZER. MOW AS NEEDED WHEN SERICEA IS OMITTED FROM THE MIXTURE. RESEED, FERTILIZE AND MULCH DAMAGED AREAS IMMEDIATELY.

TEMPORARY STABILIZATION

IMMEDIATELY AFTER LAND CLEARING AND GRADING, APPLY SURFACE STABILIZATION ON GRADED AREAS, CHANNELS, DIKES AND OTHER DISTURBED AREAS (ESC MANUAL 6.01.2). UNLESS SPECIFICALLY SHOWN OTHERWISE ON DRAWINGS, STABILIZE ANY GRADED SLOPES AND FILLS WHERE ACTIVE CONSTRUCTION WILL NOT TAKE PLACE FOR 21 CALENDAR DAYS SUFFICIENTLY SO THAT RAIN WILL NOT DISLODGE THE SOIL USING:

- TEMPORARY GRASS SEED COVERED WITH STRAW / MULCH AND TACKIFIERS.
- HYDROSEEDING
- ROLLED EROSION CONTROL PRODUCTS WITH OR WITHOUT TEMPORARY GRASS SEED.
- APPROPRIATELY APPLIED STRAW OR OTHER MULCH
- PLASTIC SHEETING

PERMANENT STABILIZATION

PERMANENT STABILIZATION MEASURES SHALL BE INSTALLED ACCORDING TO DRAWING NOTES, DETAILS AND / OR LANDSCAPE PLAN (IF PROVIDED) AFTER FINAL GRADING ACCORDING TO THE TIMELINES PRESENTED IN ACCOMPANYING TABLE.

GENERAL VEGETATIVE STABILIZATION AND MAINTENANCE REQUIREMENTS

FILTER STRIP CONSTRUCTION, STABILIZATION AND MAINTENANCE REQUIREMENTS

(REF: STORMWATER DESIGN MANUAL, C9)

1. COMPLETE ROUGH GRADING OF FILTER STRIP IN A MANNER WHICH MINIMIZES COMPACTION.
2. ADD 6-INCHES OF TOPSOIL AND SMOOTH GRADE TO ELEVATION ±4 INCHES BELOW SPECIFIED FINAL GRADE TO ALLOW FOR SOD THICKNESS. IF SOD IS NOT IMMEDIATELY AVAILABLE FOR INSTALLATION, PROVIDE TEMPORARY STABILIZATION PER ESC PLAN.
3. SOIL AMENDMENTS SHALL BE ADDED PRIOR TO SOD PLACEMENT AS INDICATED.
4. PLANT FILTER STRIP WITH NON-CLUMPING, DEEP-ROOTED GRASS SOD (COMMON BERMUDA, UNLESS APPROVED OTHERWISE).
5. WATERING FOR THE FIRST 3 WEEKS IS RECOMMENDED. A MULCH COVER IS ALSO RECOMMENDED TO ASSIST WITH HOLDING MOISTURE AND TO MINIMIZE POTENTIAL EROSION.
6. NO STORMWATER SHALL BE DIRECTED TO THE FILTER STRIP UNTIL SOD HAS TAKEN ROOT.
7. START-UP FERTILIZER APPLICATION:
   - 75 LBS OF GROUND LIMESTONE PER 1,000 SQ FT
   - PROVIDE A STARTER TYPE FERTILIZER (HIGH IN PHOSPHOROUS) BASED ON THE TYPE OF GRASS, PLANTING METHOD AND SOIL TYPE.
8. MAINTENANCE:
   IMMEDIATELY AFTER FILTER STRIP IS ESTABLISHED, GRASS WILL BE WATERED TWICE WEEKLY (DEPENDING ON RAINFALL) FOR THE FIRST 6 WEEKS.

   ONCE A YEAR SOIL WILL BE AERATED IF NECESSARY AND RESEEDED TO MAINTAIN DENSE GROWTH. ONCE A YEAR, SOIL PH WILL BE TESTED AND LIME ADDED IF NECESSARY.

   DURING THE FIRST 2 YEARS AFTER CONSTRUCTION, INSPECT QUARTERLY AFTER MAJOR STORM EVENTS (1.5 INCHES) FOR PROPER DISTRIBUTION OF FLOWS AND SIGNS OF EROSION. AFTER THE FIRST 2 YEARS, INSPECT QUARTERLY. IF EROSION IS NOTED, DETERMINE SOURCE AND REPAIR. FILL AND RESEED ERODED AREAS.

   MAINTENANCE SHALL ALSO INCLUDE ROUTINE MOWING TO PREVENT CLUMPING OF GRASS (TYPICALLY EVERY 2 WEEKS DURING GROWING SEASON). GRASS SHOULD NOT BE CUT SHORTER THAN 4-INCES OR ALLOWED TO GROW OVER 12-INCHES.

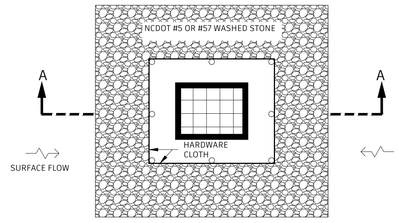
   REFER TO THE OPERATION AND MAINTENANCE AGREEMENT SUBMITTED WITH STORMWATER PERMIT FOR ADDITIONAL INFORMATION.

FILTER STRIP PLANTING AND MAINTENANCE REQUIREMENTS

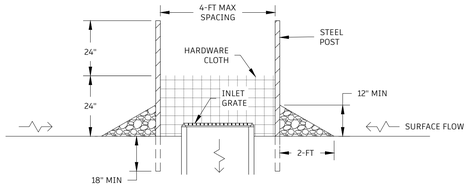
VEGETATIVE BUFFER GRADING, STABILIZATION AND MAINTENANCE REQUIREMENTS

1. COMPLETE ROUGH GRADING OF BUFFER AREA IN A MANNER WHICH MINIMIZES COMPACTION.
2. ADD 4 TO 6 INCHES OF TOPSOIL AND SMOOTH GRADE TO ELEVATION SPECIFIED FOR FINAL GRADE.
3. PROVIDE PERMANENT SEED, SOIL AMENDMENTS AND MULCH ACCORDING TO GENERAL VEGETATIVE STABILIZATION REQUIREMENTS.
4. TEMPORARY MATTING PER RECP DETAIL IS RECOMMENDED TO IMPROVE GERMINATION.
5. WATERING FOR THE FIRST 3 WEEKS IS RECOMMENDED.
6. NO STORMWATER SHALL BE DIRECTED TO THE BUFFER AREA UNTIL VEGETATION HAS BEEN ESTABLISHED.
7. MAINTENANCE:
   REFER TO PERMANENT SEEDING MAINTENANCE INSTRUCTIONS PROVIDED WITH GENERAL VEGETATIVE STABILIZATION REQUIREMENTS.

VEGETATED BUFFER GRADING, STABILIZATION AND MAINTENANCE REQUIREMENTS



PLAN VIEW



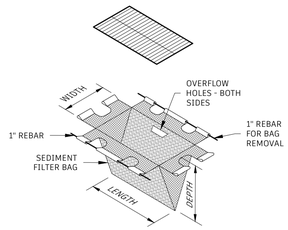
SECTION A-A

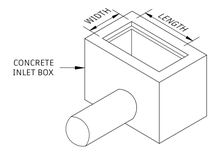
GENERAL NOTES

1. REF: ESC MANUAL, PRACTICE 6.51 AND NCDOT EROSION & SEDIMENT CONTROL MANUAL, SECTION 4.6.1 (TYPE C)
2. PRACTICE IS INTENDED TO PREVENT SEDIMENT FROM ENTERING STORM DRAINS IN THE PERIOD BEFORE PAVEMENT IS INSTALLED. ONCE TRAFFIC AREAS ARE PAVED, UTILIZE SEDIMENT FILTER BAG UNTIL ALL AREAS CONTRIBUTING RUNOFF HAVE BEEN STABILIZED.
3. CONFIGURATION SHOWN IS SUITABLE FOR INLETS RECEIVING LIGHT TO MODERATE FLOWS, WITH DRAINAGE AREA OF LESS THAN 1 AC.
4. GRATE SHOULD BE ELEVATED ABOVE SURFACE GRADE NO LESS THAN PROPOSED PAVEMENT THICKNESS.
5. MATERIALS SHALL COMPLY WITH NCDOT SPECIFICATION 1632, ROCK INLET SEDIMENT TRAP (TYPE C).
6. INSPECT INLETS ACCORDING TO ESC PLAN SCHEDULE.
7. CLEAN MESH WIRE AND STONE OF ANY ACCUMULATED DEBRIS. REMOVE SEDIMENT WHEN ACCUMULATION REACHES ONE-HALF HEIGHT OF STONE. REPLACE STONE IF CLOGGING OCCURS. REBUILD / REPAIR AS NEEDED IF DAMAGED.

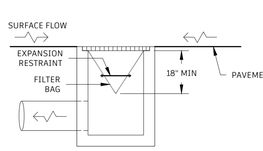
INLET PROTECTION DETAIL (UNPAVED)

HARDWARE CLOTH AND GRAVEL INLET PROTECTION
NOT TO SCALE





ISOMETRIC VIEW



SIDE VIEW

GENERAL NOTES

1. PRACTICE IS INTENDED TO PREVENT SEDIMENT FROM ENTERING STORM DRAINS IN THE PERIOD AFTER PAVEMENT HAS BEEN INSTALLED AND AREAS CONTRIBUTING RUNOFF ARE NOT FULLY STABILIZED.
2. ONCE CONTRIBUTING AREAS HAVE BEEN STABILIZED, INLET PROTECTION MAY BE REMOVED AND PROPERLY DISPOSED OF.
3. CONFIGURATION SHOWN IS SUITABLE FOR INLETS WITH DRAINAGE AREA OF LESS THAN 1 AC.
4. LENGTH AND WIDTH OF FILTER BAG SHALL BE SUITABLE FOR INLET BOX SIZE. DEPTH SHALL BE BETWEEN 18" AND 36".
5. DUMP STRAPS MAY BE INCLUDED TO EMPTY SEDIMENT.
6. FILTER BAG MATERIALS SHALL COMPLY WITH NCDOT SPECIFICATION FOR "FABRIC INSERT INLET PROTECTION" UNLESS APPROVED OTHERWISE. LOW FLOW CONDITION IS CONSIDERED TO BE LESS THAN 40 GPM / SQ FT. HIGH FLOW IS CONSIDERED 40 - 200 GPM / SQ FT.
7. INSTALL ACCORDING TO MANUFACTURERS RECOMMENDATIONS.
8. PERFORM INSPECTIONS ACCORDING TO ESC PLAN SCHEDULE.
9. EMPTY SEDIMENT WHEN EXPANSION RESTRAINT IS COVERED OR BAG IS HALF FULL, WHICHEVER COMES FIRST.
10. REPLACE FILTER BAG IF DAMAGE / TEARS OCCUR.

INLET PROTECTION DETAIL (PAVED)

FILTER BAG INLET PROTECTION
NOT TO SCALE

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	1	6/13/2025	NCDEQ COMMENTS
JAF	3	8/28/2025	MISC ENGINEER EDITS
JAF	4	9/24/2025	ESC COMMENTS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

ENGINEER

ESC NOTES & DETAILS

BEAUFORT RESCUE & EMS, INC. STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 639904748004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: 683 W. BEAUFORT ROAD BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

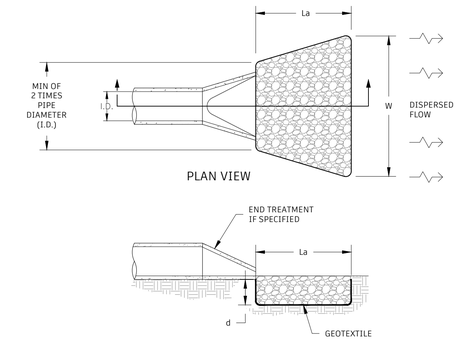
DESIGNED:	JAF
DRAWN:	JAF
APPROVED:	JAF
DATE:	6/13/2025
SCALE:	AS SHOWN
SHEET:	C701

PROJECT NO.: PM3171-001

DRAWING NO.: DTLS-C700

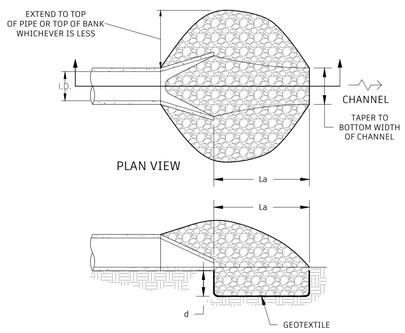
M:\Master\Projects\PM3100\PM3171-001 Beaufort EMS Substation\CAD\design\PM3171-001 DTLS-C700.dwg 12/5/2025 11:44 PM

PIPE OUTLET TO FLAT AREA
NO WELL-DEFINED CHANNEL



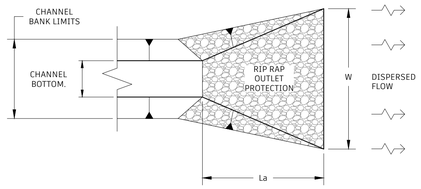
SECTION 'A-A'

PIPE OUTLET TO
WELL-DEFINED CHANNEL



SECTION 'A-A'

CHANNEL OUTLET TO FLAT AREA



GENERAL NOTES:

1. DESIGN FLOW AND VELOCITY ARE BASED ON RUNOFF CALCULATIONS FOR 10-YR EVENT.
2. APRON AND RIPRAP HAVE BEEN EVALUATED ACCORDING TO NC ESC MANUAL, APPENDIX 8.06.
3. WHEN FLOW DEPTH AND / OR VELOCITY ARE BELOW MINIMUM CURVES ON ESC MANUAL FIGURE 8.06a OR 8.06b, TERMINAL WIDTH, LENGTH AND RIPRAP SIZE MAY BE ADJUSTED BASED ON ENGINEER DISCRETION.
4. DEPTH "d" IS THE MINIMUM DEPTH OF STONE, WHICH SHALL BE AT LEAST 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6".
5. PLACE NCDOT TYPE 2 GEOTEXTILE BELOW RIPRAP. DO NOT ALLOW RIPRAP TO PUNCTURE FABRIC. IF NECESSARY, A LAYER OF #57 BEDDING STONE MAY BE USED TO OVERLAY FABRIC PRIOR TO PLACING RIPRAP.
6. WHEN USED FOR FLOW DISPERSAL, APRON SHALL DISCHARGE TO A WELL-VEGETATED AREA THAT HAS BEEN PROTECTED FROM DISTURBANCE.
7. UPSTREAM RIPRAP APRONS MAY BE SPECIFIED TO PREVENT SCOUR AT PIPE INLETS AND PROTECT SLOPES AROUND PIPE FROM EROSION. SIZING OF US APRONS IS AT ENGINEER DISCRETION. MATERIALS AND METHODS SHALL FOLLOW PROVIDED DETAIL.

RIPRAP APRON INFORMATION

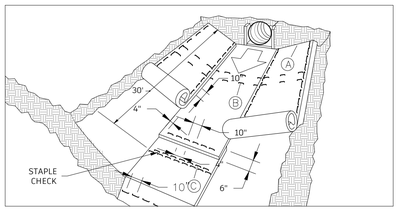
APRON ID	PIPE Ø (IN)	TAILWATER	DESIGN Q (CFS)	DESIGN V (FPS)	RIRRAP SIZE	ARPON LENGTH La (FT)	TERMINAL WIDTH TW (FT)	STONE DEPTH "d" (IN)
*RO3-DS	15	MAX	2.64	2.15	CLASS A	6	4	9
*RO4- DS	15	MAX	2.07	1.71	CLASS A	6	4**	9
RO5-US	15	--	--	--	CLASS A	4	**	9
*RO5-DS	15	MAX	0.66	3.7	CLASS A	6	4**	9

TABLE NOTES:

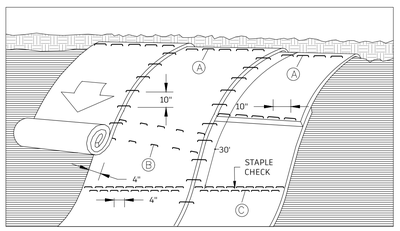
* DENOTES FLOW DEPTH AND VELOCITY ARE BELOW MINIMUM NOMOGRAPH CURVES OF APPENDIX 8.06.
** DIMENSION SHALL MATCH RECEIVING CHANNEL PER DETAIL.
US DENOTES UPSTREAM END OF PIPE. DS DENOTES DOWNSTREAM END OF PIPE.

RIPRAP OUTLET PROTECTION DETAIL

NOT TO SCALE



MATTING DITCHES



MATTING SLOPES

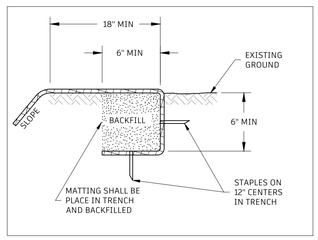


DIAGRAM (A)

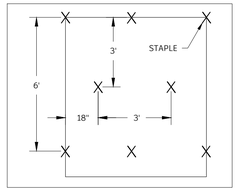


DIAGRAM (B)

STAPLE CHECK PATTERN

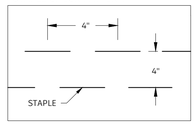


DIAGRAM (C)

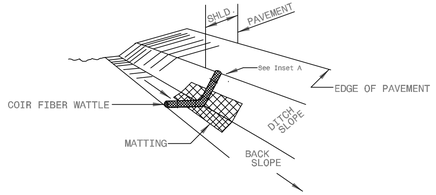
PREFERRED PRODUCTS
1. FOR SWALE / CHANNEL STABILIZATION, UTILIZE ECS-2B BIODEGRADABLE DOUBLE STRAW MAT BY EAST COAST EROSION CONTROL OR APPROVED EQUIVALENT.
2. FOR ALL OTHER AREAS, UTILIZE ECS-1B BIODEGRADABLE SINGLE STRAW MAT BY EAST COAST EROSION CONTROL OR APPROVED EQUIVALENT.

GENERAL NOTES:
1. THIS DETAIL APPLIES TO STRAW, EXCELSIOR, COIR FIBER MAT AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION AND AS DIRECTED.
2. STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1-INCH AND NOT LESS THAN 6-INCHES IN LENGTH.
3. REFER TO NCDOT SPECIFICATION 1631 FOR ADDITIONAL INFORMATION.

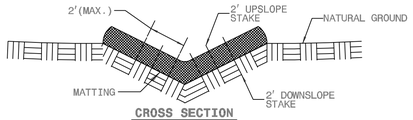
ROLLED EROSION CONTROL MATTING DETAIL

NOT TO SCALE

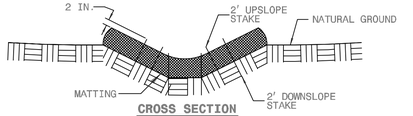
COIR FIBER WATTLE DETAIL



ISOMETRIC VIEW



CROSS SECTION
VEE DITCH



CROSS SECTION
TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

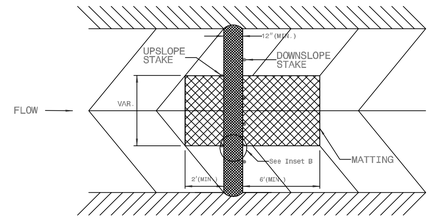
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



INSET B



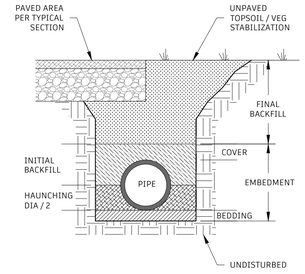
TOP VIEW

TYPICAL COIR FIBER WATTLE DETAIL

NOT TO SCALE

NOTES:

1. TRENCH SHALL BE DRY DURING PIPE INSTALLATION.
2. BACKFILL MATERIALS & METHODS: REFERENCE ASTM D2321.
3. TRENCH WIDTH: AS NECESSARY TO ENSURE HAUNCHING CAN BE PLACED AND COMPACTED. TYPICALLY 12" EACH SIDE OF PIPE (MIN) UNLESS DEPTH REQUIRES TRENCH BOX WHICH WILL DICTATE WIDTH.
4. EMBEDMENT MATERIAL: UTILIZE CLASS I, II, OR III MATERIALS. LIMIT PARTICLE SIZE TO 1.5 INCHES OR LESS.
5. BEDDING: PROVIDE UNIFORM SURFACE TO SUPPORT PIPE AT DESIGN ELEVATION. TYPICAL 4-INCH THICKNESS, LEVELED BY HAND AND COMPACTED.
6. HAUNCHING: MATERIALS TO BE WORKED IN AROUND PIPE BY HAND AND COMPACTED IN 4 TO 6-INCH LIFTS.
7. INITIAL BACKFILL: PLACE IN 4 TO 6-INCH LIFTS AND COMPACT. PREFERRED PIPE COVER IS 12-INCHES; HOWEVER, DEPTH MAY BE ADJUSTED IF NECESSARY TO ACCOMMODATE PAVEMENT AND BASE MATERIALS.
8. FINAL BACKFILL: IN UNPAVED AREAS UTILIZE NATIVE EMBANKMENT FREE OF UNSUITABLE MATERIALS (ORGANICS, WASTE / DEBRIS, BOULDERS). IN PAVED AREAS, ADJUST AS NECESSARY TO ACCOMMODATE PAVEMENT AND BASE MATERIALS.
9. COMPACTION: UTILIZE MECHANICAL TAMPER (I.E. JUMPING JACK). IN AREAS OF PROPOSED PAVEMENT, COMPACT TO 95% OF STANDARD PROCTOR TO BOTTOM OF BASE MATERIAL, THEN FOLLOW PAVEMENT DETAILS. IN UNPAVED AREAS, EMBEDMENT SHOULD BE COMPACTED TO 95% OF STANDARD PROCTOR, AND FINAL BACKFILL TO AT LEAST 85% STANDARD PROCTOR AS NECESSARY TO PREVENT SETTLING. TRENCHES IN UNPAVED AREAS SHOULD BE OVERFILLED AND THEN COMPACTED PRIOR TO PLACEMENT OF TOPSOIL.



MINIMUM BURIAL DEPTH SHALL PROVIDE 12 IN. OF FILL OVER PIPE EXCEPT AT INLET / OUTLET OF CULVERTS.

STORMWATER / CULVERT PIPE TRENCH

NOT TO SCALE

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	1	6/13/2025	NCDEQ COMMENTS
JAF	3	8/28/2025	NCDEQ COMMENTS
JAF	4	9/24/2025	ESC COMMENTS

PROJECT NO.: PM3171-001
DRAWING NO.: DTLS-C700

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

ENGINEER

DRAFT

ESC DETAILS

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

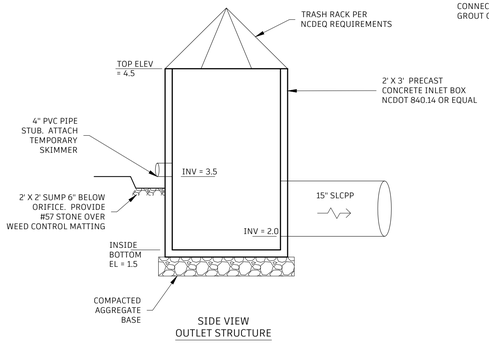
REFERENCE PIN: 6399047480004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: 683 W. BEAUFORT ROAD
BEAUFORT, NC 28516
PHONE: N/A

DESIGNED: JAF
DRAWN: JAF
APPROVED: JAF
DATE: 6/13/2025
SCALE: AS SHOWN
SHEET: C702

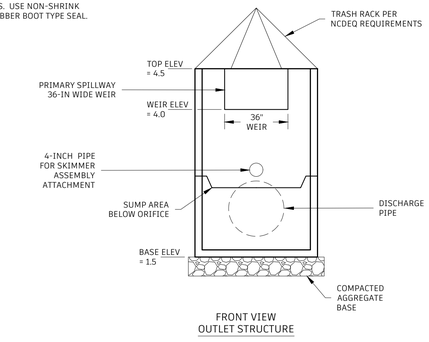
STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

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SIDE VIEW
OUTLET STRUCTURE

ALL PIPE PENETRATIONS SHALL BE MADE WITH WATERTIGHT CONNECTIONS. USE NON-SHRINK GROUT OR RUBBER BOOT TYPE SEAL.



FRONT VIEW
OUTLET STRUCTURE

MATERIALS AND INSTALLATION NOTES:

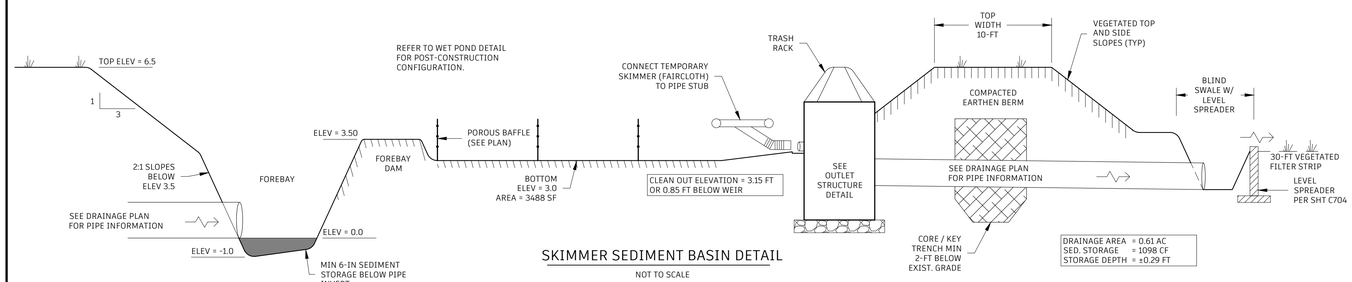
1. CLEAR, GRUB AND STRIP THE AREA UNDER EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER AND STOCKPILE FOR REUSE OR PROPERLY DISPOSE OF OFFSITE.
2. EXCAVATE KEY TRENCH. PLACE EMBANKMENT FILL MATERIAL IN LIFTS NOT TO EXCEED 9 INCHES AND COMPACT. OVER FILL THE EMBANKMENT 6 INCHES TO ALLOW FOR SETTLING. PORTIONS OF EMBANKMENT THAT HAVE EXPOSED OUTSIDE SLOPE SHALL INCLUDE CORE / KEY TRENCH FILLED WITH LOW PERMEABLE MATERIALS - NO SAND, GRAVEL, OR CRUSHED STONE.
3. INSTALL DISCHARGE PIPE IN CONJUNCTION WITH EMBANKMENT CONSTRUCTION. DO NOT TRENCH COMPLETED EMBANKMENT TO INSTALL PIPE. BACKFILL AND COMPACT UNDER AND AROUND DISCHARGE PIPE UTILIZING SAME LOW PERMEABLE MATERIALS AS CORE / KEY TRENCH.
4. PROVIDE ROPE CONNECTED TO SKIMMER AND ANCHOR ON TOP OF BANK TO ASSIST WITH INSPECTION / MAINTENANCE.
5. INSTALL DISCHARGE STRUCTURE, SKIMMER, BAFFLES, EMERGENCY SPILLWAY AND RIPRAP PER DETAILS PROVIDED.
6. A STAKE SHOULD BE PROVIDED WITH CLEANOUT ELEVATION MARKED FOR REFERENCE. ELEVATION CAN ALSO BE PAINTED ON SIDE OF DISCHARGE STRUCTURE.

MAINTENANCE:

1. INSPECT AT LEAST WEEKLY AND AFTER RAINFALL EVENTS OF 1.0 INCH OR GREATER. MAKE NECESSARY REPAIRS IMMEDIATELY.
2. REMOVE SEDIMENT AND RESTORE BASIN DIMENSIONS WHEN LEVEL REACHES CLEAN OUT ELEVATION.
3. CHECK THAT SKIMMER IS UNENCUMBERED AND ABLE TO OPERATE FREELY. REMOVE ANY DEBRIS OR VEGETATION THAT PREVENTS PROPER OPERATION. CHECK SKIMMER FOR CLOGS AND CLEAR AS NEEDED. CHECK DISCHARGE STRUCTURE FOR CLOGGING / DEBRIS / TRASH AND REMOVE.
4. REPAIR BAFFLES IF THEY BECOME DAMAGED. RE-ANCHOR BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM.
5. CHECK SPILLWAYS FOR DAMAGE OR EROSION. CHECK EMBANKMENT FOR EROSION OR SETTLING. MAKE ANY REPAIRS NECESSARY.
6. CHECK PIPE OUTLET AND REPAIR EROSION IF NECESSARY.

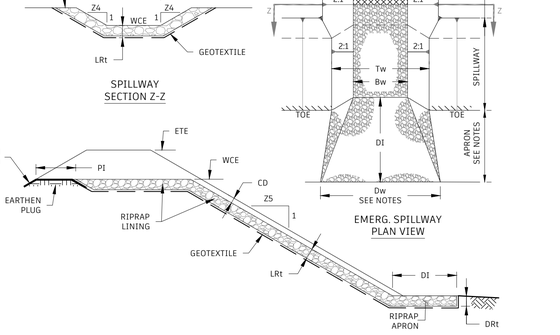
OUTLET STRUCTURE DETAIL (ESC PHASE)

NOT TO SCALE



SKIMMER SEDIMENT BASIN DETAIL

NOT TO SCALE



SPILLWAY SECTION Z-Z

EMERG. SPILLWAY PLAN VIEW

EMBANKMENT SECTION ALONG EMERG. SPILLWAY

SPILLWAY INFORMATION										
SCM ID	WEIR SIDE SLOPE Z4	TOP ELEV ETE (FT)	CREST ELEV WCE (FT)	BOTTOM WIDTH Ww (FT)	SPILLWAY RIPRAP SIZE	RIPRAP THICKNESS LRt (IN)	SLOPE Z5	CHANNEL DEPTH Cd (IN)	BOTTOM WIDTH Bw (FT)	TOP WIDTH Tw (FT)
WET POND	2	6.5	5.5	6	CLASS A	9	3	12	6	10

GENERAL NOTES:

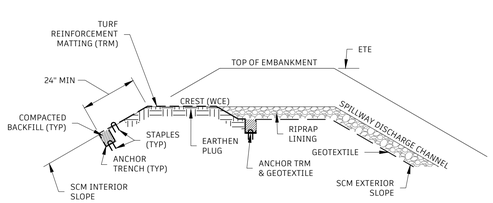
1. DIMENSION PI SHOULD BE 5-FT MINIMUM UNLESS APPROVED OTHERWISE BY ENGINEER.
2. PROVIDE TRM LINING OVER EARTHEN PLUG PER DETAIL THIS SHEET.
3. COMPLETE INSPECTIONS ACCORDING TO SPECIFIED SCHEDULE FOR ESC AND / OR POST-CONSTRUCTION PHASE AS APPROPRIATE.
4. ANY NOTED DAMAGE TO LINING OR RIPRAP SHALL BE REPAIRED AS SOON AS POSSIBLE.

APRON NOTES:

1. FOR THIS APPLICATION, SPILLWAY IS NOT EXPECTED TO RECEIVE FLOW FOR CONDITIONS LESS THAN OR EQUAL TO 100 YEAR EVENT.
2. LENGTH OF SPILLWAY AND APRON SHALL BE LIMITED TO 1-FT BEYOND TOE CONNECTION WITH EXISTING GRADE, WHICH SHOULD BE ±1-FT INTO NCDOT ROW.
3. TERMINAL WIDTH OF APRON SHALL BE 10-FT.

EMERGENCY SPILLWAY DETAIL

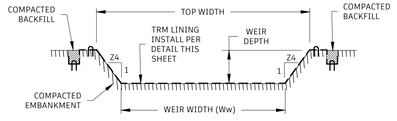
NOT TO SCALE



GENERAL NOTES:

1. ANCHOR TRENCH SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. STAPLES / STAKING SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. TURF REINFORCEMENT MAT FOR EARTHEN PLUG SHALL BE ECP-2 BY EAST COAST EROSION CONTROL PRODUCTS OR APPROVED EQUIVALENT.
4. UTILIZE NCDOT TYPE 2 GEOTEXTILE BELOW RIPRAP.

TRM LINED WEIR / EARTHEN PLUG



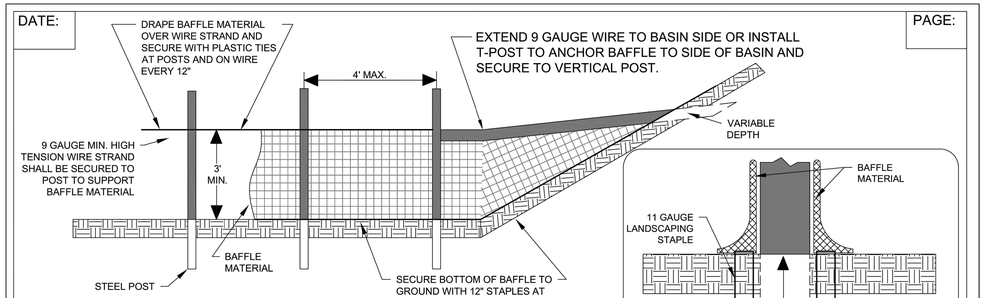
GENERAL NOTES:

1. EARTHEN PLUG OVERFLOW AREA SHALL BE LINED WITH TURF REINFORCEMENT MAT (TRM) AND ANCHORED PER DETAIL THIS SHEET.
2. COMPLETE INSPECTIONS ACCORDING TO SPECIFIED SCHEDULE FOR ESC AND / OR POST-CONSTRUCTION PHASE AS APPROPRIATE.
3. ANY NOTED DAMAGE TO LINING SHALL BE REPAIRED AS SOON AS POSSIBLE.

TRM LINED WEIR TO SPILLWAY

DATE:

PAGE:



NOTES:

1. Use matting made of 100% coconut fiber(coir) twine woven into high strength matrix.
2. Staples should be made of 0.125 inch diameter, new steel wire formed into a 'U' shape not less than 12 inches in length with a throat of 1 inch in width. The staples anchor the porous baffles into the sides and bottom of the basin.
3. Grade the basin so that the bottom is level front to back and side to side.
4. Install the coir fiber baffles immediately upon excavation of the basins.
5. Install posts across the width of the sediment trap.
6. Steel posts should be driven to a depth of 24 inches and spaced in a maximum of 4 feet apart. The top of the fabric should be a minimum of 6 inches higher than the invert of the spillway. Tops of the baffles should be a minimum of 2 inches lower than the top of the earthen embankment.
7. Install 3 coir fiber baffles in basins at drainage outlets with a spacing of 1/4 the basin length. 2 coir fiber baffles can be installed in the basins less than 20 feet in length with a spacing of 1/3 the basin length.
8. Attach a 9-gauge high tension wire strand to the steel posts at a height of 6 inches above the spillway elevation with plastic ties or wire fasteners to prevent sagging. If the temporary sediment basin will be converted to a permanent stormwater basin of a greater depth, the baffle height should be based on the pool depth during use as a temporary sediment basin.

MAINTENANCE:

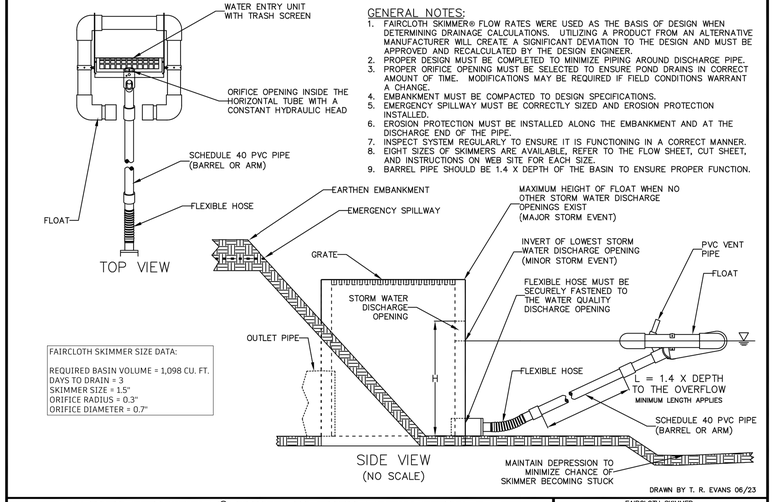
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater and repair immediately.
2. Maintain access to baffles. If the fabric collapses, tears, decomposes, or becomes ineffective, replace immediately.
3. Remove sediment deposits when it reaches half full. Replace if baffle fabric is damaged during clean-out operations. Sediment depth should never exceed half the designed storage depth.

POROUS BAFFLES

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

POROUS BAFFLE DETAIL

NOT TO SCALE



FAIRCLOTH SKIMMER SIZE DATA:

REQUIRED BASIN VOLUME = 1,098 CU. FT.
DAYS TO DRAIN = 3
SKIMMER SIZE = 1.5"
ORIFICE RADIUS = 0.3"
ORIFICE DIAMETER = 0.7"

GENERAL NOTES:

1. FAIRCLOTH SKIMMER® FLOW RATES WERE USED AS THE BASIS OF DESIGN WHEN DETERMINING DRAINAGE CALCULATIONS. UTILIZING A PRODUCT FROM AN ALTERNATIVE MANUFACTURER WILL CREATE A SIGNIFICANT DEVIATION TO THE DESIGN AND MUST BE APPROVED AND RECALCULATED BY THE DESIGN ENGINEER.
2. PROPER DESIGN MUST BE COMPLETED TO MINIMIZE PIPING AROUND DISCHARGE PIPE.
3. PROPER ORIFICE OPENING MUST BE SELECTED TO ENSURE POND DRAINS IN CORRECT AMOUNT OF TIME. MODIFICATIONS MAY BE REQUIRED IF FIELD CONDITIONS WARRANT A CHANGE.
4. EMBANKMENT MUST BE COMPACTED TO DESIGN SPECIFICATIONS.
5. EMERGENCY SPILLWAY MUST BE CORRECTLY SIZED AND EROSION PROTECTION INSTALLED.
6. EROSION PROTECTION MUST BE INSTALLED ALONG THE EMBANKMENT AND AT THE DISCHARGE END OF THE PIPE.
7. INSPECT SYSTEM REGULARLY TO ENSURE IT IS FUNCTIONING IN A CORRECT MANNER.
8. EIGHT SIZES OF SKIMMERS ARE AVAILABLE, REFER TO THE FLOW SHEET, CUT SHEET, AND INSTRUCTIONS ON WEB SITE FOR EACH SIZE.
9. BARREL PIPE SHOULD BE 1.4 X DEPTH OF THE BASIN TO ENSURE PROPER FUNCTION.

FAIRCLOTH SKIMMER® DISCHARGE SYSTEM WITH OUTLET STRUCTURE

FAIRCLOTH SKIMMER
WWW.FAIRCLOTHSKIMMER.COM
TELEPHONE: (919) 732-1244
FAX: (919) 732-1266
EMAIL: SALES@FAIRCLOTHSKIMMER.COM

FAIRCLOTH SKIMMER DETAIL

NOT TO SCALE

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	1	6/13/2025	NCDEQ COMMENTS
JAF	2	7/17/2025	NCDEQ COMMENTS
JAF	3	8/28/2025	MISC ENGINEER EDITS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

ESC DETAILS

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 6399047480040000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: 683 W. BEAUFORT ROAD BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

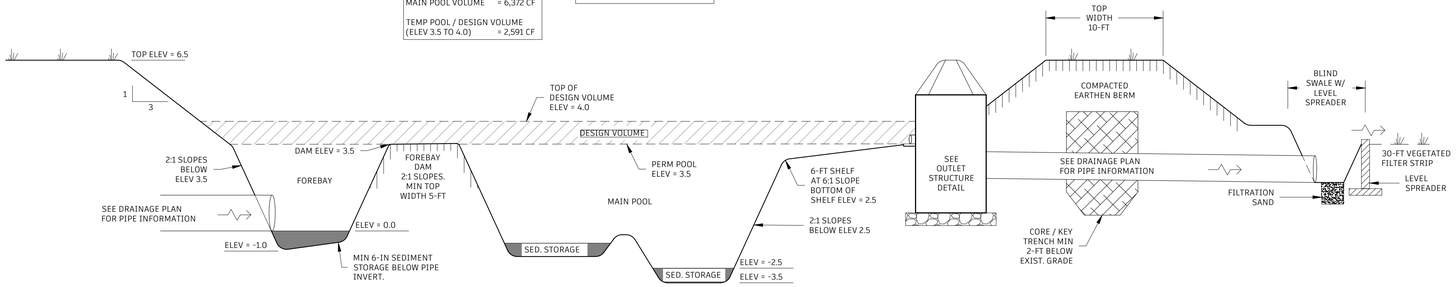
DESIGNED: JAF
DRAWN: JAF
APPROVED: JAF
DATE: 6/13/2025
SCALE: AS SHOWN
SHEET: C703

PROJECT NO.: PM3171-001
DRAWING NO.: DTLS-C700

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DESIGN INFORMATION	
TOP OF SHELF ELEV	= 3.5
TOP SHELF AREA	= 4091 SF
BOTTOM SHELF ELEV	= 2.5
BOTTOM SHELF AREA	= 1815 SF
MAIN POOL VOLUME	= 6,372 CF
TEMP POOL / DESIGN VOLUME (ELEV 3.5 TO 4.0)	= 2,591 CF

PEAK STAGE INFORMATION (FT)		
1 YR	=	4.07
10 YR	=	4.35
25YR	=	4.44
50 YR	=	4.50
100 YR	=	4.55



NOTE: MAIN POOL HAS TWO STORAGE AREAS. BOTTOM OF DEEPER SECTION IS ELEV -3.5. BOTTOM OF SHALLOWER SECTION IS ELEV -1.5.
BOTH AREAS PROVIDE 1-FT OF SEDIMENT STORAGE NOT COUNTED TOWARDS MAIN POOL VOLUME.

WET POND DETAIL

NOT TO SCALE

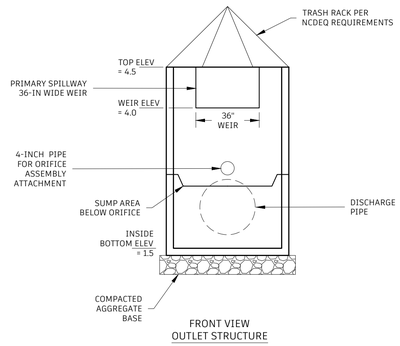
WET POND STAGE / AREA INFORMATION				
MAIN POOL				
STAGE ELEV	AREA (SF)			
6.5	9421			
6.0	8618			
5.0	7053			
4.0	5546			
3.5	4817			
FOREBAY		MAIN POOL	MP AREA 1	MP AREA 2
STAGE ELEV	AREA (SF)	STAGE ELEV	AREA (SF)	AREA (SF)
3.5	574	3.5	4091	--
3.0	320	3.0	2918	--
2.0	190	2.0	1012	502
1.0	137	1.0	713	277
0.0	93	0.0	469	100
-1.0	28	-1.0	276	14
		-2.0	134	--
		-3.0	43	--
		-3.5	16.5	--

MATERIALS AND CONSTRUCTION NOTES:

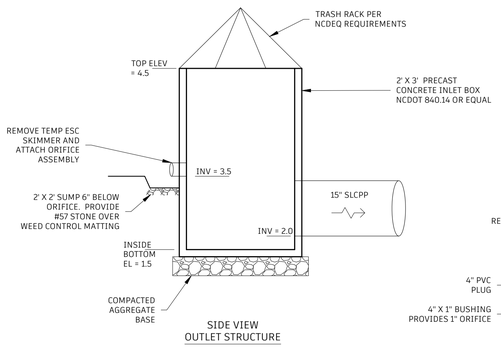
1. CONVERT SEDIMENT TRAP TO WET POND.
2. REMOVE FAIRCLOTH SKIMMER AND REPLACE WITH ORIFICE ASSEMBLY.
3. PROVIDE SUMP BELOW ORIFICE PER DETAIL.
4. EXCAVATE POND DOWN TO SPECIFIED ELEVATIONS AND DIMENSIONS.
5. SMOOTH GRADE AND PROVIDE VEGETATIVE PLANTINGS / STABILIZATION.
6. ENSURE TRASH GUARD IS SECURELY ATTACHED.

POST-CONSTRUCTION MAINTENANCE:

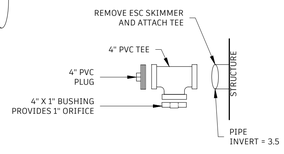
ROUTINE INSPECTIONS AND MAINTENANCE ACTIVITIES SHALL BE COMPLETED ACCORDING TO THE OPERATION AND MAINTENANCE AGREEMENT SUBMITTED WITH PERMIT APPLICATION. INSPECTIONS SHALL BE COMPLETED AT LEAST ONCE PER QUARTER AND AFTER SIGNIFICANT RAIN EVENTS (1.5" OR GREATER). A LOG OF MAINTENANCE ACTIVITIES SHALL BE KEPT AND BE AVAILABLE TO NCDEQ UPON REQUEST.



FRONT VIEW
OUTLET STRUCTURE



SIDE VIEW
OUTLET STRUCTURE



ORIFICE ASSEMBLY

OUTLET STRUCTURE DETAIL

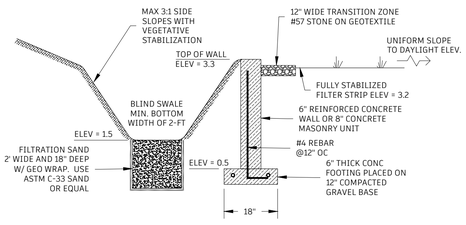
NOT TO SCALE

NOTES:

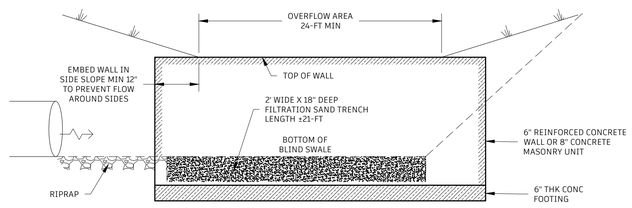
1. THE LIP OF LEVEL SPREADER SHALL BE CONSTRUCTED WITH UNIFORM ELEVATION. TOLERANCE FROM SPECIFIED TOP OF WALL ELEVATION IS ±0.25 INCHES ALONG ENTIRE LENGTH.
2. MAINTENANCE:
   PERFORM ROUTINE INSPECTIONS IN CONJUNCTION WITH WET POND SCHEDULE. CHECK BLIND SWALE FOR EROSION AND REPAIR AS NECESSARY. REMOVE ACCUMULATED SEDIMENT / DEBRIS AND PROPERLY DISPOSE. MOW VEGETATION PERIODICALLY SO FLOWS ARE NOT IMPEDED.

   CHECK LEVEL SPREADER FOR CRACKS OR OTHER DAMAGE. REPAIR AS NECESSARY. IF EROSION HAS OCCURRED AROUND ENDS OF WALL, REPLACE SOIL, COMPACT AND REPAIR VEGETATIVE GROUND COVER PER FILTER STRIP STABILIZATION INSTRUCTIONS.

REFER TO SHEET C701 FOR FILTER STRIP STABILIZATION AND MAINTENANCE REQUIREMENTS.



SIDE VIEW
LEVEL SPREADER



FRONT VIEW
LEVEL SPREADER

LEVEL SPREADER DETAIL

NOT TO SCALE

THE FOLLOWING CRITERIA APPLY TO VEGETATION IN AND AROUND THE WET POND:

1. THE DAM STRUCTURE, INCLUDING FRONT AND BACK EMBANKMENT SLOPES OF THE POND SHALL BE VEGETATED WITH NON-CLUMPING TURF GRASS; TREES AND WOODY SHRUBS SHALL NOT BE ALLOWED.
2. THE VEGETATED SHELF SHALL BE PLANTED WITH A MINIMUM OF THREE DIVERSE SPECIES OF HERBACEOUS, NATIVE VEGETATION AT A MINIMUM DENSITY OF 50 PLANTS PER 200 SQUARE FEET OF SHELF AREA.

VEGETATION SCHEDULE			
	WETLAND AREA (SF)	PLANT CATEGORY	# OF PLANTS OF CATEGORY IN WETLAND AREA
WETLAND PLANTS	2,276	HERBACEOUS PLANTS	569

WETLAND PLANT RECOMMENDATIONS

PLANTS FOR SUBMERGED AND PARTIALLY SUBMERGED VEGETATED SHELVES

BOTANICAL NAME:	COMMON NAME:
ASCLEPIAS INCARNATA	SWAMP MILKWEED
CAREX TENERA	QUILL SEDGE
CHELONE GLABRA	WHITE TURTLEHEAD
EUTROCHIUM DUBIUM	COASTAL PLAIN JOE PYE WEED
EUTROCHIUM FISTULOSUM	JOE PYE WEED
EUTROCHIUM MACULATUM	SPOTTED JOE PYE WEED
HIBISCUS COCCINEUS	SCARLET ROSE MALLOW
HIBISCUS LAEVIS	HALBERD-LEAVED ROSEMALLOW
KOSTELETZKYA VIRGINICA	SEASHORE MALLOW
LOBELIA CARDINALIS	CARDINAL FLOWER
LOBELIA ELONGATA	LONGLEAF LOBELIA
LOBELIA SIPHILITICA	GREAT BLUE LOBELIA
RHYNCHOSPORA COLORATA	STARRUSH WHITETOP
SACCHARUM BALDWINII	NARROW PLUMEGRASS

PLANT REQUIREMENTS

1. SELECT A MINIMUM OF THREE DIVERSE SPECIES OF HERBACEOUS, NATIVE VEGETATION FROM THE WETLAND PLANT LIST ABOVE.
2. A MINIMUM TWO-YEAR WARRANTY PERIOD STIPULATES REQUIREMENTS FOR PLANT SURVIVAL AND/OR REPLACEMENT. AT THE END OF THE FIRST YEAR AND AGAIN AT THE END OF THE TWO-YEAR WARRANTY PERIOD, ALL PLANTS THAT DO NOT SURVIVE MUST BE REPLACED.
3. THE DESIGN FOR PLANTINGS SHALL MINIMIZE THE NEED FOR HERBICIDES, FERTILIZERS, PESTICIDES, OR SOIL AMENDMENTS AT ANY TIME BEFORE, DURING, AND AFTER CONSTRUCTION AND ON A LONG TERM BASIS. PLANTINGS SHALL BE DESIGNED TO MINIMIZE THE NEED FOR MOWING, PRUNING, AND IRRIGATION.
4. PLANT MATERIAL SHOULD BE PURCHASED FROM A SIMILAR PROVENANCE OR LOCAL SOURCE TO ENSURE SURVIVABILITY.

GENERAL NOTES

1. TOPSOIL FROM THE SITE SHALL BE SPREAD ACROSS THE VEGETATED SHELF PRIOR TO PLACEMENT OF PLANTS.
2. WET DETENTION BASINS SHOULD INCORPORATE SEVERAL (MINIMUM OF THREE) DIVERSE SPECIES OF SHALLOW WATER EMERGENT AND SHALLOW LAND HERBACEOUS VEGETATION ON THE VEGETATED SHELF.
3. SPACING SHOULD BE APPROXIMATELY 24" TO 36" CENTERS, YIELDING COVERAGE IN APPROXIMATELY 1 TO 2 YEARS, RESPECTIVELY.
4. TURF GRASS (BERMUDA OR NCDEQ APPROVED SUBSTITUTE) SHOULD BE MAINTAINED ON THE TOPS OF BERMS AND ON THE EXTERIOR SLOPES OF CONTAINMENT BERMS.

SOIL SPECIFICATIONS

SOIL USED WITHIN A STORMWATER BMP MUST ADHERE TO THE FOLLOWING REQUIREMENTS:

1. THE SOIL MIX SHALL BE UNIFORM AND FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR MATERIAL GREATER THAN 2 INCHES.
2. SOIL TEXTURE OF THE MIX USED FOR STORMWATER WETLANDS SHOULD BE LOAMY SAND, WITH NO MORE THAN 10% CLAY (USDA SOIL TEXTURAL CLASSIFICATION).
3. A MINIMUM ORGANIC CONTENT OF 10% BY DRY WEIGHT FOR AREA PLANTED WITH WOODY SPECIES AND 5% FOR TURF AREAS.
4. THE pH SHOULD BE BETWEEN 5.5 AND 7.0. IF THE pH FALLS OUTSIDE OF THIS RANGE, IT MAY BE MODIFIED WITH LIME TO INCREASE THE pH OR IRON SULFATE AND SULFUR TO LOWER THE pH. THE LIME OR IRON SULFATE MUST BE MIXED UNIFORMLY INTO THE SOIL PRIOR TO USE.
5. TOPSOIL STOCKPILE LOCATION (IF USING ON-SITE SOILS) OR SOURCE OF TOPSOIL IF IMPORTED TO SITE.
6. SOIL ANALYSIS FOR ALL TOPSOIL TO BE USED WITHIN A BMP FACILITY.

PLANTING SPECIFICATIONS

1. FOR EROSION CONTROL PLANTING AND BANK STABILIZATION (UPLAND AREA) FOLLOW EROSION CONTROL SEEDING SCHEDULE.
2. UTILIZE A 90-DAY SLOW RELEASE FERTILIZER TABLET FOR PLANTS.
3. PLACE 3 OR 4 INCHES OF QUALITY TOPSOIL TO THE SHALLOW LAND AND SHALLOW WATER REGIONS. THE PROJECT MAY UTILIZE THE EXISTING TOPSOIL BY STOCKPILING ON SITE AND AMENDING SOIL AS NECESSARY BASED ON SOIL ANALYSIS RESULTS.
4. THE DETENTION POND MUST BE STABILIZED WITHIN 14 DAYS OF CONSTRUCTION. CONSIDER CONSTRUCTION SEQUENCING SO THAT PLANTS CAN BE PLANTED AND THE POND CAN BE BROUGHT ONLINE WITHIN 14 DAYS.

PLANTING SEASONS

HERBACEOUS PLANTS	APRIL TO JUNE (RECOMMENDED)
	MID-SEPTEMBER TO MID-OCTOBER
GRASSES	YEAR ROUND

PLANTING OUT OF SEASON IS NOT RECOMMENDED. IF CONSTRUCTION SCHEDULE AND PLANTING SCHEDULE DO NOT CORRESPOND, STABILIZE BANKS (VEGETATED SHELF) WITH APPROPRIATE TEMPORARY COVER CROP AND EROSION CONTROL MATTING UNTIL APPROPRIATE PLANTING SEASON.

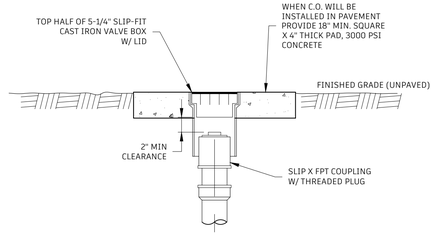
PLANTS SHOULD BE INSTALLED AS LARGE DRIFTS (I.E. MASSES OF A SINGLE SPECIE) WITHIN THEIR RESPECTIVE PLANTING AREA. OVERLAPPING OR WEAVING OF THE PLANTING AREA EDGES IS RECOMMENDED.

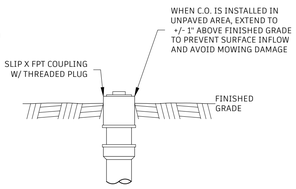
ALL PLANTS SHALL BE DIRECTLY DESCENDED FROM INDIVIDUALS GROWING WILD WITHIN 100 MILES OF THE PROJECT SITE. IF SUITABLE STOCK CANNOT BE OBTAINED, PLANTS OF OTHER GENETIC PROVENANCE MAY BE UTILIZED WITH THE APPROVAL OF THE LOCAL REGULATORY AGENCY.

DO NOT PLANT CATTAILS. CATTAILS, ALTHOUGH A WETLAND PLANT, PROVIDE A HAVEN FOR MOSQUITOES AND WILL TAKE OVER AND CROWD OUT OTHER VITAL VEGETATION.

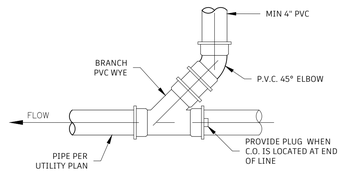
WET POND PLANTING REQUIREMENTS

(REF: NCDEQ STORMWATER DESIGN MANUAL, C-3)





UNPAVED AREA



CLEANOUT DETAIL

NOT TO SCALE

NOTES:

1. CLEANOUT DETAIL MAY BE UTILIZED FOR STORMWATER APPLICATIONS WHEN APPLICABLE.
2. LID SHALL BE MARKED "SEWER" FOR WASTEWATER APPLICATIONS IN PAVED AREA.
3. CLEANOUT PIPING SHALL MATCH MAIN LINE PIPE MATERIALS UNLESS SPECIFIED OTHERWISE.

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	1	6/13/2025	NCDEQ COMMENTS
JAF	2	7/17/2025	NCDEQ COMMENTS

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

DRAFT

ENGINEER

STORMWATER DETAILS

BEAUFORT RESCUE & EMS, INC.
STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 6399047480004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: 683 W. BEAUFORT ROAD BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

DESIGNED:	JAF
DRAWN:	JAF
APPROVED:	JAF
DATE:	6/13/2025
SCALE:	AS SHOWN
SHEET:	C704

PROJECT NO.: PM3171-001
DRAWING NO.: DTLS-C700

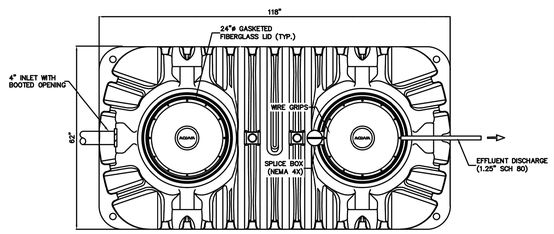
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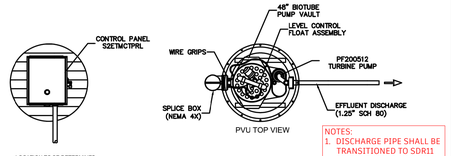
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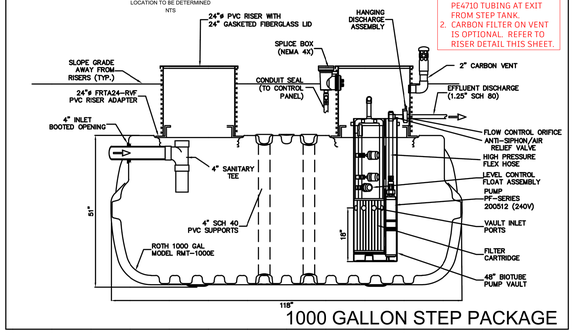
STEP PACKAGE INFORMATION:	
TANK:	1000 GALLON ROTH TANK
BAFFLE:	YES
CONTROL PANEL:	S2ETMCTPRL
FLOAT TYPE:	MF3P
FLOAT FUNCTIONS:	HIGH LEVEL, PUMP ON, PUMP OFF
DOSE VOLUME:	50 GALLONS
DRAWDOWN:	2"

CONTACT AQWA WITH QUESTIONS ABOUT ANTI-BUOYANCY MEASURES IF APPLICABLE





LOCATION TO BE DETERMINED NTS



NOTES:
1. DISCHARGE PIPE SHALL BE TRANSITIONED TO SDR11 PE4710 TUBING AT EXIT FROM STEP TANK.
2. CARBON FILTER ON VENT IS OPTIONAL. REFER TO RISER DETAIL THIS SHEET.

1000 GALLON STEP PACKAGE

STEP SYSTEM NOTES

1. SEPTIC TANK EFFLUENT PUMP (STEP) SYSTEM SHALL BE 1000 GALLON MODEL BY AQWA UNLESS APPROVED OTHERWISE.
2. STEP SYSTEM INSTALLATION AND START UP SHALL BE ACCORDING TO THE PROJECT SPECIFICATIONS.
3. STEP SYSTEMS REQUIRE PERIODIC MAINTENANCE AND PUMP OUT. AQWA OR ANOTHER SERVICE PROVIDER SHALL BE CONTRACTED TO PROVIDE ROUTINE AND EMERGENCY MAINTENANCE SERVICES.
4. CONTRACTOR SHALL CONFIRM BUILDING DRAIN ELEVATION PRIOR TO INSTALLING STEP SYSTEM. TANK AND RISER ELEVATIONS SHALL BE ADJUSTED AS NECESSARY.
5. ASSUMED SEASONAL HIGH WATER TABLE AT STEP SYSTEM TANK = ELEVATION 3.5 COUNTER BUOYANCY SHALL BE PROVIDED PER MANUFACTURER'S RECOMMENDATIONS.
7. TANK SHALL BE WATER-TIGHT. ALL PENETRATIONS OF TANK SHALL BE WITH WATER-TIGHT CONNECTIONS.
8. CALCULATED PRESSURE AT CONNECTION TO 2-INCH FORCE MAIN = ±99.5 FT. EFFLUENT PUMP SHALL BE CAPABLE OF AT LEAST 15 GPM AT 103 FT TDH IN ACCORDANCE WITH NCDEQ RECOMMENDED DESIGN CRITERIA FOR STEP SEWAGE SYSTEMS.

ANTICIPATED PUMP MODEL: ORENCO PF2005, 230V, 1ϕ, 60 Hz, 0.5 Hp

FLOW CAPABILITY = ±17 GPM @ ±113 FT TDH

DESIGN CRITERIA ITEMS (15A NCAC 02T.0305)

1. MINIMUM SETBACKS AND SEPARATIONS SHALL COMPLY WITH 15A NCAC 02T.0305(f) AND (g).
2. AIR RELIEF / ANTI SIPHON VALVE SHALL BE PROVIDED PER DETAIL.
3. STEP SYSTEM CONTROL PANEL SHALL BE POST-MOUNTED OR ATTACHED TO BUILDING IN NEMA 4X, VANDAL-RESISTANT ENCLOSURE.
4. CONTROL PANEL SHALL BE ELEVATED ABOVE ELEVATION 9.0 WHICH IS 2-FT ABOVE 100-YR FLOOD ELEVATION.
5. CONTROL PANEL SHALL HAVE A PLACARD PLACED INSIDE WITH 24-HOUR EMERGENCY CONTACT NUMBER.
6. PANEL SHALL BE U.L. LISTED AND INCLUDE A PUMP RUN LIGHT AND HAND-OFF-AUTOMATIC (H-O-A) SWITCH.
7. AN AUDIBLE AND VISIBLE HIGH-WATER ALARM MUST PROVIDED IN ACCORDANCE WITH NCDEQ REQUIREMENTS.
8. MAIN BUILDING ELECTRICAL PANEL SHALL INCLUDE TWO SEPARATE CIRCUITS - ONE FOR PUMP AND CONTROLS, ONE FOR HIGH WATER ALARM.
9. MINIMUM STORAGE SHALL EXCEED 24-HOURS OF EXPECTED INFLOW (200 GALLONS).
   PUMP OFF FLOAT ELEV. = 27.75" (INCHES ABOVE BOTTOM)
   PUMP ON FLOAT ELEV. = 29.75"
   HIGH LEVEL ALARM ELEV. = 31.75"
   INFLUENT INVERT ELEV. = 40"

   PER MANUFACTURER, TANK VOLUME PROVIDES ±25 GALLONS PER INCH OF DEPTH, EQUATING TO A DOSE VOLUME OF APPROXIMATELY 50 GALLONS AND RUNTIME OF ± 3 MINUTES.

   STORAGE BETWEEN PUMP ON AND INFLOW ELEV. = ±256 GALLONS
   STORAGE BETWEEN ALARM AND INFLOW ELEV. = ±206 GALLONS

PROJECT NO.: PM3171-001

DRAWING NO.: DTLS-C700

ROTH RMT BUOYANCY RESTRAINING COLLAR-HIGH GROUNDWATER CONDITIONS

GENERAL NOTE:

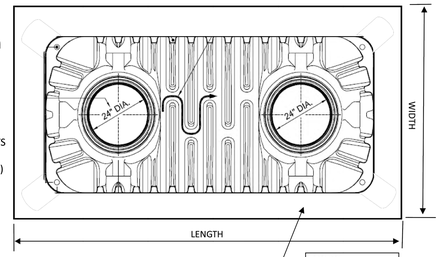
1) THE BUOYANCY RESTRAINING COLLAR DESIGN IS BASED ON BUOYANCY FORCE CALCULATIOINS AVAILABLE ON REQUEST FROM ROTH GLOBAL PLASTICS, INC. ALL FINAL DESIGN PARAMETERS ARE THE RESPONSIBILITY OF THE SYSTEM DESIGNER/INSTALLER.

CONCRETE NOTES:

1) PROVIDE CONCRETE TO OBTAIN THE MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS
2) CONCRETE MATERIALS AND WORKMANSHIP SHALL BE IN ACORDANCE WITH ACI-318-99 (BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE) AND ACI-301-LATEST EDITION (SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS)

REINFORCING STEEL:

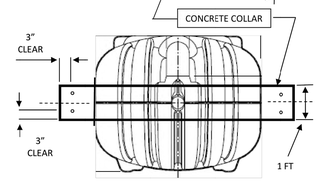
1) ALL STEEL SHALL BE BILLET STEEL CONFORMING TO STANDARDS OF ASTM A615, GRADE 60



CONCRETE COLLAR SPECIFICATIONS

TANK MODEL	RMT-500	RMT-750	RMT-1000E	RMT-1060	RMT-1250	RMT-1500
WIDTH (FT)	7'-0"	7'-0"	7'-6"	7'-6"	7'-6"	7'-6"
LENGTH (FT)	7'-0"	10'-6"	11'-6"	12'-0"	14'-0"	16'-6"
*NOMINAL SAFETY FACTOR	2.90	2.10	2.04	2.09	2.10	2.02
EST CONCRETE VOLUME	0.90	1.17	1.26	1.61	1.71	1.92

*based on installation with one foot of cover fill, density 115#/Ft³

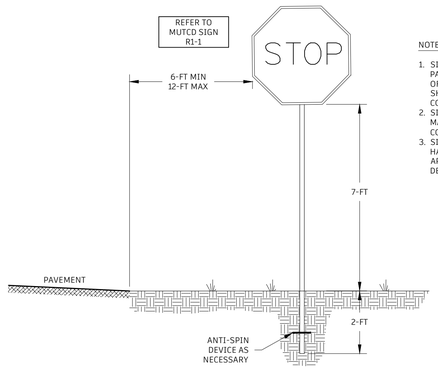


DWG SCALE: 1:1
PLOT SCALE: 1:2
SHEET NO. 1 OF 1

ROTH RMT
TANK BUOYANCY RESTRAINING SYSTEM

Roth

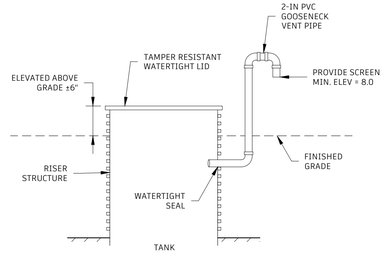
Roth Global Plastics, Inc.
One General Motors Drive
Syracuse, NY 13206
www.roth-usa.com



NOTES:
1. SIGN OFFSET FROM CURB / EDGE OF PAVEMENT VARIES BASED ON USE OF CURB AND CURB TYPE. DISTANCE SHOWN IS FOR NO CURB CONDITION.
2. SIGNS SHALL COMPLY WITH MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
3. SIGN POST AND MOUNTING HARDWARE SHALL COMPLY WITH APPLICABLE SECTIONS OF NCDOT DETAILS AND SPECIFICATIONS.

STOP SIGN DETAIL

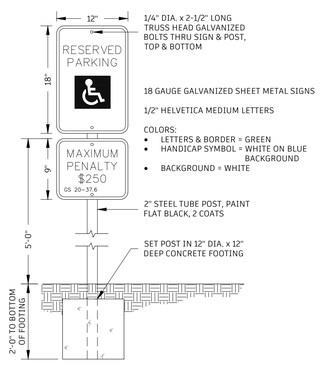
NOT TO SCALE



NOTES:
1. DETAIL IS INTENDED TO ILLUSTRATE MINIMUM RISER AND VENTING REQUIREMENTS FOR COMPLIANCE WITH NCDEQ PERMIT CONDITIONS.
2. VENT PIPE SHALL BE SCH 40 PVC WITH GLUED JOINTS UNLESS APPROVED OTHERWISE.
3. IF NECESSARY, VENT PIPING SHALL BE SECURED TO POST (4X4 TIMBER OR CONCRETE) FOR STABILITY.
4. VENT SCREEN TO DETER BIRD / INSECT NESTING SHALL BE CORROSION-RESISTANT MATERIAL (I.E. STAINLESS STEEL, ALUMINUM).
5. A CARBON FILTER MAY BE ADDED TO VENT FOR ODOR CONTROL IF DESIRED.
6. REMAINDER OF RISER COMPONENTS SHALL BE IN ACCORDANCE WITH AQWA / ORENCO DETAILS AND PROJECT SPECIFICATIONS.

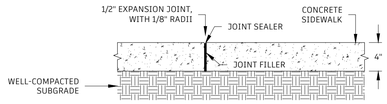
STEP TANK VENTED RISER DETAIL

NOT TO SCALE

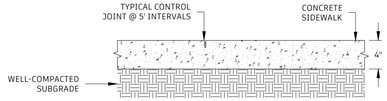


ADA ACCESSIBLE PARKING SPACE
HANDICAP SIGN DETAIL

NOTES:
1. SIDEWALKS SHALL BE CONSTRUCTED WITH MIN 4" THICK 3,000 PSI CONCRETE WHERE SUBJECT TO PEDESTRIAN TRAFFIC ONLY. SIDEWALKS SUBJECT TO VEHICULAR TRAFFIC SHALL CONFORM TO NCDOT SPECIFICATIONS.
2. TYPICAL WIDTH SHALL BE 5-FT UNLESS SHOWN OTHERWISE.
3. CONTROL JOINTS MAY BE TOOLED OR SAW CUT AT 5-FT INTERVALS. JOINTS SHALL BE 1" DEEP BY 1/8" WIDE. TOOLED JOINTS SHOULD INCLUDE 1/8" RADII AT TOP SURFACE.
4. EXPANSION JOINTS WILL BE REQUIRED AT THE END OF DAILY POUR OR 50' INTERVALS WHICHEVER IS LESS.
5. EXPANSION JOINTS WILL BE REQUIRED WHERE THE SIDEWALK ABUTS ANY RIGID STRUCTURE.
6. JOINT MATERIALS SHOULD COMPLY WITH NCDOT SPECIFICATIONS.

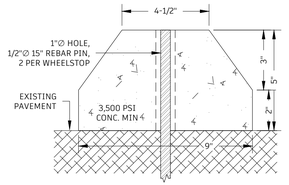


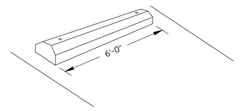
TRANSVERSE EXPANSION JOINT



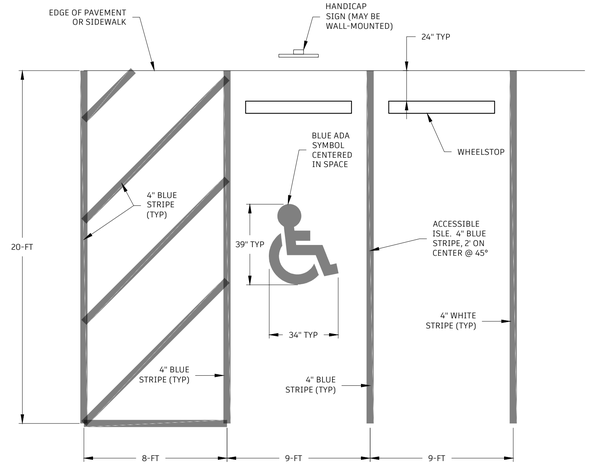
SIDEWALK DETAIL

NOT TO SCALE





WHEELSTOP DETAIL



PARKING DETAIL

NOT TO SCALE

REVISIONS

BY	NO.	DATE	DESCRIPTION
JAF	5	12/9/2025	BLDG FOOTPRINT EDITS

DRAFT

ENGINEER

SITE & UTILITY DETAILS

BEAUFORT RESCUE & EMS, INC. STEEL TANK ROAD SUBSTATION

REFERENCE PIN: 639904748004000; DEED BOOK 1668 PAGE 144
BEAUFORT TOWNSHIP, CARTERET COUNTY, NORTH CAROLINA

OWNER: BEAUFORT RESCUE & EMS, INC.
ADDRESS: 683 W. BEAUFORT ROAD BEAUFORT, NC 28516
PHONE: N/A

STROUD ENGINEERING, P.A.
422 HIGHWAY 24
MOREHEAD CITY, NC 28557
(252) 247-7479
LICENSE NO.C-0647

DESIGNED:	JAF
DRAWN:	JAF
APPROVED:	JAF
DATE:	9/8/2025
SCALE:	AS SHOWN
SHEET:	C705

M:\Master\Projects\PM3100's\PM3171-001 Beaufort EMS Substation\CAD\design\PM3171-001 DTLS- C700.dwg 12/9/2025 1:20:24 PM

40'-Ø" SETBACK LINE

48'-Ø"

34'-Ø"

5'-Ø" 3'-Ø" Ø'-Ø" 3'-Ø" 1'-8" 3'-Ø" 5'-4" 6'-4" 4'-4" 3'-Ø" 3'-4" 2'-Ø" 14'-Ø" 2'-Ø" 14'-Ø" 2'-Ø"

VERIFY OPENING WITH DOOR MANUF.

VERIFY OPENING WITH DOOR MANUF.

8'-Ø"x5'-Ø" STOOP 11'-Ø"

16" SQ. COMMON BLOCK COLUMN

CANOPY ABOVE

COVERED ENTRY

QUIK BRIK HALF HIGH UNITS

8" GUARDPOST, TYP. SEE DWG. A5.2 DET. 4

14' x 14' O.H. DOOR

O.H. DOOR CONTROLS

5'-Ø" x 5'-Ø" STOOP

TRENCH DRAIN

EMS BAY 121

INDICATES COMMON BLOCK WALL STOPS JUST UNDER THE LOW ROOF CONTINUES WITH QUIK BRIK ABOVE LOW ROOF LINE. (SEE EXTERIOR ELEVATIONS)

EYE WASH

QUIK BRIK HALF HIGH UNITS 11 5/8"x15 5/8"x3 5/8"

SECURE ENTRY 116

PANTRY

KITCHEN/ DINING 113

DAY ROOM 112

OFFICE 117

FOYER 115

EWC W/BOTTLE FILLER

DROPPED SOFFIT

⅝" GWB ON 1½" FURRING CHANNEL @ 16" O.C. FOR OFFICE 117 AND FOYER 115

INDICATES COMMON BLOCK WALL FULL HEIGHT AT LAUNDRY/ SAFE ROOM (SEE SECTIONS)

LAUNDRY/ SAFE 118

TOILET 114

SHOWER 105.1

LIN. 106

WOMENS 105

MED STOR 119

CORRIDOR 104

JAN. 103

MENS 107

SHOWER 107.1

SECURE ENTRY 101

MECH. 102

SPRINK. 120

BUNK 111

BUNK 110

BUNK 109

BUNK 108

(4) SINGLE-TIER LOCKER

(5) ADJ. 18" DEEP PLAM. SHELVES

40'-Ø" SETBACK LINE

QUIK BRIK HALF HIGH UNITS

6" STUDS @ PLUMBING WALL

8'-Ø" x 5'-Ø" STOOP

NOTE: PROVIDE UNFACED SOUND BATTS IN ALL INTERIOR PARTITIONS

HWY 101

DOOR LEGEND

FOYER 102 — A — DOOR 102A

DOOR INDICATOR

ROOM *

WALL LEGEND

- 8" ECHELON MASONRY QUIK BRICK
- 8" CMU BLOCK WALL
- 12" CMU BLOCK WALL
- 12" ECHELON MASONRY QUIK BRICK
- 1-HOUR RATED 12" CMU BLOCK WALL
- 1-HOUR RATED METAL STUD WALL
- * 20 MINUTE RATED DOOR AND FRAMES
- ** 45 MINUTE RATED DOOR AND FRAMES

1 A-1 **FLOOR PLAN**

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

THESE DRAWING AND SPECIFICATIONS REPRESENT AN INSTRUMENT OF SERVICE AND AS SUCH SHALL REMAIN IN OWNERSHIP WITH THE ARCHITECT. USE OR REPRODUCTION BY ANY MEANS, IN WHOLE OR IN PART, WITHOUT THE ARCHITECT'S WRITTEN CONSENT, IS PROHIBITED.

Coastal Architecture

- Architectural Design
- Planning
- Interiors

AIA

Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
STEEL TANK ROAD SUBSTATION
BEAUFORT, NORTH CAROLINA

COASTAL ARCHITECTURE & ENGINEERING, P.A. CERT. NO. 57762 CONTRACTOR LICENSING BOARD

LEE D. DIXON, JR. 6419 REGISTERED ARCHITECT NORTH CAROLINA

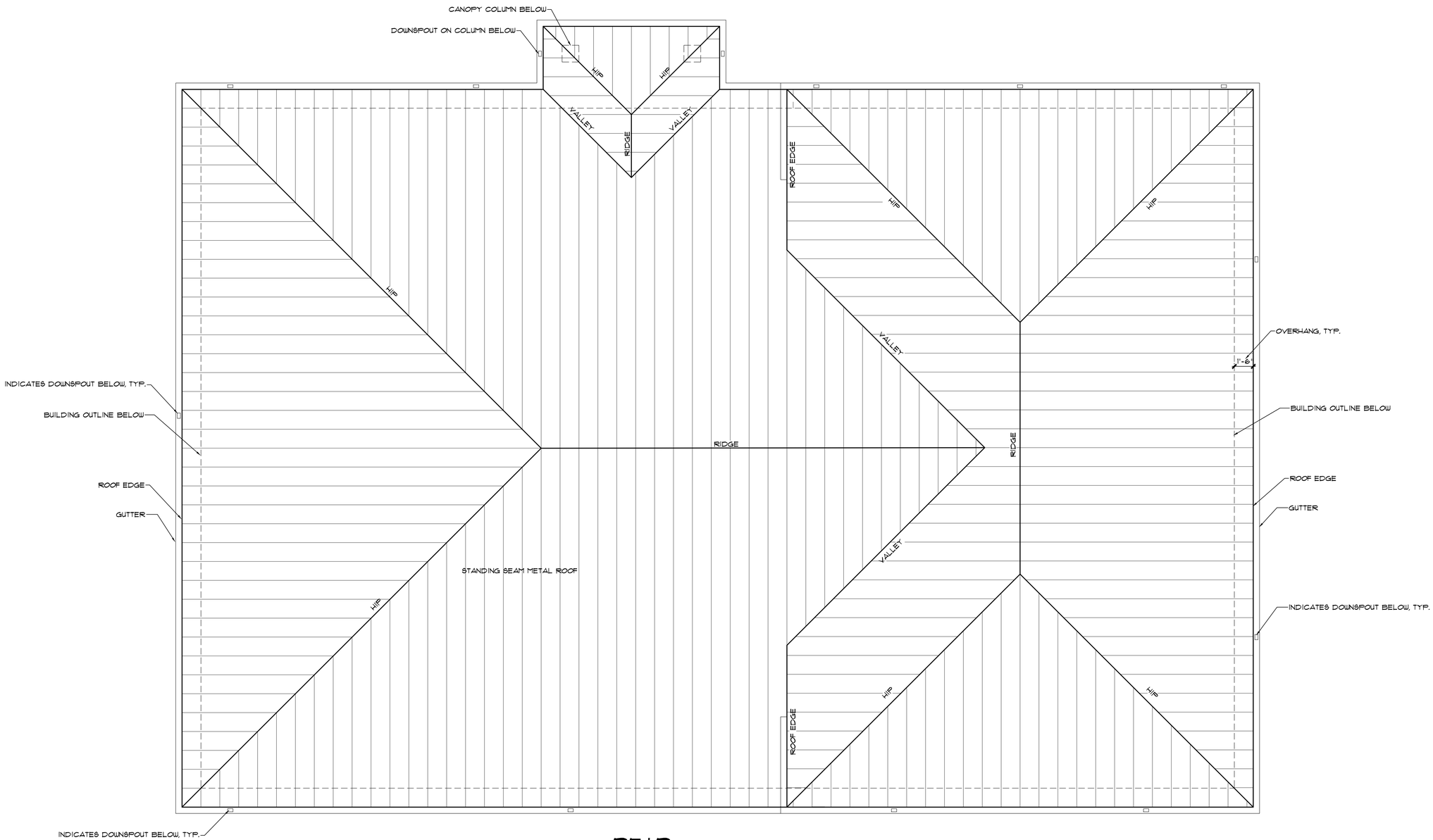
FLOOR PLAN

25003

ISSUED: 01-30-2026
DWG BY: SKC
CKD BY: LDD
REVISIONS

SHEET NO.
A-1
OF

FRONT



REAR

NOTE: PROVIDE 8"x16" CONC. SPLASH BLOCK AT ALL DOWN SPOUTS

1 / A1.1 ROOF PLAN

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

THESE DRAWING AND SPECIFICATIONS REPRESENT AN INSTRUMENT OF SERVICE AND AS SUCH SHALL REMAIN IN OWNERSHIP WITH THE ARCHITECT. USE OR REPRODUCTION BY ANY MEANS, IN WHOLE OR IN PART, WITHOUT THE ARCHITECT'S WRITTEN CONSENT, IS PROHIBITED.

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252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557

www.CoastalArchitecture.net

BEAUFORT EMS
STEEL TANK ROAD SUBSTATION
BEAUFORT, NORTH CAROLINA

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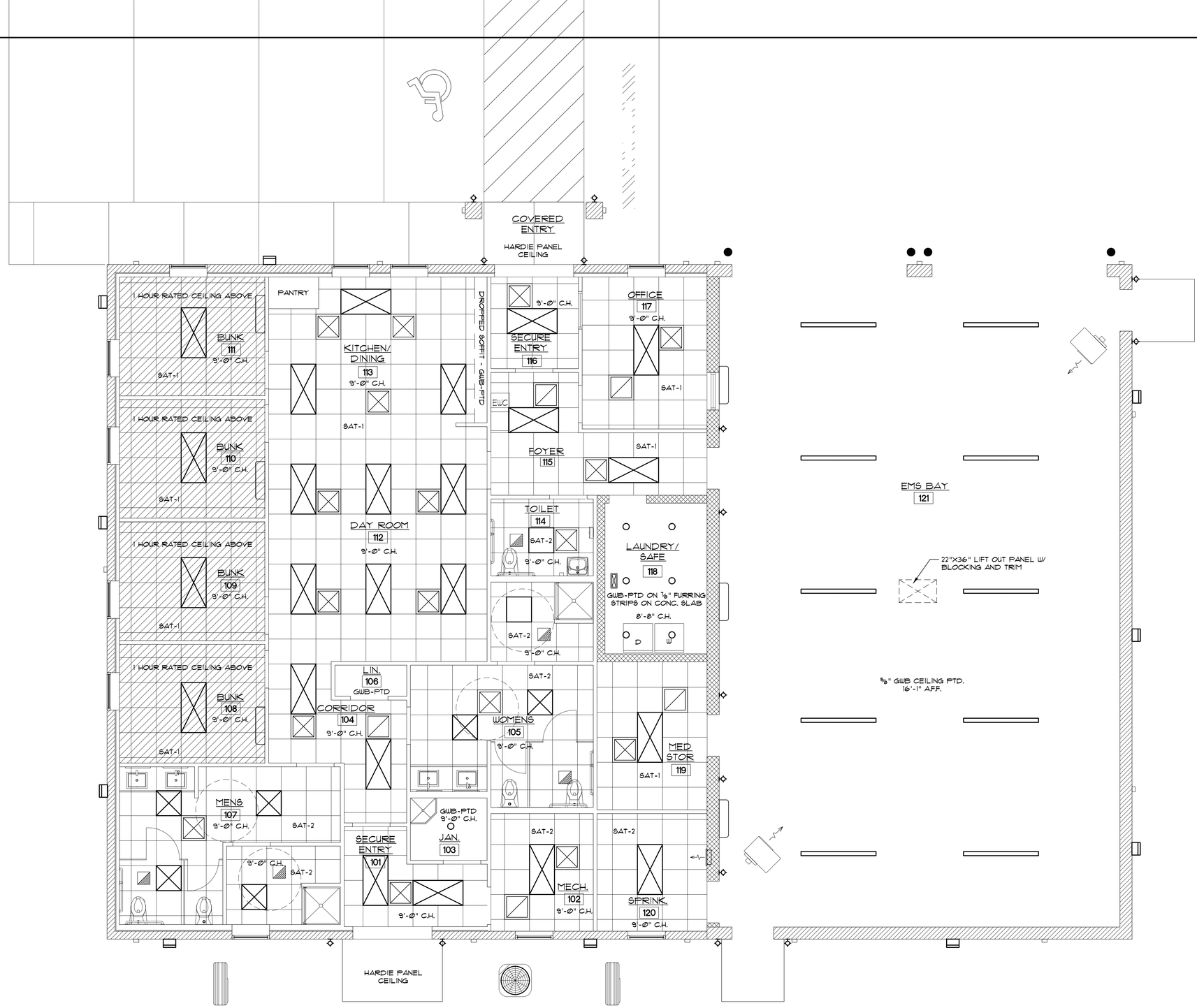
ROOF PLAN

25003

ISSUED: 01-30-2026
DWG BY: BLS
CKD BY: LDD

REVISIONS

SHEET NO.
A-1.1
OF



1/A-2 REFLECTED CEILING PLAN

SCALE: 1/4"=1'-Ø"

WALL LEGEND

- 8" ECHELON MASONRY QUIK BRICK
- 8" CMU BLOCK WALL
- 12" CMU BLOCK WALL
- 12" ECHELON MASONRY QUIK BRICK

HWY 101

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REFLECTED CEILING PLAN

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OF

WINDOW SCHEDULE

MARK	SIZE	TYPE	MATERIAL	GLAZING	REMARKS
W-1	3'-0" X 5'-4"	FIXED	ALUM.	IMPACT RESISTANT	PROVIDE BLACK OUT TINTING ON INTERIOR GLAZING
W-2	3'-0" X 5'-4"	FIXED	ALUM.	IMPACT RESISTANT	
W-3	3'-0" X 4'-0"	FIXED	ALUM.	IMPACT RESISTANT	
W-4	3'-0" X 3'-4"	FIXED	ALUM.	FIRE RATED	45 MIN. RATED

WINDOW SCHEDULE REMARKS

- ALL GLAZING TO BE IMPACT RESISTANT - 1" INSULATED, SOLAR GREY
- WINDOWS SHALL MEET APPLICABLE WIND ZONE CODE DESIGN PRESSURE REQUIREMENTS.
- PROVIDE HEAD AND SILL FLASHING AT ALL WINDOWS.

DOOR SCHEDULE

DOOR NO.	SIZE	DOOR TYPE	DOOR FRAME	REMARKS
101A	3'-0" X 7'-0"	1	A	(1)
101B	3'-0" X 7'-0"	4	D	(1)
102A	3'-0" X 7'-0"	3	D	
103A	3'-0" X 7'-0"	3	D	
105A	3'-0" X 7'-0"	3	D	(1)
105B	3'-0" X 7'-0"	3	D	
106A	3'-0" X 7'-0"	3	D	
107A	3'-0" X 7'-0"	3	D	(1)
107B	3'-0" X 7'-0"	3	D	(1)
108A	3'-0" X 7'-0"	3	D	(1) 20 MIN. RATED
109A	3'-0" X 7'-0"	3	D	(1) 20 MIN. RATED
110A	3'-0" X 7'-0"	3	D	(1) 20 MIN. RATED
111A	3'-0" X 7'-0"	3	D	(1) 20 MIN. RATED
114A	3'-0" X 7'-0"	3	D	(1)
115A	3'-0" X 7'-0"	2	B	(1) 45 MIN. RATED
115B	3'-0" X 7'-0"	4	D	(1)
116A	3'-0" X 7'-0"	1	A	(1)
116B	3'-0" X 7'-0"	4	D	(1)
117A	3'-0" X 7'-0"	4	D	
118A	3'-0" X 7'-0"	3	C	
119A	3'-0" X 7'-0"	2	B	(1) 45 MIN. RATED
120A	3'-0" X 7'-0"	2	B	(1) 45 MIN. RATED
121A	3'-0" X 7'-0"	2	B	(1)
121B	14'-0" X 14'-0"	5	CHANNEL	OVERHEAD DOOR
121C	3'-0" X 7'-0"	2	B	(1)

DOOR SCHEDULE REMARKS

(1) CLOSERS

ROOM FINISH SCHEDULE

ROOM NUMBERS	ROOM	FLOORS	BASE	WALLS	CEILINGS	HEIGHT (NOMINAL)	REMARKS
101	SECURE ENTRY	LVP	VINYL BASE	GWB-PTD	S.A.T.	9'-0"	PAINT INSIDE OF MASONRY
102	MECHANICAL						
103	JANITOR						
104	CORRIDOR						
105	WOMENS TOILET	TILE	TILE BASE				
105.1	SHOWER	TILE	TILE BASE		GWB-PTD		
106	LINEN	LVP	VINYL BASE		S.A.T.		
107	MENS TOILET	TILE	TILE BASE		S.A.T.		
107.1	SHOWER	TILE	TILE BASE		GWB-PTD		
108	BUNK	LVP	VINYL BASE		S.A.T.		
109	BUNK						
110	BUNK						
111	BUNK						
112	DAY ROOM						
113	KITCHEN						
114	TOILET	TILE	TILE BASE				
115	FOYER	LVP	VINYL BASE				
116	SECURE ENTRY						
117	OFFICE						
118	LAUNDRY/SAFE			CMU BLOCK PTD.	4" CONC. SLAB @ 24" GWB ON 7/8" FURRING CHANNELS @ 16" O.C.	8'-8"	
119	MED STORAGE			GWB-PTD	S.A.T.	9'-0"	PAINT INSIDE OF MASONRY
120	SPRINKLER			GWB-PTD	S.A.T.	9'-0"	PAINT INSIDE OF MASONRY
121	EMS GARAGE	CONC.	-	CMU BLOCK PTD.	GWB-PTD	16'-1"	

ROOM FINISH SCHEDULE REMARKS

- ALL GWB TO BE MOLD/MILDEW RESISTANT.
- PROVIDE TILE BACKER BOARD AT ALL WALL TILE.

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DOOR, WINDOW AND ROOM FINISH SCHEDULES

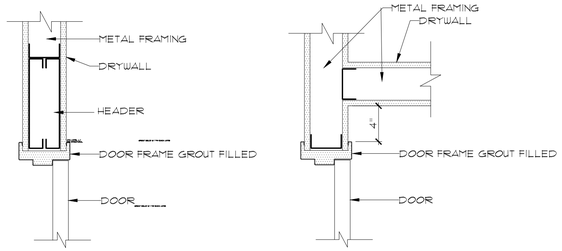
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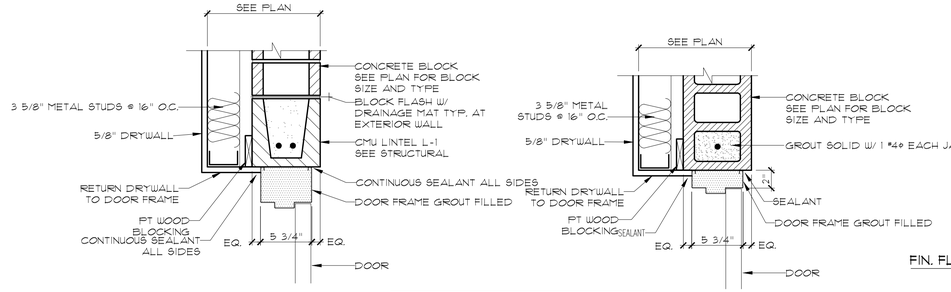
SHEET NO.
A-3
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HEAD 3 JAMB 3

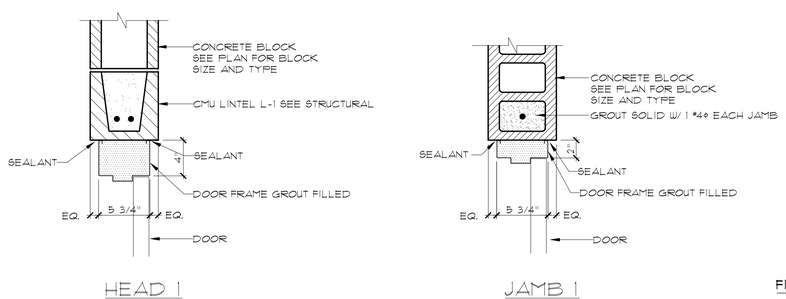
6 A-3.1 HEAD AND JAMB (DW)
SCALE: 1 1/2"=1'-0"



HEAD 2 JAMB 2

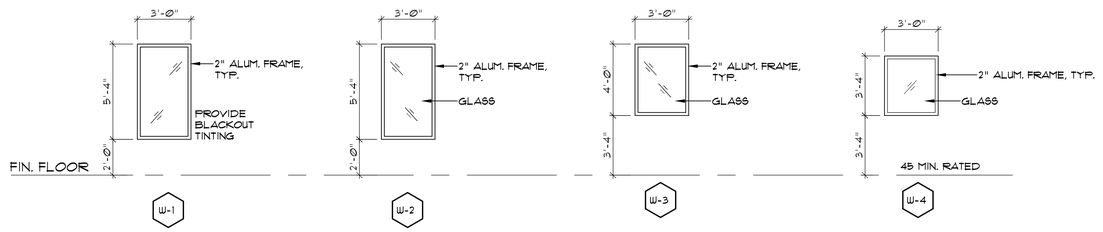
NOTE: ALL EXPOSED (TO EXTERIOR) LINTEL BLOCKS TO BE ARCHITECTURAL CMU.

5 A-3.1 HEAD AND JAMB (CMU & DW)
SCALE: 1 1/2"=1'-0"

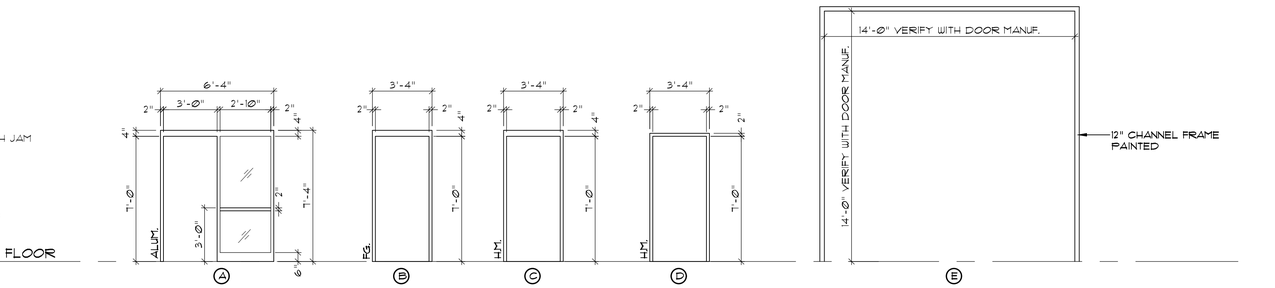


HEAD 1 JAMB 1

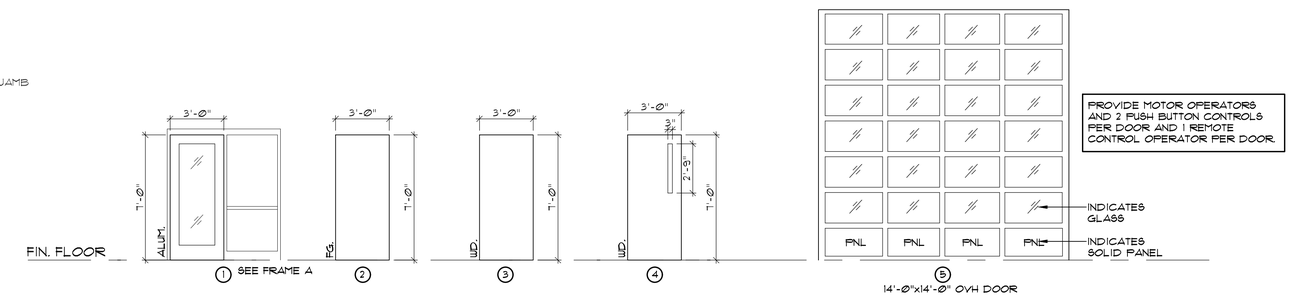
4 A-3.1 HEAD AND JAMB (CMU)
SCALE: 1 1/2"=1'-0"



3 A-3.1 WINDOW ELEVATIONS
SCALE: 1/4"=1'-0"



2 A-3.1 DOOR FRAME ELEVATIONS
SCALE: 1/4"=1'-0"



1 A-3.1 DOOR ELEVATIONS
SCALE: 1/4"=1'-0"

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lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
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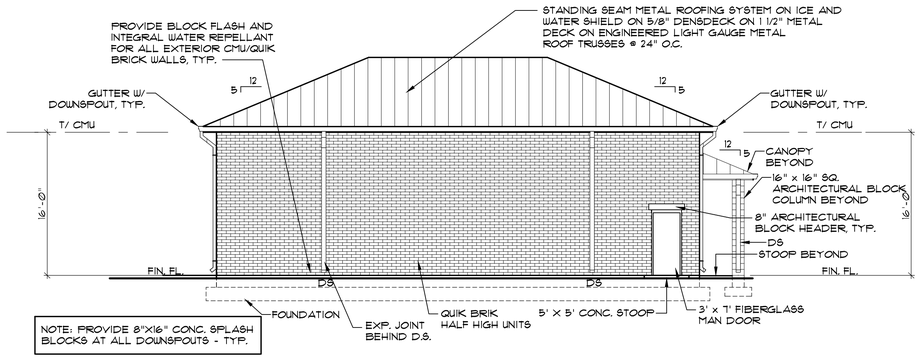
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CERT. NO. 31782
LEE D. DIXON, JR. REGISTERED ARCHITECT 6419 NORTH CAROLINA MOREHEAD CITY

DOOR AND WINDOW ELEVATIONS

25003

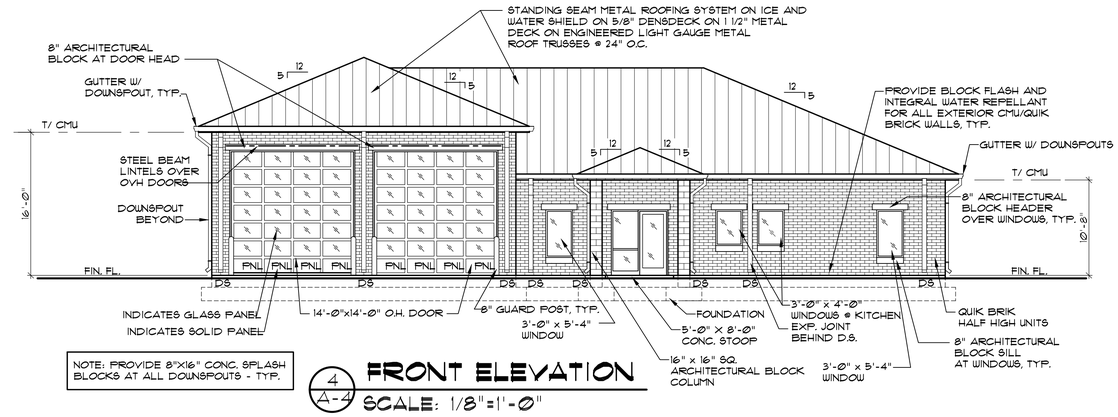
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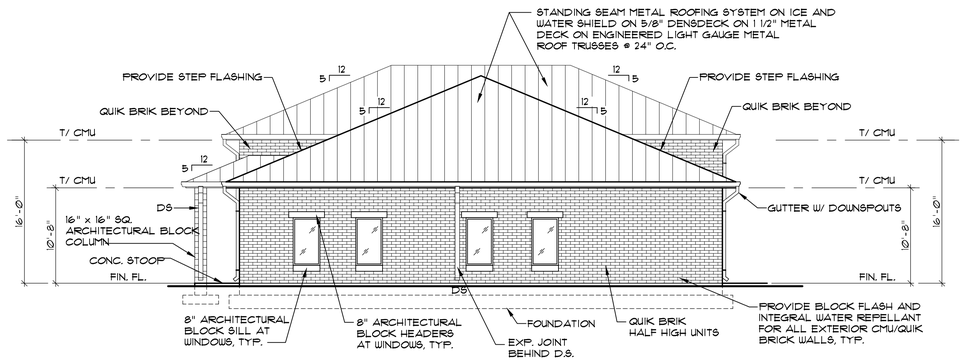
3 A-4 **LEFT END ELEVATION**

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



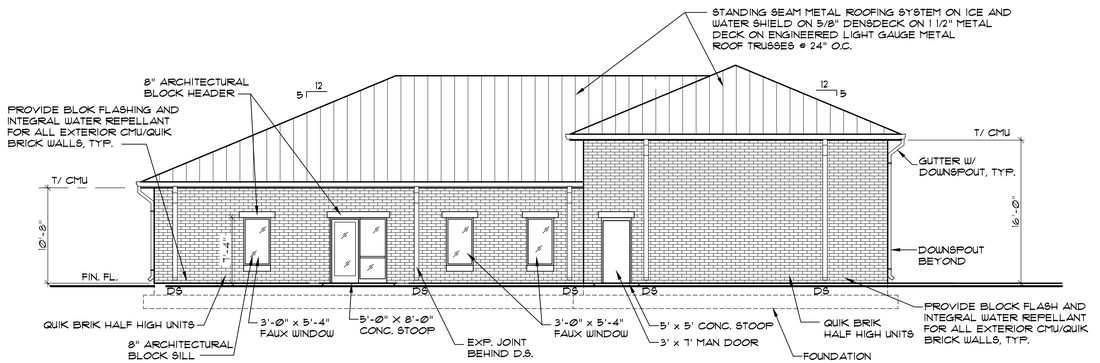
4 A-4 **FRONT ELEVATION**

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



2 A-4 **RIGHT END ELEVATION**

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



1 A-4 **REAR ELVATION**

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

SEE SITE PLAN FOR GRADE INFORMATION

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252-247-2137
lee@coastalarchitecture.net

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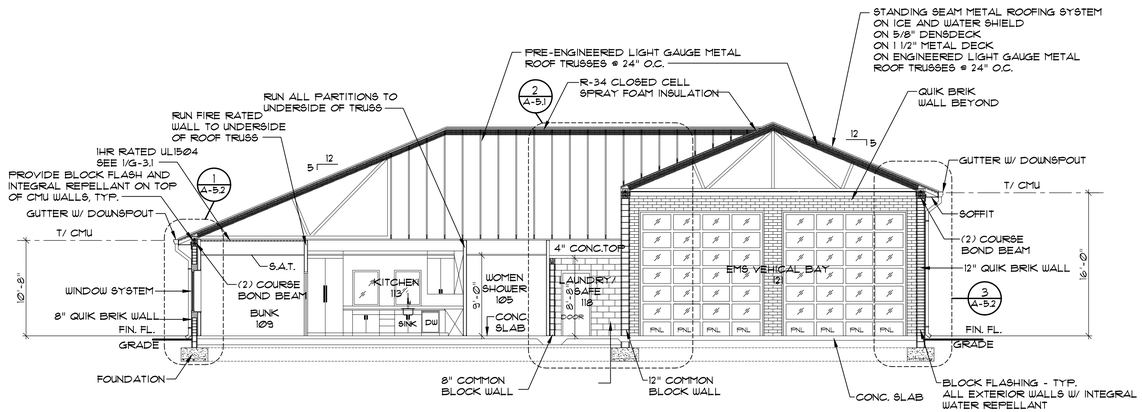
EXTERIOR ELEVATIONS

25003

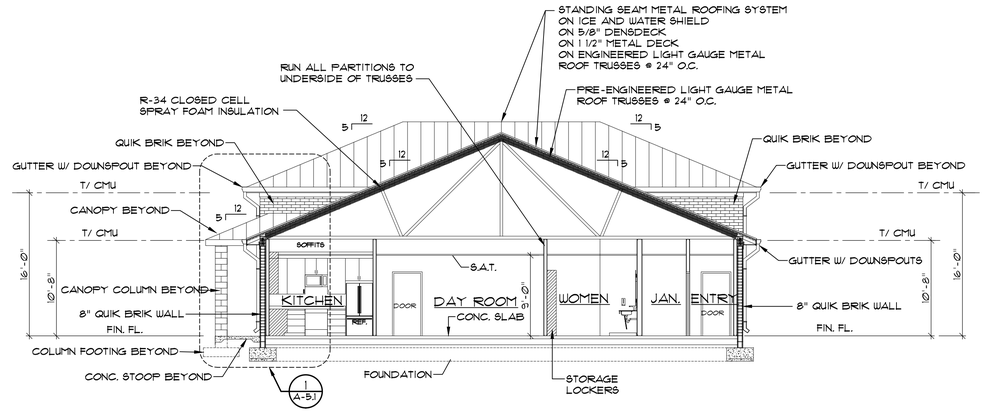
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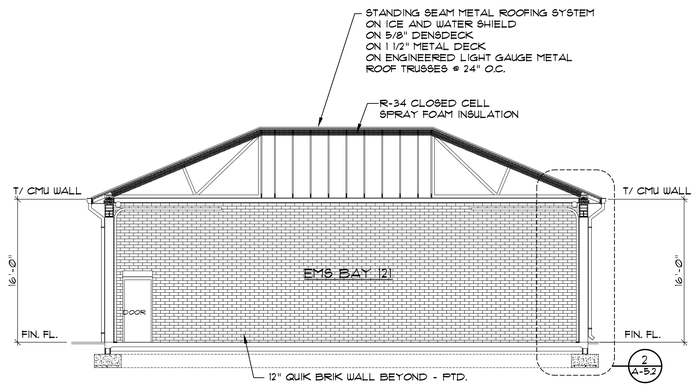
SHEET NO.
A-4
OF



1 A-5 **BUILDING SECTION**
SCALE: 1/8"=1'-0"



2 A-5 **BUILDING SECTION**
SCALE: 1/8"=1'-0"



3 A-5 **BUILDING SECTION**
SCALE: 1/8"=1'-0"

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CERT. NO. C-1792

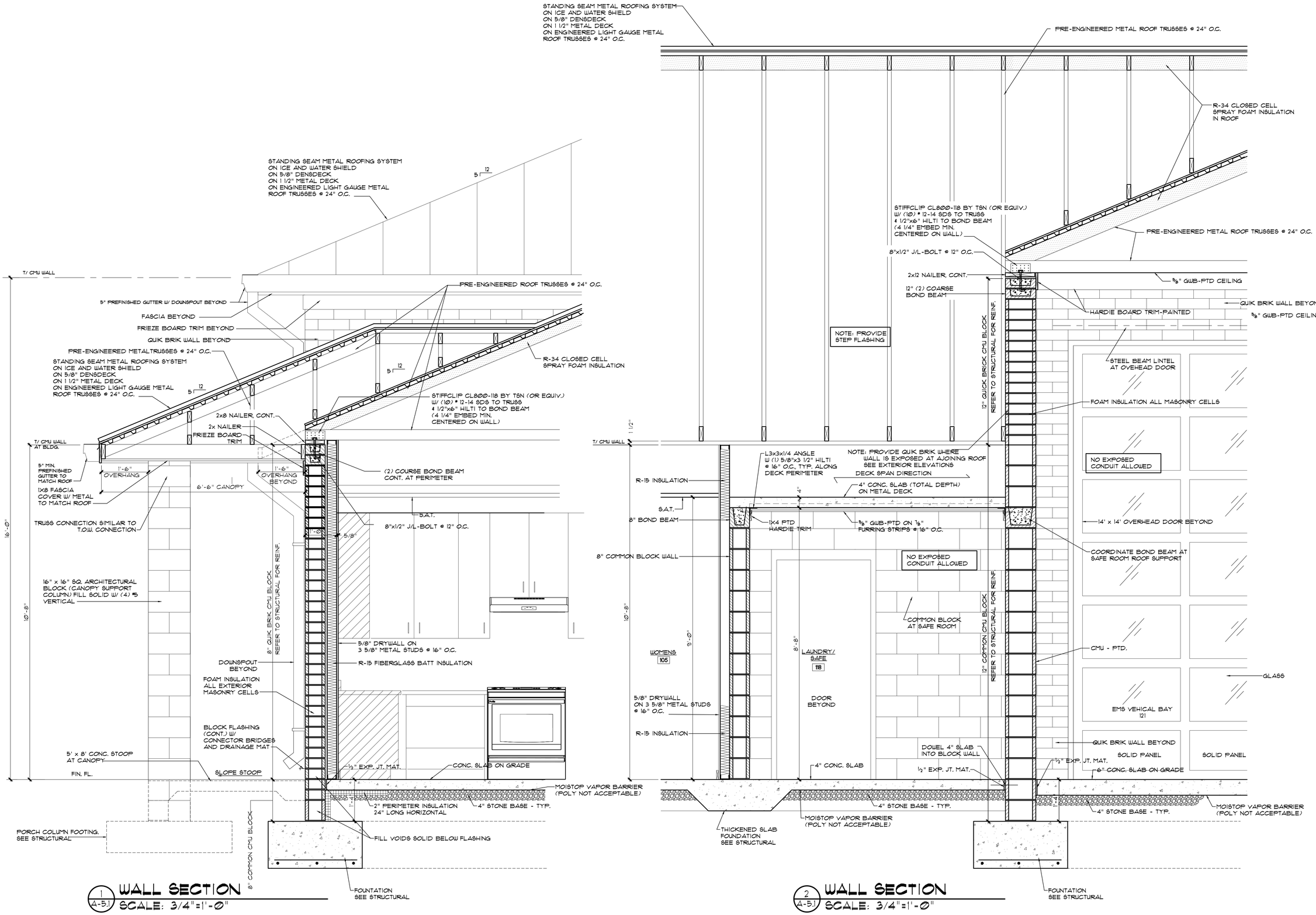
BUILDING SECTIONS

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1 A-5.1 **WALL SECTION**
SCALE: 3/4"=1'-0"

2 A-5.1 **WALL SECTION**
SCALE: 3/4"=1'-0"

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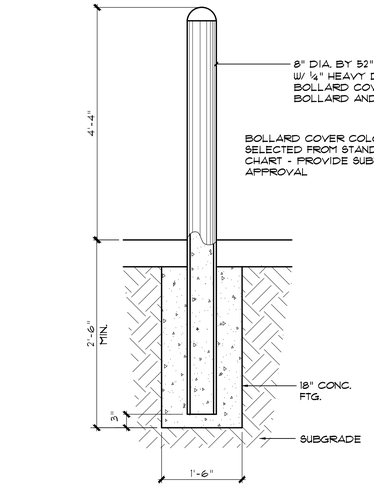
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WALL SECTIONS

25003

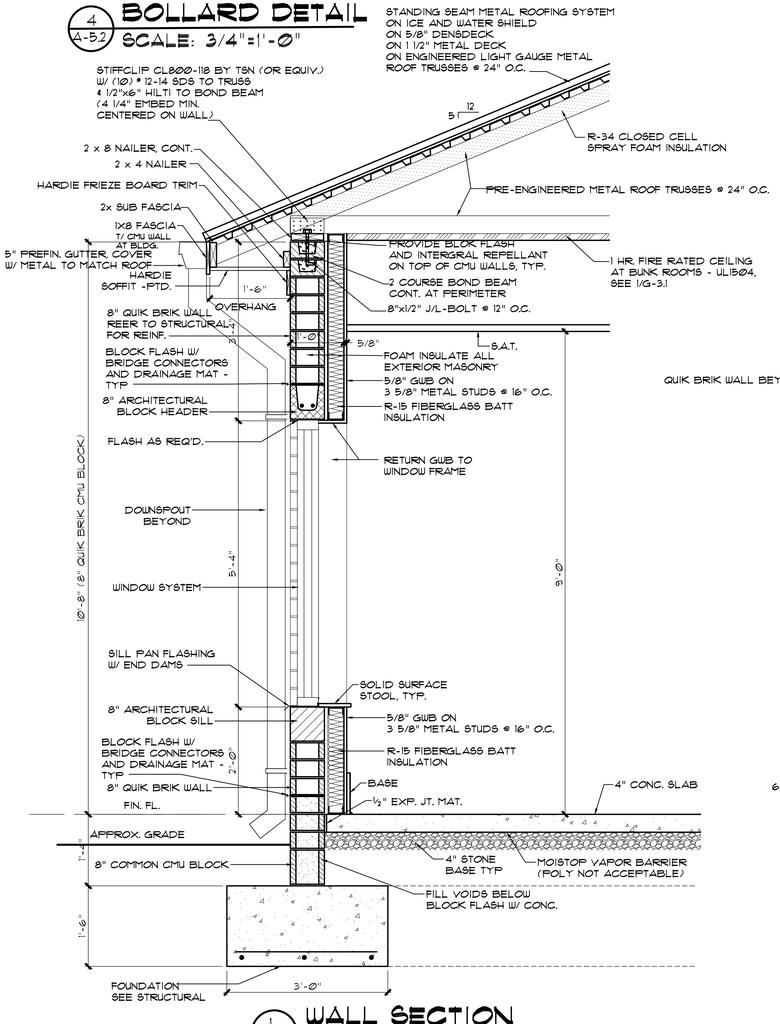
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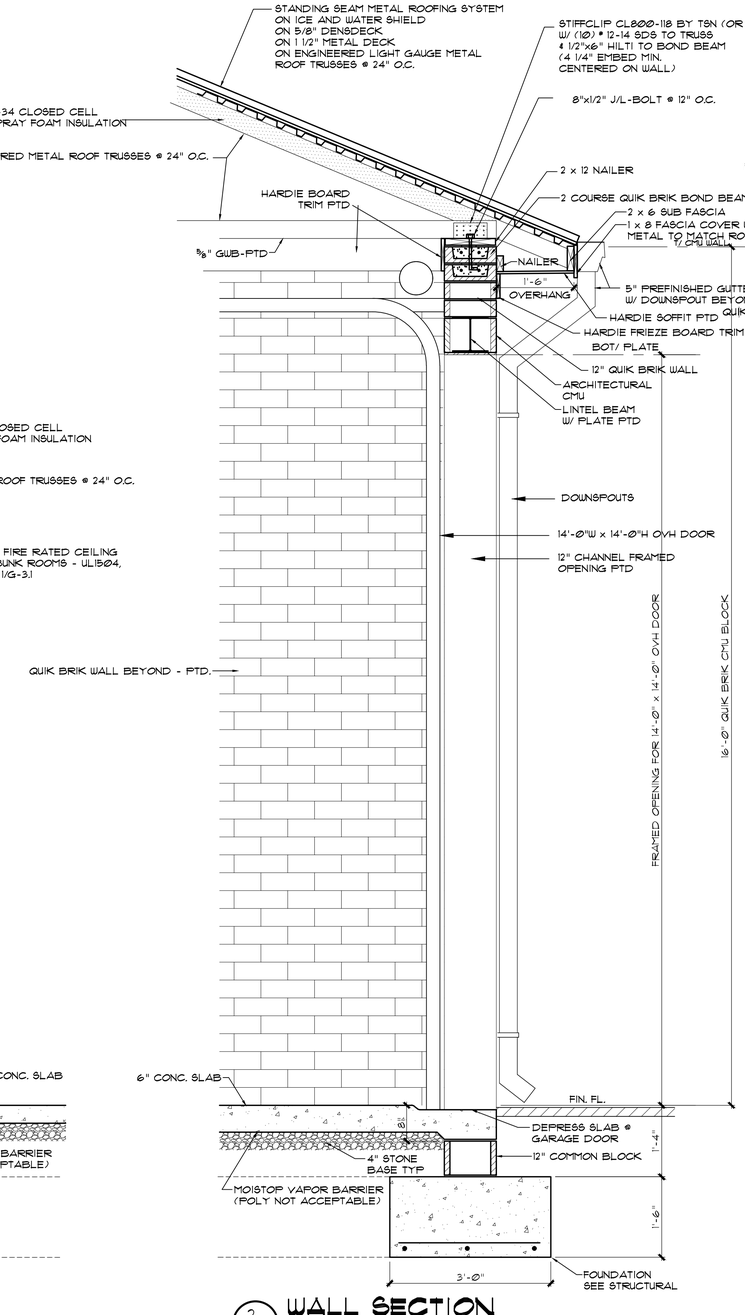
TYPICAL BOLLARD DETAIL

4 / A-5.2 SCALE: 3/4"=1'-0"



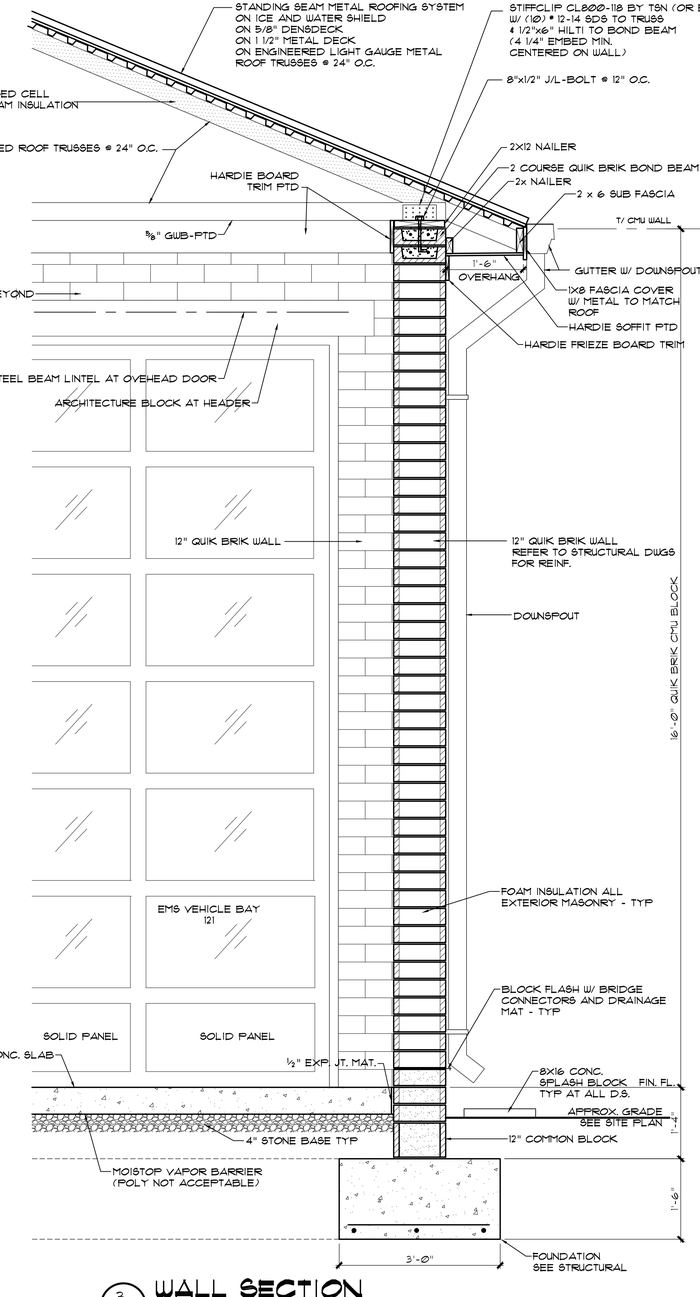
WALL SECTION

1 / A-5.2 SCALE: 3/4"=1'-0"



WALL SECTION

2 / A-5.2 SCALE: 3/4"=1'-0"



WALL SECTION

3 / A-5.2 SCALE: 3/4"=1'-0"

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REGISTERED ARCHITECT — LEE D. DIXON, JR. — 6419 — NORTH CAROLINA

WALL SECTIONS

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ISSUED:	01-30-2026
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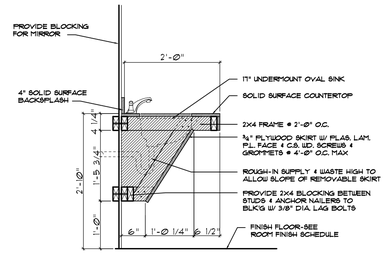
SHEET NO.
A-5.2
OF

TOILET ACCESSORIES SCHEDULE

MARK	ITEM	MFG	MODEL #	MT.HT.	REMARKS
TA-1	FRAMELESS MIRROR 2'-0"W X 3'-6"H	-	-	3'-4"	HT. TO BOTTOM OF MIRROR
TA-2	FRAMELESS MIRROR 2'-6"W X 5'-8"H	-	-	6" AFF	HT. TO BOTTOM OF MIRROR
TA-3	TOILET TISSUE DISPENSER	GP PRO	59009	18" MIN. AFF	HT. TO TOP OF DISPENSER
TA-4	PAPER TOWEL DISPENSER	GP PRO	56650A	4'-0" MAX	HT. TO BOTTOM OF DISPENSER
TA-5	SOAP DISPENSER	GP PRO	53250	4'-0" MAX	HT. TO BOTTOM OF DISPENSER
TA-6	GRAB BAR 42"	BOBRICK	B-6806X42	3'-0" MAX	HT. TO CENTER
TA-7	GRAB BAR 36"	BOBRICK	B-6806X36	3'-0" MAX	HT. TO CENTER
TA-8	GRAB BAR 18" (VERTICAL)	BOBRICK	B-6806X18	3'-3" MAX	HT. TO BOTTOM OF CENTER OF BAR @ 40" FROM REAR WALL
TA-9	COAT HOOK (ACCESSIBLE HEIGHT)	BOBRICK	B-542	4'-0" MAX	HT. TO CENTER
TA-10	COAT HOOK (STANDARD HEIGHT)	BOBRICK	B-542	66" MAX	HT. TO CENTER
TA-11	FOLDING SHOWER SEAT	BOBRICK	B-5181	17"-19"	HT. FROM FLOOR TO TOP OF SEAT
TA-12	SHOWER CURTAIN ROD	BOBRICK	B-207 X 60	72" - 74½"	HT. FROM FLOOR TO ℄ OF ROD
TA-13	SHOWER STALL GRAB BAR	BOBRICK	B-6861	3'-0" MAX	HT. TO CENTER
TA-14	ADA LOCKER BENCH	SALSBURY INDUSTRIES	77781-ADA-LGT	-	

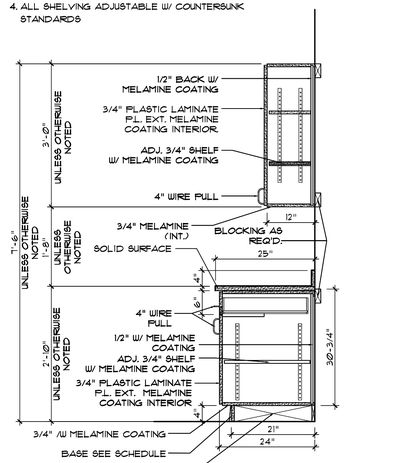
NOTES:

- SUBMIT CUT SHEETS FOR APPROVAL.
- SUBMIT SHOP DRAWINGS FOR ALL TOILET PARTITION CONFIGURATIONS.
- ALL HANDRAILS SHALL BE BLOCKED TO SUPPORT A 250 LB. LOAD MINIMUM.
- PROVIDE BLOCKING AS REQUIRED FOR ALL ACCESSORIES.

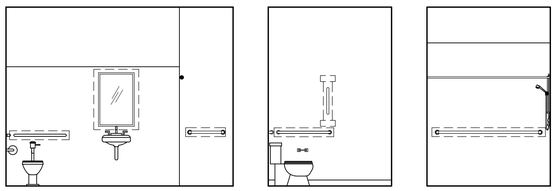


5 A-6 VANITY DETAIL
SCALE: 3/4"=1'-0"

GENERAL NOTES:
1. PLASTIC LAMINATE P.L. EXTERIOR/WHITE MELAMINE COATING INTERIOR
2. CONCEALED HINGES THROUGHOUT
3. 4" SATIN CHROME PULL WIRES
4. ALL SHELVING ADJUSTABLE W/ COUNTERSUNK STANDARDS

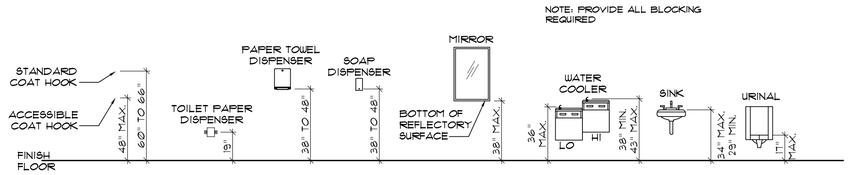


4 A-6 TYP KITCHEN CABINET SECTION
SCALE: 3/4"=1'-0"

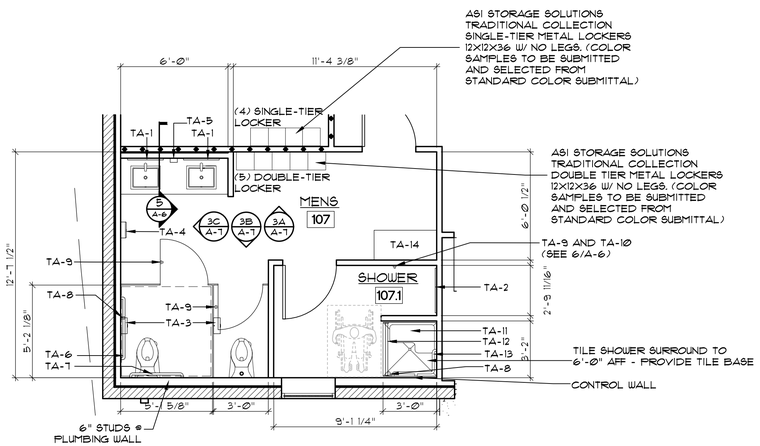


7 A-6 BLOCKING DIAGRAM
SCALE: 1/4"=1'-0"

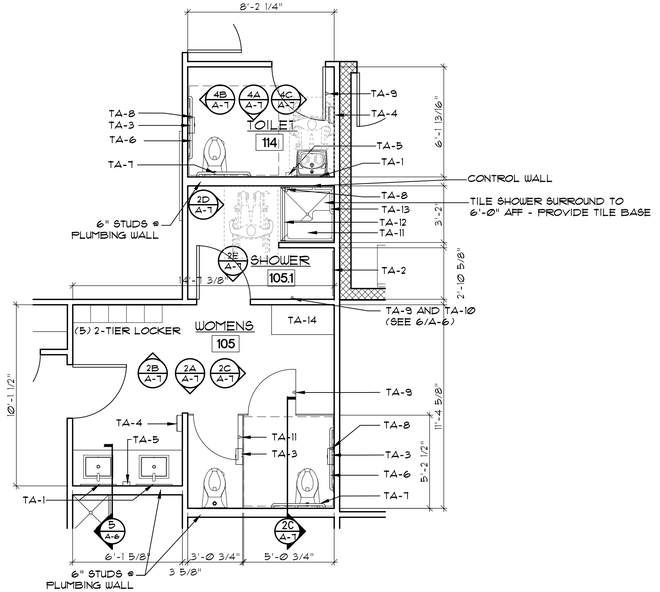
NOTE: PROVIDE ALL BLOCKING REQUIRED FOR TOILET ACCESSORIES



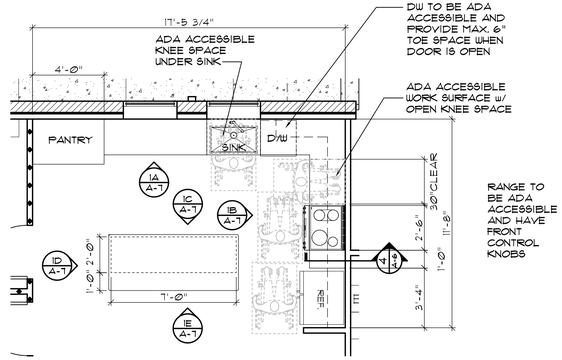
6 A-6 BARRIER-FREE FIXTURE MOUNTING HEIGHTS
SCALE: 1/4"=1'-0"



3 A-6 MEN'S TOILET 107 ENLARGED PLAN
SCALE: 1/4"=1'-0"



2 A-6 WOMEN'S TOILET 105 ENLARGED PLAN
SCALE: 1/4"=1'-0"



1 A-6 KITCHEN ROOM 113 ENLARGED PLAN
SCALE: 1/4"=1'-0"

NOTE: ALL KITCHEN APPLIANCES TO BE ADA ACCESSIBLE

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Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
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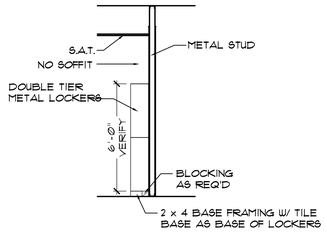
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ENLARGED PLANS

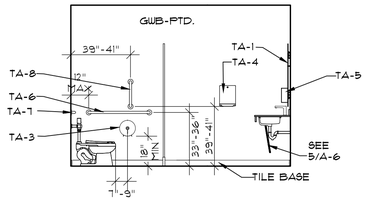
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CKD BY: LDD
REVISIONS

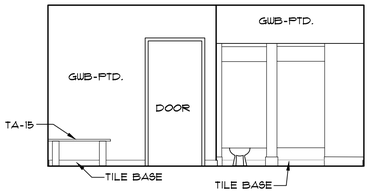
SHEET NO.
A-6
OF



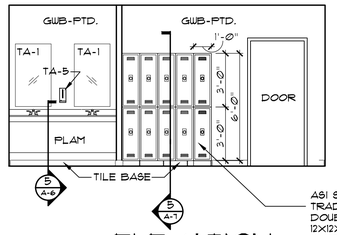
5 A-7 **LOCKER DETAIL**
SCALE: 1/4"=1'-0"



3C A-7 **ELEVATION**



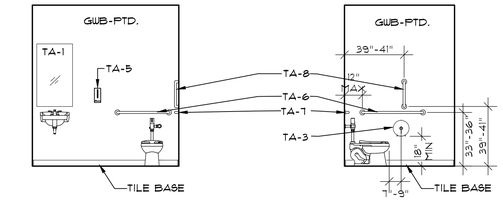
3B A-7 **ELEVATION**



3A A-7 **ELEVATION**

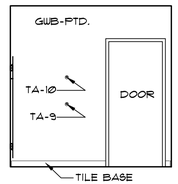
ASI STORAGE SOLUTIONS
TRADITIONAL COLLECTION
DOUBLE TIER METAL LOCKERS
12x12x36 W/ NO LEGS. (COLOR SAMPLES TO BE SUBMITTED AND SELECTED FROM STANDARD COLOR SUBMITTAL)

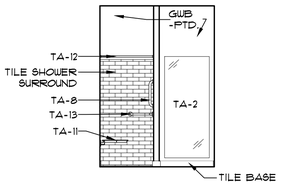
MEN'S TOILET 107
INTERIOR ELEVATION
3 A-7 SCALE: 1/4"=1'-0"



4A A-7 **ELEVATION**
4B A-7 **ELEVATION**
4C A-7 **ELEVATION**

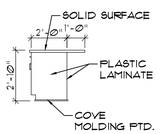
TOILET RM 114
INTERIOR ELEVATIONS
4 A-7 SCALE: 1/4"=1'-0"



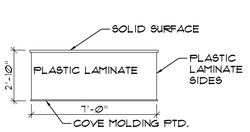


2E A-7 **ELEVATION**
2D A-7 **ELEVATION**

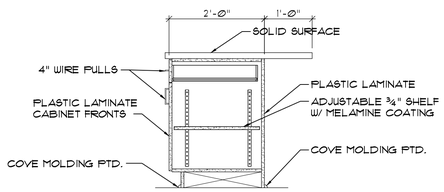
WOMEN'S SHOWER 105 SHOWN
INTERIOR ELEVATIONS
2 A-7 SCALE: 1/4"=1'-0"
SHOWER 107 SAME, OPPOSITE HAND



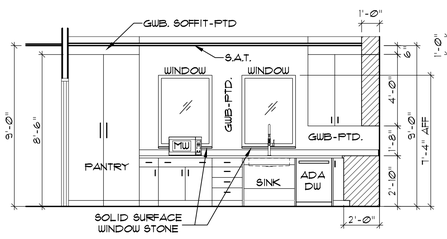
1D A-7 **KITCHEN ISLAND**



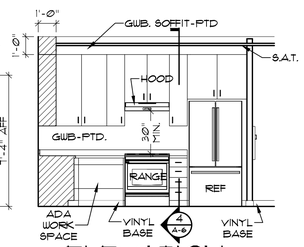
1E A-7 **KITCHEN ISLAND**



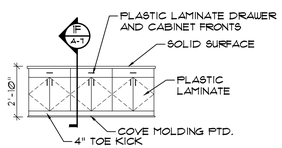
1F A-7 **KITCHEN ISLAND**
SCALE: ¾"=1'-0"



1A A-7 **ELEVATION**

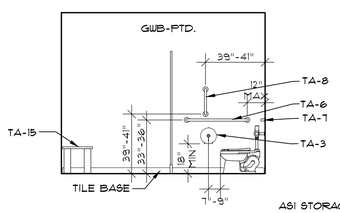


1B A-7 **ELEVATION**

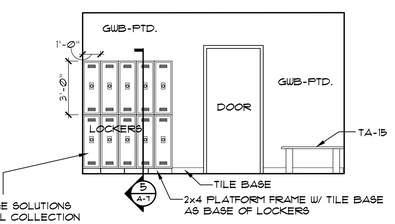


1C A-7 **KITCHEN ISLAND**

KITCHEN 113
INTERIOR ELEVATIONS
1 A-7 SCALE: 1/4"=1'-0"

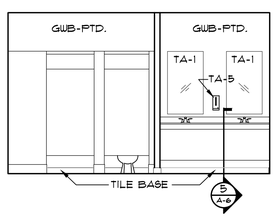


2C A-7 **ELEVATION**



2B A-7 **ELEVATION**

ASI STORAGE SOLUTIONS
TRADITIONAL COLLECTION
DOUBLE TIER METAL LOCKERS
12x12x36 W/ NO LEGS. (COLOR SAMPLES TO BE SUBMITTED AND SELECTED FROM STANDARD COLOR SUBMITTAL)



2A A-7 **ELEVATION**

WOMEN'S TOILET 105
INTERIOR ELEVATIONS
2 A-7 SCALE: 1/4"=1'-0"

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AIA
Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
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www.CoastalArchitecture.net

BEAUFORT EMS
STEEL TANK ROAD SUBSTATION
BEAUFORT, NORTH CAROLINA

LEE D. DIXON, JR. 6419 REGISTERED ARCHITECT MOREHEAD CITY, NC

INTERIOR ELEVATIONS

25003

ISSUED:	01-30-2026
DWG BY:	BLS
CKD BY:	LDD
REVISIONS	

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A-7
OF

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STRUCTURAL NOTES

GENERAL NOTES:

1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATION AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND SITE DRAWINGS. CONSULT THESE DRAWINGS FOR SLEEVES, DEPRESSIONS AND OTHER DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS.

2. ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD AND WITH ALL OTHER DRAWINGS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.

3. THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO ENSURE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDED THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING (AND ACCOMPANYING FOOTINGS), GUYS OR TIEDOWNS.

4. ADDITIONAL OBSERVATIONS AS A RESULT OF REJECTION OF WORK COMPLETED AND/OR ADDITIONAL OBSERVATIONS DUE TO THE DEFICIENCIES IN WORK OBSERVED WILL BE AT THE EXPENSE OF THE CONTRACTOR.

5. ALL STRUCTURAL SHOP DRAWINGS TO BE REVIEWED BY JOB SUPERINTENDENT IN ADDITION TO ALL PERSONNEL DEEMED NECESSARY BY CONTRACTOR PRIOR TO SUBMITTAL TO ENGINEER FOR APPROVAL.

6. ALL SHOP DRAWING RESUBMITTALS SHALL INCLUDE A WRITTEN DETAILED LIST OF LOCATIONS AND DESCRIPTIONS OF ALL CHANGES MADE FROM PREVIOUS SUBMITTAL. LIST SHALL BE SPECIFIC AND GENERAL NOTES SUCH AS 'DIMENSIONS CORRECTED' ARE NOT ACCEPTABLE.

DESIGN CODES:

2018 NORTH CAROLINA STATE BUILDING CODE

ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY

AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN

SDI DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS (PUBLICATION No. 30)

DESIGN LOADS:

THE STRUCTURAL SYSTEM FOR THIS BUILDING HAS BEEN DESIGNED WITH THE FOLLOWING SUPERIMPOSED LOADINGS:

ROOF:

DEAD LOAD	10 psf
LIVE LOAD	20 psf

WIND:

BASIC WIND SPEED (3 SEC GUST)	144 mph	
EXPOSURE CATEGORY	C	
RISK CATEGORY	II	
WIND BASE SHEARS,	Vx =	30k
	Vy =	25k

COMPONENT & CLADDING:
ALL BUILDING COMPONENTS AND CLADDING ENGINEERED BY THE COMPONENT MANUFACTURER ARE TO BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR WIND LOADS DETERMINED PER THE NORTH CAROLINA STATE BUILDING CODE FOR THE BASIC DESIGN WIND VELOCITY, IMPORTANCE FACTOR AND EXPOSURE LISTED ABOVE.

WIND LOADS ON COMPONENTS & CLADDING FOR GIVEN TRIBUTARY AREAS (p/f)

	ZONE	WIDTH (a)	0-20	20-50	50-100	<100
ROOF	1	--	27	24	21	19
			-42	-41	-39	-38
	2	6.0	27	24	21	19
			-73	-68	-60	-54
	3	6.0	27	24	21	19
			-109	-102	-92	-85
ROOF O'HANG	2	6.0	-86	-86	-86	-86
	3	6.0	-145	-130	-112	-54
WALLS	4	6.0	46	44	41	39
			-50	-48	-45	-43
	5	6.0	46	44	41	39
			-62	-58	-52	-48

SEISMIC:

IMPORTANCE FACTOR:	Ie =	1.0
RISK CATEGORY		II
MAPPED SPECTRAL RESPONSE ACCELERATIONS,	Ss =	0.11g
	S1 =	0.06g
SPECTRAL RESPONSE COEFFICIENT,	SDs =	0.12g
	SD1 =	0.09g

SEISMIC RESISTING SYSTEM:
ORDINARY REINFORCED MASONRY SHEAR WALLS

DESIGN BASE SHEARS,	Vx =	17k
	Vy =	17k
SEISMIC RESPONSE COEFFICIENT	Cs =	0.06
RESPONSE MODIFICATION FACTOR	R =	2
ANALYSIS PROCEDURE USED:		EQUIV. LAT. FORCE
SITE CLASSIFICATION		B

FOUNDATIONS:

FOUNDATIONS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 2,000 psf. ON EXISTING SOILS. BEFORE CONSTRUCTION COMMENCES, SOIL BEARING CAPACITY SHALL BE VERIFIED BY A SUBSURFACE INVESTIGATION, A CERTIFIED TESTING LABORATORY, WHOSE REPORT SHALL INCLUDE ANALYSIS AND RECOMMENDATIONS FOR SITE PREPARATION IN ORDER TO BEAR THE FOUNDATION LOADS. ABOVE REPORT SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW BEFORE FOUNDATION CONSTRUCTION BEGINS.

PLUMBING SLEEVES:

MINIMUM SLEEVE SPACING SHALL BE TWO DIAMETERS CENTER TO CENTER TO THE LARGER SLEEVE OR 6" CLEAR BETWEEN SLEEVES, WHICHEVER IS GREATER. PRIOR TO CONSTRUCTION, SLEEVE LOCATIONS AND SIZES SHALL BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.

CHEMICAL ANCHORS:

SHALL BE A POLYMER INJECTION SYSTEM SUCH AS RAMSET "EPCON", MOLLY "PARAMOUNT HVC", SIKA "SIKADUR INJECTION SEL", "HILTI-HIGH STRENGTH EPOXY", OR APPROVED EQUAL, INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. INSTALLERS SHALL BE TRAINED BY THE MANUFACTURER'S REPRESENTATIVE.

ANCHOR BOLTS:

SHALL BE A36 THREADED ROD. PROVIDE HOT DIP GALVANIZE FINISH ON ALL ANCHOR BOLTS PERMANENTLY EXPOSED TO EXTERIOR.

CONCRETE TESTING:

1. CONCRETE TESTING SHALL BE PAID FOR BY THE OWNER. TESTING LABORATORY SHALL PERFORM THE FOLLOWING TESTS ON CAST-IN-PLACE CONCRETE:

A) ASTM C143 - "STANDARD TEST METHOD FOR SLUMP OF PORTLAND CEMENT CONCRETE"
B) ASTM C39 - "STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS." A SEPARATE TEST SHALL BE CONDUCTED FOR EACH CLASS, FOR EVERY 50 CUBIC YARDS (OR FRACTION THEREOF), PLACED PER DAY. REQUIRED CYLINDER(S) QUANTITIES AND TEST AGE AS FOLLOWS:

1 AT 7 DAYS
2 AT 28 DAYS

PROVIDE ONE ADDITIONAL RESERVE CYLINDER TO BE TESTED UNDER THE DIRECTION OF THE ENGINEER, IF REQUIRED. IF 28 DAY STRENGTH IS ACHIEVED, THE ADDITIONAL CYLINDER(S) MAY BE DISCARDED.

PENETRATIONS:

NO PENETRATIONS SHALL BE MADE IN ANY STRUCTURAL MEMBERS OTHER THAN THOSE LOCATED ON THESE DRAWINGS WITHOUT PREVIOUS APPROVAL OF THE ENGINEER.

CONCRETE MIX DESIGN:

1. SHALL BE MIX DESIGNED BY A RECOGNIZED TESTING LABORATORY TO ACHIEVE A STRENGTH AT 28 DAYS AS LISTED BELOW WITH A PLASTIC AND WORKABLE MIX:

3,000 psi -	FOUNDATION WALLS AND FOOTINGS
3,000 psi -	INTERIOR SLABS-ON-GRADE
4,000 psi -	ALL OTHER CONCRETE

2. SUBMIT PROPOSED MIX DESIGN WITH RECENT FIELD CYLINDER OR LAB TESTS FOR REVIEW PRIOR TO USE. MIX SHALL BE UNIQUELY IDENTIFIED BY MIX NUMBER OR OTHER POSITIVE IDENTIFICATION. CONCRETE SHALL COMPLY WITH ALL THE REQUIREMENTS OF ASTM STANDARD C94 FOR MEASURING, MIXING, TRANSPORTING, ETC. CONCRETE TICKETS SHALL BE TIME STAMPED WHEN CONCRETE IS BATCHED. THE MAXIMUM TIME ALLOWED FROM THE TIME THE MIXING WATER IS ADDED UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED ONE AND ONE HALF (1-1/2) HOURS. IF FOR ANY REASON THERE IS A LONGER DELAY THAN STATED ABOVE, THE CONCRETE SHALL BE DISCARDED. IT SHALL BE THE RESPONSIBILITY OF THE TESTING LAB TO NOTIFY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THE ABOVE. ALL SLABS SHALL BE CURED USING CURING COMPOUND MEETING ASTM STANDARD C309 TYPE 1 AND SHALL HAVE A FUGITIVE DYE. THE COMPOUND SHALL BE PLACED AS SOON AS THE FINISHING IS COMPLETED OR AS SOON AS THE WATER HAS LEFT THE UNFINISHED CONCRETE. ALL SCUFFED OR BROKEN AREAS IN THE CURING MEMBRANE SHALL BE RECOATED DAILY. CALCIUM CHLORIDES SHALL NOT BE UTILIZED. OTHER ADMIXTURES MAY BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.

3. CONCRETE SHALL UTILIZE TYPE I/II CEMENT UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER OR GEOTECHNICAL REPORT.

4. THE CONCRETE STRENGTHS SHOWN IN THE SECTION ABOVE AND IN THE SPECIFICATIONS ARE MINIMUM COMPRESSIVE STRENGTH. THE ENGINEER SHALL DETERMINE IF THE CONCRETE IS ACCEPTABLE, OR TO BE REMOVED, OR TO RECEIVE SPECIAL CURING IF THE COMPRESSIVE STRENGTHS ARE LESS THAN SPECIFIED.

5. ALL CONCRETE EXPOSED TO WEATHER OR EARTH SHALL BE AIR ENTRAINED TO 5% TO 7%.

6. WATER REDUCING AGENTS MAY BE USED IN THE CONCRETE MIX. PLASTICIZERS AND SUPER-PLASTICIZERS MAY BE USED ONLY WHEN WRITTEN PERMISSION OF THE ENGINEER IS GIVEN.

7. NO SALTS OF ANY KIND MAY BE USED IN CONCRETE BEFORE OBTAINING THE ENGINEER'S WRITTEN PERMISSION FOR THEIR USE.

8. CONCRETE FOR TROWEL-FINISHED INTERIOR CONCRETE FLOORS SHALL NOT INCLUDE AN AIR-ENTRAINING ADMIXTURE; THE MAXIMUM AIR CONTENT IN THESE SLABS SHALL NOT EXCEED 3%.

CONCRETE AND REINFORCING PLACEMENT:

1. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 301 AND ACI 117 EXCEPT AS MODIFIED BELOW:

ACI 117 ITEM 4.3.1.1
ELEVATIONS OF SLABS-ON-GRADE TOP OF SLAB ELEVATION SHALL BE WITHIN A 3/8" ENVELOPE EITHER SIDE OF THE THEORETICAL DESIGN SURFACE.

ACI 117 ITEM 4.5.7
FLOOR FINISH TOLERANCES AS MEASURED BY PLACING A FREESTANDING (UNLEVELED) 10 FT. STRAIGHTEDGE ANYWHERE ON THE SLAB AND ALLOWING IT TO REST UPON TWO HIGH SPOTS WITHIN 28 DAYS AFTER SLAB CONCRETE PLACEMENT. THE GAP AT ANY POINT BETWEEN THE STRAIGHTEDGE AND THE FLOOR SHALL NOT EXCEED 1/4".

2. ALL REINFORCING STEEL TO BE ASTM A615, GRADE 60 (#4 AND LARGER), EXCEPT WHERE NOTED OTHERWISE. REINFORCING SHALL NOT BE WELDED.

3. WELDED WIRE FABRIC TO CONFORM TO ASTM A185 AND SHALL BE FREE FROM OIL, SCALE, AND RUST. PLACE WWF IN ACCORDANCE WITH THE TYPICAL PLACING DETAILS OF ACI STANDARDS AND THE SPECIFICATIONS. MINIMUM LAPS SHALL BE ONE SPACE PLUS 2".

4. ALL REINFORCING STEEL BARS TO BE DETAILED AND PLACED IN ACCORDANCE WITH THE LATEST ACI MANUALS.

5. LAP ALL REINFORCING SPLICES IN CONCRETE A MINIMUM OF 48 BAR DIAMETERS OR 24 INCHES, WHICHEVER IS GREATER, UNLESS NOTED OTHERWISE ON DRAWINGS (CLASS B SPLICE).

6. PROVIDE CORNER BARS OF SAME BAR DIAMETER AS SPECIFIED FOR THE WALL, BEAM, OR FOOTING. PROVIDE MINIMUM OF 40 BAR DIAMETER LAP FOR ALL CORNER BARS, UNLESS NOTED OTHERWISE.

7. PROVIDE FOUNDATION DOWELS AS SHOWN. MINIMUM SIZE DOWELS TO BE #4, UNLESS OTHERWISE NOTED. ALL VERTICAL REINFORCING STEEL IN COLUMNS AND PIERS, OR VERTICAL REINFORCING IN WALLS, SHALL BE DOWELED INTO THE FOOTINGS WITH SAME SIZE AND QUANTITY DOWEL AS THE VERTICAL REINFORCING.

8. WHERE SHOWN ON THE DRAWINGS, PROVIDE WELD PLATES, WELDMENTS, OR CONCRETE INSERTS FOR FASTENING AND SECURING OTHER COMPONENTS. CONCRETE INSERTS SHALL BE FURNISHED BY THE CONTRACTOR REQUIRING THEM AND INSTALLED BY THE CONTRACTOR CASTING THE CONCRETE AROUND THEM. CLIP ANGLES SHALL BE FURNISHED BY THE CONTRACTOR REQUIRING THEM.

9. REINFORCING STEEL SHALL RECEIVE CONCRETE COVER AS FOLLOWS:

DESCRIPTION	MINIMUM COVER
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
EXPOSED TO EARTH OR WEATHER	
#6 THROUGH #18 BARS	2"
#5 BARS OR SMALLER	1 1/2"
NOT EXPOSED TO EARTH OR WEATHER OR IN CONTACT WITH GROUND, SLABS AND WALLS	
#11 BARS OR SMALLER	3/4"
#14 AND #18	1 1/2"
BEAMS AND COLUMNS	1 1/2"

10. PROVIDE TWO (2) #5'S, ONE AT EACH FACE, UNLESS NOTED OTHERWISE, AROUND ALL OPENINGS GREATER THAN 12"x12" IN CAST-IN-PLACE CONCRETE. EXTEND REINFORCING 2'-0" BEYOND OPENING IN BOTH DIRECTIONS. CONTACT ENGINEER FOR ALL OPENINGS GREATER THAN 12"x12" FOR DESIGN.

11. COLD WEATHER AND HOT WEATHER PROVISIONS OF ACI 306 AND 305 (CURRENT EDITIONS), RESPECTIVELY, SHALL BE MAINTAINED.

12. CONTRACTOR TO FURNISH AND INSTALL 500 LINEAR FT. EACH OF ADDITIONAL #4 & #5 REINFORCING STEEL TO BE USED AT ENGINEER'S DISCRETION.

FORMWORK AND SHORING:

NO STRUCTURAL CONCRETE SHALL BE STRIPPED UNTIL IT HAS REACHED AT LEAST TWO-THIRDS OF THE 28 DAY DESIGN STRENGTH. DESIGN, ERECTION, AND REMOVAL OF ALL FORMWORK, SHORES, AND RESHORES SHALL MEET THE REQUIREMENTS SET FORTH IN ACI STANDARDS 301 AND 347.

MASONRY PRISM TESTING:

1. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL CONSTRUCT THREE (3) TEST PRISMS FOR TESTING. THEY SHALL BE CONSTRUCTED OF TWO (2) 8"x8x16" PRISMS FOR TESTING, ONE (1) ON TOP OF THE OTHER, JOINED WITH TYPE "S" MORTAR, AND FILLED WITH 3,000 psi CONCRETE GROUT. PRISMS SHALL BE CURED FOR 28 DAYS. NO REINFORCING SHALL BE USED IN THE CONSTRUCTION OF THE PRISMS.

2. PRISMS SHALL BE MADE OF THE SAME MATERIALS, UNDER THE SAME CONDITIONS, AND INSOFAR AS POSSIBLE, WITH THE SAME BONDING ARRANGEMENTS AS FOR THE STRUCTURE. THE MOISTURE CONTENT OF THE UNITS AT THE TIME OF LAYING, CONSISTENCY OF MORTAR, AND WORKMANSHIP SHALL BE THE SAME AS WILL BE USED IN THE STRUCTURE. THE VALUE OF f'm SHALL BE THE AVERAGE OF ALL SPECIMENS TESTED BUT SHALL BE NOT MORE THAN 125 PERCENT OF THE MINIMUM VALUE DETERMINED BY THE TEST, WHICHEVER IS LESS.

3. TESTING SHALL INCLUDE TESTS IN ADVANCE OF BEGINNING OPERATIONS AS DESCRIBED ABOVE, AND AT LEAST ONE (1) FIELD TEST DURING CONSTRUCTION FOR EACH 5,000 SQUARE FEET OF WALL, BUT NOT LESS THAN ONE (1) FIELD TEST MINIMUM IF TOTAL SQUARE FEET OF WALL FOR ENTIRE PROJECT IS LESS THAN 5,000 SQUARE FEET. ONLY WALLS INDICATED ON STRUCTURAL PLANS NEED BE TESTED.

4. THE COMPRESSIVE STRENGTH, f'm, SHALL BE COMPUTED BY DIVIDING THE ULTIMATE LOAD BY THE NET AREA OF THE MASONRY USED IN THE CONSTRUCTION OF THE PRISMS.

5. TEST PRISMS SHALL BE STORED FOR SEVEN DAYS IN AIR, AT A TEMPERATURE OF 70 DEGREES, PLUS OR MINUS 5 DEGREES, IN A RELATIVE HUMIDITY EXCEEDING 90 AND THEN IN AIR AT A TEMPERATURE OF 70 DEGREES, PLUS OR MINUS 5 DEGREES, UNTIL TESTED. THOSE CONSTRUCTED IN THE FIELD SHALL BE STORED UNDISTURBED FOR 48 TO 96 HOURS UNDER WET MATERIAL TO SIMULATE 90 HUMIDITY, THEN TRANSPORTED TO LABORATORY FOR CONTINUED CURING AS DESCRIBED ABOVE.

6. NOT LESS THAN THREE (3) PRISM SPECIMENS SHALL BE MADE FOR EACH FIELD TEST TO CONFIRM THAT THE MATERIALS ARE AS ASSUMED IN THE DESIGN. THE STANDARD AGE OF TEST SPECIMENS SHALL BE 28-DAYS, BUT 7-DAY TESTS MAY BE USED, PROVIDED THE RELATION BETWEEN THE 7-DAY AND 28-DAY STRENGTHS OF THE MASONRY IS ESTABLISHED BY ADEQUATE TEST DATA FOR THE MATERIALS USED.

MASONRY MATERIALS:

1. MASONRY UNITS SHALL MEET ASTM C90 TYPE I, GRADE N, FOR HOLLOW LOAD BEARING TYPE MASONRY WITH A UNIT STRENGTH OF 1,900 psi ON THE NET AREA (f'm = 1,500 psi).

2. MORTAR SHALL BE TYPE "M" (BELOW GRADE) OR "S" (ABOVE GRADE) AND SHALL MEET ASTM C270. GROUT SHALL BE 3,000 psi PEA-GRAVEL CONCRETE AND SHALL MEET ASTM C476. MORTAR MIX DESIGN SHALL BE TESTED PRIOR TO CONSTRUCTION USING MORTAR TEST CUBES, WITH 7-DAY STRENGTH OF LABORATORY MIX EXCEEDING THE 28-DAY SPECIFIED DESIGN STRENGTH. GROUT SHALL BE TESTED PRIOR TO CONSTRUCTION USING PRISMS AS DESCRIBED ABOVE.

MASONRY AND REINFORCED MASONRY PLACEMENT:

1. ALL MASONRY SHALL BE LAID IN RUNNING BOND UNLESS NOTED OTHERWISE. MATERIALS TO BE LAID AND MATERIALS TO BE BUILT UPON SHALL BE FREE FROM SNOW AND ICE.

2. PROVIDE HOOKED DOWELS INTO FOOTING FOR ALL VERTICAL REINFORCING ABOVE AS SHOWN IN THE DRAWINGS. LAP SPLICES A MINIMUM OF 48 BAR DIAMETERS. AT THE OPTION OF THE CONTRACTOR, DOWELS MAYBE DRILLED AND EPOXIED INTO FOOTING IN LIEU OF HOOKS. EPOXY SHALL BE AS NOTED ON THIS SHEET UNDER 'CHEMICAL ANCHORS;' 6" MIN. EMBEDMENT FOR #5 OR SMALLER DOWELS, 8" MIN. EMBEDMENT FOR #6 DOWELS.

3. PROVIDE DUR-O-WALL (OR EQUAL PER SPECIFICATIONS) LADDER OR TRUSS HORIZONTAL JOINT REINFORCEMENT AT EACH SECOND COURSE IN RUNNING BOND, AND EACH COURSE IN STACKED BOND, UNLESS NOTED OTHERWISE. DISCONTINUE HORIZONTAL JOINT REINFORCEMENT AT CONTROL JOINTS.

4. PROVIDE BOND BEAMS REINFORCED WITH (2) #5 BARS EVERY 6'-0" OF VERTICAL WALL, AT TOPS OF ALL MASONRY WALLS, AND WHERE SHOWN ON DRAWINGS. AT BOND BEAM CORNERS AND TEE JOINTS, PROVIDE BENT BARS TO MATCH QUANTITY AND BAR SIZE IN THE BOND BEAM. LAPS IN BOND BEAMS SHALL BE 48 BAR DIAMETERS OR A MINIMUM OF 2'-0", WHICHEVER IS GREATER.

5. WHERE SHOWN ON THE DRAWINGS, CORES IN CONCRETE BLOCK UNITS SHALL BE FILLED WITH 3,000 psi CONCRETE GROUT FROM TOP OF FOOTING TO BOTTOM OF BEARING, OR TO THE TOP OF WALL, DEPENDING ON THE CONDITION. INSPECTION OF OPENING AT BOTTOM IS REQUIRED.

6. WHERE REINFORCING STEEL IS CALLED FOR IN FILLED CORES, IT SHALL EXTEND FROM TOP OF FOOTING TO BOTTOM OF BEARING, OR TOP OF WALL, DEPENDING ON CONDITION.

7. WHERE REINFORCING STEEL IS INTERRUPTED BY AN OPENING IN THE WALL, THE QUANTITY OF BARS INTERRUPTED ARE TO BE MOVED TO EACH SIDE OF THE OPENING, HALF OF REINFORCING TO ONE SIDE AND REMAINING HALF TO THE OTHER SIDE. REINFORCING SHALL BE FROM TOP OF FOOTING TO TOP OF WALL. PROVIDE A MINIMUM OF (2) #5 VERTICAL REINFORCING BARS AT EACH JAMB. SEE PLAN NOTES AND/OR DETAILS FOR VERTICAL REINFORCING SPACING.

8. WHERE VERTICAL REINFORCING STEEL IS SPLICED IN MASONRY, PROVIDE A MINIMUM OF 48 BAR DIAMETERS, LAP SPLICE, UNLESS NOTED OTHERWISE.

9. THE MINIMUM DISTANCE BETWEEN PARALLEL BARS, EXCEPT IN COLUMNS, SHALL BE NOT LESS THAN THE DIAMETER OF THE BAR EXCEPT THAT LAPPED SPLICES MAY BE WIRED TOGETHER. THE CENTER TO CENTER SPACING OF BARS WITH A COLUMN SHALL BE NOT LESS THAN 2 AND ONE-HALF TIMES THE BAR DIAMETER.

10. ALL BARS SHALL BE COMPLETELY EMBEDDED IN MORTAR OR CONCRETE. REINFORCEMENT EMBEDDED IN HORIZONTAL MORTAR JOINTS SHALL HAVE NOT LESS THAN 5/8" MORTAR COVERAGE FROM THE EXPOSED FACE. ALL OTHER REINFORCING SHALL HAVE A MINIMUM COVERAGE OF ONE BAR DIAMETER OVER ALL BARS, BUT NOT LESS THAN 3/4", EXCEPT WHERE EXPOSED TO WEATHER OR SOIL IN WHICH CASE THE MINIMUM COVERAGE SHALL BE 2".

11. WHERE REINFORCING IS SHOWN TO BE LOCATED ALONG TWO FACES OF A CONCRETE BLOCK WALL, THE CONTRACTOR SHALL BREAKOUT THE SHELL OF THE LOWEST CONCRETE BLOCK TO GAIN ACCESS TO THE REINFORCING STEEL. THE REINFORCED STEEL SHALL THEN BE WIRED INTO ITS CORRECT POSITION, AND THE ACCESS HOLE COVERED. THE CONCRETE GROUT FILL SHALL BE PUDDLED OR VIBRATED TO ASSURE COMPLETE FILLING OF THE CORE.

12. REINFORCED MASONRY PIERS AND COLUMNS SHALL HAVE THE REINFORCING STEEL ACCURATELY LOCATED BY WIRING THE TOP AND BOTTOM OF ALL VERTICAL STEEL INTO ITS CORRECT POSITION. PROVIDE AN ACCESS HOLE AT THE BOTTOM OF ALL COLUMNS OR PIERS.

13. ALL REINFORCED HOLLOW UNIT MASONRY SHALL BE BUILT TO PRESERVE THE UNOBSTRUCTED VERTICAL CONTINUITY OF THE CELLS TO BE FILLED. WALLS AND CROSS WEBS FORMING SUCH CELLS TO BE FILLED SHALL BE FULLBEDDED IN MORTAR TO PREVENT LEAKAGE OF CONCRETE GROUT. ALL HEAD (OR END) JOINTS SHALL BE SOLIDLY FILLED WITH MORTAR FOR A DISTANCE IN FROM THE FACE OF THE WALL OR UNIT NOT LESS THAN THE THICKNESS OF THE LONGITUDINAL FACE SHELLS. BOND SHALL BE PROVIDED BY LAPPING UNITS IN SUCCESSIVE VERTICAL COURSES OR BY EQUIVALENT MECHANICAL ANCHORAGE.

A) VERTICAL CELLS TO BE FILLED SHALL HAVE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A CLEAR, UNOBSTRUCTED CONTINUOUS VERTICAL CELL MEASURING NOT LESS THAN 2"x3".

B) CLEANOUT OPENINGS SHALL BE PROVIDED AT THE BOTTOM OF ALL CELLS TO BE FILLED AT EACH POUR OF CONCRETE WHERE SUCH CONCRETE POUR IS IN EXCESS OF 6' IN HEIGHT. ANY OVERHANGING MORTAR, OTHER OBSTRUCTION OR DEBRIS SHALL BE REMOVED AND/OR CLEANED AT TIME OF INSPECTION AND PRIOR TO CORE FILLING. INSPECT AND SEAL ALL OPENINGS BEFORE CONCRETING.

C) VERTICAL REINFORCEMENT SHALL BE HELD IN POSITION AT TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 192 DIAMETERS OF REINFORCEMENT.

D) ALL CELLS CONTAINING REINFORCEMENT SHALL BE FILLED SOLIDLY WITH CONCRETE. CONCRETE SHALL BE POURED IN LIFTS OF 8' MAXIMUM HEIGHT. ALL CONCRETE SHALL BE CONSOLIDATED AT THE TIME OF POURING BY PUDDLING FOR LIFTS OF 4' OR LESS, OR BY VIBRATING FOR LIFTS GREATER THAN 4'. CONCRETE SHOULD LATER BE CONSOLIDATED AGAIN BY PUDDLING, BEFORE PLASTICITY IS LOST.

E) WHEN TOTAL CONCRETE POUR EXCEEDS 8' IN HEIGHT, THE CONCRETE SHALL BE PLACED IN 4' MAXIMUM LIFTS. MINIMUM CELL DIMENSION SHALL BE 3".

F) WHEN CONCRETING IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE POUR OF CONCRETE 1 1/2" BELOW THE TOP OF THE UPPERMOST UNIT.

14. PROVIDE A MINIMUM OF 8" BEARING FOR ALL MASONRY LINTELS.

15. WHERE LINTEL BLOCKS ARE USED IN LIEU OF HOLLOW CONCRETE BLOCKS, THE REINFORCING STEEL SHALL BE ANCHORED TO THE LOWER STEEL OR DOWELS AND THE LINTEL BLOCKS LAID AROUND THE STEEL. THE CONCRETE FILL SHALL BE INSTALLED IN LIFTS NOT TO EXCEED 2' IN HEIGHT. THE REINFORCING STEEL SHALL BE MAINTAINED IN THE SAME POSITION AS THE DOWELS. STOP THE POUR OF THE CONCRETE 1 1/2" BELOW THE TOP OF THE UPPERMOST UNIT.

16. SPECIFICATION REQUIREMENTS FOR COLD WEATHER AND HOT WEATHER MASONRY CONSTRUCTION SHALL BE MAINTAINED.

STRUCTURAL STEEL:

1. STEEL SHALL CONFORM TO ASTM A992 (Fy = 50 ksi) FOR ALL W-SHAPES, AND ASTM A36 (Fy = 36 ksi) FOR ALL OTHER MISCELLANEOUS SHAPES AND PLATES. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B (Fy = 46 ksi). STRUCTURAL PIPE SHALL CONFORM TO ASTM A53, GRADE B, TYPE "E" OR "S" (Fy = 42 ksi).

2. STEEL SHALL CONFORM TO THE LATEST EDITION OF "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC (AISC).

3. ALL STRUCTURAL STEEL EXPOSED TO EXTERIOR SHALL BE HOT-DIPPED GALVANIZED.

4. ALL SHOP CONNECTIONS TO BE WELDED (UTILIZING E70XX ELECTRODES) AND FIELD CONNECTIONS TO BE BOLTED, UNLESS OTHERWISE NOTED. STEEL TO RECEIVE ONE SHOP COAT AND ONE FIELD TOUCH UP COAT OF APPROVED PAINT, EXCEPT WHERE GALVANIZED IS INDICATED ON THE DRAWINGS.

5. WELDS FOR ALL EXPOSED STRUCTURAL STEEL SHALL BE GROUND SMOOTH UNLESS NOTED OTHERWISE.

6. ALL BOLTED CONNECTIONS SHALL CONSIST OF 3/4" DIAMETER (MIN.) ASTM A325 HIGH STRENGTH BOLTS, UNLESS NOTED OTHERWISE. BEAM CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR TO SUPPORT AN END REACTION OF Vn/2Ω, KIPS IN ACCORDANCE WITH PART 2 - "BEAM AND GIRDER DESIGN" OF THE MANUAL OF STEEL CONSTRUCTION (9TH EDITION), BUT CONNECTIONS SHALL NOT HAVE LESS THAN 2 ROWS OF BOLTS. SEE ALSO DOUBLE ANGLE AND SHEAR TAB CONNECTION SCHEDULE(S) WHERE APPLICABLE.

7. CONTRACTOR TO FURNISH AND INSTALL 500 lbs. OF ADDITIONAL MISCELLANEOUS STEEL TO BE USED AT ENGINEER'S DISCRETION.

STEEL ROOF DECK:

1. STEEL ROOF DECK SHALL BE THE SIZE INDICATED ON STRUCTURAL DRAWINGS, PAINTED WIDE RIBBED STEEL ROOF DECK AND SHALL CONFORM TO THE PROVISIONS OF THE STEEL DECK INSTITUTE (SDI) SPECIFICATIONS FOR STEEL ROOF DECK.

2. STEEL ROOF DECKS ARE DESIGNED AS HORIZONTAL DIAPHRAGMS AND SHALL BE ATTACHED TO SUPPORTS IN SDI PATTERNS AS INDICATED ON THE DRAWINGS.

COLD-FORMED LIGHT GAGE STRUCTURAL STEEL:

1. ENGINEER, FABRICATE AND INSTALL COLD-FORMED STRUCTURAL STEEL FRAMING FOR THE FOLLOWING; EXTERIOR AND INTERIOR LOAD-BEARING WALL, EXTERIOR NON-LOAD BEARING WALLS, FLOOR JOIST FRAMING, ROOF TRUSS AND RAFTER FRAMING.

2. COLD-FORMED METAL FRAMING SHALL BE CAPABLE OF WITHSTANDING DEAD, LIVE, WIND & SEISMIC DESIGN LOADS LISTED ON THE STRUCTURAL DRAWINGS.

3. DEFLECTION LIMITS: DESIGN FRAMING SYSTEMS TO WITHSTAND DESIGN LOADS WITHOUT HORIZONTAL DEFLECTIONS GREATER THAN THE FOLLOWING FOR THE HEIGHT OF THE WALL:

INTERIOR WALL FRAMING:	L/360 (HORIZONTAL LOAD OF 5 psf)
EXTERIOR WALL FRAMING:	L/600 (BACKING BRICK VENEER)
	L/360 (BACKING OTHER MATERIALS)

4. ASSUME NON-STRUCTURAL SHEATHING PROVIDES NO LATERAL BRACING TO FRAMING MEMBERS.

5. COLD-FORMED STEEL SHALL SATISFY ASTM A653 WITH HOT DIPPED GALVANIZED COATING CONFORMING TO ASTM A525, CLASS G60.

6. DESIGN NON-LOAD BEARING FRAMING SYSTEM TO MAINTAIN CLEARANCES AT OPENINGS, TO ALLOW FOR CONSTRUCTION TOLERANCES, AND TO ACCOMMODATE LIVE LOAD DEFLECTION OF PRIMARY BUILDING STRUCTURE OF 3/4" UPWARD AND DOWNWARD.

7. DESIGN ALL MEMBERS ACCORDING TO AMERICAN IRON & STEEL INSTITUTE (AISI) "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".

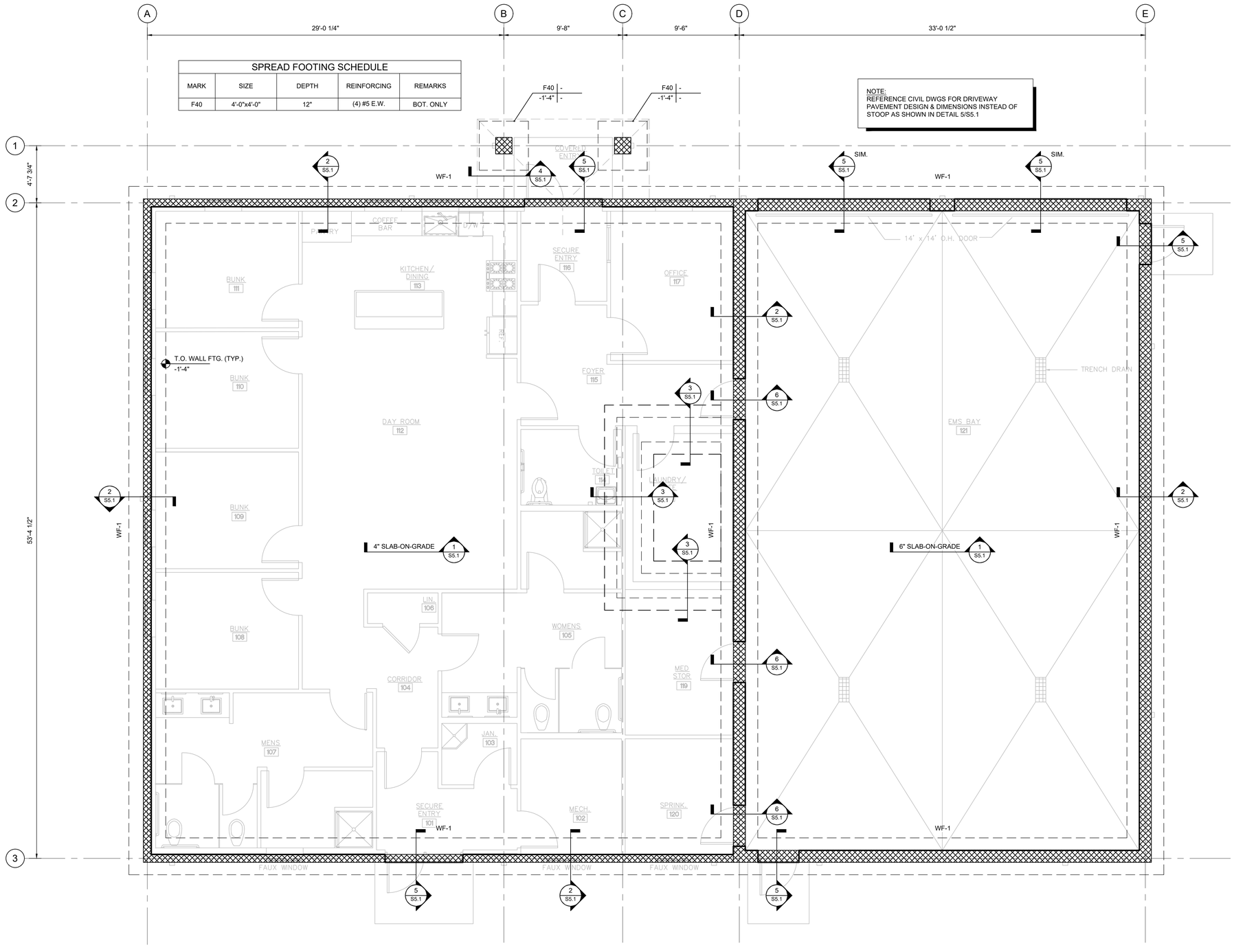
8. SUBMITTALS:
A. PRODUCT DATA: FOR EACH TYPE OF COLD-FORMED METAL FRAMING PRODUCT AND ACCESSORY INDICATED.

B. SHOP DRAWINGS: SHOW LAYOUT, SPACINGS, SIZES, THICKNESSES, AND TYPES OF COLD-FORMED METAL FRAMING; FABRICATION; AND FASTENING AND ANCHORAGE DETAILS, INCLUDING MECHANICAL FASTENERS. SHOW REINFORCING CHANNELS, OPENING FRAMING, SUPPLEMENTAL FRAMING, STRAPPING, BRACING, BRIDGING, SPLICES, ACCESSORIES, CONNECTION DETAILS, AND ATTACHMENT TO ADJOINING WORK. SHOP DRAWINGS MUST BE PREPARED UNDER THE SUPERVISION OF AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER, REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED.

C. STRUCTURAL DESIGN CALCULATI

SPREAD FOOTING SCHEDULE				
MARK	SIZE	DEPTH	REINFORCING	REMARKS
F40	4'-0"x4'-0"	12"	(4) #5 E.W.	BOT. ONLY

NOTE:
REFERENCE CIVIL DWGS FOR DRIVEWAY PAVEMENT DESIGN & DIMENSIONS INSTEAD OF STOOP AS SHOWN IN DETAIL 5/S5.1



1 FOUNDATION PLAN

ARCH REF: 1/A-1 Scale: 1/4" = 1'-0"

WALL FOOTING SCHEDULE						
MARK	WIDTH	DEPTH	REINFORCING			REMARKS
			LONGITUDINAL	TRANSVERSE	DOWEL	
WF-1	3'-0"	18"	(3) #5	#5 @ 9" O.C.	#5 @ 32" O.C.	BOT. ONLY

KEYED NOTES & LEGEND

- WALL & COLUMN FOOTING EXTENTS
- TURNED DOWN SLAB BASE
- EDGE OF SLAB
- CMU STEM WALL

FOUNDATION PLAN NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS, SEE S1.1
2. FINISHED FLOOR REFERENCE ELEVATION 0'-0", UNO.
3. VERIFY ALL DIMENSIONS & ELEVATIONS WITH ARCHITECTURAL DRAWINGS BEFORE CONSTRUCTION COMMENCES
4. ELEVATIONS ON THE STRUCTURAL DRAWINGS REFER TO THE TOP OF CONCRETE REFERENCE ELEVATION SET AT 0'-0"
5. CENTERLINE OF FOOTING SHALL COINCIDE WITH THE FOUNDATION WALL AND COLUMN CENTERLINE UNLESS NOTED OTHERWISE.
6. BACKFILL & COMPACT BOTH SIDES OF FOUNDATION WALL SIMULTANEOUSLY.
7. CENTER STOOPS ON OPENINGS UNLESS SHOWN OTHERWISE. SEE ARCHITECTURAL DRAWINGS FOR OPENING LOCATIONS.
8. FOR SIZE AND LOCATION OF ROOF, FLOOR, AND WALL OPENINGS SEE MECHANICAL AND ARCHITECTURAL DRAWINGS.
9. MECHANICAL & EQUIPMENT PADS NOT SHOWN - SEE MECHANICAL DRAWINGS FOR SIZE, LOCATION & DETAILS.
10. CONTRACTORS MUST VISIT THE SITE TO CAREFULLY REVIEW AND VERIFY EXISTING FIELD CONDITIONS PRIOR TO SUBMITTING BIDS. EXISTING CONDITIONS SHOWN MAY VARY FROM ACTUAL FIELD CONDITIONS. PLANS ARE DIAGRAMMATIC
11. SLAB ON GRADE CONTROL JOINTS SHALL BE TOOLED OR SAWCUT. THE JOINT PATTERN SHALL BE APPROXIMATELY SQUARE AND LIMITED TO AN AREA NOT TO EXCEED 225 S.F. JOINTS SHALL BE CUT WITHIN 30 HOURS OF POURING SLAB.
12. SEE ARCHITECTURAL DRAWINGS FOR SLOPES, DROPS, AND DRAIN LOCATIONS IN FLOOR SLABS.



FDR ENGINEERS
13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com

JOHN CARR FEJFAR PROFESSIONAL SEAL 035655 ENGINEER NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL CORPORATION FDR ENGINEERS P.L.L.C. P-1418

Project Name: BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

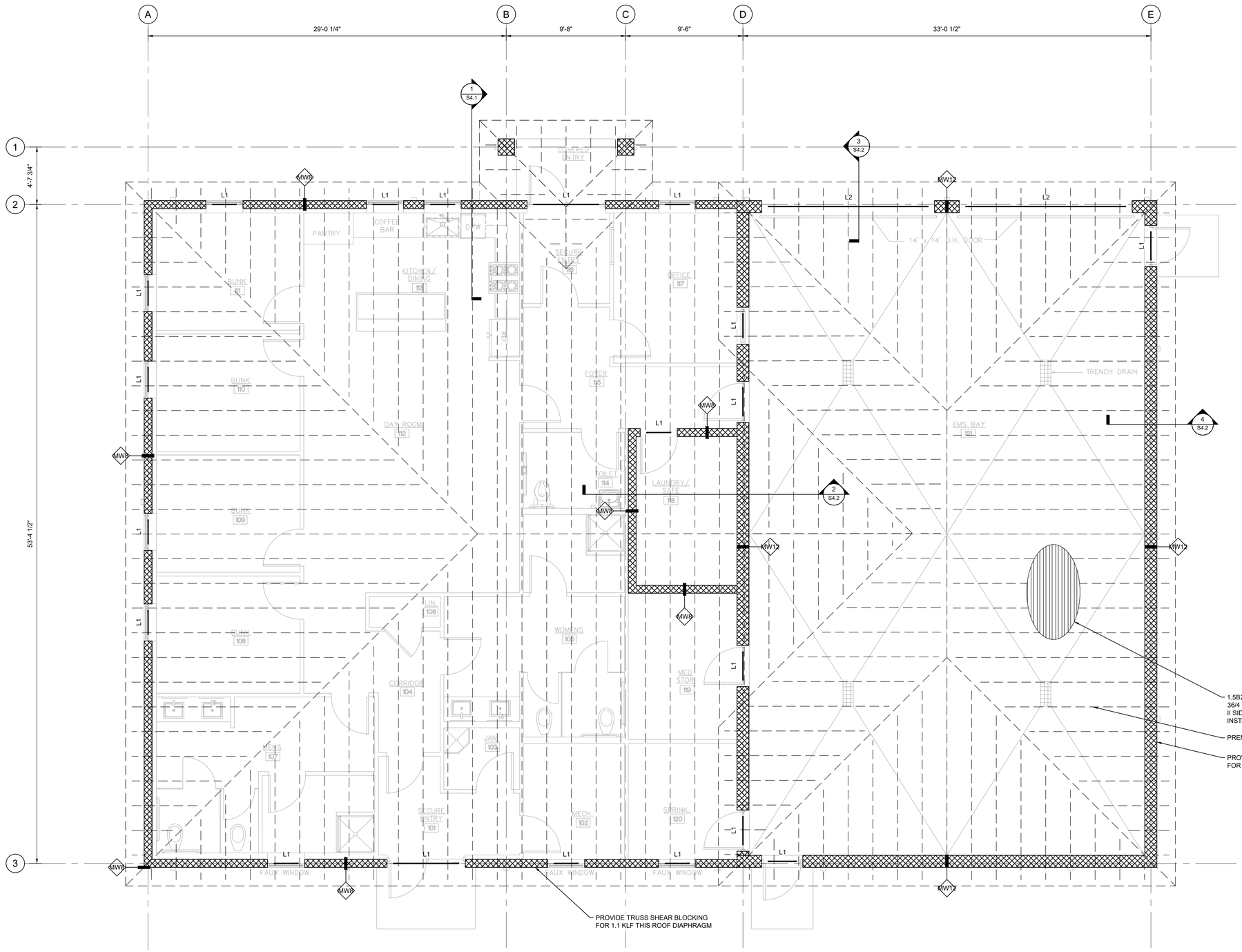
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APPROVED BY:	HMH
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Sheet: S2.1

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TRUSS DESIGN NOTES:
1. TRUSS MANUFACTURER SHALL BE RESPONSIBLE FOR FINAL TRUSS DESIGN, TO INCLUDE CALCULTIONS, LAYOUT, AND ALL NECESSARY BRACING AND BRIDGING DETAILS AS REQ'D. FOR PERMANENT STABILITY OF TRUSS SYSTEM.
3. TRUSSES AND THEIR COMPONENTS ARE TO BE DESIGNED TO RESIST THE COMPONENT AND CLADDING WIND PRESSURES OUTLINED ON SHEET S1.1.
4. TRUSSES ARE TO BE DESIGNED TO SUPPORT THE FOLLOWING SUPERIMPOSED LOADING UNLESS NOTED OTHERWISE:

TOP CHORD LL:	20 PSF
TOP CHORD DL:	10 PSF*
BOTTOM CHORD DL:	10 PSF*
NET UPLIFT:	30 PSF

*DEAD LOADS ARE CONSIDERED TO BE SUPERIMPOSED, AND DO NOT INCLUDE TRUSS SELF-WEIGHT

1 FRAMING PLAN

ARCH REF: 1/A-1 Scale: 1/4" = 1'-0"

ROOF FRAMING PLAN NOTES:
1. FOR GENERAL NOTES AND ABBREVIATIONS, SEE S1.1
2. TRUSS TO TRUSS CONNECTIONS SHALL BE DESIGNED AND DETAILED BY TRUSS MANUFACTURER.
3. ALL ROOF OPENINGS SHALL BE ENCLOSED W/L3"x3"x1/4" EDGE ANGLES. UNLESS NOTED OTHERWISE.

FDR ENGINEERS
13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com

NORTH CAROLINA PROFESSIONAL SEAL 035655 ENGINEER JOSEPH T. FEJFAR

NORTH CAROLINA PROFESSIONAL P-1418 CORPORATION FOR ENGINEERS P.L.L.C.

Project Name: BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

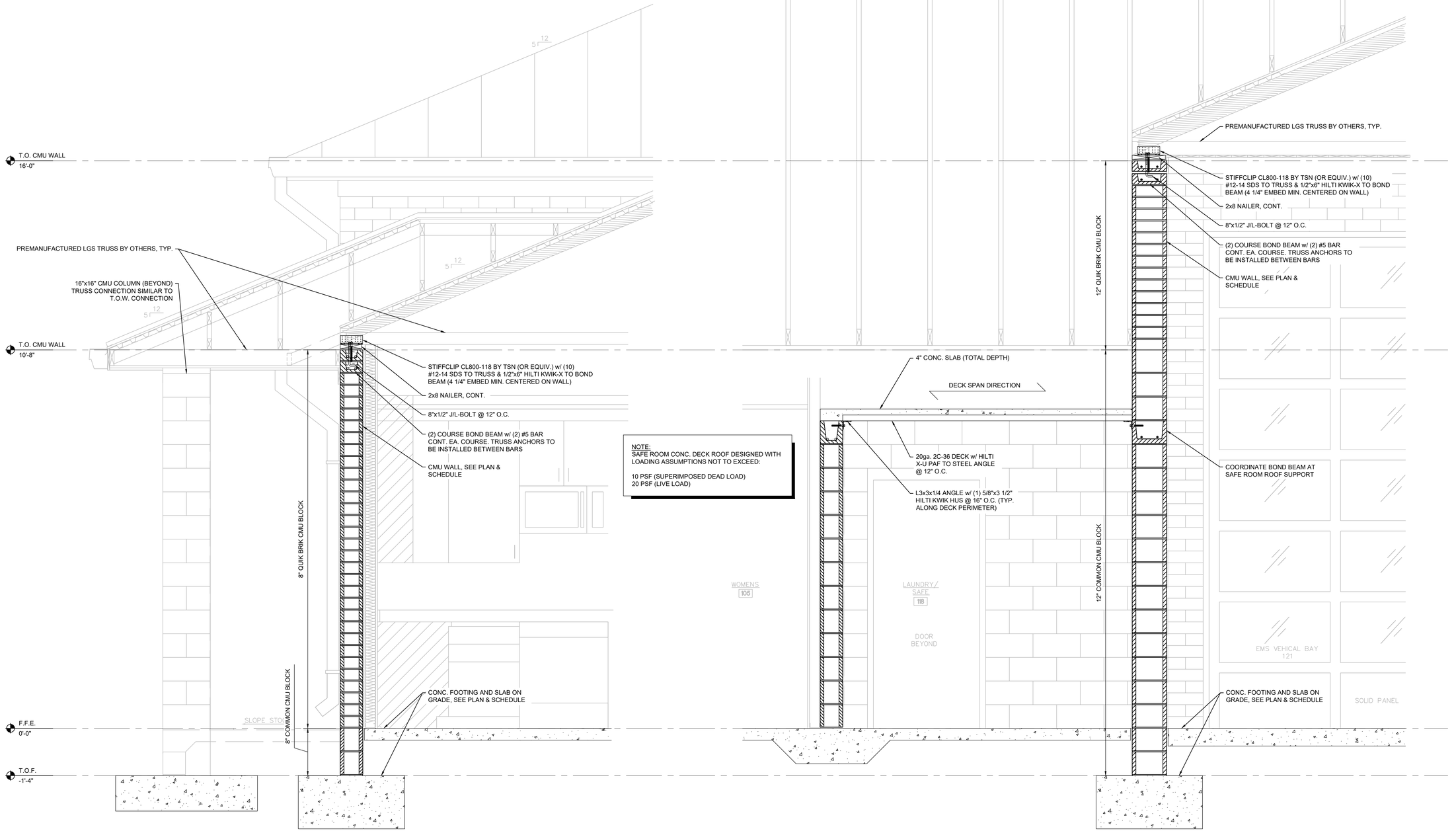
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Sheet S3.1

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1 WALL SECTION
ARCH REF: 1/A-5.1
Scale: 3/4" = 1'-0"

2 WALL SECTION
ARCH REF: 2/A-5.1
Scale: 3/4" = 1'-0"

FDR ENGINEERS
13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com

NORTH CAROLINA PROFESSIONAL SEAL 035655 ENGINEER JOHN F. HENDRICK

NORTH CAROLINA PROFESSIONAL P-1418 CORPORATION FIRM ENGINEER

Project Name: BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

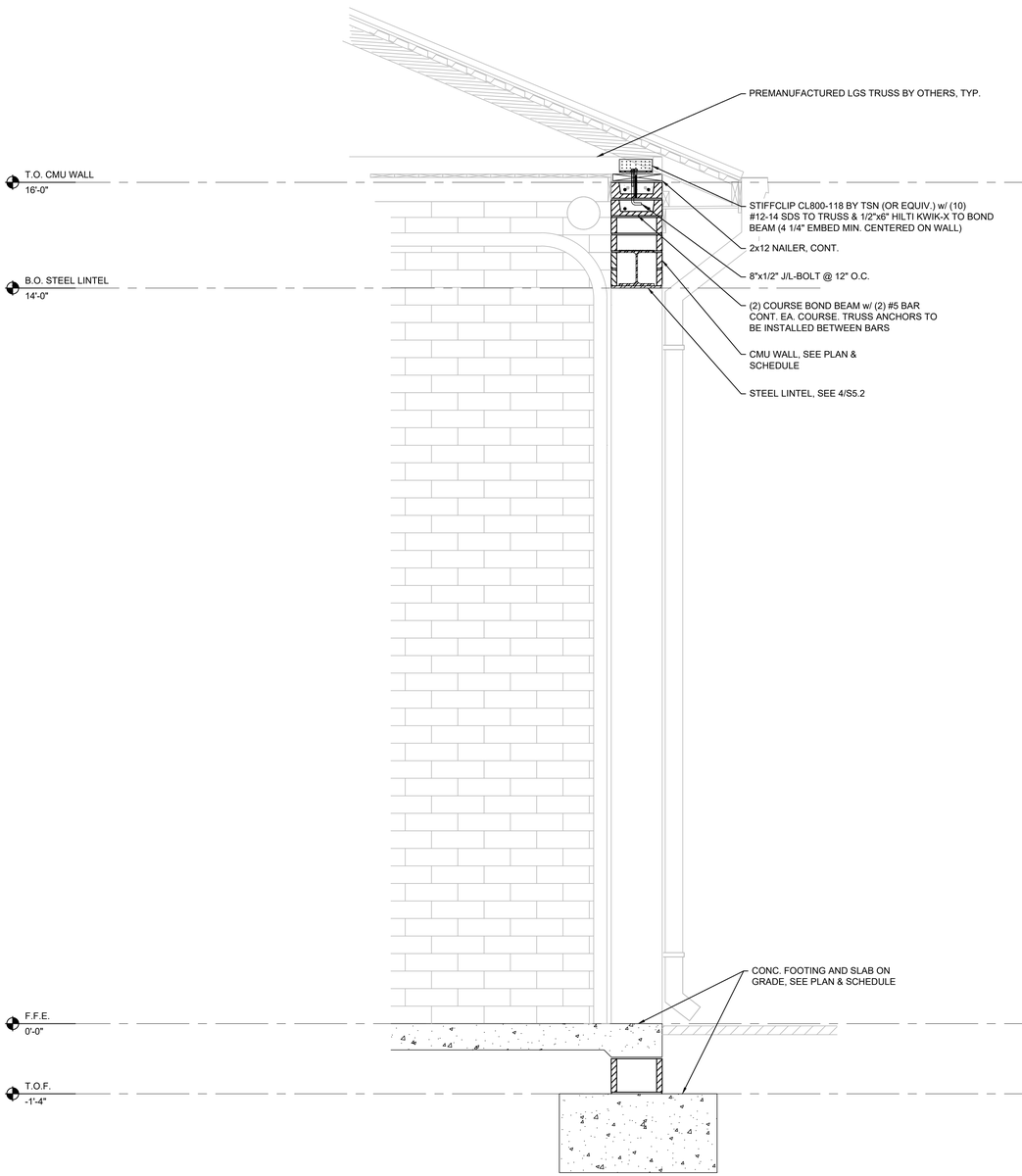
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Sheet
S4.1

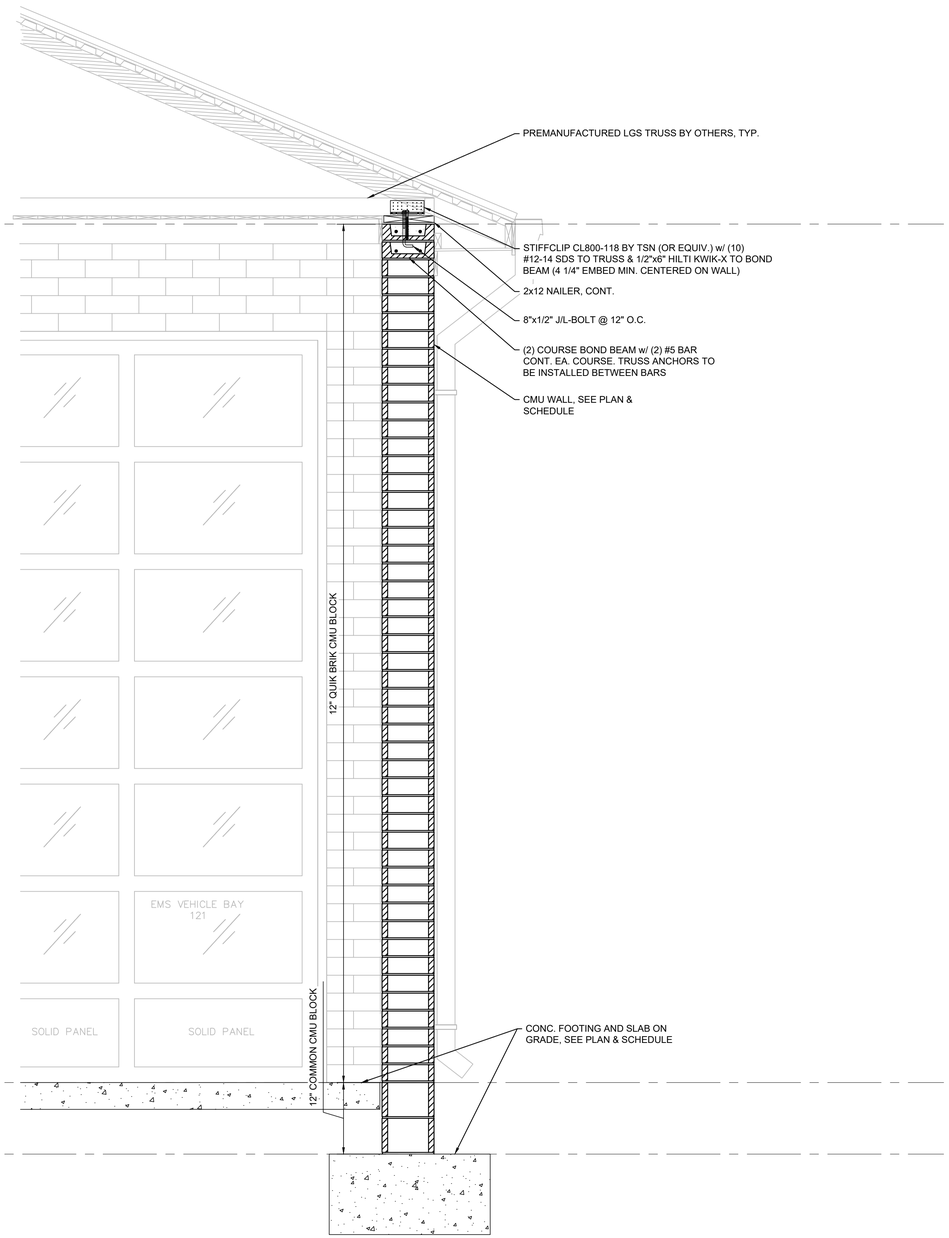
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3 WALL SECTION

ARCH REF: 2/A-5.2

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



4 WALL SECTION

ARCH REF: 3/A-5.2

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

FDR ENGINEERS
13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com

NORTH CAROLINA PROFESSIONAL SEAL 035655 ENGINEER JOHN T. FEJFAR

NORTH CAROLINA PROFESSIONAL P-1418 CORPORATION FDR ENGINEERS, P.L.L.C.

Project Name

BEAUFORT EMS

BEAUFORT, NORTH CAROLINA

Sheet Title

WALL SECTIONS

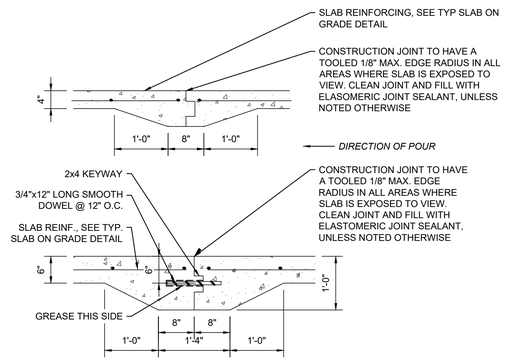
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Sheet

S4.2

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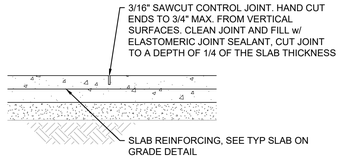


1A SLAB ON GRADE CONSTRUCTION JOINT

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

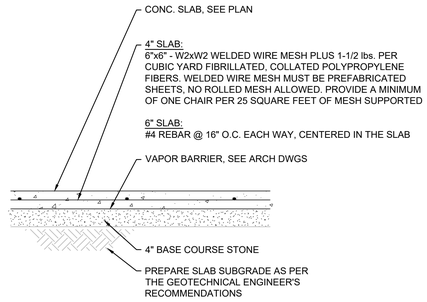
NOTES:

1. CONTRACTORS OPTION - USE REMOVABLE CONTROL JOINT MATERIAL SUCH AS "ZIP STRIP", "STRESSLOCK", OR APPROVED EQUAL.
2. SLAB ON GRADE CONTROL JOINTS SHALL BE TOOLED OR SAWCUT. THE JOINT PATTERN SHALL BE APPROXIMATELY SQUARE AND LIMITED TO AN AREA NOT TO EXCEED 225 S.F. JOINTS SHALL BE CUT WITHIN 12 HOURS OF POURING SLAB. SEE PLAN FOR PROPOSED JOINT LAYOUT. FINAL JOINT LAYOUT TO BE DETERMINED BY THE GENERAL CONTRACTOR.



1B SLAB ON GRADE CONTROL JOINT

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

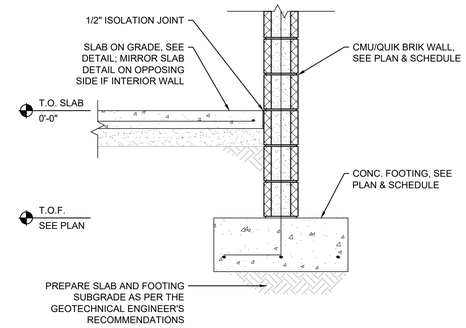


NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR SLOPES, DROPS, AND DRAIN LOCATIONS IN FLOOR SLABS.

1C SLAB ON GRADE DETAIL

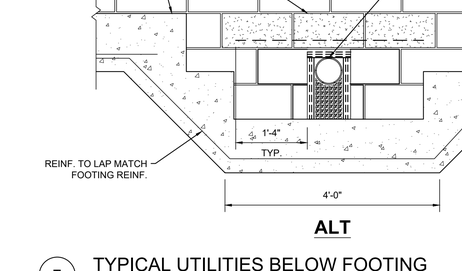
SCALE: 3/4" = 1'-0"



2 CMU BEARING WALL

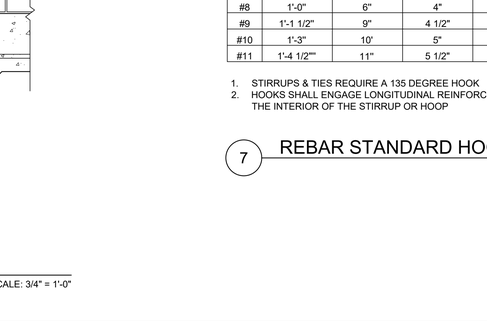
(CMU WALL / FLOATING SLAB / NO BRICK)

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



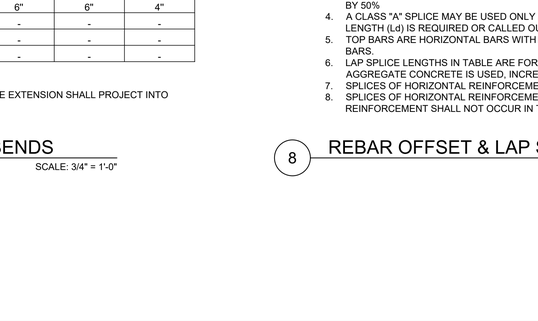
3 SECTION - INTERIOR THICKENED SLAB

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



4 EXTERIOR CMU COLUMN FOOTING

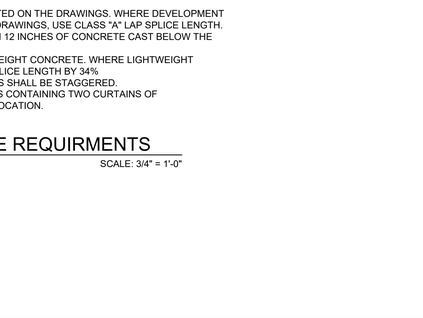
SCALE: 3/4" = 1'-0"



5 EXTERIOR CMU FOUNDATION STOOP

(STOOP / FLOATING SLAB / NO BRICK)

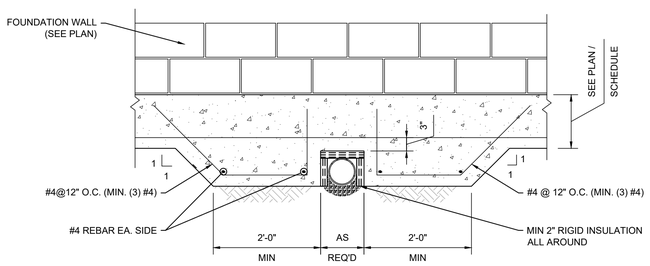
SCALE: 3/4" = 1'-0"



6 CMU FOUNDATION @ DOOR OPENING

(FLOATING SLAB / NO BRICK)

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



PIPE THRU FTG.

ALT

7 TYPICAL UTILITIES BELOW FOOTING

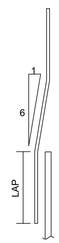
SCALE: 3/4" = 1'-0"

BAR SIZE	MAIN REINFORCEMENT: 90° HOOK EXTENSION "L"	MAIN REINFORCEMENT: INSIDE DIA. "D1"	MAIN REINFORCEMENT: 180° HOOK EXTENSION "L"	STIRRUPS & TIES: 90° HOOK EXTENSION "L"	STIRRUPS & TIES: INSIDE DIA. "D2"	STIRRUPS & TIES: 135° HOOK EXTENSION "L"	STIRRUPS & TIES: 180° HOOK EXTENSION "L"
	90° HOOK		180° HOOK	90° HOOK		135° HOOK	180° HOOK
#3	4 1/2"	2 1/4"	2 1/2"	3"	1 1/2"	3"	2 1/2"
#4	6"	3"	2 1/2"	3"	2"	3"	2 1/2"
#5	7 1/2"	3 3/4"	2 1/2"	3 3/4"	2 1/2"	3 3/4"	2 1/2"
#6	9"	4 1/2"	3"	9"	4 1/2"	4 1/2"	3"
#7	10 1/2"	5 1/4"	3 1/2"	10 1/2"	5 1/4"	5 1/4"	3 1/2"
#8	1'-0"	6"	4"	1'-0"	6"	6"	4"
#9	1'-1 1/2"	9"	4 1/2"	-	-	-	-
#10	1'-3"	10'	5"	-	-	-	-
#11	1'-4 1/2""	11"	5 1/2"	-	-	-	-

1. STIRRUPS & TIES REQUIRE A 135 DEGREE HOOK
2. HOOKS SHALL ENGAGE LONGITUDINAL REINFORCEMENT AND THE EXTENSION SHALL PROJECT INTO THE INTERIOR OF THE STIRRUP OR HOOP

7 REBAR STANDARD HOOKS & BENDS

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



CONCRETE STRENGTH	f'c = 3000 PSI				f'c = 4000 PSI			
CLASS OF LAP SPLICE	CLASS "A"		CLASS "B"		CLASS "A"		CLASS "B"	
BAR SIZE	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	1'-10"	1'-5"	2'-4"	1'-10"	1'-7"	1'-3"	2'-1"	1'-7"
#4	2'-5"	1'-10"	3'-2"	2'-5"	2'-1"	1'-7"	2'-9"	2'-1"
#5	3'-0"	2'-4"	3'-11"	3'-0"	2'-7"	2'-0"	3'-5"	2'-7"
#6	3'-7"	2'-9"	4'-8"	3'-7"	3'-1"	2'-5"	4'-1"	3'-1"
#7	5'-3"	4'-0"	6'-9"	5'-3"	4'-6"	3'-6"	5'-11"	4'-6"
#8	6'-0"	4'-7"	7'-9"	6'-0"	5'-2"	4'-0"	6'-9"	5'-2"
#9	6'-9"	5'-2"	8'-9"	6'-9"	5'-10"	4'-6"	7'-7"	5'-10"
#10	7'-6"	5'-9"	9'-8"	7'-6"	6'-6"	5'-0"	8'-5"	6'-6"
#11	8'-2"	6'-4"	10'-8"	8'-2"	7'-1"	5'-6"	9'-3"	7'-1"

NOTES:

1. UNLESS INDICATED OTHERWISE, USE CLASS "B" LAP SPLICE LENGTHS, MULTIPLIED BY THE APPLICABLE FACTORS(S) LISTED BELOW.
2. WHERE THE CLEAR SPACING OF BARS BEING SPLICED IS LESS THAN 2 BAR DIAMETERS, INCREASE THE LAP LENGTH BY 50%.
3. WHERE THE BAR COVER IS LESS THAN OR EQUAL TO THE BAR DIAMETER, INCREASE THE LAP LENGTH BY 50%
4. A CLASS "A" SPLICE MAY BE USED ONLY WHERE NOTED ON THE DRAWINGS. WHERE DEVELOPMENT LENGTH (Ld) IS REQUIRED OR CALLED OUT ON THE DRAWINGS, USE CLASS "A" LAP SPLICE LENGTH.
5. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
6. LAP SPLICE LENGTHS IN TABLE ARE FOR NORMAL WEIGHT CONCRETE. WHERE LIGHTWEIGHT AGGREGATE CONCRETE IS USED, INCREASE LAP SPLICE LENGTH BY 34%
7. SPLICES OF HORIZONTAL REINFORCEMENT IN WALLS SHALL BE STAGGERED.
8. SPLICES OF HORIZONTAL REINFORCEMENT IN WALLS CONTAINING TWO CURTAINS OF REINFORCEMENT SHALL NOT OCCUR IN THE SAME LOCATION.

8 REBAR OFFSET & LAP SPLICE REQUIRMENTS

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

FDR ENGINEERS
13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com

NORTH CAROLINA PROFESSIONAL SEAL 035655 ENGINEER JEFFREY M. HENDRICKS

NORTH CAROLINA PROFESSIONAL P-1418 CORPORATION ENGINEERS

Project Name: BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

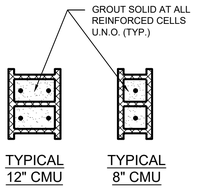
Sheet Title: FOUNDATION DETAILS

DESIGNED BY:	JTF
DRAWN BY:	JTF
APPROVED BY:	HMH
PROJECT #:	25-220
DATE:	07/09/2025

No.	Revision	Date

Sheet: S5.1

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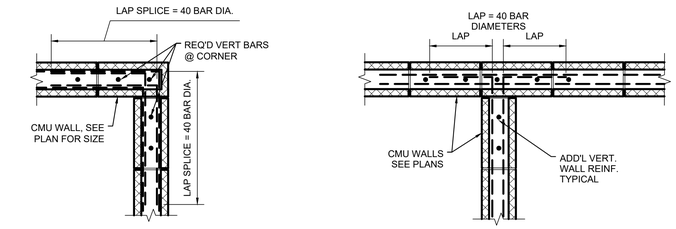


CMU WALL REINFORCING SCHEDULE			
MARK	THICKNESS	VERT REINF	REMARKS
MW8	8" CMU	(1) #5 @ 32" O.C.	FULLY GROUTED
MW12	12" CMU	(2) #5 @ 32" O.C.	FULLY GROUTED

NOTES:
1. ALL MASONRY SHALL BE LAID IN RUNNING BOND UNLESS NOTED OTHERWISE.
2. LAP SPLICES A MINIMUM OF 48 BAR DIAMETERS.
3. PROVIDE DUR-O-WALL (OR EQUAL) LADDER OR TRUSS HORIZONTAL JOINT REINFORCEMENT AT EACH SECOND COURSE IN RUNNING BOND, AND EACH COURSE IN STACKED BOND, UNLESS NOTED OTHERWISE. DISCONTINUE HORIZONTAL JOINT REINFORCEMENT AT CONTROL JOINTS.
4. PROVIDE BOND BEAMS REINFORCED WITH (2) #5 BARS EVERY 6'-0" OF VERTICAL WALL, AT TOPS OF ALL MASONRY WALLS, AND WHERE SHOWN ON DRAWINGS. FIRST BOND BEAM MAY BE PLACED AT TOP OF DOOR OPENINGS, 8'-0" MAX. AT BOND BEAM CORNERS AND TEE JOINTS, PROVIDE BENT BARS TO MATCH QUANTITY AND BAR SIZE IN THE BOND BEAM. LAPS IN BOND BEAMS SHALL BE 48 BAR DIAMETERS OR A MINIMUM OF 2'-0", WHICHEVER IS GREATER.

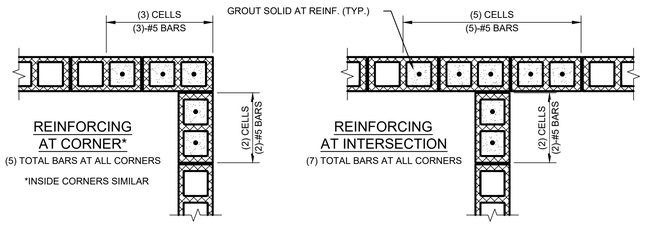
1 CMU WALL REINFORCING SCHEDULE

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



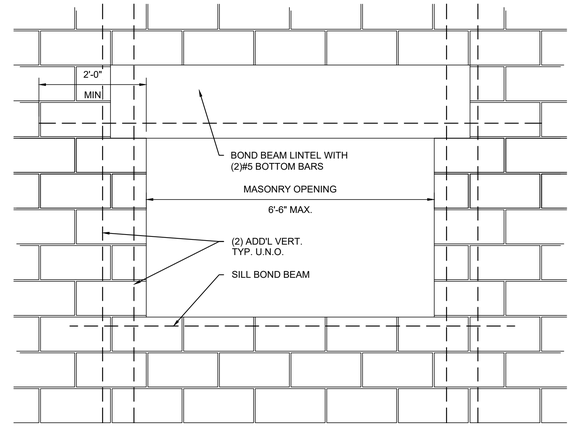
2A TYP. BOND BEAM REINFORCING AT CORNERS AND INTERSECTIONS

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



2B ADDITIONAL REINFORCING AT CORNERS AND INTERSECTIONS

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



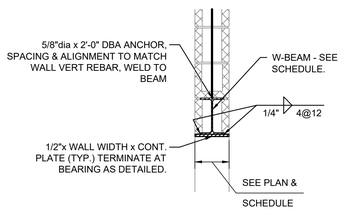
NOTES:
1. EXTEND JAMB FULL HEIGHT REINF. 6" INTO ROOF FRAMING BOND BEAM.
2. PROVIDE (1) DOWEL BAR FROM FOUNDATION AT JAMB.
3. ALL CMU LINTELS SHALL BE 16" BOND BEAM WITH (2) #5 HORIZONTAL REBAR

3 TYPICAL CMU OPENING - L1

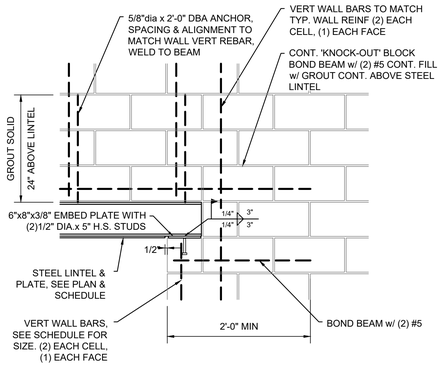
SCALE: 3/4" = 1'-0"

TYPICAL LINTEL SCHEDULE				
MARK	WALL	LINTEL TYPE	BRG. @ ENDS	SIZE
L2	12" CMU	TYPE 2	8"	W8x35

NOTES:
1. LINTELS ARE REQUIRED FOR ALL OPENINGS IN MASONRY WALLS GREATER THAN 12" WIDE.
2. COORDINATE LENGTH AND ELEVATION w/ ARCH. & MECH. DRAWINGS. PROVIDE LINTELS AS PER SCHEDULE U.N.O. ON DRAWINGS.
3. ALL ANGLE LINTELS ARE TO HAVE LONG LEGS BACK TO BACK UNLESS NOTED OTHERWISE. WELD @ 12" O.C. OR BOLT @ 4'-0" O.C. ANGLE LINTELS @ OPENINGS GREATER THAN 4'-6".
4. PROVIDE 1/4" BOTTOM PLATES WHERE REQUIRED FOR SUPPORT, OR TO CONCEAL GAP BETWEEN LINTEL ELEMENTS. EXTEND FINISH PLATE ONLY TO EDGES OF OPENING.
5. FOR OPENINGS 6'-6" OR LESS, MASONRY BLOCK UNDER LINTEL BEARING TO BE FULLY GROUTED TO AT LEAST 24" BELOW @ 12" OUT FROM LINTEL BEARING ELEVATION.
6. FOR OPENINGS WHERE BEAMS ARE REQUIRED, PROVIDE REINFORCING STEEL AND FIXED OR EXPANSION BEARINGS.
7. PROVIDE 8" BOND BEAM LINTELS OVER ALL MECHANICAL PENETRATIONS 24" WIDE AND SMALLER. PROVIDE LINTELS OVER ALL MECH. OPENINGS OVER 24" WIDE AS SHOWN IN LINTEL SHCEDULE ABOVE.



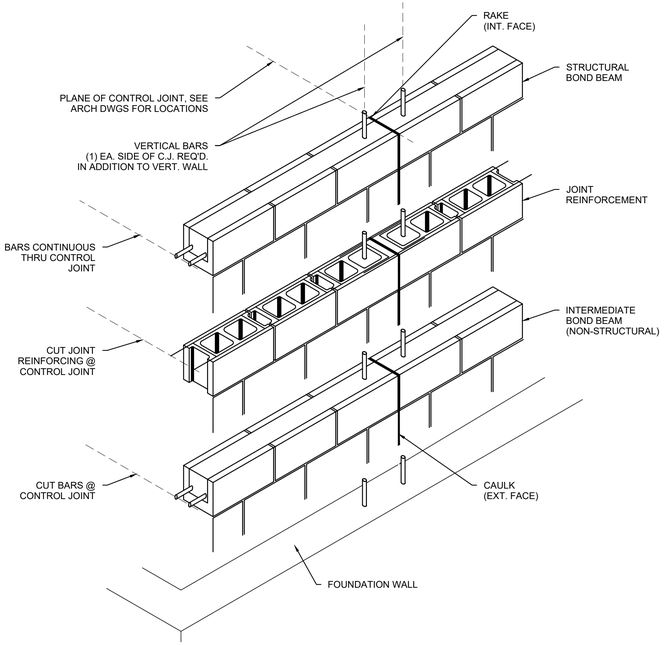
SECTION



ELEVATION VIEW

4 CMU LINTEL SCHEDULE AND DETAILS

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



5 TYP CMU CONTROL JOINT

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

FDR ENGINEERS
13200 STRICKLAND ROAD
SUITE 114, BOX 332
RALEIGH, NC 27613
p. 919.957.5100 - f. 919.957.5101
www.fdr-eng.com
jfejfar@fdr-eng.com

NORTH CAROLINA PROFESSIONAL SEAL 035655 ENGINEER JOHN T. FEJFAR

NORTH CAROLINA PROFESSIONAL P-1418 CORPORATION ENGINEERS

Project Name: BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

Sheet Title: FRAMING DETAILS

DESIGNED BY:	JTF
DRAWN BY:	JTF
APPROVED BY:	HMH
PROJECT #:	25-220
DATE:	07/09/2025

No.	Revision	Date

Sheet: S5.2

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DIVISION 15A – PLUMBING

1.1 DESCRIPTION OF THE WORK

A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:
   1. Plumbing fixtures, water heaters, and any other equipment necessary.
   2. Cold and hot water piping and insulation.
   3. DWV piping.
   4. LPI gas piping.
   5. Connection of all equipment; drain, vent, water, gas.

B. All work under this contract shall be installed in compliance with the latest edition of the following codes and standards insofar as they apply.
   1. The National Electrical Code.
   2. 2018 N.C. Building Code: Plumbing, and all applicable category codes.
   3. American Society of Sanitary Engineering Standard 1010.
   4. All local codes and ordinances.

C. These codes are minimum standards. If codes require a more stringent method of construction than the specifications require, the codes shall govern.

D. The Plumbing Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.

E. Obtain all permits, licenses, inspections, etc., required for the work, and pay for the same.

1.2 INTENT

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

1.3 COORDINATION

A. Coordinate work with other contractors. Notify Architect of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Architect for a decision before resuming operations.

B. Locations shown are approximate. The Plumbing Contractor shall refer to the architectural drawings for placement of equipment, fixtures, etc. Where locations are not clear, the Contractor shall obtain the exact locations from the Architect.

C. Coordinate all exterior piping connections w/Architect, site contractor/plans. Verify manhole elevations and provide backwater valves as required if flood level rims are below next upstream manhole cover elevation. Fixtures with flood level rims above upstream manhole shall not discharge thru bw valve. Notify engineer of backwater valve requirement, any issue prior to bid.

1.4 SHOP DRAWINGS

A. Shop drawings shall be submitted for plumbing fixtures and for pipe. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified.

PART 2 – PRODUCTS

2.1 FIXTURES

A. Each fixture shall be properly supported from the building structure as required to the end effect that all fixtures and accessories will be held rigidly in place. Water pipes supplying the fixtures must also be held rigidly in place.

B. Provide loose key angle stops and chrome plated supply pipe water supplies to fixtures.

C. All exposed piping traps and accessories for fixtures shall be chrome plated. Provide chrome plated escutcheon plates where pipes enter walls.

D. Provide shutoff valves for all sinks, water heaters, toilets, washing machines, refrigerator icemaker, exterior hose bibbs and all other plumbing fixtures.

E. Provide trap primers for all floor drains in areas not served by hose bibbs.

2.2 PIPING

A. Drain–Waste–Vent: All DWV piping shall be Schedule 40 PVC–DWV u.o.n., with the following exceptions: Use cast iron piping in all return air plenums, penetrations of rated walls/floors/ceilings, and in areas/walls adjacent to cooking equipment exhaust hoods. Review Arch. and Mech. drawings. ABS or cast iron piping shall be used for drainage/discharge with a temperature greater than 140 deg. F for a minimum distance of 10'–0".

B. Hot and cold water piping above grade: Type "L" copper w/solder joints (ASTM–B88), hard drawn with wrought copper fittings (ANSI B16.22). PEX piping with copper fittings may be used with owner/tenant approval and as allowed per code. Copper piping shall be used in areas/walls adjacent to cooking equipment exhaust hoods. Review Arch. and Mech. drawings.

C. Cold water piping below grade: Type "K" copper (ASTM–B88A) soft drawn.

D. LP gas piping shall be black steel pipe with screwed or welded joints. Support all piping as required by code. Use commercial style hangers, pipe strapping will not be allowed. Provide dirtieg, union, shut–off valve and flexible connection to all equipment. Pressure test all piping prior to putting into use. Verify size requirements prior to installation. Coordinate requirements with local gas company prior to submitting bid. Provide all components necessary for a complete operation system. Label piping per code. Paint exterior and exposed gas lines per code and building owner.

E. Hangers: Use pipe hangers where required on 8–foot centers with saddles to avoid crushing insulation.

F. Solder: 95/5. Lead free.

G. Unions: Provide unions where indicated on drawings, in long runs of piping (except drainage) and at equipment to provide convenient disassembly. Provide dielectric unions when connecting copper tubing to equipment and piping made of ferrous materials.

2.3 CLEANOUTS

A. Hex plugs in rough areas: Recessed plugs with cover plates in exposed locations.

2.4 SHOCK ARRESTERS

A. Provide shock arresters as required by codes, manufacturer's recommendations and accepted industry standards for quality construction. Provide for all quick closing valves.

PART 3 – EXECUTION

3.1 CONNECTIONS

A. This contract includes complete connection of cold water, hot water, drain, vent, and natural gas piping as required. All fittings, valves, accessories, cutoffs, drains, etc., required to complete such connections shall be included.

B. The connection to water closets shall be made watertight with gasket and wax ring. Floor flanges shall be caulked into position. Plastic caps shall be provided on the tie down bolts, and shall be secured in place by screwing down on threaded brass washers.

C. Where water pipes connect to exposed chrome plated trim, use proper chrome plated escutcheons.

3.2 SERVICE ACCESS

A. All valves and accessories shall be insulated so that they can be properly serviced. In no case shall the Plumbing Contractor install equipment or other components in situations that do not meet code requirements or manufacturer's requirements. Provide access doors as required to access valves, etc.

3.3 ROUTING OF PIPING

A. Coordinate routing of piping with others, line up work true to or at right angle to adjacent surfaces and in a workmanlike manner. Support all interior piping from building structure by means of hanger or inserts to maintain pitch of lines, to prevent vibration, and to secure piping place.

B. Space pipe hangers per NCSBC– Plumbing Sect. 308.5 and Fuel Gas Code Sect. 415.1.

C. Pipe hangers for insulated lines shall have suitable saddles to protect insulation.

3.4 INSULATION

A. All H/W and C/W piping shall be insulated with a min. of 1" inch elastomeric insulation (R–6.5 min.) in unconditioned areas. See NCSBC–Plumbing Sect. 305 for all protection requirements. All H/W piping of circulating systems shall be insulated with 1" insulation per Sect. C404.4 of the NCSBC 2018 Energy Conservation Code.

B. Provide pre–fabricated insulation kits for all sink and lavatory exposed drain and supply piping.

3.5 INSPECTIONS AND TESTS

A. Before being concealed, all water, soil and vent piping shall be tested to determine if they are water– and air–tight.

B. Prior to placing into service, entire system shall be tested for leaks in strict accordance with state and local codes.

3.6 STERILIZATION OF PIPING

A. Sterilize the new water piping thoroughly with a solution containing not less than 50 parts per million of available chlorine, using liquid chlorine, or sodium hydrochloride solution, introduced into the system in an approved manner. The sterilizing solution shall remain in the system in an approved manner. The sterilizing solution shall remain in the system for a period of 24 hours. After sterilization, flush the solution from the system with clean water until the residual chlorine content is not greater than 0.2 parts per million, unless otherwise directed.

3.7 SERVICE PRESSURE

A. Provide approved water–pressure reducing valve (PRV) if service pressure exceeds 80 psi to reduce pressure to 80 psi static or less and as required per NCSBC–Plumbing Sect. 604.8.

3.8 DRAINDOWN

A. Contractor to provide for complete plumbing system drain down.

3.9 CLEAN UP

A. During construction, keep the site clear of debris and upon completion, and before final inspection, clean up the premises to remove all evidence of his work. In addition, upon completion of construction, clean, wash, and/or polish all fixtures, equipment and exposed material and leave them bright and clean.

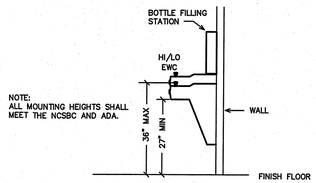
3.10 GUARANTEES

A. Guarantee all materials and labor included in the plumbing work for a period of one year from date of final acceptance by the Owner.

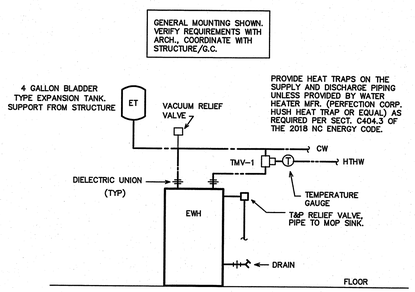
B. Any defects in the system which become evident during the guarantee period shall be corrected without cost to the Owner. This shall include the replacing of defective materials where required, and the repair of damage caused by leaking pipes, etc., and damage to building surfaces caused in making repairs.

LOAD SUMMARY – PLUMBING

WASTE DEMAND (FU)	WATER DEMAND (FU)	WATER DEMAND (GPM)
52.0	74.0	59.5



1/P-1 EWC DETAIL
SCALE: NTS



2/P-1 EWH DETAIL
SCALE: NTS

GENERAL NOTES – PLUMBING

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE, ALL LOCAL AND OTHER APPLICABLE CODES.
2. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE PLUMBING CONTRACTOR (PC) SHALL COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC).
3. THE PLUMBING PLANS AND SPECIFICATIONS SHALL BE THOROUGHLY REVIEWED PRIOR TO PURCHASING MATERIALS AND INSTALLATION AND ALL DISCREPANCIES OR INTERFERENCES BROUGHT TO THE ENGINEERS ATTENTION.
4. THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. THE PC SHALL PROVIDE ALL MISC. ITEMS NEEDED FOR A COMPLETE SYSTEM REGARDLESS IF NOTED ON THE DRAWINGS OR NOT. REFER TO ARCHITECTURAL DRAWINGS FOR ALL FLOORPLAN LAYOUTS. DO NOT USE ENGINEERING DRAWINGS FOR ROUGH–INS.
5. THE GC SHALL PROVIDE ALL WALL, FLOOR AND ROOF OPENINGS OF THE SIZE AND LOCATION REQUIRED BY THE PC AND SHALL BE RESPONSIBLE FOR PAINTING AND FLOOR FINISHES. THE PC SHALL PROPERLY SEAL ALL PENETRATIONS AND PROVIDE ESCUTCHEON PLATES AT ALL FINISHED LOCATIONS.
6. ALL NEW WATER PIPING SHALL BE INSTALLED TIGHT TO STRUCTURE, ADEQUATELY SUPPORTED AND PROTECTED AND PROPERLY PITCHED TO ALLOW TOTAL DRAINAGE.
7. ALL WATER PIPING SHALL BE HYDROSTATICALLY TESTED FOR A MINIMUM OF 15 MINUTES AT A MINIMUM OF 100 PSIG BEFORE COVERING AND ALL LEAKS CORRECTED. THE ENTIRE WATER DISTRIBUTION SYSTEM SHALL BE DISINFECTED PRIOR TO PLACING IN SERVICE.
8. PROVIDE MIN. 18" SHOCK ABSORBERS WITH STOPS ON ALL HOT AND COLD WATER FIXTURE RUNS AS REQUIRED BY CODE.
9. VENT LINES SHALL SLOPE UP TO ALL STACKS AND TERMINATE A MIN. OF 12" ABOVE ROOF LINE.
10. PROVIDE CUT SHEETS ON ALL PLUMBING FIXTURES FOR ARCHITECT AND OWNER APPROVAL PRIOR TO ORDERING ANY FIXTURES.
11. VERIFY/PROVIDE HOT WATER STORAGE (EWH) TEMPERATURE OF 140 DEG. (F). PROVIDE/VERIFY HIGH TEMPERATURE HOT WATER (HTHW) AT 120 DEGREES (MAX.) F, PROVIDE/VERIFY MEDIUM TEMPERATURE HOT WATER (MTHW) AT 110 DEGREES (MAX.) F, VERIFY MTHW FROM ALL LAVATORY FAUCETS, ANY OTHER REQUIRED FIXTURES (VERIFY). PROVIDE/VERIFY ASSE 1070 THERMOSTATIC MIXING VALVE (TMV) WHERE REQUIRED, ASSE 1017 TMV WHERE REQUIRED, AND ASSE 1016 THERMOSTATIC/PRESSURE BALANCING VALVES WHERE REQUIRED (SHOWERS, WITH MAX. SETTING OF 120 DEG. F), AND PER CODE WHETHER OR NOT SHOWN OR NOTED ON PLANS. PROVIDE/VERIFY LOW TEMPERATURE HOT WATER (LTHW) AT 85 DEGREES F (MAX) TO EYEWASH (SEE FIXTURE SCHEDULE– THERM. MIXING VALVE INCLUDED IN SPECIFICATION)
12. PROVIDE CLEANOUTS AS REQUIRED BY CODE. NOT MORE THAN 100 FEET FOR 4" DRAIN.

SYMBOL LEGEND – PLUMBING

SYMBOL	DESCRIPTION (U.O.N.)
———	SANITARY WASTE PIPING (W)
– – – – – –	VENT PIPING (V)
——— G ———	LP GAS PIPING (G)
———	COLD WATER PIPING (CW)
———	HOT WATER PIPING (HW)
——— HTHW ———	HIGH TEMPERATURE HW PIPING (HTHW) 120 DEG. F
——— MTHW ———	MEDIUM TEMPERATURE HW PIPING (MTHW) 110 DEG. F
——— LTHW ———	LOW TEMPERATURE HW PIPING (LTHW) 85 DEG. F
	SHUT–OFF VALVE
	DIELECTRIC UNION
COFF	CLEANOUT FINISH FLOOR
WCO/HCO	WALL/HORIZONTAL CLEANOUT
COFG	CLEANOUT FINISH GRADE–PROVIDE FLUSH CONCRETE COLLAR AND BRONZE COVER
	VENT THRU ROOF (VTR)
A.F.F.	ABOVE FINISHED FLOOR
A.A.V.	AIR ADMITTANCE VALVE
U.O.N.	UNLESS OTHERWISE NOTED
TMV–1	THERMOSTATIC MIXING VALVE (TMV)

FIXTURE SCHEDULE – PLUMBING *

ET * EXPANSION TANK
AMTROL MODEL ST–12, 4.4 GALLON, STEEL CONSTRUCTION, NON–ASME RATED.

EW * EYEWASH (PROVIDE WITH LTHW)
BRADLEY BARRIER–FREE WALL MOUNT HALO EYEWASH S19–224. COORDINATE EXACT MODEL/MOUNTING LOCATION W/OWNER. PROVIDE W/BRADLEY NAVIGATOR EMERGENCY S19–2000 EFX8 MIXING VALVE, INSTALL IN ACCESSIBLE LOCATION. SET OUTFLOW TO SPECIFIED LTHW TEMPERATURE (85 DEG. F).

EWC * HIGH/LOW ELECTRIC WATER COOLER WITH BOTTLE FILLER
HALSEY TAYLOR DUAL LEVEL ELECTRIC WATER COOLER WITH FILTERED BOTTLE FILLER #HTHB–HACBBLPV–WF, ADA COMPLIANT. PIPE TO SINGLE DRAIN AND SUPPLY LINE. VERIFY INSTALLATION CLEARANCE REQUIREMENTS PRIOR TO ORDERING. VERIFY MODEL– HI/LO SIDE WITH TENANT, ARCH.

EWH * ELECTRIC WATER HEATER
A.O. SMITH MODEL DRE–80–9, 80 GALLON, 9,000 WATT, 208V, 3 PH. 46 GPH RECOVERY AT 80 DEGREE (F) RISE. 1–1/4" INLET AND OUTLET, PROVIDE DRAIN PAN, EXPANSION TANK AND PRESSURE RELIEF VALVE. VERIFY INSTALLATION CLEARANCES PRIOR TO ORDERING.

FD * FLOOR DRAIN
ZURN MODEL Z415 WITH HEEL–PROOF TYPE B STRAINER, CAST IRON W/NICKEL BRONZE TOP, 5" STRAINER WITH 2" CONNECTION. PROVIDE TRAP PRIMER CONNECTION IF REQUIRED.

FPHB * FREEZE PROOF RECESSED HOSE BIBB ENCASED IN FLUSH–TO–WALL BOX
ZURN Z–1320–C, 3/4" NON FREEZE WALL HYDRANT W/INTEGRAL BACKFLOW PREVENTER, ENCASED WITH KEY LOCK. VERIFY WALL THICKNESS. PROVIDE WALL BOX AS REQUIRED– COORDINATE W/BLDG. OWNER, TENANT, ARCH., G.C. VERIFY MOUNTING LOCATION.

HB * WALL HOSE BIBB
WOODFORD MODEL #24 ANTI–SIPHON VACUUM BREAKER HOSE BIBB W/TEE KEY. COORDINATE MOUNTING W/TENANT. PROVIDE STEM LOCK SL–24 IF REQUIRED.

L1 * LAVATORY (UNDERMOUNT)
KOHLER CAXTON 17" OVAL UNDERMOUNT LAVATORY, K–2209 WHITE COLOR, ADA COMPLIANT. PROVIDE K–8998 P–TRAP, SHUT–OFF VALVES. PROVIDE DELTA FAUCET MODEL 523LF–HGMHDF. VERIFY FAUCET MOUNTING AND BOWL SIZE WITH CABINETRY, ETC.

L2 * LAVATORY (WALL MOUNT)
KOHLER CHESAPEAKE LAVATORY, K–1728, VITREOUS CHINA, 4" CENTERS, ADA COMPLIANT. PROVIDE DELTA MODEL 523LF–HDF FAUCET, 0.5 GPM MAX WITH GRID STRAINER. PROVIDE P–TRAP AND SHUT–OFF VALVES.

MS * MOP SINK BASIN WITH FAUCET
BASIN– FLORESTONE MODEL 87 MOLDED MOP RECEPTOR, 3" DRAIN SIZE. VERIFY UNIT SIZE, FLANGE/CAP LOCATION REQUIREMENTS. PROVIDE/INSTALL ON PROPER MORTAR BED, LEVEL AS NEEDED, USE WEDGE–LOCK SEAL PER MANUFACTURER'S SPECIFICATIONS. USE WATER TO CHECK FOR PROPER DRAINAGE UPON ATTACHING DRAIN PIPE AND PRIOR TO FINISHING WALLS. VERIFY SIZE PRIOR TO ORDERING. FAUCET– SPEAKMAN MODEL MR–371 FAUCET WITH VACUUM BREAKER. PROVIDE 5' HOSE W/HANGER BRACKET AND MOP HANGER.

S1 * BREAK ROOM SINK
ELKAY LR2219 SINGLE BASIN STAINLESS STEEL SINK (MODEL LRAD2219 IF ADA COMPLIANCE REQUIRED), 18 GA., SELF–RIMMING, FURNISHED WITH THREE FAUCET HOLES AND CENTER DRAIN. PROVIDE ELKAY COMMERCIAL FAUCET MODEL LK810ATSBL2 WITH TWO LEVER HANDLES, CHROME PLATED BRASS P–TRAP AND SHUT–OFF VALVES. COORDINATE EXACT UNIT WITH OWNER AND GENERAL CONTRACTOR. COORDINATE SIZE WITH CABINETRY PRIOR TO ORDERING.

SHR * SHOWER (CUSTOM BUILT/TILED– VERIFY ADA REQUIREMENT W/ARCHITECT)
COORDINATE FAUCET, ACCESSORIES W/OWNER, ARCH. PROVIDE ADA MODEL/ACCESSORIES WHERE REQUIRED (VERIFY W/ARCH, OWNER). PROVIDE DWV/SUPPLY AS REQUIRED. VERIFY HANDING, ROUTE ALL PLUMBING AS REQUIRED REGARDLESS OF HOW SHOWN ON PLANS. PROVIDE/VERIFY PROPER PRESSURE BALANCING MIXING VALVE.

TD * TRENCH DRAIN
J. R. SMITH MODEL #9930 POLYPROPYLENE SLOPED TRENCH DRAIN SYSTEM, 4" OUTLET, 1 METER SECTIONS, STAINLESS STEEL GRATE 9870–450–SS OR PROVIDE 9870–447–SSADA MODEL GRATE IF ADA COMPLIANCE IS REQUIRED (VERIFY). PROVIDE REQUIRED NUMBER OF CHANNEL SECTIONS BY LENGTH NEEDED FOR EACH TRENCH DRAIN. FIELD TRIM AT SHALLOW END OF CHANNEL AS NEEDED. PROVIDE STRAINER OR SEDIMENT BASKET AT ALL LOCATIONS. INSTALL PER MFR'S SPECS. PROVIDE MITER/CUSTOM SECTIONS IF REQUIRED. VERIFY EXACT MODEL/GRATE WITH OWNER/ARCH.

TMV–1 * THERMOSTATIC MIXING VALVE #1 (ASSE 1017)
WATTS SERIES LFMMV MIXING VALVE WITH CHECK VALVES. INSTALL IN MAINTENANCE ACCESSIBLE LOCATION AS REQUIRED. SET HW OUTFLOW TO SPECIFIED TEMPERATURE FOR HTHW– 120 DEG. F (MAX.).

TMV–2 * THERMOSTATIC MIXING VALVE #2 (ASSE 1070)
WATTS LFUSG–B 'LEAD FREE' GUARDIAN. INSTALL IN MAINTENANCE ACCESSIBLE ONLY LOCATION BELOW LAV/SINK OR AS REQUIRED. SET HW OUTFLOW TO SPECIFIED TEMPERATURE FOR LTHW– 110 DEG. F (MAX.).

VB * ICE MAKER VALVE BOX
OATEY VALVE BOX WITH 3/8" BRONZE SHUT–OFF VALVE. FLUSH TO WALL.

WB * WASHING MACHINE WALL BOX
SUPPLY AND DRAIN FIXTURE: POLYSTYRENE BOX WITH 2" DRAIN, 1/4 TURN BRASS BALL VALVES. OATEY OR APPROVED EQUAL.

WC * WATER CLOSET (FLOOR MOUNT FLUSH VALVE)
KOHLER HIGHCLIFF WATER CLOSET, K–96057, ADA COMPLIANT, 1.6 GPF. PROVIDE WITH K–4731–C SEAT, WAX SEAL, CLOSET BOLT KIT. FOR UNITS NOT REQUIRING ADA COMPLIANCE (COORDINATE W/ARCHITECT), USE KOHLER WELLCOMME K–96053 IF REQUIRED. PROVIDE SLOAN ROYAL 111–1.6 TOP SPUD FLUSHOMETER.

* OR APPROVED EQUAL. SUBMIT ALL ITEMS FOR APPROVAL BY OWNER AND ARCHITECT PRIOR TO ORDERING. ALL OTHER PLUMBING FIXTURES SHOWN ARE PROVIDED BY THE OWNER AND INSTALLED BY THE PLUMBING CONTRACTOR. SEE PLANS FOR NUMBER AND LOCATION. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT SERVED.

ENGINEER
BDG BURKE DESIGN GROUP
3305–109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771–1916
FAX: (919) 779–0826
email: ben@bdg–nc.com
Corp. License # C–2652

Coastal Architecture PLLC
Architectural Design Planning Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

11/25/25
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE

PLUMBING SPECIFICATIONS

25003
ISSUED: 11/25/2025
DWG BY: MRH
CKD BY: BEB
REVISIONS

SHEET NO.
P-1

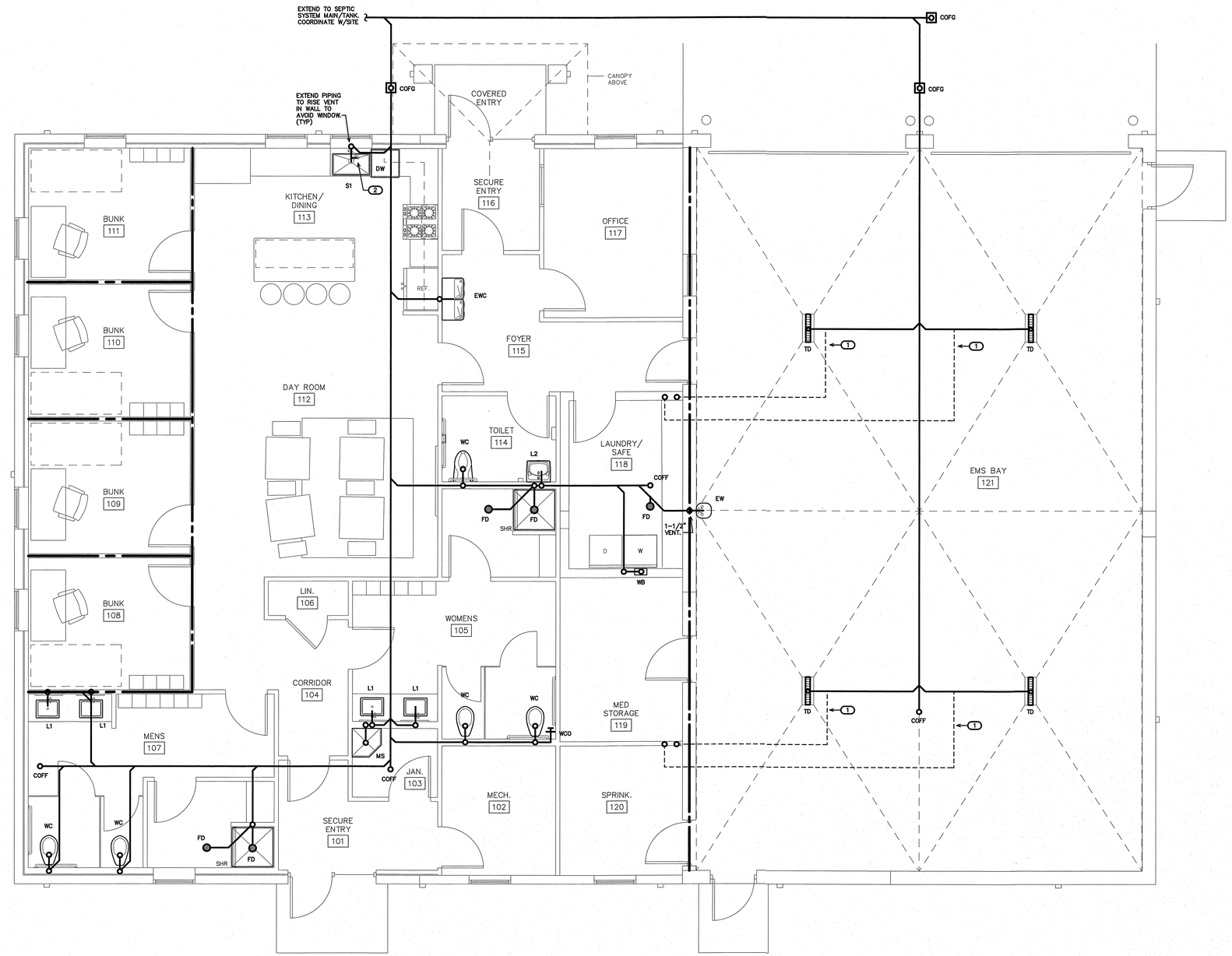
NOTE:
ALL INTERIOR WALLS ARE TO THE ROOF DECK AND ARE NEW SMOKE PARTITIONS. SEE ARCHITECTURAL SHEETS FOR LOCATIONS AND DETAILS.

KEY NOTES FOR SHEET P-2

1. 2" FIXTURE VENT BELOW FLOOR PER SECT. 905.4 OF NCSBC-PLBG. CODE, VENT MUST RISE 6" VERTICAL BEFORE HORIZONTAL RUN BELOW FLOOR. VERIFY DRAIN DEPTH. PROVIDE CLEANOUT IN FLOOR OR WALL (NOT SHOWN) PER CODE.
2. PROVIDE DRAIN TAILPIECE WITH SIDE INLET FOR DISHWASHER (DW) DRAIN HOSE CONNECTION.

NOTE:
VERIFY QUANTITY AND LOCATION OF ALL FLOOR DRAINS W/OWNER, ARCHITECT. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS. COORDINATE W/WATER PLAN.

NOTE:
COORDINATE SIZE/LENGTH, AND LOCATION OF TRENCH DRAINS W/OWNER, ARCH. COORDINATE TRENCH DRAIN INSTALLATION W/MFR REQUIREMENTS. PROVIDE ALL PARTS AS REQUIRED FOR A COMPLETE SYSTEM. SLOPE DRAINS AS REQUIRED FOR PROPER DRAINAGE. SEE ARCHITECTURAL FOR ANY FLOOR SLOPES. PROVIDE ADDITIONAL OUTLETS IF/AS REQUIRED.



1 P-2 DWV PLAN
SCALE: 1/4" = 1'-0"

ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652

Coastal Architecture PLLC
Architectural
Design
Planning
Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

11/25/25
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE

DWV PLAN

25003

ISSUED:	11/25/2025
DWG BY:	MRH
CKD BY:	BEB

REVISIONS

SHEET NO.
P-2

KEY NOTES FOR SHEET P-3

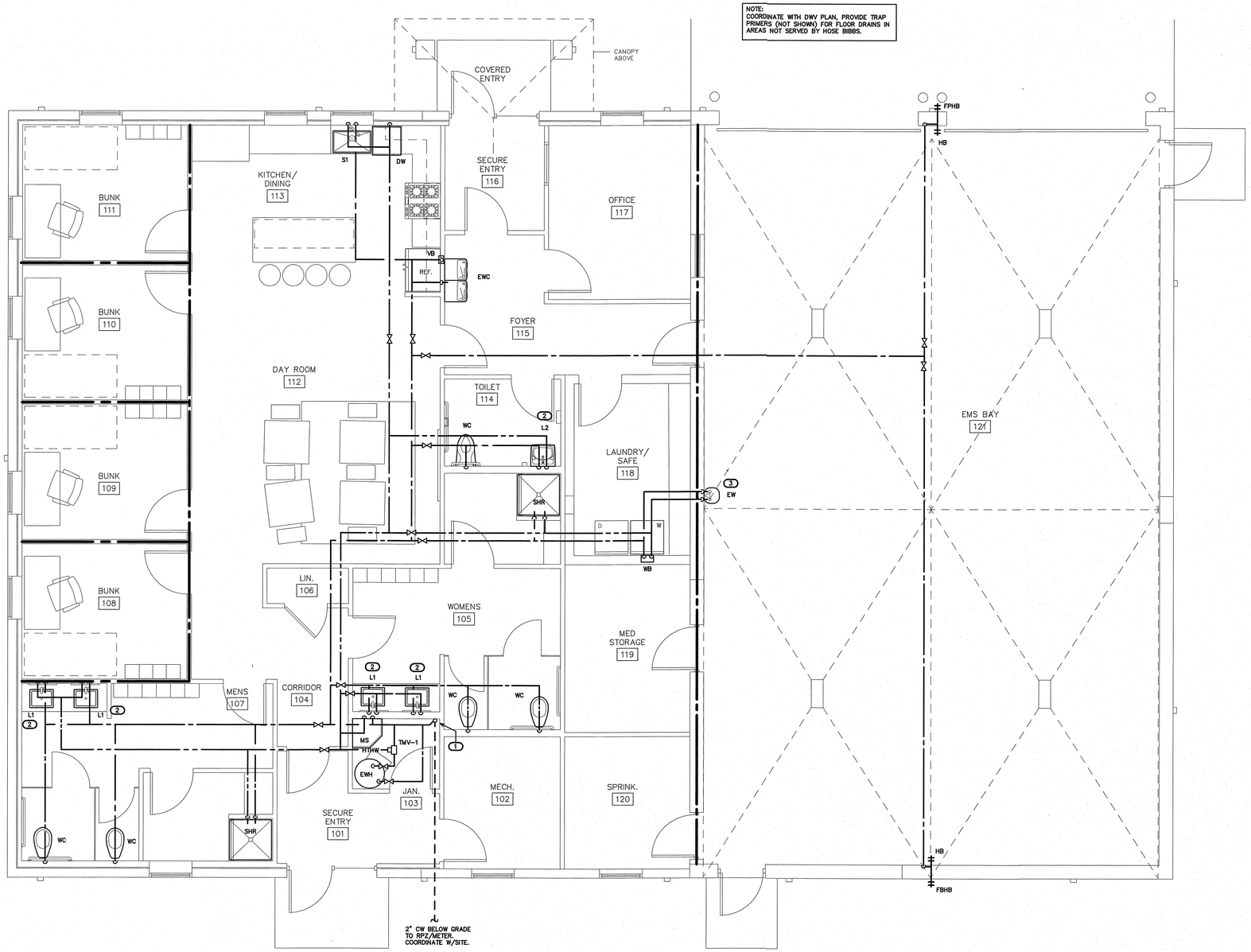
1. RISE CW FROM BELOW GRADE TO MAIN SHUT-OFF VALVE A.F.F., RISE TO RUN CW MAIN ABOVE CEILING. VERIFY LOCATION. RISE IN WALL W/ACCESS DOOR IF REQUIRED.
2. PROVIDE TMV-2 AT LAVATORY FOR CW AND 110 DEG. F (MAX) MTHW TO FAUCET. LOCATE TMV (NOT SHOWN) IN A PROPER MAINTENANCE ACCESSIBLE AREA BELOW FIXTURE, OR AS REQUIRED.
3. PROVIDE/VERIFY LTHW TO EYEWASH (EW) VIA EMERGENCY FIXTURE MIXING VALVE (NOT SHOWN- SEE FIXTURE SCHEDULE).

NOTE:
PROPERLY PROTECT/INSULATE ALL PIPING IN UNCONDITIONED AREAS (HEAT TAPE, INSULATION, ETC.). VERIFY ROUTING OF WATER LINES W/ARCHITECT. AVOID WINDOWS, ETC. ALL LINES, VALVES, ETC., SHOWN FOR CLARITY. ALL COMPONENTS MAY NOT BE SHOWN, VERIFY LOCATIONS. COORDINATE WITH ARCHITECT, ALL TRADES, STRUCTURE AS REQUIRED. (TYP)

NOTE:
ALL INTERIOR WALLS ARE TO THE ROOF DECK AND ARE NEW SMOKE PARTITIONS. SEE ARCHITECTURAL SHEETS FOR LOCATIONS AND DETAILS.

VERIFY QUANTITY, MOUNTING LOCATION OF HB, FPHB WITH OWNER, ARCHITECT. (TYP)

NOTE:
COORDINATE WITH DWV PLAN. PROVIDE TRAP PRIMERS (NOT SHOWN) FOR FLOOR DRAINS IN AREAS NOT SERVED BY HOSE BIBBS.



1 P-3 WATER PLAN
SCALE: 1/4" = 1'-0"

Coastal Architecture PLLC

Architectural
Design
Planning
Interiors

AIA
Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

11/25/25
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22036 BENJAMIN E. BURKE

WATER PLAN

25003

ISSUED:	11/25/2025
DWG BY:	MRH
CKD BY:	BEB

REVISIONS

SHEET NO.
P-3

ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652

UNDERGROUND STEEL GAS PIPING CORROSION PROTECTION:
PIPE SHALL HAVE A FACTORY-APPLIED, ELECTRICALLY-INSULATING COATING. FITTINGS AND JOINTS BETWEEN SECTIONS OF COATED PIPE SHALL BE COATED IN ACCORDANCE WITH THE COATING MFR SPECS. UNDERGROUND PIPING SYSTEMS SHALL BE INSTALLED A MIN. DEPTH OF 12 INCHES BELOW GRADE, AND SHALL BE REPUBLIC STEEL X-TRU-COAT (OR EQUAL), PLASTIC COATED SCHEDULE 40 ASTM A-53 STEEL PIPE W/WELDED JOINTS, USING X-TRU-TAPE AND PRIMER AT EACH JOINT. WRAP JOINTS SPIRALLY WITH A MINIMUM OVERLAP OF 1/2 TAPE WIDTH. EXTEND WRAP NOT LESS THAN 3" ABOVE GRADE. PROVIDE HIGH VOLTAGE HOLIDAY DETECTOR TEST OF COATING TO CHECK FOR HOLIDAYS. PROVIDE CATHODIC PROTECTION TO MEET REQUIREMENTS OF NACE STANDARD RP0169. ALL UNDERGROUND GAS PIPING PROTECTION SHALL COMPLY WITH NCSBC FUEL GAS SECT. 404.

NOTE:
ALL INTERIOR WALLS ARE TO THE ROOF DECK AND ARE NEW SMOKE PARTITIONS. SEE ARCHITECTURAL SHEETS FOR LOCATIONS AND DETAILS.

NOTE:
CONCEAL GAS PIPING RUN TO BLOCK WALLS. COORDINATE W/STRUCTURE, ARCHITECT, OWNER, G.C., AHJ, ETC. (TYP)

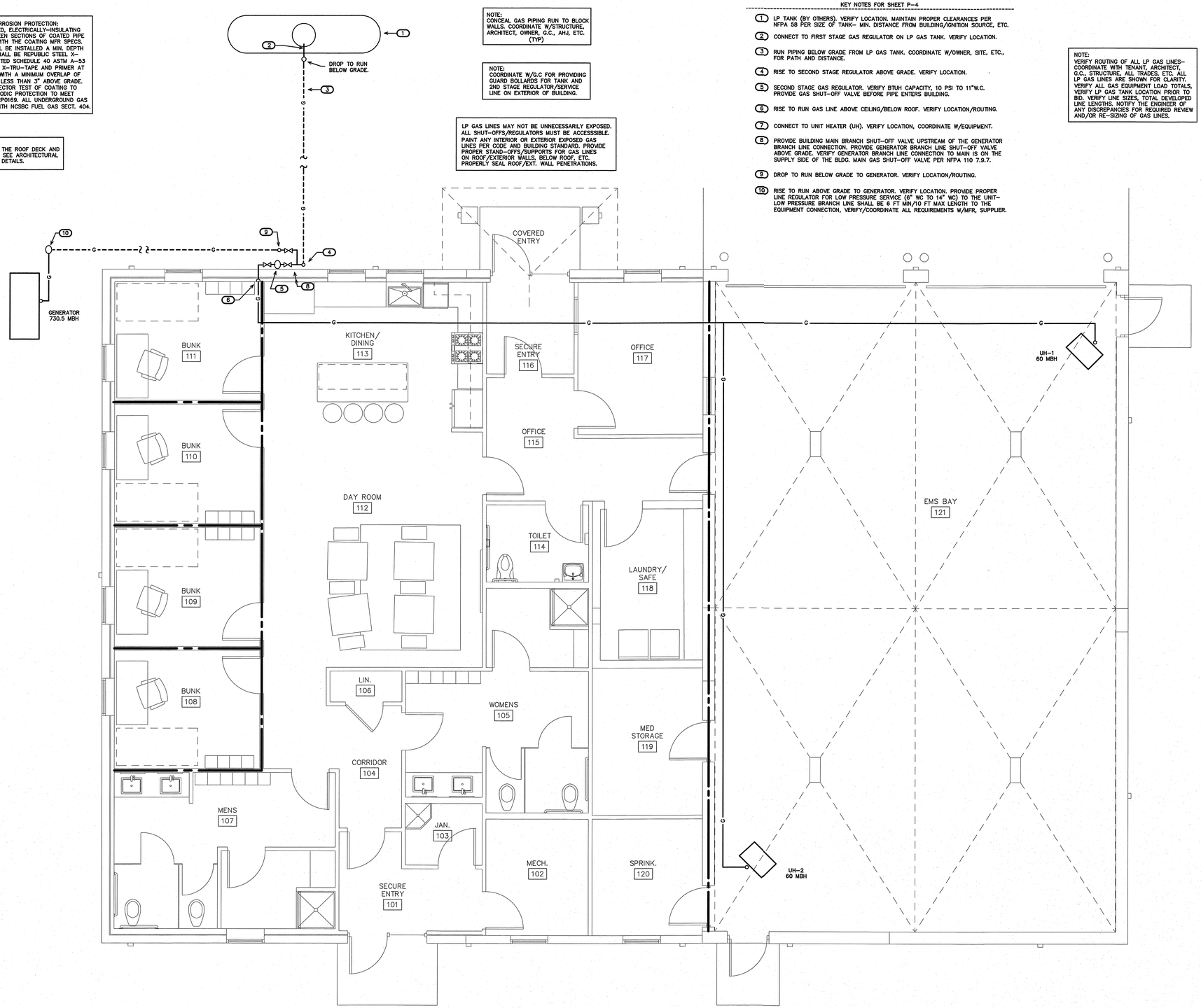
NOTE:
COORDINATE W/G.C FOR PROVIDING GUARD BOLLARDS FOR TANK AND 2ND STAGE REGULATOR/SERVICE LINE ON EXTERIOR OF BUILDING.

LP GAS LINES MAY NOT BE UNNECESSARILY EXPOSED. ALL SHUT-OFFS/REGULATORS MUST BE ACCESSSIBLE. PAINT ANY INTERIOR OR EXTERIOR EXPOSED GAS LINES PER CODE AND BUILDING STANDARD. PROVIDE PROPER STAND-OFFS/SUPPORTS FOR GAS LINES ON ROOF/EXTERIOR WALLS, BELOW ROOF, ETC. PROPERLY SEAL ROOF/EXT. WALL PENETRATIONS.

KEY NOTES FOR SHEET P-4

1. LP TANK (BY OTHERS). VERIFY LOCATION. MAINTAIN PROPER CLEARANCES PER NFPA 58 PER SIZE OF TANK- MIN. DISTANCE FROM BUILDING/IGNITION SOURCE, ETC.
2. CONNECT TO FIRST STAGE GAS REGULATOR ON LP GAS TANK. VERIFY LOCATION.
3. RUN PIPING BELOW GRADE FROM LP GAS TANK. COORDINATE W/OWNER, SITE, ETC., FOR PATH AND DISTANCE.
4. RISE TO SECOND STAGE REGULATOR ABOVE GRADE. VERIFY LOCATION.
5. SECOND STAGE GAS REGULATOR. VERIFY BTUH CAPACITY, 10 PSI TO 11"W.C. PROVIDE GAS SHUT-OFF VALVE BEFORE PIPE ENTERS BUILDING.
6. RISE TO RUN GAS LINE ABOVE CEILING/BELOW ROOF. VERIFY LOCATION/ROUTING.
7. CONNECT TO UNIT HEATER (UH). VERIFY LOCATION, COORDINATE W/EQUIPMENT.
8. PROVIDE BUILDING MAIN BRANCH SHUT-OFF VALVE UPSTREAM OF THE GENERATOR BRANCH LINE CONNECTION. PROVIDE GENERATOR BRANCH LINE SHUT-OFF VALVE ABOVE GRADE. VERIFY GENERATOR BRANCH LINE CONNECTION TO MAIN IS ON THE SUPPLY SIDE OF THE BLDG. MAIN GAS SHUT-OFF VALVE PER NFPA 110 7.9.7.
9. DROP TO RUN BELOW GRADE TO GENERATOR. VERIFY LOCATION/ROUTING.
10. RISE TO RUN ABOVE GRADE TO GENERATOR. VERIFY LOCATION. PROVIDE PROPER LINE REGULATOR FOR LOW PRESSURE SERVICE (6" WC TO 14" WC) TO THE UNIT-LOW PRESSURE BRANCH LINE SHALL BE 6 FT MIN/10 FT MAX LENGTH TO THE EQUIPMENT CONNECTION. VERIFY/COORDINATE ALL REQUIREMENTS W/MFR, SUPPLIER.

NOTE:
VERIFY ROUTING OF ALL LP GAS LINES-COORDINATE WITH TENANT, ARCHITECT, G.C., STRUCTURE, ALL TRADES, ETC. ALL LP GAS LINES ARE SHOWN FOR CLARITY. VERIFY ALL GAS EQUIPMENT LOAD TOTALS, VERIFY LP GAS TANK LOCATION PRIOR TO BID. VERIFY LINE SIZES, TOTAL DEVELOPED LINE LENGTHS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOR REQUIRED REVIEW AND/OR RE-SIZING OF GAS LINES.



1 P-4 LP GAS PLAN
SCALE: 1/4" = 1'-0"

Coastal Architecture PLLC
Architectural Design Planning Interiors
AIA
Member of the American Institure of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
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Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

11/25/25
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE

LP GAS PLAN

25003
ISSUED: 11/25/2025
DWG BY: DS
CKD BY: BEB
REVISIONS

SHEET NO.
P-4

ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652

(VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN)

PIPE SIZING SCHEDULE		
FIXTURE TYPE	DRAIN	VENT
(EW) EYEWASH	1 1/4"	1-1/4"
(EWC) ELECTRIC WATER COOLER	1 1/4"	1 1/4"
(FD) FLOOR DRAIN	2"	1-1/4"
(L) LAVATORY	1-1/2"	1-1/4"
(MS) MOP SINK	3"	1-1/2"
(S) SINK	1-1/2"	1-1/4"
(TD) TRENCH DRAIN	4"	2"
(WB) WASHING MACHINE BOX	2"	1-1/4"
(WC) FLUSH VALVE WATER CLOSET	3"	1-1/2"

RISER NOTES:

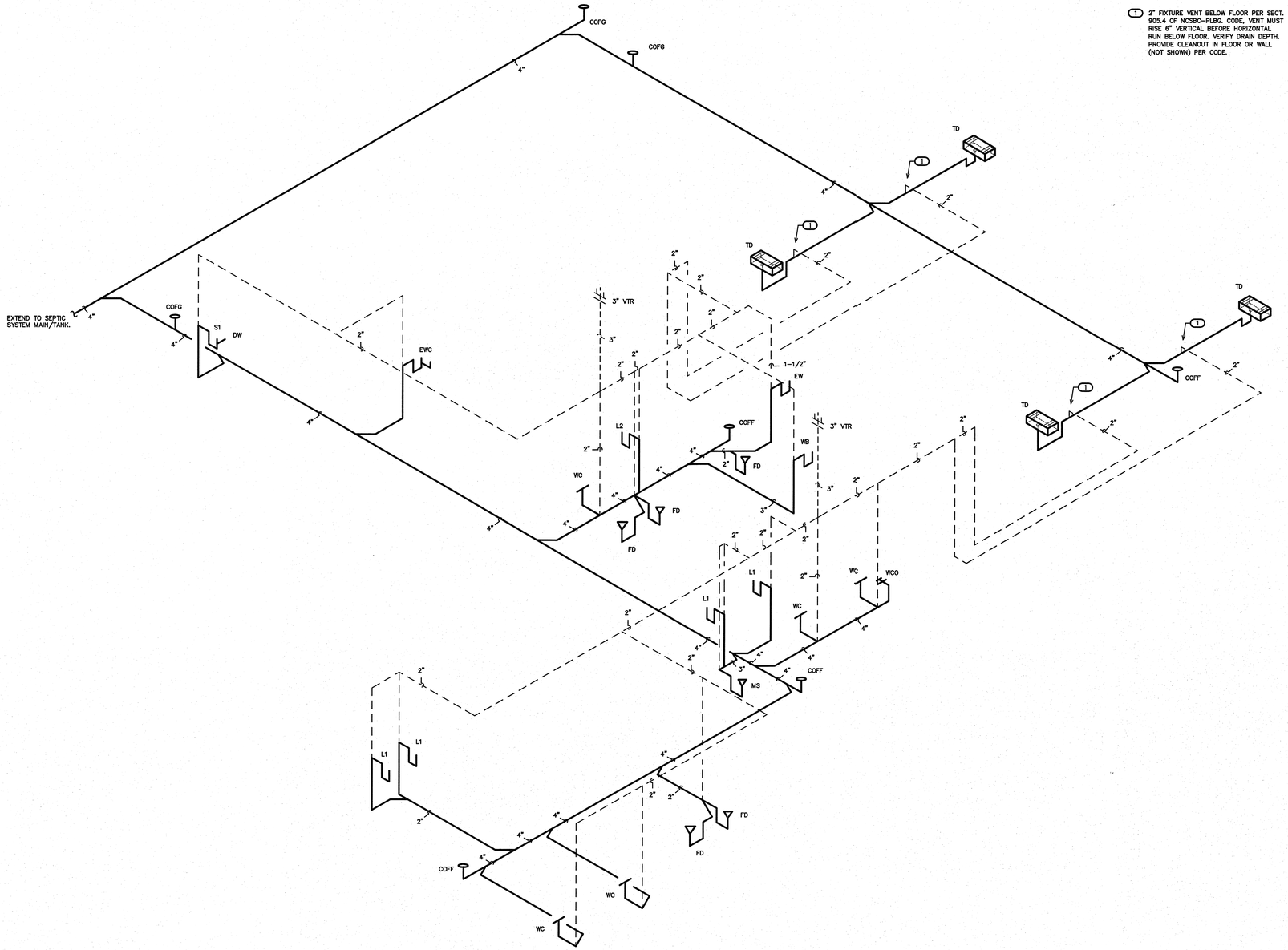
REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE. SEE PIPE SIZING SCHEDULE.
MINIMUM 2" DRAIN LINE SIZE UNDER SLAB.
MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED.
PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

NOTE:

PROVIDE PROPER VENT THRU ROOF (VTR). RUN HORIZONTALLY AS REQUIRED TO MAINTAIN 10'-0" CLEARANCE FROM ANY INTAKES. PROPERLY FLASH ANY ROOF PENETRATION. (TYP)

KEY NOTES FOR SHEET P-5

(1) 2" FIXTURE VENT BELOW FLOOR PER SECT. 905.4 OF NCSBC-PLBG. CODE, VENT MUST RISE 6" VERTICAL BEFORE HORIZONTAL. RUN BELOW FLOOR. VERIFY DRAIN DEPTH. PROVIDE CLEANOUT IN FLOOR OR WALL (NOT SHOWN) PER CODE.



1 P-5 DWV RISER
SCALE: NTS

Coastal Architecture PLLC

Architectural
Design
Planning
Interiors

AIA

Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

11/25/25

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE

DWV RISER

25003

ISSUED:	11/25/2025
DWG BY:	DS
CKD BY:	BEB

REVISIONS

SHEET NO.
P-5

ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652

(VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN)

PIPE SIZING SCHEDULE		
FIXTURE TYPE	CW	HW
(DW) DISHWASHER	–	1/2" *
(EW) EYEWASH	1/2" *	1/2" *
(EWC) ELECTRIC WATER COOLER	1/2" *	–
(FPHB) FREEZE PROOF HOSE BIBB	1/2"	–
(HB) HOSE BIBB	1/2"	–
(L) LAVATORY	1/2"	1/2"
(MS) MOP SINK	1/2"	1/2"
(S) SINK	1/2"	1/2"
(SHR) SHOWER	1/2"	1/2"
(VB) VALVE BOX	1/2" *	–
(WB) WASHING MACHINE BOX	1/2" *	1/2" *
(WC) FLUSH VALVE WATER CLOSET	1"	–

* PROVIDE BACKFLOW PREVENTER PER NCSBC-PLUMBING SECT. 608.3, EX: ASSE 1024 (WATTS SERIES 7 OR EQUAL) ASSE 1022 (WATTS SERIES SD-3 EQUAL) ETC., WHERE REQUIRED IF NOT AN INTEGRAL PART OF THE EQUIPMENT.

RISER NOTES:

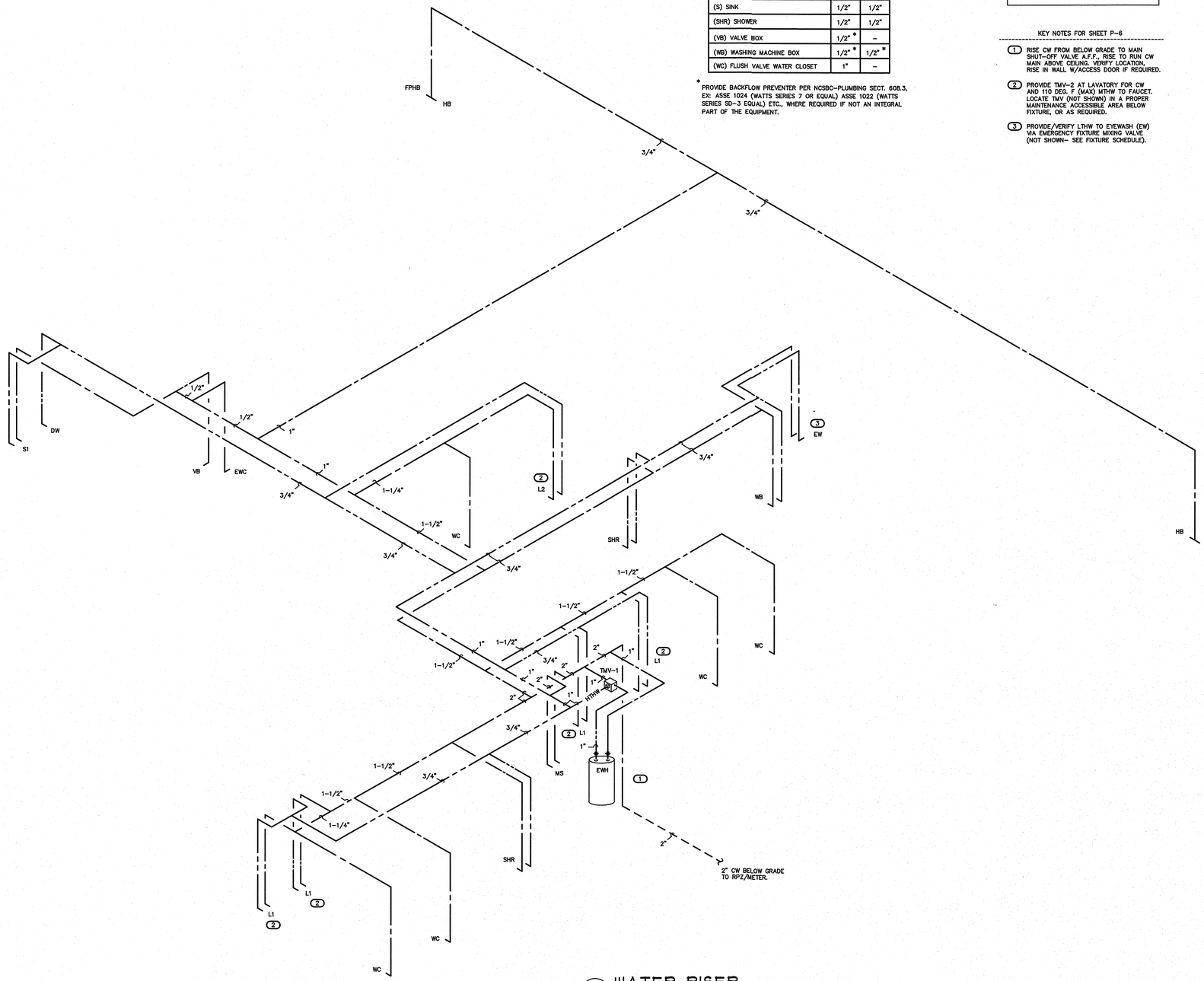
REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE. SEE PIPE SIZING SCHEDULE.

MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED. PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

NOTE:
SEE PLAN FOR SHUT-OFF VALVE LOCATIONS. COORDINATE LOCATION AND NUMBER WITH LOCAL INSPECTIONS DEPARTMENT. PROVIDE ACCESS DOORS IF REQUIRED.

KEY NOTES FOR SHEET P-6

1. RISE CW FROM BELOW GRADE TO MAIN SHUT-OFF VALVE A.F.F., RISE TO RUN CW MAIN ABOVE CEILING. VERIFY LOCATION, RISE IN WALL W/ACCESS DOOR IF REQUIRED.
2. PROVIDE TMV-2 AT LAVATORY FOR CW AND 110 DEG. F (MAX) MTHW TO FAUCET. LOCATE TMV (NOT SHOWN) IN A PROPER MAINTENANCE ACCESSIBLE AREA BELOW FIXTURE, OR AS REQUIRED.
3. PROVIDE/VERIFY LTHW TO EYEWASH (EW) VIA EMERGENCY FIXTURE MIXING VALVE (NOT SHOWN- SEE FIXTURE SCHEDULE).



1/P-6 WATER RISER
SCALE: NTS

ENGINEER

BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@dg-nc.com
Corp. License # C-2652

Coastal Architecture PLLC

Architectural
Design
Planning
Interiors

AIA

Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

11/25/25
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22039 BENJAMIN E. BURKE

WATER RISER

25003

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REVISIONS	

SHEET NO.
P-6

2018 NCSBC, FUEL GAS CODE– TABLE 402.4(25)

NOTE:
1ST STAGE PIPE SIZES BASED UPON AN INITIAL PRESSURE OF 10 PSI AND A PRESSURE DROP OF 1 PSI AT 150 FEET IN TOTAL LENGTH.
PIPE SIZES SHOWN ARE NOMINAL INSIDE DIAMETER.
TOTAL CONNECTED LOAD (OVERALL) = 850,500 BTUH

2018 NCSBC, FUEL GAS CODE– TABLE 402.4(28)

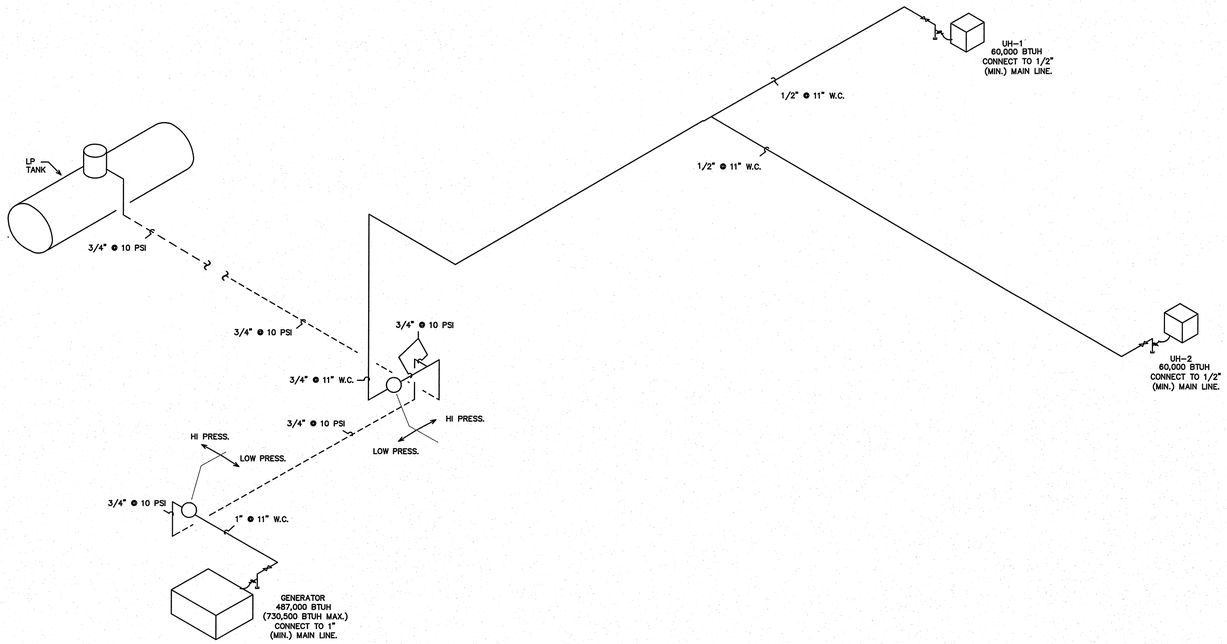
GENERATOR LINE NOTE:
2ND STAGE PIPE SIZES BASED UPON AN INITIAL PRESSURE OF 11" WC AND A PRESSURE DROP OF 1/2" WC AT 10 FEET IN TOTAL LENGTH.
PIPE SIZES SHOWN ARE NOMINAL INSIDE DIAMETER.
TOTAL CONNECTED LOAD (GENERATOR ONLY) = 730,500 BTUH

NOTE:
PROVIDE SHUT–OFF VALVE, DIRTLEG, UNION, AND FLEXIBLE CONNECTION OR AS REQUIRED TO GENERATOR. VERIFY W/MFR.

2018 NCSBC, FUEL GAS CODE– TABLE 402.4(28)

BUILDING MAIN LINE NOTE:
2ND STAGE PIPE SIZES BASED UPON AN INITIAL PRESSURE OF 11" WC AND A PRESSURE DROP OF 1/2" WC AT 125 FEET IN TOTAL LENGTH.
PIPE SIZES SHOWN ARE NOMINAL INSIDE DIAMETER.
TOTAL CONNECTED LOAD (UNIT HEATERS ONLY) = 120,000 BTUH

NOTE:
PROVIDE SHUT–OFF VALVE, DIRTLEG, UNION, AND FLEXIBLE CONNECTION OR AS REQUIRED TO EACH UNIT HEATER (UH). VERIFY CONNECTION TYPE/SIZE WITH EACH PIECE OF EQUIPMENT.



1 P-1 LP GAS RISER
SCALE: NTS

ENGINEER
BURKE DESIGN GROUP
3305–109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771–1916
FAX: (919) 779–0826
email: ben@bdg–nc.com
Corp. License # C–2652

Coastal Architecture PLLC
Architectural
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AIA
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Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

11/25/25
NORTH CAROLINA REGISTERED PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E BURKE

LP GAS RISER

25003

ISSUED:	11/25/2025
DWG BY:	DS
CKD BY:	BEB

REVISIONS

SHEET NO.
P-7

Beaufort EMS M1

HVAC EQUIPMENT SCHEDULE

HVAC SYSTEM #1	
AHU-1 DIRECT EXPANSION FAN COIL UNIT	* CARRIER MODEL #FV4CNB005, 4 WAY, MULTIPOISE FAN COIL UNIT. 6 KW HEATER. NOMINAL CAPACITY = 42,000 BTUH. 1400 CFM NOMINAL. PROVIDE HARD SHUT-OFF TXV VALVE. 3.5 TON NOMINAL. PROVIDE PROGRAMMABLE THERMOSTAT AND FILTER RACK WITH HINGED DOOR. 1/2HP, 4.3A MOTOR FLA, 28.9A HEAT FLA, 208V, 1 PH, 44.7A MCA, 45A MOCP AHU & HEAT.
HP-1 OUTDOOR HEAT PUMP UNIT	* CARRIER MODEL #25SPA542A003, 3.5 TON OUTDOOR HEAT PUMP UNIT, 15 SEER, PROVIDE CYCLE PROTECTOR, LOW PRESSURE SWITCH, CRANKCASE HEATER, 208 VOLT, 1 PHASE. COMP 18.6A RLA, FAN 1.4A FLA, OUTDOOR HEAT PUMP 24.7A MCA, 40A MOCP.

* NO SUBSTITUTIONS

Beaufort EMS M1

DUCTLESS SPLIT SYSTEM HEAT PUMP SCHEDULE

DHP-1.0 OUTDOOR HEAT PUMP UNIT	* MITSUBISHI MODEL #MXZ-3C24NA4, 2 TON OUTDOOR HEAT PUMP UNIT, 16 SEER. 208 VOLT, 1 PHASE, CONDENSING UNIT 22.1A MCA, 25A MOCP. FAN COIL UNIT IS POWERED VIA FIELD PROVIDED WIRING FROM OUTDOOR UNIT. SERVES (4) INDOOR FAN-COIL UNIT (DFC-1.1, DFC-1.2, DFC-1.3, DFC-1.4).
DFC-1.1,1.2,1.3,1.4 DIRECT EXPANSION FAN COIL UNIT	* MITSUBISHI MODEL #MSZ-FS06NA FAN COIL UNIT. NET COOLING CAPACITY = 6,000 BTUH, 167 CFM LO TO 304 CFM HI. 0.5 TON NOMINAL. PROVIDE WIRED PROGRAMMABLE THERMOSTAT, AND CONDENSATE PUMP. FAN MOTOR 0.65, FLA 208 VOLT. SINGLE PH.
DHP-2.0 OUTDOOR HEAT PUMP UNIT	* MITSUBISHI MODEL #MXZ-SM60NAM2, 5 TON OUTDOOR HEAT PUMP UNIT, 17 SEER. 208 VOLT, 1 PHASE, CONDENSING UNIT 55.0A MCA, 60A MOCP. FAN COIL UNIT IS POWERED VIA FIELD PROVIDED WIRING FROM OUTDOOR UNIT TO BRANCH BOX. SERVES (3) INDOOR FAN-COIL UNIT (DFC-1.1, DFC-1.2, DFC-1.3).
DFC-2.1, 2.2, 2.3 DIRECT EXPANSION FAN COIL UNIT	* MITSUBISHI MODEL #MSZ-FS18NA FAN COIL UNIT. NET COOLING CAPACITY = 18,000 BTUH, 272 CFM LO TO 410 CFM HI. 1.5 TON NOMINAL. PROVIDE WIRED PROGRAMMABLE THERMOSTAT, AND CONDENSATE PUMP. FAN MOTOR 0.65, FLA 208 VOLT. SINGLE PH.

* NO SUBSTITUTIONS

UNIT HEATER SCHEDULE

UNIT HEATER 60,000 BTUH (UH-1 & 2)	* STERLING MODEL# GG60 LP GAS FIRED UNIT HEATER, WITH AUTOMATIC SPARK IGNITION, 60,000 BTUH INPUT, 740 CFM, 1/2 GAS INLET, 4" FLUE, 1/12 HP, 120 VOLT, 4.1 AMP. PROVIDE AIR SWITCH, GAS SHUT-OFF VALVE, UNION, DIRT LEG, AND FLEXIBLE CONNECTION TO UNIT. PROVIDE DIRECT EXHAUST VENT TROUGH THE ROOF USING COMBUSTION AIR INLET KIT. PROVIDE ALL FLASHING AS REQUIRED.

* NO SUBSTITUTIONS

ELECTRIC WALL HEATER SCHEDULE

ELECTRIC WALL HEATER (EH-1)	* QMARK MODEL #CWH1202DSF ELECTRIC FAN-FORCED WALL HEATER, 1500 WATTS, 7.3 AMPS 208 VOLT, 1 PHASE PROVIDE WALL MOUNTING BOX, DISCONNECT SWITCH AND INTEGRAL THERMOSTAT.

* NO SUBSTITUTIONS

Beaufort EMS M1

EXHAUST FAN SCHEDULE

EXHAUST FAN #X (EF-X)	* CARNES MODEL# VCDD020C EXHAUST FAN, 196 CFM @ 1/4" SP, 740 RPM, 1.8 AMPS, 120V. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE SWITCH AND WIRE THE UNIT. THE HVAC CONTRACTOR SHALL PROVIDE UNIT, 8" RIGID DUCT TO EXTERIOR, FLASHING AND ROOF CAP. LOCATE EXHAUST TERMINATION A MINIMUM OF 10'-0" FROM ANY INTAKES.
EXHAUST FAN #X (EF-X)	* CARNES MODEL# VCDK08C EXHAUST FAN, 60 CFM @ 1/4" SP, 1500 RPM, 0.29 AMPS, 120V. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE SWITCH AND WIRE THE UNIT. THE HVAC CONTRACTOR SHALL PROVIDE UNIT, 6" RIGID DUCT TO ROOF CAP. SEE PLAN FOR DUCT LAYOUT. LOCATE EXHAUST TERMINATION A MINIMUM OF 10'-0" FROM ANY INTAKES.
EXHAUST FAN #X (EF-X)	* CARNES MODEL# VCDK009C EXHAUST FAN, 88 CFM @ 1/4" SP, 1330 RPM, 0.38 AMPS, 120V. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE SWITCH AND WIRE THE UNIT. THE HVAC CONTRACTOR SHALL PROVIDE UNIT, 6" RIGID DUCT TO ROOF CAP. SEE PLAN FOR DUCT LAYOUT. LOCATE EXHAUST TERMINATION A MINIMUM OF 10'-0" FROM ANY INTAKES.

* NO SUBSTITUTIONS

NOTE: RUN EXHAUST DUCTS HORIZONTALLY AS REQUIRED TO MAINTAIN 10'-0" MINIMUM SEPARATION FROM ANY INTAKES.

AIR DISTRIBUTION SCHEDULE

MARK	* MANUFACTURER	MODEL NO.	NECK SIZE	FACE SIZE	MATERIAL	SERVICE	NOTES
A	CARNES	SPAB224	SEE FLEXIBLE DUCT SCHEDULE	24" X 24"	STEEL	SUPPLY	LAY-IN CEILING, WHITE 4-WAY BLOW
B	CARNES	RTDBH	4" X 12"	6" X 14"	STEEL	SUPPLY	DUCT, SIDE WALL, OR CEILING MOUNTED
RA	CARNES	SPRB22	SEE FLEXIBLE DUCT SCHEDULE	24" X 24"	STEEL	RETURN	LAY-IN CEILING, WHITE

* NO SUBSTITUTIONS

COORDINATE BORDER TYPE WITH THE CEILING TYPE. SEE ARCH SHEETS
PROVIDE CUT SHEETS TO OWNER/ARCH. PRIOR TO ORDERING.

FLEXIBLE DUCTWORK SIZES

MAXIMUM CFM'S

SIZES	SUPPLY	RETURN
6"	100	100
8"	115	115
10"	250	250
12"	400	350
14"	550	500
16"	NA	900

(CHANGE OUT EXISTING FLEX DUCTS AND COLLARS AS REQUIRED TO GET NEW CFM'S SHOWN)

FLEXIBLE DUCTWORK NOTES

1) INSTALL FLEXIBLE DUCTWORK RUNS AS STRAIGHT AS POSSIBLE.

2) DO NOT ALLOW FLEXIBLE DUCT TO SAG BETWEEN SUPPORTS.

3) DO NOT STRETCH A SHORT SECTION TO FIT A SLIGHTLY LONGER SECTION. THIS DISTORTS THE DUCT SHAPE AND IMPEDES AIR FLOW.

4) DO NOT CRUSH DUCTWORK TO FIT IN A SPACE SMALLER THAN ITS ORIGINAL OUTSIDE DIAMETER. MAXIMUM ALLOWABLE DEFORMATION IS 75% OF ORIGINAL VOLUME.

5) USE RIGID 90 DEGREE ELBOWS AT ANY LOCATION WHERE THE DUCTWORK BECOMES DISTORTED.

6) EXTREME CARE SHALL BE TAKEN TO ELIMINATE ANY REDUCTION IN FLOW WITHIN THE FLEXIBLE DUCTS. THE MECH. CONTRACTOR WILL BE REQUIRED TO REPLACE THE FLEXIBLE DUCT WITH RIGID IF PROPER FLOW IS NOT OBTAINED.

7) SIZE ALL FLEXIBLE DUCT SO AS NOT TO EXCEED MAXIMUM CFM'S GIVEN IN TABLE.

GENERAL NOTES – MECHANICAL

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE AND ALL LOCAL AND OTHER APPLICABLE CODES.
2. ANY PERMITS AND INSPECTION FEES SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR (MC).
3. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE MC SHALL COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC) AND OTHER TRADES.
4. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES.
5. THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. FOR DIMENSIONS REFER TO THE ARCHITECTURAL PLANS.
6. THE MC SHALL BE RESPONSIBLE FOR ALL ELECTRICAL STARTERS INTERLOCKS, CONTROL WIRING CONDUIT AND POWER WIRING FROM DISCONNECTS TO HIS EQUIPMENT, USING A LICENSED ELECTRICIAN.
7. THE MC SHALL USE FIRE DAMPERS FOR PROTECTION OF THE OPENING IN ACCORDANCE WITH STATE AND LOCAL CODES IN ALL LOCATIONS WHERE PENETRATIONS OF RATED WALLS AND FLOORS OCCUR. SEE ARCHITECTURAL PLANS FOR RATED WALL AND FLOOR LOCATIONS. PROVIDE ACCESS DOORS AT ALL DAMPER LOCATIONS. LOCATE DOORS FOR EASY ACCESS.
8. INSTALL FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCTWORK AHU. ALL MECHANICAL EQUIPMENT SHALL OPERATE FREE OF OBJECTIONAL NOISE AND VIBRATION.
9. INSTALL TURNING VANES IN SUPPLY DUCTS AT ALL ELBOWS AND SPLITTER DAMPERS. PROVIDE BALANCING DAMPERS IN ALL DUCTS WHERE SHOWN OR REQUIRED FOR SYSTEM BALANCING.
10. DUCT DIMENSIONS ARE SHOWN INSIDE CLEAR.
11. THE MC SHALL KEEP THE PREMISES CLEAR OF DEBRIS FROM HIS WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT THE COMPLETION OF HIS WORK. HE SHALL ALSO LEAVE CLEAN ALL EXPOSED EQUIPMENT IN HIS CONTRACT.
12. PROVIDE ALL REQUIRED ROOF PENETRATIONS FOR THE INSTALLATION OF THE NEW EQUIPMENT. ALL FLASHINGS ARE BY THE MECHANICAL CONTRACTOR. ALL ROOFING WORK SHALL BE DONE BY A LICENSED ROOFING CONTRACTOR SO AS TO MAINTAIN ORIGINAL WARRANTY.
13. THE M.C. SHALL COORDINATE WITH AND PROVIDE EQUIPMENT SPEC. SHEETS TO THE GENERAL AND ELECTRICAL CONTRACTORS FOR REVIEW PRIOR TO ORDERING EQUIPMENT.
14. PROPERLY SUPPORT ALL DUCT WORK, AND EQUIP FROM STRUCTURE. PROVIDE ALL STRUCTURAL SUPPORTS FOR THE LOADS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.

LEGEND – MECHANICAL

- 12 X 8 — RECTANGULAR DUCTWORK. INSIDE CLEAR DIMENSION INDICATED (WIDTH X HEIGHT)
- FLEXIBLE DUCTWORK
- 12" DIA. — ROUND GALVANIZED STEEL DUCT INSIDE CLEAR DIMENSION INDICATED.
- SUPPLY DIFFUSER
- RETURN GRILLE
- T / AHU-1 — WALL MOUNTED THERMOSTAT (UNIT SERVED IS INDICATED)
- X / XXX — GRILLE TYPE / MIN. CFM
- 1 HOUR FIRE BARRIER
- D — D — CONDENSATE PIPING
- R — R — REFRIGERANT PIPING

OA SCHEDULE

OUTDOOR VENTILATION AIR PROVIDED PER TABLE 403.3 NCSBC MECHANICAL CODE.

APPLICATION	SQUARE FOOTAGE (SF)	AREA OUTDOOR AIR FLOW RATE (CFM/SF)	PEOPLE OUTDOOR AIR FLOW RATE (CFM/PERSON)	OCCUPANCY DENSITY RATE (# PEOPLE/ 1000SF)	OCCUPANCY (# PEOPLE)	AREA OUTDOOR AIR FLOW (CFM)	PEOPLE OUTDOOR AIR FLOW (CFM)	TOTAL (CFM)
BUNK RM	480	0.06	5	10	4	29	20	49
DAY RM	329	0.06	5	10	5	20	25	45
OFFICE	241	0.06	5	5	2	14	10	24
CORRIDOR	218	0.06	–	–	~	13	–	13
STORAGE	104	0.12	–	–	~	12	–	12
TOTAL REQUIRED								143

OUTDOOR AIR PROVIDED FROM EACH HVAC UNIT **

HVAC UNIT	OUTDOOR AIR (CFM)
AHU-1	280 – 10" DIA. O.A. DUCT
TOTAL PROVIDED	280

APPLICATION	CFM
TOILETS	70 CFM/FLUSHING FIXTURE
SHOWER	50 CFM/SHOWER FIXTURE

5 FLUSHING FIXTURE X 70 CFM = 350 CFM
2 SHOWER FIXTURE X 50 CFM = 100 CFM

EXHAUST PROVIDED BY FIVE EXHAUST FANS, MAKE UP AIR BY TRANSFER AIR

*ACTUAL OCCUPANCY PER BUILDING TENANT AS ALLOWED BY 2018 NCSBC: MECHANICAL CODE, SECTION 403.3.1.1, EXCEPTION.

** SET OUTDOOR AIR DAMPER CONTROLS TO PROVIDE OUTDOOR AIR AS INDICATED IN THIS SCHEDULE.

OUTDOOR AIR CALCULATIONS

(EMS BAYS)

OUTSIDE AIR PROVIDED BY NATURAL VENTILATION PER NCSBC MECHANICAL CODE, SECTION 402. 1858 SQ.FT. TOTAL X 0.04 = 74 SQ.FT. REQUIRED FREE AREA. OPERABLE DOORS AND WINDOWS TO EXTERIOR PROVIDE 437 SQ.FT. OF FREE AREA.

APPENDIX B

2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)
MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEM AND EQUIPMENT

Thermal Zone 3A

winter dry bulb 16F
summer dry bulb 93F

Interior Design Conditions

winter dry bulb 72F
summer dry bulb 75F
relative humidity 50%

Building Heating Load (Tenant space only) 86,500 BTU/hr

Building Cooling Load (Tenant space only) 92,200 BTU/hr

Mechanical Spacing Conditioning System

Unitary – The tenant space is served the following systems:
(1) New 3.5 Ton split system heat pump unit
(1) New 5 Ton ductless split system heat pump unit
(1) New 2 Ton ductless split system heat pump unit
(2) New 60K btu gas fired unit heaters

Boiler – Not applicable to this project.

Chiller – Not applicable to this project.

Equipment efficiencies

Efficiencies and outputs are listed on equipment schedules – See drawings.

ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2852

Coastal Architecture PLLC
Architectural Design Planning Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

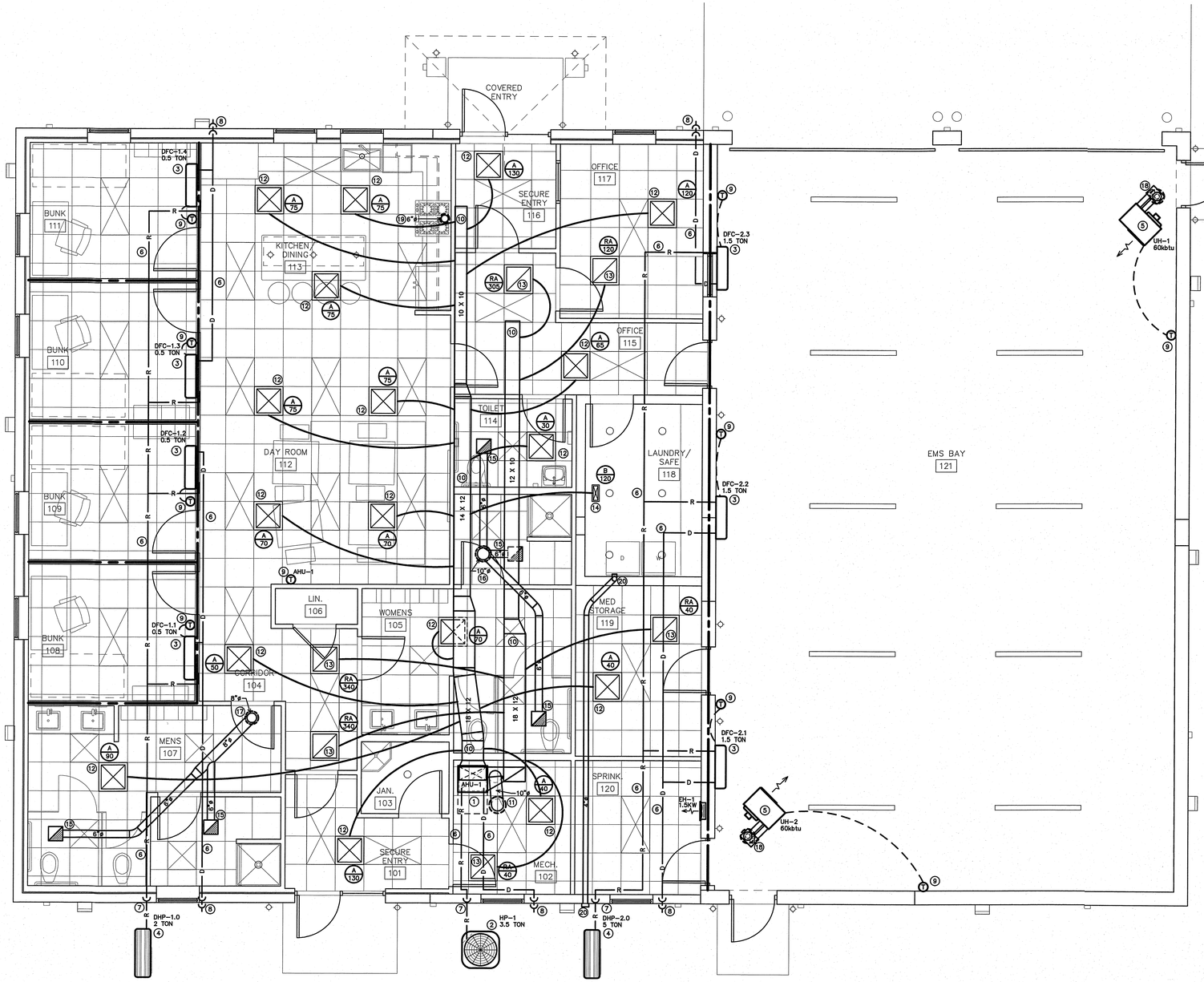
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HVAC SCHEDULES, NOTES, LEGEND

25003

ISSUED: 11/25/2025
DWG BY: RM
CKD BY: BEB
REVISIONS

SHEET NO.
M1



1 HVAC PLAN
SCALE: 1/4" = 1'-0"

PLAN NORTH

KEY NOTES FOR M :

1. NEW VERTICAL AIR HANDLING UNIT MOUNTED TO MECHANICAL ROOM FLOOR. SEE DETAIL 1/M3.
2. NEW HEAT PUMP MOUNTED ON CONCRETE PAD.
3. NEW WALL MOUNTED FAN COIL UNIT. MOUNT PER MANUFACTURERS INSTRUCTIONS.
4. NEW DUCTLESS SPLIT SYSTEM HEAT PUMP MOUNTED ON CONCRETE PAD.
5. NEW GAS FIRED 60KBTU UNIT HEATER. MOUNT PER MANUFACTURERS INSTRUCTIONS. GAS CONNECTION BY QUALIFIED GAS COMPANY INSTALLER.
6. RUN PIPING TIGHT TO STRUCTURE.(TYP)
7. RUN REFRIGERANT PIPING DOWN CONCEALED IN EXTERIOR WALL. INSULATE FULL LENGTH WITH CLOSED CELL FOAM INSULATION. COAT ALL INSULATION EXPOSED TO SUNLIGHT WITH UV RESISTANT PAINT.
8. RUN CONDENSATE PIPING DOWN CONCEALED IN EXTERIOR WALL TO 6" ABOVE FINISH GRADE. TERMINATE IN ELBOW TURNED DOWN.
9. NEW THERMOSTAT, MOUNT AT 48" AFF.
10. NEW DUCTWORK, MOUNTED TO ROOF STRUCTURE. RUN THROUGH ATTIC SPACE. SEE DETAIL 1/M3.
11. ROOF MOUNTED OUTSIDE AIR INTAKE HOOD TO 10" DIA. RIGID DUCT SUPPLYING AHU-1. AIR INTAKE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE EXHAUST DISCHARGE.
12. NEW LAY-IN SUPPLY AIR DIFFUSER.
13. NEW LAY-IN RETURN AIR GRILLE.
14. NEW SURFACE MOUNT SUPPLY AIR DIFFUSER.
15. NEW BATH ROOM EXHAUST FAN TO 6"ø RIGID DUCT. SEE PLAN FOR ADDITIONAL DUCTING, SEE SCHED. ON SHEET M1 FOR FAN SIZE.
16. NEW 10"ø RIGID DUCT TO ROOF TOP EXHAUST CAP FOR BATH ROOM EXHAUST. EXHAUST DISCHARGE SHALL BE 10'-0" MIN. FROM ANY AIR INTAKE.
17. NEW 6"ø RIGID DUCT TO ROOF TOP EXHAUST CAP FOR BATH ROOM EXHAUST. EXHAUST DISCHARGE SHALL BE 10'-0" MIN. FROM ANY AIR INTAKE.
18. NEW COMBUSTION AIR INLET BOX TO CONCENTRIC COMBUSTION AIR/FLUE PIPE THROUGH ROOF. COMBUSTION AIR/FLUE PIPE ACCESSORIES BY UNIT HEATER MANUFACTURER. INSTALL PER MANUFACTURER.
19. RANGE HOOD SHALL DISCHARGE TO THE ROOF THROUGH A 6"ø DUCT HAVING A SMOOTH INTERIOR SURFACE THAT IS AIR TIGHT, IS EQUIPPED WITH A BACK-DRAFT DAMPER AND SHALL BE INDEPENDENT OF ALL OTHER EXHAUST SYSTEMS. PROVIDE APPROPRIATELY SIZED TRANSITION FROM NEW HOOD TO NEW DUCT.
20. 4 INCH DRYER EXHAUST DUCT. TERMINATE AT WALL CAP WITH BACK DRAFT DAMPER. EACH DRYER CONNECTION WILL USE A HO-TURN DRYER VENT BOX. PROVIDE IN-LINE POWER VENTILATER (PV) WHERE DUCT LENGTH EXCEEDS CODE REQUIRED MAXIMUM. MC TO PROVIDE AND INSTALL, EC TO CONNECT.

NOTE:
ALL INTERIOR WALLS ARE TO THE ROOF DECK AND ARE NEW SMOKE PARTITIONS. SEE ARCHITECTURAL SHEETS FOR LOCATIONS AND DETAILS.

DRYER EXHAUST DUCT NOTES:

(CHAPTER 504 OF 2018 NORTH CAROLINA MECHANICAL CODE)

504.1 Installation

Clothes dryers shall be exhausted in accordance with the manufacturer's instructions. Dryer exhaust systems shall be independent of all other systems and shall convey the moisture and any products of combustion to the outside of the building

504.8.4.2 Manufacturer's instructions

The maximum length of the exhaust duct shall be determined by the dryer manufacturer's installation instructions. The code official shall be provided with a copy of the installation instructions for the make and model of the dryer. Where the exhaust duct is to be concealed, the installation instructions shall be provided to the code official prior to the concealment inspection. In the absence of fitting equivalent length calculations from the clothes dryer manufacturer, Table 504.8.4.1 shall be used.

Coastal Architecture PLLC

Architectural Design Planning Interiors

AIA

Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
252.247-2127
lee@coastalarchitecture.net

4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

11/25/25

NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BRIAN E. BURKE

HVAC PLAN

25003

ISSUED: 11/25/2025
DWG BY: RM
CKD BY: BEB
REVISIONS

SHEET NO.
M2

ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652

DIVISION 15 B – HEATING, VENTILATING AND AIR CONDITIONING

1.1 DESCRIPTION OF THE WORK

A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:

1. Heating, ventilation, and air conditioning equipment.
2. Ductwork.
3. Grilles and diffusers.
4. Controls and control wiring.
5. Condensate piping.

B. All work under this contract shall be installed in compliance with the latest edition of the following codes and standards insofar as they apply:

1. ASHRAE Guide
2. National Electric Code.
3. 2018 NC State Building Code: Mech Code.
4. The Electrical Specifications for this project.
5. SMACNA HVAC Duct Construction Standards.
6. All local codes and ordinances.
7. ARI rating.
8. 2018 NC State Building Code: Energy Conservation Code.

C. These codes are minimum standards. If codes require a more stringent method of construction than the specifications require, the codes shall govern.

D. The HVAC Contractor shall be licensed in North Carolina and have all local licenses required for the work.

1.2 INTENT

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

1.3 COORDINATION

A. Coordinate work with other contractors. Notify Owner of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Owner for a decision before resuming operations.

B. Locations shown are approximate. The HVAC Contractor shall verify with owner, the placement of equipment, fixtures, outlets, etc. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required.

C. Changes in duct or piping design caused by obstructions shall be submitted to Engineer in sketch form for study and comment prior to execution. Additional cost will not be allowed for this type of work.

1.4 SHOP DRAWINGS

A. Shop drawings shall be submitted for all major items of equipment. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified. Shop drawings shall include but are not limited to the following:

1. All equipment and accessories.
2. Grilles and diffusers.
3. Unit sizes and requirements.

PART 2 –PRODUCTS

2.1 EQUIPMENT

A. All air handling devices must have the manufacturer's recommended filter rack, for 1" thick filters.

2.2 PIPING

A. Condensate drain piping shall be PVC pipe. Provide tee and plug at changes in direction. Route pipe to proper termination point. All condensate piping shall be insulated with flexible elastomeric insulation. Provide copper piping in plenum areas.

2.3 DUCTWORK

A. Ductwork shall be built in accordance with SMACNA HVAC Duct construction standards. Furnish and install all supply, return, and ventilation ductwork shown, together with splitters, deflectors, dampers, etc. This work shall be constructed of new galvanized prime grade steel sheets. The gauges of metal to be used and the construction and bracing of joints shall be in accordance with the SMACNA recommendations.

B. Seal all sheet metal joints with fiber impregnated mastic.

C. Support from building structure on strap hangers not over 8 feet apart.

D. Use manufactured turning vanes in each elbow where required or where indicated on drawings.

E. Flexible connectors shall be 3 inches wide, of fireproof material and used to isolate noise between equipment and ductwork on supply and return side of all units.

F. Round runouts, where used, shall be built in accordance with the above standards, and each runout shall also have manufactured side take off, adjustable quadrant damper at all accessible locations and shall be of Owens Corning INL–25 flexible duct with UL label. Flex duct lengths allowed up to 14 feet. Duct must be supported with sufficient hangers in order to prevent sags. Serpentine routing will not be permitted. Quadrant damper to be 22 gauge easily adjustable manually with exterior handle (similar to H&C Kwik–set) and is not to be mounted in side take–off.

2.4 DUCT INSULATION (LOW PRESSURE)

A. All insulation, linings, coverings and adhesives shall have a flame spread classification of 25 or less and a smoke developed rating of not more than 50, exposed exterior piping.

B. All duct insulation shall comply with Section 604, of the N. C. Building Code: Mechanical Code

C. All supply and return ductwork shall be completely insulated, either internally or externally.

D. Rectangular ductwork shall be lined with two–inch thick, 1.5 lb. per cubic foot density, duct liner, Armstrong, CSG Ultraliner, Johns Manville or approved equal.

E. As an alternative to duct liner rectangular duct may be wrapped with Class 1 – 2", 3/4 lb. density (R–6.5) thick reinforced foil back fiberglass insulation, Owens–corning Series ED or equal. Tape shall be Kraft reinforced foil tape or equal.

F. Exhaust air duct does not require insulation, unless otherwise noted on the plans.

G. Insulation shall be held inplace with adhesive and welding pins 16" on center.

H. Duct dimensions shown on the drawings are Net Inside Dimensions

2.5 THERMOSTATS

A. Provide programmable electronic thermostats.
B. Submit proposed thermostats for approval.

2.6 ROOF PENETRATIONS

A. Provide pre–manufactured roof flashings compatible with equipment served.
B. Coordinate roof work with roof system used. Provide proper flashing as required.
C. Provide 1 year warranty on all roof work performed.

2.7 DUCT SMOKE DETECTORS

A. Duct detectors are not required since units air flows are 2000 cfm or less per NCSBC: Mechanical Code, Section 606.2.

PART 3 – EXECUTION

3.1 PIPING

A. The HVAC Contractor shall coordinate such routing with others, to line his work true to adjacent spaces and in a workmanlike manner and to use only short radius 90 degree elbows. Where required, piping to be sturdily supported and separated in a manner satisfactory to the Engineer.

B. The HVAC Contractor shall paint all exterior refrigerant piping, with UV resistant paint as recommended by the closed cell insulation manufacturer.

C. Insulate all condensate lines for their entire length with 1/2" closed cell insulation. Install insulation per the manufacturers recommendations.

3.2 ELECTRICAL WORK

A. The electrical contractor shall provide all switches, starters, wire conduit for the air conditioning, heating and ventilation equipment. Control wiring shall be by the heating and air conditioning contractor.

B. HVAC Contractor is responsible for verifying that power terminals have been properly grounded prior to operating equipment and must find connections to all equipment including control wiring.

C. All materials and workmanship shall be in accordance with the electrical specifications for the project. All wiring shall be color coded, and as–built wiring diagram prepared showing all connections and colors of wiring and delivered to the Owner.

D. Furnish certification for acceptance of control wiring from local electrical inspector prior to acceptance.

3.3 CLEAN UP

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

B. Furnish one box of clean filters, for each size required, at the time of final inspection to the owner.

3.4 OPERATOR'S MANUAL AND DIAGRAM

A. The HVAC Contractor shall prepare in one copy a manual describing the proper maintenance and operation of the systems. This manual shall not consist of standard factory instructions (although these may be included) but shall be prepared to describe this particular job.

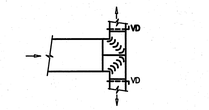
B. The manual shall be bound, indexed, dated and signed by the HVAC Contractor.

C. Qualified representative of the HVAC contractor shall meet with the designated representatives of the Owner and the Owner's representative shall be instructed in the proper operation and maintenance of the control system and other systems.

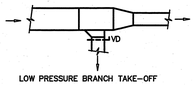
3.5 GUARANTEE

A. Guarantee all materials and labor included in the HVAC work for a period of one year from date of final acceptance by the owner. In addition, motor compressors shall be a nonprorated five year warranty. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the owner or tenant.

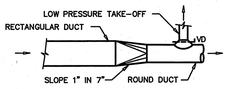
B. All air flows must be measured and balanced to within 10% of design airflows. All equipment used must have a current certification. Provide two copies of the balance report to the owner at closeout. The HVAC contractor shall return and re–balance to occupant comfort after 90 days from close–out
Provide all balance dampers needed for satisfactory operation regardless if shown on the drawings or not, and shift location of thermostats themostats if required for occupancy comfort.



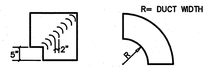
LOW PRESSURE TEE



LOW PRESSURE BRANCH TAKE–OFF



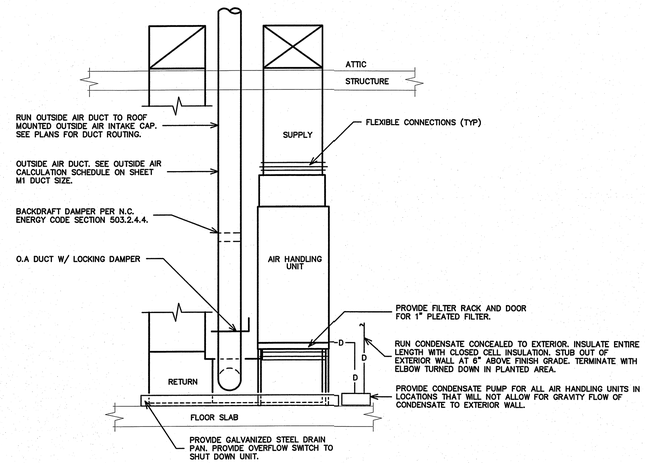
RECTANGULAR TO ROUND TRANSITION



SQUARE THROAT ELBOW FULL RADIUS ELBOW

LOW PRESSURE DUCT ELBOWS

2 DUCT CONSTRUCTION DETAIL
SCALE: NTS



1 TYPICAL VERTICAL AIR HANDLING UNIT DETAIL
SCALE: NTS

ENGINEER
BURKE DESIGN GROUP
3305–109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771–1916
FAX: (919) 779–0826
email: ben@bdg–nc.com
Corp. License # C–2652

Coastal Architecture PLLC
Architectural Design Planning Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

11/25/25
NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE

HVAC SPECs, DETAILS

25003

ISSUED:	11/25/2025
DWG BY:	RM
CKD BY:	BEB

REVISIONS

SHEET NO.
M3

DIVISION 16 – ELECTRICAL

PART 1 – GENERAL

1.1 DESCRIPTION OF THE WORK

A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:
   1. Electrical service and service equipment.
   2. Lighting and power distribution system.
   3. Provide lighting fixtures selected by owner with lamps to match.
   4. Wiring devices, boxes, cover plates, etc.
   5. Source of power for all items of equipment.
   6. Grounding.
   7. Other requirements and/or systems where shown.

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

C. All work under this contract shall be installed in accordance with the latest edition of the following codes and standards insofar as they apply:
   1. The 2020 National Electrical Code.
   2. The National Electrical Safety Code.
   3. Underwriter's Laboratories, Inc., Standards and approved listings.
   4. Electrical Testing Labatories standards.
   5. North Carolina Building Code, Latest Edition and Revisions.
   6. All local codes and ordinances.

D. The Electrical Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.

E. Obtain all permits, licenses, inspections, etc., required for the work and pay for the same. Furnish final certificate of inspection and approval from the electrical inspector having jurisdiction prior to acceptance of the work.

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

1.2 INTENT

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

1.3 COORDINATION

A. Coordinate work with other contractors. Notify Architect of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Architect for a decision before resuming operations.

B. Locations shown are approximate. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required. Coordinate all locations with architect before any rough–in.

1.4 SHOP DRAWINGS

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

PART 2 – PRODUCTS AND MATERIALS

2.1 GENERAL

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

2.2 NOT USED

2.3 CONDUCTORS

A. Conductors shall be color coded, sizes #8 and larger may be color taped on the job. Color coding shall be: Standard Practice.

B. Conductors shall be manufactured by Dodge, Southwire or approved equal. Conductors shall meet the latest requirements of NEMA and IPCEA and shall be UL approved.

C. Metallic sheathed "MC" cable may be used where allowed by N.E.C.

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

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

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

G. All wiring in mechanical spaces shall be plenum rated.

H. Provide GFI protection within 6'–0" of any sink.

I. All multi–wire branch circuits shall comply with 2020 NEC, 210.4(B).

J. All wiring at medical facilities shall comply with 2020 NEC, 517.1.

2.4 PANELBOARDS, SAFETY SWITCHES

A. Panelboards shall comply with NEMA Standard PB 1 – Latest Edition and as manufactured by Square D or ITE–Siemens.

B. The contractor shall be responsible for correctly phasing the circuits in the panelboards.

C. Safety switches shall be general duty type, size and rating as required for load service. Safety switches shall be fused or unfused as shown and/or as required. Safety switches serving motor loads shall be horsepower rated for load served.

2.5 NOT USED

2.6 WIRING DEVICES

A. Wiring devices shall be commercial grade by Bryant, Leviton, or approved equal. With matching cover. Color by Architect.

B. Wiring devices installed under a Kitchen Hood shall have stainless steel covers.

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

2.7 NOT USED

2.8 CONDUIT

A. PVC conduit will be allowed where N.E.C. approved.

B. All service conduit shall be rigid where exposed below 8'–0" AFF or exposed to the elements or hazardous conditions.

PART 3 – EXECUTION

3.1 CIRCUIT GROUNDING

A. All circuits shall contain an insulated, green, copper grounding conductor, sized in accordance with Table 250–95 of the NEC. Grounding conductors shall be connected to equipment grounding bus in panelboard and securely attached and grounded to the device or enclosure at the other end.

3.2 GROUNDING TYPE CONVENIENCE OUTLETS AND SWITCHES

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

3.3 MOTORS

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

3.4 NOT USED

3.5 EQUIPMENT LABELING

A. Provide permanent name plates for all panelboards, safety switches, wiring troughs, etc., for identification of equipment controlled, services, etc. Nameplates shall be securely and permanently attached to equipment with stainless steel screws. Nameplates shall include the name of the equipment and where it is fed from.

B. All switch plates, receptacle plates and outlet covers shall be labeled with machine printed vinyl labels identifying the circuit(s) within.

C. All empty conduit runs shall be identified and indicated where they terminate.

D. Provide typewritten directory in each panelboard to clearly identify each circuit, service, etc.

3.6 NOT USED

3.7 NOT USED

3.8 JUNCTION AND/OR PULL BOXES

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

3.9 PULL WIRE

A. Leave pull wire in each empty conduit run.

3.10 NOT USED

3.11 GROUNDING

A. All grounding shall be in accordance with Article 250 of the NEC. In addition, the following requirements shall be met:
   1. Grounding conductors shall be installed as to permit the shortest and most direct path from equipment to ground. All connections to grounding conductors shall be accessible.
   2. Equipment ground continuity shall be maintained through flexible metal conduit.
   3. All wiring devices equipped with grounding connection shall be solidly grounded to ground system with grounding conductors.
   4. The frame of all lighting fixtures shall be securely grounded to the equipment ground system with grounding conductors.
   5. All equipment enclosures, and non–current–carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.
   6. All equipment enclosures, and non–current–carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.

3.12 ELECTRICAL WORK IN CONNECTION WITH OTHER WORK

A. PLUMBING WORK: The Electrical Contractor shall furnish and install switches and devices as shown and electrically connect electric water heaters, etc. All other electrical work required will be performed by the PLUMBING CONTRACTOR.

B. HEATING AND AIR CONDITIONING WORK: The Electrical Contractor shall provide all disconnect switches, starters, and associated hardware for the equipment furnished including all line and load side wiring and conduit. Final connections to the equipment will be by the HVAC contractor. All control wiring will be accomplished by the HVAC contractor. Coordinate all work associated with the HVAC contractor.

3.13 CLEAN UP

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

3.14 GUARANTEE

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

GENERAL NOTES

1 ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL CODES HAVING JURISDICTION.

2 ALL BRANCH CIRCUIT CONDUCTORS TO BE COPPER (SERVICE CONDUCTORS MAY BE ALUMINUM WITH SAME AMPACITY AS COPPER CONDUCTORS. RE–SIZE CONDUCTERS AND CONDUIT PER NEC.)

3 ALL CIRCUITS TO BE 2 #12, 1 #12 GND IN 1/2" EMT CONDUIT AS A MINIMUM. PROVIDE WIRING FOR LARGER CIRCUITS AS REQUIRED BY NEC. RIGID CONDUIT IS REQUIRED WHERE EXPOSED BELOW 8'–0" A.F.F.

4 ALL EMPTY CONDUIT RUNS IN EXCESS OF 10 FEET SHALL BE PROVIDED WITH A PULL WIRE OR FISH TAPE/CORD.

5 CONTRACTOR SHALL VERIFY THAT ALL DOOR SWINGS ARE CORRECT BEFORE INSTALLING LIGHT SWITCH OUTLETS.

6 ALL BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET SHALL BE INCREASED TO THE NEXT LARGER SIZE WHERE THE LENGTH OF THE HOME RUN EXCEEDS 120 FEET ON 120V AND 208V CIRCUITS.

7 THE CORRECT NUMBER OF WIRES MAY NOT BE INDICATED FOR ALL CIRCUITS, ONLY THOSE WHERE CLARIFICATION IS NECESSARY. THE ELECTICAL CONTRACTOR SHALL PROVIDE ALL WIRES NECESSARY FOR THE PROPER FUNCTION OF THE SYSTEM WHETHER INDICATED ON DRAWINGS OR NOT.

8 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANELBOARDS.

9 THE ELECTRICAL CONTRACTOR SHALL VERIFY THE TYPE OF CEILING SYSTEM WITH THE GENERAL CONTRACTOR TO INSURE THAT ALL LIGHTING FIXTURES ARE COMPATIBLE WITH THE CEILING SYSTEM BEING INSTALLED. LIGHTING FIXTURES SHOULD NOT BE ORDERED UNTIL TYPE OF CEILING HAS BEEN VERIFIED.

10 ELECTRICAL REQUIREMENTS INDICATED ON DRAWINGS MAY DIFFER FROM ACTUAL EQUIPMENT FURNISHED. IF FURNISHED EQUIPMENT DIFFERS FROM RATINGS ON DRAWINGS CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER FOR APPROPRIATE ACTION TO BE TAKEN.

11 IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE EXACT BREAKER REQUIREMENTS FOR ALL EQUIPMENT PRIOR TO ORDERING PANEL. ADJUST BREAKER AND WIRE SIZES AS REQUIRED.

12 PROVIDE BOXES, JACKS, WIRING AND CONDUIT FROM LOCATIONS SHOWN TO MTP LOCATION. VERIFY EXACT REQUIREMENTS WITH OWNER.

13 ELECTRICAL CONTRACTOR SHALL PROVIDE ALL DISCONNECTS FOR MECHANICAL & PLUMBING EQUIPMENT. DISCONNECTS SHALL BE PER MANUFACTURES RECOMMENDATIONS AND FUSED PER NAME PLATE. PROVIDE NEMA 3R ENCLOSURES ON EXTERIOR. COORDINATE FUSE SIZES.

14 THE EC SHALL MEET WITH THE ARCHITECT AND TENANT PRIOR TO INSTALLING OUTLET BOXES TO VERIFY LOCATIONS AND MOUNTING HEIGHTS OF RECEPTACLES AND TELEPHONE OUTLETS.

ELECTRICAL LEGEND

X / O_X / X	LIGHT FIXTURE: LETTER DENOTES FIXTURE TYPE (REFER TO LIGHTING PLAN AND FIXTURE SCHEDULE). NL = NIGHT LIGHT (NOT SWITCHED/ALWAYS ON)
U / WP/GFI	DUPLEX RECEPTACLE – 120V; MOUNT 18" TO CENTER AFF UNLESS NOTED OTHERWISE; "WP" INDICATES WEATHER PROOF, "GFI" INDICATES GROUND FAULT CURRENT INTERRUPT PROTECTED. 'U' INDICATES RECEPTACLE WITH (2) USB PORTS.
	QUADRAPLEX RECEPTACLE – 120V
	FLOOR OR CEILING OUTLET (AS NOTED) – 120V
	SPECIAL PURPOSE RECEPTACLE – REFER TO POWER PLAN AND PANEL SCHEDULE
S	LIGHT SWITCH
S_M	SWITCH WITH INTEGRAL PIR/US MOTION SENSOR FOR AUTOMATIC SHUT–OFF WITH UP TO 2 HOUR ADJUSTABLE DELAY.
S_D	DIMMABLE LIGHT SWITCH
(S)	MOTOR RATED SWITCH
(J)	JUNCTION BOX
	TELE/DATA OUTLET – PROVIDE JUNCTION BOX WITH CONDUIT BACK TO MTP. PROVIDE (1) TELEPHONE JACK AND (1) CAT 5 DATA JACK
	SINGLE–POLE HOMERUN TO PANELBOARD
	TWO–POLE OR 3–POLE HOMERUN TO PANELBOARD
EXIT	EXIT LIGHT
	EMERGENCY EGRESS FIXTURE
PC	PHOTOCELL (LED COMPLIANT)
	BRANCH CIRCUIT WIRING
	SWITCH LEG
	GROUND CONNECTION
PANEL A	DISTRIBUTION PANELBOARD
	DISCONNECTING MEANS AS REQUIRED BY CODE

APPENDIX B

2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)
ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance

Energy Code:	Prescriptive	[X]	Energy Cost Budget	[ ]
ASHRAE 90.1:	Prescriptive	[ ]	Energy Cost Budget	[ ]

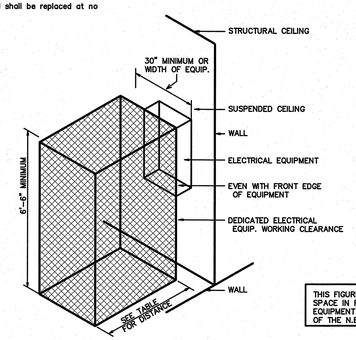
Lighting Schedule

lamp type required in fixture
number of lamps in fixture
ballast type used in fixture
number of ballasts in fixture
total wattage in fixture
→ See Light Fixture Schedule

total interior wattage specified vs. allowed	2537VA	3631VA
total exterior wattage specified vs. allowed	738VA	1300VA

Additional Prescriptive Compliance

[X] 506.2.1 More Efficient Mechanical Equipment
[ ] 506.2.2 Reduced Lighting Power Density
[ ] 506.2.3 Energy Recovery Ventilation Systems
[ ] 506.2.4 Higher Efficiency Service Water Heater
[ ] 506.2.5 On–Site Supply of Renewable Energy
[ ] 506.2.6 automatic Daylighting Control System



THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE ELECTRICAL EQUIPMENT REQUIRED BY SECTION 110–16 OF THE N.E.C.

ELECTRICAL EQUIPMENT WORKING CLEARANCE PER ARTICLE 110–26 OF N.E.C.

WORKING CLEARANCES			
VOLTAGE TO GROUND NOMINAL	MIN. CLEAR DISTANCE IN FEET		
CONDITION:	1	2	3
0–150	3	3	3
151–600	3	3–1/2	4

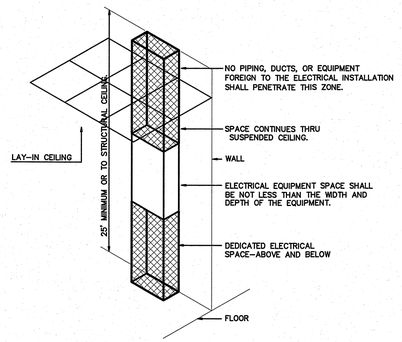
WHERE THE CONDITIONS ARE AS FOLLOWS:

1 EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.

2 EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.

3 EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

1 ELECTRICAL CLEARANCES
SCALE: NTS



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

2 DEDICATED SPACE
SCALE: NTS

ENGINEER
BURKE DESIGN GROUP
3305–109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771–1916
FAX: (919) 779–0826
email: ben@bdg–nc.com
Corp. License # C–2852

Coastal Architecture PLLC
Architectural Design
AIA
Member of the American Institure of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

BEAUFORT EMS
BEAUFORT, NORTH CAROLINA

11/25/25
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE

25003

ISSUED:	11/25/2025
DWG BY:	LS
CKD BY:	BEB
REVISIONS	

SHEET NO.
E1

Beaufort EMS E2

LIGHTING SCHEDULE *

MARK	MANUFACTURER	CATALOG NO.	VOLT.	LAMPS NO.	LAMPS TYPE	LAMPS W	BALLAST TYPE	W/ FIXTURE	REMARKS	
A	COLUMBIA	LCAT24-35LWG-EDU	120	–	LED	–	–	40	2X4 LAY-IN LED FIXTURE	*
B	COLUMBIA	LCAT22-35MWG-EDU	120	–	LED	–	–	25	2X2 LAY-IN LED FIXTURE	*
C	PRESCOLITE	LTR-6RD-H-SL20L-DM1-LTR-6RD-T-SL35KBMD	120	–	LED	–	–	22	6" LED RECESSED CAN FIXTURE, (SH) DENOTES SHOWER TRIM	*
D	COLUMBIA	MPS8-35VL-CW-EDU-(2)MPSWG4	120	–	LED	–	–	94	8' LINEAR LED STRIP FIXTURE W/ WIREGUARD	*
E	COMPASS	CUSO	120	–	LED	–	–	17	EXTERIOR NORMAL/EMERGENCY LIGHT FIXTURE- COLOR BY ARCH	*
F	COLUMBIA	MPS4-35LW-CW-EDU	120	–	LED	–	–	27	SURFACE MOUNTED LED STRIP FIXTURE	*
L	JESCO	DL-AC-FLEX2	120	–	LED	–	–	4/FT	LED TAPE LIGHTING	*
P	CHOSEN BY OWNER/ARCH, PROVIDED BY EC		120	–	LED	–	–	30	PENDANT LIGHT ($200 ALLOWANCE EACH)	*
S	CHOSEN BY OWNER/ARCH, PROVIDED BY EC		120	–	LED	–	–	30	WALL SCONCE LED FIXURE ($200 ALLOWANCE EACH)	*
W	RAB	WP2LED37NW/PC	120	–	LED	–	–	37	LED WALL PACK	*
EXIT	COMPASS	CER	120	–	LED	–	–	2	LED EXIT SIGN, COLOR BY ARCH	*
EXIT	COMPASS	CCR	120	–	LED	–	–	4	COMBINATION EMERGENCY (TUNGSTEN)/ EXIT (LED) LIGHT	*
	COMPASS	CU2HL	120	–	LED	–	–	10	EMERGENCY LIGHT, BATTERY BACKUP, BATTERY DIAGNOSTICS, COLOR BY ARCH	*

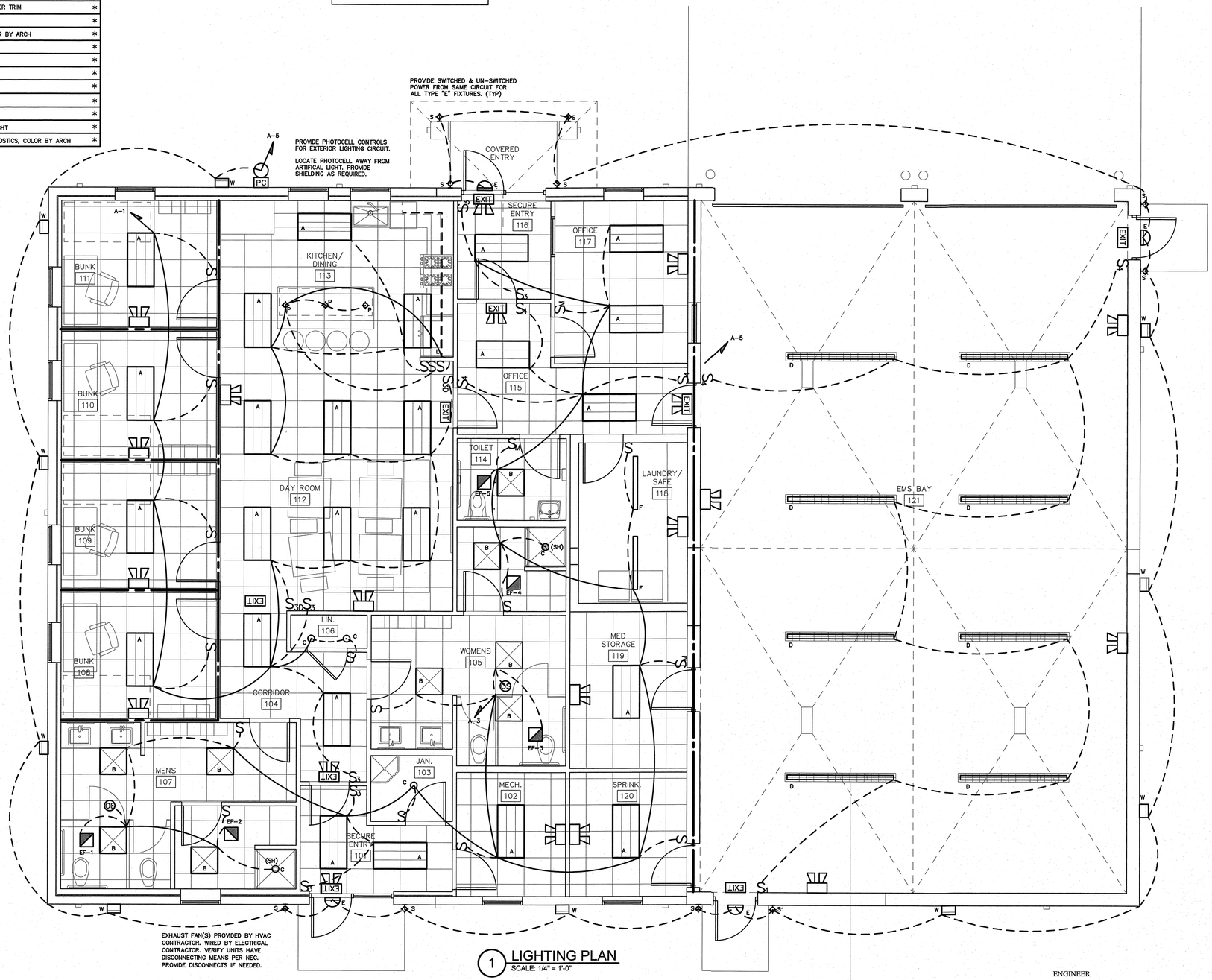
* OR APPROVED EQUAL. PROVIDE CUT SHEETS FOR OWNER APPROVAL PRIOR TO ORDERING FIXTURES.
THE EMERGENCY LIGHTS AND EXIT SIGNS MUST HAVE INTEGRAL BATTERIES, CHARGERS AND TEST SWITCHES.

NOTE:
ALL INTERIOR WALLS ARE TO THE ROOF DECK AND ARE NEW SMOKE PARTITIONS. SEE ARCHITECTURAL SHEETS FOR LOCATIONS AND DETAILS.

PROVIDE SWITCHED & UN-SWITCHED POWER FROM SAME CIRCUIT FOR ALL TYPE "E" FIXTURES. (TYP)

PROVIDE PHOTOCELL CONTROLS FOR EXTERIOR LIGHTING CIRCUIT.

LOCATE PHOTOCELL AWAY FROM ARTIFICAL LIGHT. PROVIDE SHIELDING AS REQUIRED.



EXHAUST FAN(S) PROVIDED BY HVAC CONTRACTOR. WIRED BY ELECTRICAL CONTRACTOR. VERIFY UNITS HAVE DISCONNECTING MEANS PER NEC. PROVIDE DISCONNECTS IF NEEDED.

1 LIGHTING PLAN
SCALE: 1/4" = 1'-0"

PLAN NORTH

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Architectural Design Planning Interiors
AIA
Member of the American Institute of Architects
Lee D. Dixon, Jr., AIA
252-247-2127
lee@coastalarchitecture.net
4206 Bridges St. Ext., Suite C
Morehead City, NC 28557
www.CoastalArchitecture.net

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BEAUFORT, NORTH CAROLINA

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NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E BURKE

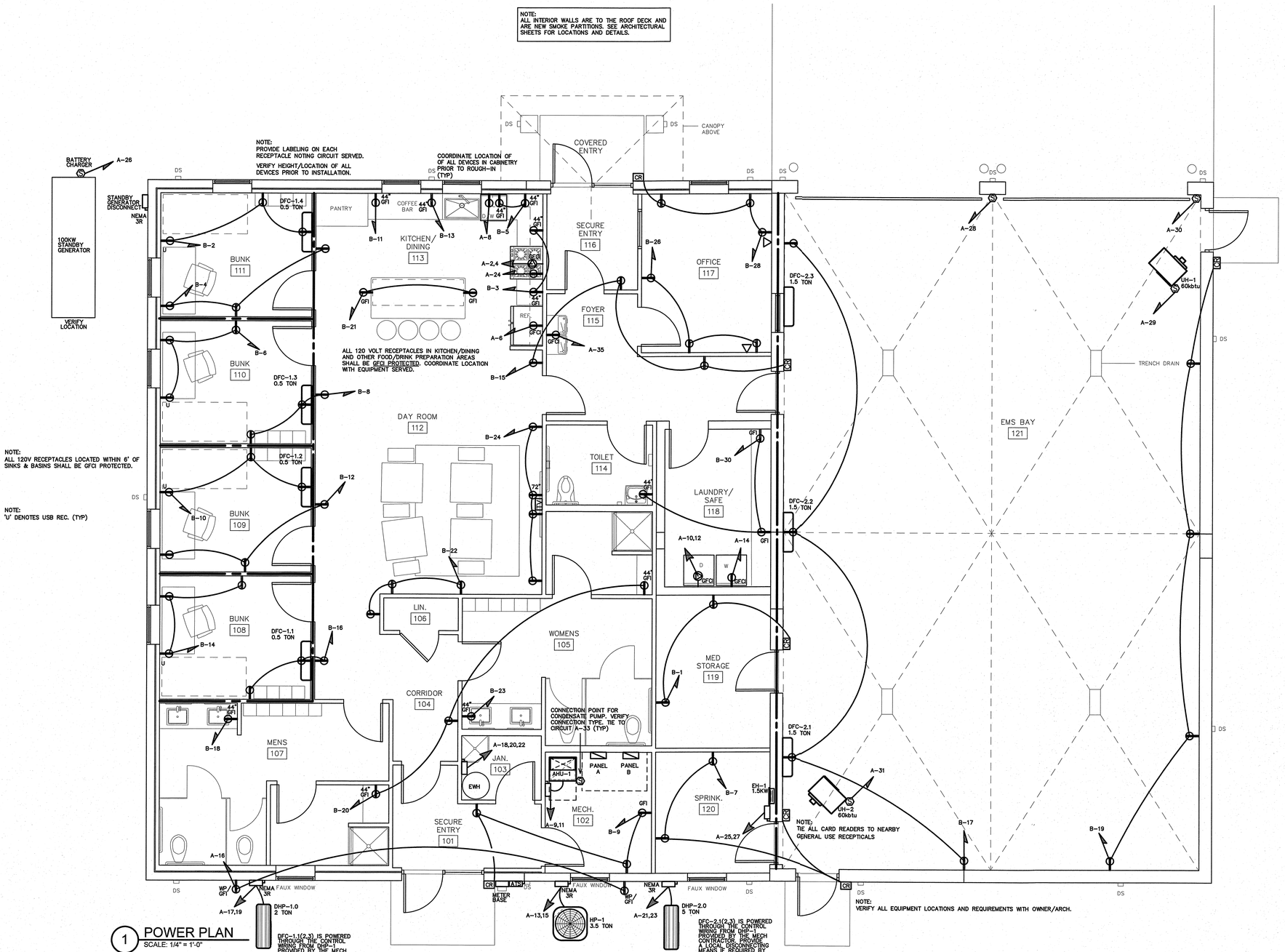
LIGHTING PLAN

25003

ISSUED:	11/25/2025
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SHEET NO.
E2

ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652



1 POWER PLAN
SCALE: 1/4" = 1'-0"

PLAN NORTH

Coastal Architecture PLLC

Architectural
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Interiors

AIA
Member of the American Institute of Architects

Lee D. Dixon, Jr., AIA
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BEAUFORT, NORTH CAROLINA

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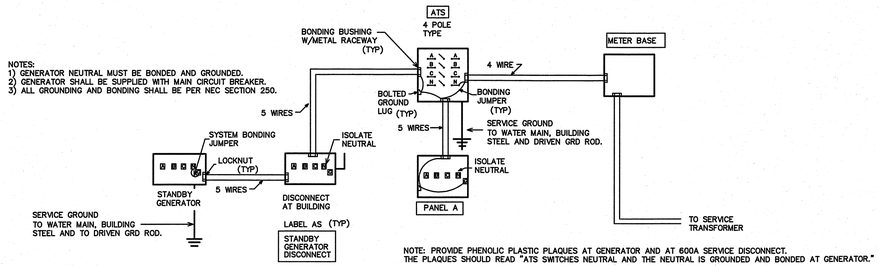
POWER PLAN

25003

ISSUED:	11/25/2025
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CKD BY:	BEB
REVISIONS	

SHEET NO.
E3

ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652



NOTES:
1) GENERATOR NEUTRAL MUST BE BONDED AND GROUNDED.
2) GENERATOR SHALL BE SUPPLIED WITH MAIN CIRCUIT BREAKER.
3) ALL GROUNDING AND BONDING SHALL BE PER NEC SECTION 250.

NOTE: PROVIDE PHENOLIC PLASTIC PLAQUES AT GENERATOR AND AT 600A SERVICE DISCONNECT. THE PLAQUES SHOULD READ "ATS SWITCHES NEUTRAL AND THE NEUTRAL IS GROUNDED AND BONDED AT GENERATOR."

2 GENERATOR GROUNDING DETAIL
SCALE: NTS

Beaufort EMS E4

AUTOMATIC TRANSFER SWITCH SCHEDULE

ATS "LIFE SAFETY"	*	ASCO MODEL#J-03AUS-B-3-0400-C-GD-F, AUTOMATIC TRANSFER SWITCH, OPEN TRANSITION. 400 AMP, 208/120 VOLT, 3 PHASE. PROVIDE GFI PROTECTION. SERVICE ENTRY RATED. NEMA 3R

* OR APPROVED EQUAL

EMERGENCY GENERATOR SCHEDULE

100 KW LIQUID PROPANE FUELED STANDBY GENERATOR *

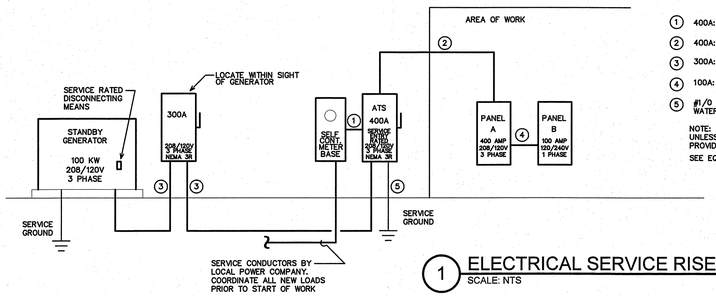
PROVIDE A "GENERAC" MODEL SG100 STANDBY GENERATOR WITH (1) "LIFE SAFETY" AUTOMATIC TRANSFER SWITCH. THE GENERATOR SHALL BE CAPABLE OF RUNNING ON LIQUID PROPANE FUEL WITH A 72 HOUR MIN RUN CAPACITY. PROVIDE ALL ACCESSORIES AS REQUIRED FOR A COMPLETE OPERATING SYSTEM. THE ENGINE SHALL HAVE A MINIMUM OF 154 HP AT 1800 RPM WITH AND ENCLOSED MUFFLER. THE DELIVERY VOLTAGE SHALL BE 208/120 VOLT, 3 PHASE. PROVIDE 10A DUAL RATE BATTERY CHARGER, AUTOMATIC VOLTAGE REGULATOR, AUTOMATIC LOW OIL PRESSURE AND HIGH TEMPERATURE SHUTDOWN. THE AUTOMATIC TRANSFER SWITCH SHALL TRANSFER FROM THE UTILITY AUTOMATICALLY WITH-IN 10 SECONDS. PROVIDE A SERVICE RATED DISCONNECTING MEANS WITH OVERCURRENT PROTECTION AT THE GENERATOR LOCATION. PROPERLY GROUND THE GENERATOR AND SERVICE EQUIPMENT PER THE NEC. PROVIDE INITIAL START UP AND OWNER TRAINING.
PROVIDE A DIGITAL CONTROL PANEL, UNIT VIBRATION ISOLATION, AND A LEVEL 1 ACOUSTIC WEATHER PROTECTIVE ENCLOSURE.
PROVIDE A LOAD TEST, START-UP AND OWNER TRAINING BY THE GENERATOR MANUFACTURER'S FACTORY TRAINED REPRESENTATIVE.

PROVIDE AN ADJUSTABLE 7-DAY/24-HOUR EXERCISE TIMER.

INSTALL PER NFPA 110 FOR THIS APPLICATION.

* OR APPROVED EQUAL

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



1 ELECTRICAL SERVICE RISER
SCALE: NTS

RISER WIRING SCHEDULE

1. 400A: 4-#500MCM IN 3" CONDUIT
2. 400A: 4-#500MCM, 1-#3 CU GND, IN 3 1/2" CONDUIT
3. 300A: 4-#350MCM, 1-#4 CU GND, IN 3" CONDUIT
4. 100A: 4-#3, 1-#8 CU GND, IN 1 1/4" CONDUIT
5. #1/0 CU GND TO BUILDING STEEL, FOUNDATION STEEL AND METALLIC WATER MAIN AND #6 CU GND TO 10' X 5/8" DRIVEN GROUND ROD

NOTE:
UNLESS OTHERWISE NOTED ALL OTHER CIRCUITS ARE 20A, 120VOLT.
PROVIDE 2-#12, 1-#12 CU GND IN 1/2" CONDUIT.
SEE EQUIPMENT SCHEDULES FOR ADDITIONAL WIRE SIZES.

Beaufort EMS E4

NEW PANEL- 'A' — MAKE: EATON; TYPE: PRL1A; OR APPROVED EQUAL — RATING: 208/120V 3 PHASE 4 WIRE; MOUNTING: SURFACE; MINIMUM AIC: VERIFY — MLO MAIN CIRCUIT BREAKER; EQUIPMENT GROUND BUS [X]YES [ ]NO; SERVICE ENTRY RATED [ ]YES [X]NO

LOAD SERVICE	CKT BRKR	WATTS PER PHASE A	B	C	CKT NO	NEUTRAL A B C	CKT NO	WATTS PER PHASE A	B	C	CKT BRKR	LOAD SERVICE	
LTS - BUNK, KITCHEN, DAY RM	20A	790			1		2	4000			50A	RANGE/OVEN	
LTS - OFFICE, RESTROOMS	20A		1315		3		4		4000			.	(G)
LTS - EMS BAY	20A			752	5		6			1800	20A	FRIDGE	(G)
LTS - EXTERIOR	20A	738			7		8	1000			20A	DISHWASHER	(G)
AHU-1	45A		3447		9		10		2500		30A	DRYER	(G)
				3447	11		12			2500		.	
HP-1	40A	2080			13		14	1440			20A	WASHER	(G)
			2080		15		16		360		20A	OUTSIDE REC.	
DHP-1	25A			2298	17		18			3000			
		2298			19		20	3000			40A	EWH	
DHP-2	90A		5720		21		22		3000				
				5720	23		24			1800	20A	MICROWAVE	
EH-1	20A	750			25		26	500			20A	GENERATOR BATTERY CHARGER	
			750		27		28		1000		20A	GARAGE DOOR	
UH-1	20A			492	29		30			1000	20A	GARAGE DOOR	
UH-2	20A	492			31		32	----			20A	SPARE	
CONDENSATE PUMP	20A		500		33		34		----		20A	SPARE	
(G) EWC	20A			888	35		36			----	20A	SPARE	
PANEL 'B'	100A	4320			37		38	----			20A	SPARE	
.			4500		39		40		----		20A	SPARE	
.				3960	41		42			----	20A	SPARE	
NOTES	SUB-TOTALS 'B'	11468	18312	17557		400A BUS		9440	10860	10100	SUB-TOTALS 'A'		
(G) DENOTES GFCI BREAKER						400A LUGS		12208	17748	18593	SUB-TOTALS 'B'	TOTAL CONNECTED LOAD	
						400A FEED		21408	29172	27657	GRAND TOTAL		
						VERIFY SIZE		179A	244A	231A	AMPS/PHASE		

NEC ALLOWABLE DEMAND FACTORS

1. DEMAND FACTORS PER NEC 220
2. LARGEST OF: NEC TABLE 220.12 OR CONNECTED LOAD
3. NEC TABLE 220.56
4. NEC 220.51
5. NEC 220.43A, 200 VA/LINEAR FT
6. NON-COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED

DIVERSIFIED LOAD SUMMARY

LOAD TYPE		DEMAND FACTOR①	A	B	C	TOTAL DIVERSIFIED LOAD
GENERAL LIGHTING	②	125%	1910	1644	940	4494
TRACK LIGHTING		125%	----	----	----	----
GENERAL USE RECEPTACLES		≤10KVA@100%	3333	3333	3333	9999
		>10KVA@50%	494	764	314	1572
MOTORS AND EQUIPMENT	LARGEST	125%	2873	7150	7150	17173
	ALL OTHERS	100%	4512	6527	6737	17776
WATER HEATERS		125%	3750	3750	3750	11250
KITCHEN EQUIPMENT	③	100%	4000	3200	2880	10080
FIX. ELEC. SPACE HEAT.	④	100%	750	3750	3000	7500
SHOW WINDOW LIGHTS	⑤	125%	----	----	----	----
SIGN		125%	----	----	----	----
MISC		100%	----	----	888	888
PHASE (TOTAL VA)			21822	30118	28992	80732
TOTAL AMPS			181A	251A	242A	VOLT AMPS / VOLTS X 1.732 = 225A TOTAL AMPS

Beaufort EMS E4

NEW PANEL- 'B' — MAKE: EATON PRL1A; TYPE: PRL1A; OR APPROVED EQUAL — RATING: 208/120V 3 PHASE 4 WIRE; MOUNTING: SURFACE; MINIMUM AIC: VERIFY — MLO MAIN CIRCUIT BREAKER; EQUIPMENT GROUND BUS [X]YES [ ]NO; SERVICE ENTRY RATED [ ]YES [X]NO

LOAD SERVICE	CKT BRKR	WATTS PER PHASE A	B	C	CKT NO	NEUTRAL A B C	CKT NO	WATTS PER PHASE A	B	C	CKT BRKR	LOAD SERVICE
REC - MED STORAGE	20A	360			1		2	540			20A	REC - BUNK 111
REC - KITCHEN COUNTER	20A		360		3		4		540		20A	REC - BUNK 111
REC - KITCHEN COUNTER	20A			360	5		6			540	20A	REC - BUNK 110
REC - SPRINKLER	20A	360			7		8	540			20A	REC - BUNK 110
REC - MECH & VEST.	20A		540		9		10		540		20A	REC - BUNK 109
REC - COFFEE BAR	20A			180	11		12			540	20A	REC - BUNK 109
REC - COFFEE BAR	20A	180			13		14	540			20A	REC - BUNK 108
REC - FOYER, KITCHEN	20A		540		15		16		540		20A	REC - BUNK 108
REC - EMS BAY	20A			720	17		18			180	20A	REC - MENS RR
REC - EMS BAY	20A	720			19		20	540			20A	REC - RR & CORRIDOR
REC - KITCHEN ISLAND	20A		360		21		22		540		20A	REC - DAY ROOM
REC - RR	20A			180	23		24			720	20A	REC - DAY ROOM
SPARE	20A	----			25		26	540			20A	REC - OFFICE 117
SPARE	20A		----		27		28		540		20A	REC - OFFICE 117
SPARE	20A			----	29		30			540	20A	REC - TOILET & LAUNDRY
NOTES	SUB-TOTALS 'B'	1620	1800	1440		100A BUS		2700	2700	2520	SUB-TOTALS 'A'	
						100A LUGS		1620	1800	1440	SUB-TOTALS 'B'	TOTAL CONNECTED LOAD
						100A FEED		4320	4500	3960	GRAND TOTAL	
						VERIFY SIZE		36A	38A	33A	AMPS/PHASE	

NEC ALLOWABLE DEMAND FACTORS

1. DEMAND FACTORS PER NEC 220
2. LARGEST OF: NEC TABLE 220.12 OR CONNECTED LOAD
3. NEC TABLE 220.56
4. NEC 220.51
5. NEC 220.43A, 200 VA/LINEAR FT
6. NON-COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED

DIVERSIFIED LOAD SUMMARY

LOAD TYPE		DEMAND FACTOR①	A	B	C	TOTAL DIVERSIFIED LOAD
GENERAL LIGHTING	②	125%	----	----	----	----
TRACK LIGHTING		125%	----	----	----	----
GENERAL USE RECEPTACLES		≤10KVA@100%	3333	3333	3333	9999
		>10KVA@50%	494	584	314	1392
MOTORS AND EQUIPMENT	LARGEST	125%	----	----	----	----
	ALL OTHERS	100%	----	----	----	----
WATER HEATERS		125%	----	----	----	----
KITCHEN EQUIPMENT	③	80%	----	----	----	----
FIX. ELEC. SPACE HEAT.	④	100%	----	----	----	----
SHOW WINDOW LIGHTS	⑤	125%	----	----	----	----
SIGN		125%	----	----	----	----
MISC		100%	----	----	----	----
PHASE (TOTAL VA)			3827	3917	3647	11391
TOTAL AMPS			32A	33A	31A	VOLT AMPS / VOLTS X 1.732 = 32A TOTAL AMPS

Beaufort EMS E4

EQUIPMENT WIRING SCHEDULE

EQUIPMENT	MCA	MOCP	VOLTS	PH	WIRE SIZE
RANGE/OVEN	(8kW)	50A	208V	1	3-#8, 1-#10 GND IN 3/4" CONDUIT
DRYER	(5KW)	30A	208V	1	3-#10, 1-#10 GND IN 3/4" CONDUIT
EWH	(9.0KW)	40A	208V	3	3-#8, 1-#10 GND IN 3/4" CONDUIT
AHU-1	44.7A	45A	208V	1	2-#8, 1-#10 GND IN 3/4" CONDUIT
HP-1	24.7A	40A	208V	1	2-#8, 1-#10 GND IN 3/4" CONDUIT
DHP-1	22.1A	25A	208V	1	2-#10, 1-#10 GND IN 1/2" CONDUIT
DHP-2	55.0A	90A	208V	1	2-#3, 1-#8 GND IN 1" CONDUIT
EH-1	(1.5KW)	20A	208V	1	2-#12, 1-#12 GND IN 1/2" CONDUIT

NOTE:
THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT ELECTRICAL REQUIREMENTS PRIOR TO ROUGH-IN AND RELEASING GEAR. ADJUST BREAKER, WIRE SIZES, ETC. AS REQUIRED.

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ELEC. PANEL & RISER

25003

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SHEET NO.
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ENGINEER
BDG BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
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Corp. License # C-2652