#### **VICINITY MAP**

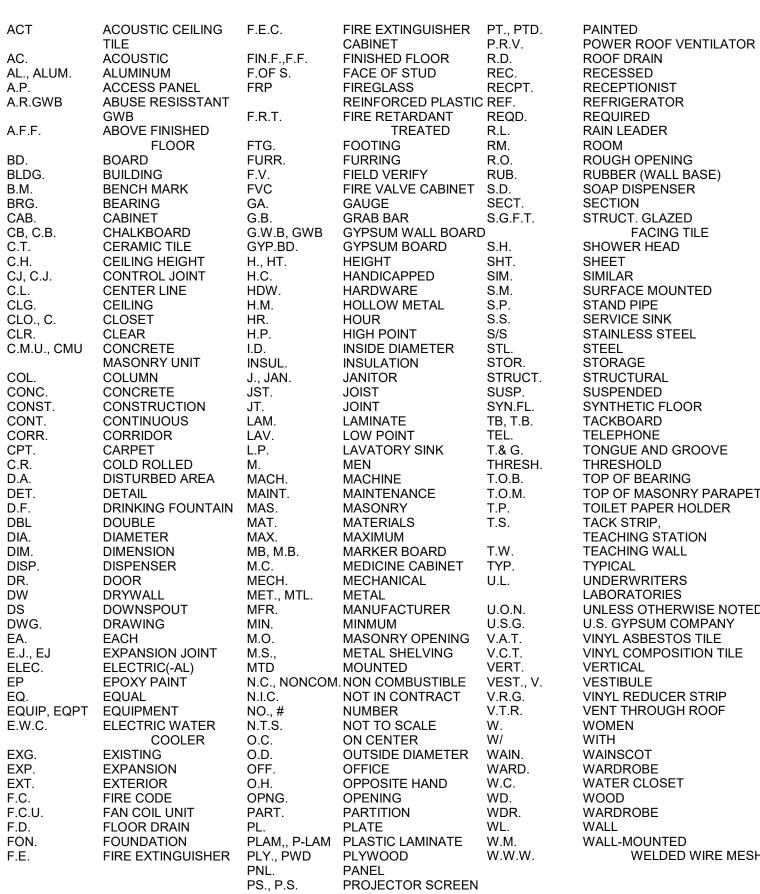


**NEW CONSTRUCTION OF** 

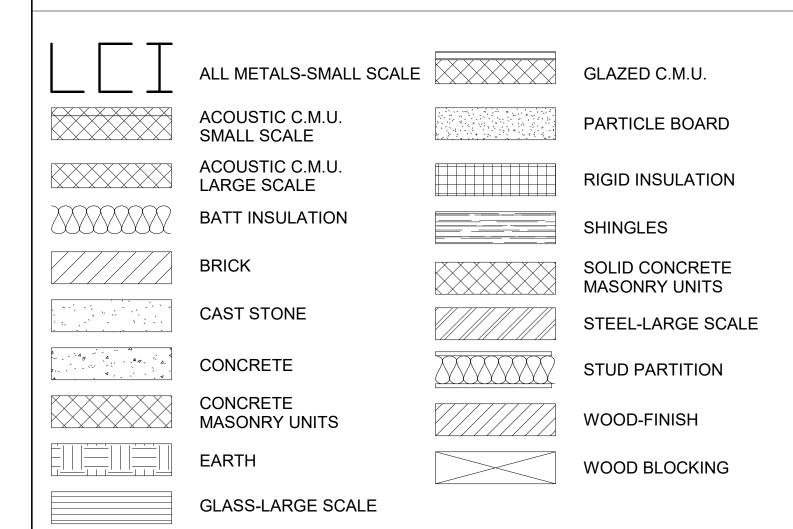
# SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING

280 COUGAR ROAD, SOUTHPORT NC 28461

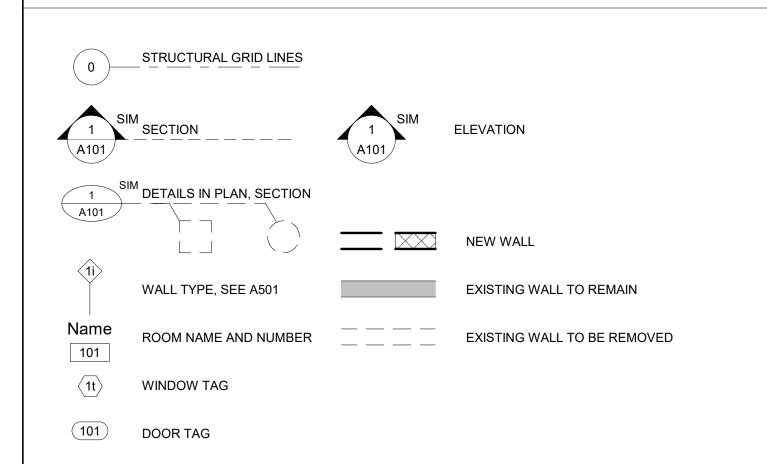
# ABBREVIATIONS

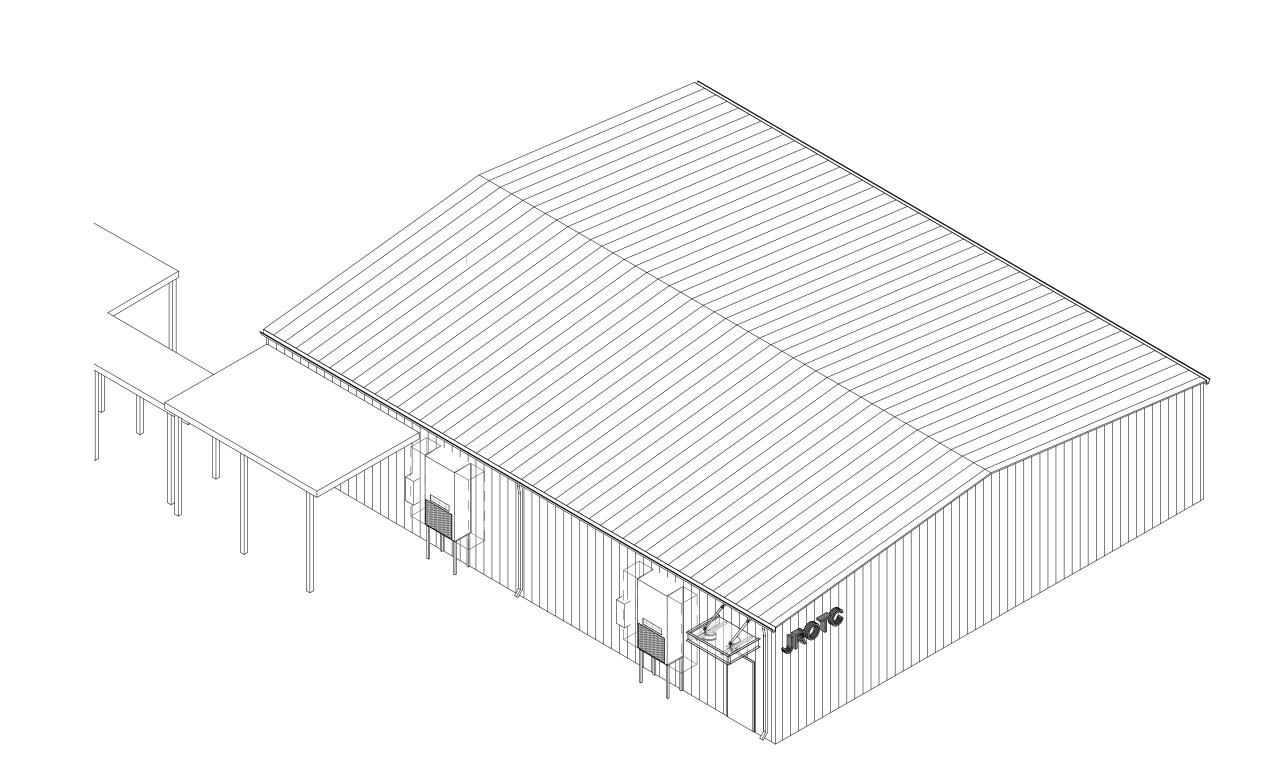


#### **SYMBOLS OF MATERIALS**



#### **DRAWING KEYS**





# ISSUED FOR CONSTRUCTION

08/27/2020

#### **DESIGN TEAM**

BECKER MORGAN GROUP WOODS ENGINEERING, P.A. CBHF ENGINEERS, PLLC PARAMOUNTE ENGINEERING, INC. ARCHITECTS & CIVIL ENGINEERS
STRUCTURAL ENGINEERS
MECHANICAL AND ELECTRICAL ENGINEERS
CIVIL ENGINEERS

#### **DRAWING LIST**

SHEET No.	SHEET TITLE	
GENERAL		
G001	COVER SHEET	
G101	BUILDING CODE SUMMARY	
G201	LIFE SAFETY PLAN	
G301	COMcheck FORM	
G401	U.L. DETAILS	
CIVIL		
C-0.0	COVER SHEET	
C-1.0	GENERAL NOTES	
C-1.1	GENERAL NOTES	
C-2.0	EX. CONDITIONS AND DEMOLITION PLAN	
C-2.1	OVERALL SITE PLAN	
C-2.2	SITE PLAN	
C-3.0	GRADING - DRAINAGE - EC PLAN	
C-4.0	UTILITY PLAN	
C-4.0 C-5.0	DETAILS	
C-5.0 C-5.1	DETAILS	
C-5.1	DETAILS	
STRUCTURAL	OFNEDAL MOTES	
S101	GENERAL NOTES	
S102	TYPICAL DETAILS	
S201	ROTC BUILDING FOUNDATION PLAN	
S301	FOUNDATION SECTIONS AND DETAILS	
ARCHITECTUF		
A001	CONSTRUCTION TYPES	
A101	FLOOR PLAN AND REFLECTED CEILING PLAN	
A102	ROOF PLAN	
A201	EXTERIOR ELEVATIONS	
A301	BUILDING SECTION AND WALL SECTIONS	
A302	DETAILS	
A401	ENLARGED PLANS AND DETAILS	
A501	SCHEDULES AND DETAILS	
PLUMBING		
P101	ROTC BUILDING - PLUMBING	
MECHANICAL		
M001	MECHANICAL ABBREVIATIONS, LEGEND, ENERGY & MECH. SUMMARIES	
M101	ROTC FLOOR PLAN AND SECTIONS	
M501	HVAC DETAILS	
M502	HVAC DETAILS	
M601	MECHANICAL SCHEDULES	
ELECTRICAL		
ELECTRICAL E001	ELECTRICAL SYMBOLS AND ABBREVIATIONS	
E1001	ELECTRICAL SYMBOLS AND ABBREVIATIONS ELECTRICAL SITE PLAN	
E100 E101	ELECTRICAL SITE PLAN ELECTRICAL FLOOR PLANS - POWER, HVAC POWER & SYSTEMS	
E101 E201	ELECTRICAL FLOOR PLANS - POWER, HVAC POWER & SYSTEMS  ELECTRICAL FLOOR PLAN - LIGHTING	
E501	ELECTRICAL DETAILS	
E502	ELECTRICAL DISER DIAGRAM AND SCHEDULES DOTO	
E601 E602	ELECTRICAL RISER DIAGRAM AND SCHEDULES - ROTC ELECTRICAL SYSTEMS RISER DIAGRAM	
FIRE ALARM	DOTO EL COD DI ANI. EIDE ALASMA	
F101	ROTC FLOOR PLAN - FIRE ALARM	
F-601	FIRE ALARM RISER DIAGRAM, LEGEND AND NOTES	



ARCHITECTURE
PLANNING

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ISSUED
FOR CONSTRUCTION

ISSUED: 08/27/2020





SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING 280 COUGAR ROAD, SOUTHPORT NC 28461

DSP # : 100 DPI SCHOOL #

COVER SHEET

0 08/27/2020 ISSUED FOR CONSTRUCTION

Mark Date Description

PROJECT NO: 2019241.00

DATE: 08/27/2020

SCALE: 1" = 1'-0"

DRAWN BY: LJR PROJ MGR: RMC

G001

# BUILDING CODE SUMMARY

	S: <u>280 COUGA</u> DR AUTHORIZE			IG ECK		PHONE	Ξ #: <u>   9</u> 10.	253.1078		E-Mail:	cecl	kert@bcswa	<u>ın.n</u> et
OWNED B	BY: City	Co	unty	Stat	e Pri	vate				_			
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CONTACT	Γ:												
DESIGNE	<u>R</u>	<u>F</u>	<u>IRM</u>		NAME	<u> </u>	<u>L</u>	ICENSE#	TELEF	PHONE #	EM	1AIL ADDRE	<u>ESS</u>
ARCHITE	CTURAL		cker Morga					4537		0.341.7600		ns@beckermorg	
CIVIL ELECTRIC	CAL		ramounte Eng BHF ENGINEE		c. Robert Balla W. Allen Cril			031591 23311		0.791.6707		and@paramount bb@cbhfenginee	
FIRE ALAI													
PLUMBIN MECHANI			SHF ENGINEE SHF ENGINEE		David M. Ha David M. Ha			23551 23551		0.791.4000		nn@cbhfenginee nn@cbhfenginee	
STRUCTU	ER-STANDPIPE IRAL G WALL >5' HI	W	oods Engine	ering, PA	Don R. Woo	ds		19475	910	0.343.8007	donv	voods@woodser	ng.com
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NO.	AND USE	(ACTUAL)	UNSPRINKLERED	SPRINKLERED	INCREASE 1,5	UNLIMITED
1	NEW EDUCATION BLDG	3,000	9,500	N/A	N/A	9,500
1.	FRONTAGE AREA INCR					
2.	A. PERIMETER WH B. TOTAL BUILDIN C. RATIO (F/P) = D. W = MINIMUM W	HICH FRONTS A G PERIMETER (F/P) /IDTH OF PUBL RONTAGE INCF	A PUBLIC WAY OR C = (F LIC WAY = (V REASE I <sub>f</sub> = 100 [F/P	DPEN SPACE HAVIN P) V) (do not exceed 30 - 0.25] x W/30 =	NG 20 FT MINIMUI 0)	M WIDTH <u>.</u> (F)
	A. PERIMETER WH B. TOTAL BUILDIN C. RATIO (F/P) = D. W = MINIMUM W E. PERCENT OF FI UNLIMITED AREA APPL	HICH FRONTS A G PERIMETER(F/P) VIDTH OF PUBL RONTAGE INCA ICABLE UNDER	A PUBLIC WAY OR C =(F LIC WAY =(V REASE I f = 100 [F/P R CONDITIONS OF S	DPEN SPACE HAVIN P) V) (do not exceed 30 - 0.25] x W/30 = SECTION 507.	NG 20 FT MINIMUI 0) (%)	
2.	A. PERIMETER WH B. TOTAL BUILDIN C. RATIO (F/P) = D. W = MINIMUM W E. PERCENT OF F	HICH FRONTS A G PERIMETER  (F/P)  /IDTH OF PUBL RONTAGE INCE ICABLE UNDER EA = TOTAL NI F OPEN PARKII	A PUBLIC WAY OR C =(F LIC WAY =(V REASE I f = 100 [F/P R CONDITIONS OF S UMBER OF STORIES NG GARAGES MUST	DPEN SPACE HAVIN  Y) (do not exceed 30 - 0.25] x W/30 = BECTION 507. S IN THE BUILDING T COMPLY WITH 40	NG 20 FT MINIMUI   (%)  × D (MAXIMUM 3	STORIES) (506.2)

#### **ALLOWABLE HEIGHT:**

	ALLOWABLE (TABLES 504.3 & 504.4)	SHOWN ON PLANS	CODE REFERENCE
BUILDING HEIGHT IN FEET	55'	15'	•
BUILDING HEIGHT IN STORIES	2	1	

Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

#### FIRE PROTECTION REQUIREMENTS:

BUILDING ELEMENT	FIRE		RATING	DETAIL#	DESIGN#	DESIGN # FOR	DESIG
SOILDING ELLIVIEW	SEPARATION DISTANCE (FEET)	REQ'D	PROVIDED* (W/ REDUCTION)	AND SHEET#	FOR RATED ASSEMBLY	RATED PENETRATION	# FOR RATED JOINTS
Structural Frame including columns, girders, trusses		0					
Bearing Walls		•			•	•	
Exterior							
North		0					
East		0					
West		0					
South		0					
Interior		0					
Nonbearing Walls and Partitions		N/A					
Exterior		N/A					
North		N/A					
East		N/A					
West		N/A					
South		N/A					
Interior walls and partitions		0					
Floor Construction, including supporting beams and joists		N/A					
Floor Ceiling Assembly		0					
Columns Supporting Floors		N/A					
Roof Construction, including supporting beams and joists		0		_	_	_	_
Roof Ceiling Assembly		0					
Columns Supporting Roof		0	•			•	-
Shaft Enclosures - Exit		N/A					
Shaft Enclosures - Other		N/A					
Corridor Separation		0					
Occupancy / Fire Barrier Separat	ion	N/A					
Party / Fire Wall Separation	•	N/A					
Smoke Barrier Separation		N/A					
Tenant / Dwelling Unit / Sleeping	Separation	N/A					
BDA Closet Wall/Ceiling Separati	-	2	2	1/A302	U415 / U419	•	•

#### 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'	NP, NS	NO LIMIT	NO LIMIT

#### LIFE SAFETY SYSTEM REQUIREMENTS:

EMERGENCY LIGHTING:	☐ NO	YES
EXIT SIGNS:	☐ NO	YES
FIRE ALARM:	☐ NO	YES
SMOKE DETECTION SYSTEMS:	☐ NO	YES PARTIAL
CARBON MONOXIDE DETECTION:	NO	YES

#### LIFE SAFETY PLAN REQUIREMENTS:

LIFE SAFETY PLAN SHEET # G201

- 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 TYPES 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 (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
- 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 (1008.1.10.)
- LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND THE AMOUNT OF DELAY (1010.1.9.7)
- LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1010.1.9.9) LOCATION OF DOORS EQUIPPED WITH HOLD-OPEN DEVICES
- LOCATION OF EMERGENCY ESCAPE WINDOWS (1030)
- THE SQUARE FOOTAGE OF EACH FIRE AREA (202)
- 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

ACCESSIBLE DWELLING UNITS	(SECTION 1107)	NI/
ACCESSIBLE DWELLING UNITS	(SECTION 1107)	IN/A

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

ACCESSIBLE PARKING SPACES SHALL BE IN ACCESSIBLE PARKING (SECTION 1106) ACCORDANCE WITH THE REQULATIONS SET FORTH

		·	BY THE NO	C BUILDING CO	DE	
LOT OR		RKING SPACES	# OF ACCE	SSIBLE SPACES P	ROVIDED	TOTAL#
PARKING AREA	REQUIRED	PROVIDED	REGULAR WITH	VAN SPAC	ES WITH	ACCESSIBLE
			5' ACCESS AISLE	132" ACCESS AISLE	8' ACCESS AISLE	PROVIDED
•		•				
TOTAL						

#### PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE		WA	TERCLOSI	ETS	URINALS	L	AVATORIE	S	SHOWERS	DRINKII
		MALE	MALE FEMALE			MALE	FEMALE	UNISEX	/ TUBS	REGULA
Щ	EXIST'G									
ă	EXIST'G NEW	1	1	•		1	1			1
ß	REQ'D	1	1			1	1			1
ΕI	NERGY	SUMM	ARY	SEE G	301 FOF	R Com(	CHECK			
	<b>NERGY</b> NERGY RE			SEE G	301 FOF	R Com(	CHECK			
EN TH EN PF	NERGY REG HE FOLLOW NERGY CO ROJECT IN	QUIREME VING DAT DE SHALI FORMATI	:NTS: FA SHALL E L ALSO BE ON FOR T	BE CONSI E PROVIDI HE PLAN	IDERED MI ED. EACH I DATA SHE	NIMUM A DESIGNE ET. IF PE	AND ANY S ER SHALL I ERFORMAI	FURNISH NCE MET	TTRIBUTE R THE REQUIF HOD, STATE OR THE PRO	RED PORT
EN TH EN PF CC	NERGY REG HE FOLLOW NERGY CO ROJECT IN DST FOR T	QUIREME VING DAT DE SHALI FORMATI HE STAN	:NTS: TA SHALL E L ALSO BE ON FOR T DARD REF	BE CONSI PROVIDI HE PLAN FERENCE	IDERED MI ED. EACH I DATA SHE	NIMUM A DESIGNE ET. IF PE	AND ANY S ER SHALL I ERFORMAI AL ENERG	FURNISH NCE MET Y COST F	THE REQUIF HOD, STATE	RED PORT THE ANN OPOSED [

#### If 'Other' specify source here:

ROOF/CEILING ASSEMBLY (each assembly)	
DESCRIPTION OF ASSEMBLY	METAL BUILDING
U-VALUE OF TOTAL ASSEMBLY	0.1 + 0.05
R-VALUE OF INSULATION	MIN. R-10 + R-19 FC
SKYLIGHTS IN EACH ASSEMBLY	N/A
U-VALUE OF SKYLIGHT	N/A
TOTAL SQUARE FOOTAGE OF SKYLIGHTS	IN EACH ASSEMBLY N/A
EXTERIOR WALLS (each assembly)	
DESCRIPTION OF ASSEMBLY	METAL BUILDING - CONTINUOUS INSU

U-VALUE OF TOTAL ASSEMBLY R-VALUE OF INSULATION **OPENINGS** (windows or doors with glazing) U-VALUE OF ASSEMBLY

PROJECTION FACTOR DOOR R-VALUES

**WALLS BELOW GRADE** (each assembly) DESCRIPTION OF ASSEMBLY U-VALUE OF TOTAL ASSEMBLY R-VALUE OF INSULATION

DESCRIPTION OF ASSEMBLY U-VALUE OF TOTAL ASSEMBLY

FLOORS SLAB ON GRADE (each assembly) **DESCRIPTION OF ASSEMBLY** U-VALUE OF TOTAL ASSEMBLY R-VALUE OF INSULATION

### STRUCTURAL DESIGN - SEE STRUCTURAL DRAWINGS

IM	PORTANCE FACTORS:	WIND SNOW SEISMIC		· ·	_
Lľ	VE LOADS:	ROOF MEZZANII FLOOR	NE	· ·	PSF PSF PSF
G	ROUND SNOW LOAD:			- PSF	
\٨/	IND LOAD:	BASIC WI	ND S	SPEED ·	

DATA SOURCE: \_\_\_\_\_

SEISMIC DESIGN CATEGORY: \_\_\_\_\_

PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS: OCCUPANCY CATEGORY (TABLE 1604.5) SPECTRAL RESPONSE ACCELERATION S<sub>S</sub> SITE CLASSIFICATION (ASCE 7)

BASIC STRUCTURAL SYSTEM ANALYSIS PROCEDURE: N/A SIMPLIFIED EQUIVALENT LATERAL FORCE ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED?

LATERAL DESIGN CONTROL: N/A SOIL BEARING CAPACITIES:

FIELD TEST (PROVIDE COPY OF TEST REPORT) PRESUMPTIVE BEARING CAPACITY PILE SIZE, TYPE AND CAPACITY

	USE	WA	TERCLOS	ETS	URINALS	L	AVATORIE	S	SHOWERS	DRINKING F	OUNTAINS
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX	/ TUBS	REGULAR	ACCESSIBLE
Щ	EXIST'G										
	NEW	1	1			1	1			1	1
	REQ'D	1	1			1	1			1	1
Sp	ecial Appr	oval: (Loc	al Jurisdic	tion, Depa	rtment of In	surance,	OSC, DPI,	DHHS, et	c., describe b	elow)	

O TO MEET THE TIONS OF THE **NUAL ENERGY** DESIGN.

applicable)

CLIMATE ZONE: 3A

METHOD OF COMPLIANCE: PRESCRIPTIVE

(ENERGY CODE) (ENERGY CODE) \_\_ PERFORMANCE PRESCRIPTIVE (ASHRAE 90.1) (ASHRAE 90.1) \_\_ PERFORMANCE PERFORMANCE (OTHER)

THERMAL ENVELOPE (Prescriptive method only)	
ROOF/CEILING ASSEMBLY (each assembly)	
DESCRIPTION OF ASSEMBLY	METAL BUILDING
U-VALUE OF TOTAL ASSEMBLY	0.1 + 0.05
R-VALUE OF INSULATION	MIN. R-10 + R-19 FC
SKYLIGHTS IN EACH ASSEMBLY	N/A

SULATED METAL WALL PANELS, R-13.87 MIN. R-0 + R-9.8 CI HM INSULATED DOORS: .16 SOLAR HEAT GAIN COEFFICIENT

HM DOORS: R-6.4

FLOORS OVER UNCONDITIONED SPACE (each assembly)

R-VALUE OF INSULATION

HORIZONTAL / VERTICAL REQUIREMENT SLAB HEATED

# **DESIGN LOADS:**

\_\_\_\_ MPH (ASCE-7-98) EXPOSURE CATEGORY \_\_\_\_\_

**MECHANICAL SUMMARY** SEE MECHANICAL DRAWINGS MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

WINTER DRY BULB SUMMER DRY BULB INTERIOR DESIGN CONDITIONS WINTER DRY BULB SUMMER DRY BULB RELATIVE HUMIDITY BUILDING HEATING LOAD BUILDING COOLING LOAD

MECHANICAL SPACING CONDITIONING SYSTEM DESCRIPTION OF UNIT

**HEATING EFFICIENCY** 

COOLING EFFICIENCY SIZE CATEGORY OF UNIT BOILER SIZE CATEGORY, IF OVERSIZED, STATE REASON

SIZE CATEGORY, IF OVERSIZED, STATE REASON LIST EQUIPMENT EFFICIENCIES:

#### **ELECTRICAL SUMMARY** SEE ELECTRICAL DRAWINGS

**ELECTRICAL SYSTEM AND EQUIPMENT** METHOD OF COMPLIANCE:

#### LIGHTING SCHEDULE

THERMAL ZONE

- LAMP TYPE REQUIRED IN FIXTURE
- NUMBER OF LAMPS IN FIXTURE BALLAST TYPE USED IN THE FIXTURE
- TOTAL WATTAGE PER FIXTURE TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED (whole building or space by space)
- TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED

#### ADDITIONAL PRESCRIPTIVE COMPLIANCE (When using the 2018 NCECC; not required for ASHRAE 90.1)

 C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE C406.3 REDUCED LIGHTING POWER

C406.7 REDUCED ENERGY USE IN SERVICE WATER

- C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
- C406.5 ON-SITE RENEWABLE ENERGY C406.6 DEDICATED OUTDOOR AIR SYSTEM

G R O U

ARCHITECTURE PLANNING 3205 Randall Parkway, Suite 211

Wilmington, NC 28403 910.341.7600 312 West Main St, Suite 300 Salisbury, MD 21801 410.546.9100

> <u>Delaware</u> 309 S Governors Ave

Dover, DE 19904 302.734.7950 Rittenhouse Station 250 South Main Street, Suite 109 Newark, DE 19711 302.369.3700

www.beckermorgan.com

ISSUED FOR CONSTRUCTION

ISSUED:





SOUTH **BRUNSWICK** HIGH SCHOOL ROTC BUILDING 280 COUGAR ROAD, SOUTHPORT NC 28461

DSP #: 100 DPI SCHOOL #:

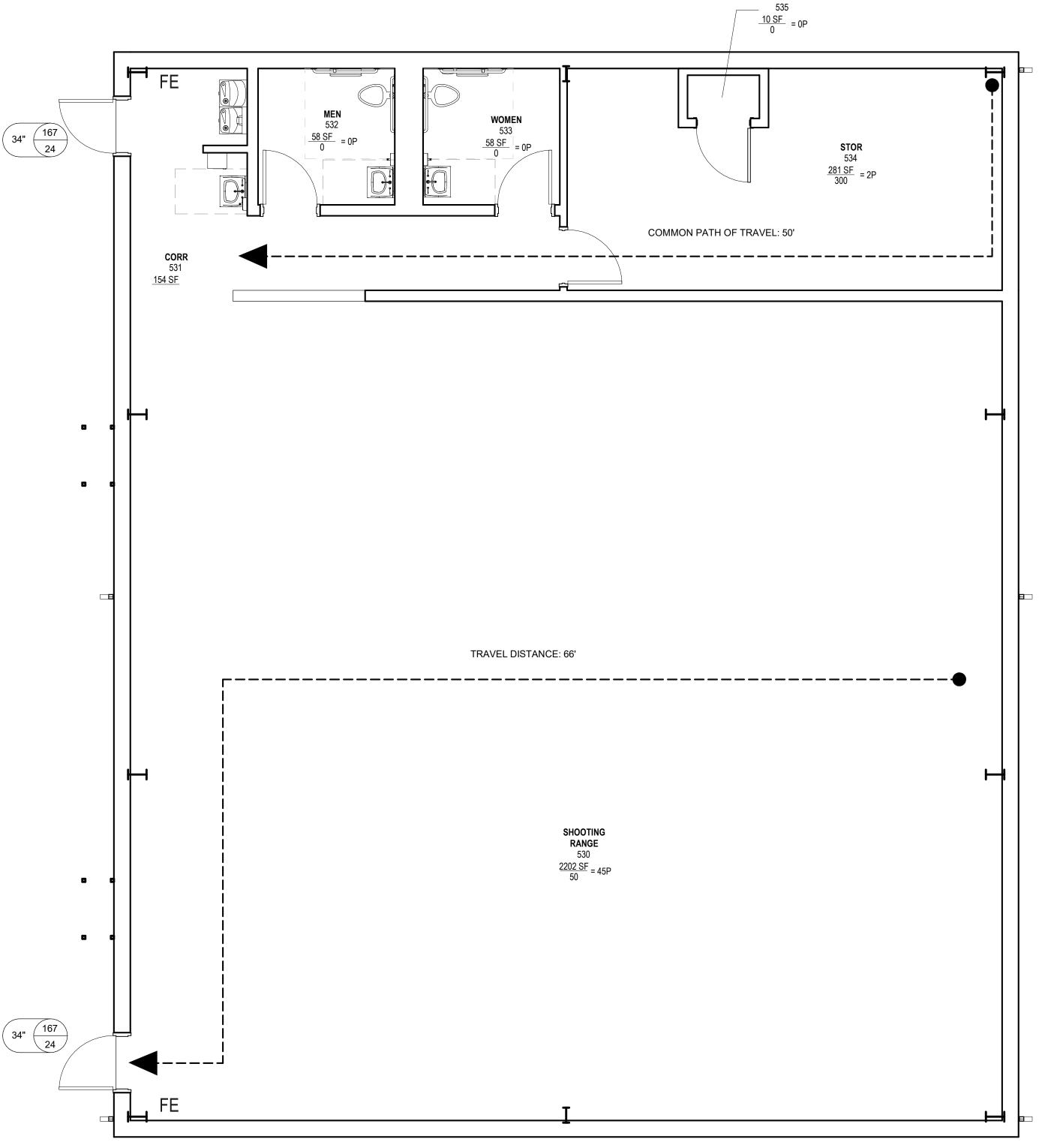
BUILDING CODE SUMMARY

0 08/27/2020 ISSUED FOR Mark Date CONSTRUCTION

DRAWN BY: LJR PROJ MGR: RMC

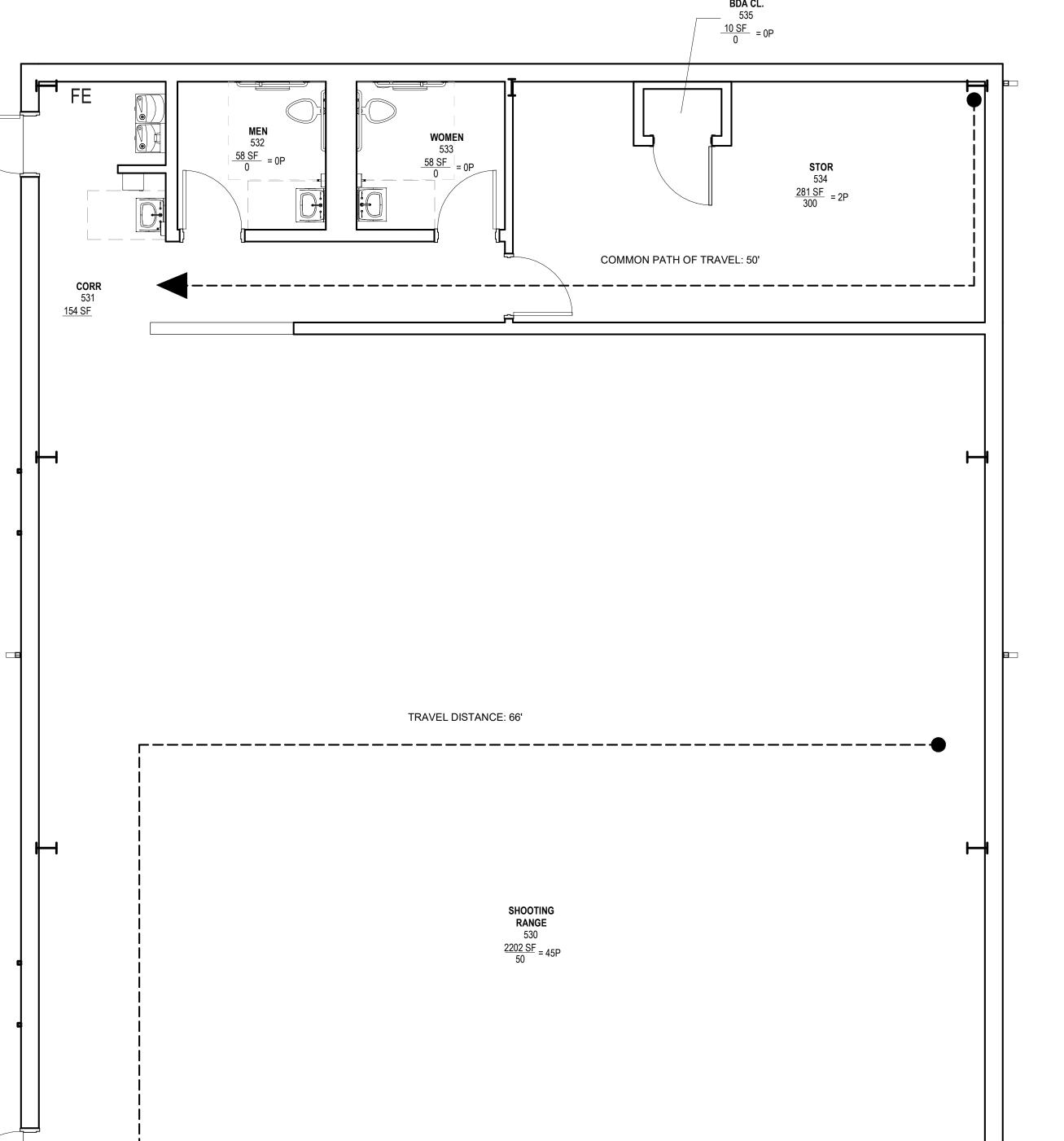
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LIFE SAFETY PLAN

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



CODE LEGEND PATH OF EGRESS •----**>** G R O U P FIRE EXTINGUISHER LOCATION

ROOM TAG / NET SQ.

OCCUPANCY LOAD

FT. AREA AND

ARCHITECTURE PLANNING

EXIT CAPACITY MARKER

**ROOM NAME** 

ROOM NUMBER

 $\frac{SF}{OCC. SF} = OCC. #$ 

OCC LOAD ALLOWED OCC LOAD
ACTUAL

MAXIMUM COMMON PATH OF TRAVEL NON-SPRINKLED BUILDING

B - BUSINESS: 75' E - EDUCATION: 75' S2 - STORAGE: 100'

#### MAXIMUM TRAVEL DISTANCE NON-SPRINKLED BUILDING

B - BUSINESS: 200' E - EDUCATION: 200' S2 - STORAGE: 300' MAXIMUM DEAD END CORRIDOR NON-SPRINKLED BUILDING

B - BUSINESS: 20' E - EDUCATION: 20' S2 - STORAGE: 20'

1. PROVIDE NEW FIRE EXTINGUISHERS IN CABINETS (FEC) AND FIRE EXTINGUISHERS ON BRACKETS (FE) AS SHÒWN ON PLAN. PROVIDE NEW FIRE EXTINGUISHERS IN KITCHEN (TYPE K), MECHANICAL, ELECTRICAL (TYPE B-C), FIRE PUMP, AND ELEVATOR MACHINE ROOMS, AND AS INDICATED.

2. FIRE EXTINGUISHER SHALL BE MINIMUM 3A-40BC RATING. 3. MARK ALL RATED PARTITIONS AND WALLS IN ACCORDANCE WITH IBC (2012) 703.7, AND AS DETAILED.

North Carolina 3205 Randall Parkway, Suite 211 Wilmington, NC 28403 910.341.7600 <u>Maryland</u> 410.546.9100

312 West Main St, Suite 300 Salisbury, MD 21801 <u>Delaware</u> 309 S Governors Ave Dover, DE 19904 302.734.7950 Rittenhouse Station 250 South Main Street, Suite 109 Newark, DE 19711 302.369.3700

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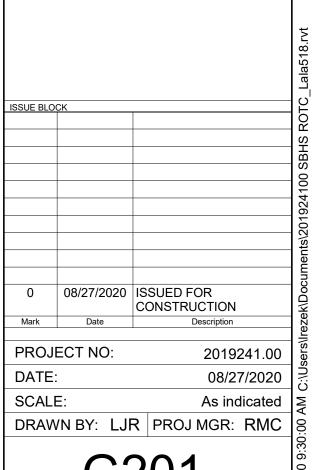
ISSUED FOR CONSTRUCTION ISSUED: 08/27/2020





SOUTH BRUNSWICK 280 COUGAR ROAD, SOUTHPORT NC 28461

LIFE SAFETY PLAN





# **▲ COM***check* Software Version COMcheckWeb

#### **Project Information**

90.1 (2013) Standard **Energy Code:** SBHS - ROTC Project Title: Southport, North Carolina Location: Climate Zone: Project Type: **New Construction** 

Permit No. Performance Sim. Specs: EnergyPlus 8.1.0.009 (EPW: USA\_NC\_Wilmington.Intl.AP.723013\_TMY3.epw)

Construction Site: South Brunswick HS Southport, North Carolina 28461 Owner/Agent: Craig Eckert
Brunswick County Schools
Bollosa, 2017 Ceckert@bcswan.net

Designer/Contractor: Frederick Collins Becker Morgan Group 3333 Jaeckle Drive Suite 120 Wilmington, North Carolina 28403 910-341-7600

rcollins@beckermorgan.com

**Building Area** Floor Area 1-single (School/University) : Nonresidential

#### **Envelope Assemblies**

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget l Factor <sub>(a</sub>
Roof: Other Metal Building Roof, [Bldg. Use 1 - single] (b)	3060			0.037	0.041
Floor: Unheated Slab-On-Grade, [Bldg. Use 1 - single] (c)	220			0.730	0.730
NORTH Ext. Wall: Other Metal Building Wall, [Bldg. Use 1 - single] (b) Door: Other (U-Factor option), Swinging, [Bldg. Use 1 - single] Door: Other (U-Factor option), Swinging, [Bldg. Use 1 - single]	720 21 21	=	=	0.059 0.160 0.160	0.094 0.700 0.700
<u>EAST</u> Ext. Wall: Other Metal Building Wall, [Bldg. Use 1 - single] (b)	623		_	0.059	0.094
SOUTH Ext. Wall: Other Wood Framed Wall, [Bldg. Use 1 - single] (b)	720		<u> </u>	0.059	0.089
<u>WEST</u> Ext. Wall: Other Metal Building Wall, [Bldg. Use 1 - single] (b)	623		_	0.059	0.094

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

(b) 'Other' components require supporting documentation for proposed U-factors. (c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Project Title: SBHS - ROTC Data filename:

Report date: 05/05/20 Page 1 of 11

Envelope PASSES: Design 1% better than code

**Envelope Compliance Statement** 

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 90.1 (2013) Standard requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.



Page 2 of 11

DPI SCHOOL #:

COMcheck FORM

DSP # : 100

G R O U P

ARCHITECTURE PLANNING

North Carolina

3205 Randall Parkway, Suite 211

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302.734.7950 Rittenhouse Station

250 South Main Street, Suite 109 Newark, DE 19711 302.369.3700 www.beckermorgan.com

> ISSUED FOR CONSTRUCTION

> > 08/27/2020

ISSUED:

PROJECT TITLE

SOUTH

BRUNSWICK

280 COUGAR ROAD, SOUTHPORT NC 28461

HIGH SCHOOL

ROTC BUILDING

Project Title: SBHS - ROTC Report date: 05/05/20 Data filename:

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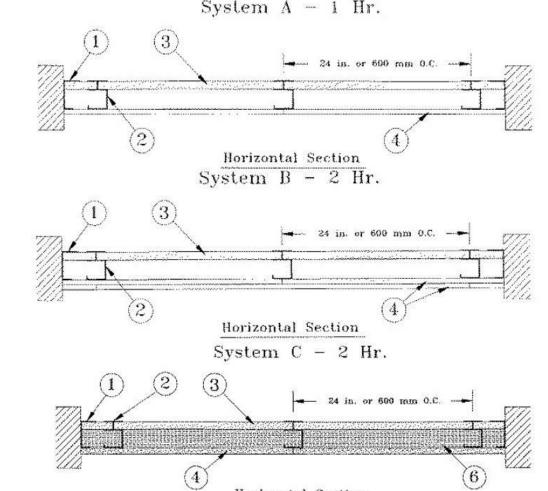
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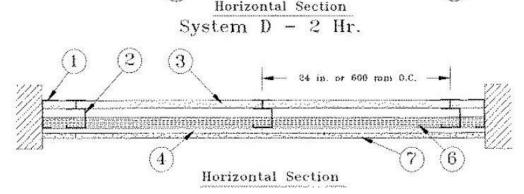
#### Design No. U415 BXUV.U415 Fire Resistance Ratings - ANSI/UL 263

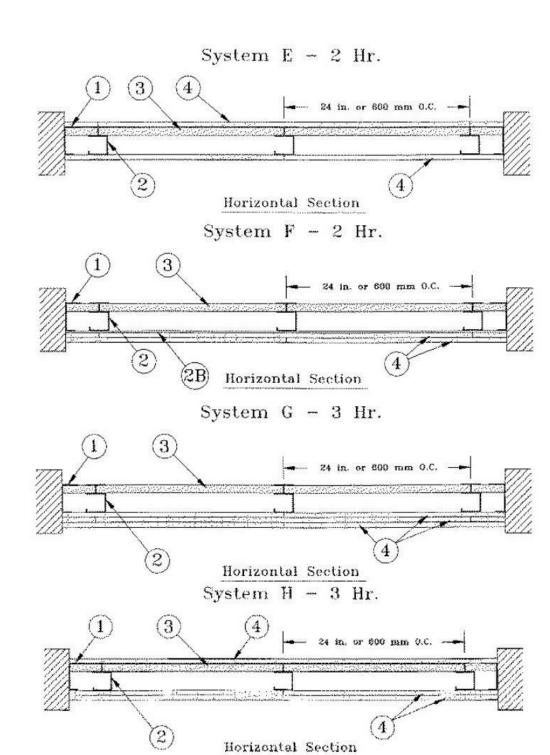
May 20, 2015

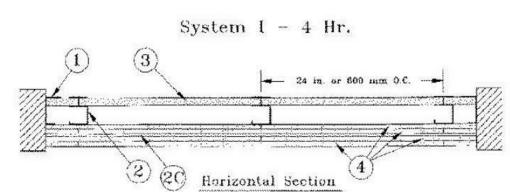
Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.









1. Floor, Side and Ceiling Runners — "J" - shaped runner, min 2-1/2 in. deep (min 4 in. deep when System C is used), with unequal legs of 1 in. and 2 in., fabricated from min 24 MSG (min 20 MSG when Item 4A, 4B or 7 are used) galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC. "E" - shaped studs (Item 2A) may be used as side runners in place of "J" - shaped runners.

2. Steel Studs — "C-H" - shaped studs, min 2-1/2 in. deep (min 4 in. deep when System C is used), fabricated from min 25 MSG (min 20 MSG when Items 2D, 4A, 4B or 7 is used) galv steel. Cut to lengths 3/8 to 1/2 in. less than floor-to-ceiling height and spaced 24 in. or 600 mm OC.

2A. Steel Studs — (Not Shown) — "E" - shaped studs installed back to back in place of "C-H" - shaped studs (Item 2) "E" - shaped studs secured together with steel screws spaced a maximum 12 in. OC. Fabricated from min 25 MSG (min 20 MSG when Item 2D, 4A, 4B or 7 is used) galv steel, min 2-1/2 in. deep (min 4 in. deep when System C is used), with one leg 1 in. long and two legs 3/4 in. long. Shorter legs 1 in. apart to engage gypsum liner panels. Cut to lengths 3/8 to 1/2 in. less than floor to ceiling heights.

2B. Furring Channels — (Optional, not shown) — For use with single or double layer systems. Resilient furring channels fabricated from min 25MSG corrosion protected steel, installed horizontally, and spaced vertically a max 24 in. OC. Flange portion of channel attached to each intersecting "C-H" or "E" stud on side of stud opposite the 1 in. liner panels with 1/2 in. long Type S or 5-12 pan-head steel screws. When furring channels are used, wallboard to be installed vertically only. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7).

2C. Furring Channels — For use with System I - "Hat" - shaped, 25 MSG galv steel furring channels

a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described in Item 3.
b. Steel Framing Members\* — Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC., and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.
2E. Steel Framing Members — (Optional, Not Shown)\* - Furring channels and resilient sound isolation clip as described below:
a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured together with four self-tapping No. 8x1/2 Self Drilling screws (2 per side 1 in. and 4 in. from overlap edge). Gypsum board attached to furring channels as described in Item 3. Side joint furring channels shall be attached to studs with RESILMOUNT Sound Isolation Clips - Type A237R located approximately 2 in. from each end of length of channel. Both Gypsum Boards at

side joints fastened into channel with screws spaced 8 in. OC, approximately 1/2 in. from joint

b. Steel Framing Members\* — Resilient sound isolation clip used to attach furring channels (Item 2Ea) to studs. Clips spaced 24 in. OC., and secured to studs with No. 10 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

2F. Steel Framing Members\* — (Optional, not shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7):

a. Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels (Item 2Da) to studs (Item 2 or 2A ). Clips spaced max. 24 in. OC. GENIECLIPS secured to studs with No. 8 x 1-1/2 in. minimum

self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into

3. Gypsum Board\* — Gypsum liner panels, nom 1 in. thick, 24 in. or 600 mm (for metric spacing) wide. Panels cut 1 in. less in length than floor to ceiling height. Vertical edges inserted in "H" portion of "C-H" studs or the gap between the two 3/4 in. legs of the "E" studs. Free edge of end panels attached to long leg of vertical "J" - runners with 1-5/8 in. long Type S steel screws spaced not greater than 12 in. OC. When wall height exceeds liner panel length, liner panel may be butted to extend to the full height of the wall. Horizontal joints need not be backed by steel framing. In System I, butt joints in liner panels are staggered min 36 in. Butt joints backed with 6 in. by 22 in. strips of 3/4 in. thick gypsum wallboard (Item 4). Wallboard strips centered over butt joints and secured to liner panels with six 1-1/2 in. long Type G steel screws, three screws along the 22 in. dimension at the top and bottom of the strips.
4. Gypsum Board\* —

System A — 1 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. when installed vertically or 8 in OC when installed horizontally. Horizontal joints need not be backed by steel framing.

System B — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in two layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 12 in. OC when installed vertically and staggered 12 in. from base layer screws or 8 in. OC when installed horizontally and staggered 8 in. from base layer screws. Horizontal joints between inner and outer layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in.

System C — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, secured with 1-1/4 in. long Type S steel screws spaced 8 in. OC along vertical edges and 12 in. OC in the field when installed vertically or 8 in. OC along the vertical edges and in the field when installed horizontally. Horizontal joints need not be backed by steel framing. Screws along side joints offset 4 in. Requires min 4 in. deep framing per Items 1, 2 and 3. Requires min 3 in. thick mineral wool batts per Item 6.

System D — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached directly to studs with 1 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Horizontal joints need not be backed by steel framing. Requires face layer of 1/2 or 5/8 in. thick cementitious backer units per Item 7 and min 1-1/2 in. thick mineral wool batts per Item 6.

System E — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. when installed horizontally. Horizontal joints need not be backed by steel framing.

CGC INC — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System F — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically in two layers. Inner or base layer attached to resilient furring channels (Item 2B) with 1 in. long Type S steel screws spaced 24 in. Outer or face layer attached to resilient furring channels (Item 2B) with 1-5/8 in. long Type S steel screws spaced 12 in. OC and staggered 12 in. from base layer screws. Joints between inner and outer layers staggered 24

System G — 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in three layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in OC when installed horizontally. Middle layer attached to stude with 1-5/8 in long Type 1

horizontally in three layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in OC when installed horizontally. Middle layer attached to studs with 1-5/8 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. . Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

System H - 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, two layers over the flange of the "C" section of the studs, one layer over the flange of the "H" section of the studs. Inner or base layer attached to studs with 1 in. long Type 5 steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Face layer attached to studs with 1-5/8 in. long Type 5 steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints

System I — 4 Hr

on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints

centered over studs and staggered 24 in. on adjacent layers

Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 4 ft wide (or 1200 mm for metric spacing) wallboard with square or tapered edges. Total of four layers to be used. First and second (inner) layers applied vertically or horizontally over the steel studs. Horizontal joints need not be backed by steel framing. When applied vertically, joints centered over studs and staggered min 24 in., otherwise all joints staggered min 12 in. First layer secured to studs with 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 24 in. OC. Second layer secured to studs with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Third layer applied vertically over the furring channels (Item 2C) with a 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Fourth layer applied vertically or horizontally with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. When applied vertically, joints to be staggered min 24 in. from third layer, otherwise all joints staggered min 12 in.

4A. Gypsum Board\* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For

4A. Gypsum Board\* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) - Nom 5/8 in. or ¾ in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 9) or Lead Discs or Tabs (see Item 10).

4B. Gypsum Board\* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For

direct attachment only) - Nominal 5/8 in, thick lead backed gypsum panels with beyeled, square or tapered edges

applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or #6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.

4C. **Gypsum Board\*** — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) - Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item

9A) or Lead Discs (see Item 10A). Lead batten strips required behind vertical joints of lead backed gypsum wallboard and

optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 10 ft long with a max thickness of 0.140 in.

placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip.

4D. **Gypsum Board\*** — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only). Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

Systems A, B, C, E, F, G, H, I

Joints on outer layers of gypsum boards (Item 4 and 4A) covered with paper tape and joint compound. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges. Exposed screw heads covered with

5. Joint Tape and Compound - (Not Shown)

joint compound.

6. Batts and Blankets\* —

Systems A, B, E, F, G, H, I

Systems A, B, E, F, G, H, I

(Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt mineral bearing the UL Classification Marking as to Fire Resistance.

System A With Type ULIX Gypsum Boards

Placed in stud cavities, any min. 3-1/2 in. thick glass fiber 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.

Systems C & D

Min 3 in. (System C) and min 1-1/2 in. (System D) thick mineral wool batts, friction fitted between the studs and floor and ceiling runners.

7. **Cementitious Backer Units\*** — (System D) — Nom 1/2 or 5/8 in. thick panels, square edge, attached to studs over gypsum wallboard with 1-5/8 in. long, Type S-12, corrosion resistant steel screws spaced 8 in. OC and staggered 8 in. from gypsum wall board screws. Joints covered with glass fiber mesh tape. Vertical joints staggered one stud cavity from gypsum wallboard joints. Horizontal joints staggered a min of 12 in. from the gypsum wallboard joints.

8. Laminating Adhesive\* — (Optional, Not Shown) — Used to bond outer layer of Cementitious Backer Units (Item 7) to inner layers of Gypsum Board (Item 4) in System D. ANSI A136.1 Type 1 organic adhesive applied with 1/4 in. square notched trowel. See Adhesives (BYWR) in the Fire Resistance Directory or Adhesives (BJLZ) in the Building Materials Directory for names of Classified companies.

9. **Lead Batten Strips** — (Not Shown, For Use With Item 4A) - Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4A) and optional at remaining stud locations. Required behind vertical joints.

9A. Lead Batten Strips — (Not Shown, for use with Item 4C) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D".. Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 6) and optional at remaining stud locations.

10. Lead Discs or Tabs — (Not Shown, For Use With Item 4A) - Used in lieu of or in addition to the lead batten strips (Item 9) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered

over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 4A) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

10A. Lead Discs — (Not Shown, for use with Item 4C) Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

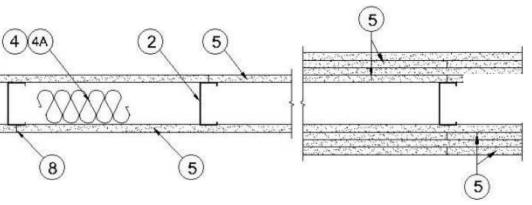
11. Lead Batten Strips — (Not Shown, For Use With Item 4B) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4B) and optional at remaining stud locations.
12. Lead Tabs — (Not Shown, For Use With Item 4B) 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 4B) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard

ONLINE CERTIFICATIONS DIRECTORY

#### Design No. U419 BXUV.U419 Fire Resistance Ratings - ANSI/UL 263

August 06, 2012

Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr (See Items 4 & 5)



1. Floor and Ceiling Runners — (Not shown) — For use with Item 2 - Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.

1A. Framing Members\* - Floor and Ceiling Runners — Not shown - In lieu of Item 1 — For use with Item 2A, proprietary channel shaped, min. 3-5/8 in. deep, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC max. Effective thickness is 0.034 in.

1B. Framing Members\* - Floor and Ceiling Runners — (Not shown - In lieu of Item 1) — For use with Item 2A, proprietary channel shaped, min. 2-1/2 in. deep, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling fasteners 24 in. OC. max. Effective thickness is 0.034 in.

1C. Framing Members\* - Floor and Ceiling Runner — Not shown - In lieu of Item 1 — For use with Item 2C, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC

1D. Framing Members\* - Floor and Ceiling Runner — Not shown - In lieu of Item 1 — For use with Item 2D, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

1E. Framing Members\*— Floor and Ceiling Runners — (Not shown) — In lieu of Item 1 - Channel shaped, attached to floor and ceiling with fasteners 24 in. OC. max.

1F. Floor and Ceiling Runners — (Not shown)—For use with Item 2B- Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, min depth to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

1G. Framing Members\*— Floor and Ceiling Runners — (Not shown, As an alternate to Item 1) — For use with Items 2F, 5F or 5G or 5I only, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max.

1H. Framing Members\* - Floor and Ceiling Runner — Not shown - In lieu of Item 1 — For use with Item 2G, proprietary channel shaped runners, minimum width to accommodate stud size, with 1- 1/8 in. long legs fabricated from min 0.015 in. (min bare metal thickness) galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

1I. Framing Members\* - Floor and Ceiling Runner — For use with Item 2H, proprietary channel shaped runners, minimum width to accommodate stud size attached to floor and ceiling with fasteners 24 in. OC max.

1J. Floor and Ceiling Runners — (Not shown) — Channel shaped, fabricated from min 0.02 in. galv steel, min width to accommodate stud size, with min 1 in. long legs, for use with studs specified below and fabricated from min 0.02 in. galv steel or thicker, attached to floor and ceiling with fasteners spaced max 24 in. OC.

1K. Framing Members\*— Floor and Ceiling Runners — (Not shown, As an alternate to Item 1) — For use with Items 2I, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max. 2. Steel Studs — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height. 2A. Framing Members\* - Steel Studs - In lieu of Item 2 - Proprietary channel shaped studs, min. depth as indicated under Item 5, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. Allowable use of studs is shown in the table below. For direct attachment of gypsum board only. Effective thickness is 0.034 in. 2B. **Steel Studs** — (As an alternate to Item 2, For use with Items 5B & 5E) Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced a max of 16 in. OC. Studs friction-fit into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height 2C. **Framing Members\* - Steel Studs —** (As an alternate to Item 2, For use with Items 5C or 5I) - Proprietary channel shaped studs, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a ½ in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only. 2D. Framing Members\* - Metal Studs - Not shown - In lieu of Item 2 - For use with Item 1D, proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.020 in, thick galy steel. Studs cut 3/8 in, to 3/4 in, less in lengths than assembly heights. 2E. **Framing Members\*— Steel Studs —** In lieu of Item 2 - For Use with Item 1E- Channel shaped studs, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly 2F. Framing Members\*— Steel Studs — (Not shown, As an alternate to Item 2) —For use with Items 1G, 5F or 5G or 5I only, channel shaped studs, min depth as indicated under Item 5F, 5G or 5I, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. 2G. Framing Members\* - Metal Studs — Not shown - In lieu of Item 2 — For use with Item 1H, proprietary channel shaped steel studs, minimum width indicated under Item 5, 1-1/4 in. deep fabricated from min 0.015 in. (min bare metal thickness) galvanized steel. Studs 3/8 in. to 3/4 in. less in lengths than assembly 2H. Framing Members\* - Steel Studs - Not shown - In lieu of Item 2 - For use with Item 1I. Proprietary channel shaped studs, minimum width indicated under Item 5, Studs to be cut 3/8 to 3/4 in less than the 2I. Framing Members\* - Steel Studs - (Not shown, As an alternate to Item 2) - For use with Items 1K ated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. O Studs to be cut 3/4 in. less than assembly height. 3. Wood Structural Panel Sheathing — (Optional, For use with Item 5 Only.)- (Not Shown) - 4 ft wide, 7/16 in. thick oriented strand board (OSB) or 15/32 in. thick structural 1 sheathing (plywood) complying with DOC PS1 or PS2, or APA Standard PRP-108, manufactured with exterior glue, applied horizontally or vertically to the steel studs. Vertical joints centered on studs, and staggered one stud space from wallboard joints. Attached to studs with flat-head self-drilling tapping screws with a min. head diam. of 0.292 in. at maximum 6 in. OC. in the perimeter and 12 in. OC. in the field. When used, fastener lengths for gypsum panels 4. Batts and Blankets\* — (Required as indicated under Item 5) — Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 5. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies. 4A. 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. 5. Gypsum Board\* — 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 joints need not be backed by steel framing. 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

	Gypsum Board Protection on Each Side of Wall			
Rating, Hr	Min Stud Depth, in. Items 2, 2D, 2E, 2G and 2H	Min Stud Depth, in. Item 2A	No. of Layers & Thkns of Panel	Min Thkns of Insulation (Item 4)
1	3-1/2	3-5/8	1 layer, 5/8 in. thick	Optional
1	2-1/2	3-5/8	1 layer, 1/2 in. thick	1-1/2 in.
1	1-5/8	3-5/8	1 layer, 3/4 in. thick	Optional
2	1-5/8	2-1/2	2 layers, 1/2 in. thick	Optional
2	1-5/8	2-1/2	2 layers, 5/8 in. thick	Optional
2	3-1/2	3-5/8	1 layer, 3/4 in. thick	3 in.
3	1-5/8	2-1/2	3 layers, 1/2 in. thick	Optional
3	1-5/8	2-1/2	2 layers, 3/4 in. thick	Optional
3	1-5/8	2-1/2	3 layers, 5/8 in. thick	Optional
4	1-5/8	2-1/2	4 layers, 5/8 in. thick	Optional

4 layers, 1/2 in.

2 layers, 3/4 in.

When Item 7B, Steel Framing Members\*, is used, Nonbearing Wall Rating is limited to 1 Hr. Min. stud depth is 3-1/2 in., min. thickness of insulation (Item 4) is 3 in., and two layers of gypsum board panels (1/2 in. or 5/8 in. thick) shall be attached to furring channels as described in Item 6. One layer of gypsum board panels (1/2 in. or 5/8 in. thick) attached to opposite side of stud without furring channels as described in Item 6. 5A. **Gypsum Board\*** — (As an alternate to Item 5) — 5/8 in. thick, 24 to 54 in. wide, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 6. 5B. Gypsum Board\* — (Not Shown) - As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 in or 3/4 in, thick products are specified. For direct attachment only to steel studs Item 2B, (not to be used with Item 3) - Nom 5/8 in. or ¾ in. may be used as alternate to all 5/8 in. or ¾ in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 in. or ¾ in. thick lead backed gypsum panels with beyeled, square or tapered edges, applied vertically. Vertical joints centered over study and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to 20 MSG steel studs Item 2B with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 11) or Lead Discs or Tabs (see Item 12) 5C. Gypsum Board\* — (For Use With Item 2C) Rating Limited to 1 Hour. 5/8 in. thick, 48 in. wide, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. (Vertical Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. Vertical joints are to be centered over studs and staggered one stud cavity on opposite sides of studs. (Horizontal Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each poard. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting i in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. All horizontal joints are to be backed as outlined under section VI of Volume 1 in the Fire Resistive

5D. **Gypsum Board\*** — (As an alternate to Item 5) — 5/8 in. thick, 48 in. wide, applied vertically or orizontally. Secured as described in Item 6. For use with Items 1 and 2 only 5E. Gypsum Board\* — (Not Shown) - (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified. For direct attachment only to steel studs Item 2B, not to be used with Item 3). Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or No. 6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. 5F. **Gypsum Board\*** — (As an alternate to Item 5) — For use with Items 1G and 2F and limited to 1 Hour Rating only, Gypsum panels with beveled, square or tapered edges, applied vertically, and fastened to the steel studs with 1 in. long Type S screws spaced 8 in. OC along vertical and bottom edges and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Steel stud depth shall be a minimum 3-5/8 in. 5G. **Gypsum Board\*** — (As an alternate to Item 5) — For use with Items 1G and 2F only, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally, as specified in the table below and fastened to the steel studs as described in Item 6. 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 joints need not be backed by steel framing. 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 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall				
Rating, Hr	Min Stud Depth, in. Item 2F	No. of Layers & Thickness of Panel	Min Thkns of Insulation (Item 4)	
2	1-5/8	2 layers, 1/2 in. thick	Optional	
2	1-5/8	2 layers, 5/8 in. thick	Optional	
3	1-5/8	3 layers, 1/2 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	

5H. **Gypsum Board\*** — (Not Shown) - (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 or 3/4 in thick products are specified. For direct attachment only to steel studs Item 2B, (not to be used with Item 3) - Nom 5/8 or 3/4 in. may be used as alternate to all 5/8 or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Gypsum board secured to 20 MSG steel studs Item 2B with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 11A) or Lead Discs (see Item 12A).

51. **Gypsum Board\*** — (As an alternate to Item 5) - Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 5. Steel stud minimum depth shall be as indicated in Item 5.

51. **Gypsum Board\*** — (Not Shown) - (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2B, not to be used with Item 3). Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick.

Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

6. Fasteners - (Not shown) - For use with Items 2 and 2F - Type S or S-12 steel screws used to attach panels to studs (Item 2) or furring channels (Item 7). **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 8 in. OC along vertical and bottom edges and 12 in. OC in the field 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- 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. 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. 6A. Fasteners — (Not shown) —For use with Item 2A - Type S or S-12 steel screws used to attach panels to studs (Item 2A). **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 8-1/2 in. OC with additional screws 1 in. and 2-1/2 in. from edges of the board when panels are horizontally, or 8 in. OC along vertical and bottom edges and 12 in. OC in the field when panels are applied vertically. Two layer systems applied vertically: 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. **Two layer systems applied horizontally:** 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 starting 8 in. from each edge of the board with ar additional screw placed 1-1/4 in. from each edge of the board. 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 starting 8 in. from each edge of the board with an additional screw placed 1-1/4 in. from each edge of the board 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 fo 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. For all layers, an additional screwshall be placed 1-1/4 in, from each edge of the board. 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. 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 For all lavers, an additional screw shall be placed 1-1/4 in, from each edge of the board. 7. 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 5A and 5E. 7A. Framing Members\* - (Not Shown) - (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below: a. Furring Channels - Formed of No. 25 MSG galv steel, 2-3/8 in, wide by 7/8 in, deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A and 5E. b. Steel Framing Members\* — Used to attach furing channels (Item 7Aa) to studs (Item 2). Clips spaced max. 48 in. OC. RSIC-1 clips secured to studs with No. 8  $\times$  1-1/2 in. ninimum self-drilling, S-12 steel screwthrough the center grommet. RSIC-V clips secured to studs with No. 8 x 9/16 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips. 7B. Framing Members\* — (Optional, Not Shown) — As an alternate to Item 7, for single or double layer systems, furring channels and Steel Framing Members on only one side of studs as described below: a. Furring Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Batts and Blankets placed in stud cavity as escribed in Item 5. Two layers of gypsum board attached to furring channels as described in Item 5. Not for use with Item 5A and 5E.

b. Steel Framing Members\* — Used to attach furring channels (Item 7Ba) to one side of studs (Item 2) only. Clips spaced 48 in. OC., and secured to studs Illlith two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the dip. Furring channels are friction fitted into clips.

7C. Framing Members\* — Optional - Not Shown - Used as an alternate method to attach resilient channels (Item 7). Clips attached at each intersection of the resilient channel and the steel studs (Item 2). Resilient channels are friction fitted into clips, and then clips are secured to the steel stud with min. 1 in. long Type S-12 steel screws through the center hole of the clip and the resilient channel flange.

7D. Framing Members\* — (Not Shown) — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:

a. Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A and 5E.

b. Steel Framing Members\* — Used to attach furring channels (Item 7Aa) to studs (Item 2). Clips spaced max. 48 in. OC. GENIECLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips.

8. 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 layer panels. Paper tape and joint compound may be omitted when gypsum panels are 9. 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 10. Caulking and Sealants\* - (Optional, not shown) - A bead of acoustical sealant applied around the partition perimeter for sound control. 11. Lead Batten Strips - (Not Shown, For Use With Item 5B) - Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5B) and optional at remaining stud locations. Required behind vertical joints. 11A. Lead Batten Strips - (Not Shown, For Use With Item 5H) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grades "A, B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud 12. Lead Discs or Tabs — (Not Shown, For Use With Item 5B) - Used in lieu of or in addition to the lead batten strips (Item 11) or optional at other locations - Max 3/4 in, diam by max 0.125 in, thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 5B) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C" 12A. Lead Discs - (Not Shown, for use with Item 5H) Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.9% meeting the Federal Specification QQ-L-201f, Grades "A, B, C or D". 13. **Lead Batten Strips —** (Not Shown, For Use With Item 5E) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to

have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5E) and optional at remaining stud locations.

14. Lead Tabs - (Not Shown, For Use With Item 5E) 2 in. wide, 5 in. long with a max thickness of 0.142 in

may be held in place with standard adhesive tape if necessary.

abs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tab

required at each location where a screw (that secures the gypsum boards, Item 5E) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs

BECKER
MORGAN

GROUP

ARCHITECTURE
PLANNING

P L A N N I N G

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910.341.7600

Dover, DE 19904 302.734.7950 Rittenhouse Station 250 South Main Street, Suite 109 Newark, DE 19711 302.369.3700

www.beckermorgan.com

ISSUED
FOR CONSTRUCTION

ISSUED: 08/27/2020





SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING 280 COUGAR ROAD, SOUTHPORT NC 28461

PROJECT TITLE

DSP # : 100 DPI SCHOOL #

U.L. DETAILS

Mark Date Description

PROJECT NO: 2019241.00

DATE: 08/27/2020

SCALE:

DRAWN BY: LJR PROJ MGR: RMC

G401

# SOUTH BRUNSWICK HIGH SCHOOL ROTC ADDITION

280 COUGAR ROAD SOUTHPORT, NC 28461

# BID DOCUMENTS

#### NOTICE REQUIRED

ALL EXISTING UNDERGROUND UTILITIES SHALL BE PHYSICALLY LOCATED PRIOR TO THE BEGINNING OF ANY CONSTRUCTION IN THE VICINITY OF SAID UTILITIES.

CONTRACTORS SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATION AT LEAST TWO WORKING DAYS, BUT NOT MORE THAN TEN WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION.

CONTRACTORS SHALL CONTACT OVERHEAD ELECTRIC PROVIDER TO COMPLY WITH FEDERAL OSHA 1910.333 MINIMUM APPROACH DISTANCE TO ENERGIZED POWERLINES AND OSH 29 CFR 1926.1407-1411 MUST BE FOLLOWED.

CONTRACTOR SHALL CONTACT AT&T PRIOR TO ANY DEMOLITION TO ALLOW FOR AT&T TO DISCONNECT COMMUNICATIONS CABLES COMING INTO THE SITE.

#### UTILITY CONTACT INFORMATION

CITY OF BOILING SPRING LAKES PLANNING & INSPECTIONS DEPARTMENT
ATTN: NICOLE MORGAN, PLANNING & ZONING ADMINISTRATOR PH: 910-363-0132

PIEDMONT NATURAL GAS ATTN: CATHY PLEASANT PH: 910-251-2827

EMERGENCY DIAL 911
POLICE - FIRE - RESCUE
CITY OF BOILING SPRING LAKES POLICE DEPARTMENT
PH: 910-363-0011 (NON-EMERGENCY)

BRUNSWICK COUNTY ENGINEERING ATTN: BRIGIT FLORA (STORMWATER) PH: 910-253-2405

BRUNSWICK COUNTY UTILITIES (WATER & SEWER)
ATTN: WILLIAM PINNIX AND/OR AMY AYCOCK
PH: 910-253-2408 AND/OR 910-253-2407

DUKE ENERGY
DISTRIBUTION CONSTRUCTION SERVICE
ALLISON WALSH
PH: 910-350-3457

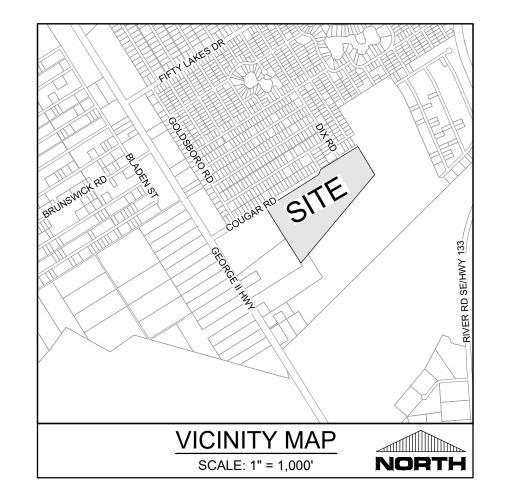
TRANSMISSION AGENT BILL WILDER PH: 910-772-4903

AT&T/BELL SOUTH
ATTN: STEVE DAYVAULT (BUILDING ENGINEERING)
PH: 910-341-0741

ATTN: JAMES BATSON, ENGINEERING PH: 910-341-1621

SPECTRUM ATTN: STEVE BARNETTE PH: 910-772-5755

# AUGUST 2020





ENGINEER (CIVIL) & LANDSCAPE ARCHITECT: PARAMOUNTE ENGINEERING, INC.

122 CINEMA DRIVE
WILMINGTON, NORTH CAROLINA 28403
ATTN: ROB BALLAND, P.E. (910) 791-6707 - ENGINEER
ATTN: ALLISON ENGEBRETSON, RLA (910) 791-6707 - LANDSCAPE

SURVEYING:
PARAMOUNTE ENGINEERING, INC.
122 CINEMA DRIVE
WILMINGTON, NORTH CAROLINA 28403
ATTN: CHRIS GAGNE, P.L.S. (910) 791-6707

SHEET INDEX				
SHEET NUMBER	SHEET TITLE			
C-0.0	COVER SHEET			
C-1.0 & C-1.1	GENERAL NOTES			
C-2.0	EX. CONDITIONS & DEMOLITION PLAN			
C-2.1 & C-2.2	SITE PLANS			
C-3.0	GRADING-DRAINAGE-EC PLAN			
C-4.0	UTILITY PLAN			
C-5.0 & C-5.1	DETAILS			





#### PREPARED BY:

PARAMOUNTE

122 Cinema Drive Wilmington, North Carolina 28403 (910) 791-6707 (O) (910) 791-6760 (F) NC License #: C-2846 PROJECT # 19436.PE

- THE CONTRACTOR IS REQUIRED TO OBTAIN ANY/ALL PERMITS REQUIRED FOR CONSTRUCTION
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH PERMITS ISSUED AND WITH THE CITY OF BOILING SPRING LAKES AND BRUNSWICK COUNTY UTILITIES (WATER & SANITARY SEWER).
- THE CONTRACTOR IS TO ESTABLISH AND CHECK ALL HORIZONTAL AND VERTICAL CONTROLS TO BE USED WITH THE PROJECT. IN ADDITION, THE CONTRACTOR IS TO COMPUTE THE LAYOUT OF THE ENTIRE SITE PLAN IN ADVANCE OF BEGINNING ANY WORK ASSOCIATED WITH THE SUBJECT PLANS. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR TO PERFORM SITE IMPROVEMENT STAKEOUT(S)
- ANYTIME WORK IS PERFORMED OFF-SITE OR WITHIN AN EXISTING EASEMENT, THE CONTRACTOR IS TO NOTIFY THE HOLDER OF SAID EASEMENT AS TO THE NATURE OF PROPOSED WORK, AND TO FOLLOW ANY GUIDELINES OR STANDARDS WHICH ARE ASSOCIATED WITH OR REFERENCED IN THE RECORDED EASEMENT.
- CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS BY OTHERS FOR ALL BUILDING DIMENSIONS AND DETAILS.

#### GENERAL NOTES:

- TREE INVENTORY AND TOPOGRAPHIC SURVEY COMPLETED BY PARAMOUNTE ENGINEERING, INC. THE SURVEY SHALL BE FIELD VERIFIED BY CONTRACTOR AND ANY DISCREPANCIES REPORTED TO
- REASONABLE CARE HAS BEEN EXERCISED IN SHOWING THE LOCATION OF EXISTING UTILITIES ON THE PLANS. THE EXACT LOCATION OF ALL EXISTING UTILITIES IS NOT KNOWN IN ALL CASES. THE CONTRACTOR SHALL EXPLORE THE AREA AHEAD OF DITCHING OPERATIONS BY OBSERVATIONS. ELECTRONIC DEVICES, HAND DIGGING AND BY PERSONAL CONTACT WITH THE UTILITY COMPANIES. IN ORDER TO LOCATE EXISTING UTILITIES IN ADVANCE OF TRENCHING OPERATIONS SO AS TO ELIMINATE OR MINIMIZE DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RESULTING FROM ANY DAMAGE TO THE EXISTING UTILITY LINES INCLUDING LOSS OF UTILITY REVENUES. CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF EXISTING UTILITIES, SUCH AS POLES, CONDUITS, FIBER OPTIC CABLES, TELEPHONE CABLES, WATER LINES, ETC.
- CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT.
- CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAGMEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE USDOT.
- ALL MATERIAL CLEARED OR DEMOLISHED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED
- ALL WORK BY THE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR AFTER THE OWNER ACCEPTS THE WORK.
- CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL CENTER AT 811 AN ALLOW THE CENTER TO LOCATE EXISTING UTILITIES BEFORE DIGGING.
- ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO START OF CONSTRUCTION. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
- 0. ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH THE RESPECTIVE UTILITY.
- 11. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
- 12. THE GENERAL CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
- 13. THE GENERAL CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
- 14. ALL STREET SURFACES, DRIVEWAYS, CULVERTS, CURB AND GUTTERS, ROADSIDE DRAINAGE DITCHES AND OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A SPECIFICATIONS.
- 15. CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
- 16. IF DEPARTURES FROM THE SPECIFICATIONS OR DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE GIVEN TO THE OWNER FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE PERMISSION OF THE OWNER, THE TOWN OF BOILING SPRING LAKES OR BRUNSWICK
- . CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE OTHER OBSTRUCTIONS OR FROM DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. CONTACT NORTH CAROLINA ONE CALL" TOLL FREE 1-800-632-4949 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NONSUBSCRIBING UTILITIES.
- 18. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, EQUIPMENT, ETC., THAT MAY BE REQUIRED.
- 19. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
- 20. ALL LOT STRIPING AND DIRECTIONAL ARROWS TO BE REFLECTIVE MARKINGS AND SHALL CONFORM TO MUTCD. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL
- . LANDSCAPE PLANTINGS AT ENTRANCE/ EXITS WILL BE INSTALLED AND MAINTAINED SO AS NOT TO INTERFERE WITH SIGHT DISTANCE NEEDS OF DRIVERS IN THE PARKING AREA AND AT ENTRANCE/EXIT LOCATIONS PER LOCAL STANDARDS.
- 22. ALL DIMENSIONS AND RADII ARE TO OUTSIDE FACE OF BUILDING OR TO FACE OF CURB UNLESS OTHERWISE NOTED

#### TRAFFIC NOTES:

- ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY & FOR DRIVEWAY(S) ARE TO BE THERMOPLASTIC & MEET CITY OF BOILING SPRING LAKES AND/OR NCDOT STANDARDS.
- TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
- . ALL TRAFFIC CONTROL SIGNS AND MARKINGS NOT WITHIN THE PUBLIC RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
- 4. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
- 5. ANY OPEN CUTTING OF A CITY STREET REQUIRES A UTILITY CUT PERMIT. CONTACT CITY OF BOILING SPRING LAKES PLANNING & INSPECTIONS DEPARTMENT AT 910-294-0996 FOR MORE DETAILS.
- ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND/OR CURBING SHALL BE
- 8. TACTILE WARNING MATS TO BE INSTALLED AT ALL WHEELCHAIR RAMPS AND CURB CUTS.

#### GENERAL EROSION AND SEDIMENT CONTROL NOTES:

- 1. THE EROSION CONTROL PLAN SHALL INCLUDE PROVISIONS FOR GROUNDCOVER ON ALL EXPOSED PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1 WITHIN 7 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY. GROUND COVER SHALL BE PROVIDED ON PROJECT IS DEVELOPED: WHETHER AS A WHOLE OR IN PHASES. ANY FROSION CONTROL ALL OTHER DISTURBED AREAS WITHIN 14 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY.
- 2. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK. (NO SEPARATE PAYMENT)
- 3. THE CONTRACTOR SHALL NOTIFY PLAN APPROVING AUTHORITY ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO FINAL INSPECTION.
- 4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO CLEARING AND/OR
- 5. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE MAINTAINED
- ON THE SITE AT ALL TIMES. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO OFF-SITE BORROW OR WASTE AREAS STAGING OR STORAGE

AREAS), THE CONTRACTOR SHALL PREPARE AND SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN

TO THE OWNER FOR REVIEW AND TO NEW HANOVER COUNTY FOR APPROVAL. CONTRACTOR SHALL PAY

CONTRACTOR SHALL PROVIDE THE OWNER AND THE ENGINEER A COPY OF THE AMENDED PERMIT. 7. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY EITHER THE

REVIEWING AGENCY OR THE ENGINEER. (NO SEPARATE PAYMENT).

SEEDED AS INDICATED AND STABILIZED.

ALL FEES REQUIRED AND SHALL INSTALL NECESSARY MEASURES AT NO SEPARATE PAYMENT. THE

- 8. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS
- 9. ALL AREAS DISTURBED BY CONSTRUCTION UNLESS OTHERWISE IMPROVED SHALL BE SODDED OR
- 10. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE
- PRIOR TO DISCHARGE TO RECEIVING OUTLET.

RUNOFF-PRODUCING EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS

- OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY. 12. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED BY CONTRACTOR ONCE STABILIZATION OR A SUFFICIENT GROUND COVER HAS BEEN ESTABLISHED OR AS DIRECTED BY THE
- ENGINEER. (NO SEPARATE PAYMENT). NCDENR'S FINAL APPROVAL IS REQUIRED. 13. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE SHALL BE REQUIRED AT ALL CONSTRUCTION STAGING AREA ENTRANCES AND ALL CONSTRUCTION ACCESS LOCATIONS INTO NON-PAVED AREA. (NO SEPARATE
- 14. WHEN CROSSING CREEK OR DRAINAGE-WAY, THE DIVISION OF WATER QUALITY SHALL BE CONTACTED PRIOR TO DISTURBING A CREEK. THE CONTRACTOR SHALL INSTALL RIP-RAP WITH FABRIC ALONG DISTURBED BANKS AND CHANNEL AND RESTORE SLOPES TO ORIGINAL CONTOURS, BUT NOT STEEPER THAN 2:1 MAXIMUM. DISTURBED CREEK AREA SHALL BE STABILIZED IMMEDIATELY.

- CONTRACTOR TO COORDINATE WITH THE OWNER TO PROPERLY MAINTAIN OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
- CONTRACTOR IS TO WALK THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT NEW SITE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND WILL BE CONSIDERED UNCLASSIFIED EXCAVATION.
- DEMOLITION SHALL INCLUDE BUT IS NOT LIMITED TO THE EXCAVATION, HAULING AND OFFSITE DISPOSAL OF CONCRETE PADS, CONCRETE DITCHES, FOUNDATIONS, SLABS, STEPS, AND STRUCTURES: ABANDONED UTILITIES, BUILDINGS, PAVEMENTS AND ALL MATERIALS CLEARED AND STRIPPED TO THE EXTENT NECESSARY AS DIRECTED BY THE GEOTECHNICAL ENGINEER FOR THE INSTALLATION OF THE NEW IMPROVEMENTS AND WITHIN THE LIMITS OF CLEARING AND GRADING AND
- THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO
- ELECTRIC, TELEPHONE, SANITARY SEWER, WATER AND STORM SEWER UTILITIES THAT SERVICE OFF-SITE PROPERTIES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS BY THE CONTRACTOR.
- THE CONTRACTOR SHALL PRODUCE A PHOTOGRAPHIC RECORD (DIGITAL) OF DEVELOPMENT COMMENCING WITH A RECORD OF THE SITE AS IT APPEARS BEFORE DEMOLITION HAS BEGUN. AFTERWARDS, A PHOTOGRAPHIC RECORD SHALL BE MAINTAINED WEEKLY DURING CONSTRUCTION AND ENDING WITH A PHOTOGRAPHIC RECORD OF THE DEVELOPMENT AS IT APPEARS AFTER DEMOLITION. THIS RECORD SHALL BE DELIVERED TO THE OWNER.
- EXISTING CURB AND GUTTER, LIGHTS, SIDEWALK, AND UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED. PROTECTED AND UNDISTURBED DURING DEMOLITION.
- ALL EXISTING IMPROVEMENTS INDICATED OR REQUIRED TO BE DEMOLISHED SHALL INCLUDE REMOVAL FROM THE PROPERTY AND PROPER DISPOSAL.
- CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES
- 10. CONTRACTOR SHALL MAINTAIN REQUIRED DISTANCES FROM HIGH VOLTAGE OVERHEAD LINES AND REMOVE TREES SO THEY DO NOT FALL TOWARDS OVERHEAD ELECTRICITY.
- PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
- ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS
- EXISTING FIRE HYDRANTS ON OR NEAR THE SITE ARE TO REMAIN IN SERVICE.
- INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS.

#### EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES:

NOTE: THESE EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES ARE INTENDED FOR EACH "PHASE" OF CONSTRUCTION. THE ORDER AND STEPS TAKEN MUST BE IMPLEMENTED AS EACH PART OF THE DEVICES/MEASURES MUST REMAIN IN PLACE UNTIL THE ENTIRE DISTURBANCE IS STABILIZED AND ALL IMPROVEMENTS WITHIN THE DISTURBANCE LIMITS ARE COMPLETE.

- 1. CONSTRUCT TEMPORARY GRAVEL CONSTRUCTION ENTRANCE(S), ESTABLISH THE LIMITS OF DISTURBANCE, TREE PROTECTION FENCING, AND TEMPORARY SILT FENCE.
- 2. CLEAR AND REMOVE FROM SITE TREES AS DESIGNATED, ROOTS, ROOT MAT, ETC. FROM THE AREA WITHIN THE DESIGNATED CLEARING LIMITS.
- 3. CONSTRUCT TEMPORARY SEDIMENT BASIN(S) AND ASSOCIATED SKIMMER, OUTLET PIPE, SPILLWAY, ETC. 4. INSTALL REMAINING EROSION CONTROL MEASURES AS SHOWN ON THE PLANS WITHIN THE AREA DISTURBED. ALL EROSION CONTROL MEASURES MUST BE INSTALLED BEFORE COMMENCING
- 5. PLANT GRASS OVER ALL GRADED AREAS WITHIN 14 WORKING DAYS OF CEASE OF ANY GRADING
- IMMEDIATELY UPON THE INSTALLATION OF ANY STORM DRAINAGE CATCH BASIN, DROP INLET, ETC., THE CONTRACTOR SHALL INSTALL INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND RESTORING TO PRE-CONSTRUCTION CONDITIONS ANY AREAS OUTSIDE THE PROJECT LIMITS THAT MAY INADVERTENTLY BE DAMAGED DUE TO THE FAILURE OF THE EROSION CONTROL MEASURES.
- 8. DURING GRADING AND AFTER GRADING HAS BEEN COMPLETE, THE CONTRACTOR SHALL CONTINUE TO MAINTAIN PERMANENT AND TEMPORARY EROSION CONTROL MEASURES UNTIL FINAL APPROVAL BY
- ENGINEER OR EROSION CONTROL INSPECTOR. 9. UPON RECEIVING FINAL APPROVAL, THE CONTRACTOR CAN REMOVE TEMPORARY EROSION CONTROL
- 10. THE CONTRACTOR SHALL CONTINUE TO WATER, FERTILIZE, MOW AND MAINTAIN GRASS & PLANTED AREAS UNTIL ALL CONSTRUCTION IS COMPLETE.

#### EROSION CONTROL MAINTENANCE PLAN:

- THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH 1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY 1/2-INCH OR GREATER RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED
  - 2. SEDIMENT FENCE / SEDIMENT FENCE OUTLETS SEDIMENT WILL BE REMOVED BEHIND THE SEDIMENT FENCE WHEN IT BECOMES HALF-FILLED. THE SEDIMENT FENCE WILL BE BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL AND SPACED 6 FEFT WITH EXTRA STRENGTH FABRIC AND NO WIRE BACKING. STAKE SPACING CAN BE 8 FEET WHEN STANDARD STRENGTH FABRIC AND WIRE. BACKING ARE USED. IF ROCK FILTERS (OR EXCELSIOR WATTLES) ARE DESIGNED AT LOW POINTS IN THE SEDIMENT FENCE THE ROCK OR WATTLE WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF FULL OF SEDIMENT, NO LONGER DRAINS, OR IS DAMAGED.
  - ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS ON THESE PLANS AND CONTRACT SPECIFICATIONS TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.

PERMANENT SEE	DING		
GRASS TYPE	LBS/ ACRE	TIME OF SEEDING	FERTILIZER LIMESTONE
BERMUDA, HULLED BERMUDA, UNHULLED	10-20 35	MARCH - AUGUST SEPT FEB.	BY SOIL TEST
CENTIPEDE	10	MARCH - AUGUST	BY SOIL TEST (NO HIGH PH)
TALL FESCUE (COASTAL CULTIVAR RECOMMENDED)	50	MARCH - AUGUST	300 LB/AC 10-20-20 OR BY SOIL TEST
SLOPES >= 2:1 CENTIPEDE SERICEA LESPEDEZA	5 20	JAN - DEC	BY SOIL TEST

TEMPORARY SEED	<u>ING</u>		
GRASS TYPE	LBS/ ACRE	TIME OF SEEDING	FERTILIZER LIMESTONE
RYE GRAIN	50	OCT APR.	400 LBS/AC. 10-20-20
SWEET SUDAN GRASS	50	JUNE - AUGUST	400 LBS/AC. 10-20-20
GERMAN or BROWNTOP MILLET	50	JUNE - AUGUST	400 LBS/AC. 10-20-20
STRAW MULCH AS NEEDED	4,000		

IN THE EVENT THAT THE GOVERNING AGENCIES TIMEFRAME FOR STABILIZATION VARY,

CONTRACTOR SHALL MEET THE MORE STRINGENT REQUIREMENT.

#### NC ACCESSIBILITY NOTES:

#### SPECIAL ATTENTION SHALL BE GIVEN TO COMPLIANCE WITH AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ANSI A117.1, AND APPLICABLE LOCAL LAWS &

- 2. IT IS ESSENTIAL THAT CONTRACTORS ARE AWARE OF THE SITE ACCESSIBILITY REQUIREMENTS. PARAMOUNTE ENGINEERING HAS DEVELOPED THESE NOTES AND DETAILS TO ASSURE THAT CONTRACTORS ARE AWARE OF THE REQUIREMENTS AT THE POINT IN TIME WHEN THEY ARE BIDDING THE PROJECT. IN ADDITION, PARAMOUNTE ENGINEERING HAS MADE A POINT IN THESE NOTES AND DETAILS, AS WELL AS IN OUR DRAWINGS, TO PROVIDE SLOPES / GRADES AND DIMENSIONS THAT COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ANSI A117.1 AND APPLICABLE LOCAL LAWS & REGULATIONS. IF THESE SLOPES / GRADES AND DIMENSIONS ARE NOT ACHIEVABLE, THE CONTRACTOR IS REQUIRED TO CONTACT THE OWNER IMMEDIATELY AND BEFORE MOVING FORWARD WITH THE WORK.
- 3. THE CONTRACTOR SHALL NOTIFY PARAMOUNTE ENGINEERING IMMEDIATELY OF ANY CONFLICT BETWEEN THESE NOTES AND DETAILS AND OTHER PROJECT DRAWINGS, WHETHER BY PARAMOUNTE ENGINEERING OR OTHERS. THE CONTRACTOR SHALL NOT PROCEED WITH THE WORK FOR WHICH THE ALLEGED CONFLICT HAS BEEN DISCOVERED UNTIL SUCH ALLEGED CONFLICT HAS BEEN RESOLVED. NO CLAIM SHALL BE MADE BY THE CONTRACTOR FOR DELAY OR DAMAGES AS A RESULT OF RESOLUTION OF ANY SUCH CONFLICT(S).
- 4. THESE ACCESSIBILITY NOTES AND DETAILS ARE INTENDED TO DEPICT SLOPE AND DIMENSIONAL REQUIREMENTS ONLY. REFER TO SIDEWALK, CURBING, AND PAVEMENT DETAILS FOR ADDITIONAL

#### ACCESSIBLE ROUTE NOTES:

- AT LEAST ONE ACCESSIBLE ROUTE SHALL BE PROVIDED WITHIN THE SITE FROM ACCESSIBLE PARKING SPACES AND ACCESSIBLE PASSENGER LOADING ZONES; PUBLIC STREETS OR SIDEWALKS; AND PUBLIC TRANSPORTATION STOPS TO THE ACCESSIBLE BUILDING OR FACILITY ENTRANCE THEY SERVE.
- 2. AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ACCESSIBLE BUILDINGS, ACCESSIBLE FACILITIES, ACCESSIBLE ELEMENTS, AND ACCESSIBLE SPACES THAT ARE ON THE SAME SITE.
- 3. WALKING SURFACES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL HAVE A MAXIMUM RUNNING
- 4. ANY WALKING SURFACE THAT IS PART OF AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER
- THAN 5.0% IS A RAMP AND SHALL COMPLY WITH THE GUIDELINES FOR RAMPS OR CURB RAMPS.
- TRANSITIONS BETWEEN RAMPS, WALKS, LANDINGS, GUTTERS OR STREETS SHALL BE FLUSHAND FREE OF ABRUPT VERTICAL CHANGES (1/4 INCH MAXIMUM VERTICAL CHANGE IN LEVEL PERMITTED).
- 6. FLOOR SURFACES SHALL BE STABLE, FIRM AND SLIP RESISTANT.

SLOPE OF 5.0% AND A MAXIMUM CROSS SLOPE OF 2.0%.

- THE MINIMUM CLEAR WIDTH OF EXTERIOR ACCESSIBLE ROUTES SHALL BE FORTY-EIGHT (48) INCHES MINIMUM MEASURED BETWEEN HANDRAILS WHERE HANDRAILS ARE PROVIDED (NC BUILDING CODE
- WHERE AN ACCESSIBLE ROUTE MAKES A 180 DEGREE TURN AROUND AN OBJECT THAT IS LESS THAN FORTY-EIGHT (48) INCHES IN WIDTH, CLEAR WIDTH SHALL BE FORTY-TWO (42) INCHES MINIMUM APPROACHING THE TURN, FORTY-EIGHT (48) INCHES MINIMUM DURING THE TURN, AND FORTY-TWO (42) INCHES MINIMUM LEAVING THE TURN. THE CLEAR WIDTH APPROACHING AND LEAVING THE TURN MAY BE THIRTY-SIX (36) INCHES MINIMUM WHEN THE CLEAR WIDTH AT THE TURN IS SIXTY (60) INCHES MINIMUM. \* SEE NOTE 7 ABOVE FOR NC CLEAR WIDTH OF EXTERIOR ACCESSIBLE ROUTES\*
- 9. AN ACCESSIBLE ROUTE WITH A CLEAR WIDTH LESS THAN SIXTY (60) INCHES SHALLPROVIDE PASSING SPACES AT INTERVALS OF TWO HUNDRED (200) FEET MAXIMUM. PASSING SPACES SHALL BE EITHER A SIXTY (60) INCH MINIMUM BY SIXTY (60) INCH MINIMUM SPACE; OR AN INTERSECTION OF TWO (2) WALKING SURFACES THAT PROVIDE A COMPLIANT T-SHAPED TURNING SPACE, PROVIDED THE BASE AND ARMS OF THE T-SHAPED SPACE EXTEND FORTY-EIGHT (48) INCHES MINIMUM BEYOND THE
- 10. DOORS, DOORWAYS AND GATES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ ANSI A117.1, AND APPLICABLE LOCAL LAWS & REGULATIONS.
- 11. DIRECTIONAL SIGNAGE INDICATING THE ROUTE TO THE NEAREST ACCESSIBLE BUILDING ENTRANCE SHALL BE PROVIDED AT INACCESSIBLE BUILDING ENTRANCES.
- 12. WHERE POSSIBLE, DRAINAGE INLETS SHALL NOT BE LOCATED ON AN ACCESSIBLE ROUTE. IN THE EVENT THAT A DRAINAGE INLET MUST BE LOCATED ON AN ACCESSIBLE ROUTE, THE GRATE SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), A117.1, THE NC BUILDING CODE, AND APPLICABLE LOCAL LAWS & REGULATIONS

- 1. ANY PART OF AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER THAN 5% SHALL BE CONSIDERED A RAMP.
- 2. THE MAXIMUM RUNNING SLOPE FOR A RAMP SHALL BE 8.33% AND THE MAXIMUM CROSS SLOPE SHALL
- 3. THE CLEAR WIDTH OF AN EXTERIOR RAMP RUN SHALL BE FORTY EIGHT INCHES (NC BUILDING CODE 1104.1). WHERE HANDRAILS ARE PROVIDED ON THE RAMP RUN, THE CLEAR WIDTH SHALL BE MEASURED BETWEEN THE HANDRAILS.
- 4. THE RISE FOR ANY RAMP RUN SHALL BE THIRTY (30) INCHES MAXIMUM.
- 5. LANDINGS SHALL BE PROVIDED AT THE TOP AND BOTTOM OF RAMPS. LANDINGS SHALL HAVE A SLOPE NOT STEEPER THAN 2.0% IN ANY DIRECTION. THE LANDING CLEAR WIDTH SHALL BE AT LEAST AS WIDE AS THE WIDEST RAMP RUN LEADING TO THE LANDING. THE LANDING CLEAR LENGTH SHALL BE SIXTY (60) INCHES LONG MINIMUM. RAMPS THAT CHANGE DIRECTION BETWEEN RUNS AT LANDINGS SHALL HAVE A CLEAR LANDING OF SIXTY (60) INCHES BY SIXTY (60) INCHES MINIMUM.
- 6. RAMP RUNS WITH A RISE GREATER THAN SIX (6) INCHES SHALL HAVE HANDRAILS ON BOTH SIDES COMPLYING WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NC BUILDING CODE/ANSI A117.1. AND APPLICABLE LOCAL LAWS & REGULATIONS.
- 7. FLOOR SURFACES OF RAMPS AND LANDINGS SHALL BE STABLE, FIRM AND SLIP RESISTANT.
- 8. EDGE PROTECTION COMPLYING WITH AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS). THE NC BUILDING CODE/ANSI A117.1. AND APPLICABLE LOCAL LAWS & REGULATIONS SHALL BE PROVIDED ON EACH SIDE OF RAMP RUNS AND ON EACH SIDE OF RAMP LANDINGS.
- WHERE DOORWAYS ARE LOCATED ADJACENT TO A RAMP LANDING, MANEUVERING CLEARANCES REQUIRED BY THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS). THE NC BUILDING CODE/ANSI A117.1 SHALL BE PERMITTED TO OVERLAP THE REQUIRED LANDING AREA. WHERE DOORS THAT ARE SUBJECT TO LOCKING ARE ADJACENT TO A RAMP LANDING, LANDINGS SHALL BE SIZED TO PROVIDE A COMPLIANT TURNING SPACE.

#### **CURB RAMP NOTES:**

- 1. THE MAXIMUM RUNNING SLOPE OF A CURB RAMP SHALL BE 8.33% AND THE MAXIMUM CROSS SLOPE
- 2. COUNTER SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO THE CURB RAMP SHALL NOT BE STEEPER THAN 5%. THE ADJACENT SURFACES AT TRANSITIONS AT CURB RAMPS TO WALKS, GUTTERS AND STREETS SHALL BE AT THE SAME LEVEL.
- 3. THE CLEAR WIDTH OF A CURB RAMP SHALL BE 36 INCHES (36) MINIMUM, EXCLUSIVE OF FLARED SIDES, IF PROVIDED. \*NOTE NC BUILDING CODE REQUIRES EXTERIOR ACCESSIBLE ROUTES TO BE 48 INCHES MINIMUM WIDE (1104.1 & 1104.2).\*
- 4. LANDINGS SHALL BE PROVIDED AT THE TOP OF CURB RAMPS. THE CLEAR LENGTH OF THE LANDING SHALL BE THIRTY-SIX (36) INCHES MINIMUM. THE CLEAR WIDTH OF THE LANDING SHALL BE AT LEAST AS WIDE AS THE CURB RAMP, EXCLUDING FLARED SIDES, LEADING TO THE LANDING. LANDINGS SHALL HAVE A SLOPE NOT STEEPER THAN 2% IN ANY DIRECTION.
- 5. IF A CURB RAMP IS LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP, OR WHERE IT IS NOT PROTECTED BY HANDRAILS OR GUARDRAILS, IT SHALL HAVE FLARED SIDES.
- 6. WHERE PROVIDED, CURB RAMP FLARES SHALL NOT EXCEED 10%.
- 7. CURB RAMPS AND THE FLARED SIDES OF CURB RAMPS SHALL BE LOCATED SO THAT THEY DO NOT PROJECT INTO VEHICULAR TRAFFIC LANES, PARKING SPACES OR PARKING ACCESS AISLES. CURBS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED
- 8. CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED
- 9. IT IS RECOMMENDED TO PROVIDE CURB RAMPS WITH A TWENTY-FOUR (24) INCH DEEP DETECTABLE WARNING COMPLYING WITH 406.12 A117.1, EXTENDING THE FULL WIDTH OF THE RAMP. REFERTO DETECTABLE WARNING DETAILS AND NOTES FOR PLACEMENT, ORIENTATION AND NOTES. THE NC BUILDING CODE DOES NOT CURRENTLY REQUIRE DETECTABLE WARNINGS AT CURB RAMPS, NOR DO
- 10. FLOOR SURFACES OF CURB RAMPS SHALL BE DEEP GROOVED, ½ INCH WIDE BY ¼ INCH DEEP, ONE (1) INCH CENTERS TRANSVERSE TO THE RAMP.

THE 2010 ADA STANDARDS - HOWEVER US DOT ADA REGULATIONS DO REQUIRE THESE.

- 11. WHERE PROVIDED, STOP LINES SHALL BE LOCATED IN ADVANCE OF CURB RAMP.
- 12. WHERE PROVIDED, PEDESTRIAN ACTIVATED SIGNALS SHALL BE LOCATED ADJACENT TO THE SIDEWALK AND NOT ON THE SIDEWALK.

13. WHERE PROVIDED, DRAINAGE INLETS SHALL BE LOCATED UPSTREAM OF CURB RAMPS AND NOT IN THE

14. CURB RAMP TYPE AND LOCATION ARE PER PLAN.

#### NC ACCESSIBILITY NOTES CONTD.

#### PARKING SPACE NOTES:

- ACCESSIBLE PARKING SPACES SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTES OF TRAVEL FROM ADJACENT PARKING TO AN ACCESSIBLE BUILDING ENTRANCE.
- 2. ACCESSIBLE PARKING SPACES SHALL BE AT LEAST NINETY-SIX (96) INCHES WIDE. ACCESS AISLES SHAL BE 60 INCHES WIDE. ONE OF SIX ACCESSIBLE SPACES SHOULD PROVIDE A VAN ACCESSIBLE AISLE. THE AISLE SHOULD BE 96 INCHES WIDE (OR ACCESSIBLE SPACE IS 11 FEET AND ACCESS AISLE IS FIVE FEET). WHERE PARKING SPACES AND ACCESS AISLES ARE MARKED WITH LINES. THE WIDTH MEASUREMENTS. SHALL BE MADE FROM CENTERLINE OF THE MARKINGS. WHERE PARKING SPACES OR ACCESS AISLES ARE NOT ADJACENT TO ANOTHER PARKING SPACE OR ACCESS AISLES, MEASUREMENTS SHALL BE PERMITTED TO INCLUDE THE FULL WIDTH OF THE LINE DEFINING THE PARKING SPACE OR ACCESS AISLE
- 3. PARKING ACCESS AISLES SHALL BE PART OF AN ACCESSIBLE ROUTE TO THE BUILDING OR FACILITY ENTRANCE AND SHALL COMPLY WITH PROVISIONS FORACCESSIBLE ROUTES. MARKED CROSSINGS SHALL BE PROVIDED WHERE THE ACCESSIBLE ROUTE MUST CROSS VEHICULAR TRAFFIC LANES. WHERE
- POSSIBLE. IT IS PREFERABLE THAT THE ACCESSIBLE ROUTE NOT PASS BEHIND PARKED VEHICLES. 4. TWO (2) ACCESSIBLE PARKING SPACES MAY SHARE A COMMON ACCESS AISLE
- 5. ACCESS AISLES SHALL EXTEND THE FULL LENGTH OF THE PARKING SPACE THEY SERVE.
- ACCESS AISLES SHALL BE MARKED SO AS TO DISCOURAGE PARKING IN THEM.
- 7. ACCESS AISLES SHALL NOT OVERLAP THE VEHICULAR WAY. ACCESS AISLES SHALL BE PERMITTED TO BE PLACED ON EITHER SIDE OF THE PARKING SPACE EXCEPTFOR ANGLED VAN PARKING SPACES WHICH
- 8. FLOOR SURFACES OF PARKING SPACES AND ACCESS AISLES SERVING THEM SHALL BE STABLE, FIRM AND SLIP RESISTANT. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE PARKING SPACES THEY

SHALL HAVE ACCESS AISLES LOCATED ON THE PASSENGER SIDE OF THE PARKING SPACES.

- SERVE. CHANGES IN LEVEL ARE NOT PERMITTED. 9. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2.0% IN
- 10. PARKED VEHICLE OVERHANGS SHALL NOT REDUCE THE REQUIRED CLEAR WIDTH OF AN ACCESSIBLE
- 11. PARKING SPACES FOR VANS AND ACCESS AISLES AND VEHICULAR ROUTES SERVING THEM SHALL PROVIDE A VERTICAL CLEARANCE OF NINETY-EIGHT (98) INCHES MINIMUM. SIGNS SHALL BE PROVIDED AT ENTRANCES TO PARKING FACILITIES INFORMING DRIVERS OF CLEARANCES AND THE LOCATION OF VAN ACCESSIBLE PARKING SPACES.
- 12. EACH ACCESSIBLE PARKING SPACE SHALL BE PROVIDED WITH SIGNAGE DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. SIGNS SHALL BE INSTALLED AT A MINIMUM CLEAR HEIGHT OF SIXTY (60) INCHES ABOVE GRADE AND SHALL NOT INTERFERE WITH AN ACCESSIBLE ROUTE FROM AN ACCESS AISLE. SIGNS LOCATED WHERE THEY MAY BE HIT BY VEHICLES BEING PARKED SHALL BE INSTALLED WITH BOLLARD PROTECTION.
- 13. SIGNAGE AT ACCESSIBLE PARKING SPACES REQUIRED BY THE NC BUILDING CODE SECTION 1106.1SHALL COMPLY WITH THE REQUIREMENTS OF NORTH CAROLINA GENERAL STATUTE 20-37.6 AND 136-30 AND THE NCDOT UNIFORM MANUAL ON TRAFFIC CONTROL DEVICES. A SEPARATE SIGN IS REQUIRED FOR EACH SPACE. SIGNS TO INDICATE THE MAXIMUM PENALTY MUST BE PROVIDED AT EACH ACCESSIBLE
- 14. ACCESSIBLE PARKING SPACE, ACCESS AISLE STRIPING, AND INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE PAINTED BLUE (OR ANOTHER COLOR THAT CAN BE DISTINGUISHED FROM PAVEMENT). PASSENGER LOADING ZONE NOTES:
- 1. PASSENGER LOADING ZONES SHALL PROVIDE VEHICULAR PULL-UP SPACE NINETY-SIX (96) INCHES WIDE MINIMUM AND TWENTY (20) FEET LONG MINIMUM.
- INCHES WIDE MINIMUM AND EXTENDS THE FULL LENGTH OF THE VEHICLE PULL-UP SPACE THEY

2. PASSENGER LOADING ZONES SHALL PROVIDE A CLEARLY MARKED ACCESS AISLE THAT IS SIXTY (60)

3. ACCESS AISLE SHALL ADJOIN AN ACCESSIBLE ROUTE AND NOT OVERLAP THE VEHICULAR WAY.

- 4. VEHICLE PULL-UP SPACES AND ACCESS AISLES SERVING THEM SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2.0% IN ALL DIRECTIONS. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE
- VEHICLE PULL-UP SPACE THEY SERVE. CHANGES IN LEVEL ARE NOT PERMITTED. 5. FLOOR SURFACES OF VEHICLE PULL-UP SPACES AND ACCESS AISLES SERVING THEM SHALL BE STABLE, FIRM AND SLIP RESISTANT.
- 6. VEHICLE PULL-UP SPACES, ACCESS AISLES SERVING THEM AND A VEHICULAR ROUTE FROM AN ENTRANCE TO THE PASSENGER LOADING ZONE, AND FROM THE PASSENGER LOADING ZONE TO A VEHICULAR EXIT SERVING THEM, SHALL PROVIDE A VERTICAL CLEARANCE OF ONE HUNDRED FOURTEEN

2. ENTRANCE DOORS, DOORWAYS AND GATES SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES

#### 1. ACCESSIBLE ENTRANCES SHALL BE PROVIDED AS REQUIRED BY THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS) AND THE NORTH CAROLINA BUILDING CODE, AND APPLICABLE LOCAL LAWS &

ACCESSIBLE ENTRANCE NOTES:

(114) INCHES MINIMUM.

- ACT (2010 ADA STANDARDS) THE NC BUILDING CODE/ANSI A117.1 AND SHALL BE ON AN ACCESSIBLE GENERAL STORM SEWER NOTES
- BRUNSWICK COUNTY, AND CITY OF BOILING SPRING LAKES REQUIREMENTS AND AS SPECIFIED ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS.
- 2. BEDDING FOR ALL STORM SEWER PIPE SHALL BE AS SPECIFIED ON THE DRAWINGS AND SPECIFICATIONS. 3. ALL STORM SEWER PIPES SHOWN AS RCP ON THE PLANS SHALL BE REINFORCED

CONCRETE PIPE CONFORMING TO ASTM C-76, UNLESS INDICATED OTHERWISE ON

ALL STORM SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH NCDEQ,

#### ROOF DRAIN NOTE:

- PROPOSED BUILDING SHALL DIVERT ROOF DRAINAGE TO SPLASH PADS AS INDICATED ON THE PLANS.
- 2. FOR PROPOSED SELF-DRAINING ROOF CANOPY OVER SIDEWALK, SEE ARCHITECTURAL PLANS FOR DESIGN AND DETAILS. NO SEPARATE ROOF DRAINS ARE REQUIRED FOR THIS CANOPY.

#### **EXISTING UTILITY NOTES:**

- 1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY THE ACTUAL LOCATION AND AVAILABILITY OF ALL EXISTING AND PROPOSED UTILITIES IN THE FIELD PRIOR TO GROUND BREAKING.
- 2. EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND, ARE BASED ON A FIELD SURVEY AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY FIELD CONDITIONS PRIOR TO BEGINNING RELATED CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.



PEI JOB#: 19436.PE

# 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.

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 of holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and 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	<ol> <li>Identification of the measures inspected,</li> <li>Date and time of the inspection,</li> <li>Name of the person performing the inspection,</li> <li>Indication of whether the measures were operating properly,</li> <li>Description of maintenance needs for the measure,</li> <li>Description, evidence, and date of corrective actions taken.</li> </ol>
(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	<ol> <li>Identification of the discharge outfalls inspected,</li> <li>Date and time of the inspection,</li> <li>Name of the person performing the inspection,</li> <li>Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration,</li> <li>Indication of visible sediment leaving the site,</li> <li>Description, evidence, and date of corrective actions taken.</li> </ol>
(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	<ol> <li>If visible sedimentation is found outside site limits, then a record of the following shall be made:</li> <li>Actions taken to clean up or stabilize the sediment that has left the site limits,</li> <li>Description, evidence, and date of corrective actions taken, and</li> <li>An explanation as to the actions taken to control future releases.</li> </ol>
(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 a stream 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, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit 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 an assurance that they will be provided as soon as possible.

#### SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING L. 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 documented in the manner

Item to Document	Documentation Requirements
(a) Each E&SC Measure has been installed and does not significantly deviate from the locations, 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 th initial installation of the E&SC Measures or if 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.

#### In addition to the E&SC Plan documents above, the following items shall be kept on the

and available for agency 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 30 days. 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.
- All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

**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).
- a) 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.

(b) Anticipated bypasses and unanticipated bypasses.

(c) Noncompliance with the conditions of this permit that may endanger health or the

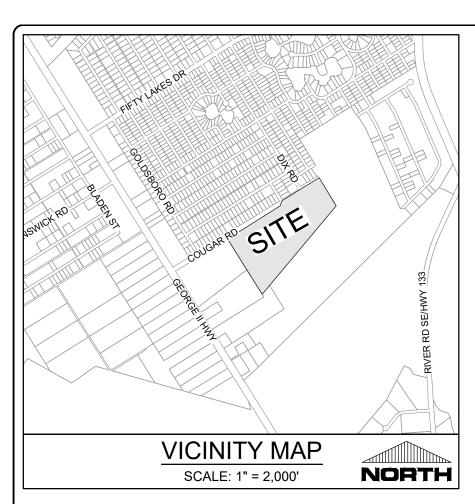
?. Reporting Timeframes and Other Requirements

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 Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment	Within 24 hours, an oral or electronic notification.
deposition in a stream or wetland	Within 7 calendar days, a report that contains a description of the
Stream or wetland	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 causes, 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	Within 24 hours, an oral or electronic notification. The notification
release of	shall include information about the date, time, nature, volume and
hazardous	location of the spill or release.
substances per Item	
1(b)-(c) above	
(c) Anticipated	A report at least ten days before the date of the bypass, if possible.
bypasses [40 CFR	The report shall include an evaluation of the anticipated quality and
122.41(m)(3)]	effect of the bypass.
(d) Unanticipated	Within 24 hours, an oral or electronic notification.
bypasses [40 CFR	Within 7 calendar days, a report that includes an evaluation of the
122.41(m)(3)]	quality and effect of the bypass.
(e) Noncompliance	Within 24 hours, an oral or electronic notification.
with the conditions	Within 7 calendar days, a report that contains a description of the
of this permit that	noncompliance, and its causes; the period of noncompliance,
may endanger	including exact dates and times, and if the noncompliance has not
health or the	been corrected, the anticipated time noncompliance is expected to
environment[40	continue; and steps taken or planned to reduce, eliminate, and
CFR 122.41( )(7)]	prevent reoccurrence of the noncompliance. [40 CFR 122.41(I)(6).
	Division staff may waive the requirement for a written report on a
	case-by-case basis.



PEI JOB#: 19436.PE



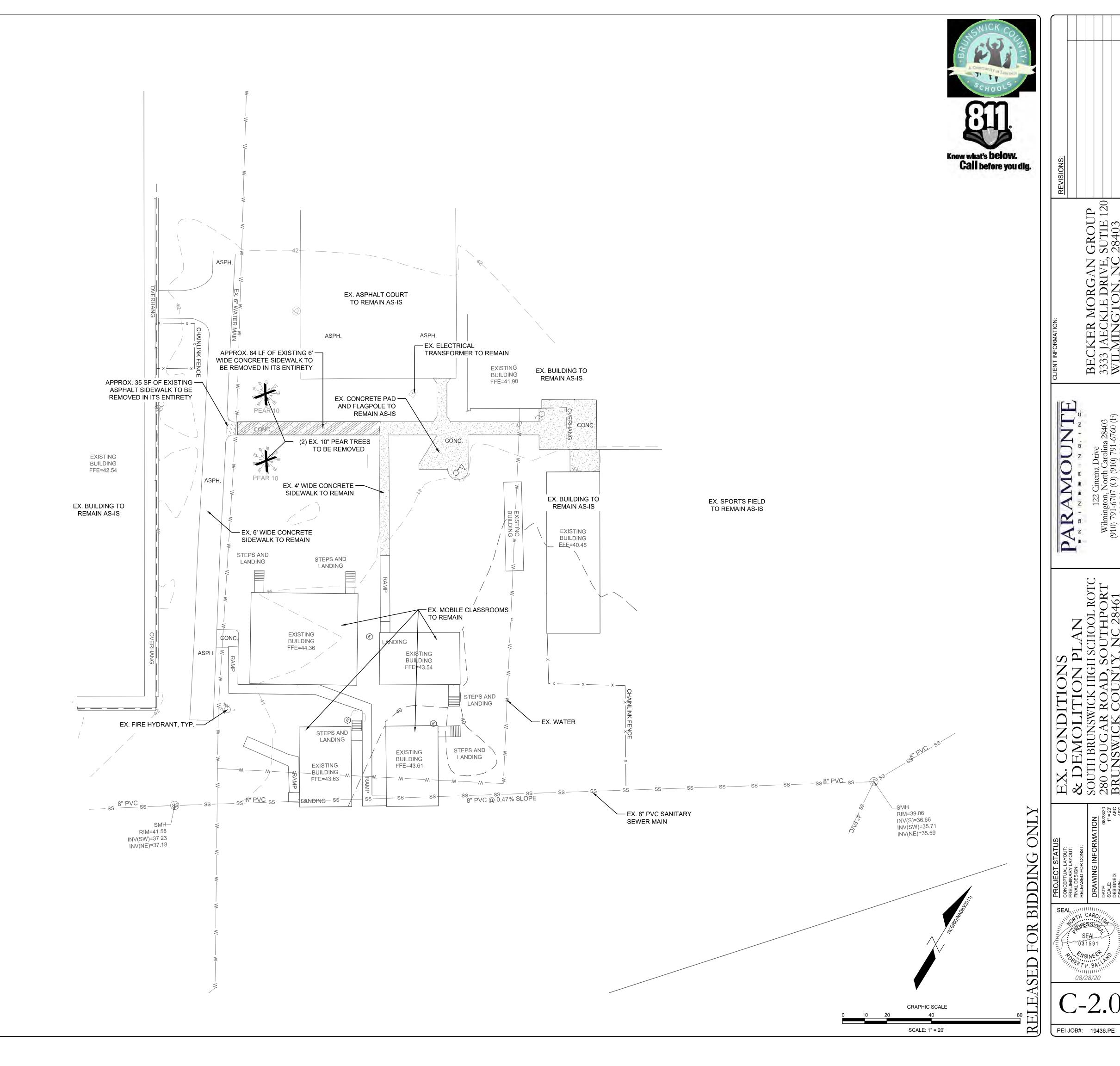
#### **DEMOLITION NOTES:**

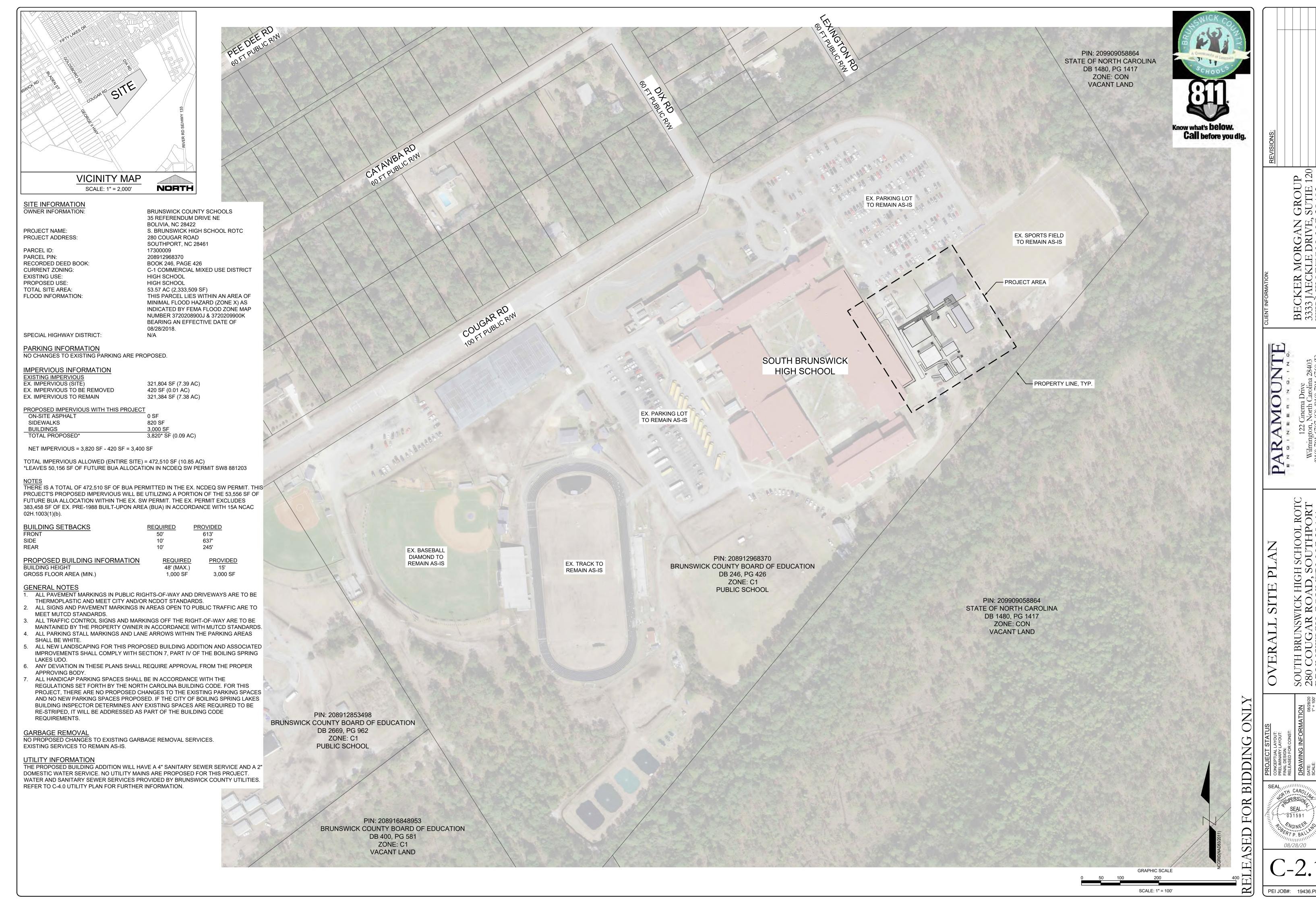
- CONTRACTOR SHALL REFER TO SHEET C-1.0 GENERAL NOTES FOR DEMOLITION NOTES.
- 2. ALL UTILITIES SHALL BE ABANDONED AND/OR DEMOLISHED AND CAPPED PROPERLY IN ACCORDANCE WITH THE UTILITY OWNERS RULES AND REGULATIONS.
- 3. CONTRACTOR SHALL COORDINATE WITH SEPARATE UTILITY OWNER/PROVIDER FOR DEMOLITION.
- 4. PRIOR TO ANY CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.

#### EX. VEGETATION NOTES:

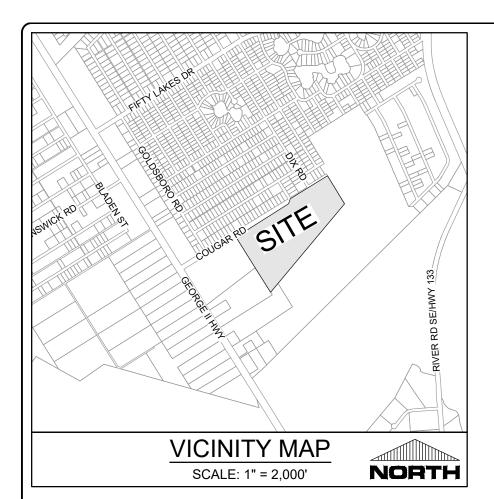
CONTRACTOR SHALL REMOVE ANY SHRUBS AS NECESSARY WITHIN THE CONSTRUCTION AREA AS LONG AS THE SAME QUANTITY AND SPECIES ARE REPLACED WHEN CONSTRUCTION IS COMPLETE.

SYMBOLS LEGEND				
	EXISTING CONCRETE TO BE REMOVED			
	EXISTING ASPHALT TO BE REMOVED			
	EXISTING UTILITY LINE TO BE REMOVED			
	EXISTING STORM STRUCTURE TO BE REMOVED			
	EXISTING SIGN/LIGHT/UTILITY POLE TO BE REMOVED			
=======================================	EXISTING FENCE TO BE REMOVED			
R	TREE PROTECTION FENCING			
X	EXISTING TREE/SHRUBS TO BE REMOVED			
	EXISTING BUILDING/STRUCTURE TO BE REMOVED			





PEI JOB#: 19436.PE



SITE INFORMATION

OWNER INFORMATION

PROJECT NAME: PROJECT ADDRESS:

PARCEL ID: PARCEL PIN: RECORDED DEED BOOK: **CURRENT ZONING:** EXISTING USE: PROPOSED USE:

TOTAL SITE AREA: FLOOD INFORMATION:

SPECIAL HIGHWAY DISTRICT: PARKING INFORMATION NO CHANGES TO EXISTING PARKING ARE PROPOSED.

IMPERVIOUS INFORMATION

EX. IMPERVIOUS (SITE) EX. IMPERVIOUS TO BE REMOVED EX. IMPERVIOUS TO REMAIN

**EXISTING IMPERVIOUS** 

ON-SITE ASPHALT 820 SF SIDEWALKS BUILDINGS TOTAL PROPOSED\* 3,820\* SF (0.09 AC)

NET IMPERVIOUS = 3,820 SF - 420 SF = 3,400 SF

TOTAL IMPERVIOUS ALLOWED (ENTIRE SITE) = 472,510 SF (10.85 AC) \*LEAVES 50,156 SF OF FUTURE BUA ALLOCATION IN NCDEQ SW PERMIT SW8 881203

NOTES THERE IS A TOTAL OF 472,510 SF OF BUA PERMITTED IN THE EX. NCDEQ SW PERMIT. THIS PROJECT'S PROPOSED IMPERVIOUS WILL BE UTILIZING A PORTION OF THE 53,556 SF OF FUTURE BUA ALLOCATION WITHIN THE EX. SW PERMIT. THE EX. PERMIT EXCLUDES 383,458 SF OF EX. PRE-1988 BUILT-UPON AREA (BUA) IN ACCORDANCE WITH 15A NCAC 02H.1003(1)(b).

BRUNSWICK COUNTY SCHOOLS 35 REFERENDUM DRIVE NE

S. BRUNSWICK HIGH SCHOOL ROTC

C-1 COMMERCIAL MIXED USE DISTRICT

THIS PARCEL LIES WITHIN AN AREA OF

MINIMAL FLOOD HAZARD (ZONE X) AS

INDICATED BY FEMA FLOOD ZONE MAP

NUMBER 3720208900J & 3720209900K

BEARING AN EFFECTIVE DATE OF

BOLIVIA, NC 28422

280 COUGAR ROAD

17300009

208912968370

HIGH SCHOOL

HIGH SCHOOL

08/28/2018.

SOUTHPORT, NC 28461

BOOK 246, PAGE 426

53.57 AC (2,333,509 SF)

321,804 SF (7.39 AC)

321,384 SF (7.38 AC)

420 SF (0.01 AC)

BUILDING SETBACKS	REQUIRED	PROVIDED
FRONT	50'	613'
SIDE	10'	637'
REAR	10'	245'

PROPOSED BUILDING INFORMATION **REQUIRED** PROVIDED **BUILDING HEIGHT** 48' (MAX.) GROSS FLOOR AREA (MIN.) 1,000 SF 3,000 SF

#### **GENERAL NOTES**

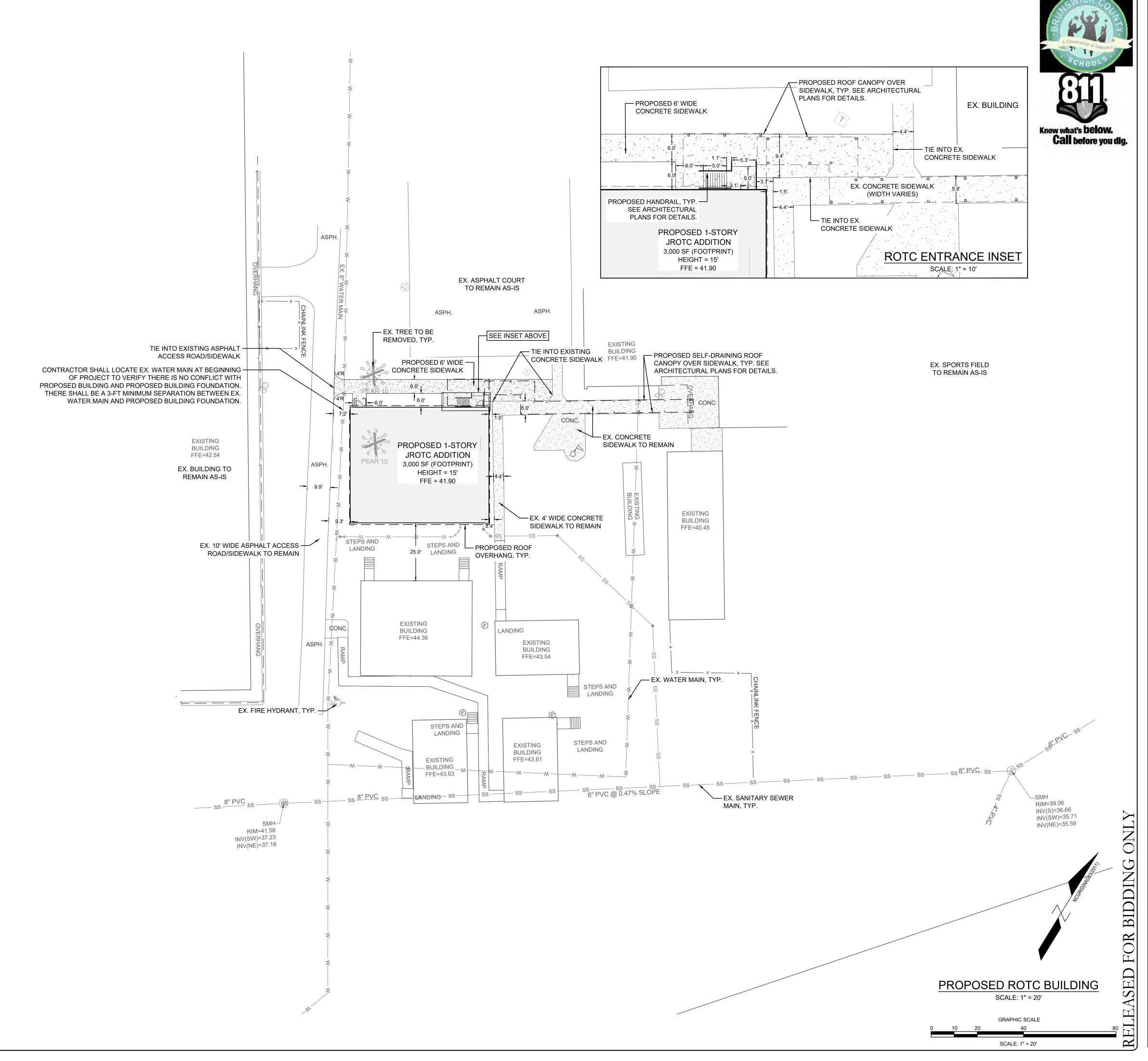
- 1. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS. 2. ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO
- MEET MUTCD STANDARDS. 3. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE
- MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
- 4. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS
- 5. ALL NEW LANDSCAPING FOR THIS PROPOSED BUILDING ADDITION AND ASSOCIATED IMPROVEMENTS SHALL COMPLY WITH SECTION 7, PART IV OF THE BOILING SPRING
- 6. ANY DEVIATION IN THESE PLANS SHALL REQUIRE APPROVAL FROM THE PROPER APPROVING BODY.
- 7. ALL HANDICAP PARKING SPACES SHALL BE IN ACCORDANCE WITH THE REGULATIONS SET FORTH BY THE NORTH CAROLINA BUILDING CODE. FOR THIS PROJECT, THERE ARE NO PROPOSED CHANGES TO THE EXISTING PARKING SPACES AND NO NEW PARKING SPACES PROPOSED. IF THE CITY OF BOILING SPRING LAKES BUILDING INSPECTOR DETERMINES ANY EXISTING SPACES ARE REQUIRED TO BE RE-STRIPED, IT WILL BE ADDRESSED AS PART OF THE BUILDING CODE REQUIREMENTS.

#### GARBAGE REMOVAL

NO PROPOSED CHANGES TO EXISTING GARBAGE REMOVAL SERVICES. EXISTING SERVICES TO REMAIN AS-IS.

#### UTILITY INFORMATION

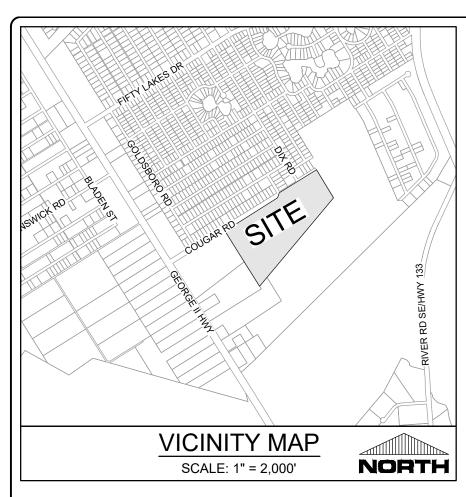
THE PROPOSED BUILDING ADDITION WILL HAVE A 4" SANITARY SEWER SERVICE AND A 2" DOMESTIC WATER SERVICE. NO UTILITY MAINS ARE PROPOSED FOR THIS PROJECT. WATER AND SANITARY SEWER SERVICES PROVIDED BY BRUNSWICK COUNTY UTILITIES. REFER TO C-4.0 UTILITY PLAN FOR FURTHER INFORMATION.



SITE

031591 PRTP. BALL 08/28/20

PEI JOB#: 19436.PE



#### **GENERAL NOTES:**

- 1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL STATE OF NC, CITY OF BOILING SPRING LAKES, AND BRUNSWICK COUNTY STANDARDS AND SPECIFICATIONS.
- 2. THE CONTRACTOR SHALL PLACE INLET PROTECTION AROUND ALL STORM DRAIN INLETS TO PROTECT THE SYSTEM FROM COLLECTING SEDIMENTATION DURING CONSTRUCTION. INLET PROTECTION SHALL REMAIN IN PLACE UNTIL PAVING IS COMPLETE AND THE SITE IS STABILIZED.
- 3. ALL ROOF DRAINS SHALL BE CONNECTED TO COLLECTION SYSTEM OR SPLASH PADS AS INDICATED.
- 4. ALL SIDEWALK CROSS SLOPES HAVE BEEN GRADED TO MEET ADA REGULATIONS. CONTRACTOR SHALL CONFIRM GRADES BEFORE PLACING PAVEMENT OR SIDEWALKS AND REPORT ANY DISCREPANCIES TO OWNER AND/OR ENGINEER.

#### **BUILDING PAD NOTE:**

1. SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITALBE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED BUILDING PAD, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND/OR THE TECHNICAL SPECIFICATIONS.

#### STORMWATER NOTE

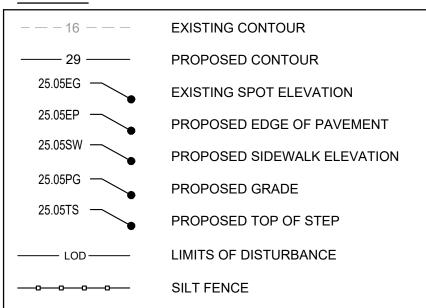
- . THERE IS AN EXISTING STATE STORMWATER PERMIT FOR THE SITE (NCDEQ SW PERMIT SW8 881203). THE SITE IS PERMITTED AS AN OVERALL LOW DENSITY PROJECT WITH AN AREA OF HIGHER DENSITY. THIS PROPOSED ROTC BUILDING ADDITION PROJECT IS WITHIN THE LOW DENSITY AREA AND WILL BE UTILIZING A PORTION OF THE FUTURE ALLOCATED IMPERVIOUS ASSOCIATED WITH THE EXISTING PERMIT.
- 2. THE PROPOSED BUILDING ADDITION WILL HAVE ROOF DRAINAGE DIRECTED ONTO SPLASH PADS AS INDICATED.

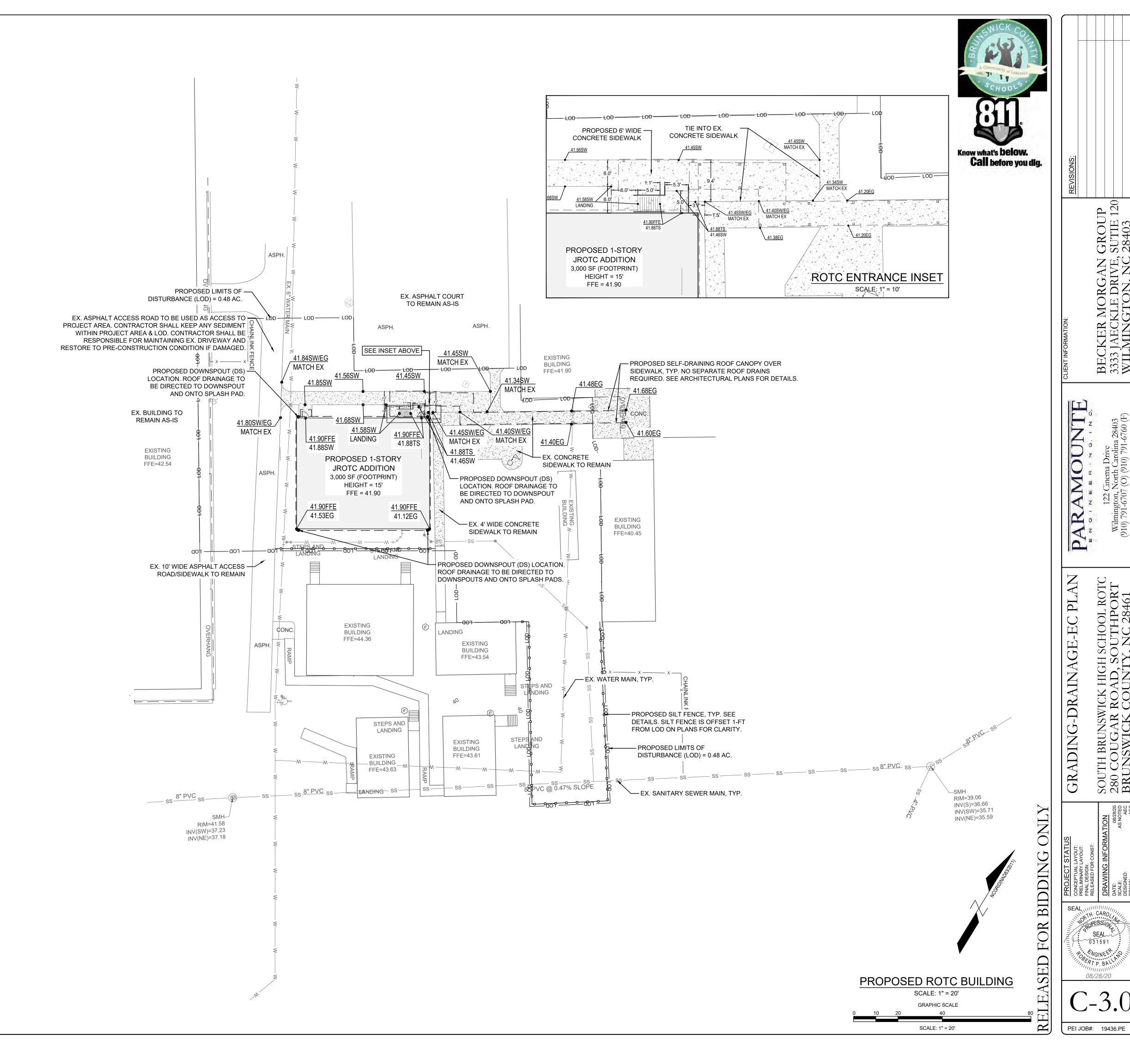
NOTATION:

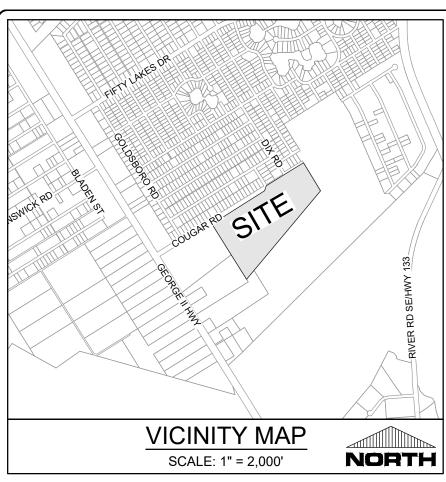
DS = DOWNSPOUT

FFE = FINISHED FLOOR ELEVATION

#### LEGEND:







#### SITE INFORMATION OWNER INFORMATION:

PROJECT NAME: PROJECT ADDRESS:

PARCEL ID: PARCEL PIN: RECORDED DEED BOOK: **CURRENT ZONING:** EXISTING USE: PROPOSED USE: TOTAL SITE AREA:

BOLIVIA, NC 28422 S. BRUNSWICK HIGH SCHOOL ROTC 280 COUGAR ROAD SOUTHPORT, NC 28461 17300009 208912968370 BOOK 246, PAGE 426 C-1 COMMERCIAL MIXED USE DISTRICT HIGH SCHOOL HIGH SCHOOL 53.57 AC (2,333,509 SF) FLOOD INFORMATION: THIS PARCEL LIES WITHIN AN AREA OF MINIMAL FLOOD HAZARD (ZONE X) AS INDICATED BY FEMA FLOOD ZONE MAP NUMBER 3720208900J & 3720209900K BEARING AN EFFECTIVE DATE OF

BRUNSWICK COUNTY SCHOOLS 35 REFERENDUM DRIVE NE

**UTILITY INFORMATION** 

CONTRACTOR SHALL INSTALL WATER AND SEWER SERVICES IN ACCORDANCE WITH CITY OF BOILING SPRING LAKES AND BRUNSWICK COUNTY UTILITIES STANDARD DETAILS AND SPECIFICATIONS.

THIS PROJECT IS PROPOSING A 4" SANITARY SEWER SERVICE FOR THE PROPOSED ROTC BUILDING. THIS SERVICE WILL CONNECT TO THE EXISTING MAINS AND/OR SERVICES AS SHOWN. THERE ARE NO PROPOSED SANITARY SEWER MAINS WITH THIS PROJECT. ALL SANITARY SEWER ALLOCATION PROVIDED BY BRUNSWICK COUNTY.

THIS PROJECT IS PROPOSING A 2" DOMESTIC SERVICE FOR THE PROPOSED ROTC BUILDING. THIS SERVICE WILL CONNECT TO EXISTING WATER MAINS AND/OR SERVICES AS SHOWN. ALL DOMESTIC WATER ALLOCATION PROVIDED BY BRUNSWICK COUNTY. NO SPRINKLER IN PROPOSED ROTC BUILDING. NO FIRE SERVICES PROPOSED.

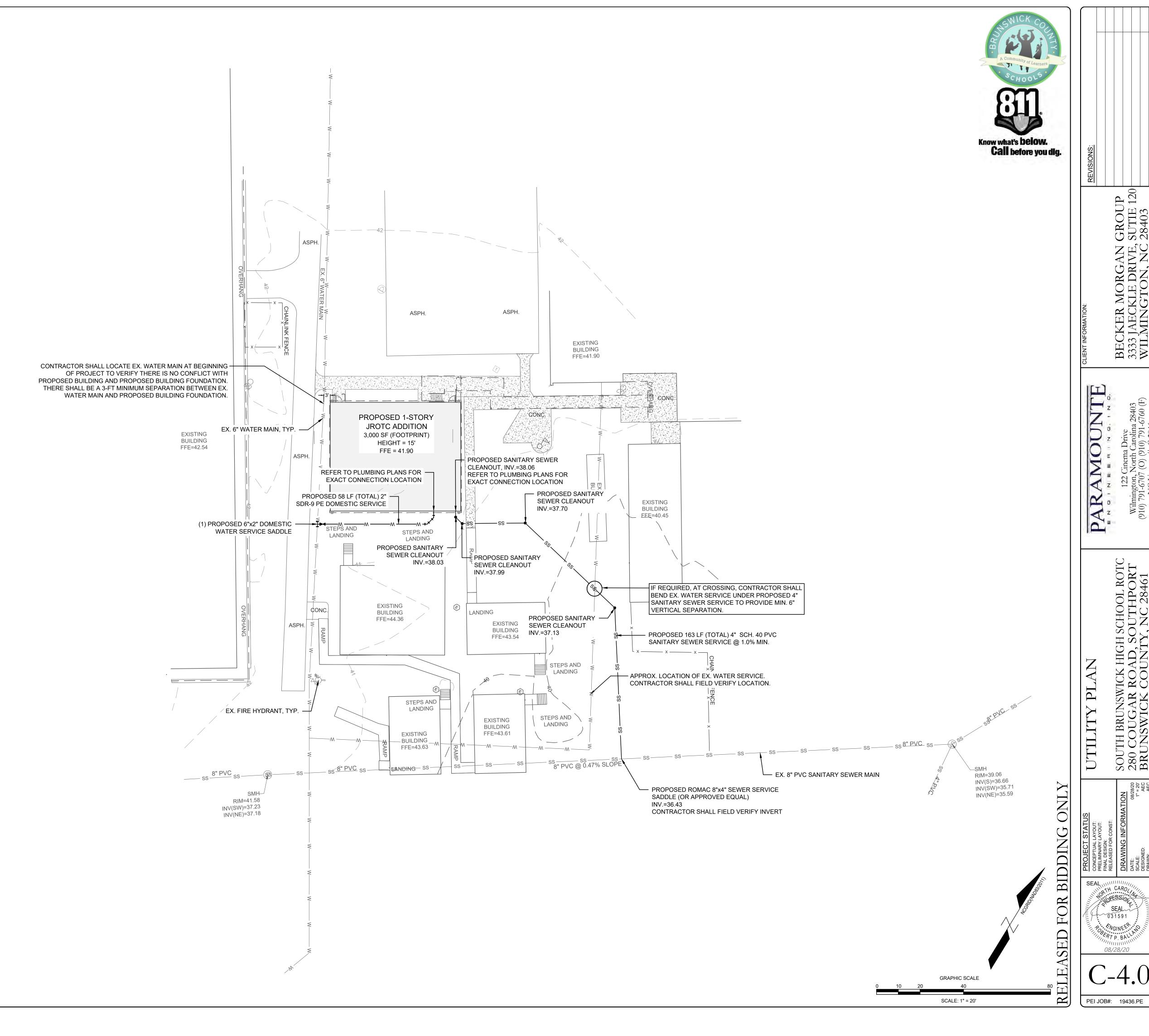
NO PRE-CONSTRUCTION MEETING REQUIRED WITH BRUNSWICK COUNTY UTILITIES; PROPOSED WATER AND SANITARY SEWER ARE CONNECTING TO PRIVATELY OWNED LINES. CONTRACTOR TO COORDINATE SHUT DOWN FOR TAP & INSTALL WITH BRUNSWICK COUNTY SCHOOLS.

#### UTILITY NOTES: (NCAC 15A.02T.0305 / T15A.18C.0906)

- WATER MAINS SHALL BE LAID SO AS TO PROVIDE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET FROM SEWERS. IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, THE WATER MAIN CAN BE INSTALLED AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, EITHER IN A SEPARATE TRENCH, OR IN THE SAME TRENCH ON A BENCH OF UNDISTURBED EARTH.
- WHEN CROSSING A WATER MAIN OVER A SEWER, THE WATER MAIN SHALL BE LAID AT LEAST 18 INCHES ABOVE THE SEWER. IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH JOINTS THAT MEET WATER MAIN STANDARDS. THE DUCTILE IRON PIPE SHALL EXTEND 10 FEET ON EACH SIDE OF THE CROSSING WITH A SECTION OF WATER MAIN PIPE CENTERED ON THE CROSSING.
- CROSSING A WATER MAIN UNDER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
- 4. WHERE VERTICAL CLEARANCE IS LESS THAN 24" BETWEEN SANITARY SEWER AND STORM DRAIN, SANITARY SEWER SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING AND STORM DRAIN SHALL BE RC PIPE.
- WHERE VERTICAL CLEARANCE IS LESS THAT 18" BETWEEN WATER MAIN AND STORM DRAIN, WATER MAIN SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING AND STORM DRAIN SHALL BE RC PIPE.

#### FIRE & LIFE SAFETY NOTES:

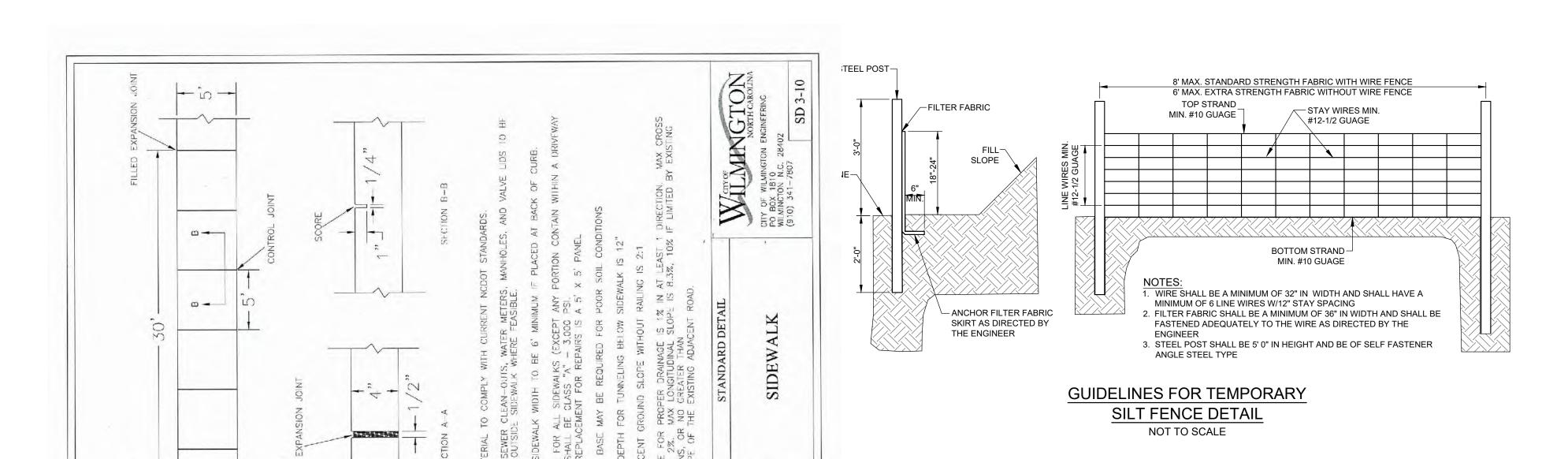
- 1. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS WITHIN ANY DEVELOPMENT.
- 2. HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
- 3. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
- 4. A MINIMUM OF 4' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
- 5. LANDSCAPING OR PARKING CAN NOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT (3') CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF HYDRANTS AND FDC.



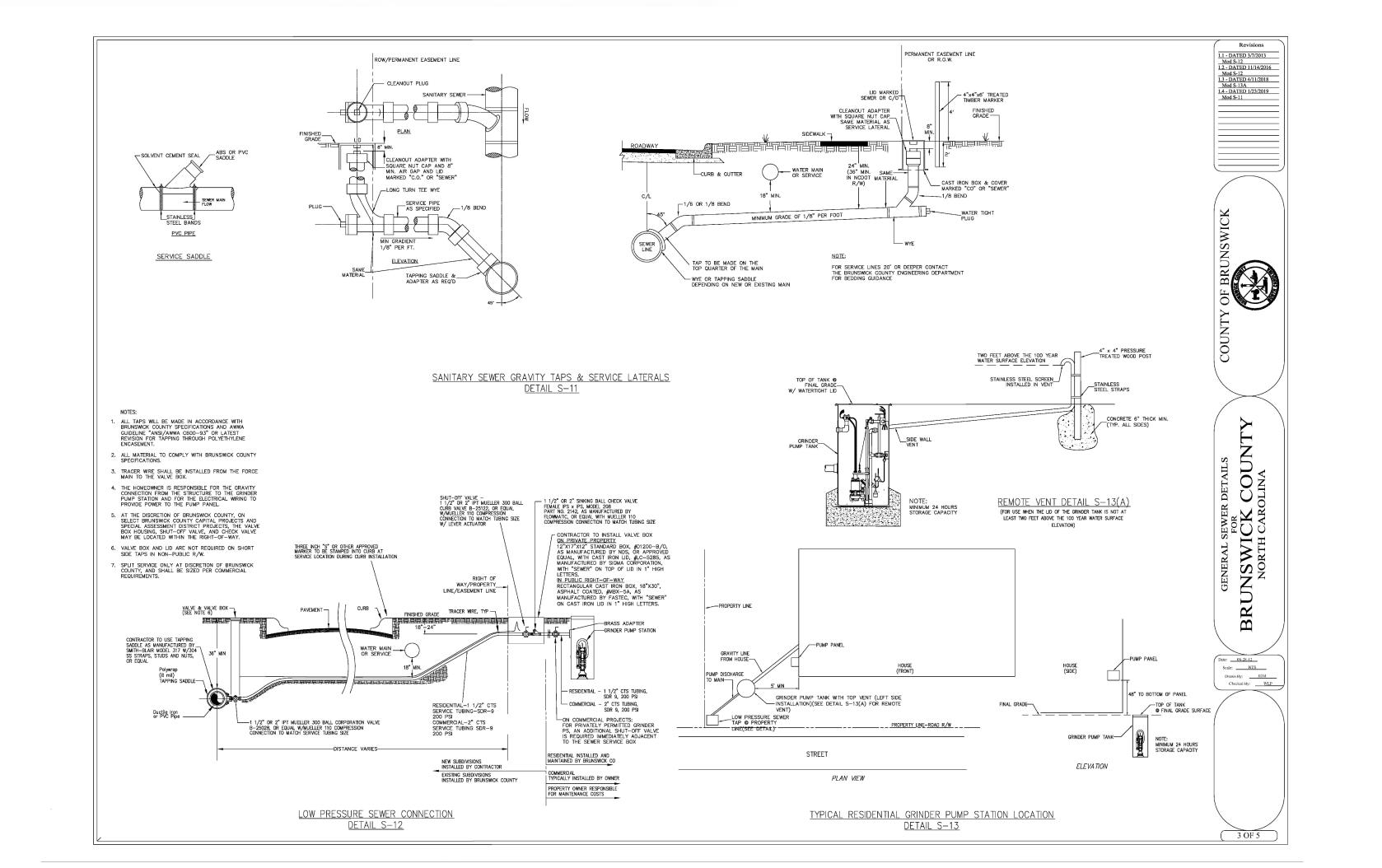
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TYPICAL SIDEWALK DETAIL NOT TO SCALE





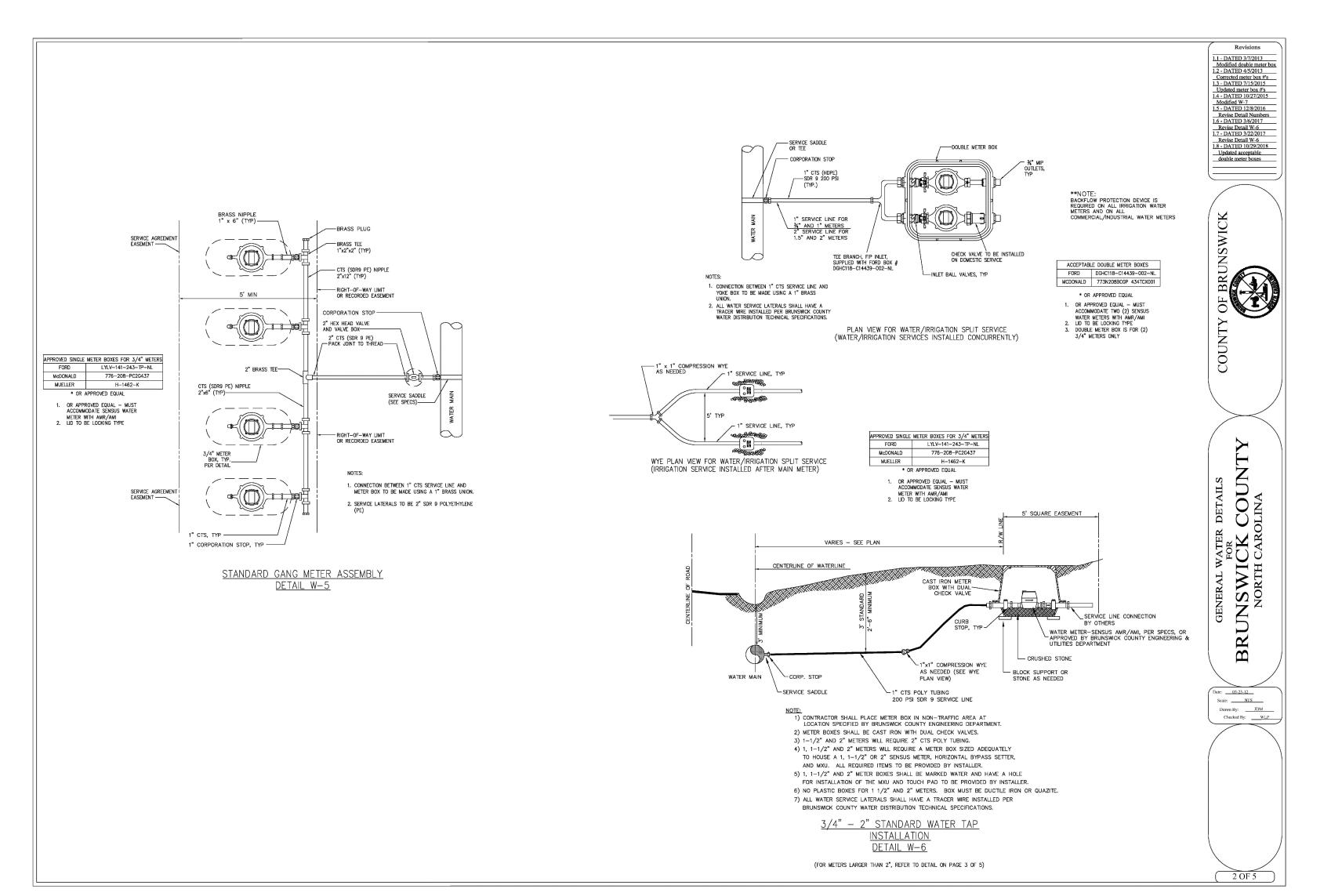
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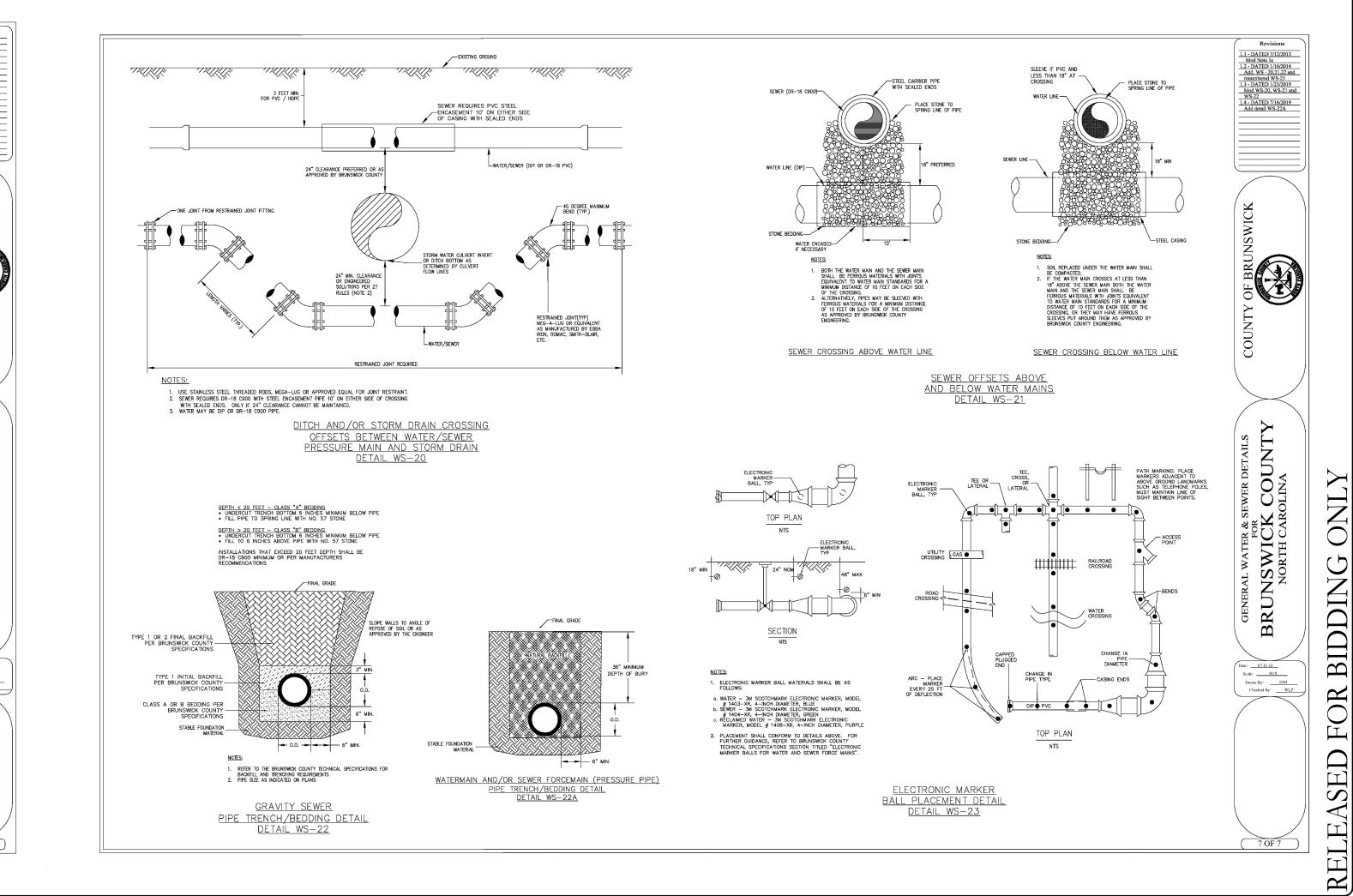
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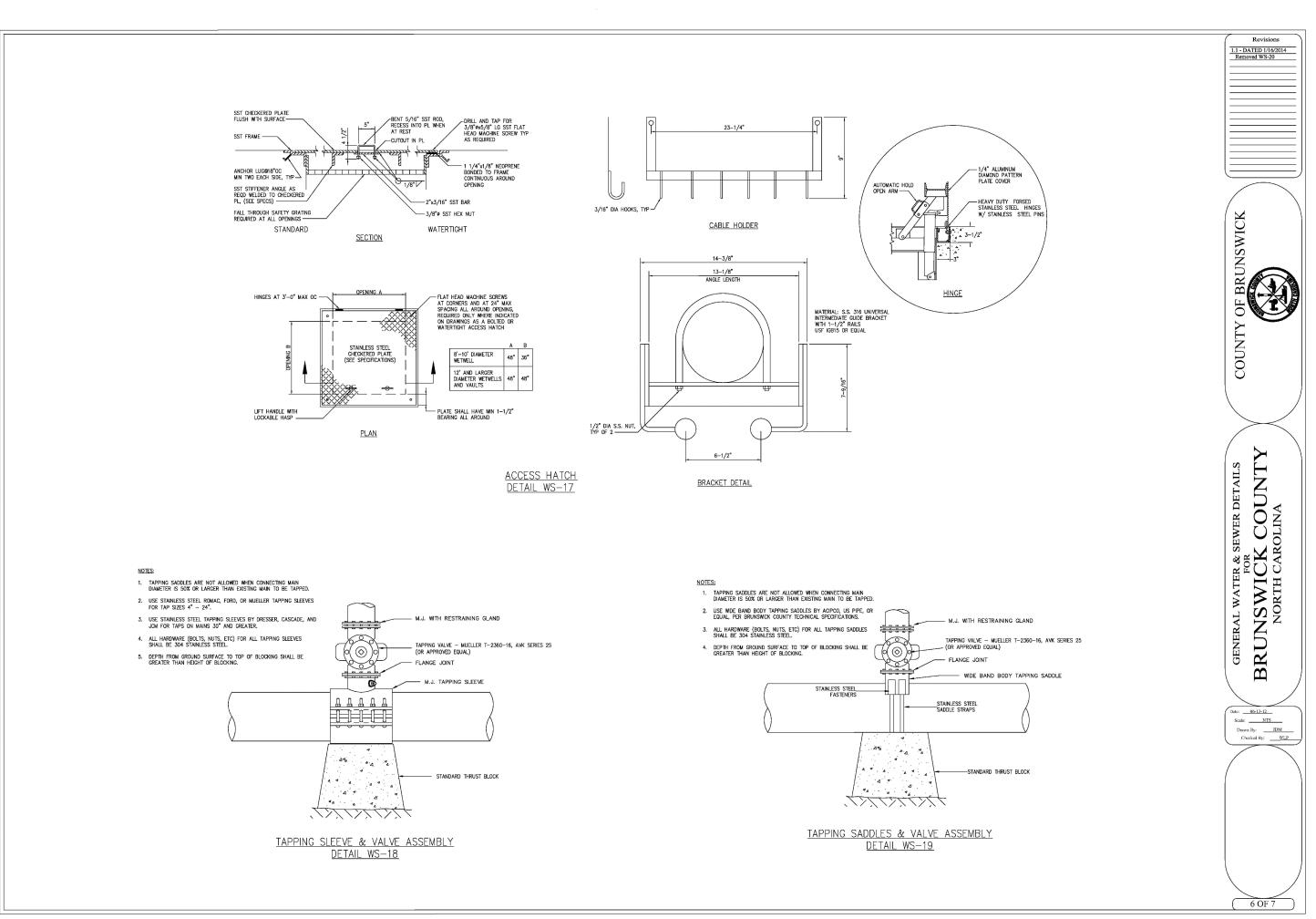
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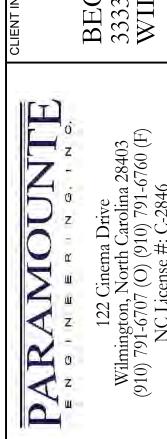
SOUTH BRUNSWICK HIGH SCHOOL ROTC 280 COUGAR ROAD, SOUTHPORT BRUNSWICK COUNTY, NC 28461

PEI JOB#: 19436.PE









SOUTH BRUNSWI 280 COUGAR R BRUNSWICK C DETAIL

SEAL 031591 PON WGINEEY PERT P. BALL 08/28/20

PEI JOB#: 19436.PE

- 1.0 CODES AND STANDARDS:
- 1.1 "2018 North Carolina State Building Code" and "International Building Code", 2015.
- 1.2 "Minimum Design Loads for Buildings and other Structures" SEI/ASCE 7-10.
- 1.3 "Building Code Requirements for Structural Concrete (ACI 318—14)" American Concrete Institute 2014.
- 1.4 "Manual of Standard Practice", Concrete Reinforcing Steel Institute, latest edition.
- 1.5 "Specification for Structural Steel Buildings (AISC 360—10)" American Institute of Steel Construction, 2011 —
- 1.6 "Structural Welding Code Steel (AWS D1.1)" and "Structural Welding Code Reinforcing Steel (AWS D1.4)", American Welding Society.
- 2.0 DESIGN LOADS:
- Project Located in: City of Southport, County of Brunswick, State of North Carolina.
- 2.1 Gravity Loads: (Reduced where allowed)

GRAVITY LOADS				
Location	Uniform (psf)	Concentrated (lbs) (Over 2.5'x2.5')		
Roof Loads:				
Dead Load	BY PEBS	20		
Live Load	20	300		
Floor Loads:				
Dead Loads:	50			
Floor Live Loads:				
First Floor	100	2,000		

2.2 Drifting Snow Loads per N.C. Building Code.

Pg = 10 psfI = 1.1Ce = 0.9Ct = 1.0

2.3 Risk Category = **II** 

2.4 Wind Loads per N.C. State Building Codes, 2018 edition (IBC 2015) & ASCE 7—10 (3—second gust) Main Wind Force Resisting System:

V= 154 mph Exposure Category "B"

Building is enclosed & Internal Pressure coefficient (GCpi) = +0.18 & -0.18 Topographic Factor Kzt = 1.0

Wind Directionality Factor, Kd = 0.85

Calculated Wind Base Shear (For MWFRS) Vx = by PEBS Vy = by PEBS

Components and Cladding:

V 148 mph	
Exposure Category	"C"

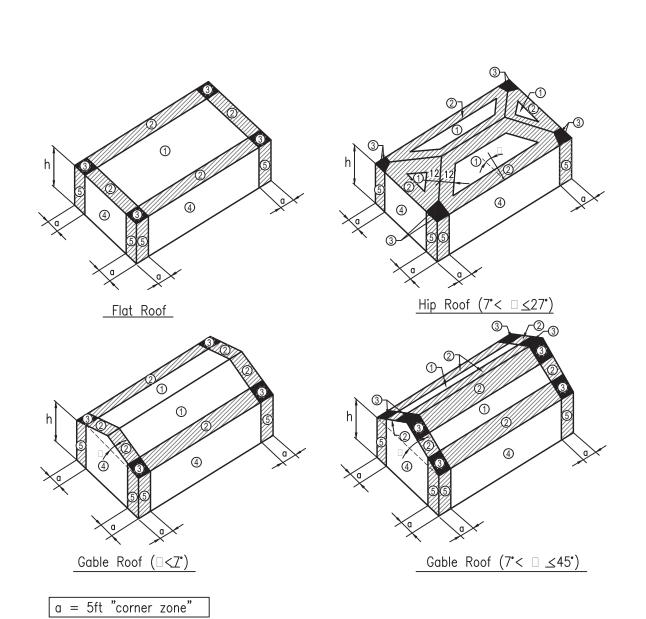
			Compon	ents and C	ladding W	ind Pressu	re (psf)			
Walls	Area <	< 10ft <sup>2</sup>	< 2	Oft <sup>2</sup>	Area	< 50ft <sup>2</sup>	Area <	100ft <sup>2</sup>	Area <	500ft <sup>2</sup>
Zone 4	47.8	-51.7	45.6	-49.7	42.7	-46.8	40.6	-44.6	35.6	-39.6
Zone 5	47.8	-63.9	45.6	-59.6	42.7	-53.9	40.6	-49.7	35.6	-39.6
Roof	Area <	< 10ft <sup>2</sup>	Area <	< 20ft <sup>2</sup>	Area	< 50ft <sup>2</sup>	Area <	100ft <sup>2</sup>	Area <	500ft <sup>2</sup>
Zone 1	19.4	-47.8	18.2	-46.5	16.6	-44.9	15.4	-43.7	15.4	-43.7
Zone 2	19.4	-80.1	18.2	-71.6	16.6	-60.3	15.4	-51.7	15.4	-51.7
Zone 3	19.4	-120.5	18.2	-99.9	16.6	-72.5	15.4	-51.7	15.4	-51.7

- . Areas noted are effective wind areas as per ASCE 7-10, 26.2 definitions.
- See figures below for Zone locations. Plus and minus signs signify pressures acting toward and away from surfaces, respectively. 4. Design pressures shown in table are strength design wind pressures. Allowable stress design
- wind pressures may be calculated by factoring the pressures by 0.6. 5. Design pressures for effective wind areas between those noted in schedule may be
- interpolated.
- 6. Tributary area = greater of LxW or LxL/3. 7. Deflections may be calculated based on 42% of these loads.
- 2.5 Seismic Loads per 2018 North Carolina State Building Code (IBC 2015) & ASCE 7-10
- Risk Category = **II** Site class = "D" (Assumed) Spectral Response Coefficients:
- SD1 = 0.158gCs = 0.086

SDS = 0.258q

- Seismic Design Category = C Seismic Importance Factor = 1.0 Basic Seismic — Force — Resisting System Steel system not specific designed for seismic resistance RX = RY = 3.0,  $\Omega Y = 3.0$ , CDY = 3.0Design Base Shear Vx = Vy = by PEBSBuilding Height Limit = NL Analysis Procedure - 12.8.1 ASCE 7-10
- 2.6 Guardrail designed per North Carolina State Building Code, Section 1607.8 Uniform load = 50 plf, any direction - per 1607.8.1Concentrated load = 200 lbs, any direction — per 1607.8.1.1 Intermediate Rail: (all those expect handrail) per 1607.8.1.2
- 2.7 Flood Loads: Project is not located in a flood zone.

Equivalent Lateral Force Procedure



3.0 FOUNDATIONS:

- 3.1 Foundation design is based upon a presumptive bearing capacity of 1,500 psf., as allowed by 2018 NCSBC Section 1806. A qualified geotechnical engineer shall be present to verify bearing capacity and the results shall be sent to the engineer.
- 3.2 New footings shall bear on strata capable of sustaining a minimum bearing pressure of 1,500 psf. The bearing capacity shall be verified by a qualified Geotechnical Engineer.
- 3.3 Top of footing (T/FTG) elevations are shown on the drawings or are to be determined by the Contractor in the field in accordance with the guidelines set forth in the drawings.
- 3.4 Bottom of exterior footings, grade beams and walls shall bear at a minimum depth of 1'-0" below final
- grade for frost protection.
- 3.5 Testing and Inspection: a. All areas to have slabs on grade shall be proof rolled in accordance with and under observation fo the
- Geotechnical Engineer and approved prior to preparation for concrete placement. b. All foundation bearing strata shall be inspected and approved by the Geotechnical Engineer prior to any
- concrete placement.
- d. Footing bearing elevations shall be adjusted in the field as required to meet the design bearing pressures

c. Geotechnical Engineer shall be the sole judge as to suitability of all foundation and/or slab bearing

- by additional excavation or compaction and/or backfilling or by other means acceptable to the Geotechnical Engineer.
- 3.6 Undercutting to remove existing fill beneath footings and slab shall be performed at the direction of the Geotechnical Engineer.
- 3.7 Engineered Fill: All fill material shall be selected in accordance with the Geotechnical Report Material shall be a clean, low plastic soil with a plasticity index less than 30 (less than 15 is preferred), liquid limit less than 50, and unit weight of 120 pcf (+ 5 pcf)
- 3.8 Compaction: All fill shall be placed in loose lifts not exceeding 8 inches in thickness and compacted to a minimum of 96 percent Standard Proctor (ASTM D-698) except that the top 12 inches shall be compacted to a minimum of 98 percent Standard Proctor. Moisture shall be controlled to within 3 percent above or below optimum content.
- 3.9 Remove all topsoil and organic materials. The stripping should extend at least 10' beyond the proposed construction limits.
- 3.10 Subsurface Water: Due to the relatively shallow groundwater encountered, (2'-3' noted during boring) temporary construction dewatering may be necessary to facilitate efficient below-grade construction. Dewatering operations for the majority of the site can be handled by the use of conventional submersible pumps directly in the excavation or temporary trenches or French drains.
- 3.11 Protection of Foundation Excavations: Exposure to the environment may weaken the soils at the footing bearing level if the foundation excavations remain open for too long a time. Therefore, foundation concrete should be placed the same day that excavations are made. If the bearing soils are softened by the surface water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom immediately prior to placement of concrete. If the excavation must remain open overnight, or if rainfall becomes imminent while the bearing soils are exposed, a 2 to 3—inch "mud mat" of "lean" concrete should be placed on the bearing soils before the placement of reinforcing steel.
- 4.0 CONCRETE:
- 4.1 Concrete Strength: All concrete shall be in accordance with the American Concrete Institute (ACI) 301 and 318.
- 4.2 Concrete shall have a 28 day compressive strength and density as follows: a. Footings..... ..3,000psi, Density =  $\pm 145$ pcf b. Interior Slab on Grade.. ..3,000psi, Density =  $\pm 145$ pcf ...4,000psi, Density =  $\pm 145$ pcf c. Exterior Slab on Grade....
- 4.3 Concrete Mix Designs: d. Submittals: Submit written reports of each proposed concrete mix not less than 15 days prior to the
- e. Mix designs, including water, cement ratios and slumps, shall be prepared in accordance with ACI 301-05, Section 4, Cement shall conform to ASTM C 150 Type 1 or at contractor's option, ASTM C 595 Type IP where fly ash is permitted. Normal weight aggregate shall conform to ASTM C 33 and light weight aggregate shall conform to ASTM C 330. No admixtures containing calcium chloride shall be permitted in any concrete.
- f. Aggregate size shall be #67 stone for supported slabs or other formed concrete elements; #57 stone for slabs on grade and footings or other concrete elements formed from and poured against earth; #89 stone for masonry grout.
- Water reducing admixture shall be used in all concrete. h. Air entraining admixture in accordance with ACI 301 shall be used in all concrete exposed freezing and thawing during construction or service conditions. i. Concrete subjected to freezing/thawing shall have a maximum water/cement ratio of 0.45 and shall contain the amount of air entraining agent specified in ACI 301-05 Section 4.
- See specifications for curing method options and apply within two (2) hours after completion of finishing to
- all concrete flatwork and walls, U.N.O., other than footings and grade beams. 4.5 Use a non-corrosive, non-chloride accelerating admixture in concrete exposed to temperatures below 40 degrees. Uniformly heat the water and aggregates to a temperature of not less than 50 degrees. Place and
- 4.6 When hot weather conditions exist, place and cure concrete in accordance with ACI 301. Cool ingredients before mixing to maintain concrete temp. at time of placement below 90 degrees.

cure concrete in accordance with ACI 306.

- 4.7 Reinforcing in all abutting concrete, including footings shall be continuous through or around all corners or intersections. Dowels or splices shall be equal in size and spacing to the reinforcing in the abutting members.
- 4.8 Refer to architectural drawings for door and window openings, drips, reglets, washes, masonry anchors, brick ledge elevations, slab depressions and miscellaneous embedded plates, bolts, anchors, angles, etc.
- 4.9 Refer to plumbing, mechanical and electrical drawings for underfloor, perimeter and other drains and for
- sleeves, outlet boxes, conduit, anchors, etc. The various trades are responsible for their items.
- 4.10 Base plates, anchor rods, support angles and other steel exposed to earth or granular fill shall be covered with a minimum of 3" of concrete. 4.11 Finish surfaces to the following tolerances, according to ASTM E 1155, for a randomly trafficked floor surface:
- a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values equal to  $\frac{3}{5}$  of the overall flatness and levelness values. b. The composite F(F) and F(L) numbers shall be measured and reported within 72 hours after completion of slab concrete finishing operations and before removal of any supporting shores.
- 4.12 Non-shrink grout shall be pre-mixed, non-corrosive, non-metallic, non-staining containing silica sands, Portland cement, shrinkage compensating and water reducing agents. Product shall only require the addition of water. Minimum compressive strength shall be 2500 psi after one day and 7000 psi after 28 days. Grout shall be free of gas producing or air releasing and oxidizing agents and contain no corrosive iron, aluminum or gypsum.
- 4.13 Provide concrete grout not mortar for reinforced masonry lintel and bond beams where indicated on drawing or as scheduled.
- 4.14 Tolerance for anchor rods and other embedded items shall be per the AISC Code of Standard Practice Section
- 4.15 Unless otherwise shown in the architectural drawings, provide 3/4—inch chamfers at all column, wall, slab or beam edges that are exposed to view in the finished structure.
- 4.16 Concrete cover for cast—in—place concrete reinforcement: Concrete cast against & permanently exposed to earth:... ....3 Inches Concrete exposed to earth or weather: No. 6 through No. 18 Bars:... ..2 Inches No. 5 Bar and smaller:.... ...1½" Inches
- Concrete not exposed to weather or in contact with ground: ... $\frac{3}{4}$ " Inches No. 11 Bar and smaller:...
- 5.0 REINFORCING STEEL:
- 5.1 Reinforcing shall be domestic new billet steel conforming to ASTM A615, Grade 60 or 60S including stirrups and ties, except that reinforcing which is required to be welded shall conform to ASTM A706.
- 5.2 Field bending of concrete reinforcing steel is not permitted.
- 5.3 Welded wire mat and fabric shall conform to ASTM A184 and A185 respectively and shall be provided in flat sheets. Welded wire mat/fabric shall be lapped 0'-6" at all splices.

#### 5.4 Rar Splices

		f'c = 3,000psi		f'c = 4,000psi	f'c =	= 5,000psi
Bar Size	Ld (in)	Class "B" Lap Splice (in)	Ld (in)	Class "B" Lap Splice (in)	Ld (in)	Class "B" Lap Splice (ir
#3	17	22	15	19	13	17
#4	22	29	19	25	17	23
#5	28	36	24	31	22	28
#6	33	43	29	37	26	34
#7	48	63	42	54	38	49
#8	55	72	48	62	43	56

- 1. Values are based on normal weight concrete. 2. Ld = minimum embed of rebar
- 3. Class "B" lap splice refers to minimum distance bars must be lapped for a full tension splice.



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#### 6.0 CONSTRUCTION AND SAFETY:

- 6.1 Woods Engineering P.A.'s responsibility is limited to the details and information shown on these drawings. It is the responsibility of the Contractor to provide adequate safety measures required by local codes as well as OSHA Standards for the Construction Industry. This should include, but not be limited to the following: Shoring to protect new as well as existing structures. Necessary Scaffolding.
  - Material Handling Equipment. Trench Boxing.
- 7.0 SHOP DRAWING SUBMITTAL:
- 7.1 See Project Manual
- 7.2 Contractor shall submit Electronic copies (PDF format) of each shop drawing for review. Shop drawings shall be reviewed by the Contractor prior to submission to the Engineer. The Contractor shall allow 10 working days for shop drawing approval.

ABBRE\	<u>VIATIONS</u>		
0	AT	HT	HIP TRUSS
&	AND	IFM	INSIDE FACE OF MASONRY
AB	ANCHOR BOLTS	INT	INTERIOR
ACI	AMERICAN CONCRETE INSTITUTE	JBE	JOIST BEARING ELEVATION
ADDL	ADDITIONAL	JT	JOINT
AFF AISC	ABOVE FINISHED FLOOR  AMERICAN INSTITUTE OF STEEL	K KB	KIP-S KICKER BRACE
AISC	CONSTRUCTION	KSI	KIPS PER SQUARE INCH
AISI	AMERICAN IRON AND STEEL	(L)	LONG SIDE REINFORCEMENT
	INSTITUTE	LB	LONG BAR
ALT	ALTERNATE	LBS	POUNDS
ARCH	ARCHITECTS — ARCHITECTURAL	LLH	LONG LEG HORIZONTAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	LLV LO	LONG LEG VERTICAL LOW
AWS	AMERICAN WELDING SOCIETY	LOC	LOCATION
B, BOTT	BOTTOM	LWC	LIGHT WEIGHT CONCRETE
BCX	BOTTOM CHORD EXTENSION	MAX	MAXIMUM
BFF	BELOW FINISHED FLOOR	MC	MOMENT CONNECTION
BLDG	BUILDING	MECH	MECHANICAL
BM BOS	BEAM BOTTOM OF STEEL	MFR MID	MANUFACTURER
BRG	BEARING	MIN	MIDDLE MINIMUM
BTWN	BETWEEN	MISC	MISCELLANEOUS
CFS	COLD FORMED STEEL	MOW	MIDDLE OF WALL
CJ	CONTRACTION JOINT	MP	MASONRY PILASTER
CL	CENTERLINE	d	NAILS — PENNY
CLR CMU	CLEAR CONCRETE MASONRY UNITS	No	NUMBER NEAD CIDE
COL	COLUMN	NS NTS	NEAR SIDE NOT TO SCALE
CONC	CONCRETE	NWC	NORMAL WEIGHT CONCRETE
CONN	CONNECTION	OC	ON CENTER
	CONSTRUCTION JOINT	OFB	OUTSIDE FACE OF BRICK
CONT	CONTINUOUS	OFM	OUTSIDE FACE OF MASONRY
CONTR CSJ	CONTRACTOR COMPOSITE STEEL JOIST	OFS	OUTSIDE FACE OF STUD
CTRD	CENTERED	OPNG OPP	OPENING OPPOSITE HAND
DBA	DEFORMED BAR ANCHOR	PEBS	PRE-ENGINEERED BUILDING
DD	DELEGATED DESIGN	1 250	SUPPLIER
DEFL	DEFLECTION	PED	PEDESTAL
DEPR	DEPRESSION - DEPRESSED	PL	PLATE
DET DIAG	DETAIL DIAGONAL	PSF PSI	POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH
Ø	DIAMETER	PSL	PARALLEL STRAND LUMBER
DIM	DIMENSION	PLF	POUNDS PER LINEAR FOOT
DIST	DISTANCE	PT	PRESSURE TREATED
DWG(S)	DRAWING(S)	REF	REFERENCE
DWL(S)	DOWEL(S)	REINF	REINFORCING
EA ELEV	EACH ELEVATION	REQD (S)	REQUIRED SHORT SIDE REINFORCEMENT
EMBED	EMBEDDED — EMBEDMENT	(S) SB	SHORT BAR
ENG	ENGINEER	SCHD	SCHEDULE
EOR	ENGINEER OF RECORD	SF	STEP FOOTING
EQ	EQUAL	SIM	SIMILAR
EQUIP	EQUIPMENT	SOG	SLAB ON GRADE
EF	EACH FACE		SPECIFICATION(S)
EJ EOD	EXPANSION JOINT EDGE OF DECK	SPF SQ	SPRUCE PINE FUR SQUARE
EOM	EDGE OF MASONRY	STD	
EOS	EDGE OF SLAB	STIFF	
EOW	EDGE OF WALL	STIRR	
EW	EACH WAY	STL	STEEL
EXIST	EXISTING	STR	STRUCTURAL
EXP EXT	EXPANSION EXTERIOR	SW SYP	SHEAR WALL SOUTHERN YELLOW PINE
FDN	FOUNDATION	T	TOP
FFE	FINISHED FLOOR ELEVATION	TCX	
FS	FAR SIDE	TOC	
FTG	FOOTING	TOS	TOP OF STEEL
GA	GAUGF	TOW	TOP OF WALL

TOW

TYP

UNO

VERT

TOP OF WALL

VEHICLE BARRIER

VERIFY IN FIELD

WELDED WIRE FABRIC

UNLESS NOTED OTHERWISE

TYPICAL

VERTICAL

WITH

GAUGE

GALVANIZED

HEADED

HORIZONTAL

HIGH

GIRDER TRUSS

HOLLOW STRUCTURAL SECTION

GALV

HORIZ

# G R O U I

ARCHITECTURE

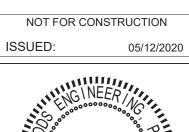
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312 West Main St, Suite 300 Salisbury, MD 21801 410.546.9100 Delaware 309 S Governors Ave

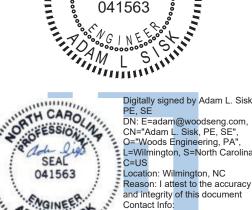
Dover, DE 19904 302.734.7950 Rittenhouse Station 250 South Main Street, Suite 109

Newark, DE 19711 302.369.3700 www.beckermorgan.com

ISSUED FOR BIDDING







Date: 2020.05.12 11:03:11-04'00'

#### SOUTH **BRUNSWICK** HIGH SCHOOL ROTC BUILDING

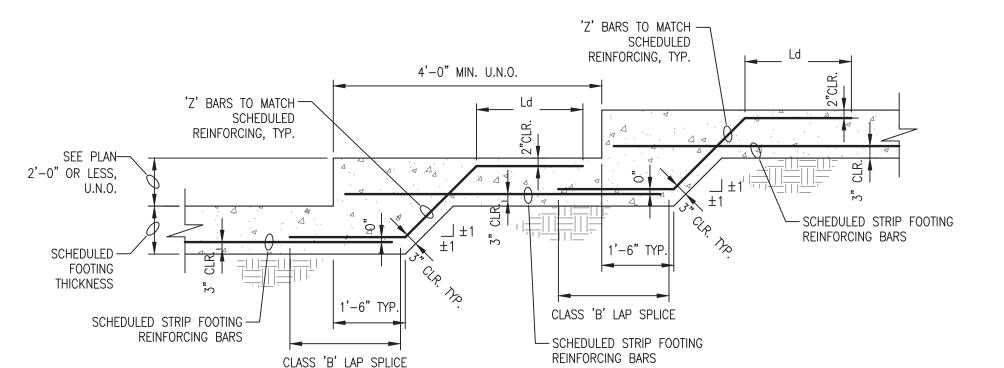
280 COUGAR ROAD,

SOUTHPORT, NC 28461

**GENERAL NOTES** 

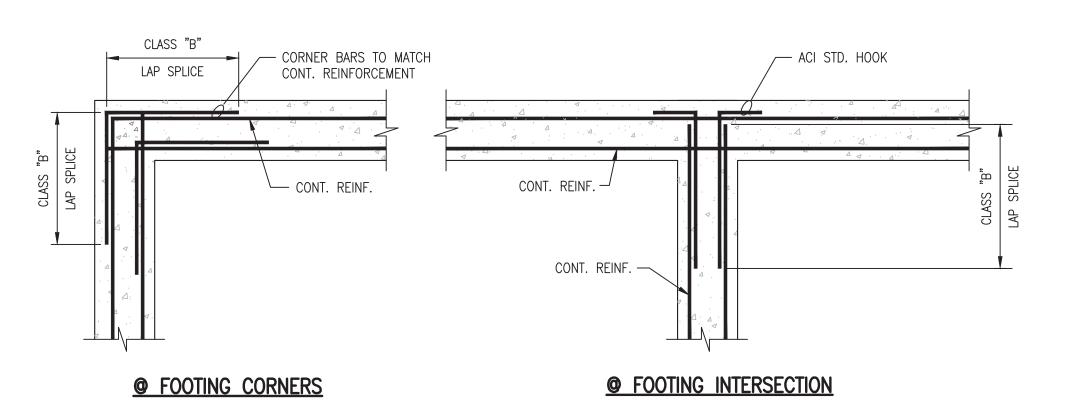
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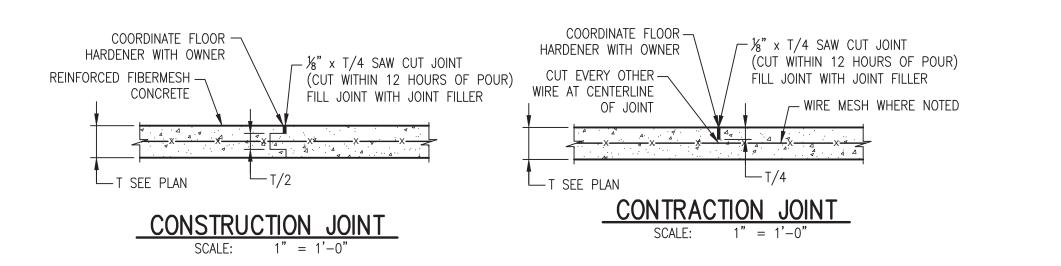


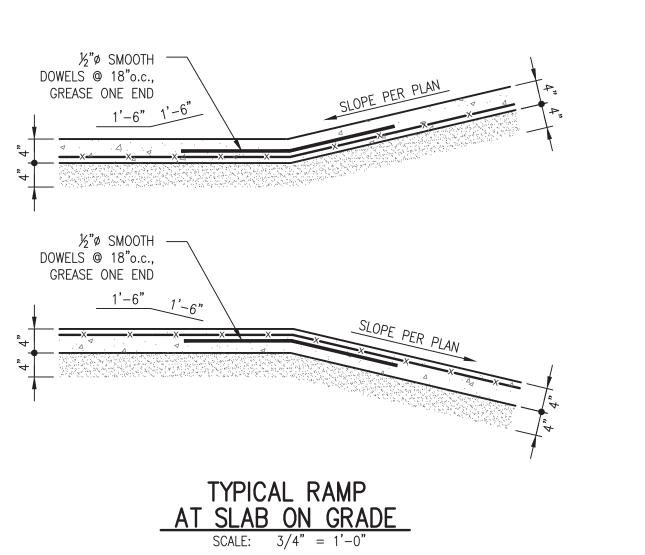
CLASS 'B' LAP SPLICE

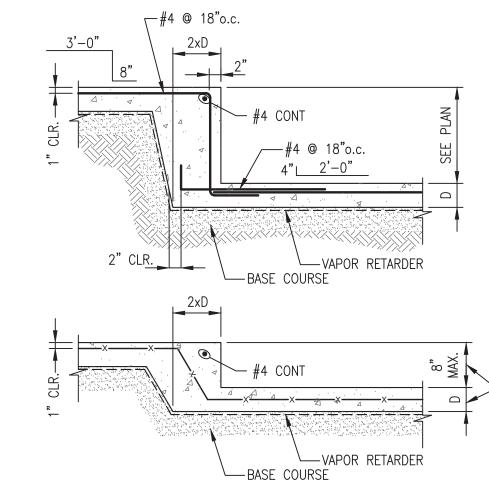
#### STEP FOOTING DETAIL



# TYPICAL CORNER REINFORCING FOR CONCRETE FOOTINGS SCALE: 3/4" = 1'-0"







TYPICAL SLAB STEP

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

GENERAL NOTE:
DETAILS SHOWN ON THIS SHEET ARE GENERIC IN NATURE AND MAY NOT PORTRAY EXACT CONDITIONS.

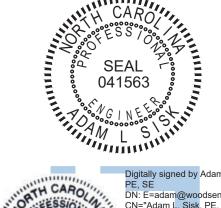
THESE DETAILS ARE INTENDED TO PROVIDE GENERAL GUIDELINES FOR TYPICAL CONSTRUCTION CONDITIONS.

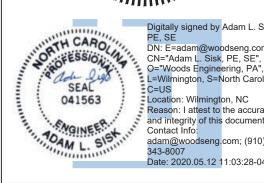
G R O U P

ARCHITECTURE PLANNING 3333 Jaeckle Drive, Suite 120 Wilmington, NC 28403 910.341.7600 Maryland 312 West Main St, Suite 300 Salisbury, MD 21801 410.546.9100 Delaware 309 S Governors Ave Dover, DE 19904 302.734.7950 Rittenhouse Station 250 South Main Street, Suite 109 Newark, DE 19711 302.369.3700 www.beckermorgan.com

ISSUED FOR BIDDING NOT FOR CONSTRUCTION ISSUED:







SOUTH BRUNSWICK HIGH SCHOOL **ROTC BUILDING** 280 COUGAR ROAD, SOUTHPORT, NC 28461

TYPICAL DETAILS

05/12/20 AS INDICATED | DRAWN BY: MBK PROJ MGR: ALS 7



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#### **LEGEND - FOUNDATION**

25'-0"

#5 HAIRPIN BAR TYP.

— 4" THICK SLAB.

SEE NOTE #4

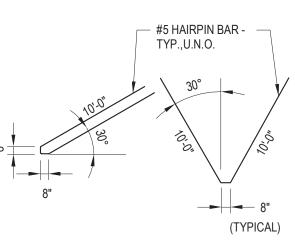
**ROTC BUILDING FOUNDATION PLAN** SCALE: 1/4" = 1'-0"

25'-0"

BAR TYP.

SPREAD FOOTING DESIGNATION SEE SCHEDULE THIS SHEET STRIP FOOTING DESIGNATION SEE SCHEDULE THIS SHEET INDICATES CONCRETE SLAB

INFO AND S301 FOR ANCHOR BOLT INFO



#### **NOTES - FOUNDATION PLAN**

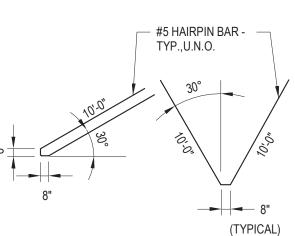
- 2. DATUM ELEVATION = TOP OF SLAB ELEVATION = ASSUMED 0'-0". OTHER ELEVATIONS ARE NOTED AS (+ OR -) FROM DATUM ELEVATION.
- 3. RELOCATE ANY UTILITY LINES THAT CONFLICT WITH THE FOUNDATIONS OR DROP THE FOUNDATIONS TO AN ELEVATION BELOW THE PROPOSED UTILITIES. RELOCATE ANY GRAVITY FLOW LINES THAT CONFLICT WITH SPREAD FOOTINGS AS SHOWN ON STRUCTURAL FOUNDATION PLANS. IF A GRAVITY FLOW LINE TRAVELS UNDER A CONTINUOUS STRIP FOOTING EITHER a. DROP THE FOOTING ELEVATION BELOW THE PROPOSED LINE b. ENCASE THE LINE IN A STEEL PIPE 2" LARGER IN DIAMETER THAN THE LINE AND EXTEND THE PIPE 1'-0" PAST EACH SIDE OF THE CONCRETE FOOTING. BACKFILL THE TRENCH WITH #57 STONE. THE BEARING CAPACITY OF THIS AREA MUST MEET OR EXCEED THE ALLOWABLE SOIL BEARING CAPACITY.
- DRAWINGS FOR OPENINGS AND DEPRESSIONS NOT SHOWN ON THESE DRAWINGS.
- 7. PROVIDE STEEL SLEEVE FOR PLUMBING LINES UNDER FOUNDATIONS. SLEEVE SHALL BE 2" LARGER IN DIAMETER THAN PLUMBING LINE AT THAT LOCATION.
- OTHERWISE.

SPREAD FOOTING (FX) SCHEDULE					
WIDTH x LENGTH x	REINFO	RCEMENT			
THICKNESS	TOP BARS EACH WAY (U.N.O.)	BOTTOM BARS EACH WAY (U.N.O.)	COMMENTS		
3'-0" x 3'-0" x 2'-0"	(4) #5	(4) #5	MONOLITHIC W/ SLAB		
4'-0" x 4'-0" x 2'-0"	(4) #5	(4) #5	MONOLITHIC W/ SLAB		
_	THICKNESS 3'-0" x 3'-0" x 2'-0"	WIDTH x LENGTH x         REINFO           THICKNESS         TOP BARS EACH WAY (U.N.O.)           3'-0" x 3'-0" x 2'-0"         (4) #5	WIDTH x LENGTH x THICKNESS         REINFORCEMENT           3'-0" x 3'-0" x 2'-0"         TOP BARS EACH WAY (U.N.O.)         BOTTOM BARS EACH WAY (U.N.O.)           4) #5         (4) #5		

	STRIP I	FOOTING (SF-x) SCHEDULE	
MARK	WIDTH x THICKNESS x LENGTH	REINFORCEMENT	COMMENTS
SF-1	1'-0" x 2'-0" x CONT.	(2) #5 CONT.	

TYPICAL DETAILS. PRE-ENGINEERED METAL BUILDING STEEL COLUMN - SEE PEMB BASE PLATE

CONTRACTION JOINTS, SEE S1.02 FOR



- 1. SEE SHEET S1.01 FOR ADDITIONAL GENERAL NOTES, FOUNDATION NOTES, CONCRETE NOTES, AND REINFORCING STEEL NOTES. ALSO, SEE SHEET S1.02 FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
- 4. SLAB-ON-GRADE SHALL BE 4" THICK (SEE PLAN) 3000 psi CONCRETE WITH WWM 6x6xW2.0xW2.0 ON SUPPORT CHAIRS ON 15 mil VAPOR BARRIER, ON 6" COMPACTED SELECT GRANULAR MATERIAL ON WELL COMPACTED SUB GRADE. SEE S1.01 FOUNDATION NOTES FOR COMPACTION REQUIREMENTS, VERIFY COMPACTION w/QUALIFIED GEOTECHNICAL ENGINEER.
- 5. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DISCIPLINE
- 6. G.C. TO COORDINATE STEPS IN FOUNDATION FOR PLUMBING, ELECTRICAL, AND MECHANICAL.
- 8. DIMENSIONS ARE FROM EDGE OF SLAB (E.O.S.) TO COLUMN CENTERLINE UNLESS NOTED

SPREAD FOOTING (FX) SCHEDULE						
	WIDTH x LENGTH x	REINFO	RCEMENT			
MARK	THICKNESS	TOP BARS EACH WAY (U.N.O.)	BOTTOM BARS EACH WAY (U.N.O.)	COMMENTS		
F3	3'-0" x 3'-0" x 2'-0"	(4) #5	(4) #5	MONOLITHIC W/ SLAB		
F4	4'-0" x 4'-0" x 2'-0"	(4) #5	(4) #5	MONOLITHIC W/ SLAB		
,						



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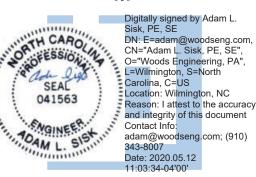
<u>Delaware</u>

309 S Governors Ave Dover, DE 19904

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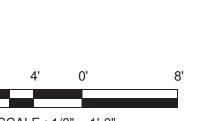


SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING

280 COUGAR ROAD, SOUTHPORT NC 28461

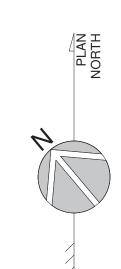
FOUNDATION PLAN

ROTC BUILDING



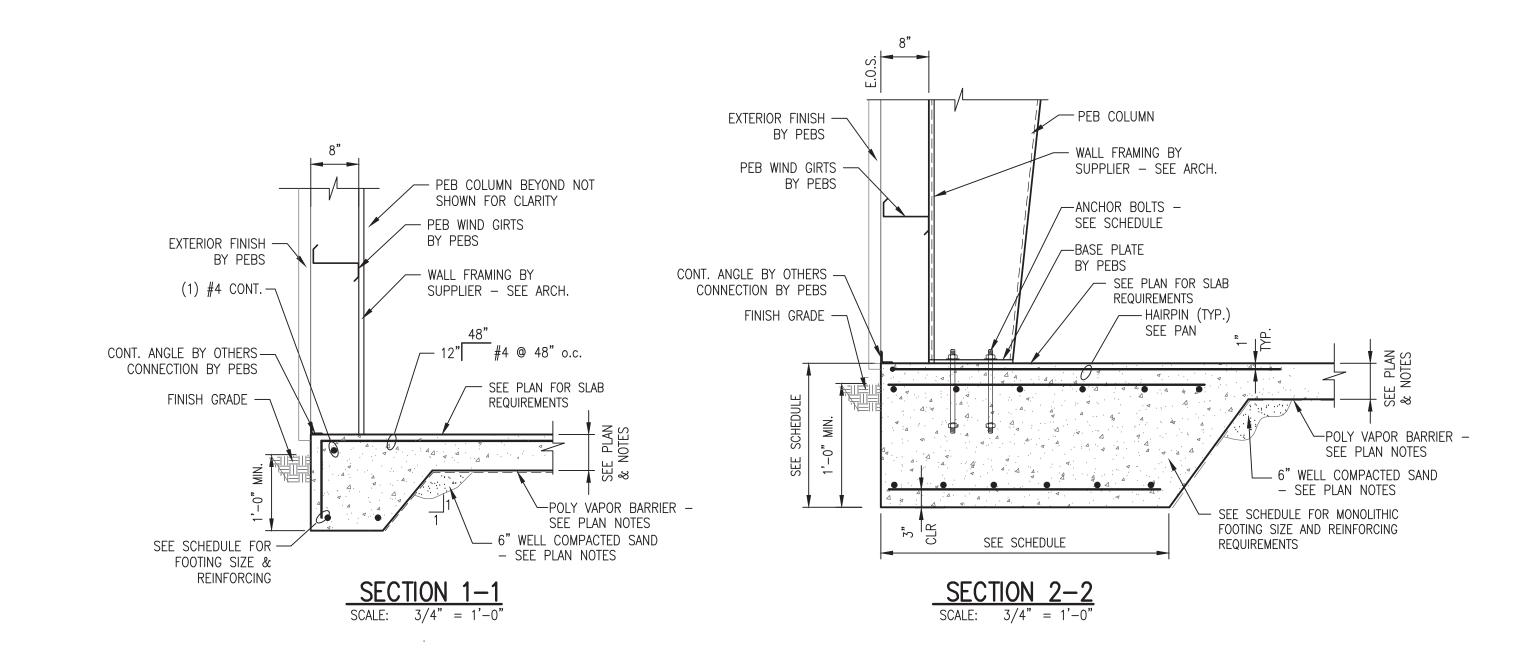
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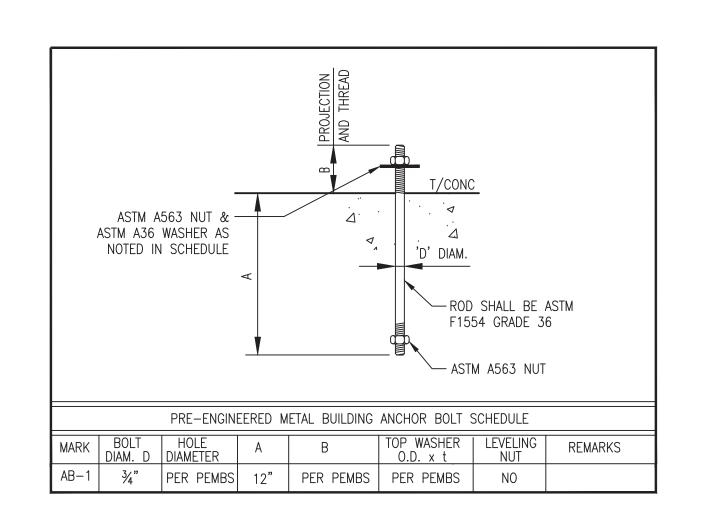
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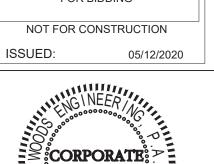
ARCHITECTURE PLANNING

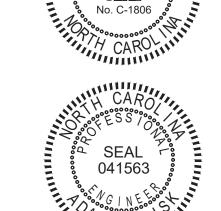
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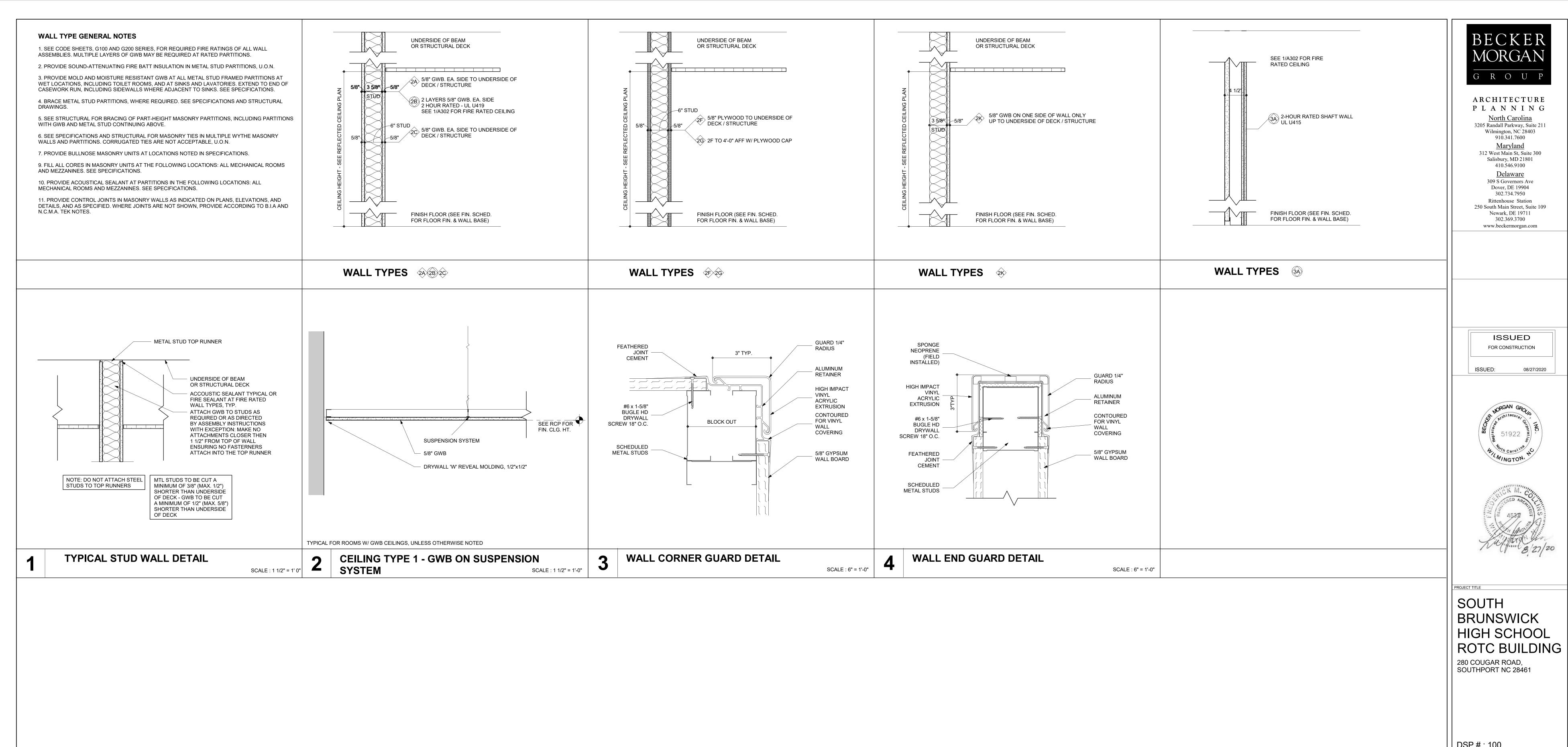




SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING 280 COUGAR ROAD, SOUTHPORT, NC 28461

FOUNDATION SECTIONS AND DETAILS

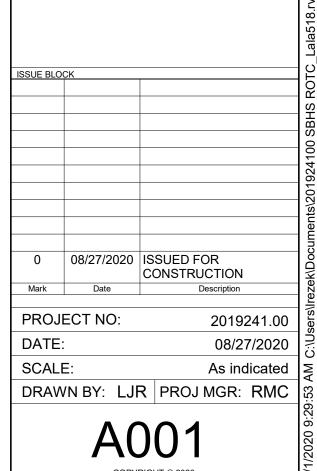
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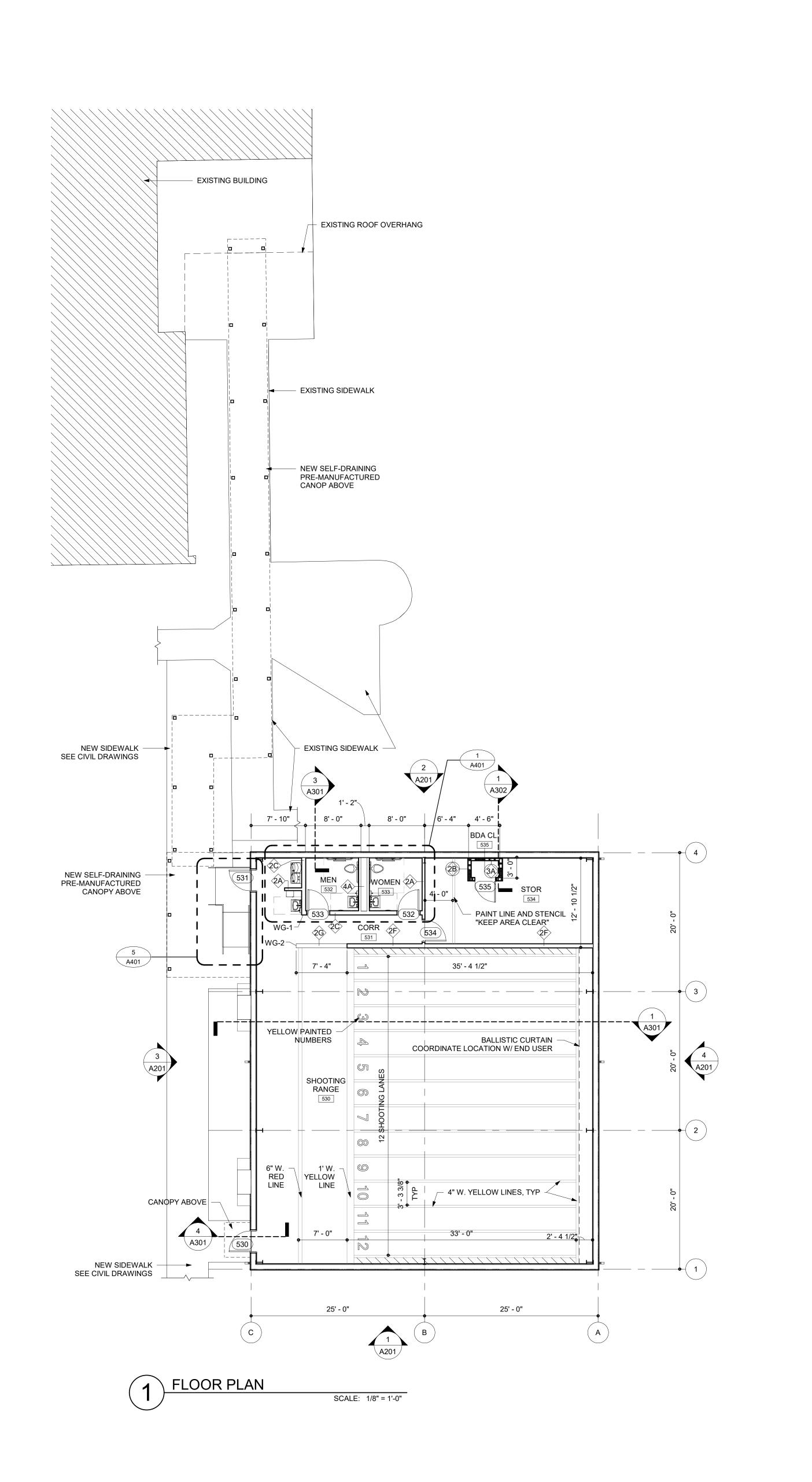


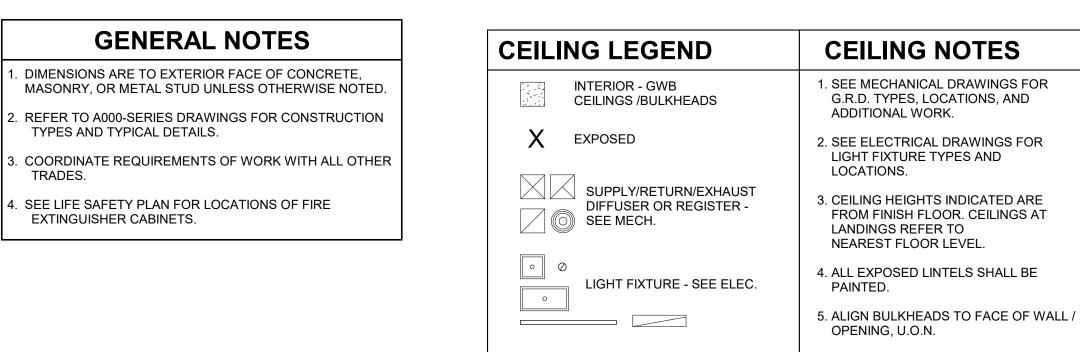


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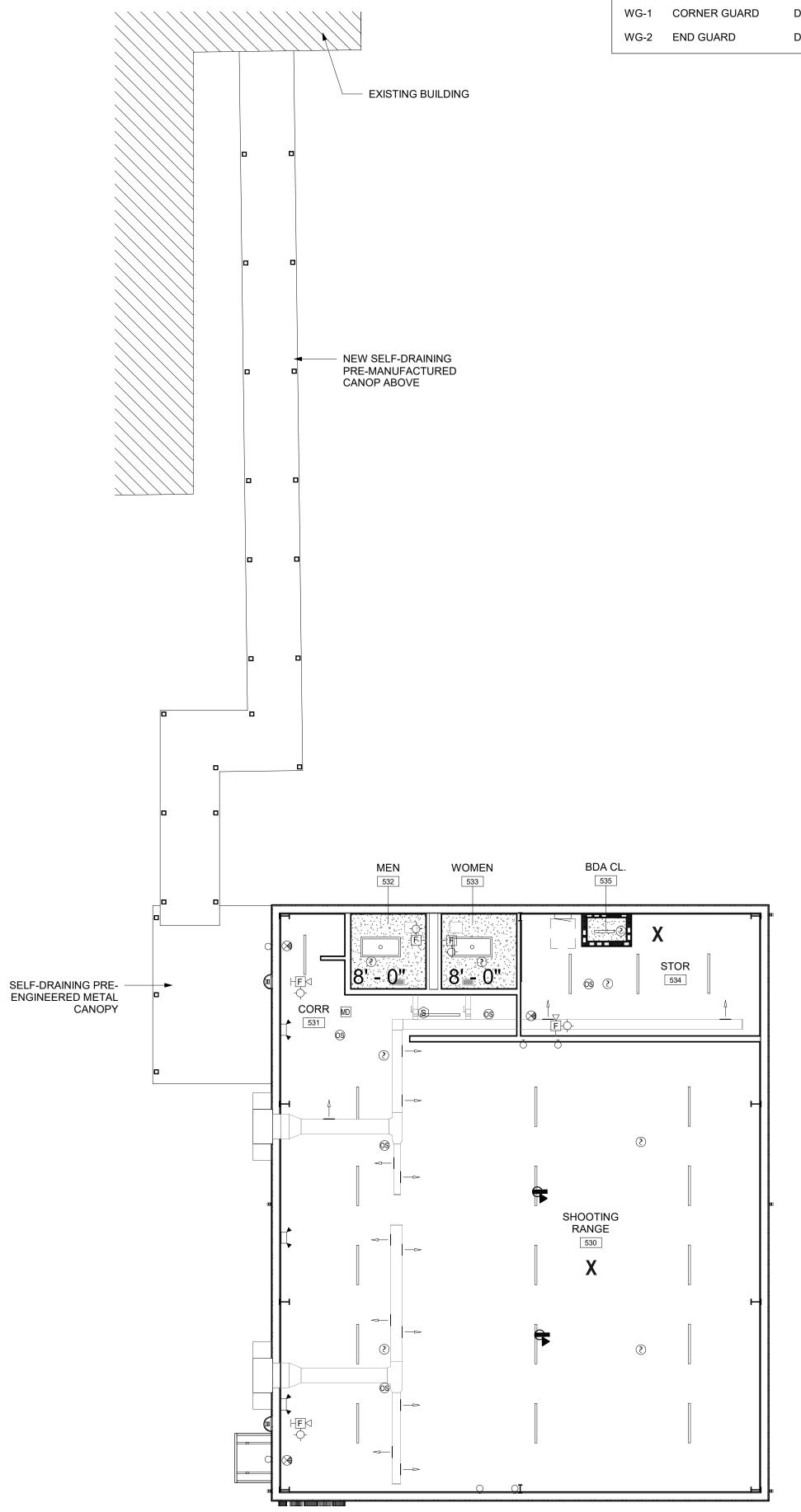
CONSTRUCTION TYPES







# WALL GUARD LEGEND DETAIL 3/A001 WG-1 CORNER GUARD DETAIL 4/A001 WG-2 END GUARD







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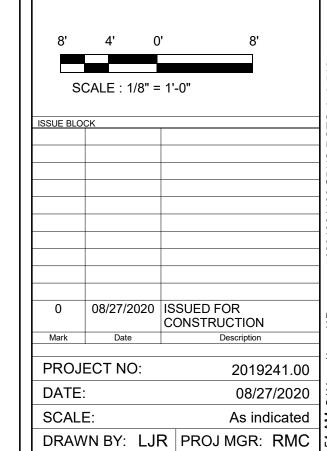


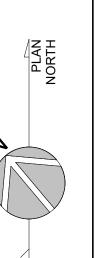


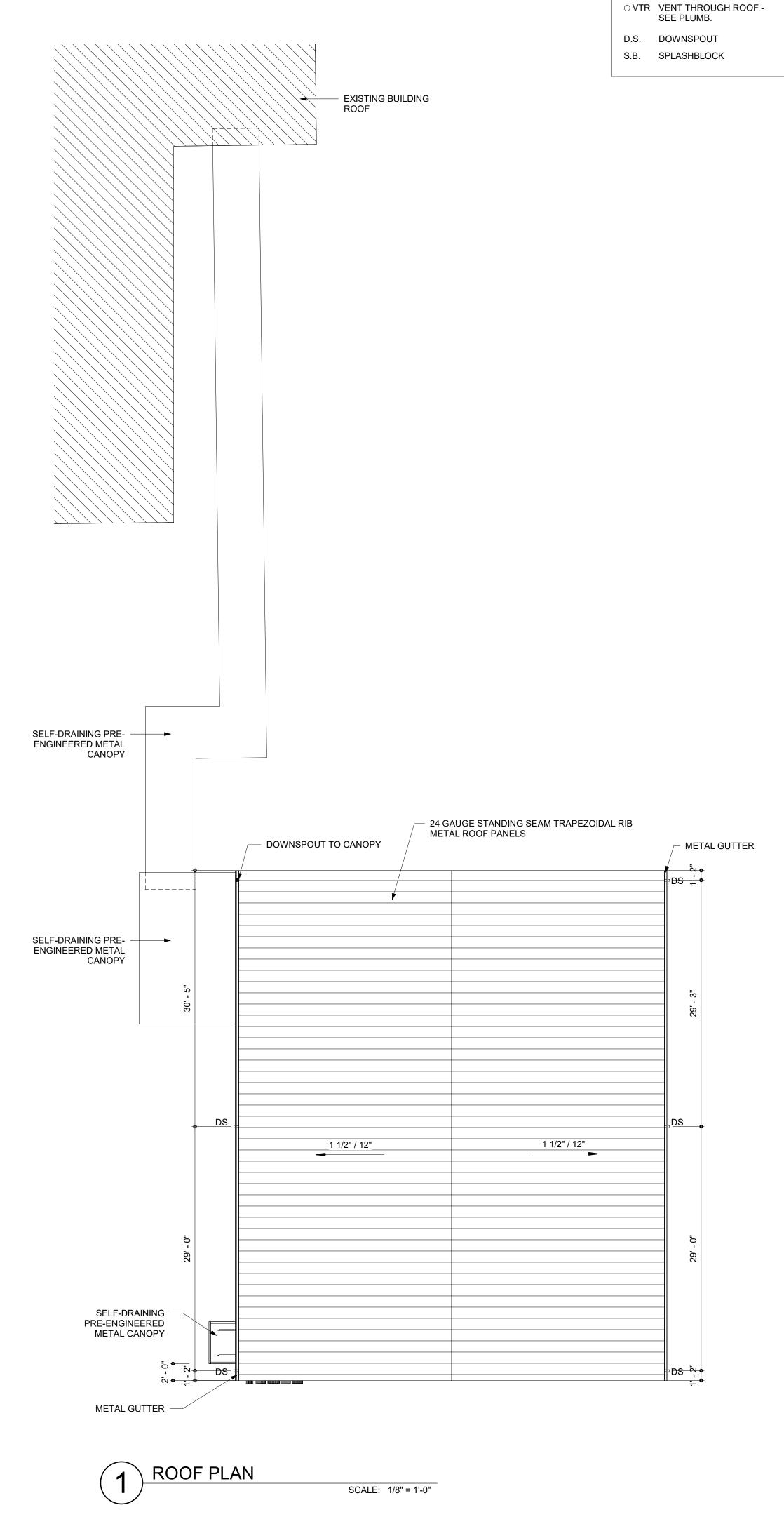
SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING 280 COUGAR ROAD, SOUTHPORT NC 28461

DSP # : 100 DPI SCHOOL # :

FLOOR PLAN AND REFLECTED CEILING PLAN







ROOF LEGEND

STANDING SEAM METAL ROOF

STANDING SEAM METAL ROOF

ROOFTOP VENTILATOR

VTR VENT THROUGH ROOFSEE PLUMB.

D.S. DOWNSPOUT

ROOF NOTES

1. DOWNSPOUTS SHALL BE 4"x3" PLAIN RECTANGULAR UNLESS OTHERWISE NOTED.

2. GUTTERS SHALL BE 6"x6" UNLESS OTHERWISE NOTED.



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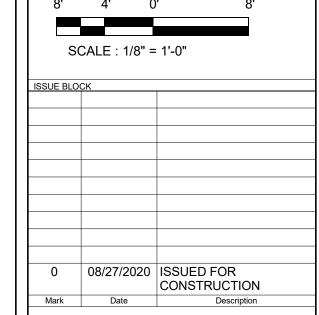




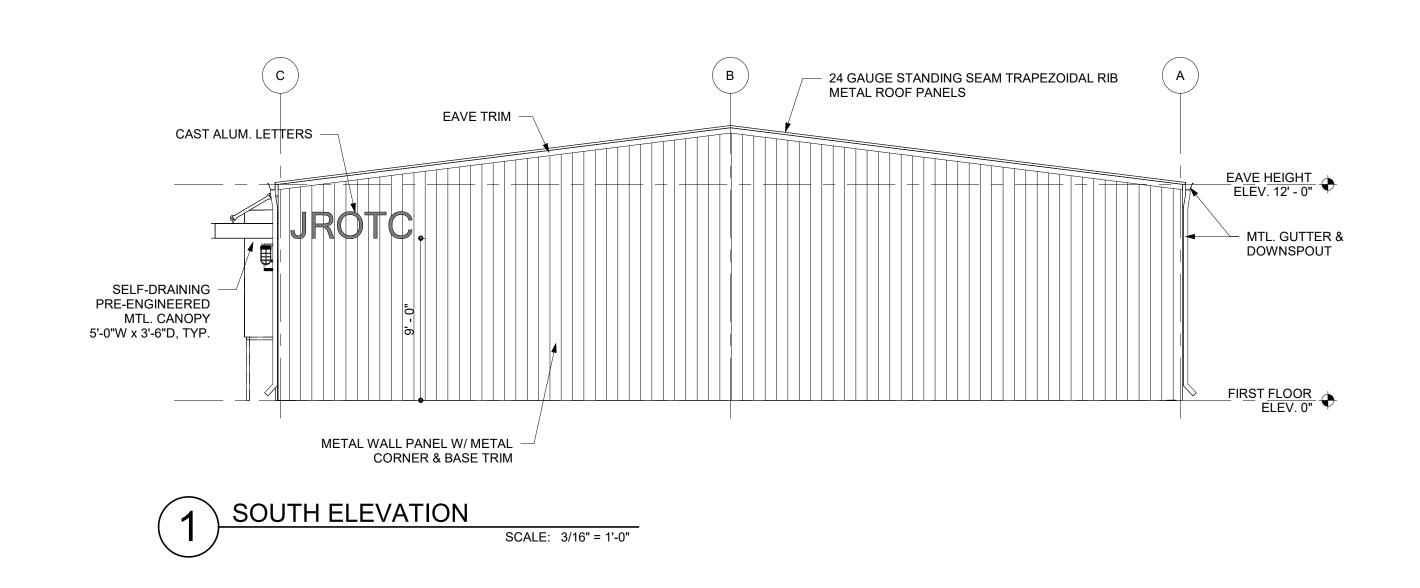
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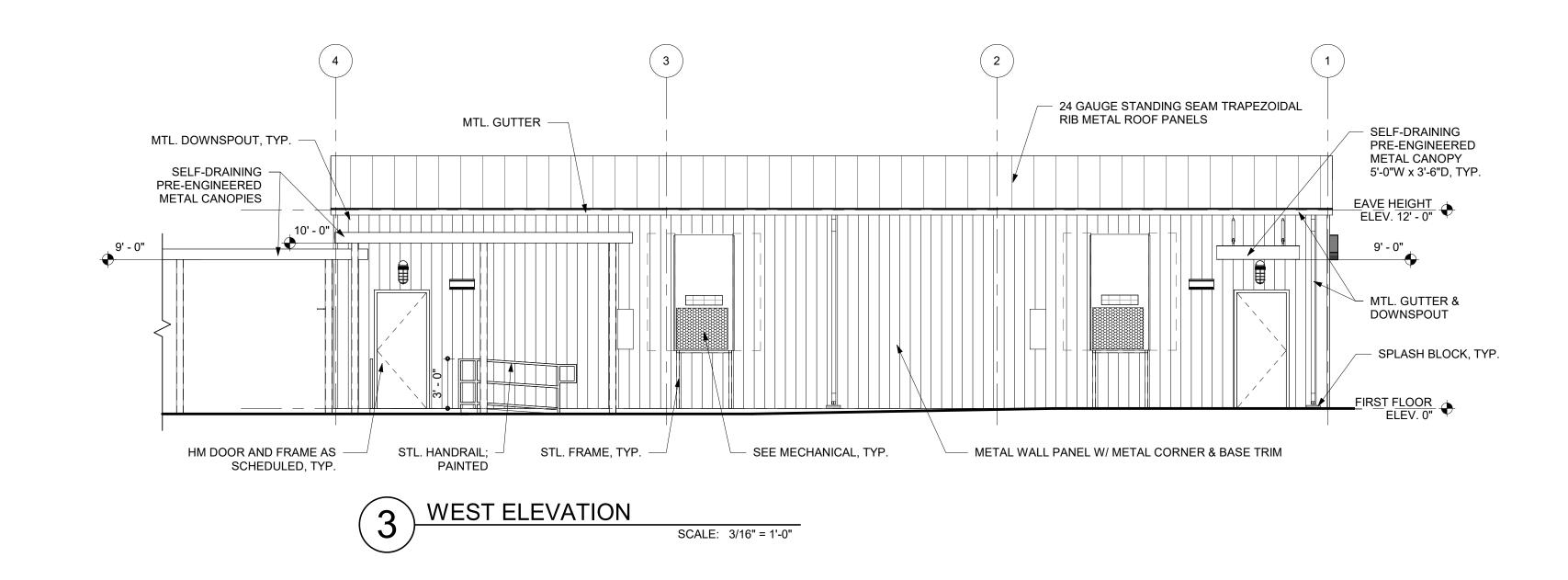
280 COUGAR ROAD, SOUTHPORT NC 28461

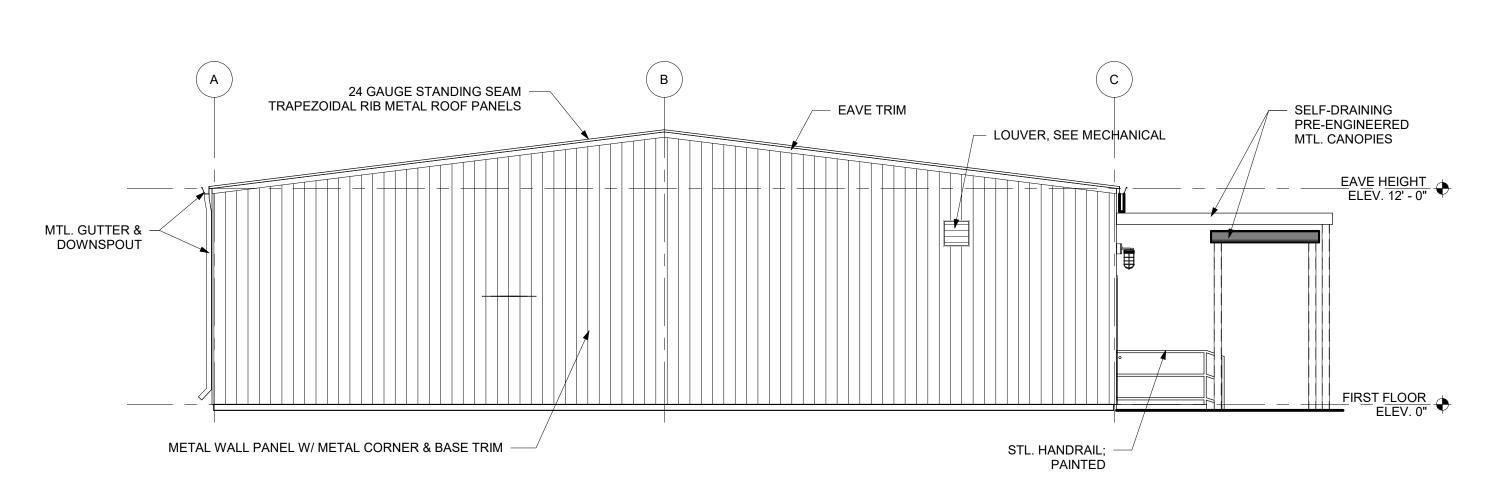
ROOF PLAN

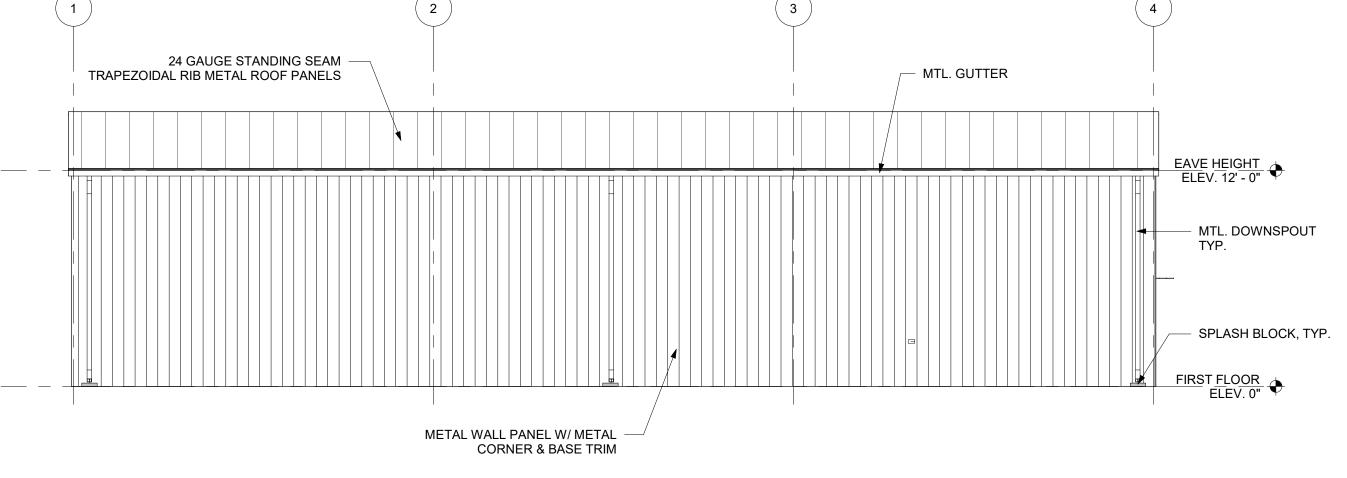


A102









NORTH ELEVATION

SCALE: 3/16" = 1'-0"



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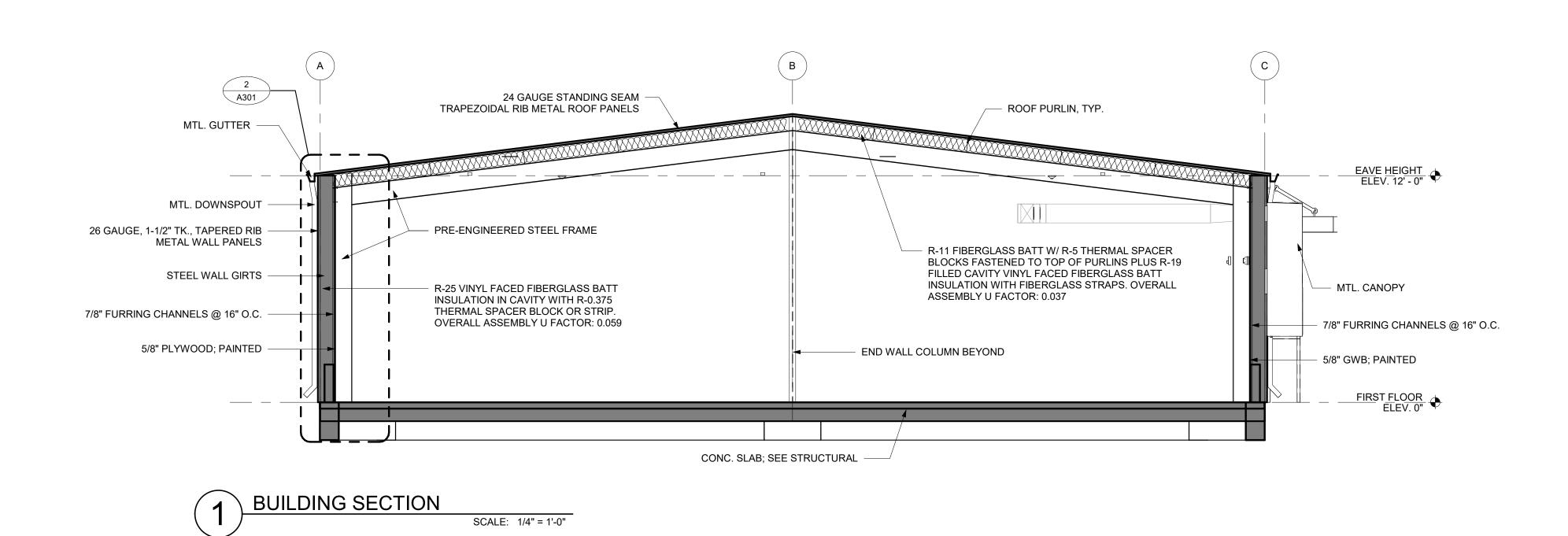
SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING 280 COUGAR ROAD, SOUTHPORT NC 28461

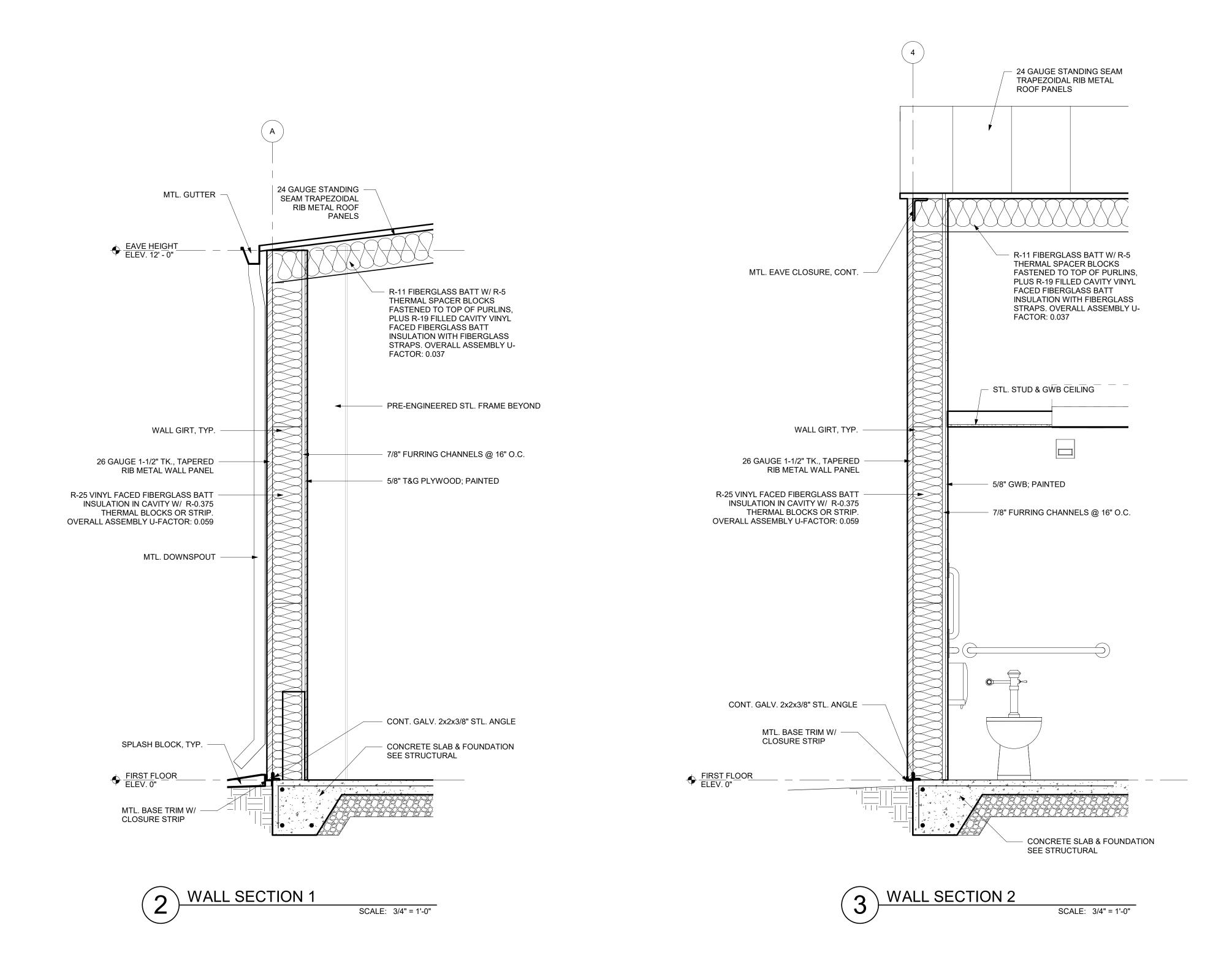
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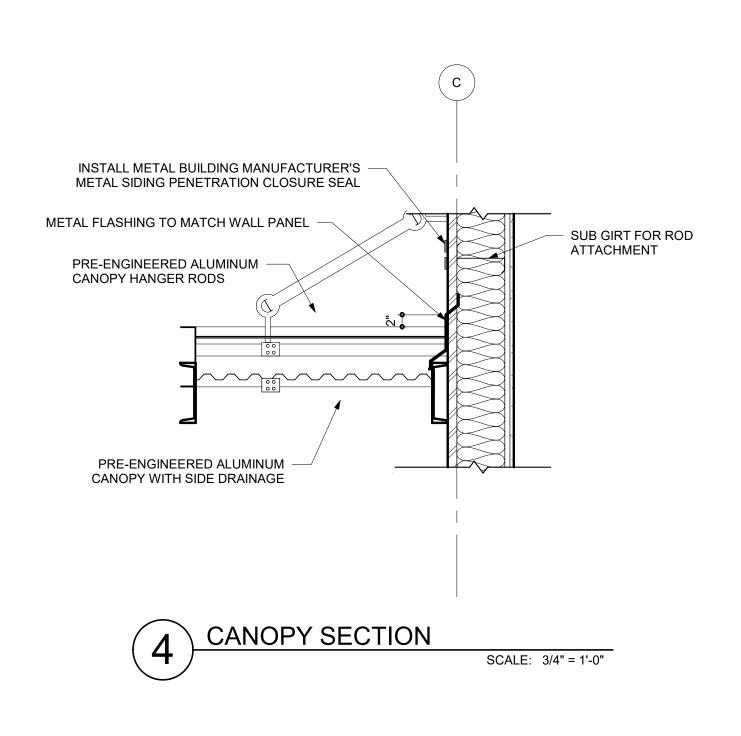
DSP # : 100 DPI SCHOOL # :

EXTERIOR ELEVATIONS

A201









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SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING 280 COUGAR ROAD, SOUTHPORT NC 28461

DSP#: 100 DPI SCHOOL#:

BUILDING SECTION
AND WALL SECTIONS

0 08/27/2020 ISSUED FOR CONSTRUCTION

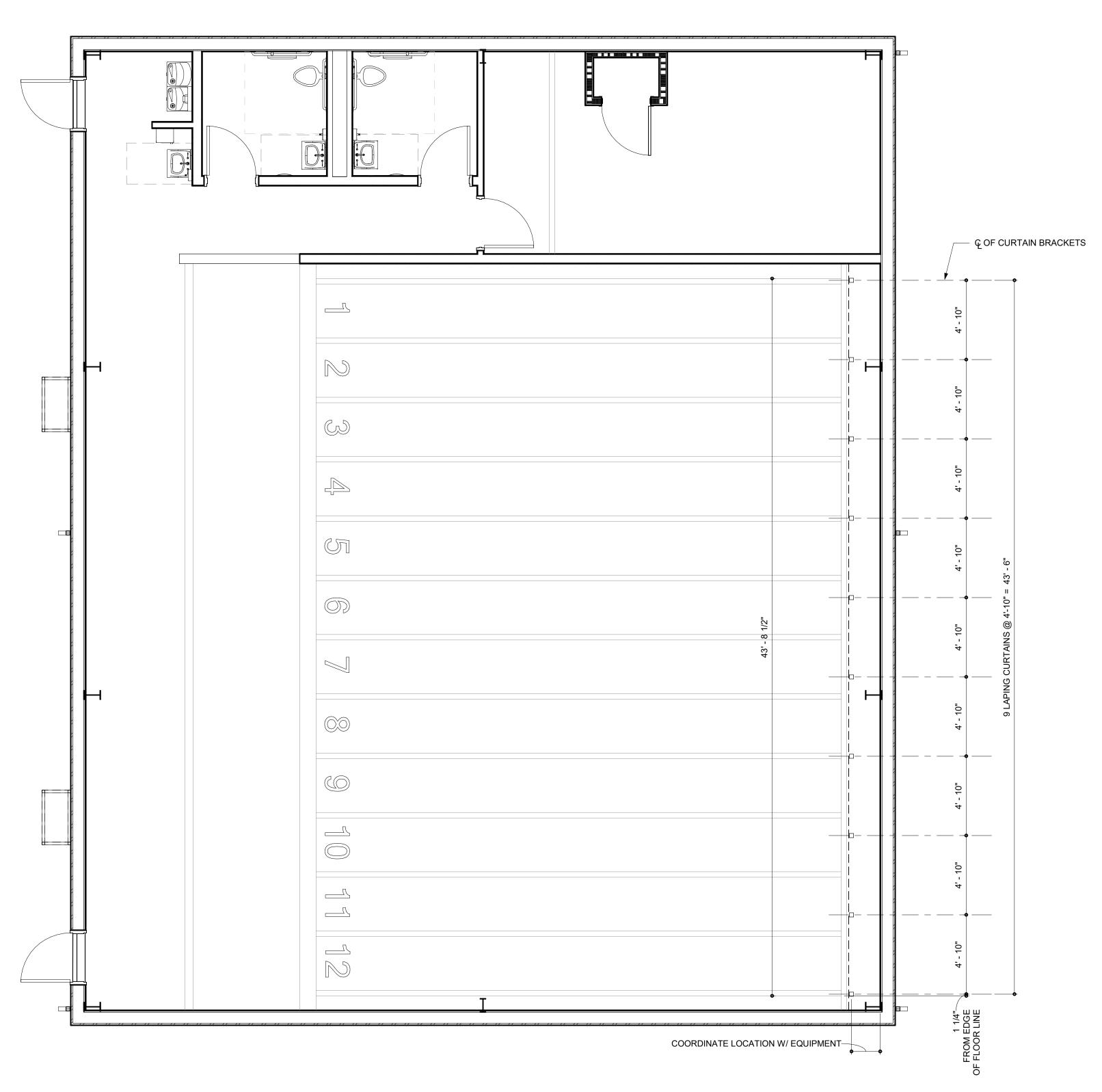
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PROJECT NO: 2019241.00

A301

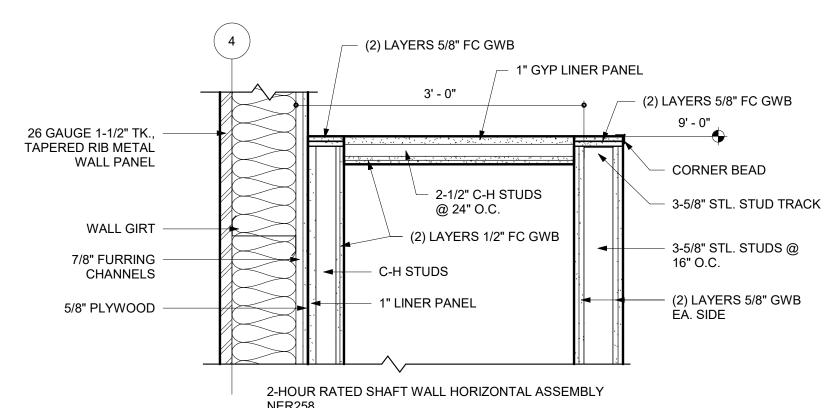
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As indicated



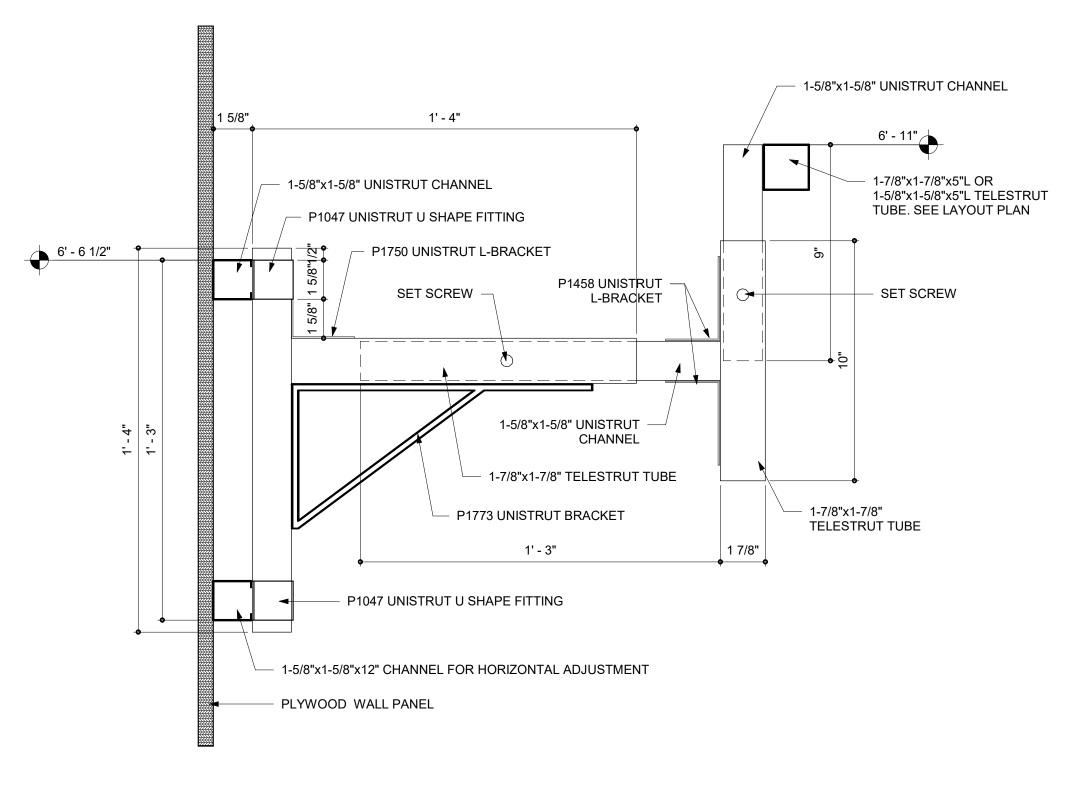
5 ROD SUPPORT PLAN

SCAL F: 1/4" = 1' 0"



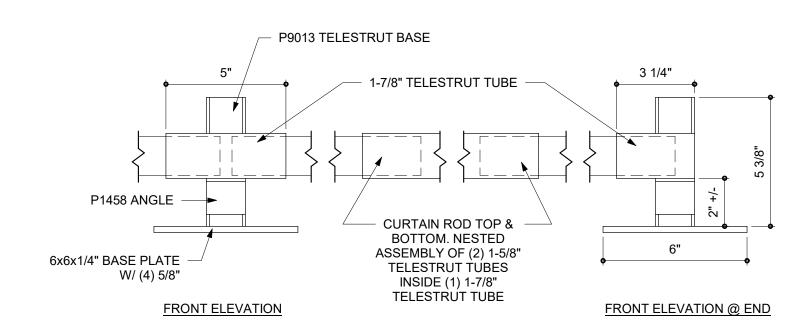
SECTION @ BDA CLOSET

SCALE: 1" = 1'-0"

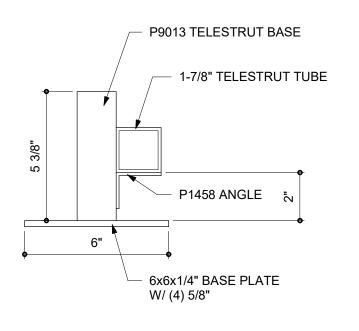


BALLISTIC CURTAIN BRACKET
DETAIL

SCALE: 3" = 1'-0"



BALLISTIC CURTAIN ROD
SUPPORT FRONT ELEVATION
SCALE: 3" = 1'-0"



BALLISTIC CURTAIN ROD
SUPPORT SIDE ELEVATON
SCALE: 3" = 1'-0



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SOUTH
BRUNSWICK
HIGH SCHOOL
ROTC BUILDING
280 COUGAR ROAD,
SOUTHPORT NC 28461

DSP # : 100 DPI SCHOOL # :

DETAILS

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Mark Date Description

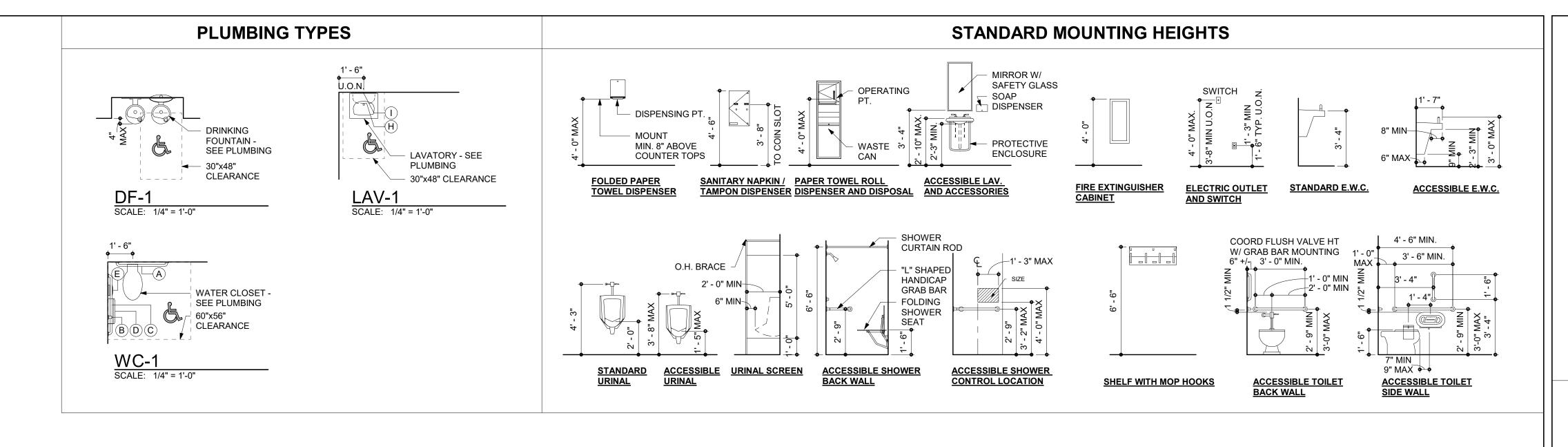
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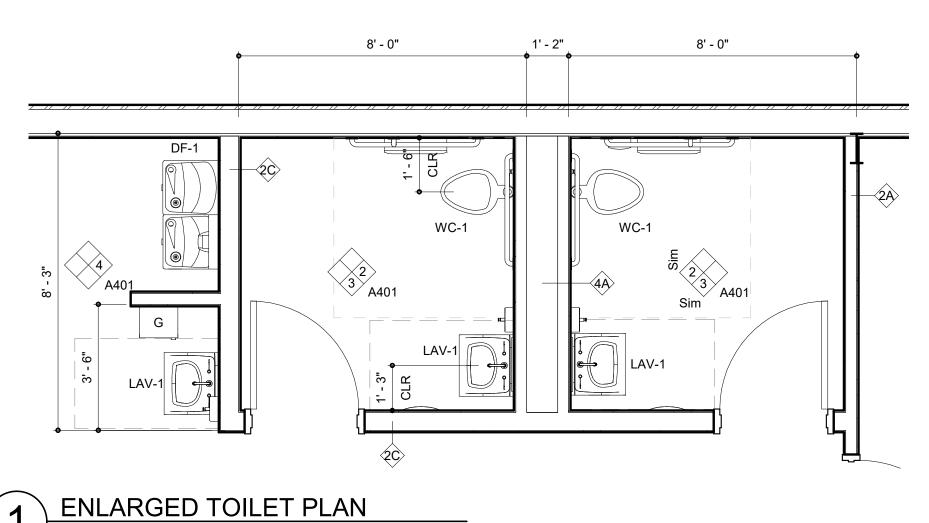
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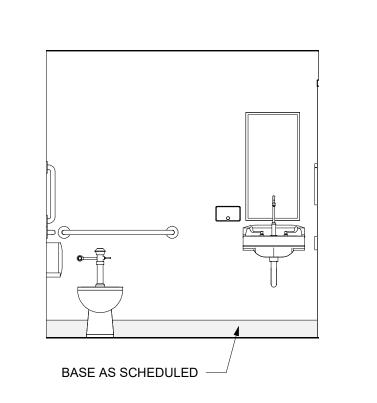
SCALE: As indicated

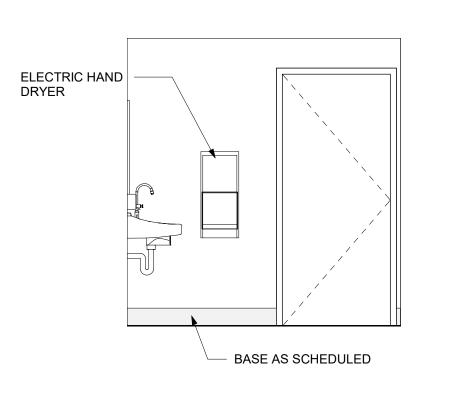
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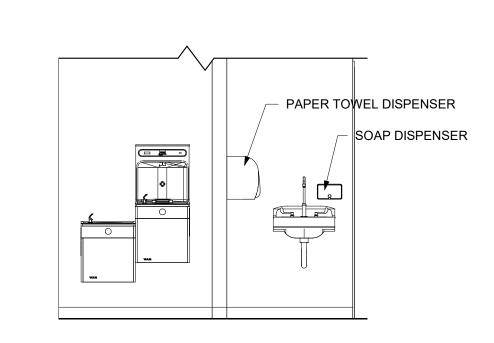
TOILET ACCESSORY SCHEDULE						
Α	36" GRAB BAR - HORIZONTAL					
В	18" GRAB BAR - VERTICAL					
С	42" GRAB BAR - VERTICAL					
D	TOILET PAPER DISPENSER	PROVIDED BY OWNER, INSTALLED BY CONTRACTOR				
Е	SANITARY NAPKIN DISPOSAL	PROVIDED BY OWNER, INSTALLED BY CONTRACTOR				
F	SOAP DISPENSER	PROVIDED BY OWNER, INSTALLED BY CONTRACTOR				
G	PAPER TOWEL DISPENSER	PROVIDED BY OWNER, INSTALLED BY CONTRACTOR				
Н	UNDER LAVATORY SHIELD					
I	18"x36" FRAMED MIRROR					
.1	FLECTRIC HAND DRYER					









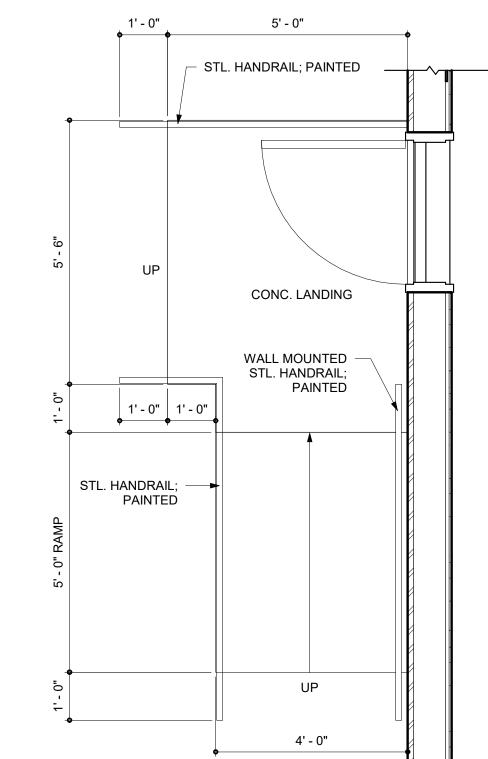


1 ENLARGED TOILET PLAN

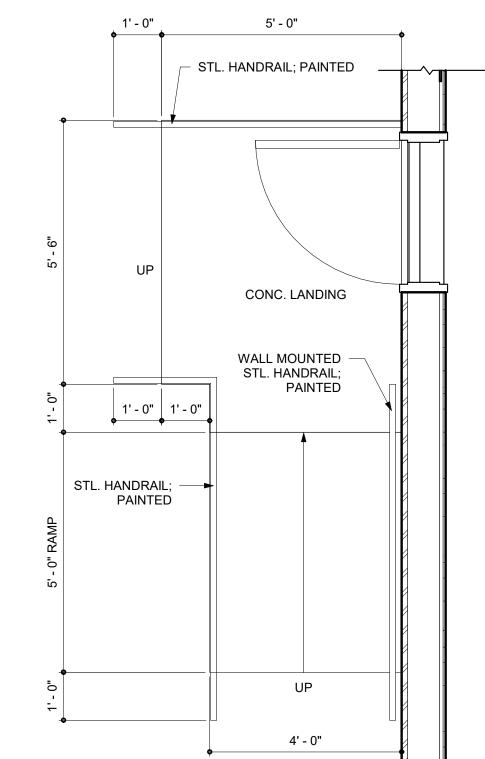




4 ELEVATION @ CORRIDOR







DSP # : 100 DPI SCHOOL # : ENLARGED PLANS AND DETAILS

G R O U P

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PROJECT TITLE

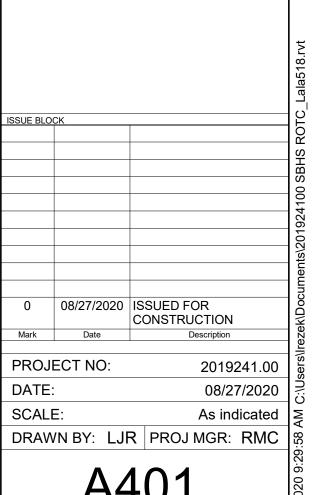
SOUTH

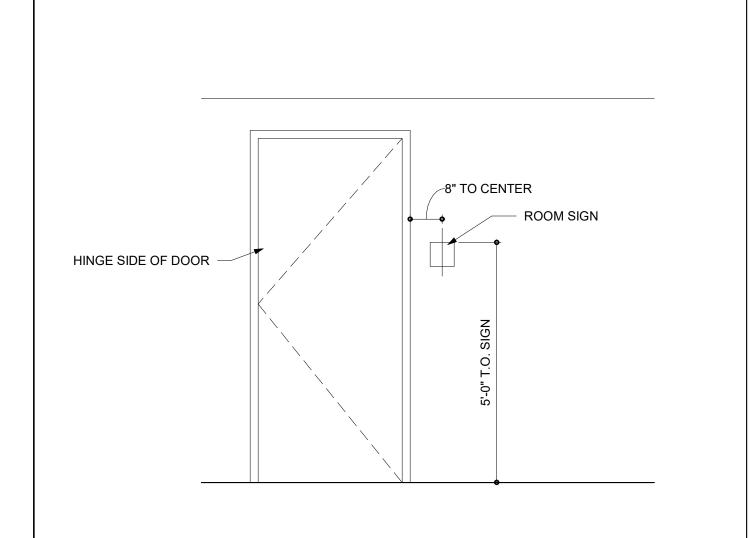
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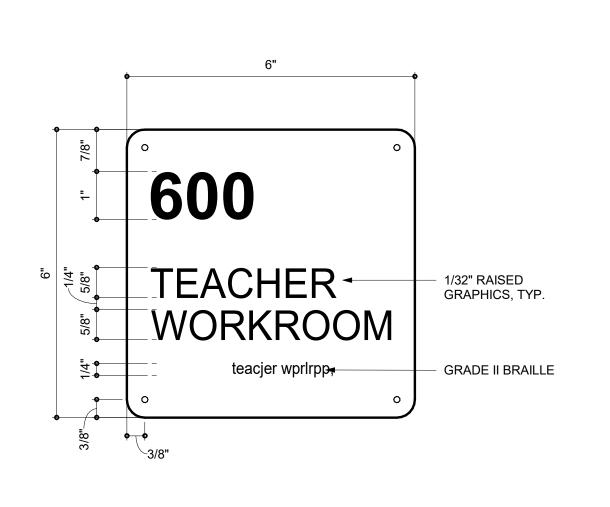
280 COUGAR ROAD, SOUTHPORT NC 28461

HIGH SCHOOL

ROTC BUILDING

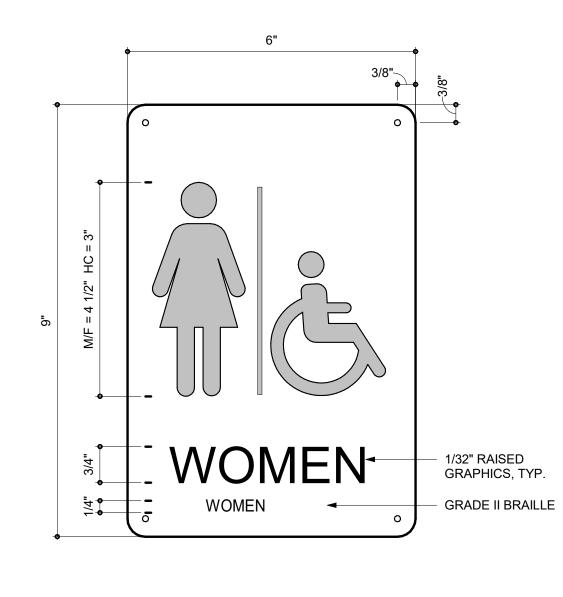






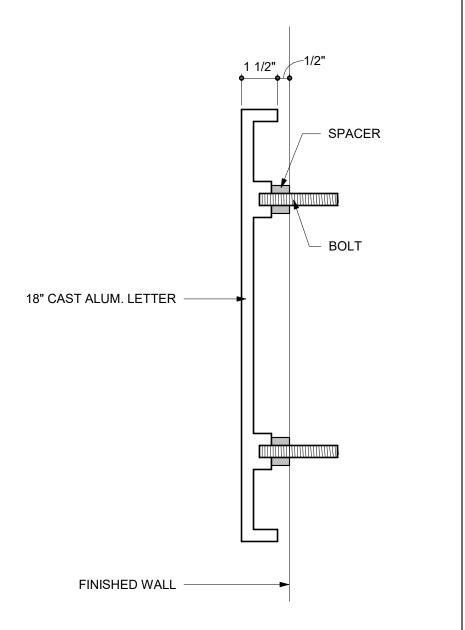
SCALE : 6" = 1' 0"

**TYPICAL SIGN MOUNTING HEIGHT** SIGN TYPE A SCALE : 3" = 1' 0"





3 SIGN TYPE B SCALE : 6" = 1' 0"



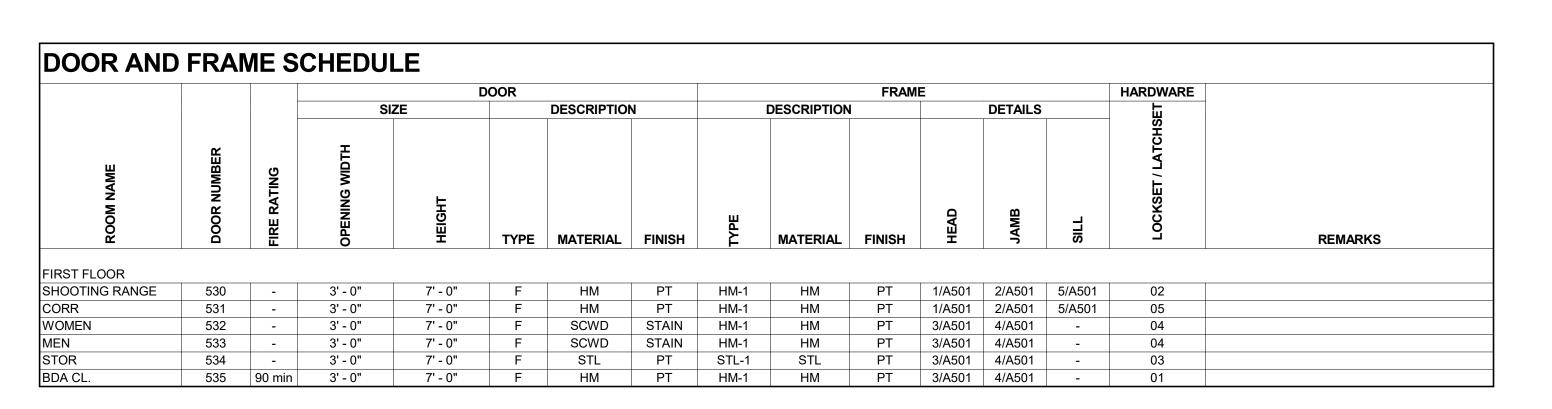
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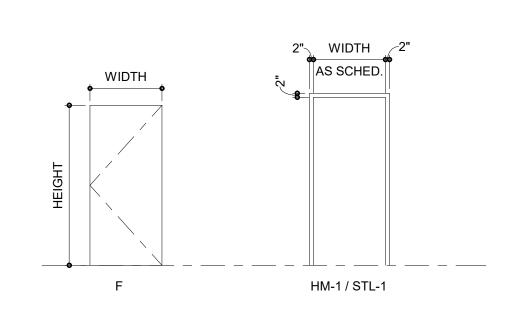
SIGN TYPE C

	SIGNAGE SCHEDULE					
ROOM IUMBER	ROOM NAME	DOOR NUMBER	SIGN TYPE	COPY ON SIGN		
532	WOMEN	532	В	WOMEN		
533	MEN	533	В	MEN		
534	STORAGE	534	Α	534 STORAGE		
535	BDA CLOSET	535	Α	535 BDA CLOSET		
NONE	NONE	NONE	С	JROTC		
	532 533 534 535	UMBER ROOM NAME  532 WOMEN  533 MEN  534 STORAGE  535 BDA CLOSET	UMBER         ROOM NAME         NUMBER           532         WOMEN         532           533         MEN         533           534         STORAGE         534           535         BDA CLOSET         535	UMBER         ROOM NAME         NUMBER         TYPE           532         WOMEN         532         B           533         MEN         533         B           534         STORAGE         534         A           535         BDA CLOSET         535         A		

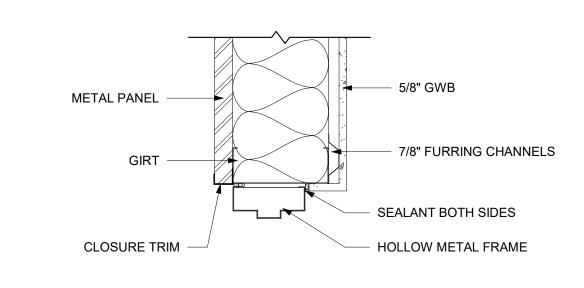
							FINIS	SH SCHE	DULE						
		F	LOOR					W	/ALL				CEIL	ING	
				BASE	NC	RTH	E	AST	SOI	JTH	W	EST			
#	ROOM NAME	MAT	PAT	MAT	MAT	FIN	MAT	FIN	MAT	FIN	MAT	FIN	MAT	FIN	COMMENTS
FIRST FLO	OOR SHOOTING RANGE	CONC	PAINT LINES	R	PLY	PT	PLY	DT	PLY	PT	H.GWB	PT	EXPO	_	
531	CORR	CONC	-	R	GWB	PT	GWB	PT	PLY	PT	H.GWB	PT	EXPO	-	
532	MEN	CONC	-	R	GWB	EPT	GWB	EPT	GWB	EPT	GWB	EPT	GWB	PT	
533	WOMEN	CONC	-	R	GWB	EPT	GWB	EPT	GWB	EPT	GWB	EPT	GWB	PT	
534	STOR	S. CONC	PAINT LINES	R	GWB	PT	GWB	PT	PLY	PT	GWB	PT	EXPO	-	
535	BDA CL.	CONC	-	R	GWB	PT	GWB	PT	GWB	PT	GWB	PT	GWB	PT	

KEY NAME	DESCRIPTION
FLOOR	DESCRIPTION
-	NOT APPLICABLE / EXISTING TO REMAIN
CONC	CONCRETE, NOT SEALED, EPOXY PAINTED
QT	QUARRY TILE
S. CONC	CONCRETE WITH SEALER/HARDENER
BASE	
-	NOT APPLICABLE / EXISTING TO REMAIN
R	RESILIENT WALL BASE
WALL	
-	NOT APPLICABLE / EXISTING TO REMAIN
EPT	EPOXY PAINT
GWB	GYPSUM WALL BOARD
PLY	PLYWOOD
PT	PAINT
CEILING	
_	NOT APPLICABLE / EXISTING TO REMAIN
EXPO	EXPOSED STRUCTURE, FIRE PROTECTOIN, PLUMBING, MECHANICAL,
	ELECTRICAL, TECHNOLOGY
GWB	GYPSUM BOARD CEILING
PT	PAINT
ODIENTA	TION
ORIENTA	
	ON PLANS NORTH WALL IS DOWN, EAST IS LEFT, SOUTH IS UP, WEST IS RIGHT
	Mom
GENERAL	NOTES
1	WALLS AND CEILINGS MAY CONTAIN MORE THAN ONE MATERIAL OR FIN
-	AS INDICATED. COORDINATE WITH CONSTRUCTION TYPE AND FINISH SII
	TO ADJACENT MATERIALS
	OFF 4404 PERI FOTER OFFI INO DI 4410 A GEN INO MIGEN FOR GEN INC.
2	SEE A101 REFLECTED CEILING PLANS & CEILING NOTES FOR CEILING
2	HEIGHTS, MATERIAL EXTENTS, LOCATIONS AND HEIGHTS OF BULKHEAD
	HEIGHTS, MATERIAL EXTENTS, LOCATIONS AND HEIGHTS OF BULKHEAD SOFFITS, ETC.
3	HEIGHTS, MATERIAL EXTENTS, LOCATIONS AND HEIGHTS OF BULKHEAD SOFFITS, ETC.  PLAN WALL TYPES TAKE PRECEDENCE OVER SCHEDULED WALL FINISH.
3	HEIGHTS, MATERIAL EXTENTS, LOCATIONS AND HEIGHTS OF BULKHEAD SOFFITS, ETC.  PLAN WALL TYPES TAKE PRECEDENCE OVER SCHEDULED WALL FINISH. PROVIDE APPROPRIATE WALL FINISH TO CORRESPOND TO WALL TYPES
3	HEIGHTS, MATERIAL EXTENTS, LOCATIONS AND HEIGHTS OF BULKHEAD SOFFITS, ETC.  PLAN WALL TYPES TAKE PRECEDENCE OVER SCHEDULED WALL FINISH. PROVIDE APPROPRIATE WALL FINISH TO CORRESPOND TO WALL TYPES MOLD AND MOISTURE RESISTANT GYPSUM BOARD SHALL BE USED AT A
3	HEIGHTS, MATERIAL EXTENTS, LOCATIONS AND HEIGHTS OF BULKHEAD SOFFITS, ETC.  PLAN WALL TYPES TAKE PRECEDENCE OVER SCHEDULED WALL FINISH. PROVIDE APPROPRIATE WALL FINISH TO CORRESPOND TO WALL TYPES
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3 4 5	HEIGHTS, MATERIAL EXTENTS, LOCATIONS AND HEIGHTS OF BULKHEAD SOFFITS, ETC.  PLAN WALL TYPES TAKE PRECEDENCE OVER SCHEDULED WALL FINISH. PROVIDE APPROPRIATE WALL FINISH TO CORRESPOND TO WALL TYPES MOLD AND MOISTURE RESISTANT GYPSUM BOARD SHALL BE USED AT A KITCHEN AREAS, TOILET ROOMS AND CUSTODIAN SERVICE CLOSETS SCHEDULED TO HAVE GYPSUM BOARD FINISHES  WALL AND CEILING FINISHES SHALL INCLUDE ALL PROJECTIONS, BEAM ENCLOSURES, RECESSES, BULKHEADS, MATERIAL CHANGES, OR OTHER

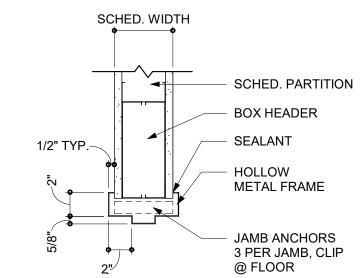


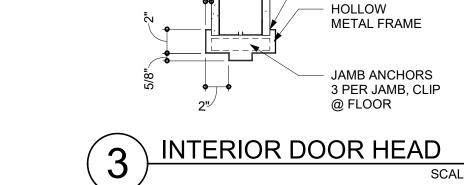


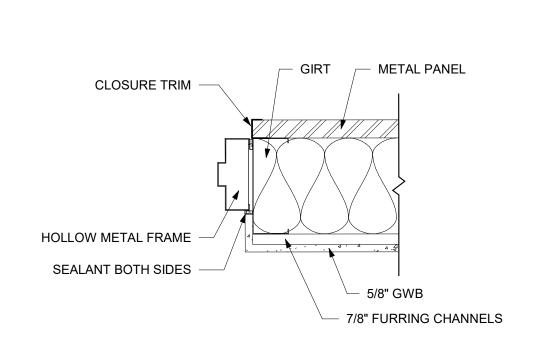
	OOR SCHEDULE LEGEND
ALUM, CW FG HM IG LAM PT SCWD SF SST ST STL TEMP	CURTAINWALL FIRE PROTECTION/FIRE-RESISTANCE RATED GLAZING HOLLOW METAL INSULATED GLAZING LAMINATED GLAZING PAINTED SOLID CORE WOOD DOOR STOREFRONT STAINLESS STEEL STAINED STEEL



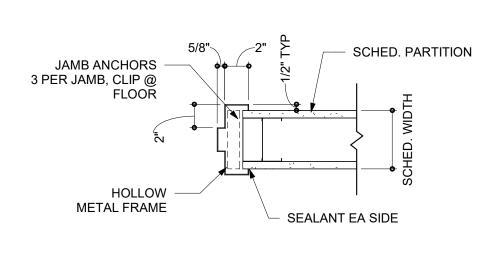
EXTERIOR DOOR HEAD



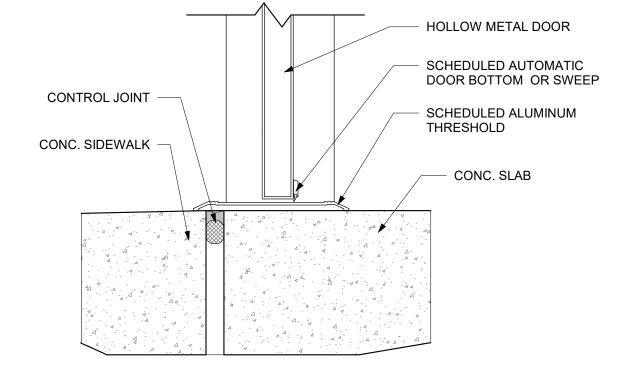




SCALE: 1 1/2" = 1'-0"



SCALE: 1 1/2" = 1'-0"



2	EXTERIOR DOOR JAMB	
( <b>Z</b> )	SCALE: 1 1/2" = 1'	-0"







ARCHITECTURE PLANNING North Carolina 3205 Randall Parkway, Suite 211

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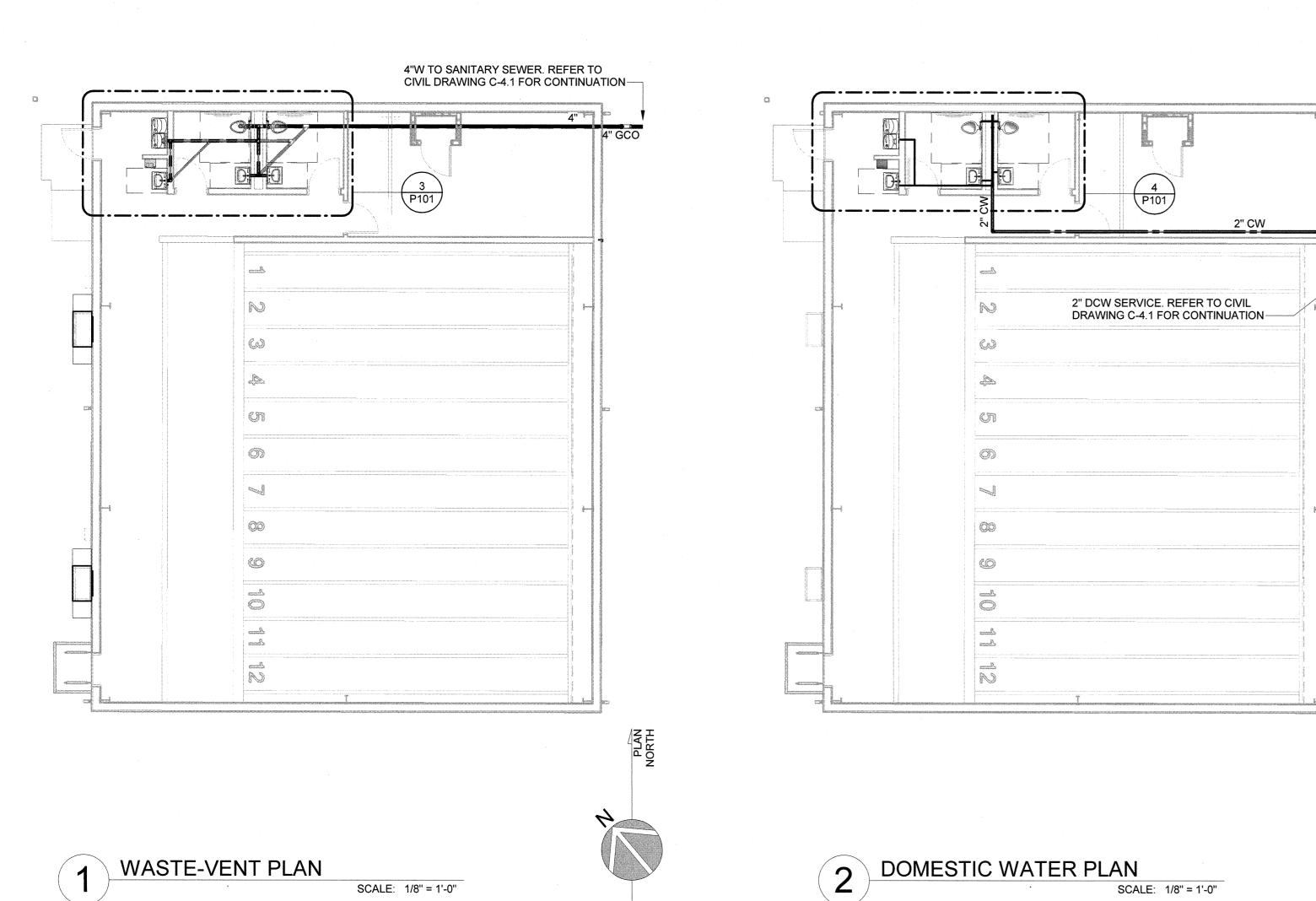
SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING 280 COUGAR ROAD, SOUTHPORT NC 28461

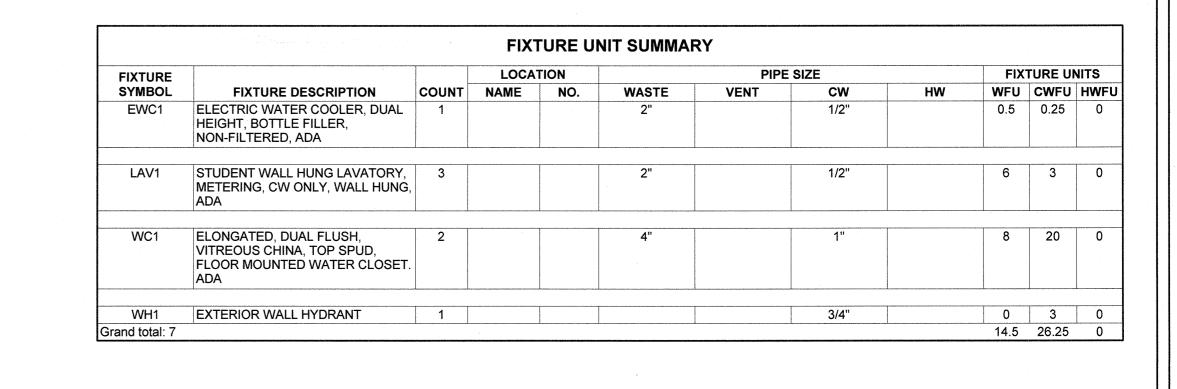
DSP # : 100 DPI SCHOOL # :

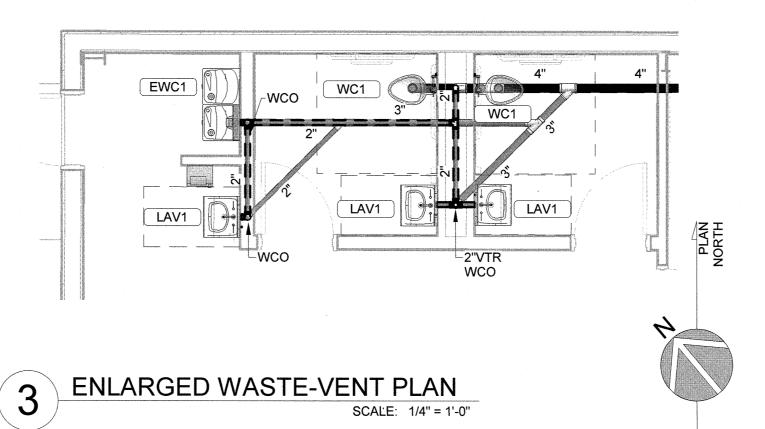
SCHEDULES AND DETAILS

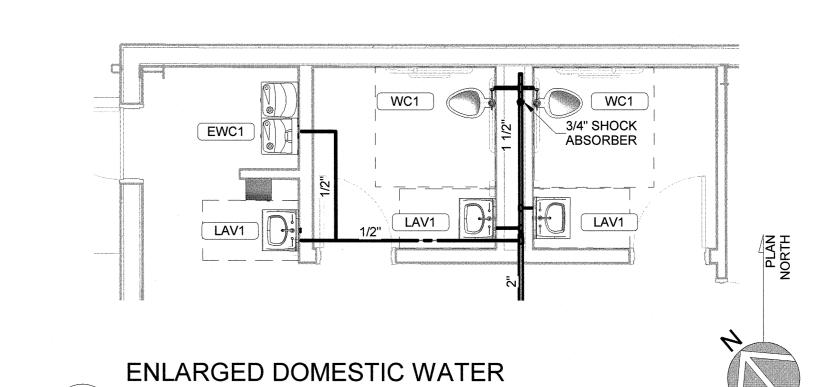
> ISSUE BLOCK 0 08/27/2020 ISSUED FOR CONSTRUCTION PROJECT NO: 2019241.00

As indicated DRAWN BY: LJR PROJ MGR: RMC









PROJECT TITLE SOUTH BRUNSWICK HIGH SCHOOL **ROTC BUILDING** 

G R O U P

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910.341.7600 **Maryland** 

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FOR CONSTRUCTION

Engineers, PLLC 2246 Yaupon Drive Wilmington, NC 28401

Phone: 910.791.4000

Fax: 910.791.5266

08/27/2020

ISSUED:

PLANNING

280 COUGAR ROAD, SOUTHPORT NC 28461

DSP#: 100 DPI SCHOOL #: 1167

SHEET TITLE **ROTC BUILDING -**PLUMBING

ISSUE BLOCK

 08/27/2020
 ISSUED FOR CONSTRUCTION

 Mark
 Date
 Description

DRAWN BY: JBS PROJ MGR: DMH

P101

2019241.00

08/27/2020

As indicated

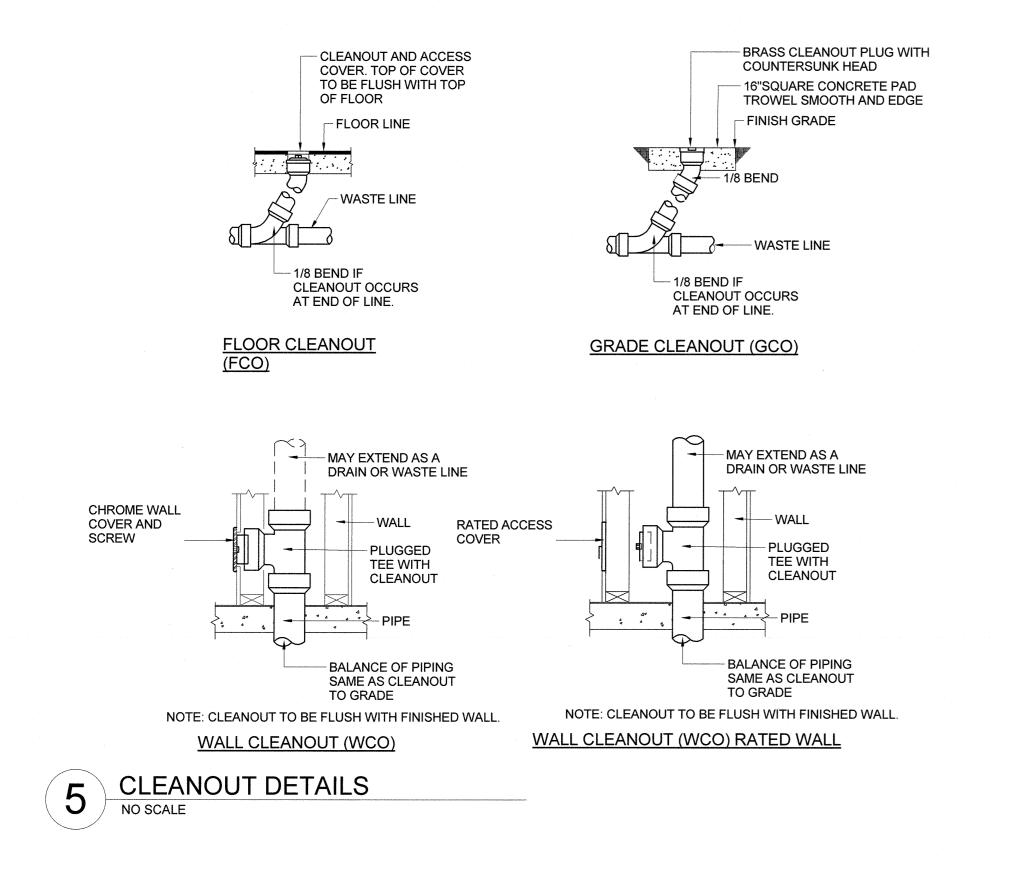
PROJECT NO:

DATE:

SCALE:

	2	ENLARGE	ID WAS	E-VEIVI	PLAN				/ / PLAN	y
	J			SCAL	E: 1/4" = 1'-0	0"			SCALE: 1/4" = 1'-0"	-
	PLUMBING I	IXTURE SCI	HEDULE							
					I	PIPE CC	ONNECTION			
TRIM			Trim has Motion	FLUSH VOLUME	WASTE	VENT	COLD WATER	HOT WATER		
MANUFACTUR			Sensing	(GALLON PER				ROUGH-IN		
ER	TRIM TYPE	Trim Model	Control	FLUSH)	PIPE SIZE	SIZE	PIPE SIZE	PIPE SIZE	SPECIFICATION	REMARKS
ELKAY	FLOOR MOUNTED CARRIER	MLP200	Yes	0.1 gal	2"	2"	1/2"		TWO LEVEL WALL HUNG WATER COOLER WITH BOTTLE FILLING STATION ON LOW SIDE. THE UNIT SHALL BE COMPLETE WITH CABINET, MOUNTING FRAME, SELF CLOSING EASY TOUCH SIDE AND FRONT PUSHBAR CONTROLS, FLEXIGUARD SAFETY BUBBLER, REFRIGERATING SYSTEM, AIR COOLED, 120 VOLT, 60 CYCLE, SINGLE PHASE POWER CONNECTION, FULLY AUTOMATIC, COMPLETE AND READY TO OPERATE.	
T&S BRASS	MANUAL METERING SINGLE TEMPERATURE	B-0712	No	0.1 gal	2"	2"	1/2"		WALL HUNG LAVATORY WITH BACKSPLASH, SINGLE HOLE DRILL. DECK-MOUNTED METERING FAUCET, COLD WATER ONLY, GRID DRAIN, LOOSE KEY ANGLE STOPS AND SUPPLIES. INSULATE WATER AND WASTE WITH INSULATION KIT. MOUNT AT ADA COMPLIANT HEIGHT. INSULATE WATER AND WASTE TO	
SLOAN	MANUAL DUAL FLUSH FLUSHOMETER	WES-111-1.6/1/1	No	1.3 gal	4"	2"	1"		ELONGATED FLOOR MOUNTED, 1-1/2" TOP SPUD, MANUAL DUAL FLUSH FLUSHOMETER, 11-1/2" ROUGH-IN, OPEN FRONT SEAT WITH SELF SUSTAINING, STAINLESS STEEL CHECK HINGES	
	•		Yes				3/4"		NON-FREEZE TYPE WALL HYDRANT, WITH DOUBLE CHECK BACKFLOW PREVENTER, VALVE ON THE INSIDE OF THE WALL, SPOUT WITH BACKFLOW PREVENTER, AND LOOSE KEY SOCKET ON THE OUTSIDE OF THE WALL. MAKE ARRANGEMENTS WITH THE GENERAL CONTRACTOR TO PROVIDE THE NECESSARY RECESS IN THE WALL. WHERE A RISER TO A WALL HYDRANT OCCURS IN AN OUTSIDE WALL THE CONTRACTOR SHALL INSULATE THE CHASE, EXCEPT THE INSIDE WALL OF THE OUTSIDE WALL OU	

OF THE CHASE. PROVIDE SHUTOFF VALVE IN ACCESSIBLE LOCATION.



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

WATER CLOSET. ADA

WH1 EXTERIOR WALL HYDRANT

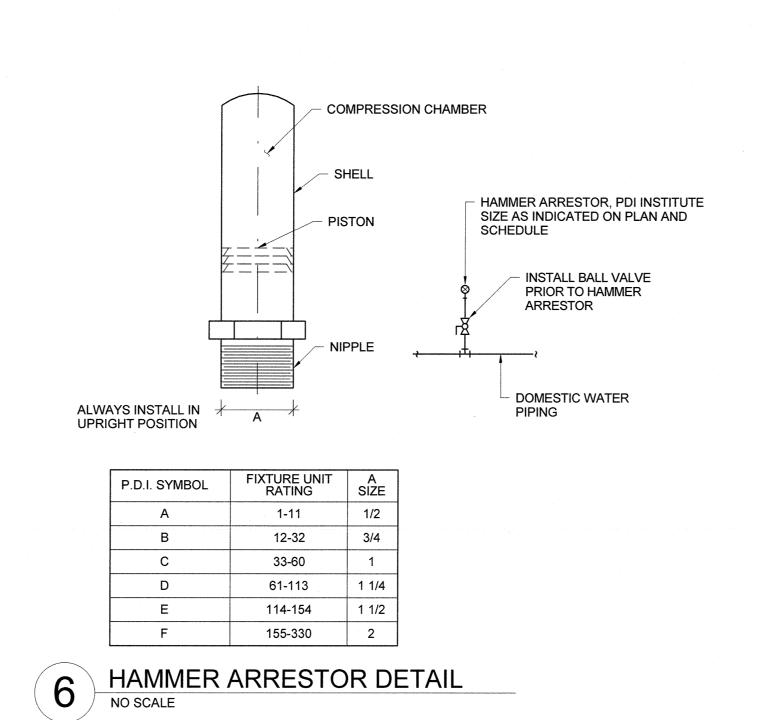
Grand total: 7

EWC1 | ELECTRIC WATER COOLER, DUAL HEIGHT, BOTTLE FILLER, NON-FILTERED, ADA

LAV1 STUDENT WALL HUNG LAVATORY, METERING, CW ONLY, WALL HUNG, ADA

WC1 ELONGATED, DUAL FLUSH, VITREOUS CHINA, TOP SPUD, FLOOR MOUNTED

WASTE-VENT PLAN



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

LIGHT GRAY

**GRANITE** 

ENAMELED

MANUFACTURER MODEL QTY MATERIAL DESCRIPTION

GALVANIZED STEEL

CAST IRON

WHITE VITREOUS CHINA

STAINLESS STEEL

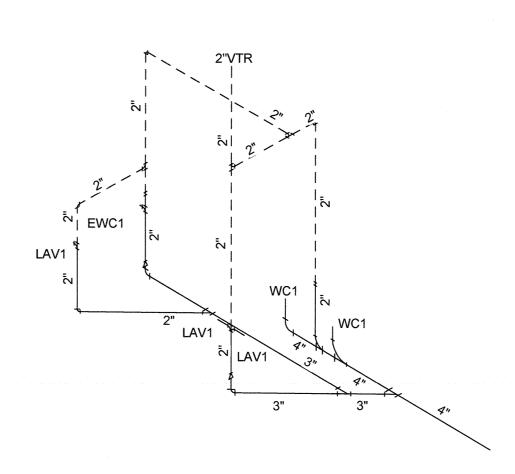
EZSTL8WSL 1

K-2812

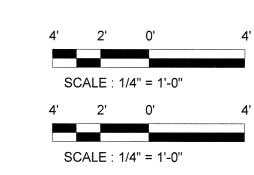
KOHLER

STANDARD

WOODFORD



	PLUMBING LEGEN
WASTE-VENT RISER DIAGRAM	<ul><li>FLOOR CLEANOUT</li><li>HAMMER ARRESTOR</li><li>BALL VALVE</li></ul>
NO SCALE	COMBINATION 1/8 BENE
	▶ 1/8 BEND
	<b>೨</b> 1/4 BEND



PLUMBING ABBREVIATIONS

AMERICANS WITH DISABILITIES ACT

AIR ADMITTANCE VALVE

ABOVE FINISHED FLOOR

DOMESTIC COLD WATER ELECTRIC WATER COOLER

FLOOR CLEANOUT

FLOOR DRAIN

HOSE BIBB

ON CENTER

VITREOUS CHINA

WATER CLOSET

WALL CLEANOUT

WALL HYDRANT

VENT THROUGH ROOF

GRADE CLEANOUT

GALLONS PER FLUSH

OPEN FRONT LESS COVER

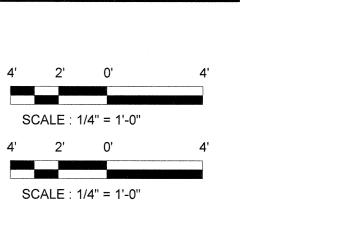
PLUMBING CONTRACTOR

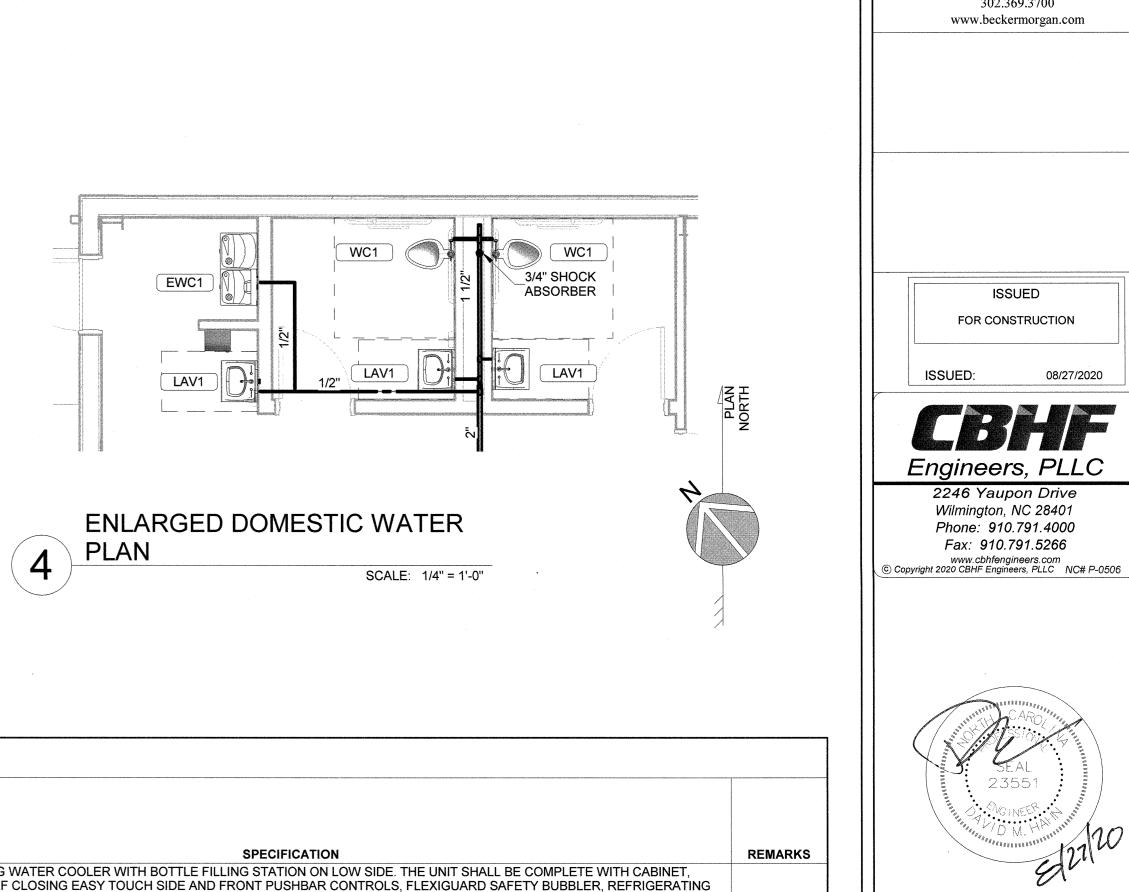
WATER HAMMER ARRESTOR

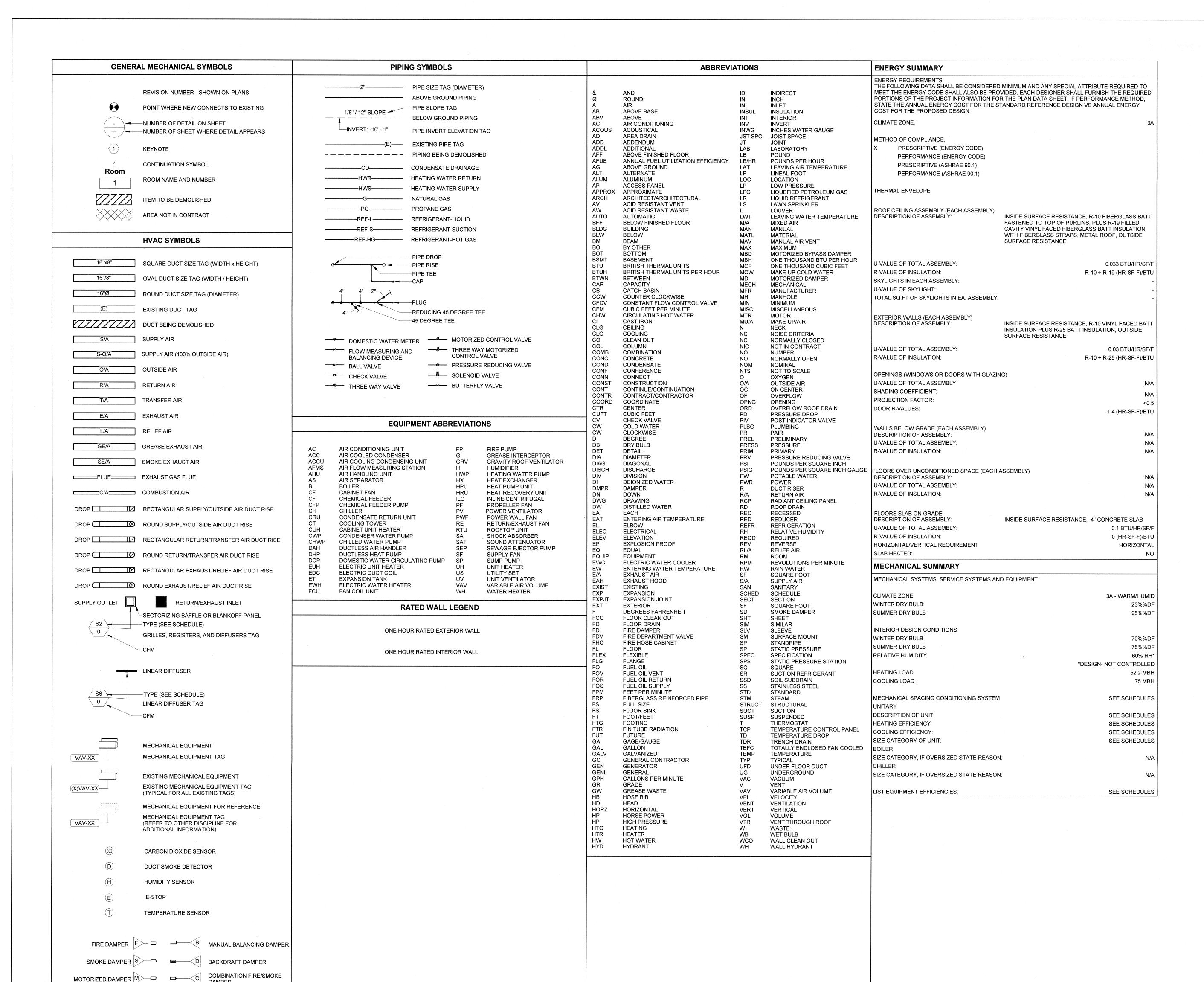
NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN PROJECT.

BRONZE

CLEANOUT









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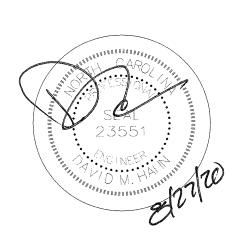
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SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING

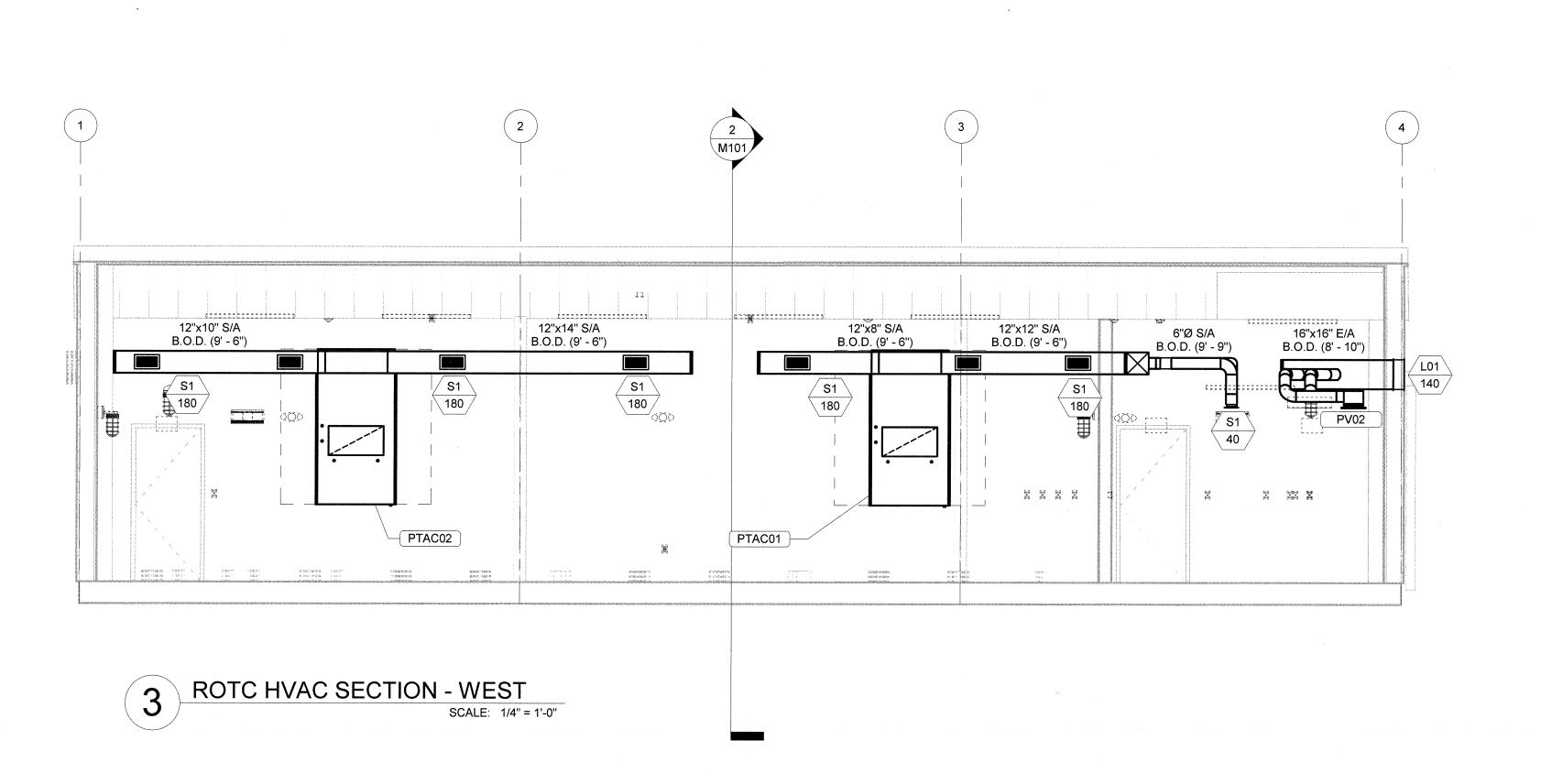
280 COUGAR ROAD, SOUTHPORT NC 28461

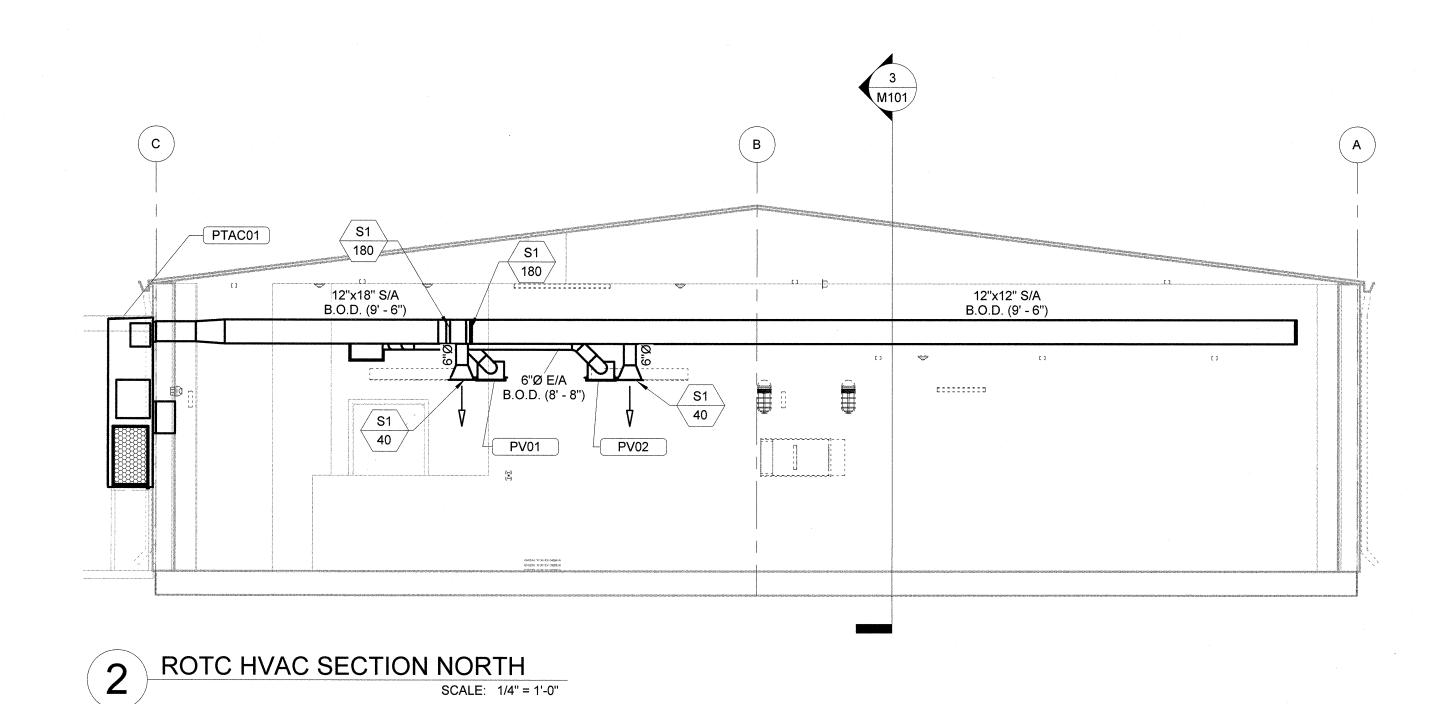
DSP # : 100 DPI SCHOOL #: 1167

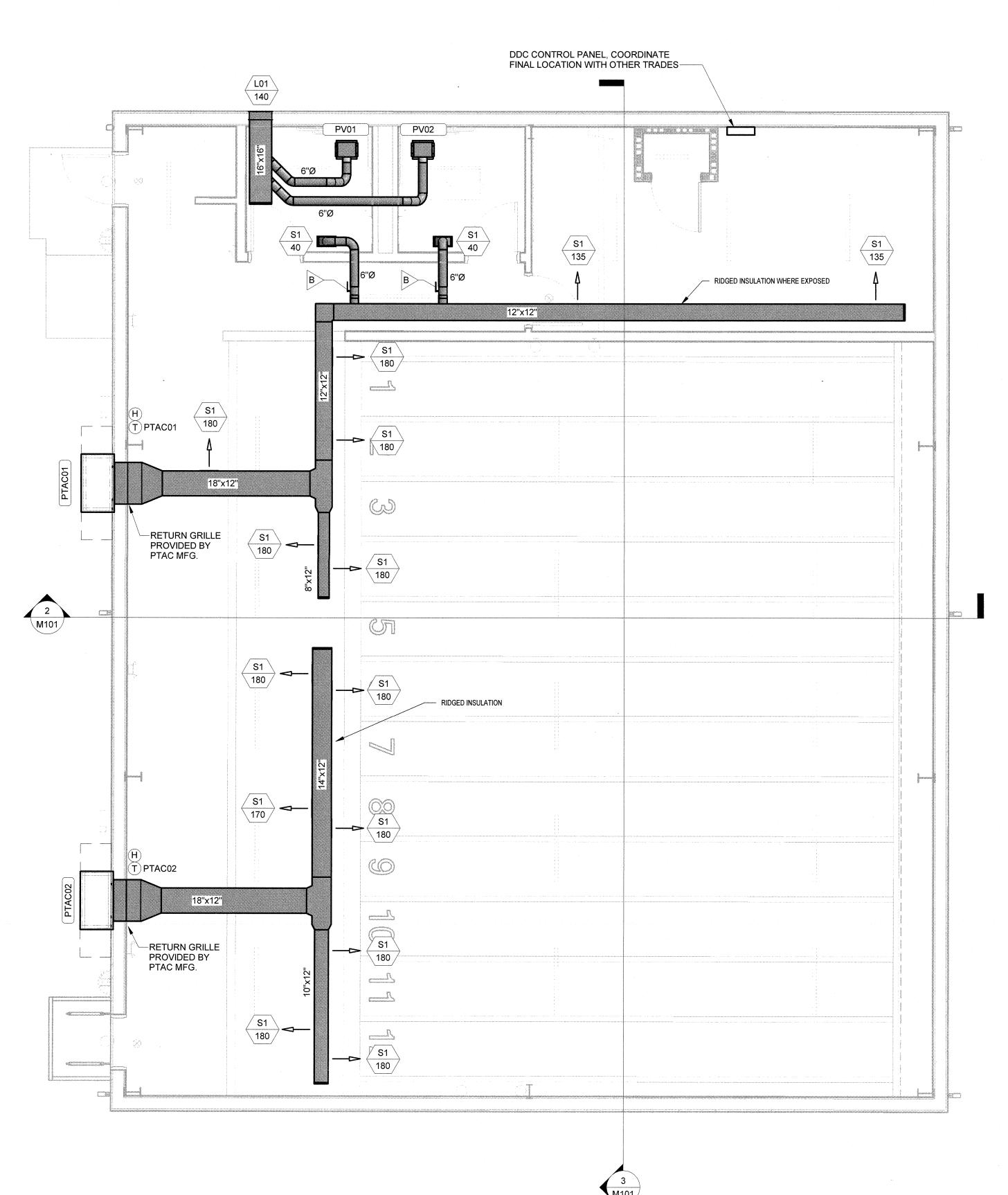
MECHANICAL ABBREVIATIONS, LEGEND, ENERGY & MECH SUMMARIES

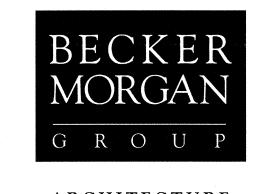
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PROJECT NO: 08/27/2020 DRAWN BY: GRM PROJ MGR: DMH









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SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING

280 COUGAR ROAD, SOUTHPORT NC 28461

DSP # : 100 DPI SCHOOL # : 1167

ROTC FLOOR PLAN AND SECTIONS

BLOCK

08/27/2020 ISSUED FOR CONSTRUCTION

Description

 Mark
 Date
 Description

 PROJECT NO:
 2019241.00

 DATE:
 08/27/2020

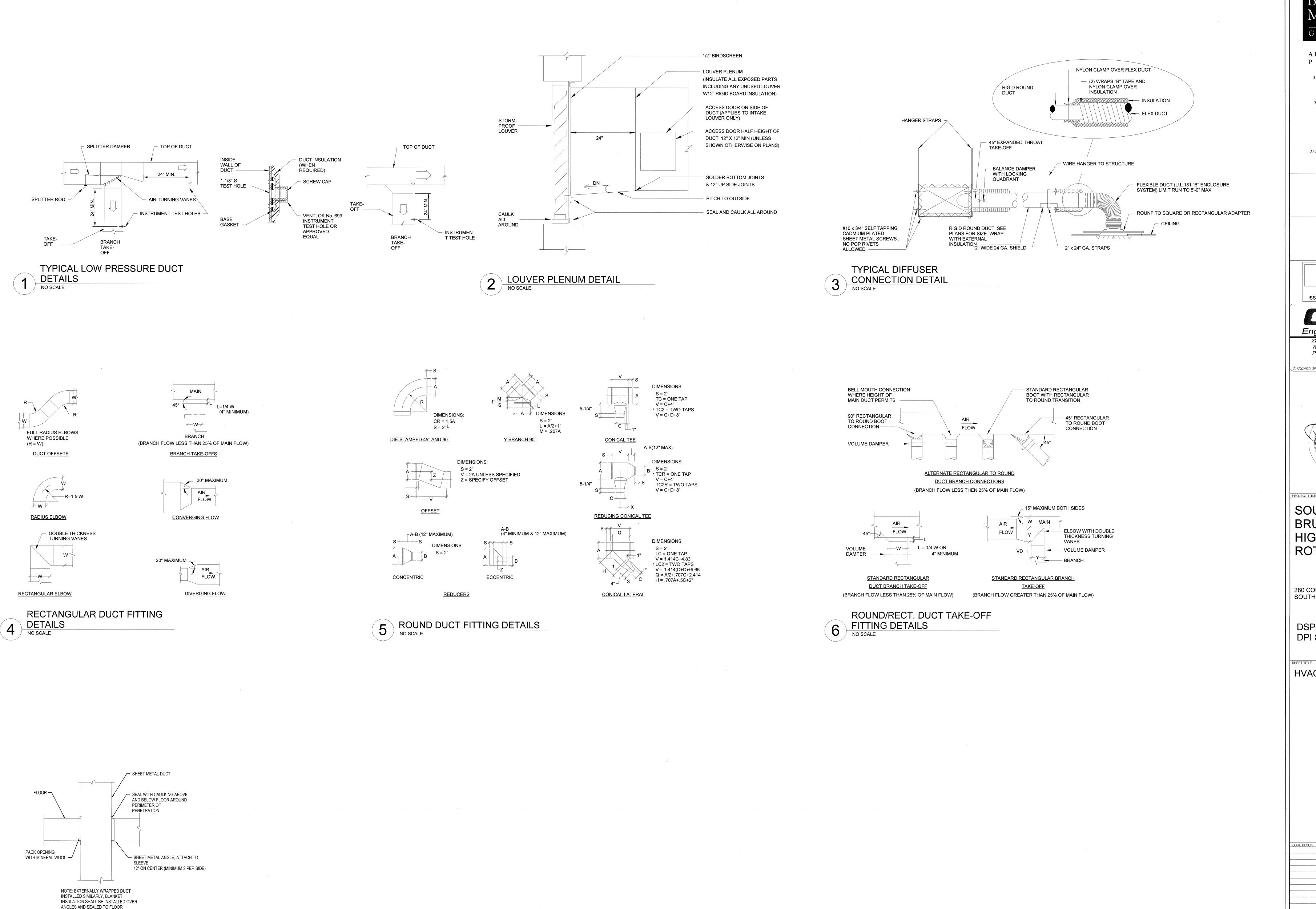
 SCALE:
 1/4" = 1'-0"

DRAWN BYAuthor PROJ MGChecker

M101

ROTC FLOOR PLAN - HVAC

SCALE: 1/4" = 1'-



TYPICAL DUCT THROUGH

7 NON-RATED WALL

GROU ARCHITECTURE PLANNING North Carolina 3333 Jaeckle Drive, Suite 120 Wilmington, NC 28403 910.341.7600 **Maryland** 312 West Main St, Suite 300 Salisbury, MD 21801 410.546.9100 <u>Delaware</u> 309 S Governors Ave Dover, DE 19904 302.734.7950 Rittenhouse Station 250 South Main Street, Suite 109 Newark, DE 19711 302.369.3700 www.beckermorgan.com ISSUED FOR CONSTRUCTION 08/27/2020 ISSUED: Engineers, PLLC 2246 Yaupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfengineers.com © Copyright 2020 CBHF Engineers, PLLC NC# P-0506 SOUTH **BRUNSWICK** HIGH SCHOOL **ROTC BUILDING** 280 COUGAR ROAD, SOUTHPORT NC 28461 DSP#:100 DPI SCHOOL #: 1167 HVAC DETAILS

PROJECT NO: 2019241.00

DATE: 08/27/2020

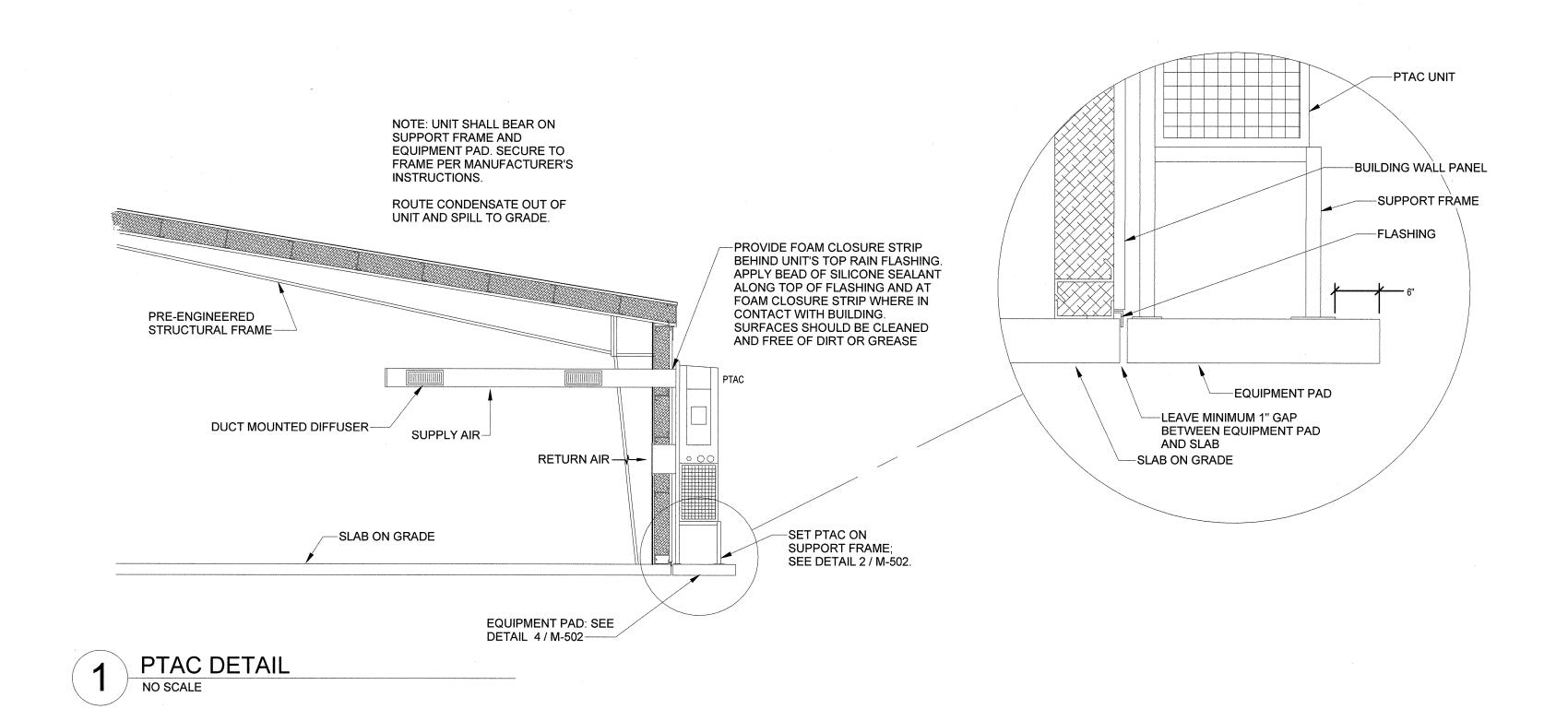
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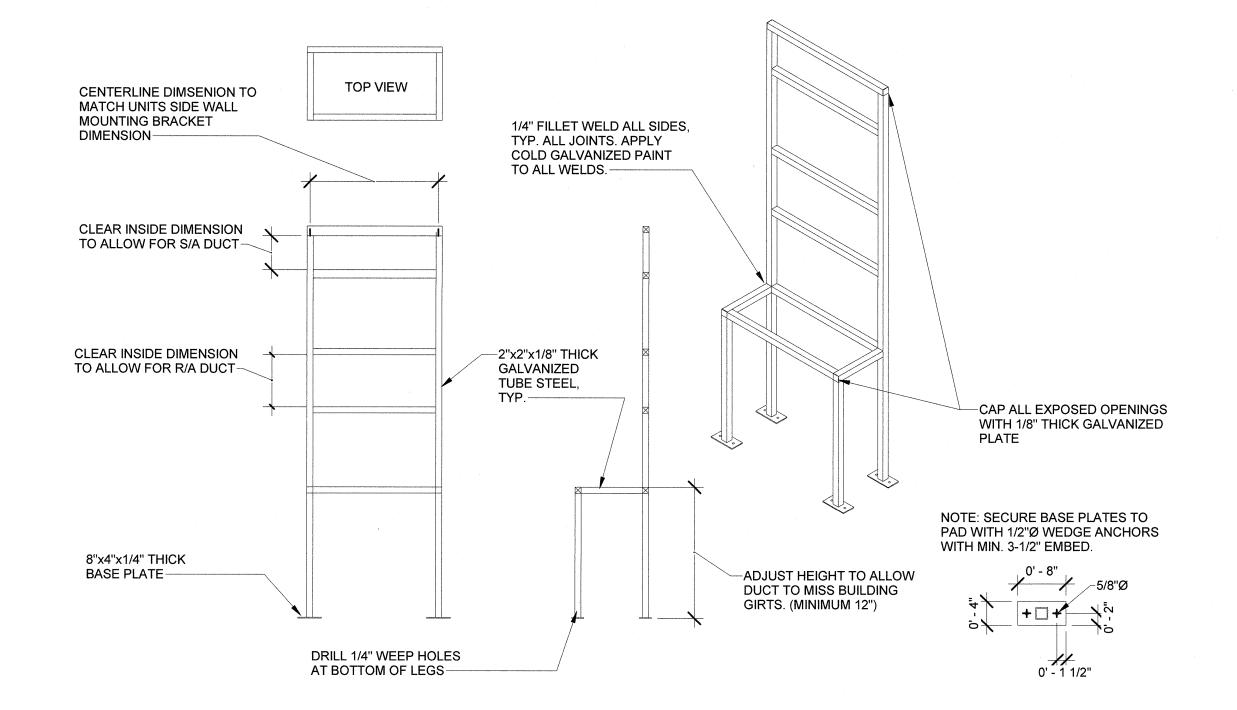
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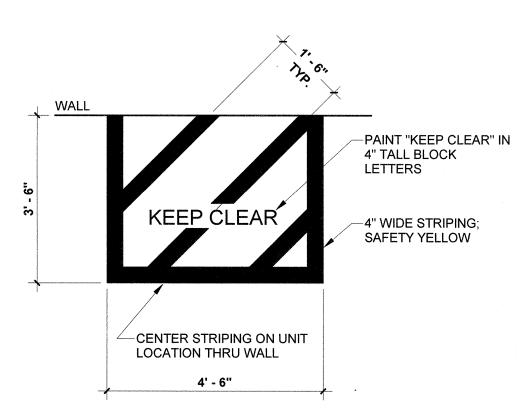
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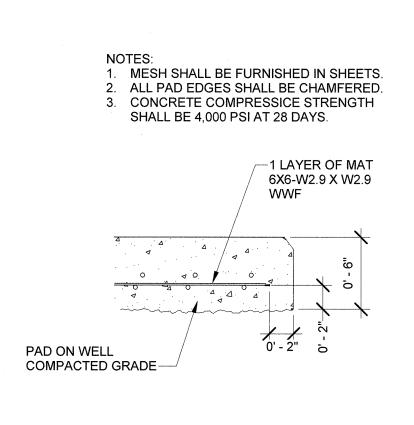




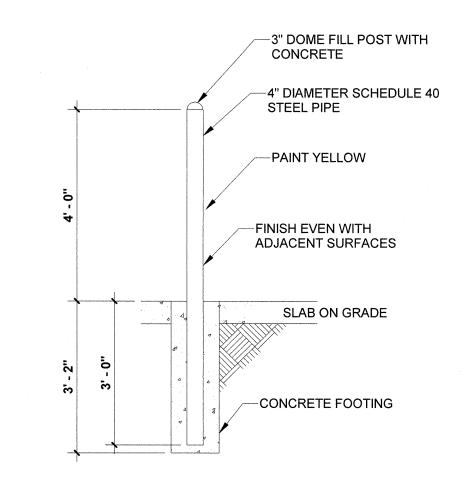
2 PTAC SUPPORT FRAME DETAIL
NO SCALE



3 PTAC STRIPING DETAIL
NO SCALE



4 EQUIPMENT PAD DETAIL
NO SCALE



5 BOLLARD DETAIL
NO SCALE



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Maryland

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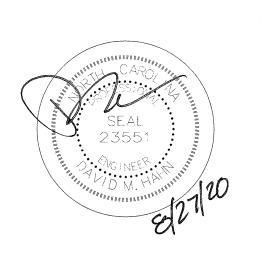
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SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING

280 COUGAR ROAD, SOUTHPORT NC 28461

DSP # : 100 DPI SCHOOL # : 1167

HVAC DETAILS

7/2020 ISSUED FOR

 08/27/2020
 ISSUED FOR CONSTRUCTION

 Mark
 Date
 Description

 PROJECT NO:
 2019241.00

 DATE:
 08/27/2020

 SCALE:
 As indicated

M502

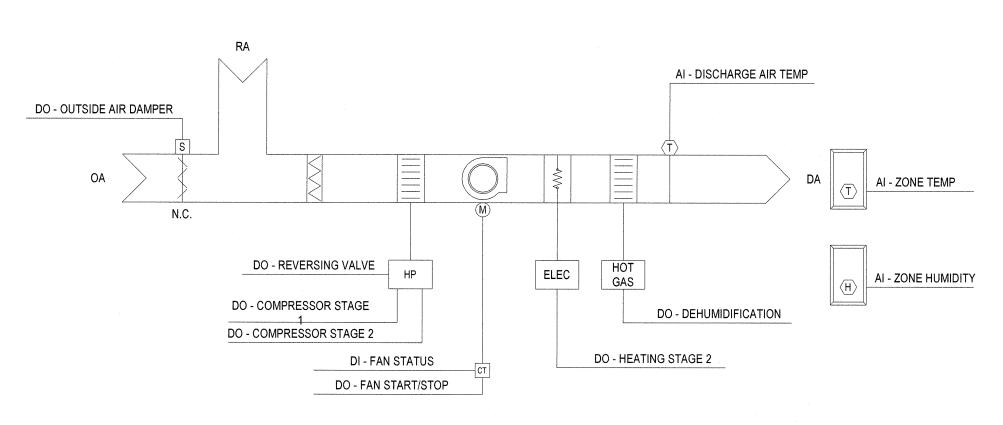
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DRAWIN CODE	BASIS OF DESIGN MANUFACTURE	ALTERNATE APPROVED ER MANUFACTURERS	BASIS OF DESIGN MODEL	SYSTEM TYPE	MOUNTING	SUPPLY AIR FAN TOTAL OUTSID AIRFLOW AIRFLO	1		L LOAD COOLING ( TOTAL NET SENSIBLE	EER		NET TOTA			(80-80/67) AIRFLOW		FULL LOAD HEA		AIRFLOW	D) HOT GAS F LATENT CAPACITY	CAPACITY (LBS H20)	ELECTRICA HEAT CAPACITY (KW)	POWER SUPPLY (V/PH/HZ)	MCA			r NOTES	ACCESSORIES
PTAC01	BARD	MARVAIR, EUBANKS	S T42S1-A			. 1250 CFM 250 CF		· · · · · · · · · · · · · · · · · · ·			1250 CFM	26800 Btu/h	21700 Btu/h	15	900 CFM	14.6	37300 Btu/h	3.3	1250 CFM	11055 Btu/h	10.43	5	240/60/1	57.0 A	60.0 A	500 lb	1	A THRU I
PTAC02	BARD	MARVAIR, EUBANKS	5 T42S1-A	HEAT PUMP	EXTERIOR WALL	.   1250 CFM   250 CF	VI 0.15 in-wg 0.	75 hp   3950	00 Btu/h   29700 Btu/l	า 11	1250 CFM	26800 Btu/h	21700 Btu/h	15	900 CFM	14.6	37300 Btu/h	3.3	1250 CFM	11055 Btu/h	10.43	5	240/60/1	57.0 A	60.0 A	500 lb	2	A THRU I
NOTES 1. REF	ER TO DIVISION SI	PECIFICATION SECTION	N 238119.13 - V	VALL MOUNTED S	ELF-CONTAINED A	AIR-CONDITIONERS F	OR ADDITIONAL	. INFORMA	TION.																			
B. TW	I-CORROSIVE DRA D STAGE SCROLL (	IN PAN CONSTRUCTIC COMPRESSORS (BOTH CONSTRUCTED WITH H TDOOR MOTORS	I HEATING AND	COOLING) WITH		FLER, DOUBLE FLOA	TING ISOLATION	I MOUNTIN	IG SYSTEM, AND SO	DUND	MUFFLING C	OVER.		-		-										-		

LOUV	ER SCHEI	DULE														
	MANUFACTURER	MODEL	ALTERNATE APPROVED	TYPE	FRAME	DESCRIPTION	MATERIAL	LOUVER	SIZE (W x H)	SERVICE TYPE	Air Flow	PERFORMA	NCE RATINGS		NOTES	ACCESSORIES
CODE			MANUFACTURERS					DEPTH (IN)				FREE AREA	S.P. LOSS (IN.H20)	WATER PENETRATION (OZ/SF)		
_01	RUSKIN	ELF6375DXH	VENT PRODUCTS, POTTORF	FIXED	EXTERIOR FLANGE	HORIZONTAL, DRAINABLE-BLADE	ALUMINUM		6 16"x16"	E/A_General Exhaust A	ir 140 CFI	ΛI 0.	77	.01	- 1	2 A
			FOR ADDITIONAL REQUIREM OM MANUFACTURERS FULL F		COLOR AND GLOSS.											
	CREENING (MATER		I LOUVER MATERIAL). . WITH 24V ACTUATOR. INTERI	OCK WIT	H RESDECTIVE DOWE	DA/ENTHATOR (CEE DIANC)										

	l .		ALTERNATE APPROVED FAN TYPE	SERVICE	CAPACITIES	3			ELECTE	RICAL					<del></del>	SONES	WEIGHT	NOTES	ACCESSOR
ODE	DESIGN MANUFACTURER	MODEL NO.	MANUFACTURERS		AIRFLOW	ESP	DRIVE TYPE			MOTOR SIZE (HP)	VOLT	PH	FREQUENCY	FLA	MOCP				
/01	GREENHECK	SP-A50-90-VG	TWIN CITY, PENNBARRY CEILING-MOUNTED VENTILATORS	EXHAUST	70 CFM	0.25 in-wg	DIRECT	838	Yes	0.008 hp	115 V	1 1	60 H	z 0.3	3 A 15.0	0.9	15 lb		1
/02	GREENHECK	SP-A50-90-VG	TWIN CITY, PENNBARRY CEILING-MOUNTED VENTILATORS	EXHAUST	70 CFM	0.25 in-wg	DIRECT	838	3 Yes	0.008 hp	115 V	1	60 H	z 0.3	3 A 15.0	0.9	15 lb		1
NOTES:			R ADDITIONAL REQUIREMENTS.	EXHAUST	/0 CFIVI	0.25 in-wg	DIRECT	838	3 Yes	s  0.008 np	115 V	1	60 H	z  0.3	3 A   15.0 A	A   0.9	15 ID	0	

DRAWING CODE		BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	SERVICE	NECK SIZE	MODULE MAT SIZE	ERIAL F	FINISH	MOUNTING	NOTES	ACCESSORIES
S1	TITUS	300FS	PRICE, METAL AIRE	LOUVERED DOUBLE DEFLECTION GRILLE	SUPPLY	12 X 6	- ALUI	MINUM V	WHITE ENAMEL	DUCT / CEILING SURFACE	1,2,3	/
2. DUCT	BRANCH CONNECT	TION SIZE TO	ONS FOR ADDITIONAL  O BE EQUAL TO THE I	NECK SIZE OF DIFFUSER UNLESS NOTED	OTHERWIS	E ON PLA	NS.					



\*\*PROVIDE FLOAT SWITCH SHUTDOWN\*\*

SELF CONTAINED AIR CONDITIONER CONTROL DETAIL NO SCALE

#### SELF CONTAINED AIR CONDITIONING

<u>DESCRIPTION</u>: SINGLE PACKAGED VERTICAL DIRECT EXPANSION (DX) HEAT PUMP SYSTEM CONSISTING OF VARIABLE SPEED AIR VOLUME, TWO STAGES OF COOLING CAPACITY, TWO STAGES OF HEATING CAPACITY (COMPRESSOR AND AUXILIARY ELECTRIC), DEMAND CONTROL VENTILATION, UNDER CONTROL OF DDC CONTROL SYSTEM.

MODULATING OUTDOOR FAN MOTOR AND LOW AMBIENT CONTROL.

F. MODULATING INDOOR FAN MOTOR FOR CONSTANT AIRFLOW.

G. PLEATED TWO-INCH MERV 8 MEDIA FILTERS.

H. HOT-GAS REHEAT COIL FOR DEHUMIDIFICATION. I. RETURN AIR GRILLE AND SLOPED EXTERIOR TOP.

<u>UNIT START/STOP CONTROL</u>: START/STOP UNIT FAN BASED ON (1) USER-DEFINED "ON/OFF" SCHEDULE, OR (2) OPERATOR COMMAND.

SPACE TEMPERATURE SETPOINTS SHALL BE AS FOLLOWS UNLESS MODIFIED BY "ON" PERIOD: TEMPERATURE: 68-78°F COMFORT ZONE HUMIDITY: 60% RH HIGH LIMIT

TEMPERATURE: 85°F HIGH LIMIT 70% RH HIGH LIMIT

SPACE TEMPERATURE SETPOINTS SHALL BE ADJUSTABLE BY SPACE OCCUPANTS. DURING "ON" PERIODS, COMMAND UNIT FAN "ON".

DURING "OFF" PERIODS, COMMAND UNIT FAN "OFF" UNLESS THERE IS A CALL FOR COOLING INDICATED BY SPACE TEMPERATURE.

<u>VENTILATION AIR CONTROL</u>: THE OUTDOOR AIR DAMPER SHALL OPEN AND CLOSE BASED ON USER-DEFINED "OCCUPIED/ UNOCCUPIED SCHEDULE":

DURING "OCCUPIED" PERIODS, THE SUPPLY FAN SHALL RUN CONTINUOUSLY AND THE OUTSIDE AIR DAMPER SHALL OPEN TO MAINTAIN VENTILATION AIRFLOW AS SCHEDULED. THE DX COOLING AND HEATING SHALL STAGE TO MAINTAIN THE OCCUPIED SPACE TEMPERATURE SETPOINT.

DURING "UNOCCUPIED" PERIODS, THE OUTDOOR AIR DAMPER SHALL BE

"ON" PERIOD SPACE TEMPERATURE: DURING "ON" PERIODS, THE UNIT FAN IS ENERGIZED, CONTROL SPACE TEMPERATURE AS FOLLOWS:

ON A RISE IN SPACE TEMPERATURE ABOVE THE MAXIMUM COMFORT ZONE TEMPERATURE, PROVIDE COOLING AS FOLLOWS:

COOLING TO MAINTAIN SPACE TEMPERATURE AT MAXIMUM COMFORT ZONE TEMPERATURE SETPOINT. ON A CONTINUED RISE IN SPACE TEMPERATURE, INCREASE FAN SPEED

COOLING AIR FLOW SHALL BE MINIMUM UNIT AIRFLOW. INITIATE STAGE 1

FROM MINIMUM SPEED TO MAXIMUM SPEED. INITIATE STAGE 2 COOLING TO MAINTAIN SPACE TEMPERATURE AT MAXIMUM COMFORT ZONE TEMPERATURE SETPOINT.

ON A FALL IN SPACE TEMPERATURE BELOW THE MINIMUM COMFORT ZONE

TEMPERATURE, PROVIDE HEATING AS FOLLOWS: HEATING AIR FLOW SHALL BE MAXIMUM UNIT AIRFLOW. INITIATE STAGE 1 HEATING (COMPRESSOR) TO MAINTAIN SPACE TEMPERATURE AT MINIMUM COMFORT ZONE TEMPERATURE SETPOINT.

IF SPACE TEMPERATURE CONTINUES TO FALL, ENERGIZE ELECTRIC COIL TO MAINTAIN SPACE TEMPERATURE AT MINIMUM COMFORT ZONE TEMPERATURE

WHEN THE SPACE TEMPERATURE IS WITHIN THE LIMITS OF THE MINIMUM AND MAXIMUM ZONE TEMPERATURE SETPOINT , UNIT FAN SHALL OPERATE AT MINIMUM SPEED AND NO COOLING OR HEATING SHALL BE INITIATED.

"OFF" PERIOD HIGH LIMIT TEMPERATURE: DURING "OFF" PERIODS, THE UNIT SHALL BE COMMANDED "OFF" UNLESS SPACE TEMPERATURE LIMITS DICTATES

THE FOLLOWING: ON A RISE IN SPACE TEMPERATURE ABOVE THE HIGH LIMIT TEMPERATURE SETPOINT, PROVIDE COOLING AS FOLLOWS: COOLING AIR FLOW SHALL BE MINIMUM UNIT AIRFLOW. INITIATE STAGE 1 COOLING TO MAINTAIN SPACE TEMPERATURE AT MAXIMUM COMFORT ZONE

TEMPERATURE SETPOINT.

ON A CONTINUED RISE IN SPACE TEMPERATURE, INCREASE FAN SPEED FROM MINIMUM SPEED TO MAXIMUM SPEED. INITIATE STAGE 2 COOLING TO MAINTAIN SPACE TEMPERATURE AT MAXIMUM COMFORT ZONE TEMPERATURE SETPOINT.

ON A FALL IN SPACE TEMPERATURE BELOW THE LOW LIMIT TEMPERATURE SETPOINT, PROVIDE HEATING AS FOLLOWS:

HEATING AIR FLOW SHALL BE MAXIMUM UNIT AIRFLOW. INITIATE STAGE 1 HEATING (COMPRESSORS) TO MAINTAIN SPACE TEMPERATURE AT LOW LIMIT

TEMPERATURE SETPOINT. IF SPACE TEMPERATURE CONTINUES TO FALL, ENERGIZE ELECTRIC COIL TO MAINTAIN SPACE TEMPERATURE AT MINIMUM COMFORT ZONE TEMPERATURE

ONCE SPACE CONDITIONS RETURN TO WITHIN LIMIT CONDITIONS, DE-ENERGIZE UNIT.

<u>DEHUMIDIFICATION</u>: ON A RISE IN ANY SPACE HUMIDITY TO ABOVE THE HIGH LIMIT HUMIDITY SETPOINT, PROVIDE DEHUMIDIFICATION AS FOLLOWS:

IF UNIT IS COOLING, DO NOTHING. IF UNIT IS NOT IN COOLING, COMMAND UNIT FAN "ON" AND INITIATE THE COOLING. MODULATE REHEAT VALVE AS NEEDED TO MAINTAIN SPACE TEMPERATURE.

	H	ARDWAF	RE POIN	TS	SOFT	WARE P	STAIC	
POINT NAME	Al	AO	DI	DO	SCHED	TREND	ALARM	SHOW ON GRAPHIC
SPACE TEMP	х					х		Х
DISCHARGE TEMP	х					х		Х
SPACE HUMIDITY	х					х		Х
FAN STATUS			Х			х		Х
FAN START STOP				х		х		Χ
REVERSING VALVE (HEATING STAGE 1)				Х		Х		X
COMPRESSOR STAGE 1				Х		х		X
OUTSIDE AIR DAMPER			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Х		Х		<b>X</b>
HEATING STAGE 2				х		х		Х
OCCUPIED SCHEDULE					X			
DAMPER SCHEDULE				-	х			
SPACE HEATING SETPOINT		х				Х		Х
SPACE COOLING SETPOINT		х				х		Х
SPACE HUMIDITY SETPOINT		х				х		Х
HIGH ZONE TEMP							х	
LOW ZONE TEMP							х	
COMPRESSOR RUNTIME EXCEEDED							х	
HIGH DISCHARGE AIR TEMP							х	
LOW DISCHARGE AIR TEMP							х	
HIGH ZONE HUMIDITY			,				х	
LOW ZONE HUMIDITY							х	
FLOAT SWITCH						<u>Lancarook</u>	Х	



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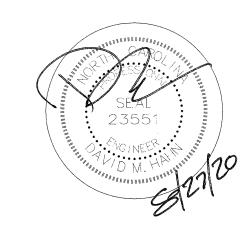
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> ISSUED FOR CONSTRUCTION

ISSUED:

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SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING

280 COUGAR ROAD, SOUTHPORT NC 28461

DSP #: 100 DPI SCHOOL #: 1167

MECHANICAL SCHEDULES

ISSUE BLOCK

08/27/2020 ISSUED FOR CONSTRUCTION

PROJECT NO: 2019241.00 DATE: 08/27/2020 SCALE: 12" = 1'-0"

DRAWN BY: GRM PROJ MGR: DMH

#### **GENERAL NOTES**

- ALL ELECTRICAL WORK SHALL BE IN FULL COMPLIANCE WITH NFPA, THE NORTH CAROLINA STATE BUILDING CODE, ALL LOCAL CODES AND ORDINANCES AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
- 2. ALL EQUIPMENT PROVIDED BY THE CONTRACTOR SHALL BE LISTED AND LABELED BY A NATIONALLY-RECOGNIZED TESTING AGENCY, ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, FOR THE CONDITIONS OF INSTALLATION. ALL MATERIAL, EQUIPMENT AND DEVICES SHALL BE NEW CURRENT PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS. EQUIPMENT SHALL BE
- 3. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS FOR WORK REQUIREMENTS, THE AMOUNT OF SPACE AVAILABLE FOR ELECTRICAL EQUIPMENT, AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER.

SUITABLE FOR ITS APPLICATION (E.G. WHEN INSTALLED OUTDOORS, IT SHALL BE WEATHERPROOF, ETC.)

- 4. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THOROUGHLY FAMILIARIZING HIMSELF WITH ANY CONTRACTUAL REQUIREMENTS AS MAY BE SET FORTH IN THE OTHER DIVISIONS OF THE PROJECT SPECIFICATIONS.
- UNLESS SPECIFICALLY NOTED OTHERWISE, SYSTEMS PROVIDED OR INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE COMPLETE AND FULLY-FUNCTIONING AFTER INSTALLATION. INCIDENTAL COMPONENTS MAY NOT BE SHOWN, AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THIS WORK, BUT REQUIRED FOR THE PROPER OPERATION OF THE EQUIPMENT OR SYSTEM, SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ADDITIONAL CIRCUITS SHALL BE INSTALLED WHEREVER NEEDED TO CONFORM TO THE SPECIFIC REQUIREMENTS OF EQUIPMENT.
- 6. TEMPORARY POWER CONNECTIONS AS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ALL TEMPORARY EQUIPMENT WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. THE CONTRACTOR SHALL PROVIDE DETAILS, METHODS, MATERIALS, ETC. FOR REVIEW PRIOR TO MAKING TEMPORARY CONNECTIONS. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS INCLUDING CONTROL EQUIPMENT, MOTOR STARTERS, BRANCH AND FEEDER CIRCUIT BREAKERS, PANELBOARDS, TRANSFORMERS, ETC. FOR TEMPORARY POWER. COORDINATE WITH THE ELECTRICAL UTILITY COMPANY AS REQUIRED.
- 7. THE WORK SHALL INCLUDE COMPLETE TESTING OF ALL EQUIPMENT AND WIRING AT THE COMPLETION OF WORK AND ANY MINOR CORRECTIONS, CHANGES OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT.
- 8. ALL EQUIPMENT SHOWN DOTTED OR DASHED IS BY OTHERS OR IS EXISTING, AS NOTED.
- ALL ELECTRICAL EQUIPMENT SHALL, AT ALL TIMES DURING CONSTRUCTION, BE ADEQUATELY PROTECTED AGAINST MECHANICAL INJURY, OR DAMAGE BY WATER AND/OR THE ELEMENTS. ELECTRICAL EQUIPMENT SHALL NOT BE STORED OUT OF DOORS, BUT SHALL BE STORED IN DRY PERMANENT SHELTERS. IF AN APPARATUS HAS BEEN DAMAGED, OR HAS BEEN SUBJECT TO POSSIBLE INJURY BY WATER OR THE ELEMENTS, SUCH DAMAGE SHALL BE REPLACED AT NO ADDITIONAL COST.
- 10. DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
- 11. CIRCUIT LAYOUTS ARE NOT INTENDED TO SHOW THE NUMBER OF FITTINGS, OR OTHER INSTALLATION DETAILS. UNLESS NOTED OTHERWISE, THE EXACT ROUTING OF FEEDER AND BRANCH CIRCUIT RACEWAYS AND CABLES IS THE RESPONSIBILITY OF THE CONTRACTOR. RISER AND GENERAL CIRCUIT ARRANGEMENTS ARE SHOWN SCHEMATICALLY/DIAGRAMMATICALLY ONLY. THE CONTRACTOR SHALL ROUTE CONDUITS AS REQUIRED BY THE CONDITIONS OF THE INSTALLATION.
- 12. UNLESS DIMENSIONED, DEVICE LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. ADJUST EXACT LOCATIONS AS REQUIRED TO SERVE THE INTENDED PURPOSE AND TO AVOID CONFLICTS AND INTERFERENCES WITH OTHER TRADES. EXACT DEVICE LOCATIONS SHALL BE AS INDICATED ON THE ARCHITECTURAL DRAWINGS OR AS DIMENSIONED. IF NOT SHOWN ON THE ARCHITECTURAL DRAWINGS OR DIMENSIONED ON THE ELECTRICAL DRAWINGS, VERIFY EXACT LOCATION WITH THE ARCHITECT/ENGINEER PRIOR TO ROUGH-IN.
- 13. CONDUIT TERMINATING IN PRESSED STEEL BOXES SHALL HAVE DOUBLE LOCKNUTS AND INSULATED BUSHINGS. CONDUITS TERMINATING IN GASKETED ENCLOSURES SHALL BE TERMINATED WITH GROUNDING TYPE CONDUIT HURS.
- 14. DEVICE BOXES SHOWN BACK-TO-BACK SHALL BE OFFSET A MINIMUM OF TWELVE (12) INCHES TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS.
- 15. BRANCH CIRCUIT HOMERUNS SHOWN ON DRAWINGS INDICATE PHASE CONDUCTORS, NEUTRAL, EQUIPMENT GROUND CONDUCTORS AS REQUIRED. ADDITIONAL CONDUCTORS REQUIRED FOR CONTROL SHALL BE INCLUDED EVEN IF NOT EXPLICITLY SHOWN.
- 16. SEAL ALL CONDUIT OPENINGS THROUGH EXTERIOR BUILDING WALLS WATERTIGHT.
- IN WET LOCATIONS AND EXTERIOR, ALL WIRING DEVICES SHALL BE WEATHER-RESISTANT LISTED WITH WEATHERPROOF WHILE IN USE COVER. LIGHTING FIXTURES SHALL BE APPROPRIATELY RATED AND LISTED FOR THE ENVIRONMENT INCLUDING 0 DEGREE BALLASTS FOR FLUORESCENT.
- 18. RACEWAYS PENETRATING FLOORS, CEILINGS OR WALLS SHALL BE PROPERLY SEALED SMOKETIGHT.
- RACEWAYS PENETRATING RATED FLOOR, CEILING OR WALL ASSEMBLIES SHALL BE PROPERLY SEALED IN ACCORDANCE WITH THE CORRESPONDING UNDERWRITERS LABORATORIES (OR OTHER APPROVED THIRD PARTY TESTING AGENCY) APPROVED AND LISTED FIRESTOPPING MATERIALS AND MANUFACTURER APPROVED INSTALLATION TECHNIQUES COMPLYING WITH ALL APPLICABLE CODES. SEE ARCHITECTURAL DRAWINGS FOR IDENTIFICATION OF RATED WALLS AND CEILINGS.
- 20. ALL RACEWAYS SHALL BE CONCEALED WHERE POSSIBLE.
- 21. INSTALL EXPOSED RACEWAYS PARALLEL TO OR AT RIGHT ANGLES TO NEARBY SURFACES OR STRUCTURAL MEMBERS, AND FOLLOW THE SURFACE CONTOURS AS MUCH AS POSSIBLE. NO DIAGONAL RUNS WILL BE ALLOWED. ALL CONDUITS SHALL BE RUN STRAIGHT AND TRUE. RUN PARALLEL OR BANKED RACEWAYS TOGETHER ON COMMON SUPPORTS WHERE PRACTICAL. MAKE BENDS IN PARALLEL OR BANKED RUNS FROM SAME CENTERLINE TO MAKE BENDS PARALLEL.
- 22. PROVIDE AND PLACE ALL SLEEVES FOR CONDUITS PENETRATING WALLS, FLOORS, PARTITIONS, ETC. LOCATE ALL NECESSARY SLOTS FOR ELECTRICAL WORK AND FORM BEFORE CONCRETE IS POURED.
- 23. PATCHING OF WATERPROOFED SURFACES SHALL RENDER THE AREA OF THE PATCHING COMPLETELY WATERPROOF.
- 24. ALL MOTORS, DRY TYPE TRANSFORMERS AND OTHER VIBRATING EQUIPMENT SHALL BE CONNECTED TO THE CONDUIT SYSTEM BY MEANS OF A SHORT SECTION (18 INCH MINIMUM) OF FLEXIBLE CONDUIT UNLESS OTHERWISE INDICATED. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED INSIDE THE FLEXIBLE CONDUIT AND TERMINATE AT THE LOAD END WITH AN APPROVED GROUNDING CLAMP OR LUG.
- 25. SURFACE MOUNTED PANELBOARDS, JUNCTION, OUTLET AND PULL BOXES, RACEWAYS, ETC., INSTALLED ON EXTERIOR SURFACES OR INSIDE ON EXTERIOR WALLS SHALL BE SUPPORTED BY SPACERS TO PROVIDE A 1/4" MINIMUM CLEARANCE BETWEEN THE WALL AND EQUIPMENT.
- 26. CEILING MOUNTED DEVICES INSTALLED IN ACOUSTICAL TILE CEILING AREAS SHALL BE SUPPORTED FROM THE STRUCTURE ABOVE WITH RODS OF SUFFICIENT SIZE TO PREVENT VERTICAL MOVEMENT OF THE OUTLET BOX. BRIDGES ALONE ARE NOT ADEQUATE UNLESS SPECIFICALLY APPROVED. CEILING MOUNTED EXIT LIGHT FIXTURES SHALL BE INSTALLED LEVEL. DO NOT SUPPORT DEVICES FROM ACCOUSTICAL CEILING TILE.
- 27. EXCAVATION AND TRENCHING REQUIRED FOR THE INSTALLATION OF ELECTRICAL POWER AND TELECOMMUNICATIONS RACEWAYS SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF DIVISION 26 OF THE PROJECT SPECIFICATIONS.
- 28. PRIOR TO TRENCHING IN ANY AREA, THE CONTRACTOR SHALL CONTACT ELECTRICAL, COMMUNICATIONS/DATA/FIBER, CABLE TELEVISION, GAS AND WATER UTILITY PROVIDERS AND HAVE ALL UTILITIES IN THE AREA IDENTIFIED. DAMAGE TO ANY UNDERGROUND UTILITIES OR STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
- 29. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED BY UNDERGROUND LINE MARKING TAPE LOCATED DIRECTLY ABOVE THE RACEWAY AT 6 TO 8 INCHES BELOW FINISHED GRADE. SEE SPECIFICATIONS SECTION 260553.
- PROVIDE ADHESIVE BACKED RECEPTACLE DEVICE PLATE LABELS IDENTIFYING THE CIRCUIT FEEDING THE DEVICE.
   LABELS SHALL INDICATE PANEL AND CIRCUIT NUMBER.
- 31. FINAL TYPED PANELBOARD DIRECTORIES INSTALLED IN THE PANELBOARD DOOR POCKET SHALL INCLUDE FINAL ACTUAL ROOM NAMES AND NUMBERS IN ADDITION TO THE GENERAL DESCRIPTION SHOWN ON THE PANEL SCHEDULES ON THE DRAWINGS.
- 32. CONDUCTOR SIZING IS BASED ON 75 DEGREE C. COPPER NEC RATINGS, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL VERIFY, PRIOR TO INSTALLATION OF CONDUCTORS OR CONDUIT FEEDING ANY EQUIPMENT, THE ELECTRICAL EQUIPMENT IS RATED FOR USE WITH 75 DEGREE C. WIRING. IF ANY EQUIPMENT IS RATED FOR USE WITH LESS THAN 75 DEGREE C. CONDUCTORS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY FOR EVALUATION/CORRECTION.
- 33. DO NOT PULL CONDUCTORS UNTIL THE CONDUIT SYSTEM IS COMPLETE IN EVERY DETAIL. IN THE CASE OF CONCEALED WORK, "COMPLETE" MEANS UNTIL ALL ROUGH PLASTERING OR MASONRY HAS BEEN COMPLETED.

- 34. WHERE SIZE IS NOT SHOWN ON THE DRAWINGS, BRANCH CIRCUITS SHALL CONSIST OF #12 OR #10 AWG MINIMUM PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS IN 1/2" MINIMUM RACEWAY.
- 35. USE #10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS WITH A TOTAL INSTALLED LENGTH GREATER THAN 75 FEET AND/OR BRANCH CIRCUIT HOMERUNS LONGER THAN 50 FEET, I.E.; #12 AWG INCREASED TO #10 AWG FOR RECEPTACLE BRANCH CIRCUITS OVER 75 FEET TOTAL LENGTH (INCLUDING THE HOMERUN SEGMENT) AND HOMERUNS OVER 50 FEET.
- 36. COMMON NEUTRAL MULTIWIRE RECEPTACLE BRANCH CIRCUITS ARE NOT PERMITTED. PROVIDE SEPARATE, INDIVIDUAL NEUTRAL CONDUCTORS FOR MULTIWIRE BRANCH CIRCUITS.
- 37. KEEP CONDUCTOR SPLICES TO A MINIMUM. INSTALL SPLICES AND TAPES THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH AND INSULATION RATINGS THAN CONDUCTORS BEING SPLICED. USE SPLICE AND TAP CONNECTORS COMPATIBLE WITH CONDUCTOR MATERIAL. INSTALL CONDUCTORS AT EACH OUTLET WITH AT LEAST 6 INCHES OF SLACK. CONNECT OUTLETS AND COMPONENTS TO WIRING AND TO GROUND AS INDICATED AND INSTRUCTED BY THE MANUFACTURER.
- 38. DO NOT SPLICE BRANCH CIRCUIT HOMERUNS WITHOUT THE PERMISSION OF THE ARCHITECT/ENGINEER.

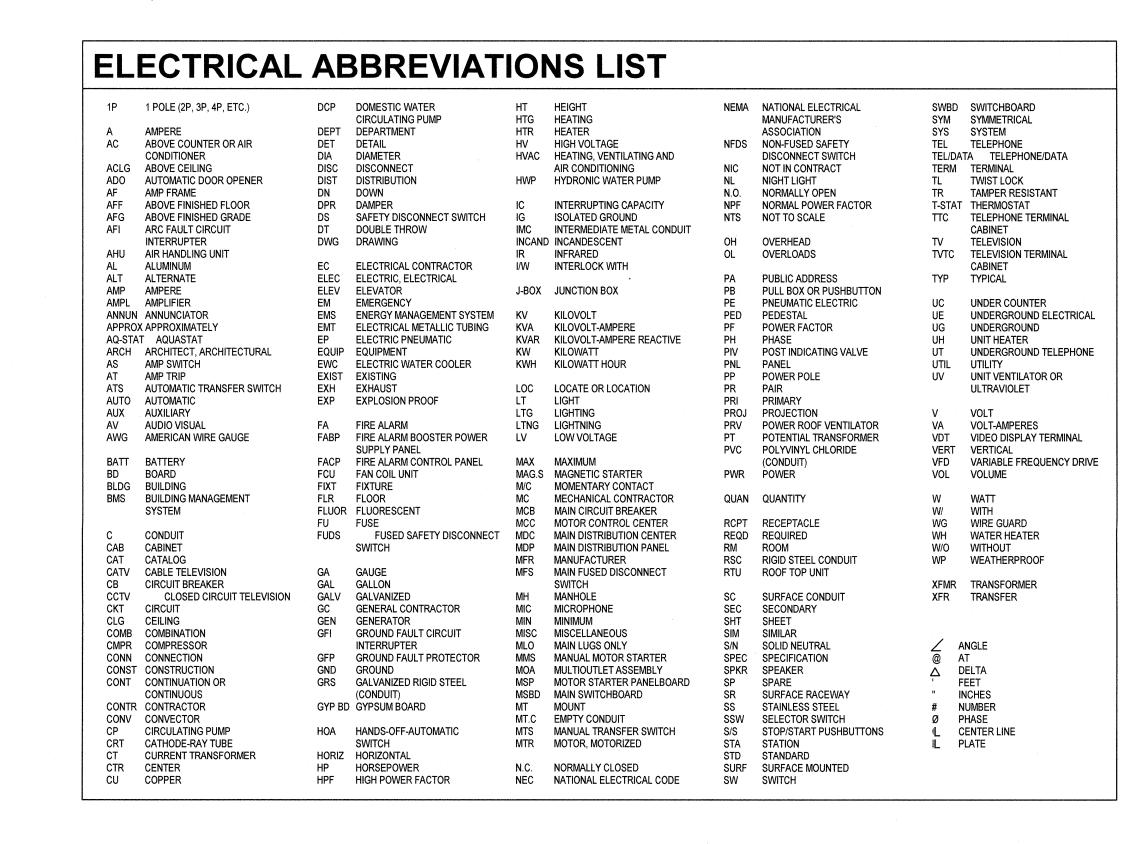
HOMERUNS SHALL BE CONTINUOUS FROM THE LAST OUTLET BOX TO THE SERVING PANELBOARD.

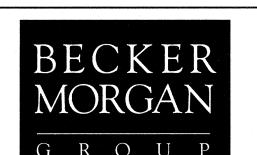
- 39. DO NOT COMBINE BRANCH CIRCUIT HOMERUNS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.
- 40. DO NOT CHANGE CIRCUITING SHOWN WITHOUT PERMISSION OF THE ARCHITECT/ENGINEER.
- 41. TROUGH TAPS SHALL BE AT SWITCH AMPACITY, UNLESS NOTED OTHERWISE.

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- 42. INSTALL WIRING DEVICES AT HEIGHTS AS SHOWN ON THE DRAWINGS. ALSO COORDINATE MOUNTING HEIGHTS WITH THE ARCHITECTURAL DRAWINGS AND CASEWORK DETAILS. IF CONFLICTING, ARCHITECTURAL DRAWINGS AND DETAILS SHALL GOVERN.
- 43. PROVIDE GROUND FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL IN ACCORDANCE WITH THE NEC INCLUDING ALL ELECTRIC WATER COOLERS, EXTERIOR RECEPTACLES AND RECEPTACLES IN AREAS SUBJECT TO POSSIBLE WET CONDITIONS. ALL RECEPTACLES INSTALLED WITHIN 6 FEET OF A SINK SHALL BE GFI PROTECTED. ALL RECEPTACLES IN NON-RESIDENTIAL KITCHENS SHALL BE GFI PROTECTED.
- 44. CONNECT BATTERY PACK TYPE EMERGENCY AND EXIT LIGHTING FIXTURES TO THE UNSWITCHED LIGHTING CIRCUIT SERVING THE SPACE LIGHTED BY THE EMERGENCY AND EXIT FIXTURES. THESE CONNECTIONS ARE INTENTIONALLY NOT SHOWN TO MAINTAIN DRAWING FOR CLARITY.
- 45. COORDINATE LIGHTING FIXTURE LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING PLAN. IF CONFLICTS ARE NOTED, REQUEST CLARIFICATION FROM THE ARCHITECT/ENGINEER BEFORE PROCEDING.
- 46. ADJACENT SWITCHES SHALL BE GANGED. INSTALL BARRIERS BETWEEN UNLIKE VOLTAGE SECTIONS.
- 47. SEPARATE NEUTRALS ARE REQUIRED FOR ALL DIMMED LIGHTING CIRCUITS.
- 48. WHERE THE DRAWINGS INDICATE A LIGHTING FIXTURE IS TO BE PROVIDED WITH SPECIAL FEATURES/SWITCHING (DIMMING, EMERGENCY BATTERY, MULTI-LEVEL, ETC), THE CONTRACTOR SHALL PROVIDE THESE FIXTURES WITH THE APPROPRIATE BALLASTING TO ACCOMMODATE THE SPECIAL FEATURE. THE CONTRACTOR SHALL PROVIDE THE FIXTURES AS INDICATED IN THE LIGHTING FIXTURE SCHEDULE WITH MODIFICATIONS AS REQUIRED BY DRAWING NOTES.
- 49. COORDINATE LOCATIONS OF PLUMBING, MECHANICAL, ELEVATOR, DATA AND TELEPHONE AND AUDIO/VISUAL EQUIPMENT AND OF OWNER-PROVIDED EQUIPMENT WITH THE RESPECTIVE CONTRACTORS AND VENDORS AND THE OWNER BEFORE ROUGH-IN. ADJUST LIGHTING FIXTURES, RECEPTACLES AND ELECTRICAL EQUIPMENT TO ACCOMMODATE THIS EQUIPMENT. ADVISE THE ARCHITECT/ENGINEER OF CONFLICTS BEFORE ROUGH-IN
- 50. BEFORE COMMENCING WORK OR ORDERING MATERIALS, THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND VERIFY THE NAMEPLATE RATINGS OF ALL EQUIPMENT (MOTORS, HEATERS, COMPRESSORS, ETC.) AND ADJUST THE RATINGS OF THE ELECTRICAL EQUIPMENT (SWITCHES, FUSES, CIRCUIT BREAKERS, FEEDERS, ETC.) AS APPROPRIATE TO SERVE THIS EQUIPMENT.
- 51. ENERGIZE EQUIPMENT ONLY AFTER OBTAINING PERMISSION FROM THE CONTRACTOR PROVIDING THE EQUIPMENT
- 52. UNLESS SPECIFICALLY NOTED OTHERWISE, THE ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL UTILIZATION EQUIPMENT SHOWN ON THE DRAWINGS. VERIFY THE TYPE OF FINAL CONNECTION AND PROVIDE APPROPRIATE WIRING METHOD. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL, PLUMBING AND GENERAL CONTRACTORS, PRIOR TO ORDERING OR INSTALLATION OF ANY EQUIPMENT, TO VERIFY MECHANICAL AND PLUMBING EQUIPMENT REQUIREMENTS ARE PROVIDED IN THE ELECTRICAL DESIGN. THE CONTRACTOR WILL NOT BE COMPENSATED FOR COSTS ASSOCIATED WITH CHANGING THE ELECTRICAL SYSTEMS TO MATCH UTILIZATION EQUIPMENT, EVEN IF THE ELECTRICAL WORK IS INSTALLED PER THE ELECTRICAL DRAWINGS.
- 53. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL FURNISH ALL STARTERS AND CONTROLS FOR THEIR EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL MOUNT STARTERS FURNISHED BY THE MECHANICAL AND PLUMBING CONTRACTORS, THE ELECTRICAL CONTRACTOR PROVIDE ALL SAFETY SWITCHES, WIRING AND CONNECTIONS TO LINE SIDE AND LOAD SIDE OF STARTERS AND SAFETY SWITCHES COMPLETE TO MECHANICAL EQUIPMENT. FOR RESISTANCE TYPE LOADS WHERE STARTERS OR CONTACTORS ARE NOT REQUIRED, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL POWER WIRING AND CONNECTIONS COMPLETE TO EQUIPMENT. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL PROVIDE ALL CONTROL WIRING AND CONNECTIONS AND DEVICES FOR THEIR EQUIPMENT.
- 54. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL EQUIPMENT TERMINATIONS, PLUGS AND CORDSETS WITH VENDOR EQUIPMENT AND VERIFY ALL DEVICE LOCATIONS FOR SPECIALITY EQUIPMENT WITH CASEWORK PRIOR TO ROUGH-IN.
- 55. THE LAYOUT AND PLACEMENT OF ELECTRICAL DISTRIBUTION EQUIPMENT IN ELECTRICAL AND MECHANICAL EQUIPMENT ROOMS IS BASED ON PUBLISHED EQUIPMENT SIZES AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. DEVIATIONS FROM CONFIGURATIONS SHOWN IS THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE NATIONAL ELECTRIC CODE REQUIRED CLEARANCES FOR ALL ELECTRICAL EQUIPMENT, PANELBOARDS, TRANSFORMERS, SAFETY SWITCHES, SWITCHBOARDS, ETC. COORDINATE RESOLUTION OF CONFLICTS WITH OTHER TRADES. ADVISE THE ARCHITECT/ENGINEER OF CONFLICTS BEFORE ROUGH-IN.
- 56. COORDINATION WITH THE UTILITY COMPANY FOR PLACEMENT OF THE UTILITY'S FACILITIES AND THE CONTRACTOR'S SERVICE ENTRANCE RACEWAYS AND CONNECTIONS TO THE CONTRACTOR'S SERVICE ENTRANCE CONDUCTORS IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- 57. TELECOMMUNICATIONS AND DATA CABLES WILL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. LEAVE PULL WIRES OR ROPES OF ADEQUATE TENSILE STRENGTH IN ALL EMPTY CONDUITS.
- 58. EXACT SPACING OF SMOKE AND HEAT DETECTORS AND AV DEVICES SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE WITH POSITIONS SHOWN ON THE DRAWINGS. DETECTOR SPACING IS BASED UPON NFPA 72 INCLUDING APPENDIX A. SLIGHT ADJUSTMENTS MAY BE MADE IN SPACING IF REQUIRED BY FIELD CONDITIONS, BUT SPACING SHALL NOT EXCEED ADA, NFPA AND EQUIPMENT MANUFACTURERS SPACING CRITERIA. DO NOT INSTALL SMOKE DETECTORS WITHIN 3 FEET OF SUPPLY AIR DIFFUSERS OR RETURN GRILLES. PROVIDE FLEX CONDUIT CONNECTIO TO SMOKE AND HEAT DETECTORS OF ADEQUATE LENGTH TO ALLOW HORIZONTAL ADJUSTMENT OF FOUR FEET FROM POSITION INDICATED ON DRAWINGS.
- 59. INSTALLATION INFORMATION PACKED WITH LIGHTING FIXTURES, DEVICES AND EQUIPMENT SHALL BE RETAINED FOR INCLUSION IN THE OPERATIONS AND MAINTENANCE MANUALS.
- 60. SAFETY: COMPLY WITH OSHA AND NEC ARC FLASH PROTECTION REQUIREMENTS.
- 61. ALL SWITCHES, RECEPTACLE AND LIGHTS SHALL COMPLY WITH ANSI 117.2 FOR ADA REQUIREMENTS.
- 62. THE ELECTRICAL CONTRACTOR AND ALL SUB CONTRACTORS WORKING FOR THE ELECTRICAL CONTRACTOR ARE RESPONSIBLE FOR COMMISSIONING EACH SYSTEM INDICATED IN THESE DRAWINGS. THE ELECTRICAL CONTRACTOR AND ALL SUB CONTRACTORS WORKING FOR THE ELECTRICAL CONTRACTOR ARE RESPONSIBLE FOR PROVIDING A COMPLETE OPERATIONAL SYSTEM TO OWNER. THE SYSTEMS WILL NOT BE CONSIDERED OPERATIONAL UNTIL THE OWNER HAS APPROVED EACH SYSTEM.
- 63. INSTALL COLOR CODED CEILING TACKS IN ACOUSTICAL TILE CEILINGS OR COLOR CODED TAPE ON CEILING GRID TIDENTIFY LOCATION OF ELECTRICAL EQUIPMENT, DISCONNECTS, LIGHTING CONTROLLERS AND POWER PACKS ETC... THAT REQUIRE REGULAR MAINTENANCE OR ARE PART OF A LIFE SAFETY SYSTEM. DOTS SHALL BE PLACED ON CEILING GRID.

YMBOL	<u>DESCRIPTION</u>	SYMBOL	DESCRIPTION
	WALL MOUNTED AREA LIGHT FIXTURE LETTER INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)	H.J.	JUNCTION BOX
0	2x4 LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED LETTER INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)	240/120	PANELBOARD, SURFACE OR RECESSED MOUNTED AS SHOWN. SIZE, RATINGS, AND MOUNTING AS INDICATED ON PANEL SCHEDULE. CONTRACTOR IS RESPONSIBLE FOR REQUIRED CLEARANCE IN FRONT OF
	4FT OR 8FT CHANNEL LIGHT FIXTURE, SUSPENDED OR SURFACE MOUNTED LETTER INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)		ELECTRICAL PANEL. SEE NEC TABLE 110.26 WORKING SPACES FOR ADDITIONAL CLEARANCE CONDITIONS.
	EMERGENCY LIGHTING UNIT, 2-HEAD WITH BATTERY BACK-UP, WALL MOUNTED, "NOT SWITCHED" INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)	Ó	DISCONNECT SWITCH, FUSED, HEAVY DUTY, SIZE AS INDICATED ON DRAWINGS ##A = DISCONNECT SIZE / # = NUMBER OF POLES / # = NEMA RATING, /##AF = FUSE SIZE
9 💆	EXIT SIGN W/EMERGENCY LIGHTING UNIT, WALL/END MOUNTED, ARROW INDICATES		FLOOR BOX, 8 GANG EXTRA DEEP
	DIRECTION. INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)0/277 VAC, 20A, MOUNTED	₩ w	WALL TELEPHONE W/ INTERCOM OUTLET
₩	AT 48" AFF UNLESS NOTED OTHERWISE	•	DATA INFORMATION OUTLET (TYPE DENOTED)
3 <b>0</b> \$	3-WAY DIMMER SW., 120/277 VAC, 20A, 0-10V TO 1%, MOUNTED AT 48" AFF UNLESS NOTED OTHERWISE	X	WIRELESS ACCESS POINT, DATA CABLE MUST BE TERMINATED IN A JACK IN THE CEILING. 1FT PATCH CABLE MUST BE PROVIDED AND DROPPED BELOW THE
-√>-	HEAVY DUTY 0-10V DIMMER, 1500W @ 120VAC, 4000W @ 277VAC MOUNTED AT 48:AFF UNLESS NOTED OTHERWISE		CEILING INTERCOM SPEAKER (WALL OR CEILING MT.)
\$0	WALL MOUNTED OCCUPANCY SENSOR, SINGLE BUTTON ON/OFF CONTROL, 180° COVERAGE, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.	_ <del>_</del>	ANTENNA
	WALL MOUNTED DUAL TECHNOLOGY		FIRE ALARM STROBE (CANDELAS)
0\$ <b>F</b>	OCCUPANCY SENSOR, DUAL BUTTON ON/OFF CONTROL, 180° COVERAGE, ADDITIONAL POWER SUPPLY FOR FAN OPERATION,	FS -	FIRE ALARM SPEAKER W/STROBE (CANDELAS)
	MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.	(2)	FIRE ALARM REMOTE ANNUNCIATOR  SMOKE DETECTOR (TYPE & TEMP DENOTED)
©S)	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, 360° COVERAGE,	HE P	F.A. PULLSTATION (TYPE DENOTED)
	NPP-16-ER, NPP-16-D-ER POWER PACKS REQUIRED FOR LIGHTING CONTROLS IN OPEN		F.A. INDIVIDUAL ADDRESSABLE MODULE
	OFFICE AREAS. POWER PACKS SHALL BE	DC	DOOR CONTACTS
	MOUNTED ABOVE ACCESSIBLE CEILINGS, MARK CEILING TILE WITH RED DOT TO	HCR	CARD READER
	INDICATE LOCATION.  2 = SECOND CONTACT TO BE PROVIDED FOR CONNECTION TO BUILDING MANAGEMENT		POWER AND SWITCH LEG
_	RECEPTACLE, DUPLEX, 120VAC, 20A MOUNTED	/ - \	UNSWITHCED LEG
<b>=</b>	16"AFF UNLESS OTHERWISE NOTED (SEE ELECTRICAL MOUNTING HEIGHT DETAIL) WP - LISTED WEATHER-RESISTANT TYPE	**************************************	RECEPTACLE, DUPLEX, 120VAC, 20A, MOUNTED 6" AFF, ABOVE COUNTER TOP.
	DEVICE WITH WEATHERPROOF, EXTRA DUTY, WHILE IN USE COVER GFI - GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A,	1	"EGB" INDICATES ELECTRICAL GROUND BAR
•	MOUNTED 24" AFF LOCATE GFI TEST SWITCH IN A READILY ACCESSIBLE LOCATION T - TAMPER RESISTANT		
	R - RECEPTACLE SHALL BE RED IN COLOR PER NEC 70, 517.31(E)		





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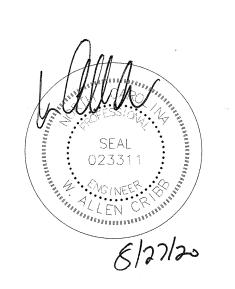
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SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING

280 COUGAR ROAD, SOUTHPORT NC 28461

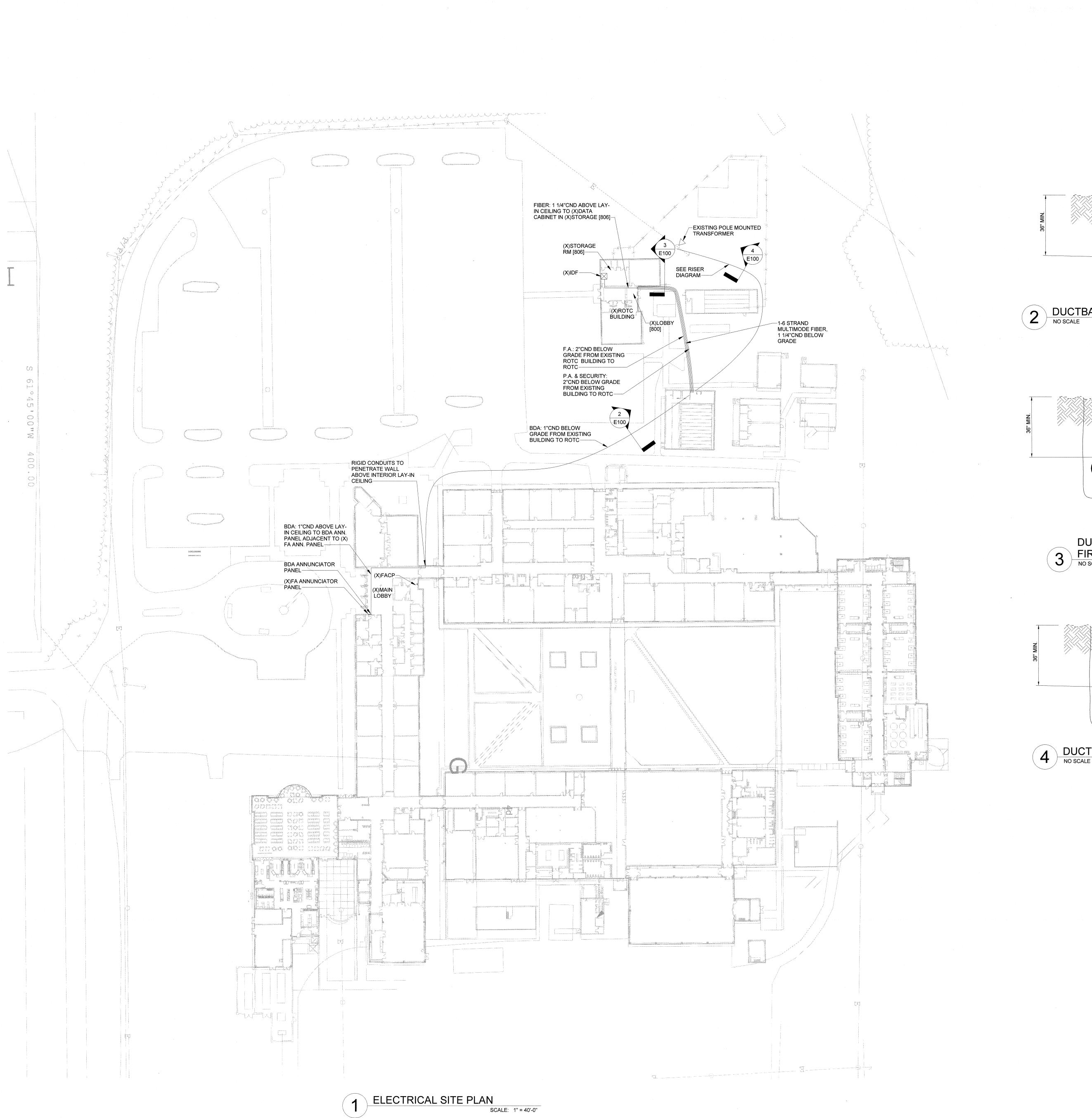
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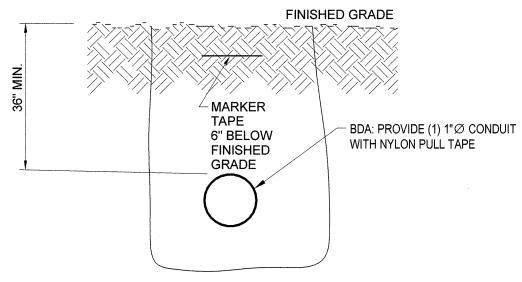
ELECTRICAL SYMBOLS AND ABBREVIATIONS

| 08/27/2020 | ISSUED FOR CONSTRUCTION |
| Mark | Date | Description |
| PROJECT NO: 2019241.00 |
| DATE: 08/27/2020

E001

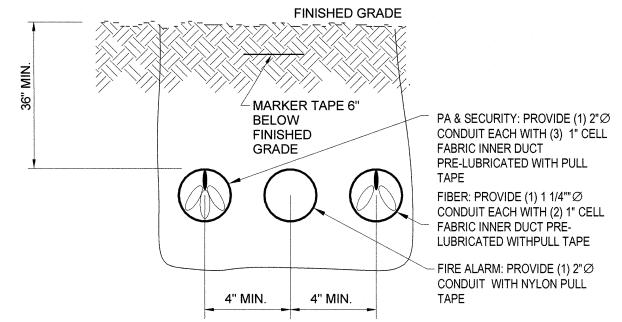
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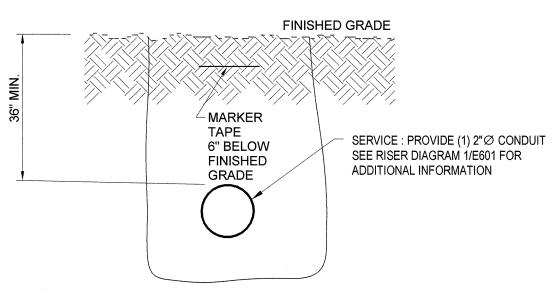


2 DUCTBANK SECTION - BDA NO SCALE

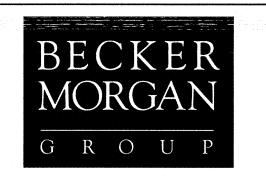
TO THE PROPERTY OF THE PROPERT



DUCTBANK DETAIL - FIBER / 3 FIRE ALARM/PA & SECURITY
NO SCALE



4 DUCTBANK DETAIL - SERVICE
NO SCALE



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SOUTH BRUNSWICK HIGH SCHOOL **ROTC BUILDING** 

280 COUGAR ROAD, SOUTHPORT NC 28461

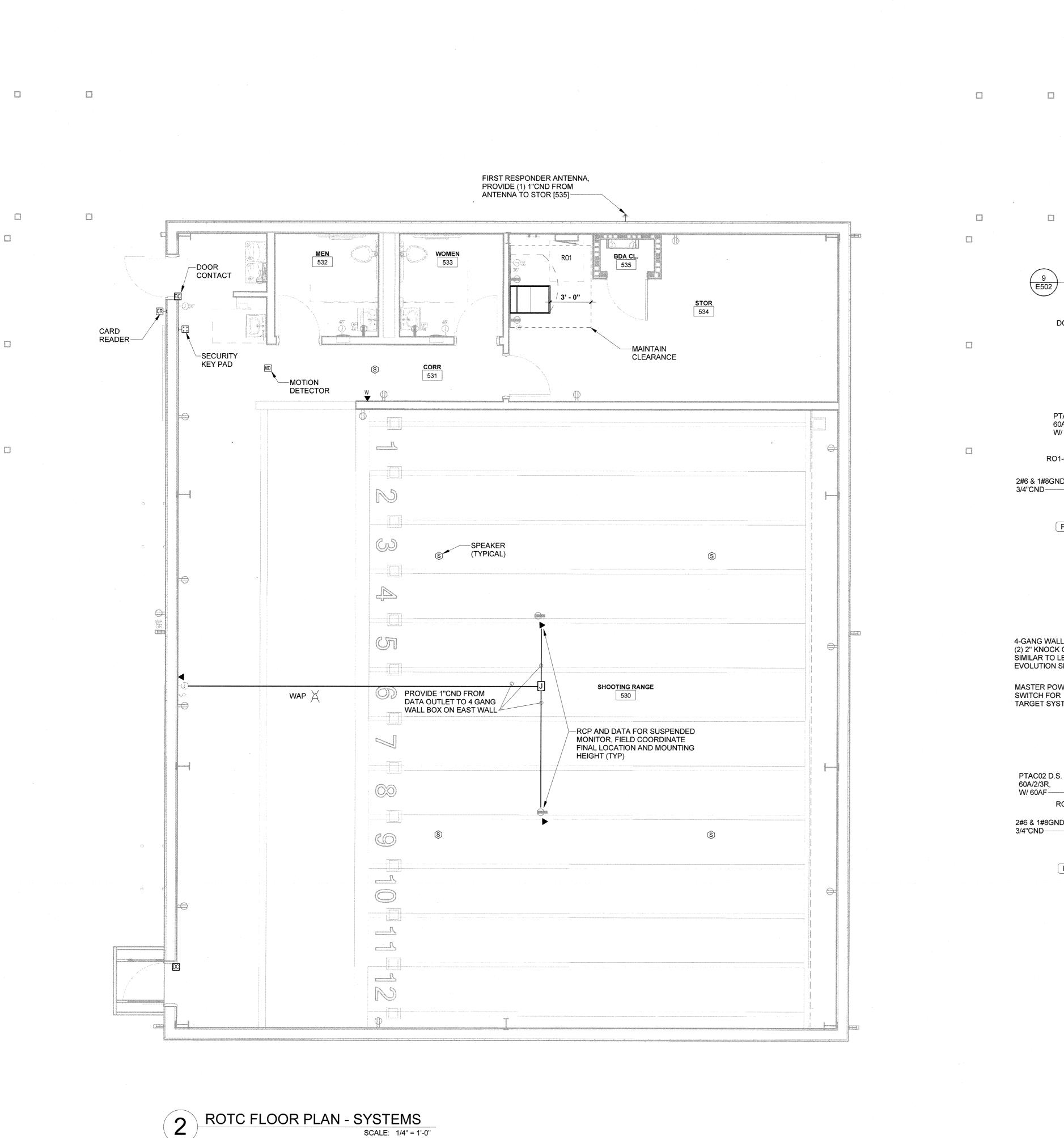
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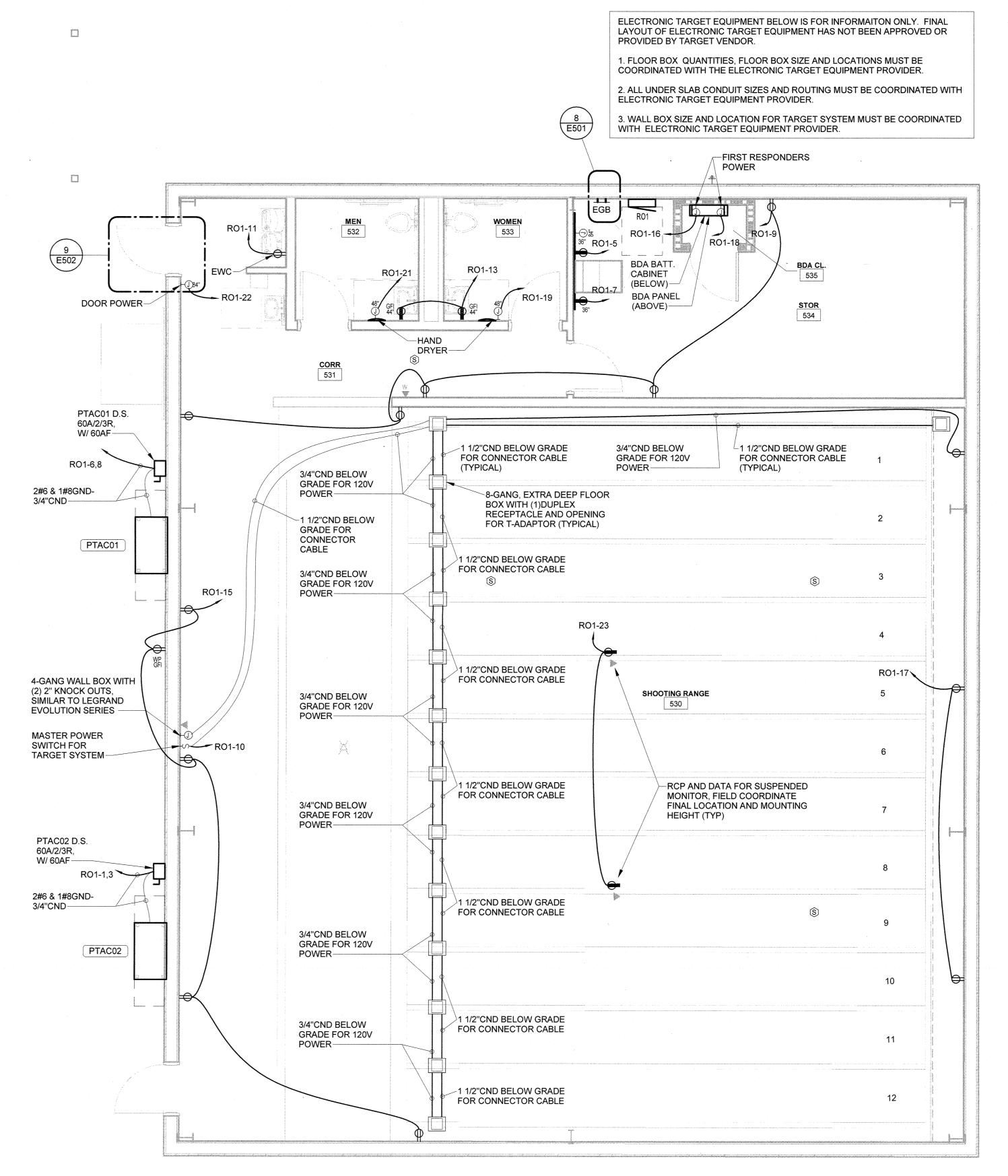
ELECTRICAL SITE PLAN

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PROJECT NO:

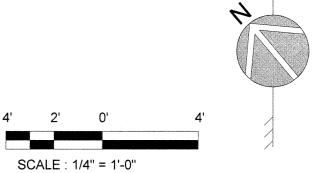
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ROTC FLOOR PLAN - POWER
AND HVAC POWER

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



BECKER MORGAN

GROUP

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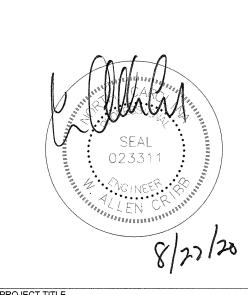
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SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING

280 COUGAR ROAD, SOUTHPORT NC 28461

DSP # : 100 DPI SCHOOL # : 1167

ROTC FLOOR PLANS POWER, HVAC
POWER AND
SYSTEMS

08/27/2020 ISSUED FOR CONSTRUCTION

Mark Date Description

PROJECT NO: 201924

ISSUE BLOCK

 PROJECT NO:
 2019241.00

 DATE:
 08/27/2020

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

 DRAWN BY: HGH
 PROJ MGR: WAC

E101

LIGHTING FIXTURE SCHEDULE BALLAST/ DESCRIPTION MANUFACTURER/SERIES DRIVER A 2X4 LAY-IN LED TROFFER RECESSED LED DRIVER LITHONIA: GTL SERIES COLUMBIA: LJT24 SERIES ACRYLIC GYPBOARD DAY-BRITE: 2TG54L B ADJUSTABLE LINEAR LED WITH ECOSENSE TROV L50-I-48-10-90-MULT 4000 LED MVOLT 4800 WALL MOUNTED LED DRIVER 1, 5 45 DEGREE BEAM ANGLE LUMENPULSE: LOGRO-48-40K-10X90-UMAS-SI-DIM SIDE OF JOIST CK EVENBALANCE: 523-000099-15 OPPOSITE SHOOT LINE C LED UTILITY LIGHT LITHONIA: CSS 3500 LED MVOLT 31 ACRYLIC WHITE SURFACE / LED DRIVER 4 COLUMBIA: CSL4 SERIES SUSPENDED DAY-BRITE: FSS430 C1 LED UTILITY LIGHT 3500 LED MVOLT 17 ACRYLIC WHITE LITHONIA: ZL1DL24 1500 SURFACE / LED DRIVER COLUMBIA: CSL2 SERIES SUSPENDED DAY-BRITE: FSS430 D EXTERIOR LED AREA LIGHT 18"Wx7"Hx9"D 4000 LED MVOLT 3433 LITHONIA: WSR-LED LED DRIVER 3, 5, 8, 9 WALL MOUNTED TYPE 3 DISTRIBUTION HUBBELL: RD12-24L SERIES BRONZE B.O.F. 8'-6" RAYON: 7650-LED E1 2-HEAD EMERGENCY LIGHT 12"Wx5.5"Hx6"D EELP: EM2LF SERIES LED MVOLT WHITE WALL MOUNTED CHLORIDE: CLUNW 7'-6"AFF EMERGI-LITE: EL-2RHL SERIES X1 EXIT SIGN, SINGLE FACE LITHONIA: EXR LED EL M6 12"Wx8"Hx2"D LED MVOLT RED WHITE SURFACE CEILING / CHLORIDE: VERWEM 7'-6"AFF WHEN EMERGI-LITE: ELXN400RN WALL MOUNTED X2 COMBINATION EXIT SIGN LITHONIA: EXR LED EL M6 12"Wx8"Hx2"D LED MVOLT 30 RED SURFACE CEILING / WHITE 2-HEAD LED LIGHTS CHLORIDE: VLLCR2R 7'-6"AFF WHEN EMERGI-LITE: ELXN400R-2LED WALL MOUNTED 1. 0-10V DIMMING 1% 4. 50% DIMMING 7. FINAL COLOR SELECTION BY ARCHITECT 2. DAMP LOCATION 5. LED REQUIRED SURGE PROTECTION 8. 90 MIN BATTERY BACK-UP. 3. WET LOCATION 6. VERIFY FINAL MOUNTING HEIGHT WITH ARCHITECT 9. INTEGRAL PHOTOCELL **GENERAL NOTES** A. THE CONTRACTOR SHALL VERIFY THE LEAD TIME OF ALL PRODUCTS SPECIFIED IN THIS SCHEDULE AT THE TIME OF PACKAGE QUOTE. B. DURING THE BID PROCESS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DELIVERY/SCHEDULING ISSUES. C. NO SUBSTITUTIONS WILL BE ALLOWED DUE TO THE LACK OF COORDINATION OF DELIVERY DATES AND CONSTRUCTION SCHEDULE AFTER BID. D. ALL EXPEDITED EXPENSES SHALL BE THE RESPONSIBILITY OF THE CONTRACTORS. E. FIXTURES TO BE INSTALLED IN CEILINGS, INDICATE ON THE ARCHITECTURAL PLANS AS HAVING INSULATION IN CONTACT WITH THE CEILING SURFACE, SHALL BE IC RATED BY MANUFACTURER. F. LIGHTING FIXTURES SHALL MEET THE AESTHETICS, DESCRIPTION AND SPECIFICATIONS, SUBSTITUTIONS SHALL INCLUDE PT. BY PT. CALCULATIONS. G.LIGHTING FIXTURES, AS SPECIFIED, HAVE BEEN SO SELECTED TO ACHIEVE REQUIRED/DESIRED FOOTCANDLE LEVELS IN THEIR RESPECTIVE AREA. HENCE SPECIFIC FIXTURE CHARACTERISTICS WHICH MAY CREATE PARTICULAR ILLUMINATION RESULTS ARE ESSENTIAL. ANY DEVIATIONS FROM SPECIFIED FIXTURES SHALL DEEM THE SUBMITTING AGENT AND CONTRACTORS RESPONSIBLE IN PROVIDINGSUCH DEVIATION FOR THE ARCHITECT/ENGINEER AND OWNER TO MAKE AN INFORMED DECISION. H. SUBSTITUTIONS APPROVED BY THE ENGINEER PREVIOUS TO BID ARE ACCEPTABLE AS LONG AS THEY ARE EQUAL TO THE FIXTURE SPECIFIED, UNLESS OTHERWISE NOTED. THIS INCLUDES LENS, COLORS, REFLECTORS, PHOTOMETRICS, HOUSING MATERIAL, FINISHES, ETC. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER WITH CUT SHEETS FOR APPROVAL. LISTED SEPARATELY SO THE ARCHITECT, ENGINEER AND OWNER CAN MAKE AN INFORMED DECISION. SUBSTITUTE FIXTURES SHALL BE PRICED WITH THE SPECIFIED FIXTURE AND ALL 4' LED LAMPS SHALL BE 3500 K, OTHER LAMPS SHALL BE AS SCHEDULED. J. ANY FIXTURE WITH THE TEXT "NL" ADJACENT TO IT SHALL INDICATE THAT THAT FIXTURE IS A NIGHT LIGHT (24HR LIGHT). THE FIXTURE SHALL BE CONNECTED TO THE UNSWITCHED HOT LEG OF THE INDICATED CIRCUIT. K. ACRYLIC PRISMATIC LENSES SHALL BE 0.156" NOMINAL MINIMUM THICKNESS. L. ALL EXIT AND EMERGENCY FIXTURES SHALL COMPLY WITH NCSBC STANDARDS AND HAVE AUTOMATIC TESTING DEVICES.

M. LED EMERGENCY BATTERY SHALL PROVIDE 1400 MINIMUM LUMENS OUTPUT FROM 1 LAMP FOR 90 MINUTES MINIMUM.

P. SEE SPECIFICATIONS SECTIONS 265100 AND 265200 FOR ADDITIONAL REQUIREMENTS.

O. PROVIDE MANUFACTURER INSTALLED NEC 2014 ARTICLE 410.130 (G) COMPLIANT DISCONNECTING MEANS FOR ALL APPLICABLE FIXTURES.

Q. ELECTRICAL CONTRACTOR SHALL RECEIVE APPROVAL FOR ALL LIGHTING FIXTURES FROM ARCHITECT/OWNER PRIOR TO PURCHASE AND ROUGH-IN.

N. LED MODULES SHALL BE REPLACEABLE.

RANGE WARNING LIGHT SYSTEM

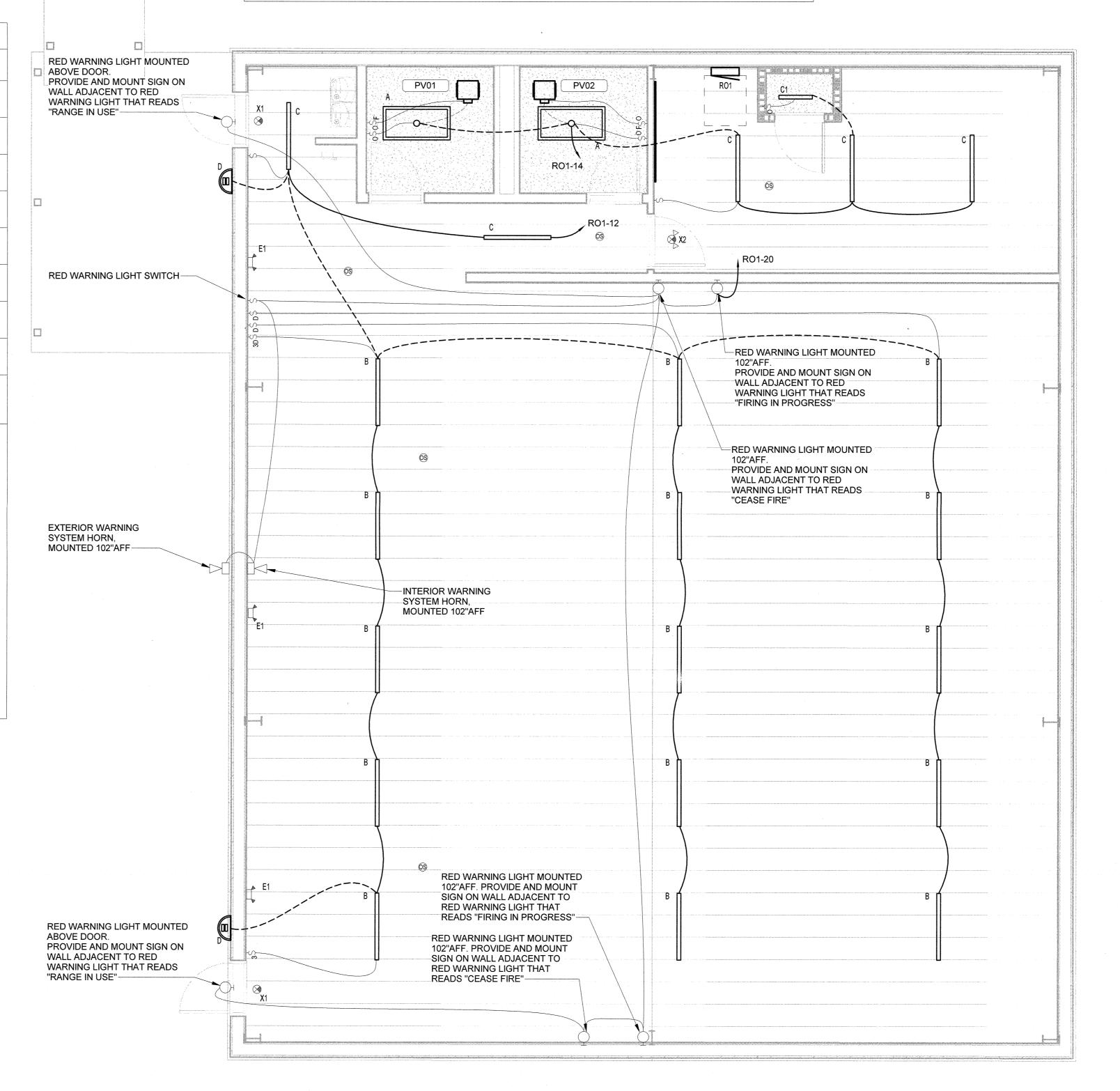
ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING A COMPLETE AND OPERATIONAL RANGE WARNING LIGHT SYSTEM. THE SYSTEM MUST CONTAIN ALL RED WARNING LIGHTS ON INTERIOR AND EXTRIOR OF BUILDING AND SHALL PROVIDE INTERIOR AND EXTERIOR HORNS AND ALL WIRING, RELAYS, CONTACTORS AND WARNING SIGNS FOR THE RANGE WARNING LIGHT SYSTEM.

THE WARNING SIGNS MUST BE RED PHENOLIC WARNING SIGNS WITH 3" HIGH WHITE LETTERS. PROVIDE (QTY 2 EXTERIOR THAT INDICATE "RANGE IN USE" AND (QTY 2 INTERIOR) THAT INDICATE "FIRING IN PROGRESS: AND (QTY 2 INTERIOR) THAT INDICATE "CEASE FIRE".

OPERATION:
LIGHTS AND HORNS MUST BE FED FROM A DEDICATED 120V CIRCUIT AND CONTOLLED FROM A SINGLE TOGGLE SWITCH LOCATED ADJACENT TO THE MASTER POWER SWITCH FOR THE TARGETING SYSTEM.

WHEN SWITCH IS TURNED ON THE INTERIOR "FIRING IN PROGRESS" AND EXTERIOR "RANGE IN USE" LIGHTS MUST ENERGIZE AND THE HORN MUST SOUND FOR 3 SECONDS.

WHEN THE SWITCH IS TURNED OFF THE LIGHTS FOR THE "RANGE IN USE" LIGHTS AND THE "FIRING IN PROGRESS" LIGHTS MUST DE-ENERGIZE, THE RED "CEASE FIRE" LIGHT MUST ENERGIZE AND THE HORN MUST SOUND FOR 3 SECONDS.





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SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING

280 COUGAR ROAD, SOUTHPORT NC 28461

DSP # : 100 DPI SCHOOL # : 1167

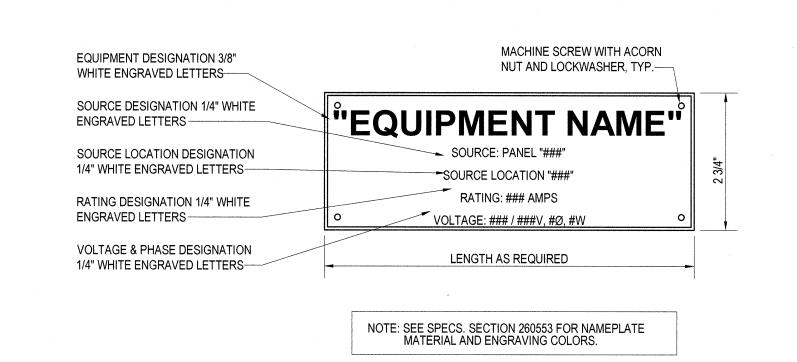
ROTC FLOOR PLAN -

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k Date Description

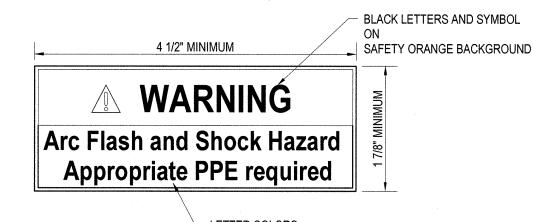
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ROTC FLOOR PLAN - LIGHTING

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



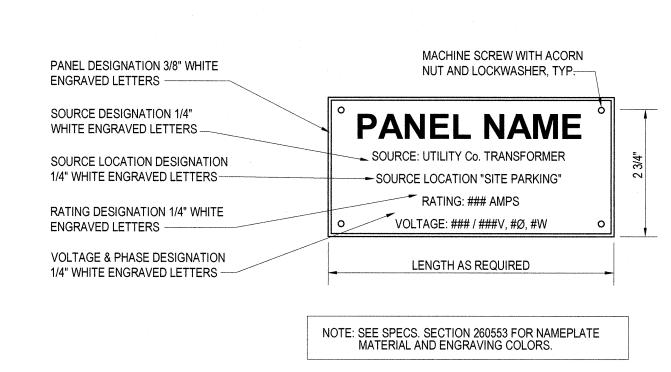




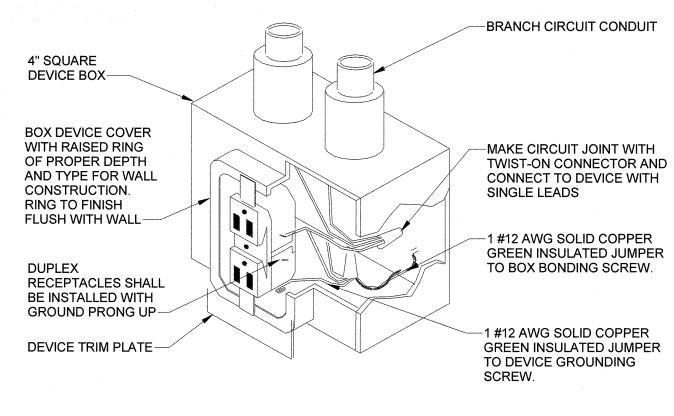
LETTER COLORS, SPECIFICATIONS 1. LABEL SHOWN CAN BE SOURCED FROM SAFETYSIGN.COM, OTHER SUPPLIERS ARE COMPLIANTSIGNS.COM & SETON.COM

2. THIS WARNING LABEL MINIMALLY COMPLIES WITH NEC, HOWEVER IF ELECTRICAL EQUIPMENT IS LIKELY TO REQUIRE EXAMINATION OR MAINTENANCE WHILE ENERGIZED A DETAILED SHORT CIRCUIT AND ARC FLASH HAZARD ANALYSIS IS RECOMMENDED.

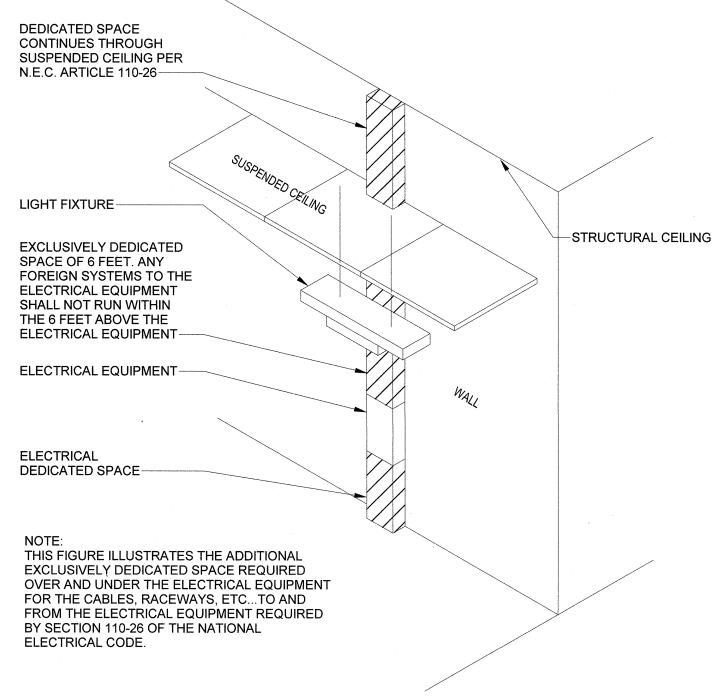




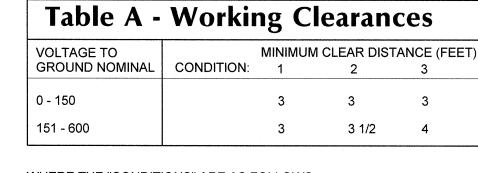






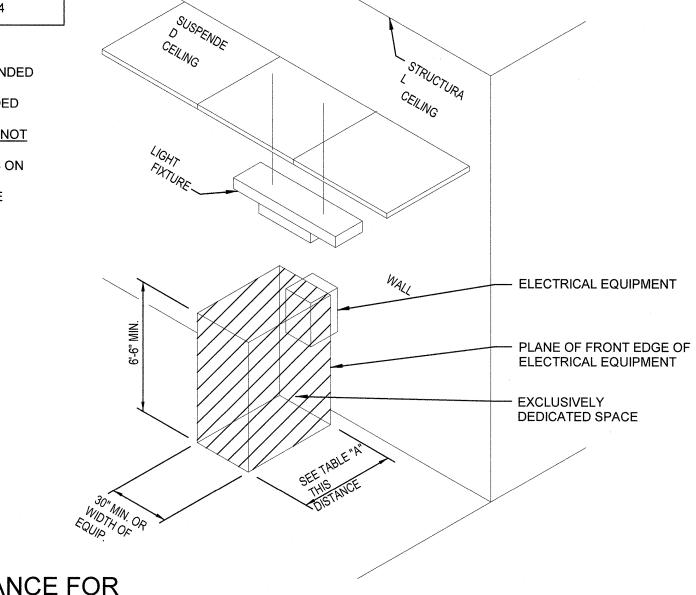




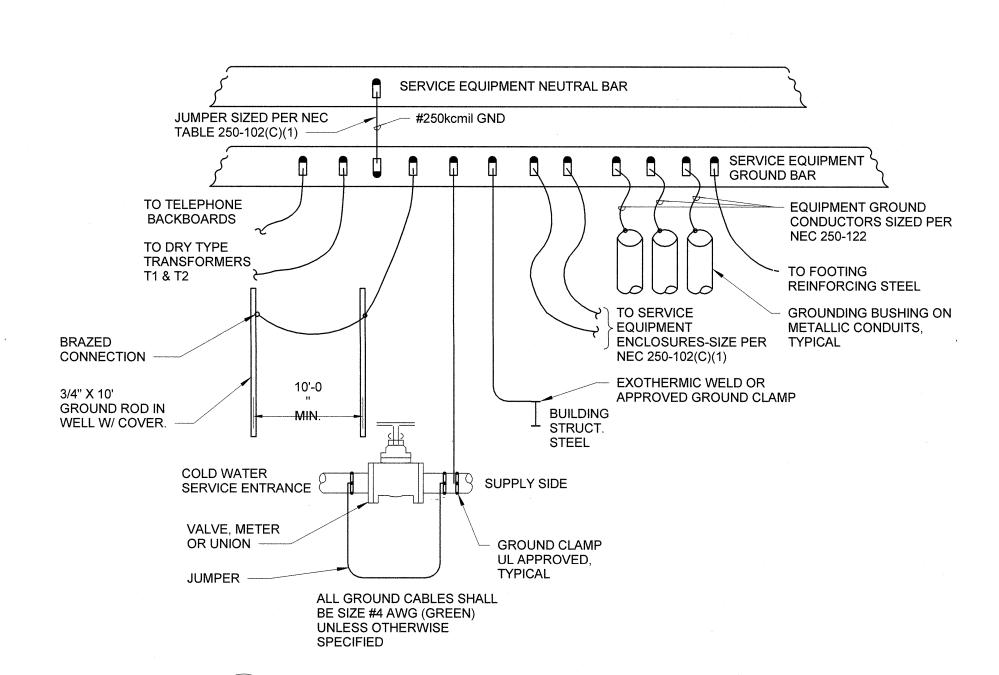


WHERE THE "CONDITIONS" ARE AS FOLLOWS: 1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.

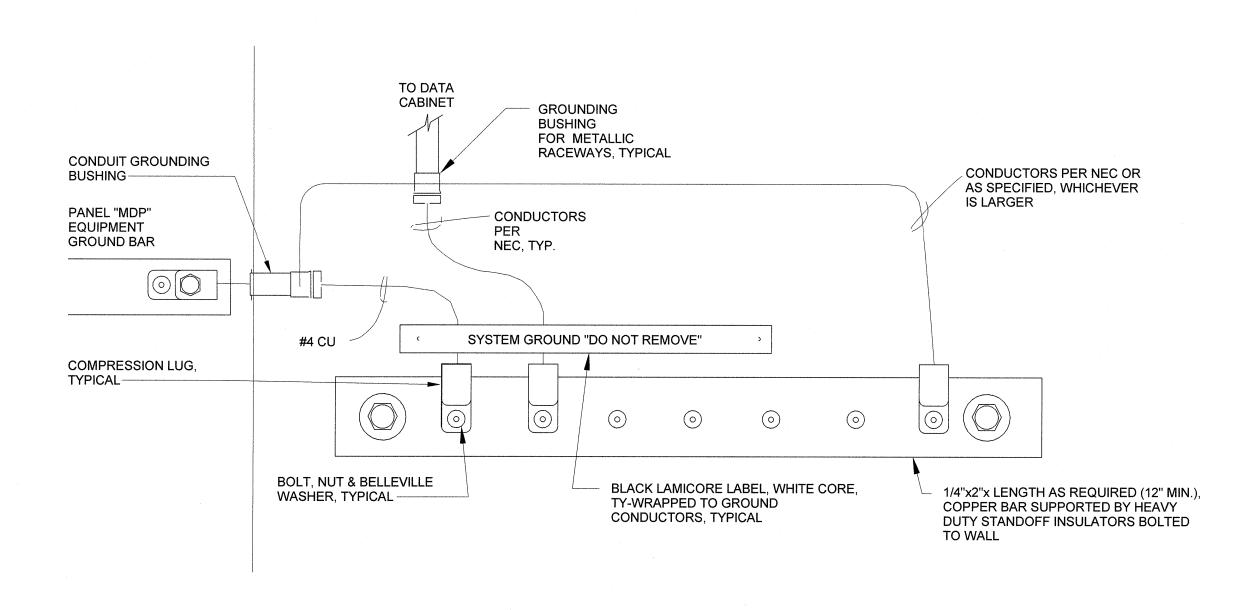
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE. 3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.



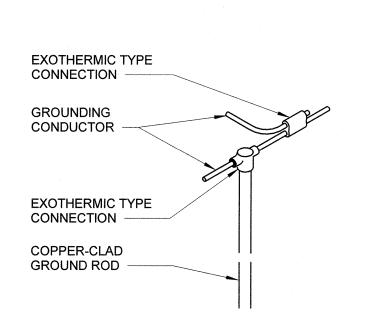
WORKING CLEARANCE FOR ELECTRICAL EQUIPMENT



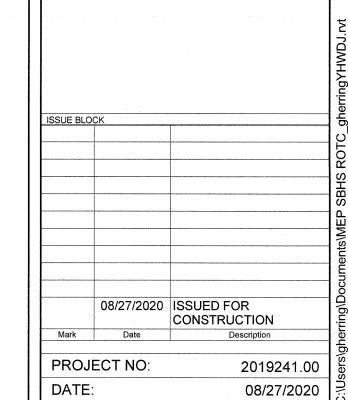
**GROUNDING DETAIL - SERVICE** 







**GROUND ROD DETAIL** 



G R O U F

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Dover, DE 19904

302.734.7950 Rittenhouse Station 250 South Main Street, Suite 109

Newark, DE 19711

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CBHF

Engineers, PLLC

2246 Yaupon Drive

Wilmington, NC 28401

Phone: 910.791.4000

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08/27/2020

ISSUED:

SOUTH

BRUNSWICK

280 COUGAR ROAD,

DSP #: 100

SOUTHPORT NC 28461

HIGH SCHOOL

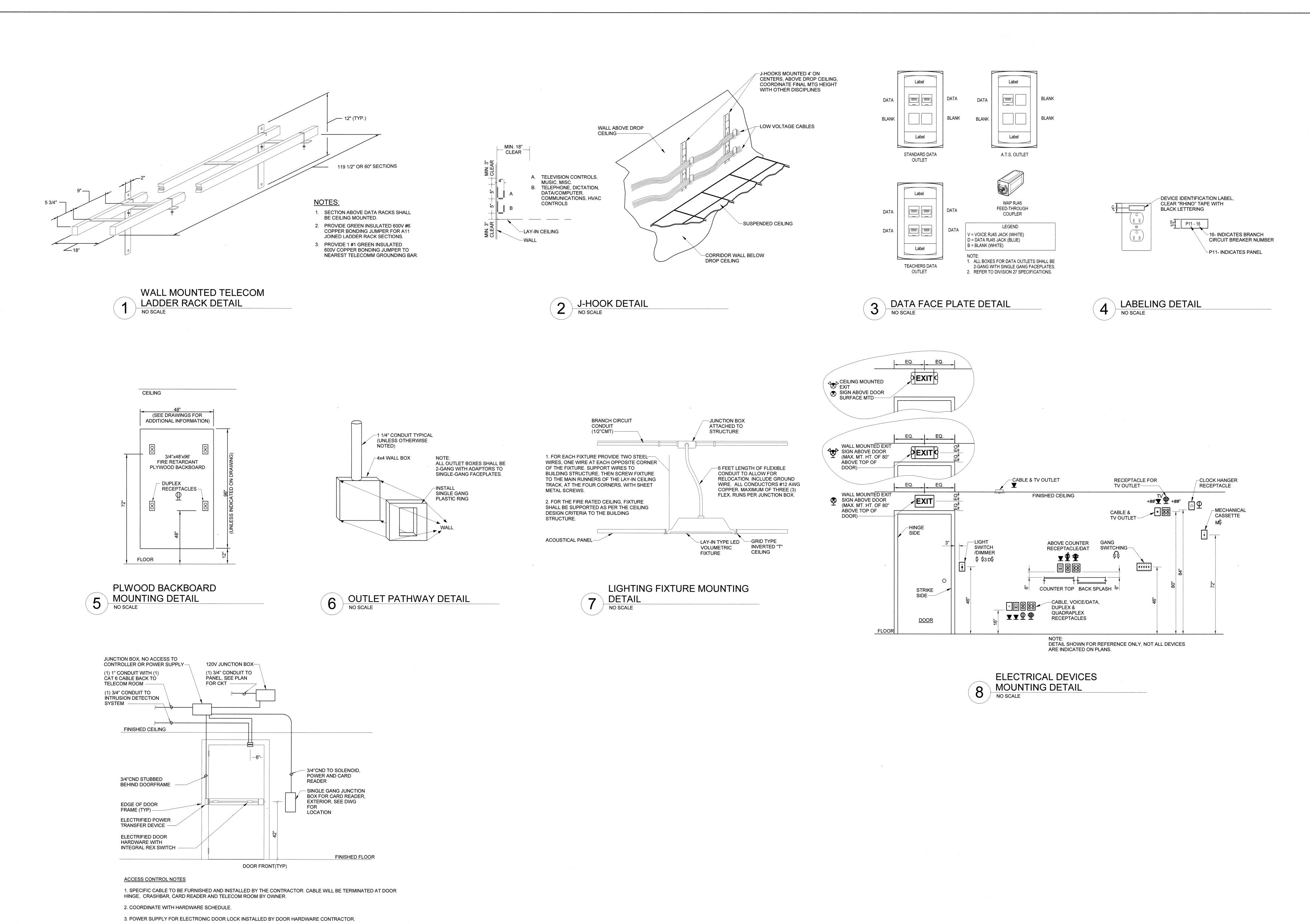
ROTC BUILDING

DPI SCHOOL #: 1167

ELECTRICAL DETAILS

12" = 1'-0" DRAWN BY: HGH | PROJ MGR: WAC

E501



4. SPLICES ARE NOT PERMITTED ON ANY CABLE OR WIRE.

SINGLE DOOR ACCESS

G R O U ARCHITECTURE PLANNING North Carolina 3333 Jaeckle Drive, Suite 120 Wilmington, NC 28403 910.341.7600 Maryland 312 West Main St, Suite 300 Salisbury, MD 21801 410.546.9100 <u>Delaware</u> 309 S Governors Ave Dover, DE 19904 302.734.7950 Rittenhouse Station 250 South Main Street, Suite 109 Newark, DE 19711 302.369.3700 www.beckermorgan.com ISSUED FOR CONSTRUCTION ISSUED: 08/27/2020 Engineers, PLLC 2246 Yaupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfengineers.com © Copyright 2020 CBHF Engineers, PLLC NC# P-0506 PROJECT TITLE SOUTH ROTC BUILDING SOUTHPORT NC 28461 DPI SCHOOL #: 1167

BRUNSWICK HIGH SCHOOL

280 COUGAR ROAD,

DSP #: 100

ISSUE BLOCK

PROJECT NO:

DATE:

SCALE:

**ELECTRICAL DETAILS** 

08/27/2020 ISSUED FOR

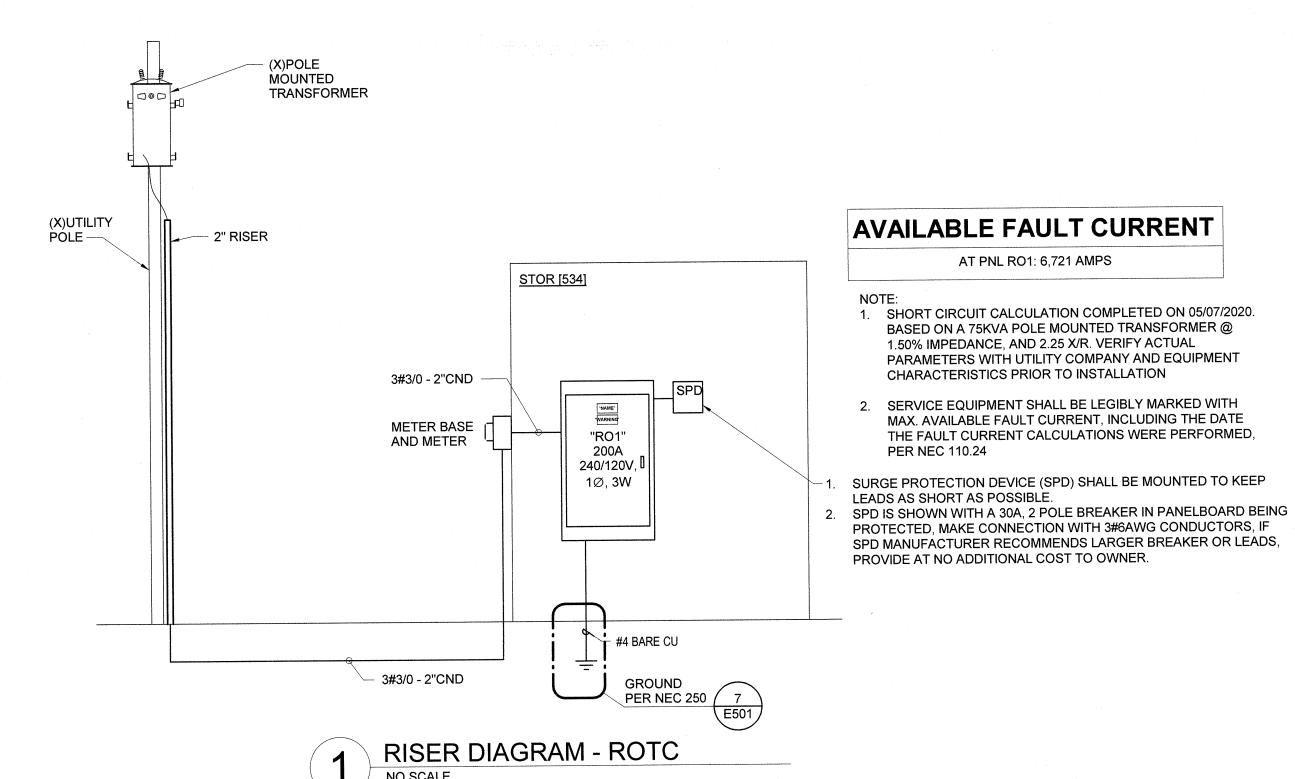
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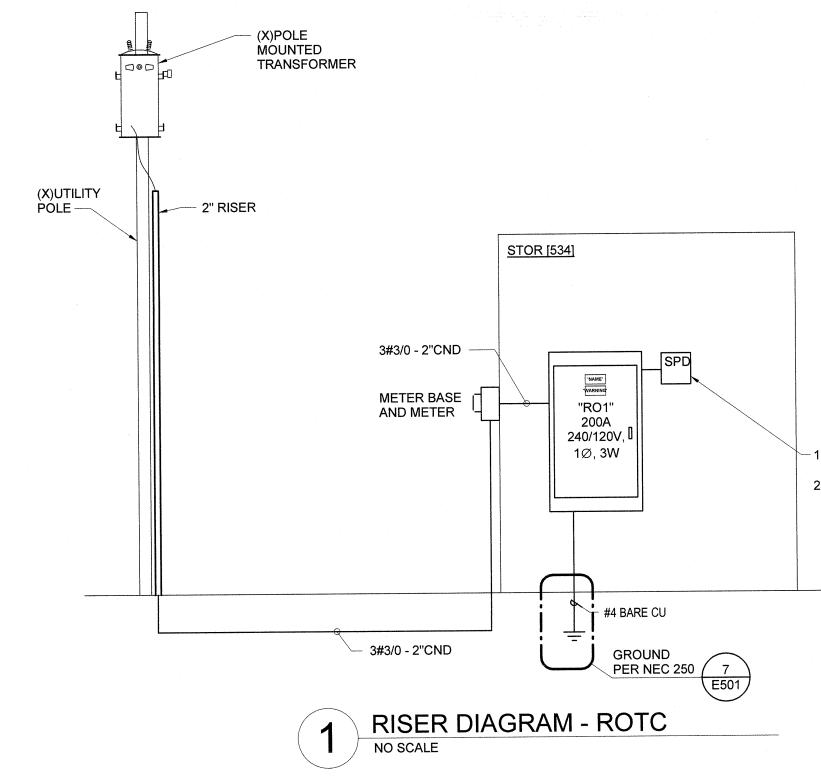
CONSTRUCTION

2019241.00

08/27/2020

12" = 1'-0"





#### 2018 APPENDIX B BUILDING CODE SUMMARY **ELECTRICAL SUMMARY**

**ELECTRICAL SYSTEMS AND EQUIPMENT** METHOD OF COMPLIANCE: PERFORMANCE **ENERGY CODE:** PERFORMANCE PRESCRIPTIVE ASHRAE 90.1: LIGHTING SCHEDULE (EACH FIXTURE TYPE) LAMP TYPE REQUIRED IN FIXTURE: SEE FIXTURE SCHEDULE NUMBER OF LAMPS IN FIXTURE: SEE FIXTURE SCHEDULE BALLAST TYPE USED IN THE FIXTURE: SEE FIXTURE SCHEDULE NUMBER OF BALLASTS IN FIXTURE: SEE FIXTURE SCHEDULE TOTAL WATTAGE PER FIXTURE: SEE FIXTURE SCHEDULE TOTAL INTERIOR WATTAGE: (WHOLE BUILDING OR SPACE BY SPACE) ALLOWED = 2,940 WATTS ADDITIONAL 10% = 2,646 WATTS SPECIFIED = 1,036 WATTS EXTERIOR ALLOWANCE: (TRADEABLE SURFACES) N/A WATTS ALLOWED = SPECIFIED = N/A WATTS (NON-TRADEABLE SURFACES:) N/A WATTS ALLOWED = N/A WATTS SPECIFIED = ADDITIONAL PRESCRIPTIVE COMPLIANCE 506.2.1 MORE EFFICIENT MECHANICAL EQUIPMENT 506.2.2 REDUCED LIGHTING POWER DENSITY

506.2.3 ENERGY RECOVERY VENTILATION SYSTEMS

506.2.5 ON-SITE SUPPLY OF RENEWABLE ENERGY 506.2.6 AUTOMATIC DAYLIGHTING CONTROL SYSTEMS

506.2.4 HIGHER EFFICIENCY SERVICE WATER HEATING

Notes:	Branch Panel: RO1  Location: STOR 534 Supply From:  Mounting: RECESSED Enclosure: NEMA1	Volts: 120/240 Phases: 1 Wires: 3						A.I.C. Rating: 10,000 AMPS SYMMETRICAL Mains Type: MAIN CB Mains Rating: 200.0 A MCB Rating: 200.0 A			
CKT	Circuit Description	Trip	Poles	A	В		Poles	Trip	Circuit Desc	ription	CK
1	PTAC02 D.S.	60.0 A	2	5472 VA 0 VA	5472 VA 0	VA	2	30.0 A	SPD		2
5	RCPT: DATA RACK IN STOR RCPT: DATA RACK IN STOR	20.0 A 20.0 A	1	180 VA 5472 V	180 VA 547	72 VA	2	60.0 A	PTAC01 D.S.		8
7		20.0 A	1	900 VA 360 VA			1	20.0 A	TARGET SYSTEM FLR BOX	ŒS	1
9	RCPTS: STOR, STOR, SHOOT RCPT: EWC (NOTE 2)	20.0 A	1	000 7,1 000 7,	1000	8 VA	1	20.0 A	LTS:CORR, SHOOT RANGE		1
11	RCPTS: TLT'S	20.0 A	1	360 VA 185 VA			1	20.0 A	LTS: TLTS, STOR		1
13	RCPTS: SHOOT RANGE, EXTERIOR	20.0 A	1	000 471 100 47		O VA	1		EMERGENCY COMMUNICA	TION SYSTEM	1
15 17	RCPTS: SHOOT RANGE, EXTERIOR	20.0 A	1	360 VA 180 VA			1	ļ.	EMERGENCY COMMUNICA		1
17	HAND DRYER	20.0 A	1	300 7.1	1380 VA 100	00 VA	1		RANGE WARNING SYSTEM		2
21	HAND DRYER	20.0 A	1	1380 VA 600 VA			1	20.0 A	DOOR POWER		2
23	RCPTS: FOR MONITORS IN SHOOT RANGE	20.0 A	1	1000 111 111	******	VA	1	20.0 A	SPARE		2
25	SPACE			0 VA 0 VA					SPACE	,	2
27	SPACE				0 VA 0	VA			SPACE		2
29	SPACE			AVO AVO					SPACE		3
			tal Load tal Amps		15018 V						
Legend: Load Cl	: assification	Connec	tal Amps ted Load	27.8 A	125.2 A	stimated	d Demar	nd	Panel	Totals	
HVAC	IVAC		21888 VA				888 VA		Total Conn. Load:	30345 \/\	
Power			3867 VA				367 VA 403 VA		Total Conn. Load: 30345 VA  Total Est. Demand: 30367 VA		
RCPT			3403 VA								
	ighting TS		1342 VA		100.00%		1342 VA 118 VA		Total Conn.: 126.4 A  Total Est. Demand: 126.5 A		
Lighting		94	VA	125.00	)%	110	) VA		Total Est. Demand.	120.5 /	

LOAD SUMMARY

LARGEST MOTOR APPROX. AMPS

SUB-TOTAL HVAC DEMAND

SUB-TOTAL HVAC DEMAND

SUB-TOTAL EQUIPMENT DEMAND

SUB-TOTAL EQUIPMENT DEMAND

LIGHTS (INTERIOR, BASED ON NEC 220.12)

TOTAL DEMAND FOR RECEPTACLE/POWER PANELS

TOTAL DEMAND FOR RECEPTACLE/POWER PANELS

ADD FOR LARGEST MOTOR

TOTAL EQUIPMENT DEMAND

LARGEST MOTOR APPROX. AMPS x .25

14 AMPS

21,888 VA

10 VA 21,898 VA

91 AMPS

400 VA

400 VA

1,100 VA

1,900 VA

6,000 VA

600 VA

1,200 VA

7,800 VA

9,750 VA

4,680 VA

4,680 VA

39,074 VA

36,278 VA

20 AMPS

163 AMPS

41 AMPS

8 AMPS

4 AMPS

11 AMPS

4 AMPS

VOLTAGE

PTAC (QTY 2)

PVO'S (QTY 2)

**EQUIPMENT** 

SECURITY

DATA RACK

LIGHTING

LIGHTS (EXTERIOR)

TOTAL LIGHTING LOAD

LIGHTING LOAD x 1.25

RECEPTACLES

RECEPTACLES

TOTAL DEMAND FOR LIGHTING

TOTAL DEMAND BUILDING AMPS

TOTAL DEMAND BUILDING AMPS

TOTAL BUILDING CONNECTED LOAD



ARCHITECTURE

PLANNING North Carolina 3333 Jaeckle Drive, Suite 120 Wilmington, NC 28403 910.341.7600 **Maryland** 

AT PNL RO1: 6,721 AMPS

BASED ON A 75KVA POLE MOUNTED TRANSFORMER @

1.50% IMPEDANCE, AND 2.25 X/R. VERIFY ACTUAL PARAMETERS WITH UTILITY COMPANY AND EQUIPMENT

2. SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED WITH

MAX. AVAILABLE FAULT CURRENT, INCLUDING THE DATE

THE FAULT CURRENT CALCULATIONS WERE PERFORMED,

CHARACTERISTICS PRIOR TO INSTALLATION

PER NEC 110.24

312 West Main St, Suite 300 Salisbury, MD 21801 410.546.9100 <u>Delaware</u> 309 S Governors Ave Dover, DE 19904

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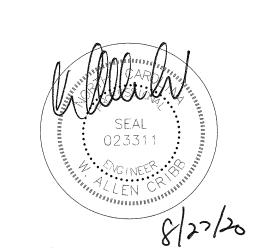
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Engineers, PLLC

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SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING

280 COUGAR ROAD, SOUTHPORT NC 28461

PROJECT TITLE

DSP #: 100 DPI SCHOOL #: 1167

ELECTRICAL RISER DIAGRAM AND SCHEDULES - ROTC

08/27/2020 ISSUED FOR CONSTRUCTION PROJECT NO: 08/27/2020

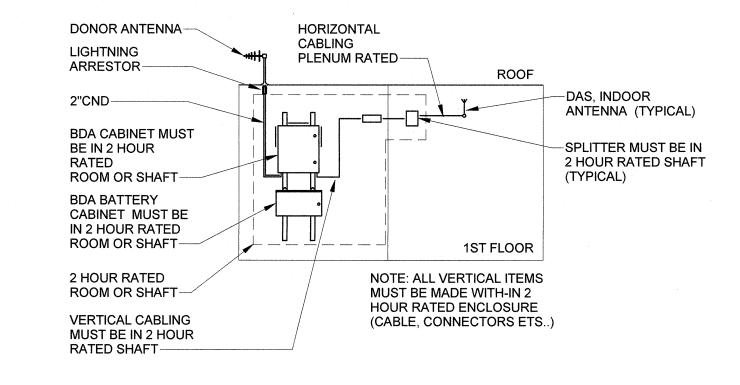
12" = 1'-0" DRAWN BY: HGH PROJ MGR: WAC

#### **BDA INSTALLATION NOTES**

- 1. ALL WIRING SHALL BE IN ACCORDANCE WITH LOCAL AND NATIONAL CODES, INCLUDING NFPA 72 (2013 EDITION) AND NEC.
- 2. A BDA SYSTEM IS AN EMERGENCY RESPONDER RADIO ENHANCED SYSTEM IN COMPLIANCE WITH THE NC FIRE CODE, SECTION 510.
- 3. WHERE REQUIRED, WIRING SHALL BE RUN IN MINIMUM 3/4" CONDUIT. SURFACE METAL RACEWAY IS ACCEPTABLE.
- 4. PLENUM RATED COAXIAL CABLE WITHOUT CONDUIT, MAY BE ACCEPTABLE FOR HORIZONTAL RUNS IN AREAS OTHER THAN WHERE WATERPROOF DEVICES ARE REQUIRED. HOWEVER, CONDUIT SHALL BE USED TO PENETRATIONS IN RATED WALLS SHALL BE MADE IN CONDUIT PER APPROPRIATE U.L. SYSTEM.
- 5. MANUFACTURER'S 1/2" COAXIAL CABLE SHALL BE USED FOR THE BDA SYSTEM, DUE TO ITS LOW OHM LOSS PROPERTIES.
- 6. THE DIRECTIONAL DONOR ANTENNA ON THE ROOF SHALL BE TIED INTO THE BUILDING GROUNDING SYSTEM.
- 7. ALL CABLES USED FOR BDA SHALL BE GROUNDED TO THE BUILDING GROUNDING SYSTEM.
- 8. THE CABLE BETWEEN THE DONOR ANTENNA AND THE AMPLIFIER MAY BE RUN TO THE ROOF, BUT IT MUST BE IN CONDUIT.
- 9. THE LIGHTING ARRESTOR SHALL BE INSTALLED AS SHOWN ON THE TYPICAL ANTENNA INSTALLATION DETAIL. THE ARRESTOR PART IS THE "COAXIAL SURGE PROTECTOR," BDA-LA-P8AX-6G.
- 10. THE CABLE FROM THE DONOR ANTENNA TO THE AMPLIFIER SHALL BE SEPARATED FROM THE RISER CABLE FROM THE BDA TO THE INDOOR ANTENNA, THIS REQUIREMENT APPLIES TO THE RISER.
   IF BOTH CABLES ARE NOT IN CONDUIT, THE MINIMUM SEPARATION SHALL BE SIX (6) FEET.
   IF AT LEAST ONE CABLE IS IN CONDUIT, THE MINIMUM SEPARATION SHALL BE THREE (3) FEET.
   THESE CABLES ARE ALLOWED TO CROSS A MAXIMUM OF ONE TIME.
- 11. THE BDA AMPLIFIER ENCLOSURE SHALL BE INSTALLED ON METAL STRUT CHANNEL (TO ALLOW AIRFLOW). SEE INSTALLATION DIAGRAM.
- 12. THE BDA AMPLIFIER AND BATTERY ENCLOSURES SHALL BE GROUNDED TO THE BUILDING GROUNDING SYSTEM UTILIZING A SORT, DIRECT PATH WITH THE MINIMUM NUMBER OF BENDS (GROUNDING CABLES SHALL NOT REVERSE DIRECTION WHEN CONNECTING TO TERMINATION POINTS.)
- 13. A.C. WIRES SHALL BE RUN IN SEPARATE CONDUIT FROM D.C. WIRING, SUCH THAT A SYSTEM ALARM DOES NOT DE-ENERGIZE THE CONTROL PANEL, MINIMUM SIZE WIRE TO BE AWG 12 THHN. PROTECTION AGAINST VOLTAGE TRANSIENTS AND SURGES SHALL BE INSTALLED AT THE ELECTRICAL PANELBOARD AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

   PRIMARY AC POWER TO THE BDA AMPLIFIER SHALL BE DEDICATED CIRCUIT.

   REDUNDANT AC POWER TO THE BDA AMPLIFIER SHALL BE ANY 120VAC CIRCUIT. (PROVIDING A SECOND (REDUNDANT) POWER CIRCUIT IS PER THE MANUFACTURERS RECOMMENDED
- CIRCUIT DISCONNECTING MEANS SHALL BE PERMANENTLY IDENTIFIED BY THE SYSTEM TYPE: i.e. "EMERGENCY COMMUNICATION SYSTEM" (ECS)
- 14. CONDUIT FOR THE DONOR (ROOF) ANTENNA AND FOR THE RISER COAXIAL CABLE SHALL BE PARALLEL TO THE DBA ENCLOSURE. THOSE CONDUIT SHALL TERMINATE WITH A BUSHING WITHIN TWO (2) FEET OF THE BOTTOM OF THE ENCLOSURE. BFPE TECHNICIANS SHALL MAKE THE CONNECTION PROVIDED, PRE-WIRED 1/4" FLEX CABLE FROM THE BDA.
- 15. INSTALLATION REQUIREMENTS TO COMPLY WITH NFPA 72, SECTION 24.3.6.8:
   THE RISER COAXIAL CABLE SHALL BE INSTALLED IN A 2 HOUR RATED ENCLOSURE OR SHAFT. (2 HOUR RATED COAXIAL CABLE IS NOT AVAILABLE AT THE CORRECT LOW OHM LOSS RATING.)
   THE SPLITTER CONNECTIONS BETWEEN THE RISER CABLE AND THE HORIZONTAL FEEDER CABLE SHALL ALSO BE MADE WITH A 2 HOUR RATED ENCLOSURE. THE FEEDER CABLE PASSAGE THROUGH THAT 2 HOUR ENCLOSURE SHALL BE FIRE STOPPED WITH THE APPROPRIATE U.L. SYSTEM.
   ALL FEEDER CABLES SHALL BE PLENUM RATED AT A MINIMUM. (FEEDER CABLES ARE THE HORIZONTAL RUNS TO THE DAS.)
- 16. WHEN SPLITTER CONNECTIONS ARE IN CONDUIT, PROVIDE A MINIMUM 12 INCH x 12 INCH JUNCTION COX TO MAKE THE CONNECTION.
- 17. THE BDA ANNUNCIATOR SHALL BE INSTALLED NEAR THE FIRE ALARM CONTROL PANELPER THE INSTALLATION NOTES ON THIS SHEET.
- 18. ALL FIELD WIRING SHALL BE CHECKED FOR SHORTS, OPENS, AND GROUNDS BEFORE MACKING CONNECTIONS.
- 19. SEE MANUFACTURERS SHEETS FOR MOUNTING DETAILS.
- 20. ALL JUNCTION BOX COVERS SHALL BE RED IN COLOR. THOSE IN FINISHED ARES ARE PERMITTED TO MATCH THE FINISH COLOR.
- 21. ALL PENETRATIONS THROUGH RATED WALLS SHALL BE SEALED USING APPROPRIATE U.L. SYSTEM.



3 BDA RISER DIAGRA

# BDA PROJECT NOTES IN TESTING AND INSTALLATION SEQUENCING

- A PRELIMINARY SITE SURVEY IS NEEDED TO DETERMINE THE EXISTING dBm SIGNAL STRENGTH.
- 2. A MORE DETAILED SURVEY WILL MAP THE BUILDING ONCE THE BUILDING IS SUBSTANTIALLY COMPLETED.
- THE NEXT SIGNAL STRENGTH SURVEY WILL COMPLY WITH THE 2018 NCFC, 510.5.3 AND NFPA 72, 24.5.2.1 (2013 EDITION)
   EACH FLOOR SHALL BE DIVIDED INTO 20 (APPROXIMATELY) EQUAL TEST AREAS, THE WORST CASE SIGNAL STRENGTH READING SHALL BE RECORDED. PROVIDE 90 PERCENT FLOOR AREA RADIO COVERAGE.

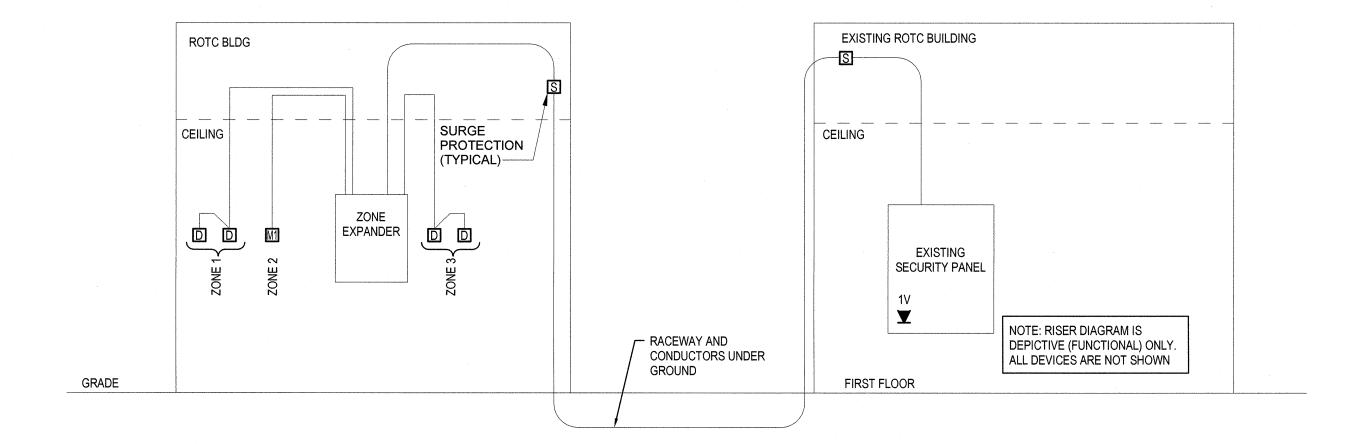
- CRITICAL AREAS, IF PRESENT, SHALL BE SURVEYED SEPARATE FROM THE EQUAL TEST AREAS;
--- EXIT PASSAGEWAYS

- --- AHJ MAY REQUIRE ADDITIONAL LOCATIONS.
  -- CRITICAL AREAS SHALL BE PROVIDED WITH 99 PERCENT RADIO COVERAGE.
- 4. THE MINIMUM SIGNAL STRENGTH OF -95 dBm IS REQUIRED.

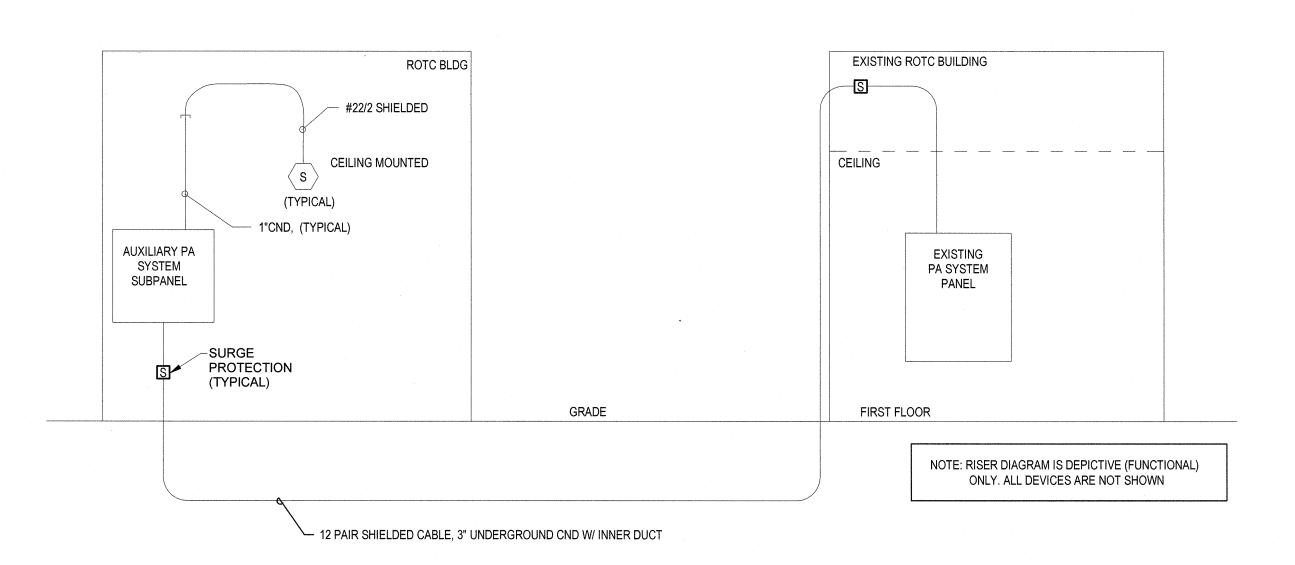
#### PROJECT SPECIFIC REQUIREMENTS

EMERGENCY RESPONDERS RADIO AMPLIFICATION SYSTEM:

- a. IN BASE CONTRACT, CONTRACTOR SHOULD INCLUDE INITIAL TESTING/SURVEY OF SIGNAL STRENGTH AT ENVELOPE COMPLETION, FINAL TESTING/SURVEY PRIOR TO SUBSTANTIAL COMPLETION OF BUILDING AND ALL REQUIRED SHOP DRAWINGS AND DOCUMENTATION TO LOCAL AHJ TO CONFIRM BUILDING MEETS RADIO SIGNAL STANDARDS. TESTING SURVEYS SHOULD COMPLY 2018 NCFC, 510.5.3 AND NFPA 72,224.5.2.1
- b. IN BASE CONTRACT, CONTRACTOR SHOULD INCLUDE ALL CONDUIT/RACEWAYS (INCLUDING CONDUIT FROM BDA LOCATION ON PLAN TO MAIN FACP ANNUNCIATOR PANEL LOCATION, JUNCTION BOXES, ETC. SHOWN ON CONTRACT DOCUMENTS FOR THE POTENTIAL BDA SYSTEM. SHOULD BDA SYSTEM NOT BE REQUIRED, ALL RACEWAYS AND BOXES SHALL BE LABELED, CAPPED AND LEFT IN PLACE.
- c. CM@RISK WILL CARRY ALLOWANCE FOR BDA SYSTEM(S) SHOULD TESTING INDICATE THE NEED FOR EMERGENCY RESPONDER COMMUNICATION AMPLIFIER. SHOULD BDA SYSTEM BE REQUIRED ELECTRICAL CONTRACTOR SHALL PROVIDE FORMAL PROPOSAL FOR INSTALLATION OF COMPLETE BDA SYSTEM (AS SHOWN ON PLANS AND NOTES).



1 SECURITY RISER DIAGRAM1
NO SCALE



2 SPEAKER RISER DIAGRAM1
NO SCALE



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Delaware

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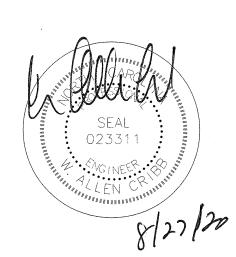
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Wilmington, NC 28401
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Fax: 910.791.5266

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SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING

PROJECT TITLE

280 COUGAR ROAD, SOUTHPORT NC 28461

DSP # : 100 DPI SCHOOL # : 1167

ELECTRICAL
SYSTEMS RISER
DIAGRAMS

JE BLOCK

08/27/2020 ISSUED FOR CONSTRUCTION

k Date Description

 PROJECT NO:
 2019241.00

 DATE:
 08/27/2020

 SCALE:
 12" = 1'-0"

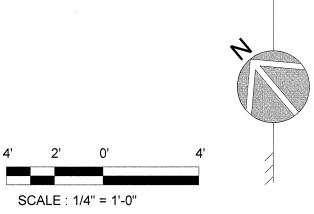
 DRAWN BY: HGH
 PROJ MGR: WAC

E602

15CD 

ROTC FLOOR PLAN - FIRE
ALARM

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





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FOR CONSTRUCTION

ISSUED: 08/27/2020

Engineers, PLLC

2246 Yaupon Drive

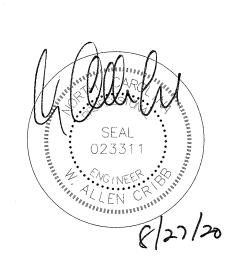
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NC# P-0506



SOUTH BRUNSWICK HIGH SCHOOL ROTC BUILDING

280 COUGAR ROAD, SOUTHPORT NC 28461

DSP # : 100 DPI SCHOOL # : 1167

ROTC FLOOR PLAN -

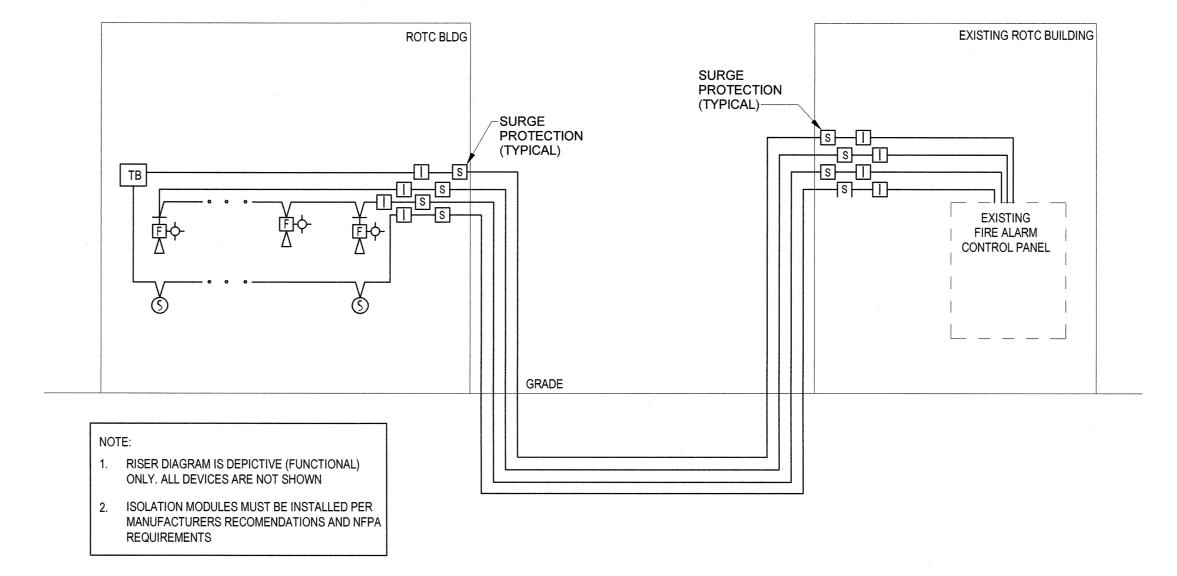
ISSUE BLOCK

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

DRAWN BY: HGH PROJ MGR: WAC

#### MANUAL FIRE ALARM SYSTEM NOTES

- 1. AS A MINIMUM THE FIRE ALARM SYSTEM SHALL INCLUDE DETECTORS, PULL STATIONS, HORN/STROBES AND STROBES WITH FIRE RATED CABLE. THE FIRE ALARM SYSTEM SHALL MEET NFPA REQUIREMENTS, THE NATIONAL ELECTRICAL CODE, THE STATE CODES, AND THE LOCAL BUILDING CODES.
- 2. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CABLE, MATERIALS AND EQUIPMENT AS SHOWN ON THE DRAWINGS/OR HEREIN SPECIFIED. ALL SYSTEM COMPONENTS SPECIFIED HEREIN, AS WELL AS THEIR INSTALLATION, SHALL COMPLY WITH APPLICABLE STANDARDS OF THE NATIONAL ELECTRICAL CODE, NATIONAL FIRE PROTECTION ASSOCIATION, AND LOCAL CODES HAVING AUTHORITY. ALL EQUIPMENT SHALL BE UL LISTED FOR FIRE ALARM SYSTEM USE.
- 3. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHALL BE INSTALLED AND CONNECTED UNDER THE DIRECTION AND SUPERVISION OF A MANUFACTURER'S REPRESENTATIVE. UPON COMPLETION OF INSTALLATION, THE MANUFACTURER'S REPRESENTATIVE SHALL PERFORM ALL OPERATIONAL TESTS AND ADJUSTMENTS AND CERTIFY IN WRITING THAT THE SYSTEM IS PROPERLY INSTALLED AND FUNCTIONS AS SPECIFIED.
- 4. ALL WIRING SHALL BE SYSTEM OR UL LISTED FIRE RATED CABLE AND COLOR CODED TO ALLOW EASE OF IDENTIFICATION OF THE DIFFERENT CIRCUITRY REQUIRED FOR THE SYSTEM. NO CIRCUIT SHALL CHANGE COLOR AT ANY POINT END TO END.
- 5. THE. MANUFACTURER'S AUTHORIZED REPRESENTATIVE SHALL PROVIDE SUPERVISION OF FINAL SYSTEM PANEL CONNECTIONS, PERFORM A COMPLETE FUNCTIONAL TEST OF THE SYSTEM, AND A WRITTEN REPORT TO THE CONTRACTOR ATTESTING THE PROPER OPERATION OF THE COMPLETED SYSTEM.
- 6. ALL DEVICES SHALL BE COMPATIBLE WITH THE EXISTING FIRE ALARM SYSTEM.
- 7. ALL WIRING SHALL BE INSTALLED IN COMPLIANCE WITH N.E.C., NFPA 72, ALL STATE AND LOCAL REQUIREMENTS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 8. SLEEVE AND SEAL ALL PENETRATIONS THROUGH FIRE WALLS.
- 9. WIRING SHALL BE A MINIMUM OF NO. 14 AWG UNLESS OTHERWISE NOTED.
- 10. THE SMOKE DUCT DETECTOR SHALL BE FURNISHED AND TERMINATED BY THE FIRE ALARM CONTRACTOR, INSTALLED BY THE MECHANICAL CONTRACTOR.
- 11. SHOP DRAWINGS MUST BE SUBMITTED BY THE FIRE ALARM CONTRACTOR COMPLYING WITH THE FIRE ALARM PLAN REVIEW REQUIREMENTS POLICY - THESE DRAWINGS DO NOT CONSTITUTE APPROVAL AND MAY CHANGE AFTER A FULL REVIEW BY THE FIRE DEPT. HAVING JURISDICTION. A SEPARATE PERMIT MUST BE OBTAINED PRIOR TO INSTALLATION.
- 12. IN CORRIDORS WHERE MORE THAN TWO VISIBLE NOTIFICATION APPLIANCES ARE IN ANY FIELD OF VIEW, THEY SHALL FLASH IN SYNCHRONIZATION.
- 13. FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR MODULES TO SHUTDOWN HVAC EQUIPMENT DURING ALARM CONDITION.
- 14. ALL FIRE ALARM WORK AND DEVICES SHALL BE INSTALLED AND TERMINATED BY A NICET LEVEL 2 FIRE ALARM TECHNICIAN.
- 15. IN THE EVENT OF AN ALARM THERE SHALL BE A "GLOBAL" SHUT DOWN OF ALL AIR HANDLING EQUIPMENT.



#### FIRE ALARM SYMBOL LEGEND (X)FACP EXISTING FIRE ALARM CONTROL PANEL EXISTING FIRE ALARM REMOTE ANNUNCIATOR FIRE ALARM HORN/STROBE DEVICE, 80" AFF, "15cd" INDICATES CANDELA RATING

SMOKE DETECTOR, CEILING MOUNTED S EXISTING DUCT SMOKE DETECTOR FIRE ALARM MANUAL STATION, 48" AFF F.A. INDIVIDUAL ADDRESSABLE ISOLATION MODULE SURGE PROTECTION MODULE (X) INDICATES EXISTING EQUIPMENT 1 KEYED NOTE (SEE SCHEDULE)

6 Fire Alarm Symbols List

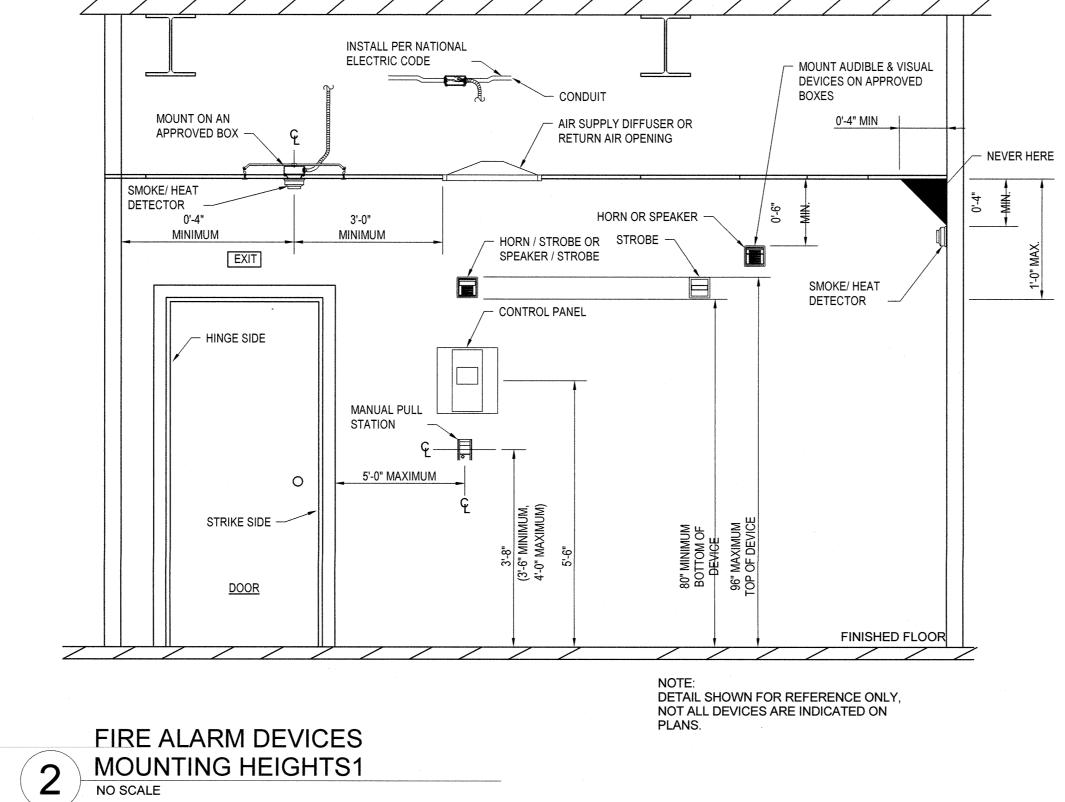
FIRE ALARM RISER1

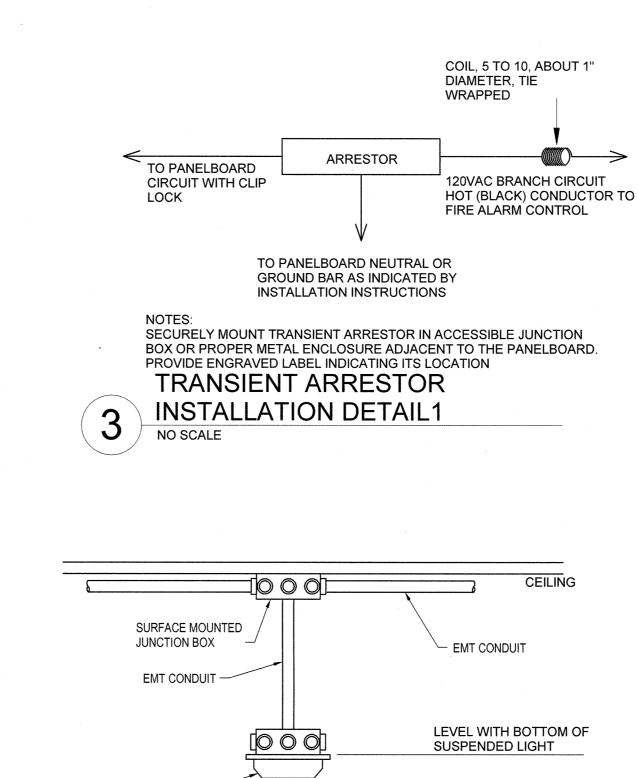
#### FIRE ALARM SYSTEM CONTROL MATRIX SYSTEM INPUTS SMOKE DETECTORS MANUAL PULL STATIONS XXX SYSTEM TROUBLE CONDITION | X | X | LOSS OF FACU AC POWER (NOTE 1) X XGROUND FAULT |X|XSHORT CIRCUIT X XX X OPEN CIRCUIT XX 1. ONLY AFTER LOSS OF POWER FOR > 8 HOURS.

2. REFER TO FIRE PROTECTION DRAWINGS FOR SPRINKLER DEVICE LOCATIONS.

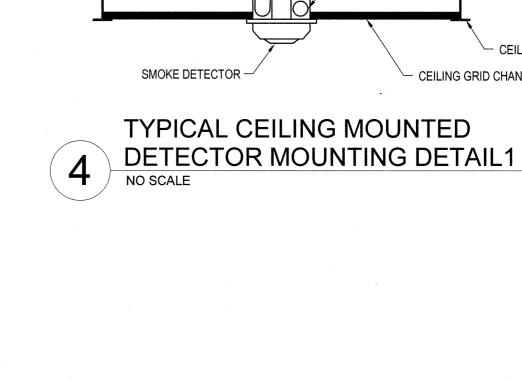
QUANTITIES AND LOCATIONS.

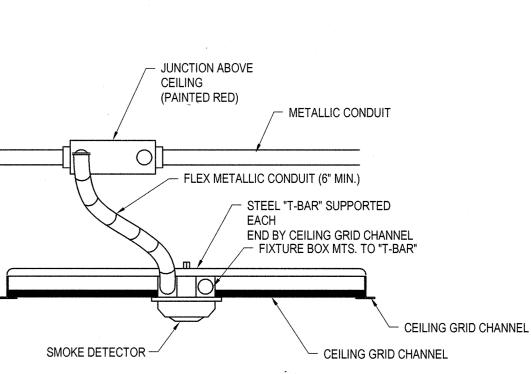
4. TYPICAL, QUANTITIES OF DEVICES ARE NOT SHOWN, SEE FIRE PROTECTION DRAWINGS FOR





TYPICAL SYSPENDED DEVICE





**ROTC BUILDING** 

280 COUGAR ROAD, **SOUTHPORT NC 28461** 

DSP#: 100 DPI SCHOOL #: 1167

FIRE ALARM RISER DIAGRAM, LEGEND AND NOTES

DRAWN BY: HGH | PROJ MGR: WAC

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