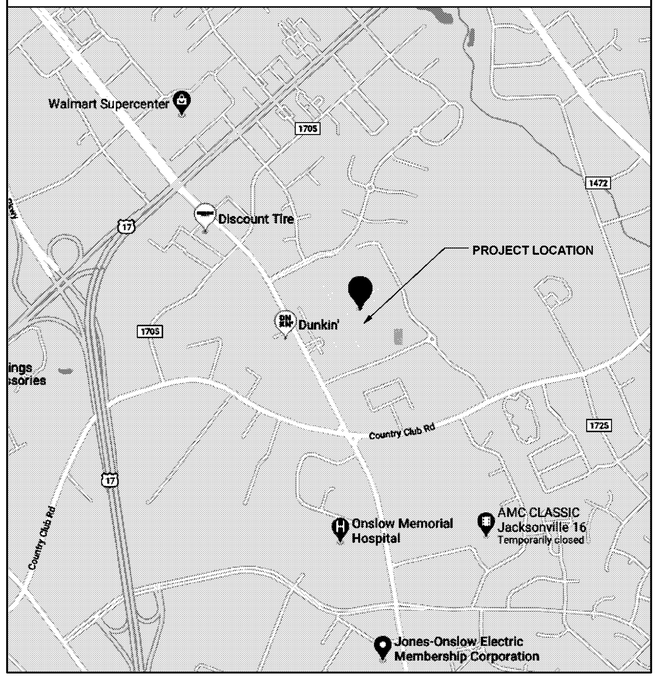
Coastal Carolina Community College
Learning Resources Center - First Floor Renovation

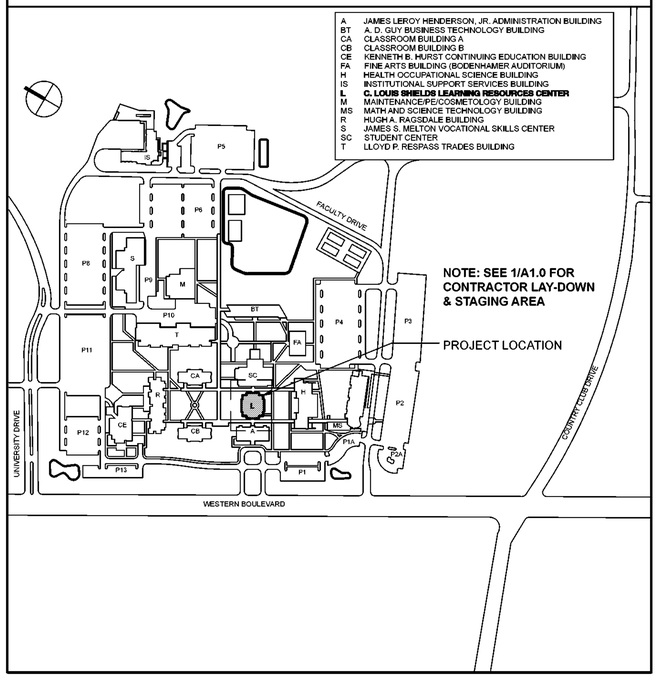
444 Western Boulevard - Jacksonville, North Carolina 28546

Bid Documents - 11-25-2024
SCO ID# 23-26060-01A

LOCATION MAP



CAMPUS MAP



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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street Wilmington, NC 28401
phone 910.762.2621
www.bmharch.com

Civil:
Tripp Engineering
419 Chestnut Street
Wilmington, NC 28401
(910) 763-5100

Structural:
Woods Engineering
254 North Front Street, Suite 201
Wilmington, NC 28401
(910) 343-8007

Plumbing, Mechanical, Electrical, Fire Alarm & Fire Protection:
CBHF Engineers, PLLC.
2246 Yaupon Drive
Wilmington, NC 28401
(910) 791-4000

BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, PC — REGISTERED ARCHITECTURAL CORPORATION — CERT. NO. 50424 — NORTH CAROLINA — WILMINGTON, N. C.

WILLIAM DANIEL HEMINGWAY — REGISTERED ARCHITECT — 13058 — NORTH CAROLINA — WILMINGTON, NC
11-25-2024

Coastal Carolina Community College
Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: DP
Date: 11-25-2024	Reviewed By: DH
Project ID	
Sheet Title: **COVER SHEET**	
Sheet No.: G1.0	

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)

(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Learning Resources Center - First Floor Renovation

Address: 444 Western Boulevard, Jacksonville, North Carolina Zip code: 28546

Owner/Authorized Agent: Carol Lurz Phone #: 910-938-6343 E-mail: lurzc@coastalcarolina.edu

Owned by: ☒ City / County ☐ Private ☐ State

Code Enforcement Jurisdiction: ☒ City Jacksonville, NC ☐ County ☐ State

CONTACT: W. Daniel Hill, AIA - Bowman Murray Hemingway Architects

DESIGNER	FIRM	NAME	LICENSE #	TELE. #	E-MAIL
Architectural	Bowman Murray Hemingway	W. Daniel Hill	13058	910-762-2621	hill@bmharch.com
Civil	Tripp Engineering	Phil Tripp	17374	910-763-5100	ptripp@trippengineering.com
Electrical	CBHF Engineers	Jason Famiglietti	35230	910-791-4000	jfam@cbhfengineers.com
Fire Alarm	CBHF Engineers	Jason Famiglietti	35230	910-791-4000	jfam@cbhfengineers.com
Plumbing	CBHF Engineers	David Hahn	23551	910-791-4000	dhahn@cbhfengineers.com
Mechanical	CBHF Engineers	David Hahn	23551	910-791-4000	dhahn@cbhfengineers.com
Sprinkler-Standpipe	CBHF Engineers	David Hahn	23551	910-791-4000	dhahn@cbhfengineers.com
Structural	Woods Engineering PA	Adam Sisk	41563	910-343-8007	adam@woodseng.com
Retaining Walls > 5' High					
Other					

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

2018 NC BUILDING CODE: ☐ New Construction ☐ Shell/Core ☐ 1st Interior Completions ☐ Addtion ☐ Phased Construction - Shell Core

2018 NC BUILDING CODE: EXISTING: ☐ Prescriptive ☐ Alteration Level I ☐ Historic Property ☐ Repair ☐ Alteration Level II ☐ Change of Use ☐ Chapter 14 ☒ Alteration Level III

CONSTRUCTED: (date) 1975 **CURRENT OCCUPANCY(S) (Ch.3) :** Assembly (A-3)

RENOVATED: (date) 2019 **PROPOSED OCCUPANCY(S) (Ch.3) :** Assembly (A-3) (no change)

RISK CATEGORY (Table 1604.5) Current: ☐ I ☐ II ☒ III ☐ IV Proposed: ☐ I ☐ II ☒ III ☐ IV

BASIC BUILDING DATA:

Construction Type: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A (check all that apply) ☐ I-B ☒ II-B ☐ III-B ☐ V-B

Sprinklers: ☐ No ☐ Partial ☒ Yes* ☒ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D

Standpipes: ☒ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry

Fire District: ☒ No ☐ Yes **Flood Hazard Area:** ☒ No ☐ Yes

Special Inspections Required: ☐ No ☒ Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

★ NOTE : Fire line, sprinkler riser, and second floor building sprinkler systems were added in 2019 renovation. Sprinkler protection of first floor will be completed in this project

Gross Building Area Table

FLOOR	EXISTING (SQ. FT.)	NEW (SQ. FT.)	SUB-TOTAL	ALTERATION AREA
2nd Floor	10,445 S.F.			500 S.F.
1st Floor	11,150 S.F.	1,845 S.F. (covered canopy areas)		12,995 S.F.
TOTAL	21,595 S.F.	1,845 S.F.	23,440 S.F.	13,495 S.F.

ALLOWABLE AREA

Primary Occupancy Classification(s):

Assembly ☐ A-1 ☐ A-2 ☒ A-3 ☐ A-4 ☐ A-5

Business ☒

Educational ☐

Factory ☐ F-1 Moderate ☐ F-2 Low

Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM

Institutional ☐ I-1 Condition ☐ 1 ☐ 2

☐ I-2 Condition ☐ 1 ☐ 2

☐ I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

☐ I-4 Condition

Mercantile ☐ I-1 Condition

Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4

Storage ☐ S-1 Moderate ☐ S-2 Low ☐ High-piled ☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage

Utility and Miscellaneous ☐

Accessory Occupancy Classification(s): N / A

Incidental Uses (Table 509): N / A

Special Uses (Chapter 4 - List Code Sections): N / A

Special Provisions: (Chapter 5 - List Code Sections): N / A

Mixed Occupancy: ☐ No ☒ Yes Separation: ____ Hr. Exception: ____

☒ **Non-Separated Use** (508.3) - The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

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

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

_____ + _____ + _____ = _____ ≤1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 AREA [4]	(C) [1,5] AREA FOR FRONTAGE INCREASE	(D) [2,3] AREA PER STORY OR UNLIMITED
1st Floor	Library Reading Room + Offices	12,995 S.F.	28,500	17.7% = 1,681	30,181
2nd Floor	Lib. stacks, Read. rm., + Offices	10,445 S.F.	28,500	17.7% = 1,681	30,181

[1] Frontage area increases from Section 506.3 are computed thus:

a. Perimeter which fronts a public way or open space having 20 feet minimum width = 205' (F)

b. Total Building Perimeter = 480' (P)

c. Ratio (F/P) = .427 (F/P)

d. W = Minimum width of public way = 30' (W)

e. Percent of frontage increase : If = [F/P - 0.25] x W/30 = .427 - 0.25 x 1 = 17.7 (%)

Allowable Area with frontage increase:

Aa = At + (NS x It) = 28,500 + 9,500 (.177) = 30,181

[2] Unlimited area applicable under conditions of Section 507.

[3] Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).

[4] The maximum area of open parking garages must comply with Table 406.5.4.

[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE 1
BUILDING HEIGHT IN FEET (TABLE 504.3) [2]	75'	31'	
BUILDING HEIGHT IN STORIES (TABLE 504.4) [3]	3	2	

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

[2] The maximum height of air traffic control towers must comply with table 412.3.1.

[3] The maximum height of open parking garages must comply with table 406.5.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ ____ REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural frame, including columns, girders, trusses	N/A	0-hr	0-hr				
Bearing walls		0-hr	0-hr				
Exterior							
North	N/A						
East	N/A						
West	N/A						
South	N/A						
Interior		0-hr	0-hr				
Nonbearing walls and partitions			Table 602				
Exterior Walls							
North	< 20'	0-hr	0-hr				
East	30'+	0-hr	0-hr				
West	30'+	0-hr	0-hr				
South	< 20'	0-hr	0-hr				
Interior Walls and partitions		0-hr	0-hr				
Floor Construction Including supporting beams and joists		0-hr	0-hr				
Floor Ceiling Assembly		0-hr	0-hr				
Columns Supporting Floors		0-hr	0-hr				
Roof Construction Including supporting beams & joists		0-hr	0-hr				
Roof ceiling assembly		0-hr	0-hr				
Columns supporting roof		0-hr	0-hr				
Shaft Enclos.- Exit		0-hr	1-hr (Existing - Section 1023-exp. 4)				
Shaft Enclos.- Other		1-hr	1-hr (Existing - Section 713.4)				
Corridor Separation		0-hr	0-hr (Table 1020.1)				
Occupancy/ Fire Barrier Separation	N/A						
Party/Fire Wall Separation	N/A						
Smoke Barrier Separation	N/A						
Tenant/ Dwelling unit/ Sleeping unit separation	N/A						
Incidental Use Separation	N/A						

*Indicate section number permitting reduction

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 (%)
NORTH: 15-20'	Unprotected/sprinklered	75%	10.4%
SOUTH: 15-20'	Unprotected/sprinklered	75%	10.4%
EAST: 30'+	Unprotected/sprinklered	NO LIMIT	16%
WEST: 30'+	Unprotected/sprinklered	NO LIMIT	20%

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 #: 1/G1.2 2/G1.2

☒ Fire and / or smoke rated wall locations (Chapter 7)

☐ Assumed and real property line locations (if not on the site plan)

☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)

☒ Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)

☒ Occupant loads for each area.

☒ Exit access travel distances (1017)

☒ Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))

☒ Dead end lengths (1020.4)

☒ Clear exit widths for each exit door

☒ Maximum calculated occupant load capacity each exit door can accomodate 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 (1010.1.10)

☐ Location of doors with delayed egress locks and amount of delay (1010.1.9.7)

☐ Location of doors with electromagnetic egress locks (1010.1.9.9)

☐ Location of doors 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 items above

ACCESSIBLE DWELING UNITS (SECTION 1107)

[NOT APPLICABLE]

ACCESSIBLE PARKING (SECTION 1106)

[NOT APPLICABLE - EXISTING TO REMAIN - NO CHANGE]

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWERS / TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXIST'G	1	2	0	1	2	2	0	0	0	0
	NEW/RENO	1	2	0	1	2	2	0	0	1	1
	TOTAL	2	4	0	2	4	4	0	0	1	1
	REQ'D	3	4	0	0	2	2	0	0	1	1

*50% URINAL SUBSTITUTION FOR WATER CLOSET AS PER NCPC SECTION 403.9.5.3

NOTE: FIRST FLOOR TOILET ROOMS TO BE COMPLETELY RENOVATED.

NOTE: (2) DRINKING FOUNTAINS AND (1) SERVICE SINK ARE REQUIRED AND PROVIDED.

NOTE: NCBC SECTION 1109.2.1 REQUIREMENT FOR ACCESSIBLE FAMILY USE TOILET ROOM APPLIES IF 6 OR MORE WATERCLOSETS ARE REQUIRED FOR THE ASSEMBLY OR MERCANTILE OCCUPANCY ONLY. (ASSEMBLY OCCUPANCY FOR BUILDING REQUIRES ONLY 5 TOTAL AGGREGATE WATERCLOSETS)

PLUMBING FIXTURE CALCULATIONS

Assembly (A-3) Requirements: 356 occ. = 178 M/178 W

Women / Men Ratio	= 50/50		
Female Watercloset	= 1 per 65	(2.74)	4 total
Male Watercloset	= 1 per 125	(1.43)	3 total
Lavatories	= 1 per 200	(0.89 ea.)	2 each total
Drinking Fountain	= 1 per 500	(0.72)	2 total
Service Sinks	= 1 required		1 total

Total Requirements:

Female Watercloset	= 2.74 + .88 = 3.62 =	4 total
Male Watercloset	= 1.43 + .88 = 2.31 =	3 total
Lavatories	= 0.89 + 0.55 = 1.43 =	2 each total
Drinking Fountain	= 0.72 + 0.44 = 1.16 =	2 total
Service Sinks	= 1 required	1 total

Business (B) Requirements: 44 occ. = 22 M/22W

Women / Men Ratio	= 50/50	
Female Watercloset	= 1 per 25 for first 50, then 1 per 50	(0.88)
Male Watercloset	= 1 per 25 for first 50, then 1 per 50	(0.88)
Lavatories	= 1 per 40 for first 80, then 1 per 80	(0.55 ea.)
Drinking Fountain	= 1 per 100	(0.44)
Service Sinks	= 1 required	

SPECIAL APPROVALS

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

North Carolina State Construction Office

City of Jacksonville

ENERGY SUMMARY

ENERGY REQUIREMENTS:

The following data shall be considered minimum and any special attribute required to meet the North Carolina Energy Conservation Code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: ☒ No ☐ Yes (The remainder of this section is not applicable)

Exempt Building: ☐ No ☒ Yes (Provide code or statutory reference:) NCEBC 908.1

Climate Zone: ☒ 3A ☐ 4A ☐ 5A

Method of Compliance: Energy Code ☐ Performance ☒ Prescriptive

ASHRAE 90.1 ☐ Performance ☐ Prescriptive

(If "Other" specify source here) ____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ ceiling Assembly (each assembly) EXISTING TO REMAIN: Inside surface resistance, 1/2" ACT, Air space, 7" Concrete, R-8 Bd. insulation, sloped fiber fill, Built-up roofing, Membrane roofing, Outside surface resistance

Description of assembly:

U-Value of total assembly: 0.052

R-Value of insulation: R-8

Skylights in each assembly: 4

U-Value of skylight: 0.70

total square footage of skylights in each assembly: 72

Roof/ ceiling Assembly (each assembly) New roof at new covered Canopy (Non-Conditioned Space)

Description of assembly: Open below. PVC membrane roof on gypsum cover board on rigid insulation on metal deck

U-Value of total assembly: 0.075

R-Value of insulation: R-11.25 (sloped insulation varies from 3/4" to 3 3/4")

Skylights in each assembly: N/A

U-Value of skylight: N/A

total square footage of skylights in each assembly: N/A

Exterior Walls (Existing Exterior Walls*): EXISTING TO REMAIN: Inside surface resistance, 8" CMU, R-5 Bd. insulation, air space, 4" Face brick, outside surface resistance

Description of assembly:

U-Value of total assembly: .137

R-Value of insulation: R-5

Openings (windows or doors with glazing) [Shall comply w/ 2018 NCECC Table C402.4]

U-Value of assembly: .28 (< 0.32)

Solar heat gain coefficient: 0.23 (< 0.25) (less than .40 when PF is > 0.5)

projection factor: < 0.5

Door R-values: N/A

Walls below grade (each assembly) EXISTING TO REMAIN

Description of assembly: N/A

U-Value of total assembly: N/A

R-Value of insulation: N/A

Floors over unconditioned space (each assembly) EXISTING TO REMAIN

Description of assembly: N/A

U-Value of total assembly: N/A

R-Value of insulation: N/A

Floors slab on grade EXISTING TO REMAIN

Description of assembly: N/A

U-Value of total assembly: N/A

R-Value of insulation: N / A

Horizontal/ vertical requirement: N/A

slab heated: NO

STRUCTURAL DESIGN

DESIGN LOADS:

Importance Factors: Snow (I_s) 1.1; Seismic (I_E) 1.25

Live Loads: Roof 20 psf; Mezzanine N/A psf; Floor 100 psf

Ground Snow Loads: 10 psf

Wind Loads: Ultimate Wind Speed 147 PER ASCE 7-10 mph (ASCE-7-10); Exposure Category B

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

Provide the following Seismic Design Parameters:

Risk Category (Table 1604.5) ☐ I ☐ II ☒ III ☐ IV

Spectral Response Acceleration SS 0.148 %g S1 0.07 %g

Site Classification (ASCE 7) ☐ A ☐ B ☐ C ☒ D ☐ E ☐ F

Data Source: ☐ Field Test ☒ Presumptive ☐ Historical Data

Basic Structural System ☐ Bearing Wall ☐ Dual w/Special Moment Frame ☒ Building Frame ☐ Dual w/Intermediate R/C or Special Steel ☐ Moment Frame ☐ Inverted Pendulum

Note From Engineer: Steel system not specifically detailed for seismic resistance excluding cantilever system.

Analysis Procedure ☐ Simplified ☒ Equivalent Lateral Force ☐ Dynamic

Architectural, Mechanical, Components anchored? ☐ Yes ☒ No

LATERAL DESIGN CONTROL: Earthquake ☐ Wind ☒

SOIL BEARING CAPACITIES:

Field Test (provide copy of test report) ____ psf

Presumptive Bearing capacity ____ psf

Pile size, type, and capacity 8"ϕ, Timber, 30kip

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone: 3A

winter dry bulb: 23º F

summer dry bulb: 93º F

Interior design conditions

winter dry bulb: 70º F

summer dry bulb: 75º F

relative humidity: 60º RH

Building heating load: See Mechanical

Building cooling load: See Mechanical

Mechanical Spacing Conditioning System

Unitary

description of unit: See Mechanical Schedules

heating efficiency: See Mechanical Schedules

cooling efficiency: See Mechanical Schedules

size category of unit: See Mechanical Schedules

Boiler

Size category. If oversized, state reason: N/A

Chiller

Size category. If oversized, state reason: N/A

List equipment efficiencies: See Mechanical Schedules

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:

Energy Code: ■ Prescriptive ☐ Performance

ASHRAE 90.1: ☐ Prescriptive ☐ Performance

Lighting schedule (each fixture type)

lamp type required in fixture: (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 specified vs allowed (whole building or space by space)

TBD - SEE E-0.9

total exterior wattage specified vs allowed

TBD - SEE E-0.9

Additional Prescriptive Compliance

☐ 506.2.1 More Efficient Mechanical Equipment

■ 506.2.2 Reduced Lighting Power Density

☐ 506.2.3 Energy Recovery Ventilation Systems

☐ 506.2.4 Higher Efficiency Service Water Heating

☐ 506.2.5 On-Site Supply of Renewable energy

☐ 506.2.6 Automatic Daylighting Control Systems

BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, PC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50424 NORTH CAROLINA WILMINGTON, N.C.

WILLIAM DANIEL HILL 13058 REGISTERED ARCHITECT NORTH CAROLINA WILMINGTON, NC 11-25-2024

Coastal Carolina Community College Learning Resources Center - First Floor Renovation

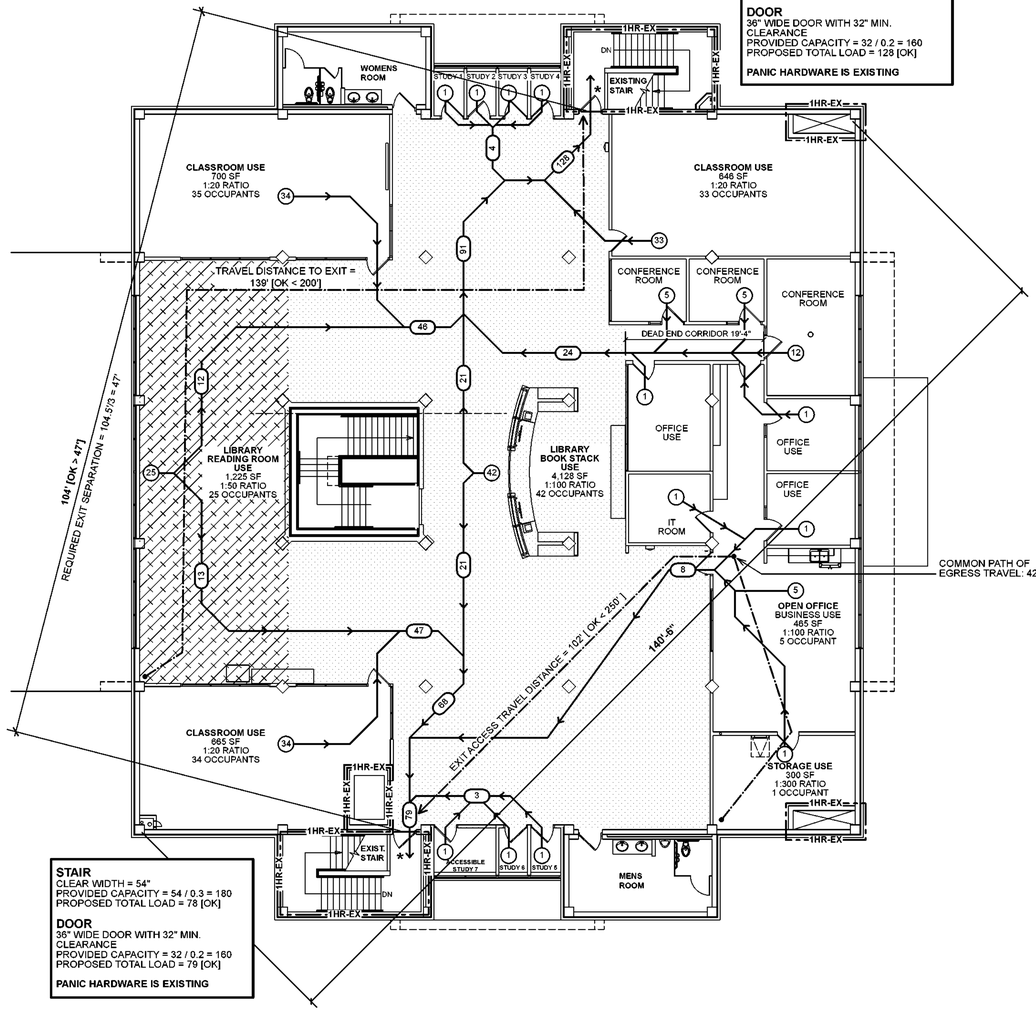
444 Western Boulevard, Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By DP
Date 11-25-2024	Reviewed By DH
Project ID	

Sheet Title: **BUILDING DATA/ APPENDIX B**

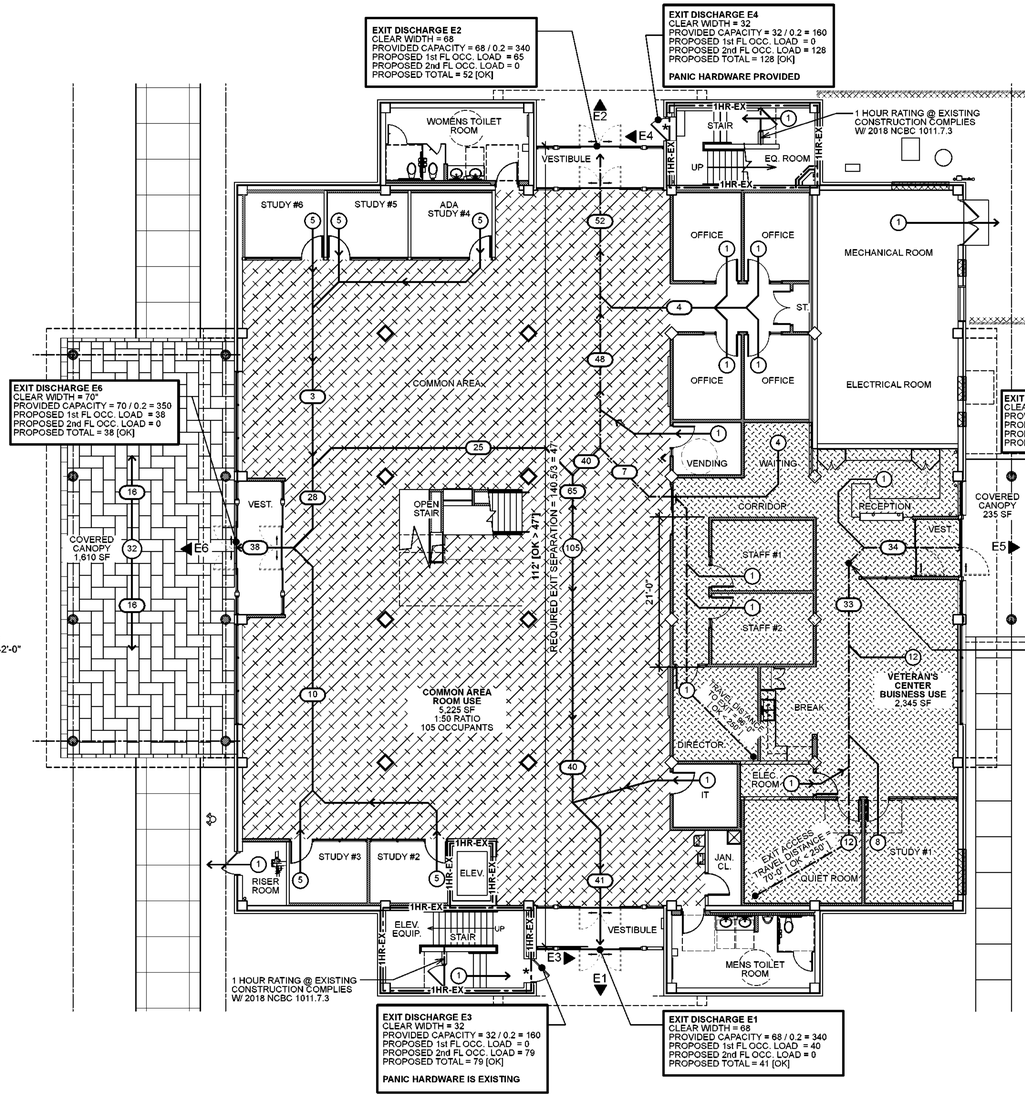
Sheet No.: G1.1



1 G1.2 Second Floor Life Safety Plan (Unchanged in Project)
Scale: 1" = 10'-0"

NOTE :
SECOND FLOOR HAS NFPA13 SPRINKLER SYSTEM FROM 2019 RENOVATION PROJECT.

PROJECT NOTE :
IT IS THE OWNER'S INTENT THAT THE SECOND FLOOR SHALL REMAIN IN USE AND OPERATIONAL FOR THE DURATION OF THE PROJECT. LIMITED PERIODS OF CLOSING THE SECOND FLOOR TO STAFF AND STUDENT USE SHALL BE COORDINATED IN ADVANCE WITH THE OWNERS REPRESENTATIVE. PRIOR TO CONSTRUCTION, THE COLLEGE WILL MODIFY DOOR HARDWARE TO RATED STAIR ENCLOSURES FROM NIGHT LATCH PANIC HARDWARE TO CLASSROOM / ENTRY PANIC HARDWARE TO ALLOW STUDENT ACCESS TO SECOND FLOOR DURING CONSTRUCTION. DURING CONSTRUCTION, G.C. SHALL MAINTAIN STUDENT ACCESS TO THE EXISTING ELEVATOR TO THE GREATEST EXTENT POSSIBLE. REFER TO DRAWING D1.0 FOR TEMPORARY PARTITIONS TO BE MAINTAINED DURING CONSTRUCTION.



2 G1.2 First Floor Life Safety Plan
Scale: 1" = 10'-0"

LEGEND - FOR 1/G1.2 & 2/G1.2	
E5 ▶	EXIT DISCHARGE DOOR #
(#)	ROOM OCCUPANCY LOAD
(##)	EGRESS PATH OCCUPANCY LOAD
OCC.	OCCUPANCY
*	DOOR WITH PANIC HARDWARE
1HR-EX	1 HOUR RATED FIRE BARRIER-EXISTING TO REMAIN AND BE MAINTAINED IN CONSTRUCTION

LEARNING RESOURCES OCCUPANCY COUNT	
FIRST FLOOR: 12,995 SF TOTAL	
TOTAL OCCUPANTS FOR FIRST FLOOR: 150 (A-3) + 44 (B) = 194 TOTAL	
194 TOTAL = 97 FEMALE & 97 MALE	
SECOND FLOOR : 10,445 SF TOTAL	
TOTAL OCCUPANTS FOR SECOND FLOOR:	
206 = TOTAL103 FEMALE & 103 MALE	
TOTAL:	**400**
MEN:	**200**
WOMEN:	**200**

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11-25-2024

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Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

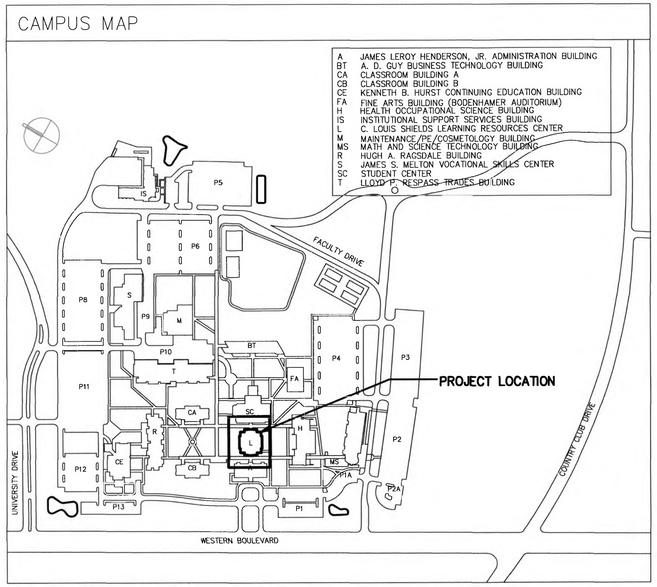
REV	DATE	DESCRIPTION

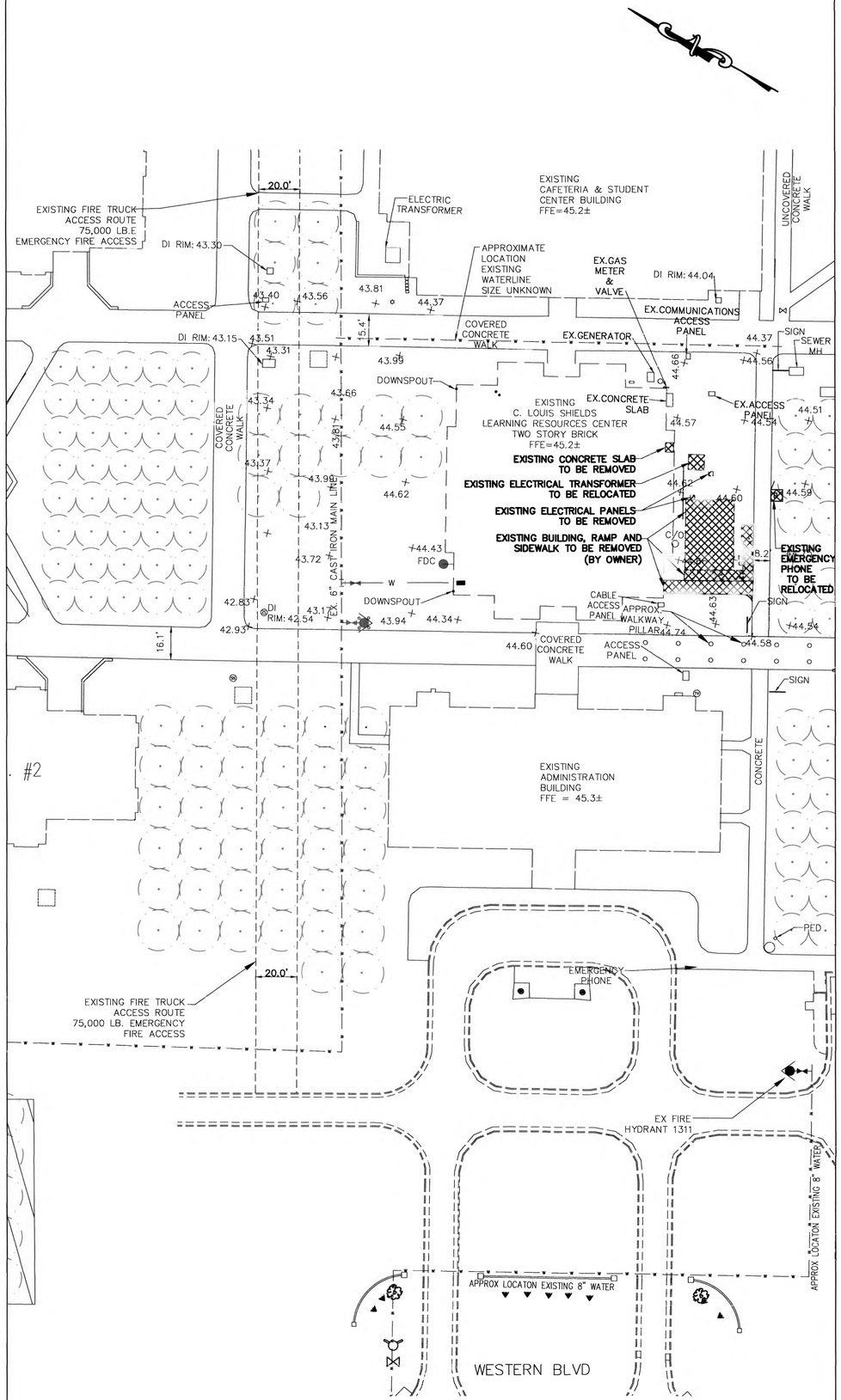
Project Manager	Drawn By
	DP
Date	Reviewed By
11-25-2024	DH

Project ID

Sheet Title
FIRST AND SECOND FLOOR LIFE SAFETY PLANS

Sheet No.
G1.2





NOTES:
1. CONTRACTOR SHALL FIELD VERIFY LOCATION, INVERT, SIZE, MATERIAL, AND EXISTING UTILITIES PRIOR TO ORDERING MATERIAL OR COMMENCING CONSTRUCTION.
2. FIELD VERIFY COLUMN LOCATION, UNDER COVERED CONCRETE WALK. FIELD ADJUST TO AVOID IMPACTING COLUMN FOOTER.
3. ALL UNDERGROUND LINES OUTSIDE BUILDING FOOTPRINT, EXCEPT LAWN IRRIGATION LINES, SHALL BE REQUIRED TO HAVE A WARNING TAPE INSTALLED IN THE BACKFILL BETWEEN 6" TO 24" BELOW FINISHED GRADE DIRECTLY OVER PIPING
4. METALLIC LINES SHALL BE IDENTIFIED WITH DURABLE PRINTED PLASTIC WARNING TAPES, MINIMUM 3" WIDE WITH LETTERING TO IDENTIFY BURIED LINE BELOW.
5. NON-METALLIC PIPES, OTHER THAN GAS LINES, SHALL BE IDENTIFIED BY DETECTABLE WARNING TAPE, MINIMUM 2" WIDE, WITH LETTERING TO IDENTIFY BURIED LINE BELOW
6. FOR PLASTIC SEWER PIPING, AN INSULATED COPPER TRACER WIRE OR OTHER APPROVED CONDUCTOR SHALL BE PROVIDED TO THE TRACER WIRE OR THE TRACER WIRE SHALL TERMINATE AT THE CLEANOUT BETWEEN THE BUILDING DRAIN AND THE BUILDING SEWER. THE TRACER WIRE SIZE SHALL NOT BE LESS THAN 14 AWG AND THE INSULATION TYPE SHALL BE LISTED FOR DIRECT BURIAL.
7. AN INSULATED COPPER TRACER WIRE OR OTHER APPROVED CONDUCTOR SHALL BE INSTALLED ADJACENT TO UNDERGROUND NON METALLIC PIPING ACCESS SHALL BE PROVIDED TO THE TRACER WIRE OR THE TRACER WIRE SHALL BE TERMINATE ABOVE GROUND AT THE END OF THE NON-METALLIC PIPING. THE TRACER WIRE SIZE SHALL NOT BE LESS THAN 18 AWG AND THE INSULATION TYPE SUITABLE FOR DIRECT BURIAL.
8. THE PROJECT IS NOT LOCATED IN ANY SPECIAL FLOOD HAZARD AREAS, AS SHOWN ON FIRM MAP NUMBER 3720 4387 00J DATE: 11-03-2005

FIRE PROTECTION NOTES:
1. With respect to hydrants, driveways, buildings and landscaping, fire department connections shall be so located that fire apparatus and hose connected to supply the system will not obstruct access to the buildings for other fire apparatus. The location of fire department connections shall be approved by the fire chief.
2. Fire department connections shall be located on the street side of buildings, fully visible and recognizable from the street or nearest point of fire department vehicle access or as otherwise approved by the fire chief.
3. On existing buildings, wherever the fire department connection is not visible to approaching fire apparatus, the fire department connection shall be indicated by an approved sign mounted on the street front or on the side of the building. Such sign shall have the letters "FDC" at least 6 inches (152 mm) high and words in letters at least 2 inches (51 mm) high or an arrow to indicate the location. All such signs shall be subject to the approval of the fire code official.
4. Immediate access to fire department connections shall be maintained at all times and without obstruction by fences, bushes, trees, walls or any other fixed or moveable object. Access to fire department connections shall be approved by the fire chief.
5. A working space of not less than 36 inches (762 mm) in width, 36 inches (914 mm) in depth and 78 inches (1981 mm) in height shall be provided and maintained in front of and to the sides of wall-mounted fire department connections and around the circumference of free-standing fire department connections, except as otherwise required or approved by the fire chief.

LEGEND

EXISTING GEOTHERMAL WELL

DEMO

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621
Fax - (910) 762-8506

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 17374 ENGINEER PHILLIP GREGORY TRIPP 11-25-24

TRIPP ENGINEERING, P.C
419 Chestnut Street
Wilmington, North Carolina 28401
Phone 910-763-5100
2024 TRIPP ENGINEERING, P.C.
LICENSE No. C-1427

Coastal Carolina Community College
Learning Resources Center
First Floor Renovation
444 Western Boulevard, Jacksonville, NC

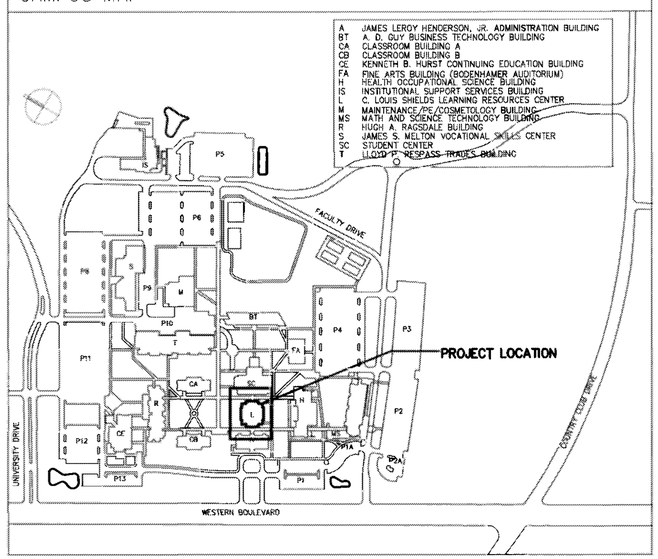
DEMO PLAN

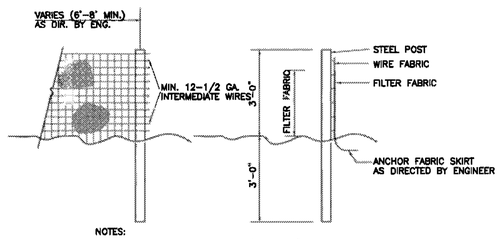
REVISIONS

DRAWN BY
EJW
CHECKED BY
PGT
DATE
11.25.2024
SHEET NUMBER
C1

CAMPUS MAP

A	JAMES LEROY HENDERSON, JR. ADMINISTRATION BUILDING
BT	A. D. GUY BUSINESS TECHNOLOGY BUILDING
CA	CLASSROOM BUILDING A
CB	CLASSROOM BUILDING B
CE	KENNETH B. HURST CONTINUING EDUCATION BUILDING
FA	FINE ARTS BUILDING (BODENHAMER AUDITORIUM)
H	HEALTH OCCUPATIONAL SCIENCE BUILDING
IS	INSTITUTIONAL SUPPORT SERVICES BUILDING
L	C. LOUIS SHIELDS LEARNING RESOURCES CENTER
M	MAINTENANCE/PE (COSMETOLOGY BUILDING
MS	MATH AND SCIENCE TECHNOLOGY BUILDING
R	HUGH A. RAGSDALE BUILDING
S	JAMES S. MELTON VOCATIONAL SKILLS CENTER
SC	STUDENT CENTER
T	LLOYD P. RESPASS TRADES BUILDING

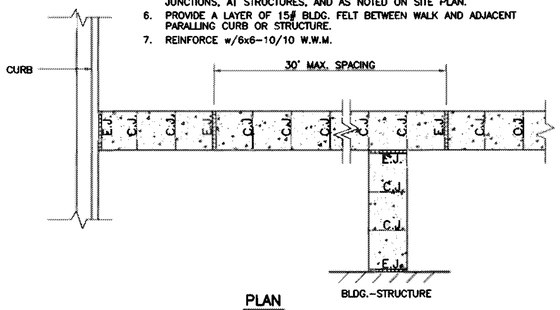




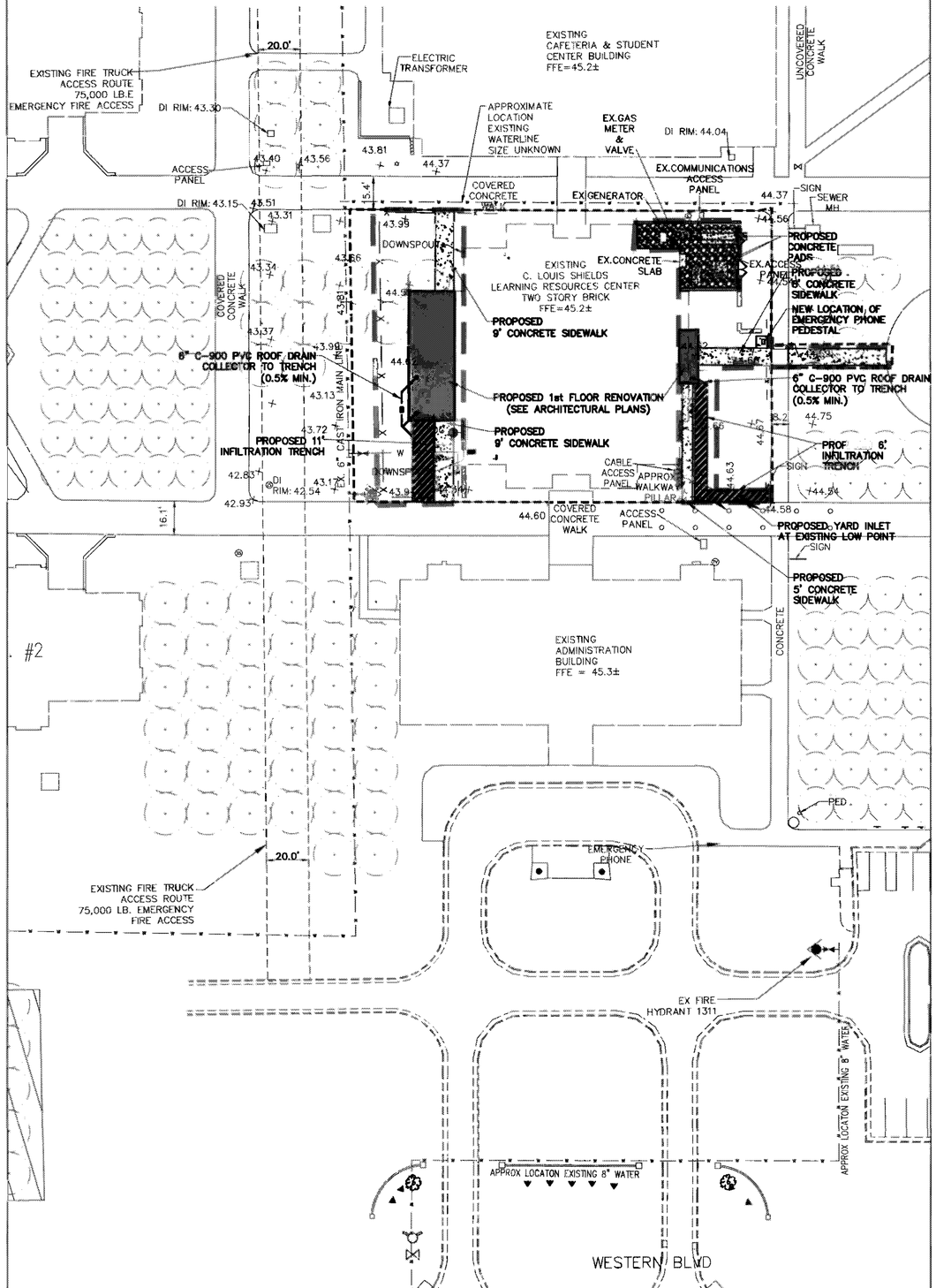
NOTES:
1. FENCE FABRIC SHALL BE A MIN. OF 32" IN WIDTH AND SHALL HAVE A MIN. OF SIX LINE WIRES WITH 12" STAY SPACING.
2. FABRIC SHALL BE FOR EROSION CONTROL AND MIN. OF 36" IN WIDTH. FABRIC SHALL BE FASTENED ADEQUATELY TO THE WIRE FABRIC AS DIRECTED BY THE ENGINEER.
3. STEEL POST SHALL BE 5'-0" IN HEIGHT AND BE OF THE SELF-FASTENER STEEL ANGLE TYPE.

TEMPORARY SILT FENCE
NTS

NOTES:
1. SIDEWALK THICKNESS SHALL BE 4" UNLESS NOTED OTHERWISE.
2. CONTRACTION JOINTS (C.J.) SPACE SAME AS SIDEWALK WIDTH.
3. THICKEN SIDEWALK TO 6" AT DRIVEWAYS.
4. THICKEN SIDEWALK TO 6" IN LAST 3' WHERE IT ABUTS PAVEMENT WITH NO CURB.
5. 1/2" EXPANSION JOINT (E.J.) REQUIRED AT 30' MAX. AT SIDEWALK JUNCTIONS, AT STRUCTURES, AND AS NOTED ON SITE PLAN.
6. PROVIDE A LAYER OF 15# BLDG. FELT BETWEEN WALK AND ADJACENT PARALLING CURB OR STRUCTURE.
7. REINFORCE w/6x6-10/10 W.W.M.



SIDEWALK JOINT DETAILS
NTS



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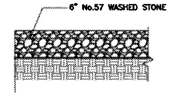
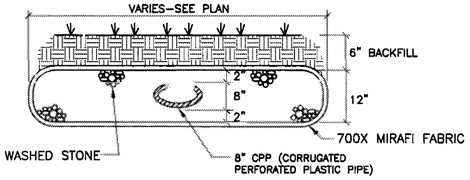


PERVIOUS STONE SECTION
NTS



TRENCH DRAIN DETAIL
NTS

SITE DATA

PROPERTY OWNER	COASTAL CAROLINA COMMUNITY COLLEGE
PROJECT ADDRESS	444 WESTERN BLVD JACKSONVILLE, NC 28546
PIN NUMBER	438711551975
PROJECT AREA	27,595 SF (0.63 Ac.)
DISTURBED AREA	0.23 Ac.
IMPERVIOUS AREAS WITHIN PROJECT AREA	
EXISTING BUILDING	12,180 SF
PROPOSED BUILDING	1,583 SF
PROPOSED SIDEWALK	1,848 SF
TOTAL IMPERVIOUS WITHIN PROJECT AREA	15,611 SF
PERVIOUS GRAVEL	836 SF

LEGEND

- EXISTING GEOTHERMAL WELL
- LIMITS OF DISTURBANCE
- x — TEMPORARY SILT FENCE
- PROPOSED TRENCH
- PROPOSED CONCRETE
- PROPOSED 1st FLOOR MOD
- PROPOSED PERVIOUS GRAVEL

BAR SCALE 1"=30'
30' 15' 0' 30' 60' 90'

BOWMAN MURRAY HEMINGWAY
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NORTH CAROLINA PROFESSIONAL SEAL 17374 ENGINEER PGREGORY TRIPP 11-15-24

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419 Chestnut Street
Wilmington, North Carolina 28401
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2024 TRIPP ENGINEERING, P.C.
LICENSE No. C-1427

Coastal Carolina Community College
Learning Resources Center
First Floor Renovation
444 Western Boulevard, Jacksonville, NC

SITE, GRADING, DRAINGE, EROSION CONTROL AND STORMWATER MANAGEMENT PLAN

REVISIONS

DRAWN BY
EJW
CHECKED BY
PGT
DATE
11.25.2024
SHEET NUMBER
C2

TE No: 23021

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 – 14th Edition

1.6 "Structural Welding Code – Steel (AWS D1.1)" and "Structural Welding Code – Reinforcing Steel (AWS D1.4)", American Welding Society.

1.7 "Specification for the Design of Cold-Formed Steel Structural Members", American Iron and Steel Institute (AISI), S100-12.

1.8 "Building Code Requirements for Masonry Structures", ACI 530-13, ASCE 5-13, TMS 402-13.

1.9 "Standard Specifications for Joist Girders (JG-10)", "Standard Specifications for Open Web Steel Joists, K-Series (k-10)", "Standard Specifications for Long Span Steel Joist, LH Series and Deep Longspan Steel Joists, DLH Series (LH/DLH-1.1)", Steel Joist Institute

1.10 "Design Manual For Floor Decks and Roof Decks", Steel Deck Institute, latest edition.

2.0 DESIGN LOADS:
Project Located in: City of Jacksonville, County of Onslow, 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:		
Live Load	20	300
Dead Load	20	
Floor Live Loads:		
First Floor	100	

2.2 Drifting Snow Loads per Referenced Code.

Pg = 10 psf
I = 1.10
Ce = 0.9
Ct = 1.0

2.3 Risk Category = **III**

2.4 Wind Loads per Referenced Code.

Basic Design Wind Speed:
3-second Gust PER ASCE
V = 147 mph
Exposure "C"

Main Wind Force Resisting System:
Canopy Structure is open
Topographic Factor Kzt = 1.0
Wind Directionality Factor, Kd = 0.85

CALCULATED WIND BASE SHEAR (VULT FOR MWFRS)		
Unit Name	**Vx (k)**	**Vy (k)**
Canopy	9	4

Components & Cladding

Components and Cladding Wind Pressure (psf)									
Walls	**Area < 10ft2**		**Area < 20ft2**		**Area < 50ft2**		**Area < 100ft2**		**Area < 500ft2**	
Zone 4	47.9	-52.0	45.9	-50.0	42.9	-46.9	40.6	-44.9	35.8	-39.8
Zone 5	47.9	-64.2	45.9	-60.1	42.9	-54.0	40.6	-50.0	35.8	-39.8
Roof	**Area < 10ft2**		**Area < 20ft2**		**Area < 50ft2**		**Area < 100ft2**		**Area < 500ft2**	
Zone 1'	21.7	-48.8	19.9	-48.8	18.1	-48.8	17.2	-48.8	17.2	-30.7
Zone 1	21.7	-84.9	19.9	-80.3	18.1	-71.3	17.2	-66.8	17.2	-53.3
Zone 2	21.7	-111.9	19.9	-105.2	18.1	-96.1	17.2	-87.1	17.2	-71.3
Zone 3	21.7	-152.6	19.9	-139.0	18.1	-118.7	17.2	-105.2	17.2	-71.3

Notes:
1. Areas noted are effective wind areas as per ASCE 7, 26.2 definitions.
2. See figures this sheet for Zone locations.
3. 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 Referenced Code.

Risk Category = **III**
Site class = "D" (Presumptive)
Spectral Response Coefficients:
SDS = 0.158g
SD1 = 0.113g
Cs = 0.066

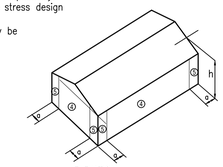
Seismic Design Category = "B"
Seismic Importance Factor = 1.25
Basic Seismic – Force – Resisting System
Steel System not specifically detailed for Seismic Resistance excluding Cantilever System

RX=RY=3.0, QX=QY=3.0, CDX=CDY=3.0
Design Base Shear Vx. = Vy = 1k
Building Height Limit = NL
Analysis Procedure – per Referenced Code.
Equivalent Lateral Force Procedure

2.6 Guardrail designed per Referenced Code, Chapter 16 IBC

Guardrail:
Uniform load = 50 plf, any direction
Concentrated load = 200 lbs, any direction
Intermediate Rail: (all those except handrail)

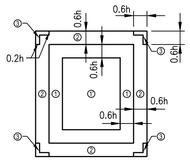
2.7 Flood Loads:
Project is not located in a flood zone.



ELEVATION

COMPONENT & CLADDING WALL ZONES

a = 11ft



COMPONENT & CLADDING
FLAT ROOF ZONES

h = 27ft "mean roof height"

3.0 FOUNDATIONS:

3.1 Foundation design is based on geotechnical report #22:33881 by ECS Southeast LLP Wilmington, NC dated November 2, 2023 with addendum "A1" dated May 23, 2024. This report is available in the project manual. The recommendations contained in this report are for the Contractor's information only.

3.2 Foundation design is based on 8"ø round wood piles with compression capacity of 30 kips, tension capacity of 4 kips & shear capacity of 3.5 kips with 30ft embedment – pile installer shall coordinate with geotechnical engineer to determine driving criteria based on equipment to be used.

3.3 Top of Pile Caps (T/PC) 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 Pile Caps, and grade beams 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 of 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.

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

d. Footing bearing elevations shall be adjusted in the field as required to meet the design bearing pressures 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 Contractor shall review all construction considerations as outlined in the Geotechnical report and bid accordingly.

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, Pile caps, Grade Beams and Interior Slab-on-grade.....3,000psi, Density = ±145pcf
b. Exterior Slab on Grade.....4,000psi, Density = ±145pcf
c. CMU Grout Fill.....3,000psi pea gravel mix, Density = ±145pcf, Slump 8"-11" or grout per Structural Masonry Notes, this sheet.

4.3 Concrete Mix Designs:
a. Submittals: Submit written reports of each proposed concrete mix not less than 15 days prior to the start of work.
b. 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.
c. 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.
d. Water reducing admixture shall be used in all concrete.
e. Air entraining admixture in accordance with ACI 301 shall be used in all concrete exposed freezing and thawing during construction or service conditions.
f. 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.
g. All columns and walls shall have superplasticizer admixture

4.4 Curing:
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 cure concrete in accordance with ACI 306.

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.

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 Fill slabs, not shown on the structural drawings and all exterior slabs to be broom finished, shall be reinforced with a minimum of 6 x 6 x W2.0 x W2.0 WWM unless noted otherwise on other drawings.

4.12 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 ½ 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.

4.13 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.

4.14 Provide concrete grout – not mortar – for reinforced masonry lintel and bond beams where indicated on drawing or as scheduled.

4.15 Tolerance for anchor rods and other embedded items shall be per the AISC Code of Standard Practice Section 7.5.

4.16 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.

4.17 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:
Slabs, Walls, Joists:
No. 11 Bar and smaller:.....¾" Inches
Beams, Columns:
Primary Reinforcement, Ties, Stirrups:.....1½" Inches

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 Bar 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 (in)**
#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
#9	62	81	54	70	48	63
#10	69	90	60	78	54	69
#11	76	98	66	85	59	76

NOTES:
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.
4. For Epoxy Coated bars multiply table values by 1.2
5. For Beam Top Bars multiply table values by 1.3
6. For Top Bars in Slabs 13in and thicker multiply table values by 1.3

6.0 STRUCTURAL MASONRY:

6.1 All structural masonry shall conform to ACI 530 standards as appropriate to the material.

6.2 Concrete Masonry Units (CMU):
a. Units shall be lightweight cellular units conforming to ASTM C 90, Grade N-2. Concrete masonry net area unit strength shall be no less than 2,000psi in accordance with ASTM C 140, with a unit weight not exceeding 95 pcf.
b. Design compressive strength of CMU (fm) = 2,000psi.

6.3 Mortar shall conform to ASTM C 270. Mortar shall be type "S" and shall conform to the ASTM C270 proportion requirements.

6.4 Neither type "N" mortar nor masonry cement shall be used as part of the lateral force resisting system.

6.5 Grouting:
a. Grout shall conform to ASTM C476 as specified by proportion. Masonry grout shall conform to the ASTM proportion requirements for coarse grout with a slump of 8 to 11 inches. Contractor may substitute grout with pea gravel concrete masonry fill, see note 4.2 this sheet.
b. All bond beams shall be filled with grout and reinforced as indicated on the drawings (details or schedules). Mortar fill is not permitted.
c. All masonry wall cells or cavities indicated as reinforced shall be grouted for the full height of the wall, unless specifically noted otherwise on the drawings. Unreinforced walls indicated as grouted shall be grouted full height, unless specifically noted otherwise. Mortar fill is not permitted.
d. All masonry cells or cavities below grade shall be grouted solid unless specifically noted otherwise on the drawings. Mortar fill is not permitted.
e. Vertical grouting shall be low lift or high lift as follows:
(1) Low lift grouting shall be used for all cavity walls and may be used for all walls at the option of the Contractor. Lifts shall not exceed 4'-0" in height.
(2) High lift grouting is permissible only for filling of cellular masonry units and shall not exceed 12'-8" in height. Clean out holes shall be provided at the base of each grouted cell.
f. Grouting shall be stopped 1-1/2" below the top of a course to form a key at the joint.
g. Grouting of masonry beams or lintels shall be done in one continuous operation.
h. Consolidate pours with mechanical vibrator and reconsolidate by mechanical vibration after initial water loss and settlement has occured.
i. Mechanical vibrator shall be a low velocity vibrator with a ¾" head.

6.6 Masonry Reinforcing:
a. Foundation dowels may slope a maximum of 1:6 to align with wall cavities or vertical CMU cores. Greater slopes will require replacement of the foundation dowels.
b. Spliced reinforcing shall be lapped a length calculated per IBC 2107.5 OR 15" OR as shown on drawings, whichever is greatest. All splices shall be wired together.
c. Vertical reinforcing bars shall have a minimum clearance of ¼" from masonry and shall be held in position top and bottom and at intervals not exceeding 4'-0". Accessories for such support shall be used. Provide "AA Wire Products Company" (or approved equal) Rebar Positioner AA225 or AA239 for vertical bars and AA238 for horizontal bars or approved equal products from other suppliers.
d. Horizontal joint reinforcing shall be lapped no less than 6" all splices, including corners and tees where no control joint is used.
e. All horizontal joint reinforcing shall stop at control joints.
f. Horizontal reinforcing in bond beams shall be continuous through control joints.
g. All CMU walls shall have joint reinforcing @ 16"o.c. All joint reinforcing shall have (2) 9 gauge (0.148"ø or W1.7) side rods & cross rods @ 16"o.c.

6.7 Masonry contractor shall provide for and coordinate with other trades for placement of all items to be embedded or built into the masonry.

MINIMUM SPLICING LENGTH (Ld) FOR MASONRY	
BAR SIZE	**SPLICE LENGTH**
#3	16"
#4	22"
#5	26"
#6	43"
#7	60"

WOODS ENGINEERING
Consulting Structural Engineers
254 North Front Street Phone: 910.343.8007
Wilmington, NC 28401 www.woodseng.com

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621
Fax - (910) 762-8506

SCO ID# 23-26060-01A

WOODS ENGINEERING, P.A. CORPORATE SEAL No. C-1806 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041563 ADAM L. SISK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041563 ENGINEER ADAM L. SISK

Digitally signed by Adam L. Sisk, PE, SE
DN: C=US, E=adam@woodseng.com, CN=Adam L. Sisk, PE, SE, O=WOODS ENGINEERING, P.A., L=Wilmington, S=North Carolina, 2.5.4.65=Reason: I attest to the accuracy and integrity of this document
Date: 2024.11.25 16:14:00 -05'00'

Coastal Carolina Community College Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: MBK
Date: 11/25/2024	Reviewed By: AS
Project ID	

Sheet Title
GENERAL NOTES

Sheet No.
S1.01

7.0 COLD-FORMED STEEL FRAMING:

7.1 All members shall be designed in accordance with the American Iron and Steel Institute (AISI) "Specifications for the Design of Cold-formed Steel Structural Members", Latest Edition.

7.2 All framing members shall be formed from corrosion-resistant steel corresponding to the requirements of ASTM A446, with a minimum yield strength of 33 ksi for joists and studs and 33 ksi for runners.

7.3 All members shown are standard designations of Steel Stud Manufacturers Association (SSMA)

7.4 Design of members indicated in structural drawings is based on minimum properties of products produced per SSMA standards of members specified. No substitution of materials is acceptable for use without prior approval of the structural engineer. Substitutions shall meet or exceed all properties produced per SSMA standards of members specified.

7.5 All shop drawing submittals shall show layout, spacing, sizes, thicknesses and types of cold-formed metal framing, fabrication, and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details and attachment to adjoining work.

7.6 Shop drawings, design calculations and other structural data shall be prepared and sealed by a qualified engineer. The Structural Engineer shall be legally qualified to practice in the jurisdiction where the project is located and shall be experienced in providing engineering services of the kind indicated.

7.7 All framing components shall be cut squarely for attachment to perpendicular members or as required for an angular fit tight against abutting members. All load bearing stud/walls shall be factory assembled into panels with studs bearing squarely and fully in top and bottom tracks.

7.8 Fastening components shall be by self-drilling screws or by welding as defined below UNO on the drawings.

7.9 Screwed connections:
- a. Screws shall be type S-12 or type S-4 for all framing members per manufacturer's recommendations.
- b. A minimum of three (3) exposed threads shall penetrate through at joined materials.
- c. Corrosion-resistant cadmium-plated screws shall be used for screws attaching metal lath, masonry ties, and other exterior materials.

7.10 Welded connections:
- a. Gas metal arc welding (GMAW) shall be used for 20 ga. Or lighter members. AWSE-705-3, E-705-E, E-705-6 wire electrodes .030"-.035" diameter shall be used with carbon dioxide, argon-oxygen or argon-carbon dioxide shielding. Welding equipment 60-100 amperes at 25 volts using 220-volt 3-phase electric service.
- b. Shielded metal arc welding (SMAW) shall be used for 18 ga' and heavier members. AWS E-6012, E-6013, or E-7014 electrodes of 3/32" or 1/8" diameter shall be used. Welding equipment heat setting shall be varied dependent on material thickness.
- c. All welds shall be touched up with zinc rich paint, or paint similar to that used by the framing member manufacturer.

7.11 Alignment of studs (plumbness) and walls (straightness) shall be within 1/960 of their respective heights and lengths.

7.12 Studs shall be plumbed, aligned, and securely attached to top and bottom runners. Splices in studs are not permitted.

7.13 Where manufacturer's recommendations for erection, attachment, assembly, bracing, alignment, or other installation, or assembly requirements are more stringent than indicated in these drawings, the manufacturer's recommendations shall apply.

STEEL THICKNESS

Gauge:	Mils	Design Thickness		Minimum Thickness		Yield Strength
		Inches	mm	Inches	mm	ksi
20	33	0.0346	0.879	0.0329	0.836	33
18	43	0.0451	1.146	0.0428	1.087	33
16	54	0.0566	1.438	0.0538	1.367	50
14	68	0.0713	1.811	0.0677	1.720	50
12	97	0.1017	2.583	0.0966	2.454	50

8.0 STEEL JOISTS:

8.1 All steel joists shall be designed, fabricated, and erected in accordance with the SJI Specifications.

8.2 Joist ends shall be fixed and bridging shall be placed prior to application of any loads.

8.3 End Support:
- a. Minimum bearing requirements shall be in accordance with the SJI Specification. Extended joist ends for bearing on masonry shall be provided by the joist manufacturer where required to accommodate bearing conditions shown on the drawings.
- b. K Series joists shall be welded to supports with 1/8" fillet welds, one each side, 2" long.
- c. Bolt joists as indicated below to structural steel supports at column centerlines or where joists do not space on centerlines, bolt connections for each joist adjacent to centerline. K Series: 2 @ 1/2-inch diameter bolts (minimum)

8.4 Joist bridging:
- a. Shall be placed in accordance with the SJI Specification U.N.O. and shall be horizontal rods or angles at top & bottom chords for all K Series joists.
- b. Bridging that terminates at or is interrupted by structural steel members, shall be welded or bolted thereto. Provide diagonal ("X") bridging for ends of bridging lines terminating at walls/beams.

8.5 Holes in joist chords are not permitted, except at bearing and bolted connections.

8.6 All joists (40) forty feet and longer shall require a row of bolted bridging to be in place before slackening of hoisting lines.

9.0 STRUCTURAL STEEL:

9.1 All structural steel shall be of the grades indicated below, unless noted otherwise on plans or details.
Rolled shapes ASTM A992 Gr. 50
Steel pipe ASTM A53, Type E or S, Grade B, Fy-35ksi
Structural tubing ASTM A500, Grade B, Fy-46ksi
Plates and bars ASTM A36 U.N.O.
Anchor rods ASTM F1554, Grade 36 U.N.O.
Miscellaneous ASTM A36 U.N.O.

9.2 All structural steel shall be detailed, fabricated and erected in accordance with the AISC Code of Standard Practice. The fabricator is responsible for the design of connections not shown on the structural drawings. For the purpose of the connection design, the fabricator shall retain a professional engineer registered in the state where the project is located. The engineer shall seal and sign each shop drawing containing connection design. A note shall accompany the drawings stating that the seal is for "Connection Design Only".

9.3 Connection Design:
- a. Generally, connections shown on the drawings are schematic and are intended to show the relationship of the members.
- b. Connections shall be designed for one-half (1/2) the allowable uniform load on the member, as defined in Part 3, "Allowable Loads on Beams" tables in the AISC "Manual of Steel Construction", 14th Edition, See plan notes for design methodology and minimum reactions.

9.4 Bolted connections:
- a. Bearing type connections shall be snug tight with A325N or A490N bolts, U.N.O. Oversized and long-slotted holes are NOT permitted U.N.O. At single shear plate connections, provide bearing type fasteners with horizontal short slotted holes. All bolts shall be snug tight. DO NOT over torque bolts.
- b. Protruding bolt heads, shafts or nuts shall not extend nor prohibit the application of architectural finishes or placement of steel deck at its correct location and elevation.
- c. Connection designer is responsible for verifying the axial capacity after a section is reduced for bolt holes. Member size may be increased or plates added to maintain required capacity.
- d. Bolted connections shall be assembled and inspected in accordance with RCSC-2009 (Specification for Structural Joints Using High-Strength Bolts).

9.5 Welded connections:
- a. All welding shall be in accordance with the "Structural Welding Code - Steel" (AWS D1.1) of the American Welding Society, Latest Edition.
- b. Electrodes for welding shall comply with the requirements of Table 4.1.1 of the AWS code.
- c. At Moment Connections and Braced Frames Provide filler Metal that has a minimum CVN Toughness of 20 ft-lbs at minus 20 degrees F, As determined by AWS classification or Manufacturer Certification.
- d. Proof of welder certification shall be available at the job site during times of inspection.

9.6 Minimum plate thickness shall be 3/8" U.N.O.; minimum bolt diameter shall be 3/4-inch U.N.O.; minimum shop weld shall be 3/16" and minimum field weld shall be 1/4-inch U.N.O.

9.7 All re-entrant corners (such as copes and blocks) shall be cut and shaped notch free with a radius of at least 1/2-inch.

10.0 STEEL DECK:

10.1 Steel roof deck shall be galvanized, Type B, 1 1/2" deep, 20 gauge, U.N.O.

10.2 For steel roof deck spans, mechanically fasten side laps at mid-span as noted on plan
Provide additional sidelap fasteners where noted on plan.
Fasten roof deck to supporting members as noted on plan.

10.3 Do not hang pipes or ducts from steel roof deck. Fasten roof deck to supporting members as noted on plan.

11.0 CONSTRUCTION AND SAFETY:

11.1 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.

12.0 SHOP DRAWING SUBMITTAL:

12.1 See Project Manual

12.2 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.

12.3 The following items require delegated design by a licensed engineer:
-Steel connection design
-Exterior Cold-Formed metal framing design

13.0 SUPPLEMENTAL FRAMING:

13.1 Provide supplemental framing for the support of pipes, conduits, light fixtures, etc. Supplemental framing shall consist of slotted steel channels, steel angles, hanger rods, and appropriate hardware. Finish for framing and hardware shall be galvanized or rust-inhibiting acrylic enamel paint.

13.2 Slotted Steel Channels: For exterior use, hot-dipped galvanized finish. For interior use, manufacturer's standard finish.

13.3 Steel Angles: for exterior use, hot-dipped galvanized. For interior use, prime with rust-inhibitive primer and finish paint two coats of alkyd enamel.

13.4 Hanger Rods: Galvanized carbon steel threaded rods.

13.5 Fastening Hardware: Finish shall match connected parts.

14.0 SPECIAL INSPECTIONS:

14.1 Refer to Specification Section 014533 and for all Special Inspections requirements.

ABBREVIATIONS

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

DO NOT SCALE DIGITAL OR HARD COPIES OF THESE DRAWINGS:

Unless Specifically Noted - Drawings, Plans, Sections, Details, Etc. are a graphic representation of the framing conditions and/or requirements.
Rebar lengths, bends & etc. SHALL NOT be determined by scaling any drawings included in this set of documents. Lengths & sizes shall be determined by the schedules only, or specifically requested if not numerically shown. Submit a written request to Woods Engineering, PA if further clarification is needed.

WOODS ENGINEERING
Consulting Structural Engineers
254 North Front Street Phone: 910.343.8007
Wilmington, NC 28401 www.woodseng.com

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621
Fax - (910) 762-8506

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER CORPORATE SEAL No. C-1806

NORTH CAROLINA PROFESSIONAL SEAL 041563 ENGINEER ADAM L. SISK

Digitally signed by Adam L. Sisk, PE, SE
DN: cn=adam@woodseng.com, CN="Adam L. Sisk, PE, SE", OU=WOODS ENGINEERING, P.A., O=WOODS ENGINEERING, P.A., L=Wilmington, S=North Carolina, C=US
Reason: I attest to the accuracy and integrity of this document
Date: 2024.11.25 16:08:09 00'00'

Coastal Carolina Community College Learning Resources Center - First Floor Renovation

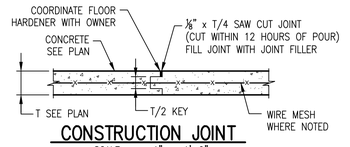
444 Western Boulevard, Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

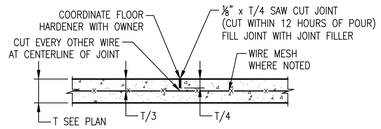
Project Manager	Drawn By: MBK
Date: 11/25/2024	Reviewed By: AS
Project ID	

Sheet Title: **GENERAL NOTES**

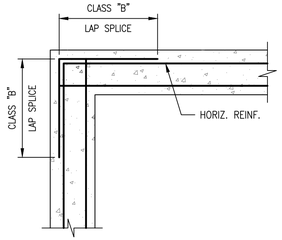
Sheet No.: S1.02



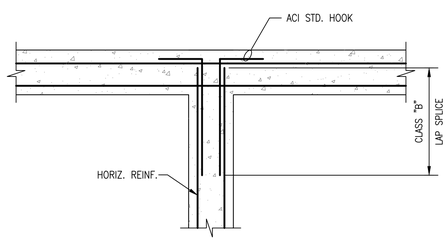
CONSTRUCTION JOINT
SCALE: 1" = 1'-0"
WITH WIRE MESH



CONTRACTION JOINT
SCALE: 1" = 1'-0"
WITH WIRE MESH

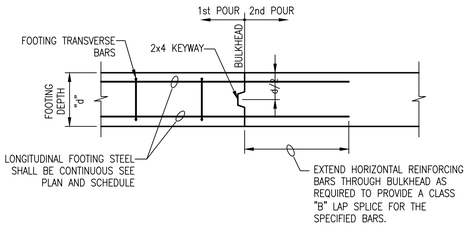


② FOOTINGS CORNERS

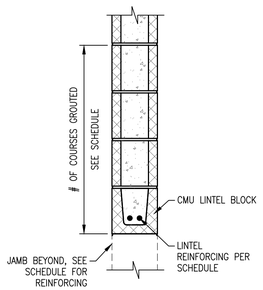


② FOOTINGS INTERSECTION

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

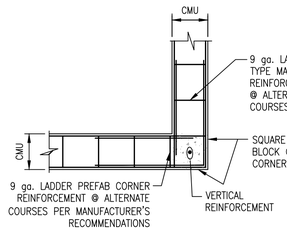


TYPICAL FOOTING CONSTRUCTION JOINT SECTION
SCALE: 3/4" = 1'-0"



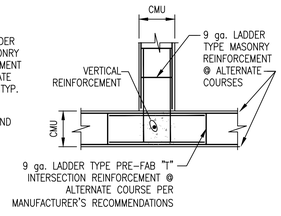
CMU HEADER DETAIL

DETAIL "A"
SCALE: 1" = 1'-0"



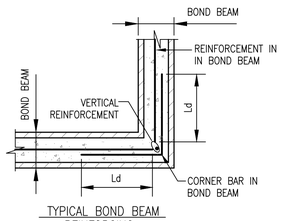
TYPICAL CMU CORNER

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



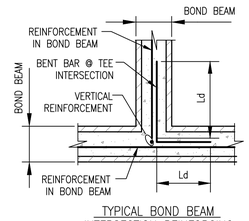
TYPICAL CMU INTERSECTION

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



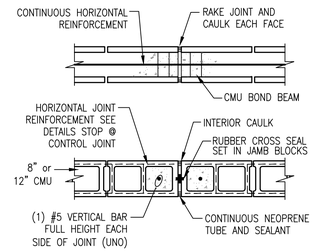
TYPICAL BOND BEAM REINFORCING

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



TYPICAL BOND BEAM INTERSECTION REINFORCING

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



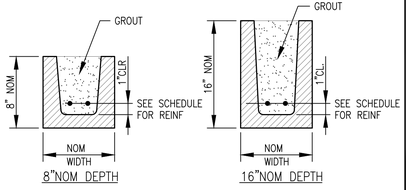
TYPICAL CONTROL JOINT

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

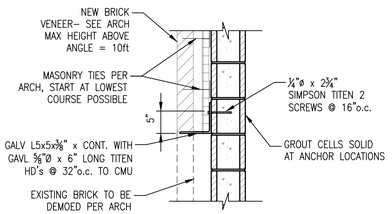
NOTE:
COORDINATE CONTROL JOINT LOCATION W/ARCHITECTURAL MAXIMUM SPACING OF 25' OR 3 TIMES THE WALL HEIGHT

NON LOAD BEARING CMU LINTEL SCHEDULE

CLEAR OPENING	DEPTH	REINFORCING 6" CMU	REINFORCING 8" CMU	REINFORCING 12" CMU	MIN. BRG.
0'-8" TO 3'-4"	8"	1#4	1#4	2#5	8"
3'-4" TO 4'-8"	8"	1#4	1#4	2#5	8"
4'-8" TO 6'-0"	8"	1#4	1#5	2#5	8"
6'-0" TO 8'-0"	8"	1#4	2#5	2#5	8"
8'-0" TO 10'-0"	16"	1#4	2#5	2#5	12"
10'-0" TO 12'-0"	16"	–	–	2#5	12"



NOTES:
1. BEAR REINFORCING 4" (MIN) EACH END.
2. FILL BLOCK CORES WITH GROUT TO A DEPTH OF 48"(MIN) BELOW LINTEL BEARING.
3. SEE BEAM SCHEDULE FOR LINTELS FOR CLEAR SPANS OVER 12' AND LINTELS SUPPORTING FLOOR OR ROOF LOADS.
4. THESE LINTELS ARE NOT DESIGNED FOR MASONRY WALLS THAT CARRY FLOOR OR ROOF LOAD.



NEW BRICK SUPPORT DETAIL
SCALE: 3/4" = 1'-0"

LOCATE CMU CONTROL JOINTS AS FOLLOWS:

1. AT MAXIMUM SPACING OF 25' OR 3 TIMES THE WALL HEIGHT. COORDINATE CONTROL JOINT LOCATIONS W/ ARCHITECTURAL PLANS.
2. AT ALL ABRUPT CHANGES IN WALL HEIGHT.
3. AT ALL CHANGES IN WALL THICKNESS, SUCH AS AT PIPE AND DUCT CHASES AND ADJACENT TO COLUMNS OR PILASTERS.
4. CENTERED OVER JOINTS IN FOUNDATIONS AND FLOORS.
5. CENTERED BELOW JOINTS IN ROOFS AND FLOORS THAT BEAR ON CMU WALLS.
6. AT A DISTANCE NOT OVER ONE-HALF THE REQUIRED JOINT SPACING FROM BONDED WALL INTERSECTIONS, CORNERS OR CHANGES IN WALL DIRECTION.
7. DO NOT PROVIDE CONTROL JOINTS IN CMU SHEAR WALLS.

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

WOODS ENGINEERING
Consulting Structural Engineers
254 North Front Street Phone: 910.343.8007
Wilmington, NC 28401 www.woodseng.com

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621
Fax - (910) 762-8506

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER CORPORATE SEAL No. C-1806

NORTH CAROLINA PROFESSIONAL SEAL 041563 ENGINEER ADAM L. SISK

Digitally signed by Adam L. Sisk, PE, SE
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Reason: I am the author of this document
Location: Wilmington, Surface Pro 7
Date: 2024.11.25 16:14:12-05'00'

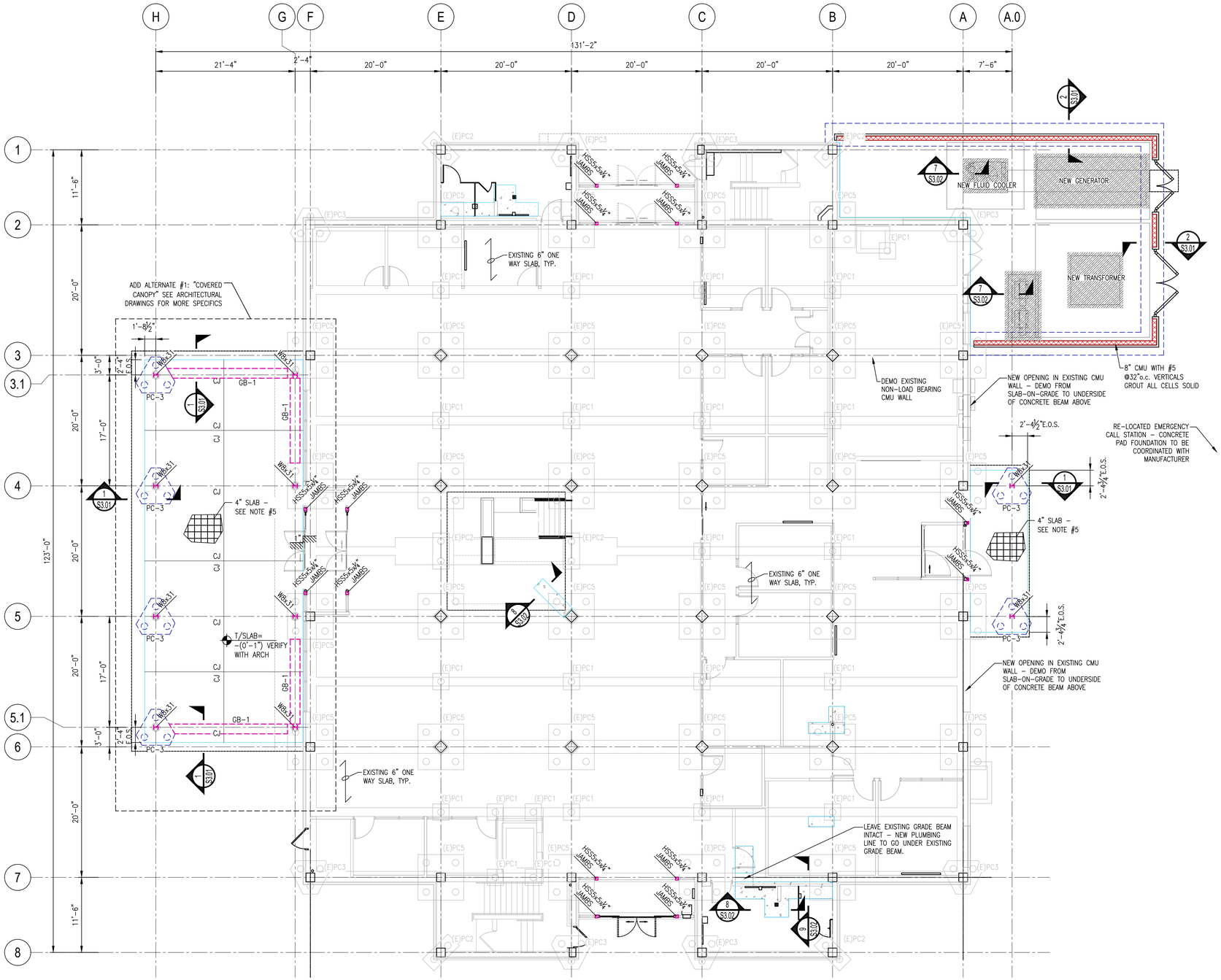
Coastal Carolina Community College Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: MBK
Date: 11/25/2024	Reviewed By: AS
Project ID	

Sheet Title: **TYPICAL DETAILS**

Sheet No.: S1.03



FIRST FLOOR STRUCTURAL RENOVATION PLAN

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

FOUNDATION LEGEND

- WXX / HSSXXX — STEEL COLUMN – SEE PLAN FOR SIZE AND LOCATION SEE S3.0 SHEETS FOR BASE PLATE DETAILS (BP-x)
- SF-x — STRIP FOOTING DESIGNATION SEE PLAN & S3.0 SHEETS
- PCx — PILE CAP DESIGNATION SEE PLAN & S3.0 SHEETS
- INDICATES 8" CMU WALL SEE PLAN FOR REQUIREMENTS
- 0 — GRID DESIGNATION FOR CENTERLINE OF COLUMN U.N.O.
- INDICATES EXISTING GRADE BEAM
- (E)PCx — INDICATES EXISTING PILE CAP
- INDICATES PORTION OF SLAB TO BE REMOVED FOR PLUMBING INSTALLATION AND RE-POURED – SEE NOTE #4 BELOW AND DETAILS ON S3.02
- GB-X — GRADE BEAM SEE S4 SHEETS FOR SIZE AND REINFORCING
- CJ — INDICATES CONCRETE SLAB CONTRACTION JOINTS, SEE TYPICAL DETAILS SHEET. SEE PLAN FOR LOCATIONS. MAXIMUM SPACING = 12' IN BOTH DIRECTIONS
- INDICATES EQUIPMENT PAD – SEE DETAIL ON S3 SHEETS

FOUNDATION PLAN NOTES

1. SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE TYPICAL DETAILS SHEET. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. DATUM ELEVATION = TOP OF EXISTING SLAB ELEVATION = ASSUMED 0'-0" = 46'-4" M.S.L.(F.V.) OTHER ELEVATIONS ARE NOTED AS (+ OR -) FROM DATUM ELEVATION.
3. FOUNDATION DESIGN IS BASED UPON 8ø ROUND TIMBER PILES WITH 30 KIPS COMPRESSION CAPACITY, UPLIFT CAPACITY 4 KIPS AND 3.5 KIPS LATERAL CAPACITY WITH 30 FEET EMBEDMENT DEPTH. TOP OF PILE CAPS = (-1'-8") FROM DATUM.
4. INTERIOR SLAB-ON-GRADE SHALL POUR BACKS BE 6" THICK 3000 psi CONCRETE ON 15 mil VAPOR RETARDER, ON 6" OF GRAVEL (GP, GW) OR CLEAN SANDS WITH LESS THAN 5% FINES PASSING #200 SIEVE (SP, SW, SP-SM) OR APPROVED EQUAL ON WELL COMPACTED SUB GRADE. REINFORCE PER DETAIL ON S3.02. VERIFY FILL MATERIALS AND COMPACTION WITH QUALIFIED GEOTECHNICAL ENGINEER.
5. EXTERIOR SLAB-ON-GRADE SHALL BE 4" THICK 4,000 psi CONCRETE WITH WWM6x6xW2.9xW2.9, AIR ENTRAINMENT AND LIGHT BROOM FINISH ON 10mil VAPOR RETARDER, ON 6" OF GRAVEL (GP, GW) OR CLEAN SANDS WITH LESS THAN 5% FINES PASSING #200 SIEVE (SP, SW, SP-SM) OR APPROVED EQUAL ON WELL COMPACTED SUB GRADE. VERIFY FILL MATERIALS AND COMPACTION WITH QUALIFIED GEOTECHNICAL ENGINEER.
6. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DISCIPLINE DRAWINGS FOR OPENINGS AND DEPRESSIONS NOT SHOWN ON THESE DRAWINGS.
7. 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. IF THE UTILITY LINE IS < 2'-0" BELOW THE STRIP FOOTING, THEN 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.
   c. IF THE LINE IS ≥ 2'-0" BELOW BOTTOM OF FOOTING, THEN STEEL PIPE IS NOT REQUIRED. BACKFILL THE TRENCH WITH #57 STONE. THE BEARING CAPACITY OF THIS AREA MUST MEET OR EXCEED THE ALLOWABLE SOIL BEARING CAPACITY.
8. DIMENSIONS ARE FROM EDGE OF SLAB (E.O.S.) AND OUTSIDE FACE OF STUD (O.F.S.) / CURTAIN WALL (O.F.C.W.) TO COLUMN CENTERLINE UNLESS NOTED OTHERWISE.
9. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.

PROJECT NORTH

NORTH

WOODS ENGINEERING
Consulting Structural Engineers
254 North Front Street Phone: 910.343.8007
Wilmington, NC 28401 www.woodseng.com

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621
Fax - (910) 762-8506

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL WOODS ENGINEERING, P.A. CORPORATE SEAL No. C-1806 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 041563 ENGINEER ADAM L SISK

NORTH CAROLINA PROFESSIONAL SEAL 041563 ENGINEER ADAM L SISK

Digitally signed by Adam L. Sisk, PE, SE
DN: (Location=Wilmington, City=Adam L Sisk, PE, SE, O=WOODS ENGINEERING, P.A., C=US, E=ASISK.NUMBER=ALT1.2024090302506, L=Wilmington, S=North Carolina, C=US
Reason: I attest to the accuracy and integrity of this document
Date: 2024.11.25 16:14:17-05'00'

Coastal Carolina Community College Learning Resources Center - First Floor Renovation

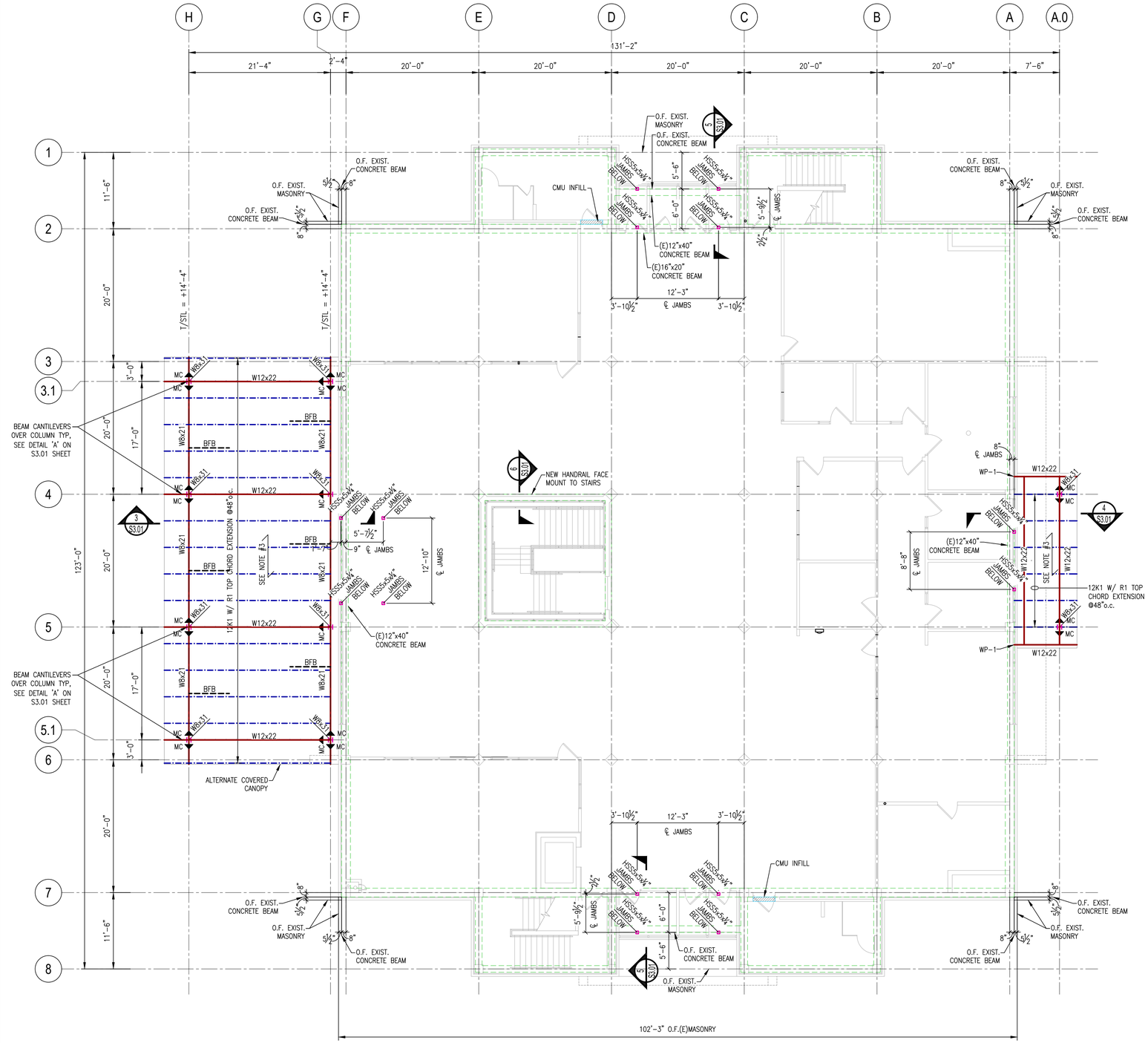
444 Western Boulevard, Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: MBK
Date: 11/25/2024	Reviewed By: AS
Project ID	

Sheet Title: **FIRST FLOOR STRUCTURAL RENOVATION PLAN**

Sheet No.: **S2.01**



SECOND FLOOR STRUCTURAL RENOVATION PLAN

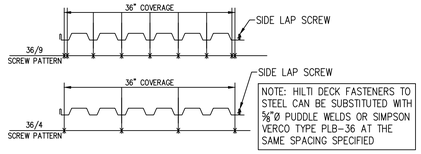
SCALE: 1/8" = 1'-0"

PLAN LEGEND

- W_x_ / HSSXxX — STEEL COLUMN – SEE PLAN FOR SIZE AND LOCATION
- W_x_ — STEEL BEAM – SEE PLAN FOR SIZE AND LOCATION
- MC — INDICATES MOMENT CONNECTION – DESIGN ALL FOR A 35 K–FT MOMENT (LRFD)
- STEEL JOIST – SEE PLAN FOR SIZE AND LOCATION
- 0 — GRID DESIGNATION FOR CENTERLINE OF COLUMN U.N.O.
- MASONRY INFILL ABOVE DOORS SEE TYPICAL DETAILS SHEET
- INDICATES EXITING CONCRETE BEAM
- BFB — INDICATES L2x2x¼" BOTTOM FLANGE BRACING
- WP–x — INDICATES WALL PLATE – SEE DETAIL ON S3.01

PLAN NOTES

1. SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE TYPICAL DETAILS SHEET. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. ELEVATIONS SHOWN ON PLAN ARE REFERENCED TO DATUM ELEVATION (0'–0") – SEE S2.01.
3. TYPICAL ROOF DECK IS 1½" DEEP, 20 ga., GALVANIZED, TYPE 'B' METAL ROOF DECK.
4. METAL ROOF DECK SHALL BE ATTACHED TO SUPPORTING MEMBERS WITH HILTI X–HSN 24 FOR STEEL THICKNESS EQUAL TO OR LESS THAN 3/8" AND HILTI X–ENP 19 OTHERWISE IN A 36/4 PATTERN U.N.O. ON PLAN – EXCEPT WITHIN 8'–0" OF ROOF EDGE PROVIDE FASTENERS IN A 36/7 PATTERN. PROVIDE (1) HILTI SCC TEK OR SIMPSON VSC2 SIDELAP SCREW PER SPAN, U.N.O. ON PLAN.



NOTE: HILTI DECK FASTENERS TO STEEL CAN BE SUBSTITUTED WITH ⅝"ø PUDDLE WELDS OR SIMPSON VERCO TYPE PLB–36 AT THE SAME SPACING SPECIFIED

5. ALL JOISTS SHALL BE DESIGNED FOR A NET UPLIFT PRESSURE OF 30 psf.
6. PROVIDE JOIST BRIDGING PER SJI RECOMMENDATIONS.
7. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.

PROJECT NORTH

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Wilmington, NC 28401 www.woodseng.com

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ARCHITECTS
514 Market Street
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Tel - (910) 762-2621
Fax - (910) 762-8506

SCO ID# 23–26060–01A

NORTH CAROLINA PROFESSIONAL ENGINEER CORPORATE SEAL No. C–1806

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041563 ADAM L. SISK

Digitally signed by Adam L. Sisk, PE, SE
DN: E=adam@woodseng.com, CN=Adam L Sisk, PE, SE, O=WOODS ENGINEERING, PLLC
1.2.840.113549.1.9.2=Wilmington, Subscrib Carolina, C=US
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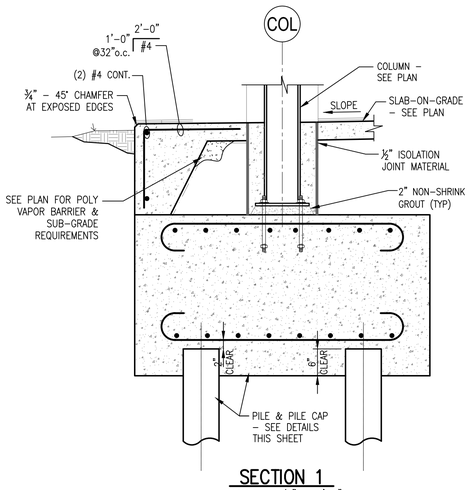
REV.	DATE	DESCRIPTION

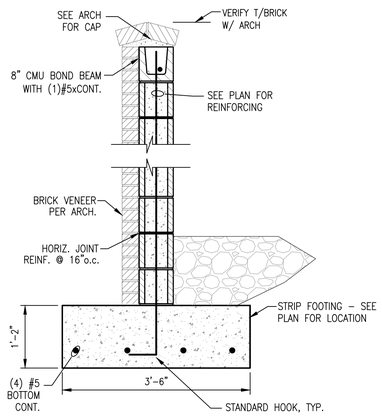
Project Manager	Drawn By: MBK
Date: 11/25/2024	Reviewed By: AS
Project ID	

Sheet Title: **SECOND FLOOR STRUCTURAL RENOVATION PLAN**

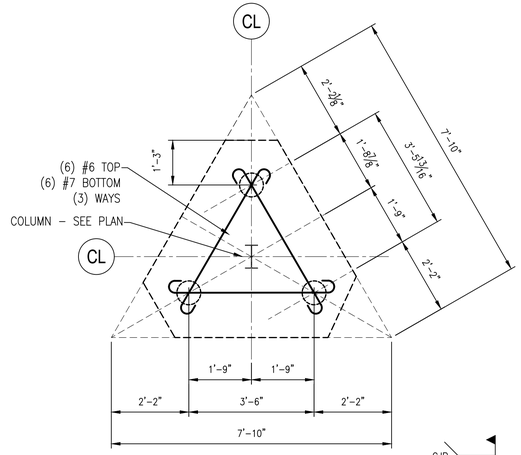
Sheet No.: S2.02



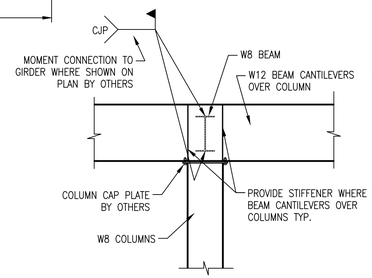
SECTION 1
SCALE: 3/4" = 1'-0"



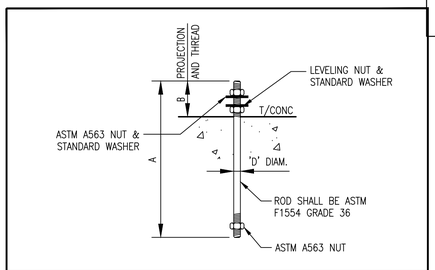
SECTION 2
SCALE: 3/4" = 1'-0"



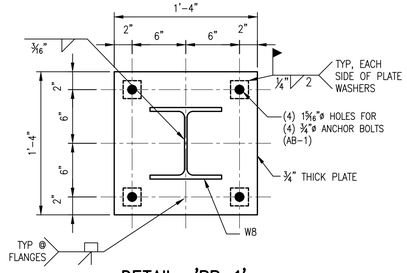
PC-3
SCALE: 1/2" = 1'-0"
3'-0" THICK



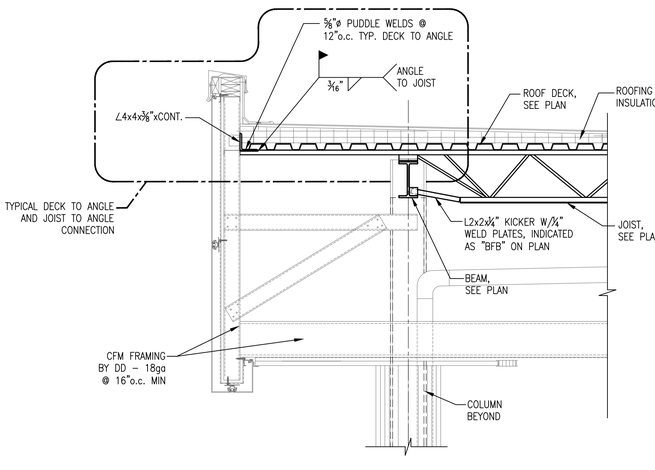
DETAIL A
SCALE: 3/4" = 1'-0"
BEAM TO COLUMN CONNECTION AT COVERED CANOPY

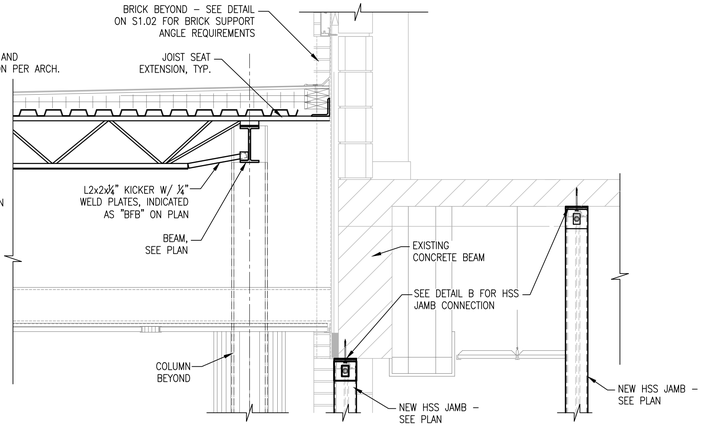


ANCHOR BOLT SCHEDULE							
MARK	BOLT DIAM. D	HOLE DIAMETER	A	B	WASHER O.D. x t	LEVELING NUT	REMARKS
AB-1	¾"	1⅜6"	1'-7"	5"	2" x ¼"	YES	2" LEVELING GROUT



DETAIL 'BP-1'
SCALE: 1 1/2' = 1'-0"
(W8 BASEPLATE)
TYPICAL, UNO





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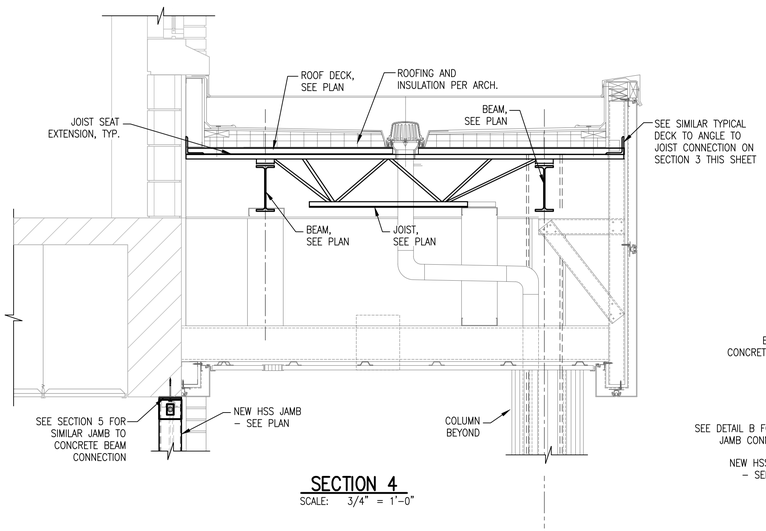

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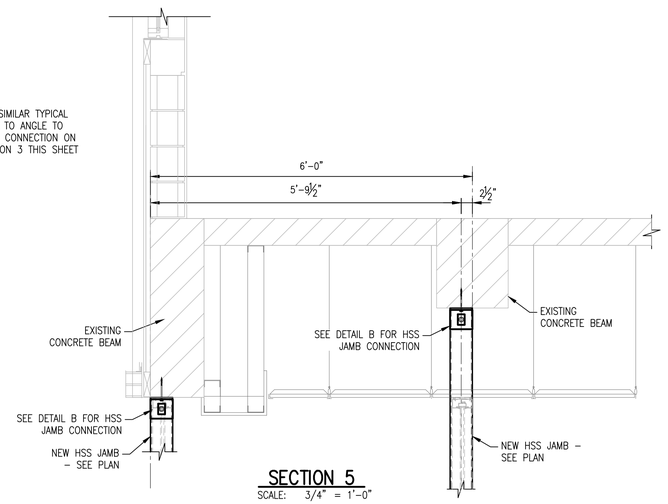
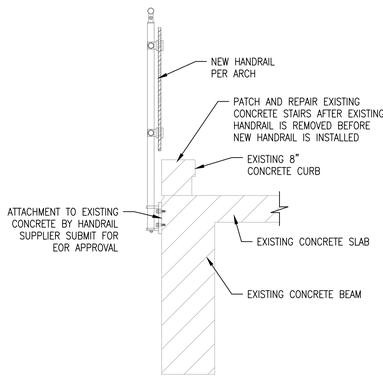
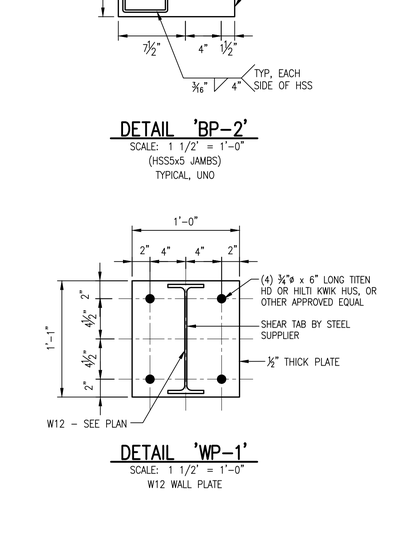


SECTION 5
SCALE: 3/4" = 1'-0"



DETAIL B
SCALE: 3/4" = 1'-0"
HSS JAMB TO EXISTING CONCRETE BEAM CONNECTION

SECTION 6
SCALE: 3/4" = 1'-0"



DETAIL 'BP-2'
SCALE: 1 1/2' = 1'-0"
(HSS5x5 JAMBS)
TYPICAL, UNO

DETAIL 'WP-1'
SCALE: 1 1/2' = 1'-0"
W12 WALL PLATE

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Consulting Structural Engineers
254 North Front Street Phone: 910.343.8007
Wilmington, NC 28401 www.woodseng.com

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621
Fax - (910) 762-8506

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER, INC. CORPORATE SEAL No. C-1806

NORTH CAROLINA PROFESSIONAL SEAL 041563 ENGINEER ADAM L. SISK

Digitally signed by Adam L. Sisk, PE, SE
DN: E=adam@woodseng.com, CN=Adam L Sisk, PE, SE, O=WOODS ENGINEERING, PA, C=US
2.5.4.65=fc4ef2f2ca4b7c7c312f24f4f0320506, L=Wilmington, S=North Carolina, C=US
Reason: I am the author of this document
Location:
Date: 2024.11.25 16:14:28-05'00'

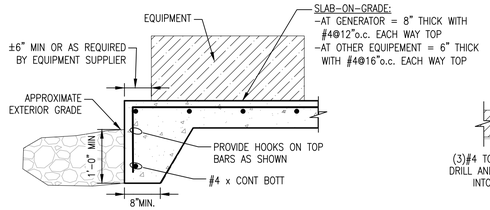
Coastal Carolina Community College Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: MBK
Date: 11/25/2024	Reviewed By: AS
Project ID	

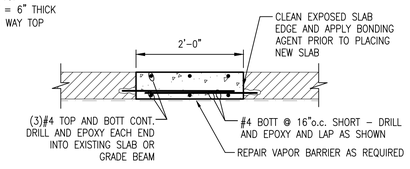
Sheet Title
SECTIONS & DETAILS

Sheet No.
S3.01



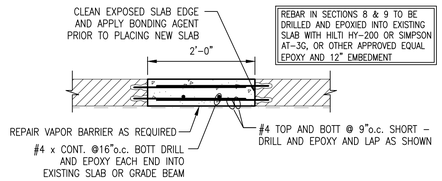
SECTION 7

SCALE: 3/4" = 1'-0"
EQUIPMENT PAD DETAIL



SECTION 8

SCALE: 3/4" = 1'-0"
SLAB POUR BACK
PLAN N-S VIEW



SECTION 9

SCALE: 1" = 1'-0"
SLAB POUR BACK
PLAN E-W PLAN

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Consulting Structural Engineers
254 North Front Street Phone: 910.343.8007
Wilmington, NC 28401 www.woodseng.com

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621
Fax - (910) 762-8506

SCO ID# 23-26060-01A

WOODS ENGINEERING, P.A. CORPORATE SEAL No. C-1806 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 041563 ENGINEER ADAM L. SISK

NORTH CAROLINA PROFESSIONAL SEAL 041563 ENGINEER ADAM L. SISK

Digitally signed by Adam L. Sisk, PE, SE
DN: E=adam@woodseng.com, CN=Adam L. Sisk, PE, SE, OU=WOODS ENGINEERING, P.A., SERIALNUMBER=AA1D1D0A0000D0206, L=Wilmington, S=North Carolina, C=US
Reason: I attest to the accuracy and integrity of this document
Date: 2024.11.25 16:14:33-05'00'

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Date 11/25/2024	Reviewed By AS
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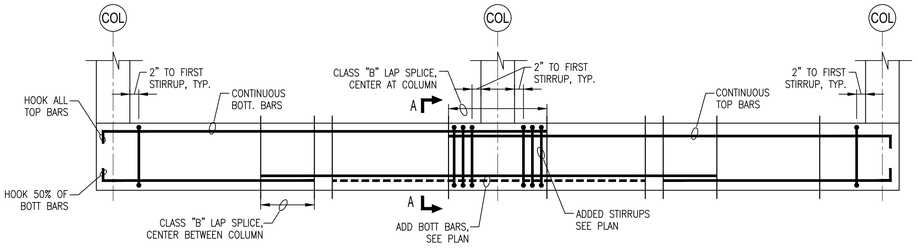
Sheet Title

FOUNDATION SECTIONS

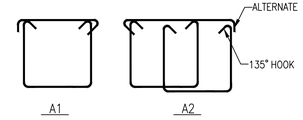
Sheet No.

S3.02

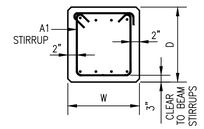
TYPICAL GRADE BEAM REINFORCING LAYOUT

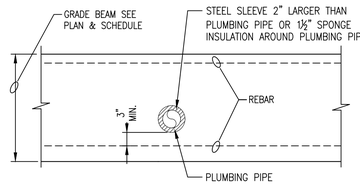


TYPICAL STIRRUP



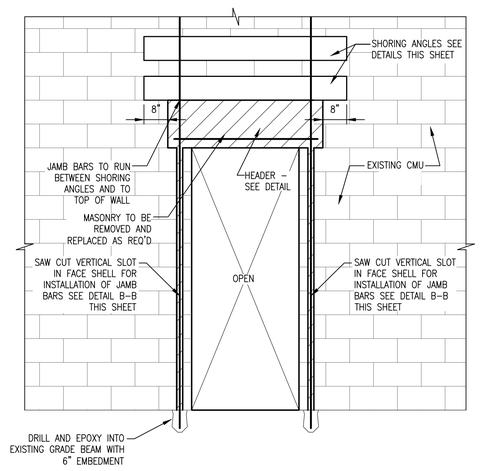
DETAIL A–A





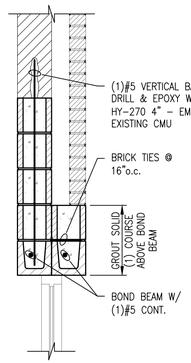
PLUMBING SLEEVE THROUGH GRADE BEAM

SCALE: 3/4" = 1'–0"



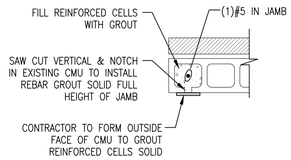
NEW OPENING IN EXISTING EXTERIOR NON–LOAD BEARING WALL ELEVATION

SCALE: 1/2" = 1'–0"



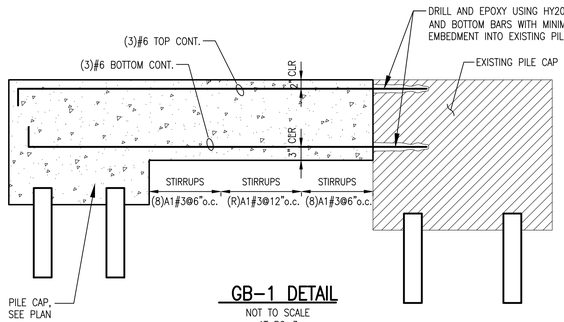
DETAIL A–A

SCALE: 3/4" = 1'–0"



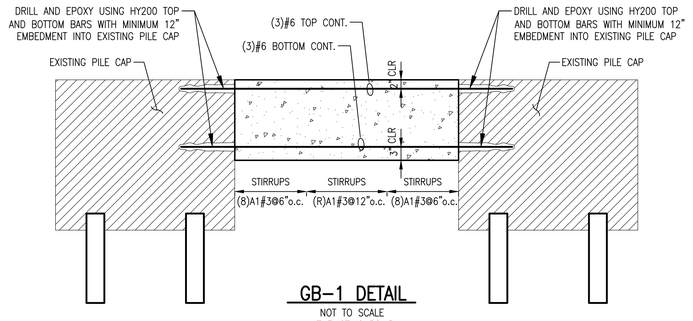
DETAIL B–B

SCALE: 3/4" = 1'–0"



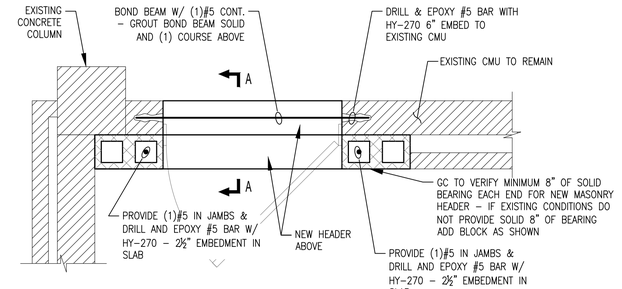
GB–1 DETAIL

NOT TO SCALE
AT PC–3
(18"Wx24"D)



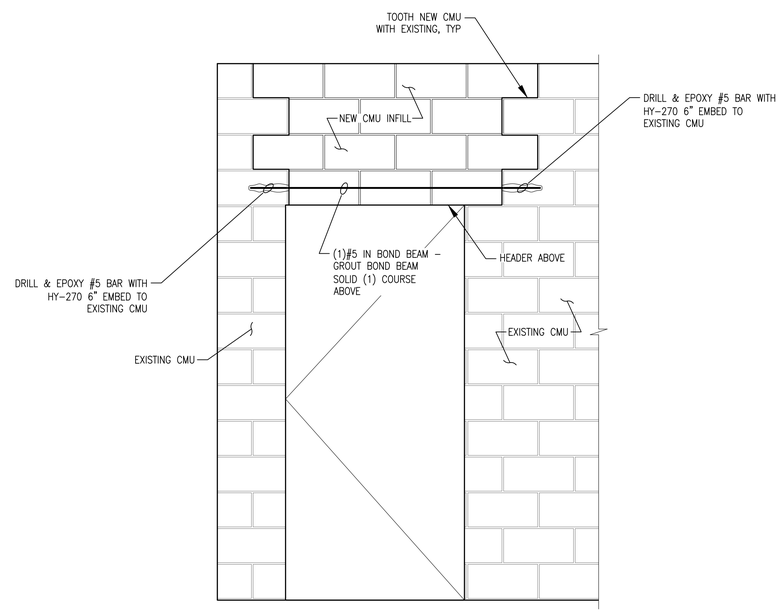
GB–1 DETAIL

NOT TO SCALE
AT EXISTING PC–5
(18"Wx24"D)



NEW CMU JAMBS IN EXISTING CMU WALL

SCALE: 3/4" = 1'–0"



ELEVATION AT NEW CMU INFILL ABOVE EXISTING CMU OPENING

SCALE: 3/4" = 1'–0"

WOODS ENGINEERING
Consulting Structural Engineers
254 North Front Street Phone: 910.343.8007
Wilmington, NC 28401 www.woodseng.com

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621
Fax - (910) 762-8506

SCO ID# 23–26060–01A

NORTH CAROLINA PROFESSIONAL ENGINEERING FIRM CORPORATE SEAL No. C–1806

NORTH CAROLINA PROFESSIONAL SEAL 041563 ENGINEER ADAM L. SISK

NORTH CAROLINA PROFESSIONAL SEAL 041563 ENGINEER ADAM L. SISK

Digitally signed by Adam L. Sisk, PE, SE
DN: E=adam@woodseng.com, CN=Adam L. Sisk, PE, SE, O=WOODS ENGINEERING, PA
C=US, SERIALNUMBER=(U)20240903092506, L=Wilmington, S=North Carolina, C=US
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Date: 2024.11.25 16:14:37-05'00'

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444 Western Boulevard, Jacksonville, North Carolina 28546

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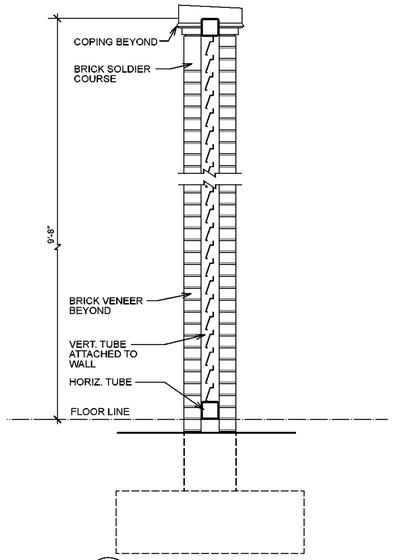
Project Manager	Drawn By: MBK
Date: 11/25/2024	Reviewed By: AS
Project ID	

Sheet Title

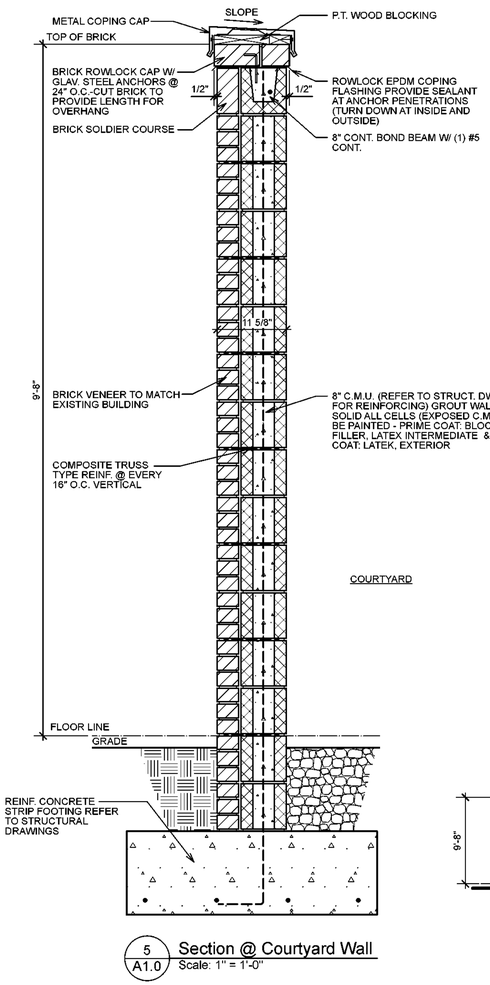
GRADE BEAM AND CMU DETAILS

Sheet No.

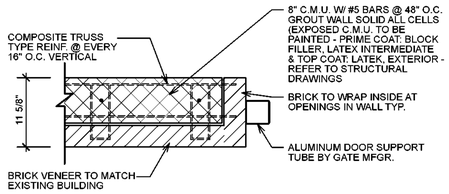
S4.01



6 A1.0 Section @ Swing Gate
Scale: 3/4" = 1'-0"



5 A1.0 Section @ Courtyard Wall
Scale: 1" = 1'-0"



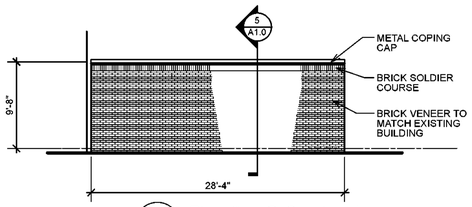
7 A1.0 Plan Detail @ Courtyard Wall
Scale: 1" = 1'-0"

NOTES :

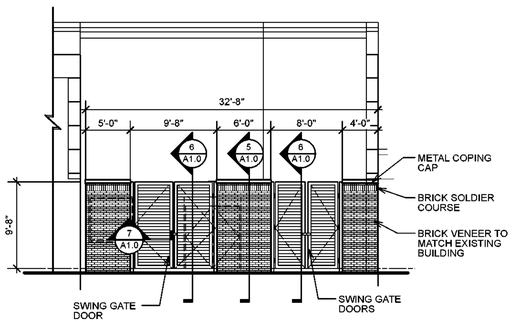
ALUMINUM SWING GATES AT MECHANICAL YARD :

1. BASIS OF DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ALUMINUM ORSOGRIL SWING GATE BY BARNETT BATES OR COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:

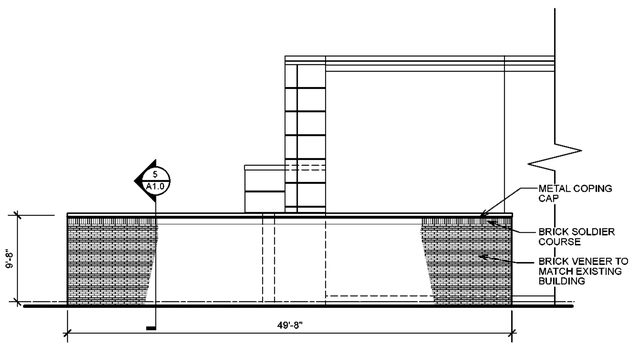
   A. AMETCO MANUFACTURING CORPORATION-VENETIAN 100 SWING GATE.
   B. PALMSHIELD - ATLAS LOUVER
   C. FORTRESS STYLES ALUMI-GUARD
   D. CITY SCAPES INC. TOUGHGATE
2. DIMENSIONS: CUSTOM SIZE AS INDICATED ON DRAWINGS.
3. FINISH : POLYESTER POWDER COAT FINISH - COLOR SELECTED BY OWNER FROM MANUFACTURERS STANDARS LIST OF COLORS. PROVIDE 20 YEAR FINISH WARRANTY.
4. INFILL PANELS: HORIZONTAL LOUVERS AT 100% VIEW BLOCKING.
5. PROVIDE FOUNDATION FOR SWING GATES PER MANUFACTURER'S SPECIFICATIONS.



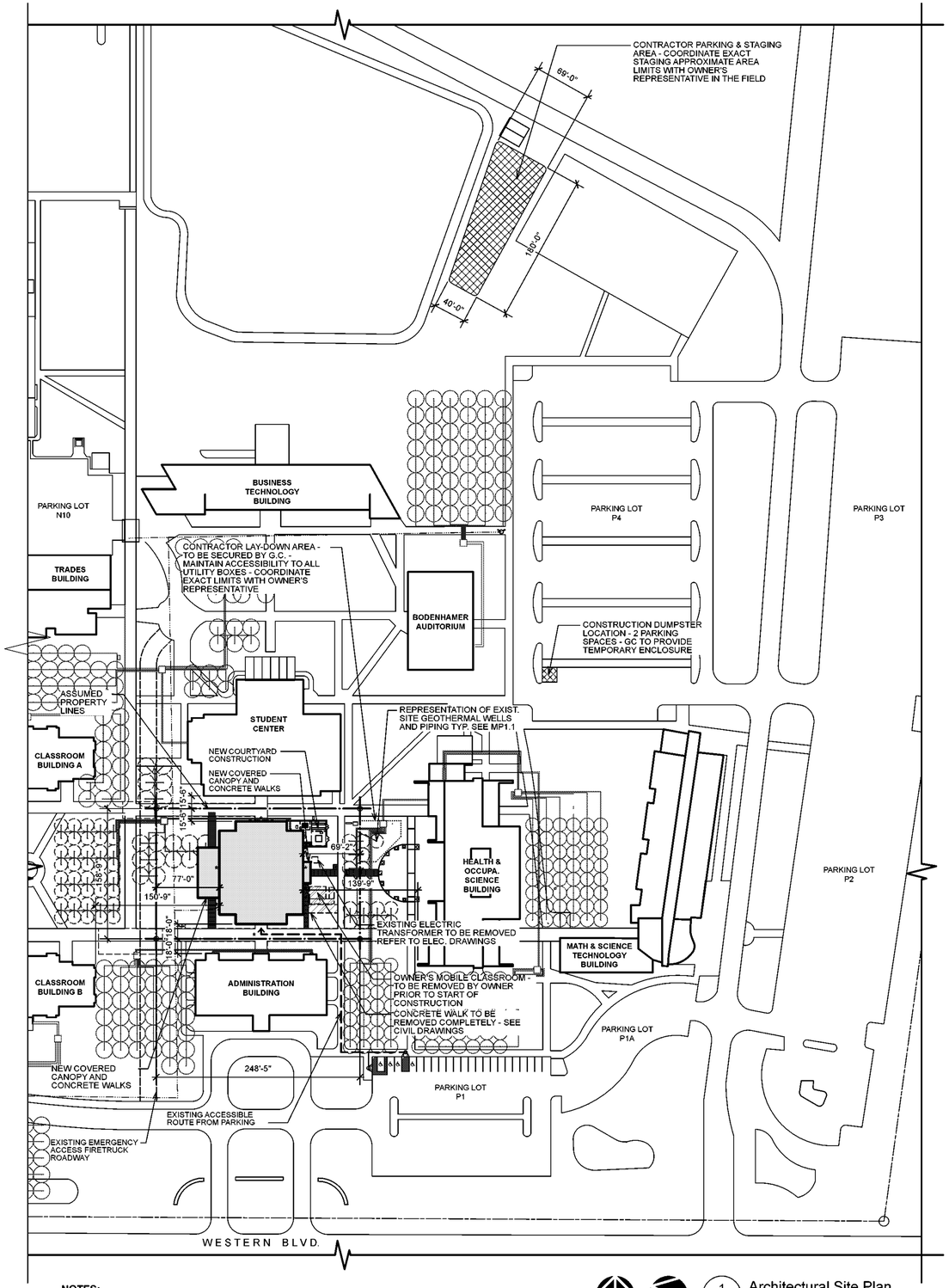
4 A1.0 Elevation @ Courtyard
Scale: 1/8" = 1'-0"



3 A1.0 Elevation @ Courtyard
Scale: 1/8" = 1'-0"



2 A1.0 Elevation @ Courtyard
Scale: 1/8" = 1'-0"



NOTES:

1. ALL DIMENSIONS AND UNDERGROUND UTILITIES SHALL BE VERIFIED IN AREA OF WORK.
2. REFER TO CIVIL, STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION AND SITE REQUIREMENTS. CONTRACTOR SHALL PERFORM DEMOLITION, PATCH AND REPAIR WORK AS REQUIRED TO COMPLETE NEW WORK.
3. UPON COMPLETION OF WORK RETURN ANY DISTURBED SITE AREA TO ORIGINAL CONDITION.
4. REPLACE WITH NEW ANY LANDSCAPING DAMAGED DURING CONSTRUCTION.

PROJECT NORTH

NORTH

1 A1.0 Architectural Site Plan
Scale: 1:900

NOTE: ✱DENOTES ACCESSIBLE ENTRY TO LEARNING RESOURCES CENTER.

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, PC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50424 NORTH CAROLINA WILMINGTON, N.C.

WILLIAM DANIEL HILL NORTH CAROLINA REGISTERED LICENSED ARCHITECT SEAL 13058 WILMINGTON, NC 11-25-2024

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Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

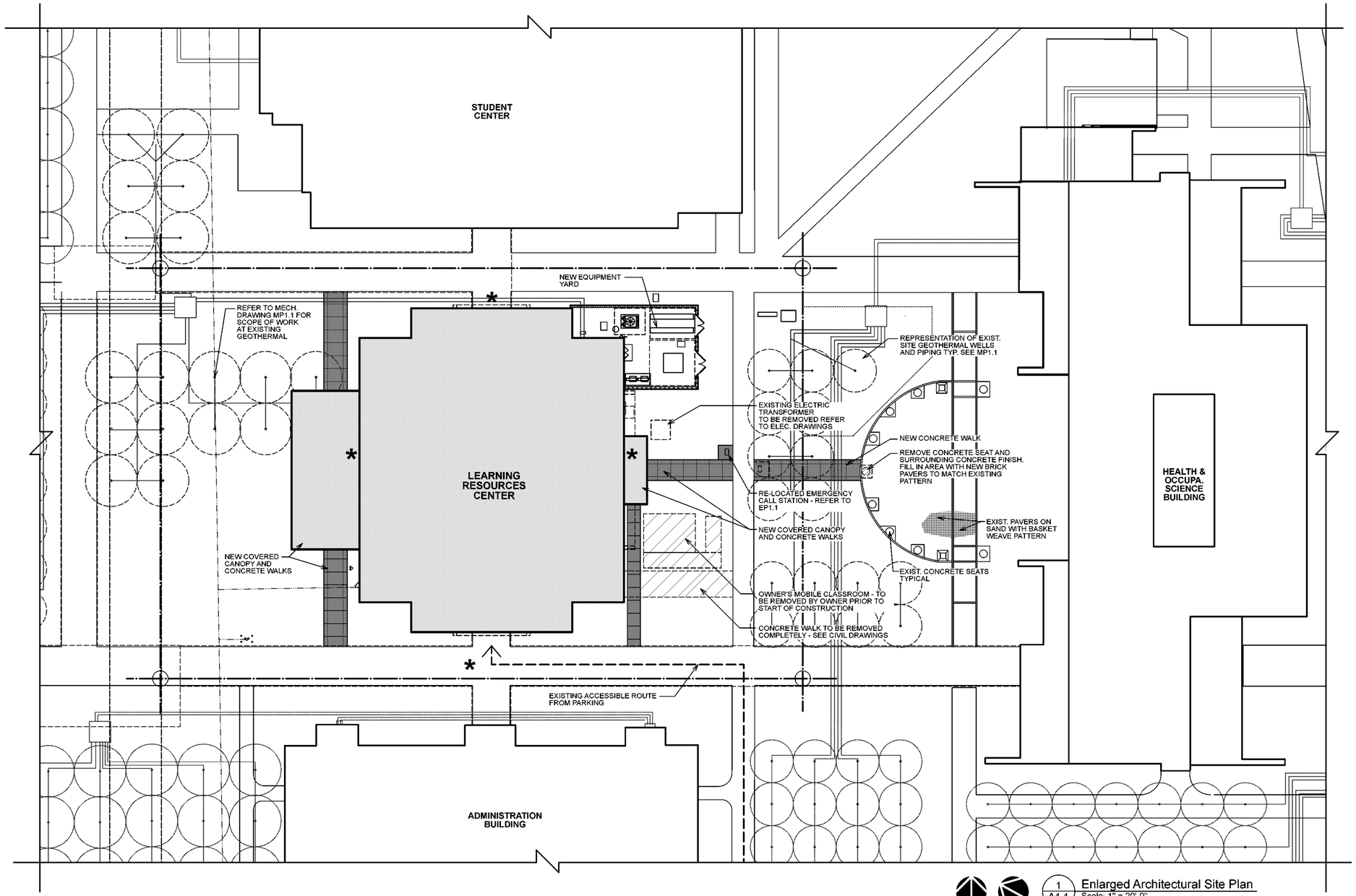
Project Manager	Drawn By: DP
Date: 11-25-2024	Reviewed By: DH
Project ID	

Sheet Title: **ARCHITECTURAL SITE PLAN**

Sheet No.: A1.0

EQUIPMENT YARD NOTE:

THE PROPOSED NEW EQUIPMENT YARD AREA CONTAINS MULTIPLE EXISTING UNDERGROUND UTILITY RACEWAYS, DIRECT BURIED CABLES, PIPING, ETC. EXTREME CAUTION MUST BE USED IN THE EXCAVATION OF THIS AND THE SURROUNDING AREA. ALL EXCAVATION OF THIS AND THE SURROUNDING AREA MUST BE HAND DIG ONLY. MARKING OF EXISTING UNDERGROUND UTILITY RACEWAYS, DIRECT BURIED CABLES, PIPING, ETC. IN THE PROPOSED NEW SERVICE YARD AND SURROUNDING AREAS MUST BE PROVIDED AND IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR ASSUMES RESPONSIBILITY FOR ANY DAMAGE TO AND THE COST FOR REPAIR OF ANY EXISTING UTILITY RACEWAYS, DIRECT BURIED CABLES ,PIPING, ETC DURING THE CONSTRUCTION PERIOD.



1 / A1.1 Enlarged Architectural Site Plan
Scale: 1" = 20'-0"

NOTE:

* DENOTES ACCESSIBLE ENTRY TO LEARNING RESOURCES CENTER.

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, PC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50424 NORTH CAROLINA WILMINGTON, N. C.

WILLIAM DANIEL HEMINGWAY REGISTERED ARCHITECT 13058 NORTH CAROLINA WILMINGTON, NC

11-25-2024

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Sheet Title
ENLARGED ARCHITECTURAL SITE PLAN AND DETAILS

Sheet No.
A1.1

ADD ALTERNATE # 1
ALL WORK TO PROVIDE ALL LABOR AND MATERIAL TO PROVIDE COVERED CANOPY 140. ALTERNATE TO INCLUDE ALL ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL WORK INVOLVED IN CONSTRUCTION OF COVERED CANOPY 140 AS SHOWN ON A2.0 AND A3.0. BASE BID TO INCLUDE DOORS 134B AND SIDEWALKS AS SHOWN ON A2.1. BASE BID TO INCLUDE INFILTRATION TRENCHES AS DELINEATED ON CIVIL DRAWINGS.

EQUIPMENT YARD NOTE:
THE PROPOSED NEW EQUIPMENT YARD AREA CONTAINS MULTIPLE EXISTING UNDERGROUND UTILITY RACEWAYS, DIRECT BURIED CABLES, PIPING, ETC. EXTREME CAUTION MUST BE USED IN THE EXCAVATION OF THIS AND THE SURROUNDING AREA. ALL EXCAVATION OF THIS AND THE SURROUNDING AREA MUST BE HAND DIG ONLY. MARKING OF EXISTING UNDERGROUND UTILITY RACEWAYS, DIRECT BURIED CABLES, PIPING, ETC. IN THE PROPOSED NEW SERVICE YARD AND SURROUNDING AREAS MUST BE PROVIDED AND IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR ASSUMES RESPONSIBILITY FOR ANY DAMAGE TO AND THE COST FOR REPAIR OF ANY EXISTING UTILITY RACEWAYS, DIRECT BURIED CABLES, PIPING, ETC DURING THE CONSTRUCTION PERIOD.

LEGEND

- 1HR EX — 1 HOUR RATED FIRE BARRIER - EXISTING CONSTRUCTION TO REMAIN & BE MAINTAINED
- EXISTING WALL TO REMAIN
- NEW RENOVATION PARTITION
- INFILL WITH NEW BRICK AND C.M.U. CONSTRUCTION TO MATCH EXISTING-TOOTH INFILL -REFER TO DEMOLITION PLAN
- (135B) DOOR DESIGNATION-REFER TO A6.0
- W- NEW WINDOW DESIGNATION
- 135 ROOM NAME / IDENTIFICATION #
- A PARTITION TYPE - REFER TO DRAWING A6.0
- F.E.C. FIRE EXTINGUISHER CABINET - COORDINATE LOCATION WITH FIRE MARSHALL
- # EXISTING COLUMN LINE
- # NEW COLUMN LINE
- (NT) OWNER PROVIDED AND CONTRACTOR INSTALLED INTERACTIVE BOARD; NEWLINE TRUTOUCH-G.C. TO PROVIDE BLOCKING FOR MOUNT AS REQUIRED. REFER TO ELECTRICAL DRAWINGS

NOTES:

1. ALL DIMENSIONS SHALL BE FIELD VERIFIED.
2. FURNITURE IS SHOWN FOR REFERENCE ONLY AND IS NOT IN CONTRACT (N.I.C.)
3. REFER TO CIVIL DRAWINGS FOR ALL SITEWORK.
4. COORDINATE AREAS OF FLOOR SLAB CUTS AND PATCH IN THE EXISTING FLOOR SLAB WITH PLUMBING AND ELECTRICAL WORK. REFER TO STRUCTURAL DRAWINGS FOR SLAB PATCH WORK.
5. ADD ALTERNATE # 1 - ALL WORK TO PROVIDE ALL LABOR AND MATERIAL TO PROVIDE COVERED CANOPY 140. ALTERNATE TO INCLUDE ALL ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL WORK INVOLVED IN CONSTRUCTION OF COVERED CANOPY 140 AS SHOWN ON A2.0 AND A3.0. BASE BID TO INCLUDE DOORS 134B AND SIDEWALKS AS SHOWN ON A2.1. BASE BID TO INCLUDE INFILTRATION TRENCHES AS DELINEATED ON CIVIL DRAWINGS.
6. ADD ALTERNATE # 2 - ALL WORK TO PROVIDE LABOR AND MATERIAL FOR THE COMPLETE INSTALLATION OF A STANDBY POWER SYSTEM INCLUDING NEW NATURAL GAS FUELED ENGINE-GENERATOR SET, AUTOMATIC TRANSFER SWITCH AND ASSOCIATED CONDUCTORS, CONDUIT AND EQUIPMENT - REFER TO ELECTRICAL AND PLUMBING DRAWINGS.
7. ADD ALTERNATE #3 - ALL WORK TO PROVIDE LABOR AND MATERIAL FOR PRECAST TREADS AND RISERS AND PRECAST TERRAZZO TILES AS DELINEATED AT THE CENTRAL STAIR ON DRAWING A5.0 AND SPECIFICATION SECTION 096623.
8. ADD ALTERNATE #11 - ALL WORK TO PROVIDE ELEVATOR MODERNIZATION TO THE MAIN ELEVATOR IN THE LEARNING RESOURCES CENTER BUILDING BY TKE AS SPECIFIED IN SECTION 142400.5 HYDRAULIC ELEVATOR MODERNIZATION.
9. NEW DOORS AND FRAMES AT OPENINGS 124 AND 129 WILL REQUIRE MASONRY INFILL ABOVE FRAMES - REFER TO FRAME DETAILS AND STRUCTURAL DRAWINGS. TOOTH INFILL INTO ADJACENT CMU AND MATCH ADJACENT CMU IN SIZE, STYLE, AND COURSING.
10. SEE ELECTRICAL SHEET E-0.11 FOR ACCESS CONTROL DETAILS. INFRASTRUCTURE FOR ACCESS CONTROL IS INCLUDED IN THE PROJECT SCOPE. FINAL ACCESS CONTROL DEVICES AND WIRING IS BY THE OWNER UNLESS NOTED OTHERWISE.

1 First Floor Renovation Plan
A2.0 Scale: 1/8" = 1'-0"

PROJECT NORTH

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, PC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50424 NORTH CAROLINA WILMINGTON, N.C.

WILLIAM DANIEL HEMINGWAY SEAL 13058 NORTH CAROLINA REGISTERED ARCHITECT WILMINGTON, NC
11-25-2024

Coastal Carolina Community College
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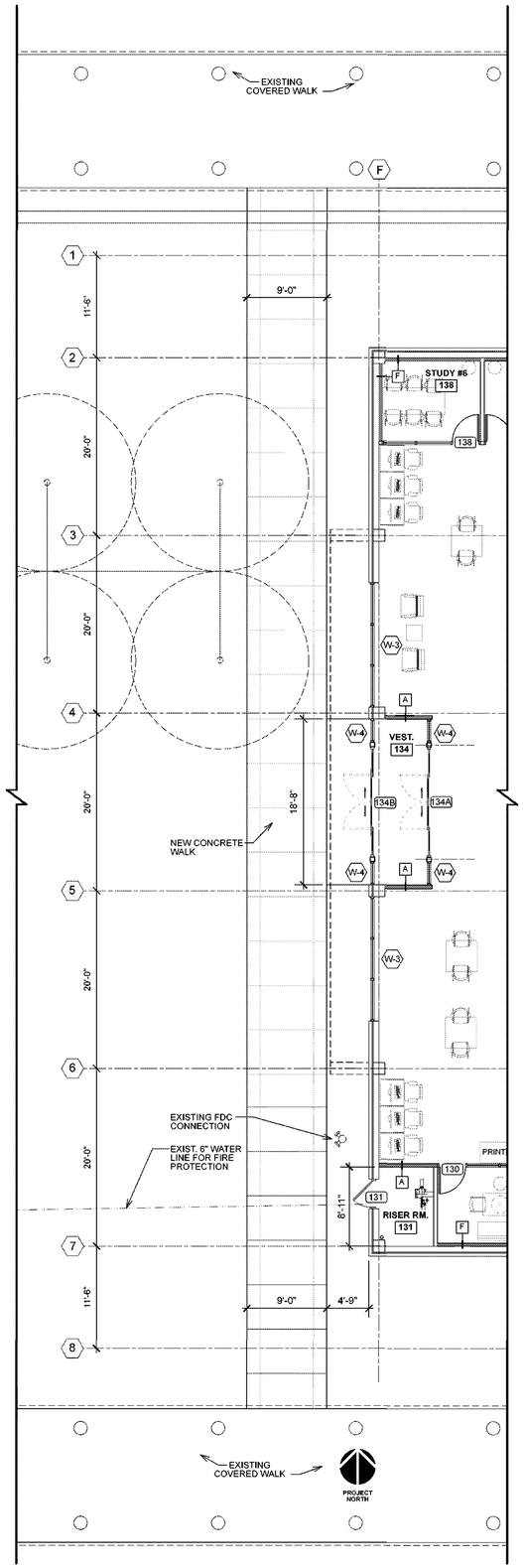
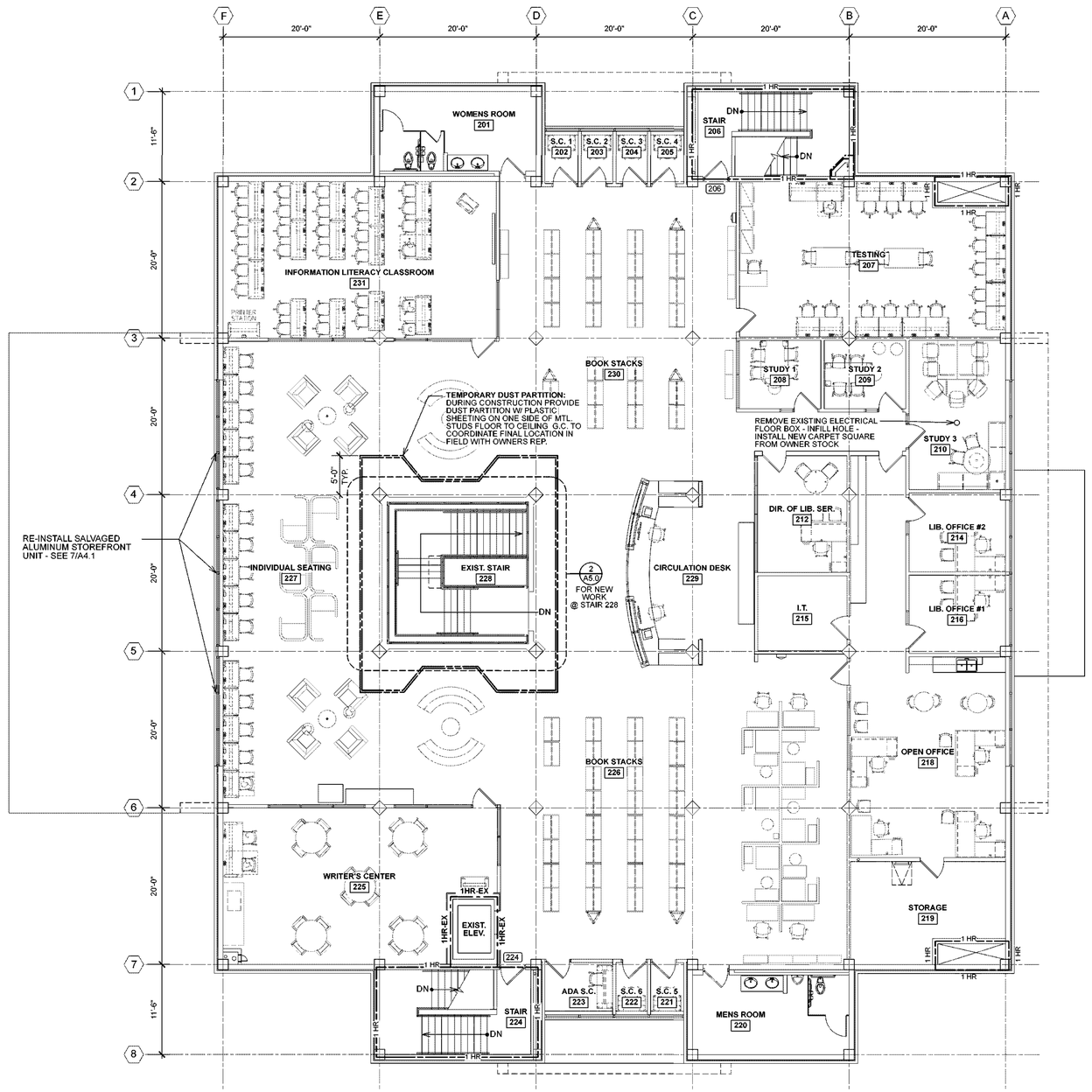
Project ID	

Sheet Title
FIRST FLOOR RENOVATION PLAN

Sheet No.
A2.0



2 A2.1 Covered Canopy 140 - Base Bid Renovation Plan
Scale: 1/8" = 1'-0"



1 A2.1 Second Floor Renovation Plan
Scale: 1/8" = 1'-0"

NOTES:

1. ALL DIMENSIONS SHALL BE FIELD VERIFIED.
2. THE OWNER WILL REMOVE FURNITURE AROUND STAIR 228 PRIOR TO PROJECT. OWNER AND G.C. TO COORDINATE EXACT EXTENTS OF WORK AREA AROUND STAIR 228.

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN, MURRAY, HEMINGWAY ARCHITECTS, PC
REGISTERED ARCHITECTURAL CORPORATION
CERT. NO. 50424
NORTH CAROLINA
WILMINGTON, N.C.

WILLIAM DANIEL HILL
REGISTERED ARCHITECT
13058
NORTH CAROLINA
WILMINGTON, NC
11-25-2024

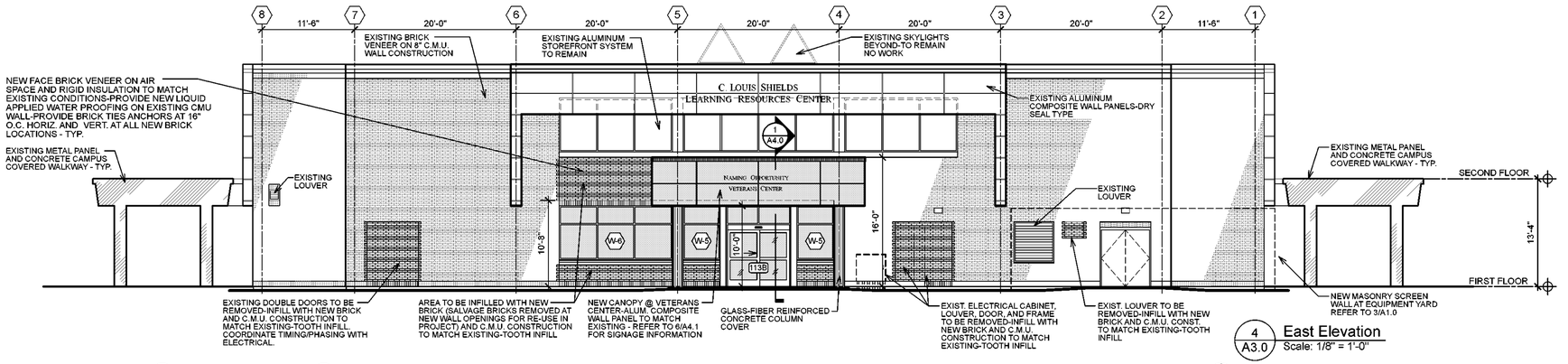
Coastal Carolina Community College
Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By DP
Date 11-25-2024	Reviewed By DH
Project ID	

Sheet Title
SECOND FLOOR RENOVATION PLAN

Sheet No.
A2.1



BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, PC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50424 NORTH CAROLINA WILMINGTON, N.C.

WILLIAM DANIEL HILL REGISTERED ARCHITECT 13058 NORTH CAROLINA WILMINGTON, NC
11-25-2024

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Learning Resources Center - First Floor Renovation
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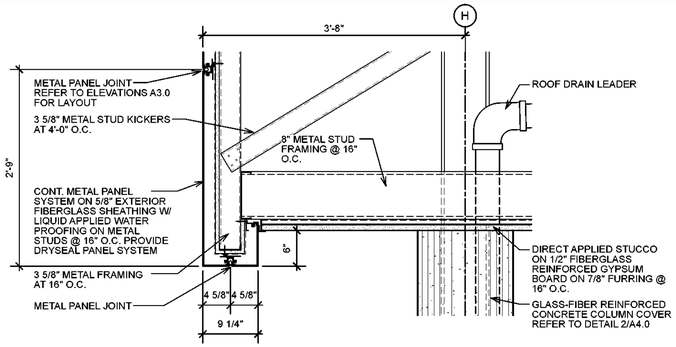
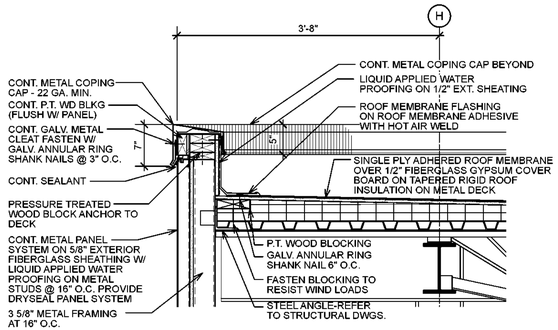
Sheet Title
EXTERIOR ELEVATIONS

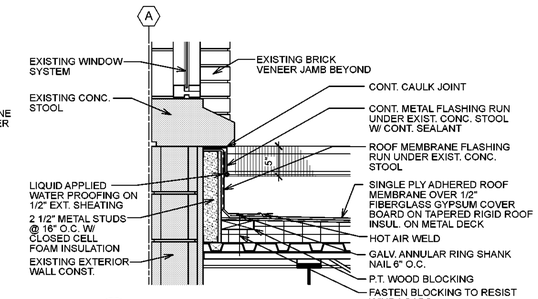
Sheet No.
A3.0



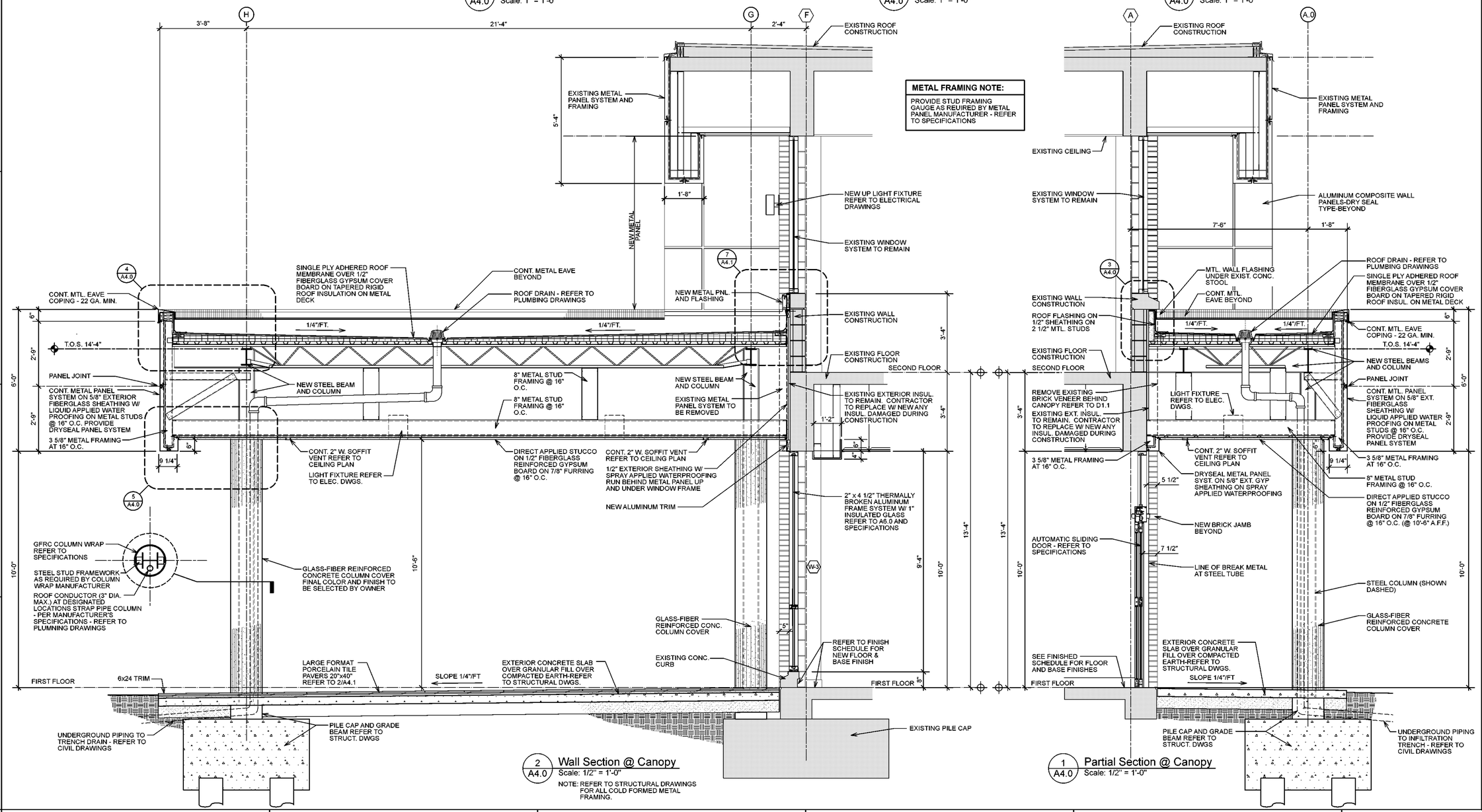
5 A4.0 Enlarged Section @ Canopy
Scale: 1" = 1'-0"



4 A4.0 Enlarged Section @ Canopy
Scale: 1" = 1'-0"



3 A4.0 Enlarged Detail @ Canopy
Scale: 1" = 1'-0"



2 A4.0 Wall Section @ Canopy
Scale: 1/2" = 1'-0"
NOTE: REFER TO STRUCTURAL DRAWINGS FOR ALL COLD FORMED METAL FRAMING.

METAL FRAMING NOTE:
PROVIDE STUD FRAMING GAUGE AS REQUIRED BY METAL PANEL MANUFACTURER - REFER TO SPECIFICATIONS

1 A4.0 Partial Section @ Canopy
Scale: 1/2" = 1'-0"

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, PC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50424 NORTH CAROLINA WILMINGTON, N.C.

WILLIAM DANIEL HILL 13058 REGISTERED ARCHITECT NORTH CAROLINA WILMINGTON, NC
11.25.2024

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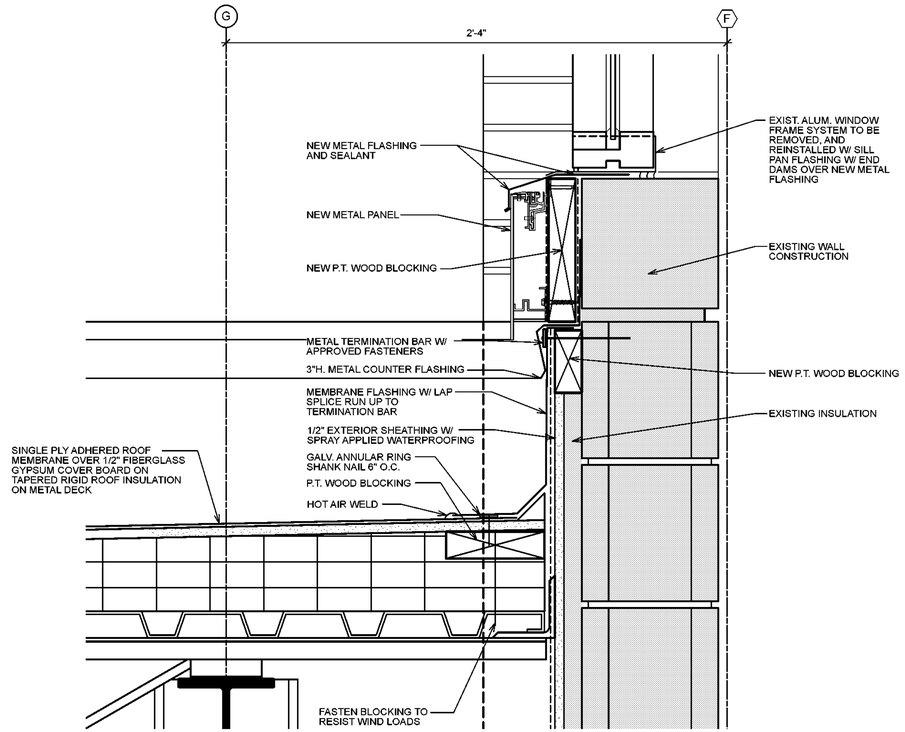
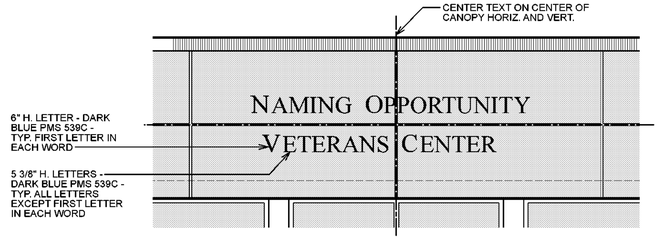
Sheet Title
SECTIONS AND DETAILS

Sheet No.
A4.0



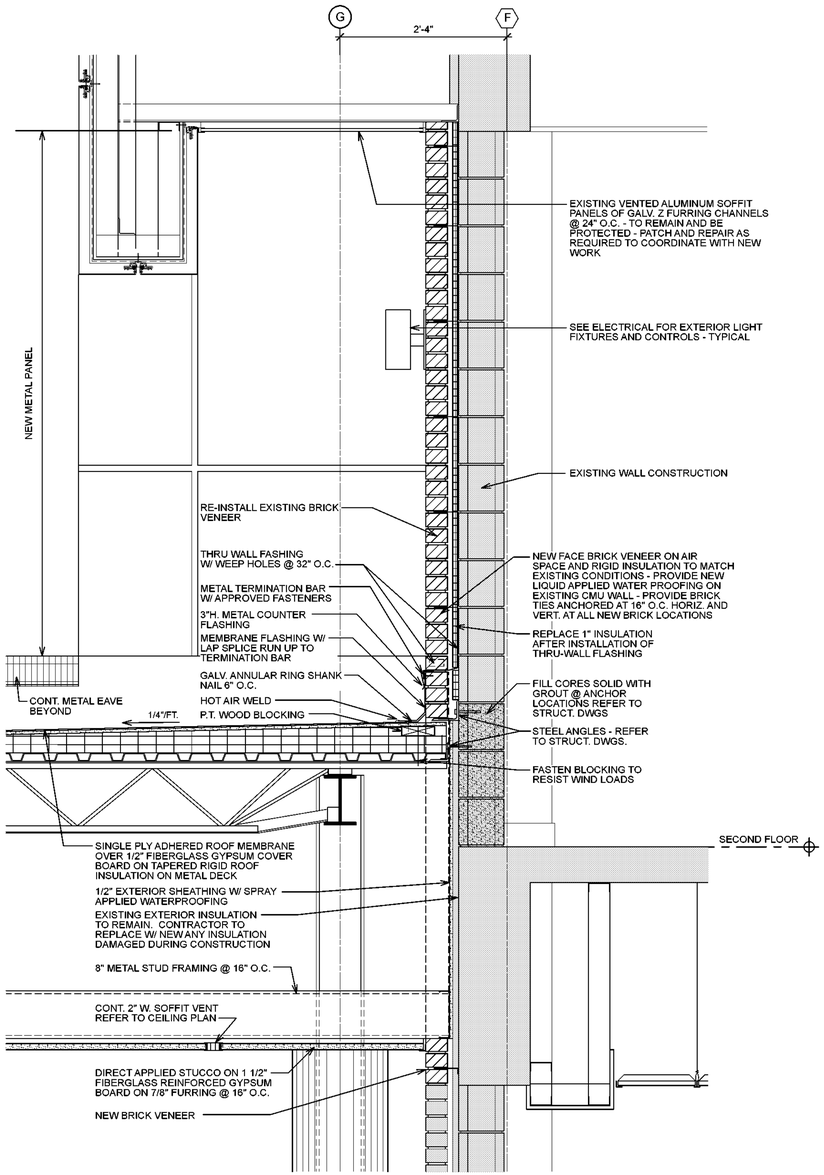
7 A4.1 Enlarged Detail @ Canopy
Scale: 3" = 1'-0"



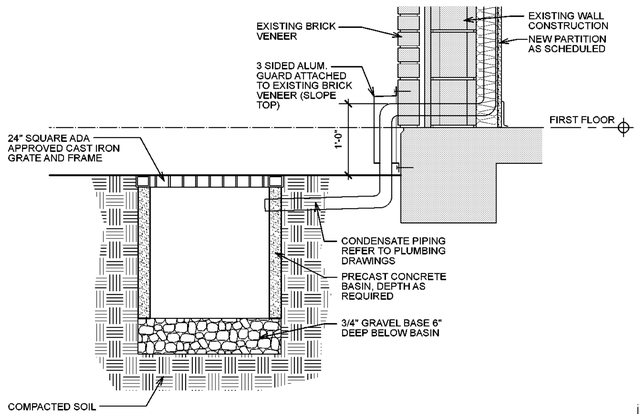
6 A4.1 Signage Elevation
Scale: 3/8" = 1'-0"

SIGNAGE NOTES:

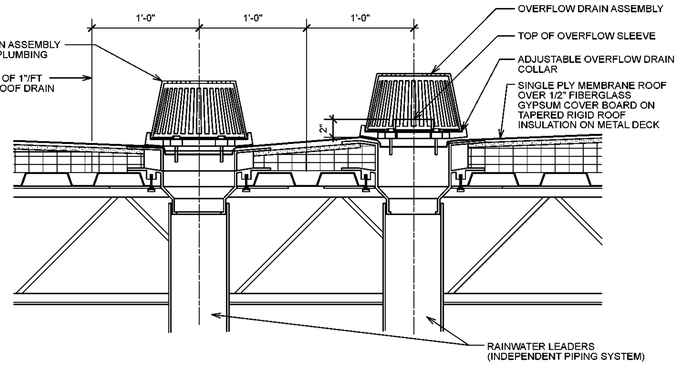
1. LETTERS TO BE WATER JET CUT ALUMINUM. USE MOUNTING PADS WITH SILICONE ADHESIVE FOR DIMENSIONAL LETTERS WHEN MOUNTING TO METAL PANEL SURFACES. FONT TO BE SELECTED BY THE OWNER.
2. COORDINATE ALL FINAL TEXT, FONT, LAYOUT, AND COLORS WITH OWNER FOR FINAL APPROVAL.
3. FIRST LETTER OF EACH WORD TO BE 6" TALL - ALL REMAINING LETTERS TO BE 5-3/8" TALL - TYPICAL. LETTERS TO BE 3/8" THICK.
4. FOR 'NAMING OPPORTUNITY' LETTERS - GC TO PROVIDE FOR UP TO 20 LETTERS AND A MINIMUM OF 3 LETTERS AT THE 6" FONT HEIGHT. FINAL 'NAMING OPPORTUNITY' TO BE COORDINATED WITH THE OWNER.



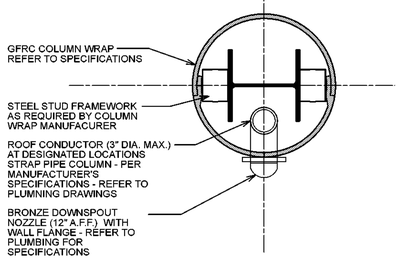
1 A4.1 Wall Section @ Canopy
Scale: 1" = 1'-0"



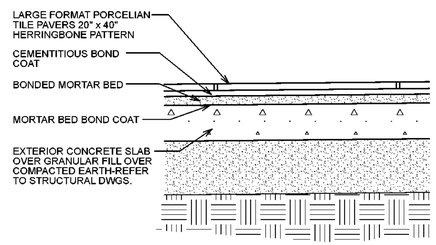
5 A4.1 Detail @ Open Bottom Catch Basin
Scale: 1" = 1'-0"
REFER TO FLOOR PLAN AND ELEVATIONS FOR LOCATIONS



4 A4.1 Roof Drain Detail
Scale: 1 1/2" = 1'-0"



3 A4.1 Detail @ Overflow Drain
Scale: 1 1/2" = 1'-0"



2 A4.1 Detail @ Covered Canopy Tile
Scale: 1 1/2" = 1'-0" TCNA DETAIL NO. F101-23

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, PC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50424 NORTH CAROLINA WILMINGTON, N.C.

WILLIAM DANIEL HILL REGISTERED ARCHITECT 13058 NORTH CAROLINA WILMINGTON, NC
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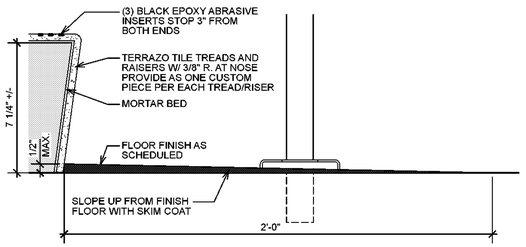
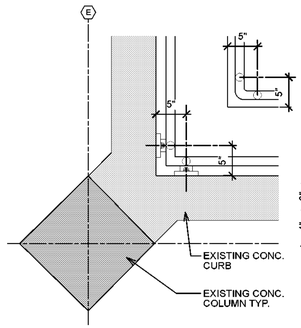
Sheet Title
SECTIONS AND DETAILS

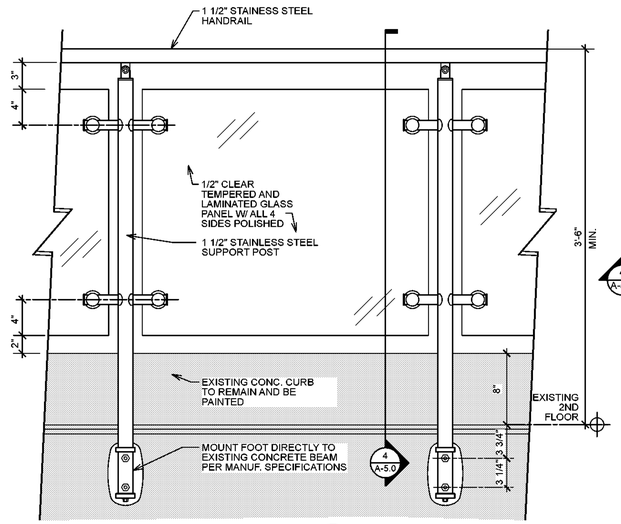
Sheet No.
A4.1



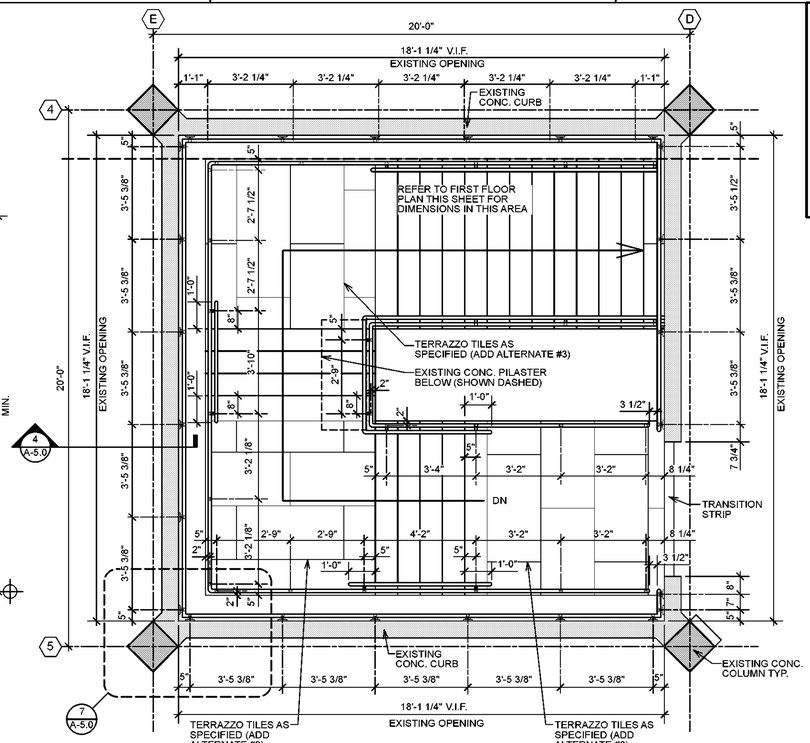
8 A5.0 **Stair Detail**
Scale: 3" = 1'-0"



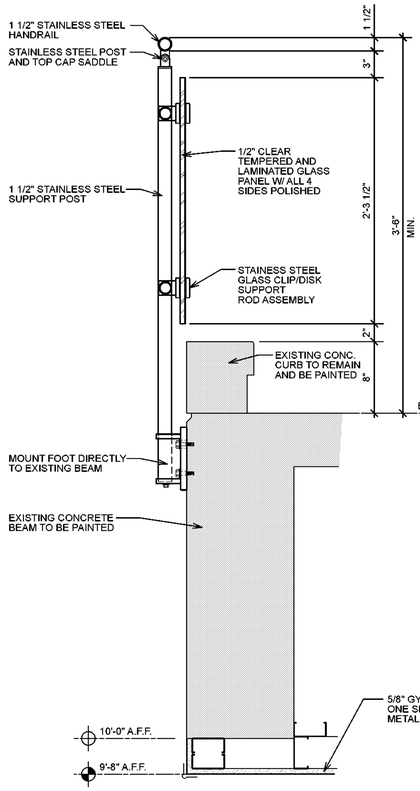
7 A5.0 **Plan Detail @ Stair**
Scale: 1" = 1'-0"



5 A5.0 **Elevation @ Guardrail**
Scale: 1 1/2" = 1'-0"



2 A5.0 **Enlarged Stair Plan - Second Floor**
Scale: 3/8" = 1'-0"



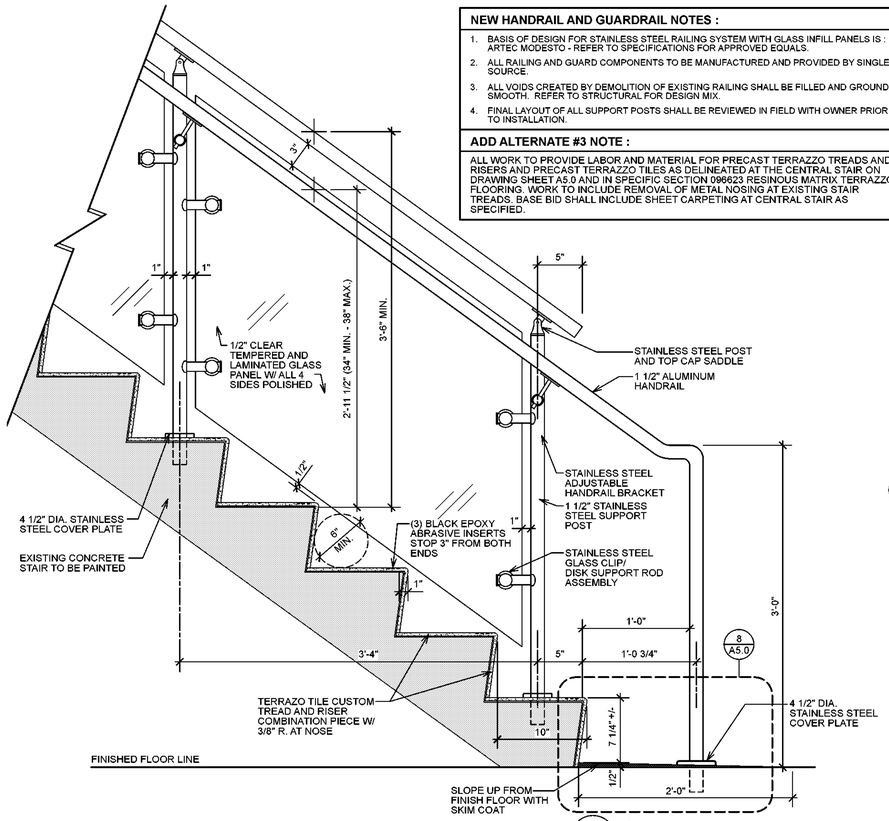
4 A5.0 **Section at Gaurd Rail**
Scale: 1 1/2" = 1'-0"

NEW HANDRAIL AND GUARDRAIL NOTES :

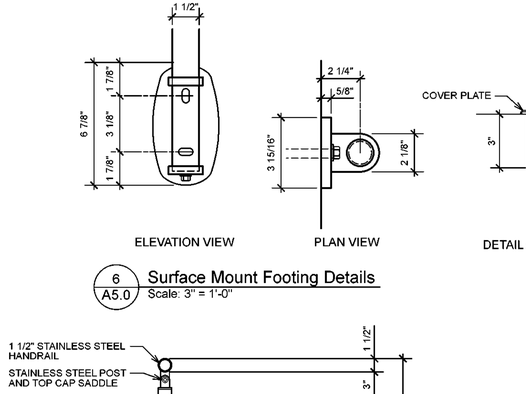
1. BASIS OF DESIGN FOR STAINLESS STEEL RAILING SYSTEM WITH GLASS INFILL PANELS IS : ARTEC MODESTO - REFER TO SPECIFICATIONS FOR APPROVED EQUALS.
2. ALL RAILING AND GUARD COMPONENTS TO BE MANUFACTURED AND PROVIDED BY SINGLE SOURCE.
3. ALL VOIDS CREATED BY DEMOLITION OF EXISTING RAILING SHALL BE FILLED AND GROUND SMOOTH. REFER TO STRUCTURAL FOR DESIGN MIX.
4. FINAL LAYOUT OF ALL SUPPORT POSTS SHALL BE REVIEWED IN FIELD WITH OWNER PRIOR TO INSTALLATION.

ADD ALTERNATE #3 NOTE :

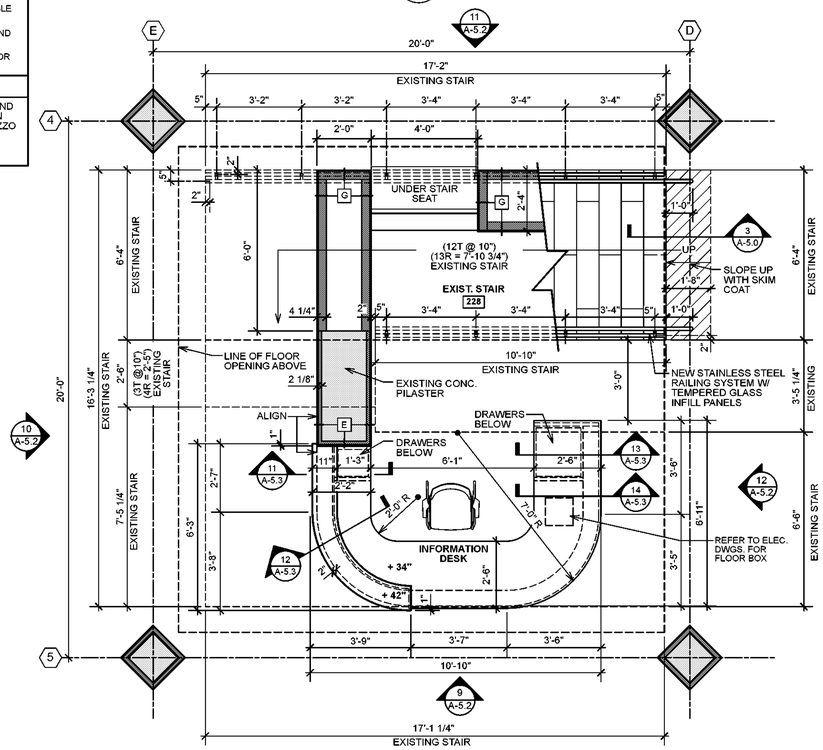
ALL WORK TO PROVIDE LABOR AND MATERIAL FOR PRECAST TERRAZZO TREADS AND RISERS AND PRECAST TERRAZZO TILES AS DELINEATED AT THE CENTRAL STAIR ON DRAWING SHEET A5.0 AND IN SPECIFIC SECTION 096623 RESINOUS MATRIX TERRAZZO FLOORING. WORK TO INCLUDE REMOVAL OF METAL NOSING AT EXISTING STAIR TREADS. BASE BID SHALL INCLUDE SHEET CARPETING AT CENTRAL STAIR AS SPECIFIED.



3 A5.0 **Stair Detail**
Scale: 1 1/2" = 1'-0"



6 A5.0 **Surface Mount Footing Details**
Scale: 3" = 1'-0"



1 A5.0 **Enlarged Stair Plan - First Floor**
Scale: 3/8" = 1'-0"

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

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WILLIAM DANIEL HILL REGISTERED ARCHITECT 13058 NORTH CAROLINA WILMINGTON, N.C.
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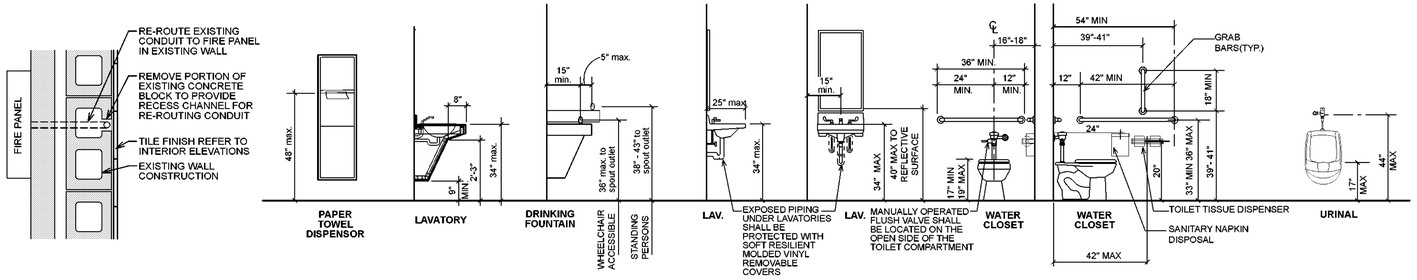
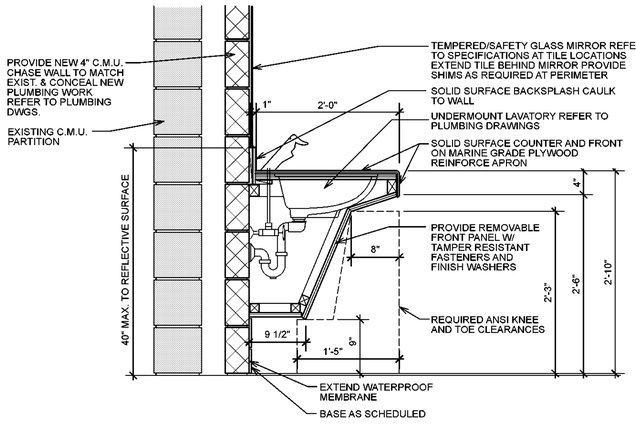
Sheet Title
ENLARGED STAIR PLAN & DETAILS

Sheet No.
A5.0

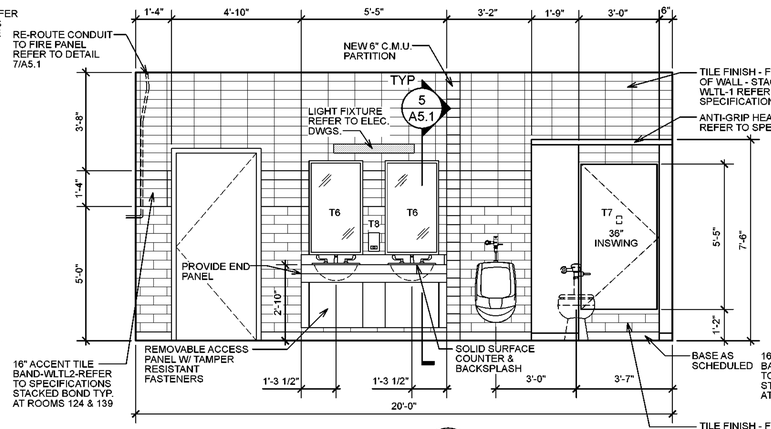


7 / A5.1 Plan Detail @ Fire Panel
Scale: 1" = 1'-0"

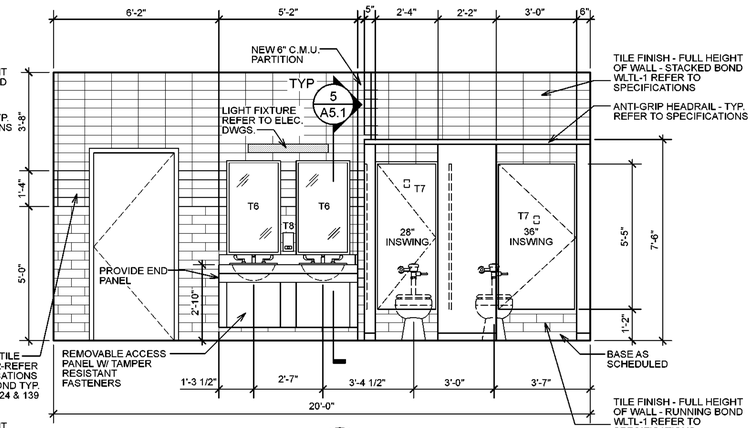
6 / A5.1 ADA Fixture Mounting Requirements
Scale: 3/8" = 1'-0"



5 / A5.1 Section @ Wall Mounted Sink
Scale: 1" = 1'-0"



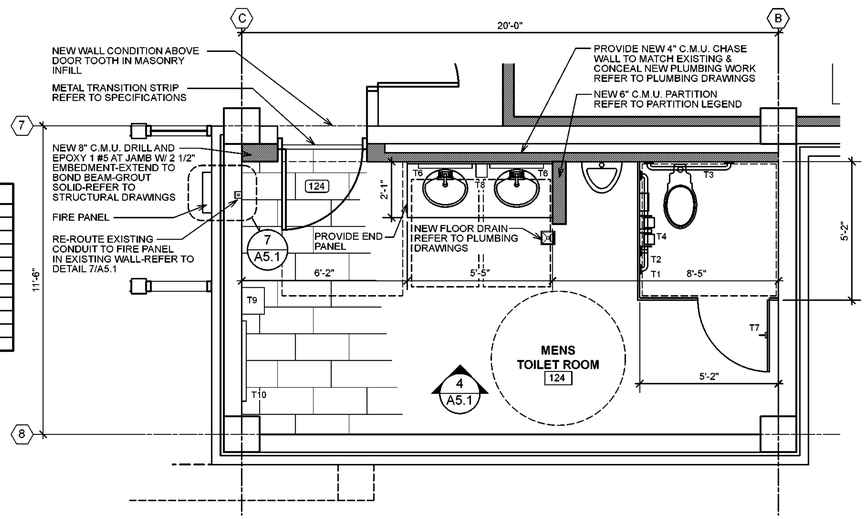
4 / A5.1 Elevation @ Mens Room
Scale: 3/8" = 1'-0"



3 / A5.1 Elevation @ Womens Room
Scale: 3/8" = 1'-0"

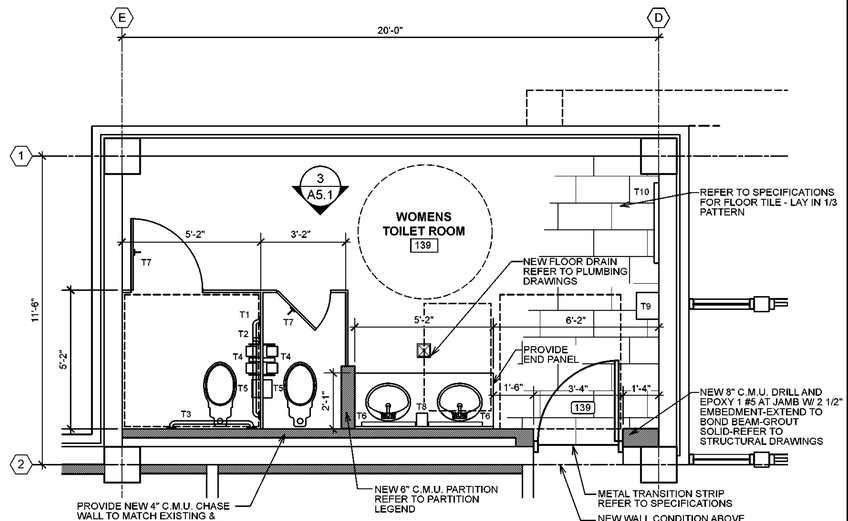
	TOILET ACCESSORIES	MNTG. HT.
T1	Vertical Handicapped Grab Bar-18"	40"
T2	Handicapped Grab Bar - 42"	36"
T3	Handicapped Grab Bar - 36"	36"
T4	Toilet Tissue Dispenser- Double Roll	18"
T5	Sanitary Napkin Disposal	18"
T6	Frame Mirror - 2'-0" Wide x 3'-6" High	40" (bottom)
T7	Clothes Hook - 48" at required accessible locations, 60" for standard height locations	48" / 60"
T8	Wall Mounted Soap Dispenser	40"
T9	Paper Towel Dispenser	48"
T10	Full Body Mirror - 3'-0" Wide x 6'-0"	

NOTE: Mounting heights are to operating mechanism where applicable.



FLOOR TILE NOTE :
WATER PROOFING MEMBRANE TO COVER ENTIRE FLOOR AND EXTEND 8" UP WALLS. G.C. TO PERFORM FLOOD TEST PRIOR TO PLACING MORTAR BED OR INSTALLING TILE. REFER TO SPECIFICATIONS.

2 / A5.1 Enlarged Plan @ Mens Room
Scale: 3/8" = 1'-0"



FLOOR TILE NOTE :
WATER PROOFING MEMBRANE TO COVER ENTIRE FLOOR AND EXTEND 8" UP WALLS. G.C. TO PERFORM FLOOD TEST PRIOR TO PLACING MORTAR BED OR INSTALLING TILE. REFER TO SPECIFICATIONS.

1 / A5.1 Enlarged Plan @ Womens Room
Scale: 3/8" = 1'-0"

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

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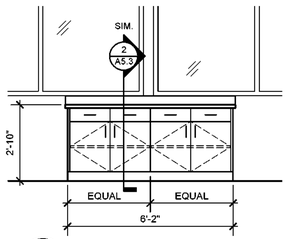
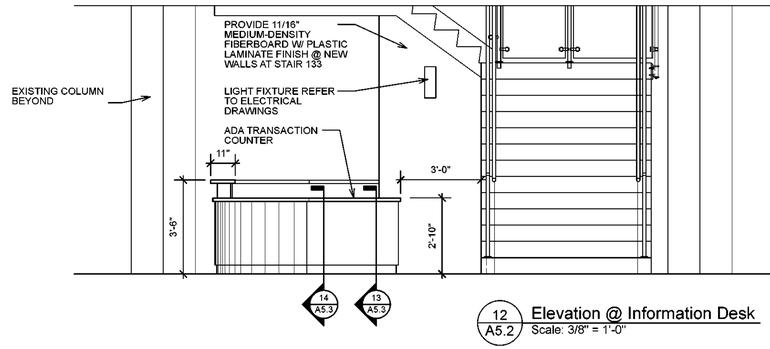
Sheet Title
ELARGED PLANS AND DETAILS

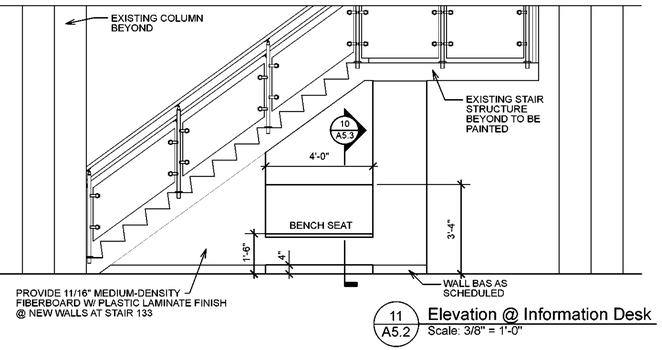
Sheet No.
A5.1



13 A5.2 Elevation @ Printer Station
Scale: 3/8" = 1'-0"



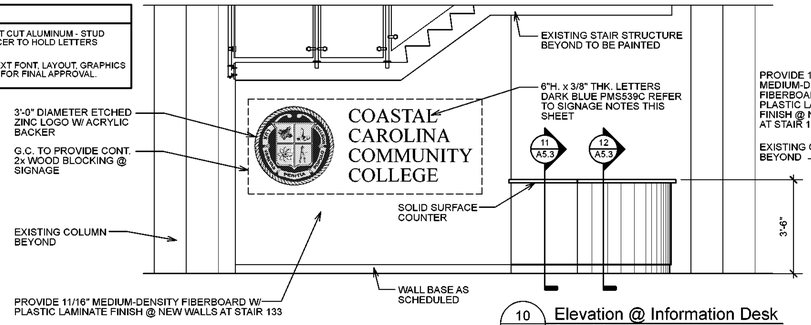
12 A5.2 Elevation @ Information Desk
Scale: 3/8" = 1'-0"



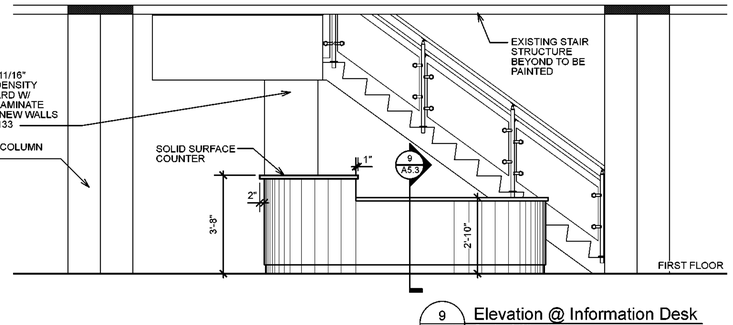
11 A5.2 Elevation @ Information Desk
Scale: 3/8" = 1'-0"

SIGNAGE NOTES :

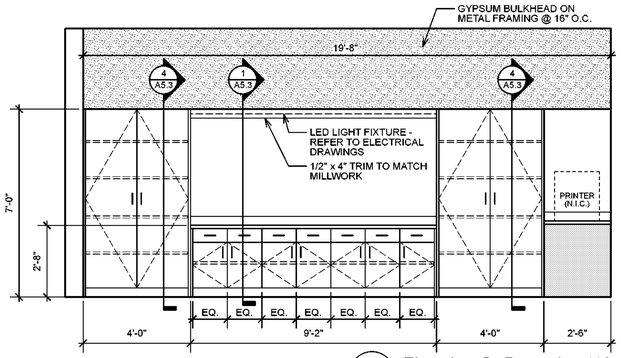
1. LETTERS TO BE WATER JET CUT ALUMINUM - STUD MOUNT PROVIDE 3/8" SPACER TO HOLD LETTERS AND SEAL OFF WALL
2. COORDINATE ALL FINAL TEXT FONT, LAYOUT, GRAPHICS AND COLOR WITH OWNER FOR FINAL APPROVAL.



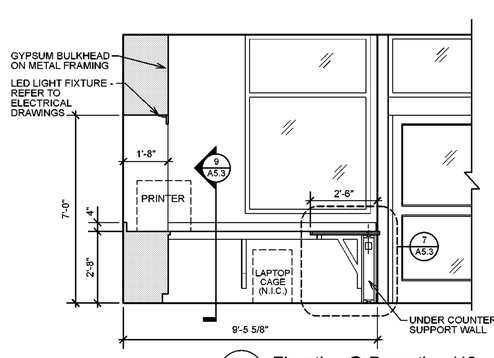
10 A5.2 Elevation @ Information Desk
Scale: 3/8" = 1'-0"



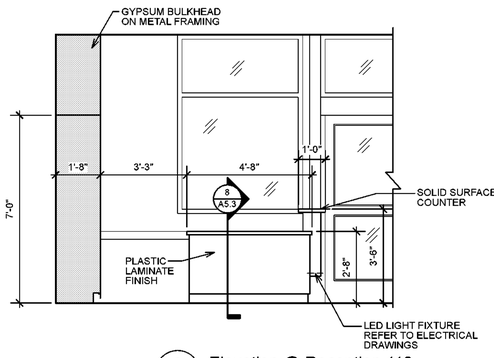
9 A5.2 Elevation @ Information Desk
Scale: 3/8" = 1'-0"



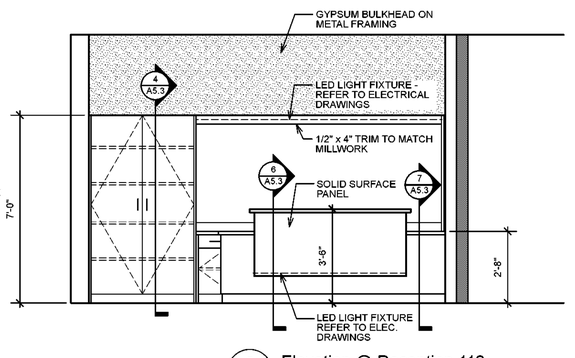
8 A5.2 Elevation @ Reception 112
Scale: 3/8" = 1'-0"



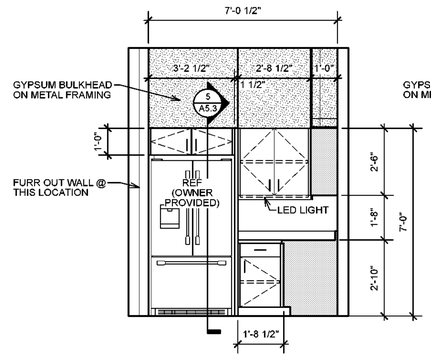
7 A5.2 Elevation @ Reception 112
Scale: 3/8" = 1'-0"



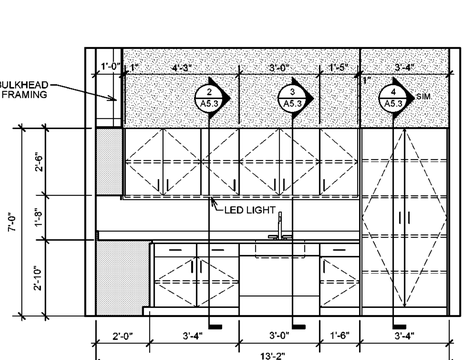
6 A5.2 Elevation @ Reception 112
Scale: 3/8" = 1'-0"



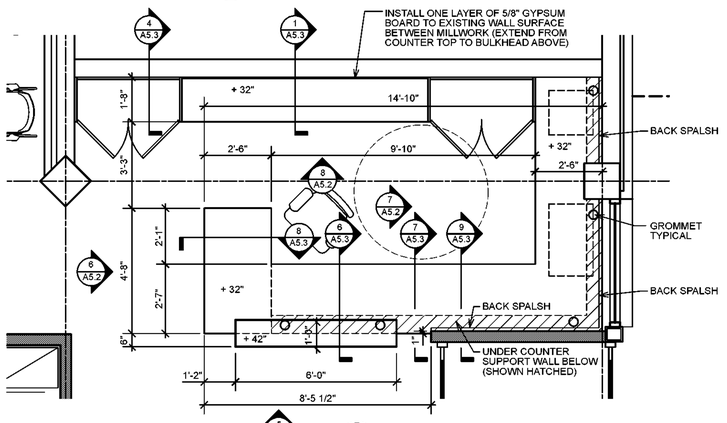
5 A5.2 Elevation @ Reception 112
Scale: 3/8" = 1'-0"



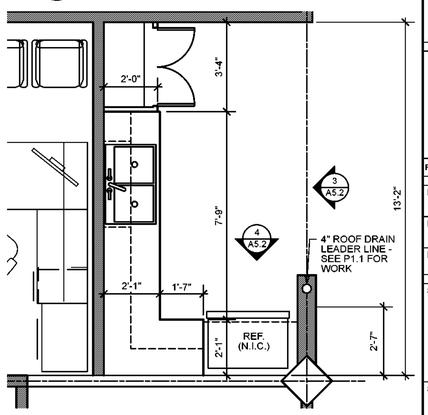
4 A5.2 Veterans Center - Break Area
Scale: 3/8" = 1'-0"



3 A5.2 Veterans Center - Break Area
Scale: 3/8" = 1'-0"



2 A5.2 Enlarged Plan @ Reception 112
Scale: 3/8" = 1'-0"



1 A5.2 Enlarged Plan @ Break Area 114A
Scale: 3/8" = 1'-0"

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, PC
REGISTERED ARCHITECTURAL CORPORATION
CERT. NO. 50424
NORTH CAROLINA
WILMINGTON, N. C.

WILLIAM DANIEL HILL
13058
NORTH CAROLINA
REGISTERED
ARCHITECT
WILMINGTON, NC
11.25.2024

Coastal Carolina Community College
Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: DP
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MILLWORK ELEVATIONS AND DETAILS

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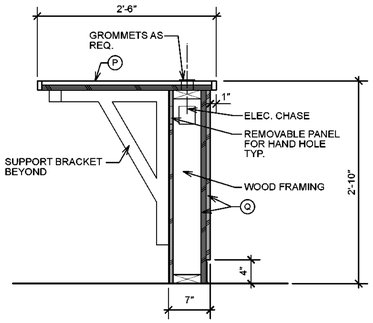
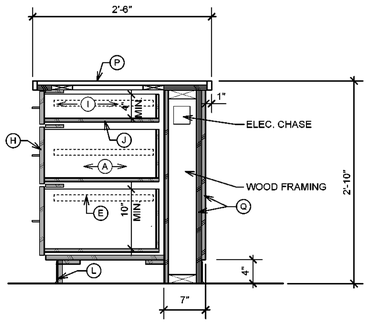
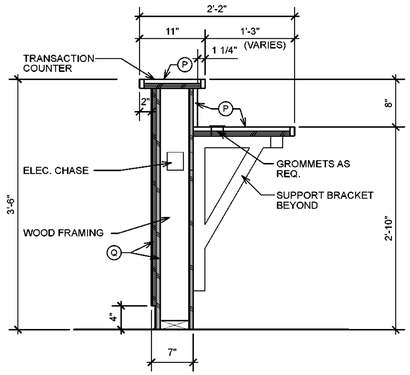
A5.2



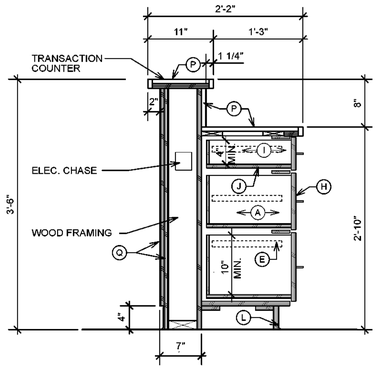
14 A5.3 Millwork Section @ Info Desk
Scale: 1" = 1'-0"



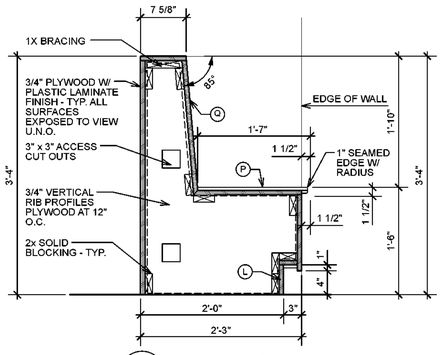
13 A5.3 Millwork Section @ Info Desk
Scale: 1" = 1'-0"



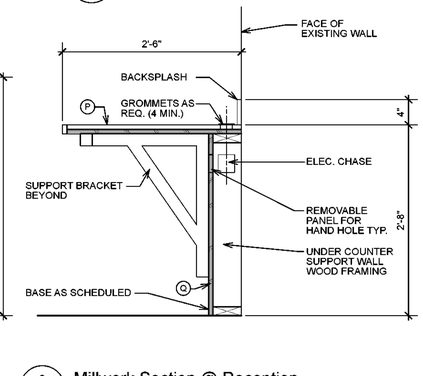
12 A5.3 Millwork Section @ Info Desk
Scale: 1" = 1'-0"



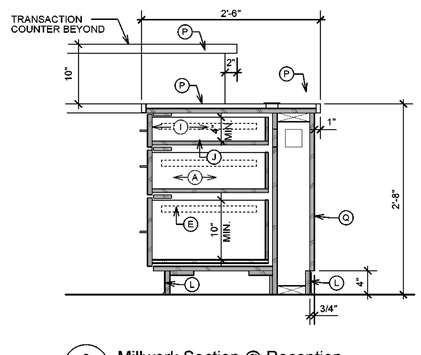
11 A5.3 Millwork Section @ Info Desk
Scale: 1" = 1'-0"



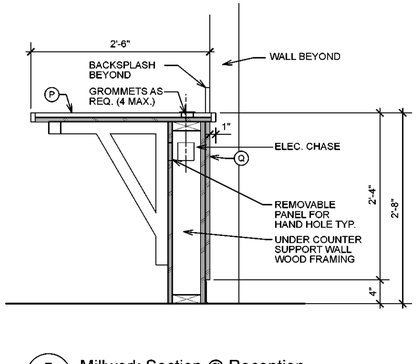
10 A5.3 Section @ Couch
Scale: 1" = 1'-0"



9 A5.3 Millwork Section @ Reception
Scale: 1" = 1'-0"

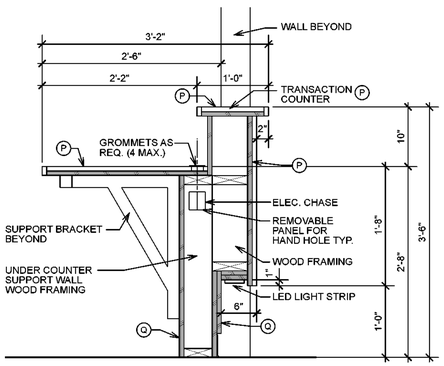


8 A5.3 Millwork Section @ Reception
Scale: 1" = 1'-0"

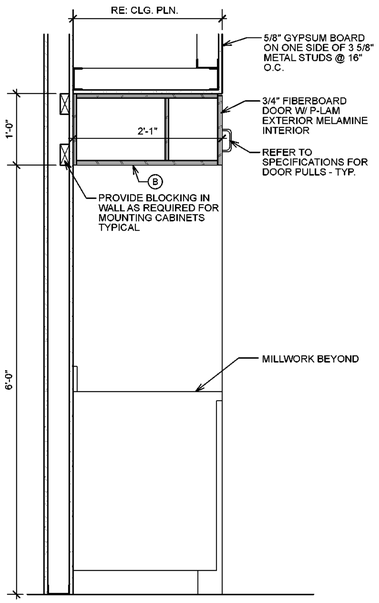


7 A5.3 Millwork Section @ Reception
Scale: 1" = 1'-0"

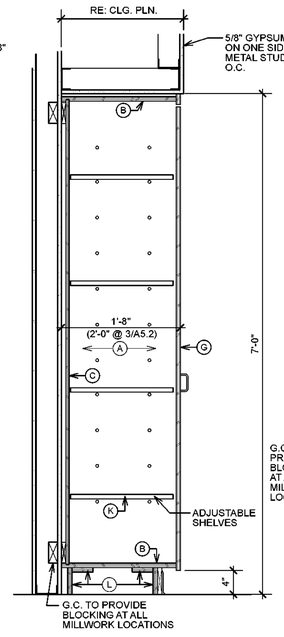
LEGEND OF MATERIALS			
(A)	END	3/4" MELAMINE	● ★
(B)	FLOOR	3/4" MELAMINE	● ★
(C)	BACK	1/2" MELAMINE	★
(D)	BACK MOUNTING RAIL	3/4" MELAMINE	● ★
(E)	FRONT MOUNTING RAIL	3/4" MELAMINE	● ★
(F)	INT. MOUNTING RAIL	3/4" MELAMINE	● ★
(G)	DOOR	3/4" MELAMINE	● ★
(H)	DRAWER FRONT	3/4" MELAMINE	● ★
(I)	DRAWER SIDES & BACK	1/2" MELAMINE	★
(J)	DRAWER FLOOR	1/2" MELAMINE	★
(K)	SHELF	3/4" MELAMINE	● ★
(L)	TOE BOARD ASSEMBLY	3/4" HARDWOOD	●
(M)	COUNTERTOP /BACKSPLASH	3/4" MELAMINE	● ★
(N)	WALL CAB TOP	3/4" MELAMINE	● ★
(P)	COUNTERTOP / BACKSPLASH	1/2" SOLID SURFACE W/ 1 1/4" R. EDGE	
(Q)	PANEL	3/4" MELAMINE	● ★
●	WITH PLASTIC LAMINATE EXTERIOR		
★	WITH MATCHING EDGE		



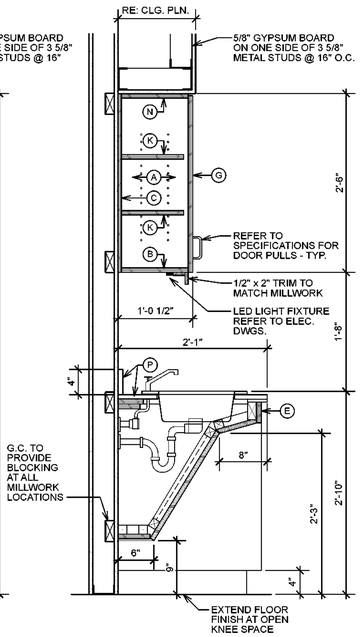
6 A5.3 Millwork Section @ Reception
Scale: 1" = 1'-0"



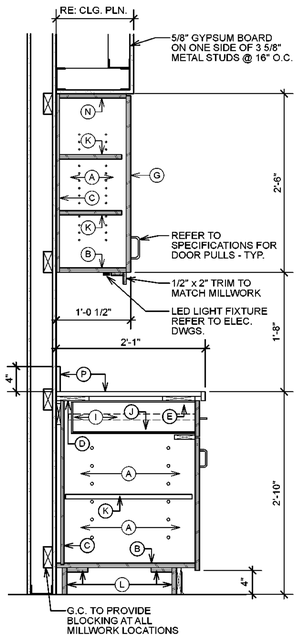
5 A5.3 Millwork Section
Scale: 1" = 1'-0"



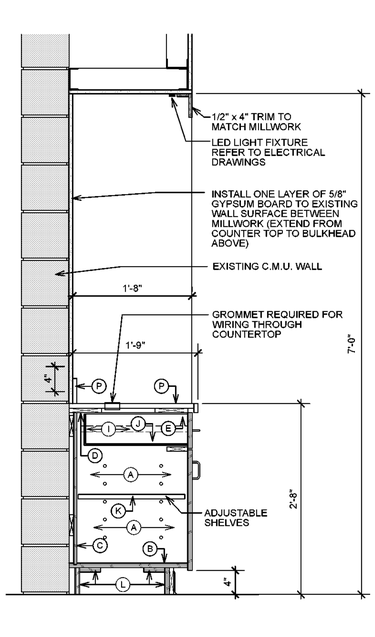
4 A5.3 Millwork Section
Scale: 1" = 1'-0"



3 A5.3 Millwork Section
Scale: 1" = 1'-0"



2 A5.3 Millwork Section
Scale: 1" = 1'-0"



1 A5.3 Millwork Section
Scale: 1" = 1'-0"

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN, MURRAY, HEMINGWAY ARCHITECTS, PC
REGISTERED ARCHITECTURAL CORPORATION
CERT. NO. 50424
NORTH CAROLINA
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WILLIAM DANIEL HILL
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NORTH CAROLINA
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Sheet Title
MILLWORK ELEVATIONS AND DETAILS

Sheet No.
A5.3

DOOR SCHEDULE

DOOR NO.	OPENING: LEAVES	WIDTH	HEIGHT	THICKNESS	DOOR: MATERIAL	FINISH	ELEVATION	FRAME: MATERIAL	FINISH	ELEVATION	HEAD	JAMB	SILL	GLAZING	Fire Rating	HW Set	COMMENTS
100A	PAIR SLIDE	11'-9"	7'-0"	——	ALUM	FF	D-2A	ALUM	FF	D-2A/W-2	DH9	DJ9	DS9	1" TEMP		11.0	ACCESS CONTROL-REFER TO ELECTRICAL DRAWINGS
100B	PAIR SLIDE	11'-9"	7'-0"	——	ALUM	FF	D-2A	ALUM	FF	D-2A/W-2	DH10	DJ10	DS10	1" TEMP		10.0	
101	EXISTING DOOR AND FRAME TO REMAIN														1 HR	12.0	NIC: OWNER PROVIDED & INSTALLED DOOR HARDWARE
102	EXISTING DOOR AND FRAME TO REMAIN														1 HR	2.0	DOOR & FRAME TO RECEIVE NEW PAINT & DOOR HARDWARE
103	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-4	DH8	DJ8	DS8			5.0	
104	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-4	DH8	DJ8	DS8			5.0	
105	PAIR	(2) 2'-4"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-3	DH2	DJ2	DS2			4.0	
106	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-4	DH8	DJ8	DS8			5.0	
107	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-4	DH8	DJ8	DS8			5.0	
110	SINGLE	3'-0"	7'-0"	1 3/4"	ALUM	FF	D-4	ALUM	FF	F-11	DH3	DJ3	DS3	1/4" TEMP		7.0	
113A	SLIDE	8'-0"	7'-0"	——	SCW	FF	D-2B	ALUM	FF	D-2B/W-5	DH7	DJ7	DS7	1" TEMP		10.0	
113B	SLIDE	8'-0"	7'-0"	——	ALUM	FF	D-2B	ALUM	FF	D-2B/W-5	DH6	DJ6	DS6	1" TEMP		11.0	ACCESS CONTROL-REFER TO ELECTRICAL DRAWINGS
115	SLIDE	7'-0"	7'-0"	——	ALUM	FF	D-2C	ALUM	FF	D2C	DH13	DJ13	DS13	1" TEMP		11.0	
116	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-4	DH8	DJ8	DS8			5.0	
117	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-4	DH8	DJ8	DS8			5.0	
118	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-4	DH8	DJ8	DS8			5.0	
119	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-4	ALUM	FF	F-5	DH5	DJ5	DS5	1/4" TEMP		8.0	PUSH BUTTON ENTRY - REFER TO ELECTRICAL DRAWINGS
120	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-4	HM	PT	F-1	DH1	DJ1	DS1	1/4" TEMP		8.0	PUSH BUTTON ENTRY - REFER TO ELECTRICAL DRAWINGS
121	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-1	DH2	DJ2	DS2			3.0	
122	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-1	DH1	DJ1	DS1			3.0	ACCESS CONTROL-REFER TO ELECTRICAL DRAWINGS
123	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-1	DH2	DJ2	DS2			1.0	
124	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-2	DH4	DJ4	DS4			9.0	REFER TO DOOR DETAILS INFILL ABOVE DOOR
125A	PAIR SLIDE	11'-9"	7'-0"		ALUM	FF	D-2A	ALUM	FF	D-2A/W-2	DH10	DJ10	DS10	1" TEMP		10.0	
125B	PAIR SLIDE	11'-9"	7'-0"		ALUM	FF	D-2A	ALUM	FF	D-2A/W-2	DH9	DJ9	DS9	1" TEMP		11.0	ACCESS CONTROL-REFER TO ELECTRICAL DRAWINGS
126	EXISTING DOOR AND FRAME TO REMAIN														1 HR	12.0	NIC: OWNER PROVIDED & INSTALLED DOOR HARDWARE
127	EXISTING DOOR AND FRAME TO REMAIN														1 HR	2.0	DOOR & FRAME TO RECEIVE NEW PAINT & DOOR HARDWARE
129	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-4	ALUM	FF	F-6	DH5	DJ5	DS5	1/4" TEMP		6.0	
130	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-4	ALUM	FF	F-7	DH5	DJ5	DS5	1/4" TEMP		6.0	
131	EXISTING DOOR AND FRAME TO REMAIN																EXISTING RISER ROOM
134A	PAIR SLIDE	12'-4"	7'-0"		ALUM	FF	D-2A	ALUM	FF	D-2A/W-4	DH11	DJ11	DS11	1" TEMP		10.0	
134B	PAIR SLIDE	12'-4"	7'-0"		ALUM	FF	D-2A	ALUM	FF	D-2A/W-4	DH12	DJ12	DS12	1" TEMP		11.0	ACCESS CONTROL-REFER TO ELECTRICAL DRAWINGS
136	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-4	ALUM	FF	F-8	DH5	DJ5	DS5	1/4" TEMP		6.0	
137	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-4	ALUM	FF	F-9	DH5	DJ5	DS5	1/4" TEMP		6.0	
138	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-4	ALUM	FF	F-10	DH5	DJ5	DS5	1/4" TEMP		6.0	
139	SINGLE	3'-0"	7'-0"	1 3/4"	SCW	ST	D-3	HM	PT	F-2	DH4	DJ4	DS4			9.0	REFER TO DOOR DETAILS INFILL ABOVE DOOR
206	EXISTING DOOR AND FRAME TO REMAIN														1 HR	12.0	DOOR & FRAME TO RECEIVE NEW PAINT & DOOR HARDWARE
224	EXISTING DOOR AND FRAME TO REMAIN														1 HR	12.0	DOOR & FRAME TO RECEIVE NEW PAINT & DOOR HARDWARE

DOOR NOTES:

1. ALL DOORS SHALL BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS PROVIDED WITH EACH DOOR.
2. EXTERIOR ROUGH OPENINGS SHALL HAVE FLASHING AT HEAD, JAMB, AND SILL. SHALL BE INSTALLED PER FLASHING MANUFACTURER'S INSTRUCTIONS.
3. SHIMS AND ANCHORING CLIPS ARE NOT SHOWN IN DETAILS FOR CLARITY BUT SHALL BE PROVIDED AS PER MANUFACTURER'S INSTRUCTIONS.
4. ANCHORING CLIPS SHALL BE STAINLESS STEEL AND SHALL BE INSTALLED WITH STAINLESS STEEL FASTENERS, ADJUST ROUGH OPENING AS NECESSARY.
5. ALL DOOR GLAZING SHALL BE TEMPERED UNLESS NOTED OTHERWISE.

WINDOW NOTES:

1. ALL WINDOWS SHALL BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS PROVIDED WITH EACH WINDOW.
2. ROUGH OPENINGS SHALL HAVE FLASHING AT HEAD, JAMB, AND SILL. FLASHING SHALL BE INSTALLED PER FLASHING MANUFACTURER'S INSTRUCTIONS.
3. SILL FLASHING SHALL BE PREMOLDED, SELF ADHERING WITH 3/8" HIGH BACKDAM. HEAD AND JAMB FLASHING SHALL BE STRAIGHT AND SELF ADHERING.
4. SHIMS AND ANCHORING CLIPS ARE NOT SHOWN IN DETAILS FOR CLARITY BUT SHALL BE PROVIDED AS PER WINDOW MANUFACTURER'S INSTRUCTIONS.
5. ANCHORING CLIPS SHALL BE STAINLESS STEEL AND SHALL BE INSTALLED WITH STAINLESS STEEL FASTENERS, ADJUST ROUGH OPENING AS NECESSARY.
6. ALL GLAZING WITHIN 24" OF A DOOR SHALL BE TEMPERED.

FRAME NOTES:

1. ALUMINUM FRAME DIMENSIONS ARE NOMINAL - FIELD VERIFY ACTUAL DIMENSIONS PRIOR TO FABRICATION.
2. ANCHOR EXTERIOR ALUMINUM FRAMES TO MEET N.C. WIND LOAD REQUIREMENTS AND PROVIDE SEALED DOCUMENTATION BY ENGINEER LICENSED IN N.C. SEE S1.01 COMPONENTS AND CLADDING WIND PRESSURE TABLE.

GLAZING NOTES:

1. EACH PANE OF SAFETY GLAZING SHALL BE IDENTIFIED BY A MANUFACTURER'S DESIGNATION SPECIFYING WHO APPLIED THE DESIGNATION, THE MANUFACTURER OR INSTALLER AND THE SAFETY GLAZING STANDARD WITH WHICH IT COMPLIES.

ABBREVIATIONS

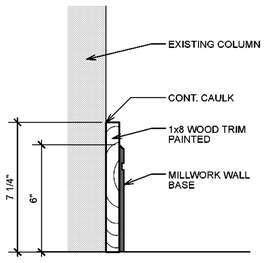
ALUM.	ALUMINUM
APSF	ACRYLIC PLASTER SOFFIT FINISH
CPT TL	CARPET TILE & TYPE (SEE FINISH SCHED. LEGEND)
CONC.	CONCRETE
CMU	CONCRETE MASONRY UNIT
DBL	DOUBLE
EGAP	EXPOSED GRID ACOUSTICAL PANEL (REFER TO SPECIFICATIONS FOR TYPE)
ETR	EXISTING TO REMAIN
EXT.	EXTERIOR
EXIST.	EXISTING
F.F.	FACTORY FINISH
GY. BD.	GYPSUM BOARD
HM	HOLLOW METAL
INSUL.	INSULATED
INT.	INTERIOR
MIN.	MINUTE
OPNG.	OPENING
PT.	PAINT
RBBS	RUBBER BASE - REFER TO SPECIFICATIONS
SCW	SOLID CORE WOOD
SCHED	SCHEDULED
ST	STAINED
TILE	TILE-SEE SPECIFICATIONS FOR TYPE
TEMP.	TEMPERED
VCT	VINYL COMPOSITE TILE

FINISH SCHEDULE

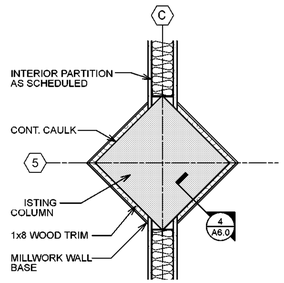
ROOM #	ROOM NAME	FLOOR	BASE	NORTH WALL MAT/FINISH	EAST WALL MAT/FINISH	SOUTH WALL MAT/FINISH	WEST WALL MAT/FINISH	CEILING MAT	CEILING FINISH	REMARKS
100	VESTIBULE	CARPET TILE 1	RBBS 1		ETR		ETR	EGAP #1	-	
101	EXISTING STAIR	ETR	ETR	ETR	ETR	ETR	ETR	ETR	ETR	
102	EQUIPMENT ROOM	ETR	ETR	ETR	ETR	ETR	ETR	ETR	ETR	REFER TO DOOR NOTES
103	OFFICE	CARPET TILE 2	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
104	OFFICE	CARPET TILE 2	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
105	STORAGE ROOM	CARPET TILE 2	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
106	OFFICE	CARPET TILE 2	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
107	OFFICE	CARPET TILE 2	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
108	MECHANICAL ROOM	ETR	ETR	ETR	ETR	ETR	ETR	ETR	ETR	
109	ELECTRICAL ROOM	ETR	ETR	ETR	ETR	ETR	ETR	ETR	ETR	REPAIR WALLS & FLOOR @ LOCATION OF REMOVED WALL
110	VENDING	CARPET TILE 2	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
111	WAITING	CARPET TILE 2	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
112	RECEPTION	CARPET TILE 3	RBBS 1	GY.BD. / PT	GY.BD. / PT	——	GY.BD. / PT	EGAP#1/GY.BD.	-	NORTH WALL PROVIDE 5/8" METAL FURRING @ 16" O.C. & GY.BD. ON EXISTING WALL
113	VESTIBULE	CARPET TILE 1	RBBS 1	GY.BD. / PT	——	GY.BD. / PT	——	EGAP #1	-	
114	VETERANS CENTER	CARPET TILE 3	RBBS 1	ETR/PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
114A	BREAK	LVT 1	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY. BD.	-	
115	CORRIDOR	CARPET TILE 3	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
116	STAFF # 1	CARPET TILE 3	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
117	STAFF # 2	CARPET TILE 3	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
118	DIRECTOR OFFICE	CARPET TILE 3	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
119	STUDY # 1	CARPET TILE 3	RBBS 1	GY.BD. / PT	ETR/PT	GY.BD. / PT	GY.BD. / PT	EGAP #1		
120	QUIET ROOM	CARPET TILE 3	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1		
121	ELECTRICAL ROOM	QCT	RBBS 2	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
122	IT ROOM	QCT	RBBS 2	PAINT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	ACCESS ONLY IN PRESENCE OF OWNERS REP.
123	JANITORS CLOSET	TL-1	RBBS 2	PAINT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1	-	
124	MENS TOILET ROOM	TL-1	WLTL-1	WLTL-1/WLTL-2	WLTL-1/WLTL-2	WLTL-1/WLTL-2	WLTL-1/WLTL-2	GYP. BD.	PAINT	SEAL GROUT
125	VESTIBULE	CARPET TILE 1	RBBS 2	——	ETR	——	ETR	EGAP #1	-	
126	EXISTING STAIR	ETR	ETR	ETR	ETR	ETR	ETR	ETR	ETR	
127	ELEVATOR EQUIPMENT ROOM	ETR	ETR	ETR	ETR	ETR	ETR	ETR	ETR	REFER TO DOOR NOTES
128	EXISTING ELEVATOR									
129	STUDY # 2	CARPET TILE 2	RBBS 1	——	ETR/PT	GY.BD. / PT	GY.BD. / PT	EGAP #1		
130	STUDY # 3	CARPET TILE 2	RBBS 1	——	GY.BD. / PT	GY.BD. / PT	ETR/PT	EGAP #1		
131	RISER ROOM	ETR	RBBS 2	GY.BD. / PT	ETR	ETR	ETR	ETR	ETR	PROVIDE PAINT & WALL BASE TO MATCH EXIST. @ NEW WALL CONSTRUCTION
132	COMMON AREA	CARPET TILE 2	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1/GY.BD.	-	SEE NOTES
133	EXISTING OPEN STAIR	TRZ 1	——	——	——	——	——	——		SEE NOTES/FLOOR FINISH TO ADD ALTERNATE #3 BASE BID IS SHEET CARPET RUNNER AS SPECIFIED
134	VESTIBULE	CARPET TILE 1	RBBS 1	GY.BD. / PT	——	GY.BD. / PT	——	EGAP #1	-	
135	COMMON AREA	CARPET TILE 2	RBBS 1	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	GY.BD. / PT	EGAP #1/ GY. BD.	- / PT	REFER TO A7.0 FOR CEILING/SEE NOTES
136	STUDY # 4	CARPET TILE 2	RBBS 1	GY.BD. / PT	ETR / PT	GY.BD. / PT	ETR / PT	EGAP	-	
137	STUDY # 5	CARPET TILE 2	RBBS 1	GY.BD. / PT	ETR / PT	GY.BD. / PT	ETR / PT	EGAP		
138	STUDY # 6	CARPET TILE 2	RBBS 1	GY.BD. / PT	ETR / PT	GY.BD. / PT	GY.BD. / PT	EGAP	-	
139	WOMENS TOILET ROOM	TL-1	WLTL-1	WLTL-1/WLTL-2	WLTL-1/WLTL-2	WLTL-1/WLTL-2		GYP. BD.	PAINT	SEAL GROUT
140	COVERED CANOPY	PAVER TILE(PV-1)	——	——	——	——	——	GYP. BD.	APSF	EXTERIOR COLUMNS TO BE PRE-FINISHED

NOTES:

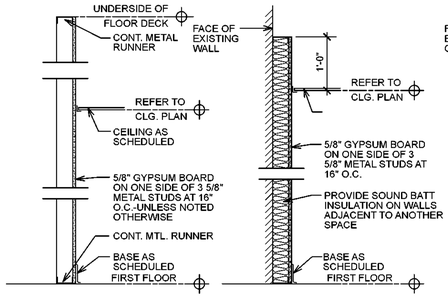
1. ALL EXISTING COLUMNS TO BE FINISHED WITH BASE AND WALL FINISH TO MATCH ROOM THAT CONTAINS EXISTING COLUMN.
2. ALL EXPOSED SPRINKLER PIPING TO BE PAINTED. INCLUDING, BUT NOT LIMITED TO, FIRST AND SECOND FLOOR OF CENTRAL OPEN STAIR 133.
3. ALL EXPOSED CONCRETE SURFACES AT EXISTING OPEN STAIR (133 & 228), NOT RECEIVING NEW FINISHES ARE TO BE PAINTED.



4 / A6.0 Column Base Detail
Scale: 3" = 1'-0"



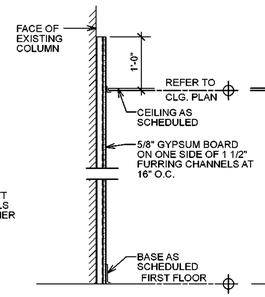
3 / A6.0 Column Base Detail
Scale: 1" = 1'-0"



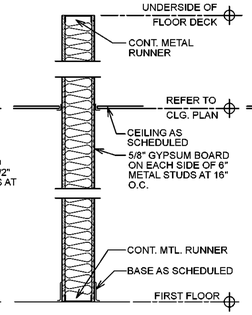
WALL ASSEMBLY TYPE "G"

NOTE: REFER TO A5.2 FOR WALL FINISH AT NEW WALLS AT OPEN STAIR 133. NEW WALLS TO BE SHEATHED W/ 11/16" MEDIUM DENSITY FIBERBOARD W/ PLASTIC LAMINATE FINISH.

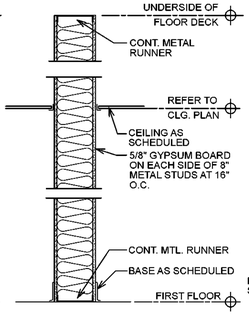
WALL ASSEMBLY TYPE "F"



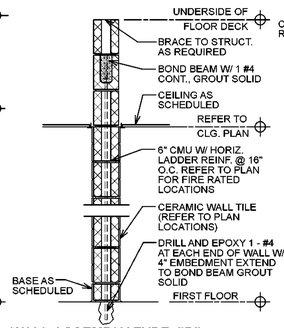
WALL ASSEMBLY TYPE "E"



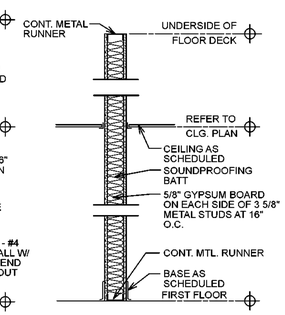
WALL ASSEMBLY TYPE "D"



WALL ASSEMBLY TYPE "C"



WALL ASSEMBLY TYPE "B"



WALL ASSEMBLY TYPE "A"

1 / A6.0 Partition Types
Scale: 3/4" = 1'-0"

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, P.C. REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50424 NORTH CAROLINA WILMINGTON, N.C.

WILLIAM DANIEL HILL REGISTERED ARCHITECT 13058 NORTH CAROLINA WILMINGTON, N.C. 11-25-2024

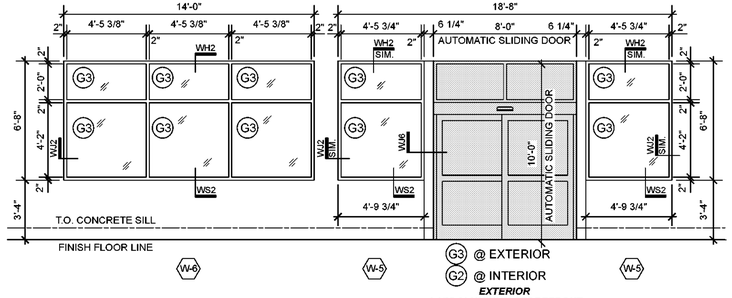
Coastal Carolina Community College
Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

REV	DATE	DESCRIPTION

Project Manager	Drawn By: DP
Date: 11-25-2024	Reviewed By: DH
Project ID	

Sheet Title: **DOOR SCHEDULE AND ROOM FINISH SCHEDULES**

Sheet No.: A6.0

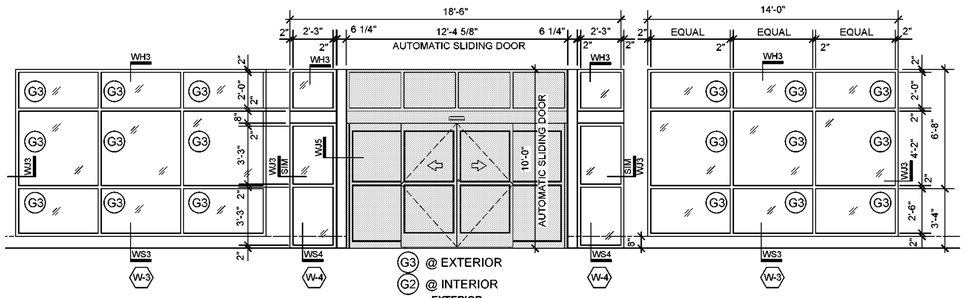


EXTERIOR
4 1/2" ALUMINUM STOREFRONT

★ HATCHED AREA INDICATES AUTOMATIC DOOR UNIT

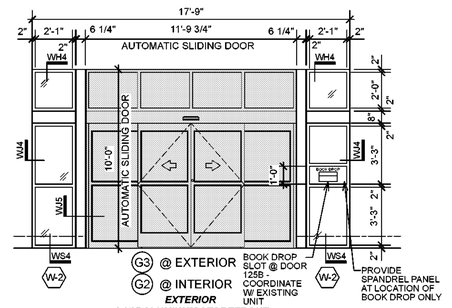
SYMBOLS

- G1 — 1/4" TEMPERED GLAZING - CLEAR
- G2 — 1" TEMPERED INSULATED GLAZING - CLEAR
- G3 — 1" TEMPERED INSULATED GLAZING (EXTERIOR)



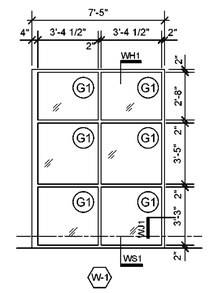
EXTERIOR
4 1/2" ALUMINUM STOREFRONT

★ HATCHED AREA INDICATES AUTOMATIC DOOR UNIT



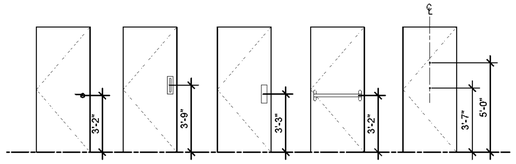
EXTERIOR
4 1/2" ALUMINUM STOREFRONT

★ HATCHED AREA INDICATES AUTOMATIC DOOR UNIT

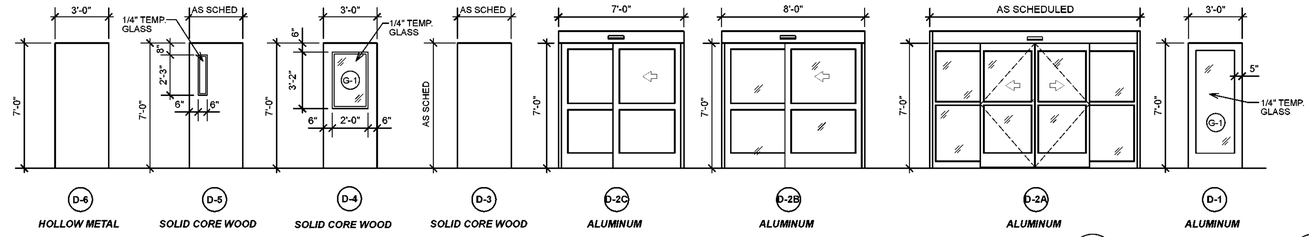


INTERIOR
4 1/2" ALUMINUM STOREFRONT

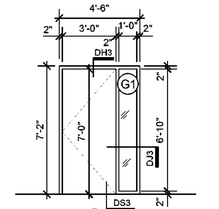
3 A6.0 Window Elevations
Scale: 1/4" = 1'-0"



3 A6.1 Door Hardware Mounting Heights
Scale: 1/4" = 1'-0"

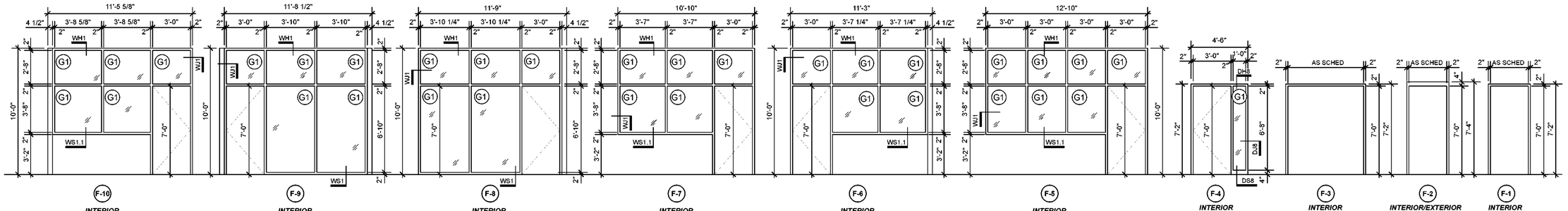


2 A6.1 Door Elevations
Scale: 1/4" = 1'-0"



INTERIOR
4 1/2" ALUMINUM STOREFRONT

1 A6.1 Frame Elevations (Cont.)
Scale: 1/4" = 1'-0"



1 A6.1 Frame Elevations
Scale: 1/4" = 1'-0"

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13058
NORTH CAROLINA
WILMINGTON, NC
11-25-2024

Coastal Carolina Community College
Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

REV	DATE	DESCRIPTION

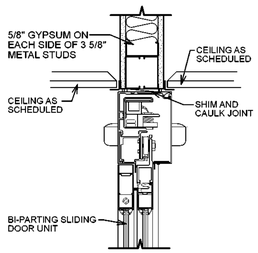
Project Manager	Drawn By: DP
Date: 11-25-2024	Reviewed By: DH
Project ID	

Sheet Title

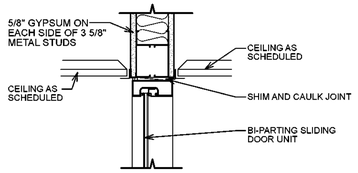
DOOR AND WINDOW FRAME ELEVATIONS

Sheet No.

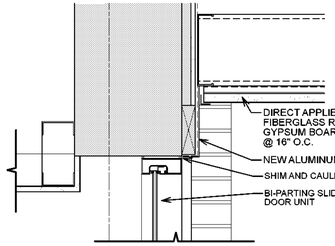
A6.1



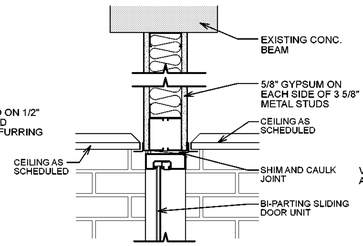
DH-13 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



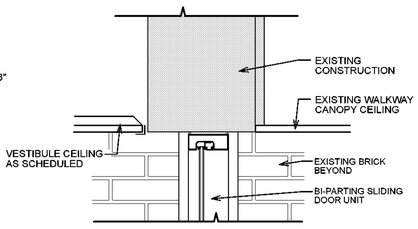
DH-12 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



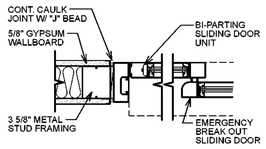
DH-11 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



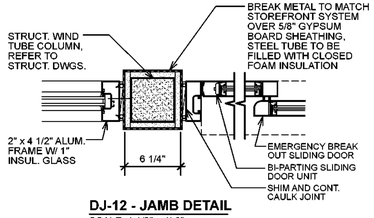
DH-10 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



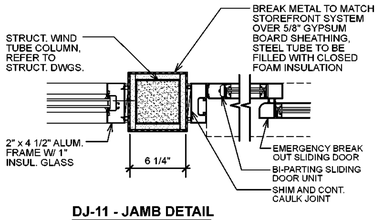
DH-9 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



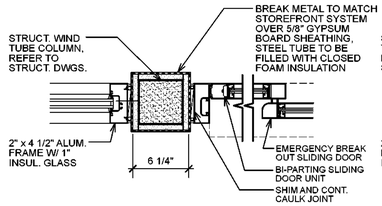
DJ-13 - JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



DJ-12 - JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



DJ-11 - JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



DJ-10 - JAMB DETAIL
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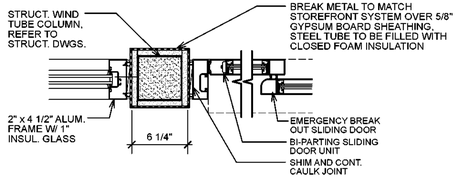
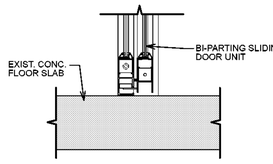


DJ-9 - JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



DS-13 - SILL DETAIL
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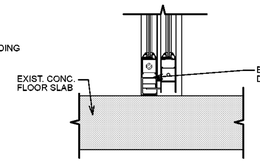
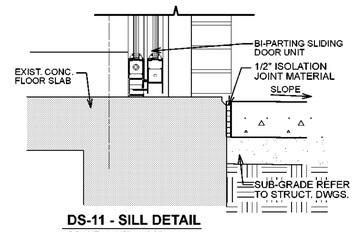


DS-12 - SILL DETAIL
SCALE: 1 1/2" = 1'-0"



DS-11 - SILL DETAIL
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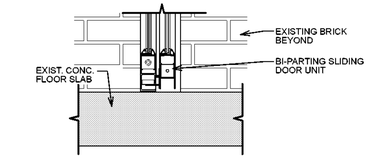
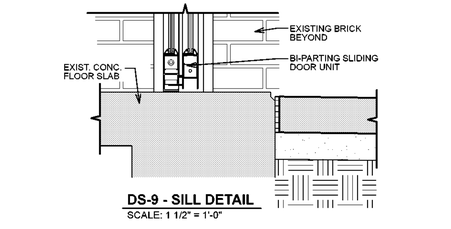
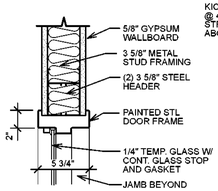


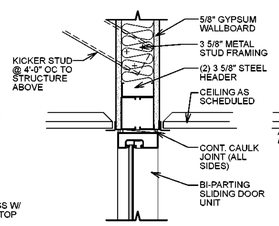
DS-10 - SILL DETAIL
SCALE: 1 1/2" = 1'-0"



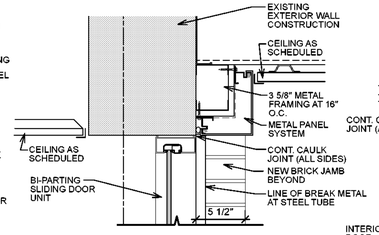
DS-9 - SILL DETAIL
SCALE: 1 1/2" = 1'-0"



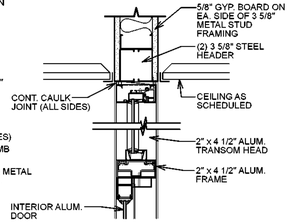
DH-8 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



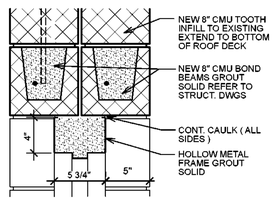
DH-7 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



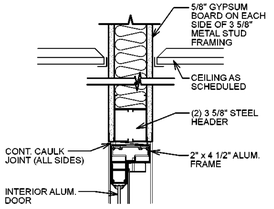
DH-6 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



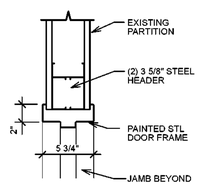
DH-5 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



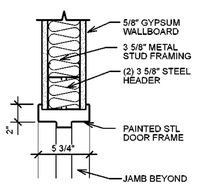
DH-4 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



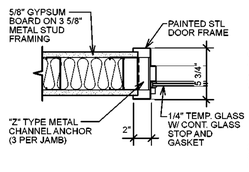
DH-3 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



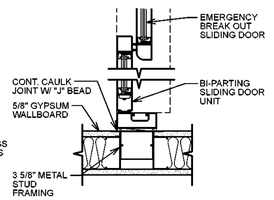
DH-2 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



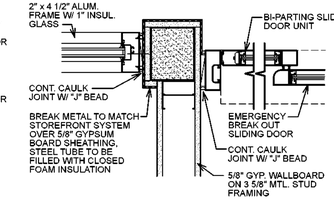
DH-1 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



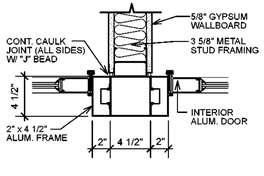
DJ-8 - JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



DJ-7 - JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



DJ-6 - JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



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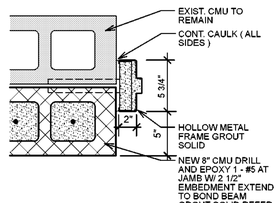
SCALE: 1 1/2" = 1'-0"



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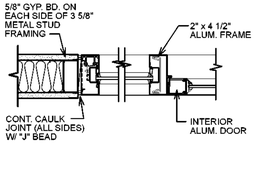

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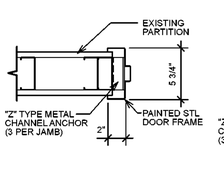

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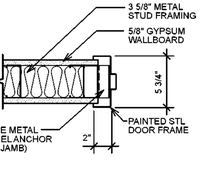
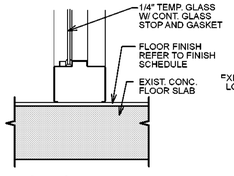
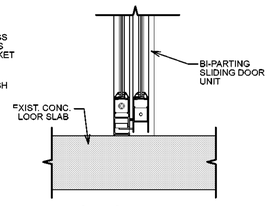


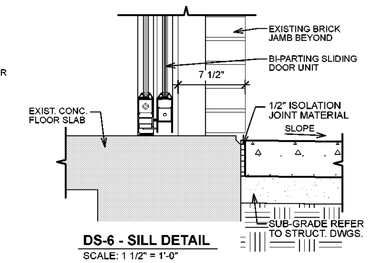
DJ-1 - JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



DS-8 - SILL DETAIL
SCALE: 1 1/2" = 1'-0"



DS-7 - SILL DETAIL
SCALE: 1 1/2" = 1'-0"



DS-6 - SILL DETAIL
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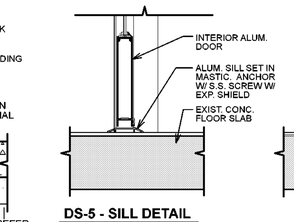

DS-5 - SILL DETAIL
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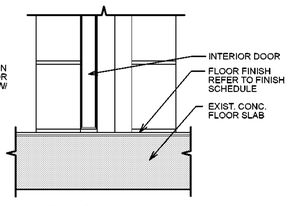

DS-4 - SILL DETAIL
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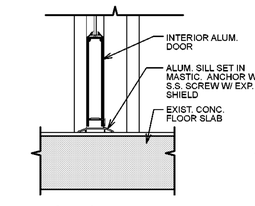

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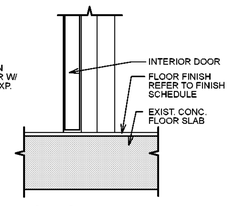

DS-2 - SILL DETAIL
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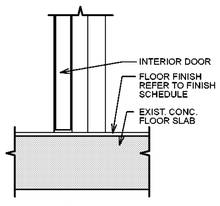


DS-1 - SILL DETAIL
SCALE: 1 1/2" = 1'-0"

1 / A6.2 Door Frame Details
Scale: 1 1/2" = 1'-0"

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, PC · REGISTERED ARCHITECTURAL CORPORATION · CERT. NO. 50424 · NORTH CAROLINA · WILMINGTON, N.C.

WILLIAM DANIEL HALL · REGISTERED ARCHITECT · 13058 · NORTH CAROLINA · WILMINGTON, NC · 11-25-2024

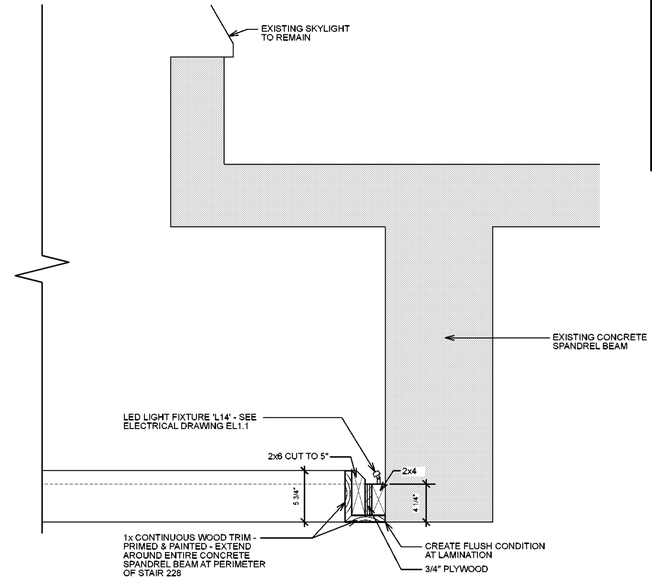
Coastal Carolina Community College
Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

REV	DATE	DESCRIPTION

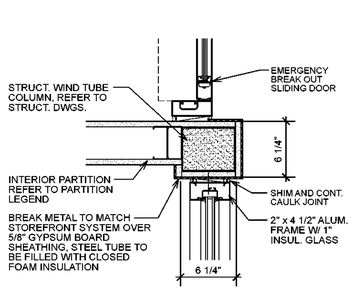
Project Manager	Drawn By: DP
Date: 11-25-2024	Reviewed By: DH
Project ID	

Sheet Title
DOOR FRAME DETAILS

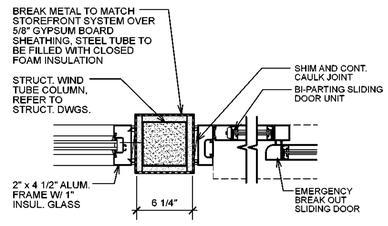
Sheet No.
A6.2



2 / A6.3 Detail @ Stair 228 Light
Scale: 1 1/2" = 1'-0"



WJ6



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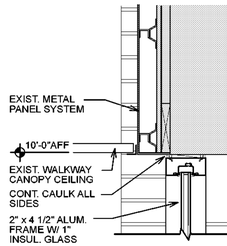
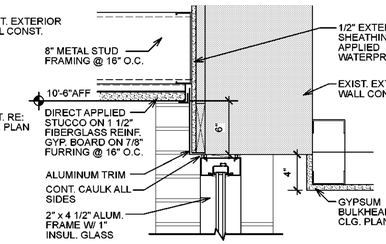


WH4



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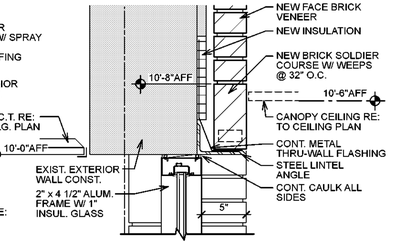
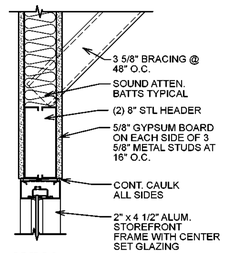
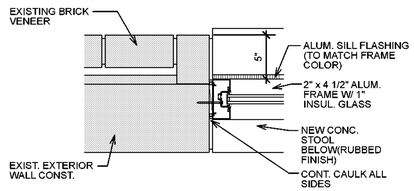


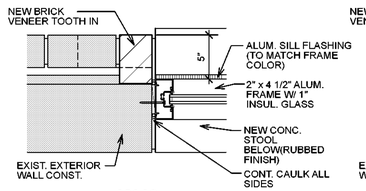
WH2



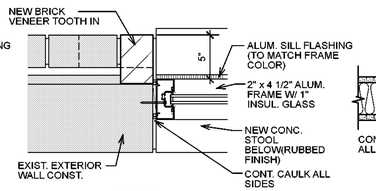
WH1



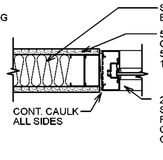
WJ4



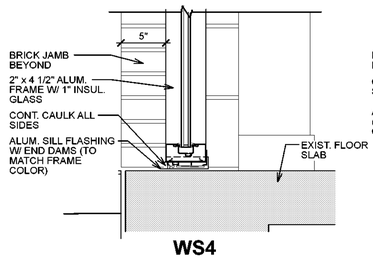
WJ3



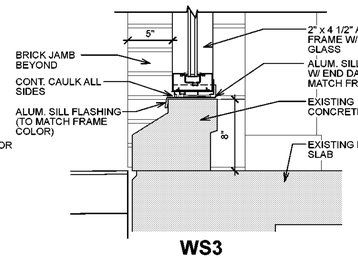
WJ2



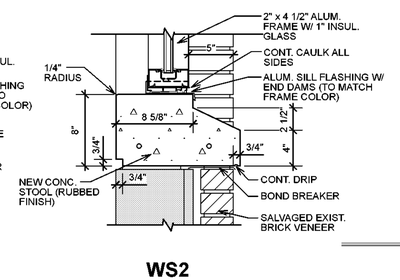
WJ1



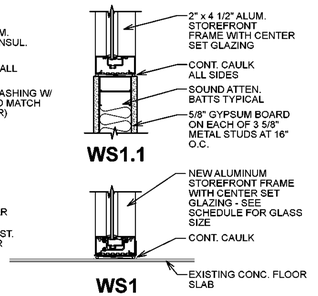
WS4



WS3



WS2



WS1.1 / WS1

1 / A6.3 Exterior / Interior Window Details
Scale: 1 1/2" = 1'-0"

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

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WILLIAM DANIEL HILL 13058 NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT WILMINGTON, NC
11-25-2024

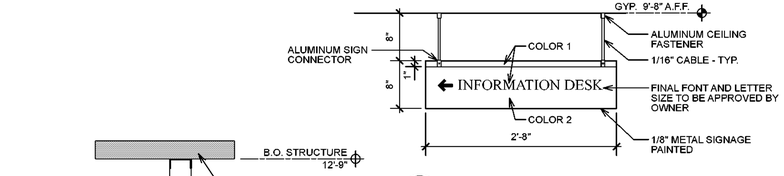
Coastal Carolina Community College
Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

REV	DATE	DESCRIPTION

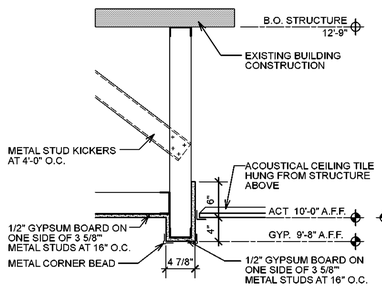
Project Manager	Drawn By: DP
Date: 11-25-2024	Reviewed By: DH
Project ID	

Sheet Title
WINDOW FRAME DETAILS

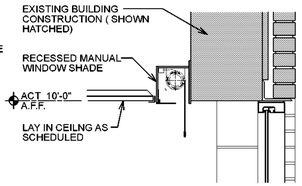
Sheet No.
A6.3



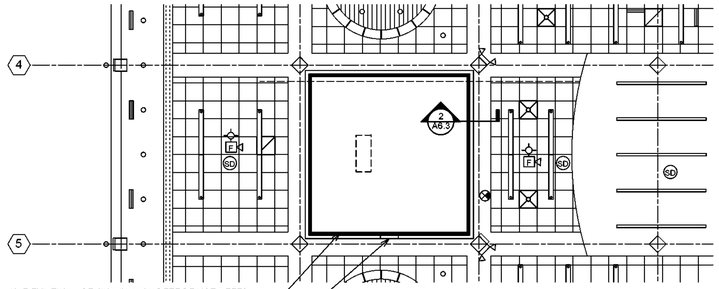
9 A7.0 **Sign Detail**
Scale: 1" = 1'-0"



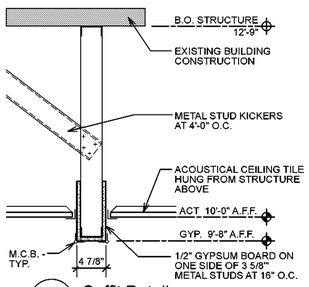
8 A7.0 **Soffit Detail**
Scale: 1" = 1'-0"



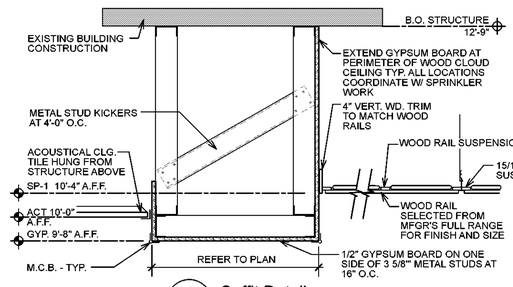
7 A7.0 **Detail @ Manual Roller Shade Detail**
Scale: 1" = 1'-0"



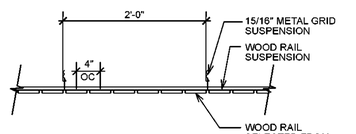
6 A7.0 **Second Floor Partial Second Floor Ceiling Plan**
Scale: 1/8" = 1'-0"



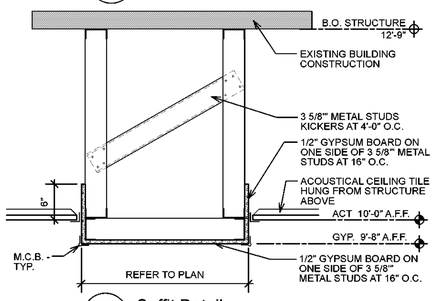
5 A7.0 **Soffit Detail**
Scale: 1" = 1'-0"



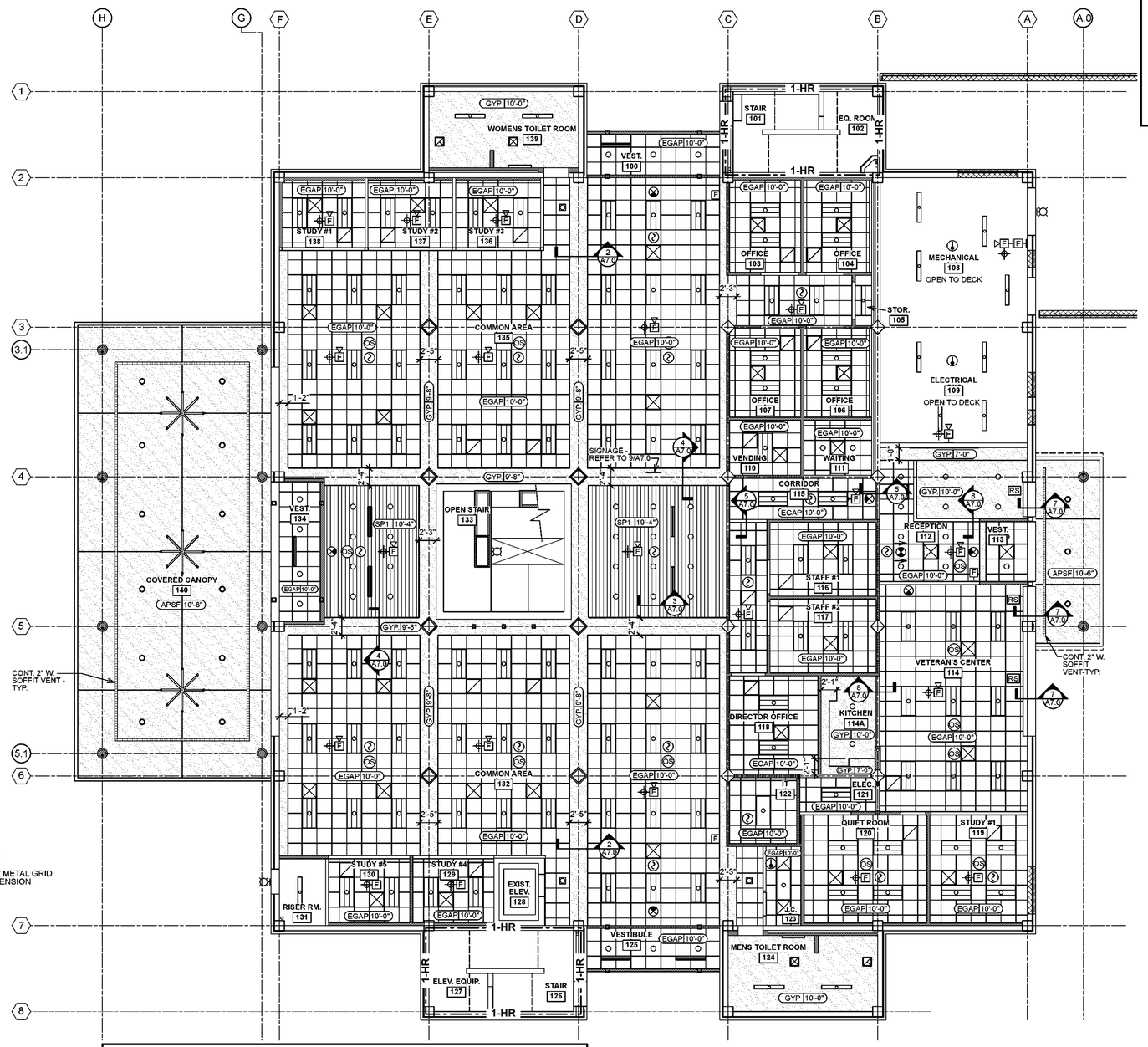
4 A7.0 **Soffit Detail**
Scale: 1" = 1'-0"



3 A7.0 **Suspended Wood Cloud Detail**
Scale: 1" = 1'-0"



2 A7.0 **Soffit Detail**
Scale: 1" = 1'-0"



LEGEND

- 2'-0" x 2'-0" ACOUSTICAL CEILING TILE AND GRID (NO RATING)
- GYPSUM BOARD = GYP.
- GYP[12'-0"] CEILING TYPE / CEILING HEIGHT - REFER TO SPECIFICATIONS
  - GYP = GYPSUM BOARD 1/2" PAINTED
  - EGAP = EXPOSED GRID ACOUSTICAL PANEL
  - SP# = SPECIALITY CEILING
  - APSF = ACRYLIC PLASTER SOFFIT FINISH
- LED LIGHTING FIXTURE - REFER TO ELECTRICAL DRAWINGS
- DIRECT/INDIRECT SUSPENDED FIXTURE - REFER TO ELECTRICAL DRAWINGS
- WALL MOUNTED LIGHT FIXTURE
- RECESSED LIGHT FIXTURE
- F — WALL MOUNTED FIRE ALARM PULL STATION
- F — FIRE ALARM HORN/VISUAL DEVICE CEILING MOUNTED
- RETURN AIR
- RETURN AIR
- SD — SMOKE DETECTOR
- OS — OCCUPANCY SENSOR
- EMERGENCY LIGHT FIXTURE
- RS — MANUAL ROLLER SHADE - REFER TO SPECIFICATIONS
- SMOKE DETECTOR
- EXIT SIGN
- HEAT DETECTOR

PROJECT NORTH

1 A7.0 **First Floor Reflected Ceiling Plan**
Scale: 1/8" = 1'-0"

REFLECTED CEILING PLAN NOTES:

1. THE CONTRACTOR SHALL CONFIRM AND COORDINATE ALL MECHANICAL, ELECTRICAL, AND PLUMBING ITEMS.
2. VERIFY CEILING CLEARANCES PRIOR TO BEGINNING GRID AND FIXTURE PLACEMENT.
3. CENTER GRID AND DEVICES WHENEVER POSSIBLE. LAY-IN TILE TO HAVE 6" MINIMUM TILE WIDTH AT WALL EDGE.
4. CEILING MOUNTED SPEAKERS TO BE OWNER PROVIDED - CONTRACTOR INSTALLED. SEE ELECTRICAL DRAWINGS FOR QUANTITY AND LOCATION.
5. SPRINKLER DESIGN TO INCLUDE ACCOMODATIONS FOR WOOD CLOUD CEILNGS AS SHOWN.

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN, MURRAY, HEMINGWAY ARCHITECTS, PC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50424 NORTH CAROLINA WILMINGTON, N.C.

WILLIAM DANIEL HEMINGWAY 13058 NORTH CAROLINA REGISTERED ARCHITECT WILMINGTON, NC
11-25-2024

Coastal Carolina Community College
Learning Resources Center -
First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

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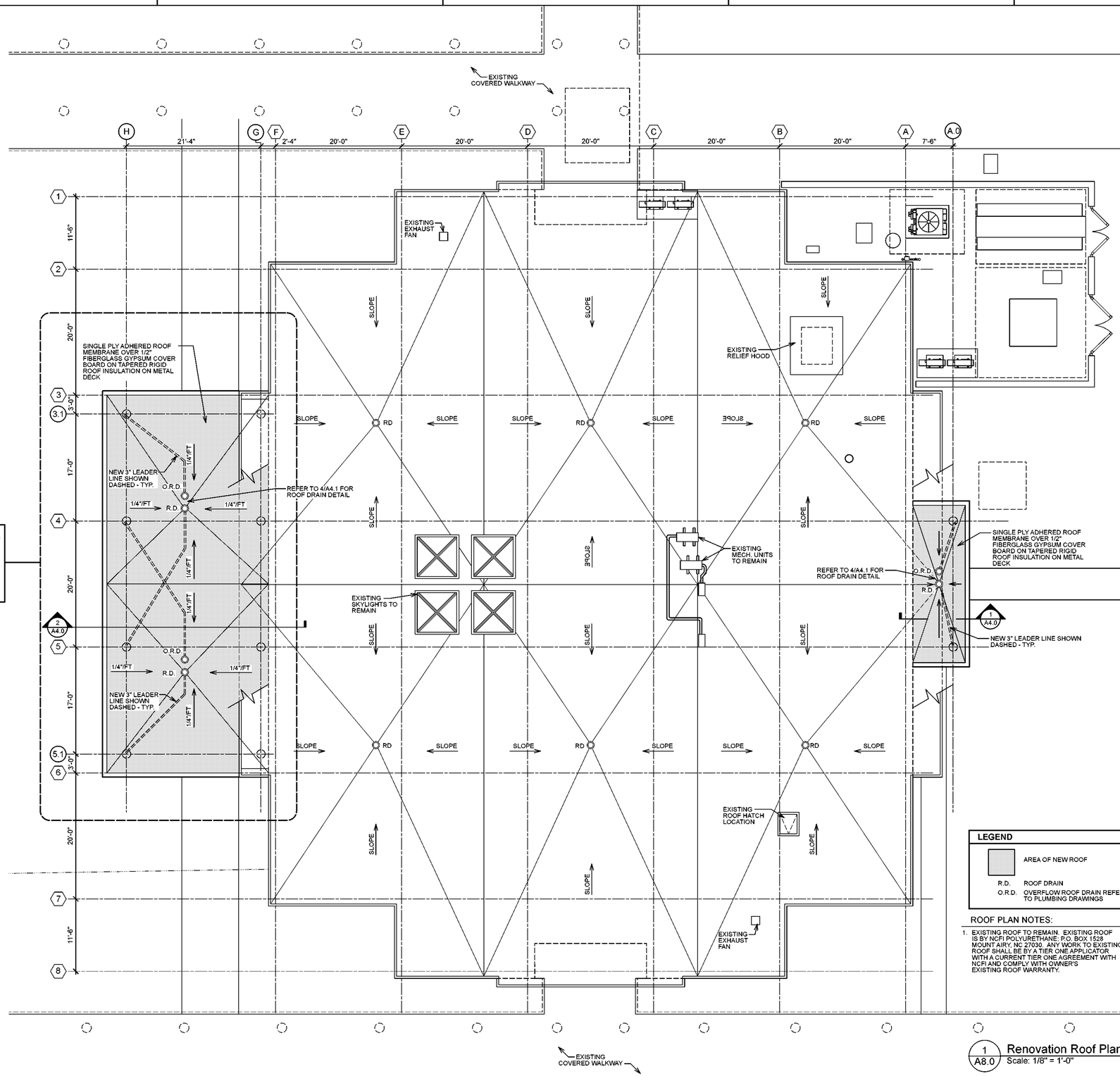
Sheet Title
RENOVATION REFLECTED CEILING PLANS

Sheet No.
A7.0



ADD ALTERNATE # 1
ALL WORK TO PROVIDE ALL LABOR AND MATERIAL TO PROVIDE COVERED CANOPY 140.
ALTERNATE TO INCLUDE ALL ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL WORK INVOLVED IN CONSTRUCTION OF COVERED CANOPY 140 AS SHOWN ON A2.0 AND A3.0. BASE BID TO INCLUDE DOORS 134B AND SIDEWALKS AS SHOWN ON A2.1. BASE BID TO INCLUDE INFILTRATION TRENCHES AS DELINEATED ON CIVIL DRAWINGS.

LEGEND

	AREA OF NEW ROOF
R.D.	ROOF DRAIN
O.R.D.	OVERFLOW ROOF DRAIN REFER TO PLUMBING DRAWINGS

ROOF PLAN NOTES:

1. EXISTING ROOF TO REMAIN. EXISTING ROOF IS BY NCFI POLYURETHANE: P.O. BOX 1528 MOUNT AIRY, NC 27030. ANY WORK TO EXISTING ROOF SHALL BE BY A TIER ONE APPLICATOR WITH A CURRENT TIER ONE AGREEMENT WITH NCFI AND COMPLY WITH OWNER'S EXISTING ROOF WARRANTY.

1 / A8.0 Renovation Roof Plan
Scale: 1/8" = 1'-0"

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN, MURRAY, HEMINGWAY ARCHITECTS, PC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50424 NORTH CAROLINA WILMINGTON, N.C.

DAVIS 13058 REGISTERED ARCHITECT NORTH CAROLINA WILMINGTON, NC 11-25-2024

Coastal Carolina Community College
Learning Resources Center - First Floor Renovation
444 Western Boulevard, Jacksonville, North Carolina 28546

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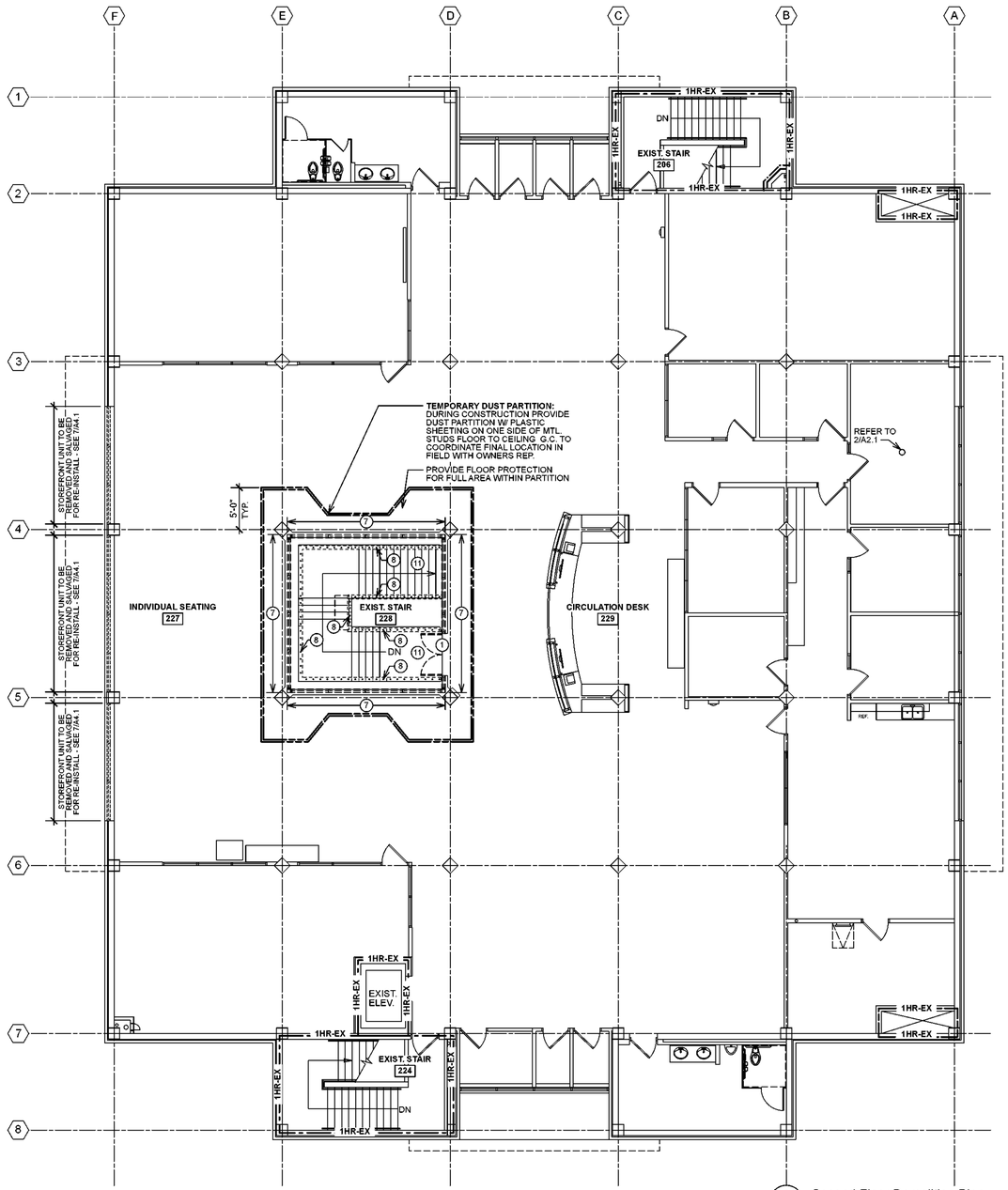
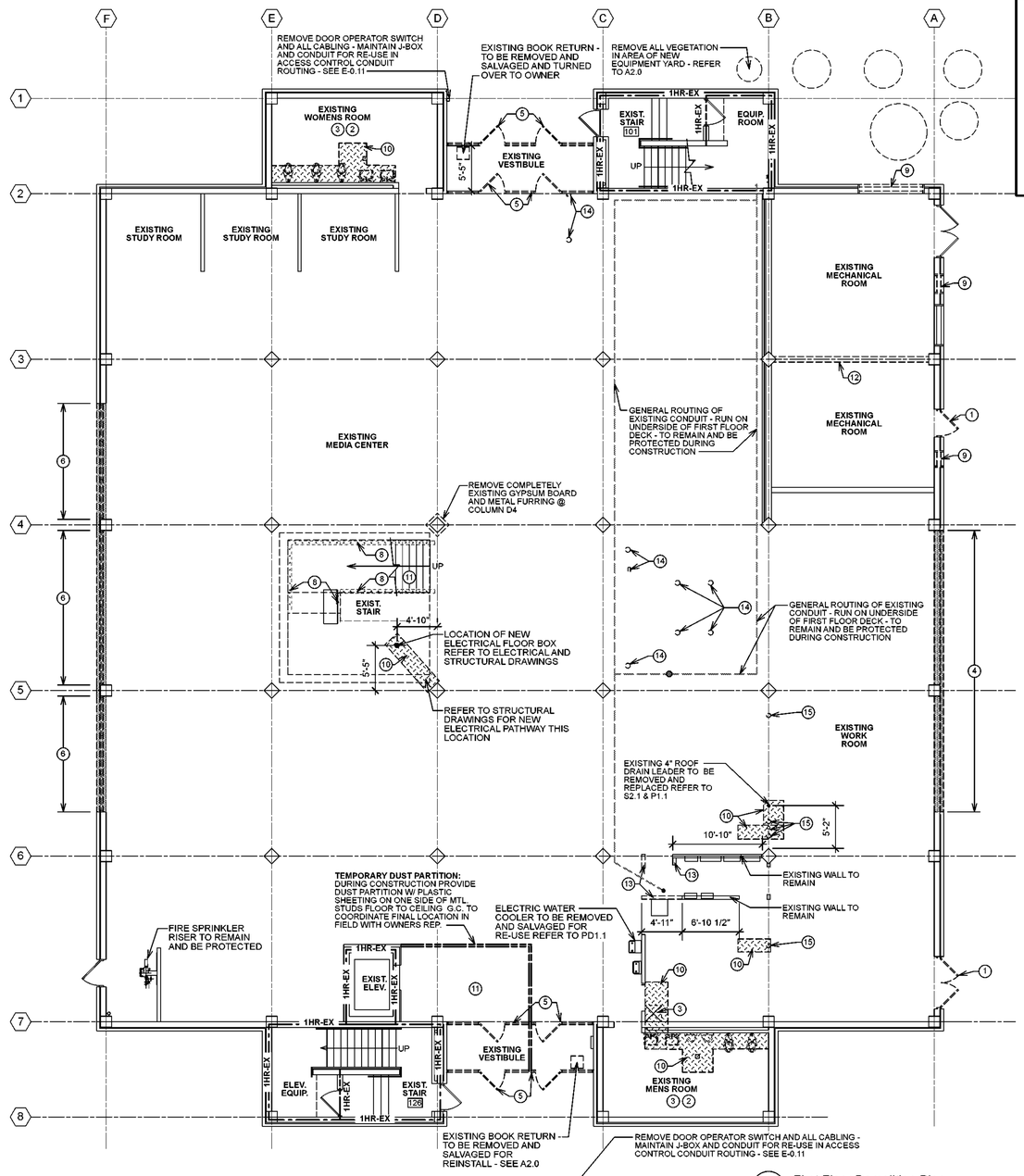
Sheet Title: **ROOF PLAN**

Sheet No.: A8.0



2 / D1.0 Second Floor Demolition Plan
Scale: 1/8" = 1'-0"



1 / D1.0 First Floor Demolition Plan
Scale: 1/8" = 1'-0"

DEMOLITION NOTES

1. REMOVE EXISTING DOOR AND FRAME COMPLETELY. PATCH AND REPAIR ADJACENT SURFACES AS REQUIRED.
2. REMOVE EXISTING TILE FLOORING, BASE, AND TRANSITIONS, EXPOSE AND PREPARE CONCRETE SUBFLOOR FOR NEW FINISH.
3. PLUMBING CONTRACTOR TO REMOVE EXISTING PLUMBING FIXTURES, CAP SUPPLY AND WASTE AND VENT LINES AS REQUIRED.
4. REMOVE PORTION OF EXISTING EXTERIOR WALL CONSTRUCTION FOR INSTALLATION OF NEW EXTERIOR DOOR AND FRAME AND/OR WINDOW SYSTEM. REFER TO D1.1 FOR DEMOLITION ELEVATIONS ANS A3.0 FOR RENOVATION ELEVATIONS. REFER TO STRUCTURAL DRAWINGS.
5. REMOVE EXISTING EXTERIOR STOREFRONT ENTRANCE SYSTEM ENTIRELY. REMOVE COMPLETLEY CONCRETE **SILLS** AT BASE OF SYSTEMS
6. REMOVE EXISTING EXTERIOR ALUMINUM WINDOW SYSTEM ENTIRELY.
7. REMOVE EXISTING STAIRWELL STOREFRONT, INCLUDING DOORS, FRAMES AND WOOD HANDRAIL COMPLETELY PATCH AND REPAIR ADJACENT SURFACES AS REQUIRED.
8. REMOVE EXISTING STAIRWELL WOOD HANDRAIL AND STEEL PICKETS.
9. REMOVE EXISTING LOUVER. TOOTH IN CMU AND BRICK TO MATCH EXISTING.
10. REMOVE PORTION OF EXISTING CONCRETE SLAB. REFER TO PLUMBING DRAWINGS. REFER TO STRUCTURAL DRAWINGS PRIOR TO ANY SLAB CUTTING.
11. REMOVE EXISTING CARPET AND BASE AND TRANSITIONS, EXPOSE & PREPARE SUBFLOOR FOR NEW FINISH. CUT OUT EXISTING METAL NOSING. GRIND CONCRETE SMOOTH AND PREP FOR NEW TILE FINISH.
12. REMOVE EXISTING CMU WALL. REFER TO STRUCTURAL DRAWINGS.
13. REMOVE EXISTING INTERIOR GYPSUM BOARD AND METAL STUD PARTITIONS COMPLETELY.
14. REMOVE EXISTING FLOOR ELECTRICAL OUTLETS. SEE ELECTRICAL DRAWINGS.
15. REMOVE EXISTING PLUMBING LINES. SEE PLUMBING DRAWINGS.

REFER TO OTHER DEMOLITION SHEETS FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL PROVIDE ADDITIONAL DEMOLITION, PATCH AND REPAIR, AS REQUIRED TO COMPLETE NEW WORK.

ASBESTOS ABATEMENT: HAS BEEN COMPLETED AS PART OF A PREVIOUS PROJECT. CLEARANCE REPORTS ARE INCLUDED IN THE PROJECT MANUAL OR CAN BE OBTAINED FROM THE OWNER'S REPRESENTATIVE.
LEAD PAINT NOTIFICATION: REFER TO SPECIFICATIONS AND LEAD PAINT REPORT INCLUDED IN PROJECT MANUAL.

EXISTING STAIR 228: EXERCISE CARE IN DEMOLITION OF HANDRAIL COMPONENTS - EXISTING MONOLITHIC CONCRETE STAIR IS INTENDED TO REMAIN AND BE INCORPORATED INTO COMPLETED PROJECT.

NOTES:

1. CONTRACTOR SHALL PROVIDE ADDITIONAL DEMOLITION PATCH AND REPAIR AS REQUIRED TO COMPLETE NEW WORK.
2. FIELD VERIFY ALL NECESSARY DIMENSIONS BEFORE COMMENCING WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES.
3. REMOVE EXISTING VEGETATION AS NECESSARY TO PERFORM WORK. REFER TO CIVIL DRAWINGS.
4. DURING CONSTRUCTION G.C. SHALL MAINTAIN STUDENT ACCESS TO THE EXISTING ELEVATOR TO THE GREATEST EXTENT POSSIBLE.
5. THE COLLEGE WILL MODIFY DOOR HARDWARE TO DOORS 101,126, 206, & 224 TO ALLOW STUDENT ACCESS TO SECOND FLOOR DURING CONSTRUCTION.
6. THE SECOND FLOOR SHALL REMAIN OPERATIONAL FOR DURATION OF PROJECT, EXCEPT FOR LIMITED PERIODS OF TIME TO BE COORDINATED OWNER'S REPRESENTATIVE.
7. COORDINATE AREA OF FLOOR SLAB CUT AND PATCH WITH STRUCTURAL, PLUMBING, AND ELECTRICAL WORK. SLAB PATCH, INCLUDING AT TOILET ROOMS SHALL BE 4" MIN. SLAB ON GRADE. 4000 PSI CONCRETE-SYNTHETIC FIBER REINFORCED ON 15 MIL VAPOR BARRIER ON 4" WELL COMPACTED FILL ON WELL COMPACTED SUB GRADE.

LEGEND

- EXISTING TO REMAIN
- EXISTING TO BE REMOVED
- EXISTING DOOR AND FRAME TO REMAIN
- EXISTING DOOR AND FRAME TO BE REMOVED
- (1) DEMOLITION NOTE
- (B2) EXISTING COLUMN GRID
- 1HR EX 1 HOUR RATED FIRE BARRIER - EXISTING CONSTRUCTION TO REMAIN AND BE MAINTAINED
- AREA OF CONCRETE SLAB TO BE REMOVED - REFER TO STRUCTURAL, PLUMBING, AND ELECTRICAL DRAWINGS

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN, MURRAY, HEMINGWAY ARCHITECTS, PC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50424 NORTH CAROLINA WILMINGTON, N.C.

WILLIAM DAMELL HILL REGISTERED ARCHITECT 13058 NORTH CAROLINA WILMINGTON, NC
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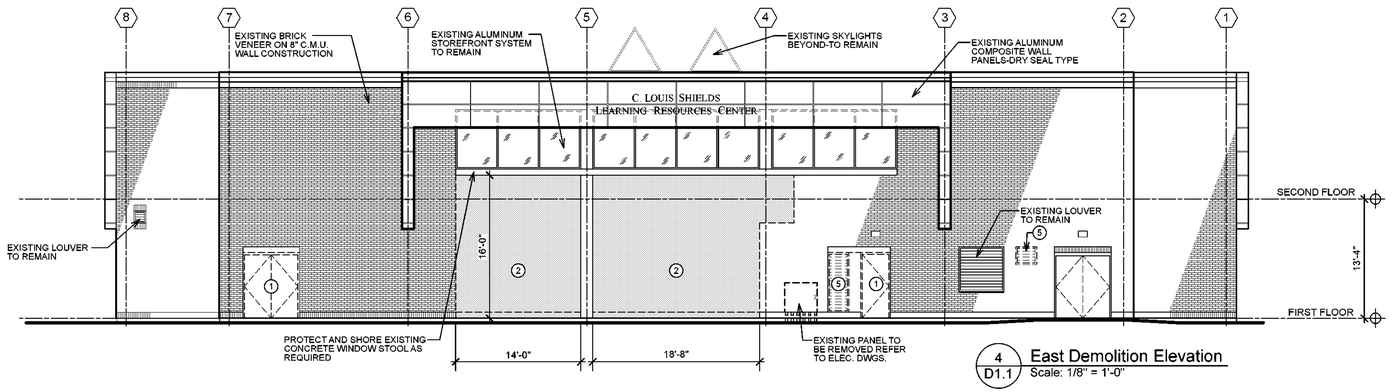
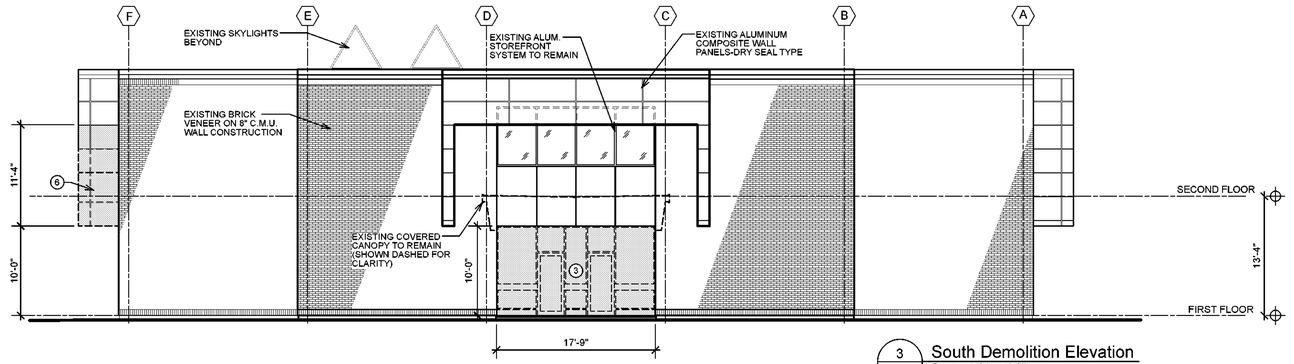
Sheet Title
DEMOLITION FLOOR PLANS

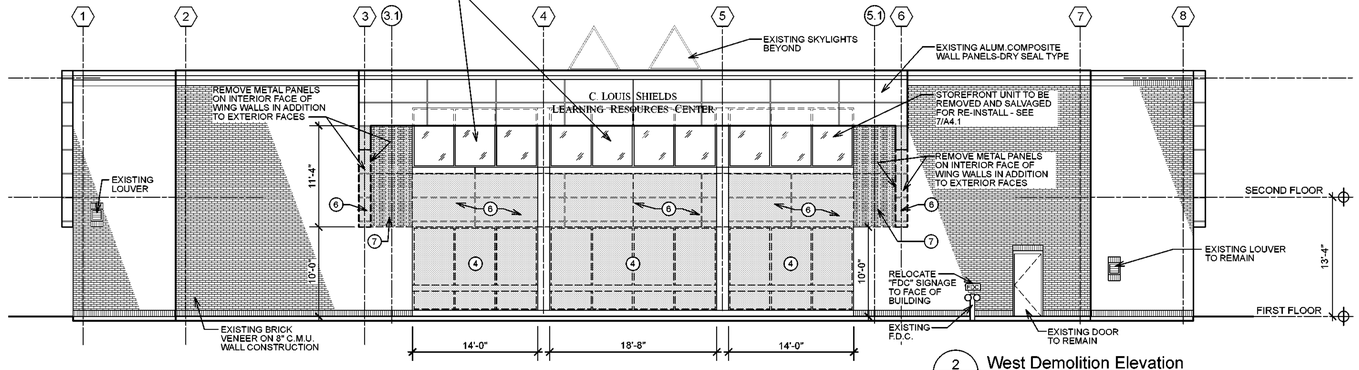
Sheet No.
D1.0



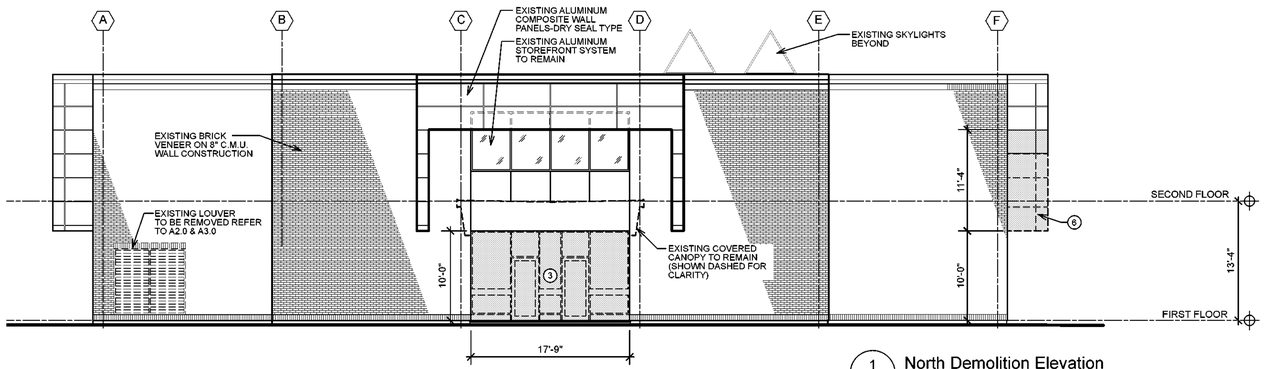
4 / D1.1 East Demolition Elevation
Scale: 1/8" = 1'-0"



3 / D1.1 South Demolition Elevation
Scale: 1/8" = 1'-0"



2 / D1.1 West Demolition Elevation
Scale: 1/8" = 1'-0"



1 / D1.1 North Demolition Elevation
Scale: 1/8" = 1'-0"

DEMOLITION NOTES

1. REMOVE EXISTING DOOR AND FRAME COMPLETELY. PATCH AND REPAIR ADJACENT SURFACES AS REQUIRED. PREPARE BRICK VENEER FOR TOOTH INFILL - TYPICAL
2. REMOVE PORTION OF EXISTING EXTERIOR WALL CONSTRUCTION FOR INSTALLATION OF NEW EXTERIOR DOOR AND FRAME AND/OR WINDOW SYSTEM. REFER TO A3.0 FOR RENOVATION ELEVATIONS.
3. REMOVE EXISTING EXTERIOR STOREFRONT ENTRANCE SYSTEM ENTIRELY. REMOVE COMPLETLEY CONCRETE **SILLS** AT BASE OF SYSTEMS. REPAIR SILL AS REQUIRED.
4. REMOVE EXISTING EXTERIOR ALUMINUM WINDOW SYSTEM ENTIRELY.
5. REMOVE EXISTING LOUVER. TOOTH IN CMU AND BRICK TO MATCH EXISTING. REFER TO TO A3.0 FOR RENOVATION ELEVATIONS.
6. REMOVE EXISTING METAL PANEL SYSTEM.
7. REMOVE EXISTING BRICK VENEER.

TO GREATEST EXTENT POSSIBLE - SALVAGE ANY REMOVED BRICK AND RECYCLE FOR USE ON PROJECT - REFER TO A3.0 FOR NEW ELEVATIONS AND NEW MASONRY WORK.

REFER TO OTHER DEMOLITION SHEETS FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL PROVIDE ADDITIONAL DEMOLITION, PATCH AND REPAIR, AS REQUIRED TO COMPLETE NEW WORK.

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, PC · REGISTERED ARCHITECTURAL CORPORATION · CERT. NO. 50424 · NORTH CAROLINA · WILMINGTON, N. C.

WILLIAM DANIEL HILL · REGISTERED ARCHITECT · 13058 · NORTH CAROLINA · WILMINGTON, NC
11·25·2024

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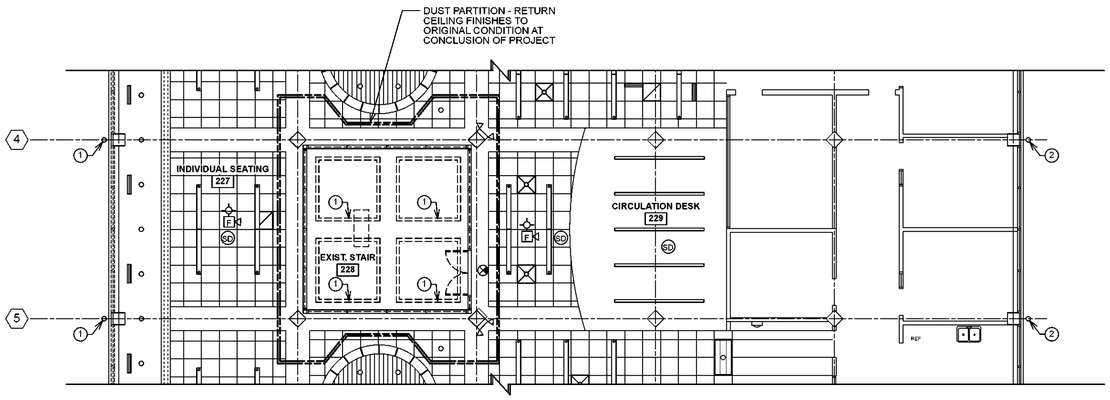
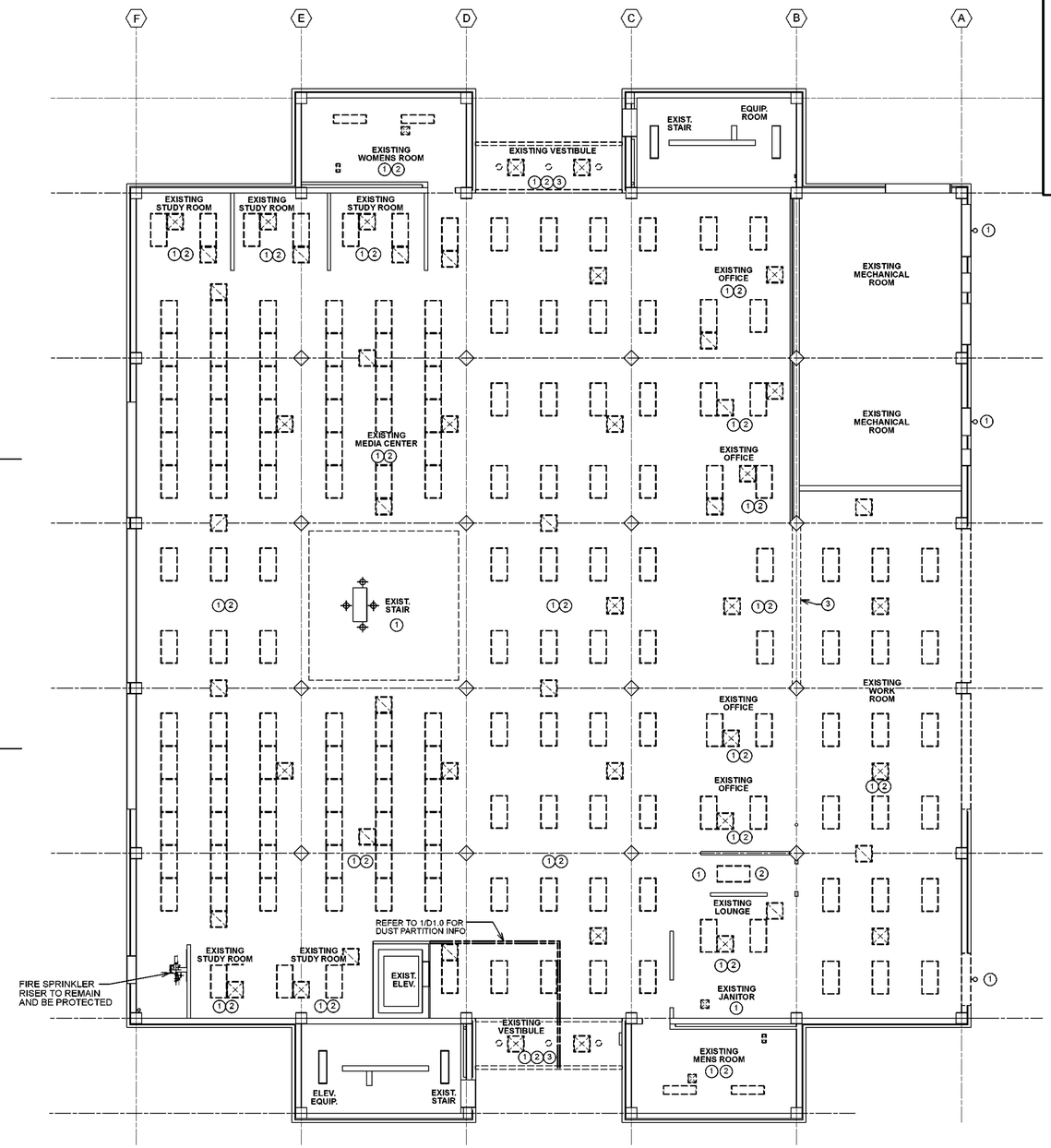
Sheet Title
DEMOLITION ELEVATIONS

Sheet No.
D1.1



2 D1.0 Second Floor Partial Reflected Ceiling Demolition Plan
Scale: 1/8" = 1'-0"



1 D1.2 First Floor Reflected Ceiling Demolition Plan
Scale: 1/8" = 1'-0"

DEMOLITION NOTES

1. ELECTRICAL CONTRACTOR TO REMOVE EXISTING LIGHTING DEVICES: ALL FIXTURES, SWITCHES, CONDUCTORS, SENSORS, EMERGENCY LIGHTS AND ASSOCIATED WIRING.
2. MECHANICAL CONTRACTOR TO REMOVE EXISTING DIFFUSERS & GRILLES. MECHANICAL UNITS ABOVE CEILING TO BE REMOVED COMPLETELY. SEE MECHANICAL DRAWINGS.
3. REMOVE EXISTING METAL STUD AND GYPSUM BOARD BULKHEAD AND SOFFIT IN IT'S ENTIRETY.

REFER TO PLUMBING, MECHANICAL, ELECTRICAL AND FIRE ALARM DRAWINGS FOR SYSTEM TERMINATIONS AND CAPS AND FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL PROVIDE ADDITIONAL DEMOLITION, PATCH AND REPAIR, AS REQUIRED TO COMPLETE NEW WORK.

LEGEND

- EXISTING TO REMAIN
- EXISTING TO BE REMOVED
- (1) DEMOLITION NOTE

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

BOWMAN MURRAY HEMINGWAY ARCHITECTS, PC · REGISTERED ARCHITECTURAL CORPORATION · CERT. NO. 50424 · NORTH CAROLINA · WILMINGTON, N.C.

WILLIAM DANIEL HILL · 13058 · REGISTERED ARCHITECT · NORTH CAROLINA · WILMINGTON, NC
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11-25-2024	DH

Project ID

Sheet Title
DEMOLITION REFLECTED CEILING PLANS

Sheet No.
D1.2

PLUMBING GENERAL NOTES

1. SCOPE OF WORK: THESE DRAWINGS AND ACCOMPANYING SPECIFICATIONS DESCRIBE SCOPE OF WORK REQUIRED FOR PLUMBING SYSTEMS. LABOR AND MATERIAL SHALL BE PROVIDED AS REQUIRED FOR A COMPLETE, WORKMANLIKE INSTALLATION OF ALL SYSTEMS SHOWN ON DIAGRAMMATIC DRAWINGS AND/OR AS SPECIFIED HEREIN.
2. CONTRACTOR: THE WORD "CONTRACTOR", "PLUMBING CONTRACTOR", AND "P.C." AS USED HEREIN SHALL MEAN THE PLUMBING INSTALLER UNLESS OTHERWISE QUALIFIED.
3. DRAWINGS: DRAWINGS ARE DIAGRAMMATIC AND MAY NOT COMPLETELY DESCRIBE EVERY DETAIL OF THE INSTALLATION. HOWEVER, CONTRACTOR IS RESPONSIBLE FOR FURNISHING COMPLETE SYSTEMS INCLUDING ALL REQUIRED EQUIPMENT AND ACCESSORIES TO OBTAIN FULLY FUNCTIONING PLUMBING SYSTEMS.
4. CODE COMPLIANCE: COMPLY WITH THE LATEST EDITIONS OF THE FOLLOWING STANDARDS AND CODES, INSOFAR AS THEY APPLY:

   NORTH CAROLINA STATE BUILDING CODE (CODE), LATEST EDITION AND REVISIONS.

   LOCAL JURISDICTION REQUIREMENTS.
5. PERMITS AND INSPECTIONS: OBTAIN ALL PERMITS, LICENSES, INSPECTIONS, ETC., REQUIRED FOR WORK AND PAY FOR SAME. FURNISH A FINAL CERTIFICATE OF INSPECTION AND APPROVAL FROM THE AUTHORITY HAVING JURISDICTION PRIOR TO ACCEPTANCE OF THE WORK.
6. SUPERVISION: PROVIDE SKILLED SUPERINTENDENTS TO SUPERVISE THE WORK FROM THE BEGINNING TO COMPLETION AND FINAL INSPECTION.
7. PROGRESS OF WORK: PERFORM WORK IN ACCORDANCE WITH SCHEDULE AND REQUIREMENTS OF THE GENERAL CONTRACTOR. UNDER NO CIRCUMSTANCES SHALL THIS CONTRACTOR DELAY THE OVERALL PROJECT SCHEDULE.
8. COORDINATION: COORDINATE PLUMBING WORK WITH THE WORK OF OTHER TRADES. LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE UNLESS SPECIFICALLY DIMENSIONED. ARRANGE PLUMBING SO AS NOT TO INTERFERE WITH THE WORK OF OTHER TRADES. VERIFY ACTUAL BUILDING STRUCTURE PRIOR TO DUCT FABRICATION AND ADJUST LAYOUT AS REQUIRED. INCLUDE ALL OFFSETS IN DUCTS, FITTINGS, PIPING, ETC. AS REQUIRED TO PROPERLY INSTALL EQUIPMENT.
9. EQUIPMENT LOCATIONS: DETERMINE EXACT EQUIPMENT AND MATERIALS LOCATIONS TO PROVIDE BEST ARRANGEMENT AND TO FACILITATE PROPER MAINTENANCE AND SERVICING OF EQUIPMENT.
10. LISTING AND LABELING: ALL EQUIPMENT SHALL BE LABELED OR LISTED BY UL OR OTHER APPROVED TESTING AGENCY WHERE REQUIRED.
11. STORAGE SPACE: CONSULT WITH THE GENERAL CONTRACTOR REGARDING JOB SITE STORAGE FOR PLUMBING MATERIALS TO BE INSTALLED UNDER THIS PROJECT. STORAGE SPACE MUST BE SECURED AND CONTRACTOR'S REPRESENTATIVE MUST BE ON JOB BEFORE ANY MATERIAL MAY BE RECEIVED.
12. CLEANUP: REMOVE ALL DEBRIS GENERATED IN THE ACCOMPLISHMENT OF WORK UNDER THIS PROJECT. CLEAN, REPLACE OR REPAIR ALL SURFACES SOILED OR DAMAGED DURING THE COURSE OF THE WORK. REMOVE DEBRIS DAILY SO TO MAINTAIN SAFE WORKING CONDITIONS.
13. RECORD DRAWINGS: MAINTAIN ONE SET OF "RED-LINED" RECORD DRAWINGS ON SITE AT ALL TIMES AND PROVIDE DRAWINGS TO ARCHITECT/ENGINEER PRIOR TO FINAL INSPECTION.
14. EXISTING BUILDINGS AND CONSTRUCTION:
    A. WORK UNDER THIS CONTRACT IS TO BE PERFORMED IN AN EXISTING BUILDING. BUILDING LAYOUT INDICATED IS DEVELOPED FROM EXISTING RECORD DOCUMENTS AND LIMITED FIELD VERIFICATION FOR THE PURPOSES OF DESCRIBING THE WORK. VERIFY ALL EXISTING CONDITIONS AND ADJUST WORK AS REQUIRED TO SUIT ACTUAL FIELD CONDITIONS.
    B. PERFORM ALL WORK IN ACCORDANCE WITH SAFETY REGULATIONS.
    C. DO NOT CUT ANY STRUCTURAL MEMBERS WITHOUT EXPRESS WRITTEN INSTRUCTIONS FROM ARCHITECT/ENGINEER. PROVIDE CUTTING AND PATCHING FOR EXISTING FINISHES AS REQUIRED.
    D. COORDINATE INSTALLATION OF NEW PLUMBING SYSTEMS WITH EXISTING BUILDING SYSTEMS. ADJUST ARRANGEMENTS AS REQUIRED TO ACCOMMODATE INTERFERENCES.
    E. THE SECOND FLOOR IS TO REMAIN OPEN DURING CONSTRUCTION. PLUMBING SYSTEMS SERVING THE SECOND FLOOR MUST REMAIN OPERATIONAL AT ALL TIMES UNLESS SHUTDOWN IS COORDINATED WITH THE OWNER.

PLUMBING DEMOLITION NOTES

1. THE PLUMBING CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS FOR DEMOLITION REQUIREMENTS AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER. REMOVE ALL FIXTURES, EQUIPMENT, PIPING, SUPPORTS, ACCESSORIES, ETC. MADE OBSOLETE BY THESE ALTERATIONS AS SHOWN IN THE PLUMBING DRAWINGS. ALL ITEMS TO BE REMOVED OR MODIFIED MAY NOT BE SHOWN, HOWEVER, THIS CONTRACTOR SHALL REMOVE ANY PLUMBING WORK AS REQUIRED BY THE CONSTRUCTION OR AS DIRECTED BY THE OWNER OR THE ENGINEER. SURVEY THE AFFECTED AREAS BEFORE SUBMITTING A BID.
2. ALL EXISTING PLUMBING FIXTURES, EQUIPMENT AND PIPING SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED.
3. THESE DRAWINGS ARE COMPILED BY THE ARCHITECT/ENGINEER FROM THE OWNER'S AS-BUILT RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE PLUMBING CONTRACTOR SHALL VERIFY ALL PIPING, FIXTURE LOCATIONS, DIMENSIONS, MATERIALS AND ALL FIELD CONDITIONS AFFECTING HIS WORK.
4. WHERE PLUMBING SYSTEMS PASS THROUGH THE DEMOLITION AREAS TO SERVE OTHER PORTIONS OF THE PREMISES, THEY SHALL REMAIN OR BE SUITABLY RELOCATED AND THE SYSTEM RESTORED TO NORMAL OPERATION. ADVISE THE ARCHITECT/ENGINEER IMMEDIATELY IF SUCH CONDITIONS ARE UNCOVERED BEFORE PROCEEDING WITH ADDITIONAL WORK.
5. PROTECT ALL EXISTING LIFE SAFETY SYSTEMS, FIRE ALARM AND PUBLIC ADDRESS SYSTEMS AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE OWNER AND ARCHITECT/ENGINEER IN WRITING WHEN SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN SERVICE.
6. SURVEY THE EFFECTED AREAS BEFORE SUBMITTING A BID AS ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DEPICTED ON THE DRAWINGS AND SOME UNUSUAL CONDITIONS MAY EXIST.

PLUMBING LEGEND

CA	COMPRESSED AIR PIPING
C	CONDENSATE PIPING
140°F	DOMESTIC 140°F WATER PIPING
140R	DOMESTIC 140°F RETURN WATER PIPING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER CIRCULATION PIPING
	DOMESTIC HOT WATER PIPING
F	FILTERED WATER PIPING
SP	FIRE SPRINKLER PIPING
FM	FORCE MAIN PIPING
NG	NATURAL GAS PIPING
LP	LP GAS PIPING
GW	GREASE WASTE PIPING
MCA	MEDICAL COMPRESSED AIR PIPING
N2	NITROUS OXIDE PIPING
O2	O2 (OXYGEN) PIPING
OD	OVERFLOW ROOF DRAIN PIPING
RD	ROOF DRAIN PIPING
	SANITARY VENT PIPING
	SANITARY WASTE PIPING
T	TEPID WATER PIPING
TP	TRAP PRIMER PIPING
VAC	VACUUM PIPING
NPW	NON-POTABLE WATER
	BACKFLOW PREVENTION DEVICE
	BALL VALVE
	CHECK VALVE
	CIRCUIT SETTER (BALANCING VALVE)
	CIRCULATION PUMP
	CONTROL VALVE
	EXTENT OF DEMOLITION
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FS	FLOOR SINK
	GAS-REGULATOR VALVE
	GATE VALVE
	GATE VALVE IN RISER
GCO	GRADE CLEANOUT
HB	HOSE BIBB
	PIPE CAP
	PIPE ELBOW
	PIPE ELBOW DOWN
	PIPE ELBOW UP
	PIPE TEE
	PIPE TEE DOWN
	PIPE TEE UP
SP / FM	SUMP PUMP
1	DEMOLITION KEYED NOTE TAG
	HATCHING INDICATES ITEMS TO BE DEMOLISHED
1	NEW WORK KEYED NOTE
	POINT OF CONNECTION - NEW TO EXISTING
	PRESSURE REDUCING VALVE
	SOLENOID VALVE
M 140°F	THERMOSTATIC MIXING VALVE
WCO	WALL CLEANOUT
WH	WALL HYDRANT
	WASHING MACHINE BOX
"X"	WATER HAMMER ARRESTOR

NOTE: ALL ITEMS LISTED IN THIS SCHEDULE MAY NOT BE USED IN PROJECT

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com

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PLUMBING ABBREVIATIONS

(X)	EXISTING
AAV	AIR ADMITTANCE VALVE
A.F.F.	ABOVE FINISHED FLOOR
A.R.C.I.	ACID RESISTANT CAST IRON
ADA	AMERICANS WITH DISABILITIES ACT
BRZ.	BRONZE
BT	BATHTUB
C.I.	CAST IRON
CO	CLEANOUT
CONC.	CONCRETE
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DIA.	DIAMETER
E.C.I.	ENAMELED CAST IRON
EC	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FS	FLOOR SINK
GA.	GAUGE
GAL.	GALLON
GC	GENERAL CONTRACTOR
GCO	GRADE CLEANOUT
GPF	GALLONS PER FLUSH
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GWH	GAS-FIRED WATER HEATER
HB	HOSE BIBB
INCL.	INCLUDED
KS	KITCHEN SINK
LAV	LAVATORY
LP	LIQUID PROPANE
MS	MOP SERVICE BASIN
NAT.	NATURAL GAS
NKL.	NICKEL
NON SIMULT.	NON SIMULTANEOUS
O.F.L.C.	OPEN FRONT LESS COVER
OB	OUTLET BOX
OC	ON CENTER
ORDL	OVERFLOW ROOF DRAIN LEADER
PC	PLUMBING CONTRACTOR
PRESS. BAL.	PRESSURE BALANCED
RCVY.	RECOVERY
RDL	ROOF DRAIN LEADER
SA	WATER HAMMER ARRESTOR
SH	SHOWER
SK	SINK
SLD.	SLIDE
SS	STAINLESS STEEL
TDH	TOTAL DYNAMIC HEAD
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VC	VITREOUS CHINA
VR	VANDAL RESISTANT
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT

NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN PROJECT.

BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN
12/06/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION
1	12/6/2024	ADDENDUM #1

Project Manager	Drawn By: JBS
Date: 11-25-2024	Reviewed By: DMH
Project ID	

Sheet Title: PLUMBING GENERAL NOTES, LEGEND, ABBREVIATIONS

Sheet No.: P0.1

PLUMBING FIXTURE SCHEDULE

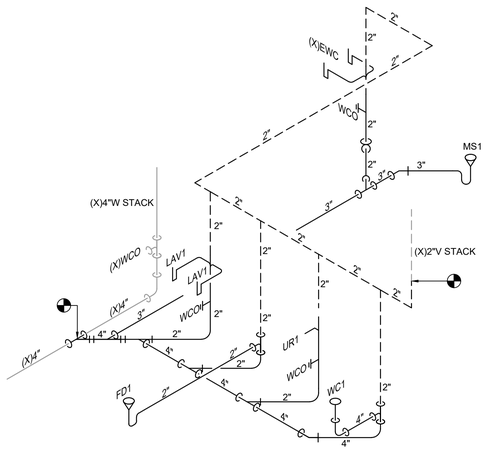
DRAWING CODE	FIXTURE		DESCRIPTION	MANUFACTURER	MODEL	ALTERNATE APPROVED MANUFACTURERS	NOTES	PIPE SIZE			
								DCW	DHW	WASTE	VENT
WC1	FLUSH VALVE WATER CLOSET, FLOOR MTD., 1.28GPF, ADA	BOWL	16.5" HIGH BOWL, ELONGATED, V.C., 2-1/8" TRAPWAY; TOP SPUD; MADERA	AMERICAN STANDARD	3043.001	ZURN, KOHLER	6	1"	-	4"	2"
		FLUSH VALVE	11.5" HIGH, 1.28GPF	SLOAN	111-1.28 YBYC	ZURN, TEC					
		SEAT	OFLC w/ SELF-SUSTAINING S.S. CHECK HINGE; HEIGHT 17-19" AFF	OLSONITE	95C	BEMIS, CHURCH					
WC2	FLUSH VALVE WATER CLOSET, FLOOR MTD, 1.28GPF	BOWL	15" HIGH BOWL, ELONGATED, V.C., 2-1/8" TRAPWAY; TOP SPUD; MADERA	AMERICAN STANDARD	2234.001	ZURN, KOHLER		1"	-	4"	2"
		FLUSH VALVE	16" HIGH, 1.28GPF	SLOAN	113-1.28 YBYC	ZURN, TEC					
		SEAT	OFLC w/ SELF-SUSTAINING S.S. CHECK HINGE	OLSONITE	95C	BEMIS, CHURCH					
UR1	URINAL WALL HUNG, 0.125GPF, ADA	BOWL	VITREOUS CHINA, WASHOUT, ELONGATED RIM MTD. 17 A.F.F. MAX., 3/4"TOP SPUD	AMERICAN STANDARD	6590.001	ZURN, KOHLER	1	3/4"	-	2"	2"
		FLUSH VALVE	11.5 HIGH	SLOAN	186-0.125-YBYC	ZURN, TEC					
LAV1	UNDERMOUNT OVAL LAVATORY, ADA	BOWL	19"x15"x5-1/2" VITREOUS CHINA, UNGLAZED RIM	AMERICAN STANDARD	0497.221	ZURN, CRANE	2,3,4,5	1/2"	1/2"	2"	2"
		FAUCET	CHROME PLATED BRASS, METERING, VANDAL RESISTANT, 0.25 GALLON/CYCLE MAX., ADA COMPLIANT,	MOEN	8894	ZURN, T&S					
		DRAIN	CAST BRASS CHROME PLATED GRID DRAIN LESS OVERFLOW WITH 17GA. SEAMLESS BRASS TAILPIECE	McGUIRE	PRODRAIN	DEARBORN, DELTA					
		MIXING VALVE	LEAD FREE THERMOSTATIC MIXING VALVE - SETPOINT = 90°F INSTALL ON HOT WATER SUPPLY, ASSE 1070	CASH ACME	HG-135	LEONARD, WATTS					
SK1	2-COMPARTMENT COUNTERTOP SINK, 7.5" DEEP (ADA SIDE APPROACH)	BOWL	33x22x7.5, 18 GA S.S.	ELKAY	LR3322	JUST, ACORN	2,3,4,5	1/2"	1/2"	2"	2"
		FAUCET	180° SWING SPOUT, SINGLE LEVER HANDLE, 3 HOLE, 1.5GPM, SOLID BRASS CONSTRUCTION, CHROME FINISH	MOEN	8701	DELTA, ZURN					
		DRAIN	BASKET STRAINER	ELKAY	LK35	ZURN, MOEN					
MS1	MOP SINK	BASIN	24"x24"x10" MOLDED STONE w/ STAINLESS STEEL DRAIN	FIAT	MSB-2424	FLORESTONE, ZURN		1/2"	1/2"	3"	2"
		FAUCET	BRASS CONSTRUCTION, ROUGH CHROME FINISH, INTEGRAL VACUUM BREAKER, INTEGRAL CHECK STOPS, 3/4"THREADED SPOUT, SERVICE STOPS, WALL MOUNT, VANDAL RESISTANT, LEVER HANDLES	MOEN	8124	DELTA, ZURN					
		ACCESSORIES	STAINLESS STEEL, THREE STATION MOP/BROOM HOLDER	MOEN	8198	-					
		ACCESSORIES	STAINLESS STEEL, HOSE BRACKET WITH 30" HEAVY DUTY RUBBER HOSE, GHT THREADED CONNECTION	MOEN	8199	DELTA, ZURN					
WCO	WALL CLEANOUT	FIXT	ROUND S/S ACCESS COVER & SCREW, RECESS BRONZE THRD. PLUG	SIOUX CHIEF	870	ZURN, SMITH		-	-	MATCH	-
FD1	FLOOR DRAIN	FIXT	FINISHLINE ADJUSTABLE, SCH. 40 HUB CONNECTION, ABS/PVC BASE ADAPTOR, ROUND NICKLE BRONZE STRAINER, TRAP PRIMER PORT.	SIOUX CHIEF	832	ZURN, SMITH		-	-	MATCH	-
HB1	INTERIOR HOSE BIBB	FIXT	POLISHED CHROME, VACUUM BREAKER, REMOVABLE TEE HANDLE, 3/4" HOSE THREAD	WOODFORD	24	ZURN, WATTS		1/2"	-	-	-
OB1	ICE MAKER BOX	FIXT	ABS HOUSING, 1/4 TURN BALL VALVE, CHROME PLATED BRASS, SHOCK ARRESTORS	SIOUX CHIEF	696	OATEY, IPS		1/2"	-	-	-
RD1	ROOF DRAIN	FIXT	15" DIAMETER ROOF DRAIN. ENAMEL COATED CAST IRON BODY, GRAVEL GUARD AND DOME STRAINER, DECK CLAMP	SIOUX CHIEF	868-1504	ZURN, SMITH		-	-	MATCH	
ORD1	OVERFLOW ROOF DRAIN	FIXT	15" DIAMETER ROOF DRAIN. ENAMEL COATED CAST IRON BODY, GRAVEL GUARD AND DOME STRAINER, DECK CLAMP, INTERNAL WATER DAM	SIOUX CHIEF	868-1504P	ZURN, SMITH	7	-	-	MATCH	

NOTES
1. PROVIDE MATCHING CAST IRON AND STEEL FLOOR SUPPORT CARRIER WITH BEARING PLATE AND WALL HANGER.
2. PROVIDE CAST BRASS SLIP JOINT P-TRAP WITH CLEANOUT; PROVIDE ADA OFFSET ARRANGEMENT WHERE REQUIRED.
3. COORDINATE WITH MILLWORK.
4. COORDINATE ADA MILLWORK ENCLOSURE FOR WATER AND DRAIN PIPING UNDER SINK.
5. PROVIDE 1/2" IPS X 3/8" OD ANGLE BRASS STOP(S) WITH RIGID COPPER RISERS. ALL EXPOSED PIPING SHALL BE CHROME PLATED.
6. TRIP LEVER OR FLUSH HANDLE TO BE LOCATED ON WIDE SIDE OF STALL OR TOILET ROOM.
7. TERMINATE THROUGH COLUMN WRAP WITH BRONZE PITCHER SPOUT. ZURN Z199 OR APPROVED EQUAL. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.

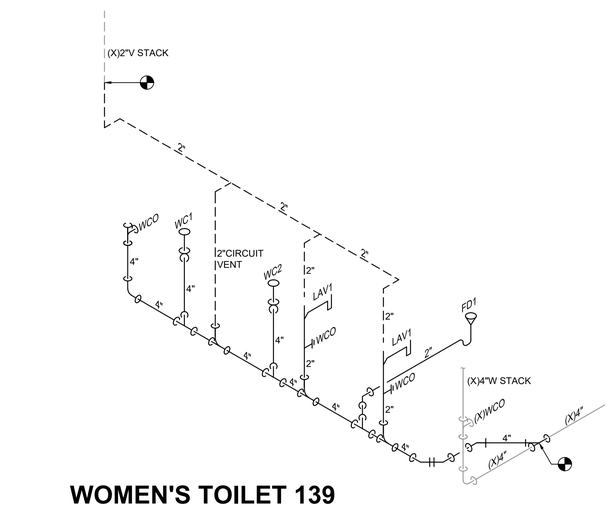
GAS LOAD SCHEDULE

FIXTURE TAG	DESCRIPTION	BTUH RATING	QUANTITY	TOTAL
EG-1	GENERATOR	2,220,750	1	2,220,750
TOTAL LOAD				2,220,750
BUILDING SERVICE GAS PRESSURE				11" W.C.

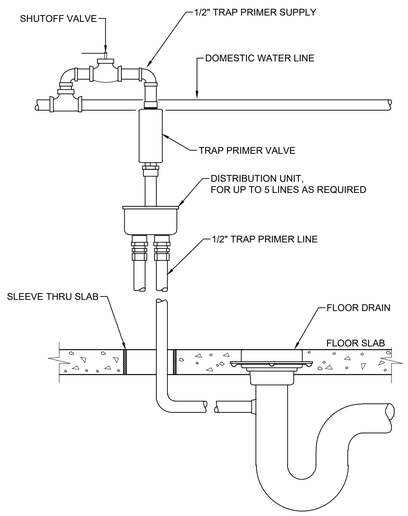
ADD ALTERNATE #2
ENGINE GENERATOR SET



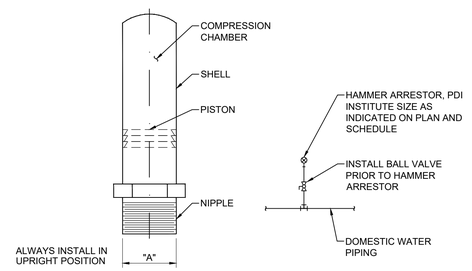
MEN'S TOILET 124
WASTE-VENT RISER DIAGRAM
E1 NOT TO SCALE



WOMEN'S TOILET 139
WASTE-VENT RISER DIAGRAM
E2 NOT TO SCALE

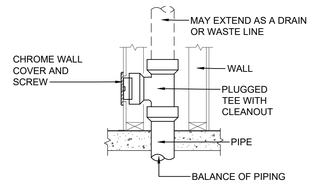


HAMMER ARRESTOR DETAIL
E4 NOT TO SCALE



P.D.I. SYMBOL	FIXTURE UNIT RATING	A SIZE
A	1-11	1/2"
B	12-32	3/4"
C	33-60	1"
D	61-113	1"
E	114-154	1"
F	155-330	1"

HAMMER ARRESTOR DETAIL
E5 NOT TO SCALE



NOTE: CLEANOUT TO BE FLUSH WITH FINISHED WALL.

WALL CLEANOUT (WCO)

TYPICAL CLEANOUT DETAIL
C4 NOT TO SCALE

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506

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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HIMM
12/06/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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Project Manager	Drawn By JBS
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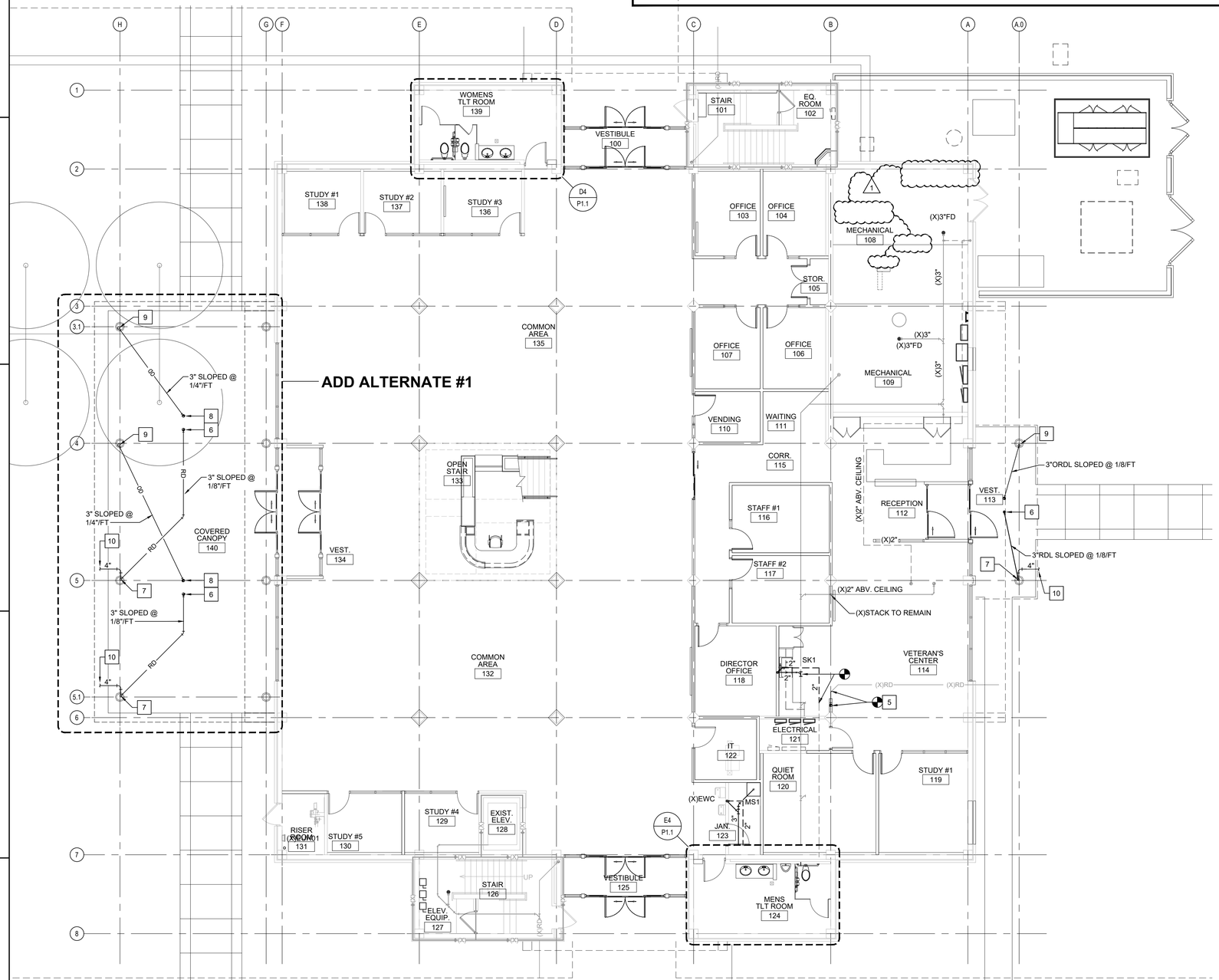
Sheet Title
PLUMBING SCHEDULE AND DETAILS

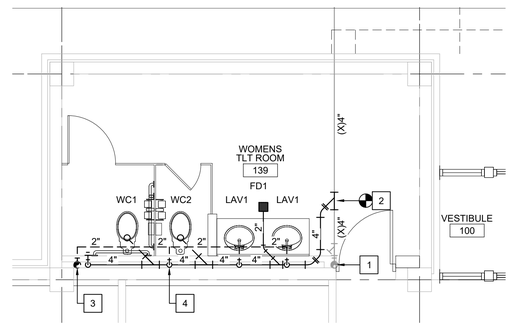
Sheet No.
P0.2

KEYED NOTES

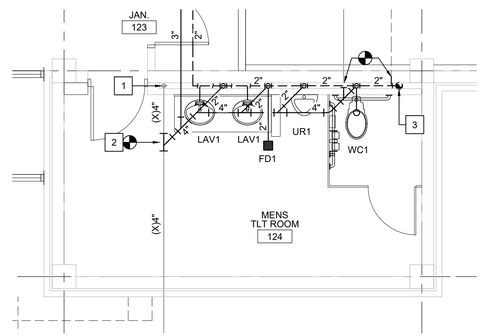
1	EXISTING 4"WASTE-STACK, WCO
2	MAINTAIN 10X PIPE DIAMETERS DOWNSTREAM OF STACK BEFORE MAKING CONNECTION.
3	VENT STACK UP TO SECOND FLOOR. CONNECT TO EXISTING VENT PIPING ABOVE.
4	2" CIRCUIT VENT
5	CONTRACTOR MUST INSTALL NEW ROOF DRAIN LEADER AND CONNECT ABOVE CEILING AND BELOW FLOOR SLAB TO EXISTING.
6	3" RDL FROM RD1 ABOVE.
7	3" RDL DOWN IN COLUMN TO BELOW GRADE. SEE SITE UTILITY PLAN FOR CONTINUATION.
8	3" ORDL FROM ORD1 ABOVE
9	3" ORDL DOWN IN COLUMN AND PENETRATE COLUMN WRAP ABOVE GRADE WITH BRONZE PITCHER SPOUT FITTING. COORDINATE HEIGHT WITH ARCHITECT.
10	4" TO INFILTRATION TRENCH. SEE SITE UTILITY PLAN C2 FOR CONTINUATION.



E1 FIRST FLOOR PLAN - WASTE-VENT
1/8" = 1'-0"
PLAN NORTH



D4 ENLARGED WASTE-VENT PLAN
1/4" = 1'-0"
PLAN NORTH



E4 ENLARGED WASTE-VENT PLAN
1/4" = 1'-0"
PLAN NORTH

WALL LEGEND

——+——	1 HOUR RATED WALL - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506

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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23551 DAVID M. HIMM
12/06/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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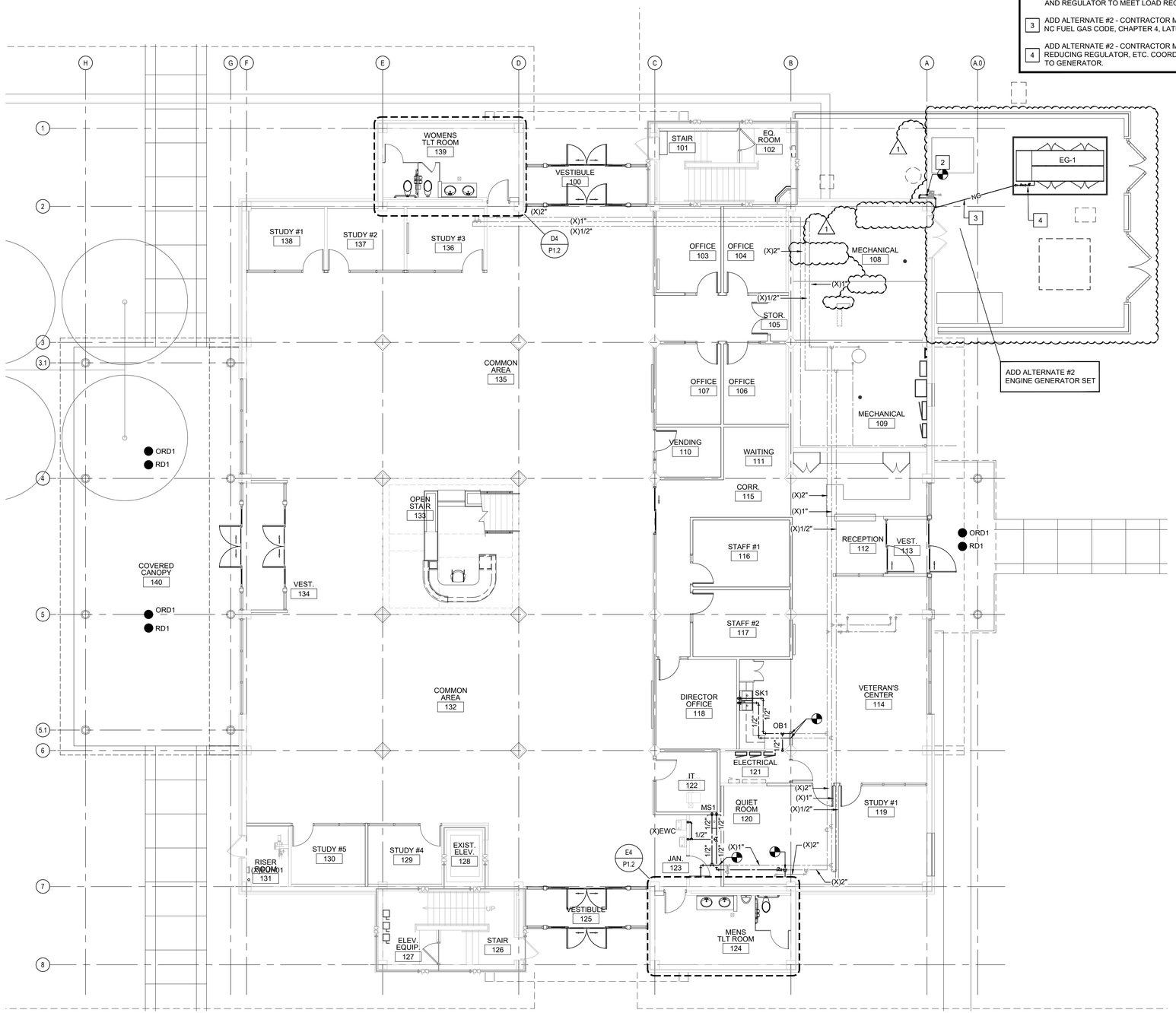
Sheet Title
PLUMBING
FIRST FLOOR
WASTE-VENT PLANS

Sheet No.
P1.1

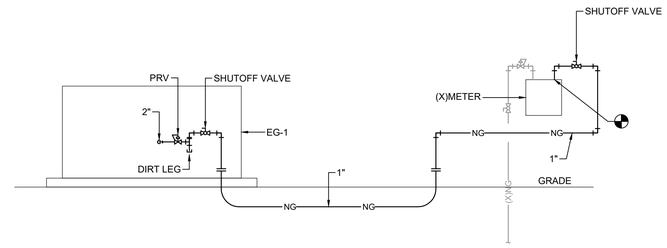
KEYED NOTES

1. PROVIDE AND INSTALL PRESSURE TYPE TRAP PRIMER VALVE. CONNECT TO FLOOR DRAIN.
2. ADD ALTERNATE #2 - CONTRACTOR MUST INSTALL NEW PIPING FROM EXISTING GAS METER TO NEW GAS-FIRED GENERATOR SET. CONTRACTOR MUST CONFIRM THAT EXISTING SERVICE IS CAPABLE OF SUPPLYING 2,115 CFH AT 2 PSI AND/OR HAVE GAS COMPANY PROVIDE NEW METER AND REGULATOR TO MEET LOAD REQUIRMENT.
3. ADD ALTERNATE #2 - CONTRACTOR MUST ROUTE PIPING UNDERGROUND IN ACCORDANCE WITH NC FUEL GAS CODE, CHAPTER 4, LATEST EDITION.
4. ADD ALTERNATE #2 - CONTRACTOR MUST PROVIDE AND INSTALL SHUT OFF VALVE, PRESSURE REDUCING REGULATOR, ETC. COORDINATE WITH OTHER TRADES TO MAKE FINAL CONNECTION TO GENERATOR.

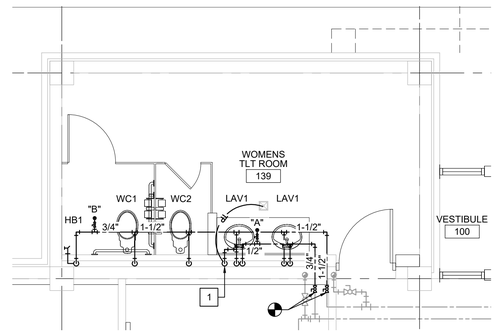


E1 FIRST FLOOR PLAN - DOMESTIC WATER
1/8" = 1'-0"

PLAN NORTH

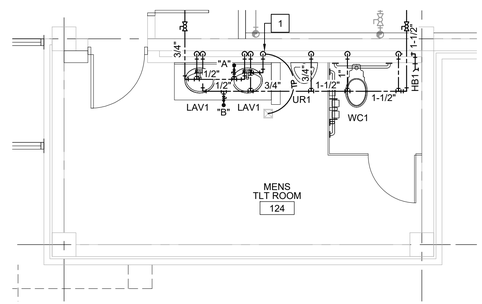


B4 ADD ALTERNATE #2 GAS PIPING RISER DIAGRAM
NOT TO SCALE



D6 ENLARGED DOMESTIC WATER PLAN
1/4" = 1'-0"

PLAN NORTH



E5 ENLARGED DOMESTIC WATER PLAN
1/4" = 1'-0"

PLAN NORTH

WALL LEGEND

——+——	1 HOUR RATED WALL - EXISTING

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CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506

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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HIMM
12/06/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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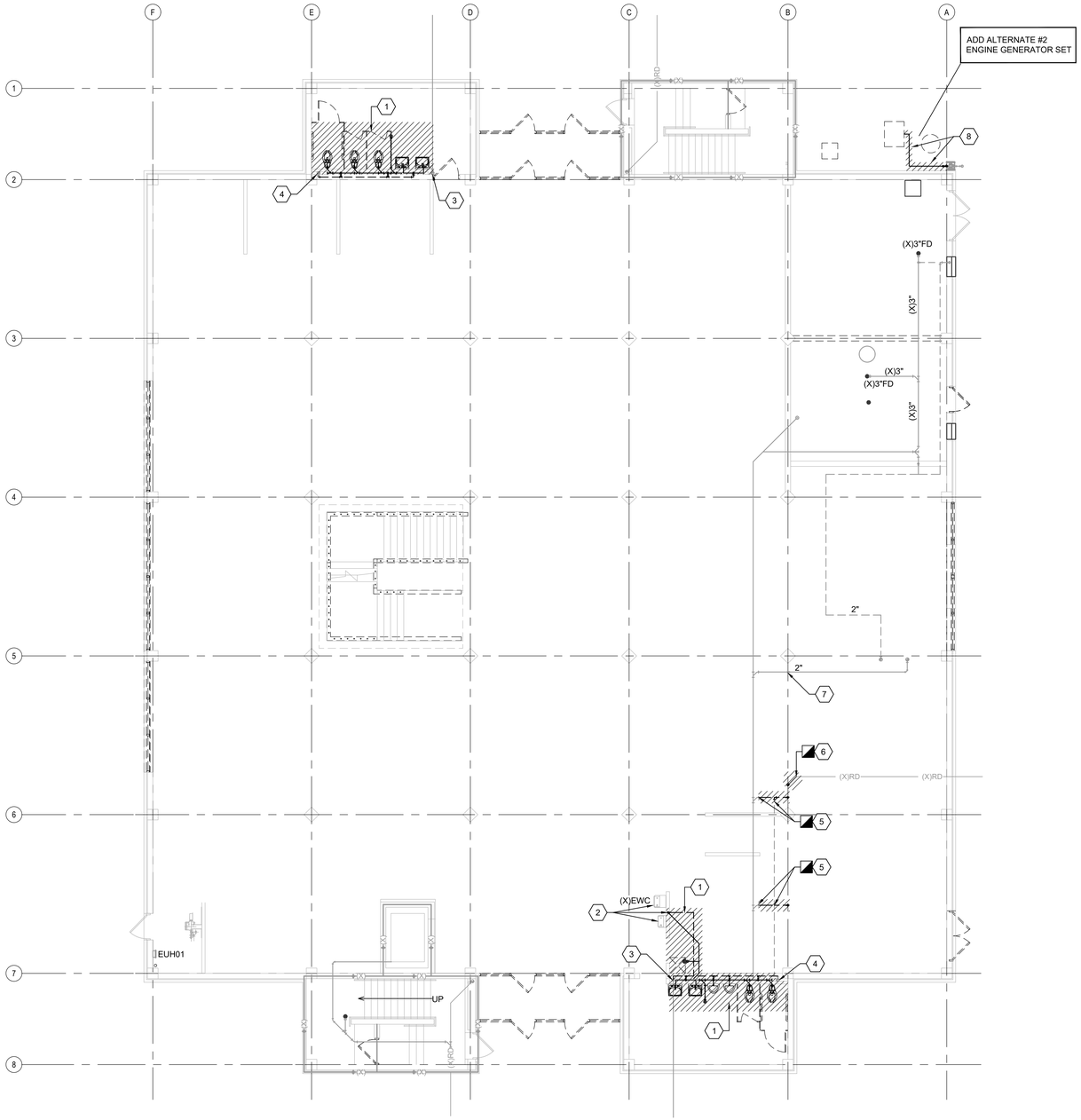
Project ID	

Sheet Title: PLUMBING FIRST FLOOR DOMESTIC WATER AND FUEL GAS PIPING PLANS

Sheet No.

P2.1



E1 FIRST FLOOR PLAN - DEMOLITION

1/8" = 1'-0"

PLAN NORTH

DEMOLITION KEYED NOTES

1. REMOVE AND PROPERLY DISPOSE OF PLUMBING FIXTURES, FLOOR DRAINS, TRIM, BRANCH PIPING, ETC.
2. CONTRACTOR MUST REMOVE EXISTING WATER COOLER AND STORE FOR REINSTALLATION. CONTRACTOR MUST DEMOLISH EXISTING WASTE AND VENT PIPING. SEE NEW WORK PLANS FOR REINSTALLATION.
3. EXISTING WASTE STACK TO REMAIN AND BE REUSED.
4. EXISTING VENT STACK TO REMAIN AND BE REUSED.
5. CONTRACTOR MUST REMOVE EXISTING WASTE AND VENT PIPING, INCLUDING STACK IN WALL, BACK TO MAINS AND CAP. WASTE PIPING TO HAVE NO DEAD ENDS AS PER NCPC 704.5.
6. CONTRACTOR MUST REMOVE EXISTING ROOF DRAIN LEADER FROM ABOVE CEILING TO END OF DEMOLITION BELOW FLOOR AS INDICATED. SEE NEW WORK PLANS FOR REINSTALLATION.
7. EXISTING WASTE STACK TO REMAIN. CONTRACTOR MUST COORDINATE WITH GC TO MAINTAIN INTEGRITY OF EXISTING STACK.
8. CONTRACTOR MUST REMOVE EXISTING FUEL GAS PIPING, FITTINGS, REGULATOR, ETC FEEDING EXISTING GENERATOR BACK TO EXISTING METER. SEE NEW WORK PLAN FOR FURTHER INFORMATION.

WALL LEGEND

—(X)—	1 HOUR RATED WALL - EXISTING

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CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23551 DAVID M. HIMM
12/06/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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Sheet Title
PLUMBING DEMOLITION FIRST FLOOR PLAN - WASTE-VENT

Sheet No.
PD1.1



E1 FIRST FLOOR PLAN - DEMOLITION

1/8" = 1'-0"

PLAN NORTH

DEMOLITION KEYED NOTES

1. REMOVE AND PROPERLY DISPOSE OF PLUMBING FIXTURES, TRIM, BRANCH PIPING, ETC.
2. REMOVE EXISTING DHW PIPING SERVING LAVATORIES OF FIRST FLOOR TOILETS.
3. REMOVE EXISTING DCW PIPING SERVING FIRST FLOOR TOILET ROOM.
4. CONTRACTOR MUST REMOVE EXISTING DCW AND DHW PIPING BACK TO MAIN AND CAP.
5. CONTRACTOR MUST REMOVE EXISTING WATER PIPING BACK TO END POINT OF DEMOLITION AS INDICATED. PREPARE PIPING FOR EXTENSION. SEE NEW WORK PLAN.

WALL LEGEND

—(X)—	1 HOUR RATED WALL - EXISTING

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CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23551 DAVID M. HAHN
12/06/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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Sheet Title
PLUMBING DEMOLITION FIRST FLOOR PLAN - DOMESTIC WATER

Sheet No.
PD2.1

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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MECHANICAL PIPE SYMBOLS

	3-WAY CONTROL VALVE
	2-WAY CONTROL VALVE
	BALL VALVE
	BLOCK VALVE / SHUTOFF VALVE
	GAUGE
	PUMP
	ANGLE VALVE
	DRAIN
	CHECK VALVE
	GLOBE VALVE
	FLOW TRANSMITTER
T	STEAM TRAP
RPZ	RPZ
NC	NORMALLY CLOSED
	BOILER BLOWDOWN VALVE (SUPPLIED WITH BOILER)
	CIRCUIT SETTER
	BOILER STOP CHECK VALVE
	FLANGED BUTTERFLY VALVE
	FLANGE
	FLOW MEASURING ORIFICE

NOTE: ALL ITEMS MAY NOT BE USED IN PROJECT.

GENERAL DEMOLITION NOTES

1. THE MECHANICAL CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS FOR DEMOLITION REQUIREMENTS AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER. REMOVE ALL EQUIPMENT, DUCTWORK, SUPPORTS, CONTROLS, ACCESSORIES, ETC.., AND MECHANICAL ITEMS MADE OBSOLETE BY THESE ALTERATIONS AS SHOWN IN THE MECHANICAL DRAWINGS. ALL ITEMS TO BE REMOVED OR MODIFIED MAY NOT BE SHOWN, HOWEVER, THIS CONTRACTOR SHALL REMOVE ANY MECHANICAL WORK AS REQUIRED BY THE CONSTRUCTION OR AS DIRECTED BY THE OWNER OR THE ENGINEER. SURVEY THE AFFECTED AREAS BEFORE SUBMITTING A BID.
2. SCHEDULING OF DEMOLITION - COORDINATE SCHEDULING OF MECHANICAL DEMOLITION WORK WITH THE OWNER AND GENERAL CONTRACTOR SO AS TO MINIMIZE DISRUPTION OF THE OWNER'S USE OF THE FACILITIES AND MAINTAIN THE CONSTRUCTION SEQUENCE OF THE GENERAL CONTRACTOR. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INSTRUCTIONS CONCERNING PHASING AND SEQUENCE OF WORK.
3. EXISTING MECHANICAL SYSTEMS - VERIFY CONDITION OF EXISTING MECHANICAL SYSTEMS TO BE REUSED SO THAT COMPLETE, FULLY OPERATIONAL AND RELIABLE SYSTEMS ARE OBTAINED AT THE COMPLETION OF THE WORK. NOTIFY ARCHITECT/ENGINEER OF ANY SYSTEMS FOUND TO BE OF QUESTIONABLE CONDITION.
4. ALL EXISTING MECHANICAL EQUIPMENT AND DEVICES SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED.
5. DEMOLISHED MATERIALS - UNLESS SPECIFICALLY REQUESTED BY THE OWNER, ALL DEMOLISHED MECHANICAL MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
6. CUTTING AND PATCHING - PERFORM CUTTING AND PATCHING FOR MECHANICAL WORK SO AS TO MINIMIZE DAMAGE TO CEILINGS, FLOORS AND WALLS. REFER TO ARCHITECTURAL DRAWINGS AND GENERAL SPECIFICATIONS SECTIONS FOR SPECIFIC RESPONSIBILITIES REGARDING CUTTING AND PATCHING.
7. THESE DRAWINGS ARE COMPILED BY THE ARCHITECT/ENGINEER FROM THE OWNER'S AS-BUILT RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL DUCTWORK, EQUIPMENT LOCATIONS, DIMENSIONS AND ALL FIELD CONDITIONS AFFECTING HIS WORK.
8. WHERE MECHANICAL SYSTEMS PASS THROUGH THE DEMOLITION AREAS TO SERVE OTHER PORTIONS OF THE PREMISES, THEY SHALL REMAIN OR BE SUITABLY RELOCATED AND THE SYSTEM RESTORED TO NORMAL OPERATION. ADVISE THE ARCHITECT/ENGINEER IMMEDIATELY IF SUCH CONDITIONS ARE UNCOVERED BEFORE PROCEEDING WITH ADDITIONAL WORK.
9. PROTECT ALL EXISTING LIFE SAFETY SYSTEMS, FIRE ALARM AND PUBLIC ADDRESS SYSTEMS AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE OWNER AND ARCHITECT/ENGINEER IN WRITING OF SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED MAINTAINING SERVICE.
10. SURVEY THE EFFECTED AREAS BEFORE SUBMITTING A BID AS ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DEPICTED ON THE DRAWINGS AND SOME UNUSUAL CONDITIONS EXIST.

MECHANICAL LEGEND

	CEILING EXHAUST AIR GRILLE
	CEILING RETURN AIR / TRANSFER AIR GRILLE
	CEILING SUPPLY AIR DIFFUSER / GRILLE
(X)	EXISTING
	INDICATES TO DEMOLISH
	EXTENT OF DEMOLITION
	POINT OF CONNECTION
D	DUCT SMOKE DETECTOR
TH	T-STAT / HUMIDISTAT OR TEMP/HUMIDITY SENSOR
	MANUAL VOLUME DAMPER
M	MOTORIZED DAMPER
AIR TYPE DESIGNATOR / AIRFLOW, CFM	DIFFUSER / REGISTER / GRILLE TAG
CWR	CONDENSER WATER RETURN PIPING
(X)CWR	CONDENSER WATER RETURN PIPING - EXISTING
CWS	CONDENSER WATER SUPPLY PIPING
(X)CWS	CONDENSER WATER SUPPLY PIPING - EXISTING
C	CONDENSATE PIPING
(X)C	CONDENSATE PIPING - EXISTING
R	REFRIGERANT LINE-SET PIPING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

ENERGY SUMMARY (2018 BUILDING CODE)

ENERGY REQUIREMENTS:
THE FOLLOWING DATA SHALL BE CONSIDERED MINIMUM AND ANY SPECIAL ATTRIBUTE REQUIRED TO MEET THE ENERGY CODE SHALL ALSO BE PROVIDED. EACH DESIGNER SHALL FURNISH THE REQUIRED PORTIONS OF THE PROJECT INFORMATION FOR THE PLAN DATA SHEET. IF PERFORMANCE METHOD, STATE THE ANNUAL ENERGY COST FOR THE STANDARD REFERENCE DESIGN VS ANNUAL ENERGY COST FOR THE PROPOSED DESIGN.

CLIMATE ZONE: 3

METHOD OF COMPLIANCE:
X PRESCRIPTIVE (ENERGY CODE)
PERFORMANCE (ENERGY CODE)
PRESCRIPTIVE (ASHRAE 90.1)
PERFORMANCE (ASHRAE 90.1)

THERMAL ENVELOPE (SECOND FLOOR)

ROOF CEILING ASSEMBLY (EXISTING)
DESCRIPTION OF ASSEMBLY: N/A
U-VALUE OF TOTAL ASSEMBLY: N/A
R-VALUE OF INSULATION: N/A
SKYLIGHTS IN EACH ASSEMBLY: (EXISTING) N/A
U-VALUE OF SKYLIGHT: N/A
TOTAL SQ.FT OF SKYLIGHTS IN EA. ASSEMBLY: N/A

EXTERIOR WALLS (EXISTING)
DESCRIPTION OF ASSEMBLY: INSIDE SURFACE RESISTANCE, 8" CMU, R-5 BOARD INSULATION, AIR SPACE, 4" FACE BRICK, OUTSIDE SURFACE RESISTANCE
U-VALUE OF TOTAL ASSEMBLY: 0.137
R-VALUE OF INSULATION: R-5 (HR-SF-F)/BTU

OPENINGS (WINDOWS OR DOORS WITH GLAZING)
U-VALUE OF TOTAL ASSEMBLY 0.28 BTU/HR/SF/F
SHADING COEFFICIENT: 0.23
PROJECTION FACTOR: <0.5
DOOR R-VALUES: N/A

WALLS BELOW GRADE (EACH ASSEMBLY)
DESCRIPTION OF ASSEMBLY: N/A
U-VALUE OF TOTAL ASSEMBLY: N/A
R-VALUE OF INSULATION: N/A

FLOORS OVER UNCONDITIONED SPACE (EACH ASSEMBLY)
DESCRIPTION OF ASSEMBLY: N/A
U-VALUE OF TOTAL ASSEMBLY: N/A
R-VALUE OF INSULATION: N/A

FLOORS SLAB ON GRADE
DESCRIPTION OF ASSEMBLY: 4" CONCRETE SLAB
U-VALUE OF TOTAL ASSEMBLY: 0.9 BTU/HR/SF/F
R-VALUE OF INSULATION: N/A
HORIZONTAL/VERTICAL REQUIREMENT N/A
SLAB HEATED: N/A

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

CLIMATE ZONE 3A - WARM/HUMID
WINTER DRY BULB: 23 °F
SUMMER DRY BULB 93 °F

INTERIOR DESIGN CONDITIONS
WINTER DRY BULB 70 °F
SUMMER DRY BULB 75 °F
RELATIVE HUMIDITY 60% RH*
*DESIGN- NOT CONTROLLED
(FIRST FLOOR) HEATING LOAD: 342.7 MBH
(FIRST FLOOR) COOLING LOAD: 403.4 MBH

MECHANICAL SPACING CONDITIONING SYSTEM
UNITARY
DESCRIPTION OF UNIT: SEE SCHEDULES
HEATING EFFICIENCY: SEE SCHEDULES
COOLING EFFICIENCY: SEE SCHEDULES
SIZE CATEGORY OF UNIT: SEE SCHEDULES
BOILER
SIZE CATEGORY, IF OVERSIZED STATE REASON: N/A
CHILLER
SIZE CATEGORY, IF OVERSIZED STATE REASON: N/A

LIST EQUIPMENT EFFICIENCIES: SEE SCHEDULES

ABBREVIATIONS

TERM	ABBREVIATION	TERM	ABBREVIATION
ABOVE FINISHED FLOOR	AFF	INCH OF WATER GAUGE	INWG
ABOVE GROUND	AG	INDOOR UNIT	IDU
ABOVE SEA LEVEL	ASL	IRON PIPE SIZE	IPS
ACROSS THE LINE	ACL	KILOVOLT-AMP	KVA
AIR ADMITTANCE VALVE	AAV	KILOWATT	KW
AIR CONDITION(-ING, -ED)	AIR COND	KILOWATT HOUR	KWH
AIR-HANDLING UNIT	AHU OR AH	LEAVING AIR TEMPERATURE	LAT
AIR FLOW MEASURING STATION	AFMA	LEAVING WATER TEMPERATURE	LWT
AMBIENT	AMB	LENGTH	LG
AMPERE (AMP, AMPS)	AMP	LINEAR FEET	LF
ANALOG INPUT	AI	MAXIMUM	MAX
ANALOG OUTPUT	AO	MAXIMUM OVERCURRENT PROTECTION	MOCP
AND	&	MEDIUM-PRESSURE STEAM	MPS
APPARATUS DEW POINT	ADP	MILES PER HOUR	MPH
APPROXIMATE	APPROX	MINIMUM	MIN.
ARCHITECT	ARCH	MINIMUM CIRCUIT AMPERES	MCA
ATMOSPHERE	ATM	MINUTE	MIN
AVERAGE	AVG	MANUFACTURER	MFR
BRAKE HORSEPOWER	BHP	MOTOR CONTROL CENTER	MCC
BROWN & SHARPE WIRE GAGE	B&S	NOISE CRITERIA	NC
BRITISH THERMAL UNIT	BTU	NON-STANDARD PART LOAD	NPLV
BRITISH THERMAL UNIT PER HOUR	MBH	NORMALLY OPEN	NO
1000 BRITISH THERMAL UNIT	MBH	NORMALLY CLOSED	NC
BUILDING	BLDG	NOT APPLICABLE	N/A
BUILDING AUTOMATION SYSTEM	BAS	NOT IN CONTRACT	N I C
CELSIUS	°C	NOT TO SCALE	NTS
CHILLED WATER RETURN	CHWR	NUMBER	NO
CHILLED WATER SUPPLY	CHWS	ON CENTER	OC
COEFFICIENT, VALVE FLOW	CV	OUNCE	OZ
COEFFICIENT OF PERFORMANCE FACTOR	COP	OUTDOOR UNIT	ODU
COMPRESSOR	COMP	OUTSIDE AIR	OA
CONCRETE	CONC	PACKAGE UNIT	PU
CONDENS(-ER, -ING, -ATION)	COND	PACKAGE TERMINAL AIR CONDITIONER	PTAC
CONNECTION	CONN	PARTS PER MILLION	PPM
CONTINUATION	CONT	PERCENT	%
COOLING LOAD	CLG LOAD	PHASE	PH
CUBIC FEET	CU FT	POUNDS	LBS
CUBIC INCH	CU IN	POUNDS PER SQUARE FOOT	PSF
CUBIC FEET PER MINUTE	CFM	POWER VENTILATOR	PV
CFM, STANDARD CONDITIONS	SCFM	PRESSURE	PRESS
DECIBEL	DB	PRESSURE REDUCING VALVE	PRV
DEGREE	DEG OR °	PRESSURE SAFETY VALVE	PSV
DEDICATED OUTDOOR AIR SYSTEM	DOAS	PUMPED CONDENSATE	PC
DEGREES FAHRENHEIT	DEG. F	QUANTITY	QTY
DETAIL	DET	RATED LOAD AMPS	RLA
DEW-POINT TEMPERATURE	DPT	RECIRCULATE	RECIRC
DIAMETER	DIA	REDUCED PRESSURE BACKFLOW PREVENTER	RPZ
DIAMETER, INSIDE	ID	REFRIGERANT (12, 22, ETC.)	R22, R410
DIAMETER, OUTSIDE	OD	REFRIGERANT LIQUID	RL
DIFFERENCE OR DELTA	DIFF	REFRIGERANT SUCTION	RS
DIGITAL INPUT	DI	REQUIRED	REQD OR REQ'D
DIGITAL OUTPUT	DO	RELATIVE HUMIDITY	RH
DOMESTIC HOT WATER	DHW	RETURN AIR	RA
DOMESTIC HOT WATER RECIRCULATION	DHWR	REVOLUTIONS PER MINUTE	RPM
DRY-BULB TEMPERATURE	DBT	REVOLUTIONS PER SECOND	RPS
DUCTLESS SPLIT SYSTEM AIR HANDLER	DAH	ROOF VENTILATOR	RV
DUCTLESS SPLIT SYSTEM HEAT PUMP	DHP	ROOF TOP UNIT	RTU
ENERGY EFFICIENCY RATING	ERR	SAFETY FACTOR	SF
EFFICIENCY	EFF	SEASONAL ENERGY EFFICIENCY RATIO	SEER
ELECTRIC UNIT HEATER	EUH	SECOND	S
ELEVATION	EL	SHADING COEFFICIENT	SC
ENTERING	ENT	SPECIFICATION	SPEC
ENTERING WATER TEMPERATURE	EWT	SQUARE	SQ
ENTERING AIR TEMPERATURE	EAT	STANDARD	STD
EXISTING	(X)	STATIC PRESSURE	SP
EXTERNAL AMBIENT TEMPERATURE	EAT	SUPPLY	SPLY
EXTERNAL STATIC PRESSURE	ESP	SUPPLY AIR	SA
EXHAUST AIR	EA	TEMPERATURE	TEMP
EXHAUST FAN	EF	TEMPERATURE DIFFERENCE	TD
FACE VELOCITY	FVEL	THERMOSTAT	T STAT
FAHRENHEIT	°F	TONS OF REFRIGERATION	TONS
FEET PER MINUTE	FPM	TO BE DETERMINED	TBD
FEET PER SECOND	FPS	TOP OF STEEL	TOS
FLOOR	FLR	TOTAL DYNAMIC HEAD	TDH
FOOT OR FEET	FT	TYPICAL	TYP
FULL LOAD AMPS	FLA	U-FACTOR	U
GAGE OR GAUGE	GA	UNDER GROUND	UG
GALLONS	GAL	UNLESS OTHERWISE NOTED	UON
GALLONS PER HOUR	GPH	UNIT HEATER - ELECTRIC	UH
GALLONS PER MINUTE	GPM	VARIABLE AIR VOLUME	VAV
GALLONS PER DAY	GPD	VARIABLE FREQUENCY DRIVE	VFD
GAS UNIT HEATER	GUH	VELOCITY	VEL
GRAINS	GR	VENTILATION, VENT	VENT
HEAD	HD	VENT THRU ROOF	VTR
HEAT EXCHANGER	HX	VERTICAL	VERT
HEATING AND VENTILATION UNIT	HV	VOLT	V
HEATING, VENTILATION AND AIR CONDITIONING	HVAC	VOLT AMPERE	VA
HEIGHT	HGT	VOLUME	VOL
HERTZ	HZ	WATER PRESSURE DROP	WPD
HIGH DENSITY POLYPROPYLENE	HDPE	WATER GAUGE	WG
HIGH-PRESSURE STEAM	HPS	WATT	W
HORSEPOWER, HEAT PUMP	HP	WATT-HOUR	WH
HOT WATER COIL	HWC	WITH	W/
HOUR(S)	HR	WEIGHT	WT
HUMIDITY, RELATIVE	RH	WET BULB	WB
INTEGRATED PART LOAD VALUES	IPLV	YARD	YD
INCH	IN.	YEAR	YR

NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN PROJECT.

WALL LEGEND

(X)	1 HOUR RATED WALL - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN
11/25/2024

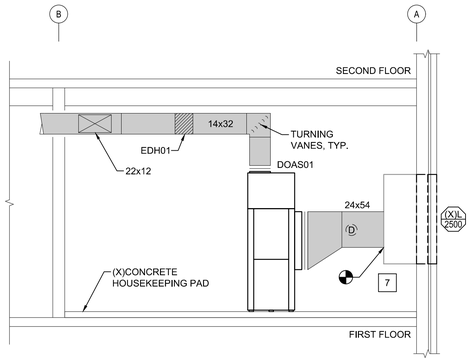
Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By GRM
Date 11-25-2024	Reviewed By DMH
Project ID	

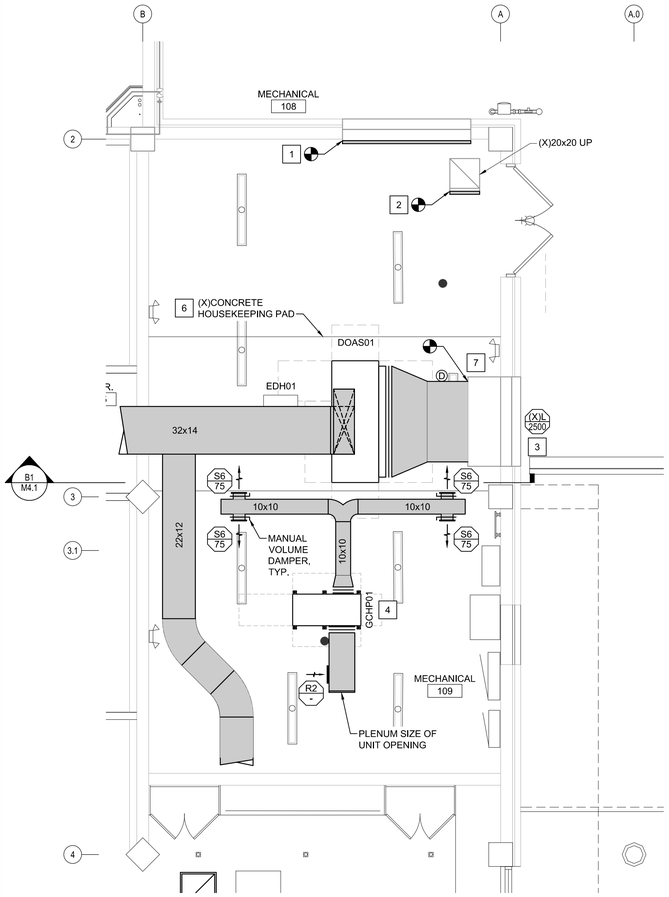
Sheet Title
MECHANICAL SUMMARIES, NOTES, LEGEND AND ABBREVIATIONS

Sheet No.
M0.1



B1 SECTION - HVAC

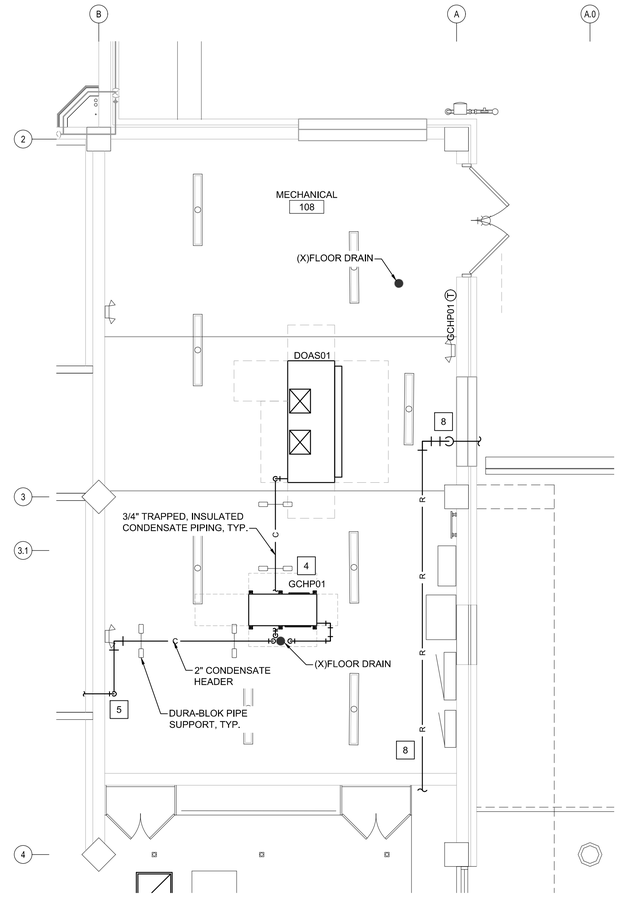
1/4" = 1'-0"



E1 ENLARGED PLAN - HVAC

1/4" = 1'-0"

PLAN NORTH



E3 ENLARGED PLAN - CONDENSATE PIPING

1/4" = 1'-0"

PLAN NORTH

WALL LEGEND

—(X)—	1 HOUR RATED WALL - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

GENERAL NOTES

1. DRAWINGS ARE DEVELOPED FROM LIMITED FIELD OBSERVATIONS. THE MECHANICAL CONTRACTOR IS REQUIRED TO CONFIRM ALL WORK THROUGH FIELD VERIFICATION PRIOR TO COMMENCING ANY WORK.
2. COORDINATE DUCT ELEVATION AND GENERAL PLACEMENT WITH STRUCTURE AND OTHER TRADES, TYP..
3. COORDINATE AIR-HANDLING EQUIPMENT LOCATION TO MAXIMIZE SPACE WHILE MAINTAINING MANUFACTURERS CLEARANCE REQUIREMENTS.

KEYED NOTES

1. PROVIDE BACKPAN ON EXISTING LOUVER AND SEAL WEATHER-TIGHT.
2. PROVIDE DUCT CAP ON EXISTING DUCT AND SEAL AIR-TIGHT.
3. PATCH ALL LEGACY OPENINGS IN EXISTING LOUVER PLENUM AND SEAL AIR-TIGHT.
4. SUSPEND UNIT FROM STRUCTURE ABOVE.
5. SECURE VERTICAL CONDENSATE PIPING TO MASONRY WALL WITH STAINLESS STEEL HARDWARE OR APPROVED EQUAL.
6. MECHANICAL CONTRACTOR TO TAKE NECESSARY ACTION TO INSURE EXISTING CONCRETE HOUSEKEEPING PAD WHERE DOAS01 SITS IS LEVEL AND SUITABLE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
7. PATCH ALL LEGACY OPENINGS IN EXISTING LOUVER PLENUM AND SEAL WEATHER-TIGHT.
8. INSULATED REFRIGERANT PIPING LINE-SET, PENETRATE EXTERIOR WALL APPROXIMATELY 12" ABOVE FINISHED GRADE AND SEAL WEATHER-TIGHT.

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN

11/25/2024

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Learning Resource Center - First Floor Renovation
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Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By GRM
Date 11-25-2024	Reviewed By DMH
Project ID	

Sheet Title: MECHANICAL ENLARGED PLANS

Sheet No.: M4.1

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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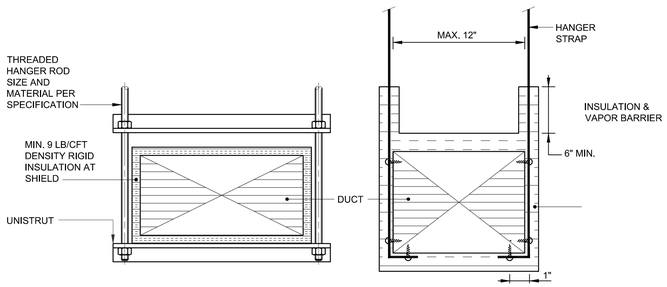


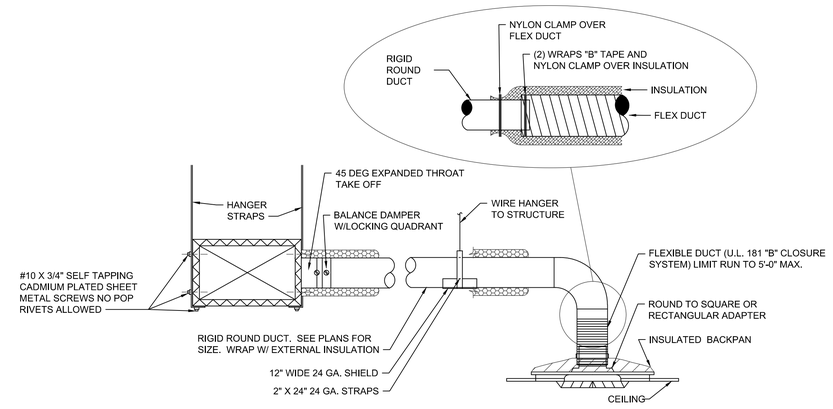
TRAPEZE HANGER DETAIL STRAP HANGER DETAIL

NOTES:

1. TRAPEZE HANGERS SHALL BE PROVIDED FOR ALL DUCT WORK. TRAPEZE HANGERS CANNOT BE USED FOR BRANCH DUCT WORK 12" IN WIDTH AND SHORTER REFER TO STRAP HANGER DETAIL.
2. SUPPORTS SHALL BE SPACED AND SIZED AS PER SPECIFICATIONS.
3. RIGID INSULATION SHALL EXTEND MINIMUM OF 3" BEYOND STRUT ON BOTH SIDES. MAINTAIN VAPOR BARRIER ACROSS STRUT.

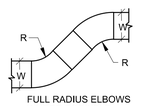
B1 DUCT HANGER SUPPORT DETAIL

NOT TO SCALE



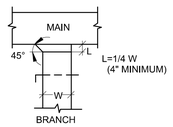
B3 DIFFUSER CONNECTION DETAIL

NOT TO SCALE



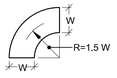
FULL RADIUS ELBOWS WHERE POSSIBLE (R = W)

DUCT OFFSETS

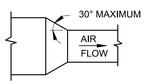


(BRANCH FLOW LESS THAN 25% OF MAIN FLOW)

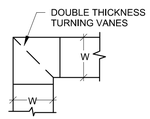
BRANCH TAKE-OFFS



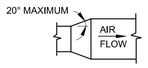
RADIUS ELBOW



CONVERGING FLOW



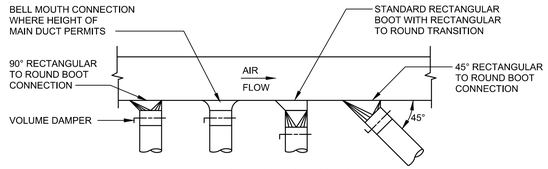
RECTANGULAR ELBOW



DIVERGING FLOW

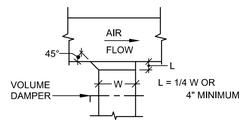
D1 RECTANGULAR DUCT FITTING DETAILS

NOT TO SCALE



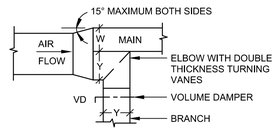
ALTERNATE RECTANGULAR TO ROUND DUCT BRANCH CONNECTIONS

(BRANCH FLOW LESS THEN 25% OF MAIN FLOW)



STANDARD RECTANGULAR DUCT BRANCH TAKE-OFF

(BRANCH FLOW LESS THAN 25% OF MAIN FLOW)

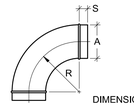


STANDARD RECTANGULAR BRANCH TAKE-OFF

(BRANCH FLOW GREATER THAN 25% OF MAIN FLOW)

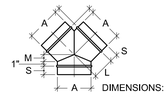
D2 ROUND/RECT. DUCT TAKE-OFF FITTING DETAILS

NOT TO SCALE



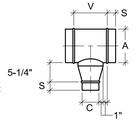
DIMENSIONS:
CR = 1.5A
S = 2"L

DIE-STAMPED 45° AND 90°



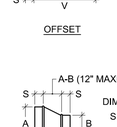
DIMENSIONS:
S = 2"
L = A/2+1"
M = .207A

Y-BRANCH 90°



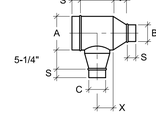
DIMENSIONS:
S = 2"
TC = ONE TAP
V = C+4"
* TC2 = TWO TAPS
V = C+D+8"

CONICAL TEE



DIMENSIONS:
S = 2"
V = 2A UNLESS SPECIFIED
Z = SPECIFY OFFSET

OFFSET

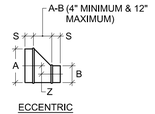


DIMENSIONS:
S = 2"
* TCR = ONE TAP
V = C+4"
TC2R = TWO TAPS
V = C+D+8"

REDUCING CONICAL TEE

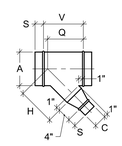
DIMENSIONS:
S = 2"

CONCENTRIC



ECCENTRIC

REDUCERS



DIMENSIONS:
S = 2"
LC = ONE TAP
V = 1.414C+4.83
* LC2 = TWO TAPS
V = 1.414(C+D)+9.66
Q = A/2+.707C+2.414
H = .707A+.5C+2"

CONICAL LATERAL

D4 ROUND DUCT FITTING DETAILS

NOT TO SCALE

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HIANN

11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By GRM
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Sheet Title: MECHANICAL DETAILS	
Sheet No.: M5.1	

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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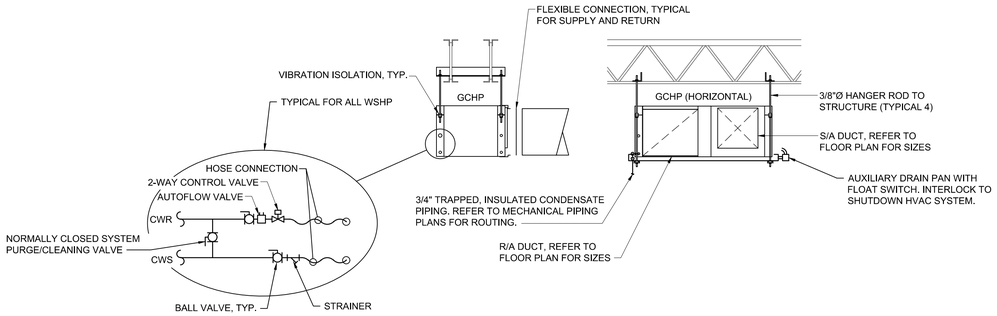
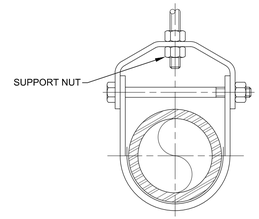


FOR UNITS GCHP02, 03, 04, 05, 06, 07, 08, 09, 26, 27 & 28

B2 HORIZONTAL GCHP DETAIL
NOT TO SCALE

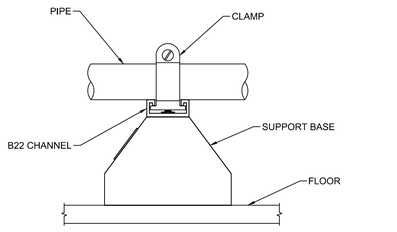


SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

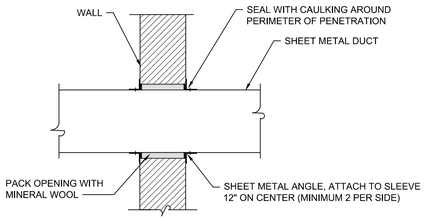
HEAVY DUTY CLEVIS HANGER

NOTES:
1. THIS DETAIL SHALL BE USED AS A GUIDE. ALL HANGERS SHALL MEET THE REQUIREMENTS OF THE SPECIFICATIONS.
2. PIPE 6" AND LARGER SHALL HAVE ROLLER SUPPORTED WITH DUAL RODS.
3. FOR CHW SERVICE OVER 3" REPLACE SADDLE WITH 12" LONG 14 GA SHIELD WITH RIGID INSULATION BETWEEN PIPE AND SHIELD.
4. WHERE TRAPEZE HANGERS ARE USED FOR HEATING HOT WATER PROVIDE ROLLERS.
5. PIPE SUBJECT TO DAMAGE MUST HAVE PADDED HANGER.

B4 PIPE HANGER SUPPORT DETAIL
NOT TO SCALE

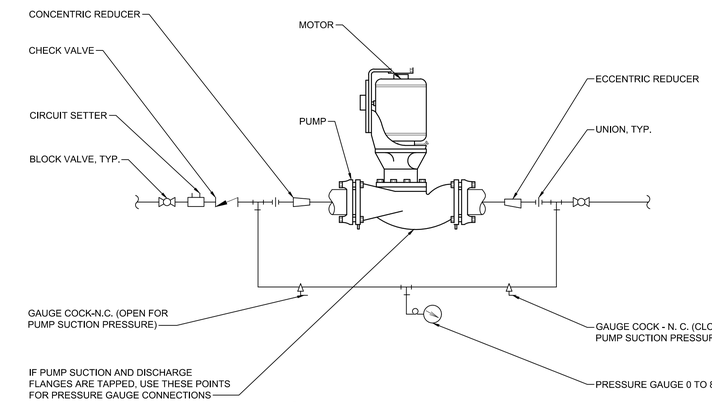


D1 PIPE SUPPORT DETAIL
NOT TO SCALE



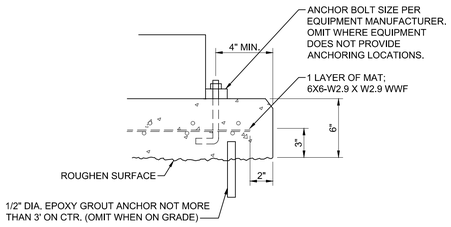
NOTE: EXTERNALLY WRAPPED DUCT INSTALLED SIMILARLY, BLANKET INSULATION SHALL BE INSTALLED OVER ANGLES AND SEALED TO WALL BARRIER.

D2 DUCT THROUGH NON-RATED WALL DETAIL
NOT TO SCALE

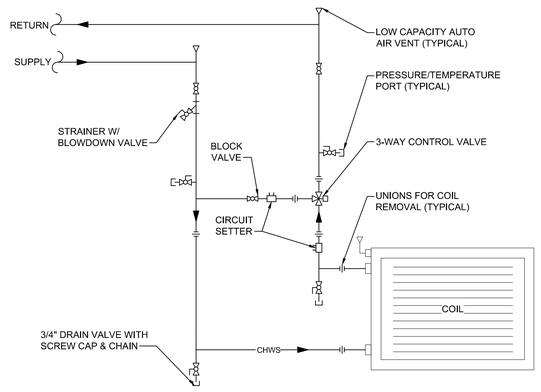


D4 IN-LINE PUMP DETAIL
NOT TO SCALE

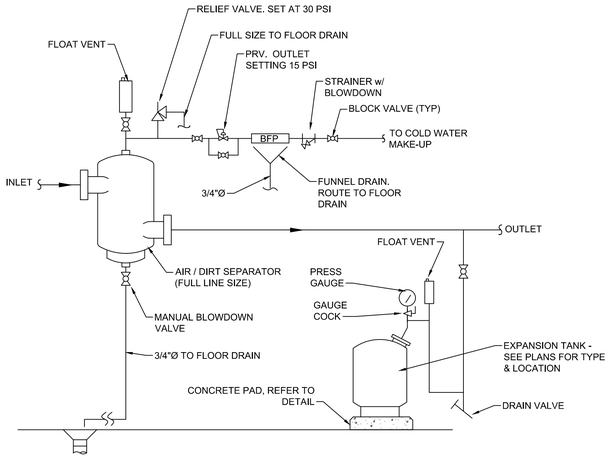
NOTE:
1. MESH SHALL BE FURNISHED IN SHEETS.
2. ALL PAD EDGES SHALL BE CHAMFERED.
3. CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000 PSI AT 28 DAYS
4. ONLY ANCHOR EQUIPMENT WITH MANUFACTURER SUPPLIED ANCHOR MOUNTS



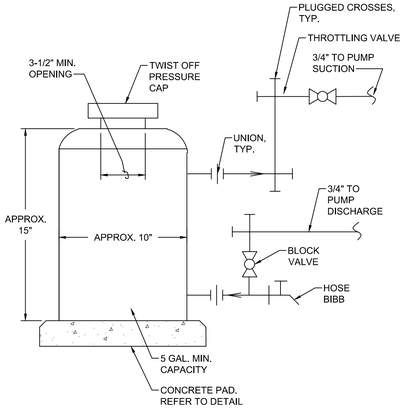
E1 EQUIPMENT PAD-EXTERIOR DETAIL
NOT TO SCALE



E2 DOAS CONDENSING WATER COIL PIPING 3-WAY DETAIL
NOT TO SCALE



E4 AIR SEPARTATOR / EXPANSION TANK DETAIL
NOT TO SCALE



E5 CHEMICAL FEED DETAIL
NOT TO SCALE

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA REGISTERED PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HIANI

11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

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Sheet Title
MECHANICAL DETAILS AND SCHEDULE

Sheet No.
M5.2

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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NC# P-0506

GROUND COUPLED HEAT PUMP SCHEDULE

DRAWING CODE	DESIGN BASIS MFR	MODEL	ALTERNATE APPROVED MFRS	AIR SIDE-COOLING							AIR SIDE-HEATING						HG REHEAT		WATER SIDE		INDOOR FAN SECTION			ELECTRICAL				WEIGHT (LBS)	NOTES	ACCESSORIES
				TOTAL NET (MBH)	SENS NET (MBH)	EER (AHRI)	EAT (Fdb/Fwb)	LAT (Fdb/Fwb)	EWT (F)	LWT (F)	TOTAL NET (MBH)	COP (AHRI)	EAT (F)	LAT (F)	EWT (F)	LWT (F)	SA LAT (°F)	CAP (MBH)	MATERIAL	FLUID	FLOW (GPM)	PD (FT H2O)	SA (CFM)	OA (CFM)	ESP (IN H2O)	VOLTAGE (V/PH/HZ)	FLA (AMPS)	MCA (AMPS)	MOCP (AMPS)			
GCHP01	TRANE	EXHG009A	WATER FURNACE, FLORIDA HEATPUMP	8.2	5.7	16.1	76.1 / 67.3	58.9 / 58.8	90	99.1	8.0	5.60	70.0	93.9	50	44.8	68.3	3.1	CUPRO-NICKEL	WATER	2.3	10.9	300	-	0.50	208/1/60	4.20	6.00	15	175	1,2	A THUR J
GCHP02	TRANE	EXHG018A	WATER FURNACE, FLORIDA HEATPUMP	18.2	14.8	17.6	75.9 / 63.2	53.4 / 52.7	90	100.1	18.4	5.70	70.0	98.7	50	43.8	63.9	6.8	CUPRO-NICKEL	WATER	4.5	8.4	600	170	0.50	208/1/60	9.80	12.00	20	270	1,2	A THRU I
GCHP03	TRANE	EXHG009A	WATER FURNACE, FLORIDA HEATPUMP	7.7	6.7	16.1	75.4 / 63.0	55.2 / 54.2	90	98.5	8.0	5.60	70.0	94.7	50	44.8	64.1	2.9	CUPRO-NICKEL	WATER	2.3	10.9	300	45	0.50	208/1/60	4.20	6.00	15	175	1,2	A THRU I
GCHP04	TRANE	EXHG009A	WATER FURNACE, FLORIDA HEATPUMP	7.7	6.8	16.1	75.7 / 62.6	55.1 / 53.8	90	98.5	8.0	5.60	70.0	95.7	50	44.8	63.9	2.9	CUPRO-NICKEL	WATER	2.3	10.9	300	85	0.50	208/1/60	4.20	6.00	15	175	1,2	A THRU I
GCHP05	TRANE	EXHG024A	WATER FURNACE, FLORIDA HEATPUMP	24.1	16.8	17.4	75.5 / 65.1	56.4 / 55.1	90	100.1	25.7	5.70	70.0	99.7	50	43.4	68.8	9.0	CUPRO-NICKEL	WATER	6.0	11.1	800	125	0.50	208/1/60	15.20	19.00	30	270	1,2	A THRU I
GCHP06	TRANE	EXHG009A	WATER FURNACE, FLORIDA HEATPUMP	7.7	6.7	16.1	75.4 / 62.6	55.0 / 53.8	90	98.5	8.0	5.60	70.0	94.9	50	44.8	63.8	2.9	CUPRO-NICKEL	WATER	2.3	10.9	300	60	0.50	208/1/60	4.20	6.00	15	175	1,2	A THRU I
GCHP07	TRANE	EXHG024A	WATER FURNACE, FLORIDA HEATPUMP	23.4	18.4	17.4	76.2 / 63.4	55.2 / 53.4	90	99.8	25.7	5.70	70.0	100.4	50	43.4	65.3	8.8	CUPRO-NICKEL	WATER	6.0	11.1	800	200	0.50	208/1/60	15.20	19.00	30	270	1,2	A THRU I
GCHP08	TRANE	EXHG030A	WATER FURNACE, FLORIDA HEATPUMP	29.7	24.6	17.8	75.9 / 63.2	53.4 / 52.9	90	102.4	30.3	5.80	70.0	98.5	50	42.2	63.7	11.2	CUPRO-NICKEL	WATER	6.0	8.4	1,000	215	0.50	208/1/60	15.60	20.00	30	315	1,2	A THRU I
GCHP09	TRANE	EXHG030A	WATER FURNACE, FLORIDA HEATPUMP	30.3	23.8	17.8	75.9 / 64.2	54.2 / 54.0	90	102.7	30.3	5.80	70.0	98.2	50	42.2	64.7	11.4	CUPRO-NICKEL	WATER	6.0	8.4	1,000	130	0.50	208/1/60	15.60	20.00	30	315	1,2	A THRU I
GCHP26	TRANE	EXHG012A	WATER FURNACE, FLORIDA HEATPUMP	11.0	9.4	16.4	76.0 / 63.1	54.5 / 53.7	90	99.3	12.2	5.80	70.0	98.4	50	43.8	64.0	4.1	CUPRO-NICKEL	WATER	3.0	15.5	400	55	0.50	208/1/60	6.60	8.00	15	175	1,2	A THRU I
GCHP27	TRANE	EXHG009A	WATER FURNACE, FLORIDA HEATPUMP	7.8	6.6	16.1	76.3 / 64.0	56.1 / 55.3	90	98.7	8.0	5.60	70.0	94.3	50	44.8	65.2	2.9	CUPRO-NICKEL	WATER	2.3	10.9	300	75	0.50	208/1/60	4.20	6.00	15	175	1,2	A THRU I
GCHP28	TRANE	EXHG009A	WATER FURNACE, FLORIDA HEATPUMP	7.7	6.7	16.1	75.5 / 62.9	55.1 / 54.1	90	98.5	8.0	5.60	70.0	95.3	50	44.8	64.0	2.9	CUPRO-NICKEL	WATER	2.3	10.9	300	90	0.50	208/1/60	4.20	6.00	15	175	1,2	A THRU I

NOTES:
1. REFER TO DIVISION 23 SPECIFICATIONS FOR FURTHER INFORMATION.
2. DDC CONTROLLERS/CONTROL DEVICES TO BE FURNISHED AND FIELD INSTALLED BY THE DIVISION 230923 CONTRACTOR. GCHP EQUIPMENT MUST BE FURNISHED WITH AN OPTIONS TERMINAL CONNECTION BOARD FOR REMOTE CONTROLLER/THERMOSTAT/HUMIDISTAT CONTROL. FACTORY INSTALLED EQUIPMENT BACNET/LON CONTROLS ARE NOT ACCEPTABLE.

ACCESSORIES
A. HEATING AND COOLING CIRCUIT HOT GAS REHEAT.
B. PROVIDE PAN WITH FLOAT SWITCH SHUT-OFF.
C. 24V CONTROLS INCLUDING LOCKOUT RELAY, ANTI-SHORT CYCLE COMPRESSOR PROTECTION, RANDOM START DELAY, BROWN-OUT PROTECTION, LOW PRESSURE TIME DELAY, COMPRESSOR DELAY ON START AND AN OPEN RELAY.
D. WIRING FROM THE FACTORY FOR CONDENSATE OVERFLOW, FREEZE PROTECTION, HOT GAS REHEAT, AND COMPRESSOR ENABLE.
E. 35 DEGREE F FREEZESTAT.
F. CONDENSATE OVERFLOW SENSOR.
G. SOUND ATTENUATION PACKAGE INCLUDING LINED COMPRESSOR ENCLOSURE WITH 1/2 INCH CABINET INSULATION AND COMPRESSOR VIBRATION ISOLATION.
H. 1/2" THICK FOIL FACED GLASS FIBER.
I. RETURN AIR DUCT PANEL.
J. 2" DUCTED FILTER RACK, MERV 8 (GCHP01 ONLY).

DRY CLOSED CIRCUIT COOLER SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURER	TYPE	SERVICE	FLUID	HEAT REJECTION (MBH)	AIR SIDE			WATER SIDE					INLET AND OUTLET SIZE (IN.)	ELECTRICAL VOLTAGE (V/PH/HZ)	OPERATING WEIGHT (LBS)	NOTES	ACCESSORIES
								FANS (QTY)	AIRFLOW (CFM)	HP (EA.)	FLOW (GPM)	EWT (°F)	LWT (°F)	EAT (°Fdb)	PRES. DROP (PSI)					
CCC01	EVAPCO	EAW-VD91S2MA24716-525AXSP08	POOLPAK, DIRECT COIL	INDUCED DRAFT	FLUID COOLER	WATER	275	1	15,401	3.31	110.00	105.0	100.0	80.0	5.1	1.5	208/3/60	1,700	1	A THRU L

NOTES:
1 REFER TO DIVISION 23 SPECIFICATIONS FOR FURTHER INFORMATION.

ACCESSORIES:
A PLAIN END (PE) COIL CONNECTIONS
B IBC STANDARD STRUCTURAL DESIGN
C 1.0 IMPORTANCE FACTOR SPECIFIED
D NITROGEN CHARGED COILS
E 304L STAINLESS STEEL COILS WITH COATED ALUMINUM FINS
F INDIVIDUAL ALARM CONTACTS
G TERMINAL BOX WITH ANALOG INPUT
H FORK LIFT CHANNELS
I RETURN BEND COVER PLATE
J 304 STAINLESS STEEL STRUCTURE AND CASING
K INDIVIDUAL MOTOR DISCONNECT SWITCHES
L HEADER END COVER PLATE

MINI-SPLIT SYSTEM SCHEDULE

DRAWING CODE (IDU / ODU)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL (IDU / ODU)	ALTERNATE APPROVED MANUFACTURERS	INDOOR UNIT CONFIGURATION	SYSTEM TYPE	ARI COOLING 80/67/95		ARI HEATING 70/47	MIN SEER	MIN HSPF	INDOOR UNIT				OUTDOOR UNIT				REFRIGERANT PIPING		NOTES	ACCESSORIES
						TOTAL (MBH)	MIN (MBH)	TOTAL (MBH)			FAN	ELECTRICAL		WEIGHT (LBS)	ELECTRICAL			WEIGHT (LBS)	MAXIMUM LENGTH (FT.)	MAXIMUM HEIGHT DIFFERENTIAL (FT.)		
											SA MIN-MAX (CFM)	VOLTAGE (V/PH/HZ)	MCA (A)		VOLTAGE (V/PH/HZ)	MCA (A)	MOCP (A)					
DAH1 / DCU1	MITSUBISHI	TPKA0A012 / TRUYA012	DAIKIN, LG	WALL MOUNTED	AIR CONDITIONER	12.0	5.8	-	20.8	-	320 - 425	208/1/60	1.0	30	208/1/60	11.0	28	95	165	100	1,2,3,4	A,B,C
DAH2 / DCU2	MITSUBISHI	TPKA0A012 / TRUYA012	DAIKIN, LG	WALL MOUNTED	AIR CONDITIONER	12.0	5.8	-	20.8	-	320 - 425	208/1/60	1.0	30	208/1/60	11.0	28	95	165	100	1,2,3,4	A,B,C

NOTES:
1 REFER TO DIVISION 23 SPECIFICATIONS FOR FURTHER INFORMATION.
2 ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT AND CONDUCTOR FROM OUTDOOR UNIT TO INDOOR UNIT.
3 PROVIDE CONCRETE MOUNTING PAD FOR OUTDOOR UNIT.
4 MOUNT INDOOR UNIT AT MAXIMUM ALLOWED HEIGHT WHILE MAINTAINING MANUFACTURERS RECOMMENDED CLEARANCES.

ACCESSORIES:
A SEACOAST COATING PROTECTION ON OUTDOOR UNIT.
B WIRED WALL-MOUNTED REMOTE CONTROLLER
C PROVIDE BLUE DIAMOND MAXIBLUE CONDENSATE PUMP AND RESERVOIR OR EQUAL WITH CAPACITY OF 3.7 GAL/HR AT 16.5 FT OF HEAD. INTERLOCK TO SHUTDOWN UNIT. PUMP IS POWERED FROM INDOOR UNIT.

WATER-TO-AIR DOAS SCHEDULE

DRAWING CODE	LOCATION	DESIGN BASIS MFR	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MFRS	AIR SIDE-COOLING					AIR SIDE-HEATING				WATER SIDE				INDOOR FAN SECTION			ELECTRICAL				OPERATING WEIGHT	NOTES	ACCESSORIES
					TOTAL (MBH)	SENS (MBH)	EAT (°Fdb/°Fwb)	LAT (°Fdb/°Fwb)	EWT (F)	TOTAL (MBH)	EAT (°F)	EWT (°F)	LWT (°F)	MATERIAL	FLUID	FLOW (GPM)	PD (FT H2O)	SA (CFM)	OA (CFM)	ESP (IN H2O)	VOLTAGE (V/PH/HZ)	FLA (A)	MCA (A)	MOP (A)	(LBS)		
DOAS01	SEE PLANS	TRANE	GEVE2403	CARRIER, YORK	226.2	105.4	93.0 / 79.0	55.6 / 53.4	95.0	219.8	26.0	50.0	44.3	COPPER/NICKEL	WATER	60.00	15.20	2,500	2,500	1.00	208/3/60	74.2	81.7	110.0	1,610	1	A THRU J

NOTES:
1 REFER TO DIVISION 23 SPECIFICATIONS FOR FURTHER INFORMATION.

ACCESSORIES:
A 100% OUTDOOR AIR HEAT PUMP
B DOUBLE WALL CONSTRUCTION
C MODULATING HOT GAS REHEAT
D CORROSION COAT ALL COILS AND INTERIOR AND EXTERIOR CASING INCLUDING FAN AND HOUSING
E DISCHARGE AIR CONTROL
F BACNET CONTROLLER AND LCD TOUCHSCREEN
G STAINLESS STEEL DRAIN PAN
H CONTROL OF DUCT MOUNTED SCR ELECTRIC HEATER WITH 0-10 VDC SIGNAL
I FACTORY STARTUP
J 5-YEAR PARTS AND LABOR WARRANTY

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN

11/25/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By GRM
Date 11-25-2024	Reviewed By DMH
Project ID	

Sheet Title
MECHANICAL SCHEDULES

Sheet No.
M6.1

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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POWER VENTILATOR SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	FAN TYPE	FAN WHEEL	SERVICE	DRIVE TYPE	DAMPER	MOTOR ENCLOSURE	CAPACITIES				ELECTRICAL						SONES	WEIGHT (LBS.)	NOTES	ACCESSORIES
										AIRFLOW (CFM)	ESP (IN. WG.)	FAN RPM	MOTOR RPM	MOTOR TYPE	MOTOR SIZE (HP)	V/PH/HZ	FLA (A)	MCA (A)	MOCP (A)				
PV01	GREENHECK	SQ-70-VG	TWIN CITY, PENNBARRY	CENTRIFUGAL VENTILATORS - IN-LINE	COMPOSITE MATERIAL	EXHAUST	DIRECT	BACKDRAFT	TENV	140	0.38	1,665	1,725	ECM	1/15	120/1/60	1.3	2.0	15	5.3	50	1,2	A,B
PV02	GREENHECK	SQ-80-VG	TWIN CITY, PENNBARRY	CENTRIFUGAL VENTILATORS - IN-LINE	COMPOSITE MATERIAL	EXHAUST	DIRECT	BACKDRAFT	TENV	210	0.38	1,403	1,725	ECM	1/10	120/1/60	1.4	2.0	15	6.2	70	1,2	A,B

NOTES:
1 REFER TO DIVISION 23 SPECIFICATIONS FOR FURTHER INFORMATION.
2 CONTROLLED VIA OCCUPANCY SENSOR. REFER TO ELECTRICAL PLANS.

ACCESSORIES:
A GRAVITY BACKDRAFT DAMPER
B VIBRATION ISOLATION

PUMP SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	PUMP TYPE	SERVICE	FLUID	CAPACITY (GPM)	EFFICIENCY	TOTAL DYNAMIC HEAD (FT)	MAX OPERATING PRESSURE (PSIG)	MAX OPERATING TEMPERATURE (°F)	INLET AND OUTLET SIZE (IN.)	CONNECTION TYPE	IMPELLER SIZE (IN.)	MOTOR					NOTES	ACCESSORIES
															ENCLOSURE TYPE	MATERIALS	SPEED (RPM)	(HP)	ELECTRICAL (V/PH/HZ)		
P-1A	B&G	E-90 2AAC	TACO, PATTERSON	IN-LINE CENTRIFUGAL	CONDENSING WATER	WATER	107.60	76.30	70.0	37	110	2" / 2"	FLANGED	4.875"	ODP	CAST IRON	3,100	5	208/3/60	1	A
P-1B	B&G	E-90 2AAC	TACO, PATTERSON	IN-LINE CENTRIFUGAL	CONDENSING WATER	WATER	107.60	76.30	70.0	37	110	2" / 2"	FLANGED	4.875"	ODP	CAST IRON	3,100	5	208/3/60	1	A

NOTES: 1 REFER TO DIVISION 23 SPECIFICATIONS FOR FURTHER INFORMATION.

ACCESSORIES: A N/A

EXPANSION TANK SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	SERVICE	WORKING PRESSURE (PSIG)	VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	TYPE	CONFIGURATION	DIM. H/D (IN.)	WEIGHT DRY (LBS)	WEIGHT FULL (LBS)	NOTES	ACCESSORIES
ET1	B&G	D-15	WESSELS, TACO	CONDENSER WATER	65	7.8	6.3	DIAPHRAGM	VERTICAL	19/12	42	107	1,2,3	A

NOTES:
1 REFER TO DIVISION 23 SPECIFICATIONS FOR FURTHER INFORMATION.
2 ASME BOILER AND PRESSURE VESSEL CODE: SECTION VIII, DIVISION 1.
3 FACTORY PRECHARGE 12 PSIG

ACCESSORIES: A PRESSURE GAUGE

AIR/DIRT SEPARATOR SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	FLOW (GPM)	WATER CONNECTIONS		WEIGHT (LBS)	NOTES	ACCESSORIES
						SIZE (IN)	STYLE			
AS1	B&G	CRSN-4F	WESSELS, TACO	COALESCING, LOW VELOCITY	107.60	4	FLANGED	147	1,2,3	A,B,C,D

NOTES:
1 REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
2 ASME CERTIFIED, CONSTRUCTED AND STAMPED FOR 125 PSI WORKING PRESSURE @ 200°F.
3 WEIGHT LISTED IS FILLED WEIGHT.

ACCESSORIES:
A 304 STAINLESS STEEL COALESCENCE PALL RINGS
B AUTOMATIC AIR VENT
C FLUSH VALVE
D MANUAL BLOWDOWN VALVE

DIFFUSERS, REGISTERS AND GRILLES SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	SERVICE	NECK SIZE (IN.)	BRANCH CONN. SIZE (IN.)	MODULE SIZE (IN.)	MATERIAL	FINISH	MOUNTING	NOTES	ACCESSORIES
S1	PRICE	ASCD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER, 3-CONE	SUPPLY	6Ø	-	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3	A
S2	PRICE	ASCD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER, 3-CONE	SUPPLY	8Ø	-	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3	A
S3	PRICE	ASCD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER, 3-CONE	SUPPLY	10Ø	-	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3	A
S4	PRICE	620DAL	METALAIRE, TITUS	LOUVER FACE DIFFUSER	SUPPLY	8Ø	-	12 X 12	ALUMINUM	WHITE	CEILING SURFACE	1,2,3	A
S5	PRICE	SDS100	METALAIRE, TITUS	LINEAR SLOT DIFFUSER, 2-SLOT, 1" SLOT	SUPPLY	8Ø	-	48 X 6	ALUMINUM	WHITE	T-BAR/SURFACE	1,2,3	B,C
S6	PRICE	620DAL	METALAIRE, TITUS	LOUVER FACE DIFFUSER	SUPPLY	12 X 6	-	-	ALUMINUM	WHITE	DUCT SURFACE	1,2,3	A
R1	PRICE	630FF	METALAIRE, TITUS	FIXED FACE GRILLE, MERV-8 FILTER FRAME	RETURN	20 X 20	-	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3	C
R2	PRICE	630	METALAIRE, TITUS	FIXED FACE GRILLE	RETURN	16 X 12	-	-	ALUMINUM	WHITE	DUCT SURFACE	1,2,3	-
E1	PRICE	630	METALAIRE, TITUS	FIXED FACE GRILLE	EXHAUST	20 X 20	-	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3	C
E2	PRICE	630	METALAIRE, TITUS	FIXED FACE GRILLE	EXHAUST	12 X 12	-	-	ALUMINUM	WHITE	CEILING SURFACE	1,2,3	D

NOTES:
1 REFER TO DIVISION 23 SPECIFICATIONS FOR FURTHER INFORMATION.
2 DUCT BRANCH CONNECTION SIZE TO BE EQUAL TO THE NECK SIZE OF DIFFUSER UNLESS NOTED OTHERWISE ON PLANS.
3 PAINT ALL VISIBLE DUCTWORK THROUGH GRILLES AND REGISTERS FLAT BLACK.

ACCESSORIES:
A VOLUME DAMPER
B ADJUSTABLE PATTERN CONTROLLERS
C INSULATED PLENUM BOX
D OPPOSED BLADE DAMPER

HIGH-VOLUME, LOW-SPEED FAN SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	SERVICE	DRIVE	FAN				ELECTRICAL						WEIGHT (LBS)	NOTES	ACCESSORIES
						TYPE	NUMBER OF BLADES	DIAMETER (FT)	MAX SPEED (RPM)	MOTOR ENCLOSURE	MAX WATTS (W)	SOUND AT MAX SPEED (DBA)	V/PH/HZ	MCA (A)	MOCP (A)			
F01	BIG ASS FANS	MK-I61-06	HUNTER, GREENHECK	CIRCULATION	DIRECT	HVLS DOWNFLOW	6	6	140	INTEGRAL TO FAN FRAME	42.2	<35	120/1/60	-	-	40	1,2,3	A,B
F02	BIG ASS FANS	MK-I61-06	HUNTER, GREENHECK	CIRCULATION	DIRECT	HVLS DOWNFLOW	6	6	140	INTEGRAL TO FAN FRAME	42.2	<35	120/1/60	-	-	40	1,2,3	A,B
F03	BIG ASS FANS	MK-I61-06	HUNTER, GREENHECK	CIRCULATION	DIRECT	HVLS DOWNFLOW	6	6	140	INTEGRAL TO FAN FRAME	42.2	<35	120/1/60	-	-	40	1,2,3	A,B

NOTES:
1 REFER TO DIVISION 23 SPECIFICATIONS FOR FURTHER INFORMATION.
2 PROVIDE FAN WITH DIRECT DRIVE MOTOR AND AND AIRFOIL BLADES.
3 REFER TO ARCHITECTURAL DRAWINGS FOR COLOR AND FINISH.

ACCESSORIES:
A WALL MOUNT VARIABLE SPEED CONTROL PANEL WITH BAS INTEGRATION
B 24" DOWNROD

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN

11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: GRM
Date: 11-25-2024	Reviewed By: DMH
Project ID	
Sheet Title: MECHANICAL SCHEDULES	
Sheet No.: M6.2	

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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VENTILATION SUMMARY - FIRST FLOOR

	MULTIPLIER	FLOOR AREA (ft²)	MAXIMUM OCCUPANTS	MAXIMUM SUPPLY AIR (CFM)	REQUIRED OUTDOOR AIR (CFM/PERSON)	REQUIRED OUTDOOR AIR (CFM/ft²)	REQUIRED OUTDOOR AIR (CFM)	REQUIRED OUTDOOR AIR (% OF SUPPLY)	UNCORRECTED OUTDOOR AIR (CFM)
GCHP-01									
108 MECHANICAL	1	400	0	233.6	0	0	0	0	0
109 MECHANICAL	1	316	0	104.5	0	0	0	0	0
Totals (incl. Space Multipliers)				338.1					**0**
GCHP-02									
112 RECEPTION	1	320	1	198.1	5	0.06	0	0	24.2
113 VESTIBULE	1	48	0	70.7	0	0.06	0	0	2.9
114 VETERANS CENTER	1	722	8	374.3	5	0.12	0	0	126.6
121 ELECTRICAL	1	53	0	7.8	0	0	0	0	0
Totals (incl. Space Multipliers)				651					**155**
GCHP-03									
119 STUDY #1	1	198	6	200.5	5	0.06	0	0	41.9
Totals (incl. Space Multipliers)				200.5					**45**
GCHP-04									
120 QUIET ROOM	1	256	12	248.7	5	0.06	0	0	75.4
Totals (incl. Space Multipliers)				248.7					**80**
GCHP-05									
123 JAN	1	56	0	8.3	0	0	0	0	0
124 MENS ROOM	1	227	2	192.8	0	0	0	0	0
125 VESTIBULE	1	112	0	362.4	0	0.06	0	0	6.7
132B COMMON AREA	1	1291	6	323.1	5	0.06	0	0	107.5
Totals (incl. Space Multipliers)				886.7					**115**
GCHP-06									
129 STUDY #4	1	104	4	120.2	5	0.06	0	0	26.2
130 STUDY #5	1	103	4	136.5	5	0.06	0	0	26.2
Totals (incl. Space Multipliers)				256.8					**55**
GCHP-07									
132A COMMON AREA	1	1115	20	759.5	5	0.06	0	0	166.9
132C COMMON AREA	1	303	0	44.7	5	0.06	0	0	18.2
Totals (incl. Space Multipliers)				804.2					**190**
GCHP-08									
132D COMMON AREA	1	303	0	44.7	5	0.06	0	0	18.2
134 VESTIBULE	1	111	0	154.6	0	0.06	0	0	6.7
135A COMMON AREA	1	1100	21	832.8	5	0.06	0	0	171
Totals (incl. Space Multipliers)				1032.1					**200**
GCHP-09									
100 VESTIBULE	1	111	0	354.2	0	0.06	0	0	6.7
135B COMMON AREA	1	1340	6	317.9	5	0.06	0	0	110.4
139 WOMENS ROOM	1	227	2	196	0	0	0	0	0
110 VENDING	1	77	0	190.6	0	0	0	0	0
Totals (incl. Space Multipliers)				1058.6					**120**
GCHP-26									
103 OFFICE	1	128	1	97.7	5	0.06	0	0	12.7
104 OFFICE	1	130	1	155.2	5	0.06	0	0	12.8
105 STORAGE	1	23	0	32.3	5	0.06	0	0	1.4
106 OFFICE	1	123	1	107.1	5	0.06	0	0	12.4
107 OFFICE	1	122	1	54.4	5	0.06	0	0	12.3
Totals (incl. Space Multipliers)				446.8					**55**
GCHP-28									
111 WAITING	1	78	2	46.4	5	0.06	0	0	14.7
115 CORRIDOR	1	231	0	34.1	0	0.06	0	0	13.9
116 STAFF #1	1	149	1	58.4	5	0.06	0	0	13.9
117 STAFF #2	1	149	1	58.4	5	0.06	0	0	13.9
118 DIRECTORS OFFICE	1	166	1	60.9	5	0.06	0	0	15
Totals (incl. Space Multipliers)				258.2					**75**
GCHP-28									
136 STUDY #3	1	116	4	83	5	0.06	0	0	27
137 STUDY #2	1	113	4	96.2	5	0.06	0	0	26.8
138 STUDY #1	1	111	4	136.3	5	0.06	0	0	26.7
Totals (incl. Space Multipliers)				315.5					**85**
TOTAL									**1175**

VENTILATION SUMMARY - SECOND FLOOR

	MULTIPLIER	FLOOR AREA (ft²)	MAXIMUM OCCUPANTS	MAXIMUM SUPPLY AIR (CFM)	REQUIRED OUTDOOR AIR (CFM/PERSON)	REQUIRED OUTDOOR AIR (CFM/ft²)	REQUIRED OUTDOOR AIR (CFM)	REQUIRED OUTDOOR AIR (% OF SUPPLY)	UNCORRECTED OUTDOOR AIR (CFM)
GCHP-10									
201 EXST WOMENS ROOM	1	225	2	170.1	0	0	0	0	0
Totals (incl. Space Multipliers)				170.1					**0**
GCHP-11									
202 STUDY CARREL 1	1	33	1	51.2	5	0.06	0	0	7
203 STUDY CARREL 2	1	28	1	48.6	5	0.06	0	0	6.7
204 STUDY CARREL 3	1	28	1	48.6	5	0.06	0	0	6.7
205 STUDY CARREL 4	1	33	1	106.5	5	0.06	0	0	7
Totals (incl. Space Multipliers)				255					**30**
GCHP-12									
207 TESTING	1	696	15	657.9	5	0.06	0	0	116.8
Totals (incl. Space Multipliers)				657.9					**120**
GCHP-13									
208 STUDY 1	1	101	2	100.9	5	0.06	0	0	16.1
209 STUDY 2	1	101	2	100.9	5	0.06	0	0	16.1
211 CORRIDOR	1	119	0	18.3	0	0	0	0	0
Totals (incl. Space Multipliers)				220					**35**
GCHP-14									
210 STUDY 3	1	245	4	277.8	5	0.06	0	0	34.7
Totals (incl. Space Multipliers)				277.8					**35**
GCHP-15									
212 DIR OF LIBRARY SERV	1	184	1	48.8	5	0.06	0	0	16
Totals (incl. Space Multipliers)				48.8					**20**
GCHP-16									
214 LIBRARIAN OFF #2	1	135	1	91.7	5	0.06	0	0	13.1
216 LIBRARIAN OFF #1	1	134	1	91.4	5	0.06	0	0	13
Totals (incl. Space Multipliers)				183.1					**30**
GCHP-17									
213 CORRIDOR	1	193	0	54	0	0.06	0	0	11.6
217 BREAK AREA	1	195	0	200.3	5	0.06	0	0	11.7
218 LIBRARY OPEN OFFICE	1	331	4	196.4	5	0.06	0	0	39.9
Totals (incl. Space Multipliers)				450.7					**65**
GCHP-18									
219 STORAGE	1	249	0	162.7	5	0.06	0	0	14.9
Totals (incl. Space Multipliers)				162.7					**15**
GCHP-19									
220 EXST MENS ROOM	1	227	2	171.8	0	0	0	0	0
Totals (incl. Space Multipliers)				171.8					**0**
GCHP-20									
221 STUDY CARREL 5	1	31	1	52.1	5	0.06	0	0	6.9
222 STUDY CARREL 6	1	28	1	48.9	5	0.06	0	0	6.7
223 STUDY CARREL 7	1	57	1	91.1	5	0.06	0	0	8.4
Totals (incl. Space Multipliers)				192.1					**25**
GCHP-21									
225 WRITING LAB	1	665	24	831.9	5	0.06	0	0	159.9
Totals (incl. Space Multipliers)				831.9					**160**
GCHP-22									
226 BOOKSTACKS	1	1571	0	242.7	5	0.06	0	0	94.3
227-A INDVID. SEATING	1	488	4	206.8	5	0.06	0	0	49.3
Totals (incl. Space Multipliers)				449.6					**145**
GCHP-23									
227 INDVID. SEATING	1	1193	24	951.8	5	0.06	0	0	191.6
Totals (incl. Space Multipliers)				951.8					**195**
TOTAL									**875**

ELECTRIC DUCT HEATER SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	DUCT SIZE (W X H) (IN)	HEATING CAPACITY (KW)	STAGES	SUPPLY AIRFLOW (CFM)	ELECTRICAL (V/PH/HZ)	(AMPS)	(MOCP)	MOUNT	NOTES	ACCESSORIES
EDH01	TUTCO	E-SERIES DH	MARKEL, INDEECO	32 X 14	40.0	1	2,500	208/3/60	111.0	150	SLIP-IN	1	A THRU K

NOTES: 1 REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.

ACCESSORIES:
- A DISCONNECTING CONTACTORS
- B SCR CONTROL
- C MANUAL BACKUP LIMITS
- D AIRFLOW SWITCH (NON-ADJUSTABLE)
- E CONTROL TRANSFORMER
- F DISCONNECT SWITCH
- G STEP CONTROLLER
- H VAPOR BARRIER
- I STAINLESS STEEL TERMINALS
- J A-WIRE, 80/20 A-GRADE WIRE COIL WITH STAINLESS STEEL TERMINALS
- K STAINLESS STEEL COIL RACKS

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN

11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: GRM
Date: 11-25-2024	Reviewed By: DMH
Project ID	

Sheet Title: MECHANICAL SCHEDULES

Sheet No.: M6.3

SETPOINTS (ALL ADJUSTABLE)

OCCUPIED ROOM TEMPERATURE	68°F HEATING	74°F COOLING
UNOCCUPIED ROOM TEMPERATURE	55°F HEATING	90°F COOLING
LOCAL SETPOINT ADJUSTMENT	+/- 2°F	
OVERRIDE PERIOD	1 HOUR	

SEQUENCE OF OPERATION

NORMAL OPERATING MODES:

OCCUPIED MODE: WHEN SYSTEM SCHEDULE IS ACTIVE BASED ON TIME OF DAY AND CALENDAR OR HOLIDAY SCHEDULE.

UNOCCUPIED MODE: WHEN SYSTEM SCHEDULE, CALENDAR AND HOLIDAY SCHEDULE ARE INACTIVE.

OCCUPIED MODE:
THE BAS WILL SEND A NETWORK VARIABLE TO THE NETWORK THERMOSTAT TO INITIATE THE OCCUPIED CONDITIONS OF THE THERMOSTAT.

THE HP SHALL BE STARTED BY THE BAS BASED UPON TIME OF DAY SCHEDULE, OR MANUAL COMMAND. THE BAS SHALL MONITOR FAN STATUS VIA A CURRENT SWITCH. ON FAILURE OF A UNIT TO OPERATE, AN ALARM SHALL BE ACTIVATED AT THE OPERATOR WORKSTATION. WHEN THE HEAT PUMP UNIT IS IN THE NORMAL OPERATING MODE AND THE FAN SETTING IS IN THE "AUTO" POSITION, THE FAN WILL RUN AT A CONSTANT SPEED ACCORDING TO SPACE COOLING AND HEATING LOAD DEMAND. OTHERWISE THE FAN CAN BE SET FROM THE LOCAL THERMOSTAT OR FROM THE BMS FRONT END TO RUN. THE SAFETY INTERLOCK SHALL SHUTDOWN THE HEAT PUMP UNIT WHEN A SAFETY CONDITION OCCURS.

THE SPACE TEMPERATURE SHALL BE MAINTAINED BY SEQUENCING THE UNIT'S COMPRESSOR STAGES AND REVERSING VALVE.

IN COOLING OPERATION, THE REVERSING VALVE SHALL BE DISABLED AND THE COMPRESSOR STAGE SHALL ENABLE WITH THE CALCULATED COOLING LOAD AS DEFINED IN TABLE 1.0. THE COMPRESSOR STAGE SHALL DISABLE WHEN NOT IN COOLING OPERATION.

TABLE 1.0

COOLING LOAD (%)	COMPRESSOR STAGING
0	OFF
</= 50	COMPRESSOR STAGE 1 (DISABLE)
75	COMPRESSOR STAGE 1 (ENABLE)

IN HEATING OPERATION, THE REVERSING VALVE SHALL BE ENABLED AND THE COMPRESSOR STAGE SHALL ENABLE WITH THE CALCULATED HEATING LOAD AS DEFINED IN TABLE 1.1. THE COMPRESSOR STAGE SHALL DISABLE WHEN NOT IN HEATING OPERATION.

TABLE 1.1

HEATING LOAD (%)	COMPRESSOR STAGING
0	OFF
</= 50	COMPRESSOR STAGE 1 (DISABLE)
75	COMPRESSOR STAGE 1 (ENABLE)

UNOCCUPIED MODE:
THE BAS WILL SEND A NETWORK VARIABLE TO THE NETWORK THERMOSTAT TO INITIATE THE UNOCCUPIED CONDITIONS OF THE THERMOSTAT. PER THE MANUFACTURER SEQUENCE OF OPERATION, THE SUPPLY FAN SHALL BE OFF EXCEPT UNDER THE FOLLOWING CONDITIONS:

SETUP / SETBACK: THE NETWORK THERMOSTAT WILL INITIATE SETUP/SETBACK BASED ON UNOCCUPIED SETPOINTS IN ACCORDANCE TO THE MANUFACTURER'S SEQUENCE OF OPERATION.

BYPASS: THE NETWORK THERMOSTAT WILL INITIATE BYPASS/OVERRIDE BASED ON TOCCTIME PARAMETER FOR OVERRIDE DURATION IN ACCORDANCE TO THE MANUFACTURER'S SEQUENCE OF OPERATION.

DEHUMIDIFICATION:
THE CONTROLLER SHALL RECEIVE A SIGNAL FROM THE LOOP WATER SOURCE MONITOR INDICATING THAT THERE IS WATER FLOW AND THAT THE WATER TEMPERATURE IS WITHIN ACCEPTABLE LIMITS.

THE CONTROLLER SHALL MEASURE THE ZONE HUMIDITY, INITIATE COOLING AND CYCLE THE HOT GAS REHEAT TO MAINTAIN ITS SETPOINT. TO PREVENT SHORT CYCLING, DEHUMIDIFICATION SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME. THE COMPRESSOR SHALL RUN SUBJECT TO ITS OWN INTERNAL SAFETIES AND CONTROLS. DEHUMIDIFICATION SHALL BE DISABLED WHENEVER THE REVERSING VALVE IS IN HEAT MODE.

CALCULATIONS

COOLING OPERATION: COOLING OPERATION SHALL BE ACTIVE WHILE THE ROOM TEMPERATURE IS ABOVE THE ACTIVE ROOM TEMPERATURE COOLING SETPOINT AND SHALL REMAIN ACTIVE UNTIL THE ROOM TEMPERATURE DROPS BELOW THE ROOM TEMPERATURE DEADBAND LOW LIMIT THRESHOLD.

HEATING OPERATION: HEATING OPERATION SHALL BE ACTIVE WHILE THE ROOM TEMPERATURE IS BELOW THE ACTIVE ROOM TEMPERATURE HEATING SETPOINT AND SHALL REMAIN ACTIVE UNTIL THE ROOM TEMPERATURE RISES ABOVE THE ROOM TEMPERATURE DEADBAND HIGH LIMIT THRESHOLD.

SUPPLY AIR FAN REQUEST: WHEN THE HEAT PUMP UNIT IS IN THE NORMAL OPERATING MODE AND THE FAN SETTING IS IN THE "AUTO" POSITION, THE FAN WILL RUN AT A CONSTANT SPEED ACCORDING TO ROOM COOLING AND HEATING LOAD. OTHERWISE THE FAN CAN BE SET FROM THE LOCAL THERMOSTAT OR FROM THE BMS FRONT END TO RUN.

COOLING REQUEST: WHEN COOLING OPERATION IS ACTIVE, THE COMPRESSOR STAGE INITIALLY OFF, SHALL STAGE ON/OFF TO MAINTAIN THE ACTIVE ROOM TEMPERATURE COOLING SETPOINT.

HEATING REQUEST: WHEN HEATING OPERATION IS ACTIVE, THE COMPRESSOR STAGE INITIALLY OFF, SHALL STAGE ON/OFF TO MAINTAIN THE ACTIVE ROOM TEMPERATURE HEATING SETPOINT.

SAFETIES

PRIMARY CONDENSATION OVERFLOW DETECTION: UPON PRIMARY CONDENSATION OVERFLOW DETECTION, THE HP SHALL SHUTDOWN THE UNIT, THE FAN, AND THE COMPRESSOR STAGE SHALL DISABLE.

AUXILIARY CONDENSATION OVERFLOW DETECTION: UPON AUXILIARY CONDENSATION OVERFLOW DETECTION, THE HP SHALL SHUTDOWN THE UNIT, THE FAN, AND THE COMPRESSOR STAGE SHALL DISABLE.

ALARMS

SUPPLY AIR TEMPERATURE ALARM: AN ALARM SHALL BE SENT IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 120 F OR LOWER THAN 40 F.

ROOM TEMPERATURE ALARM: AN ALARM SHALL INITIATE WHEN THE ROOM TEMPERATURE IS ABOVE THE MAXIMUM DEADBAND LIMIT FOR THE ACTIVE ROOM TEMPERATURE COOLING SETPOINT OR BELOW THE MINIMUM DEADBAND LIMIT FOR THE ACTIVE ROOM TEMPERATURE HEATING SETPOINT.

ROOM HUMIDITY ALARM: AN ALARM SHALL INITIATE WHEN THE ROOM HUMIDITY IS ABOVE THE MAXIMUM LIMIT SETPOINT.

SUPPLY AIR FAN STATUS ALARM: AN ALARM SHALL INITIATE WHEN THE FAN STATUS FROM THE CURRENT SWITCH DOESN'T MATCH THE FAN COMMAND SIGNAL OUTPUT. THE ALARM SIGNAL WILL BE DELAYED PREVENTING PREMATURE ALARMING FROM OCCURRING.

FILTER STATUS ALARM: AN ALARM SHALL INITIATE WHEN THE RUNTIME FOR THE HEAT PUMP EXCEEDS 2200 HOURS AND THE FILTER HAS NOT BEEN CHANGED. THE RUNTIME SHALL BE RESET THROUGH BAS GRAPHICS.

COMPRESSOR RUNTIME ALARM: AN ALARM SHALL INITIATE WHEN THE COMPRESSOR RUNTIME EXCEEDS A USER DEFINABLE LIMIT.

MONITORING

SA FAN COMMAND: THE SUPPLY AIR FAN COMMAND IS MONITORED FOR TRENDING/REPORTING PURPOSES.

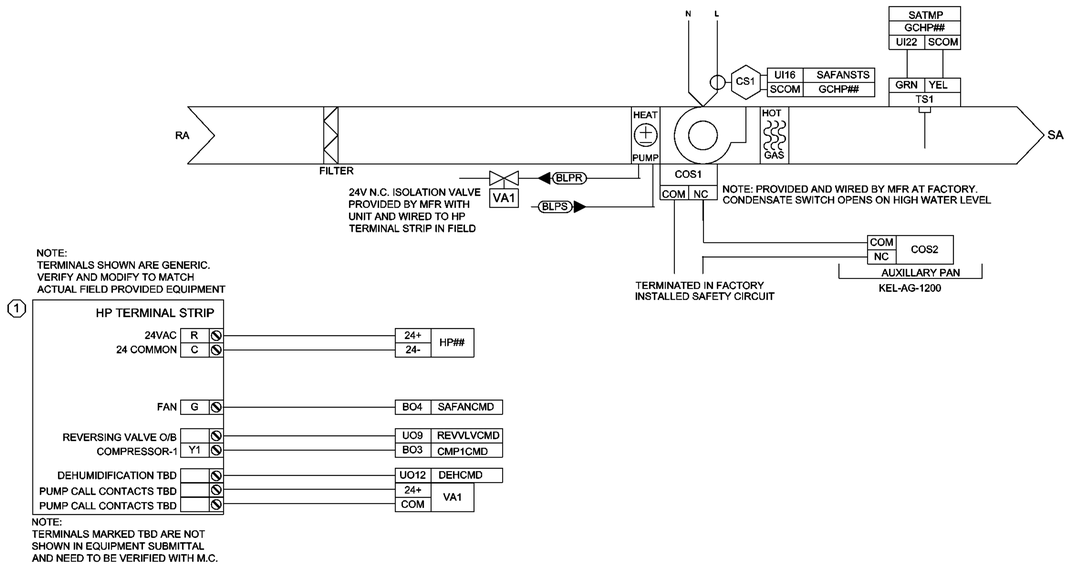
ROOM TEMPERATURE: THE ROOM TEMPERATURE IS MEASURED AND MONITORED FOR TRENDING/REPORTING PURPOSES.

SUPPLY AIR TEMPERATURE: THE SUPPLY AIR TEMPERATURE IS MEASURED AND MONITORED FOR TRENDING/REPORTING PURPOSES.

REVERSING VALVE COMMAND: THE REVERSING VALVE COMMAND IS MONITORED FOR TRENDING/REPORTING PURPOSES.

COMPRESSOR STAGE 1 COMMAND: THE COMPRESSOR STAGE 1 COMMAND IS MONITORED FOR TRENDING/REPORTING PURPOSES.

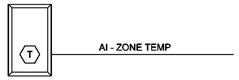
ROOM RELATIVE HUMIDITY: THE ROOM RELATIVE HUMIDITY IS MEASURED AND MONITORED FOR TRENDING/REPORTING PURPOSES.



E2 GCHP CONTROL SCHEMATIC
NOT TO SCALE

GCHP POINTS LIST

	HARDWARE POINTS				SOFTWARE POINTS						
POINT NAME	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM	SHOW ON GRAPHIC
DISCHARGE AIR TEMP	X								X		X
ZONE HUMIDITY	X								X		X
ZONE SETPOINT ADJUST	X										X
ZONE TEMP	X								X		X
EMERGENCY SHUTDOWN			X						X	X	X
FAN STATUS			X						X		X
ZONE OVERRIDE			X						X		X
COMPRESSOR START/STOP				X					X		X
FAN START/STOP				X					X		X
HEATING STAGE 1				X					X		X
REVERSING VALVE				X							X
COOLING SETPOINT					X				X		X
HEATING SETPOINT					X				X		X
SCHEDULE								X			
COMPRESSOR RUNTIME EXCEEDED										X	
FAN FAILURE										X	
FAN IN HAND										X	
FAN RUNTIME EXCEEDED										X	
FILTER CHANGE REQUIRED										X	
HIGH DISCHARGE AIR TEMP										X	
HIGH ZONE HUMIDITY										X	
HIGH ZONE TEMP										X	
LOW DISCHARGE AIR TEMP										X	
LOW ZONE HUMIDITY										X	
LOW ZONE TEMP										X	



TELECOM ROOM CONDITIONS

ROOM CONDITIONS:
THE SENSOR SHALL MONITOR THE AIR TEMPERATURE ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.

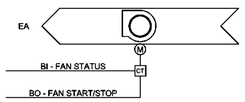
ALARM SHALL BE GENERATED AS FOLLOWS:
- SENSOR FAILURE: SENSOR READING INDICATES SHORTED OR DISCONNECTED SENSOR.
- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN 80f (ADJ.)

ROOM AIR TEMPERATURE HISTORY:
THE SENSOR SHALL MONITOR AND RECORD THE HIGH AND LOW TEMPERATURE READINGS FOR THE ROOM AIR. THESE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

C4 TELECOM ROOM CONDITIONS CONTROLS
NOT TO SCALE

POWER VENTILATOR POINTS LIST

	HARDWARE POINTS				SOFTWARE POINTS						
POINT NAME	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM	SHOW ON GRAPHIC
FAN STATUS			X						X		X
FAN START/STOP				X					X		X
SCHEDULE								X			
FAN FAILURE										X	
FAN IN HAND										X	
FAN RUNTIME EXCEEDED										X	



EXHAUST FAN - ON/OFF

RUN CONDITIONS - SCHEDULED:
THE FAN SHALL RUN ACCORDING TO A USER DEFINABLE SCHEDULE.

FAN:
THE FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

E4 EXHAUST FAN CONTROL SCHEMATIC
NOT TO SCALE

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506

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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN
11/25/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By GRM
Date 11-25-2024	Reviewed By DMH
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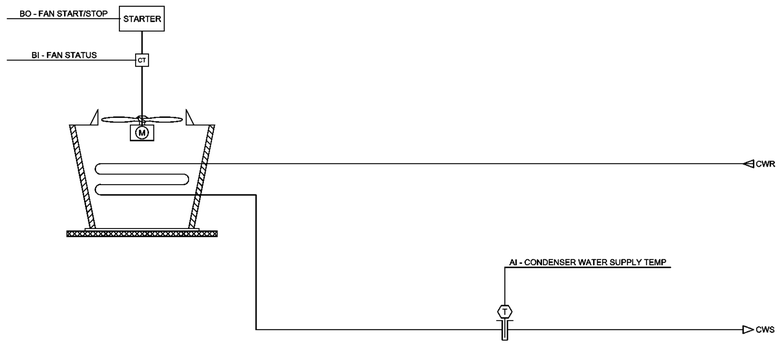
Sheet Title	MECHANICAL CONTROLS
Sheet No.	M7.1



CLOSED-CIRCUIT COOLER

RUN CONDITIONS:
THE CLOSED-CIRCUIT COOLER FAN SHALL BE ENABLED TO RUN WHENEVER THE OUTSIDE AIR TEMPERATURE IS GREATER THAN 40°F (ADJ.) AND LESS THAN 80°F (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

CLOSED CIRCUIT COOLER POINTS LIST

	HARDWARE POINTS				SOFTWARE POINTS						
POINT NAME	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM	SHOW ON GRAPHIC
CONDENSER WATER SUPPLY TEMP	X								X		X
FAN STATUS			X						X		X
FAN START/STOP				X					X		X
OUTSIDE AIR TEMP					X						X
FAN FAILURE										X	
FAN RUNNING IN HAND										X	

C1 **CLOSED CIRCUIT COOLER SCHEMATIC**
NOT TO SCALE

DEDICATED OUTSIDE AIR SYSTEM

CONTROL OF THE HOT GAS REHEAT UNIT IS ACCOMPLISHED THROUGH A DEDICATED STANDALONE CONTROL MODULE. THE FUNCTION OF THIS CONTROLLER IS TO MAINTAIN A DISCHARGE AIR TEMPERATURE. AN OUTSIDE AIR TEMPERATURE SENSOR WILL BE USED BY THE CONTROLLER TO ENABLE THE COOLING OR HEATING MODES. A FIELD MOUNTED DISCHARGE AIR SENSOR WILL BE USED TO CONTROL THE COOLING, HOT GAS REHEAT AND HEATING OUTPUT.

OCCUPIED / UNOCCUPIED CONTROL
THE UNIT CAN BE OCCUPIED IN ONE OF THREE WAYS, A FACTORY INSTALLED JUMPER FOR LOCAL CONTROL, BUILT-IN SCHEDULING USING A LCD DISPLAY OR THROUGH BAS VIA BACNET.

MODE SELECTION
THE MODE OF THE UNIT IS DETERMINED BY THE OUTSIDE AIR TEMPERATURE. IF THE TEMPERATURE IS BELOW 65 DEGREES (ADJUSTABLE) HEATING MODE IS ENABLED AND COOLING IS LOCKED OUT, THE COOLING MODE WILL ENABLE IF THE TEMPERATURE IS ABOVE 70 DEGREES (ADJUSTABLE). THESE SETPOINTS CAN COME FROM THE LOCAL PROGRAM, VIA A BACNET POINT OR THE LCD DISPLAY (IF INSTALLED). FROM THESE SETPOINTS, THE COOLING AND HEATING MODES ARE ENABLED OR DISABLED.

OCCUPIED MODE
WHEN THE CONTROLLER RECEIVES A CALL FOR OCCUPANCY AND THERE ARE NO FAULTS OR SHUTDOWN CONDITIONS THE UNIT WILL ENTER OCCUPIED MODE

SUPPLY FAN (SF)
AS THE OUTSIDE AIR DAMPER OPENS, A 90 SECOND DELAY IS STARTED, AFTER 90 SECONDS THE SF WILL TURN ON.
THE SUPPLY FAN WILL RUN FOR 30 SECONDS TO CONFIRM PROOF UPON CLOSURE OF A DP SWITCH BEFORE COOLING, HOT GAS REHEAT, OR HEATING WILL BE ENABLED.
THE SUPPLY FAN SHALL OPERATE CONTINUOUSLY WHILE THE UNIT IS IN THE OCCUPIED MODE.

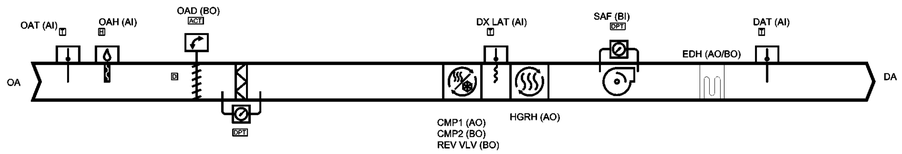
COOLING MODE
THE COMPRESSORS ARE CONTROLLED AND STAGED BY A LEAVING AIR SETPOINT. COMPRESSOR WILL BE STAGED BASED ON A MINIMUM LEAVING AIR SETPOINT OF 44 DEGREES (ADJUSTABLE), REMAINING STAGES WILL BE CONTROLLED BY PID LOGIC. THE MAXIMUM LEAVING AIR TEMPERATURE SETPOINT IS 60 DEGREES (ADJUSTABLE). A LIQUID AND SUCTION LINE TEMPERATURE SENSOR WILL BE LOCATED ON CIRCUIT #1. COOLING WILL BE DISABLED IF THE SUCTION LINE TEMPERATURE FALLS BELOW 28 DEGREES (ADJUSTABLE) AND RE-ENABLED ABOVE 38 DEGREES (ADJUSTABLE).

HOT GAS REHEAT (HGRH) - MODULATING VALVE (MV):
THE HGRH AND CONDENSER VALVE WILL BE MODULATED TO MAINTAIN THE DISCHARGE AIR SETPOINT. BASED ON THE DISCHARGE AIR TEMPERATURE THE HOT GAS VALVE WILL MODULATE BETWEEN 100% (FULL REHEAT) TO 0% (FULL COOLING) TO MAINTAIN THE DISCHARGE AIR SETPOINT, PLUS OR MINUS HALF OF A DEGREE. THE CONDENSER VALVE WILL MODULATE OPPOSITE TO THE HOT GAS VALVE BETWEEN 100% (FULL COOLING) TO 0% (FULL REHEAT).

HEATING MODE
IF THE OUTSIDE AIR TEMPERATURE IS BELOW THE 65 DEGREES, THE UNIT WILL DISABLE COOLING AND ENABLE HEATING.
WHEN THE DISCHARGE AIR TEMPERATURE IS BELOW THE HEATING SETPOINT (ADJUSTABLE) THE 1ST/ STAGE WILL BE ENABLED AND WILL FOLLOW ONE OF THE CONTROL SEQUENCES BELOW BASED ON THE INSTALLED HEAT.

SCR - 1ST/ STAGE HEAT PUMP IS ENABLED THEN A MODULATING FIRST STAGE OF HEAT OF THE DUCT MOUNTED SCR ELECTRIC HEATER WILL MODULATE UP TO A 100%, UPON REACHING 100%, A SECOND STAGE WILL BE ADDED, AND THE FIRST STAGE WILL RESET TO 0% AND MODULATE UP TO 100% CONTINUING TO ADD AVAILABLE STAGES AS AVAILABLE.

SYSTEM POINT DESCRIPTION	POINTS										ALARMS				
	GRAPHIC	ANALOG HARDWARE INPUT (AI)	BINARY HARDWARE INPUT (BI)	ANALOG HARDWARE OUTPUT (AO)	BINARY HARDWARE OUTPUT (BO)	SOFTWARE POINT (SFT)	HARDWARE INTERLOCK (HDW)	WIRELESS (WLS)	NETWORK (NET)	HIGH ANALOG LIMIT	LOW ANALOG LIMIT	BINARY	LATCH DIAGNOSTIC	SENSOR FAIL	COMMUNICATION FAIL
COMPRESSOR 1 COMMAND CMP1	X				X										
COMPRESSOR 2 COMMAND CMP2	X				X										
DISCHARGE AIR TEMPERATURE DAT	X	X												X	
DX COIL LEAVING AIR TEMPERATURE LOCAL DX LAT	X	X								X	X			X	
HOT GAS REHEAT VALVE COMMAND HGRH	X			X											
OUTDOOR AIR DAMPER COMMAND OAD	X				X										
OUTDOOR AIR DAMPER END SWITCH OAD	X		X												
OUTSIDE AIR HUMIDITY LOCAL OAH	X	X												X	
OUTSIDE AIR TEMPERATURE LOCAL OAT	X	X												X	
PRIMARY FILTER STATUS LOCAL FIL	X		X										X		
REVERSING VALVE REV VLV	X				X										
SUPPLY FAN STATUS LOCAL SAF	X		X												
DISCHARGE AIR TEMPERATURE SETPOINT DAT SP	X					X									
OCCUPANCY OCC	X					X									
OUTDOOR AIR COOLING ENABLE SETPOINT OA CLG EN SP	X					X									
OUTDOOR AIR HEATING ENABLE SETPOINT OA HTG EN SP	X					X									
DEHUMIDIFICATION TEMPERATURE SETPOINT DEHUM TEMP STPT	X					X									
REHEATING OUTPUT	X				X										
REHEATING ENABLE	X					X									



E4 **DOAS CONTROL SCHEMATIC**
NOT TO SCALE

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN
11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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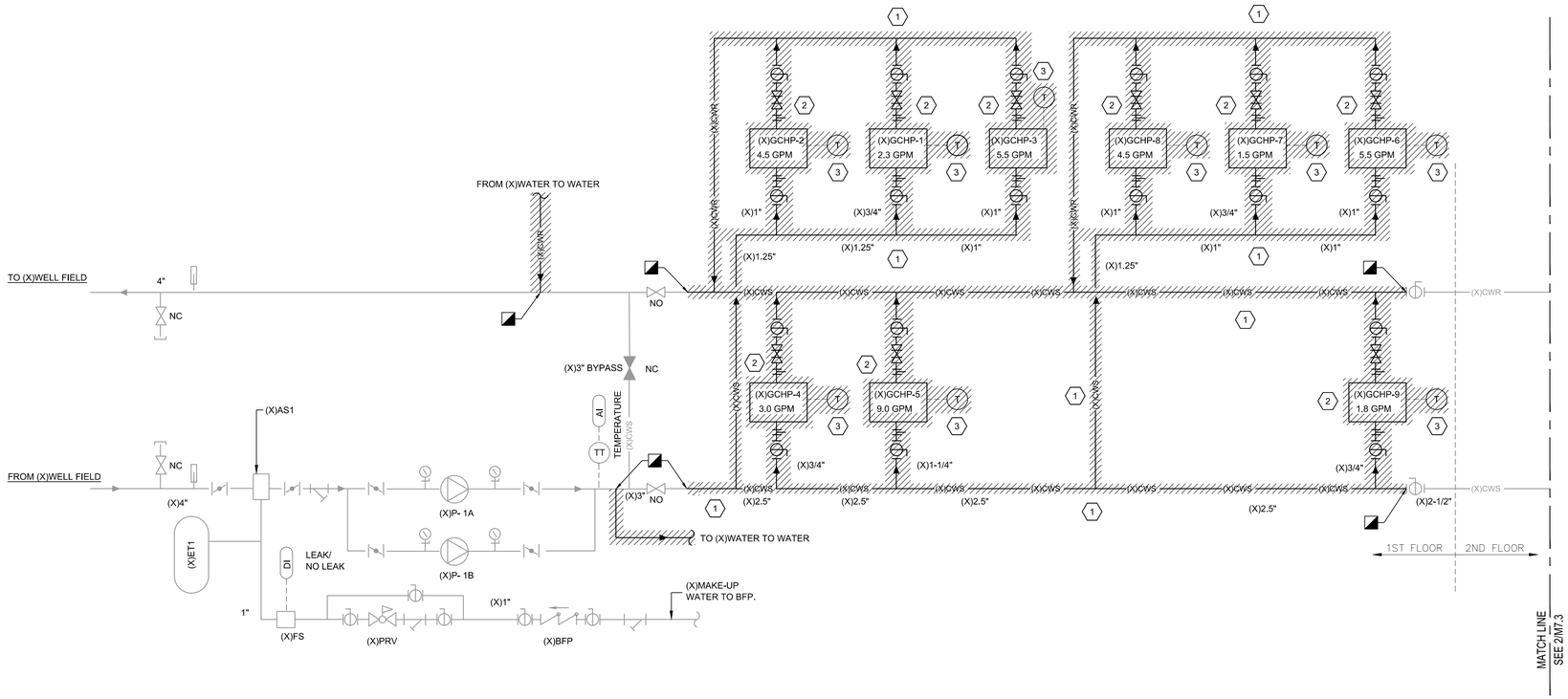
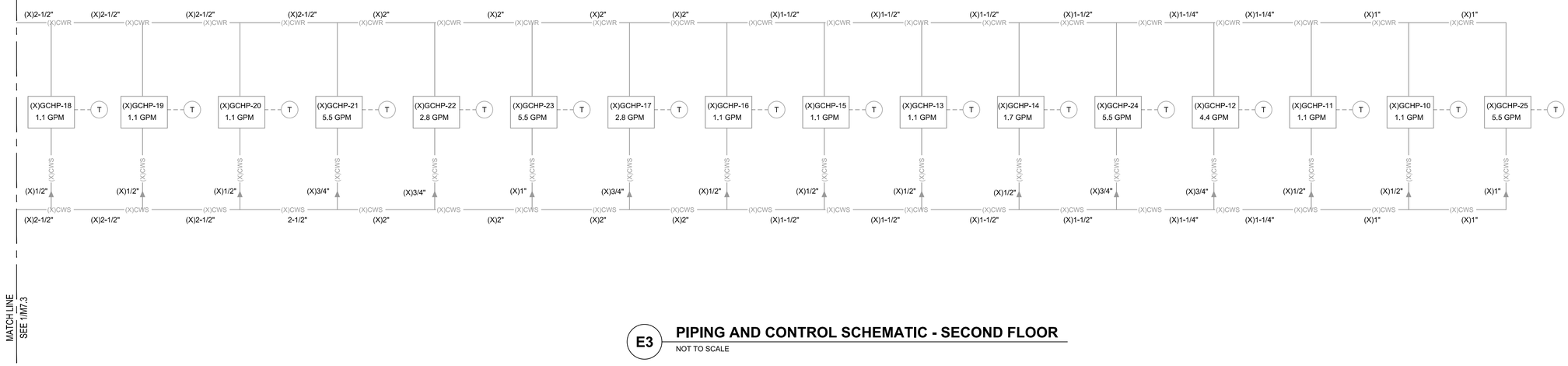
Sheet Title: MECHANICAL CONTROLS

Sheet No.: M7.2



C2 PIPING AND CONTROL SCHEMATIC - FIRST FLOOR

NOT TO SCALE



E3 PIPING AND CONTROL SCHEMATIC - SECOND FLOOR

NOT TO SCALE

DEMOLITION KEYED NOTES

1. REMOVE / DISPOSE EXISTING HYDRONIC PIPING INCLUDING BUT NOT LIMITED TO HYDRONIC PIPING, HANGERS, SUPPORTS, INSULATION, CONTROL VALVES, AIR SEPARATORS, EXPANSION TANKS, ACCESSORIES, ETC. TO EXTENT SHOWN. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
2. REMOVE / DISPOSE EXISTING GCHP INCLUDING BUT NOT LIMITED TO GCHP, HANGERS, SUPPORTS, CONTROLS, ETC. TO EXTENT SHOWN. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
3. REMOVE AND DISPOSE EXISTING TEMPERATURE SENSOR INCLUDING BUT NOT LIMITED TO TEMPERATURE SENSOR, CONTROL WIRING, ETC., TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.

MECHANICAL GENERAL NOTES

1. IF ANY EQUIPMENT PLANNED FOR DEMOLITION CONTAINS REFRIGERANT, THEN THE CONTRACTOR IS REQUIRED TO CAPTURE ALL REFRIGERANT FOR REUSE OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF EPA CLEAN AIR ACT. WORK MUST BE CONDUCTED UNDER SUPERVISION OF AN EPA CERTIFIED TECHNICIAN.
2. WHERE PIPING CONTAINS GAS THAT IS TO BE REMOVED OR WORKED ON, PROCEDURE OD NCGC 406.7.1 ALONG WITH NFPA 54 7.2.7 AND 8.3.1 SHALL BE OBSERVED.THE LINE SHALL BE FIRST DISCONNECTED FROM ALL SOURCES OF GAS PRESSURE, VENTED TO THE OUTDOORS, AND THEN THOROUGHLY PURGED WITH AIR, WATER, OR INERT GAS BEFORE ANY CUTTING OR WELDING IS DONE.
3. THERMOSTATS AND SENSORS CONTAINING MERCURY SHALL BE DISPOSED IN ACCORDANCE WITH EPA RESOURCE CONSERVATION AND RECOVERY ACT (RCRA). CONTRACTOR SHALL REFER TO EPA WEBSITE FOR HANDLING PROCEDURES FOR DISPOSAL AND SPILL MANAGEMENT OF PRODUCTS CONTAINING MERCURY.

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN
11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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Sheet Title
MECHANICAL PIPING AND CONTROL SCHEMATIC - DEMOLITION

Sheet No.
M7.3

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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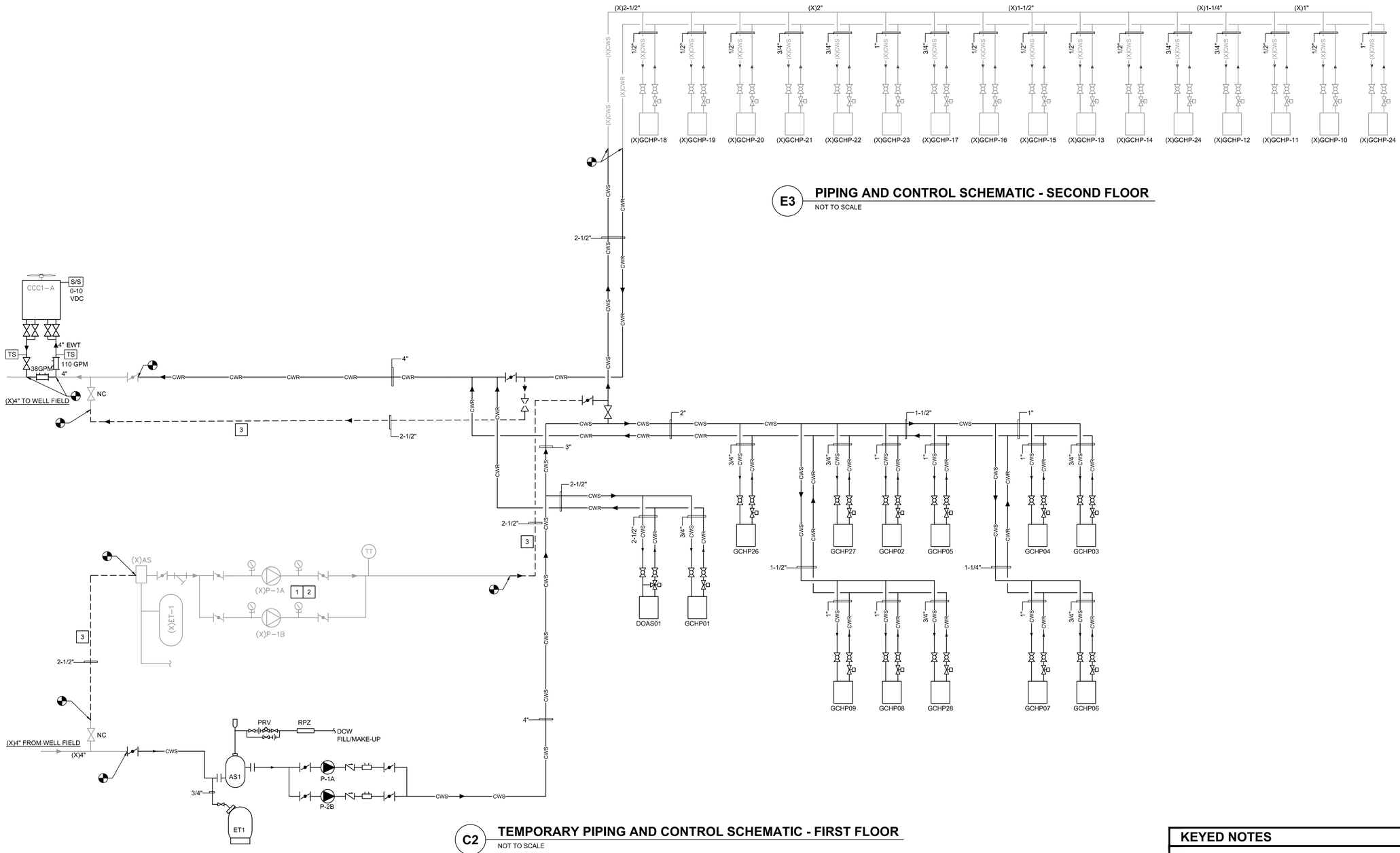

E3 **PIPING AND CONTROL SCHEMATIC - SECOND FLOOR**
NOT TO SCALE

C2 **TEMPORARY PIPING AND CONTROL SCHEMATIC - FIRST FLOOR**
NOT TO SCALE

KEYED NOTES

1. PROVIDE TEMPORARY CONDENSER SUPPLY AND RETURN PIPING AS SHOWN. EXISTING HYDRONIC PUMPS, ACCESSORIES AND PIPING TO BE USED TO ALLOW SECOND FLOOR GCHP'S TO CONTINUE TO OPERATE DURING FIRST FLOOR RENOVATION.
2. EXISTING HYDRONIC PUMPS, ACCESSORIES AND PIPING TO BE REMOVED AND DEMOLISHED ONCE NEW HYDRONIC PUMPS, ACCESSORIES AND PIPING ARE IN PLACE TO SUPPORT NEW FIRST FLOOR RENOVATION AND EXISTING SECOND FLOOR GCHP UNITS.
3. TEMPORARY PIPING LOCATED IN MECHANICAL ROOM

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HIANN
11/25/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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MECHANICAL PIPING AND CONTROL SCHEMATIC

Sheet No.
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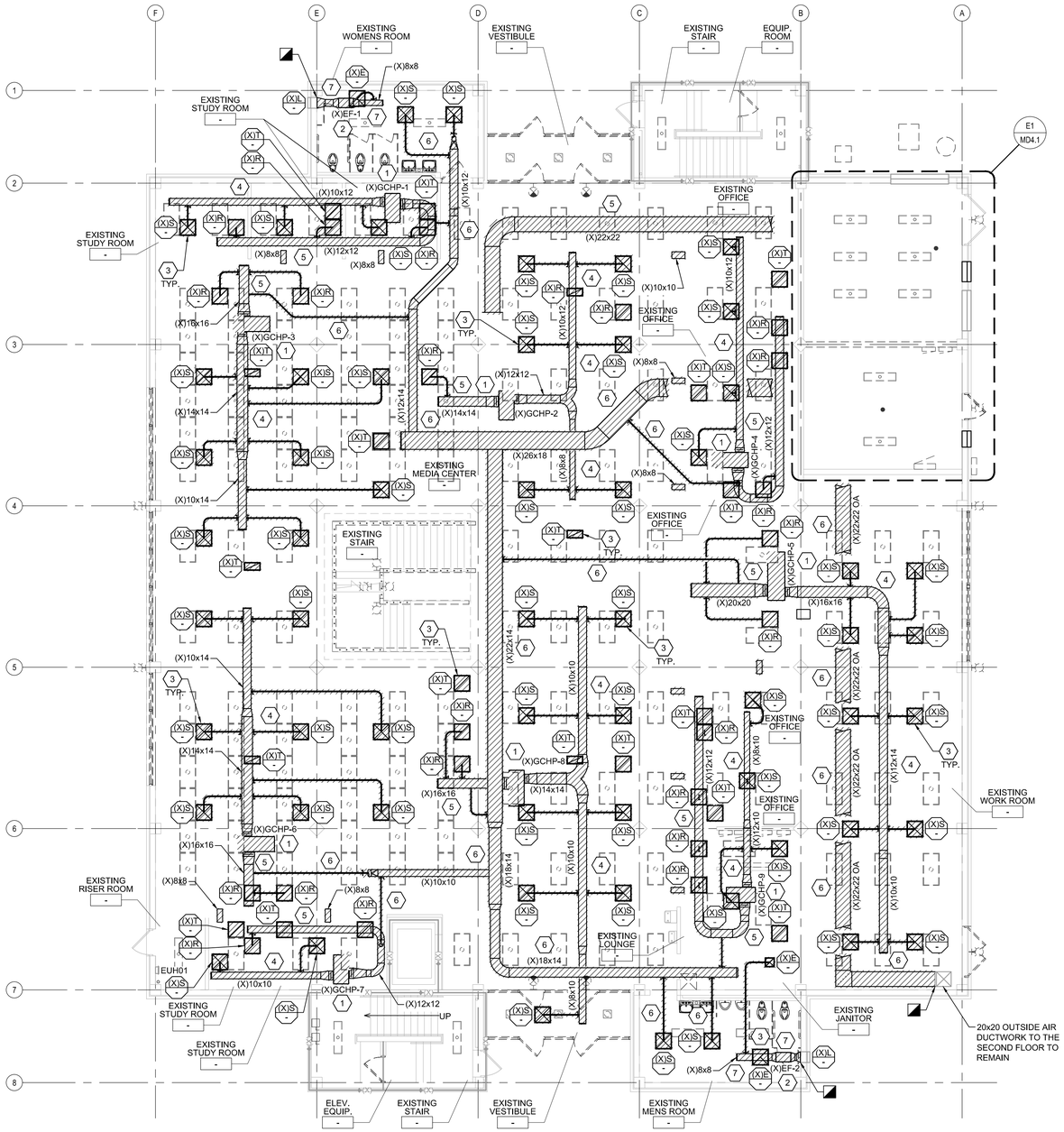

E1 FIRST FLOOR PLAN - DEMOLITION

1/8" = 1'-0"

0 4' 8' 16'

PLAN NORTH

DEMOLITION KEYED NOTES

1. REMOVE / DISPOSE EXISTING GCHP INCLUDING BUT NOT LIMITED TO GCHP, HANGERS, SUPPORTS, ANCHORS, INSERTS, CONTROLS, ETC. TO EXTENT SHOWN. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
2. REMOVE / DISPOSE EXISTING EXHAUST FAN INCLUDING BUT NOT LIMITED TO EXHAUST FAN, HANGERS, SUPPORTS, ANCHORS, INSERTS, CONTROLS, ETC. TO EXTENT SHOWN, TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
3. REMOVE / DISPOSE EXISTING DIFFUSERS / GRILLES. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
4. REMOVE AND DISPOSE OF SUPPLY DUCTWORK INCLUDING, BUT NOT LIMITED TO, SUPPLY AIR DUCTWORK, FLEX DUCT, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES, TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
5. REMOVE AND DISPOSE OF RETURN DUCTWORK INCLUDING, BUT NOT LIMITED TO, RETURN AIR DUCTWORK, FLEX DUCT, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
6. REMOVE AND DISPOSE OF MAKEUP AIR DUCTWORK INCLUDING, BUT NOT LIMITED TO, MAKEUP AIR DUCTWORK, FLEX DUCT,HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
7. REMOVE AND DISPOSE OF EXHAUST AIR DUCTWORK INCLUDING, BUT NOT LIMITED TO, EXHAUST AIR DUCTWORK, FLEX DUCT,HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.

MECHANICAL GENERAL NOTES

1. IF ANY EQUIPMENT PLANNED FOR DEMOLITION CONTAINS REFRIGERANT, THEN THE CONTRACTOR IS REQUIRED TO CAPTURE ALL REFRIGERANT FOR REUSE OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF EPA CLEAN AIR ACT. WORK MUST BE CONDUCTED UNDER SUPERVISION OF AN EPA CERTIFIED TECHNICIAN.
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3. THERMOSTATS AND SENSORS CONTAINING MERCURY SHALL BE DISPOSED IN ACCORDANCE WITH EPA RESOURCE CONSERVATION AND RECOVERY ACT (RCRA). CONTRACTOR SHALL REFER TO EPA WEBSITE FOR HANDLING PROCEDURES FOR DISPOSAL AND SPILL MANAGEMENT OF PRODUCTS CONTAINING MERCURY.

WALL LEGEND

1 HOUR RATED WALL - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506

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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN

11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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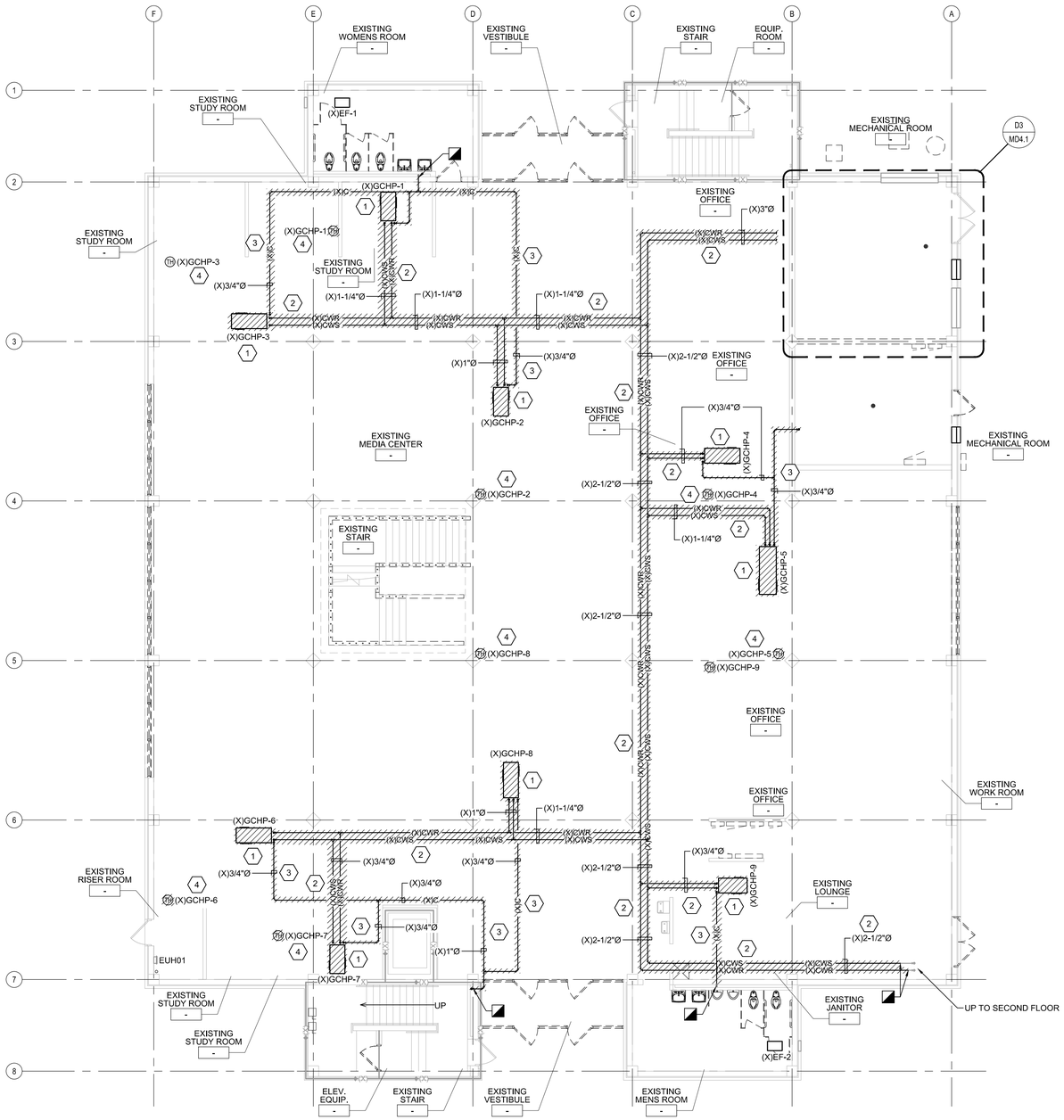
MECHANICAL DEMOLITION FIRST FLOOR PLAN - HVAC

Sheet No.
MD1.1



E1 FIRST FLOOR PLAN - DEMOLITION

1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

DEMOLITION KEYED NOTES

1. REMOVE / DISPOSE EXISTING GCHP INCLUDING BUT NOT LIMITED TO GCHP, HANGERS, SUPPORTS, CONTROLS, ETC. TO EXTENT SHOWN. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
2. REMOVE / DISPOSE EXISTING CONDENSER WATER SUPPLY AND RETURN PIPING INCLUDING BUT NOT LIMITED TO CONDENSER WATER SUPPLY AND RETURN PIPING, HANGERS, SUPPORTS, INSULATION, ETC. TO EXTENT SHOWN. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
3. REMOVE / DISPOSE EXISTING CONDENSATE PIPING INCLUDING BUT NOT LIMITED TO CONDENSATE PIPING, HANGERS, SUPPORTS, INSULATION, ETC. TO EXTENT SHOWN. PREPARE OPENING FOR CONNECTION WITH NEW CONDENSATE PIPING. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
4. REMOVE / DISPOSE EXISTING TEMPERATURE SENSOR AND CONTROL VALVE INCLUDING BUT NOT LIMITED TO TEMPERATURE SENSOR, CONTROL VALVE, CONTROL WIRING, ETC.. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.

MECHANICAL GENERAL NOTES

1. IF ANY EQUIPMENT PLANNED FOR DEMOLITION CONTAINS REFRIGERANT, THEN THE CONTRACTOR IS REQUIRED TO CAPTURE ALL REFRIGERANT FOR REUSE OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF EPA CLEAN AIR ACT. WORK MUST BE CONDUCTED UNDER SUPERVISION OF AN EPA CERTIFIED TECHNICIAN.
2. WHERE PIPING CONTAINS GAS THAT IS TO BE REMOVED OR WORKED ON, PROCEDURE OD NCGC 406.7.1 ALONG WITH NFPA 54 7.2.7 AND 8.3.1 SHALL BE OBSERVED.THE LINE SHALL BE FIRST DISCONNECTED FROM ALL SOURCES OF GAS PRESSURE, VENTED TO THE OUTDOORS, AND THEN THOROUGHLY PURGED WITH AIR, WATER, OR INERT GAS BEFORE ANY CUTTING OR WELDING IS DONE.
3. THERMOSTATS AND SENSORS CONTAINING MERCURY SHALL BE DISPOSED IN ACCORDANCE WITH EPA RESOURCE CONSERVATION AND RECOVERY ACT (RCRA). CONTRACTOR SHALL REFER TO EPA WEBSITE FOR HANDLING PROCEDURES FOR DISPOSAL AND SPILL MANAGEMENT OF PRODUCTS CONTAINING MERCURY.

WALL LEGEND

-(X)-	1 HOUR RATED WALL - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23551 DAVID M. HAHN
11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By GRM
Date 11-25-2024	Reviewed By DMH
Project ID	

Sheet Title: MECHANICAL DEMOLITION FIRST FLOOR PLAN - HYDRONIC

Sheet No.: MD1.2

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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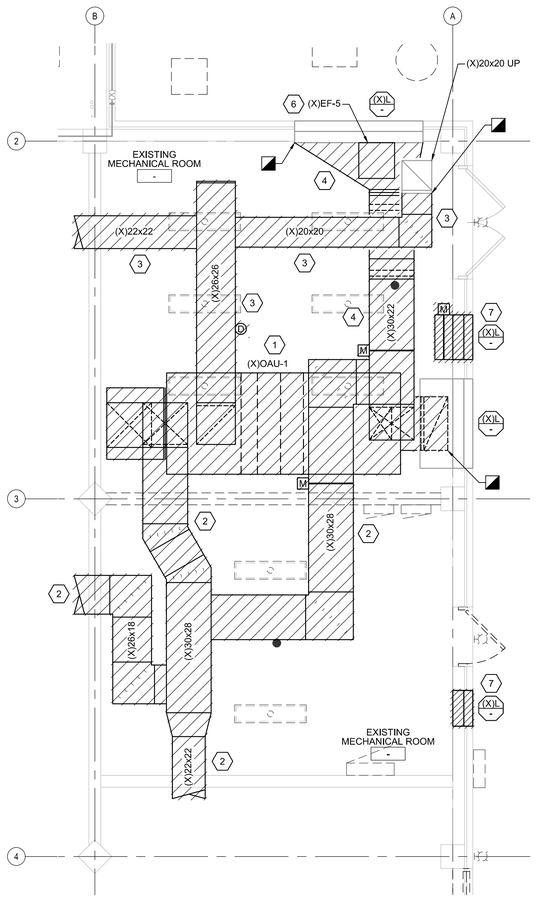
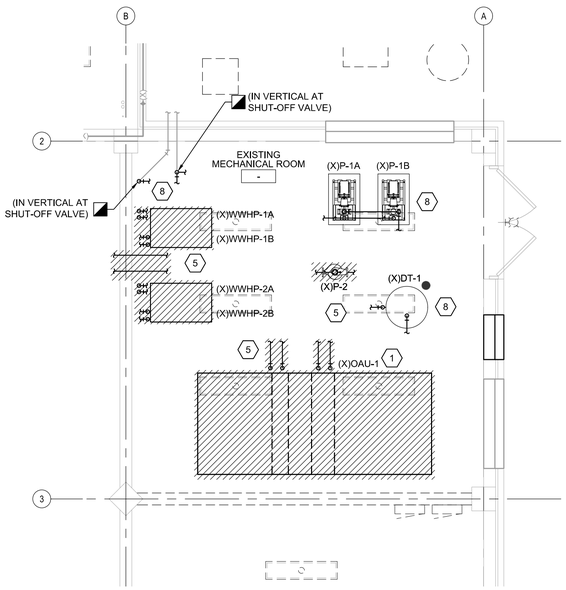
DEMOLITION KEYED NOTES

1. REMOVE / DISPOSE EXISTING OAU INCLUDING BUT NOT LIMITED TO OAU, SUPPORTS, ANCHORS, INSERTS, CONTROLS, ETC.. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
2. REMOVE AND DISPOSE OF MAKEUP AIR DUCTWORK INCLUDING, BUT NOT LIMITED TO, MAKEUP AIR DUCTWORK, DAMPERS, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
3. REMOVE AND DISPOSE OF RETURN DUCTWORK INCLUDING, BUT NOT LIMITED TO, RETURN AIR DUCTWORK, DUCT DETECTOR, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
4. REMOVE AND DISPOSE OF EXHAUST AIR DUCTWORK INCLUDING, BUT NOT LIMITED TO, EXHAUST AIR DUCTWORK, DAMPERS, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
5. REMOVE / DISPOSE EXISTING HYDRONIC PIPING INCLUDING BUT NOT LIMITED TO HYDRONIC PIPING, WWHP'S, HANGERS, SUPPORTS, INSULATION, CONTROL VALVES, AIR SEPARATORS, EXPANSION TANKS, ACCESSORIES, ETC. TO EXTENT SHOWN. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE. HYDRONIC PIPING SERVING THE SECOND FLOOR GROUND COUPLED HEAT PUMP UNITS MUST REMAIN ACTIVE THROUGH CONSTRUCTION. COORDINATE CHANGEOVER TO NEW PIPING SYSTEM WITH OWNER.
6. REMOVE / DISPOSE EXISTING EXHAUST FAN INCLUDING BUT NOT LIMITED TO EXHAUST FAN, HANGERS, SUPPORTS, ANCHORS, INSERTS, CONTROLS, ETC. TO EXTENT SHOWN. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
7. REMOVE / DISPOSE EXISTING LOUVER INCLUDING BUT NOT LIMITED TO LOUVER, MOTORIZED DAMPER, HANGERS, SUPPORTS, ANCHORS, INSERTS, CONTROLS, ETC. TO EXTENT SHOWN. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
8. EXISTING PUMPS, ASSOCIATED HYDRONIC PIPING AND ACCESSORIES SERVING THE SECOND FLOOR GCHP'S TO REMAIN DURING RENOVATION OF FIRST FLOOR. REFER TO PIPING DIAGRAMS C2/M7.3 AND C2/7.4 FOR ADDITIONAL INFORMATION.



E1 ENLARGED PLAN - DEMOLITION
1/4" = 1'-0"

PLAN NORTH



D3 ENLARGED PLAN - DEMOLITION
1/4" = 1'-0"

PLAN NORTH

WALL LEGEND

—(X)—	1 HOUR RATED WALL - EXISTING

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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN
11/25/2024

Coastal Carolina Community College
Learning Resource Center -
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444 Western Boulevard
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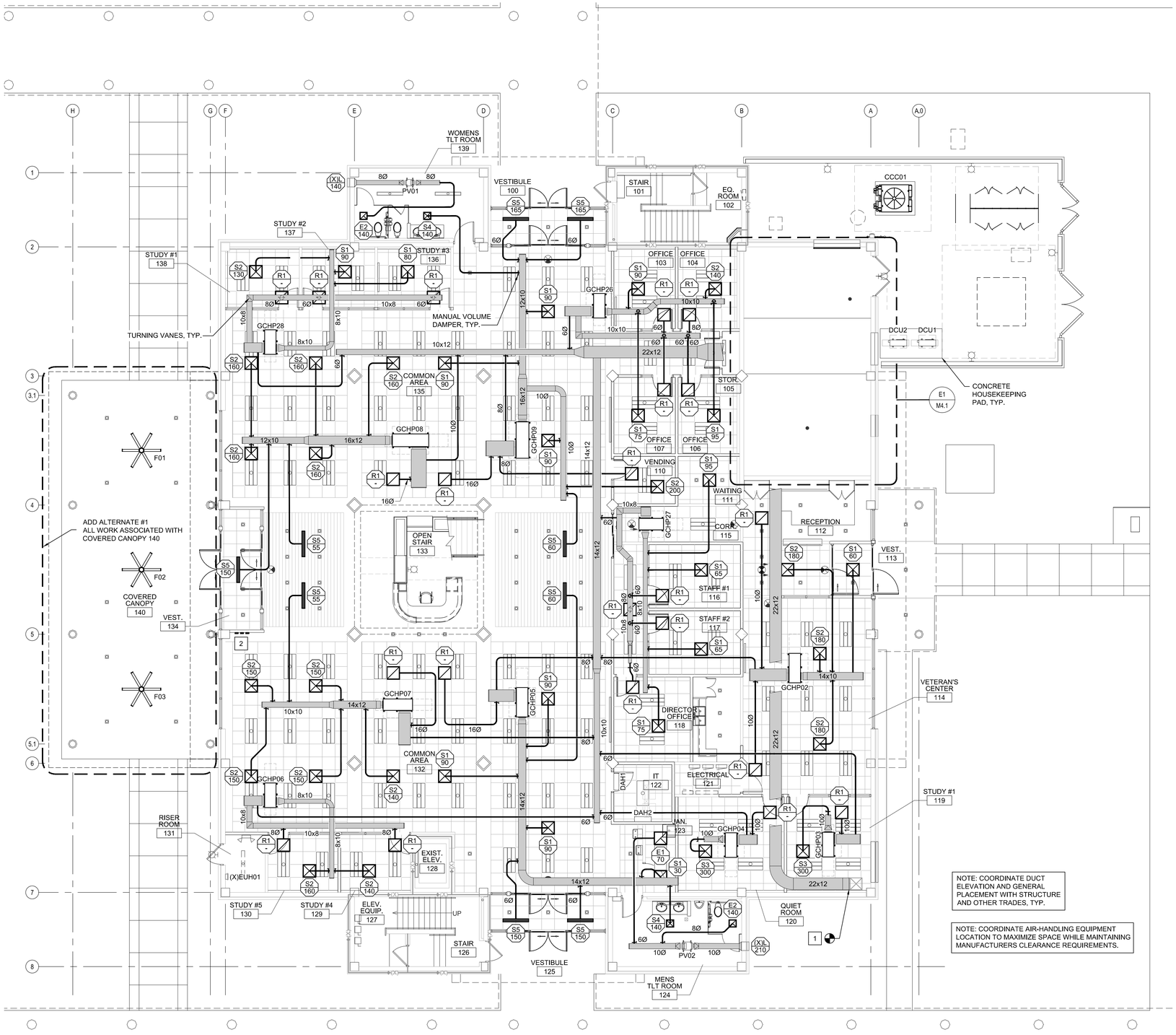
Sheet Title
MECHANICAL DEMOLITION ENLARGED PLANS

Sheet No.
MD4.1



KEYED NOTES

1. CONNECT TO EXISTING OUTSIDE AIR DUCTWORK SERVING THE SECOND FLOOR.
2. FAN VARIABLE SPEED CONTROL PANEL, PROVIDED BY M.C., INSTALLED BY E.C., TYPICAL FOR THREE.

E1 FIRST FLOOR PLAN - HVAC
1/8" = 1'-0"

PLAN NORTH

WALL LEGEND

1 HOUR RATED WALL - EXISTING

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CBHF Engineers, PLLC
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Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

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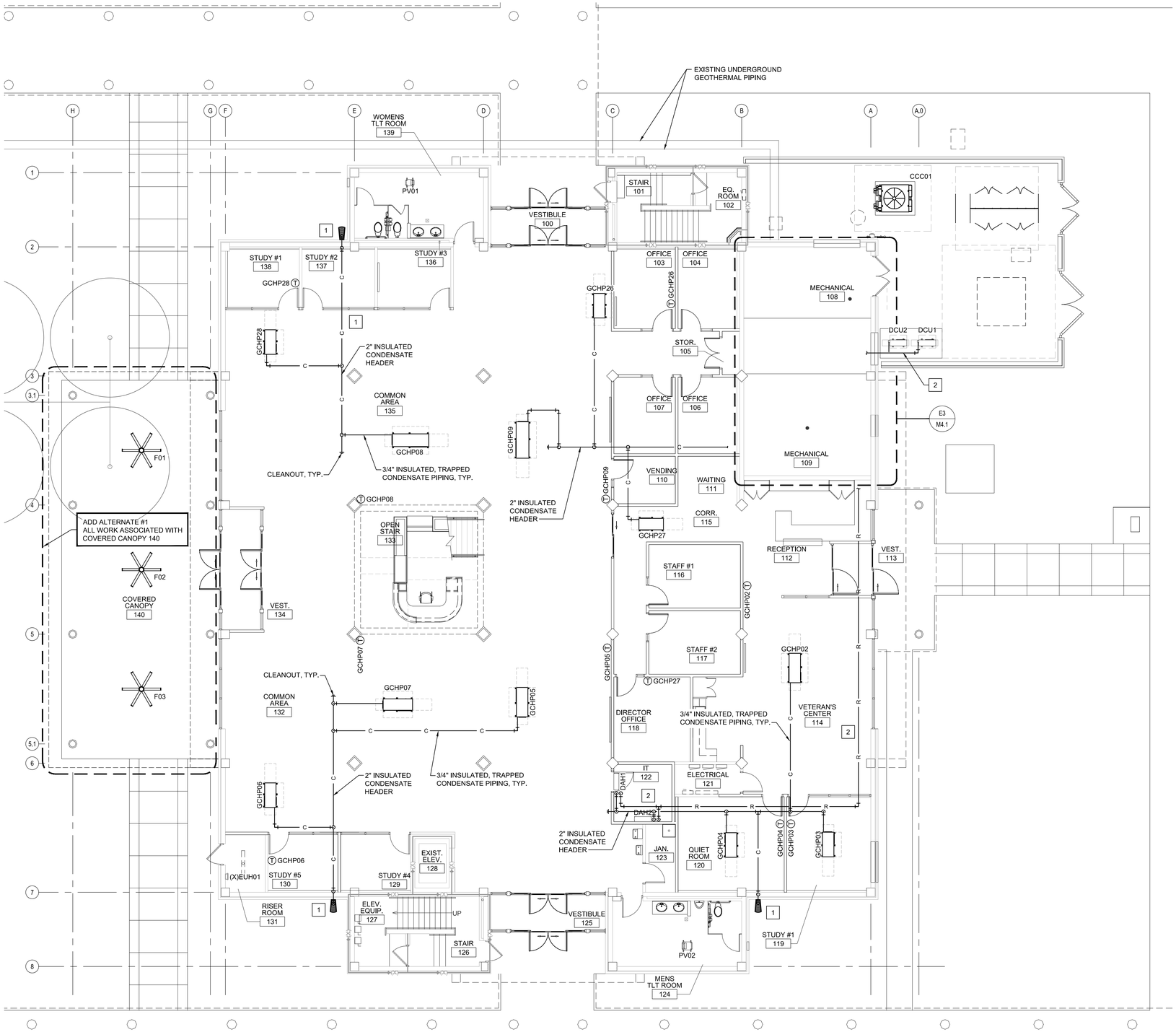
Sheet Title
MECHANICAL FIRST FLOOR PLAN - HVAC

Sheet No.
MH1.1



KEYED NOTES

1. ROUTE CONDENSATE HEADER DOWN INTERIOR WALL , EXIT TO EXTERIOR APPROXIMATELY 12" ABOVE FINISHED GRADE AND SPILL TO SPLASH BLOCK. SEAL PENETRATION WEATHER-TIGHT.
2. INSULATED REFRIGERANT PIPING LINE-SET. REFER TO SPECIFICATIONS FOR OUTDOOR REFRIGERANT PIPING CLADDING. SUPPORT OUTDOOR REFRIGERANT PIPING ON SCREEN WALL WITH STAINLESS STEEL HARDWARE.

E1 FIRST FLOOR PLAN - CONDENSATE PIPING

1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

WALL LEGEND

—(X)—	1 HOUR RATED WALL - EXISTING

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Wilmington, NC 28401
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Fax: 910.791.5266
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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HIARR

11/25/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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MECHANICAL
FIRST FLOOR PLAN -
CONDENSATE PIPING

Sheet No.
MH1.2

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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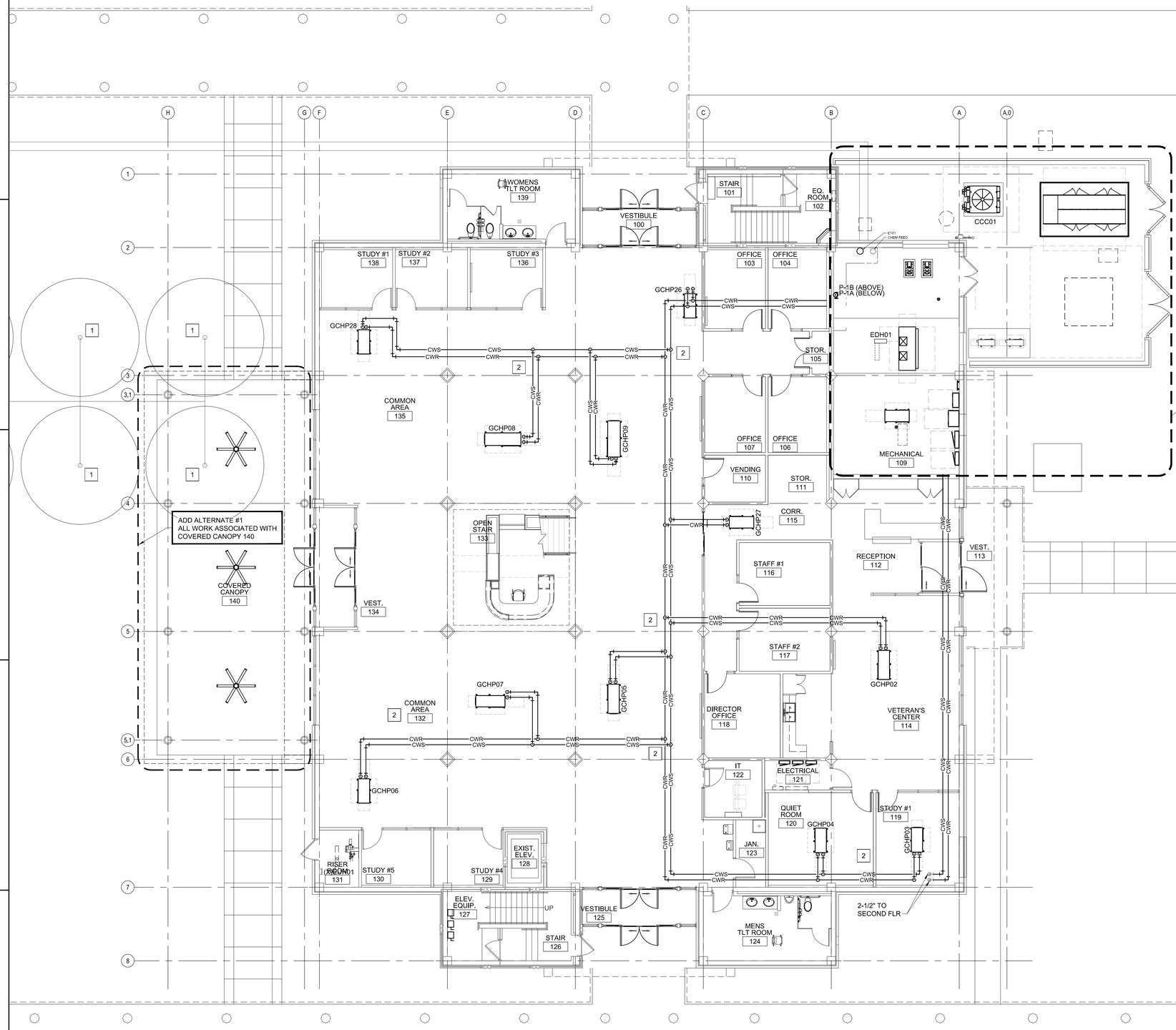

KEYED NOTES

1. RECORD DRAWINGS INDICATE POTENTIAL WELL-FIELD CONFLICTS WITH NEW CONSTRUCTION. THE CONTRACTOR MUST PROVIDE A UTILITY LOCATING SERVICE TO IDENTIFY WHERE THESE WELLS AND DISTRIBUTION PIPING ARE LOCATED. IF ANY WELLS OR DISTRIBUTION PIPING ARE DISTURBED, THEY ARE TO BE ABANDONED IN PLACE AND THE REMAINDER OF THE DISTRIBUTION SYSTEM REPAIRED SO THAT REMAINING WELLS REMAIN OPERATIONAL. IF PIPING IS NOT DISTURBED BY CONSTRUCTION, REMAINING PIPING AND WELLS MAY REMAIN OPERATIONAL EVEN IF BELOW NEW CONCRETE PADS. REGARDLESS OF WHETHER OR NOT THE GEOTHERMAL WELL FILLED IS AFFECTED BY CONSTRUCTION, THE ENTIRE SYSTEM MUST BE FLUSHED PER THE SPECIFICATIONS.
2. REFER TO FLOW DIAGRAMS ON M7.3 AND M7.4 FOR PIPING SIZES NOT SHOWN.

E1 FIRST FLOOR PLAN - HYDRONIC

1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

WALL LEGEND

—+(X)—	1 HOUR RATED WALL - EXISTING

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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

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Sheet Title
MECHANICAL
FIRST FLOOR PLAN -
HYDRONIC

Sheet No.
MP1.1

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
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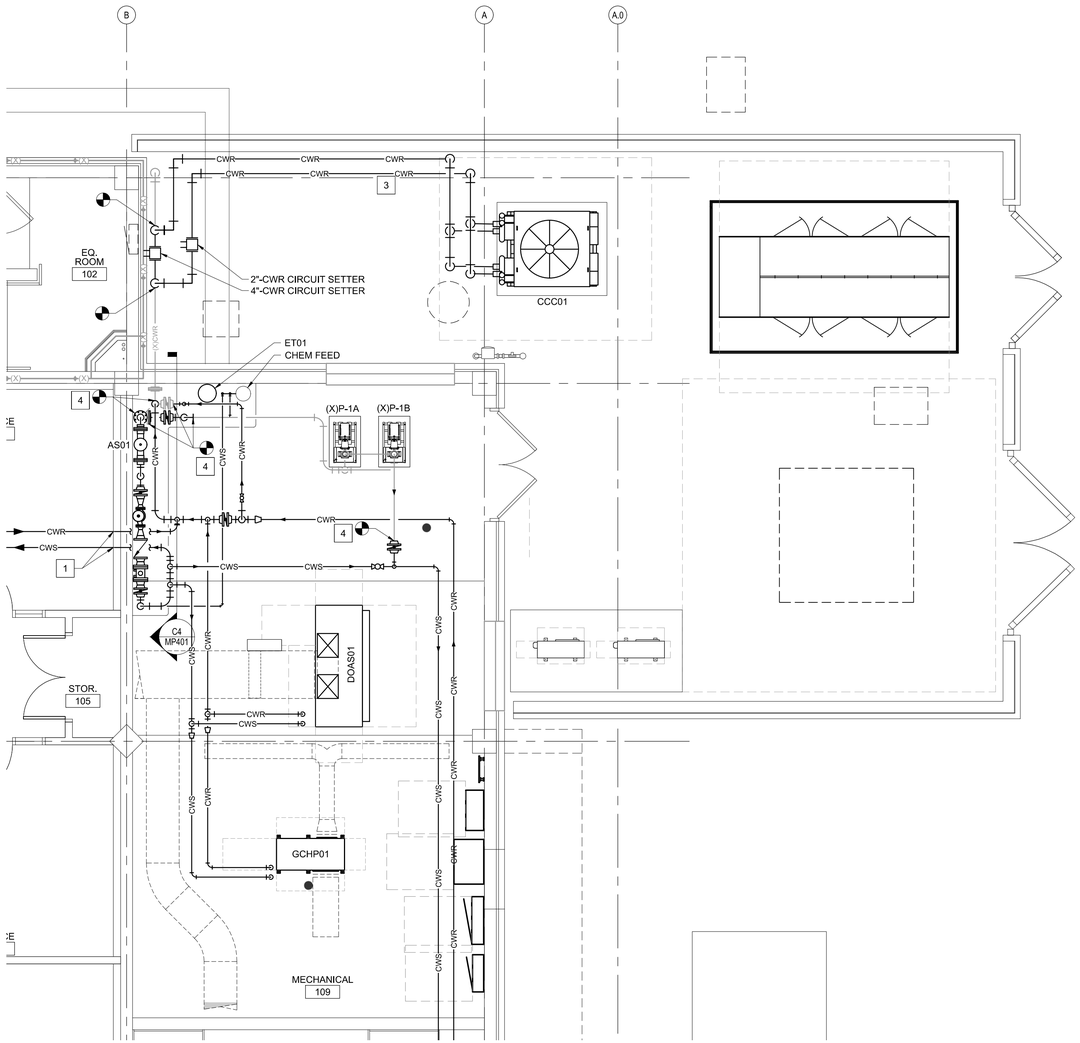
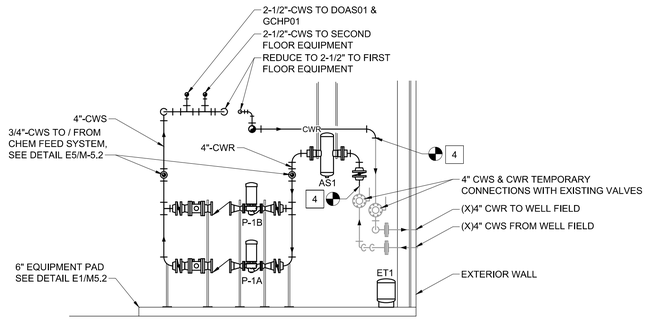


E1 PARTIAL FIRST FLOOR PLAN - HYDRONIC

1/4" = 1'-0"

PLAN NORTH

0 2' 4' 8'



C4 HYDRONIC PIPING SECTION

NOT TO SCALE

KEYED NOTES

1. 2-1/2"-CWS & CDR, USE EXISTING WALL PENETRATIONS.
2. 2"-CWR TO / FROM CCC01, TIE INTO EXISTING 4"-CWR PIPE MOUNTED ABOVE GRADE.
3. ROUTE 2"-CWR TO / FROM CCC01 ALONG AND SUPPORT FROME COURTYARD WALL.
4. TIE INTO EXISTING PIPING

WALL LEGEND

—(X)—	1 HOUR RATED WALL - EXISTING

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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
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Wilmington, NC 28401
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NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN

11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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Project Manager	Drawn By RWC
Date 11-25-2024	Reviewed By DMH
Project ID	

Sheet Title: MECHANICAL PARTIAL FIRST FLOOR PLAN - HYDRONIC

Sheet No.: MP4.1

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	CEILING FAN, SEE LIGHTING FIXTURE SCHEDULE FOR TYPE
	2x4 LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED
	2x2 LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED
	4FT OR 8FT LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED
	4FT OR 8FT CHANNEL LIGHT FIXTURE, SUSPENDED OR SURFACE MOUNTED
	UNDER COUNTER LIGHT FIXTURE
	DIRECT/INDIRECT FIXTURE, SUSPENDED
	TRACK WITH LIGHT KIT
	RECESSED LIGHT FIXTURE
	SURFACE LIGHT FIXTURE
	RECESSED WALL WASH LIGHT FIXTURE
	WALL MOUNTED LIGHT FIXTURE
	EXIT SIGN, SINGLE FACE, CEILING, CHEVRON INDICATES DIRECTION.
	EXIT SIGN, DOUBLE FACE, CEILING MOUNTED, CHEVRON INDICATES DIRECTION.
	EXIT SIGN W/EMERGENCY LIGHTING UNIT, CEILING MOUNTED, CHEVRON INDICATES DIRECTION.
	EXIT SIGN, SINGLE FACE, WALL/END MOUNTED, CHEVRON INDICATES DIRECTION.
	EXIT SIGN, DOUBLE FACE, WALL/END MOUNTED, CHEVRON INDICATES DIRECTION.
	EXIT SIGN W/EMERGENCY LIGHTING UNIT, WALL/END MOUNTED, CHEVRON INDICATES DIRECTION.
	EMERGENCY LIGHTING UNIT, 2-HEAD WITH BATTERY BACK-UP, WALL MOUNTED, "NOT SWITCHED"
	EMERGENCY LIGHTING UNIT, 2-HEAD WITH BATTERY BACK-UP, CEILING MOUNTED, "NOT SWITCHED"
	**FOR ALL LIGHTING FIXTURE TYPES ABOVE: LETTER ADJACENT TO FIXTURE INDICATES FIXTURE TYPE, SEE LIGHTING FIXTURE SCHEDULE
	POWER & SWITCH LEG
	UNSWITCHED LEG
	CONDUIT, HOME RUN TO PANEL BOARD
PB	PHOTOCELL, REMOTE MOUNTED, 120V, 10 SECOND TIME DELAY, UL WET LOCATION, RATED FOR 1500 W @ 120 VAC AND 4000 W @ 277 VAC (FOR USE WITH LAMP SOURCE(S) SHOWN.
$	SWITCH, SINGLE POLE, 120/277VAC, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED, SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED.
$3	3-WAY SWITCH, 120/277 VAC, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED.
$4	4-WAY SWITCH 120/277 VAC, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED.
$WP	WEATHERPROOF SWITCH, SINGLE POLE 120/277 VAC, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
D$	DIMMER SWITCH, 0-10V OR LINE VOLTAGE RATING AS REQUIRED BY LIGHTING FIXTURE(S). LINE VOLTAGE RATED DIMMERS MUST BE 1500W FOR 120 VAC AND 4000W 277VAC MINIMUM.

SYMBOL	DESCRIPTION
OS	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, 360° COVERAGE 2 = SECOND CONTACT TO BE PROVIDED FOR CONNECTION TO BUILDING MANAGEMENT
OS	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, LONG RANGE COVERAGE 2 = SECOND CONTACT TO BE PROVIDED FOR CONNECTION TO BUILDING MANAGEMENT
OS	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, 180° COVERAGE 2 = SECOND CONTACT TO BE PROVIDED FOR CONNECTION TO BUILDING MANAGEMENT
OS	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, PIR TECHNOLOGY OCCUPANCY SENSOR, LOW VOLTAGE (24VDC) 19mA DRAW, WATTSTOPPER CX100-1, LONG RANGE SENSOR. INSTALL WHERE FREE OF OBSTRUCTIONS.
OS	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, PIR TECHNOLOGY OCCUPANCY SENSOR, LOW VOLTAGE (24VDC) 19mA DRAW, WATTSTOPPER CX100-3, TWO SIDED AISLEWAY. INSTALL WHERE FREE OF OBSTRUCTIONS.
O$	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, SINGLE BUTTON ON/OFF CONTROL, 180° COVERAGE, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
O$2	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, DUAL BUTTON ON/OFF CONTROL, 180° COVERAGE, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
O$D	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, DUAL BUTTON ON/OFF CONTROL WITH 0-10V DIMMING, 180° COVERAGE, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED. WATTSTOPPER DW-311 OR EQUAL.
O$F	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, DUAL BUTTON ON/OFF CONTROL, 180° COVERAGE, ADDITIONAL POWER SUPPLY FOR FAN OPERATION. MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
$T	WALL MOUNTED DIGITAL TIMED SWITCH (5 MIN'S TO 12 HR'S), SINGLE BUTTON ON/OFF CONTROL, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
	RECEPTACLE, DUPLEX, 120VAC, 20A, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED.
U	RECEPTACLE, DUPLEX, 120VAC, 20A, WITH A-USB AND C-USB CHARGING CAPABILITY, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED.
	RECEPTACLE, DUPLEX, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH.
U	RECEPTACLE, QUADPLEX, 120VAC, 20A, WITH A-USB AND C-USB CHARGING CAPABILITY MOUNTED 16"AFF UNLESS OTHERWISE NOTED .
	RECEPTACLE, QUADPLEX, 120VAC, 20A MOUNTED 16"AFF UNLESS OTHERWISE NOTED .
	RECEPTACLE, QUADPLEX, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH.
	RECEPTACLE, DUPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED.
	RECEPTACLE, DUPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH.
	RECEPTACLE, QUADPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A MOUNTED 16"AFF UNLESS OTHERWISE NOTED.
	RECEPTACLE, QUADPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH.
	RECEPTACLE, 250VAC, 2 POLE, 3 WIRE, WALL MOUNTED
	**FOR ALL RECEPTACLE TYPES ABOVE: +XX"- INDICATES MOUNTING HEIGHT OF DEVICE IN INCHES AFF (IF GIVEN) (SEE ELECTRICAL MOUNTING HEIGHT DETAIL) WP - LISTED WEATHER-RESISTANT TYPE DEVICE WITH WEATHERPROOF IN USE COVER TR - TAMPER RESISTANT S - INDICATES THE TOP RECEPTACLE OF THE DEVICE IS CONTROLLED VIA WALL SWITCH H - DEVICE MOUNTED HORIZONTALLY U - USB IN-WALL CHARGER
30A/3/3R W/ 30AF	DISCONNECT SWITCH, FUSED, HEAVY DUTY, SIZE AS INDICATED ON DRAWINGS ##A = DISCONNECT SIZE / # = NUMBER OF POLES / # = NEMA RATING, / ##AF = FUSE SIZE
CB	ENCLOSED BREAKER, SIZE AS INDICATED ON DRAWINGS ##A = BREAKER SIZE / # = NUMBER OF POLES / # = NEMA RATING
"Equip" #AMP HMCP (#HP) NEMA #	VARIABLE FREQUENCY DRIVE (VFD)
"Equip" #AMP HMCP (#HP) NEMA # M$##	STARTER, FULL VOLTAGE, SIZE AS INDICATED ON DRAWINGS COMBINATION STARTER WITH CIRCUIT BREAKER DISCONNECT, FULL VOLTAGE, SIZE AS INDICATED ON DRAWINGS MANUAL MOTOR STARTER, ELECTRICAL CONTRACTOR SHALL COORDINATE POLES AND SIZE WITH EQUIPMENT ## = AMPERAGE RATING WHEN INDICATED ON DRAWING

SYMBOL	DESCRIPTION
208/120V	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 ELECTRICAL PANEL. SEE NEC TABLE 110.26 WORKING SPACES FOR ADDITIONAL CLEARANCE CONDITIONS.
	GROUND BUS, "E" INDICATES ELECTRICAL GROUND BAR, "TG" INDICATES TELECOMMUNICATIONS GROUND BAR
	CABLE TRAY, LADDER TYPE
	HAND HOLE, IN GRADE, TIER RATING AS INDICATED ON DRAWING
1	DEMOLITION KEY NOTE SYMBOL
1	KEY NOTE SYMBOL
1	REVISION DELTA
WP WAP WALL CLNG	WIRELESS ACCESS POINT, PROVIDE 1" CONDUIT TO CABLE TRAY AND 2 CAT6 CABLE DATA IN A DUAL GANG BOX WITH A SINGLE GANG PLASTER RING. OWNER SHALL PROVIDE AND INSTALL SURGE PROTECTOR AND WAP DEVICE. WP - LISTED WEATHER-RESISTANT TYPE DEVICE
2	COMBINATION DATA/TELEPHONE OUTLET, MOUNTED 18" AFF UNLESS OTHERWISE NOTED. PROVIDE 1-1/4" CONDUIT TO CABLE TRAY WITH 2 CAT6A CABLES
4	COMBINATION DATA/TELEPHONE OUTLET, MOUNTED 18" AFF UNLESS OTHERWISE NOTED. PROVIDE 1-1/4" CONDUIT TO CABLE TRAY WITH 4 CAT6A CABLES
2 FB2	2 GANG FLOOR BOX WITH ONE DUPLEX RECEPTACLE AND 2 CAT6A TELECOM/DATA CABLES IN 1-1/4" C. TO CABLE TRAY. PROVIDE METALLIC IN-USE COVER
	JUNCTION BOX - WALL MOUNTED +##" - INDICATES MOUNTING HEIGHT OF DEVICE IN INCHES AFF (if given)
	JUNCTION BOX - CEILING/ABOVE CEILING MOUNTED
	JUNCTION BOX - FLOOR MOUNTED
TV	WALL MOUNTED DOUBLE GANG BOX FOR TELEVISION MOUNTED AT 72" AFF UNLESS NOTED OTHERWISE. BOX SHALL HAVE DUPLEX RECEPTACLE AND DATA CONNECTIONS FOR TELEVISION AS DIRECTED BY OWNER. PROVIDE AND INSTALL 1" CONDUIT TO CABLE TRAY AND 2 CAT6A CABLES.
	WALL MOUNTED CAMERA, WP INDICATES WEATHERPROOF. PROVIDE 1" CONDUIT TO CABLE TRAY WITH 1 CAT6A CABLE. CAMERA PROVIDED AND INSTALLED BY OWNER.
	CEILING MOUNTED CAMERA, PROVIDE AND INSTALL 1" CONDUIT TO TO CABLE TRAY WITH 1 CAT6A CABLE. CAMERA PROVIDED AND INSTALLED BY OWNER .
S	CEILING MOUNTED SPEAKER, PROVIDE AND INSTALL 1" CONDUIT TO CABLE TRAY WITH 1 CAT6A CABLE. SPEAKER PROVIDED AND INSTALLED BY OWNER.
S	WALL MOUNTED SPEAKER, PROVIDE AND INSTALL 1" CONDUIT TO CABLE TRAY WITH 1 CAT6A CABLE. SPEAKER PROVIDED AND INSTALLED BY OWNER.
	FLOOR MOUNTED DATA RACK
	1 HOUR RATED FIRE WALL
	1 HOUR RATED FIRE WALL - EXISTING
	2 HOUR RATED FIRE WALL
	2 HOUR RATED FIRE WALL - EXISTING

TYPICAL ABBREVIATIONS:

A, AMP	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BOF	BOTTOM OF FIXTURE
BRKR	BREAKER
C, CND	CONDUIT
CAB	CABINET
CAT	CATALOG
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
CU	COPPER
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EQ, EQIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FLA	FULL LOAD AMPS
FLR	FLOOR
FWE	FURNISHED WITH EQUIPMENT
GEN	GENERATOR
G, GND	GROUND
GFI, GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HH	HANDHOLE
HP	HORSE POWER
HTR	HEATER
Hz	HERTZ
IMC	INTERMEDIATE METALLIC CONDUIT
JB	JUNCTION BOX
K	THOUSAND
Kcmil	THOUSAND CIRCULAR MILLS
KVA	KILOVOLT AMPERE
KW	KILOWATTS
KWH	KILOWATT-HOURS
LP	LIGHTING PANEL, LIGHT POLE
LTG	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	MANHOLE
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTG	MOUNTING
N, NEUT	NEUTRAL
N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NTS	NOT TO SCALE
P	POLE
PA	PUBLIC ADDRESS
PB	PULL BOX, PUSH-BUTTON
PF	POWER FACTOR
PH,	PHASE
PNL	PANEL
PP	POWER PANEL, POWER POLE
PWR	POWER
RECPT,RCP	RECEPTACLE
REQ'D	REQUIRED
RGS	RIGID GALVANIZED STEEL CONDUIT
RM	ROOM
SH	SHEET
SM	SURFACE MOUNTED
SPEC	SPECIFICATION
SS	SELECTOR SWITCH
SST	STAINLESS STEEL
SW	SWITCH
TEL	TELEPHONE
TYP	TYPICAL
UG, UGND	UNDERGROUND
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UTIL	UTILITY
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE, WATT
WH	WATT-HOUR
WP	WEATHERPROOF
XFMR	TRANSFORMER
(X)	EXISTING

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com

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NC# P-0506

BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI 11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: WPJ
Date: 11-25-2024	Reviewed By: JPF
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Sheet Title: ELECTRICAL ABBREVIATIONS AND LEGEND	
Sheet No.: E-0.1	

ELECTRICAL SELECTIVE DEMOLITION NOTES

1. SELECTIVE ELECTRICAL DEMOLITION SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR AS DESCRIBED HEREIN AND AS SHOWN ON THE CONTRACT DRAWINGS. GROSS DEMOLITION WILL BE PROVIDED BY THE GENERAL CONTRACTOR. IDENTIFY ACTIVE UTILITIES, AND AT THE APPROPRIATE TIME, DISCONNECT AND CAP OFF SUCH UTILITIES AND PROVIDE EXPERIENCED PERSONNEL ON SITE DURING GENERAL CONTRACTOR DEMOLITION OPERATIONS TO PERFORM SUCH OPERATIONS AND RESOLVE ISSUES. REMOVE MATERIALS NOTED FOR SALVAGE AND REUSE. IDENTIFY AND MARK WIRING AND DEVICES TO REMAIN FOR THE GENERAL CONTRACTOR.

2. THE ELECTRICAL CONTRACTOR SHALL REVIEW THE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DEMOLITION REQUIREMENTS AND CARRY OUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER. REMOVE ALL WIRING DEVICES, BOXES, FIXTURES, EXPOSED ABANDONED RACEWAYS, HANGARS, ETC., AND THOSE MADE OBSOLETE BY THESE ALTERATIONS AND AS SHOWN ON THE ELECTRICAL DRAWINGS. ALL ITEMS TO BE REMOVED OR MODIFIED MAY NOT BE SHOWN, HOWEVER, THIS CONTRACTOR SHALL REMOVE ANY ELECTRICAL WORK AS REQUIRED BY THE CONSTRUCTION OR AS DIRECTED BY THE OWNER OR ARCHITECT/ENGINEER. SURVEY THE AFFECTED AREAS BEFORE SUBMITTING A BID AS ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DEPICTED ON THE DRAWINGS AND SOME UNUSUAL CONDITIONS MAY EXIST.

3. REMOVE, RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION.

4. ALL EXISTING ELECTRICAL EQUIPMENT AND DEVICES SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED.

5. VERIFY FIELD MEASUREMENTS AND CIRCUITING ARRANGEMENTS ARE AS SHOWN ON DRAWINGS.

6. VERIFY THAT ABANDONED WIRING AND EQUIPMENT SERVE ONLY ABANDONED FACILITIES.

7. DISCONNECT AND/OR DE-ENERGIZE ELECTRICAL SYSTEMS IN WALLS, FLOORS, AND CEILINGS SCHEDULED FOR REMOVAL.

8. PROVIDE TEMPORARY AND/OR PERMANENT WIRING AND CONNECTIONS AS SHOWN AND/OR AS REQUIRED BY CONDITIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, AND WHEN SUCH WORK IS SPECIFICALLY APPROVED BY THE OWNER AND PERMITTED BY REGULATORY AUTHORITIES, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS.

9. EXISTING ELECTRICAL SERVICE: COORDINATE POWER OUTAGES WITH THE OWNER AND UTILITY COMPANY. MAINTAIN EXISTING SYSTEMS IN SERVICE. DISABLE SYSTEMS ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. OBTAIN PERMISSION FROM THE OWNER AT LEAST 24 HOURS BEFORE PARTIALLY OR COMPLETELY DISABLING SYSTEM. MINIMIZE OUTAGE DURATION. MAKE TEMPORARY CONNECTIONS TO MAINTAIN SERVICE IN AREAS ADJACENT TO WORK AREA.

10. CONTINUOUS SERVICE IS REQUIRED ON ALL CIRCUITS AND OUTLETS AFFECTED BY THESE CHANGES, EXCEPT WHERE THE OWNER WILL PERMIT AN OUTAGE FOR A SPECIFIC TIME. OBTAIN OWNER'S CONSENT BEFORE REMOVING ANY CIRCUIT FROM CONTINUOUS SERVICE.

11. PROTECT ALL EXISTING TELEPHONE, DATA, LIFE SAFETY SYSTEMS, FIRE ALARM, SECURITY, ACCESS CONTROL AND PUBLIC ADDRESS SYSTEMS AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE OWNER AND ARCHITECT/ENGINEER IN WRITING IF SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN SERVICE.

12. WHERE ELECTRICAL SYSTEMS PASS THROUGH THE DEMOLITION AREAS TO SERVE OTHER PORTIONS OF THE PREMISES, THEY SHALL BE PROTECTED FROM DAMAGE AND REMAIN OR BE SUITABLY RELOCATED UTILIZING MATCHING SIZE AND TYPE MATERIALS AND THE SYSTEM RESTORED TO NORMAL OPERATION. ADVISE THE ARCHITECT/ENGINEER IMMEDIATELY IF SUCH CONDITIONS ARE UNCOVERED BEFORE PROCEEDING WITH ADDITIONAL WORK.

13. EXISTING FIRE ALARM SYSTEM: COORDINATE WORK WITH THE OWNER'S FIRE ALARM SYSTEM VENDOR AND MAINTAIN THE EXISTING SYSTEM IN SERVICE THROUGHOUT THE PROJECT. DISABLE SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. NOTIFY THE OWNER AND LOCAL FIRE SERVICE AT LEAST 24 HOURS BEFORE PARTIALLY OR COMPLETELY DISABLING SYSTEM. LIMIT OUTAGES TO NORMAL BUSINESS HOURS ONLY AND MINIMIZE OUTAGE DURATION. MAKE TEMPORARY CONNECTIONS TO MAINTAIN SERVICE IN AREAS ADJACENT TO WORK AREA.

14. MAINTAIN ACCESS TO EXISTING ELECTRICAL INSTALLATIONS WHICH REMAIN ACTIVE. MODIFY INSTALLATION OR PROVIDE ACCESS PANEL AS APPROPRIATE.

15. ENDS OF ALL CONDUITS TO REMAIN SHALL BE TIGHTLY PLUGGED TO EXCLUDE DUST AND MOISTURE WHILE THE BUILDING IS UNDER RENOVATION.

16. PROTECT EXISTING CIRCUITS TO REMAIN AND EXTEND AS REQUIRED UTILIZING MATCHING CONDUCTORS AND CONDUIT SIZE AND TYPE.

17. SECURE ALL CIRCUITS, RACEWAYS, CABLE AND CONDUCTORS THAT, AS A RESULT FROM THIS CONSTRUCTION, ARE ABANDONED OR UNUSED. REMOVE UNUSED EXPOSED CONDUIT AND WIRING BACK TO POINT OF CONCEALMENT INCLUDING ABANDONED CONDUIT ABOVE ACCESSIBLE CEILINGS. REMOVE UNUSED WIRING IN CONCEALED CONDUITS BACK TO SOURCE OR NEAREST POINT OF USAGE. BLANK ABANDONED KNOCKOUTS IN REMAINING BOXES. INSTALL BLANK PLATES FOR ALL UNUSED OUTLETS THAT WILL REMAIN AS A RESULT OF THIS CONSTRUCTION. ALL SUCH WORK SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES.

18. TRACE OUT EXISTING WIRING THAT IS TO BE RELOCATED OR REMOVED AND PERFORM THE RELOCATION OR REMOVAL WORK AS REQUIRED FOR A COMPLETE OPERATING AND SAFE SYSTEM.

19. RECONNECT EXISTING CIRCUITS SEPARATED AS A RESULT OF THIS CONSTRUCTION.

20. EXTEND EXISTING SWITCH LEGS TO NEW SWITCH LOCATIONS AS SHOWN AND/OR REQUIRED.

21. DELIVER ALL REMOVED AND SALVAGED LIGHTING FIXTURES, WIRING DEVICES, FIRE ALARM DEVICES, SPEAKERS, ETC., TO THE OWNER, OR AT THE OWNER'S OPTION, DISPOSE OF PROPERLY OFF SITE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL ENVIRONMENTAL REGULATIONS. FEES ASSOCIATED WITH DISPOSAL SHALL BE INCLUDED IN THE CONTRACTOR'S BASE BID.

22. PROTECT EXISTING CIRCUITS FEEDING LIGHTING FIXTURES FOR EXTENSION TO NEW AND RELOCATED LIGHTING FIXTURES.

23. DO NOT DISTURB EXISTING DATA, TELEPHONE, SECURITY/INTRUSION AND ENERGY MANAGEMENT SYSTEMS, DEVICES OR CABLES UNLESS SPECIFICALLY NOTED OTHERWISE.

24. ALL FLUSH MOUNTED WIRING DEVICES SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED. IT IS THE INTENTION OF THE THIS CONTRACT TO REMOVE ALL FLUSH MOUNTED DEVICES THAT CONFLICT WITH NEW CONSTRUCTION AND SECURE THEIR ASSOCIATED BRANCH CIRCUITS.

25. COORDINATE WITH THE OTHER TRADES, PRIOR TO BID, AND INCLUDE IN THE BASE BID THE ELECTRICAL DISCONNECTION OF ANY EQUIPMENT BEING DEMOLISHED, EVEN IF NOT EXPLICITLY SHOWN. UNLESS NOTED OTHERWISE, REMOVE ALL DEMOLISHED EQUIPMENT FROM THE PROPERTY AND IDENTIFIED IN THE ELECTRICAL DRAWINGS.

26. THESE DRAWINGS ARE COMPILED BY THE ARCHITECT/ENGINEER FROM THE OWNER'S RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL CIRCUITS, WIRING, CONDUIT, DIMENSIONS, POINTS OF ACCESS AND ALL FIELD CONDITIONS AFFECTING HIS WORK. BEGINNING OF DEMOLITION MEANS THE CONTRACTOR ACCEPTS EXISTING CONDITIONS.

27. THE DISPOSAL OF SPENT FLUORESCENT LIGHTS THAT CONTAIN MERCURY GENERATED IN PUBLIC BUILDINGS MUST FOLLOW AN APPROVED RECYCLING PROGRAM REQUIRED BY NC GENERAL STATUTES G.S. 130A-310.60. CONSULT WITH THE BUILDING OWNER FOR RECYCLING PROGRAM DETAILS. THIS MATERIAL IS NOT PERMITTED TO BE DISPOSED IN A LANDFILL.

28. SEE GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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NC# P-0506

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

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ELECTRICAL SELECTIVE DEMOLITION NOTES

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ELECTRICAL GENERAL NOTES

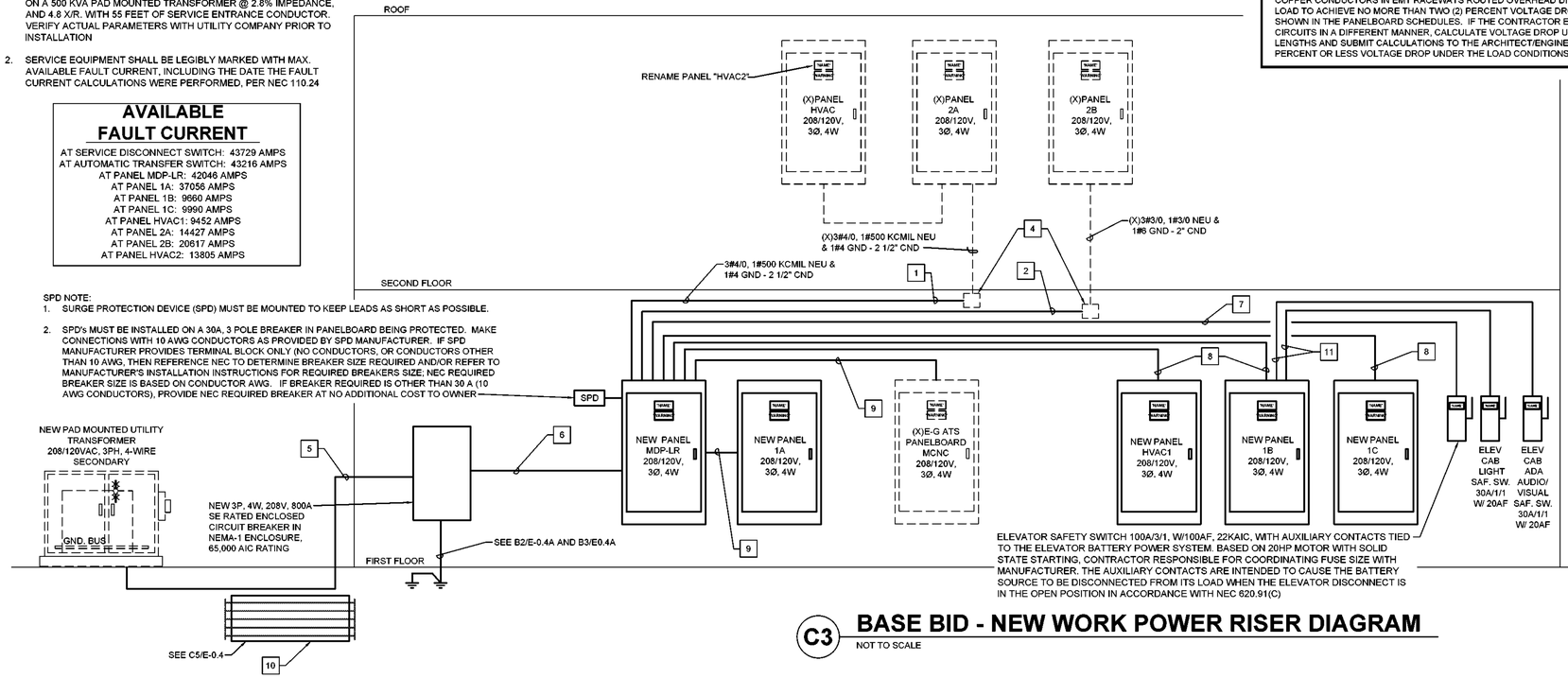
1. ALL ELECTRICAL WORK SHALL BE IN FULL COMPLIANCE WITH NFPA 70, THE NORTH CAROLINA STATE BUILDING CODE, ALL LOCAL CODES AND ORDINANCES AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
2. ALL EQUIPMENT PROVIDED BY THE CONTRACTOR SHALL BE LISTED AND LABELED BY A NATIONALLY-RECOGNIZED 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 SUITABLE FOR ITS APPLICATION (E.G. WHEN INSTALLED OUTDOORS, IT SHALL BE WEATHERPROOF, ETC.)
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.
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.
5. 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.
9. 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 HUBS.
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.
17. 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.
19. 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. LIGHTING FIXTURES, SPEAKER ASSEMBLIES, ETC. MOUNTED IN FIRE-RATED CEILINGS SHALL BE PROVIDED WITH UL-LISTED, PRE-FABRICATED OR FIELD FABRICATED SHROUDS/ACCESSORIES NECESSARY TO MAINTAIN THE CEILING FIRE RATING.
21. ALL RACEWAYS SHALL BE CONCEALED WHERE POSSIBLE. IF APPLICABLE, MATCH EXISTING RACEWAY INSTALLATION METHODS AND ROUTINGS AT OR NEAR EXISTING FACILITIES.
22. 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.
23. USE FLUSH MOUNTING OUTLET BOXES IN FINISHED AREAS AND FOR EXTERIOR DEVICES/LIGHT FIXTURES UNLESS NOTED OTHERWISE.
24. 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.
25. PATCHING OF WATERPROOFED SURFACES SHALL RENDER THE AREA OF THE PATCHING COMPLETELY WATERPROOF.
26. ALL MOTORS 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.
27. 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.
28. 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.
29. 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.
30. 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.
31. 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.
32. WHERE UNDERGROUND RACEWAYS ARE REQUIRED TO TURN UP INTO CABINETS, EQUIPMENT, ETC., AND ON TO POLES, THE ELBOW REQUIRED AND THE STUB-UP OUT OF THE SLAB OR EARTH SHALL BE OF PLASTIC-COATED RIGID STEEL.
33. PROVIDE ADHESIVE BACKED RECEPTACLE AND SWITCH/DIMMER/OCCUPANCY SENSOR DEVICE PLATE LABELS IDENTIFYING THE PANEL AND CIRCUIT FEEDING THE DEVICE. LABELS SHALL INDICATE PANEL AND CIRCUIT NUMBER. SEE SPECIFICATIONS SECTION 260553 FOR REQUIREMENTS.
34. 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.
35. 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.
36. 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.
37. 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.
38. LIGHTING AND RECEPTACLE BRANCH CIRCUITS SHALL CONSIST OF #12 AWG AND/OR #10 AWG MINIMUM PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS IN 1/2" MINIMUM RACEWAY. OTHER BRANCH CIRCUITS MAY BE INDICATED AND MINIMUM CONDUCTOR SIZES MAY BE SHOWN ON THE DRAWINGS. REGARDLESS, THE CONTRACTOR SHALL REFER TO THE "MINIMUM CONDUCTORS SIZE CHART" ON THE DRAWINGS AND PROVIDE CONDUCTORS SIZES AS REQUIRED TO MAINTAIN A MAXIMUM 3% VOLTAGE DROP.
39. 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. REFER TO THE "MINIMUM CONDUCTORS SIZE CHART" ON THE DRAWINGS AND INCREASE CONDUCTORS SIZES AS REQUIRED TO MAINTAIN A MAXIMUM OF 3% VOLTAGE DROP.
40. COMMON NEUTRAL BRANCH CIRCUITS ARE NOT PERMITTED. PROVIDE SEPARATE, INDIVIDUAL NEUTRAL CONDUCTORS FOR ALL BRANCH CIRCUITS.
41. ALTERNATE MULTIWIRE RECEPTACLE CIRCUITS SUCH THAT ADJACENT RECEPTACLES ARE ON DIFFERENT CIRCUITS.
42. COMMON NEUTRAL MULTIWIRE RECEPTACLE BRANCH CIRCUITS ARE NOT PERMITTED. PROVIDE SEPARATE, INDIVIDUAL NEUTRAL CONDUCTORS FOR MULTIWIRE BRANCH CIRCUITS.
43. 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.
44. 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.
45. DO NOT COMBINE BRANCH CIRCUIT HOMERUNS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.
46. DO NOT CHANGE CIRCUITING SHOWN WITHOUT PERMISSION OF THE ARCHITECT/ENGINEER.
47. TROUGH TAPS SHALL BE AT SWITCH AMPACITY, UNLESS NOTED OTHERWISE.
48. 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.
49. 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.
50. IN AREAS IN WHICH DUAL LEVEL SWITCHING IS INDICATED (TYPICALLY BY 2 OR MORE ADJACENT, GANGED SWITCHES), PROVIDE THE APPROPRIATE NUMBER OF CONDUCTORS TO FACILITATE THIS FUNCTION (AS TYPICALLY SHOWN).
51. CONNECT BATTERY PACK TYPE EMERGENCY AND EXIT LIGHTING 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.
52. COORDINATE LIGHTING FIXTURE LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING PLAN. IF CONFLICTS ARE NOTED, REQUEST CLARIFICATION FROM THE ARCHITECT/ENGINEER BEFORE PROCEEDING.
53. ADJACENT SWITCHES SHALL BE GANGED. INSTALL BARRIERS BETWEEN UNLIKE VOLTAGE SECTIONS.
54. SEPARATE NEUTRALS ARE REQUIRED FOR ALL DIMMED LIGHTING CIRCUITS.
55. WHERE THE DRAWINGS INDICATE A LIGHTING FIXTURE IS TO BE PROVIDED WITH SPECIAL FEATURES/SWITCHING (DIMMING, EMERGENCY BATTERY BALLAST, 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.
56. 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.
57. 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.
58. UNLESS SPECIFICALLY NOTED OTHERWISE, THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL MAKE FINAL CONNECTIONS TO HIS EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL, PLUMBING AND GENERAL CONTRACTORS, PRIOR TO ORDERING OR INSTALLATION OF ANY EQUIPMENT, TO VERIFY MECHANICAL, PLUMBING AND GENERAL CONTRACTOR PROVIDED EQUIPMENT REQUIREMENTS ARE PROVIDED IN THE ELECTRICAL DESIGN. IF ELECTRICAL REQUIREMENTS DIFFER FROM THOSE SHOWN ON THE DRAWINGS, THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL BE RESPONSIBLE FOR DESIGN AND CONSTRUCTION COSTS ASSOCIATED WITH CHANGING THE ELECTRICAL SYSTEM TO MATCH UTILIZATION EQUIPMENT.
59. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL FURNISH ALL STARTERS AND CONTROLS FOR THEIR EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE SAFETY SWITCHES AND CIRCUIT BREAKERS AND PROVIDE WIRING AND CONNECTIONS TO THE LINE SIDE OF SAFETY SWITCHES AND/OR CIRCUIT BREAKERS. THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL PROVIDE LOAD SIDE WIRING AND CONNECTIONS TO EQUIPMENT. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL PROVIDE ALL CONTROL WIRING AND CONNECTIONS AND DEVICES FOR THEIR EQUIPMENT.
60. ENERGIZE EQUIPMENT ONLY AFTER OBTAINING PERMISSION FROM THE CONTRACTOR PROVIDING THE EQUIPMENT.
61. 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.
62. 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.
63. 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.
64. EXACT SPACING OF SMOKE AND HEAT DETECTORS AND A/V 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 CONNECTION TO SMOKE AND HEAT DETECTORS OF ADEQUATE LENGTH TO ALLOW HORIZONTAL ADJUSTMENT OF FOUR FEET FROM POSITION INDICATED ON DRAWINGS.
65. COORDINATE FIRE ALARM SYSTEM MODIFICATIONS WITH THE OWNER AND THE OWNER'S FIRE ALARM SYSTEM VENDOR. THE EXISTING SYSTEM SHALL REMAIN OPERATIONAL AT ALL TIMES UNLESS PRIOR ARRANGEMENTS HAVE BEEN MADE WITH THE OWNER.
66. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FIRE ALARM WORK ON THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO DE-PROGRAMMING REMOVED DEVICES, PUTTING SYSTEM ON TEST, PROTECTING EXISTING DEVICES DURING CONSTRUCTION, ETC. EC SHALL INCLUDE IN BID THE COST FOR THE SCHOOL'S FIRE ALARM VENDOR TO PERFORM THIS WORK. THE EC SHALL BE RESPONSIBLE FOR PAYING FOR ANY FALSE ALARMS CAUSED BY THE CONSTRUCTION FOR THIS PROJECT.
67. INSTALLATION INFORMATION PACKED WITH LIGHTING FIXTURES, DEVICES AND EQUIPMENT SHALL BE RETAINED FOR INCLUSION IN THE OPERATIONS AND MAINTENANCE MANUALS.
68. PROTECT ALL EXISTING POWER, COMMUNICATIONS, DATA, LIFE SAFETY SYSTEMS, FIRE ALARM AND PUBLIC ADDRESS SYSTEMS AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE OWNER AND ARCHITECT/ENGINEER IF SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN SERVICE.
69. THE CONTRACT REQUIRES SEVERAL NEW CIRCUITS BE ADDED TO EXISTING PANELBOARDS AND NUMEROUS EXISTING CIRCUITS' LOADING WILL CHANGE AS A RESULT OF THIS WORK. THE CONTRACTOR SHALL ENDEAVOR TO MAINTAIN PHASE BALANCE ON ALL PANELBOARDS AFFECTED BY THIS WORK. RECONNECT/MODIFY/EXTEND EXISTING CIRCUITING AS REQUIRED TO MAINTAIN SAFE CIRCUIT LOADING AND PHASE BALANCE. COORDINATE CONNECTIONS TO THE EXISTING ELECTRICAL DISTRIBUTION SYSTEM WITH THE OWNER AND ARCHITECT/ENGINEER. PROVIDE ACCURATE, UPDATED, TYPED PANEL SCHEDULES FOR ALL AFFECTED PANELS. NOTE ALL FINAL CIRCUIT CONFIGURATIONS ON AS-BUILT DRAWINGS.
70. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING NECESSARY TO INSTALL ALL EQUIPMENT AS REQUIRED AND SHALL REESTABLISH ALL FINISHES TO THEIR ORIGINAL CONDITION WHERE CUTTING AND PATCHING OCCUR. ALL CUTTING AND PATCHING SHALL BE DONE IN A THOROUGHLY WORKMANSHIP MANNER. SAW CUT CONCRETE AND MASONRY PRIOR TO BREAKING OUT SECTIONS. ALL PATCHING MATERIALS AND WORKMANSHIP SHALL BE PERFORMED BY TRADESMEN EXPERIENCED IN THAT WORK. ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT/ENGINEER.
71. CORE DRILL HOLES IN EXISTING CONCRETE WALLS AS REQUIRED.
72. INSTALL WORK AT SUCH TIME AS TO REQUIRE THE MINIMUM AMOUNT TO CUTTING AND PATCHING.
73. CUT OPENINGS ONLY LARGE ENOUGH TO ALLOW EASY INSTALLATION OF THE CONDUIT.
74. WHEN INDICATED, CONNECT NEW LOADS TO EXISTING ABANDONED CIRCUITS SERVING THE SAME AREA AND NOTE CIRCUITS ON AS-BUILT DRAWINGS.
75. EXISTING CIRCUITING WHERE SHOWN IS FOR CONVENIENCE PURPOSES ONLY. VERIFICATION OF EXISTING WIRING DESTINATION, TERMINATION AND ADDITIONS OF NEW LOADS IS THE RESPONSIBILITY OF THE CONTRACTOR.
76. MAINTAIN CONTINUITY OF ALL EXISTING CIRCUITS TO REMAIN OR PORTIONS THEREOF AFFECTED BY THIS WORK.
77. DESIGN AND ADDITION OF NEW CIRCUITING IS BASED ON THE ENGINEER'S BEST INFORMATION REGARDING EXISTING CONDITIONS AND CURRENT DRAWINGS. AVAILABILITY OF ADEQUATE CIRCUIT BREAKER SPACE FOR NEW WORK IN EXISTING PANELBOARDS SHALL BE VERIFIED BY THE CONTRACTOR AFTER DEMOLITION OF THE EXISTING SPACE. IF ADEQUATE SPACE IS NOT AVAILABLE FOR NEW CIRCUIT BREAKERS THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR RESOLUTION.
78. ABANDONED POWER WIRING, RACEWAYS AND CONDUCTORS, SHALL BE REMOVED BACK TO THEIR SOURCE. THE ACCESSIBLE PORTIONS OF ABANDONED CABLES (VOICE, DATA, VIDEO, ALARM, ETC.) SHALL BE REMOVED.
79. TRACE OUT EXISTING WIRING THAT IS TO BE RELOCATED, OR REMOVED AND PERFORM THE RELOCATION OR REMOVAL WORK AS REQUIRED FOR A COMPLETE OPERATING AND SAFE SYSTEM.
80. INSOFAR AS POSSIBLE, MATCH EXISTING EXPOSED DEVICES IN FINISHED AREAS IN TYPE, COLOR AND FINISH.
81. THE EXISTING ELECTRICAL SYSTEMS DEPICTED ON THESE DRAWINGS HAVE BEEN COMPILED BY THE ENGINEER FROM THE OWNER'S RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF THE EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, POINTS OF ACCESS AND FIELD CONDITIONS AFFECTING HIS WORK.
82. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING ELECTRICAL SYSTEMS AND THE EXISTING BUILDING. THE SUBMISSION OF THE PROPOSAL BY THE CONTRACTOR SHALL BE CONSIDERED EVIDENCE THAT HE OR HIS REPRESENTATIVE HAS VISITED THE SITE AND BUILDINGS AND NOTED THE LOCATION AND CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED AND THAT HE TAKES FULL RESPONSIBILITY OF ALL FACTORS GOVERNING HIS WORK. NO EXTRAS WILL BE CONSIDERED BECAUSE OF ADDITIONAL WORK NECESSITATED BY EXISTING JOB CONDITIONS THAT ARE NOT INDICATED ON THE DRAWINGS.
83. SOME EXISTING RECEPTACLE, LIGHTING OR OTHER LOADS MAY BE SERVED BY CIRCUITS INDICATED TO BE REMOVED. IF SUCH CONDITIONS ARE DISCOVERED, REQUEST THE ARCHITECT/ENGINEER PROVIDE NEW CIRCUIT NUMBER FOR THE LOAD. DO NOT INDISCRIMINATELY CONNECT TO THE NEAREST CIRCUIT.
84. ALL UNUSED OUTLET BOXES SHALL BE REMOVED OR, WITH SPECIFIC APPROVAL OF THE ARCHITECT/ENGINEER, SHALL BE BLANKED WITH STAINLESS STEEL PLATES. ALL OPENINGS IN EXISTING WALLS AND CEILINGS MADE BY THIS CONTRACTOR SHALL BE REPAIRED TO AN EQUAL FINISH AS ADJACENT SURFACES.
85. PROVIDE ALL ELECTRICAL RELOCATION WORK ASSOCIATED WITH THE RELOCATING OF EQUIPMENT FOR THE EXISTING FACILITIES, INCLUDING DISCONNECTING ALL EXISTING WIRING AND CONDUITS AND PROVIDING NEW WIRING AND CONDUITS TO THE RELOCATED EQUIPMENT.
86. THE EXISTING FACILITIES WILL REMAIN OCCUPIED BY STUDENTS AND THE STAFF THROUGHOUT THE PROJECT. AS SUCH, WORK WILL [BE DONE IN PHASES AND WILL] REQUIRE SPECIAL EFFORT BY THIS CONTRACTOR TO ALLOW THE WORK TO PROCEED IN A TIMELY MANNER. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE OWNER AND GENERAL CONTRACTOR SO AS TO MINIMIZE DISRUPTION OF THE OWNER'S USE OF THE FACILITIES AND MAINTAIN THE CONSTRUCTION SEQUENCE OF THE GENERAL CONTRACTOR. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INSTRUCTIONS CONCERNING PHASING AND SEQUENCE OF WORK.
87. SEE "ELECTRICAL SELECTIVE DEMOLITION NOTES" FOR ADDITIONAL REQUIREMENTS.
88. SAFETY
    A. COMPLY WITH OSHA AND NEC ARC FLASH PROTECTION REQUIREMENTS.
    B. FOR EQUIPMENT BEING REMOVED AND REPLACED, THE CONTRACTOR SHALL DE-ENERGIZE THE EQUIPMENT AND MAKE IT SAFE PRIOR TO REMOVAL AND COMPLY WITH OSHA REQUIREMENTS FOR LOCKING-OUT AND TAGGING EQUIPMENT TO PREVENT INADVERTENT RE-ENERGIZING.
    C. WHERE EQUIPMENT IS BEING REMOVED, BUT NOT REPLACED, REMOVE THE CONDUCTORS FEEDING THE EQUIPMENT BACK TO THE POINT WHERE THEY RECEIVE POWER. REMOVE ACCESSIBLE CONDUITS. ABANDON IN PLACE INACCESSIBLE CONDUITS. AFTER REMOVAL OF EQUIPMENT, REPAIR ANY OPENING LEFT TO MATCH SURROUNDING WALLS, CEILINGS, OR FLOORS TO THE ARCHITECT/ENGINEER'S SATISFACTION.
    D. COORDINATE WITH THE OTHER TRADES

NOTE:
1. SHORT CIRCUIT CALCULATION COMPLETED ON 05/23/2024. BASED ON A 500 KVA PAD MOUNTED TRANSFORMER @ 2.8% IMPEDANCE, AND 4.8 X/R, WITH 55 FEET OF SERVICE ENTRANCE CONDUCTOR. VERIFY ACTUAL PARAMETERS WITH UTILITY COMPANY PRIOR TO INSTALLATION
2. SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED WITH MAX. AVAILABLE FAULT CURRENT, INCLUDING THE DATE THE FAULT CURRENT CALCULATIONS WERE PERFORMED, PER NEC 110.24

AVAILABLE FAULT CURRENT

AT SERVICE DISCONNECT SWITCH: 43729 AMPS
AT AUTOMATIC TRANSFER SWITCH: 43216 AMPS
AT PANEL MDP-LR: 42046 AMPS
AT PANEL 1A: 37056 AMPS
AT PANEL 1B: 9660 AMPS
AT PANEL 1C: 9990 AMPS
AT PANEL HVAC1: 9452 AMPS
AT PANEL 2A: 14427 AMPS
AT PANEL 2B: 20617 AMPS
AT PANEL HVAC2: 13805 AMPS

SPD NOTE:
1. SURGE PROTECTION DEVICE (SPD) MUST BE MOUNTED TO KEEP LEADS AS SHORT AS POSSIBLE.
2. SPD's MUST BE INSTALLED ON A 30A, 3 POLE BREAKER IN PANELBOARD BEING PROTECTED. MAKE CONNECTIONS WITH 10 AWG CONDUCTORS AS PROVIDED BY SPD MANUFACTURER. IF SPD MANUFACTURER PROVIDES TERMINAL BLOCK ONLY (NO CONDUCTORS, OR CONDUCTORS OTHER THAN 10 AWG, THEN REFERENCE NEC TO DETERMINE BREAKER SIZE REQUIRED AND/OR REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR REQUIRED BREAKERS SIZE; NEC REQUIRED BREAKER SIZE IS BASED ON CONDUCTOR AWG. IF BREAKER REQUIRED IS OTHER THAN 30 A (10 AWG CONDUCTORS), PROVIDE NEC REQUIRED BREAKER AT NO ADDITIONAL COST TO OWNER



ELEVATOR SAFETY SWITCH 100A/3/1, W/100AF, 22KAIC, WITH AUXILIARY CONTACTS TIED TO THE ELEVATOR BATTERY POWER SYSTEM. BASED ON 20HP MOTOR WITH SOLID STATE STARTING, CONTRACTOR RESPONSIBLE FOR COORDINATING FUSE SIZE WITH MANUFACTURER. THE AUXILIARY CONTACTS ARE INTENDED TO CAUSE THE BATTERY SOURCE TO BE DISCONNECTED FROM ITS LOAD WHEN THE ELEVATOR DISCONNECT IS IN THE OPEN POSITION IN ACCORDANCE WITH NEC 620.91(C)

C3 BASE BID - NEW WORK POWER RISER DIAGRAM
NOT TO SCALE

SERVICE AND FEEDER CONDUCTOR SIZE NOTE

POWER RISER DIAGRAM SERVICE AND FEEDER CONDUCTOR SIZES ARE BASED ON 75°C COPPER CONDUCTORS IN EMT RACEWAYS ROUTED OVERHEAD DIRECTLY FROM SOURCE TO LOAD TO ACHIEVE NO MORE THAN TWO (2) PERCENT VOLTAGE DROP AT THE DEMAND LOAD SHOWN IN THE PANELBOARD SCHEDULES. IF THE CONTRACTOR ELECTS TO INSTALL CIRCUITS IN A DIFFERENT MANNER, CALCULATE VOLTAGE DROP USING ACTUAL CONDUCTOR LENGTHS AND SUBMIT CALCULATIONS TO THE ARCHITECT/ENGINEER DOCUMENTING TWO (2) PERCENT OR LESS VOLTAGE DROP UNDER THE LOAD CONDITIONS INDICATED.

KEYED NOTES

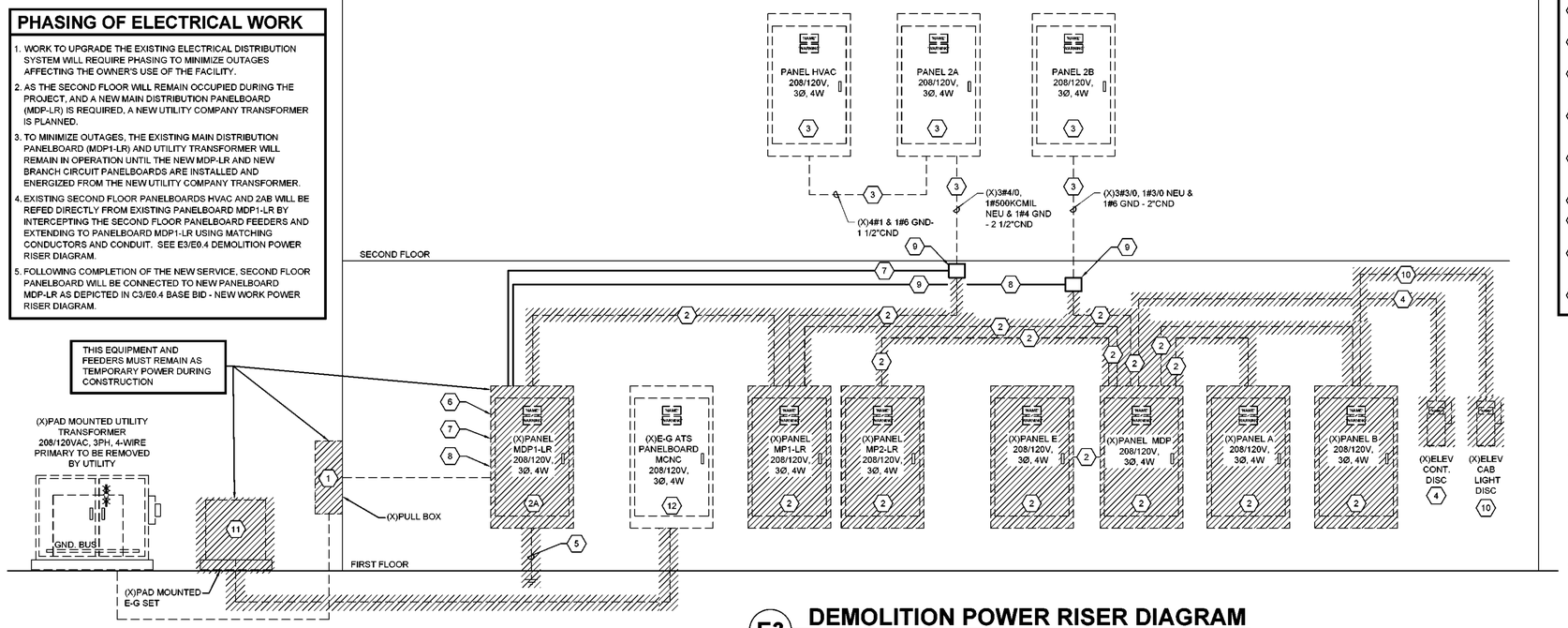
1. EXTEND EXISTING PANEL 2A FEEDER TO NEW SOURCE PANEL MDP-LR WITH CONDUCTORS AND RACEWAY OF MATCHING AMPACITY AND TYPE.
2. EXTEND EXISTING PANEL 2B FEEDER TO NEW SOURCE PANEL MDP-LR WITH CONDUCTORS AND RACEWAY OF MATCHING AMPACITY AND TYPE.
3. NOT USED.
4. EXISTING GALVANIZED, SCREW COVER SPLICE BOX, INSTALLED DURING DEMOLITION PHASE.
5. (2) 4" CONDUITS, EACH WITH 4#500 KCMIL & (1) #2/0 GND .
6. (2) 4" CONDUITS, EACH WITH 4#500 KCMIL & (1) #2/0 GND.
7. 3#1 & 1#8 GND - 1 1/4" CND
8. 4#1/0 & 1#6 GND - 2" CND
9. 4#3 & 1#8 GND - 1 1/4" CND
10. CONCRETE ENCASED DUCTBANK FOR ADD ALTERNATE #2 ENGINE-GENERATOR, ENGINE-GENERATOR ACCESSORIES LOADCENTER AND CONTROL CONDUCTORS. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
11. 2#12 & 1#12 GND - 1/2" CND.

DEMOLITION KEYED NOTES

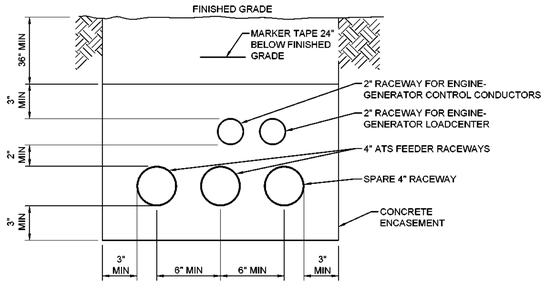
1. REMOVE EXISTING PULLBOX AND SERVICE CONDUCTORS FROM UTILITY COMPANY PAD MOUNTED TRANSFORMER. DO NOT REMOVE UNTIL NEW SERVICE EQUIPMENT IS ENERGIZED.
2. REMOVE EXISTING PANELBOARD AND ASSOCIATED FEEDER RACEWAY AND CONDUCTORS.
2A. REMOVE EXISTING PANELBOARD AND ASSOCIATED FEEDER RACEWAY AND CONDUCT AFTER INSTALLATION OF NEW PANEL MDP-LR. DO NOT REMOVED UNTIL NEW SERVICE EQUIPMENT IS ENERGIZED.
3. EXISTING PANELBOARD AND ASSOCIATED FEEDER RACEWAY AND CONDUCTORS TO REMAIN FOR EXTENSION TO NEW SOURCE PANELBOARD.
4. REMOVE EXISTING ELEVATOR CONTROLLER SAFETY SWITCH AND ASSOCIATED FEEDER RACEWAY AND CONDUCTORS TO SOURCE PANELBOARD.
5. REMOVE EXISTING GROUND CONNECTION AND ASSOCIATED CONDUCTOR AFTER INSTALLATION OF NEW PANEL MDP-LR.
6. PROVIDE AND INSTALL TWO NEW 3/60 CIRCUIT BREAKER IN EXISTING SPACE IN EXISTING PANEL " MDP1-LR TO PROVIDE TEMPORARY FEEDER TO EXISTING PUMPS P-1A AND P-1B. MATCH EXISTING PUMP FEEDER AMPACITY.
7. PROVIDE AND INSTALL NEW 2/225 CIRCUIT BREAKER IN EXISTING SPACE IN EXISTING PANEL "MDP1-LR" TO PROVIDE TEMPORARY FEEDER TO EXISTING PANEL "2A". MATCH EXISTING PANEL FEEDER AMPACITY.
8. PROVIDE AND INSTALL NEW 3/100 CIRCUIT BREAKER IN EXISTING SPACE IN EXISTING PANEL "MDP1-LR" TO PROVIDE TEMPORARY FEEDER TO EXISTING PANEL "2B". MATCH EXISTING PANEL FEED AMPACITY.
9. NEW GALVANIZED, SCREW COVER SPLICE BOX, SIZE AS REQUIRED.
10. REMOVE EXISTING ELEVATOR CAB LIGHTING SAFETY SWITCH AND ASSOCIATED BRANCH CIRCUIT RACEWAY TO SOURCE PANELBOARD.
11. ONLY IF ADD ALTERNATE #3 IS ACCEPTED. REMOVE EXISTING PAD MOUNTED ENGINE-GENERATOR SET AND DELIVER TO OWNER. REMOVE EXISTING FEEDER RACEWAY AND CONDUCTORS TO EXISTING ENGINE-GENERATOR PANELBOARD MCNC.
12. EXISTING ENGINE-GENERATOR SWITCH MCNC TO REMAIN.

PHASING OF ELECTRICAL WORK

1. WORK TO UPGRADE THE EXISTING ELECTRICAL DISTRIBUTION SYSTEM WILL REQUIRE PHASING TO MINIMIZE OUTAGES AFFECTING THE OWNER'S USE OF THE FACILITY.
2. AS THE SECOND FLOOR WILL REMAIN OCCUPIED DURING THE PROJECT, AND A NEW MAIN DISTRIBUTION PANELBOARD (MDP-LR) IS REQUIRED, A NEW UTILITY COMPANY TRANSFORMER IS PLANNED.
3. TO MINIMIZE OUTAGES, THE EXISTING MAIN DISTRIBUTION PANELBOARD (MDP1-LR) AND UTILITY TRANSFORMER WILL REMAIN IN OPERATION UNTIL THE NEW MDP-LR AND NEW BRANCH CIRCUIT PANELBOARDS ARE INSTALLED AND ENERGIZED FROM THE NEW UTILITY COMPANY TRANSFORMER.
4. EXISTING SECOND FLOOR PANELBOARDS HVAC AND 2AB WILL BE REFED DIRECTLY FROM EXISTING PANELBOARD MDP1-LR BY INTERCEPTING THE SECOND FLOOR PANELBOARD FEEDERS AND EXTENDING TO PANELBOARD MDP1-LR USING MATCHING CONDUCTORS AND CONDUIT. SEE E3/E0.4 DEMOLITION POWER RISER DIAGRAM.
5. FOLLOWING COMPLETION OF THE NEW SERVICE, SECOND FLOOR PANELBOARD WILL BE CONNECTED TO NEW PANELBOARD MDP-LR AS DEPICTED IN C3/E0.4 BASE BID - NEW WORK POWER RISER DIAGRAM.



E3 DEMOLITION POWER RISER DIAGRAM
NOT TO SCALE



C5 ENGINE GENERATOR CONCRETE ENCASED DUCTBANK SECTION
NOT TO SCALE

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506

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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI 11/25/2024

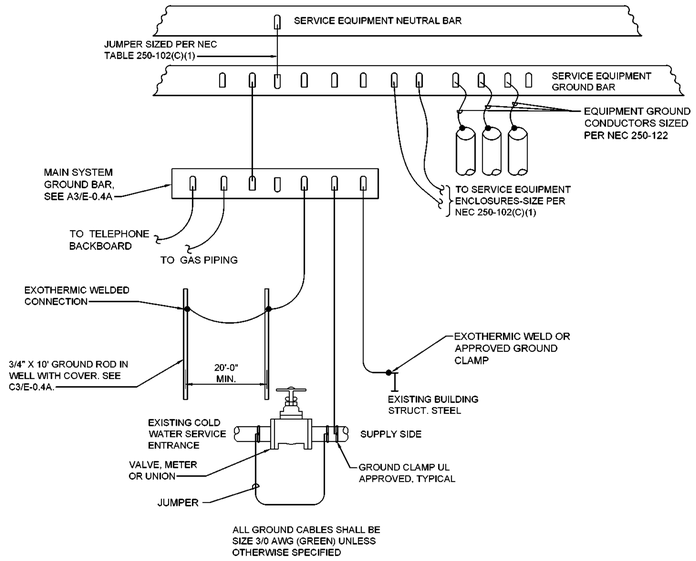
Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

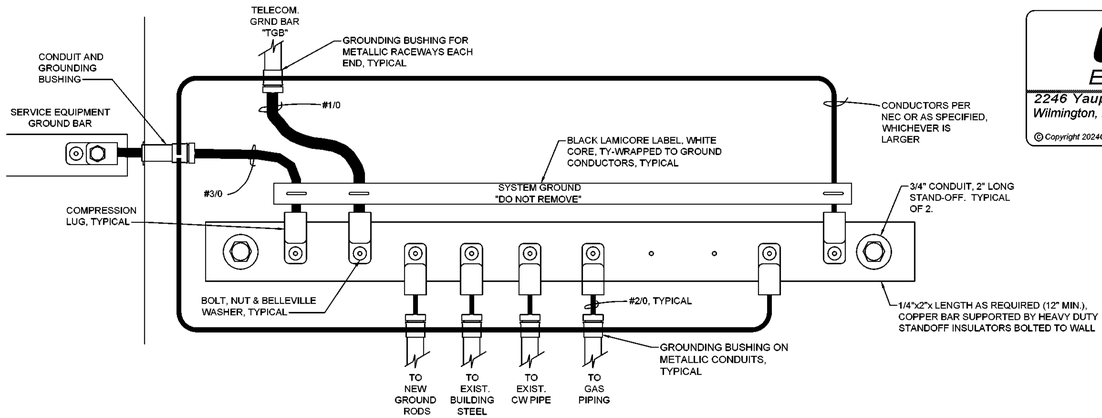
Project Manager	Drawn By WPJ
Date 11-25-2024	Reviewed By JPF
Project ID	

Sheet Title: ELECTRICAL POWER RISER DIAGRAM AND DETAILS

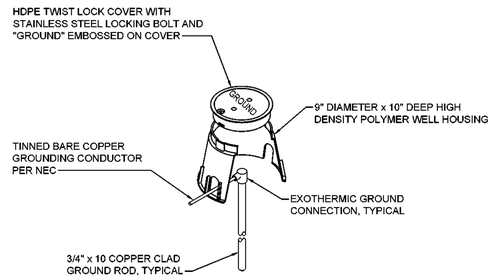
Sheet No.: E-0.4



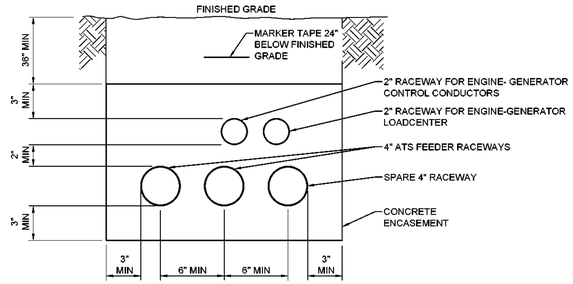
B2 SERVICE GROUNDING DETAIL
NOT TO SCALE



B3 MAIN SYSTEM GROUND "EGB" BAR DETAIL EGB
NOT TO SCALE



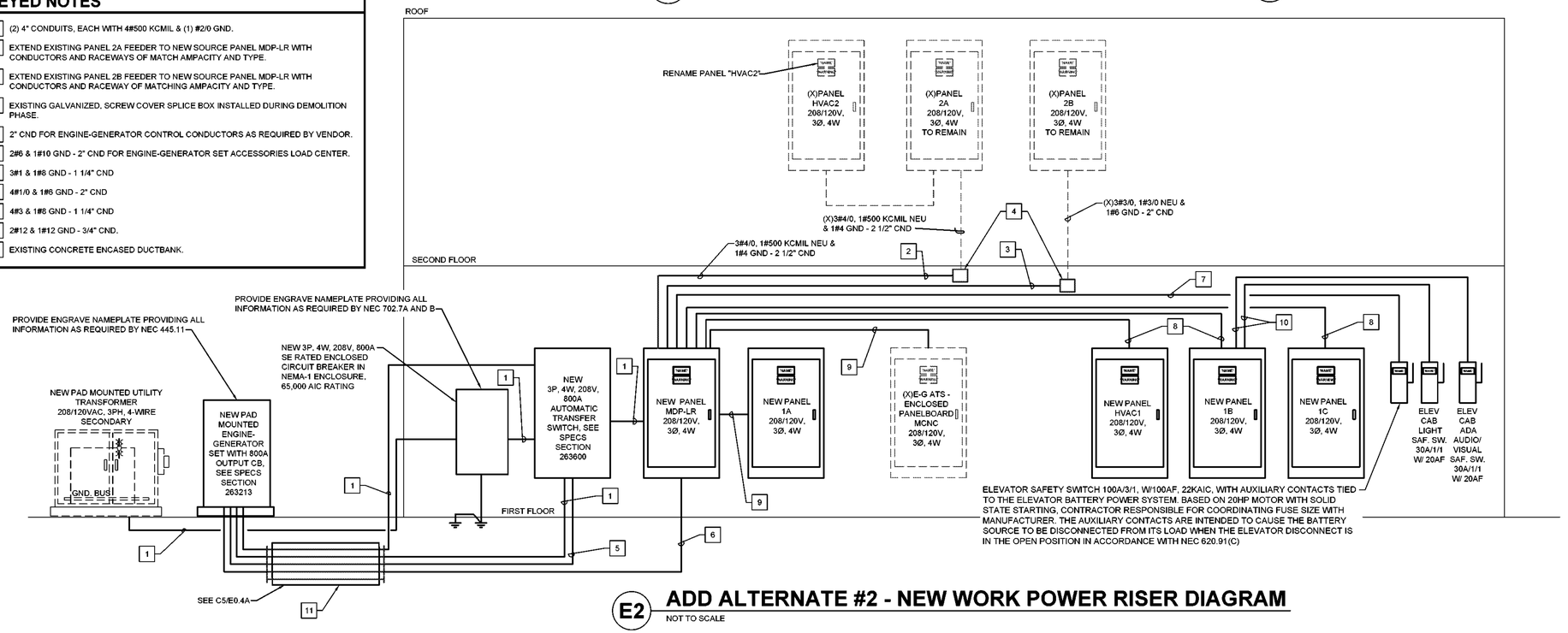
C3 GROUNDING INSPECTION WELL DETAIL
NOT TO SCALE



C5 EXISTING ENGINE GENERATOR CONCRETE ENCASED DUCTBANK SECTION
NOT TO SCALE

KEYED NOTES

1. (2) 4" CONDUITS, EACH WITH 4#500 KCMIL & (1) #2/0 GND.
2. EXTEND EXISTING PANEL 2A FEEDER TO NEW SOURCE PANEL MDP-LR WITH CONDUCTORS AND RACEWAYS OF MATCH AMPACITY AND TYPE.
3. EXTEND EXISTING PANEL 2B FEEDER TO NEW SOURCE PANEL MDP-LR WITH CONDUCTORS AND RACEWAY OF MATCHING AMPACITY AND TYPE.
4. EXISTING GALVANIZED, SCREW COVER SPLICE BOX INSTALLED DURING DEMOLITION PHASE.
5. 2" CND FOR ENGINE-GENERATOR CONTROL CONDUCTORS AS REQUIRED BY VENDOR.
6. 2#6 & 1#10 GND - 2" CND FOR ENGINE-GENERATOR SET ACCESSORIES LOAD CENTER.
7. 3#1 & 1#8 GND - 1 1/4" CND
8. 4#1/0 & 1#8 GND - 2" CND
9. 4#3 & 1#8 GND - 1 1/4" CND
10. 2#12 & 1#12 GND - 3/4" CND.
11. EXISTING CONCRETE ENCASED DUCTBANK.



E2 ADD ALTERNATE #2 - NEW WORK POWER RISER DIAGRAM
NOT TO SCALE

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI 11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By WPJ
Date 11-25-2024	Reviewed By JPF
Project ID	

Sheet Title: ELECTRICAL ALTERNATE BID #2 POWER RISER DIAGRAM AND DETAILS

Sheet No.

E-0.4A

Panel MDP-LR

TYPE:	208	120	VOLTS, 3	PHASE, 4	WIRE	PROVIDE	XX	EQUIPMENT GROUND BUS
BOLT-ON	MOUNT:	SURFACE				IF	XX	100 % NEUTRAL BUS
	FEED:	TOP				CHECKED		ULSE LABEL
	NEMA -	1	ENCLOSURE					ISOLATED GROUND BAR

LOAD SERVED	LOAD VA	CKT BKR TRIP/POLES	CKT #	PHASE LOAD VA A	B	C	CKT #	CKT BKR TRIP/POLES	LOAD VA	LOAD SERVED
SPD		30/3	1	1,970			2	25/3	1,970	CCC01
|		|	3		1,970		4	|	1,970	|
|		|	5			1,970	6	|	1,970	|
SPARE		70/3	7				8	70/3		SPARE
|		|	9				10	|		|
|		|	11				12	|		|
E-G SET ATS-ENCLOSED PANELBOARD MCNC	9,706	100/3	13	9,706			14			SPACE
|	9,706	|	15		14,698		16	60/2	4,992	ADD ALT. #3 E-G SET LOADCENTER
|	9,706	|	17			14,698	18	|	4,992	(NOTE 5)
PUMP P1-B	2,006	30/3	19	4,011			20	30/3	2,006	PUMP P1-A
|	2,006	|	21		4,011		22	|	2,006	|
|	2,006	|	23			4,011	24	|	2,006	|
PANEL 2B		100/3	25	22,170			26	100/3	22,170	ELEVATOR (NOTE 4)
|		|	27		22,170		28	|	22,170	|
|		|	29			22,170	30	|	22,170	|
EDH01	13,330	150/3	31	21,182			32	110/3	7,852	DOAS1
|	13,330	|	33		21,182		34	|	7,852	|
|	13,330	|	35			21,182	36	|	7,852	|
SPACE		|	37	6,240			38	150/3	6,240	PANEL HVAC1
|		|	39		6,406		40	|	6,406	|
|		|	41			8,653	42	|	8,653	|
PANEL 1C	10,752	150/3	43	19,180			44	150/3	8,428	PANEL 1B
|	11,296	|	45		18,818		46	|	7,522	|
|	12,652	|	47			18,551	48	|	5,899	|
PANEL 2A		225/3	49	2,405			50	100/3	2,405	PANEL 1A
|		|	51		2,390		52	|	2,390	|
|		|	53			3,611	54	|	3,611	|
SPACE		|	55				56	|		SPACE
|		|	57				58	|		|
|		|	59				60	|		|
SPACE		|	61				62	|		SPACE
|		|	63				64	|		|
|		|	65				66	|		|
NOTES (AS APPLICABLE):				86,864	91,846	94,846	TTL PHASE VA		1,000	A. BUS (COPPER, UNO)
1. COORDINATE CIRCUIT BREAKER TRIP WITH EQUIPMENT.				724	764	790	TTL PHASE AMPS		1,000	A. MAIN LUGS AND/OR FEEDER RATING
2. SEE ESTIMATED LOAD SUMMARY FOR SERVICE SIZING CALCULATIONS.				32%	34%	35%	PHASE BALANCE		65	KAIC MINIMUM RATING

DEMAND SUMMARY:	CONN. (VA)	DEMAND FACTOR	DEMAND (VA)
TOTAL RECEPTACLES (VA) = 37,600			
RECEPTACLES FIRST 10 KVA	10,000	1.00	10,000
RECEPTACLES > 10 KVA	27,600	0.50	13,800
LIGHTING	7,226	1.25	9,033
MISCELLANEOUS EQUIPMENT	52,082	1.00	52,082
OTHER EQUIPMENT (CONTINUOUS)		1.25	
LARGEST MOTOR	66,510	1.25	83,138
HVAC EQUIPMENT (FLA = MCA X 0.8)	109,937	1.00	109,937
KITCHEN EQUIPMENT		1.00	
TOTAL CONNECTED (VA)	273,355		
TOTAL DEMAND (VA)			277,989
TOTAL DEMAND (AMPERES)			771.6
	77.2%		

ADDITIONAL NOTES:
3. COORDINATE SPD CIRCUIT BREAKER TRIP WITH SPD PROVIDED.
4. PROVIDE SHUNT TRIP CIRCUIT BREAKER
5. INDICATE AS "SPARE" IF ADD ALTENRATE #2 IS NOT ACCEPTED

Panel 1A

TYPE:	208	120	VOLTS, 3	PHASE, 4	WIRE	PROVIDE	XX	EQUIPMENT GROUND BUS
BOLT-ON	MOUNT:	SURFACE				IF	XX	100 % NEUTRAL BUS
HINGED TRIM	FEED:	TOP				CHECKED		ULSE LABEL
	NEMA -	1	ENCLOSURE					ISOLATED GROUND BAR

LOAD SERVED	LOAD VA	CKT BKR TRIP/POLES	CKT #	PHASE LOAD VA A	B	C	CKT #	CKT BKR TRIP/POLES	LOAD VA	LOAD SERVED
LIGHTS 108, SERVICE YARD	464	20/1	1	824			2	20/1	360	RECEPTACLES SERVICE YARD
EMERGENCY PHONE	200	20/1	3		560		4	20/1	360	RECEPTACLE ELECTRICAL 109
ELEVATOR SHUNT TRIP SUPEREVISORY POWER	200	20/1	5			200	6	20/1		SPARE
SPARE		20/1	7				8	20/1		SPARE
SPARE		20/1	9				10	20/1		SPARE
SPARE		20/1	11				12	20/1		SPARE
SPARE		20/1	13				14	20/1		SPARE
SPARE		20/1	15				16	20/1		SPARE
SPARE		20/1	17				18	20/1		SPARE
SPARE		20/1	19				20	20/1		SPARE
SPARE		20/1	21				22	20/1		SPARE
SPARE		20/1	23			1,581	24	15/2	1,581	GCHP01
SPARE		20/1	25	1,581			26	|	1,581	|
DAH2/DCU2	915	25/2	27		1,830		28	25/2	915	DAH1/DCU1
|	915	|	29			1,830	30	|	915	|
NOTES (AS APPLICABLE):				2,405	2,390	3,611	TTL PHASE VA		100	A. BUS (COPPER, UNO)
1. COORDINATE CIRCUIT BREAKER TRIP WITH EQUIPMENT.				20	20	30	TTL PHASE AMPS		100	A. MAIN CIRCUIT BREAKER
				29%	28%	43%	PHASE BALANCE		42	KAIC MINIMUM RATING

DEMAND SUMMARY:	CONN. (VA)	DEMAND FACTOR	DEMAND (VA)
TOTAL RECEPTACLES (VA) = 720			
RECEPTACLES FIRST 10 KVA	720	1.00	720
RECEPTACLES > 10 KVA		0.50	
LIGHTING	464	1.25	580
MISCELLANEOUS EQUIPMENT	400	1.00	400
OTHER EQUIPMENT (CONTINUOUS)		1.25	
LARGEST MOTOR		1.25	
HVAC EQUIPMENT (FLA = MCA X 0.8)	6,822	1.00	6,822
KITCHEN EQUIPMENT		1.00	
TOTAL CONNECTED (VA)	8,406		
TOTAL DEMAND (VA)			8,522
TOTAL DEMAND (AMPERES)			23.7
PANEL DEMAND LOADING VS RATING	23.7%		

Panel 1B

TYPE:	208	120	VOLTS, 3	PHASE, 4	WIRE	PROVIDE	XX	EQUIPMENT GROUND BUS
BOLT-ON	MOUNT:	SURFACE				IF	XX	100 % NEUTRAL BUS
HINGED TRIM	FEED:	TOP				CHECKED		ULSE LABEL
	NEMA -	1	ENCLOSURE					ISOLATED GROUND BAR

LOAD SERVED	LOAD VA	CKT BKR TRIP/POLES	CKT #	PHASE LOAD VA A	B	C	CKT #	CKT BKR TRIP/POLES	LOAD VA	LOAD SERVED
EXTERIOR RECEPTACLES 140	720	20/1	1	2,340			2	20/1	1,620	RECEPTACLES 103,104
LIGHTS 125,129,130,131,132	1,647	20/1	3		3,087		4	20/1	1,440	RECEPTACLES 106,107
LIGHTS 133,134 135	787	20/1	5			1,767	6	20/1	1,000	VENDING MACHINE 110 (NOTE 3)
LIGHTS 100,135,136,137,138	1,886	20/1	7	2,886			8	20/1	1,000	VENDING MACHINE 110 (NOTE 3)
LIGHTS 112,113,114,114A,116-124	1,307	20/1	9		2,027		10	20/1	720	RECEPTACLES 100, 139
LIGHTS 103,104,105,106,107,108,110,111,115,139	624	20/1	11			1,824	12	20/1	1,200	AUTOMATIC DOOR 100
EXTERIOR LIGHT THRU PC	342	20/1	13	542			14	20/1	200	CHARGING STATION 135
FIRE ALARM CONTROL UNIT (NOTE 2)	200	20/1	15		560		16	20/1	360	RECEPTACLE 136
F01, F02, F03 140 (NOTE 4)	127	20/1	17			487	18	20/1	360	RECEPTACLE 137
ELEVATOR CAB LIGHTS (NOTE 5)	200	20/1	19	740			20	20/1	540	RECEPTACLE 138
ELEVATOR SHAFT LIGHTS (NOTE 5)	48	20/1	21		588		22	20/1	540	RECEPTACLES 135
ELEV CAB AUDIO/VISUAL/TEXT SCREEN (NOTE 5)	200	20/1	23			920	24	20/1	720	RECEPTACLES 135
EUH01	1,500	15/1	25	2,220			26	20/1	720	RECEPTACLES 135
SPARE		20/1	27		540		28	20/1	540	RECEPTACLES 135
SPARE		20/1	29			360	30	20/1	360	RECEPTACLES 135
SPARE		20/1	31	1,200			32	20/1	1,200	AUTOMATIC DOORS 134
SPARE		20/1	33		720		34	20/1	720	RECEPTACLES 135
SPARE		20/1	35			600	36	20/1	600	AUTOMATIC DOOR 115
SPARE		20/1	37				38	20/1		SPARE
SPARE		20/1	39				40	20/1		SPARE
SPARE		20/1	41				42	20/1		SPARE
NOTES (AS APPLICABLE):				9,928	7,522	5,958	TTL PHASE VA		225	A. BUS (COPPER, UNO)
1. COORDINATE CIRCUIT BREAKER TRIP WITH EQUIPMENT.				83	63	50	TTL PHASE AMPS		150	A. MAIN CIRCUIT BREAKER
2. PROVIDE CIRCUIT BREAKER LOCKING DEVICE.				42%	32%	25%	PHASE BALANCE		22	KAIC MINIMUM RATING

DEMAND SUMMARY:	CONN. (VA)	DEMAND FACTOR	DEMAND (VA)
TOTAL RECEPTACLES (VA) = 12,760			
RECEPTACLES FIRST 10 KVA	10,000	1.00	10,000
RECEPTACLES > 10 KVA	2,760	0.50	1,380
LIGHTING	6,821	1.25	8,526
MISCELLANEOUS EQUIPMENT	2,000	1.00	2,000
OTHER EQUIPMENT (CONTINUOUS)		1.25	
LARGEST MOTOR		1.25	
HVAC EQUIPMENT (FLA = MCA X 0.8)	1,827	1.00	1,827
KITCHEN EQUIPMENT		1.00	
TOTAL CONNECTED (VA)	23,408		
TOTAL DEMAND (VA)			23,733
TOTAL DEMAND (AMPERES)			65.9
PANEL DEMAND LOADING VS RATING	43.9%		

ADDITIONAL NOTES
3. GFCI CIRCUIT BREAKER
4. INDICATE AS SPARE IF ADD ALTERNATE #1 IS NOT ACCEPTED.
5. INDICATE AS SPARE IF ADD ALTERNATE #11 IS NOT ACCEPTED.

Panel HVAC1

TYPE:	208	120	VOLTS, 3	PHASE, 4	WIRE	PROVIDE	XX	EQUIPMENT GROUND BUS
BOLT-ON	MOUNT:	SURFACE				IF	XX	100 % NEUTRAL BUS
HINGED TRIM	FEED:	TOP				CHECKED		ULSE LABEL
	NEMA -	1	ENCLOSURE					ISOLATED GROUND BAR

LOAD SERVED	LOAD VA	CKT BKR TRIP/POLES	CKT #	PHASE LOAD VA A	B	C	CKT #	CKT BKR TRIP/POLES	LOAD VA	LOAD SERVED
SPARE		20/1	1				2	20/1		SPARE
SPARE		20/1	3				4	20/1		SPARE
SPARE		20/1	5				6	20/1		SPARE
SPARE		20/1	7				8	20/1		SPARE
SPARE		20/1	9				10	20/1		SPARE
SPARE		20/1	11				12	20/1		SPARE
SPARE		20/1	13				14	20/1		SPARE
GCHP26	666	15/2	15		666		16	20/1		SPARE
|	666	|	17			666	18	20/1		|
GCHP27	499	15/2	19	998			20	15/2	499	GCHP03
|	499	|	21		998		22	|	499	|
GCHP28	499	15/2	23			998	24	15/2	499	GCHP04
|	499	|	25	998			26	|	499	|
SPARE		15/2	27		499		28	15/2	499	GCHP06
|		|	29			499	30	|	499	|
SPARE		20/2	31	998			32	20/2	998	GCHP02
|		|	33		998		34	|	998	|
GCPH08	1,664	30/2	35			3,245	36	30/2	1,581	GCHP05
|	1,664	|	37	3,245			38	|	1,581	|
GCPH09	1,664	30/2	39		3,245		40	30/2	1,581	GCHP07
|	1,664	|	41			3,245	42	|	1,581	|
NOTES (AS APPLICABLE):				6,240	6,406	8,653	TTL PHASE VA		225	A. BUS (COPPER, UNO)
1. COORDINATE CIRCUIT BREAKER TRIP WITH EQUIPMENT.				52	53	72	TTL PHASE AMPS		150	A. MAIN CIRCUIT BREAKER
				29%	30%	41%	PHASE BALANCE		22	KAIC MINIMUM RATING

DEMAND SUMMARY:	CONN. (VA)	DEMAND FACTOR	DEMAND (VA)
TOTAL RECEPTACLES (VA) =			
RECEPTACLES FIRST 10 KVA		1.00	
RECEPTACLES > 10 KVA		0.50	
LIGHTING		1.25	
MISCELLANEOUS EQUIPMENT		1.00	
OTHER EQUIPMENT (CONTINUOUS)		1.25	
LARGEST MOTOR		1.25	
HVAC EQUIPMENT (FLA = MCA X 0.8)	21,299	1.00	21,299
KITCHEN EQUIPMENT		1.00	
TOTAL CONNECTED (VA)	21,299		
TOTAL DEMAND (VA)			21,299
TOTAL DEMAND (AMPERES)			59.1
PANEL DEMAND LOADING VS RATING	39.4%		

Panel 1C

TYPE:	208	120	VOLTS, 3	PHASE, 4	WIRE	PROVIDE	XX	EQUIPMENT GROUND BUS
BOLT-ON	MOUNT:	SURFACE				IF	XX	100 % NEUTRAL BUS
HINGED TRIM	FEED:	TOP				CHECKED		ULSE LABEL
	NEMA -	1	ENCLOSURE					ISOLATED GROUND BAR

LOAD SERVED	LOAD VA	CKT BKR TRIP/POLES	CKT #	PHASE LOAD VA A	B	C	CKT #	CKT BKR TRIP/POLES	LOAD VA	LOAD SERVED
RECEPTACLES 132	720	20/1	1	900			2	20/1	180	PRINTER 112
RECEPTACLES 132	720	20/1	3		900		4	20/1	180	LAPTOP CHARGER 112
RECEPTACLES 132	720	20/1	5			1,080	6	20/1	360	RECEPTACLES 112
RECEPTACLES 132	720	20/1	7	1,920			8	20/1	1,200	AUTOMATIC DOORS 113
RECEPTACLE 122	360	20/1	9		1,800		10	20/1	1,440	RECEPTACLES 116,117
RECEPTACLE 122	360	20/1	11			1,080	12	20/1	720	RECEPTACLES 118
RECEPTACLE 122	360	20/1	13	540			14	20/1	180	RECEPTACLE 114
RECEPTACLE 122	360	20/1	15		2,160		16	20/1	1,800	COFFEE MAKER 114
ELEVATOR PIT RECEPTACLE (NOTE 4)	180	20/1	17			1,980	18	20/1	1,800	MICROWAVE 114
ELEVATOR PUMP PUMP (NOTE 4)	696	20/1	19	1,896			20	20/1	1,200	REFRIGRATOR 114
ELEVATOR OIL MINDER SYSTEM (NOTE 4)	200	20/1	21		1,400		22	20/1	1,200	AUTOMATIC DOORS 119,120
SPARE		20/1	23			1,440	24	20/1	1,440	RECEPTACLES 119,120
SPARE		20/1	25	1,260			26	20/1	1,260	RECEPTACLES 121,123,131,132
SPARE		20/1	27		1,000		28	20/1	1,000	EWC 132 (NOTE 3)
SPARE		20/1	29			540	30	20/1	540	RECEPTACLES 124,125
SPARE		20/1	31	1,200			32	20/1	1,200	AUTOMATIC DOORS 125
SPARE		20/1	33		1,000		34	20/1	1,000	COPIER 132
RECEPTACLE 122	2,496	30/2	35			3,496	36	20/1	1,000	COPIER 132
|	2,496	|	37	3,036			38	20/1	540	RECEPTACLES 132
RECEPTACLE 122	2,496	30/2	39		3,036		40	20/1	540	RECEPTACLES 130
|	2,496	|	41			3,036	42	20/1	540	RECEPTACLES 129
NOTES (AS APPLICABLE):				10,752	11,296	12,852	TTL PHASE VA		225	A. BUS (COPPER, UNO)
1. COORDINATE CIRCUIT BREAKER TRIP WITH EQUIPMENT.				90	94	105	TTL PHASE AMPS		150	A. MAIN CIRCUIT BREAKER
				31%	33%	36%	PHASE BALANCE		22	KAIC MINIMUM RATING

DEMAND SUMMARY:	CONN. (VA)	DEMAND FACTOR	DEMAND (VA)
TOTAL RECEPTACLES (VA) = 24,120			
RECEPTACLES FIRST 10 KVA	10,000	1.00	10,000
RECEPTACLES > 10 KVA	14,120	0.50	7,060
LIGHTING		1.25	
MISCELLANEOUS EQUIPMENT	10,580	1.00	10,580
OTHER EQUIPMENT (CONTINUOUS)		1.25	
LARGEST MOTOR		1.25	
HVAC EQUIPMENT (FLA = MCA X 0.8)		1.00	
KITCHEN EQUIPMENT		1.00	
TOTAL CONNECTED (VA)	34,700		
TOTAL DEMAND (VA)			27,640
TOTAL DEMAND (AMPERES)			76.7
PANEL DEMAND LOADING VS RATING	51.1%		

ADDITIONAL NOTES
3. GFCI CIRCUIT BREAKER
4. INDICATE AS SPARE IF ADD ALTERNATE #3 IS NOT ACCEPTED.

LOAD SUMMARY

VOLTAGE	PHASE
208	3

EXISTING DEMAND LOAD	
(DETERMINED BY 1 YEAR POWER BILLS)	85,000 WATTS
ASSUMED POWER FACTOR OF .8	106,250 VA
EXISTING DEMAND AMPS	295 AMPS
x 125% (PER NEC 220.87)	369 AMPS
LOADS REMOVED THIS PROJECT	
LIGHTING	
LIGHTS (INTERIOR), PER NEC 220.12	19,493 VA
TOTAL LIGHTING REMOVED THIS PROJECT	54 AMPS
RECEPTACLES	
TOTAL RECEPTACLES REMOVED THIS PROJECT	17,820 VA
TOTAL RECEPTACLES REMOVED THIS PROJECT	49 AMPS
EQUIPMENT	
EST. HVAC EQUIPMENT REMOVED THIS PROJECT	75,600 VA
TOTAL HVAC EQUIPMENT REMOVED THIS PROJECT	210 AMPS
TOTAL LOAD REMOVED THIS PROJECT	313 AMPS
TOTAL LOAD REMOVED THIS PROJECT	112,913 VA
LOAD ADDED THIS PROJECT	
LARGEST MOTOR APPROX. AMPS	78 AMPS
LARGEST MOTOR APPROX. AMPS X .25	20 AMPS
HVAC	
HVAC EQUIP (per connected VA panel MDP-LR)	109,937 VA
SUB-TOTAL HVAC DEMAND	109,937 VA
SUB-TOTAL HVAC DEMAND	305 AMPS
EQUIPMENT	
MISC. EQUIP (per connected VA panel MDP-LR)	52,082 VA
SUB-TOTAL EQUIPMENT DEMAND	52,082 VA
SUB-TOTAL EQUIPMENT DEMAND	145 AMPS
ADD FOR LARGEST MOTOR	20 AMPS
TOTAL EQUIPMENT DEMAND	164 AMPS
LIGHTING	
LIGHTS (INTERIOR), PER NEC 220.12	19,493 VA
LIGHTS (EXTERIOR) x 1.25	428 VA
SIGN x 1.25	1,500 VA
TOTAL LIGHTING LOAD	21,420 VA
TOTAL DEMAND FOR LIGHTING	59 AMPS
RECEPTACLES (per connected VA panel MDP-LR)	37,600 VA
FIRST 10000VA	10,000 VA
REMAINDER @ 50%	13,800 VA
TOTAL DEMAND FOR RECEPTACLE/POWER PANELS	23,800 VA
TOTAL DEMAND FOR RECEPTACLE/POWER PANELS	66 AMPS
TOTAL LOAD ADDED THIS PROJECT	595 AMPS
TOTAL LOAD ADDED THIS PROJECT	214,282 VA
TOTAL DEMAND BUILDING AMPS	650 AMPS
TOTAL DEMAND BUILDING VA	234,182 VA

NOTE: ARRANGE PANELBOARD BRANCH CIRCUIT BREAKERS AS SHOWN ON THE ABOVE SCHEDULES. AGREEMENT OF CIRCUIT BREAKER (POLE) NUMBERS WITH THE PANEL SCHEDULES AND ELECTRICAL FLOOR PLANS IS REQUIRED IN ORDER TO AVOID CONFUSION DURING CONSTRUCTION, REDRAWING THE CIRCUITRY FOR RECORD DRAWING PURPOSES AND ACCURATE DOCUMENTATION OF THE AS-BUILT CONDITIONS.

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506

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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
11/25/2024

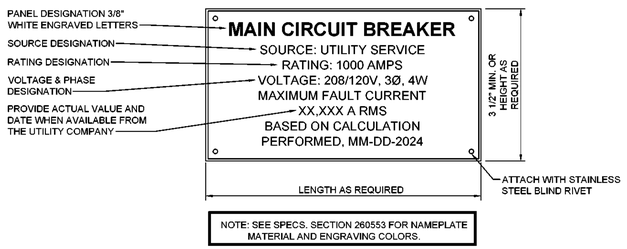
Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By WPJ
Date 11-25-2024	Reviewed By JPF
Project ID	

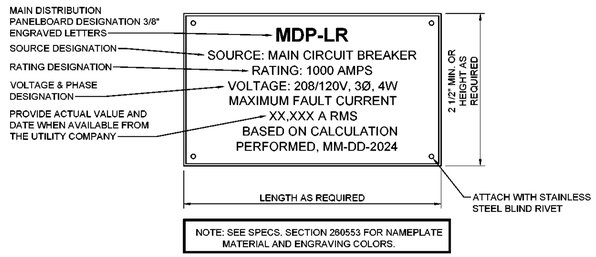
Sheet Title
ELECTRICAL LOAD SUMMARY AND PANEL SCHEDULES

Sheet No.
E-0.5



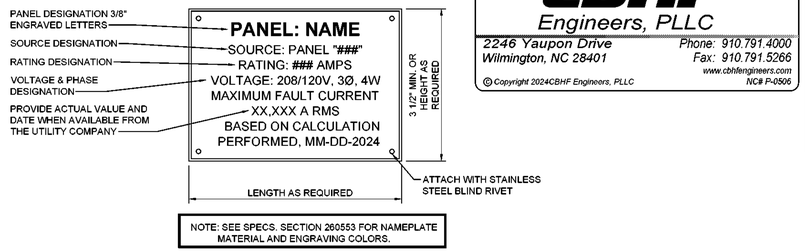
A1 MAIN CIRCUIT BREAKER NAMEPLATE DETAIL

NOT TO SCALE



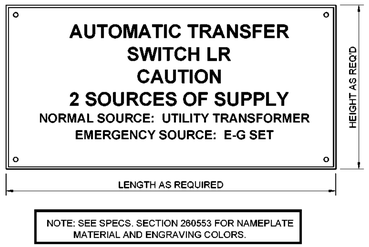
A2 MDP NAMEPLATE DETAIL

NOT TO SCALE



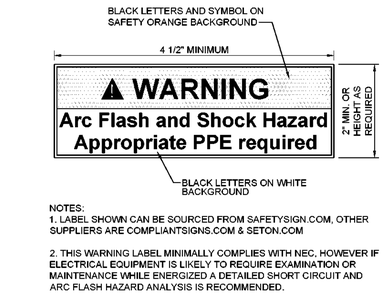
A4 TYPICAL PANELBOARD NAMEPLATE DETAIL

NOT TO SCALE



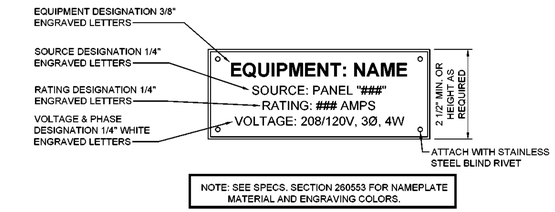
C1 AUTOMATIC TRANSFER SWITCH NAMEPLATE DETAIL

NOT TO SCALE



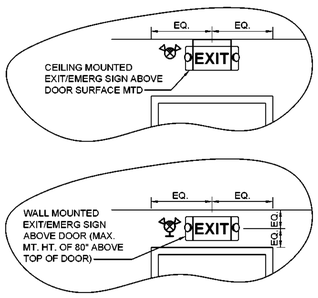
C2 ELECTRICAL EQUIPMENT WARNING LABEL DETAIL

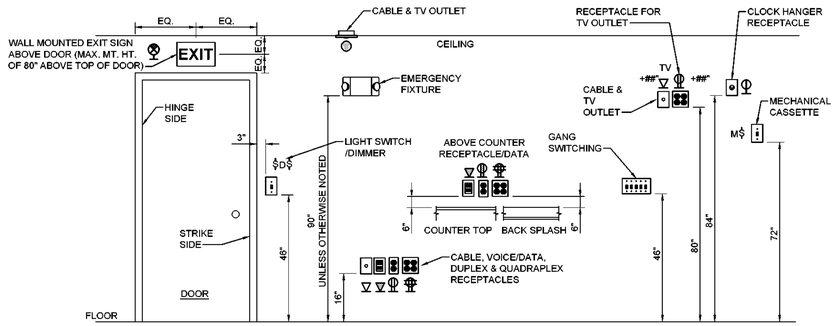
NOT TO SCALE



C4 TYPICAL EQUIPMENT NAMEPLATE DETAIL

NOT TO SCALE

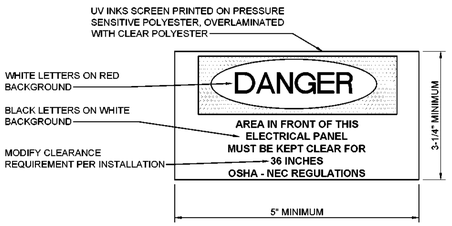




NOTE: DETAIL SHOWN FOR REFERENCE ONLY, NOT ALL DEVICES ARE INDICATED ON PLANS.

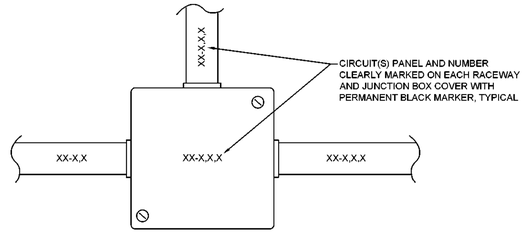
E1 ELECTRICAL DEVICES - MOUNTING HEIGHT DETAIL

NOT TO SCALE



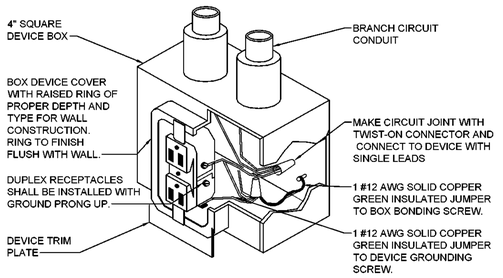
D3 NEC WORKING SPACE LABEL DETAIL

NOT TO SCALE



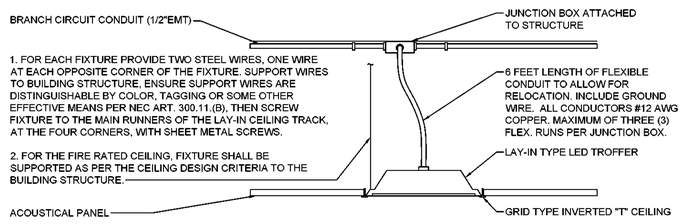
D5 CIRCUIT IDENTIFICATION DETAIL

NOT TO SCALE



E3 RECEPTACLE GROUNDING DETAIL

NOT TO SCALE



E5 LIGHTING FIXTURE MOUNTING DETAIL

NOT TO SCALE

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI 11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: WPJ
Date: 11-25-2024	Reviewed By: JPF
Project ID	

Sheet Title: ELECTRICAL DETAILS

Sheet No.: E-0.6

MINIMUM CONDUCTORS SIZE CHART

PROVIDE THE FOLLOWING MINIMUM SIZES FOR BRANCH CIRCUIT CONDUCTORS:

SINGLE PHASE CIRCUITS

CONDUCTOR SIZE (AWG)	BRANCH CIRCUIT BREAKER TRIP (AMPERES)	CIRCUIT VOLTAGE MAXIMUM ALLOWABLE CIRCUIT LENGTH (FEET)			
		120	208	240	277
#12	15	81	141	163	188
#10	15	135	234	270	312
#8	15	204	355	409	473
#12	20	61	106	122	141
#10	20	101	175	202	233
#8	20	153	266	307	354
#10	30	67	117	135	155
#8	30	102	177	204	236

THREE PHASE CIRCUITS

CONDUCTOR SIZE (AWG)	BRANCH CIRCUIT BREAKER TRIP (AMPERES)	CIRCUIT VOLTAGE MAXIMUM ALLOWABLE CIRCUIT LENGTH (FEET)			
			208	240	480
#12	15		163	188	377
#10	15		270	312	624
#12	20		122	141	283
#10	20		202	234	468
#10	30		135	156	312
#8	30		205	236	473
#8	40		153	177	354
#6	40		239	276	553
#8	50		123	142	283
#6	50		191	221	442
#6	60		159	184	368
#4	60		245	283	567

NOTES:

1. CONDUCTOR LENGTHS ARE BASED ON SINGLE & THREE PHASE, 90% POWER FACTOR LOADS USING 75°C COPPER CONDUCTORS IN EMT RACEWAYS TO ACHIEVE NO MORE THAN 3 PERCENT VOLTAGE DROP.
2. CALCULATIONS ASSUME LOADS OF 80% OF CIRCUIT BREAKER TRIP (12A, 16A & 24A, 32A, 40A & 48A, RESPECTIVELY) ARE CONCENTRATED AT THE END OF THE CIRCUITS.
3. IF LOAD CHARACTERISTICS DIFFER FROM ABOVE, CALCULATE USING KNOWN CHARACTERISTICS AND SUBMIT CALCULATIONS TO THE ARCHITECT/ENGINEER DOCUMENTING 3% OR LESS VOLTAGE DROP UNDER THE ACTUAL LOAD CONDITIONS.
4. WHEN A DEDICATED SINGLE LOAD LESS THAN NOTED ABOVE IS KNOWN, THE CONTRACTOR MAY UTILIZE SMALLER CONDUCTORS UPON SUBMISSION OF VOLTAGE DROP CALCULATIONS DOCUMENTING 3% OR LESS VOLTAGE DROP. THE MINIMUM LOAD SHALL BE ASSUMED TO BE 60% OF THE CB TRIP RATING REGARDLESS OF ACTUAL DEDICATED LOAD.
5. USE THE LARGER OF THE CONDUCTORS INDICATED ON THE DRAWINGS OR THIS TABLE.

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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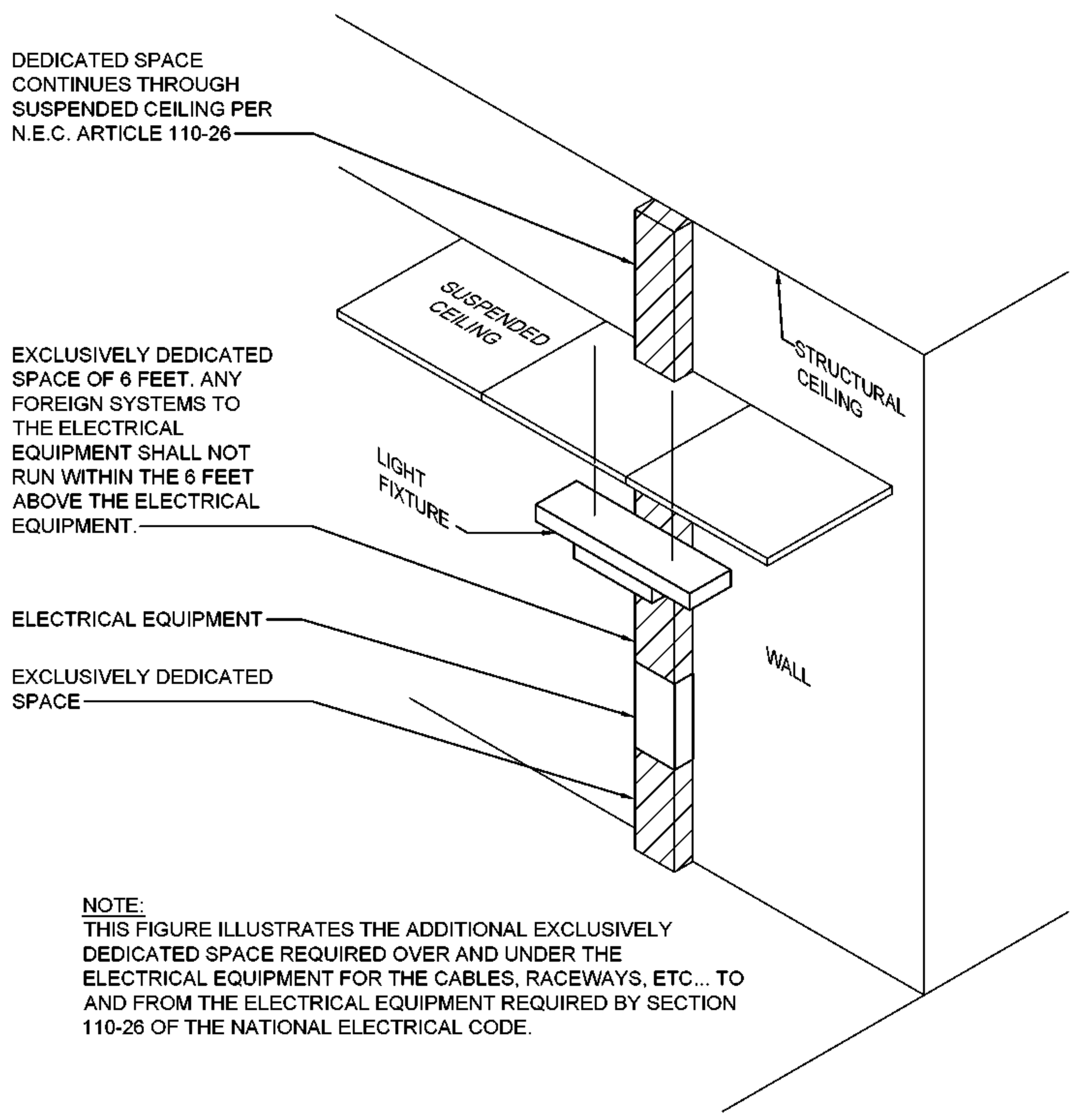


NOTE:
THIS FIGURE ILLUSTRATES THE ADDITIONAL EXCLUSIVELY DEDICATED SPACE REQUIRED OVER AND UNDER THE ELECTRICAL EQUIPMENT FOR THE CABLES, RACEWAYS, ETC... TO AND FROM THE ELECTRICAL EQUIPMENT REQUIRED BY SECTION 110-26 OF THE NATIONAL ELECTRICAL CODE.

C1 DEDICATED SPACE FOR ELECTRICAL

NOT TO SCALE

TABLE 110.26(A)(1) - WORKING SPACES

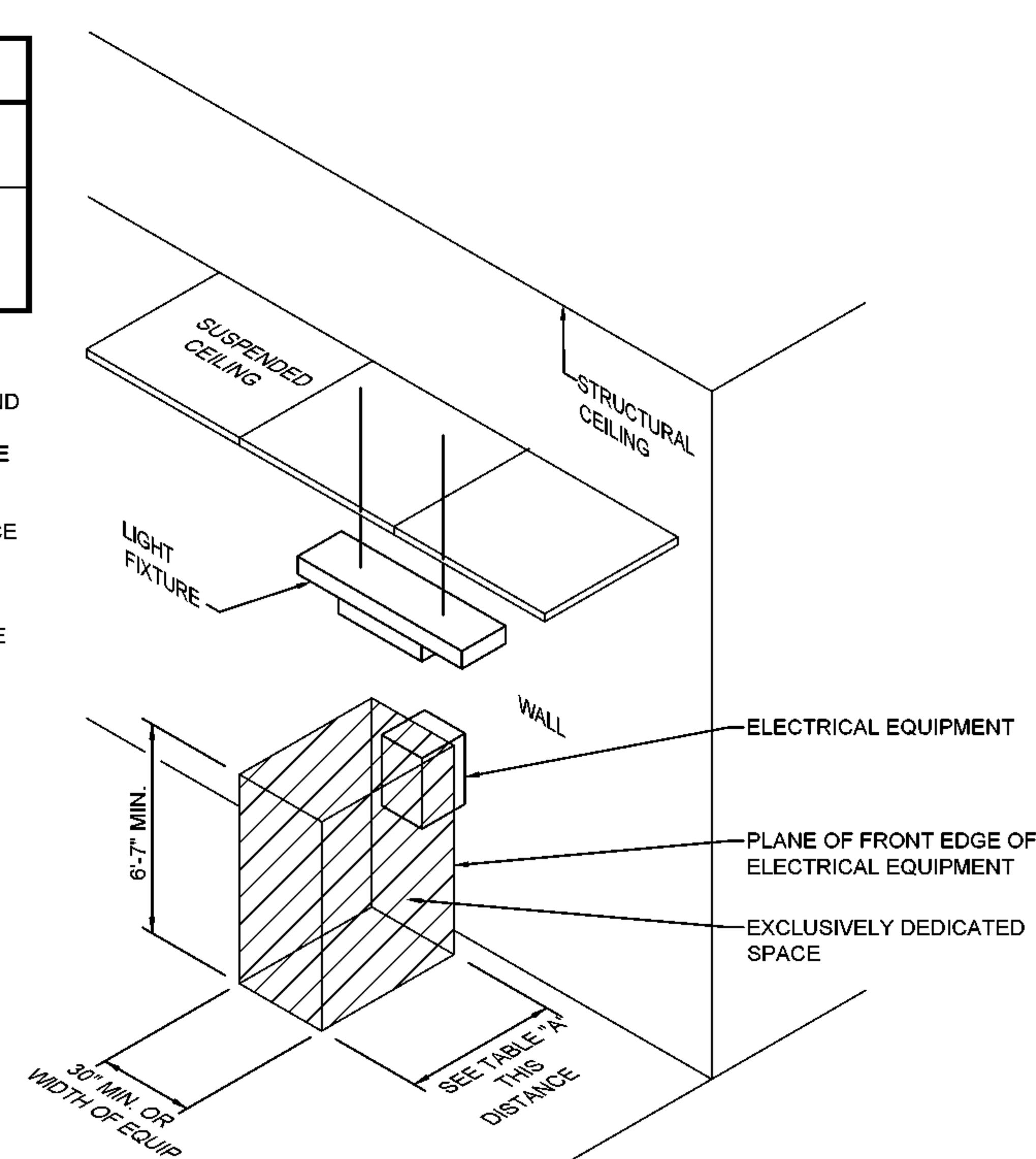
NOMINAL VOLTAGE TO GROUND	MINIMUM CLEAR DISTANCE (FEET) CONDITION 1	CONDITION 2	CONDITION 3
0 - 150	900mm (3 ft)	900mm (3 ft)	900mm (3 ft)
151 - 600	900mm (3 ft)	1.0m (3 ft 6 in.)	1.2 m (4 ft.)
601 - 1000	900mm (3 ft)	1.2 m (4 ft.)	1.5 m (5 ft.)

NOTE: WHERE THE "CONDITIONS" ARE AS FOLLOWS:

CONDITION 1 - EXPOSED LIVE PARTS ON ONE SIDE OF WORKING SPACE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE THAT ARE EFFECTIVELY GUARDED BY INSULATING MATERIALS.

CONDITION 2 - EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND GROUNDED PARTS ON THE OTHER SIDE OF WORKING SPACE. CONCRETE BRICK, OR TILE WALLS SHALL BE CONSIDERED GROUNDED.

CONDITION 3 - EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE



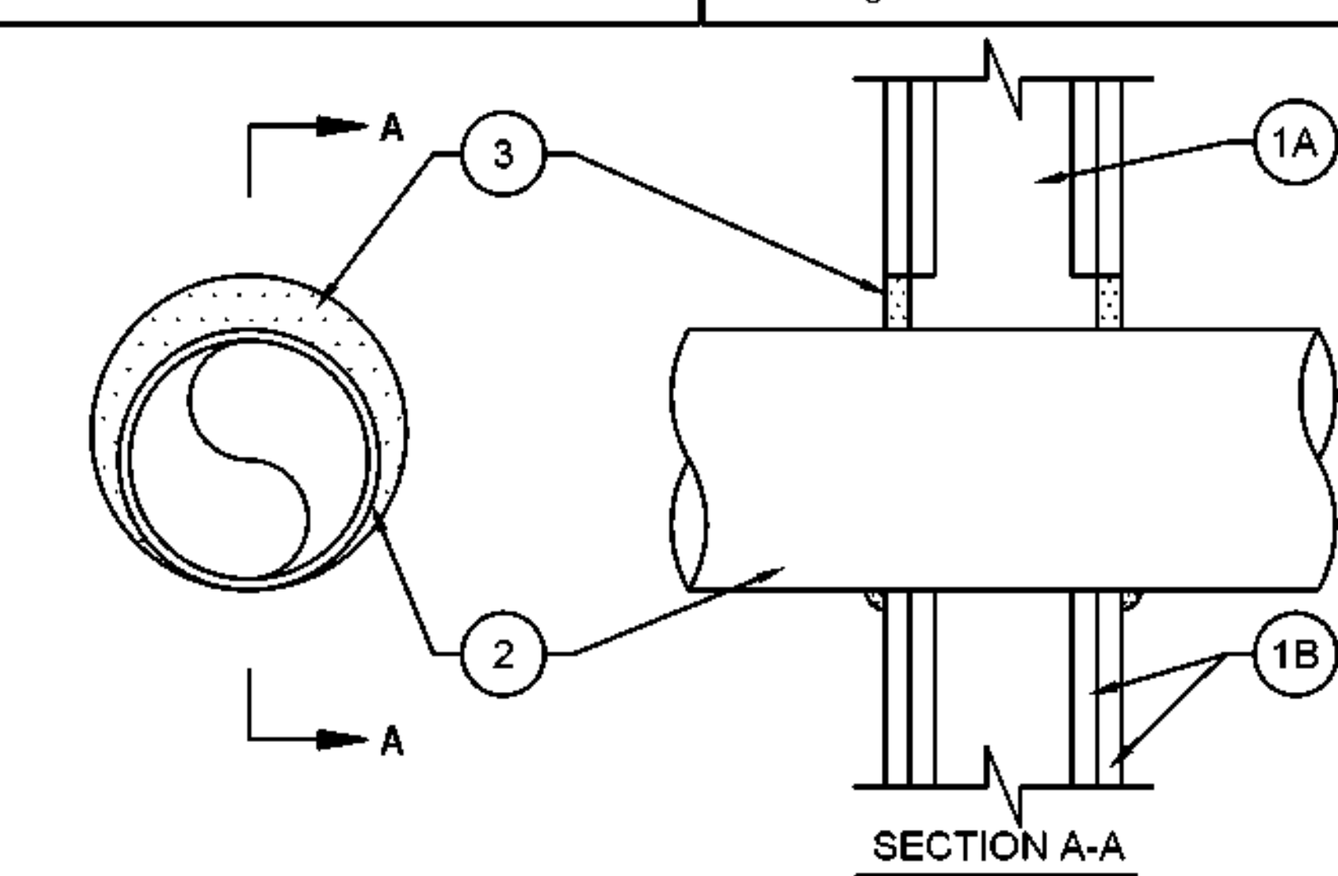
E1 WORKING SPACE FOR ELECTRICAL

NOT TO SCALE

System No. W-L-1054

January 21, 2020

ANSI / UL1479 (ASTM E814)	CAN / ULC S115
F Ratings - 1 and 2 Hr (See Items 1 & 3)	F Ratings - 1 and 2 Hr (See Items 1 & 3)
T Ratings - 0 Hr	FT Ratings - 0 Hr
L Ratings at Ambient - Less Than 1 CFM / sq ft	FH Ratings - 1and 2 HR (See Items 1 and 3)
L Ratings at 400 F - Less Than 1 CFM / sq ft	FTH Ratings - 0 Hr
	FTH Ratings - 0 Hr L Rating at Ambient - Less Than 1 CFM / sq ft
	L Ratings at 400 F - Less Than 1 CFM / sq ft



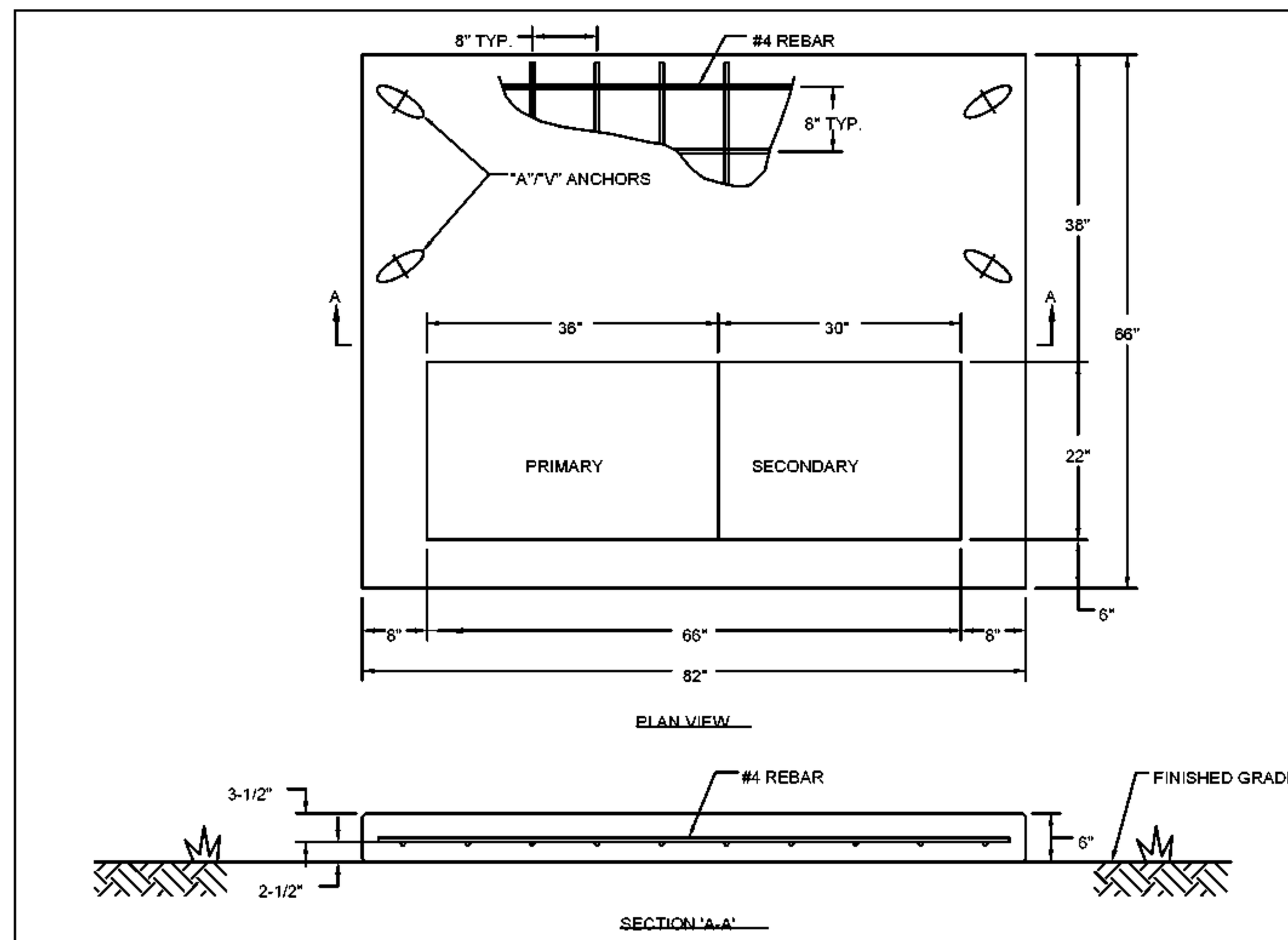
1. WALL ASSEMBLY — THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   - A. STUDS — WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC. STEEL STUDS TO BE MIN 2-1/2 IN. (64 MM) WIDE AND SPACED MAX 24 IN. (610 MM) OC. FOR M RATING, STEEL STUDS TO BE MIN 3-5/8 IN. (92 MM) WIDE. WHEN STEEL STUDS ARE USED AND THE DIAM OF OPENING EXCEEDS THE WIDTH OF STUD CAVITY, THE OPENING SHALL BE FRAMED ON ALL SIDES USING LENGTHS OF STEEL STUD INSTALLED BETWEEN THE VERTICAL STUDS AND SCREW-ATTACHED TO THE STEEL STUDS AT EACH END. THE FRAMED OPENING IN THE WALL SHALL BE 4 TO 6 IN. (102 TO 152 MM) WIDER AND 4 TO 6 IN. (102 TO 152 MM) HIGHER THAN THE DIAM OF THE PENETRATING ITEM SUCH THAT, WHEN THE PENETRATING ITEM IS INSTALLED IN THE OPENING, A 2 TO 3 IN. (51 TO 76 MM) CLEARANCE IS PRESENT BETWEEN THE PENETRATING ITEM AND THE FRAMING ON ALL FOUR SIDES.
   - B. GYPSUM BOARD* — 5/8 IN. (16 MM) THICK, 4 FT (122 CM) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 32-1/4 IN. (819 MM) FOR STEEL STUD WALLS. MAX DIAM OF OPENING IS 14-1/2 IN. (368 MM) FOR WOOD STUD WALLS. THE F AND FH RATINGS OF THE FIRESTOP SYSTEM ARE EQUAL TO THE FIRE RATING OF THE WALL ASSEMBLY. THE M RATING IS APPLICABLE ONLY TO 1 HR RATED WALLS.
2. THROUGH-PENETRANTS — ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE SHALL BE MIN 0 IN. TO MAX 2-1/4 IN. (57 MM). PIPE MAY BE INSTALLED WITH CONTINUOUS POINT CONTACT. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
   - A. STEEL PIPE — NOM 30 IN. (762 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   - B. IRON PIPE — NOM 30 IN. (762 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   - C. CONDUIT — NOM 4 IN. (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR 6 IN. (152 MM) . DIAM STEEL CONDUIT.
   - D. COPPER TUBING — NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   - E. COPPER PIPE — NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
3. FILL, VOID OR CAVITY MATERIAL* — SEALANT — MIN 5/8 IN. (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT OR CONTINUOUS CONTACT LOCATIONS BETWEEN PIPE AND WALL, A MIN 1/2 IN. (13 MM) DIAM BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE WALL INTERFACE ON BOTH SURFACES OF WALL.

Movement Direction	Penetrant Item	Nominal Penetrant Diameter	Annular Space	Movement	Sealant Depth	F-Rating	L Rating with Movement
Y	2A, 2C*	2 in.	Max 2-1/4 in.	5%	5/8 in.	1 hr	N/A
Z	2A, 2C*	2 in.	2-1/4 in.	0.25 in.	5/8 in.	1 hr	N/A

* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION

E3 1 AND 2 HOUR FIREWALL PENETRATION DETAIL

NOT TO SCALE



NOTES:

1. THIS STANDARD PRACTICE APPLIES TO THE COASTAL AREA ONLY OF DUKE ENERGY PROGRESS. COMPANY REPRESENTATIVE WILL IDENTIFY 'COASTAL AREA' AS DEFINED BY DUKE ENERGY.
2. CUSTOMER TO PROVIDE AND INSTALL TRANSFORMER PAD PER REFERENCED DOCUMENT IN APPENDIX C PAGE 6.
3. THE COMPANY RESERVES THE RIGHT TO REFUSE SERVICE TO NEW INSTALLATIONS THAT DO NOT MEET DUKE ENERGY REQUIREMENTS.
4. REFERENCE APPENDIX C, PAGE 7 TO DETERMINE IF CURBING AND ABSORPTION BED IS REQUIRED.
5. PROTECTIVE POLES ARE REQUIRED WHEN TRANSFORMERS ARE EXPOSED TO VEHICLE TRAFFIC. SEE FIGURE 61 FOR PROTECTIVE POLE DETAILS.
6. THERE SHALL BE MINIMUM CLEARANCES OF 10' IN FRONT OF THE TRANSFORMER AND 3' ON ALL OTHER SIDES OF THE TRANSFORMER. SEE FIGURES 52 AND 53 FOR MORE DETAILS ON CLEARANCES.
7. TRANSFORMER MUST BE LOCATED IN AN AREA THAT ALLOWS SAFE ACCESS BY DUKE ENERGY CONSTRUCTION AND MAINTENANCE EQUIPMENT IN WET OR DRY WEATHER.
8. CONSIDER FROST ACTION, DRAINAGE, AND LOCAL SOIL CONDITIONS WHEN PREPARING SITE FOR PAD. SOIL UNDERNEATH PADS SHALL BE LEVELED AND COMPACTED. SOIL SHALL ALSO BE FREE OF ROOTS AND OTHER ORGANIC MATERIALS TO PREVENT SETTLING AND EROSION. SOD MAY BE REQUIRED AROUND PAD TO PREVENT SOIL EROSION.
9. CUSTOMER SHALL INSTALL THE CONDUIT FOR THE PRIMARY CONDUCTORS AS CLOSE TO THE CENTER OF THE PRIMARY AREA AS PRACTICAL. THE SECONDARY CONDUITS SHALL BE INSTALLED TO THE RIGHT INSIDE OF THE SECONDARY AREA. SEE APPENDIX C, PAGE 6 FOR PAD INSTALLATION DETAILS AND SPECIFICATIONS.
10. ALL CONDUITS SHALL BE CUT SO THAT THE TOP OF THE CONDUIT IS FLUSH WITH THE PAD.
11. PRECAST PAD SUPPLIERS ARE REQUIRED TO PROVIDE THE PADS WITH RECESSED "A/V" ANCHORS, TO BE USED FOR LIFTING THE PADS.

REVISED	BY	CHK'D	APPR.
3			
2 2/28/20	EANES	FLETCHER	GRAHAM
1 6/25/19	MORGAN	VALENTIN	ADCOCK
0 3/4/19	EANES	EANES	ADCOCK

SMALL FLAT PADS FOR THREE-PHASE PAD-MOUNTED TRANSFORMERS

DUKE ENERGY.

DEC	DEM	DEP	DEF
		X	

APPENDIX C - PAGE 4

E5 DUKE ENERGY SMALL FLAT PAD DETAIL

NOT TO SCALE

BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI 11/25/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By WPJ
Date 11-25-2024	Reviewed By JPF
Project ID	

Sheet Title

ELECTRICAL DETAILS

Sheet No.

E-0.7

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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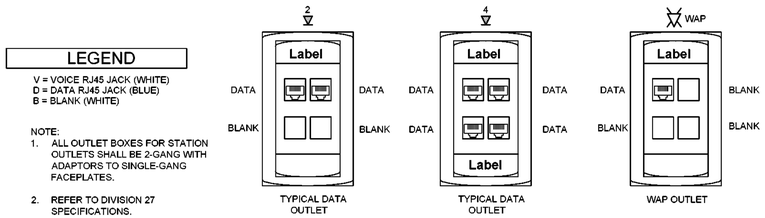
NC# P-0506

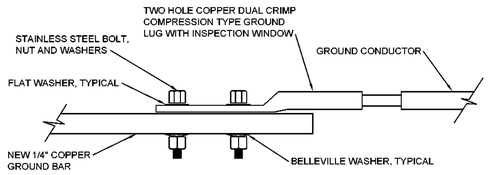
BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

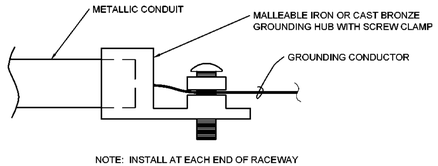




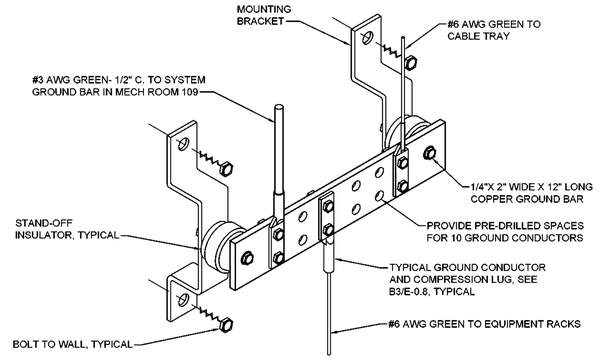
B1 TYPICAL DATA OUTLET DETAILS
NOT TO SCALE



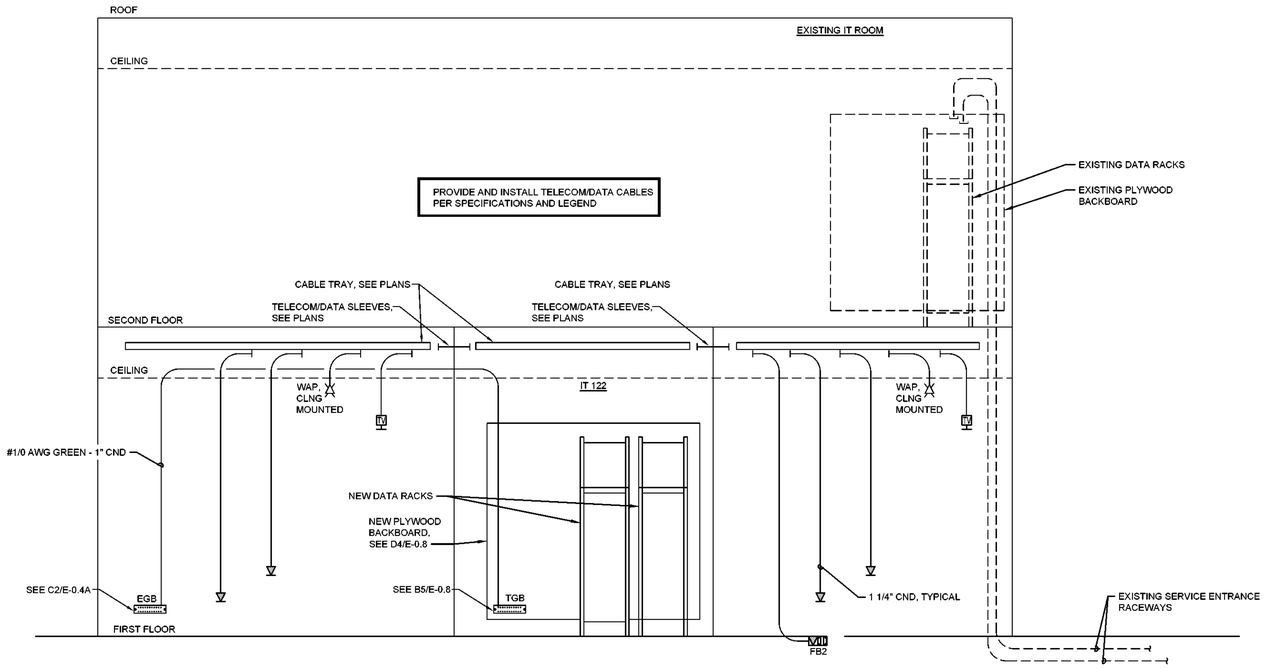
B3 TYPICAL GROUND BAR CONNECTION DETAIL
NOT TO SCALE



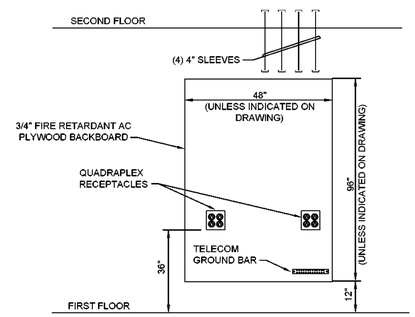
C3 CONDUIT HUB AND GROUNDING CONDUCTOR DETAIL
NOT TO SCALE



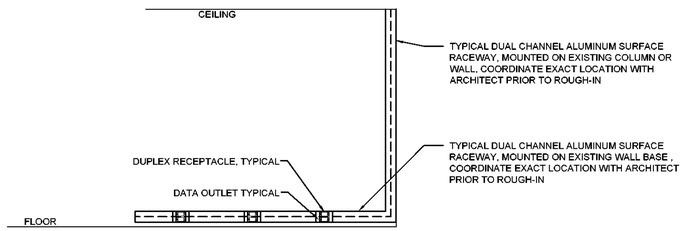
B5 TELECOMMUNICATIONS GROUND BAR DETAIL
NOT TO SCALE



E1 TELECOMMUNICATION RISER DIAGRAM
NOT TO SCALE



D4 TELECOMMUNICATION BACKBOARD DETAIL
NOT TO SCALE



E4 TYPICAL DUAL CHANNEL SURFACE RACEWAY DETAIL
NOT TO SCALE

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Learning Resource Center -
First Floor Renovation
444 Western Boulevard
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Project Manager	Drawn By WPJ
Date 11-25-2024	Reviewed By JPF
Project ID	

Sheet Title
ELECTRICAL DETAILS

Sheet No.
E-0.8

LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER/SERIES	NOM. SIZE	SOURCE / TEMP(oK) / DELIVERED LUMENS	VOLTS	WATTS	LENS	COLOR/ MATERIAL	MOUNTING HEIGHT	DRIVER/ DIMMING	REMARKS / MFGR. OPTIONS
L1	LAY-IN CENTER ELEMENT LED	ACUITY "STAKS" SERIES COLUMBIA "LCAT24" SERIES DAYBRITE "2FGX" SERIES	2'x4'	LED / 3500K / 6000 LUMENS	MVOLT	50	VOLUMETRIC ACRYLIC	WHITE/ ALUMINUM	RECESSED CEILING	LED DRIVER 0-10V, 10% DIMMING	80 CRI, COL, ZT
L1E	LAY-IN CENTER ELEMENT LED	ACUITY "STAKS" SERIES COLUMBIA "LCAT24" SERIES DAYBRITE "2FGX" SERIES	2'x4'	LED / 3500K / 6000 LUMENS	MVOLT	50	VOLUMETRIC ACRYLIC	WHITE/ ALUMINUM	RECESSED CEILING	LED DRIVER 0-10V, 10% DIMMING	80 CRI, COL, ZT E10WLCP BATTERY BACKUP
L2	LAY-IN CENTER ELEMENT LED	ACUITY "STAKS" SERIES COLUMBIA "LCAT24" SERIES DAYBRITE "2FGX" SERIES	2'x4'	LED / 3500K / 4000 LUMENS	MVOLT	33	VOLUMETRIC ACRYLIC	WHITE/ ALUMINUM	RECESSED CEILING	LED DRIVER 0-10V, 10% DIMMING	80 CRI, COL, ZT
L2E	LAY-IN CENTER ELEMENT LED	ACUITY "STAKS" SERIES COLUMBIA "LCAT24" SERIES DAYBRITE "2FGX" SERIES	2'x4'	LED / 3500K / 4000 LUMENS	MVOLT	33	VOLUMETRIC ACRYLIC	WHITE/ ALUMINUM	RECESSED CEILING	LED DRIVER 0-10V, 10% DIMMING	80 CRI, COL, ZT E10WLCP BATTERY BACKUP
L2A	LAY-IN CENTER ELEMENT LED	ACUITY "STAKS" SERIES COLUMBIA "LCAT24" SERIES DAYBRITE "2FGX" SERIES	2'x4'	LED / 3500K / 4000 LUMENS	MVOLT	33	VOLUMETRIC ACRYLIC	WHITE/ ALUMINUM	RECESSED CEILING	LED DRIVER 0-10V, 1% DIMMING	80 CRI, COL, ZT
L2AE	LAY-IN CENTER ELEMENT LED	ACUITY "STAKS" SERIES COLUMBIA "LCAT24" SERIES DAYBRITE "2FGX" SERIES	2'x4'	LED / 3500K / 4000 LUMENS	MVOLT	33	VOLUMETRIC ACRYLIC	WHITE/ ALUMINUM	RECESSED CEILING	LED DRIVER 0-10V, 1% DIMMING	80 CRI, COL, ZT E10WLCP BATTERY BACKUP
L3	LAY-IN LED	ACUITY "CPX LED" SERIES COLUMBIA "CBT24" SERIES HE WILLIAMS " BP24" SERIES	2'x4'	LED / 3500K / 5000 LUMENS	MVOLT	37	SATIN WHITE	WHITE/ ALUMINUM	RECESSED CEILING	LED DRIVER 0-10V, 10% DIMMING	
L4	RECESSED LINEAR LED	MARK LIGHTING "SLOT 2 LED" LITECONTROL "2L" SERIES FINELITE "HP2R" SERIES	2" x LENGTH AS INDICATED	LED / 3500K / 600 LUMENS PER FOOT	120	6 PER FOOT	FLUSH SATIN ACRYLIC	WHITE/ STEEL	RECESSED CEILING	LED DRIVER 0-10V, 10% DIMMING	LOP, FLP, FL, 80 CRI, MIN10, ZT
L5	SURFACE MOUNTED LED WRAPAROUND	ACUITY "BLWP 4" SERIES COLUMBIA "RLW4" SERIES HE WILLIAMS "39" SERIES	4'	LED / 3500K / 4800 LUMENS	MVOLT	37	VOLUMETRIC ACRYLIC	WHITE/ STEEL	SURFACE CEILING	LED DRIVER 0-10V, 10% DIMMING	ADSM, GZ10
L5E	SURFACE MOUNTED LED WRAPAROUND	ACUITY "BLWP" SERIES COLUMBIA "RLW4" SERIES HE WILLIAMS "39" SERIES	4'	LED / 3500K / 4800 LUMENS	MVOLT	37	VOLUMETRIC ACRYLIC	WHITE/ STEEL	SURFACE CEILING	LED DRIVER 0-10V, 10% DIMMING	ADSM, GZ10, E10WLCP BATTERY BACKUP
L6	SURFACE MOUNTED LED STRIP	ACUITY "CSS" SERIES COLUMBIA "CSL4" SERIES DAYBRITE "SDS" SERIES	4'	LED / 3500K / 5000 LUMENS	MVOLT	43		WHITE/ ALUMINUM	SURFACE CEILING	LED DRIVER	ALO3
L7	WALL MOUNTED VANITY LIGHT	ACUITY "FMVTSL" SERIES WAC LIGHTING "WS" SERIES TGS "VF3" SERIES	3'	LED / 3500K / 1300 LUMENS	MVOLT	26	WHITE ACRYLIC	BRUSHED NICKEL	WALL OVER MIRROR	LED DRIVER 0-10V, 10% DIMMING	
L8	RECESSED LED DOWNLIGHT	LITHONIA "LBR4 NCH" SERIES GREEN CREATIVE "NYX" SERIES LIGHTOLIER "Z4RDL" SERIES	4"	LEDs / 3500K / 1500 LUMENS	MVOLT	18		WHITE/ ALUMINUM	RECESSED CEILING	LED DRIVER UGZ 0-10V DIMMING	7
L8E	RECESSED LED DOWNLIGHT	LITHONIA "LBR4 NCH" SERIES GREEN CREATIVE "NYX" SERIES LIGHTOLIER "Z4RDL" SERIES	4"	LEDs / 3500K / 1500 LUMENS	MVOLT	18		WHITE/ ALUMINUM	RECESSED CEILING	LED DRIVER UGZ 0-10V DIMMING	7 E10WCP BATTERY BACKUP
L9	RECESSED LED DOWNLIGHT	LITHONIA "LBR4 NCH SERIES GREEN CREATIVE "NYX" SERIES LIGHTOLIER "Z4RDL" SERIES	4"	LEDs / 3500K / 2000 LUMENS	MVOLT	22		WHITE/ ALUMINUM	RECESSED CEILING	LED DRIVER UGZ 0-10V DIMMING	7 WET LOCATION LABEL
L9E	RECESSED LED DOWNLIGHT	LITHONIA "LBR4 NCH" SERIES GREEN CREATIVE "NYX" SERIES LIGHTOLIER "Z4RDL" SERIES	4"	LEDs / 3500K / 2000 LUMENS	MVOLT	22		WHITE/ ALUMINUM	RECESSED CEILING	LED DRIVER UGZ 0-10V DIMMING	7 E10WCP BATTERY BACKUP, WET LOCATION LABEL
L10	SURFACE MOUNTED LED TAPE LIGHT	ACOLYTE "CHAS1-F-WH-RB-SWS220" SERIES JESCO "DL" SERIES KELVIX "502" SERIES	LENGTH AS INDICATED	LED / 3500K / 339 LUMENS/FT	120/24	3 W/LF		WHITE	SURFACE UNDER CABINET	LED DRIVER 0-10V DIMMING	IP20 RATING, 11,13,14
L11	WALL MOUNTED SQUARE UPLIGHT CYLINDER	SEA GULL LIGHTING "8731701" SERIES LITON "WD1Q340" SERIES FC LIGHTING "FCCSQ400" SERIES	4" x 10"	LEDs / 3500K / 1500 LUMENS	MVOLT	18		WHITE/ ALUMINUM	WALL	LED DRIVER	FLOOD DISTRIBUTION, PROVIDE EQUIVALENT LED REPLACEMENT LAMP AS REQUIRED
L12	WALL MOUNTED LED AREA LIGHT	ACUITY "WPX1 LED" SERIES EXO "SG1" SERIES LEDALUX "MWP15" SERIES	8" x 11"	LEDs / 4000K / 2900 LUMENS	MVOLT	24		BRONZE/ ALUMINUM	WALL	LED DRIVER	WET LOCATION LABEL
L12E	WALL MOUNTED LED AREA LIGHT	ACUITY "WPX1 LED" SERIES EXO " SG1" SERIES LEDALUX "MWP15" SERIES	8" x 11"	LEDs / 4000K / 2900 LUMENS	MVOLT	24		BRONZE/ ALUMINUM	WALL	LED DRIVER	E10WCP BATTERY BACKUP, WET LOCATION LABEL
L13	WALL MOUNTED DOWN LIGHT CYLINDER	KIRLIN "LSC-09RDN" SERIES PRESCOLITE "LTC" SERIES PEACHTREE LIGHTING "C9BLR" SERIES	9" x 16"	LEDs / 4000K / 5000 LUMENS DOWN	MVOLT	54		DARK BRONZE/ ALUMINUM	WALL	LED DRIVER	62T TRIM, 37 FINISH, WFL BEAM, 89, WB, WET LOCATION LABEL
L14E	SURFACE MOUNTED LED TAPE LIGHT	ACOLYTE "CHAS1-C-WH-RB-SWS220" SERIES JESCO "DL" SERIES KELVIX "502" SERIES	LENGTH AS INDICATED	LED / 3500K / 535 LUMENS/FT	277/24	4.4 W/LF		WHITE	WALL IN LIGHTING COVE	LED DRIVER 0-10V DIMMING	IP20 RATING, 10,12,13,15,16
L15	SURFACE MOUNTED VAPORTIGHT LED	LITHONIA "FEM LED" SERIES COLUMBIA "LXEM" SERIES ILLUMINA" BS100LED" SERIES	4'	LED / 3500K / 4000 LUMENS	MVOLT	24	LPPFL	FIBERGLASS	WALL	LED DRIVER	WD DISTRIBUTION, GZ10
X1	RECESSED CEILING MOUNTED SINGLE FACE EXIT	LITHONIA "EDGR" SERIES EMERGI-LITE "OW" SERIES MULE LIGHTING " CEL1" SERIES		RED LED	MVOLT	5		WHITE	RECESSED CEILING		R, EL, SD
X2	RECESSED CEILING MOUNTED DOUBLE FACE EXIT	LITHONIA "EDGR" SERIES EMERGI-LITE "OW" SERIES MULE LIGHTING "CEL2" SERIES		RED LED	MVOLT	5		WHITE	RECESSED CEILING		RMR, EL, SD
E1	WALL MOUNTED EMERGENCY LIGHT	LITHONIA "ELM6L" EMERGI-LITE "12" SERIES MULE LIGHTING "TRS-HO" SERIES		LED 110 LUMENS	MVOLT	4		WHITE	WALL		LTP, SDRT

REMARKS:

1. BI-LEVEL SWITCHING
2. DAMP LOCATION
3. WET LOCATION
4. WIREGUARD
5. LED REQUIRED SURGE PROTECTION
6. FINAL COLOR SELECTION BY ARCHITECT
7. AR TRIM, TRW TRIM
8. NOT USED
9. NOT USED
10. TILTABLE STAND
11. 0-10V NON-DIMMING DRIVER, RATING AS REQUIRED BY LOAD
12. 0-10V DIMMING DRIVER(S), RATING AS REQUIRED BY LOAD
13. END FEED BARE WIRE CONNECTION
14. FACTORY ASSEMBLED
15. FIELD ASSEMBLED
16. PROVIDE 90 MINUTE BATTERY BACKUP FOR 100% FIXTURE OUTPUT

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. THE ELECTRICAL CONTRACTOR SHALL RECEIVE APPROVAL FOR ALL LIGHTING FIXTURES FROM THE ARCHITECT/OWNER PRIOR TO PURCHASE AND ROUGH-IN.
F. FIXTURES TO BE INSTALLED IN CEILINGS INDICATED ON THE ARCHITECTURAL PLANS AS HAVING INSULATION IN CONTACT WITH THE CEILING SURFACE SHALL BE MANUFACTURER RATED "IC". PROVIDE SHROUDS AS NECESSARY FOR FIXTURES THAT ARE NOT "IC" RATED.
G. ALL LIGHTING FIXTURES PENETRATING RATED FLOOR/CEILING ASSEMBLY SHALL BE PROVIDED WITH ACCESSORIES TO MAINTAIN ASSEMBLY FIRE RATING. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL RATINGS.
H. "NL" ADJACENT TO FIXTURE INDICATES AN UNSWITCHED 24 HOUR NIGHT LIGHT. THE FIXTURE SHALL BE CONNECTED TO THE UNSWITCHED INDICATED CIRCUIT.
I. LED MODULES SHALL BE REPLACEABLE.
J. ACRYLIC PRISMATIC LENSES SHALL BE 0.125" NOMINAL MINIMUM THICKNESS.
K. ALL EXIT AND EMERGENCY FIXTURES SHALL COMPLY WITH NCSBC STANDARDS AND HAVE AUTOMATIC TESTING DEVICES.
L. LED EMERGENCY BATTERY SHALL PROVIDE FULL RATED FIXTURE, 1400 MINIMUM LUMENS OUTPUT FOR 90 MINUTES MINIMUM.
M. SEE SPECIFICATIONS SECTIONS 265100 AND 265200 FOR ADDITIONAL REQUIREMENTS.
O. LIGHTING FIXTURES HAVE BEEN SELECTED AND SPECIFIED TO ACHIEVE REQUIRED/DESIRED ILLUMINATION LEVELS AND OTHER CHARACTERISTICS IN THEIR RESPECTIVE AREAS. SPECIFIED FIXTURES HAVE SPECIFIC CHARACTERISTICS WHICH MAY CREATE UNIQUE ILLUMINATION RESULTS ESSENTIAL TO THE PROJECT. LIGHTING FIXTURES PROVIDED SHALL MEET THE ASTHETICS, DETAILS, AND SPECIFICATIONS STATED ABOVE AND IN THE DIVISION 26 SPECIFICATIONS, AND MOUNTING HEIGHTS AND SPACINGS SHOWN ON THE DRAWINGS. ANY DEVIATIONS FROM THE SPECIFIED FIXTURES SHALL DEEM ALL PARTIES IN THE SUPPLY CHAIN AND CONTRACTOR RESPONSIBLE FOR PROVIDING DETAILED COMPARISONS OF THE SPECIFIED FIXTURE AND THE PROPOSED FIXTURE FOR ARCHITECT AND ENGINEER REVIEW IN DETERMINING EQUALITY. PROVIDE COMPLETE POINT BY POINT ILLUMINATION STUDIES FOR ALL SUBSTITUTIONS.
P. SUBSTITUTIONS MAY BE APPROVED BY THE ARCHITECT AND ENGINEER IF THEY ARE JUDGED TO BE EQUAL TO THE SPECIFIED FIXTURES. "EQUAL" MAY INCLUDE, AT THE SOLE DISCRETION OF THE ARCHITECT AND ENGINEER, LENS MATERIAL AND CHARACTERISTICS, COLORS, REFLECTORS, HOUSING MATERIAL AND CONFIGURATION, FINISHES, PHOTOMETRICS, EFFICIENCY, OPTIONS, FUNCTIONALITY, ETC.

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com

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2018 APPENDIX B BUILDING CODE SUMMARY
ELECTRICAL SUMMARY
ELECTRICAL SYSTEMS AND EQUIPMENT

METHOD OF COMPLIANCE:

ENERGY CODE: ☑ PRESCRIPTIVE ☐ PERFORMANCE
ASHRAE 90.1: ☐ PRESCRIPTIVE ☐ PERFORMANCE

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 = 13,872 WATTS
ADDITIONAL 10% = 12,485 WATTS
SPECIFIED = 6,127 WATTS

EXTERIOR ALLOWANCE:
(TRADEABLE SURFACES)

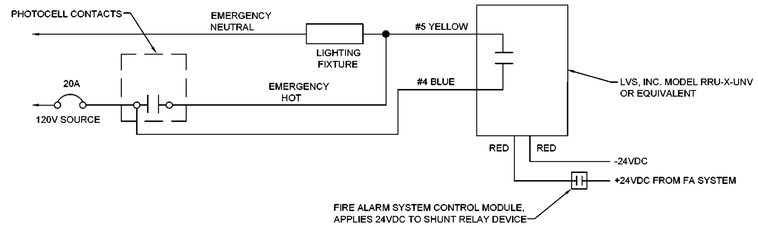
ALLOWED = 600 WATTS
SPECIFIED = 342 WATTS

(NON-TRADEABLE SURFACES:)

ALLOWED = N/A WATTS
SPECIFIED = N/A WATTS

ADDITIONAL PRESCRIPTIVE COMPLIANCE

☐ C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE
☐ C406.3 REDUCED LIGHTING POWER DENSITY
☑ C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
☐ C406.5 ON-SITE RENEWABLE ENERGY
☐ C406.6 DEDICATED OUTSIDE AIR SYSTEM
☐ C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING
☐



E4 EXTERIOR EGRESS LIGHTING SHUNT RELAY DETAIL
NOT TO SCALE

BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI 11/25/2024

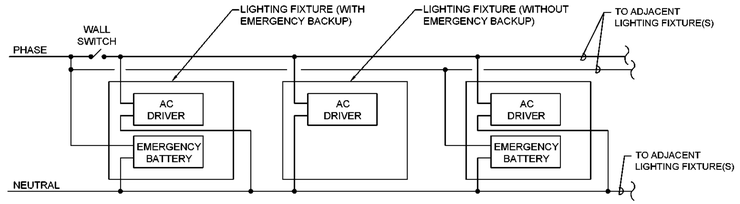
Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: WPJ
Date: 11-25-2024	Reviewed By: JPF
Project ID	

Sheet Title: ELECTRICAL SCHEDULES AND DETAILS

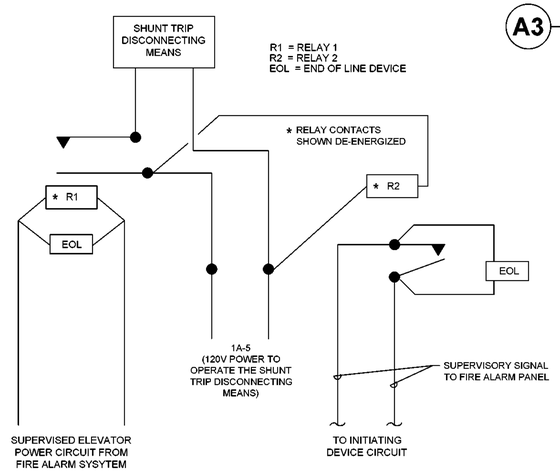
Sheet No.: E-0.9



NOTE: EQUIPMENT GROUND NOT SHOWN FOR CLARTIY

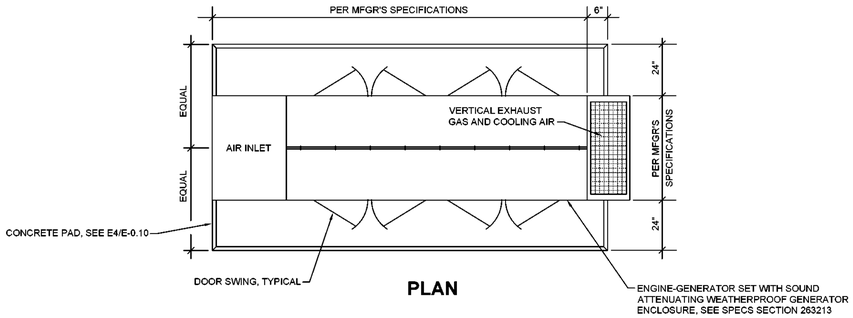
A3 EMERGENCY BATTERY WIRING DETAIL

NOT TO SCALE

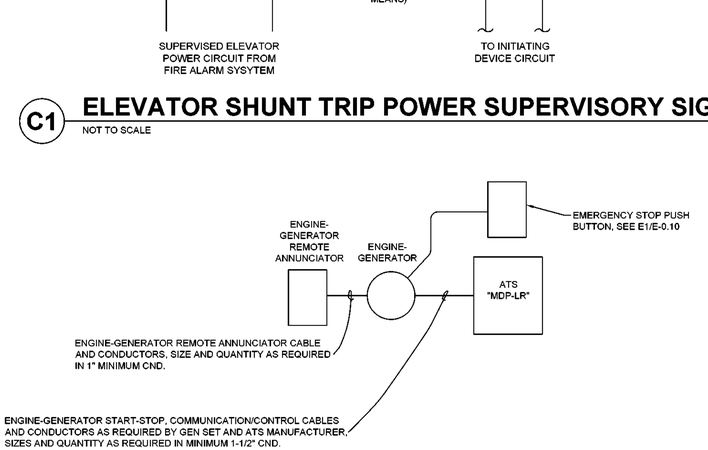


C1 ELEVATOR SHUNT TRIP POWER SUPERVISORY SIGNAL

NOT TO SCALE

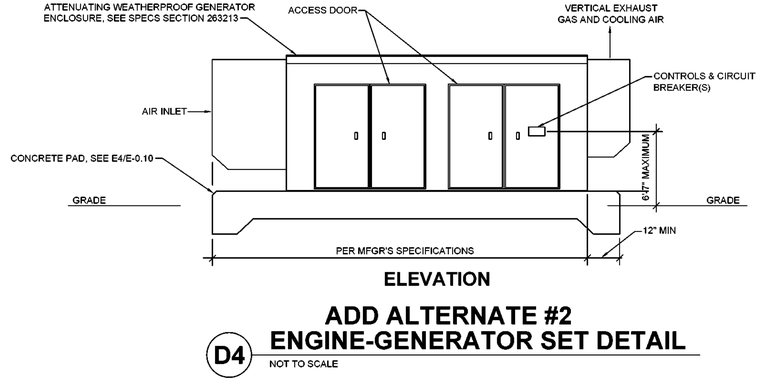


PLAN



D3 ADD ALTERNATE #2 GENERATOR CONTROL BLOCK DIAGRAM

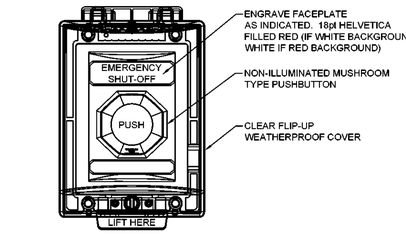
NOT TO SCALE



ELEVATION

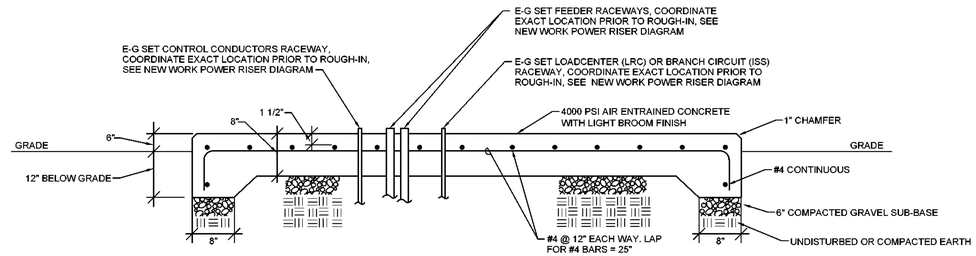
D4 ADD ALTERNATE #2 ENGINE-GENERATOR SET DETAIL

NOT TO SCALE



E1 ADD ALTERNATE #2 ENGINE-GENERATOR EMERGENCY SHUTOFF SWITCH

NOT TO SCALE



NOTE: FIELD VERIFY EXACT PAD SIZE REQUIREMENTS AND RACEWAY STUB-UP LOCATIONS WITH ENGINE-GENERATOR VENDOR PRIOR TO POURING OF PAD

E4 ADD ALTERNATE #2 ENGINE-GENERATOR SET CONCRETE PAD DETAIL

NOT TO SCALE

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI 11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By DETAILS
Date 11-25-2024	Reviewed By JPF
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Sheet Title

ELECTRICAL DETAILS

Sheet No.

E-0.10

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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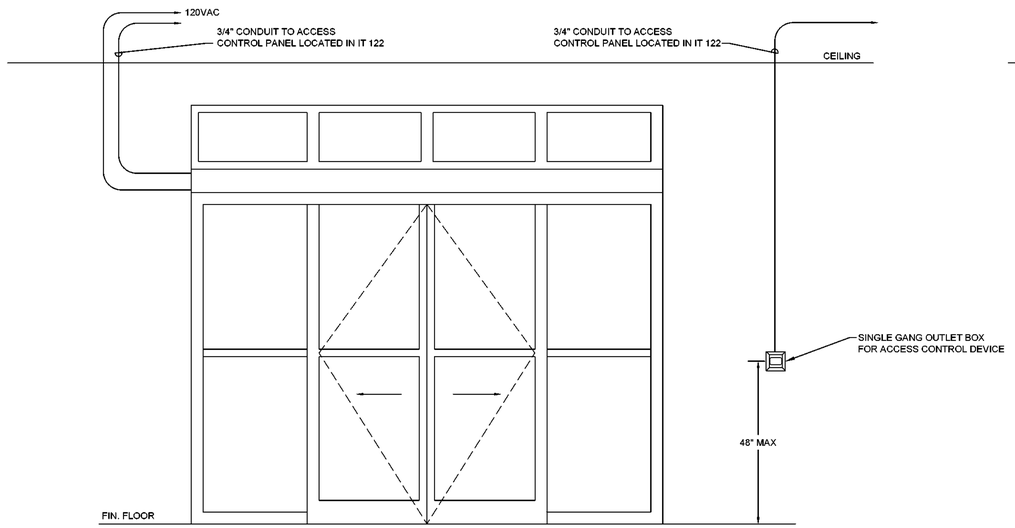
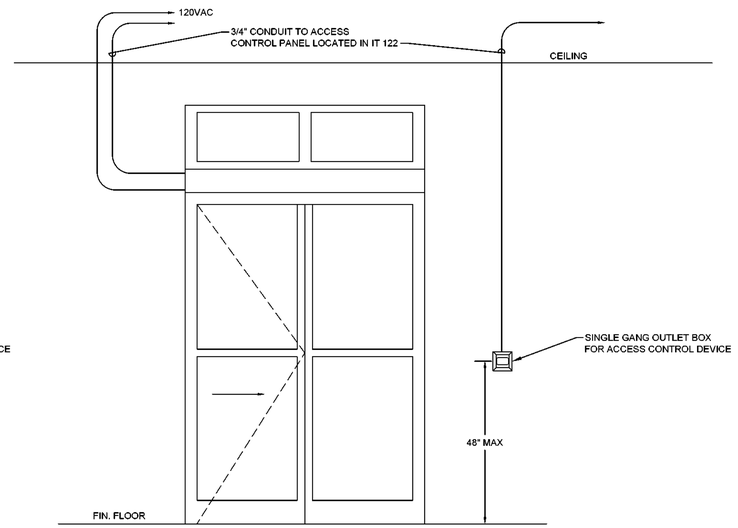


NOTES:

1. COORDINATE THE EXACT LOCATION OF ACCESS CONTROL DEVICE OUTLET BOX AND CONDUIT WITH THE ARCHITECT, ENGINEER, DOOR HARDWARE AND ACCESS CONTROL VENDORS PRIOR TO ROUGH-IN.

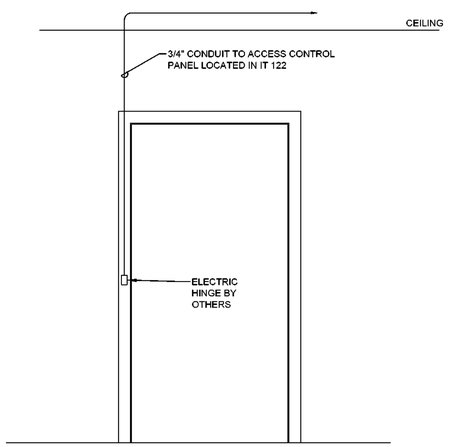
C2 DOORS 100A/100B, 125A/125B, 134A/134B ACCESS CONTROL DETAIL
NOT TO SCALE



NOTES:

1. COORDINATE THE EXACT LOCATION OF ACCESS CONTROL DEVICE OUTLET BOX AND CONDUIT WITH THE ARCHITECT, ENGINEER, DOOR HARDWARE AND ACCESS CONTROL VENDORS PRIOR TO ROUGH-IN.

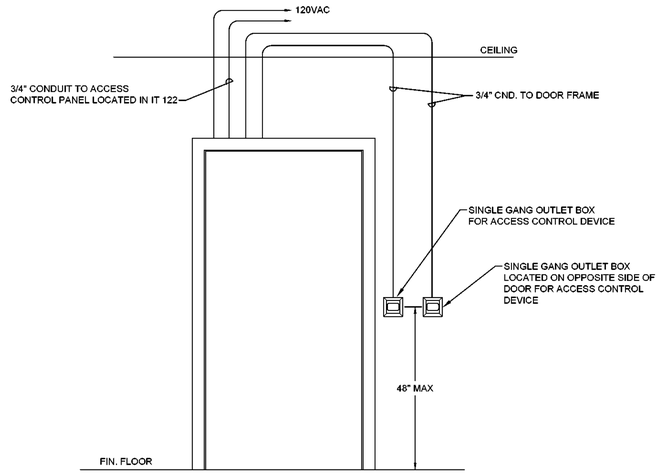
C4 DOORS 113A/113B ACCESS CONTROL DETAIL
NOT TO SCALE



NOTES:

1. COORDINATE THE EXACT LOCATION OF ACCESS CONTROL CONDUIT WITH THE ARCHITECT, ENGINEER, HARDWARE AND ACCESS CONTROL VENDORS PRIOR TO ROUGH-IN.

E2 DOOR 122 ACCESS CONTROL DETAIL
NOT TO SCALE



NOTES:

1. COORDINATE THE EXACT LOCATION OF ACCESS CONTROL DEVICE OUTLET BOX AND CONDUIT WITH THE ARCHITECT, ENGINEER, DOOR HARDWARE AND ACCESS CONTROL VENDORS PRIOR TO ROUGH-IN.

E3 DOORS 119 / 120 ACCESS CONTROL DETAIL
NOT TO SCALE

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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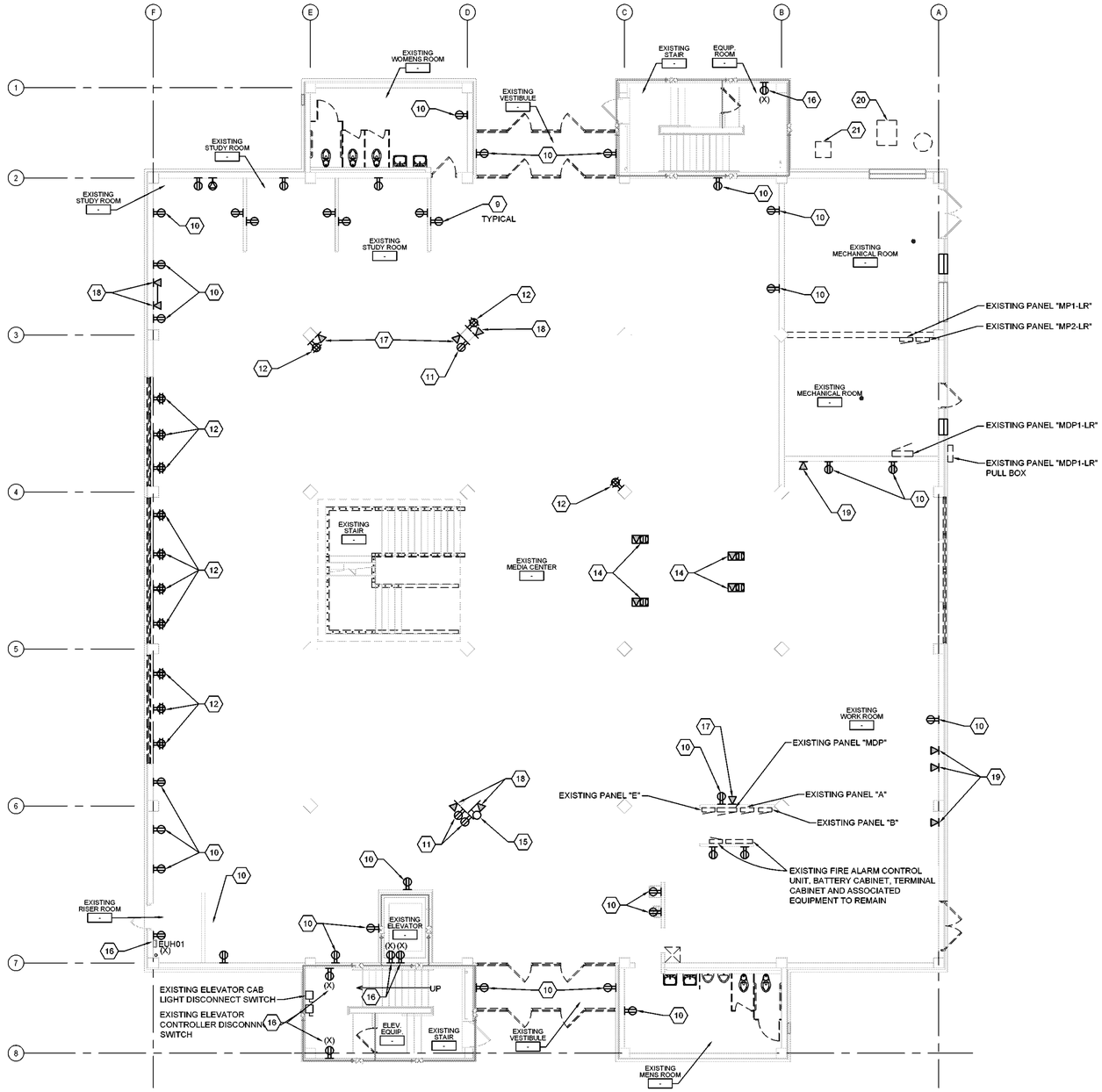

DEMOLITION KEYED NOTES

1. NOT USED.
2. NOT USED.
3. NOT USED.
4. NOT USED.
5. NOT USED.
6. NOT USED.
7. NOT USED.
8. NOT USED.
9. REMOVE EXISTING DUPLEX RECEPTACLE, OUTLET BOX, RACEWAY AND ASSOCIATED BRANCH CIRCUIT CONDUCTORS TO SOURCE.
10. REMOVE EXISTING DUPLEX RECEPTACLE AND ASSOCIATED BRANCH CIRCUIT CONDUCTORS TO SOURCE. EXISTING OUTLET BOX AND RACEWAY TO REMAIN FOR REUSE.
11. REMOVE EXISTING SURFACE MOUNTED RECEPTACLE, SURFACE MOUNTED RACEWAY, RACEWAY AND ASSOCIATED BRANCH CIRCUIT CONDUCTORS TO SOURCE.
12. REMOVE EXISTING SURFACE MOUNTED QUAD RECEPTACLE, SURFACE RACEWAY, RACEWAY AND ASSOCIATED BRANCH CIRCUIT CONDUCTORS TO SOURCE.
13. REMOVE EXISTING POWER POLE AND ASSOCIATED BRANCH CIRCUIT CONDUCTORS AND RACEWAY TO SOURCE.
14. REMOVE EXISTING FLOOR BOX AND ASSOCIATED BRANCH CIRCUIT CONDUCTORS TO SOURCE. ABANDON EXISTING RACEWAYS BELOW FLOOR. PATCH FLOOR TO MATCH SURROUNDING CONDITIONS.
15. REMOVE EXISTING SURFACE MOUNTED OUTLET BOX AND SURFACE RACEWAY.
16. EXISTING DUPLEX RECEPTACLE AND ASSOCIATED BRANCH CIRCUIT CONDUCTORS TO REMAIN.
17. REMOVE EXISTING TELECOM/DATA OUTLET, OUTLET BOX AND ASSOCIATED CABLES TO SOURCE.
18. REMOVE EXISTING SURFACE MOUNTED TELECOM/DATA OUTLET, SURFACE RACEWAY AND ASSOCIATED CABLES TO SOURCE.
19. REMOVE EXISTING TELECOM/DATA OUTLET AND CABLES TO SOURCE. EXISTING OUTLET BOX AND RACEWAY TO REMAIN.
20. REMOVE EXISTING ENGINE-GENERATOR SET AND ASSOCIATED TRANSFER SWITCH AND DELIVER TO OWNER. REMOVE EXISTING ASSOCIATED FEEDER CONDUCTORS AND RACEWAY.
21. EXISTING HVAC OUTDOOR UNIT TO REMAIN.

WALL LEGEND

	1 HOUR RATED WALL - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

E1 **FIRST FLOOR POWER PLAN - DEMOLITION**
1/8" = 1'-0"

PLAN NORTH

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By WPJ
Date 11-25-2024	Reviewed By JPF
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Sheet Title
ELECTRICAL DEMOLITION FIRST FLOOR PLAN - POWER

Sheet No.
ED1.1

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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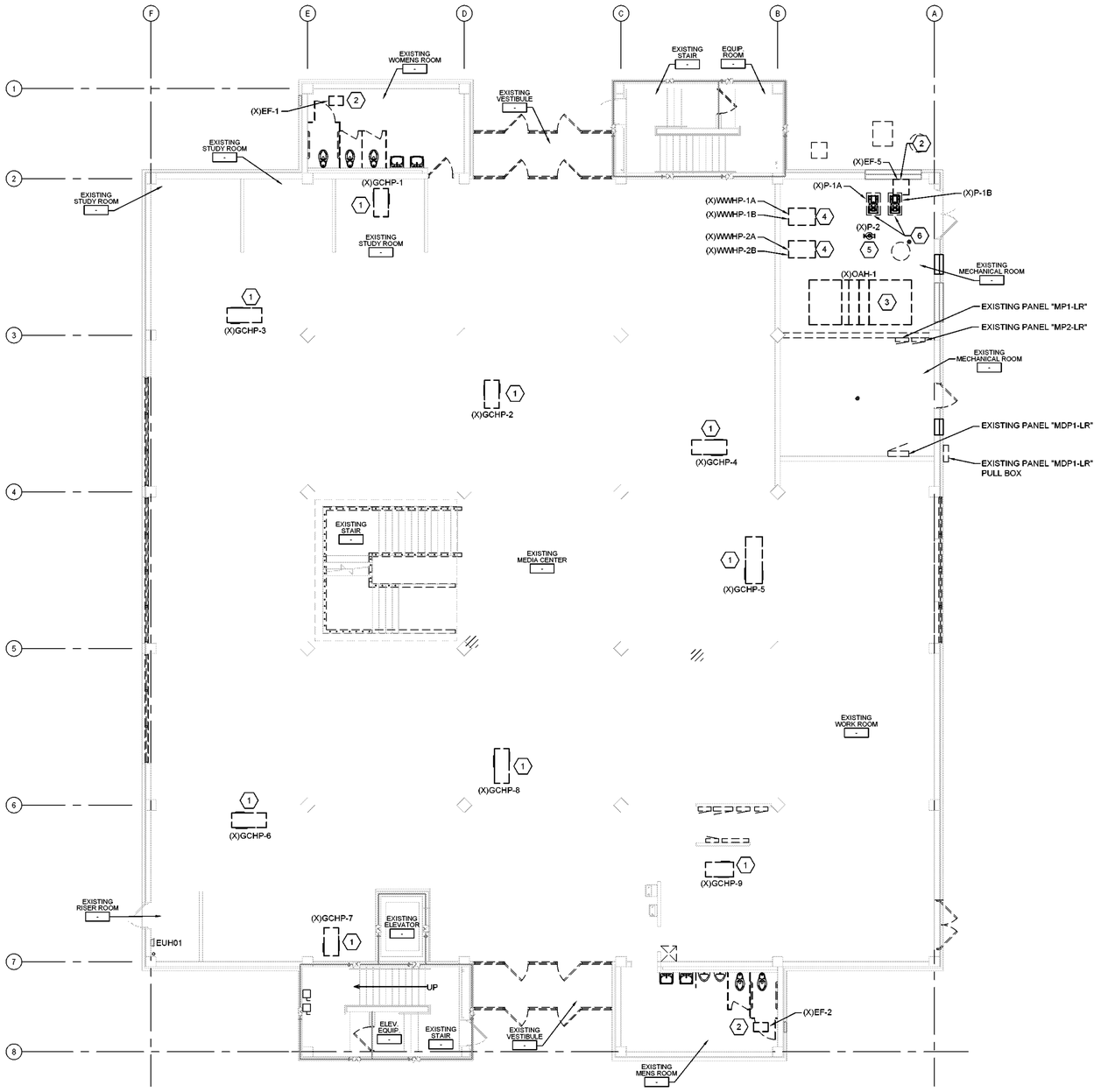

DEMOLITION KEYED NOTES

1. REMOVE AND DISPOSE OF EXISTING GCHP DISCONNECTING MEANS AND ASSOCIATED BRANCH CIRCUIT RACEWAY AND CONDUCTORS TO SOURCE PANELBOARD.
2. REMOVE AND DISPOSE OF EXISTING EXHAUST FAN DISCONNECTING MEANS AND ASSOCIATED BRANCH CIRCUIT CONDUCTORS AND RACEWAY TO SOURCE PANELBOARD.
3. REMOVE AND DISPOSE OF OAH1 DISCONNECTING MEANS AND ASSOCIATED BRANCH CIRCUIT RACEWAY AND CONDUCTORS TO SOURCE PANELBOARD.
4. REMOVE AND DISPOSE OF EXISTING WWHP DISCONNECTING MEANS AND ASSOCIATED BRANCH CIRCUIT RACEWAY AND CONDUCTORS TO SOURCE PANELBOARD.
5. REMOVE EXISTING PUMP DISCONNECTING MEANS AND ASSOCIATED BRANCH CIRCUIT RACEWAY AND CONDUCTORS TO SOURCE PANELBOARD.
6. EXISTING PUMP AND ASSOCIATED DISCONNECTING MEANS AND BRANCH CIRCUIT RACEWAY AND CONDUCTORS TO REMAIN.

WALL LEGEND

	1 HOUR RATED WALL - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

E1 **FIRST FLOOR MECHANICAL POWER PLAN - DEMOLITION**
1/8" = 1'-0"

PLAN NORTH

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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Sheet Title: ELECTRICAL DEMOLITION FIRST FLOOR PLAN - MECHANICAL POWER

Sheet No.: ED1.2

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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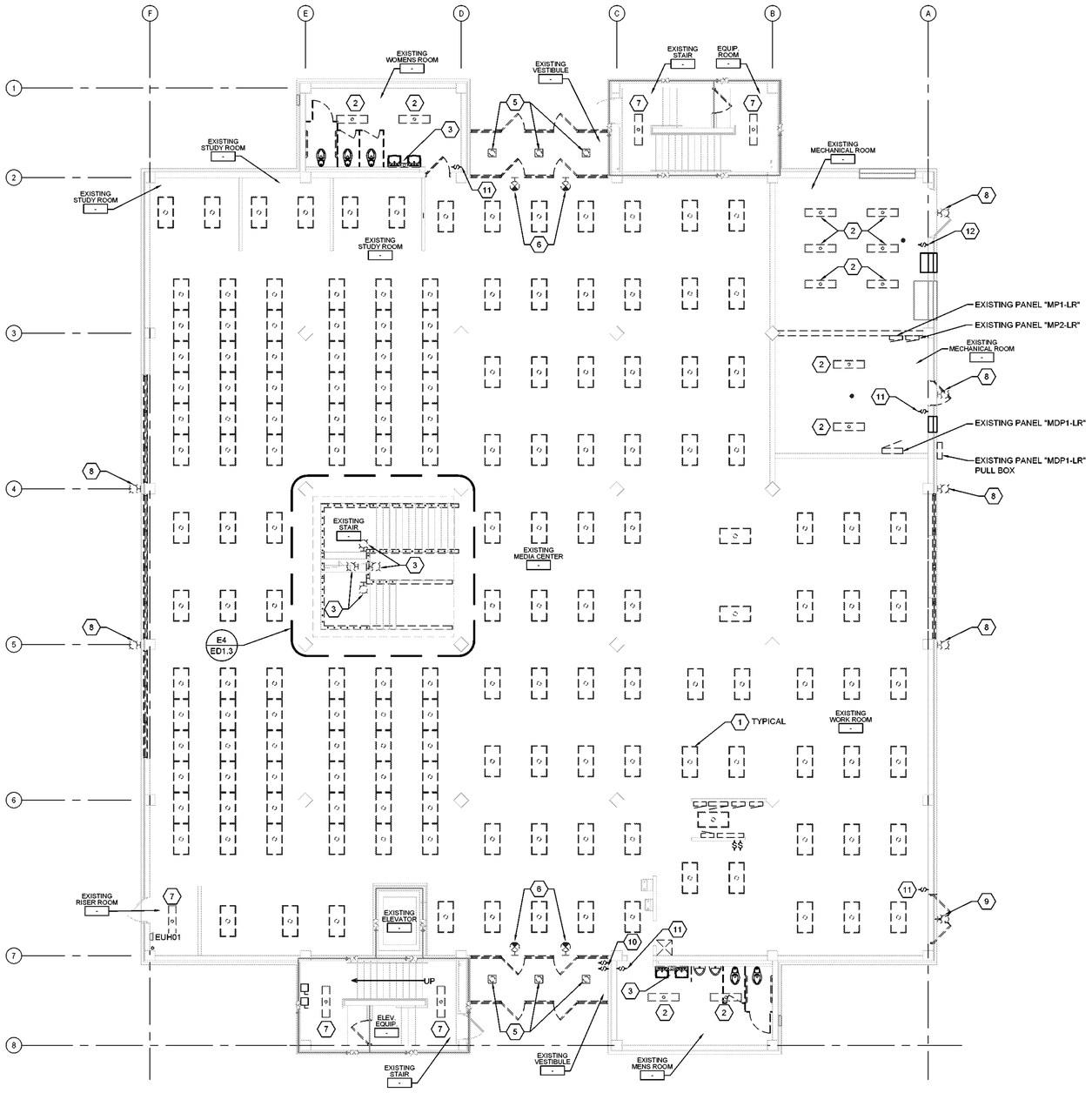


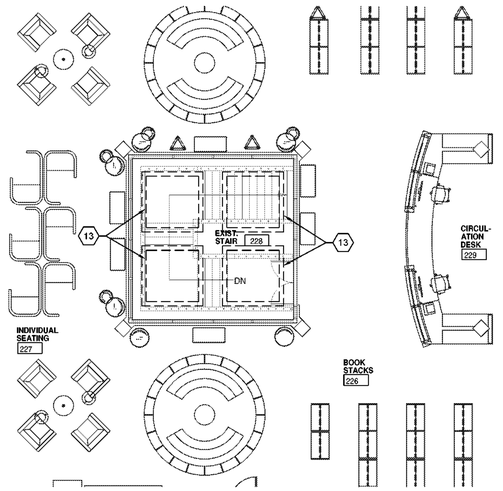
E1 FIRST FLOOR LIGHTING PLAN - DEMOLITION

1/8" = 1'-0"

PLAN NORTH

DEMOLITION KEYED NOTES

1. REMOVE AND DISPOSE OF EXISTING LAY-IN LIGHTING FIXTURE AND ASSOCIATED BRANCH CIRCUIT CONDUCTORS AND RACEWAYS TO SOURCE PANELBOARD.
2. REMOVE AND DISPOSE OF EXISTING SURFACE CEILING MOUNTED LIGHTING FIXTURE AND ASSOCIATED BRANCH CIRCUIT CONDUCTORS AND RACEWAY TO SOURCE PANELBOARD.
3. REMOVE AND DISPOSE OF EXISTING WALL MOUNTED LIGHTING FIXTURE AND ASSOCIATED BRANCH CIRCUIT CONDUCTOR AND RACEWAY TO SOURCE PANELBOARD. EXISTING OUTLET BOX AND RACEWAY TO REMAIN FOR REUSE.
4. REMOVE AND DISPOSE EXISTING PENDANT MOUNTED LIGHTING FIXTURE AND ASSOCIATED BRANCH CIRCUIT CONDUCTORS AND RACEWAY TO SOURCE PANELBOARD.
5. REMOVE EXISTING RECESSED DOWNLIGHT FIXTURE AND ASSOCIATED BRANCH CIRCUIT RACEWAY AND CONDUCTORS TO SOURCE PANELBOARD.
6. REMOVE EXISTING SURFACE MOUNTED EXIT FIXTURE AND ASSOCIATED BRANCH CIRCUIT CONDUCTORS AND RACEWAY TO SOURCE PANELBOARD.
7. REMOVE AND DISPOSE OF EXISTING WALL MOUNTED EXTERIOR LIGHTING FIXTURE AND BRANCH CIRCUIT CONDUCTORS TO SOURCE PANELBOARD. EXISTING OUTLET BOX AND RACEWAY TO REMAIN FOR REUSE.
8. REMOVE AND DISPOSE OF EXISTING WALL MOUNTED EXTERIOR LIGHTING FIXTURE AND BRANCH CIRCUIT CONDUCTORS TO SOURCE PANELBOARD. PROVIDE AND INSTALL NEW STAINLESS STEEL BLANK PLATE ON EXISTING OUTLET BOX.
9. NOT USED.
10. REMOVE AND DISPOSE OF EXISTING LIGHT SWITCH, SWITCH PLATE, SWITCH LEGS, OUTLET BOX AND RACEWAY.
11. REMOVE AND DISPOSE OF EXISTING LIGHT SWITCH AND SWITCH LEGS. PROVIDE AND INSTALL NEW STAINLESS STEEL BLANK ON EXISTING OUTLET BOX.
12. REMOVE AND DISPOSE OF EXISTING SWITCH, SWITCH PLATE AND SWITCH LEGS, EXISTING OUTLET BOX AND RACEWAY TO REMAIN FOR REUSE.
13. REMOVE AND DISPOSE OF EXISTING PENDANT MOUNTED FLUORESCENT LIGHTING FIXTURE. SECURE EXISTING LIGHTING CIRCUIT AND CONTROL CONDUCTORS FOR RECONFIGURATION AND RECONNECTION TO NEW LIGHTING FIXTURES.



E4 PARTIAL SECOND FLOOR LIGHTING PLAN - DEMOLITION

1/8" = 1'-0"

PLAN NORTH

WALL LEGEND

	1 HOUR RATED WALL - EXISTING

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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI 11/25/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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Sheet Title
ELECTRICAL DEMOLITION FIRST FLOOR PLAN - LIGHTING

Sheet No.
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CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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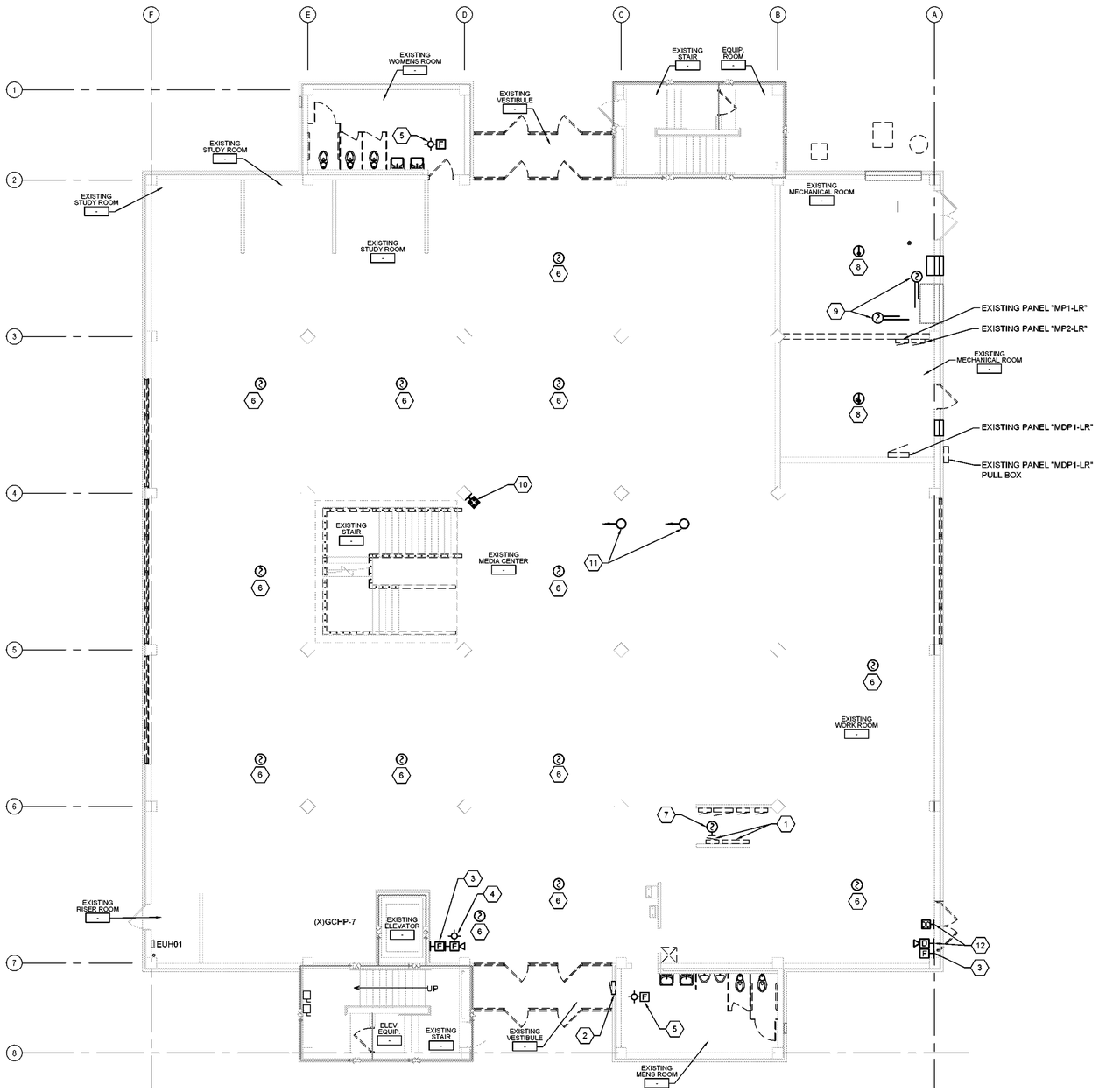

DEMOLITION KEYED NOTES

1. EXISTING FIRE ALARM CONTROL UNIT AND ASSOCIATED TERMINAL CABINETS, POWER SUPPLIES, ETC. TO REMAIN
2. EXISTING FIRE ALARM REMOTE ANNUNCIATOR TO REMAIN.
3. REMOVE AND DISPOSE OF EXISTING WALL MOUNTED FIRE ALARM MANUAL STATION AND ASSOCIATED CABLES. EXISTING OUTLET BOX AND RACEWAY TO EXISTING FIRE ALARM CONTROL PANEL TO REMAIN.
4. REMOVE AND DISPOSE OF EXISTING WALL MOUNTED FIRE ALARM HORN/STROBE DEVICE. EXISTING OUTLET BOX AND RACEWAY TO FIRE ALARM CONTROL PANEL TO REMAIN.
5. REMOVE AND DISPOSE OF EXISTING CEILING MOUNTED FIRE ALARM STROBE ONLY DEVICE AND ASSOCIATED OUTLET BOX, RACEWAY AND CABLES TO FIRE ALARM CONTROL PANEL.
6. REMOVE EXISTING CEILING MOUNTED FIRE ALARM SMOKE DETECTOR AND ASSOCIATED OUTLET BOX, RACEWAY AND CABLE TO EXISTING FIRE ALARM CONTROL PANEL.
7. EXISTING WALL MOUNTED SMOKE DETECTOR TO REMAIN.
8. REMOVE EXISTING CEILING MOUNTED FIRE ALARM HEAT DETECTOR AND ASSOCIATED OUTLET BOX, RACEWAY AND CABLES TO EXISTING FIRE ALARM CONTROL PANEL.
9. REMOVE EXISTING FIRE ALARM DUCT MOUNTED SMOKE DETECTOR, REMOTE INDICATING DEVICE AND ASSOCIATED OUTLET BOX, RACEWAY AND CABLES TO EXISTING FIRE ALARM CONTROL PANEL.
10. REMOVE EXISTING WALL MOUNTED EMERGENCY CALL BUTTON AND ASSOCIATED CABLES. OUTLET BOX AND RACEWAY TO REMAIN FOR REUSE.
11. EXISTING CEILING MOUNTED SECURITY CAMERA AND ASSOCIATED CABLES TO BE REMOVED BY OWNER.
12. REMOVE EXISTING DOOR ALARM CONTACT AND HORN.

E1 FIRST FLOOR SYSTEMS PLAN - DEMOLITION
1/8" = 1'-0"

PLAN NORTH

WALL LEGEND

1 HOUR RATED WALL - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
11/25/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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Sheet Title: ELECTRICAL DEMOLITION FIRST FLOOR PLAN - SYSTEMS

Sheet No.: ED1.4

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
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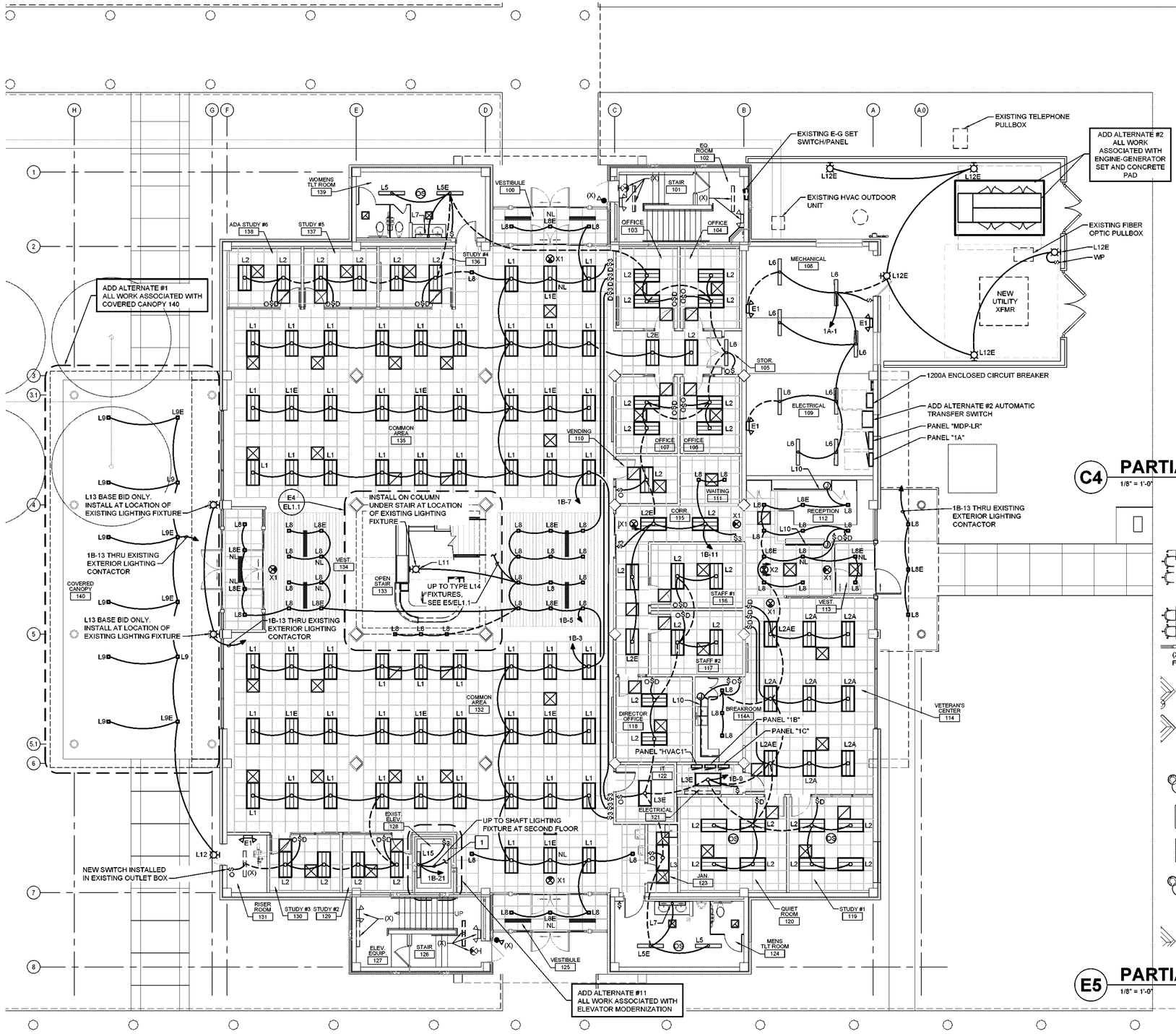
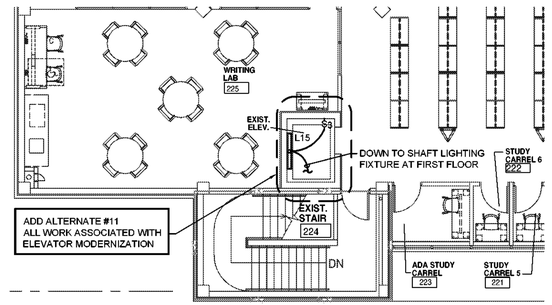
KEYED NOTES

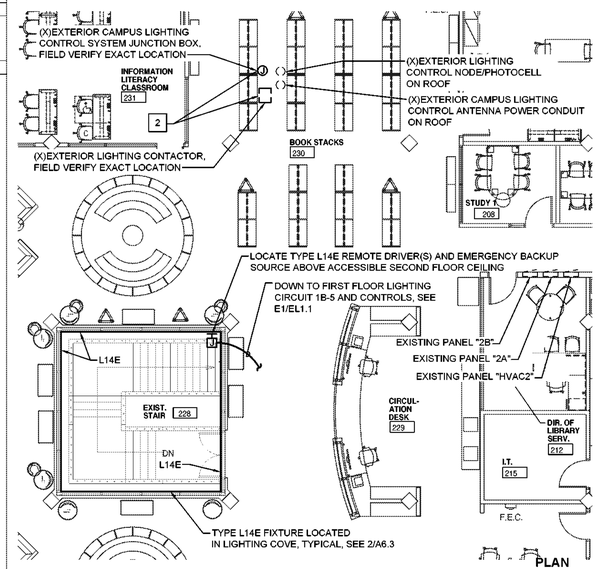
1. CONNECT TO EXISTING ELEVATOR SHAFT LIGHTING CIRCUIT.
2. CONNECT NEW EXTERIOR LIGHTING CIRCUIT TO EXISTING EXTERIOR LIGHTING CONTACTOR AND EXTERIOR CAMPUS LIGHTING CONTROL SYSTEM NODE/PHOTOCELL/ ANTENNA SYSTEM.



C4 **PARTIAL SECOND FLOOR PLAN - LIGHTING**
1/8" = 1'-0"

PLAN NORTH





E5 **PARTIAL SECOND FLOOR PLAN - LIGHTING**
1/8" = 1'-0"

PLAN NORTH

E1 **FIRST FLOOR PLAN - LIGHTING**
1/8" = 1'-0"

PLAN NORTH

WALL LEGEND

	1 HOUR RATED WALL - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

BOWMAN
MURRAY
HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
11/25/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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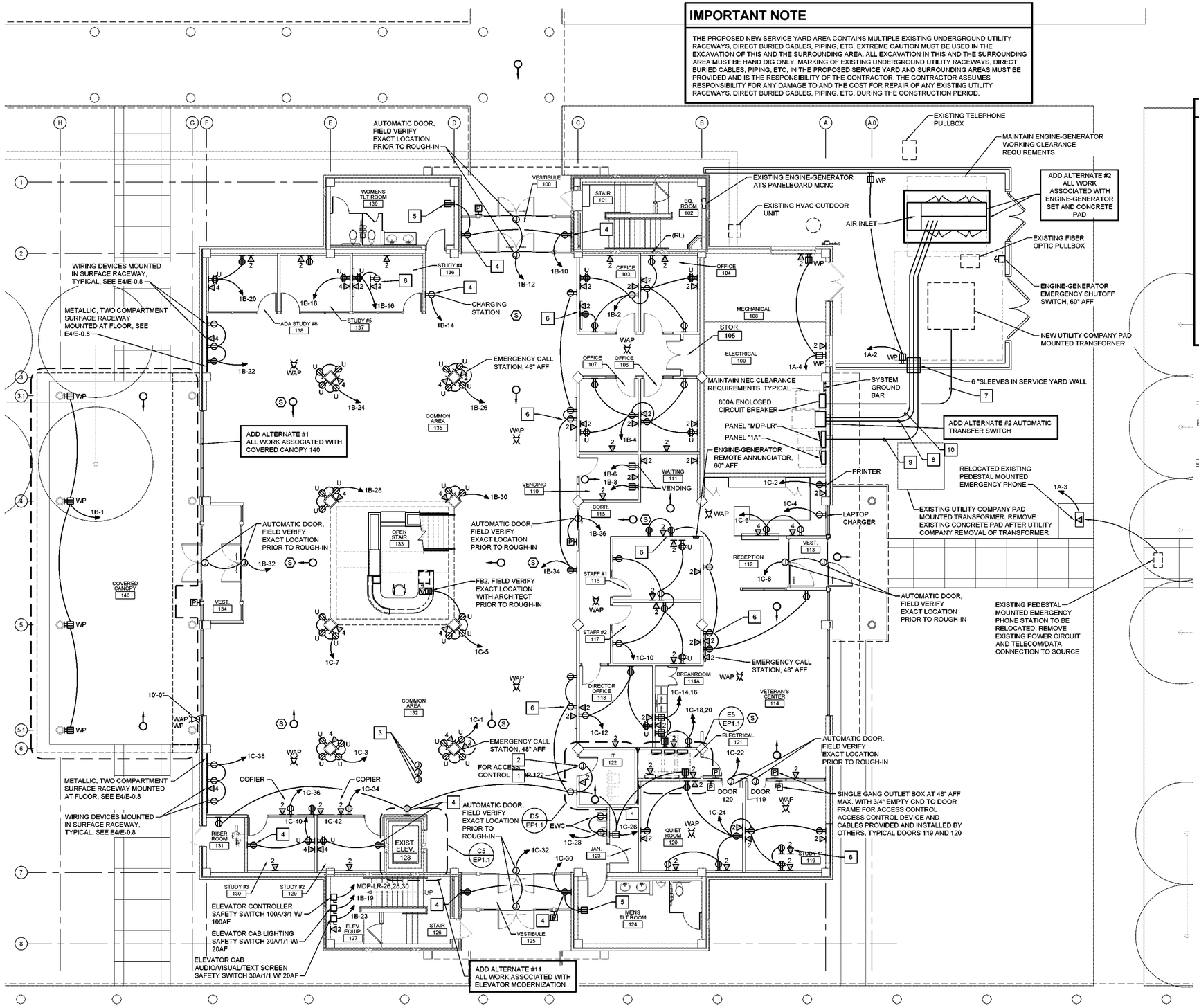
Sheet Title
ELECTRICAL
FIRST AND SECOND
FLOOR PLANS -
LIGHTING

Sheet No.
EL1.1

IMPORTANT NOTE

THE PROPOSED NEW SERVICE YARD AREA CONTAINS MULTIPLE EXISTING UNDERGROUND UTILITY RACEWAYS, DIRECT BURIED CABLES, PIPING, ETC. EXTREME CAUTION MUST BE USED IN THE EXCAVATION OF THIS AND THE SURROUNDING AREA. ALL EXCAVATION IN THIS AND THE SURROUNDING AREA MUST BE HAND DIG ONLY. MARKING OF EXISTING UNDERGROUND UTILITY RACEWAYS, DIRECT BURIED CABLES, PIPING, ETC, IN THE PROPOSED SERVICE YARD AND SURROUNDING AREAS MUST BE PROVIDED AND IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR ASSUMES RESPONSIBILITY FOR ANY DAMAGE TO AND THE COST FOR REPAIR OF ANY EXISTING UTILITY RACEWAYS, DIRECT BURIED CABLES, PIPING, ETC. DURING THE CONSTRUCTION PERIOD.

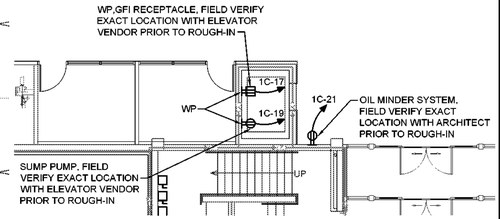


E1 FIRST FLOOR PLAN - POWER

1/8" = 1'-0"

KEYED NOTES

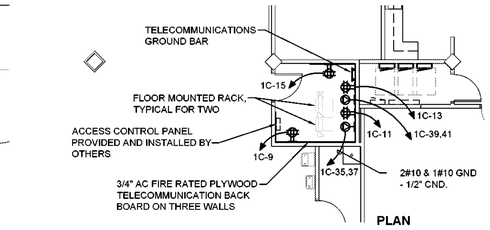
1. JUNCTION BOX AT 48" AFF WITH 1/2" EMPTY CONDUIT TO CEILING CAVITY FOP ACCESS CONTROL PROVIDED AND INSTALLED BY OTHERS.
2. 120 VOLT POWER FOR ACCESS CONTROL POWER SUPPLY. FIELD VERIFY EXACT LOCATION WITH ACCESS CONTROL VENDOR PRIOR TO ROUGH-IN.
3. 3 - 3/4" EMPTY CND. WITH PULL STRING FROM PANEL "1C". ONE EACH FOR FUTURE ELEVATOR PIT RECEPTACLE, SUMP PUMP AND OIL MINDER SYSTEM IF ADD ALTERNATE #3 IS NOT ACCEPTED.
4. NEW DUPLEX RECEPTACLE INSTALLED IN EXISTING OUTLET BOX.
5. NEW DUPLEX RECEPTACLE INSTALLED IN EXISTING OUTLET BOX. PROVIDE OUTLET BOX EXTENSION RINGS AS REQUIRED TO MAKE EXISTING OUTLET BOX FLUSH WITH NEW WALL TILE INSTALLATION.
6. INTERACTIVE BOARD. COORDINATE EXACT POWER AND TELECOM/DATA CONNECTION LOCATION AND MOUNTING HEIGHT WITH OWNER PRIOR TO ROUGH-IN.
7. UNDERGROUND SERVICE CONDUCTORS.
8. ENGINE-GENERATOR UNDERGROUND AUTOMATIC TRANSFER SWITCH FEEDER RACEWAY.
9. ENGINE-GENERATOR UNDERGROUND ACCESSORIES LOADCENTER FEEDER RACEWAY.
10. ENGINE-GENERATOR UNDERGROUND CONTROL CONDUCTOR RACEWAY.



C5 EXIST. ELEV 128 PLAN

1/8" = 1'-0"

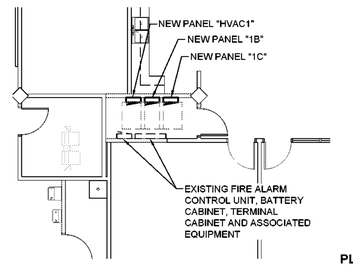
PLAN NORTH



D5 IT 122 PLAN

1/8" = 1'-0"

PLAN NORTH



E5 ELECTRICAL 121 PLAN

1/8" = 1'-0"

PLAN NORTH

WALL LEGEND

	1 HOUR RATED WALL - EXISTING

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CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com

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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
11/25/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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Sheet Title
ELECTRICAL
FIRST FLOOR PLAN - POWER

Sheet No.
EP1.1

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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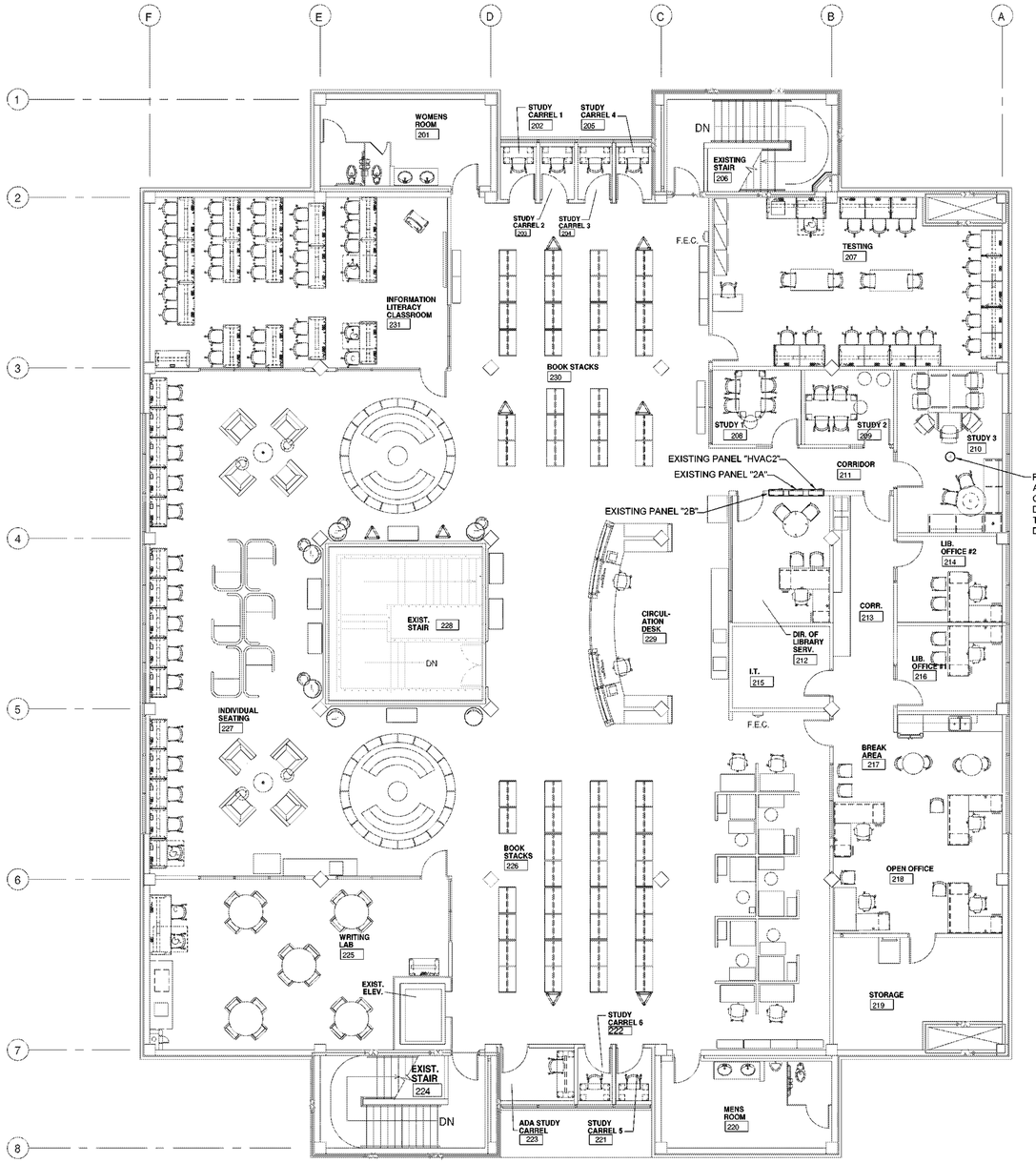

REMOVE EXISTING POKE THRU FLOOR BOX AND ASSOCIATED RACEWAY AND BRANCH CIRCUIT CONDUCTORS TO SOURCE OR ADJACENT WIRING DEVICE. RECONNECT WIRING DEVICES CONNECTED TO THIS CIRCUIT AS REQUIRED. EXISTING TELECOM/ DATA CABLE TO BE REMOVED BY OWNER.

E1 SECOND FLOOR PLAN - POWER

1/8" = 1'-0"

0 4' 8' 16'

PLAN NORTH

WALL LEGEND

1 HOUR RATED WALL - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
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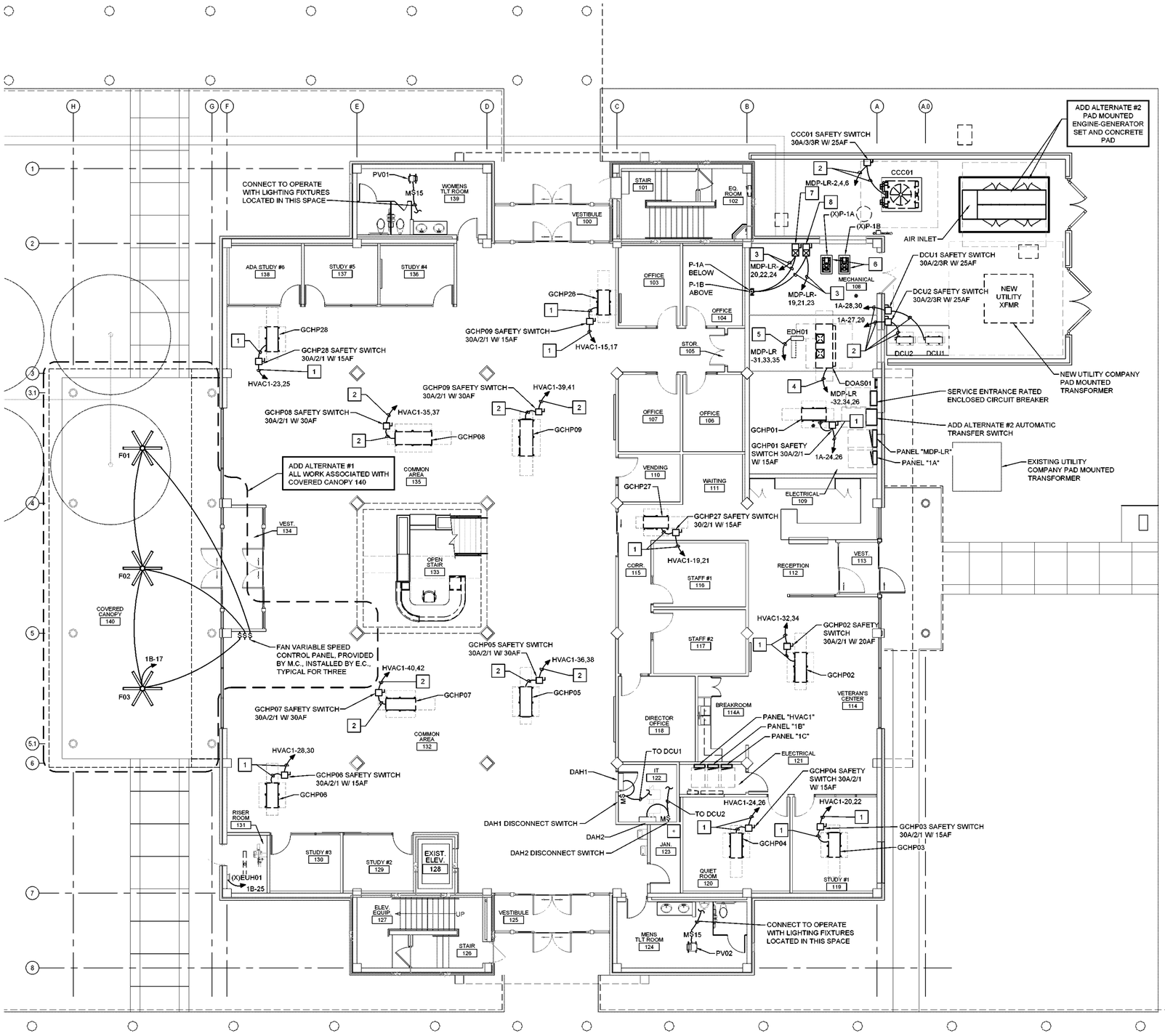
Sheet Title
ELECTRICAL SECOND FLOOR PLAN - POWER

Sheet No.
EP1.2



KEYED NOTES

1	2#12 & 1#12 GND - 1/2" CND
2	2#10 & #10 GND - 1/2" CND
3	3#10 & 1#10 GND - 1/2" CND
4	3#2 & 1#6 GND - 1 1/4" CND
5	3#1/0 & 1#6 GND - 1 1/2" CND, 90°C CONDUCTORS (PER MFGR. INSTALLATION GUIDELINES)
6	EXISTING PUMP P-1A AND P-1B MUST REMAIN OPERATIONAL UNTIL NEW PUMPS P-1A AND P-1B ARE OPERATIONAL
7	PUMP P-1A DISCONNECT/FUSE/STARTER. 30A/3/1 W/ 30AF, NEMA SIZE 3 STARTER.
8	PUMP P-1B DISCONNECT/FUSE/STARTER. 30A/3/1 W/ 30AF, NEMA SIZE 3 STARTER.

E1 FIRST FLOOR PLAN - MECHANICAL EQUIPMENT POWER

1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

WALL LEGEND

	1 HOUR RATED WALL - EXISTING

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CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
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Fax: 910.791.5266
www.cbhfengineers.com
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
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Tel - (910) 762-2621

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Sheet Title
ELECTRICAL
FIRST FLOOR PLAN -
MECHANICAL
EQUIPMENT POWER

Sheet No.
EP1.3

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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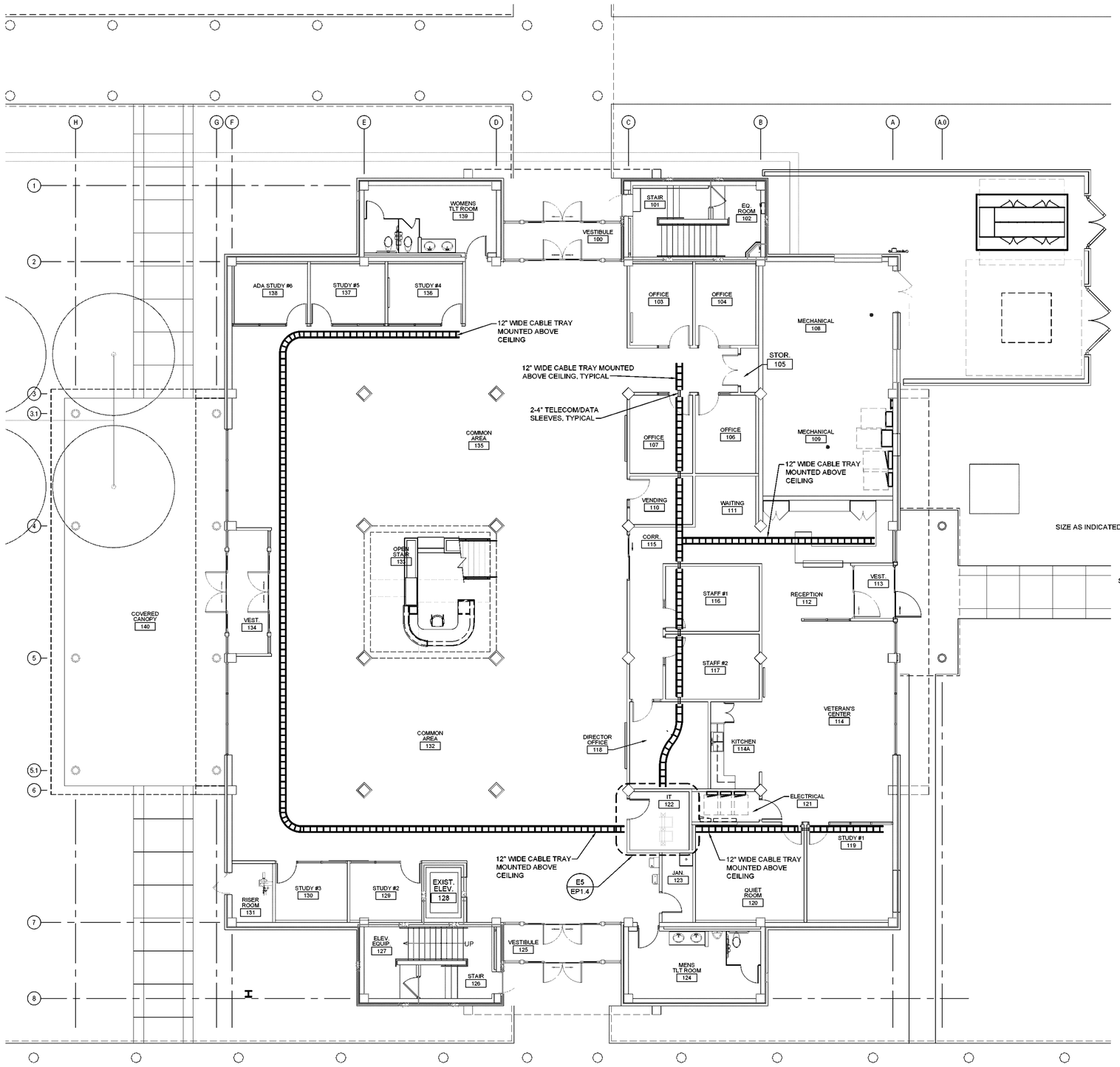
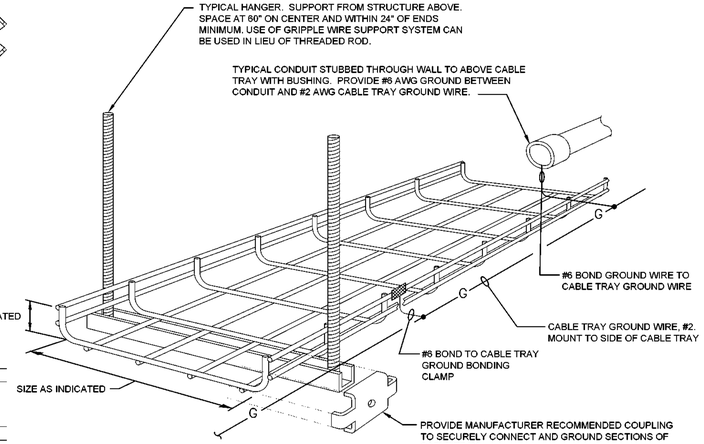


E1 FIRST FLOOR PLAN - CABLE TRAY

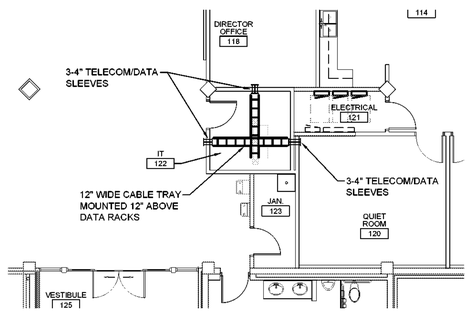
1/8" = 1'-0"

PLAN NORTH



C5 CABLE TRAY DETAIL

NOT TO SCALE



E5 IT 122 PLAN - CABLE TRAY

1/8" = 1'-0"

PLAN NORTH

WALL LEGEND

	1 HOUR RATED WALL - EXISTING

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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

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Sheet Title
ELECTRICAL FIRST FLOOR PLAN - CABLE TRAY

Sheet No.
EP1.4

FIRE ALARM LEGEND

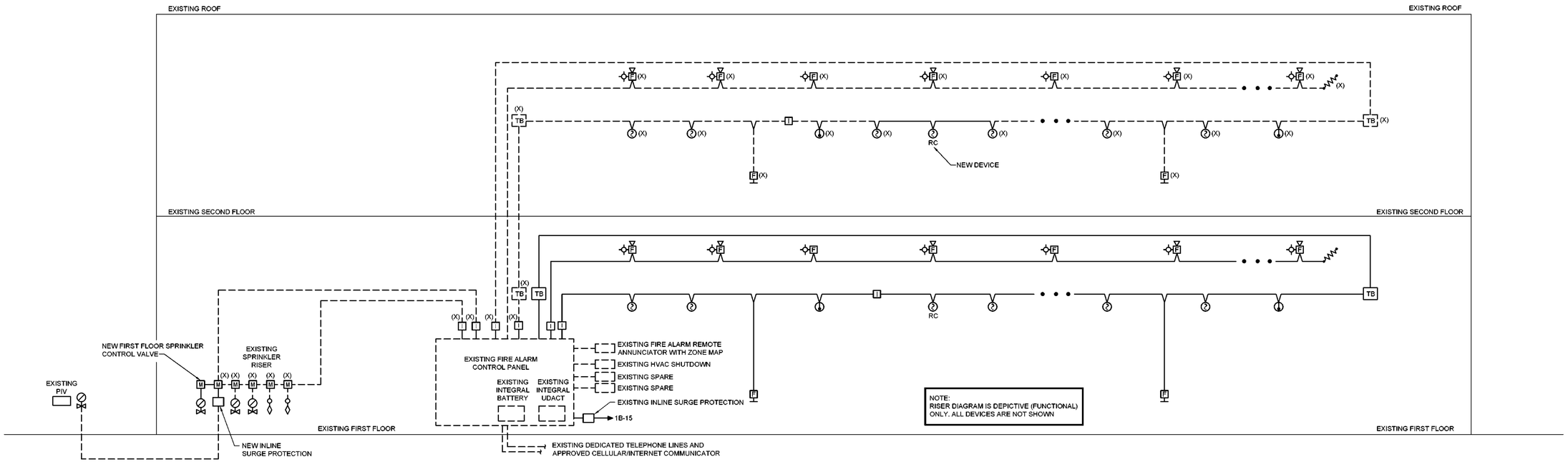
SYMBOL	DESCRIPTION
F	FIRE ALARM MANUAL STATION, 48" AFF
15cd	FIRE ALARM HORN/STROBE DEVICE, 80" AFF, "15cd" INDICATES CANDELA RATING
	FIRE HORN (ONLY) DEVICE, 80" AFF
15cd	FIRE ALARM HORN/STROBE DEVICE, CEILING MOUNTED, "15cd" INDICATES CANDELA RATING
15cd	FIRE ALARM VISUAL (ONLY) DEVICE, 80" AFF, "15cd" INDICATES CANDELA RATING
15cd	FIRE ALARM VISUAL (ONLY) CEILING MOUNTED "15cd" INDICATES CANDELA RATING
15cd	FIRE ALARM BELL/STROBE, 80" AFF. "15cd" INDICATES CANDELA RATING
	HEAT DETECTOR, CEILING MOUNTED
	SMOKE DETECTOR, CEILING MOUNTED
RC	SMOKE DETECTOR, CEILING MOUNTED, WITH ELEVATOR RECALL FUNCTION
	DOOR HOLD OPEN DEVICE BY G.C.
	SPRINKLER FLOW SWITCH
	SPRINKLER TAMPER SWITCH
I	ISOLATION MODULE
C	CONTROL MODULE
C	CONTROL MODULE, WALL MOUNTED
FACP	FIRE ALARM CONTROL PANEL (FACP)
FA REMOTE ANN	FIRE ALARM REMOTE ANNUNCIATOR PANEL
	GAS VALVE CONTROL MODULE
	END OF LINE RESISTER (EOR)

(SYMBOLS SHOWN FOR REFERENCE ONLY AND MAY NOT IMPLY CONTRACTUAL REQUIREMENTS)

FIRE ALARM SYSTEM CONTROL MATRIX

SYSTEM INPUTS	SYSTEM OUTPUTS: ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE NOTIFICATION APPLIANCES	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ALARM SIGNAL TO MONITORING SERVICE	SUPERVISORY SIGNAL TO MONITORING SERVICE	TROUBLE SIGNAL TO MONITORING SERVICE	DISPLAY/PRINT CHANGE OF STATUS	TRANSMIT ALARM SIGNAL TO CENTRAL STATION	RELEASE MAGNETICALLY HELD DOORS	RECALL ELEVATORS TO PRIMARY RECALL FLOOR	RECALL ELEVATORS TO ALTERNATE RECALL FLOOR	ACTIVATE FIRE HAT SIGNAL	SIGNAL HVAC CONTROL SYSTEM	SHUNT TRIP ELEVATOR FEEDER CIRCUIT BREAKER
SMOKE DETECTORS	X	X			X			X	X	X				X	
ELEVATOR SHAFT SMOKE DETECTORS	X	X			X			X	X	X					X
HEAT DETECTORS	X	X			X			X	X	X				X	
ELEVATOR SHAFT HEAT DETECTORS	X	X			X			X	X	X					X
MANUAL PULL STATIONS	X	X			X			X	X	X				X	
SYSTEM TROUBLE CONDITION			X				X	X							
LOSS OF FACU AC POWER (NOTE 1)			X				X	X							
GROUND FAULT			X				X	X							
SHORT CIRCUIT			X				X	X							
OPEN CIRCUIT			X				X	X							
PRIMARY FLOOR ELEVATOR LOBBY RECALL SMOKE DETECTOR	X	X			X			X	X	X		X		X	
ALTERNATE FLOOR ELEVATOR LOBBY RECALL SMOKE DETECTOR	X	X			X			X	X	X	X			X	
SPRINKLER SYSTEM FLOW SWITCH (NOTE 5)	X	X			X			X	X	X				X	X
STANDPIPE FLOW SWITCH (NOTE 5)	X	X			X				X	X					X
FIRE PROTECTION PIPING HEAT TRACE				X		X		X							
SPRINKLER SYSTEM TAMPER SWITCH (NOTE 5)				X		X		X							
STANDPIPE TAMPER SWITCH (NOTE 5)				X		X		X							
SPRINKLER PRESSURE SWITCH (NOTE 5)				X		X		X							
STANDPIPE PRESSURE SWITCH (NOTE 5)				X		X		X							
PIV SUPERVISORY				X		X		X							
RPZ TAMPER SWITCH				X		X		X							
RPZ HOT BOX LOW TEMPERATURE				X		X		X							

NOTES:
1. ONLY AFTER LOSS OF POWER FOR > 3 HOURS.
2. ELEVATOR INPUTS AND OUTPUTS ARE TYPICAL FOR EACH ELEVATOR.
3. REFER TO FIRE PROTECTION DRAWINGS FOR SPRINKLER DEVICE LOCATIONS.
4. REFER TO MECHANICAL DRAWINGS FOR DUCT MOUNTED SMOKE DETECTOR LOCATIONS.
5. TYPICAL, QUANTITIES OF DEVICES ARE NOT SHOWN, SEE FIRE PROTECTION DRAWINGS FOR QUANTITIES AND LOCATIONS.



E3 FUNCTIONAL FIRE ALARM RISER DIAGRAM
NOT TO SCALE

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com

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NC# P-0506

BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: WPJ
Date: 11-25-2024	Reviewed By: JPF
Project ID	

Sheet Title: FIRE ALARM LEGEND, MATRIX AND FUNCTIONAL FIRE ALARM RISER

Sheet No.: F0.1

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506
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BOWMAN
MURRAY
HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
11/25/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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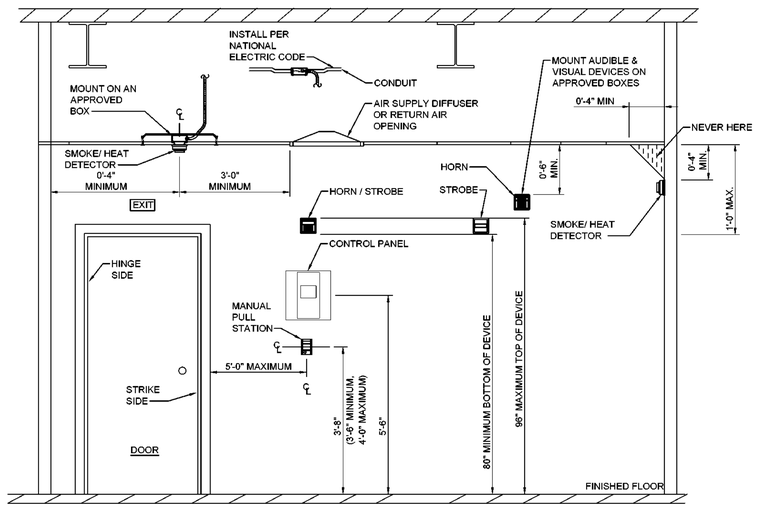
Sheet Title

FIRE ALARM DETAILS

Sheet No.

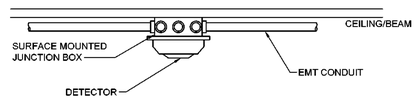
F0.2



NOTE:
DETAIL SHOWN FOR REFERENCE ONLY, NOT ALL DEVICES ARE INDICATED ON PLANS.

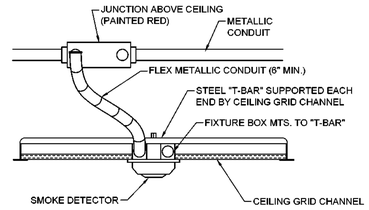
E1 DEVICE MOUNTING DETAIL

NOT TO SCALE



E3 TYPICAL SURFACE DEVICE DETAIL

NOT TO SCALE



E5 TYPICAL CEILING MOUNTED DEVICE DETAIL

NOT TO SCALE

CBHF
Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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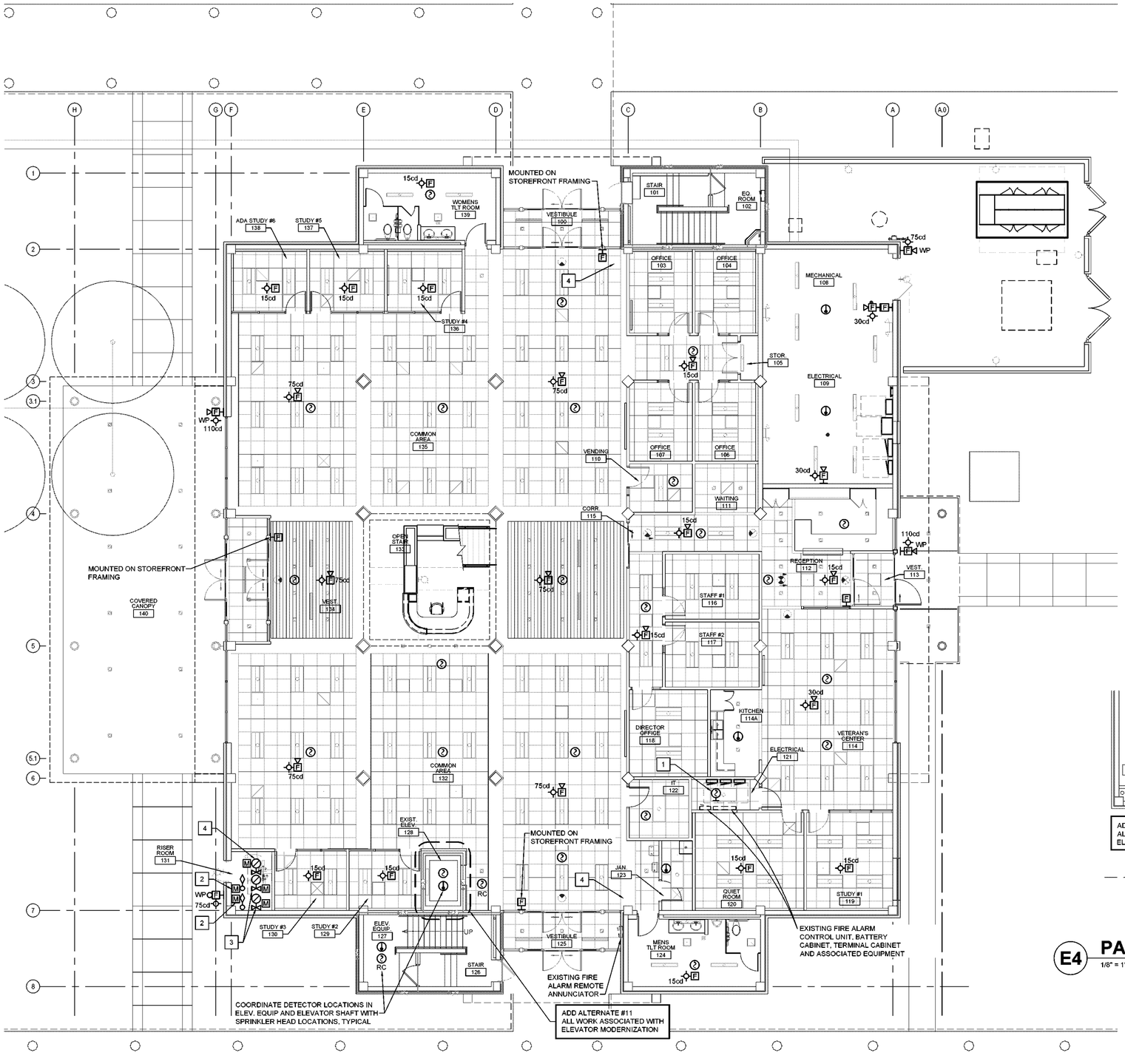
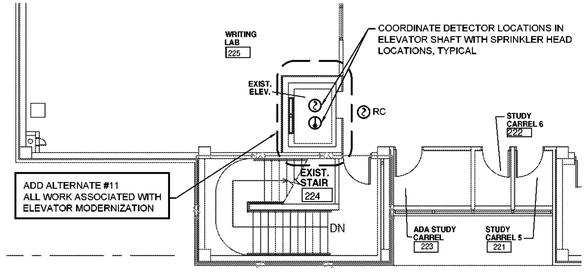
KEYED NOTES

1. EXISTING WALL MOUNTED SMOKE DETECTOR.
2. EXISTING SPRINKLER SYSTEM FLOW SWITCH AND MONITOR MODULE.
3. EXISTING SPRINKLER SYSTEM TAMPER SWITCH AND MONITOR MODULE.
4. NEW FIRST FLOOR SPRINKLER CONTROL VALVE AND MONITOR MODULE.



E1 FIRST FLOOR PLAN - FIRE ALARM
1/8" = 1'-0"

PLAN NORTH



E4 PARTIAL SECOND FLOOR PLAN - FIRE ALARM
1/8" = 1'-0"

PLAN NORTH

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
11/25/2024

Coastal Carolina Community College
Learning Resource Center -
First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

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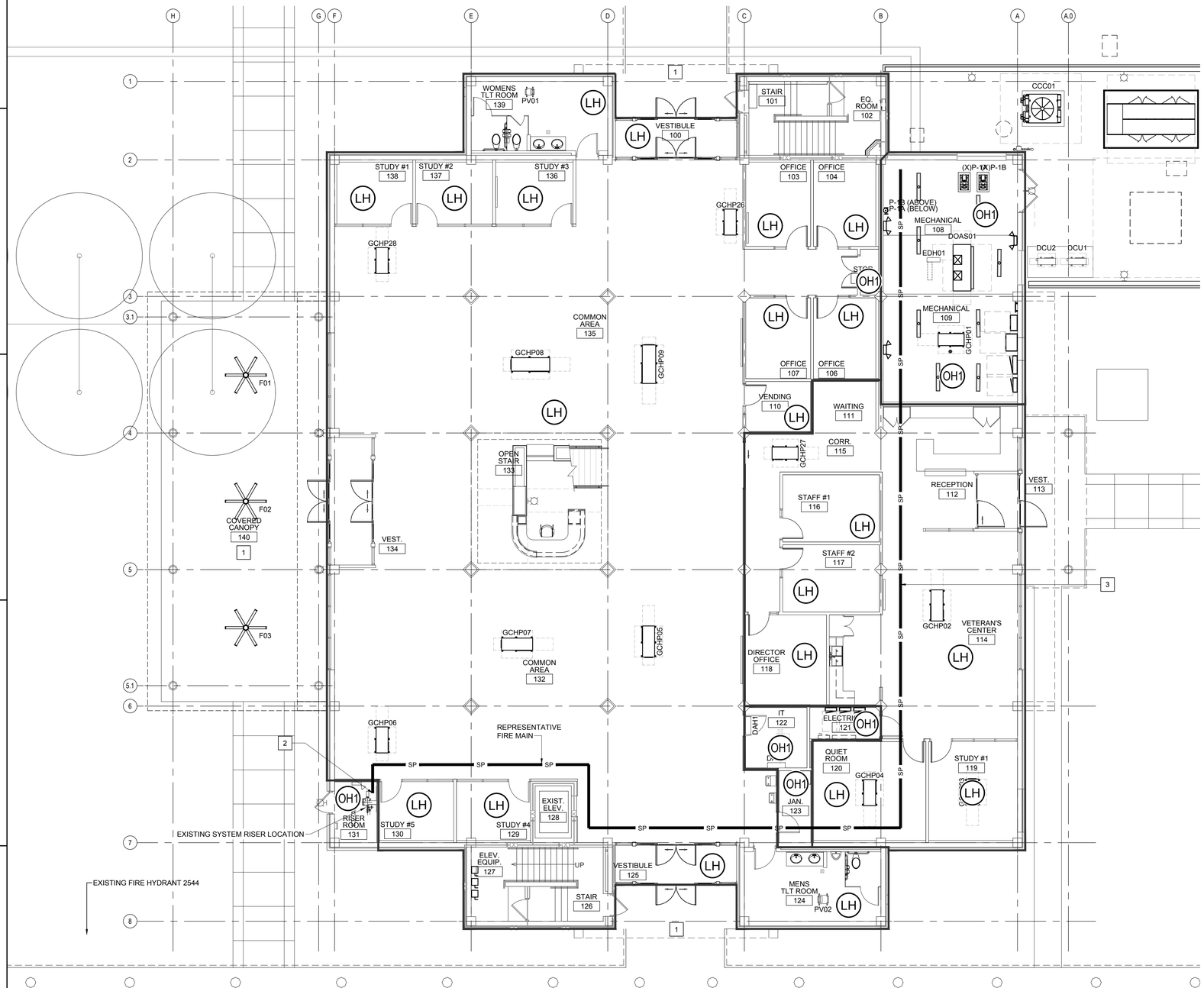
Sheet Title
FIRE ALARM FIRST AND SECOND FLOOR PLAN

Sheet No.
F1.1



E1 FIRST FLOOR PLAN - FIRE PROTECTION

1/8" = 1'-0"

PLAN NORTH

KEYED NOTES

1. IN ACCORDANCE WITH SECTION 8.15.7.2 OF NFPA 13, SPRINKLERS SHALL BE PERMITTED TO BE OMITTED WHERE EXTERIOR CANOPIES, ROOFS, PORTE-COCHERES, BALCONIES, DECKS, AND SIMILIAR PROJECTS ARE CONSTRUCTED WITH MATERIALS THAT ARE NONCOMBUSTIBILE, LIMITED-COMBUSTIBLE, OR FIRE RETARDANT-TREATED.
2. A NEW FLOOR CONTROL VALVE WILL BE PROVIDED TO SERVE THE FIRST FLOOR. THIS SHALL BE A COMPLETE RISER ASSEMBLY INCLUDING THE FOLLOWING: ISOLATION VALVE, CHECK VALVE, PRESSURE GAUGE, WATER FLOW SWITCH, MAIN DRAIN AND INSPECTORS TEST.
3. REPRESENTATIVE MAIN ROUTING. HYDRAULIC CALCULATIONS TO BE PERFORMED BY THE SPRINKLER CONTRACTOR. HYDRAULIC DEMAND IS NOT GREATER THAN THAT OF THE OF THE EXISTING SYSTEM ON THE SECOND FLOOR. 2.5" MAINS EXPECTED.

SCOPE

THE SCOPE OF THIS PROJECT INCLUDES THE EXTENSION OF AN EXISTING WET-PIPE SPRINKLER SYSTEM THAT CURRENTLY SERVES THE SECOND FLOOR, TO ALSO PROTECT THE FIRST FLOOR. A FLOOR CONTROL VALVE WILL BE PROVIDED OFF THE THE MAIN SYSTEM RISER AT THE RISER ROOM. THE WET-PIPE SYSTEM WILL THEN EXTEND TO PROTECT ALL SPACES OF THE FIRST FLOOR. THE HAZARD CLASSIFICATIONS PER NFPA 13 ARE LESS THAN OR EQUAL TO THAT OF THE SECOND FLOOR, AND THEREFORE HYDRULIC DEMAND IS NOT ANTICIPATED TO RESULT IN A CHANGE IN THE SYSTEM (I.E. NO FIRE PUMP). THE SPRINKLER CONTRACTOR SHALL PERFORM HYDRAULIC CALCULATIONS AS PART OF THEIR SPRINKLER SHOP SUBMITTAL.

CODES AND STANDARDS

DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS.

- 2018 NORTH CAROLINA BUILDING CODE.
- 2018 NORTH CAROLINA FIRE CODE.
- NFPA 13 STANDARD FOR INSTALLATION OF FIRE SPRINKLER SYSTEMS (2013).
- NFPA 24 STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES (2013).
- NFPA 25 STANDARD FOR INSPECTION, TESTING AND MAINTENANCE OF WATER-BASED FIRE ALARM AND SIGNALING CODE (2013).
- ALL LOCAL AHJ AND NC SCO REQUIRMENTS.

HYDRANT INFORMATION

#HYDRO2544

Last flow:	06/20/2024
Static:	62 Psi
Residual:	58 psi
Pitot:	40 Psi
Flow:	1062 GPM
Flow @ 20 psi:	3781 GPM

WALL LEGEND

—(X)—	1 HOUR RATED WALL - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506

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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23551 DAVID M. HAHN
11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: RWC
Date: 11-25-2024	Reviewed By: DMH
Project ID	

Sheet Title: FIRE PROTECTION FIRST FLOOR PLAN

Sheet No.: FP1.1

FIRE SPRINKLER SYSTEM DESIGN SCHEDULE

AREAS	SYSTEM TYPE	HAZARD CLASSIFICATION	SYMBOL	DENSITY (GPM/SQFT)	DESIGN AREA (SQFT)	HOSE ALLOWANCE (GPM)	DURATION (MIN)	MAX HEAD SPACING (SQFT)	SPRINKLER TYPE	K-FACTOR	POSITION	FINISH	TEMPERATURE (F)	NOTES
VESTIBULE, STUDY, COMMON AREA, OFFICES, RESTROOMS AND SIMILAR	WET-PIPE	LIGHT HAZARD	LH	0.1	1500	100	60	225	QUICK RESPONSE STANDARD SPRAY	5.6	RECESSED PENDANT	CHOME CONCEALER	155	1
MECHANICAL, RISER ROOM, JANITOR, IT	WET-PIPE	ORDINARY HAZARD (GROUP 1)	OH1	0.15	1500	250	90	130	QUICK RESPONSE STANDARD SPRAY	5.6	UPRIGHT WHERE EXPOSED CONCEALED PENDANT IN FINISHED SPACES	BRASS WHERE EXPOSED, PAINTED CONCEALER IN FINISHED SPACED	155	1, 2

NOTES: 1. DESIGN AREA IS PERMITTED TO BE REDUCED FOR QUICK RESPONSE SPRINKLER HEADS IN ACCORDANCE WITH NFPA 12 11.2.3.2.3.

CBHF Engineers, PLLC
2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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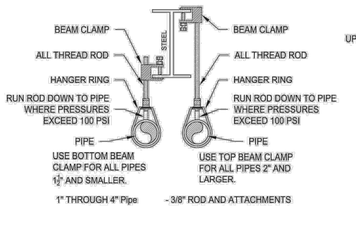
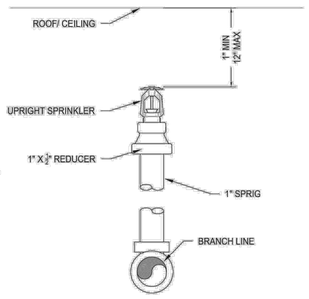


C1 BEAM CLAMP DETAIL
NOT TO SCALE



C2 UPRIGHT SPRINKLER DETAIL
NOT TO SCALE

HANGER INSTALLATION REQUIREMENTS

	MAXIMUM DISTANCE BETWEEN HANGERS								
NOMINAL PIPE SIZE	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"
BLAZEMASTER CPVC	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"	9'-0"	10'-0"	n/a	n/a
THREADED LIGHTWALL	n/a	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	12'-0"	n/a	n/a
STEEL PIPE (SCH 10/SCH 40)	n/a	12'-0"	12'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"

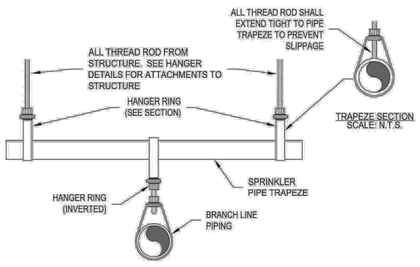
100 PSI STATIC PRESSURE ON SYSTEM REQUIRES UP-LIFT RESTRAINT WITHIN 12 INCHES HORIZONTALLY OF HEAD FOR ARM-OVERS AND END OF BRANCHLINE.

THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER AND THE LAST HANGER ON THE LINE SHALL NOT EXCEED 36" FOR 1" PIPE, 48" FOR 1-1/4" PIPE, AND 60" FOR 1-1/2" PIPE OR LARGER.

THE CUMULATIVE HORIZONTAL LENGTH OF AN UNSUPPORTED ARMOVER TO A SPRINKLER, SPRINKLER DROP, OR SPRIG-UP SHALL NOT EXCEED 24" or 12" WHERE STATIC PRESSURE EXCEEDS 100 PSI

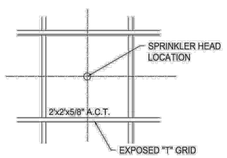
TRAPEZE INSTALLATION REQUIREMENTS

SPAN OF TRAPEZE (Schedule 10)	NOMINAL PIPE SIZE SUPPORTED							
	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"
1'-6"	1"	1"	1"	1"	1"	1"	1 1/4"	1 1/4"
2'-0"	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"
2'-6"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	2"
3'-0"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"	2"
4'-0"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"	2 1/2"
5'-0"	2"	2"	2"	2"	2"	2"	2 1/2"	2 1/2"
6'-0"	2"	2"	2"	2"	2"	2 1/2"	2 1/2"	3"
7'-0"	2"	2"	2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"
8'-0"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"
9'-0"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"	4"
10'-0"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"	3"	4"



E3 TRAPEZE HANGER DETAIL
NOT TO SCALE

E1 RETURN BEND DETAIL
NOT TO SCALE



E2 CEILING TILE DETAIL
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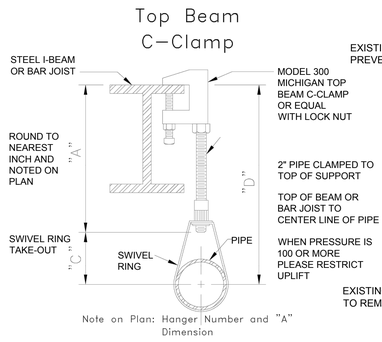

E4 TYPICAL PIPE HANGER DETAIL
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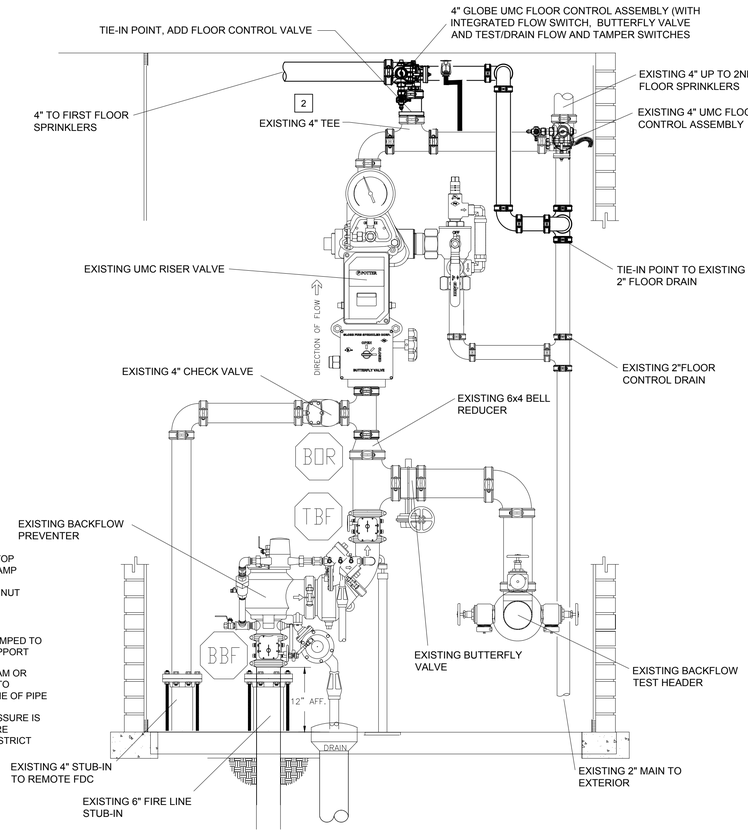

E5 RISER DETAIL
NOT TO SCALE

WALL LEGEND

—X—	1 HOUR RATED WALL - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28401
Tel - (910) 762-2621

SCO ID# 23-26060-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23551 DAVID M. HAHN
11/25/2024

Coastal Carolina Community College
Learning Resource Center - First Floor Renovation
444 Western Boulevard
Jacksonville, North Carolina 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By RWC
Date 11-25-2024	Reviewed By DMH
Project ID	

Sheet Title
FIRE PROTECTION DETAILS

Sheet No.
FP1.2