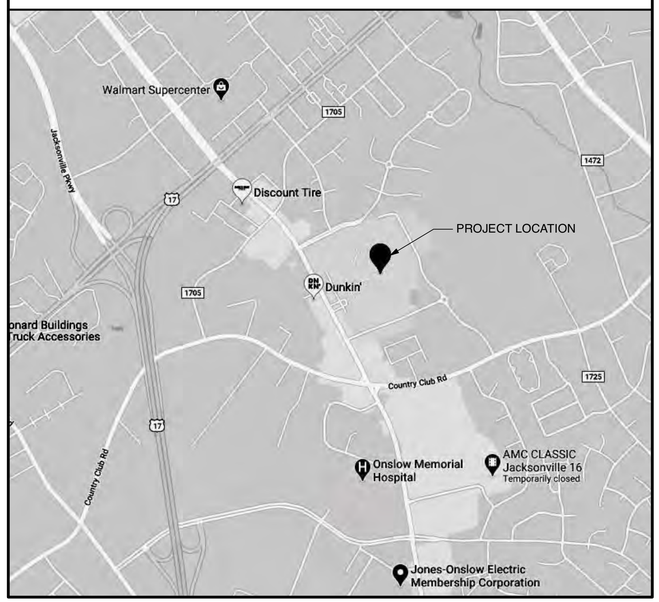
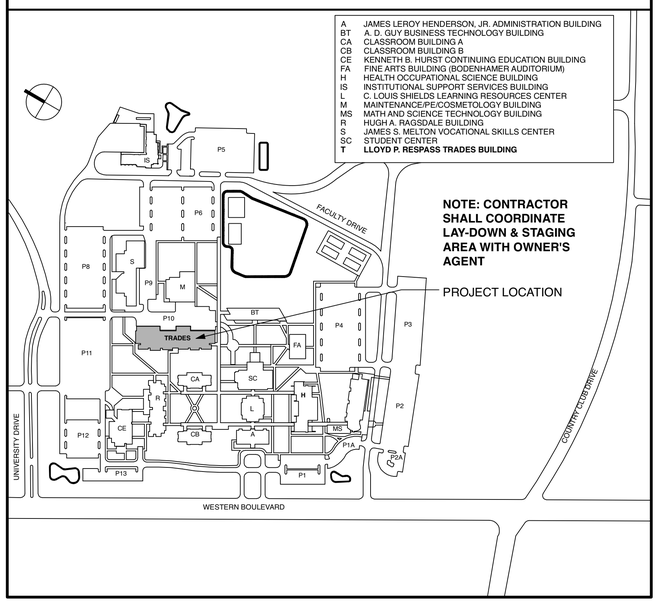
Coastal Carolina Community College
Trades Building Renovation

444 Western Boulevard,
Jacksonville, North Carolina 28546

LOCATION MAP



CAMPUS MAP



DRAWING INDEX

BOWMAN MURRAY HEMINGWAY ARCHITECTS

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phone 910.762.2621
www.bmharch.com

Plumbing / Mechanical / Electrical
CBHF Engineers, PLLC.
2246 Yaupon Drive
Wilmington, NC 28401
(910) 791-4000

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

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

JOHN DOUGLAS MURRAY — REGISTERED ARCHITECT — 6437 — NORTH CAROLINA — WILMINGTON, NC — 6-20-2025

Coastal Carolina Community College
Trades Building Renovation
444 Western Boulevard,
Jacksonville, NC 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: DP
Date: 06-20-2025	Reviewed By: JDM
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: CCCC - Trades Building - 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	John Murray	6437	910-762-2621	murray@bmharch.com
Civil					
Electrical	CBHF Engineers	Jason Famiglietti	35230	910-791-4000	jfam@cbhfengineers.com
Fire Alarm					
Plumbing					
Mechanical	CBHF Engineers	David Hahn	23551	910-791-4000	dhahn@cbhfengineers.com
Sprinkler-Standpipe					
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) 1973 **CURRENT OCCUPANCY(S) (Ch.3) :** Business (COLLEGE)

RENOVATED: (date) _____ **PROPOSED OCCUPANCY(S) (Ch.3) :** Business (COLLEGE)

RISK CATEGORY (Table 1604.5) **Current:** ☐ I ☐ II ☒ III ☐ IV (NO CHANGE)

Proposed: ☐ I ☐ II ☒ III ☐ IV (NO CHANGE)

BASIC BUILDING DATA:

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

Sprinklers: ☒ No ☐ Partial ☐ 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.)

Gross Building Area Table

FLOOR	EXISTING (SQ. FT.)	NEW (SQ. FT.)	SUB-TOTAL	ALTERATION AREA
Covered walk area	1,380 S.F.			
1st Floor	31,835 S.F.			3,190 S.F.
TOTAL	33,215 S.F.			3,190 S.F.

ALLOWABLE AREA
[UNCHANGED IN RENOVATION]

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): _____

Incidental Uses (Table 509): N / A

Special Uses (Chapter 4 - List Code Sections): 406.8 Repair Garages ; 414/414.3 Hazardous Materials (Not In Project Area)

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	Classrooms, Offices, Vocational (B)	33,215 S.F.	23,000	17,250	40,250

[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 = 1,110' (F)

b. Total Building Perimeter = 1,110' (P)

c. Ratio (F/P) = 1 (F/P)

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

e. Percent of frontage increase : If = [F/P - 0.25] x W/30 = 75 (%)

Allowable Area with frontage increase:

As = As + (NS x Ir) = Business Use = 23,000 + (23,000 x 0.75) = 40,250

[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
[UNCHANGED IN PROJECT]

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
BUILDING HEIGHT IN FEET (TABLE 504.3) [2]	55'	Unchanged (20')	
BUILDING HEIGHT IN STORIES (TABLE 504.4) [3]	3	Unchanged (1)	

[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
[PROVIDED PROTECTION - UNCHANGED IN PROJECT]

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							
Exterior							
North	30'+	0-hr	0-hr				
East	30'+	0-hr	0-hr				
West	30'+	0-hr	0-hr				
South	30'+	0-hr	0-hr				
Interior							
Nonbearing walls and partitions							
Exterior Walls							
North	n/a	n/a					
East	n/a	n/a					
West	n/a	n/a					
South	n/a	n/a					
Interior Walls and partitions							
Floor Construction Including supporting beams and joists		0-hr	Exist. - Slab on Grade				
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		N/A					
Shaft Enclos.- Other		N/A					
Corridor Separation		1-hr	0-hr* (Table 1018.1 - Exception *f - Single Tenant)				
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					
Incidential Use Separation		N/A					

PERCENTAGE OF WALL OPENING CALCULATIONS
[UNCHANGED IN PROJECT]

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
NORTH: 30'+	Unprotected/unsprinklered	NO LIMIT	unchanged
SOUTH: 30'+	Unprotected/unsprinklered	NO LIMIT	unchanged
EAST: 30'+	Unprotected/unsprinklered	NO LIMIT	unchanged
WEST: 30'+	Unprotected/unsprinklered	NO LIMIT	unchanged

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 #: Life Safety Plan unchanged in project - Area of Work shown on 2 / G1.1

- ☒ 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)

[UNCHANGED IN PROJECT]

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	4	6	-	4	4	4	-	-	-	-
	NEW/RENO										
	TOTAL										
	REQ'D	3	5		2	4	4	-	-	-	-

SPECIAL APPROVALS

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

City of Jacksonville (Local Jurisdiction)

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design 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:) NC EXISTING BUILDING CODE 811.1

Climate Zone: ☒ 3A ☐ 4A ☐ 5A

Method of Compliance: Energy Code ☐ Performance ☒ Prescriptive

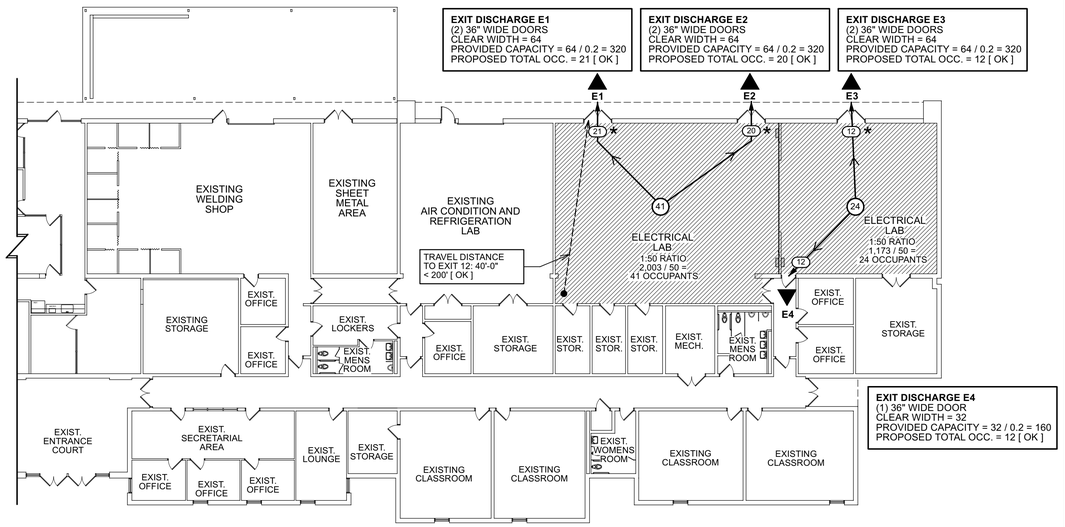
ASHRAE 90.1 ☐ Performance ☐ Prescriptive

(If "Other" specify source here) _____

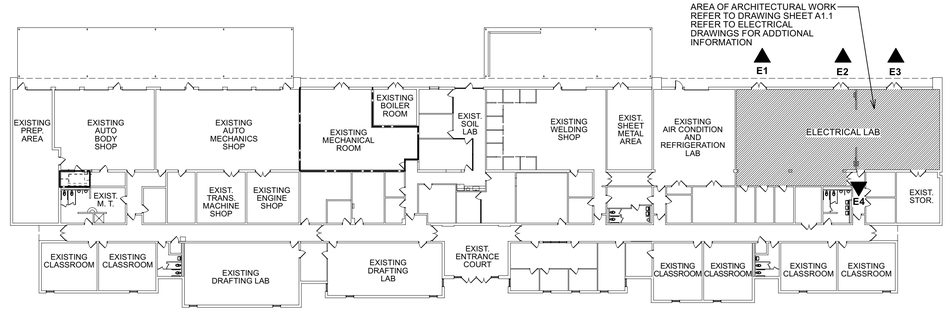
STRUCTURAL DESIGN
(See Structural Drawings)

MECHANICAL DESIGN
(See Mechanical Drawings)

ELECTRICAL DESIGN
(See Electrical Drawings)



2 / G1.1 Life Safety Plan
Scale: 1/16" = 1'-0"



1 / G1.1 Trades Building - Key Plan
Scale: 1" = 30'-0"

Approved
JACKSONVILLE, N.C.
File Number: BP25-00001319
Approval Date: 07/08/25

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WILMINGTON, NC
07-08-2025

Coastal Carolina Community College
Trades Building Renovation
444 Western Boulevard,
Jacksonville, NC 28546

REV.	DATE	DESCRIPTION

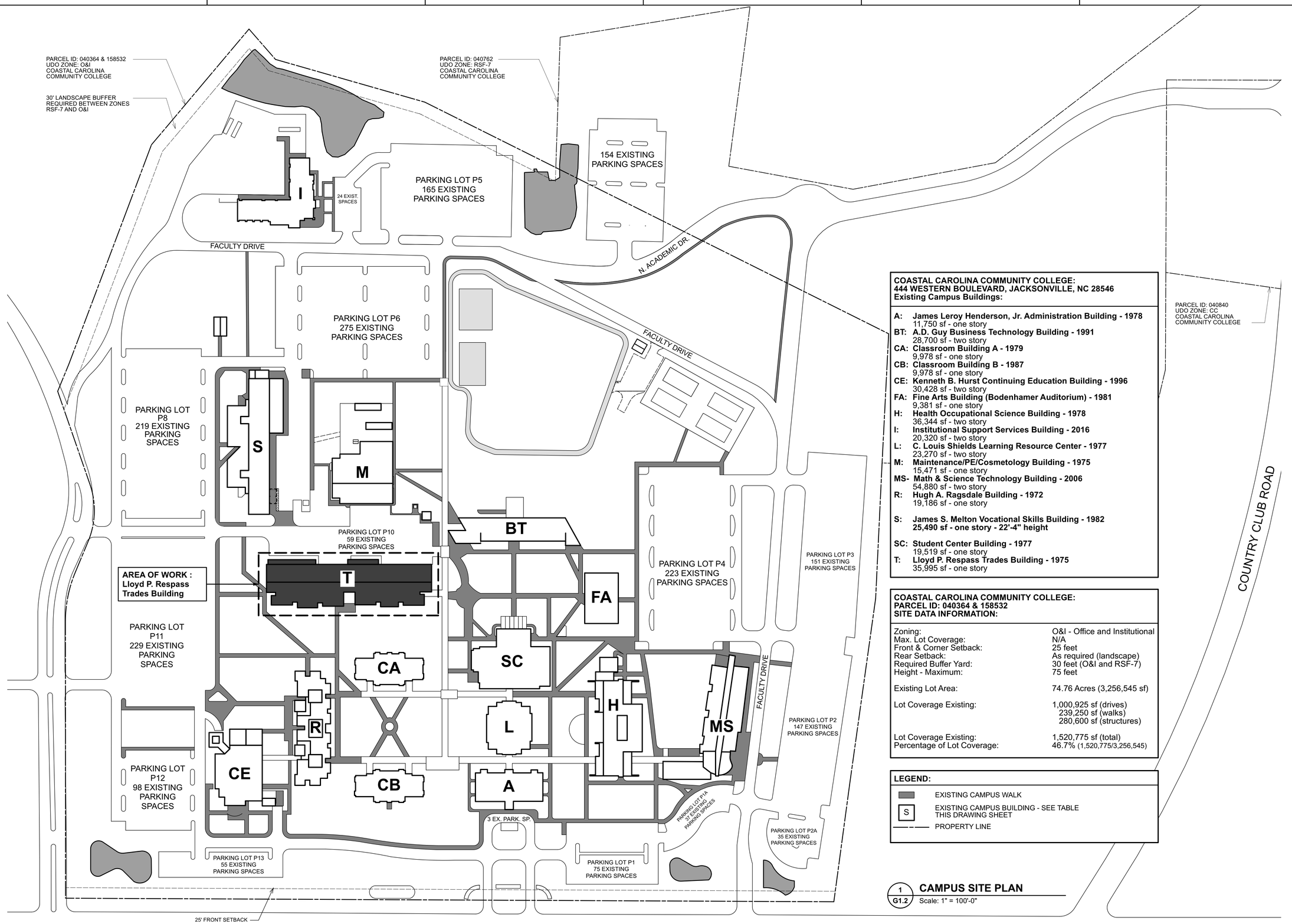
Project Manager	Drawn By DP
Date 06-20-2025	Reviewed By JDM
Project ID	

Sheet Title

APPENDIX B - BUILDING DATA

Sheet No.

G1.1



COASTAL CAROLINA COMMUNITY COLLEGE:
444 WESTERN BOULEVARD, JACKSONVILLE, NC 28546
Existing Campus Buildings:

- **A: James Leroy Henderson, Jr. Administration Building - 1978**
  11,750 sf - one story
- **BT: A.D. Guy Business Technology Building - 1991**
  28,700 sf - two story
- **CA: Classroom Building A - 1979**
  9,978 sf - one story
- **CB: Classroom Building B - 1987**
  9,978 sf - one story
- **CE: Kenneth B. Hurst Continuing Education Building - 1996**
  30,428 sf - two story
- **FA: Fine Arts Building (Bodenhamer Auditorium) - 1981**
  9,381 sf - one story
- **H: Health Occupational Science Building - 1978**
  36,344 sf - two story
- **I: Institutional Support Services Building - 2016**
  20,320 sf - two story
- **L: C. Louis Shields Learning Resource Center - 1977**
  23,270 sf - two story
- **M: Maintenance/PE/Cosmetology Building - 1975**
  15,471 sf - one story
- **MS- Math & Science Technology Building - 2006**
  54,880 sf - two story
- **R: Hugh A. Ragsdale Building - 1972**
  19,186 sf - one story
- **S: James S. Melton Vocational Skills Building - 1982**
  25,490 sf - one story - 22'-4" height
- **SC: Student Center Building - 1977**
  19,519 sf - one story
- **T: Lloyd P. Respass Trades Building - 1975**
  35,995 sf - one story

COASTAL CAROLINA COMMUNITY COLLEGE:
PARCEL ID: 040364 & 158532
SITE DATA INFORMATION:

Zoning:	O&I - Office and Institutional
Max. Lot Coverage:	N/A
Front & Corner Setback:	25 feet
Rear Setback:	As required (landscape)
Required Buffer Yard:	30 feet (O&I and RSF-7)
Height - Maximum:	75 feet
Existing Lot Area:	74.76 Acres (3,256,545 sf)
Lot Coverage Existing:	1,000,925 sf (drives) 239,250 sf (walks) 280,600 sf (structures)
Lot Coverage Existing:	1,520,775 sf (total)
Percentage of Lot Coverage:	46.7% (1,520,775/3,256,545)

LEGEND:

- EXISTING CAMPUS WALK
- S — EXISTING CAMPUS BUILDING - SEE TABLE THIS DRAWING SHEET
- PROPERTY LINE

1 / G1.2 CAMPUS SITE PLAN
Scale: 1" = 100'-0"

Approved
JACKSONVILLE, N.C.
File Number: BP25-00001319
Approval Date: 07/08/25

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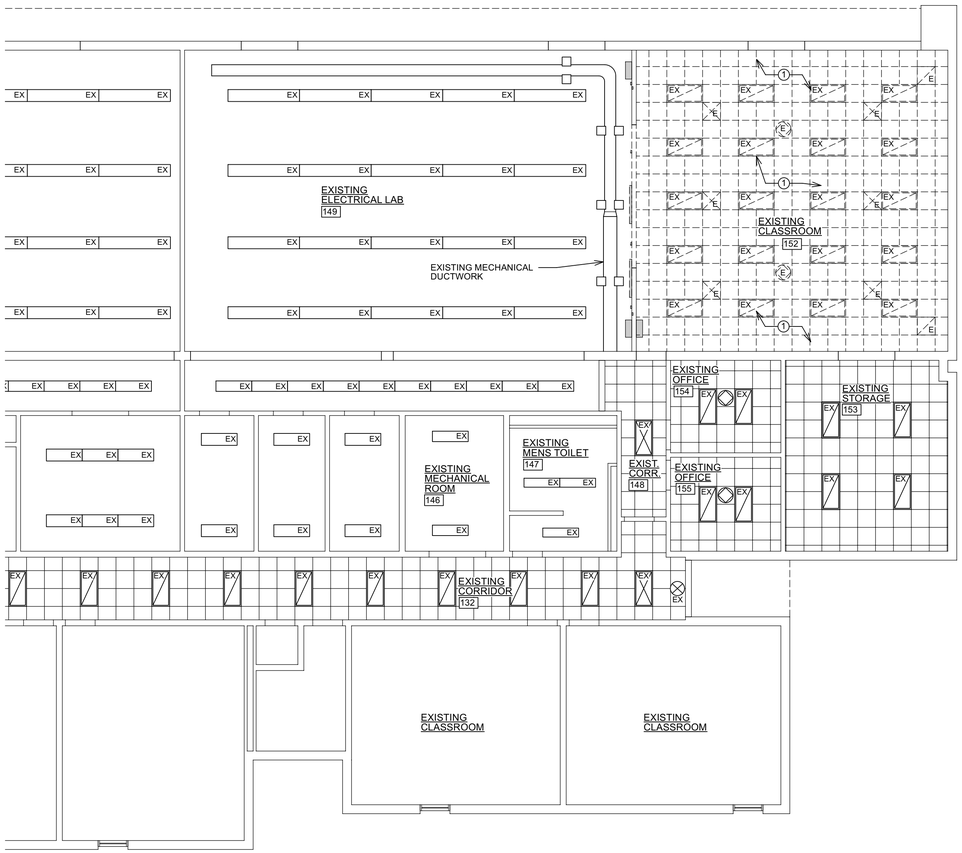
Project ID	

Sheet Title
CAMPUS SITE PLAN

Sheet No.
G1.2



CEILING DEMOLITION NOTES

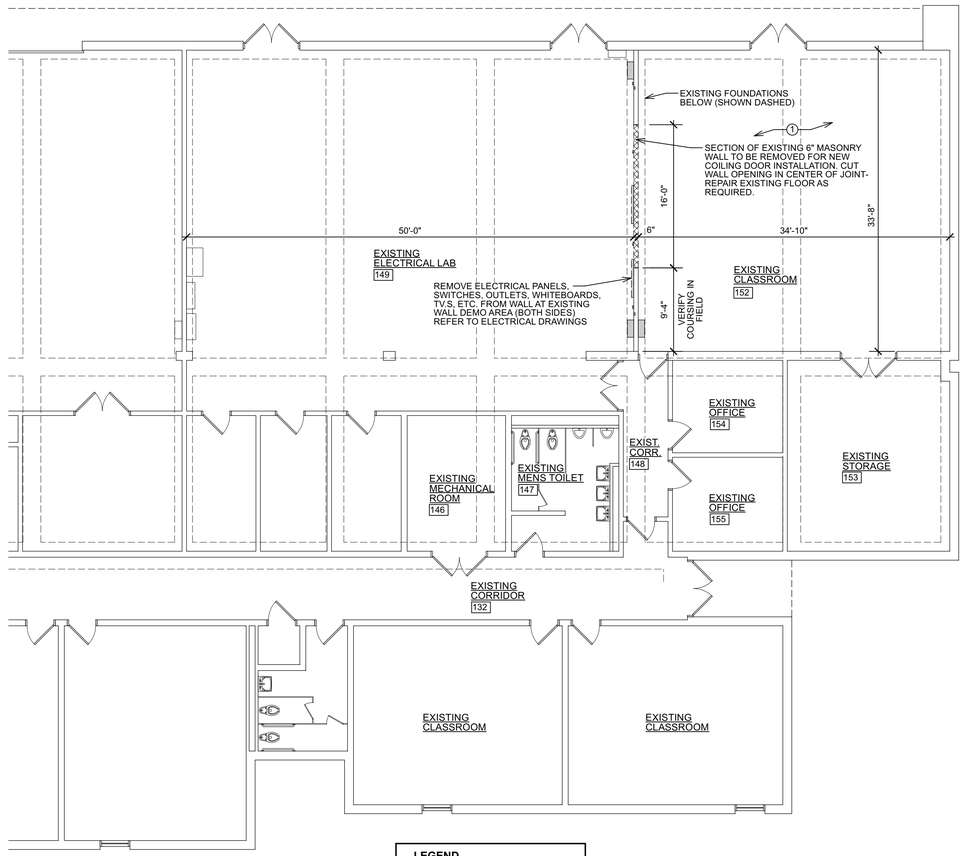
1. EXISTING CEILING GRID SYSTEM AND HANGERS, LIGHTS, HVAC GRILLES, ETC TO BE REMOVED.

CEILING LEGEND

- EXISTING CEILING TILE GRID TO REMAIN
- EXISTING CEILING TILE GRID TO BE REMOVED
- EXISTING LIGHT FIXTURES
- EXISTING LIGHT FIXTURE TO BE REMOVED
- EXISTING MECHANICAL GRILLES
- EXISTING MECHANICAL GRILLES TO BE REMOVED
- EXISTING EXIT SIGN

2 D1.1 Demolition Reflected Ceiling Plan

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



DEMOLITION NOTES

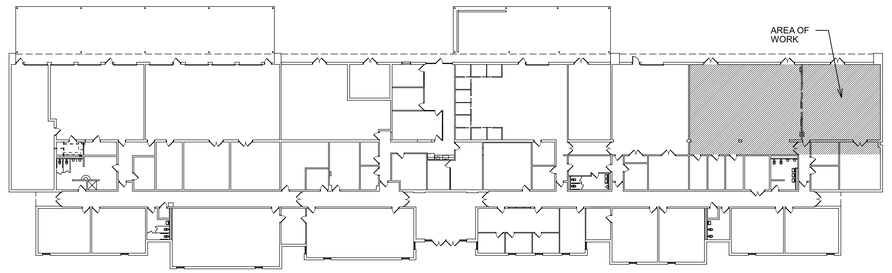
1. REMOVE EXISTING VCT FLOORING.

LEGEND

- EXISTING PARTITION TO REMAIN
- EXISTING PARTITION TO BE REMOVED
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE REMOVED

1 D1.1 Demolition Floor Plan

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



KEY PLAN
SCALE: 1/32" = 1'-0"

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6.26.2025

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REV.	DATE	DESCRIPTION

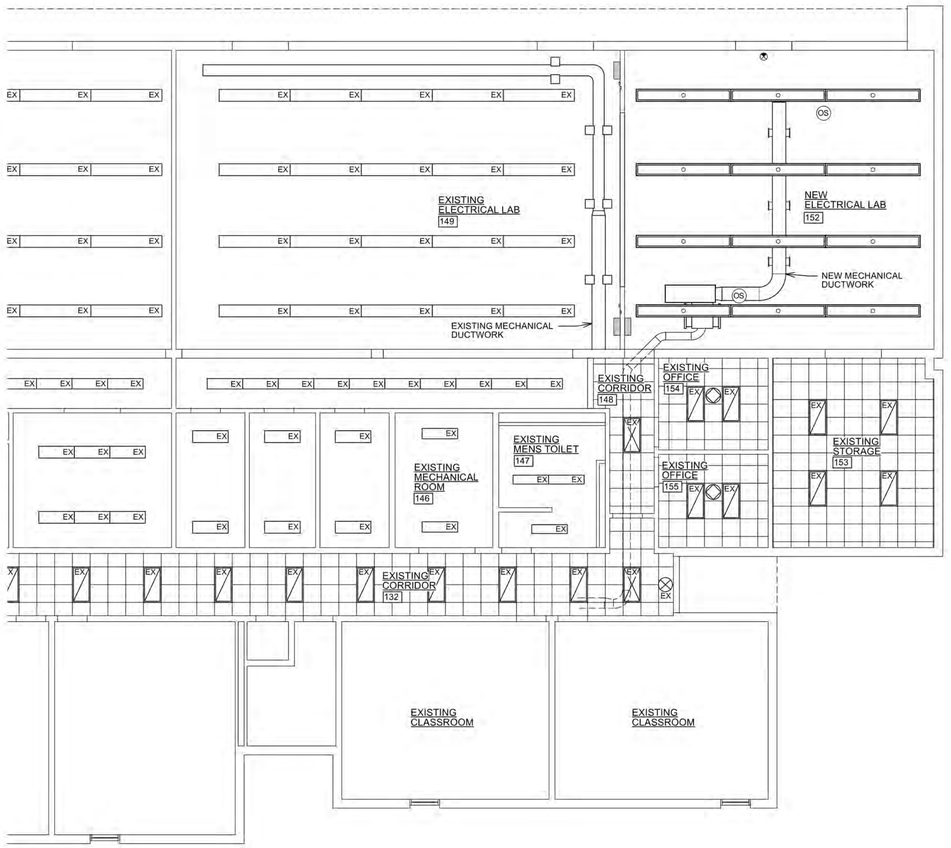
Project Manager	Drawn By: DP
Date: 06-20-2025	Reviewed By: JDM
Project ID	

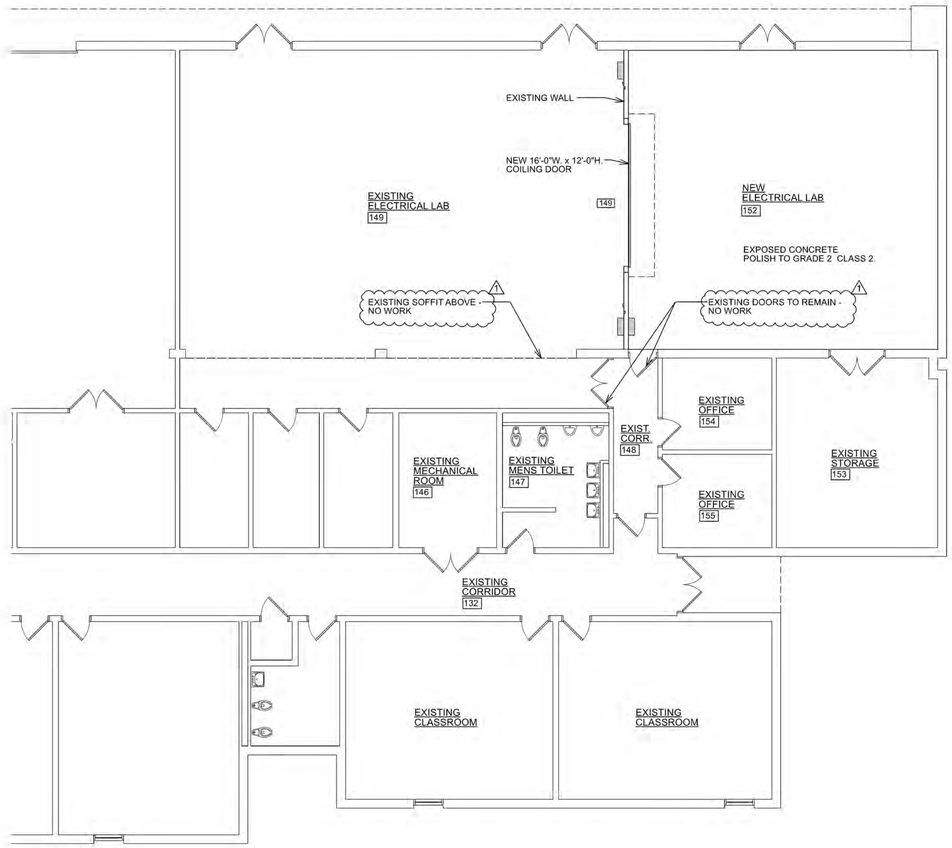
Sheet Title

DEMOLITION FLOOR AND REFLECTED CEILING PLANS

Sheet No.

D1.1



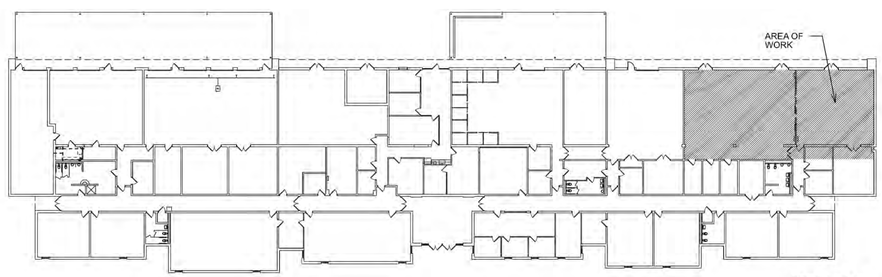


LEGEND

- EXISTING CEILING TILE GRID TO REMAIN
- EXISTING LIGHT FIXTURES
- EXISTING MECHANICAL GRILLES
- EXISTING EXIT SIGN
- NEW LIGHT FIXTURES
- NEW EXIT SIGN
- NEW OCCUPANCY SENSOR

2 / A1.1 Renovation Reflected Ceiling Plan
Scale: 1/8" = 1'-0"

1 / A1.1 Renovation Floor Plan
Scale: 1/8" = 1'-0"



KEY PLAN
SCALE: 1/32" = 1'-0"

Approved
JACKSONVILLE, N.C.
File Number: BP25-00001319
Approval Date: 07/09/25

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REV.	DATE	DESCRIPTION
1	7.7.2025	City of Jacksonville - Review Comment Responses

Project Manager	Drawn By: DP
Date: 06-20-2025	Reviewed By: JDM
Project ID	

Sheet Title
RENOVATION FLOOR AND REFLECTED CEILING PLANS

Sheet No.
A1.1

ABBREVIATIONS

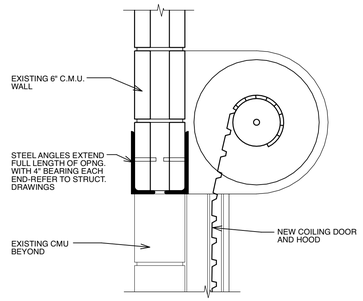
ALUM.	ALUMINUM
APSF	ACRYLIC PLASTER SOFFIT FINISH
CPT TL	CARPET TILE & TYPE (SEE FINISH SCHED. LEGEND)
CONC.	CONCRETE
CMU	CONCRETE MASONRY UNIT
DBL	DOUBLE
EGAP	EXPOSED GRID ACOUSTICAL PANEL (REFER TO SPECIFICATIONS FOR TYPE)
ETR	EXISTING TO REMAIN
EXT.	EXTERIOR
EXIST.	EXISTING
F.F.	FACTORY FINISH
GY. 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
149	EXISTING ELECTRICAL LAB			EXIST. PAINT	EXIST. PAINT	EXIST. PAINT	EXIST. PAINT			
152	NEW ELECTRICAL LAB	POLISHED CONCRETE GRADE 2, CLASS 2	RBBS 1	EXIST. PAINT	EXIST. PAINT	EXIST. PAINT	EXIST. PAINT	EXPOSED STRUCTURE PAINT	-	

DOOR SCHEDULE

OPENING				DOOR			FRAME									
DOOR NO.	WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	ELEVATION	FRAME MATERIAL	FINISH	ELEVATION	HEAD	JAMB	SILL	GLAZING	Fire Rating	HW Set	COMMENTS
149	16'-0"	12'-0"	——	F.F.	FF	D-1	STEEL	FF	-	DH1	DJ1	DS1				



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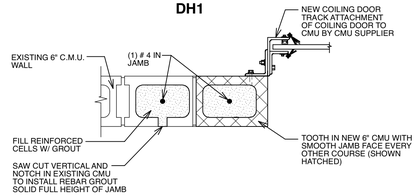
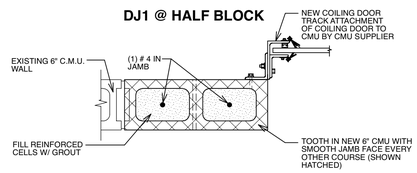
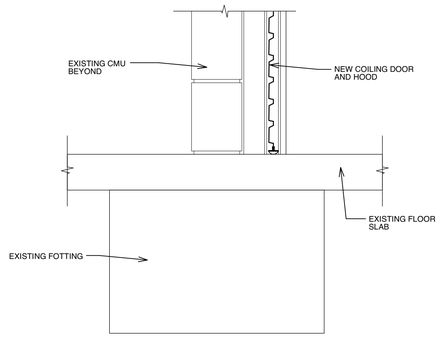


DJ1 @ HALF BLOCK



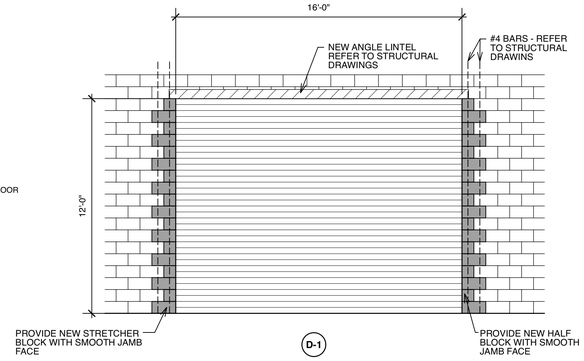
DJ1 @ STRETCHER



DS1

OVERHEAD DOOR

2 / A2.0 Door Details
Scale: 1 1/2" = 1'-0"



D-1
STEEL COILING DOOR

1 / A2.0 Door Elevations
Scale: 1/4" = 1'-0"

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REV.	DATE	DESCRIPTION

Project Manager	Drawn By DP
Date 06-20-2025	Reviewed By JDM
Project ID	

Sheet Title

DOOR AND ROOM FINISH SCHEDULES

Sheet No.

A2.0

1.0 CODES AND STANDARDS:

1.1 2018 North Carolina State Building Code

1.2 "Minimum Design Loads for Buildings and other Structures" SEI/ASCE 7-16.

1.3 "Building Code Requirements for Masonry Structures" TMS 402-13.

1.4 "Specification for Structural Steel Buildings" AISC 360-10.

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

2.0 DESIGN LOADS:
Project Located in: City of Jacksonville, County of Onslow, State of North Carolina.

2.1 Gravity Loads: (Reduced where allowed)

GRAVITY LOADS			
Case	Locations	Uniform (psf)	Concentrated (lbs) (Over 2.5'x2.5')
DEAD	Roof	20	
	Floor	100	
LIVE	Roof	20	
	Floor	100	

2.2 Snow Loads per Referenced Code.

Pg = 10 psf
I = 1.1
Ce = 0.9
Ct = 1.0

2.3 Risk Category = III

2.4 Wind Loads per Referenced Code

Alterations are permitted to be made to any structure without requiring the structure to comply with Sections 1609 provided the alteration complies with requirements for new structures and the following conditions are met:

1. The alteration does not increase the wind force in any element by more than 10% or decrease the strength of any existing member by more than 10%.

2. The alteration does not decrease the design strength of any existing structural element to resist wind forces by more than 10%.

The alteration does comply with the new structure requirement and does not increase forces or decrease strength therefore the existing structure is not required to comply with Section 1609.

2.5 Seismic Loads per Referenced Code.

Alterations are permitted to be made to any structure without requiring the structure to comply with Sections 1613 provided the alteration complies with requirements for new structures and the following conditions are met:

1. The alteration does no increase the seismic force in any element by more than 10 percent or decrease the strength of any existing member by more than 10 percent.

2. The alteration does not decrease the design strength of any existing structural element to resist seismic forces by more than 10%.

The alteration does comply with new structure requirements and does not increase forces or decrease strength therefore the existing structure is not required to comply with Section 1613.

2.6 Guardrail designed per Referenced Code
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.

3.0 STRUCTURAL MASONRY:

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

3.2 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.

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

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

3.5 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 1½" 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 occurred.
i. Mechanical vibrator shall be a low velocity vibrator with a ¾" head.

3.6 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 ¾" 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.

3.7 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"

4.0 STRUCTURAL STEEL:

4.1 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.

4.2 All structural steel shall be detailed, fabricated and erected in accordance with the AISC Code of Standard Practice.

4.3 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.

4.4 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.

4.5 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.

5.0 SHOP DRAWING SUBMITTAL:

5.1 See Project Manual

5.2 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.

6.0 CONSTRUCTION AND SAFETY:

6.1 Woods Engineering P.A.'s responsibility is limited to the details and information shown on these drawings. It is the responsibility of the Contractor to provide adequate safety measures required by local codes as well as OSHA Standards for the Construction Industry.
This should include, but not be limited to the following:
Shoring to protect new as well as existing structures.
Necessary Scaffolding.
Material Handling Equipment.
Trench Boxing.

ABBREVIATIONS

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

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Approved
JACKSONVILLE N.C.
File Number: BP25-00001319
Approval Date: 07/08/25
CAMP LEJEUNE HOME OF MCAS NEW RIVER

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Date: 2025.06.18 18:24:58-04'00'

Coastal Carolina Community College
Trades Building Renovation
444 Western Boulevard,
Jacksonville, NC 28546

REV.	DATE	DESCRIPTION

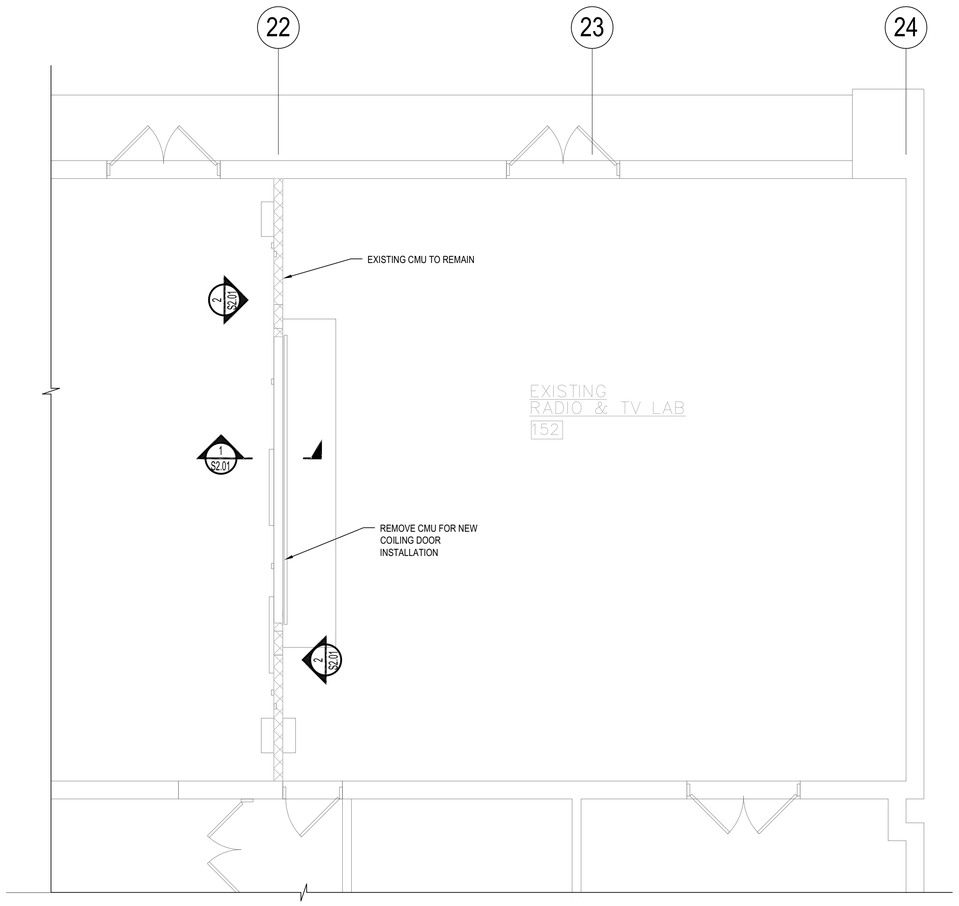
Project Manager	Drawn By JK
Date 6-20-2025	Reviewed By AS
Project ID	

Sheet Title

GENERAL NOTES

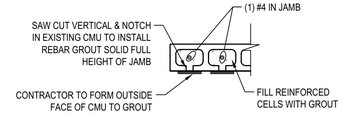
Sheet No.

S1.01



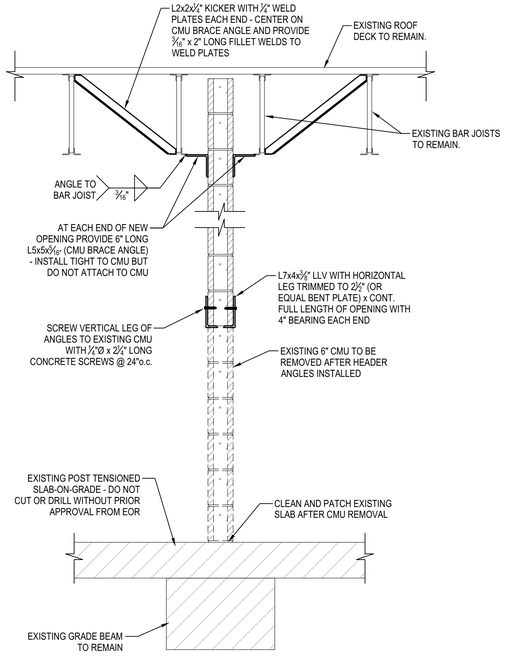
PARTIAL FLOOR FRAMING / DEMO PLAN

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



DETAIL A

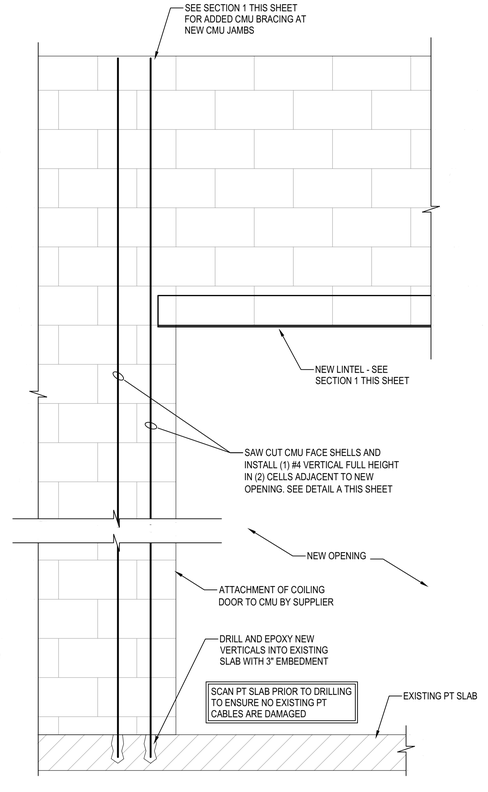
SCALE: 3/4" = 1'-0"



SECTION 1

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

NEW OPENING FOR COILING DOOR



ELEVATION 2

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

NEW OPENING FOR COILING DOOR

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Date: 2025.06.18 16:25:01 -04'00'

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REV.	DATE	DESCRIPTION

Project Manager	Drawn By: JK
Date: 6-20-2025	Reviewed By: AS
Project ID	

Sheet Title

PARTIAL FLOOR FRAMING/ DEMO PLAN AND SECTIONS

Sheet No.

S2.01

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.

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.

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.
11. IF ANY UNUSUAL STRUCTURAL OR ARCHITECTURAL CONDITIONS ARE ENCOUNTERED DURING DEMOLITION, CONTACT THE ARCHITECT/ENGINEER.
12. REMOVE AIR CONDITIONING, REFRIGERATION, AND OTHER EQUIPMENT CONTAINING REFRIGERANTS WITHOUT RELEASING CHLOROFLUOROCARBON REFRIGERANTS TO THE ATMOSPHERE IN ACCORDANCE WITH THE CLEAN AIR ACT AMENDMENT OF 1990. RECOVER ALL REFRIGERANTS PRIOR TO REMOVING AIR CONDITIONING, REFRIGERATION, AND OTHER EQUIPMENT CONTAINING REFRIGERANTS AND DISPOSE OF IN ACCORDANCE WITH THE PARAGRAPH ENTITLED "DISPOSAL OF OZONE DEPLETING SUBSTANCE (ODS)." TURN IN SALVAGED CLASS I ODS REFRIGERANTS AS SPECIFIED IN PARAGRAPH, "SALVAGED MATERIALS AND EQUIPMENT."

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.

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06.20.2025

Coastal Carolina Community College
Trades Building Renovation
444 Western Boulevard,
Jacksonville, NC 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: MEZ
Date: 06.20.2025	Reviewed By: DMH
Project ID	

Sheet Title
MECHANICAL SCHEDULE, ABBREV. LEGEND & SUMMARY

Sheet No.
M-0.1

MECHANICAL SPECIFICATIONS

PART 1 GENERAL

1.1 SCOPE OF WORK: THESE DRAWINGS AND SPECIFICATIONS DESCRIBE THE SCOPE OF WORK REQUIRED FOR PROJECT MECHANICAL HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL REQUIRED FOR COMPLETE, FULLY FUNCTIONING MECHANICAL SYSTEMS COMPLYING WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.

1.2 CONTRACTOR: THE WORD "CONTRACTOR" AS USED HEREIN SHALL MEAN THE HVAC INSTALLER UNLESS OTHERWISE QUALIFIED.

1.3 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 HVAC SYSTEMS.

1.4 CODE COMPLIANCE: COMPLY WITH THE LATEST EDITIONS OF THE FOLLOWING STANDARDS AND CODES, INSOFAR AS THEY APPLY:

A. NORTH CAROLINA STATE BUILDING CODE, LATEST EDITION AND REVISIONS

B. LOCAL JURISDICTION REQUIREMENTS: INCLUDE ALL WORK TO COMPLY WITH CODES WHETHER INDICATED ON DRAWINGS OR NOT. NOTIFY ENGINEER OF DISCREPANCIES BETWEEN DRAWINGS AND CODES PRIOR TO BEGINNING WORK.

1.5 MANUFACTURER'S RECOMMENDATIONS: INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

1.6 WORKMANSHIP: UTILIZE SKILLED MECHANICS TO OBTAIN A HIGH-QUALITY PROFESSIONAL FINISH INSTALLATION WHEN COMPLETED. WORK OF UNACCEPTABLE QUALITY SHALL BE REMOVED AND REWORKED AT NO ADDITIONAL COST. ENGINEER SHALL BE THE JUDGE OF WORKMANSHIP AND THEIR OPINION WILL BE FINAL. IN ADDITION, ANY EXISTING CONSTRUCTION DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER BY THE CONTRACTOR AT NO ADDITIONAL COST.

1.7 SUPERVISION: PROVIDE SKILLED SUPERINTENDENTS TO SUPERVISE THE WORK FROM THE BEGINNING TO COMPLETION AND FINAL INSPECTION.

1.8 PROGRESS OF WORK: PERFORM WORK IN ACCORDANCE WITH THE SCHEDULE AND REQUIREMENTS OF THE OWNER. UNDER NO CIRCUMSTANCES SHALL THIS CONTRACTOR DELAY THE OVERALL PROJECT SCHEDULE.

1.9 COORDINATION: COORDINATE MECHANICAL WORK WITH THE WORK OF OTHER TRADES. LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE UNLESS SPECIFICALLY DIMENSIONED. LAYOUT MECHANICAL WORK SO AS NOT TO INTERFERE WITH THE WORK OF OTHER TRADES. VERIFY ACTUAL BUILDING STRUCTURE PRIOR TO DUCT FABRICATION AND ADJUST ARRANGEMENT AS REQUIRED. INCLUDE ALL OFFSETS IN DUCTS, FITTINGS, PIPING, ETC. AS REQUIRED TO PROPERLY INSTALL EQUIPMENT.

1.10 EQUIPMENT LOCATIONS: DETERMINE EXACT EQUIPMENT AND MATERIALS LOCATIONS TO PROVIDE BEST ARRANGEMENT AND TO FACILITATE PROPER MAINTENANCE AND SERVICING OF EQUIPMENT.

1.11 LISTING AND LABELING: ALL EQUIPMENT SHALL BE LABELED OR LISTED BY UL OR OTHER APPROVED TESTING AGENCY WHERE REQUIRED.

1.12 STORAGE SPACE: CONSULT WITH THE OWNER REGARDING JOB SITE STORAGE FOR MECHANICAL 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.

1.13 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.

1.14 ELECTRICAL WORK

A. PERFORM ELECTRICAL WORK FOR MECHANICAL EQUIPMENT IN COMPLIANCE WITH PROJECT ELECTRICAL REQUIREMENTS. ELECTRICAL WORK FOR MECHANICAL EQUIPMENT NOT SPECIFICALLY INDICATED TO BE PROVIDED BY THE ELECTRICAL CONTRACTOR IN THE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AS PART OF HIS WORK.

B. ELECTRICAL DRAWINGS ARE BASED ON ELECTRICAL CHARACTERISTICS INDICATED IN DRAWING MECHANICAL EQUIPMENT SCHEDULES. ANY EQUIPMENT FURNISHED BY THE MECHANICAL CONTRACTOR WHICH DOES NOT MATCH THE ELECTRICAL CHARACTERISTICS INDICATED IN THE DRAWING SCHEDULES SHALL BE COORDINATED WITH THE ELECTRICAL CONTRACTOR. ANY ADDITIONAL COSTS FOR ELECTRICAL INSTALLATION REQUIRED FOR EQUIPMENT NOT MATCHING THE DRAWING SCHEDULES SHALL BE BORNE BY THE MECHANICAL CONTRACTOR.

C. LOW VOLTAGE CONTROL WIRING FOR MECHANICAL SYSTEMS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR.

1.15 SUBMITTALS: SUBMIT ONE (1) ELECTRONIC COPY OF DESCRIPTIVE DATA FOR MECHANICAL EQUIPMENT AND MATERIALS INCLUDING GRILLES AND DAMPERS FOR APPROVAL BY THE ENGINEER. CLEARLY IDENTIFY ALL ITEMS.

1.16 OPERATING AND MAINTENANCE MANUALS: SUBMIT TWO COPIES OF COMPLETE OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT, INCLUDING NECESSARY CUT SHEETS, CHARTS, WRITTEN INSTRUCTIONS, WIRING DIAGRAMS, FINAL AS-BUILT DRAWINGS WITH BALANCED AIRFLOWS INDICATED, ETC. BIND IN SUITABLE HARD BACK RING BINDERS, PROPERLY INDEXED, AND DELIVER TO THE OWNER PRIOR TO BUILDING OCCUPANCY. IN ADDITION, AFFIX A FOLDER WITH TYPICAL "OWNER'S INSTRUCTIONS" AND "MAINTENANCE INFORMATION" INSIDE THE MECHANICAL EQUIPMENT AS APPLICABLE. THE FOLDER SHALL ALSO INCLUDE A COMPLETE STARTUP LOG FOR EQUIPMENT.

1.17 RECORD DRAWINGS: MAINTAIN ONE SET OF "RED-LINED" RECORD DRAWINGS ON SITE AT ALL TIMES AND PROVIDE DRAWINGS TO ENGINEER PRIOR TO FINAL INSPECTION.

1.18 WARRANTY: WARRANTY THE MATERIALS AND WORKMANSHIP COVERED BY THESE DRAWINGS AND SPECIFICATIONS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. REPAIR AND/OR REPLACE ANY PARTS OF ANY SYSTEM THAT MAY PROVE TO BE DEFECTIVE AT NO ADDITIONAL COST TO THE OWNER WITHIN THE WARRANTY PERIOD. PROVIDE 5 YEAR WARRANTY FOR ALL AIR CONDITIONING COMPRESSORS. FURNISH WARRANTY CERTIFICATES FOR ALL MECHANICAL EQUIPMENT. WARRANTY TO COMMENCE UPON DATE OF ACCEPTANCE OF WORK BY OWNER.

PART 2 MATERIALS

2.1 EQUIPMENT

A. MODELS AS SCHEDULED ON THE DRAWINGS. MANUFACTURERS INDICATED ARE INTENDED TO ESTABLISH THE QUALITY AND TYPE OF EQUIPMENT DESIRED. COMPARABLE EQUIPMENT WILL BE CONSIDERED FOR APPROVAL BY THE ARCHITECT/ENGINEER

B. INCLUDE ALL ACCESSORIES INDICATED OR AS RECOMMENDED BY THE MANUFACTURER FOR PROPER OPERATION.

C. WATER-SOURCE HEAT PUMP UNITS SHALL BE FURNISHED AND INSTALLED AS SCHEDULED ON THE DRAWINGS. SUBMIT PRODUCT DATA INCLUDING PERFORMANCE RATINGS, DIMENSIONS, WEIGHT, ELECTRICAL REQUIREMENTS, ACCESSORY INFORMATION, AND INSTALLATION CLEARANCES FOR EACH UNIT. INCLUDE SAMPLE NAMEPLATE AND MANUFACTURER'S STANDARD WARRANTY. COORDINATE SUBMITTALS WITH STRUCTURAL SUPPORT, ELECTRICAL, PIPING, AND DUCT CONNECTIONS. INSTALL UNITS IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. SUSPEND FROM BAR JOISTS USING TRAPEZE-STYLE HANGERS WITH NEOPRENE VIBRATION ISOLATORS. PROVIDE FLEXIBLE CONNECTORS AT DUCT CONNECTIONS AND PRESS-CONNECT HYDRONIC CONNECTIONS. INSTALL MANUAL AIR VENTS AND Y-STRAINERS AT UNIT CONNECTIONS. START-UP SHALL BE PERFORMED BY A FACTORY-AUTHORIZED TECHNICIAN. TESTING, ADJUSTING, AND BALANCING OF AIRFLOW AND HYDRONIC FLOW SHALL BE PERFORMED BY AN AABC-CERTIFIED BALANCING CONTRACTOR. SUBMIT FINAL BALANCING REPORTS FOR REVIEW

2.2 DUCTWORK

A. DUCT CONSTRUCTION (SINGLE WALL): GALVANIZED STEEL CONSTRUCTED, MILL-PHOSPHATIZED FINISH SUITABLE FOR FIELD PAINTING, BRACED, SUPPORTED AND INSTALLED ACCORDING TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS, 1" PRESSURE CLASS, SEAL CLASS A. SEAL USING APPROPRIATE CODE APPROVED TYPE DUCT SEALING MASTIC (HARDCAST CCWI-181, RED DEVIL D-SEAL, RCD #8). "DUCT TAPE" IS NOT ACCEPTABLE FOR DUCT SEALING. DUCT-MATE OR SIMILAR FLANGED JOINT CONNECTIONS ARE ACCEPTABLE WHEN INSTALLED STRICTLY PER MANUFACTURER RECOMMENDATIONS.

B. DUCT SIZES INDICATED ARE INSIDE FREE AREA DIMENSIONS. DUCT DIMENSIONS SHALL BE ADJUSTED TO SUIT FIELD CONDITIONS USING EQUIVALENT SIZE PER ASHRAE STANDARD. RECTANGULAR OR ROUND DUCTWORK MAY BE USED AT CONTRACTOR OPTION PROVIDED EQUIVALENT SIZE PER ASHRAE STANDARD IS USED.

C. ELBOWS: ALL SQUARE BENDS OR ELBOW FITTINGS SHALL BE FITTED WITH APPROVED TYPE DOUBLE THICKNESS TURNING VANES.

D. EXPOSED SPIRAL DUCTWORK: PROVIDE EXPOSED ROUND DOUBLE-WALL SPIRAL DUCTWORK WITH INTERSTITIAL FIBERGLASS INSULATION CONFORMING TO ASTM C1071 AND NAIMA AH124. DUCT INNER WALL SHALL BE PERFORATED OR SOLID GALVANIZED SHEET METAL AS REQUIRED. OUTER SHELL SHALL BE SMOOTH-GALVANIZED STEEL WITH MILL-PHOSPHATIZED FINISH SUITABLE FOR FIELD PAINTING. DUCT SHALL BE PAINTED TO MATCH ADJACENT OR CONNECTED DUCTWORK COLOR, TO BE CONFIRMED BY ARCHITECT DURING SUBMITTAL REVIEW. SUSPEND DUCTWORK FROM EXISTING BAR JOISTS USING GALVANIZED THREADED ROD AND UNISTRUT OR ANGLE TRAPEZE SUPPORTS. HANGERS SHALL COMPLY WITH SMACNA STANDARDS AND BE SPACED ACCORDING TO SMACNA TABLE 5-2 FOR ROUND DUCT. HANGERS SHALL BE INSTALLED WITHIN 24-INCHES OF ELBOWS AND WITHIN 48 INCHES OF EACH BRANCH CONNECTION. DUCTWORK AND SUPPORTS SHALL BE INSTALLED LEVEL AND ALIGNED TO MAINTAIN CONTINUITY AND VISUAL UNIFORMITY IN FINISHED SPACES.

E. DUCT ACCESSORIES: PROVIDE MANUAL VOLUME DAMPERS IN SUPPLY AND RETURN DUCTWORK WHERE SHOWN OR AS REQUIRED FOR SYSTEM BALANCING. DAMPERS SHALL BE MULTI-BLADE, PARALLEL OR OPPOSED TYPE, CONSTRUCTED OF GALVANIZED STEEL WITH LINKAGE OUT OF THE AIRSTREAM AND LEAKAGE CLASS III OR BETTER. INCLUDE LOCKING QUADRANT HANDLE MOUNTED ON AN ELEVATED PLATFORM FOR USE WITH INSULATED DUCT. PROVIDE FLEXIBLE DUCT CONNECTORS AT EACH WATER-SOURCE HEAT PUMP DUCT CONNECTION. CONNECTORS SHALL BE FACTORY-FABRICATED WITH NEOPRENE-COATED FIBERGLASS FABRIC AND GALVANIZED STEEL ENDS, SUITABLE FOR SYSTEM PRESSURE AND TEMPERATURE. INSTALL TO PREVENT TRANSMISSION OF VIBRATION AND ALLOW FOR THERMAL MOVEMENT. INCLUDE ALL NECESSARY DUCT ACCESSORIES, FASTENERS, AND HARDWARE TO COMPLETE A FUNCTIONAL AND SERVICEABLE SYSTEM. HARDWARE SHALL BE GALVANIZED OR STAINLESS STEEL AND SUITABLE FOR USE WITH EXPOSED, PAINTED SPIRAL DUCT

2.3 HANGERS AND SUPPORTS:

A. SUPPORT ALL HYDRONIC PIPING USING GALVANIZED STEEL CLEVIS HANGERS CONFORMING TO MSS SP-58, TYPE 1. HANGERS SHALL BE SIZED FOR TYPE L COPPER TUBE AND INSTALLED IN ACCORDANCE WITH MSS SP-69. PROVIDE GALVANIZED THREADED ROD AND BEAM CLAMPS TO SUSPEND HANGERS FROM EXISTING BAR JOISTS. HANGERS SHALL BE LEVEL, PLUMBED, AND SPACED TO MAINTAIN PIPE GRADE, ALLOW FOR THERMAL MOVEMENT, AND SUPPORT FITTINGS AND VALVES WITHOUT STRAINING CONNECTIONS. SUSPEND EACH WATER-SOURCE HEAT PUMP FROM EXISTING BAR JOISTS USING A TRAPEZE HANGER CONSISTING OF GALVANIZED THREADED RODS AND UNISTRUT OR EQUIVALENT METAL CHANNEL. TRAPEZE SUPPORTS SHALL BE DESIGNED TO CARRY THE OPERATING WEIGHT OF THE UNIT AND TO PROVIDE CLEARANCE FOR SERVICE ACCESS. SECURE ALL COMPONENTS USING MANUFACTURER-APPROVED HARDWARE AND VERIFY ALIGNMENT BEFORE FINAL CONNECTION OF PIPING

2.4 AIR DISTRIBUTION

A. DIFFUSERS AND REGISTERS: MODELS AS SCHEDULED ON THE DRAWINGS. MANUFACTURERS INDICATED ARE INTENDED TO ESTABLISH THE QUALITY AND TYPE OF EQUIPMENT DESIRED. COMPARABLE EQUIPMENT WILL BE CONSIDERED FOR APPROVAL BY THE ENGINEER. INCLUDE FINISH AND ACCESSORIES AS INDICATED.

B. SUPPLY AIR DIFFUSERS: PROVIDE DUCT-MOUNTED CURVED-FACE SUPPLY AIR DIFFUSERS FOR INSTALLATION ON EXPOSED SPIRAL DUCTWORK. DIFFUSERS SHALL BE CONSTRUCTED OF EXTRUDED OR FORMED ALUMINUM AND INCLUDE FACTORY-INSTALLED OPPOSED-BLADE BALANCING DAMPERS. FACE STYLE SHALL BE CURVED TO MATCH THE RADIUS OF THE DUCT FOR FLUSH INTEGRATION. DIFFUSER FINISH SHALL BE FACTORY-PREPARED TO ACCEPT FIELD-APPLIED PAINT. COLOR TO MATCH ADJACENT DUCTWORK AND SHALL BE CONFIRMED BY ARCHITECT DURING SUBMITTAL REVIEW. DIFFUSERS SHALL BE INSTALLED WITH AIRTIGHT CONNECTIONS TO DUCTS AND ORIENTED FOR CONSISTENT VISUAL ALIGNMENT WITH DUCT SEAMS AND STRUCTURAL GRID.

C. RETURN AIR GRILLE: PROVIDE SIDE-MOUNTED RETURN AIR GRILLE INSTALLED ON EXPOSED RETURN DUCTWORK. GRILLE SHALL BE CONSTRUCTED OF EXTRUDED OR FORMED ALUMINUM AND INCLUDE AN INTEGRAL-OPPOSED-BLADE BALANCING DAMPER. GRILLE SHALL BE FACTORY-PREPARED FOR FIELD PAINTING. FINAL COLOR TO MATCH ADJACENT DUCTWORK AND SHALL BE CONFIRMED BY ARCHITECT DURING SUBMITTAL REVIEW. MOUNTING SHALL BE BY CONCEALED BRACKETS OR COUNTERSUNK SCREWS. ENSURE AIRTIGHT CONNECTION TO DUCTWORK AND ORIENT TO ALIGN WITH DUCT SEAMS AND VISUAL GRID. FINAL GRILLE SIZE AND AIRFLOW PERFORMANCE SHALL BE INDICATED IN THE SCHEDULE ON THE DRAWINGS.

2.5 PIPING

A. HYDRONIC PIPING: THIS PROJECT SHALL BE LIMITED TO 2 INCHES AND SMALLER AND SHALL CONSIST OF TYPE L, DRAWN-TEMPER COPPER TUBE CONFORMING TO ASTM B88. ALL FITTINGS SHALL BE PRESS-CONNECT TYPE (E.G., VIEGA PROPRESS OR APPROVED EQUAL) WITH EPDM OR HNBR SEALING ELEMENTS AND RATED FOR A MINIMUM OF 200 PSIG AT 250°F. DIELECTRIC FITTINGS SHALL BE PROVIDED WHEREVER COPPER PIPING TRANSITIONS TO DISSIMILAR METALS SUCH AS STEEL PIPING SHALL BE INSTALLED TRUE TO LINE AND SUPPORTED IN ACCORDANCE WITH MSS SP-58 AND THE PRESS FITTING MANUFACTURER'S PUBLISHED REQUIREMENTS. USE COPPER-COMPATIBLE HANGERS AND SUPPORTS. JOINTS SHALL BE MADE USING MANUFACTURER-APPROVED PRESS TOOLS; NO SOLDERED, BRAZED, GROOVED, OR WELDED JOINTS ARE PERMITTED UNDER THIS SPECIFICATION. ALL CONNECTIONS TO TERMINAL EQUIPMENT SHALL INCLUDE UNIONS TO FACILITATE MAINTENANCE AND REPLACEMENT. THE INSTALLED SYSTEM SHALL BE RATED FOR A MINIMUM WORKING PRESSURE OF 100 PSIG AT 180°F.

B. HYDRONIC SPECIALTIES: PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS OF HYDRONIC PIPING AND AT EACH WATER-SOURCE HEAT PUMP COIL TO FACILITATE SYSTEM AIR REMOVAL. AIR VENTS SHALL BE BRONZE-BODIED WITH NONFERROUS INTERNALS AND SHALL INCLUDE SCREWDRIVER OR THUMBSCREW OPERATORS. CONNECTIONS SHALL BE COMPATIBLE WITH PRESS-CONNECT FITTINGS. MINIMUM RATING: 150 PSIG AT 225°F. INSTALL Y-PATTERN STRAINERS IN THE INLET PIPING TO EACH WATER-SOURCE HEAT PUMP. STRAINERS SHALL BE BRONZE OR CAST IRON WITH PRESS-CONNECT OR PRESS-ADAPTER ENDS SUITABLE FOR USE WITH TYPE L COPPER TUBING. INCLUDE STAINLESS STEEL 40-MESH SCREENS AND DRAIN TAPS FOR CLEANOUT. PROVIDE FLEXIBLE CONNECTORS ON THE SUPPLY AND RETURN CONNECTIONS TO EACH WATER-SOURCE HEAT PUMP. CONNECTORS SHALL BE STAINLESS STEEL BELLOWS TYPE WITH WOVEN PROTECTIVE JACKETS AND PRESS-CONNECT ENDS OR FIELD-INSTALLED PRESS ADAPTERS. RATED FOR 150 PSIG AND 250°F MINIMUM.

C. HYDRONIC VALVES: PROVIDE ISOLATION VALVES ON SUPPLY AND RETURN PIPING SERVING EACH WATER-SOURCE HEAT PUMP UNIT. VALVES SHALL BE TWO-PIECE, FULL-PORT BALL VALVES WITH PRESS-CONNECT ENDS, BRONZE BODY, PTFE SEATS, AND EPDM OR NBR O-RINGS. BALL SHALL BE CHROME-PLATED BRASS OR STAINLESS STEEL. MINIMUM RATING: 600 PSIG COLD WORKING PRESSURE. VALVES SHALL BE COMPATIBLE WITH TYPE L COPPER TUBE AND SUITABLE FOR USE WITH PRESS FITTINGS. WHERE REQUIRED TO PREVENT BACKFLOW OR TO MAINTAIN LOOP BALANCE, PROVIDE BRONZE SWING CHECK VALVES WITH PRESS-CONNECT ENDS, RATED MINIMUM 200 PSIG. PROVIDE HOSE-END DRAIN VALVES WITH BLEEDER CAPS OR INTEGRAL DRAIN BALL VALVES TO ALLOW DRAINING AND SERVICING OF UNIT CONNECTIONS. VALVE HANDLES SHALL BE EXTENDED TYPE OR PROVIDED WITH INSULATED STEM EXTENSIONS TO MAINTAIN VAPOR SEAL IN INSULATED SYSTEMS. INSTALL VALVES IN ACCESSIBLE LOCATIONS AND ORIENT FOR FULL OPERATION AND MAINTENANCE CLEARANCE

D. CONDENSATE PIPING: SCH 40 PVC W/ SOLVENT WELD JOINTS. PROVIDE TRAP AT COOLING COIL DRAIN CONNECTION. PROVIDE CLEANOUTS AT CHANGE IN DIRECTION. EXTEND CONDENSATE PIPING AS INDICATED PER PLANS.

2.6 HVAC IDENTIFICATION

A. PIPING AND EQUIPMENT;: MATCH EXISTING IDENTIFICATION FOR HYDRONIC PIPING. WHERE NO EXISTING LABELS ARE PRESENT, PROVIDE PRETENSIONED PIPE WRAP LABELS IN ACCORDANCE WITH ASME A13.1, COLOR-CODED FOR SYSTEM TYPE, AND INSTALLED TO COVER THE FULL CIRCUMFERENCE OF THE PIPE. INCLUDE FLOW DIRECTION ARROWS. LABELS SHALL BE RESISTANT TO MOISTURE AND SUITABLE FOR APPLICATION OVER PIPE INSULATION. LABEL EACH WATER-SOURCE HEAT PUMP UNIT WITH A 1/16-INCH-THICK PLASTIC LAMINATED NAMEPLATE, ENGRAVED WITH UNIT DESIGNATION TO MATCH DRAWING SCHEDULE. MINIMUM LETTER HEIGHT: 1/2 INCH. FASTEN NAMEPLATES TO UNIT CASING IN A VISIBLE LOCATION USING STAINLESS STEEL SCREWS AND PERMANENT ADHESIVE. LABELS SHALL WITHSTAND 160°F OPERATING TEMPERATURE.

2.7 INSULATION

A. PROVIDE FLEXIBLE ELASTOMERIC DUCT LINER INSIDE RETURN PLENUMS AND ADJACENT RETURN DUCTWORK CONNECTED TO EACH WATER-SOURCE HEAT PUMP. LINER SHALL BE CLOSED-CELL ELASTOMERIC FOAM SHEET MATERIAL COMPLYING WITH ASTM C534, TYPE II, AND NFPA 90A. MATERIAL SHALL HAVE A MAXIMUM FLAME-SPREAD INDEX OF 25 AND SMOKE-DEVELOPED INDEX OF 50 PER UL 723. MINIMUM LINER THICKNESS SHALL BE 1 INCH. INSTALL USING MANUFACTURER'S ADHESIVE AND MECHANICAL FASTENERS IN ACCORDANCE WITH SMACNA REQUIREMENTS. PROVIDE SEALED EDGES AT ALL TRANSITIONS TO UNLINED DUCT AND TERMINATE LINER NEATLY AT ALL CONNECTIONS.

B. HVAC PIPING INSULATION: MATCH EXISTING HYDRONIC PIPING INSULATION WHERE PRESENT. WHERE NO EXISTING INSULATION OR LABELING IS AVAILABLE, PROVIDE NEW INSULATION USING PRE-FORMED GLASS-FIBER PIPE INSULATION WITH FACTORY-APPLIED ALL-SERVICE JACKET (ASJ). INSULATION SHALL BE RATED FOR USE UP TO 850°F AND SHALL COMPLY WITH ASTM C547, TYPE I, WITH A MINIMUM THICKNESS OF 1 INCH. ALL JACKETS SHALL BE SEALED AT LONGITUDINAL AND BUTT JOINTS WITH MATCHING ASJ TAPE AND ADHESIVE TO MAINTAIN A SEALED VAPOR RETARDER. INSTALLATION SHALL COMPLY WITH MANUFACTURER'S INSTRUCTIONS.

C. CONDENSATE DRAIN PIPING INSULATION: ELASTOMERIC CLOSED CELL PIPE INSULATION, ARMAFLEX AP OR EQUAL, 1/2" THICK. PROTECT ALL EXTERIOR, EXPOSED PIPE INSULATION WITH ARMAFLEX WB FINISH.

2.8 VIBRATION CONTROLS

A. PROVIDE VIBRATION ISOLATION FOR ALL SUSPENDED WATER-SOURCE HEAT PUMPS USING ELASTOMERIC ISOLATION MOUNTS. MOUNTS SHALL BE MOLDED NEOPRENE OR EQUIVALENT ELASTOMERIC MATERIAL, RATED FOR THE INSTALLED EQUIPMENT LOAD, AND CAPABLE OF A MINIMUM STATIC DEFLECTION OF 0.15 INCH. INSTALL ISOLATION MOUNTS BETWEEN THE EQUIPMENT AND UNISTRUT TRAPEZE FRAME. MOUNTS SHALL BE COMPATIBLE WITH HORIZONTAL TRAPEZE SUPPORT AND BE INSTALLED LEVEL, CENTERED, AND IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. VIBRATION ISOLATORS SHALL BE SELECTED TO MINIMIZE TRANSMISSION OF STRUCTURE-BORNE VIBRATION TO THE BUILDING FRAME.

PART 3 EXECUTION

3.1 PREPARATION: REVIEW CONSTRUCTION DOCUMENTS AND VERIFY ARRANGEMENT WITH FIELD CONDITIONS. COORDINATE PROPOSED MECHANICAL EQUIPMENT AND SYSTEMS WITH ASSOCIATED WORK OF OTHER TRADES.

3.2 INSTALLATION: INSTALL ALL MECHANICAL WORK IN ACCORDANCE WITH CODE, MANUFACTURER'S RECOMMENDATIONS AND GOOD INDUSTRY PRACTICE. ARRANGE WORK TO ALLOW EASY ACCESS TO EQUIPMENT FOR SERVICE AND MAINTENANCE.

3.3 DUCTWORK: LAYOUT DUCTWORK TO AVOID INTERFERENCES AND MAXIMIZE USABLE SPACE IN THE BUILDING.

3.4 PIPING: ROUTE PIPING NEATLY, PARALLEL TO BUILDING WALLS. WHERE REQUIRED, SLOPE PIPING FOR PROPER DRAINAGE.

3.5 PIPING INSULATION: INSTALL INSULATION NEATLY. APPLY ADHESIVE TO BOTH FACES OF JOINT TO OBTAIN FULLY ADHERED, VAPOR TIGHT INSTALLATION. FINISH ALL INSULATION EXPOSED TO WEATHER WITH MANUFACTURE APPROVED WEATHERPROOF COATING.

3.6 HANGERS AND SUPPORTS: HANG AND SUPPORT EQUIPMENT, DUCTS AND PIPING IN A SUBSTANTIAL MANNER FROM THE BUILDING STRUCTURE. SPACE HANGERS IN ACCORDANCE WITH CODE AND SO AS TO AVOID EXCESS DEFLECTION OR SAG. NO PORTION OF THE STRUCTURE SHALL BE OVER STRESSED BY THE HANGING OPERATION OR BY THE FINAL SUPPORTS. ATTACHMENTS DEEMED INADEQUATE BY THE ENGINEER SHALL BE REWORKED AS DIRECTED. PROVIDE VIBRATION ISOLATION FOR MOVING MACHINERY.

3.7 START-UP: VERIFY INSTALLATION IS COMPLETE AND READY FOR START-UP. START-UP ALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING FACTORY CERTIFIED MECHANICS. AFTER START-UP, VERIFY AND DOCUMENT THAT EQUIPMENT IS OPERATING PROPERLY WITHIN MANUFACTURER'S SPECIFIED TOLERANCES.

3.8 TESTING AND BALANCING: THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING, ADJUSTING, AND BALANCING OF BOTH AIRFLOW AND HYDRONIC FLOW ASSOCIATED WITH THE WATER-SOURCE HEAT PUMP SYSTEM. ALL TESTING AND BALANCING SHALL BE PERFORMED BY A CONTRACTOR CERTIFIED BY THE ASSOCIATED AIR BALANCE COUNCIL (AABC). HYDRONIC BALANCING SHALL INCLUDE MEASUREMENT AND ADJUSTMENT OF FLOW TO EACH UNIT TO VERIFY COMPLIANCE WITH DESIGN CONDITIONS. AIR BALANCING SHALL INCLUDE VERIFICATION AND ADJUSTMENT OF SUPPLY AIR QUANTITIES AT OUTLETS SERVED BY THE UNIT. SUBMIT FINAL CERTIFIED BALANCING REPORTS DOCUMENTING ALL AIR AND WATER FLOW RATES AND FINAL SETTINGS.

3.9 PROVIDE BAS CONTROLS AND FIELD DEVICES FOR EACH WATER-SOURCE HEAT PUMP UNIT. ALL CONTROLS SHALL BE FURNISHED AND INSTALLED BY SCHNEIDER ELECTRIC'S LOCAL OFFICE IN MORRISVILLE, NC, UTILIZING THE SCHNEIDER STRUXUREWARE ENTERPRISE SYSTEM. CONTACT: TYLER BEACHAM, TYLER.BEACHAM@SE.COM. CONTROLS SHALL INTEGRATE INTO THE EXISTING SCHNEIDER ENTERPRISE SERVER AT COASTAL CAROLINA COMMUNITY COLLEGE.

A. PROVIDE THE FOLLOWING FIELD-LEVEL CONTROL DEVICES PER UNIT:
B. ROOM TEMPERATURE SENSOR
C. ROOM HUMIDITY SENSOR (WHERE INDICATED)
D. 3-WAY CONTROL VALVE WITH ELECTRONIC ACTUATOR (COMPATIBLE WITH PRESS-CONNECT SYSTEM)
E. DUCT MOUNTED SUPPLY AIR TEMPERATURE SENSOR
F. DUCT MOUNTED RETURN AIR TEMPERATURE SENSOR
G. SUPPLY FAN STATUS (CURRENT SENSOR OR AIRFLOW SWITCH)
H. CONDENSATE OVERFLOW SWITCH
I. UNIT ENABLE RELAY OR DISCONNECT INPUT
J. ALL POINTS, SEQUENCES OF OPERATION, AND CONTROL DIAGRAMS SHALL BE DEFINED ON THE DRAWINGS. INSTALLATION, PROGRAMMING, AND FINAL COMMISSIONING SHALL BE PERFORMED BY FACTORY-CERTIFIED TECHNICIANS. ALL COMPONENTS SHALL BE BACNET-COMPATIBLE AND TESTED PER ASHRAE 135. SYSTEM STARTUP SHALL INCLUDE FULL FUNCTIONAL VERIFICATION AND OPERATIONAL TESTING IN COORDINATION WITH HVAC AND TAB CONTRACTORS.

3.10 COMMISSIONING: DEMONSTRATE AND DOCUMENT OPERATION OF ALL MECHANICAL SYSTEMS INSTALLED UNDER THIS CONTRACT IN THE PRESENCE OF THE ENGINEER. INCLUDE ALL TESTS, TRIAL OPERATIONS, ETC. AS REQUIRED TO PROVE THAT ALL SYSTEMS ARE IN COMPLETE SERVICEABLE CONDITION AND WILL FUNCTION AS INTENDED. ALL COSTS OF COMMISSIONING SHALL BE BORNE BY THIS CONTRACTOR.

3.11 CLEAN-UP: CLEAN ALL EQUIPMENT AND DEVICES AND INSTALL NEW FILTERS IN EQUIPMENT IMMEDIATELY PRIOR TO OWNER ACCEPTANCE AND OCCUPANCY

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File Number: BP25-00001319
Approval Date: 07/08/25

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06.20.2025

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REV.	DATE	DESCRIPTION

Project Manager	Drawn By: MEZ
Date: 06.20.2025	Reviewed By: DMH
Project ID	

Sheet Title: **MECHANICAL SPECIFICATIONS**

Sheet No.: M-0.2

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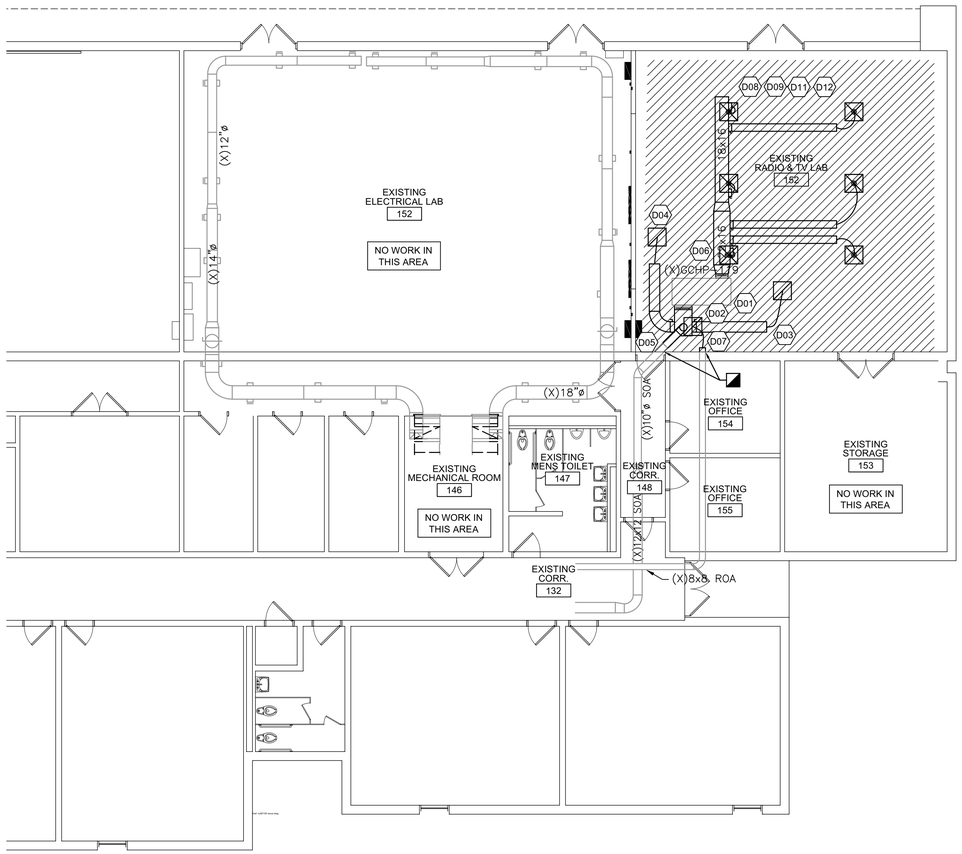
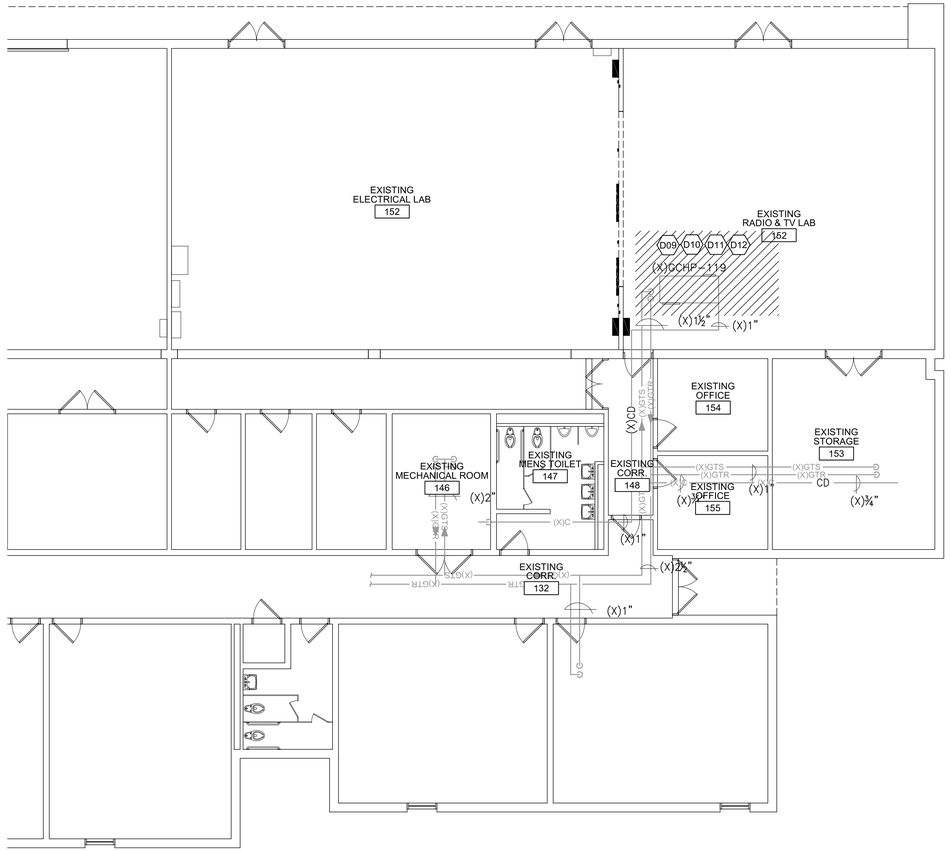


D1 **MECHANICAL DEMOLITION HVAC PLAN**
1/8" = 1'-0"

PLAN NORTH



D4 **MECHANICAL DEMOLITION PIPING PLAN**
1/8" = 1'-0"

PLAN NORTH

DEMOLITION KEYED NOTES

D01 REMOVE AND DISPOSE CEILING-MOUNTED GROUND-COUPLED HEAT PUMP UNIT INCLUDING ALL ASSOCIATED UNISTRUT AND THREADED ROD SUPPORT HARDWARE.

D02 REMOVE AND DISPOSE RETURN AIR PLENUM FROM UNIT INCLUDING ALL CONNECTIONS TO RETURN DUCTWORK, FLEX DUCTS, AND OUTSIDE AIR DUCT.

D03 REMOVE AND DISPOSE ALL RETURN AIR DUCTWORK INCLUDING HARD DUCT AND FLEX DUCT BRANCHES FROM RETURN GRILLES TO PLENUM.

D04 REMOVE AND DISPOSE TWO (2) RETURN AIR GRILLES LOCATED IN CEILING GRID; GRILLES TO BE DEMOLISHED WITH CEILING, NO SALVAGE REQUIRED.

D05 REMOVE AND DISPOSE TWO (1) OUTSIDE RETURN AIR GRILLE LOCATED IN CEILING GRID; GRILLE TO BE DEMOLISHED WITH CEILING, NO SALVAGE REQUIRED. CUT BACK DUCT TO WALL FOR FUTURE WALL GRILLE.

D06 DISCONNECT OUTSIDE AIR DUCT FROM RETURN AIR PLENUM AND CUT BACK WITHIN SAME SPACE; PROVIDE CLEAN SQUARE CUT AND TEMPORARY METAL CAP FOR FUTURE RECONNECTION.

D07 REMOVE AND DISPOSE ALL SUPPLY AIR DUCTWORK FROM HEAT PUMP TO SIX (6) DIFFUSER TAKEOFF LOCATIONS INCLUDING MAIN TRUNK AND BRANCHES.

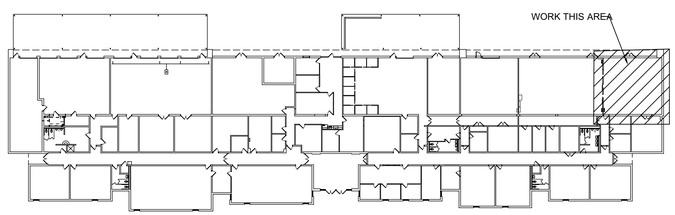
D08 REMOVE AND DISPOSE ALL SUPPLY AIR FLEX DUCT CONNECTIONS TO DIFFUSERS; DIFFUSERS TO BE REMOVED WITH CEILING, NO SALVAGE REQUIRED.

D09 REMOVE AND DISPOSE ALL DUCT HANGERS AND SUPPORTS INCLUDING UNISTRUT AND METAL STRAPS ATTACHED TO STRUCTURE.

D10 DISCONNECT AND CUT BACK GEOTHERMAL SUPPLY AND RETURN PIPING TO EXISTING VALVES; PROVIDE CAPPED ENDS WITHIN THE SPACE AND LABEL FOR FUTURE EXTENSION.

D11 REMOVE AND DISPOSE ALL HVAC EQUIPMENT, DUCTWORK, AND COMPONENTS FROM SITE; DISPOSE OR RECYCLE IN ACCORDANCE WITH PROJECT WASTE MANAGEMENT PLAN.

D12 PROTECT AND MAINTAIN ALL ACTIVE MEP SYSTEMS TO REMAIN; VERIFY ISOLATION PRIOR TO DEMOLITION ACTIVITIES.



E6 **KEY PLAN**
NOT TO SCALE

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MECHANICAL DEMOLITION PLANS

Sheet No.
MD1.1

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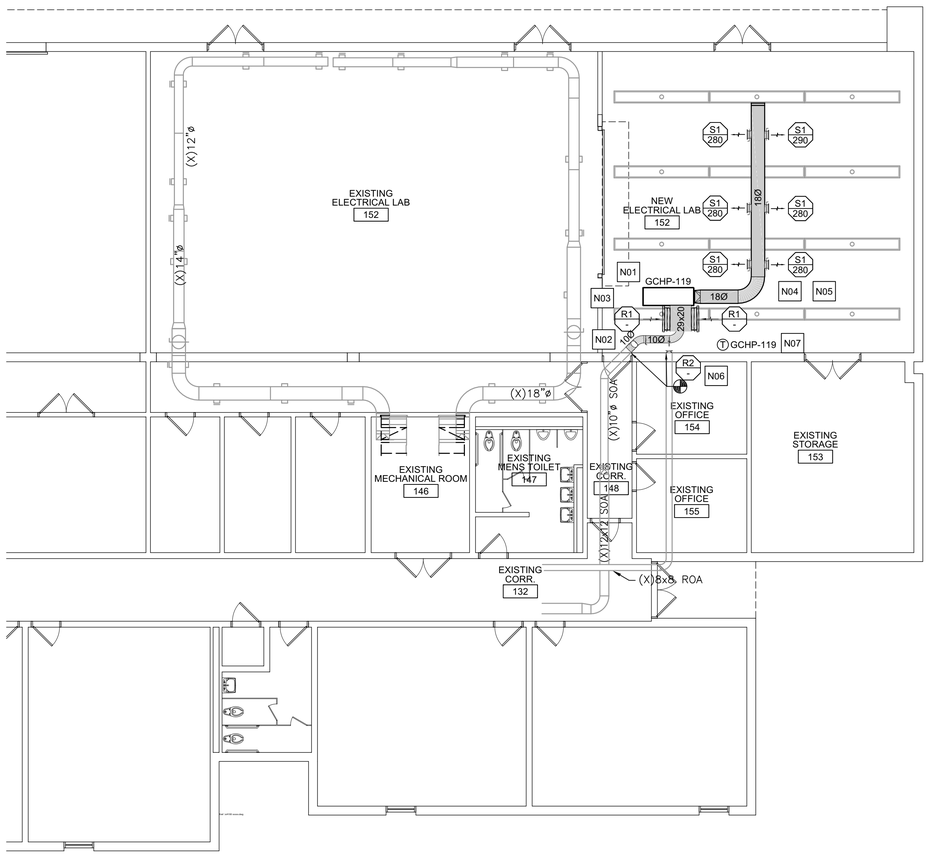
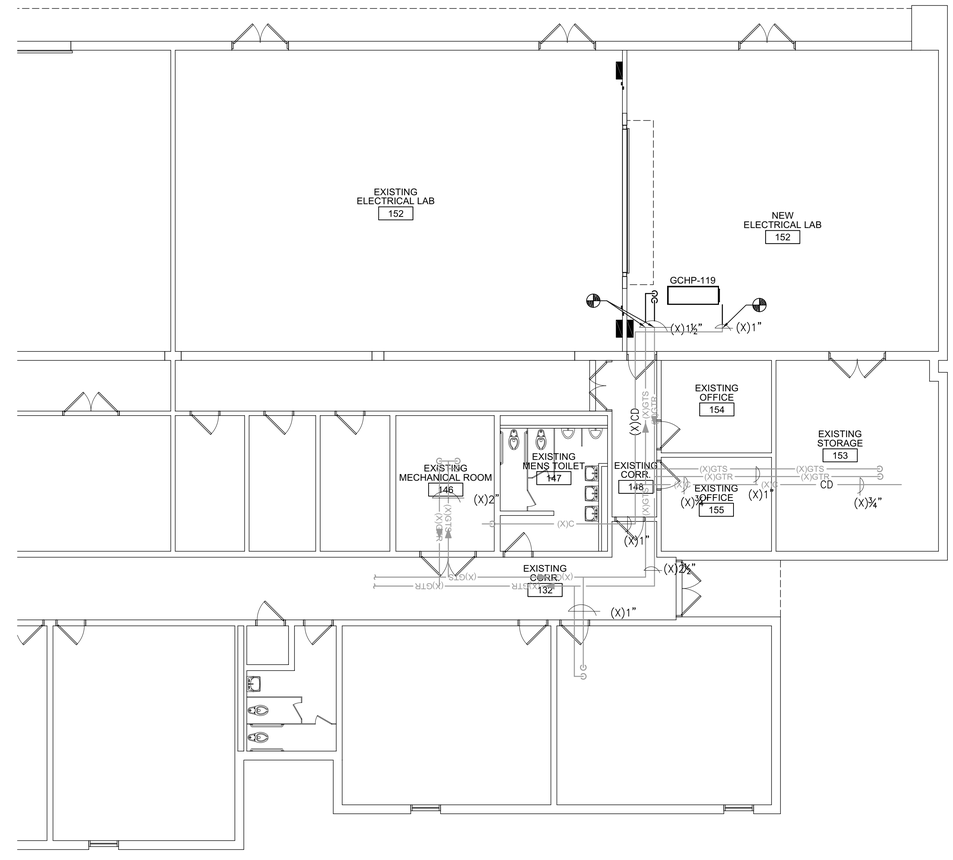


D1 MECHANICAL HVAC PLAN

1/8" = 1'-0"

PLAN NORTH



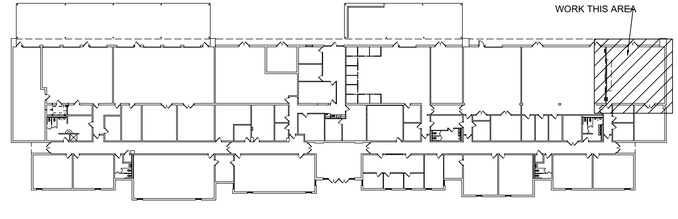
D4 MECHANICAL PIPING PLAN

1/8" = 1'-0"

PLAN NORTH

KEYED NOTES

N01	PROVIDE AND INSTALL NEW GROUND-COUPLED HEAT PUMP UNIT AT LOCATION INDICATED ON PLANS; INSTALL PER SPECIFICATIONS INCLUDING ALL REQUIRED SUPPORTS, UNISTRUT FRAMING, THREADED RODS, AND VIBRATION ISOLATION COMPONENTS.
N02	PROVIDE AND INSTALL SUPPLY OUTSIDE AIR DUCTWORK FROM POINT OF DEMOLITION TO NEW RETURN AIR PLENUM; INCLUDE BALANCING DAMPER AS INDICATED ON PLANS AND PROVIDE DUCT HANGERS PER SPECIFICATIONS.
N03	PROVIDE AND INSTALL NEW RETURN AIR PLENUM WITH RETURN AIR GRILLES AS INDICATED ON PLANS; GRILLES SHALL INCLUDE OPPOSED BLADE DAMPERS PER SCHEDULE. ALL DAMPERS SHALL BE POSITIONED TO FACILITATE BALANCING DURING TEST AND BALANCE PHASE.
N04	PROVIDE AND INSTALL NEW SUPPLY AIR DUCTWORK AS INDICATED ON PLANS; DUCTWORK SHALL BE DOUBLE-WALL SPIRAL WITH INTERNAL INSULATION PER SPECIFICATIONS AND SHALL BE SUSPENDED FROM STRUCTURE USING HANGERS AS SPECIFIED. CENTERLINE OF DUCT HEIGHT SHALL ALIGN WITH THAT IN ADJACENT ROOM AND MATCH THE ELEVATION OF THE GROUND-COUPLED HEAT PUMP SUPPLY CONNECTION.
N05	PROVIDE AND INSTALL SUPPLY AIR REGISTERS AS INDICATED ON PLANS; COORDINATE REGISTER LOCATIONS WITH LIGHTING TO AVOID INTERFERENCES. REGISTERS SHALL BE SIDE-MOUNTED ON ROUND DUCT AT 3:00 AND 9:00 POSITIONS, AND INCLUDE OPPOSED BLADE DAMPERS AND FACTORY SUPPLIED DUCT CONNECTIONS PER SPECIFICATIONS.
N06	PROVIDE AND INSTALL NEW WALL-MOUNTED GRILLE FOR RETURN OUTSIDE AIR; CONNECT TO EXISTING RETURN OUTSIDE AIR DUCTWORK PER PLANS AND SPECIFICATIONS.
N07	PROVIDE AND INSTALL NEW TEMPERATURE AND HUMIDITY SENSOR PER SPECIFICATIONS; INSTALLATION BY DDC CONTRACTOR AT EXISTING LOCATION OF TEMPERATURE AND HUMIDITY SENSOR. DDC CONTRACTOR TO CONFIRM THIS LOCATION. DDC CONTRACTOR SHALL ALSO PROVIDE ALL CONTROL COMPONENTS, WIRING, AND CONDUIT REQUIRED FOR COMPLETE OPERATION OF THE GROUND-COUPLED HEAT PUMP.



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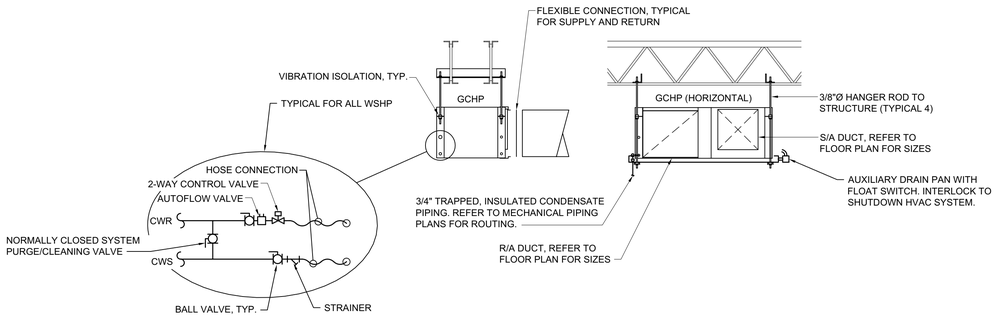

FOR UNITS GCHP02, 03, 04, 05, 06, 07, 08, 09, 26, 27 & 28

B2 HORIZONTAL GCHP DETAIL

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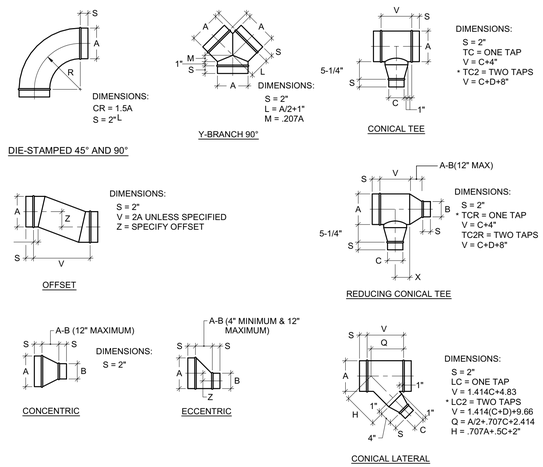
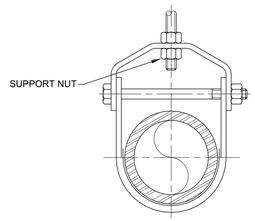


D2 ROUND DUCT FITTING DETAILS

NOT TO SCALE



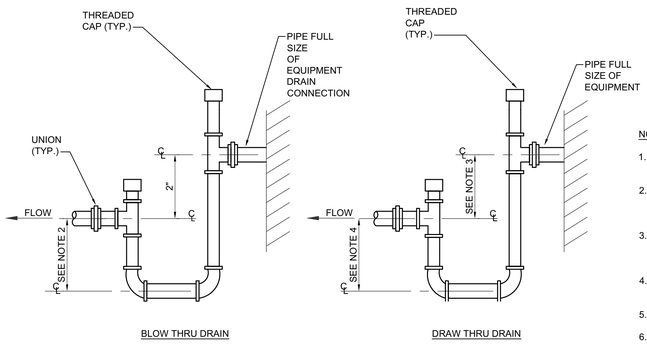
HEAVY DUTY CLEVIS HANGER

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



NOTES:

1. LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.
2. HEIGHT MUST BE EQUAL TO UNIT MAXIMUM TOTAL STATIC PRESSURE PLUS 1/2".
3. HEIGHT MUST BE EQUAL TO UNIT MAXIMUM NEGATIVE STATIC PRESSURE PLUS 1".
4. HEIGHT MUST BE 1/2 OF HEIGHT INSTALLED IN NOTE 3.
5. PIPE TO NEAREST DRAIN.
6. TRAP MUST NOT BLOCK ACCESS TO EQUIPMENT
7. PROVIDE UNIONS AT INLET AND OUTLET OF TRAP.

D4 CONDENSATE DRAIN DETAIL

NOT TO SCALE

GROUND COUPLED HEAT PUMP SCHEDULE

DRAWING CODE	DESIGN BASIS MANUFACTURER	MODEL	ALTERNATE APPROVED MFRS	AIR SIDE-COOLING						AIR SIDE-HEATING				HG REHEAT					INDOOR FAN SECTION			ELECTRICAL				WEIGHT	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)	SA LAT (°F)	CAP (MBH)	FLUID	FLOW (GPM)	PD (FT H2O)	SA (CFM)	OA (CFM)	ESP (IN H2O)	VOLTAGE (V/PH/HZ)	FLA (AMPS)	MCA (AMPS)	MOCP (AMPS)	(LBS)		
GCHP-119	TRANE	GEHK0484	CARRIER, YORK	48	36.0	16.0	73.0	54.0	63	53.00	63.00	4.9	68.0	102.0	63.0	18.00	WATER	12.00	14.30	1,690	-	0.50	460/3/60	9.60	12.00	15.0	377	1,2	A THRU J

NOTES:
1 REFER TO 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, COMPRESSOR START/STOP.
E. 35 DEGREE F FREEZESTAT.
F. CONDENSATE OVERFLOW SENSOR.
G. SOUND ATTENUATION PACKAGE TO INCLUDE COMPRESSOR ENCLOSURE WITH 1/2 INCH CABINET INSULATION AND COMPRESSER VIBRATION ISOLATION.
H. 1/2" THICK FOIL FACED GLASS FIBER.
I. RETURN AIR DUCT PANEL.
J. 2" DUCTED FILTER RACK, MERV 8

DIFFUSERS, REGISTERS AND GRILLES SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	SERVICE	NECK SIZE (IN.)	MODULE SIZE (IN.)	MATERIAL	FINISH	MOUNTING	NOTES	ACCESSORIES
S1	PRICE	620	GREENHECK, TITUS	DOUBLE DEFLECTION LOUVER FACE DIFFUSER	SUPPLY	12 X 6	-	ALUMINUM	WHITE	DUCT SURFACE	1,2,3,4	A,B
R1	PRICE	60	GREENHECK, TITUS	FIXED FACE GRILLE	RETURN	30 X 18	-	ALUMINUM	WHITE	DUCT SURFACE	1,2,3	A
R2	PRICE	60	GREENHECK, TITUS	FIXED FACE GRILLE	RETURN	8	8 X 8	ALUMINUM	WHITE	DUCT SURFACE	1,2,3	A

NOTES:
1 REFER TO 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.
4 MOUNT TO SPIRAL DUCT AT THE "3-O'CLOCK" AND "9-O'CLOCK" POSITIONS.

ACCESSORIES: A VOLUME DAMPER
B DUCT ADAPTER FRAME FOR SPIRAL DUCT

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NC# P-0506

Approved
JACKSONVILLE, N.C.
File Number: BP25-00001319
Approval Date: 07/08/25
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NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN
06.20.2025

Coastal Carolina Community College
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REV.	DATE	DESCRIPTION

Project Manager	Drawn By: MEZ
Date: 06.20.2025	Reviewed By: DMH
Project ID	

Sheet Title
MECHANICAL DETAILS

Sheet No.
M-5.1

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.

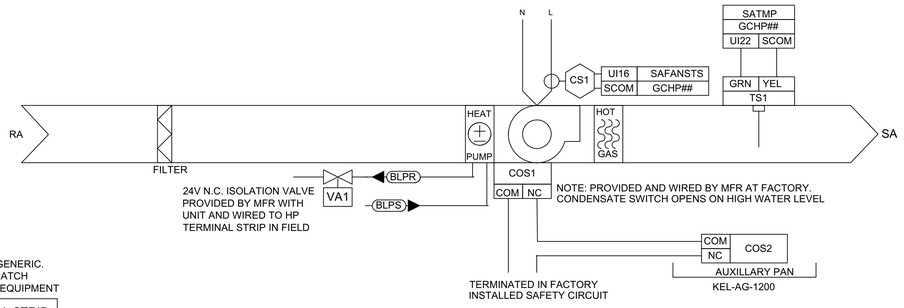
REVERSING VALVE COMMAND: THE REVERSING VALVE COMMAND IS MONITORED FOR TRENDING/REPORTING PURPOSES.

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

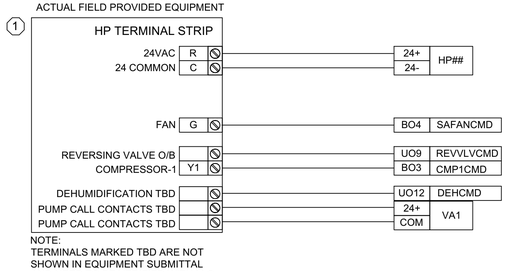
ROOM RELATIVE HUMIDITY: THE ROOM RELATIVE HUMIDITY IS MEASURED AND MONITORED FOR TRENDING/REPORTING PURPOSES.

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	



NOTE:
TERMINALS SHOWN ARE GENERIC.
VERIFY AND MODIFY TO MATCH
ACTUAL FIELD PROVIDED EQUIPMENT



NOTE:
TERMINALS MARKED TBD ARE NOT
SHOWN IN EQUIPMENT SUBMITTAL
AND NEED TO BE VERIFIED WITH M.C.

E2 GCHP CONTROL SCHEMATIC
NOT TO SCALE

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Sheet Title
MECHANICAL CONTROLS

Sheet No.
M-7.1

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
CL	CHLORINE
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
CP	CONTROL PANEL
CR	CONTROL RELAY, CORROSION RESISTANT
CS	CONTROL SWITCH
CV	CONTROL VALVE
CT	CURRENT TRANSFORMER
CU	COPPER
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EQ, EQIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EPRF	EXPLOSION PROOF
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FLA	FULL LOAD AMPS
FLUOR	FLUORESCENT
FLR	FLOOR
FWE	FURNISHED WITH EQUIPMENT
GEN	GENERATOR
G, GND	GROUND
GFI, GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO
HP	HORSE POWER
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
Hz	HERTZ
IMC	INTERMEDIATE METALLIC CONDUIT
INCAND	INCANDESCENT
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
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	MANHOLE
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
N, NEUT	NEUTRAL
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
P	POLE
PA	PUBLIC ADDRESS
PB	PULL BOX, PUSH-BUTTON
PF	POWER FACTOR
PH,ϕ	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PP	POWER PANEL, POWER POLE
PT	POTENTIAL TRANSFORMER
PWR	POWER
RECPT,RCP	RECEPTACLE
REQ'D	REQUIRED
RGS	RIGID GALVANIZED STEEL CONDUIT
RM	ROOM
RTU	REMOTE TELEMETRY UNIT
SCR	DC MOTOR DRIVE
SH	SHEET
SM	SURFACE MOUNTED
SPEC	SPECIFICATION
SS	SELECTOR SWITCH
SST	STAINLESS STEEL
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCH GEAR
TEL	TELEPHONE
TPS	TWISTED PAIR SHIELDED
TVSS, SPD	TRANSIENT VOLTAGE SURGE SUPPRESSOR
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

LOAD SUMMARY (EXISTING PANEL LF)

VOLTAGE	PHASE
480	3

LOADS REMOVED THIS PROJECT

LIGHTING

TOTAL LIGHTING LOAD	2,000	VA
LIGHTING LOAD x 1.25	2,500	VA
TOTAL LIGHTING REMOVED THIS PROJECT	3	AMPS

RECEPTACLES

TOTAL RECEPTACLES REMOVED THIS PROJECT	7,000	VA
TOTAL RECEPTACLES REMOVED THIS PROJECT	8	AMPS

EQUIPMENT

TOTAL HVAC EQUIPMENT REMOVED THIS PROJECT	8,122	VA
TOTAL HVAC EQUIPMENT REMOVED THIS PROJECT	10	AMPS
TOTAL LOAD REMOVED THIS PROJECT	21	AMPS
TOTAL LOAD REMOVED THIS PROJECT	17,622	VA

LOAD ADDED THIS PROJECT

HVAC

GCHP1	7,982	VA
SUB-TOTAL HVAC DEMAND	7,982	VA
SUB-TOTAL HVAC DEMAND	10	AMPS

EQUIPMENT

ROLL-UP DOOR #1	1,176	VA
SUB-TOTAL EQUIPMENT DEMAND	1,176	VA
SUB-TOTAL EQUIPMENT DEMAND	1	AMPS
TOTAL EQUIPMENT DEMAND	1	AMPS

LIGHTING

LIGHTS (INTERIOR)	720	VA
TOTAL LIGHTING LOAD	720	VA
LIGHTING LOAD x 1.25	900	VA
TOTAL DEMAND FOR LIGHTING	1	AMPS
TOTAL LOAD ADDED THIS PROJECT	12	AMPS
TOTAL LOAD ADDED THIS PROJECT	10,058	VA
TOTAL NET LOAD CHANGED BUILDING AMPS	-9	AMPS
TOTAL NET LOAD CHANGED BUILDING VA	-7,564	VA

LOAD SUMMARY (EXISTING PANEL PH)

VOLTAGE	PHASE
480	3

LOADS REMOVED THIS PROJECT

RECEPTACLES

TOTAL RECEPTACLES REMOVED THIS PROJECT	7,000	VA
TOTAL RECEPTACLES REMOVED THIS PROJECT	8	AMPS
TOTAL LOAD REMOVED THIS PROJECT	8	AMPS
TOTAL LOAD REMOVED THIS PROJECT	7,000	VA

LOAD ADDED THIS PROJECT

EQUIPMENT

ROLL-UP DOOR #1	1,176	VA
SUB-TOTAL EQUIPMENT DEMAND	1,176	VA
SUB-TOTAL EQUIPMENT DEMAND	1	AMPS
TOTAL EQUIPMENT DEMAND	1	AMPS
TOTAL LOAD ADDED THIS PROJECT	1	AMPS
TOTAL LOAD ADDED THIS PROJECT	1,176	VA
TOTAL NET LOAD CHANGED PANEL AMPS	-7	AMPS
TOTAL NET LOAD CHANGED PANEL VA	-5,824	VA

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	POWER & SWITCH LEG
	UNSWITCHED LEG
	CONDUIT, HOME RUN TO PANEL BOARD
	2x4 LIGHT FIXTURE, RECESSED MOUNTED
	8FT CHANNEL LED LIGHT FIXTURE, SUSPENDED MOUNTED
	EMERGENCY LIGHTING UNIT, 2-HEAD WITH BATTERY BACK-UP, WALL MOUNTED, "NOT SWITCHED"
	EXIT SIGN, SINGLE FACE, WALL, CHEVRON INDICATES DIRECTION.
$	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.
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.
OS	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, 360° COVERAGE 2 = SECOND CONTACT TO BE PROVIDED FOR CONNECTION TO BUILDING MANAGEMENT
30A/3/1 W/ 30AF	DISCONNECT SWITCH, FUSED, HEAVY DUTY, SIZE AS INDICATED ON DRAWINGS ##A = DISCONNECT SIZE / # = NUMBER OF POLES / # = NEMA RATING, /##AF = FUSE SIZE
208/120V 480/277V	(X)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.
	(X)TRANSFORMER, SIZE AS INDICATED ON DRAWING
	RECEPTACLE, DUPLEX, 120VAC, 20A, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED. (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	RECEPTACLE, DUPLEX, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH.
	RECEPTACLE, 250VAC, 2 POLE, 3 WIRE, WALL MOUNTED, SIZE AS INDICATED ON DRAWING
M$	MANUAL MOTOR STARTER, ELECTRICAL CONTRACTOR SHALL COORDINATE POLES AND SIZE WITH EQUIPMENT
J	JUNCTION BOX - CEILING/ABOVE CEILING MOUNTED
S	CEILING MOUNTED SPEAKER
	3 UP/STOP/DN PUSHBUTTON CONTROLLER
CLNG WAP	(X)WIRELESS ACCESS POINT, 1 (X)DATA IN A DUAL GANG BOX WITH A SINGLE GANG PLASTER RING, THE ELECTRICAL CONTRACTOR SHALL PROTECT AND RE-INSTALL.
?	(X)SMOKE DETECTOR, CEILING MOUNTED
	HATCHING INDICATES ITEMS TO BE DEMOLISHED. REMOVE DEVICE, EQUIPMENT, FIXTURE INDICATED, CIRCUIT, AND CONDUIT BACK TO SOURCE UNLESS OTHERWISE NOTED.
1	DEMOLITION KEY NOTE SYMBOL
1	KEY NOTE SYMBOL
1	REVISION DELTA

(X)PANEL LE

TYPE: NEMA 1 | BOLT-ON | SQUARE D - I-LINE | 480 | MOUNT: SURFACE | FEED: BOTTOM | 277 V, | 3 PH, | 4 WIRE | PROVIDE IF CHECKED: | EQUIP. GND BUS | NEUTRAL BUS | GUTTER TAPS | SUB-FEED LUGS

LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR	LOAD VA	LOAD SERVED
(X)LIGHTING/HVAC RM 122		20/1	1				2	20/1		(X)LIGHTS RM 127
(X)LIGHTING/HVAC RM 122		20/1	3				4	20/1		(X)LIGHTS RM 127
(X)LIGHTING/HVAC RM 122		20/1	5				6	20/1		(X)LIGHTS RM 127
(X)SPARE		20/1	7				8	20/1		(X)LIGHTS RM 126
(X)SPARE		20/1	9				10	20/1		(X)LIGHTS RM 126
(X)SPARE		20/1	11				12	20/1		(X)SPARE
(X)SPARE		20/1	13				14	20/1		(X)SPARE
(X)SPARE		20/1	15				16	20/1		(X)SPARE
(X)SPACE		-	17				18	-		(X)SPACE
(X)SPACE		-	19				20	15/3		(X)LOAD
(X)SPACE		-	21				22	|		|
(X)SPACE		-	23				24	|		|
(X)SPACE		-	25	2,661			26	15/3	2,661	**GCHP1 (NOTE 2)**
(X)SPACE		-	27		2,661		28	|	2,661	|
(X)SPACE		-	29			2,661	30	|	2,661	|
(X)SPACE		-	31				32	250/3		(X)LOAD
(X)SPACE		-	33				34	|		|
(X)SPACE		-	35				36	|		|
(X)SPACE		-	37				38	225/3		(X)LOAD
(X)SPACE		-	39				40	|		|
(X)SPACE		-	41				42	|		|
(X)SPACE		-	43				44	250/3		(X)LOAD
(X)SPACE		-	45				46	|		|
(X)SPACE		-	47				48	|		|
(X)SPACE		-	49				50	250/3		(X)LOAD
(X)SPACE		-	51				52	|		|
(X)SPACE		-	53				54	|		|
(X)SPACE		-	55				56	-		(X)SPACE
(X)SPACE		-	57				58	-		(X)SPACE
(X)SPACE		-	59				60	-		(X)SPACE
				2,661	2,661	2,661	TOTAL V. AMPS			
				10	10	10	CONN. AMPS			

NOTES:
1. HVAC & REFRIG. EQUIP. MUST USE TYPE HACR BREAKERS.
2. USE SPARE 15/3 BREAKER TO FEED NEW EQUIPMENT

400 A. BUS (COPPER)
400 A. MAIN LUGS

(X)PANEL PH

TYPE: NEMA 1 | BOLT-ON | SQUARE D - I-LINE | 208 | MOUNT: SURFACE | FEED: BOTTOM | 120 V, | 3 PH, | 4 WIRE | PROVIDE IF CHECKED: | EQUIP. GND BUS | NEUTRAL BUS | GUTTER TAPS | SUB-FEED LUGS

LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR	LOAD VA	LOAD SERVED
(X)TIMECLOCK		20/1	1				2	20/3		**(X)3 PHASE RECEPT. #4 (NOTE 2)**
(X)3 PHASE RECEPT. #1 (NOTE 2)		20/3	3				4	|		|
|		|	5				6	|		|
|		|	7				8	20/1		(X)CANOPY LIGHTING
(X)3 PHASE RECEPT. #2 (NOTE 2)		20/3	9				10	20/1		(X)CANOPY LIGHTING
|		|	11				12	20/1		(X)CANOPY LIGHTING
|		|	13				14	20/1		**(X)RECEPTACLE (NOTE 2)**
(X)3 PHASE RECEPT. #3 (NOTE 2)		20/3	15				16	-		(X)SPACE
|		|	17				18	20/2		(X)SPARE
|		|	19				20	|		|
(X)SPACE		-	21				22	-		(X)SPACE
(X)SPACE		-	23				24	-		(X)SPACE
(X)SPARE		100/2	25				26	-		(X)SPACE
|		|	27				28	-		(X)SPACE
(X)SPACE		-	29				30	-		(X)SPACE
(X)SPACE		-	31				32	-		(X)SPACE
(X)SPACE		-	33				34	-		(X)SPACE
(X)SPACE		-	35				36	-		(X)SPACE
(X)SPACE		-	37				38	-		(X)SPACE
(X)SPACE		-	39				40	-		(X)SPACE
							TOTAL V. AMPS			
							CONN. AMPS			

NOTES:
1. HVAC & REFRIG. EQUIP. MUST USE TYPE HACR BREAKERS.
2. REMOVE CONDUCTORS IN ENTIRETY TO DEVICE AND LABEL BREAKER AS SPARE

225 A. BUS (COPPER)
225 A. MAIN LUGS

(X)PANEL PH REVISED

TYPE: NEMA 1 | BOLT-ON | SQUARE D - I-LINE | 208 | MOUNT: SURFACE | FEED: BOTTOM | 120 V, | 3 PH, | 4 WIRE | PROVIDE IF CHECKED: | EQUIP. GND BUS | NEUTRAL BUS | GUTTER TAPS | SUB-FEED LUGS

LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR	LOAD VA	LOAD SERVED
(X)TIMECLOCK		20/1	1				2	20/3		**SPARE**
SPARE		20/3	3				4	|		|
|		|	5				6	|		|
|		|	7				8	20/1		(X)CANOPY LIGHTING
SPARE		20/3	9				10	20/1		(X)CANOPY LIGHTING
|		|	11				12	20/1		(X)CANOPY LIGHTING
|		|	13	1,176			14	20/1	**1,176**	**ROLL UP DOOR #1 OPERATOR (NOTE 2)**
SPARE		20/3	15				16	-		(X)SPACE
|		|	17				18	20/2		(X)SPARE
|		|	19				20	|		|
(X)SPACE		-	21				22	-		(X)SPACE
(X)SPACE		-	23				24	-		(X)SPACE
(X)SPARE		100/2	25				26	-		(X)SPACE
|		|	27				28	-		(X)SPACE
(X)SPACE		-	29				30	-		(X)SPACE
(X)SPACE		-	31				32	-		(X)SPACE
(X)SPACE		-	33				34	-		(X)SPACE
(X)SPACE		-	35				36	-		(X)SPACE
(X)SPACE		-	37				38	-		(X)SPACE
(X)SPACE		-	39				40	-		(X)SPACE
				1,176			TOTAL V. AMPS			
				10			CONN. AMPS			

NOTES:
1. HVAC & REFRIG. EQUIP. MUST USE TYPE HACR BREAKERS.
2. UTILIZE THE BREAKER MADE SPARE DUE TO DEMOLITION

225 A. BUS (COPPER)
225 A. MAIN LUGS

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 023311 W. ALLEN CRIBB
06.20.2025

Coastal Carolina Community College
Trades Building Renovation
444 Western Boulevard,
Jacksonville, NC 28546

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: JLG
Date: 06.20.2025	Reviewed By: WAC
Project ID	

Sheet Title
ELECTRICAL LOAD SUMMARIES, LEGEND, ABBREVIATIONS & PANEL SCHEDULES

Sheet No.
E-0.1

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ELECTRICAL GENERAL NOTES

1. ALL ELECTRICAL WORK MUST 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 MUST 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 MUST BE NEW CURRENT PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS. EQUIPMENT MUST BE SUITABLE FOR ITS APPLICATION (E.G. WHEN INSTALLED OUTDOORS, IT MUST BE WEATHERPROOF, ETC.)

3. THE CONTRACTOR MUST 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 MUST 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 MUST 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, MUST BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ADDITIONAL CIRCUITS MUST BE INSTALLED WHEREVER NEEDED TO CONFORM TO THE SPECIFIC REQUIREMENTS OF EQUIPMENT.

6. TEMPORARY POWER CONNECTIONS AS REQUIRED MUST BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ALL TEMPORARY EQUIPMENT WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. THE CONTRACTOR MUST 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.

7. THE WORK MUST 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 MUST, AT ALL TIMES DURING CONSTRUCTION, BE ADEQUATELY PROTECTED AGAINST MECHANICAL INJURY, OR DAMAGE BY WATER AND/OR THE ELEMENTS. ELECTRICAL EQUIPMENT MUST NOT BE STORED OUTDOORS BUT MUST 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 MUST BE REPLACED AT NO ADDITIONAL COST.

10. DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS OR FIELD VERIFY ALL 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 MUST 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 MUST 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 MUST HAVE DOUBLE LOCKNUTS AND INSULATED BUSHINGS. CONDUIT TERMINATING IN GASKETED ENCLOSURES MUST BE TERMINATED WITH GROUNDING TYPE CONDUIT HUBS.

14. BRANCH CIRCUIT HOMERUNS SHOWN ON DRAWINGS INDICATE PHASE CONDUCTORS, NEUTRAL, EQUIPMENT GROUND CONDUCTORS AS REQUIRED. ADDITIONAL CONDUCTORS REQUIRED FOR CONTROL MUST BE INCLUDED EVEN IF NOT EXPLICITLY SHOWN.

15. ALL RACEWAYS MUST BE CONCEALED WHERE POSSIBLE. IF APPLICABLE, MATCH EXISTING RACEWAY INSTALLATION METHODS AND ROUTINGS AT OR NEAR EXISTING FACILITIES.

16. 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 MUST 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.

17. ALL MOTORS AND OTHER VIBRATING EQUIPMENT MUST 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 MUST BE INSTALLED INSIDE THE FLEXIBLE CONDUIT AND TERMINATE AT THE LOAD END WITH AN APPROVED GROUNDING CLAMP OR LUG.

18. PROVIDE ADHESIVE BACKED RECEPTACLE AND SWITCH/DIMMER/OCCUPANCY SENSOR DEVICE PLATE LABELS IDENTIFYING THE PANEL AND CIRCUIT FEEDING THE DEVICE. LABELS MUST INDICATE PANEL AND CIRCUIT NUMBER.

19. FINAL TYPED PANELBOARD DIRECTORIES INSTALLED IN THE PANELBOARD DOOR POCKET MUST INCLUDE FINAL ACTUAL ROOM NAMES AND NUMBERS IN ADDITION TO THE GENERAL DESCRIPTION SHOWN ON THE PANEL SCHEDULES ON THE DRAWINGS.

20. CONDUCTOR SIZING IS BASED ON 75 DEGREE C. COPPER NEC RATINGS, UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST 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 MUST NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY FOR EVALUATION/CORRECTION.

21. 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.

22. WHERE SIZE IS NOT SHOWN ON THE DRAWINGS, BRANCH CIRCUITS MUST CONSIST OF #12 OR #10 AWG MINIMUM PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS IN 3/4" MINIMUM RACEWAY.

23. LIGHTING AND RECEPTACLE BRANCH CIRCUITS MUST CONSIST OF #12 AWG AND/OR #10 AWG MINIMUM PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS IN 3/4" MINIMUM RACEWAY. OTHER BRANCH CIRCUITS MAY BE INDICATED AND MINIMUM CONDUCTOR SIZES MAY BE SHOWN ON THE DRAWINGS.

24. USE #10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS WITH A TOTAL INSTALLED LENGTH, GREATER THAN 75 FEET AND/OR BRANCH CIRCUIT HOMERUNS LONGER THAN 50 FEET, I.E., #12 AWG INCREASED TO #10 AWG FOR RECEPTACLE BRANCH CIRCUITS OVER 75 FEET TOTAL LENGTH (INCLUDING THE HOMERUN SEGMENT) AND HOMERUNS OVER 50 FEET. IF 277 VOLT CIRCUITS ARE SHOWN, USE #10 AWG CONDUCTORS FOR 20 AMPERE, 277 VOLT BRANCH CIRCUITS WITH TOTAL INSTALLED LENGTH GREATER THAN 200 FEET AND/OR BRANCH CIRCUIT HOMERUNS LONGER THAN 125 FEET, I.E., #12 AWG INCREASED TO #10 AWG FOR RECEPTACLE BRANCH CIRCUITS OVER 75 FEET TOTAL LENGTH (INCLUDING THE HOMERUN SEGMENT) AND HOMERUNS OVER 50 FEET.

25. COMMON NEUTRAL BRANCH CIRCUITS ARE NOT PERMITTED. PROVIDE SEPARATE, INDIVIDUAL NEUTRAL CONDUCTORS FOR ALL BRANCH CIRCUITS.

26. 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.

27. DO NOT SPLICE BRANCH CIRCUIT HOMERUNS WITHOUT THE PERMISSION OF THE ENGINEER. HOMERUNS MUST BE CONTINUOUS FROM THE LAST OUTLET BOX TO THE SERVING PANELBOARD.

28. DO NOT COMBINE BRANCH CIRCUIT HOMERUNS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.

29. DO NOT CHANGE CIRCUITING SHOWN WITHOUT PERMISSION OF THE ENGINEER.

30. COORDINATE LIGHTING FIXTURE LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING PLAN. IF CONFLICTS ARE NOTED, REQUEST CLARIFICATION FROM THE ARCHITECT BEFORE PROCEEDING.

31. SEPARATE NEUTRALS ARE REQUIRED FOR ALL DIMMED LIGHTING CIRCUITS.

32. WHERE THE DRAWINGS INDICATE A LIGHTING FIXTURE IS TO BE PROVIDED WITH SPECIAL FEATURES/SWITCHING (DIMMING, EMERGENCY BATTERY PACK, MULTI-LEVEL, ETC.), THE CONTRACTOR MUST PROVIDE THESE FIXTURES WITH THE APPROPRIATE DRIVERS TO ACCOMMODATE THE SPECIAL FEATURE. THE CONTRACTOR MUST PROVIDE THE FIXTURES AS INDICATED IN THE LIGHTING FIXTURE SCHEDULE WITH MODIFICATIONS AS REQUIRED BY DRAWING NOTES.

33. COORDINATE LOCATIONS OF MECHANICAL EQUIPMENT, GENERAL CONTRACTOR, 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 OF CONFLICTS BEFORE ROUGH-IN.

34. BEFORE COMMENCING WORK OR ORDERING MATERIALS, THE CONTRACTOR MUST 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.

35. ENERGIZE EQUIPMENT ONLY AFTER OBTAINING PERMISSION FROM THE CONTRACTOR PROVIDING THE EQUIPMENT.

36. UNLESS SPECIFICALLY NOTED OTHERWISE, THE ELECTRICAL CONTRACTOR MUST MAKE FINAL CONNECTIONS TO ALL UTILIZATION EQUIPMENT SHOWN ON THE DRAWINGS. VERIFY THE TYPE OF FINAL CONNECTION AND PROVIDE APPROPRIATE WIRING METHOD. THE ELECTRICAL CONTRACTOR MUST COORDINATE WITH THE MECHANICAL AND GENERAL CONTRACTORS, PRIOR TO ORDERING OR INSTALLATION OF ANY EQUIPMENT, TO VERIFY MECHANICAL EQUIPMENT REQUIREMENTS ARE PROVIDED IN THE ELECTRICAL DESIGN. THE CONTRACTOR WILL NOT BE COMPENSATED FOR COSTS ASSOCIATED WITH CHANGING THE ELECTRICAL SYSTEMS TO MATCH UTILIZATION EQUIPMENT, EVEN IF THE ELECTRICAL WORK IS INSTALLED PER THE ELECTRICAL DRAWINGS.

37. THE MECHANICAL AND PLUMBING CONTRACTORS MUST FURNISH ALL STARTERS AND CONTROLS FOR THEIR EQUIPMENT. THE ELECTRICAL CONTRACTOR MUST MOUNT STARTERS FURNISHED BY THE MECHANICAL AND PLUMBING CONTRACTORS, THE ELECTRICAL CONTRACTOR PROVIDE ALL SAFETY SWITCHES, WIRING AND CONNECTIONS TO LINE SIDE AND LOAD SIDE OF STARTERS AND SAFETY SWITCHES COMPLETE TO MECHANICAL EQUIPMENT. FOR RESISTANCE TYPE LOADS WHERE STARTERS OR CONTACTORS ARE NOT REQUIRED, THE ELECTRICAL CONTRACTOR MUST PROVIDE ALL POWER WIRING AND CONNECTIONS COMPLETE TO EQUIPMENT. THE MECHANICAL AND PLUMBING CONTRACTORS MUST PROVIDE ALL CONTROL WIRING AND CONNECTIONS AND DEVICES FOR THEIR EQUIPMENT.

38. COORDINATE FIRE ALARM SYSTEM MODIFICATIONS/SMOKE DETECTOR RELOCATION WITH THE OWNER AND GENERAL CONTRACTOR. THE EXISTING SYSTEM MUST REMAIN OPERATIONAL AT ALL TIMES UNLESS PRIOR ARRANGEMENTS HAVE BEEN MADE WITH THE OWNER.

39. 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 MUST INCLUDE IN BID THE COST FOR THE SCHOOL'S FIRE ALARM VENDOR TO PERFORM THIS WORK.

40. INSTALLATION INFORMATION PACKED WITH LIGHTING FIXTURES, DEVICES AND EQUIPMENT MUST BE RETAINED FOR INCLUSION IN THE OPERATIONS AND MAINTENANCE MANUALS.

41. 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 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.

42. THE CONTRACT REQUIRES SEVERAL NEW CIRCUITS BE ADDED TO EXISTING PANELBOARDS. THE CONTRACTOR MUST 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 ENGINEER. PROVIDE ACCURATE, UPDATED, TYPED PANEL SCHEDULES FOR ALL AFFECTED PANELS. NOTE ALL FINAL CIRCUIT CONFIGURATIONS ON AS-BUILT DRAWINGS.

43. THE CONTRACTOR MUST PERFORM ALL CUTTING AND PATCHING NECESSARY TO INSTALL ALL EQUIPMENT AS REQUIRED AND MUST REESTABLISH ALL FINISHES TO THEIR ORIGINAL CONDITION WHERE CUTTING AND PATCHING OCCUR. ALL CUTTING AND PATCHING MUST BE DONE IN A THOROUGHLY WORKMANSHIP MANNER. SAW CUT CONCRETE AND MASONRY PRIOR TO BREAKING OUT SECTIONS. ALL PATCHING MATERIALS AND WORKMANSHIP MUST BE PERFORMED BY TRADESMEN EXPERIENCED IN THAT WORK. ALL WORK MUST BE SUBJECT TO THE APPROVAL OF THE ARCHITECT.

44. CORE DRILL HOLES IN EXISTING CONCRETE WALLS AS REQUIRED.

45. INSTALL WORK AT SUCH TIME AS TO REQUIRE THE MINIMUM AMOUNT TO CUTTING AND PATCHING.

46. CUT OPENINGS ONLY LARGE ENOUGH TO ALLOW EASY INSTALLATION OF THE CONDUIT.

47. MAINTAIN CONTINUITY OF ALL EXISTING CIRCUITS TO REMAIN OR PORTIONS THEREOF AFFECTED BY THIS WORK.

48. 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 MUST BE VERIFIED BY THE CONTRACTOR AFTER DEMOLITION OF THE EXISTING SPACE. IF ADEQUATE SPACE IS NOT AVAILABLE FOR NEW CIRCUIT BREAKERS THE CONTRACTOR MUST NOTIFY THE ENGINEER FOR RESOLUTION.

49. ABANDONED POWER WIRING, RACEWAYS AND CONDUCTORS, MUST BE REMOVED BACK TO THEIR SOURCE. THE ACCESSIBLE PORTIONS OF ABANDONED CABLES (VOICE, DATA, VIDEO, ALARM, ETC.) MUST BE REMOVED.

50. 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.

51. INSOFAR AS POSSIBLE, MATCH EXISTING EXPOSED DEVICES IN FINISHED AREAS IN TYPE, COLOR AND FINISH.

52. 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 MUST VERIFY ALL DIMENSIONS, POINTS OF ACCESS AND FIELD CONDITIONS AFFECTING HIS WORK.

53. THE CONTRACTOR MUST VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING ELECTRICAL SYSTEMS AND THE EXISTING BUILDING. THE SUBMISSION OF THE PROPOSAL BY THE CONTRACTOR MUST 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.

54. 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.

55. ALL UNUSED OUTLET BOXES MUST BE REMOVED OR, WITH SPECIFIC APPROVAL OF THE ARCHITECT, MUST BE BLANKED WITH STAINLESS STEEL PLATES. ALL OPENINGS IN EXISTING WALLS AND CEILINGS MADE BY THIS CONTRACTOR MUST BE REPAIRED TO AN EQUAL FINISH AS ADJACENT SURFACES.

56. THE EXISTING FACILITIES WILL REMAIN OCCUPIED BY STUDENTS AND THE STAFF THROUGHOUT THE PROJECT. AS SUCH, WORK WILL REQUIRE SPECIAL EFFORT BY THIS CONTRACTOR TO ALLOW THE WORK TO PROCEED IN A TIMELY MANNER. ALL ELECTRICAL WORK MUST 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.

57. SEE "SELECTIVE DEMOLITION NOTES" FOR ADDITIONAL REQUIREMENTS.

58. SAFETY
    A. COMPLY WITH OSHA AND NEC ARC FLASH PROTECTION REQUIREMENTS.
    B. FOR EQUIPMENT BEING REMOVED AND REPLACED, THE CONTRACTOR MUST 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 ARCHITECTS SATISFACTION.
    D. 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.

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, 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. 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.

9. 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.

10. 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 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.

11. 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.

12. EXISTING FIRE ALARM SYSTEM: COORDINATE WORK WITH THE OWNER AND MAINTAIN THE EXISTING SYSTEM IN SERVICE UNTIL THE WORK IS COMPLETED. 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.

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

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

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

16. 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.

17. 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.

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

19. 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.

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

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

22. 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.

23. REMOVE ALL FLUSH MOUNTED DEVICES THAT CONFLICT WITH NEW CONSTRUCTION AND SECURE THEIR ASSOCIATED BRANCH CIRCUITS.

24. 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.

20. DELIVER ALL REMOVED AND SALVAGED LIGHTING FIXTURES TO THE OWNER, OR AT THE OWNER'S OPTION, DISPOSE OF PROPERLY OFF SITE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL ENVIRONMENTAL REGULATIONS. ALL USED LAMPS MUST BE RECYCLED, NOT DISPOSED OF. COORDINATE DISPOSAL WITH UNCW EH&S. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH THE OWNER'S PROCEDURES FOR CONVENIENT COLLECTION, SAFE STORAGE, AND PROPER RECYCLING OF SPENT FLUORESCENT LIGHTS AND THERMOSTATS THAT CONTAIN MERCURY AND CONTRACTUAL INCLUSIVE OF ANY ARRANGEMENTS WITH BUYERS OF THE RECYCLED MATERIALS. FEES ASSOCIATED WITH DISPOSAL SHALL BE INCLUDED IN THE CONTRACTOR'S BASE BID.

21. SEE GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.

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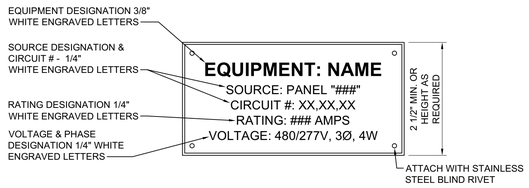
REV.	DATE	DESCRIPTION

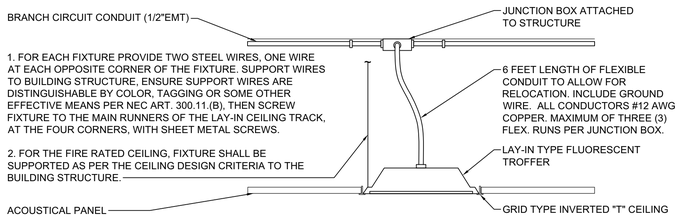
Project Manager	Drawn By JLG
Date 06.20.2025	Reviewed By WAC
Project ID	

Sheet Title
ELECTRICAL GENERAL AND SELECTIVE DEMOLITION NOTES

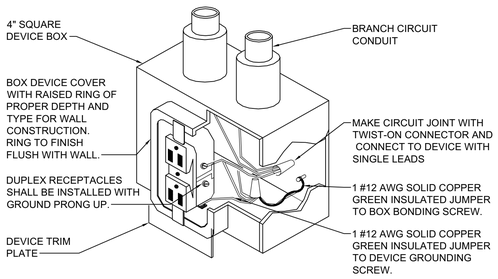
Sheet No.
E-0.2



B1 **TYPICAL DISCONNECT NAMEPLATE DETAIL**
NOT TO SCALE



C1 **LIGHTING FIXTURE MOUNTING DETAIL**
NOT TO SCALE



D1 **RECEPTACLE GROUNDING DETAIL**
NOT TO SCALE

LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER/SERIES	NOM. SIZE	SOURCE / TEMP(oK) / DELIVERED LUMENS	VOLTS	WATTS	LENS	COLOR/ MATERIAL	MOUNTING HEIGHT	DRIVER/ DIMMING	REMARKS
A	INDUSTRIAL LED STRIP LIGHTING	HE WILLIAMS - 82 SERIES ACUITY AF LINEAR METALUX INDUSTRIAL LED	14"x7"x8'	LEDs / 3500K / 10,700 LUMENS	MVOLT	68	RIBBED REFLECTOR	WHITE/ 20/22GUAGE	SURFACE BOTTOM STEEEL	LED DRIVER 0-10V DIMMING	8
X	THERMOPLASTIC LED EXIT SIGN SINGLE FACE, 6" LETTERS	BEGHELLI: PXRSA-AT EELP: XE2RW EM SD EMERGILITE: ELXN400RN-AD	12"L 7.2"H 2"D	LEDs	MVOLT		6" RED	WHITE RED LETTERS	ABOVE DOOR SURFACE	N/A	9

REMARKS:
1. BI-LEVEL SWITCHING
2. DAMP LOCATION
3. WET LOCATION
4. WIREGUARD
5. LED REQUIRED SURGE PROTECTION
6. VERIFY FINAL MOUNTING HEIGHT WITH ARCHITECT
7. FINAL COLOR SELECTION BY ARCHITECT
8. MOUNT TO THE BOTTOM OF EXISTING STEEL
9. INTEGRAL BATTERY BACKUP-90 MINUTES

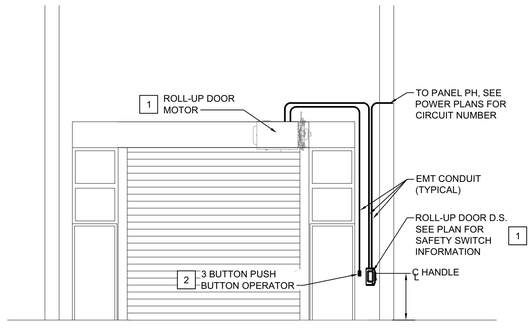
GENERAL NOTES:

A. THE CONTRACTOR MUST VERIFY THE LEAD TIME OF ALL PRODUCTS SPECIFIED IN THIS SCHEDULE AT THE TIME OF PACKAGE QUOTE.
B. DURING THE BID PROCESS, THE CONTRACTOR MUST 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 MUST BE THE RESPONSIBILITY OF THE CONTRACTORS.
E. THE ELECTRICAL CONTRACTOR MUST RECEIVE APPROVAL FOR ALL LIGHTING FIXTURES FROM THE ARCHITECT/OWNER PRIOR TO PURCHASE AND ROUGH-IN.
F. LED MODULES MUST BE REPLACEABLE.
G. ALL EXIT AND EMERGENCY FIXTURES MUST COMPLY WITH NCSBC [APPLICABLE STATE BUILDING CODE] STANDARDS AND HAVE AUTOMATIC TESTING DEVICES.
H. LED EMERGENCY BATTERY MUST PROVIDE FULL RATED FIXTURE [A MINIMUM OF 50% OF RATED FIXTURE] [1400 MINIMUM LUMENS] OUTPUT FOR 90 MINUTES MINIMUM.
I. SEE SPECIFICATIONS SECTIONS FOR ADDITIONAL REQUIREMENTS.
J. THE FIRST FIXTURE NAMED IN THE MANUFACTURER COLUMN IS THE BASIS OF DESIGN. OTHER FIXTURES ARE SIMILAR IN THE OPINION OF THE ARCHITECT AND ENGINEER. IF THE CONTRACTOR ELECTS TO SUBMIT A FIXTURE OTHER THAN THE BASIS OF DESIGN FIXTURE, INCLUDING ONE OF THE TWO SIMILAR FIXTURES, REQUIREMENTS OF NOTES O. AND P. APPLY. [THE ABOVE FIXTURE TYPES ARE LISTED AS THE DESIGN BASIS. THE ACTUAL FIXTURES SUBMITTED MUST BE MANUFACTURED IN THE UNITED STATES.]
K. 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 MUST 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 MUST 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.
L. 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.

ROLL-UP DOOR KEYED NOTES

1 ROLL-UP DOOR'S: THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE LATEST DRAWINGS FOR PURCHASED EQUIPMENT FROM THE ROLL UP DOOR PROVIDER. THE ELECTRICAL CONTRACTOR MUST COORDINATE ALL EQUIPMENT VOLTAGES, RECOMMENDED BREAKER RATINGS, CONDUIT, CABLE AND CONDUCTOR INSTALLATION REQUIREMENTS FOR THIS PROJECT. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL EQUIPMENT REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. NOTIFY THE ARCHITECT / ENGINEER IF PURCHASED EQUIPMENT DIFFERS FROM THE INFORMATION PROVIDED IN THIS DESIGN.

2 3 BUTTON PUSH BUTTON STATION PROVIDED BY ROLL UP DOOR VENDOR INSTALLED BY E.C.



NOTE:
1. ELECTRICAL CONTRACTOR MUST COORDINATE FINAL MOUNTING HEIGHTS OF OPERATORS AND SAFETY SW'S WITH OWNER PRIOR TO ROUGH-IN AND INSTALLATION.

E5 **ROLL-UP DOOR DETAIL**
NOT TO SCALE

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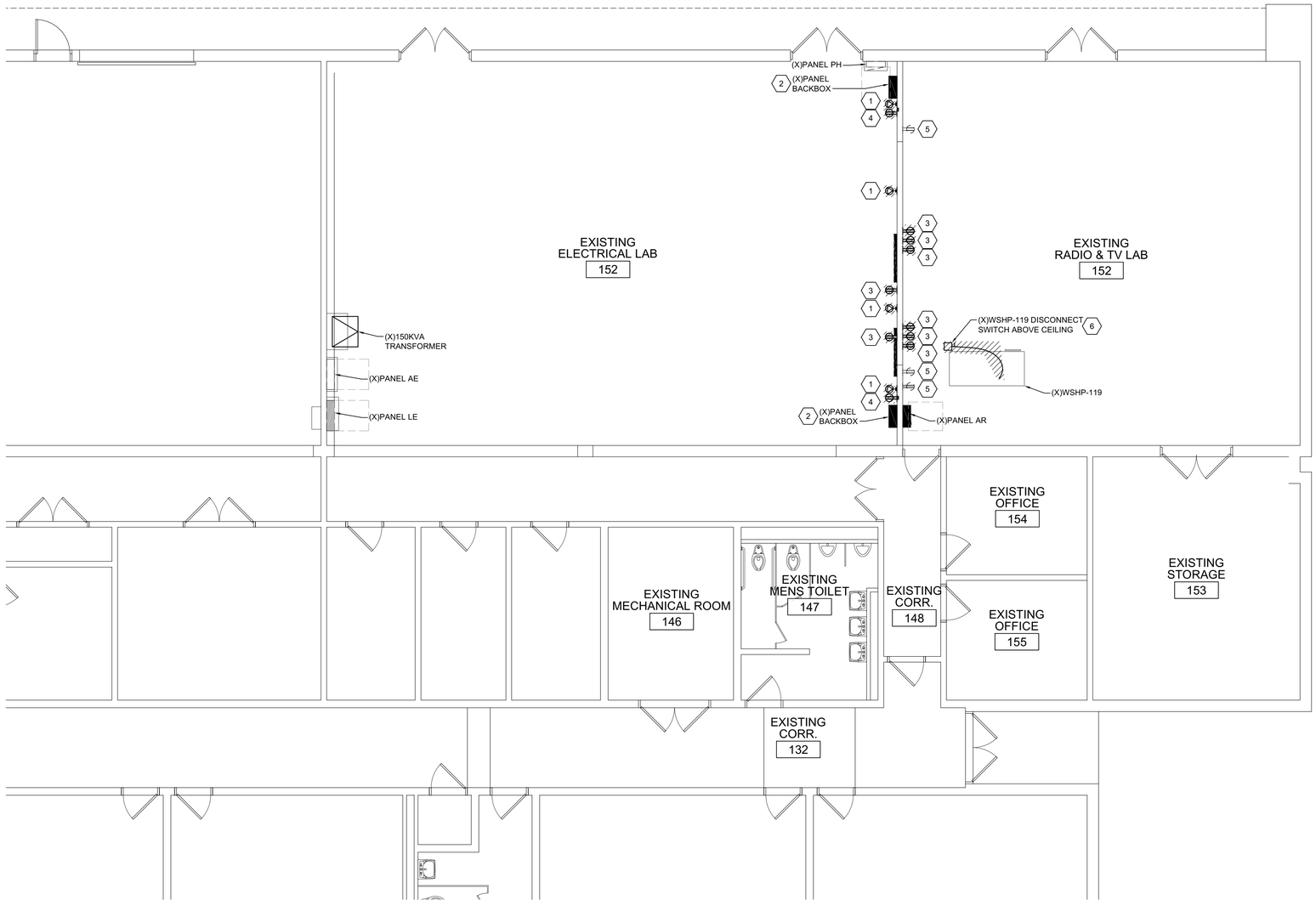
Sheet Title
ELECTRICAL DETAILS AND LIGHTING FIXTURE SCHEDULE

Sheet No.
E-0.3

DEMOLITION KEYED NOTES

1. 20AMP, 4WIRE TWIST LOCK RECEPTACLE: THE CONTRACTOR MUST REMOVE THE RECEPTACLE, BOX, CONDUIT AND CONDUCTORS IN ENTIRETY BACK TO PANEL PH. LABEL BREAKERS AS SPARE IN PANEL PH. TRANSMIT ALL REMOVED MATERIALS TO THE COLLEGE UPON COMPLETION.
2. PANEL BACKBOX: THE CONTRACTOR MUST REMOVE THE PANEL BACKBOX, 3" CONDUIT, SUPPORTS, ETC. IN ENTIRETY. TRANSMIT ALL REMOVED MATERIAL TO THE COLLEGE UPON COMPLETION.
3. RECEPTACLE: THE CONTRACTOR MUST REMOVE RECEPTACLE, BOX, CONDUIT AND CONDUCTORS IN ENTIRETY BACK TO SOURCE. MAINTAIN THE CONTINUITY OF ALL DEVICES UPSTREAM AND DOWNSTREAM FROM THE DEVICE BEING REMOVED AS REQUIRED.
4. RECEPTACLE: THE CONTRACTOR MUST REMOVE RECEPTACLE, EXPOSED CONDUIT AND CONDUCTORS IN ENTIRETY BACK TO SOURCE. MAINTAIN THE CONTINUITY OF ALL DEVICES UPSTREAM AND DOWNSTREAM FROM THE DEVICE BEING REMOVED AS REQUIRED. PROVIDE A BLANK PLATE COVER ON THE EXISTING BOX THAT CANNOT BE REMOVED.
5. EXISTING RECEPTACLE TO REMAIN: THE CONTRACTOR MUST PROTECT THE EXISTING RECEPTACLE DURING DEMOLITION AND CONSTRUCTION. THE RECEPTACLE MUST REMAIN OPERATIONAL AT THE END OF CONSTRUCTION.
6. WSHP-119 DISCONNECT: THE CONTRACTOR MUST REMOVE THE DISCONNECT, CONDUIT, CONDUCTORS, SUPPORTS, ETC. IN ENTIRETY TO SOURCE. LABEL CIRCUIT BREAKER IN SOURCE PANEL AS SPARE.

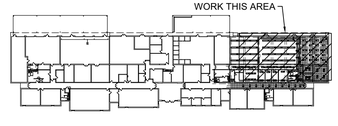


1 PARTIAL DEMOLITION FLOOR PLAN POWER

3/16" = 1'-0"

PLAN NORTH

0 4' 8' 12'



2 KEY PLAN

NOT TO SCALE

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Project Manager	Drawn By: JLG
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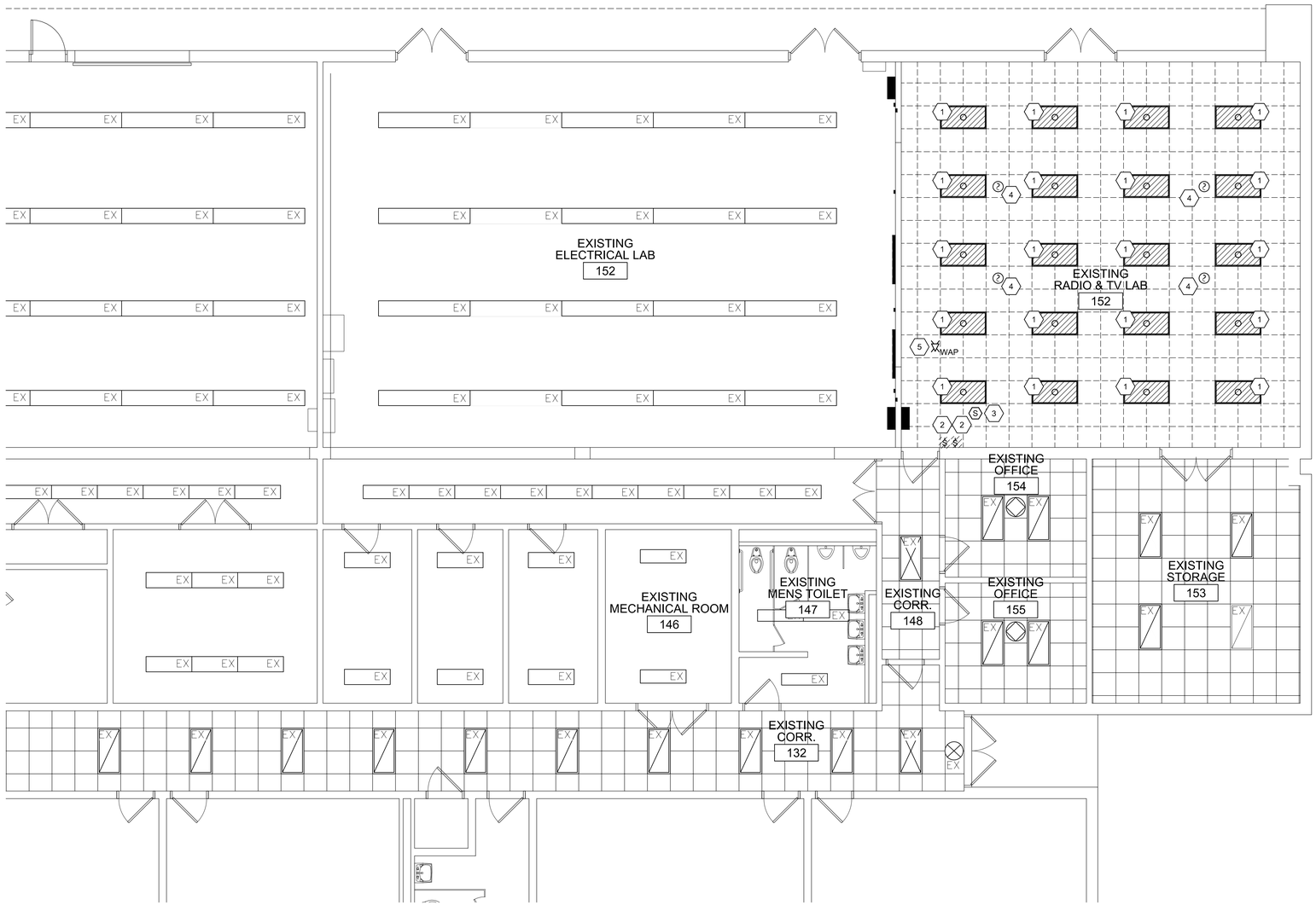
Sheet Title
ELECTRICAL DEMOLITION PARTIAL FIRST FLOOR POWER PLAN

Sheet No.
ED1.1

DEMOLITION KEYED NOTES

1. LIGHT FIXTURES: THE CONTRACTOR MUST DISCONNECT AND REMOVE THE LIGHT FIXTURE, BRANCH CIRCUIT CONDUIT AND CONDUCTORS IN ENTIRETY. LOCATE AND PROTECT THE EXISTING LIGHTING FEED DURING DEMOLITION AND CONSTRUCTION FOR RE-USE AND EXTENSION.
2. WALL SWITCHES: THE CONTRACTOR MUST REMOVE THE SWITCH AND CONDUCTORS TO ALL LIGHT FIXTURES IN ENTIRETY. PROTECT THE EXISTING IN-WALL CONDUIT AND BOX DURING DEMOLITION AND CONSTRUCTION FOR RE-USE.
3. CEILING SPEAKER: THE CONTRACTOR MUST COORDINATE WITH THE OWNERS IT DEPT TO HAVE THE PA SPEAKER DEVICE REMOVED DURING DEMOLITION AND CONSTRUCTION. PROTECT THE EXISTING CABLING FEEDING THE PA SPEAKER DURING DEMOLITION AND CONSTRUCTION FOR RE-USE/RE-CONNECTION TO THE SPEAKER.
4. FIRE SMOKE DETECTOR: THE CONTRACTOR MUST PROTECT AND RELOCATE THE EXISTING FIRE ALARM SMOKE DETECTORS TO THE BOTTOM OF THE ROOF DECK. THE CONTRACTOR MUST RE-USE THE EXISTING CABLING AND KEEP THE FIRE ALARM SYSTEM ACTIVE DURING DEMOLITION AND CONSTRUCTION. RE-SUPPORT FIRE ALARM CABLING IN THE SPACE AS REQUIRED.
5. CEILING MOUNTED WIRELESS ACCESS POINT(WAP): THE CONTRACTOR MUST COORDINATE WITH THE OWNERS IT DEPT TO HAVE THE WAP DEVICE REMOVED DURING DEMOLITION AND CONSTRUCTION. PROTECT THE EXISTING CABLING DURING DEMOLITION AND CONSTRUCTION FOR RE-USE/RE-CONNECTION TO WAP.



1 PARTIAL DEMOLITION FLOOR PLAN LIGHTING & SYSTEMS PLAN

3/16" = 1'-0"

PLAN NORTH

0 4' 8' 12'

2 KEY PLAN

NOT TO SCALE

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Project Manager	Drawn By JLG
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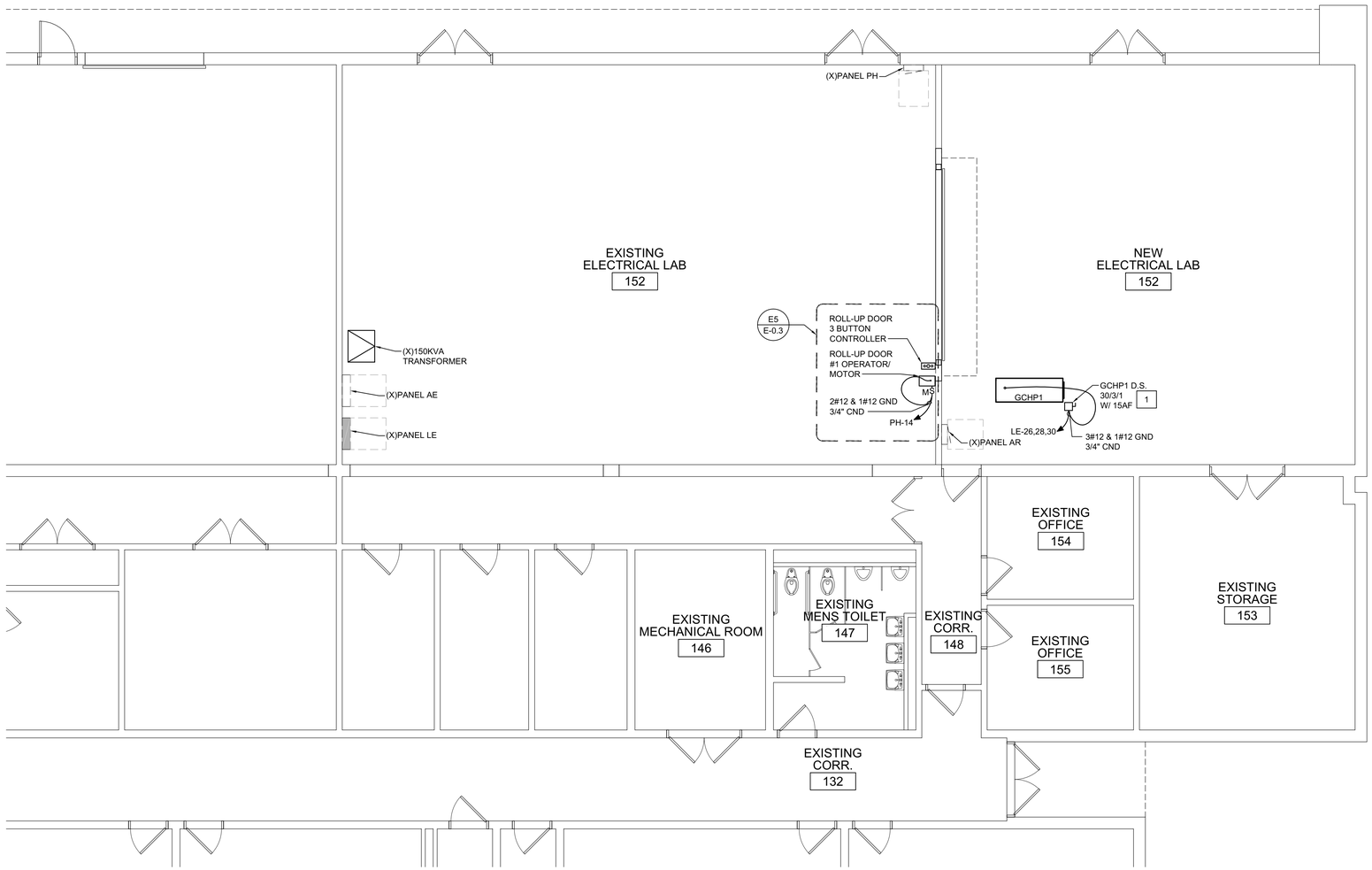
Sheet Title: ELECTRICAL DEMOLITION PARTIAL FIRST FLOOR LIGHTING & SYSTEMS PLAN

Sheet No.: ED1.2

KEYED NOTES

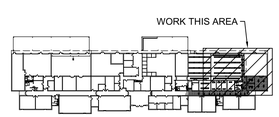
1 GCHP1 DISCONNECT SWITCH: THE CONTRACTOR MUST PROVIDE ALL REQUIRED HARDWARE/SUPPORTS TO MOUNT AND INSTALL THE DISCONNECT ADJACENT TO THE HVAC EQUIPMENT.



1 **PARTIAL FIRST FLOOR POWER PLAN**
3/16" = 1'-0"

PLAN NORTH

0 4' 8' 12'



2 **KEY PLAN**
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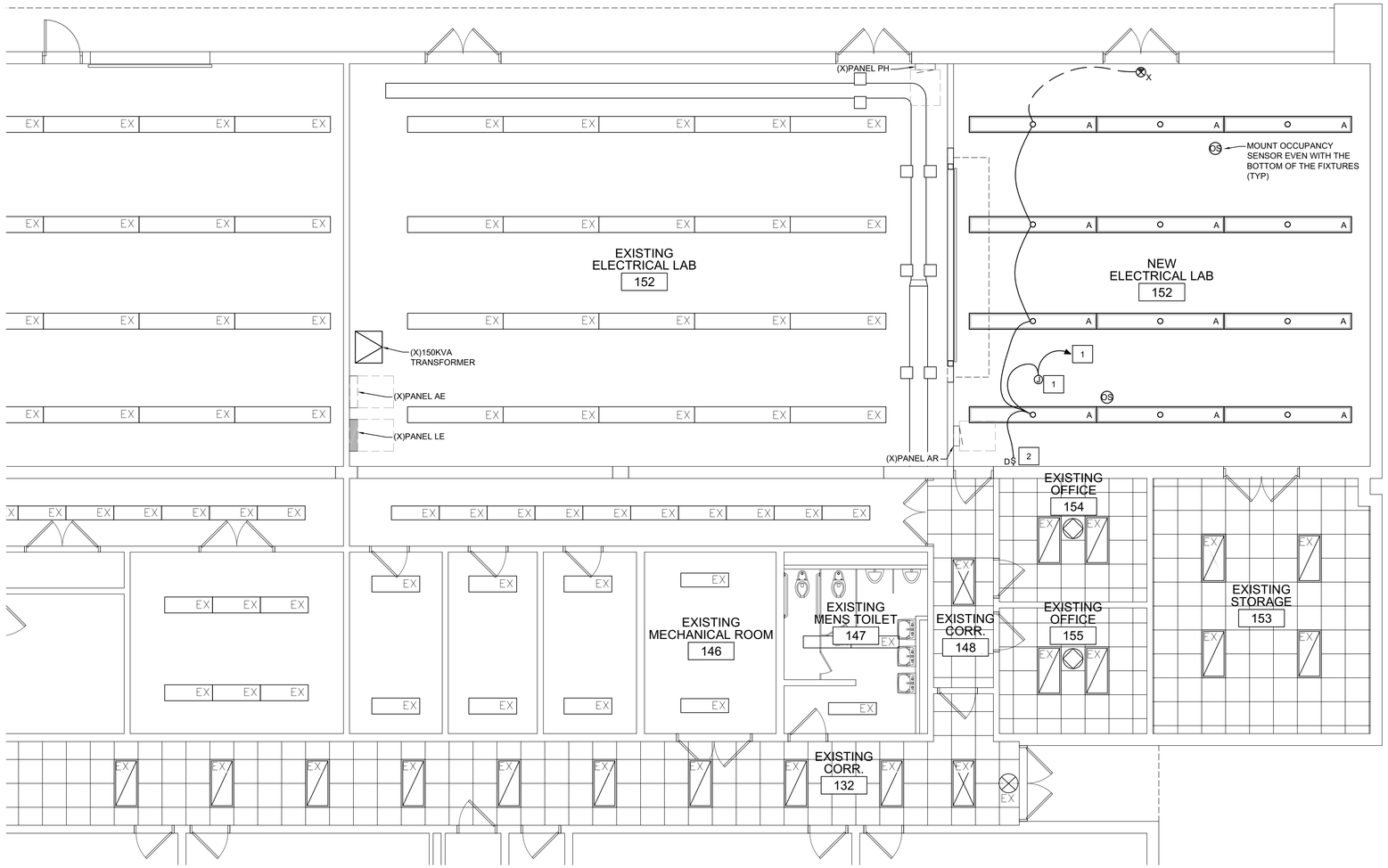
Sheet Title
ELECTRICAL PARTIAL FIRST FLOOR POWER PLAN

Sheet No.
EP1.1

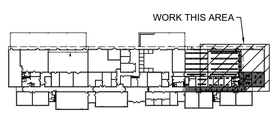
KEYED NOTES

1. LIGHT FIXTURE FEED: THE CONTRACTOR MUST FEED THE LIGHT FIXTURES WITH THE CIRCUIT IDENTIFIED AND PROTECTED DURING DEMOLITION. INSTALL A CEILING MOUNTED JUNCTION BOX AT THE LOCATION OF THE EXISTING FEED.
2. SWITCH BOX AND IN-WALL CONDUIT: THE CONTRACTOR MUST RE-USE THE EXISTING IN-WALL BOX AND CONDUIT TO ROUTE THE SWITCH LEG CONDUCTORS FROM THE DIMMER SWITCH TO THE FIXTURES. THE EXISTING BOX IS A 2 GANG AND WILL REQUIRE A BLANK PLATE INSERT FOR THE SECOND GANG SPACE NO LONGER BEING UTILIZED.



1 PARTIAL FIRST FLOOR LIGHTING & SYSTEMS PLAN
3/16" = 1'-0"

PLAN NORTH



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Sheet Title: ELECTRICAL PARTIAL FIRST FLOOR LIGHTING & SYSTEMS PLAN

Sheet No.: EL1.1