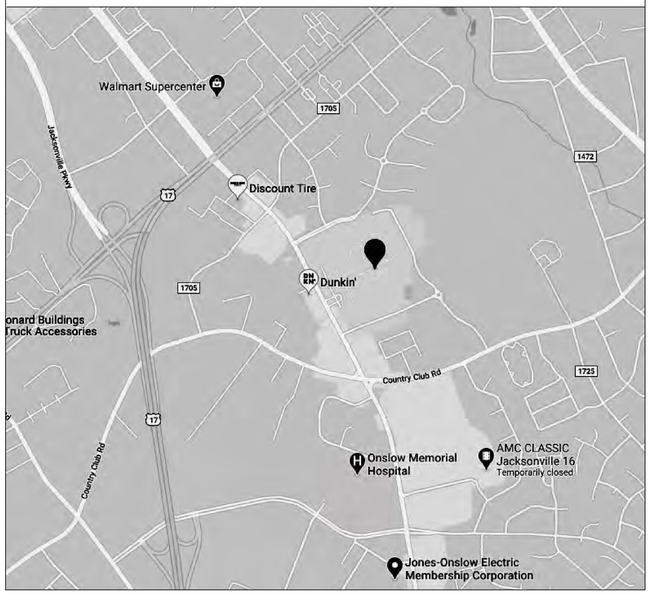
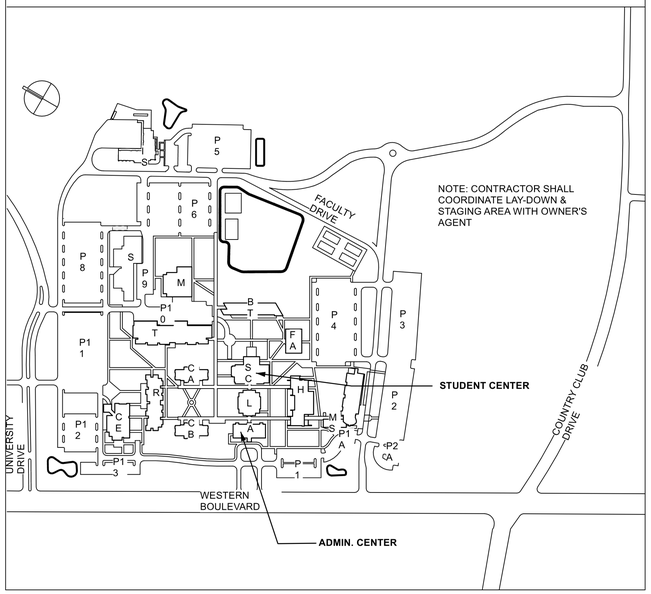
Coastal Carolina Community College
Administration Building & Student Center
Supplemental Cooling

444 Western Boulevard
Jacksonville, North Carolina 28546
SCO # 24-28039-01A

LOCATION MAP



CAMPUS MAP



DRAWING INDEX

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www.bmharch.com

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

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

Approved
JACKSONVILLE, N.C.
File Number: BP25-00000220
Approval Date: 03/05/25

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
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Tel - (910) 762-2621

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

JOHN DOUGLAS MURRAY REGISTERED ARCHITECT 8437 NORTH CAROLINA WILMINGTON, NC

Coastal Carolina Community College
Administration Building & Student Center
Supplemental Cooling
444 Western Boulevard
Jacksonville, North Carolina 28546
SCO # 24-28039-01A

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: CWG
Date: 1.28.2025	Reviewed By: JDM
Project ID	

Sheet Title
COVER SHEET

Sheet No.
CS-1

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: Coastal Carolina Community College Administration Building Supplemental Cooling

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

Owner/Authorized Agent: BMH Architects Phone #: (910) 762-2621 E-mail: murray@bmharch.com

Owned by: ☐ City / County ☐ Private ☐ State

Code Enforcement Jurisdiction: ☒ City Jacksonville ☐ County ☒ State

CONTACT: John D. Murray ,AIA

DESIGNER	FIRM	NAME	LICENSE #	TELE. #	E-MAIL
Architectural	Bowman Murray Hemingway	John D. Murray	6437	910-762-2621	murray@bmharch.com
Civil					
Electrical	CBHF Engineers	Allen Cribb	023311	910-791-4000	acribb@cbhfengineers.com
Fire Alarm					
Plumbing					
Mechanical	CBHF Engineers	David Hahn	23554	910-791-4000	dhahn@cbhfengineers.com
Sprinkler-Standpipe	CBHF Engineers	David Hahn	23554	910-791-4000	dhahn@cbhfengineers.com
Structural	Woods Engineering PA	Adam Sisk	41563	910-343-8007	adam@woodseng.com
Retaining Walls > 5' High					
Other					

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

2018 NC BUILDING CODE: ☐ New Building ☐ Addition ☐ Renovation
☐ 1st Time Interior Completion
☐ Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements
☐ Phased Construction - Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements.

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

CONSTRUCTED: (date) 1975 **CURRENT OCCUPANCY(S) (Ch.3) :** Business

RENOVATED: (date) 2024 **PROPOSED OCCUPANCY(S) (Ch.3) :** Business

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

BASIC BUILDING DATA:

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

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

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

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

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

Gross Building Area Table

FLOOR	EXISTING (SQ. FT.)	NEW (SQ. FT.)	SUB-TOTAL
3rd Floor			
2nd Floor			
Mezzanine			
1st Floor	11,848	0	11,848
Basement			
TOTAL			

ALLOWABLE AREA

Primary Occupancy Classification(s):

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

Accessory Occupancy Classification(s): N/A

Incidental Uses (Table 509): N/A

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

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

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

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

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

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

_____ + _____ + _____ = _____ <1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 [4] AREA	(C) AREA FOR FRONTAGE INCREASE [1,5]	(D) [2,3] AREA PER STORY OR UNLIMITED
Administration -1	Office	11,848	23,000		23,000

[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 = _____(F)

b. Total Building Perimeter = _____(P)

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

d. W = Minimum width of public way = _____(W)

e. Percent of frontage increase $I = f\ 100\ [F/P - 0.25] \times W/30$ = _____(%)

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

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

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

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

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
BUILDING HEIGHT IN FEET (TABLE 504.3) [2]	55'	20'	
BUILDING HEIGHT IN STORIES (TABLE 504.4) [3]	3	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 (NOT APPLICABLE)

LIFE SAFETY SYSTEM REQUIREMENTS (NOT APPLICABLE)

ACCESSIBLE DWELING UNITS (SECTION 1107) (NOT APPLICABLE)

ACCESSIBLE PARKING (SECTION 1106) (NOT APPLICABLE)

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1) (NOT APPLICABLE)

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)
North Carolina State Construction Office
City of Jacksonville

ENERGY SUMMARY

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

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

Exempt Building: ☐ No ☒ Yes (Provide code or statutory reference:) 2018 NC EXISTING BC 708.1

Climate Zone: ☒ 3A ☐ 4A ☐ 5A

STRUCTURAL DESIGN

DESIGN LOADS:
Importance Factors:
Snow (I_s) 1.0
Seismic (I_E) 1.0

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

Ground Snow Loads: 10 psf

Wind Loads: Ultimate Wind Speed 138 mph (ASCE-7); Exposure Category C

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

Provide the following Seismic Design Parameters:

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

Spectral Response Acceleration SS 11.2 %g S1 5.4 %g

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

Data Source: ☐ Field Test ☐ Presumptive ☐ Historical Data

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

Analysis Procedure ☐ Simplified ■ Equivalent Lateral Force ☐ Dynamic

Architectural, Mechanical, Components anchored? ☐ **Yes** ■ **No**

LATERAL DESIGN CONTROL: Earthquake ☐ Wind ■

SOIL BEARING CAPACITIES: SEE STRUCTURAL DRAWINGS

Field Test (provide copy of test report) N/A psf
Presumptive Bearing capacity N/A psf
Pile size, type, and capacity N/A

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
(For further information refer to mechanical schedules)

Thermal Zone: 3A - Warm/Humid
winter dry bulb: 23 degrees F
summer dry bulb: 93 degrees F

Interior design conditions
winter dry bulb: 70 degrees F
summer dry bulb: 75 degrees F
relative humidity: 60 degrees RH (design - not controlled)

Building heating load: Existing Equipment

Building cooling load: Existing Equipment

Mechanical Spacing Conditioning System
Unitary
description of unit: N/A - Existing Equipment
heating efficiency: N/A - Existing Equipment
cooling efficiency: N/A - Existing Equipment
size category of unit: N/A - Existing Equipment
Boiler
Size category. If oversized, state reason: N/A
Chiller
Size category. If oversized, state reason: N/A

List equipment efficiencies: N/A - Existing Equipment

ELECTRICAL SUMMARY
NOT REQUIRED FOR PROJECT - LIGHTING IS NOT A PART OF PROJECT

ELECTRICAL SYSTEM AND EQUIPMENT (For further information refer to electrical schedules)

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

Lighting schedule (each fixture type)
lamp type required in fixture:
number of lamps in fixture:
ballast type used in the fixture:
number of ballasts in fixture:
total wattage per fixture:
total interior wattage specified vs allowed (whole building or space by space)
Whole Building:____ Specified,____ Allowed

total exterior wattage specified vs allowed
Exterior:____Specified,____ Allowed

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

Approved
JACKSONVILLE N.C.
File Number: BP25-00000220
Approval Date: 03/05/25
CAMP LEJEUNE, MCAS NEW RIVER

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

JOHN DOUGLAS MURRAY REGISTERED ARCHITECT 6437 NORTH CAROLINA WILMINGTON, N.C. 1.28.2025

Coastal Carolina Community College
Administration Building & Student Center
Supplemental Cooling
444 Western Boulevard
Jacksonville, North Carolina 28546
SCO # 24-28039-01A

REV.	DATE	DESCRIPTION

Project Manager	Drawn By CWG
Date 1.28.2025	Reviewed By JDM
Project ID	

Sheet Title
APPENDIX B - ADMINISTRATION BUILDING

Sheet No.
CS-2

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: Coastal Carolina Community College Student Center Building Supplemental Cooling

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

Owner/Authorized Agent: BMH Architects Phone #: (910) 762-2621 E-mail: murray@bmharch.com

Owned by: ☒ City / County ☐ Private ☐ State

Code Enforcement Jurisdiction: ☒ City Jacksonville ☐ County ☒ State

CONTACT: John D. Murray ,AIA

DESIGNER	FIRM	NAME	LICENSE #	TELE. #	E-MAIL
Architectural	Bowman Murray Hemingway	John D. Murray	6437	910-762-2621	murray@bmharch.com
Civil					
Electrical	CBHF Engineers	Allen Cribb	023311	910-791-4000	acribb@cbhfengineers.com
Fire Alarm					
Plumbing					
Mechanical	CBHF Engineers	David Hahn	23554	910-791-4000	dhahn@cbhfengineers.com
Sprinkler-Standpipe	CBHF Engineers	David Hahn	23554	910-791-4000	dhahn@cbhfengineers.com
Structural	Woods Engineering PA	Adam Sisk	41563	910-343-8007	adam@woodseng.com
Retaining Walls > 5' High					
Other					

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

2018 NC BUILDING CODE: ☐ New Building ☐ Addition ☐ Renovation
☐ 1st Time Interior Completion
☐ Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements
☐ Phased Construction - Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements.

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

CONSTRUCTED: (date) 1975 **CURRENT OCCUPANCY(S) (Ch.3) :** A3

RENOVATED: (date) 2024 **PROPOSED OCCUPANCY(S) (Ch.3) :** A3 & Business

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

BASIC BUILDING DATA:

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

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

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

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

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

Gross Building Area Table

FLOOR	EXISTING (SQ. FT.)	NEW (SQ. FT.)	SUB-TOTAL
3rd Floor			
2nd Floor			
Mezzanine			
1st Floor	14,260	0	14,260
Basement			
TOTAL			

ALLOWABLE AREA

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

Accessory Occupancy Classification(s): N/A

Incidental Uses (Table 509): N/A

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

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

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

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

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

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

______ + ______ + ____ = ____ <1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 [4] AREA	(C) [1,5] AREA FOR FRONTAGE INCREASE [1]	(D) [2,3] AREA PER STORY OR UNLIMITED
Student Center-1	Dining / Office	14,260	9500	6745	16,245

[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 = 511 (F)
b. Total Building Perimeter = 533 (P)
c. Ratio (F/P) = 96 (F/P)
d. W = Minimum width of public way = 30 (W)
e. Percent of frontage increase $I = f$ 100 [F/P - 0.25] x W/30 = 71 (%)

[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.

1 (revision)

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
BUILDING HEIGHT IN FEET (TABLE 504.3) [2]	55'	20'	
BUILDING HEIGHT IN STORIES (TABLE 504.4) [3]	2	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 (NOT APPLICABLE)

LIFE SAFETY SYSTEM REQUIREMENTS (NOT APPLICABLE)

ACCESSIBLE DWELING UNITS (SECTION 1107) (NOT APPLICABLE)

ACCESSIBLE PARKING (SECTION 1106) (NOT APPLICABLE)

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1) (NOT APPLICABLE)

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)
North Carolina State Construction Office
City of Jacksonville

ENERGY SUMMARY

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

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

Exempt Building: ☐ No ☒ Yes (Provide code or statutory reference:) 2018 NC EXISTING BC 708.1

Climate Zone: ☒ 3A ☐ 4A ☐ 5A

STRUCTURAL DESIGN

DESIGN LOADS:
Importance Factors: Snow (I_S) 1.0; Seismic (I_E) 1.0
Live Loads: Roof 20 psf; Mezzanine N/A psf; Floor N/A psf
Ground Snow Loads: 10 psf
Wind Loads: Ultimate Wind Speed 138 mph (ASCE-7); Exposure Category C

SEISMIC DESIGN CATEGORY: ☐ A ■ B ☐ C ☐ D
Provide the following Seismic Design Parameters:
Risk Category (Table 1604.5) ☐ I ■ II ☐ III ☐ IV
Spectral Response Acceleration SS 11.2 %g S1 5.4 %g
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ■ D ☐ E ☐ F
Data Source: ☐ Field Test ☐ Presumptive ☐ Historical Data
Basic Structural System ☐ Bearing Wall ☐ Dual w/Special Moment Frame ■ Building Frame ☐ Dual w/Intermediate R/C or Special Steel ☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure ☐ Simplified ■ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☐ Yes ■ No

LATERAL DESIGN CONTROL: Earthquake ☐ Wind ■

SOIL BEARING CAPACITIES: SEE STRUCTURAL DRAWINGS
Field Test (provide copy of test report) N/A psf
Presumptive Bearing capacity N/A psf
Pile size, type, and capacity N/A

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT (For further information refer to mechanical schedules)
Thermal Zone: 3A - Warm/Humid
winter dry bulb: 23 degrees F
summer dry bulb: 93 degrees F
Interior design conditions
winter dry bulb: 70 degrees F
summer dry bulb: 75 degrees F
relative humidity: 60 degrees RH (design - not controlled)

Building heating load: Existing Equipment
Building cooling load: Existing Equipment

Mechanical Spacing Conditioning System
Unitary
description of unit: N/A - Existing Equipment
heating efficiency: N/A - Existing Equipment
cooling efficiency: N/A - Existing Equipment
size category of unit: N/A - Existing Equipment
Boiler
Size category. If oversized, state reason: N/A
Chiller
Size category. If oversized, state reason: N/A
List equipment efficiencies: N/A - Existing Equipment

ELECTRICAL SUMMARY
NOT REQUIRED FOR PROJECT - LIGHTING IS NOT A PART OF PROJECT

ELECTRICAL SYSTEM AND EQUIPMENT (For further information refer to electrical schedules)
Method of Compliance:
Energy Code: ☐ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☐ Performance

Lighting schedule (each fixture type)
lamp type required in fixture:
number of lamps in fixture:
ballast type used in the fixture:
number of ballasts in fixture:
total wattage per fixture:
total interior wattage specified vs allowed (whole building or space by space)
Whole Building:____ Specified,____ Allowed
total exterior wattage specified vs allowed
Exterior:____Specified,____ Allowed

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

Approved — Jacksonville N.C. File Number: BP25-00000220 Approval Date: 03/05/25

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

Bowman, Murray, Hemingway Architects, PC — Registered Architectural Corporation — North Carolina — Cert. No. 50424 — Wilmington, N.C.

John Douglas Murray — Registered Architect — 6437 — North Carolina — Wilmington, NC — 2.24.2025

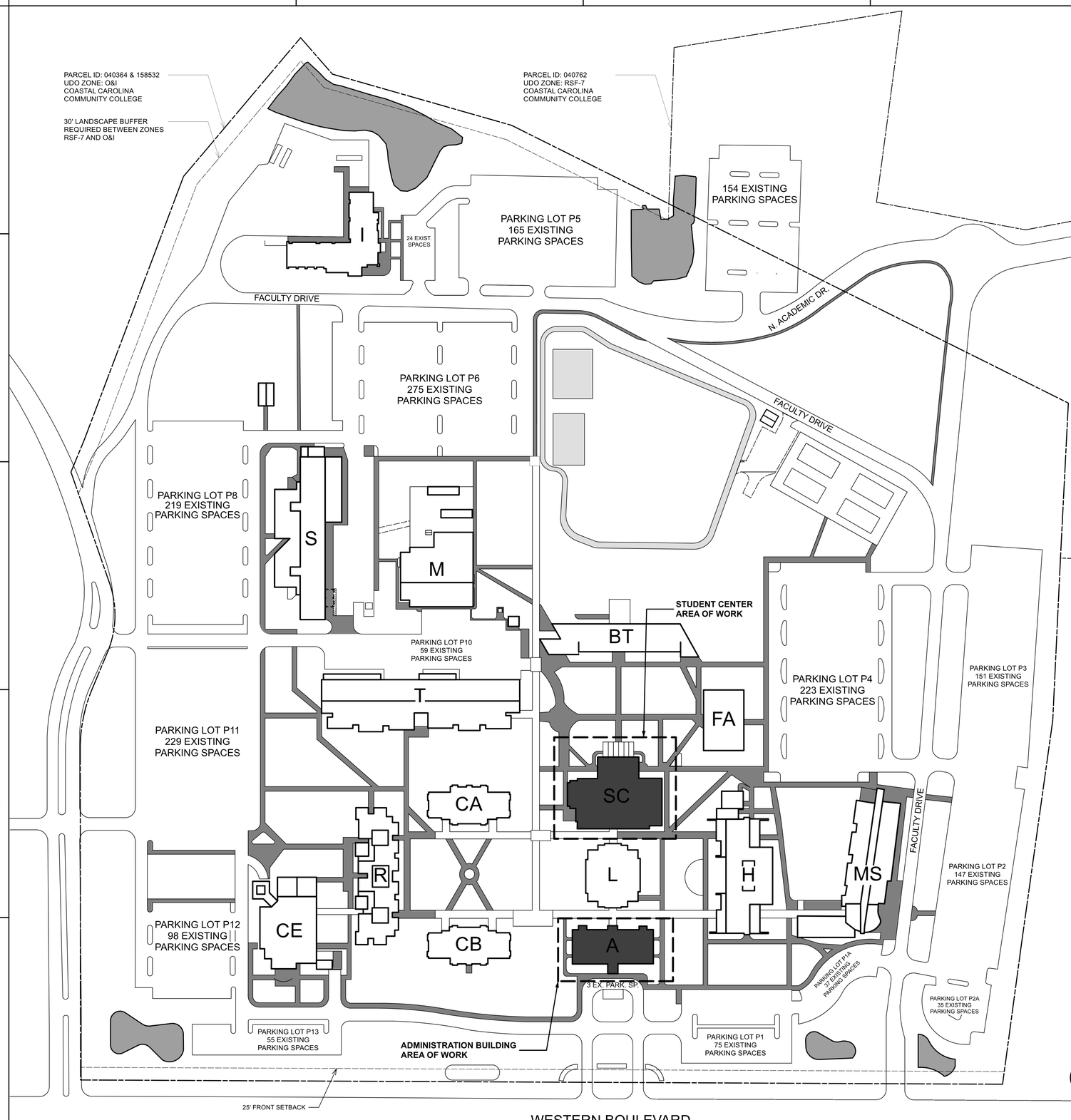
Coastal Carolina Community College Administration Building & Student Center Supplemental Cooling
444 Western Boulevard
Jacksonville, North Carolina 28546
SCO # 24-28039-01A

REV.	DATE	DESCRIPTION
1	2/24/25	COJ COMMENT REVISION

Project Manager | Drawn By CWG
Date 1.15.2024 | Reviewed By JDM
Project ID

Sheet Title: **APPENDIX B - STUDENT CENTER**

Sheet No. CS-3



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) 239,850 sf (walks) 280,000 sf (structures)
Lot Coverage Proposed:	600 sf (change from walk to covered canopy)
Lot Coverage Existing & Proposed:	1,520,775 sf (total)
Percentage of Lot Coverage (E & P):	46.7% (1,520,775/3,256,545)

LEGEND:

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

1 / A100 CAMPUS SITE PLAN
Scale: 1" = 100'-0"

Approved
JACKSONVILLE, N.C.
File Number: BP25-00000220
Approval Date: 03/05/25

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

JOHN DOUGLAS MURRAY REGISTERED ARCHITECT 6437 NORTH CAROLINA WILMINGTON, N.C. 1.28.2025

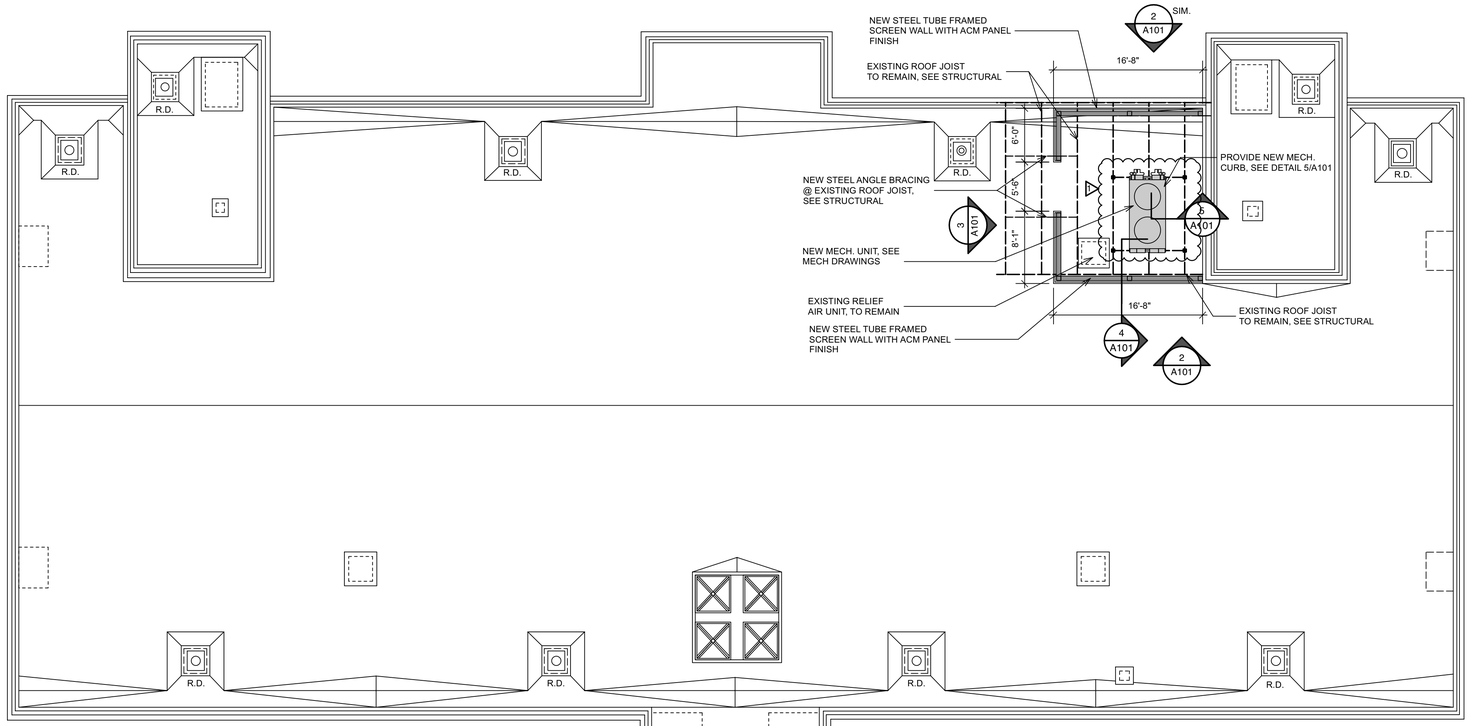
Coastal Carolina Community College
Administration Building & Student Center
Supplemental Cooling
444 Western Boulevard
Jacksonville, North Carolina 28546
SCO # 24-28039-01A

REV.	DATE	DESCRIPTION

Project Manager	Drawn By CWG
Date 1.28.2025	Reviewed By JDM
Project ID	

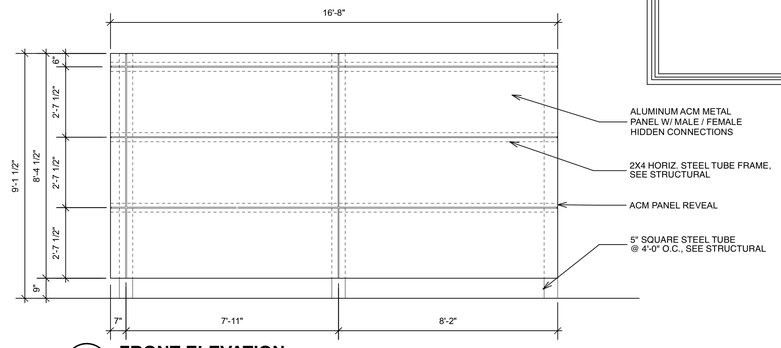
Sheet Title
CAMPUS SITE PLAN

Sheet No.
A100



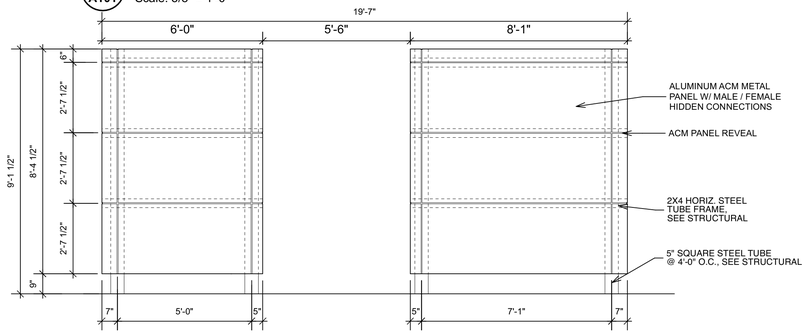
1 A101 ADMINISTRATION BUILDING ROOF

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



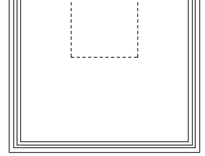
2 A101 FRONT ELEVATION

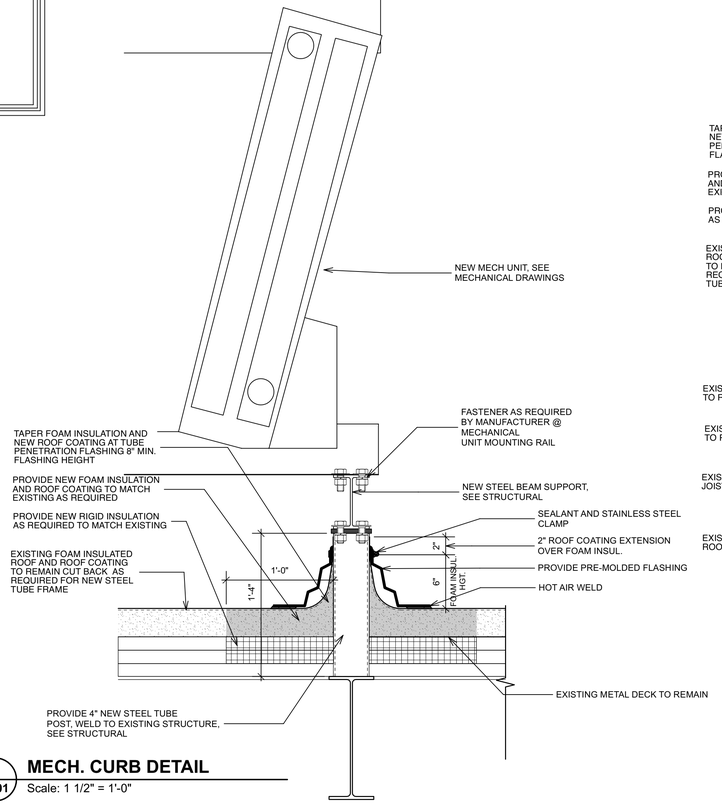
Scale: 3/8" = 1'-0"



3 A101 SIDE ELEVATION

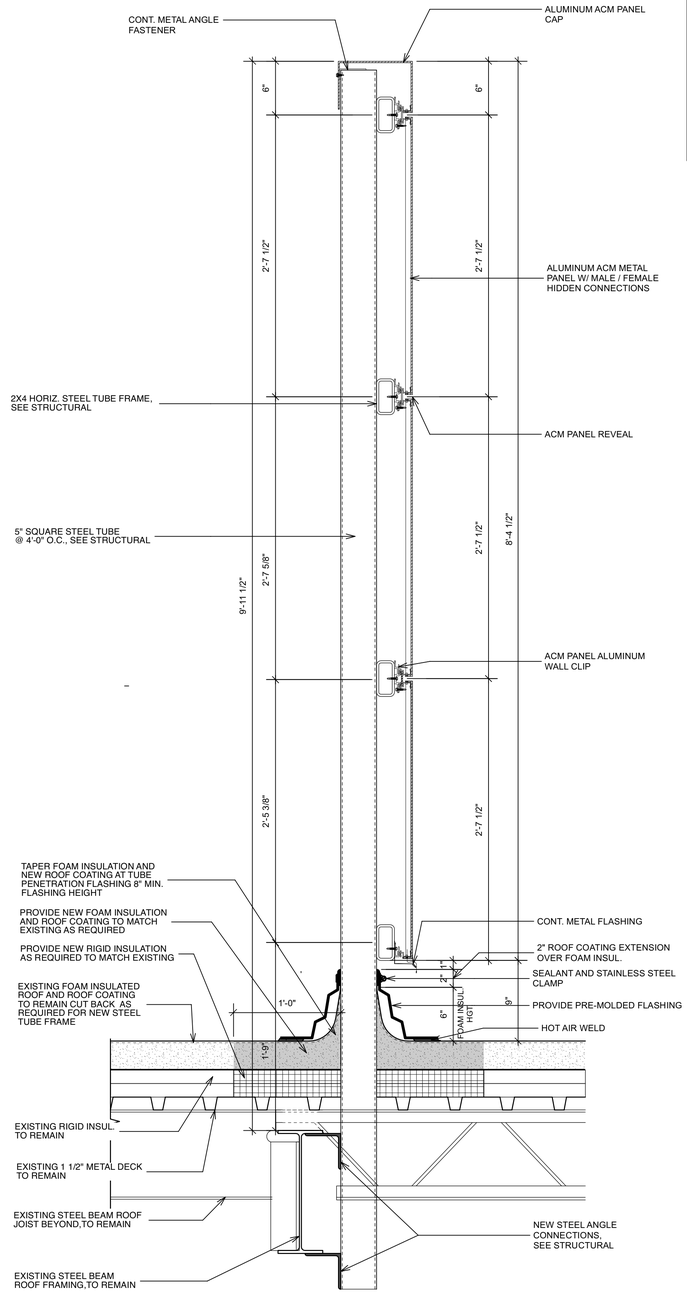
Scale: 3/8" = 1'-0"





5 A101 MECH. CURB DETAIL

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



4 A101 SECTION @ SCREEN WALL

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

Approved
JACKSONVILLE, N.C.
File Number: BP25-00000220
Approval Date: 03/05/25
CAMP LEJEUNE MCAS NEW RIVER

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2 . 24 . 2025

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SCO # 24-28039-01A

REV.	DATE	DESCRIPTION
1	2/24/25	COJ COMMENTS

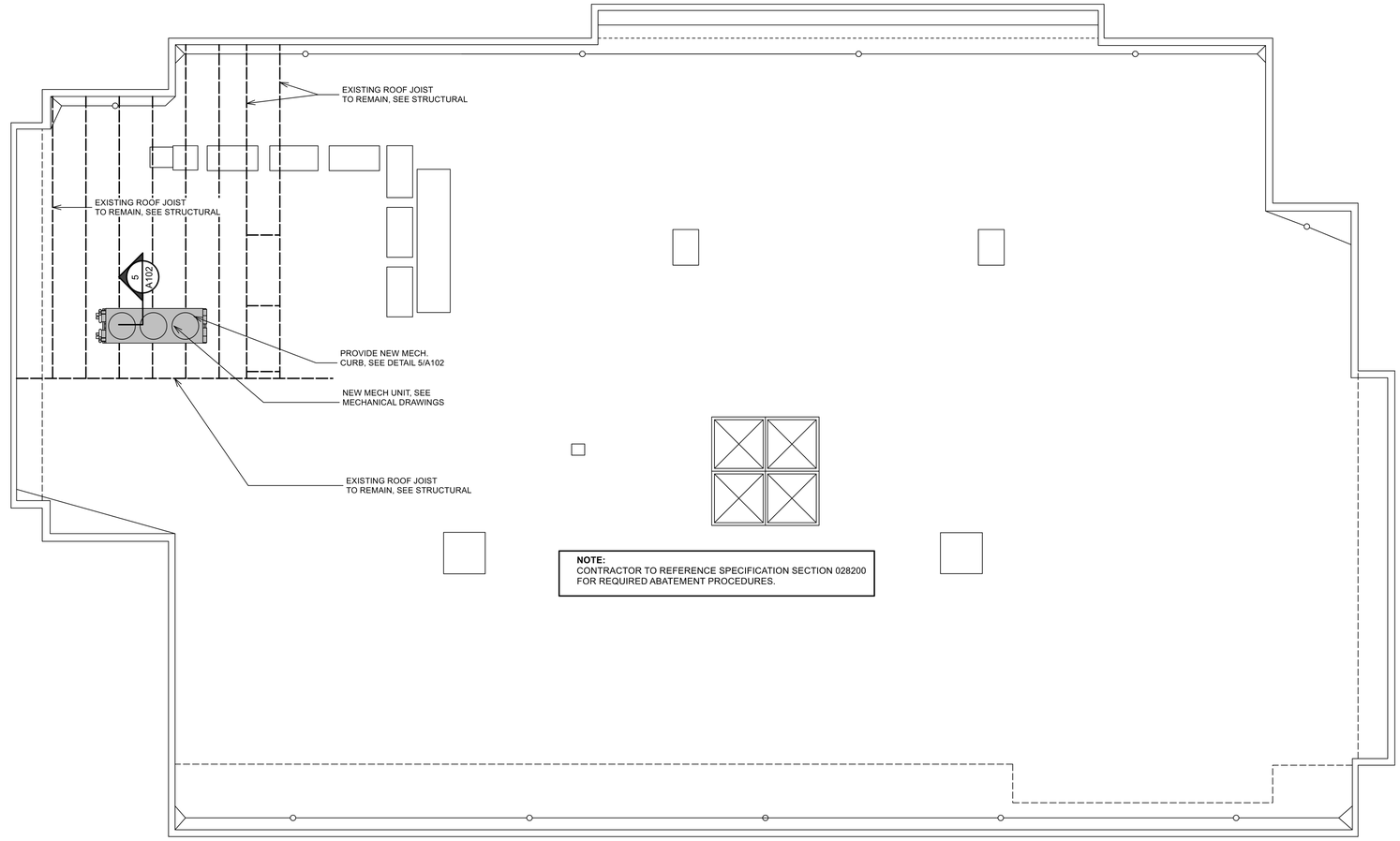
Project Manager	Drawn By: CWG
Date: 1.15.2024	Reviewed By: JDM
Project ID	

Sheet Title

ADMINISTRATION BUILDING ROOF PLAN AND DETAILS

Sheet No.

A101



NOTE:
CONTRACTOR TO REFERENCE SPECIFICATION SECTION 028200 FOR REQUIRED ABATEMENT PROCEDURES.

1 / A102 **STUDENT CENTER ROOF PLAN**
Scale: 1/8" = 1'-0"

Approved
JACKSONVILLE, N.C.
File Number: BP25-00000220
Approval Date: 03/05/25
Town of CAMP LEJEUNE MCAS NEW RIVER

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JOHN DOUGLAS MURRAY REGISTERED ARCHITECT 6437 NORTH CAROLINA WILMINGTON, NC 1.28.25

Coastal Carolina Community College
Administration Building & Student Center
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444 Western Boulevard
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SCO # 24-28039-01A

REV.	DATE	DESCRIPTION

Project Manager	Drawn By: CWG
Date: 1.28.2025	Reviewed By: JDM
Project ID	

Sheet Title
STUDENT CENTER ROOF PLAN

Sheet No.
A102

1.0 CODES AND STANDARDS:

1.1 "2018 North Carolina State Building Code" and "International Building Code", 2015.

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

1.3 "Specification for Structural Steel Buildings (AISC 360-10)" American Institute of Steel Construction, 2011 - 14th Edition

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

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

2.0 DESIGN LOADS:
Project Located in: City of Wilmington, County of New Hanover, State of North Carolina.

2.1 Gravity Loads: (Reduced where allowed)

GRAVITY LOADS		
Location	Uniform (psf)	Concentrated (lbs)
Roof Loads:		
Dead Load	20	
Live Load	20	
Cooling Unit on Administration Building		2,420 lbs
Cooling Unit on Student Center building		3,730 lbs

2.2 Snow Loads per Referenced Code.

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

2.3 Risk Category = II

2.4 Wind Loads per Referenced Code.

Basic Design Wind Speed:
3-second Gust PER ASCE
V = 138 mph
Exposure "C"

Main Wind Force Resisting System:
Building is enclosed & Internal Pressure coefficient (GCpi) = +0.18 & -0.18
Topographic Factor Kzt = 1.0
Wind Directionality Factor, Kd = 0.85

C&C Wind Load on Screen Wall = 46.1 psf (ULTIMATE)

Components & Cladding

Components and Cladding Wind Pressure (psf)										
Walls	**Area < 10ft2**		**Area < 20ft2**		**Area < 50ft2**		**Area < 100ft2**		**Area < 500ft2**	
Zone 4	38.7	-42.0	37.1	-40.4	34.6	-37.9	32.8	-36.3	28.9	-32.2
Zone 5	38.7	-51.9	37.1	-48.6	34.6	-43.7	32.8	-40.4	28.9	-32.2
Roof	**Area < 10ft2**		**Area < 20ft2**		**Area < 50ft2**		**Area < 100ft2**		**Area < 500ft2**	
Zone 1'	17.5	-39.4	16.0	-39.4	16.0	-39.4	16.0	-39.4	16.0	-24.8
Zone 1	17.5	-68.6	16.0	-64.9	16.0	-57.6	16.0	-54.0	16.0	-43.0
Zone 2	17.5	-90.4	16.0	-85.0	16.0	-77.7	16.0	-70.4	16.0	-57.6
Zone 3	17.5	-123.3	16.0	-112.3	16.0	-95.9	16.0	-85.0	16.0	-57.6

Calculated Wind Base Shear (For MWFRS)
Vx = NA Vy = NA

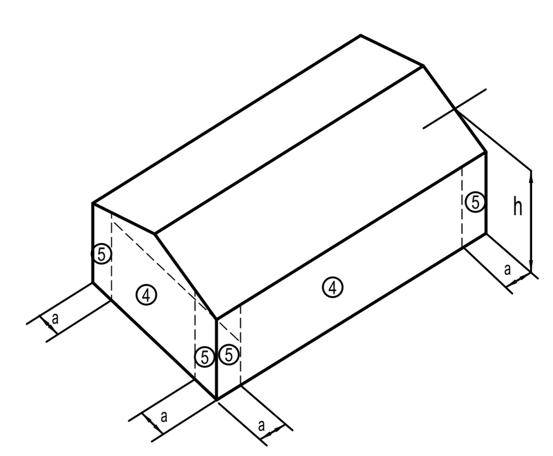
Per Section 3404 Alterations to existing buildings.

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.



ELEVATION

COMPONENT & CLADDING WALL ZONES

a = 8ft

2.6 Seismic Loads per 2018 North Carolina State Building Code (IBC 2015) & ASCE 7-10

Risk Category = II
Site class = "D" (Assumed)
Spectral Response Coefficients:
SDS = 0.119g
SD1 = 0.087g

Seismic Design Category = B
Seismic Importance Factor = 1.0
Basic Seismic - Force - Resisting System
Bearing Wall System - Not Applicable - Structure is Existing

Design Base Shear Vx = N/A Vy = N/A
Building Height Limit = N/A
Analysis Procedure - N/A

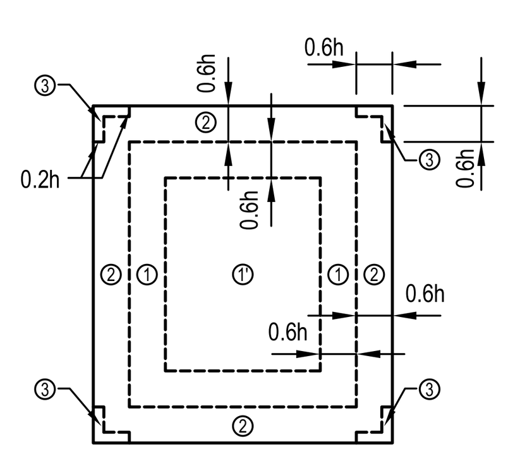
PER SECTION 3404 Alterations to existing buildings.

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.



COMPONENT & CLADDING
FLAT ROOF ZONES

h = 18ft "mean roof height"

3.0 STRUCTURAL STEEL:

3.1 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.

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

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

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

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

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

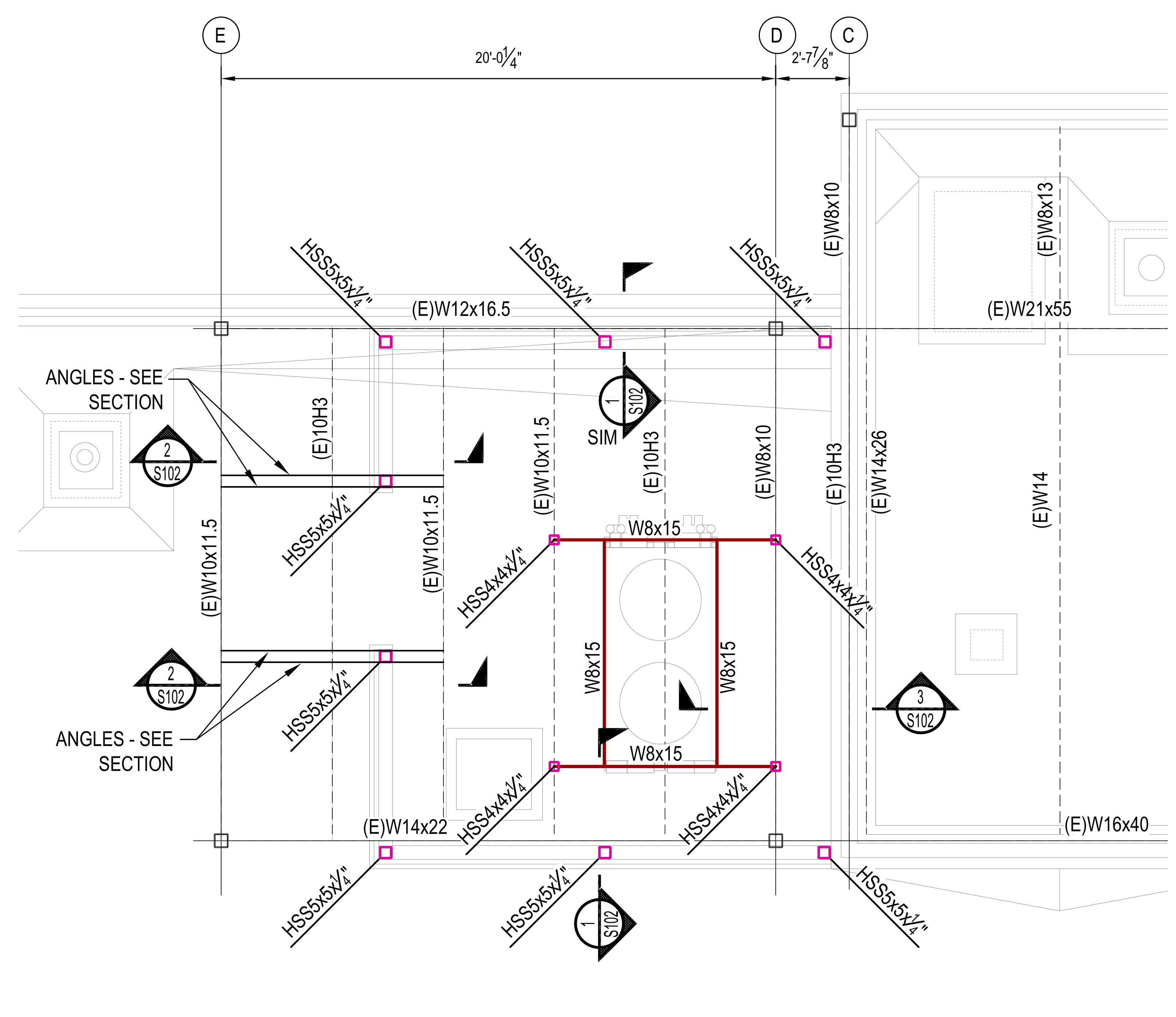
ROOF FRAMING LEGEND

HSSXxX	STEEL POST UP, SEE PLAN FOR SIZE AND LOCATION
0	GRID DESIGNATION FOR CENTERLINE OF COLUMN U.N.O.
(E)x	EXISTING BEAMS, JOISTS
WXxX	NEW STEEL BEAMS

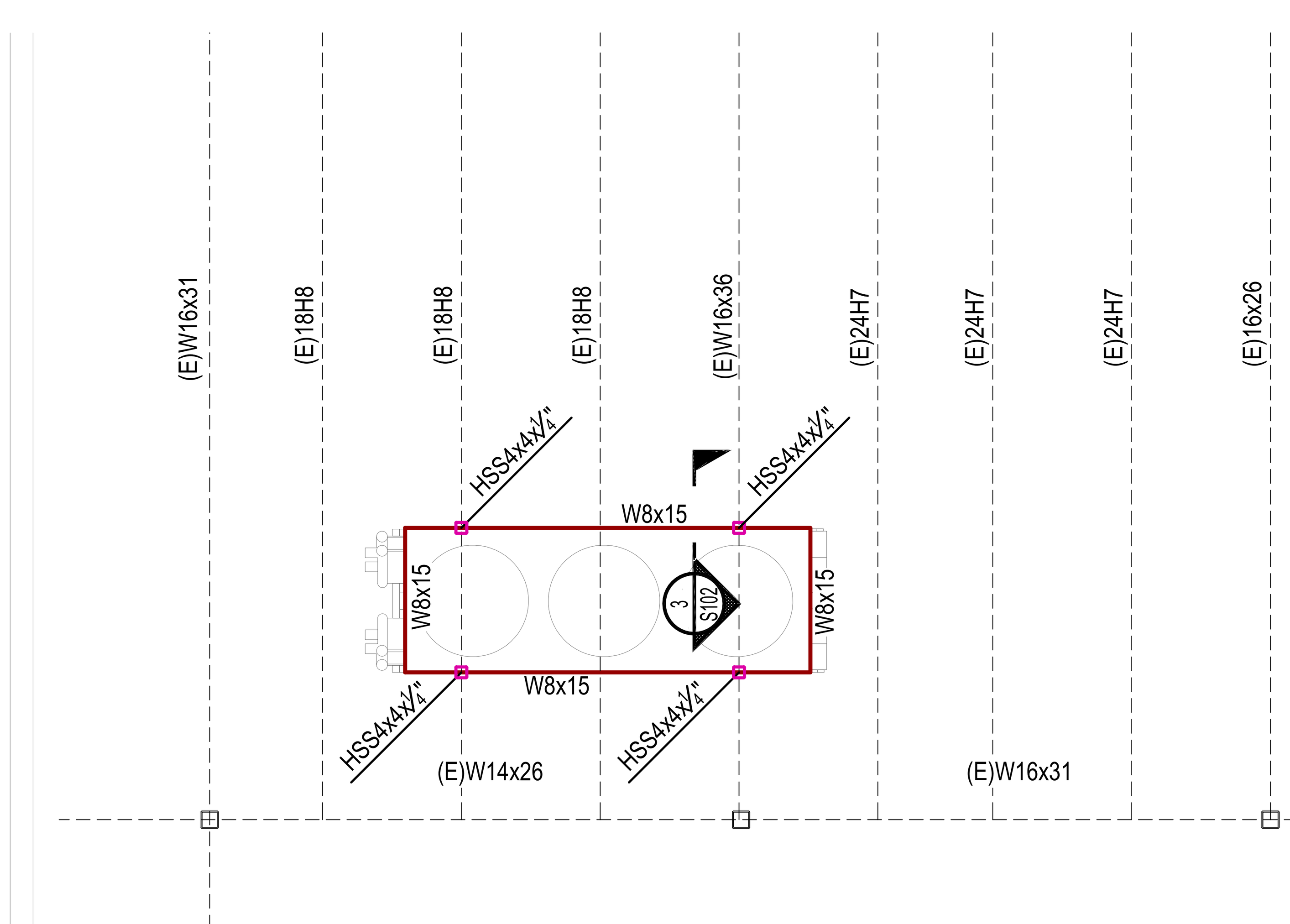
ROOF FRAMING PLAN NOTES

1. SEE NOTES THIS SHEET FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS.

2. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.



ADMINISTRATION BUILDING
PARTIAL ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"



STUDENT CENTER
PARTIAL ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

ROOF TOP UNIT LOCATION ADJUSTED (1)

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CORPORATE SEAL
No. C-1806
NORTH CAROLINA

NORTH CAROLINA
PROFESSIONAL
SEAL
041563
ENGINEER
ADAM L. SISK

Digitally signed by Adam L. Sisk, PE, SE
DN: E=adam@woodseng.com, CN="Adam L. Sisk, PE, SE", O="WOODS ENGINEERING, P.A.", SERIALNUMBER=AATL20240605352556, L=Wilmington, S=North Carolina, C=US
Date: 2025.03.04 15:45:58-05'00'

Coastal Carolina Community College
Administration Building & Student Center
Supplemental Cooling

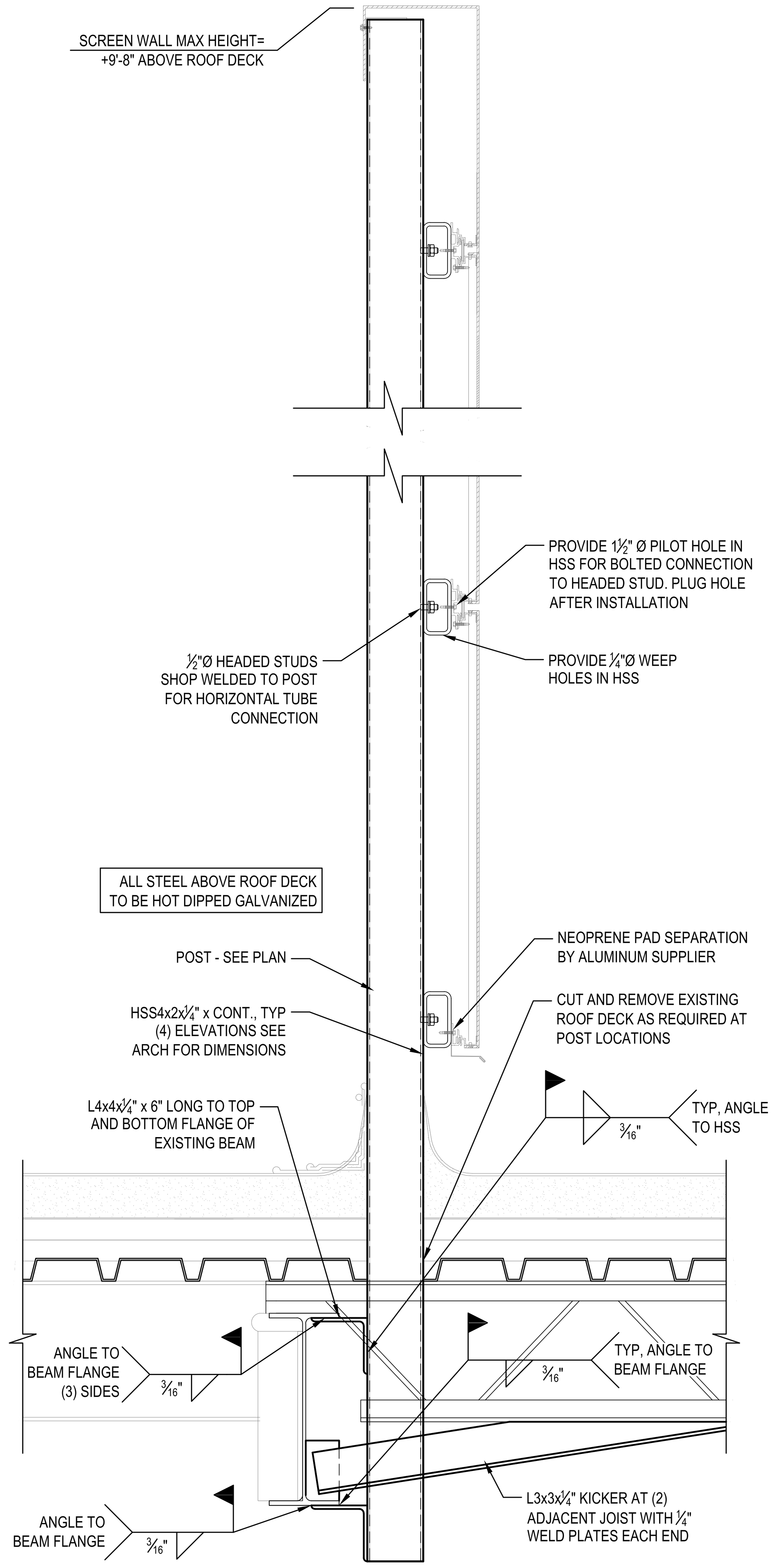
444 Western Boulevard
Jacksonville, North Carolina 28546
SCO # 24-28039-01A

REV.	DATE	DESCRIPTION
1	2/24/2025	COJ COMMENTS

Project Manager	Drawn By JK
Date 01.15.24	Reviewed By AS
Project ID	

Sheet Title
GENERAL NOTES, PARTIAL ROOF FRAMING PLANS

Sheet No.
S101



SECTION 1
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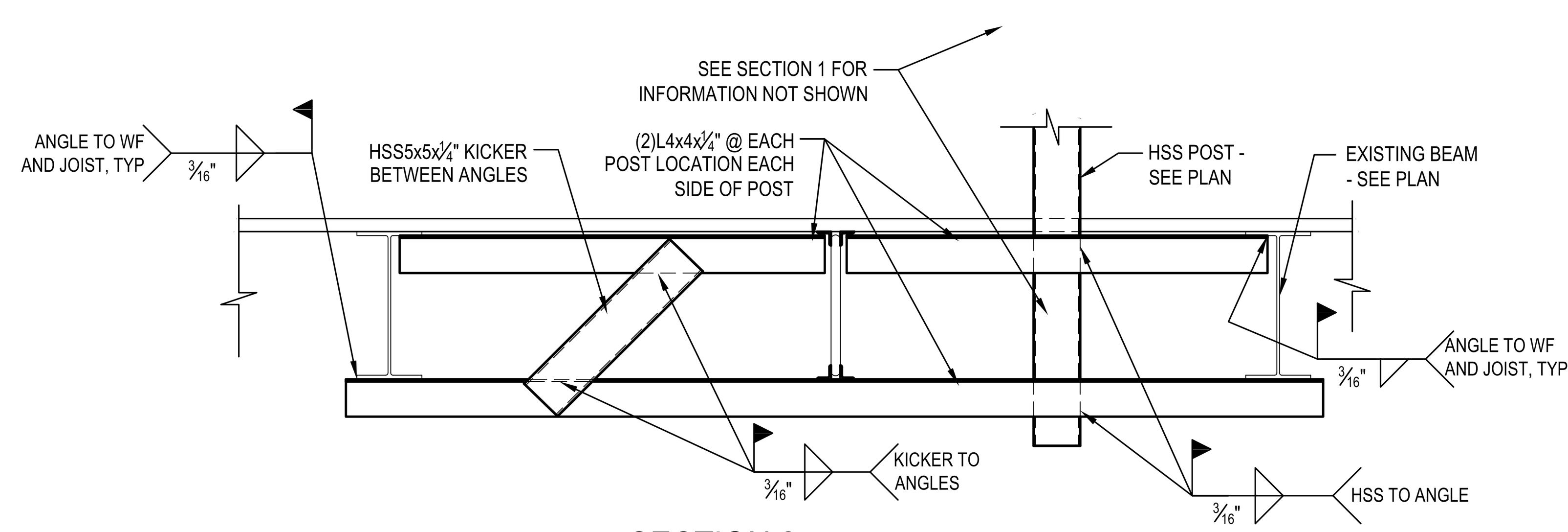

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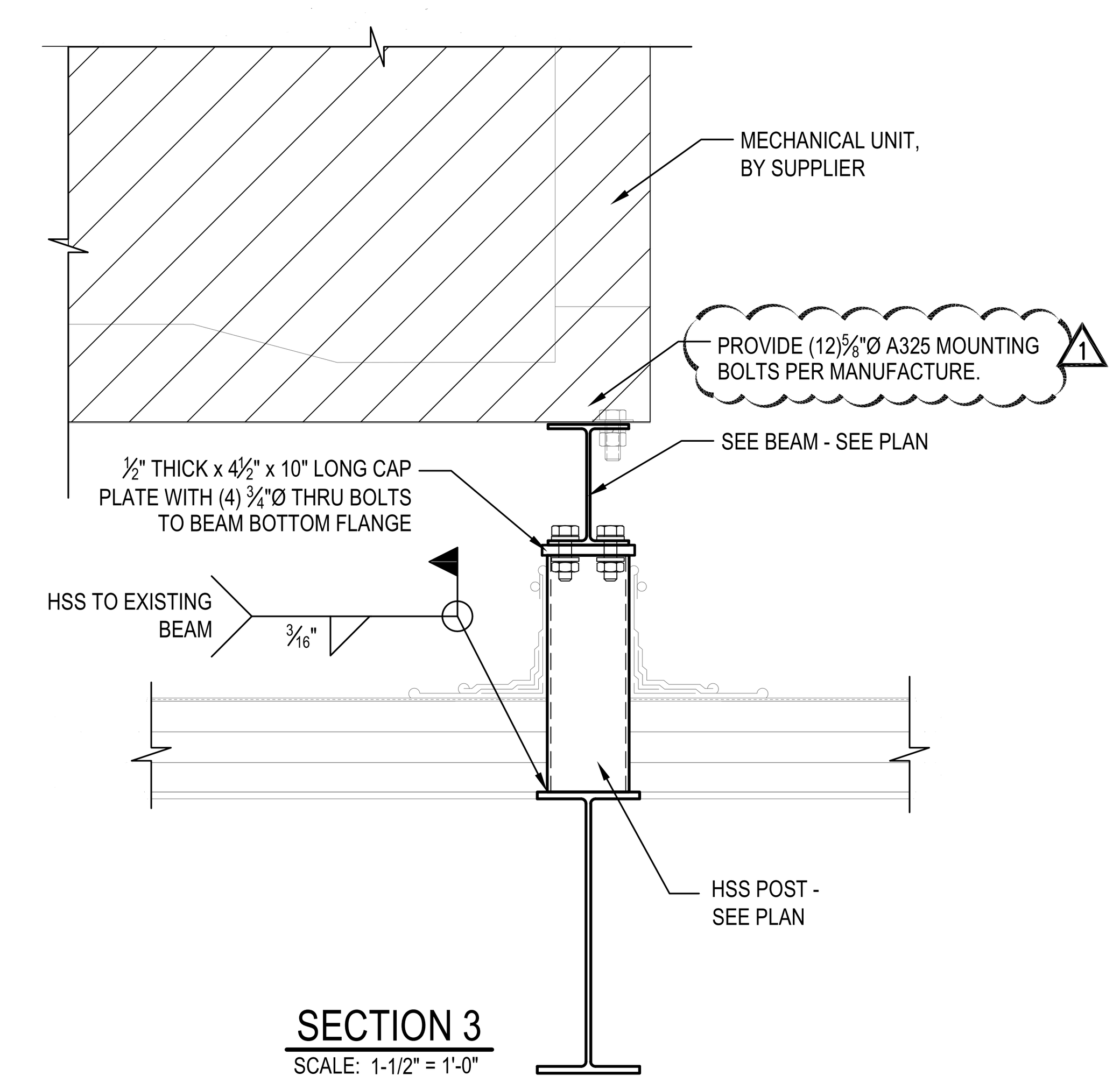

SECTION 3
SCALE: 1-1/2" = 1'-0"
MECHANICAL CURB

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1	2/24/2025	COJ COMMENTS

Project Manager	Drawn By JK
Date 01.15.24	Reviewed By AS
Project ID	

Sheet Title

ROOF FRAMING SECTIONS

Sheet No.

S102

MECHANICAL PIPE SYMBOLS

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

NOTE: ALL ITEMS MAY NOT BE USED IN PROJECT.

MECHANICAL LEGEND

	INDICATES TO DEMOLISH
	EXTENT OF DEMOLITION
	POINT OF CONNECTION

NOTE: ALL ITEMS MAY NOT BE USED IN PROJECT.

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
BUILDING HEATING LOAD:	EXISTING EQUIPMENT
BUILDING COOLING LOAD:	EXISTING EQUIPMENT
MECHANICAL SPACING CONDITIONING SYSTEM	
UNITARY	
DESCRIPTION OF UNIT:	N/A EXISTING EQUIPMENT
HEATING EFFICIENCY:	N/A EXISTING EQUIPMENT
COOLING EFFICIENCY:	N/A EXISTING EQUIPMENT
SIZE CATEGORY OF UNIT:	N/A EXISTING EQUIPMENT
BOILER	
SIZE CATEGORY, IF OVERSIZED STATE REASON:	N/A
CHILLER	
SIZE CATEGORY, IF OVERSIZED STATE REASON:	N/A
LIST EQUIPMENT EFFICIENCIES:	N/A EXISTING EQUIPMENT

MECHANICAL ABBREVIATIONS

ABBREVIATION	TERM
ADJ	ADJUSTABLE
AMCA	AIR MOVEMENT AND CONTROL ASSOCIATION
AMP	AMPERE (AMP, AMPS)
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
CFM	CUBIC FEET PER MINUTE
CIP	CAST IN PLACE
CMU	CONCRETE MASONRY UNIT
COP	COEFFICIENT OF PERFORMANCE
DB	DRY BULB
DEG OR °	DEGREE
EA	EXHAUST AIR
EG	EXHAUST GRILLE
EAT	ENTERING AIR TEMPERATURE
ECM	ELECTRONICALLY COMMUTATED MOTOR
EER	ENERGY EFFICIENCY RATIO
ESP	EXTERNAL STATIC PRESSURE
F	FAN
°F	FAHRENHEIT
FLA	FULL LOAD AMPS
FT	FEET
HC	HOT WATER COIL
HGT OR H	HEIGHT
HP	HORSEPOWER
HR	HOUR(S)
IN.	INCH
IN.-WG	INCHES WATER GAUGE
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
L	LOUVER
MAX	MAXIMUM
MBH	1000 BTUH
MCA	MINIMUM CIRCUIT AMPACITY
MCWB	MEAN COINCIDENT WET BULB
MIN.	MINIMUM
MOCP	MAXIMUM OVER CURRENT PROTECTION
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
OZ	OUNCE
OA	OUTSIDE AIR
%	PERCENT
RA	RETURN AIR
RG	RETURN GRILLE
RPM	REVOLUTIONS PER MINUTE
RTU	ROOF TOP UNIT
SA	SUPPLY AIR
SF	SQUARE-FEET
SG	SUPPLY GRILLE
SQ	SQUARE
TG	TRANSFER GRILLE
TYP	TYPICAL
UH	UNIT HEATER
V/PH/HZ	VOLT/PHASE/HERTZ
VTR	VENT THROUGH ROOF
W	WIDTH
WB	WET BULB
WWR	WELL WATER RETURN
WWS	WELL WATER SUPPLY

NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN PROJECT.

DRY CLOSED CIRCUIT COOLER SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURER	TYPE	SERVICE	FLUID	HEAT REJECTION (MBH)	AIR SIDE				WATER SIDE					INLET AND OUTLET SIZE (IN.)	ELECTRICAL (UNIT)				OPERATING WEIGHT (LBS)	NOTES	ACCESSORIES
								FANS (QTY)	AIRFLOW (CFM)	HP (EA.)	FAN MOTOR TYPE	FLOW (GPM)	EWT (°F)	LWT (°F)	EAT (°Fdb)	PRES. DROP (PSI)		VOLTAGE (V/PH/HZ)	FLA (A)	MCA (A)	MOCP (A)			
CCC1-A	EVAPCO	EAW-VD91S2MA320P7-432AXSP06	POOLPAK, DIRECT COIL	INDUCED DRAFT	FLUID COOLER	WATER	708	2	35,617	4.29	ECM	145.00	113.0	103.2	80.0	5.76	2	460/3/60	12.0	15.0	20	2,450	1	A THRU L
CCC1-SC	EVAPCO	EAW-VD91S3MA24716-425AXSP02	POOLPAK, DIRECT COIL	INDUCED DRAFT	FLUID COOLER	WATER	700	3	48,133	3.31	ECM	200.00	105.0	98.0	80.0	3.90	3	208/3/60	28.9	36.2	40	3,390	1	A THRU L

NOTES:
1 REFER TO SPECIFICATION SECTION 236500 - DRY CLOSED CIRCUIT COOLERS FOR FURTHER INFORMATION.
2 CTI 201 CERTIFIED.

ACCESSORIES:
A PLAIN END (PE) COIL CONNECTIONS
B IBC STANDARD STRUCTURAL DESIGN
C 1.0 IMPORTANCE FACTOR SPECIFIED
D NITROGEN CHARGED COILS
E 304L STAINLESS STEEL COILS WITH COATED ALUMINUM FINS
F INDIVIDUAL ALARM CONTACTS
G TERMINAL BOX WITH ANALOG INPUT
H FORK LIFT CHANNELS
I RETURN BEND COVER PLATE
J 304 STAINLESS STEEL STRUCTURE AND CASING
K MATCHING WEATHERTIGHT CONTROL PANEL WITH SINGLE POINT POWER CONNECTION, 0-10 VDC FAN CONTROL, FAN STATUS ALARM.
L HEADER END COVER PLATE

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File Number: BP25-00000220
Approval Date: 03/05/25

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01/29/2025

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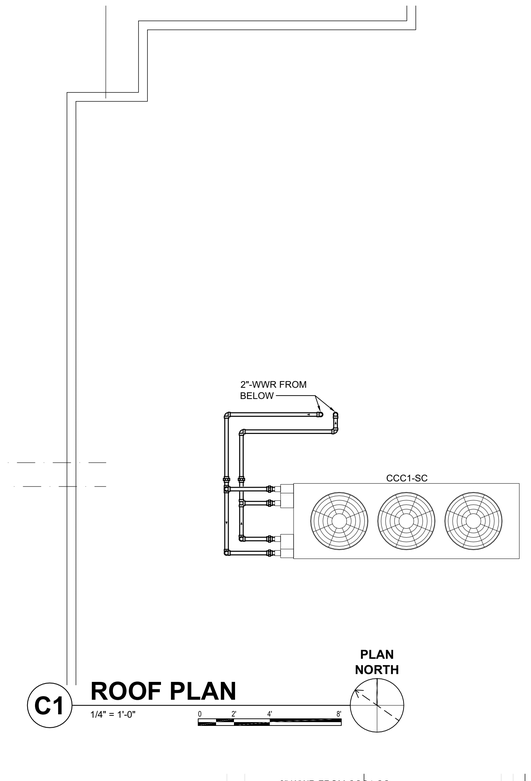
SCO # 24-28039-01A

REV.	DATE	DESCRIPTION
0	01/28/25	ISSUED FOR CONSTRUCTION

Project Manager
Drawn By: RWC
Date: 01-15-25
Reviewed By: JRB
Project ID: 23091

Sheet Title: MECHANICAL ABBREVIATIONS, LEGENDS AND NOTES

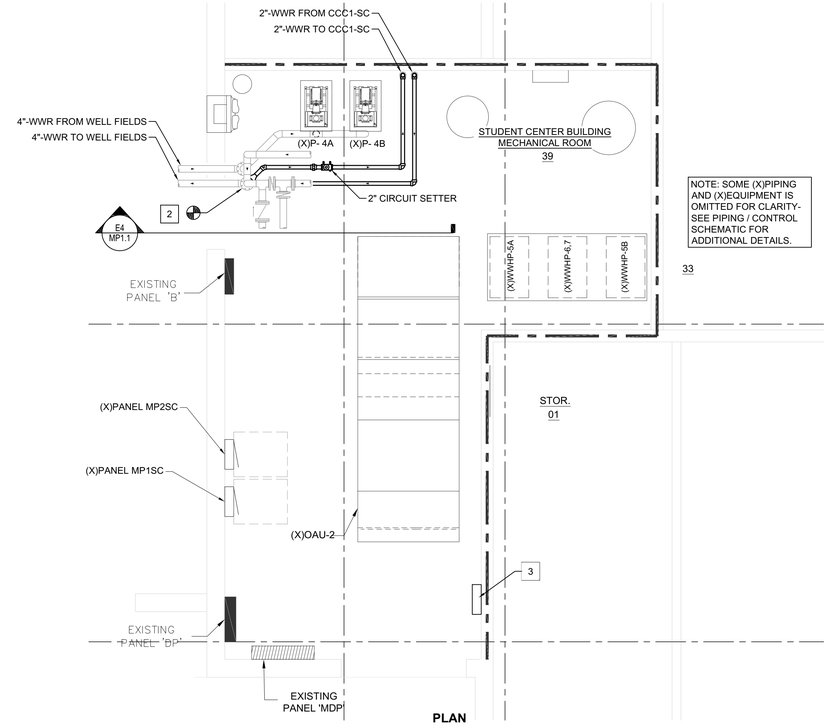
Sheet No.: M-0.1



C1 ROOF PLAN

1/4" = 1'-0"

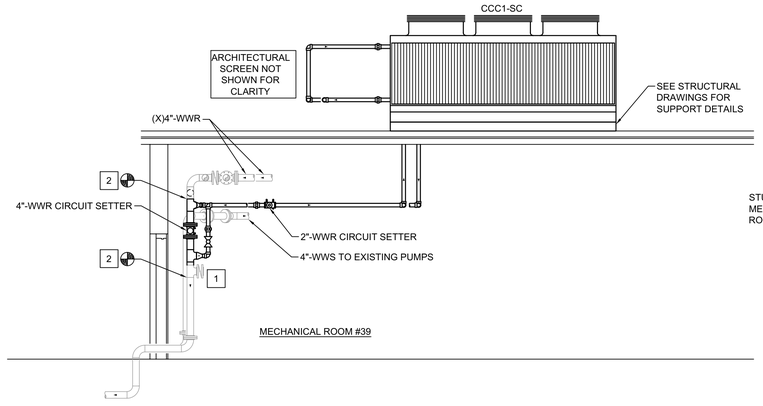
PLAN NORTH



E1 MECHANICAL ROOM PLAN

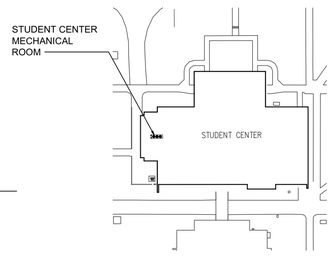
1/4" = 1'-0"

PLAN NORTH



E4 SECTION

NOT TO SCALE



2 KEY PLAN

NOT TO SCALE

MECHANICAL KEYED NOTES

1. RELOCATE EXISTING 4" TEE AND BUTTERFLY VAVLE TO BELOW NEW PIPING ARRANGEMENT.
2. TIE-IN TO EXISTING 4"-WWR PIPING.
3. (X)SCHNEIDER HVAC BMS CONTROL PANEL. MODIFY/EXPAND AS REQUIRED TO ACCOMPLISH CONTROL SEQUENCE FOR NEW DRY COOLER. REFER TO SHEET M-6.1 FOR ADDITIONAL DETAILS.

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0	01/28/25	ISSUED FOR CONSTRUCTION

Project Manager	Drawn By: RWC
Date: 01-15-25	Reviewed By: JRB
Project ID: 23091	

Sheet Title: MECHANICAL PIPING STUDENT CENTER BUILDING

Sheet No.: MP1.1

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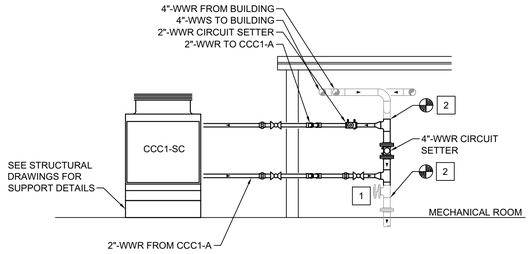
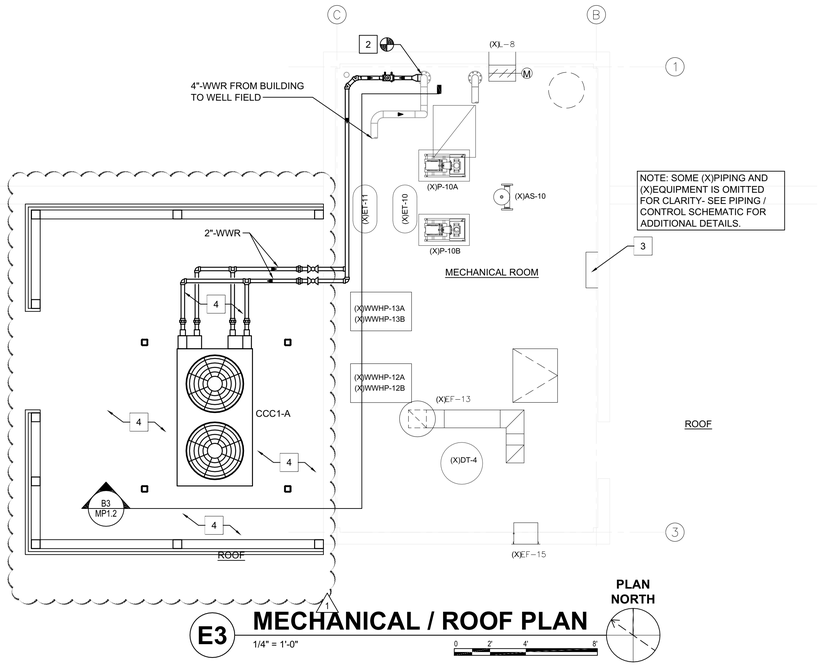


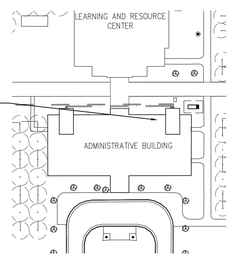
B3 SECTION
NOT TO SCALE



E3 MECHANICAL / ROOF PLAN
1/4" = 1'-0"

MECHANICAL KEYED NOTES

1. RELOCATE EXISTING 4" TEE AND BUTTERFLY VAVLE TO BELOW NEW PIPING ARRANGEMENT.
2. TIE-IN TO EXISTING 4"-WWR PIPING.
3. (X)SCHNEIDER HVAC BMS CONTROL PANEL. MODIFY/EXPAND AS REQUIRED TO ACCOMPLISH CONTROL SEQUENCE FOR NEW DRY COOLER. REFER TO SHEET M-6.1 FOR ADDITIONAL DETAILS.
4. COORDINATE STRUCTURAL LAYOUT TO MAINTAIN MANUFACTURER REQUIRED SERVICE AND OPERATION CLEARANCES AROUND DRY COOLER.



E6 KEY PLAN
NOT TO SCALE

bmh
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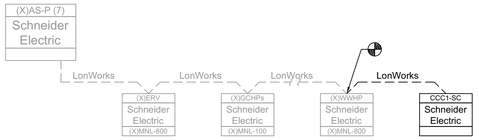
REV.	DATE	DESCRIPTION
1	02/24/25	COJ COMMENTS
0	01/28/25	ISSUED FOR CONSTRUCTION

Project Manager	Drawn By RWC
Date 01-15-25	Reviewed By JRB
Project ID 23091	

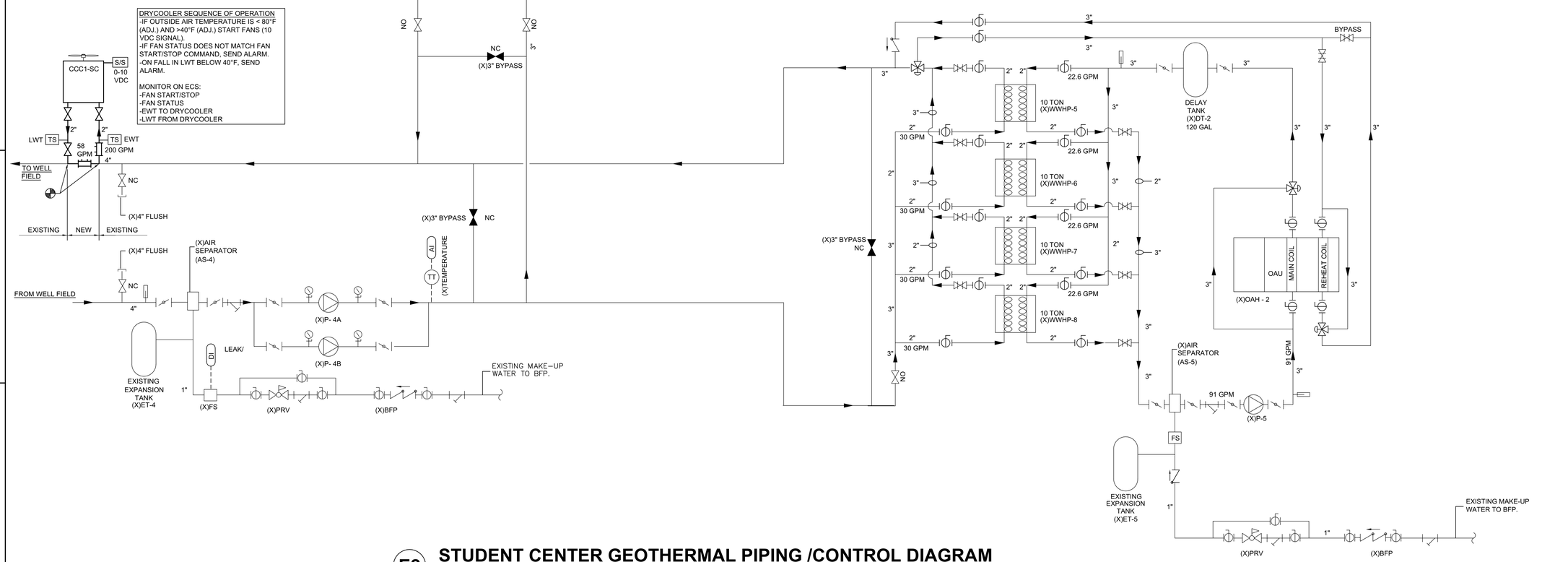
Sheet Title
MECHANICAL PIPING
ADMIN BUILDING

Sheet No.
MP1.2



A1 STUDENT CENTER DDC NETWORK

NOT TO SCALE



E2 STUDENT CENTER GEOTHERMAL PIPING /CONTROL DIAGRAM

NOT TO SCALE

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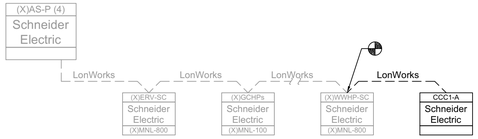
0	01/28/25	ISSUED FOR CONSTRUCTION

Project Manager	Drawn By: RWC
Date: 01-15-25	Reviewed By: JRB
Project ID: 23091	

Sheet Title: STUDENT CENTER GEOTHERMAL PIPING CONTROL DIAGRAM

Sheet No.: M-6.1



A1 ADMINISTRATION DDC NETWORK

NOT TO SCALE

E2 ADMINISTRATION BUILDING GEOTHERMAL PIPING / CONTROL DIAGRAM

NOT TO SCALE

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0	01/28/25	ISSUED FOR CONSTRUCTION

Project Manager	Drawn By: RWC
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Sheet Title: ADMINISTRATION GEOTHERMAL PIPING CONTROL DIAGRAM

Sheet No.: M-6.2

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	CEILING FAN, SEE LIGHTING FIXTURE SCHEDULE FOR TYPE
	2x4 LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED
	2x2 LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED
	4FT OR 8FT LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED
	4FT OR 8FT CHANNEL LIGHT FIXTURE, SUSPENDED OR SURFACE MOUNTED
	UNDER COUNTER LIGHT FIXTURE
	DIRECT/INDIRECT FIXTURE, SUSPENDED
	TRACK WITH LIGHT KIT
	RECESSED LIGHT FIXTURE
	SURFACE LIGHT FIXTURE
	RECESSED WALL WASH LIGHT FIXTURE
	WALL MOUNTED LIGHT FIXTURE
	EXIT SIGN, SINGLE FACE, CEILING, CHEVRON INDICATES DIRECTION.
	EXIT SIGN, DOUBLE FACE, CEILING MOUNTED, CHEVRON INDICATES DIRECTION.
	EXIT SIGN W/EMERGENCY LIGHTING UNIT, CEILING MOUNTED, CHEVRON INDICATES DIRECTION.
	EXIT SIGN, SINGLE FACE, WALL/END MOUNTED, CHEVRON INDICATES DIRECTION.
	EXIT SIGN, DOUBLE FACE, WALL/END MOUNTED, CHEVRON INDICATES DIRECTION.
	EXIT SIGN W/EMERGENCY LIGHTING UNIT, WALL/END MOUNTED, CHEVRON INDICATES DIRECTION.
	EMERGENCY LIGHTING UNIT, 2-HEAD WITH BATTERY BACK-UP, WALL MOUNTED, "NOT SWITCHED"
	EMERGENCY LIGHTING UNIT, 2-HEAD WITH BATTERY BACK-UP, CEILING MOUNTED, "NOT SWITCHED"
	**FOR ALL LIGHTING FIXTURE TYPES ABOVE: LETTER ADJACENT TO FIXTURE INDICATES FIXTURE TYPE, SEE LIGHTING FIXTURE SCHEDULE
	POWER & SWITCH LEG
	UNSWITCHED LEG
	CONDUIT, HOME RUN TO PANEL BOARD
PE	PHOTOCELL, REMOTE MOUNTED, 120V, 10 SECOND TIME DELAY, UL WET LOCATION, RATED FOR 1500 W @ 120 VAC AND 4000 W @ 277 VAC (FOR USE WITH LAMP SOURCE(S) SHOWN.
$	SWITCH, SINGLE POLE, 120/277VAC, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED, SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED.
$3	3-WAY SWITCH, 120/277 VAC, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED.
$4	4-WAY SWITCH 120/277 VAC, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED.
$S	INDICATES BI-LEVEL SWITCHING, 1 SWITCH SWITCHES OUTSIDE LAMPS, 1 SWITCH SWITCHES INSIDE LAMPS. SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED.
$WP	WEATHERPROOF SWITCH, SINGLE POLE 120/277 VAC, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
D$	DIMMER SWITCH, 0-10V OR LINE VOLTAGE RATING AS REQUIRED BY LIGHTING FIXTURE(S). LINE VOLTAGE RATED DIMMERS MUST BE 1500W FOR 120 VAC AND 4000W 277VAC MINIMUM.
AFC$	ADJUSTABLE FAN CONTROL, 120/277VAC, SINGLE POLE, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED, SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED

SYMBOL	DESCRIPTION
OS	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, 360° COVERAGE 2 = SECOND CONTACT TO BE PROVIDED FOR CONNECTION TO BUILDING MANAGEMENT
OS	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, LONG RANGE COVERAGE 2 = SECOND CONTACT TO BE PROVIDED FOR CONNECTION TO BUILDING MANAGEMENT
OS	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, 180° COVERAGE 2 = SECOND CONTACT TO BE PROVIDED FOR CONNECTION TO BUILDING MANAGEMENT
OS	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, PIR TECHNOLOGY OCCUPANCY SENSOR, LOW VOLTAGE (24VDC) 19mA DRAW, WATTSTOPPER CX100-1, LONG RANGE SENSOR. INSTALL WHERE FREE OF OBSTRUCTIONS.
OS	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, PIR TECHNOLOGY OCCUPANCY SENSOR, LOW VOLTAGE (24VDC) 19mA DRAW, WATTSTOPPER CX100-3, TWO SIDED AISLEWAY. INSTALL WHERE FREE OF OBSTRUCTIONS.
O$	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, SINGLE BUTTON ON/OFF CONTROL, 180° COVERAGE, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
O$2	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, DUAL BUTTON ON/OFF CONTROL, 180° COVERAGE, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
O$D	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, DUAL BUTTON ON/OFF CONTROL WITH 0-10V DIMMING, 180° COVERAGE, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED. WATTSTOPPER DW-311 OR EQUAL.
O$F	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, DUAL BUTTON ON/OFF CONTROL, 180° COVERAGE, ADDITIONAL POWER SUPPLY FOR FAN OPERATION, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
$T	WALL MOUNTED DIGITAL TIMED SWITCH (5 MIN'S TO 12 HR'S), SINGLE BUTTON ON/OFF CONTROL, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
	RECESSED SINGLE/DOUBLE GANG BOX WITH BLANK COVER PLATE, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED
	RECESSED DEDICATED/PICTURE/CLOCK SINGLE OUTLET, 120VAC, 20A, MOUNTED 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, QUADPLEX, 120VAC, 20A MOUNTED 16"AFF UNLESS OTHERWISE NOTED (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	RECEPTACLE, QUADPLEX, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH.
	RECEPTACLE, DUPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED. (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	RECEPTACLE, DUPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH.
	RECEPTACLE, QUADPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A MOUNTED 16"AFF UNLESS OTHERWISE NOTED (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	RECEPTACLE, QUADPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH.
	RECEPTACLE, 250VAC, 2 POLE, 3 WIRE, WALL MOUNTED, SIZE AS INDICATED ON DRAWING
	RECEPTACLE, 480VAC, 2 POLE, 3 WIRE, WALL MOUNTED, SIZE AS INDICATED ON DRAWING
	RECEPTACLE, DUPLEX, 120VAC, 20A CEILING MOUNTED (LAY-IN / GYPBOARD / SUSPENDED)
	RECEPTACLE, DUPLEX, 120VAC, 20A RECESSED FLOOR MOUNTED.
	UPS FED RECEPTACLE, DUPLEX, 120VAC, 20A, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED. (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	UPS FED RECEPTACLE, QUADPLEX, 120VAC, 20A, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED. (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	**FOR ALL RECEPTACLE TYPES ABOVE: +XX"- INDICATES MOUNTING HEIGHT OF DEVICE IN INCHES AFF (IF GIVEN) (SEE ELECTRICAL MOUNTING HEIGHT DETAIL) WP - LISTED WEATHER-RESISTANT TYPE DEVICE WITH WEATHERPROOF IN USE COVER TR - TAMPER RESISTANT S - INDICATES THE TOP RECEPTACLE OF THE DEVICE IS CONTROLLED VIA WALL SWITCH H - DEVICE MOUNTED HORIZONTALLY U - USB IN-WALL CHARGER
30A/3/3R, W/ 30AF	DISCONNECT SWITCH, FUSED, HEAVY DUTY, SIZE AS INDICATED ON DRAWINGS ##A = DISCONNECT SIZE / # = NUMBER OF POLES / # = NEMA RATING, / ##AF = FUSE SIZE
CB	ENCLOSED BREAKER, HEAVY DUTY, SIZE AS INDICATED ON DRAWINGS ##A = BREAKER SIZE / # = NUMBER OF POLES / # = NEMA RATING
"Equip" #AMP HMCP (#HP) NEMA #	VARIABLE FREQUENCY DRIVE (VFD)
"Equip" #AMP HMCP (#HP) NEMA #	STARTER, FULL VOLTAGE, SIZE AS INDICATED ON DRAWINGS
	COMBINATION STARTER WITH CIRCUIT BREAKER DISCONNECT, FULL VOLTAGE, SIZE AS INDICATED ON DRAWINGS
M##	MANUAL MOTOR STARTER, ELECTRICAL CONTRACTOR SHALL COORDINATE POLES AND SIZE WITH EQUIPMENT ## = AMPERAGE RATING WHEN INDICATED ON DRAWING
	1 BUTTON CONTROLLER

SYMBOL	DESCRIPTION
	2 START/STOP PUSHBUTTON CONTROLLER
	3 UP/STOP/DN PUSHBUTTON CONTROLLER
EPO	WALL MOUNTED 120V EMERGENCY OFF PUSH BUTTON WITH RED MUSHROOM STYLE HEAD WITH MANUAL PULL REST, NORMALLY OPEN, WITH CLEAR PROTECTIVE COVER. MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
	WALL MOUNTED PUSH PLATE MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
208/120V 480/277V	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.
	TRANSFORMER, SIZE AS INDICATED ON DRAWING
	METER
PP	SERVICE POLE, HUBBEL, LEGRAND, OR EQUAL, EXTRUDED ALUMINUM SERVICE POLE, 2-CHANNELS WITH CEILING TRIM, ANODIZED ALUMINUM, MULTI-SERVICE, TWO-CHANNEL POLE WITH (2) KNOCKOUTS, (2) 20AMP RECEPTACLES. ADJUSTABLE T-BAR ASSEMBLY FOR MOUNTING POLES IN MIDDLE OF CEILING. UL LISTED. EACH POWER POLE SHOWN ON PLAN SHALL HAVE PROVISIONS FOR (2) DATA DROPS AND (1) VOICE DROP.
M	ELECTRICAL MOTOR
	GROUND BUS, "E" INDICATES ELECTRICAL GROUND BAR, "TG" INDICATES TELECOMMUNICATIONS GROUND BAR
	CABLE TRAY, LADDER TYPE
	CABLE TRAY, CENTER HUNG TYPE
	CABLE TRAY, BASKET TYPE
	HAND HOLE, IN GRADE, TIER RATING AS INDICATED ON DRAWING
	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
WP WAP WALL CLNG	WIRELESS ACCESS POINT, 1 DATA IN A DUAL GANG BOX WITH A SINGLE GANG PLASTER RING, OWNER SHALL PROVIDE SURGE PROTECTOR AND WAP DEVICE, THE ELECTRICAL CONTRACTOR SHALL INSTALL. WP - LISTED WEATHER-RESISTANT TYPE DEVICE
1V/1D	COMBINATION DATA/TELEPHONE OUTLET, MOUNTED 18" AFF UNLESS OTHERWISE NOTED. PROVIDE 11/4" CONDUIT TO ABOVE ACCESSIBLE GRID CEILING W/PULL STRING FOR OUTLETS LOCATED BELOW HARD (GYPBOARD) CEILINGS, ROUTE 11/4" CONDUIT TO TELEPHONE/DATA ROOM. #V = NUMBER OF VOICE CONNECTIONS / #D = NUMBER OF DATA CONNECTIONS, IF INDICATED
	WALL TELEPHONE OUTLET, MOUNTED 60" AFF UNLESS OTHERWISE NOTED. PROVIDE 11/4" CONDUIT TO ABOVE ACCESSIBLE GRID CEILING W/PULL STRING FOR OUTLETS LOCATED BELOW HARD (GYPBOARD) CEILINGS, ROUTE 11/4" CONDUIT TO TELEPHONE/DATA ROOM.
1V/1D	COMBINATION DATA/TELEPHONE OUTLET, RECESSED CEILING MOUNTED (LAY-IN / GYPBOARD) PROVIDE 11/4" CONDUIT TO ABOVE ACCESSIBLE GRID CEILING W/PULL STRING FOR OUTLETS LOCATED BELOW HARD (GYPBOARD) CEILINGS, ROUTE 11/4" CONDUIT TO TELEPHONE/DATA ROOM. #V = NUMBER OF VOICE CONNECTIONS / #D = NUMBER OF DATA CONNECTIONS, IF INDICATED
1V/1D	COMBINATION POWER/DATA/TELEPHONE BOX, RECESSED FLOOR MOUNTED (POKE-THROUGH SIMILAR TO HUBBELL S1PT4X4BRS). PROVIDE BRASS COVER PLATE WITH FLUSH ACCESS COVERS FOR EACH PLUG IN CONNECTION. PROVIDE PULL STRING IN CONDUIT. SEE DETAIL #, SHEET E###
1V/1D 2G	COMBINATION POWER/DATA/TELEPHONE BOX, RECESSED FLOOR MOUNTED (CAST-IN-PLACE). PROVIDE BRASS COVER PLATE WITH FLUSH ACCESS COVERS FOR EACH PLUG IN CONNECTION. PROVIDE PULL STRING IN CONDUIT. SEE DETAIL #, SHEET E### #V = NUMBER OF VOICE CONNECTIONS / #D = NUMBER OF DATA CONNECTIONS; 1"CND UNDER SLAB TO NEAREST WALL, STUB ABOVE CEILING #G = GANG FLOOR BOX WITH TWO DUPLEX RECEPTACLES, VOICE AND DATA
V4D FBX	4 GANG FLOOR BOX WITH DUPLEX RECEPTACLE AND DATA CAPABILITIES (CONFIRM WITH OWNER FOR REQUIREMENTS). PROVIDE METALLIC IN-USE COVER (HUBBELL CFB4G30CR OR EQUIVALENT).
	JUNCTION BOX - WALL MOUNTED +## - INDICATES MOUNTING HEIGHT OF DEVICE IN INCHES AFF (if given)
J	JUNCTION BOX - CEILING/ABOVE CEILING MOUNTED
J	JUNCTION BOX - FLOOR MOUNTED

SYMBOL	DESCRIPTION
	WALL MOUNTED DOUBLE GANG BOX FOR TELEVISION MOUNTED AT 72" AFF UNLESS NOTED OTHERWISE. BOX SHALL HAVE DUPLEX RECEPTACLE AND DATA CONNECTIONS FOR TELEVISION AS DIRECTED BY OWNER/CLIENT/TENANT. BOX SHALL BE PASS & SEYMOUR TV2MW OR APPROVED EQUIVALENT.
	CEILING MOUNTED DOUBLE GANG BOX FOR TELEVISION RECESSED IN CEILING. BOX SHALL HAVE DUPLEX RECEPTACLE AND DATA CONNECTIONS FOR TELEVISION AS DIRECTED BY OWNER/CLIENT/TENANT. BOX SHALL BE PASS & SEYMOUR TV2MW OR APPROVED EQUIVALENT.
ES	ELECTRIC STRIKE
M	MAGNETIC LOCK
DC	DOOR CONTACTS
CR	CARD READER
K	KEYPAD
M	MOTION DETECTOR (TYPE DENOTED)
WP	WALL MOUNTED CAMERA, WP INDICATES WEATHERPROOF
	CEILING MOUNTED CAMERA
S	CEILING MOUNTED SPEAKER
S	WALL MOUNTED SPEAKER
	FLOOR MOUNTED DATA RACK
	WALL MOUNTED DATA RACK
	PROJECTOR PAN, CEILING MOUNTED
	1 HOUR RATED FIRE WALL
(X)	1 HOUR RATED FIRE WALL - EXISTING
	2 HOUR RATED FIRE WALL
(X)	2 HOUR RATED FIRE WALL - EXISTING
	3 HOUR RATED FIRE WALL
(X)	3 HOUR RATED FIRE WALL - EXISTING
OHP	OVERHEAD PRIMARY CONDUCTORS
(X)OHP	OVERHEAD PRIMARY CONDUCTORS - EXISTING
UGP	UNDERGROUND PRIMARY CONDUCTORS
(X)UGP	UNDERGROUND PRIMARY CONDUCTORS - EXISTING
OHS	OVERHEAD SECONDARY CONDUCTORS
(X)OHS	OVERHEAD SECONDARY CONDUCTORS - EXISTING
UGS	UNDERGROUND SECONDARY CONDUCTORS
(X)UGS	UNDERGROUND SECONDARY CONDUCTORS - EXISTING
G	COPPER CLASS 1 CONDUCTOR ON ROOF
GA	ALUMINUM CLASS 1 CONDUCTOR ON ROOF
UGG	COPPER CLASS 1 CONDUCTOR BELOW GRADE
C C	CONTROL CABLE CONDUIT
	GROUND ROD, COPPER, 3/4"DIA x 10'-0" LONG
"A"	COPPER AIR TERMINAL IN BRONZE BASE
"B"	ALUMINUM AIR TERMINAL IN ALUMINUM BASE
T	226V - STYLE THRU-ROOF CONNECTOR (TYPE T)
T1	230V - STYLE THRU-ROOF CONNECTOR (TYPE T1)
"BM"	LIGHTNING CONDUCTOR CABLE CONNECTOR
	GROUNDING ELECTRODE CONDUCTOR, 10' COILED ABOVE GRADE

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
DC	DIRECT CURRENT
DI	DOOR INTERLOCK
DISC SW	DISCONNECT SWITCH
DN	DOWN
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EPO	EMERGENCY POWER OFF
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

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01/29/2025

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REV.	DATE	DESCRIPTION
0	01/28/25	ISSUED FOR CONSTRUCTION

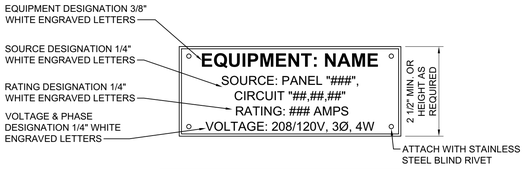
Project Manager	Drawn By: AJC
Date: 01-15-25	Reviewed By: WAC
Project ID: 23091	

Sheet Title: ELECTRICAL LEGEND AND ABBREVIATIONS

Sheet No.: E-0.1

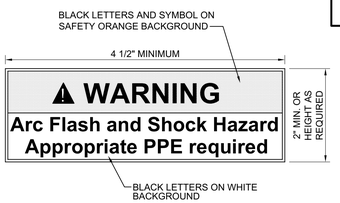
ELECTRICAL GENERAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE IN FULL COMPLIANCE WITH NFPA 70, THE NORTH CAROLINA STATE BUILDING CODE, ALL LOCAL CODES AND ORDINANCES AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
2. ALL EQUIPMENT PROVIDED BY THE CONTRACTOR SHALL BE LISTED AND LABELED BY A NATIONALLY-RECOGNIZED TESTING AGENCY, ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, FOR THE CONDITIONS OF INSTALLATION. ALL MATERIAL, EQUIPMENT AND DEVICES SHALL BE NEW CURRENT PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS. EQUIPMENT SHALL BE SUITABLE FOR ITS APPLICATION (E.G. WHEN INSTALLED OUTDOORS, IT SHALL BE WEATHERPROOF, ETC.)
3. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS FOR WORK REQUIREMENTS, THE AMOUNT OF SPACE AVAILABLE FOR ELECTRICAL EQUIPMENT, AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER.
4. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THOROUGHLY FAMILIARIZING HIMSELF WITH ANY CONTRACTUAL REQUIREMENTS AS MAY BE SET FORTH IN THE OTHER DIVISIONS OF THE PROJECT SPECIFICATIONS.
5. UNLESS SPECIFICALLY NOTED OTHERWISE, SYSTEMS PROVIDED OR INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE COMPLETE AND FULLY-FUNCTIONING AFTER INSTALLATION. INCIDENTAL COMPONENTS MAY NOT BE SHOWN, AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THIS WORK, BUT REQUIRED FOR THE PROPER OPERATION OF THE EQUIPMENT OR SYSTEM, SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ADDITIONAL CIRCUITS SHALL BE INSTALLED WHEREVER NEEDED TO CONFORM TO THE SPECIFIC REQUIREMENTS OF EQUIPMENT.
6. TEMPORARY POWER CONNECTIONS AS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ALL TEMPORARY EQUIPMENT WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. THE CONTRACTOR SHALL PROVIDE DETAILS, METHODS, MATERIALS, ETC. FOR REVIEW PRIOR TO MAKING TEMPORARY CONNECTIONS. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS INCLUDING CONTROL EQUIPMENT, MOTOR STARTERS, BRANCH AND FEEDER CIRCUIT BREAKERS, PANELBOARDS, TRANSFORMERS, ETC. FOR TEMPORARY POWER. COORDINATE WITH THE ELECTRICAL UTILITY COMPANY AS REQUIRED.
7. THE WORK SHALL INCLUDE COMPLETE TESTING OF ALL EQUIPMENT AND WIRING AT THE COMPLETION OF WORK AND ANY MINOR CORRECTIONS, CHANGES OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT.
8. ALL EQUIPMENT SHOWN DOTTED OR DASHED IS BY OTHERS OR IS EXISTING, AS NOTED.
9. ALL ELECTRICAL EQUIPMENT SHALL, AT ALL TIMES DURING CONSTRUCTION, BE ADEQUATELY PROTECTED AGAINST MECHANICAL INJURY, OR DAMAGE BY WATER AND/OR THE ELEMENTS. ELECTRICAL EQUIPMENT SHALL NOT BE STORED OUT OF DOORS, BUT SHALL BE STORED IN DRY PERMANENT SHELTERS. IF AN APPARATUS HAS BEEN DAMAGED, OR HAS BEEN SUBJECT TO POSSIBLE INJURY BY WATER OR THE ELEMENTS, SUCH DAMAGE SHALL BE REPLACED AT NO ADDITIONAL COST.
10. DO NOT SCALE ELECTRICAL DRAWINGS. 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 SHALL ROUTE CONDUITS AS REQUIRED BY THE CONDITIONS OF THE INSTALLATION.
12. UNLESS DIMENSIONED, DEVICE LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. ADJUST EXACT LOCATIONS AS REQUIRED TO SERVE THE INTENDED PURPOSE AND TO AVOID CONFLICTS AND INTERFERENCES WITH OTHER TRADES. EXACT DEVICE LOCATIONS SHALL BE AS INDICATED ON THE ARCHITECTURAL DRAWINGS OR AS DIMENSIONED. IF NOT SHOWN ON THE ARCHITECTURAL DRAWINGS OR DIMENSIONED ON THE ELECTRICAL DRAWINGS, VERIFY EXACT LOCATION WITH THE ARCHITECT/ENGINEER PRIOR TO ROUGH-IN.
13. CONDUIT TERMINATING IN PRESSED STEEL BOXES SHALL HAVE DOUBLE LOCKNUTS AND INSULATED BUSHINGS. CONDUITS TERMINATING IN GASKETED ENCLOSURES SHALL BE TERMINATED WITH GROUNDING TYPE CONDUIT HUBS.
14. BRANCH CIRCUIT HOMERUNS SHOWN ON DRAWINGS INDICATE PHASE CONDUCTORS, NEUTRAL, EQUIPMENT GROUND CONDUCTORS AS REQUIRED. ADDITIONAL CONDUCTORS REQUIRED FOR CONTROL SHALL BE INCLUDED EVEN IF NOT EXPLICITLY SHOWN.
15. SEAL ALL CONDUIT OPENINGS THROUGH EXTERIOR BUILDING WALLS WATERTIGHT.
16. IN WET LOCATIONS AND EXTERIOR, ALL WIRING DEVICES SHALL BE WEATHER-RESISTANT LISTED WITH WEATHERPROOF WHILE IN USE COVER. LIGHTING FIXTURES SHALL BE APPROPRIATELY RATED AND LISTED FOR THE ENVIRONMENT INCLUDING 0 DEGREE BALLASTS FOR FLUORESCENT.
17. RACEWAYS PENETRATING FLOORS, CEILINGS OR WALLS SHALL BE PROPERLY SEALED SMOKETIGHT.
18. ALL RACEWAYS SHALL BE CONCEALED WHERE POSSIBLE. IF APPLICABLE, MATCH EXISTING RACEWAY INSTALLATION METHODS AND ROUTINGS AT OR NEAR EXISTING FACILITIES.
19. INSTALL EXPOSED RACEWAYS PARALLEL TO OR AT RIGHT ANGLES TO NEARBY SURFACES OR STRUCTURAL MEMBERS, AND FOLLOW THE SURFACE CONTOURS AS MUCH AS POSSIBLE. NO DIAGONAL RUNS WILL BE ALLOWED. ALL CONDUITS SHALL BE RUN STRAIGHT AND TRUE. RUN PARALLEL OR BANKED RACEWAYS TOGETHER ON COMMON SUPPORTS WHERE PRACTICAL. MAKE BENDS IN PARALLEL OR BANKED RUNS FROM SAME CENTERLINE TO MAKE BENDS PARALLEL.
20. USE FLUSH MOUNTING OUTLET BOXES IN FINISHED AREAS AND FOR EXTERIOR DEVICES/LIGHT FIXTURES UNLESS NOTED OTHERWISE.
21. PATCHING OF WATERPROOFED SURFACES SHALL RENDER THE AREA OF THE PATCHING COMPLETELY WATERPROOF.
22. ALL MOTORS AND OTHER VIBRATING EQUIPMENT SHALL BE CONNECTED TO THE CONDUIT SYSTEM BY MEANS OF A SHORT SECTION (18 INCH MINIMUM) OF FLEXIBLE CONDUIT UNLESS OTHERWISE INDICATED. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED INSIDE THE FLEXIBLE CONDUIT AND TERMINATE AT THE LOAD END WITH AN APPROVED GROUNDING CLAMP OR LUG.
23. SURFACE MOUNTED PANELBOARDS, JUNCTION, OUTLET AND PULL BOXES, RACEWAYS, ETC., INSTALLED ON EXTERIOR SURFACES OR INSIDE ON EXTERIOR WALLS SHALL BE SUPPORTED BY SPACERS TO PROVIDE A 1/4" MINIMUM CLEARANCE BETWEEN THE WALL AND EQUIPMENT.
24. PROVIDE ADHESIVE BACKED RECEPTACLE AND SWITCH/DIMMER/OCCUPANCY SENSOR DEVICE PLATE LABELS IDENTIFYING THE PANEL AND CIRCUIT FEEDING THE DEVICE. LABELS SHALL INDICATE PANEL AND CIRCUIT NUMBER. SEE SPECIFICATIONS SECTION 260553 FOR REQUIREMENTS.
25. FINAL TYPED PANELBOARD DIRECTORIES INSTALLED IN THE PANELBOARD DOOR POCKET SHALL INCLUDE FINAL ACTUAL ROOM NAMES AND NUMBERS IN ADDITION TO THE GENERAL DESCRIPTION SHOWN ON THE PANEL SCHEDULES ON THE DRAWINGS.
26. CONDUCTOR SIZING IS BASED ON 75 DEGREE C. COPPER NEC RATINGS, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL VERIFY, PRIOR TO INSTALLATION OF CONDUCTORS OR CONDUIT FEEDING ANY EQUIPMENT, THE ELECTRICAL EQUIPMENT IS RATED FOR USE WITH 75 DEGREE C. WIRING. IF ANY EQUIPMENT IS RATED FOR USE WITH LESS THAN 75 DEGREE C. CONDUCTORS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY FOR EVALUATION/CORRECTION.
27. 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.
28. WHERE SIZE IS NOT SHOWN ON THE DRAWINGS, BRANCH CIRCUITS SHALL CONSIST OF #12 OR #10 AWG MINIMUM PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS IN 1/2" MINIMUM RACEWAY.
29. 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.
30. 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.
31. DO NOT SPLICE BRANCH CIRCUIT HOMERUNS WITHOUT THE PERMISSION OF THE ARCHITECT/ENGINEER. HOMERUNS SHALL BE CONTINUOUS FROM THE LAST OUTLET BOX TO THE SERVING PANELBOARD.
32. DO NOT COMBINE BRANCH CIRCUIT HOMERUNS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.
33. DO NOT CHANGE CIRCUITING SHOWN WITHOUT PERMISSION OF THE ARCHITECT/ENGINEER.
34. TROUGH TAPS SHALL BE AT SWITCH AMPACITY, UNLESS NOTED OTHERWISE. COORDINATE LOCATIONS OF MECHANICAL WITH THE RESPECTIVE CONTRACTORS AND VENDORS AND THE OWNER BEFORE ROUGH-IN. ADJUST LIGHTING FIXTURES, RECEPTACLES AND ELECTRICAL EQUIPMENT TO ACCOMMODATE THIS EQUIPMENT. ADVISE THE ARCHITECT/ENGINEER OF CONFLICTS BEFORE ROUGH-IN
35. BEFORE COMMENCING WORK OR ORDERING MATERIALS, THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND VERIFY THE NAMEPLATE RATINGS OF ALL EQUIPMENT (MOTORS, HEATERS, COMPRESSORS, ETC.) AND ADJUST THE RATINGS OF THE ELECTRICAL EQUIPMENT (SWITCHES, FUSES, CIRCUIT BREAKERS, FEEDERS, ETC.) AS APPROPRIATE TO SERVE THIS EQUIPMENT.
36. UNLESS SPECIFICALLY NOTED OTHERWISE, THE ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL UTILIZATION EQUIPMENT SHOWN ON THE DRAWINGS. VERIFY THE TYPE OF FINAL CONNECTION AND PROVIDE APPROPRIATE WIRING METHOD. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL, PLUMBING AND GENERAL CONTRACTORS, PRIOR TO ORDERING OR INSTALLATION OF ANY EQUIPMENT, TO VERIFY MECHANICAL AND PLUMBING EQUIPMENT REQUIREMENTS ARE PROVIDED IN THE ELECTRICAL DESIGN. THE CONTRACTOR WILL NOT BE COMPENSATED FOR COSTS ASSOCIATED WITH CHANGING THE ELECTRICAL SYSTEMS TO MATCH UTILIZATION EQUIPMENT, EVEN IF THE ELECTRICAL WORK IS INSTALLED PER THE ELECTRICAL DRAWINGS.
37. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL FURNISH ALL STARTERS AND CONTROLS FOR THEIR EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL MOUNT STARTERS FURNISHED BY THE MECHANICAL AND PLUMBING CONTRACTORS, THE ELECTRICAL CONTRACTOR PROVIDE ALL SAFETY SWITCHES, WIRING AND CONNECTIONS TO LINE SIDE AND LOAD SIDE OF STARTERS AND SAFETY SWITCHES COMPLETE TO MECHANICAL EQUIPMENT. FOR RESISTANCE TYPE LOADS WHERE STARTERS OR CONTACTORS ARE NOT REQUIRED, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL POWER WIRING AND CONNECTIONS COMPLETE TO EQUIPMENT. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL PROVIDE ALL CONTROL WIRING AND CONNECTIONS AND DEVICES FOR THEIR EQUIPMENT.
38. ENERGIZE EQUIPMENT ONLY AFTER OBTAINING PERMISSION FROM THE CONTRACTOR PROVIDING THE EQUIPMENT.
39. PROTECT ALL EXISTING POWER, COMMUNICATIONS, DATA, LIFE SAFETY SYSTEMS, FIRE ALARM AND PUBLIC ADDRESS SYSTEMS AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE OWNER AND ARCHITECT/ENGINEER IF SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN SERVICE.
40. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING NECESSARY TO INSTALL ALL EQUIPMENT AS REQUIRED AND SHALL REESTABLISH ALL FINISHES TO THEIR ORIGINAL CONDITION WHERE CUTTING AND PATCHING OCCUR. ALL CUTTING AND PATCHING SHALL BE DONE IN A THOROUGHLY WORKMANSHIP MANNER. SAW CUT CONCRETE AND MASONRY PRIOR TO BREAKING OUT SECTIONS. ALL PATCHING MATERIALS AND WORKMANSHIP SHALL BE PERFORMED BY TRADESMEN EXPERIENCED IN THAT WORK. ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT/ENGINEER.
41. CORE DRILL HOLES IN EXISTING CONCRETE WALLS AS REQUIRED.
42. INSTALL WORK AT SUCH TIME AS TO REQUIRE THE MINIMUM AMOUNT TO CUTTING AND PATCHING.
43. CUT OPENINGS ONLY LARGE ENOUGH TO ALLOW EASY INSTALLATION OF THE CONDUIT.
44. MAINTAIN CONTINUITY OF ALL EXISTING CIRCUITS TO REMAIN OR PORTIONS THEREOF AFFECTED BY THIS WORK.
45. DESIGN AND ADDITION OF NEW CIRCUITING IS BASED ON THE ENGINEER'S BEST INFORMATION REGARDING EXISTING CONDITIONS AND CURRENT. AVAILABILITY OF ADEQUATE CIRCUIT BREAKER SPACE FOR NEW WORK IN EXISTING PANELBOARDS SHALL BE VERIFIED BY THE CONTRACTOR AFTER DEMOLITION OF THE EXISTING SPACE. IF ADEQUATE SPACE IS NOT AVAILABLE FOR NEW CIRCUIT BREAKERS THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR RESOLUTION.
46. INSOFAR AS POSSIBLE, MATCH EXISTING EXPOSED DEVICES IN FINISHED AREAS IN TYPE, COLOR AND FINISH.
47. THE EXISTING ELECTRICAL SYSTEMS DEPICTED ON THESE DRAWINGS HAVE BEEN COMPILED BY THE ENGINEER FROM THE OWNER'S RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF THE EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, POINTS OF ACCESS AND FIELD CONDITIONS AFFECTING HIS WORK.
48. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING ELECTRICAL SYSTEMS AND THE EXISTING BUILDING. THE SUBMISSION OF THE PROPOSAL BY THE CONTRACTOR SHALL BE CONSIDERED EVIDENCE THAT HE OR HIS REPRESENTATIVE HAS VISITED THE SITE AND BUILDINGS AND NOTED THE LOCATION AND CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED AND THAT HE TAKES FULL RESPONSIBILITY OF ALL FACTORS GOVERNING HIS WORK. NO EXTRAS WILL BE CONSIDERED BECAUSE OF ADDITIONAL WORK NECESSITATED BY EXISTING JOB CONDITIONS THAT ARE NOT INDICATED ON THE DRAWINGS.
49. 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 SHALL BE COORDINATED WITH THE OWNER AND GENERAL CONTRACTOR SO AS TO MINIMIZE DISRUPTION OF THE OWNER'S USE OF THE FACILITIES AND MAINTAIN THE CONSTRUCTION SEQUENCE OF THE GENERAL CONTRACTOR. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INSTRUCTIONS CONCERNING PHASING AND SEQUENCE OF WORK.
50. SAFETY: COMPLY WITH OSHA AND NEC ARC FLASH PROTECTION REQUIREMENTS.



NOTE: SEE SPECS. SECTION 260553 FOR NAMEPLATE MATERIAL AND ENGRAVING COLORS.

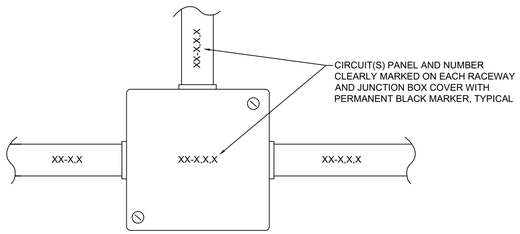
A4 TYPICAL EQUIPMENT NAMEPLATE DETAIL
NOT TO SCALE



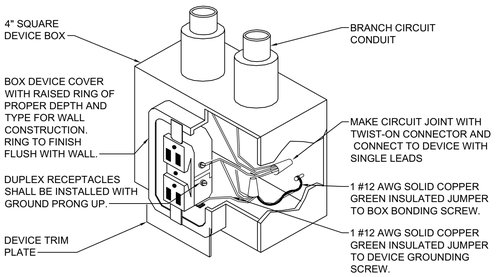
NOTES:
1. LABEL SHOWN CAN BE SOURCED FROM SAFETYSIGN.COM, OTHER SUPPLIERS ARE COMPLIANTSIGNS.COM & SETON.COM

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

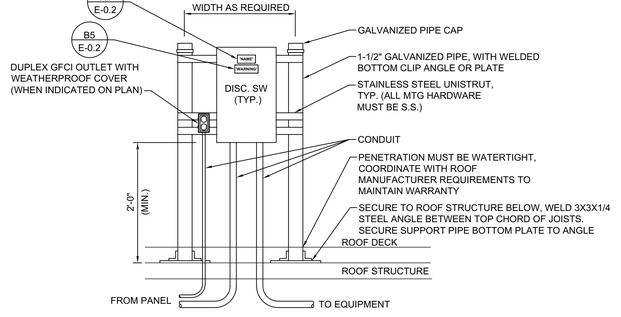
B5 ELECTRICAL EQUIPMENT WARNING LABEL DETAIL
NOT TO SCALE



C4 CIRCUIT IDENTIFICATION DETAIL
NOT TO SCALE



C5 RECEPTACLE GROUNDING DETAIL
NOT TO SCALE



D3 ROOF EQUIPMENT SUPPORT RACK DETAIL
NOT TO SCALE

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Supplemental Cooling
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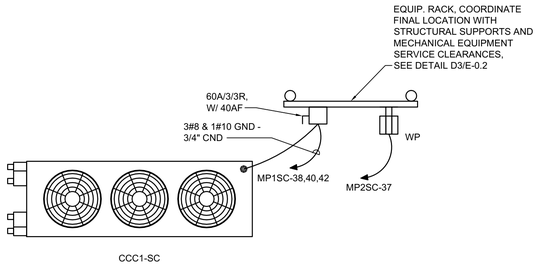
REV.	DATE	DESCRIPTION
0	01/28/25	ISSUED FOR CONSTRUCTION

Project Manager	Drawn By: AJC
Date: 01-15-25	Reviewed By: WAC
Project ID: 23091	

Sheet Title: ELECTRICAL GENERAL NOTES AND DETAILS

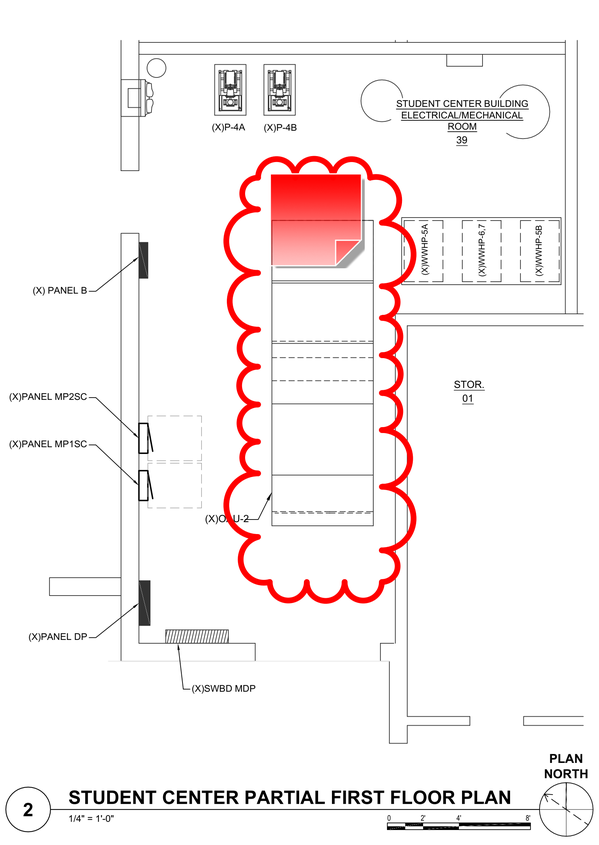
Sheet No.: E-0.2



1 STUDENT CENTER PARTIAL ROOF PLAN

1/4" = 1'-0"

PLAN NORTH



2 STUDENT CENTER PARTIAL FIRST FLOOR PLAN

1/4" = 1'-0"

PLAN NORTH

REVISED PANEL MP1SC

TYPE: NEMA 1 | 208 | 120 V | 3 PH | 4 WIRE | PROVIDED IF XX | EQUIP. GND BUS
BOLT-ON | MOUNT: SURFACE | CHECKED: XX | NEUTRAL BUS
EATON TYPE PRL4B | FEED: TOP | 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)GCHP-19	2,282	50/3	1	4,564			2	50/3	2,282	(X)GCHP-24
	2,282		3		4,564		4		2,282	
	2,282		5			4,564	6		2,282	
(X)GCHP-20	2,282	50/3	7	3,627			8	25/3	1,345	(X)GCHP-25
	2,282		9		3,627		10		1,345	
	2,282		11			3,627	12		1,345	
(X)GCHP-21	2,282	50/3	13	3,627			14	25/3	1,345	(X)GCHP-26
	2,282		15		3,627		16		1,345	
	2,282		17			3,627	18		1,345	
(X)GCHP-22	1,345	25/3	19	2,342			20	15/3	997	(X)GCHP-32
	1,345		21		2,342		22		997	
	1,345		23			2,342	24		997	
(X)GCHP-34	997	15/3	25	1,994			26	15/3	997	(X)GCHP-33
	997		27		1,994		28		997	
	997		29			1,994	30		997	
(X)GCHP-37	2,282	35/3	31	3,159			32	15/3	877	(X)GCHP-34
	2,282		33		3,159		34		877	
	2,282		35			3,159	36		877	
(X)GCHP-38	2,282	35/3	37	5,760			38	**40/3**	**3,478**	**CCC1-SC (NOTE 2)**
	2,282		39		5,760		40		**3,478**	
	2,282		41			5,760	42		**3,478**	
(X)PANEL MP2SC	33,324	400/3	43	33,324						
	32,625				32,625					
	33,528					33,528				
				58,397	57,698	58,601	TOTAL V. AMPS		600	A. BUS (COPPER)
				487	481	488	CONN. AMPS		600	A. MAIN LUGS
									65	KAIC MIN.

NOTES:
1. (X) INDICATES EXISTING LOAD.
2. PROVIDE BREAKER INDICATED, BREAKER AIC MUST MATCH PANEL AIC RATING.
3. HVAC EQUIPMENT SHALL USE TYPE HACR BREAKERS.

REVISED PANEL MP2SC

TYPE: NEMA 1 | 208 | 120 V | 3 PH | 4 WIRE | PROVIDED IF XX | EQUIP. GND BUS
BOLT-ON | MOUNT: SURFACE | CHECKED: XX | NEUTRAL BUS
EATON TYPE PRL3A | FEED: BOTTOM | | GUTTER TAPS | SUB-FEED LUGS

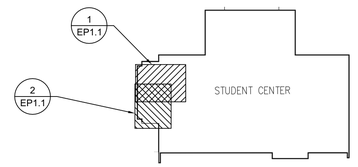
LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR	LOAD VA	LOAD SERVED
(X)GCHP-23	936	15/2	1	1,571			2	15/2	635	(X)GCHP-31
	936		3		1,571		4		635	
(X)GCHP-27	936	15/2	5			1,872	6	15/2	936	(X)GCHP-36
	936		7	1,872			8		936	
(X)GCHP-29	718	15/2	9		5,522		10	50/3	4,804	(X)GCHP-39
	718		11			5,522	12		4,804	
(X)GCHP-28	718	15/2	13	5,522			14		4,804	
	718		15		1,353		16	15/2	635	(X)GCHP-30
(X)OAU-2	4,198	60/3	17			4,833	18		635	
	4,198		19	12,772			20	100/3	8,573	(X)WHHP-6,7
	4,198		21		12,772		22		8,573	
(X)EXISTING LOAD	1,440	15/1	23			10,013	24		8,573	
(X)EXISTING LOAD	1,248	15/2	25	4,250			26	45/3	3,002	(X)WHHP-5A
	1,248		27		4,250		28		3,002	
(X)PUMP P-5	1,273	20/3	29			4,275	30		3,002	
	1,273		31	4,275			32	45/3	3,002	(X)WHHP-5B
	1,273		33		4,275		34		3,002	
(X)IDDC CONTROL PANEL	600	15/1	35			3,602	36		3,002	
RCP: CCC1-SC SERVICING (NOTE 2)	**180**	**20/1**	37	3,062			38	30/3	2,882	(X)EXISTING LOAD
(X)SPACE		-	39		2,882		40		2,882	
(X)EXHAUST FAN EF-7	528	15/1	41			3,410	42		2,882	
				33,324	32,625	33,528	TOTAL V. AMPS		400	A. BUS (COPPER)
				278	272	279	CONN. AMPS		400	A. MAIN LUGS
									65	KAIC MIN.

NOTES:
1. (X) INDICATES EXISTING LOAD.
2. PROVIDE BREAKER INDICATED, BREAKER AIC MUST MATCH PANEL AIC RATING.

1600A SWBD MDP LOAD SUMMARY

VOLTAGE	PHASE
208	3

LARGEST MOTOR APPROX. AMPS	64	AMPS
LARGEST MOTOR APPROX. AMPS x .25	16	AMPS
HVAC		
CCC1-SC	10,434	VA
EXISTING PANEL MP1SC HVAC LOADS	147,081	VA
SUB-TOTAL HVAC DEMAND	157,515	VA
SUB-TOTAL HVAC DEMAND	437	AMPS
EQUIPMENT		
EXISTING PANEL MP1SC EQUIPMENT LOADS	17,002	VA
EXISTING PANEL DP EQUIPMENT LOADS	47,626	VA
SUB-TOTAL EQUIPMENT DEMAND	64,627	VA
SUB-TOTAL EQUIPMENT DEMAND	179	AMPS
ADD FOR LARGEST MOTOR	16	AMPS
TOTAL EQUIPMENT DEMAND	195	AMPS
KITCHEN EQUIPMENT		
EXISTING PANEL KA KITCHEN LOADS	94,068	VA
SUB-TOTAL EQUIPMENT DEMAND	94,068	VA
DEMAND FACTOR 65% (6 UNITS OR OVER)	61,144	VA
SUB-TOTAL EQUIPMENT DEMAND	261	AMPS
TOTAL EQUIPMENT DEMAND	170	AMPS
LIGHTING		
EXISTING LIGHTS (INTERIOR, BASED ON NEC 220.12)	54,984	VA
EXISTING LIGHTS (EXTERIOR)	7,144	VA
TOTAL LIGHTING LOAD	62,128	VA
TOTAL DEMAND FOR LIGHTING	172	AMPS
RECEPTACLES		
NEW RECEPTACLE	180	VA
EXISTING RECEPTACLES	95,072	VA
FIRST 10000VA	10,000	VA
REMAINDER @ 50%	37,626	VA
TOTAL DEMAND FOR RECEPTACLE/POWER PANELS	47,626	VA
TOTAL DEMAND FOR RECEPTACLE/POWER PANELS	132	AMPS
TOTAL DEMAND BUILDING AMPS	1,107	AMPS
TOTAL DEMAND BUILDING VA	398,804	VA
TOTAL BUILDING CONNECTED LOAD	473,410	VA



KEY PLAN

NOT TO SCALE

PLAN NORTH

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

Approved JACKSONVILLE, N.C. CITY OF FAMILY LEGENDS MCAS NEW RIVER
File Number: BP25-00000220
Approval Date: 03/05/25

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
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Tel - (910) 762-2621
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NORTH CAROLINA PROFESSIONAL SEAL 023311 ENGINEER ALLEN CRIBB
01/29/2025

Coastal Carolina Community College
Admin Building & Student Center
Supplemental Cooling
444 Western Boulevard
Jacksonville, North Carolina 28546
SCO # 24-28039-01A

REV.	DATE	DESCRIPTION
0	01/28/25	ISSUED FOR CONSTRUCTION

Project Manager	Drawn By: AJC
Date: 01-15-25	Reviewed By: WAC
Project ID: 23091	

Sheet Title
ELECTRICAL POWER
STUDENT CENTER
BUILDING

Sheet No.
EP1.1

CBHF Engineers, PLLC
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www.cbhfengineers.com
NC# P-0506

Approved
JACKSONVILLE, N.C.
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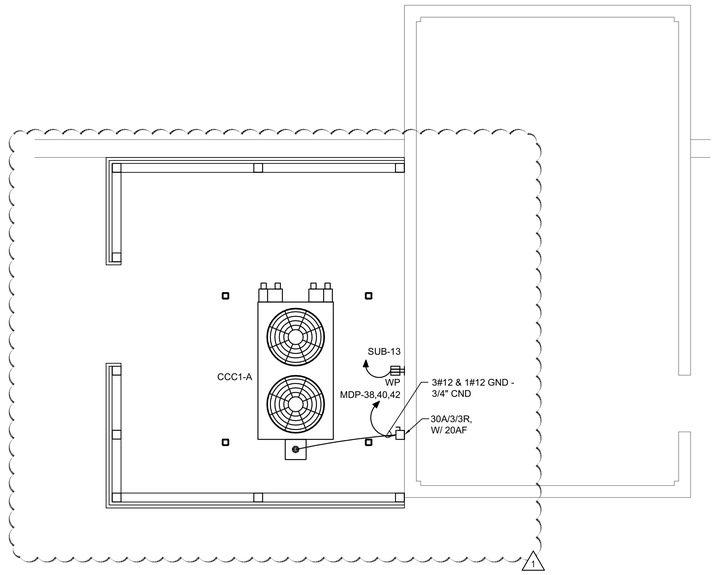
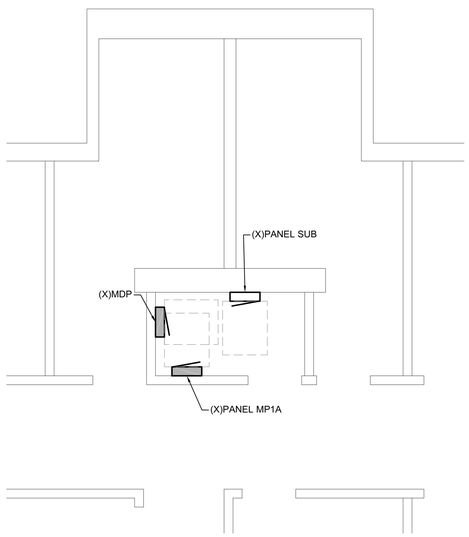


1 ADMIN BUILDING PARTIAL ROOF PLAN
1/4" = 1'-0"

PLAN NORTH



2 ADMIN BUILDING PARTIAL FIRST FLOOR PLAN
1/4" = 1'-0"

PLAN NORTH

REVISED PANEL MDP

TYPE: NEMA 1 | 480 | 277 V | 3 PH | 4 WIRE | PROVIDED IF | XX | EQUIP. GND BUS
BOLT-ON | MOUNT: WALL | CHECKED: | XX | NEUTRAL BUS
SQUARE D TYPE I-LINE HCN | FEED: BOTTOM | | | 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)PANEL A VIA	*8,800*	*60/3*	1	21,200			2	*60/3*	*12,400*	*(X)PANEL B VIA*
EXISTING 45 KVA TRANSFORMER #1	*8,000*	|	3		20,800		4	|	*12,800*	*EXISTING 45KVA TRANSFORMER #2*
|	*7,300*	|	5			18,800	6	|	*11,500*	|
(X)PANEL L	*12,000*	*100/3*	7	15,880			8	*20/3*	*3,880*	*(X)PUMP 10-A (10 HP, 14 FLA)*
|	*11,400*	|	9		15,280		10	|	*3,880*	|
|	*8,400*	|	11			12,280	12	|	*3,880*	|
(X)WWHP 13-A	*2,505*	*15/3*	13	2,505			14	*20/3*		*(X)PUMP 10-B (NOTE 4)*
|	*2,505*	|	15		2,505		16	|		|
|	*2,505*	|	17			2,505	18	|		|
(X)WWHP 13-B	*2,084*	*15/3*	19	3,026			20	*15/3*	*942*	*(X)AIR COMPRESSOR*
|	*2,084*	|	21		3,026		22	|	*942*	|
|	*2,084*	|	23			3,026	24	|	*942*	|
(X)WWHP 12-B	*2,084*	*15/3*	25	4,168			26	*15/3*	*2,084*	*(X)WWHP 12-A*
|	*2,084*	|	27		4,168		28	|	*2,084*	|
|	*2,084*	|	29			4,168	30	|	*2,084*	|
(X)EXISTING LOAD	*4,432*	*20/1*	31	7,432			32	*20/1*	*3,000*	*(X)WATER HEATER*
(X)EXISTING LOAD	*4,432*	*20/1*	33		7,432		34	*20/1*	*3,000*	*(X)WATER HEATER*
(X)EXISTING LOAD	*4,432*	*20/1*	35			8,864	36	*20/1*	*4,432*	*(X)EXISTING LOAD*
(X)PANEL MP1A	*20,143*	*100/3*	37	23,469			38	**20/3**	**3,326**	**CCC1-A (NOTE 2)**
|	*20,864*	|	39		24,190		40	|	**3,326**	|
|	*20,254*	|	41			23,580	42	|	**3,326**	|
				77,680	77,401	73,223	TOTAL V. AMPS		300	A. BUS (COPPER)
				280	279	264	CONN. AMPS		300	A. MAIN CIRCUIT BREAKER
									10	KAIC MIN.

NOTES:
1. (X) INDICATES EXISTING LOAD.
2. PROVIDE BREAKER INDICATED, BREAKER AIC MUST MATCH PANEL AIC RATING.
3. HVAC EQUIPMENT SHALL USE TYPE HACR BREAKERS.
4. REDUNDANT PUMP AND WILL NOT RUN CONCURRENTLY WITH 'A' PUMP.

PANEL MDP LOAD SUMMARY

VOLTAGE	PHASE
480	3
LARGEST MOTOR APPROX. AMPS	14 AMPS
LARGEST MOTOR APPROX. AMPS x .25	4 AMPS
HVAC	
CCC1-A	9,977 VA
EXISTING WWHP-12A	6,252 VA
EXISTING WWHP-12B	6,252 VA
EXISTING WWHP-13A	7,516 VA
EXISTING WWHP-13B	6,252 VA
EXISTING PANEL MP1A HVAC LOADS	61,261 VA
EXISTING PANEL A HVAC LOADS	3,615 VA
EXISTING PANEL B HVAC LOADS	5,505 VA
SUB-TOTAL HVAC DEMAND	106,630 VA
SUB-TOTAL HVAC DEMAND	128 AMPS
EQUIPMENT	
EXISTING WATER HEATER (QTY 2)	6,000 VA
EXISTING AIR COMPRESSOR	2,826 VA
EXISTING PUMP 10-A/B	11,640 VA
EXISTING PANEL A EQUIPMENT LOADS	2,410 VA
EXISTING PANEL B EQUIPMENT LOADS	3,670 VA
REMAINING EXISTING MDP PANEL LOADS	17,728 VA
SUB-TOTAL EQUIPMENT DEMAND	44,274 VA
SUB-TOTAL EQUIPMENT DEMAND	53 AMPS
ADD FOR LARGEST MOTOR	4 AMPS
TOTAL EQUIPMENT DEMAND	57 AMPS
LIGHTING	
EXISTING LIGHTS (INTERIOR, BASED ON NEC 220.12)	35,037 VA
EXISTING LIGHTS (EXTERIOR)	6,025 VA
TOTAL LIGHTING LOAD	41,062 VA
TOTAL DEMAND FOR LIGHTING	49 AMPS
RECEPTACLES	
NEW RECEPTACLE	180 VA
EXISTING RECEPTACLES	30,220 VA
FIRST 10000VA	10,000 VA
REMAINDER @ 50%	10,200 VA
TOTAL DEMAND FOR RECEPTACLE/POWER PANELS	20,200 VA
TOTAL DEMAND FOR RECEPTACLE/POWER PANELS	24 AMPS
TOTAL DEMAND BUILDING AMPS	259 AMPS
TOTAL DEMAND BUILDING VA	215,076 VA
TOTAL BUILDING CONNECTED LOAD	192,146 VA

REVISED PANEL SUB

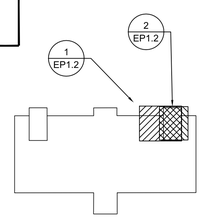
TYPE: NEMA 1 | 240 | 120 V | 1 PH | 3 WIRE | PROVIDED IF | XX | EQUIP. GND BUS
LOAD CENTER | MOUNT: SURFACE | CHECKED: | XX | NEUTRAL BUS
SQAURE D TYPE QOC16US | FEED: TOP | | | GUTTER TAPS
| | | | SUB-FEED LUGS

LOAD SERVED	LOAD VA	CKT BKR	CKT #	A	B	CKT #	CKT BKR	LOAD VA	LOAD SERVED
(X)GARBAGE DISPOSAL	*1,500*	*20/1*	1	2,500		2	*20/1*	*1,000*	*(X)VENDING MACHINE*
(X)RECEPTACLES: RIGHT OF SINK	*720*	*20/1*	3		1,720	4	*20/1*	*1,000*	*(X)VENDING MACHINE*
(X)OVEN	*5,000*	*40/2*	5	6,000		6	*20/1*	*1,000*	*(X)VENDING MACHINE*
|	*5,000*	|	7		5,900	8	*15/1*	*900*	*(X)UNDERCOUNTER LIGHTS*
(X)RM: 44/RM: 44	*1,920*	*20/20*	9	2,640		10	*20/1*	*720*	*(X)RECEPTACLES: LEFT OF STOVE*
(X)EXISTING LOAD	*2,880*	*30/1*	11		3,980	12	*20/1*	*1,100*	*(X)MICROWAVE*
RCP: CCC1-A SERVICING (NOTE 2)	**180**	**20/1**	13	180		14	-		*(X)SPACE*
(X)SPACE		-	15			16			*(X)SPACE*
				11,320	11,600	TOTAL V. AMPS		100	A. BUS (COPPER)
				94	97	CONN. AMPS		100	A. MAIN LUGS
								10	KAIC MIN.

NOTES:
1. (X) INDICATES EXISTING LOAD.
2. PROVIDE BREAKER INDICATED, BREAKER AIC MUST MATCH PANEL AIC RATING.
3. 20/20 INDICATES (2) 20/1 BREAKERS IN SINGLE PANELBOARD SPACE. (PIGGYBACK)

PANEL SUB LOAD SUMMARY

VOLTAGE	PHASE
208	1
EQUIPMENT	
EXISTING CIRCUIT #11	2,880 VA
SUB-TOTAL EQUIPMENT DEMAND	2,880 VA
SUB-TOTAL EQUIPMENT DEMAND	14 AMPS
TOTAL EQUIPMENT DEMAND	14 AMPS
KITCHEN EQUIPMENT	
EXISTING GARBAGE DISPOSAL	1,500 VA
EXISTING OVEN	10,000 VA
EXISTING MICROWAVE	1,100 VA
EXISTING VENDING MACHINE (QTY 3)	3,000 VA
SUB-TOTAL EQUIPMENT DEMAND	15,600 VA
DEMAND FACTOR 65% (6 UNITS OR OVER)	10,140 VA
SUB-TOTAL EQUIPMENT DEMAND	75 AMPS
TOTAL EQUIPMENT DEMAND	49 AMPS
LIGHTING	
EXISTING LIGHTS (INTERIOR)	900 VA
TOTAL LIGHTING LOAD	900 VA
LIGHTING LOAD x 1.25	1,125 VA
TOTAL DEMAND FOR LIGHTING	5 AMPS
RECEPTACLES	
NEW RECEPTACLE	180 VA
EXISTING RECEPTACLES	3,360 VA
TOTAL DEMAND FOR RECEPTACLE/POWER PANELS	3,540 VA
TOTAL DEMAND FOR RECEPTACLE/POWER PANELS	17 AMPS
TOTAL DEMAND PANEL AMPS	85 AMPS
TOTAL DEMAND PANEL VA	17,685 VA
TOTAL PANEL CONNECTED LOAD	19,560 VA



KEY PLAN
NOT TO SCALE

PLAN NORTH

bmh
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NORTH CAROLINA PROFESSIONAL SEAL 023311 ENGINEER JOSEPH ALLEN CRIBB
02/24/2025

Coastal Carolina Community College
Admin Building & Student Center
Supplemental Cooling

444 Western Boulevard
Jacksonville, North Carolina 28546
SCO # 24-28039-01A

REV.	DATE	DESCRIPTION
1	02/24/25	COJ COMMENTS
0	01/28/25	ISSUED FOR CONSTRUCTION

Project Manager	Drawn By AJC
Date 01-15-25	Reviewed By WAC
Project ID 23091	

Sheet Title
ELECTRICAL POWER
ADMIN BUILDING

Sheet No.
EP1.2