2018 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(Except 1 & 2-Family Dwellings and Townhouses)

PROJECT NAME: BURKE COUNTY FOOTHILLS HIGHER EDUCATION CENTER

PROJECT ADDRESS: 2128 S. STERLING ST.
MORGANTON, NORTH CAROLINA

ZIP CODE: 28655

PROPOSED USE: BUSINESS

OWNER/AUTHORIZED AGENT: BURKE COUNTY - MARK DELEHANT PHONE #: (336) 971-5151

OWNED BY: ■ CITY/COUNTY ☐ PRIVATE ☐ STATE

CODE ENFORCEMENT JURISDICTION: ☐ CITY ■ COUNTY ☐ STATE

LEAD DESIGN PROFESSIONAL: DONALD R. BRITTAIN, P.E.

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #
ARCHITECTURAL:	-----	-----	-----	-----
CIVIL:	-----	-----	-----	-----
ELECTRICAL:	BRITTAIN ENGINEERING, INC.	DONALD R. BRITTAIN	7883	(828) 328-1813
FIRE ALARM:	-----	-----	-----	-----
PLUMBING:	-----	-----	-----	-----
MECHANICAL:	BRITTAIN ENGINEERING, INC.	DONALD R. BRITTAIN	7883	(828) 328-1813
SPRINKLER-STANDPIPE:	N/A	N/A	N/A	N/A
STRUCTURAL:	N/A	N/A	N/A	N/A
RETAINING WALLS <5'H:	N/A	N/A	N/A	N/A
OTHER:	N/A	N/A	N/A	N/A

■ 2018 EDITION OF NC CODE FOR: ☐ NEW CONSTRUCTION ☐ ADDITION ☐ UPFIT

EXISTING: ☐ RECONSTRUCTION ■ ALTERATION ☐ REPAIR

CONSTRUCTED ☐ ORIGINAL USE ■ RENOVATED ☐ CURRENT USE ☐

☐ 2018 N.C. REHAB CODE Information: Work area must be delineated on the submitted plans.
Check all that apply: REPAIR ☐ RENOVATION ☐ ALTERATION ☐ RECONSTRUCTION ☐ CHANGE OF USE ☐ ADDITON ☐
Describe scope of work based on code sections of the rehab code

☐ Last known legal Occupancy History Property: YES ☐ NO ☐
ORIGINAL BUILDING CONSTRUCTION DATE
Consideration for review under the Rehab Code based on code section as follows:
Reviewers Notes for Field Inspector:

BUILDING DATA:
CONSTRUCTION TYPE: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A
☐ I-B ■ II-B ☐ III-B ☐ V-B
MIXED CONSTRUCTION: ☐ YES ☐ NO TYPE N/A

SPRINKLERS: ☐ NO ☐ PARTIAL ■ YES ☐ NFPA13 ☐ NFPA13R ☐ NFPA13D

STANDPIPES: ■ NO ☐ YES ☐ CLASS ☐ I ☐ II ☐ III ☐ WET ☐ DRY

FIRE DISTRICT: ☐ NO ■ YES FLOOD HAZARD ☐ YES ■ NO

BUILDING HEIGHT: FEET: 40' NUMBER OF STORIES: 1

MEZZANINE: ■ NO ☐ YES

GROSS BUILDING AREA:

FLOOR:	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
6TH FLOOR	N/A	N/A	N/A
5TH FLOOR	N/A	N/A	N/A
4TH FLOOR	N/A	N/A	N/A
3RD FLOOR	N/A	N/A	N/A
2ND FLOOR	N/A	N/A	N/A
MEZZANINE	N/A	N/A	N/A
UPPER FLOOR	N/A	N/A	N/A
LOWER FLOOR	N/A	N/A	N/A
TOTAL:	N/A	N/A	N/A

ALLOWABLE AREA:

PRIMARY OCCUPANCY: ASSEMBLY ☐ A1 ☐ A2 ☐ A3 ☐ A4 ☐ A5
BUSINESS ■ EDUCATIONAL ☐ FACTORY ☐ F1 MODERATE ☐ F2 LOW
HAZARDOUS ☐ H1 DETONATE ☐ H2 DEFLAGRATE ☐ H3 HIGH ☐ H4 HEALTH ☐ H5 HPM
INSTITUTIONAL ☐ ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4
I-3 CONDITION ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
MERCANTILE ☐ RESIDENTIAL ☐ R1 ☐ R2 ☐ R3 ☐ R4
STORAGE ☐ S1 MODERATE ☐ S2 LOW ☐ HIGH-PILED
☐ UTILITY & MISCELLANEOUS ☐ GARAGE ☐ OPEN ☐ ENCLOSED ☐ REPAIR GARAGE

SECONDARY OCCUPANCY: S-1 (STORAGE)

SPECIAL USES: ☐ 402 ☐ 403 ☐ 404 ☐ 405 ☐ 406 ☐ 407 ☐ 408 ☐ 409 ☐ 410
☐ 411 ☐ 412 ☐ 413 ☐ 414 ☐ 415 ☐ 416 ☐ 417 ☐ 418 ☐ 419 ☐ 420 ☐ 421

SPECIAL PROVISIONS: ☐ 508.2 ☐ 508.3 ☐ 508.4 ☐ 508.5 ☐ 508.5 ☐ 508.6 ☐ 508.7 ☐ 508.8

MIXED OCCUPANCY: ■ YES ☐ YES SEPARATION: N/A EXCEPTION:

■ INCIDENTAL USE SEPARATION:
THIS USE IS NOT EXEMPT AS A NON-SEPARATED USE (SEE EXCEPTIONS)

☐ NON-SEPARATED USE (302.3.1)
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 (302.3.2) - SEE BELOW FOR AREA CALCULATIONS
FOR EACH STORY, THE AREA OF THE OCCUPANCY SHALL BE THAT THE SUM OF THE RATIOS OF THE ACTUAL FLOOR AREA OF EACH USE DIVIDED BY THE ALLOWABLE FLOOR AREA FOR EACH USE SHALL NOT EXCEED 1.

$$\frac{\text{ACTUAL AREA OF OCCUPANCY "A"}}{\text{ALLOWABLE AREA OF OCCUPANCY "A"}} + \frac{\text{ACTUAL AREA OF OCCUPANCY "B"}}{\text{ALLOWABLE AREA OF OCCUPANCY "B"}} + \text{=____} \leq 1.00$$

STORY NO.	DESCRIPTION AND USE	"A" BLDG AREA PER STORY (ACTUAL)	"B" TABLE 503[5] AREA	"C" AREA FOR FRONTAGE INCREASE[1]	"D" AREA FOR SPRINKLER INCREASE[2]	"E" ALLOWABLE AREA OR UNLIMITED[3]	"F" MAXIMUM AREA OR UNLIMITED[3]
ONE (1)	BUSINESS	10,700	9,000		18,000	N/A	27,000
TWO (2)	BUSINESS	10,700	9,000		18,000	N/A	27,000

[1] FRONTAGE AREA INCREASES FROM SECTION 506.2 COMPUTATION 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
e. PERCENT OF FRONTAGE INCREASE = I_f = 0.25] x W/30 = _____ (%)

[2] THE SPRINKLER INCREASE PER SECTION 506.3 IS AS FOLLOWS:
a. MULTI-STORY BUILDING I_s = 200 PERCENT
b. SINGLE STORY BUILDING I_s = 300 PERCENT

[3] UNLIMITED AREA APPLICABLE UNDER CONDITIONS OF SECTIONS GROUP B,F,M,S,A4 (507);
GROUP A MOTION PICTURE (507.6); WALLS (402.6); AND H2 AIRCRAFT PAINT HANGERS (507.7).
[4] MAXIMUM BUILDING AREA = NUMBER OF STORIES IN THE BUILDING x E (506.4).
[5] THE MAXIMUM AREA OF [illegible] GARAGES MUST COMPLY WITH 406.3.5. THE MAXIMUM AREA OF AIR TRAFFIC CONTROL TOWERS MUST COMPLY WITH 412.1.2.

BRITTAIN ENGINEERING, INC.
CONSULTING MECHANICAL AND ELECTRICAL ENGINEERS
PO BOX 939
HICKORY, NC 28603

ALLOWABLE HEIGHT

	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLER	SHOWN ON PLANS	CODE REFERENCE
TYPE OF CONSTRUCTION	TYPE VB		TYPE VB	503
BUILDING HEIGHT (FEET)	FEET 40	FEET = H+20	FEET 35	503
BUILDING HEIGHT (STORIES)	STORIES 2	STORIES 1	STORIES 3	503

FIRE PROTECTION REQUIREMENTS

LIFE SAFETY PLAN #, IF PROVIDED N/A

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQUIRED	RATING PROVIDED W/ XXX REDUCTION	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
STRUCTURAL FRAME, INCLUDING COLUMNS, GIRDERS, TRUSSES		N/A	N/A	N/A	N/A	N/A	N/A
BEARING WALLS							
EXTERIOR							
NORTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EAST	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WEST	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SOUTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INTERIOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NONBEARING WALLS AND PARTITIONS							
EXTERIOR							
NORTH	<5	1 HR	1 HR	[illegible]CH	U419	N/A	N/A
EAST	>5	N/A	N/A	[illegible]	N/A	N/A	N/A
WEST	>5	N/A	N/A	[illegible]	N/A	N/A	N/A
SOUTH	N/A	N/A	N/A	[illegible]	N/A	N/A	N/A
INTERIOR WALLS & PARTITIONS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SHAFT ENCLOSURES - EXIT	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SHAFT ENCLOSURES - [illegible]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CORRIDOR SEPARATION	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OCCUPANCY SEPARATION	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PARTY/FIRE WALL SEPARATION	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SMOKE BARRIER SEPARATION	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TENANT SEPARATION	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INCIDENTAL USE SEPARATION	N/A	N/A	N/A	N/A	N/A	N/A	N/A

* INDICATE SECTION NUMBER PERMITTING REDUCTION

LIFE SAFETY REQUIREMENTS

EMEGENCY LIGHTING:	☐ NO	■ YES
EXIT SIGNS:	☐ NO	■ YES
FIRE ALARM:	☐ NO	■ YES
SMOKE DETECTION SYSTEMS:	☐ NO	■ YES
PANIC HARDWARE:	■ NO	☐ YES

EXIT REQUIREMENTS
NUMBER AND ARRANGEMENT OF EXITS

FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM[2] NUMBER OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS[3] (SECTION 1014.2)	
	REQUIRED	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1015.1)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
LOWER FLOOR PLAN	2	5	300		58	109'
UPPER FLOOR PLAN	2	2	300	50	58	109'

[1] CORRIDOR DEAD ENDS (SECTION 1016.3)
[2] SINGLE EXITS (TABLE 1018.2)
[3] COMMON PATH OF TRAVEL (SECTION 1013.3)

EXIT WIDTH

USE GROUP OR SPACE DESIGNATION	(A) AREA[1] SQ. FT.	(B) AREA[1] PER OCCUPANT (TABLE 1004.1.2)	OCCUPANT LOAD (TABLE 1004.1.1)	(C) EGRESS WIDTH PER OCCUPANT (TABLE 1005.1)		EXIT WIDTH (in)[2,3,4,5,6] REQUIRED WIDTH (SECTION 1005.1) A/B x C		ACTUAL WIDTH SHOWN ON PLANS	
				STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL
LOWER FLOOR PLAN	10,000	100	107	N/A	.15	N/A	16.1	N/A	160
UPPER FLOOR PLAN	10,000	100	107	.2	.15	21.4	16.1	95	64

[1] SEE TABLE 1004.1.2 TO DETERMINE WHETHER NET OR GROSS AREA IS APPLICABLE.
[2] SEE DEFINITION "AREA, GROSS" AND "AREA, NET" (SECTION 1002).
[3] MIN. STAIRWAY WIDTH(SECTION 1005.1);MIN. CORRIDOR WIDTH(SECTION 1016.2);MIN. DOOR WIDTH(SECTION 1018.1)
[4] MIN. WIDTH OF EXIT PASSAGEWAY (SECTION 1020.2)
[5] SEE SECTION 1004.5 FOR CONVEGING EXITS.
[6] THE LOSS OF ONE MEANS EGRESS SHALL NOT REDUCE THE AVAILABLE CAPACITY TO LESS THAN 50% OF THE TOTAL REQUIRED (SECTION 1005.1).
[7] ASSEMBLY OCCUPANCIES (SECTION 1024).

PERCENTAGE OF OPENINGS (TABLE 704.8)

NORTH ELEVATION
TOTAL BUILDING ELEVATION AREA = 3,317 SQ. FT.
TOTAL SQUARE FOOTAGE OF OPENINGS = 366 SQ. FT.
TOTAL = 366/3,317 = 11% < 15%

STRUCTURAL DESIGN
(SEE STRUCTURAL DRAWINGS FOR BUILDING SUMMARY)

PLUMBING FIXTURE REQUIREMENTS

USE ASSEMBLY	WATERCLOSETS		URINALS	LAVATORIES		SERVICE SINK	DRINKING FOUNTAINS	
	MALE	FEMALE		MALE	FEMALE		REGULAR	ACCESSIBLE
EXISTING	3	6	1	4	4	1	2	2
NEW	2	2	N/A	2	2	N/A	2	2
REQUIRED	4	4		3	3	N/A	N/A	2

ACCESSIBLE PARKING

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # OF ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR w/ 5' ACCESS AISLE	VAN SPACES w/ 8' ACCESS AISLE		
TOTAL:						

SPECIAL APPROVALS

SPECIAL APPROVAL: (LOCAL JURISDICTION, DEPARTMENT OF INSURANCE, OSC, DPI, DFS, ICC, etc., DESCRIBE BELOW)

ENEGY 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 energy cost budget method, state the annual energy cost budget versus allowable annual energy cost budget.

THERMAL ENVELOPE

Method of Compliance:
☐ Prescriptive ☐ Performance ☐ Energy Cost Budget

ROOF/CEILING ASSEMBLY (each assembly)

Exterior Air Film	.34
Single Ply Membrane	.34
Rigid Insulation	20
Air Space	.34
Suspended Ceiling	.68
Interior Air Film	.68
U-Value of total assembly	1/22.38= 0.04468
R-Value of Insulation	20
Skylights in each assembly	N/A
U-Value of skylight	N/A
total sq ft of skylights in each assembly	

EXTERIOR WALLS (4" brick and metal studs)

Exterior Air Film	.34
Face Brick	.7
2" Air Space	.45
1/2" exterior sheathing	.54
6" batt insulation	19
5/8" Fire Code Gypsum Board	.56
Interior Air Film	.68
U-Value of total assembly	1 / 22.39 = 0.74
R-Value of Insulation	19

Openings (window or doors glazing)

U-Value of assembly	.57
Shading coefficient	"0"
Projection factor	"0"
Low E (If required)	N / A
Door R-Value	2.0

WALLS ADJACENT TO UNCONDITIONED SPACE (each assembly)

Openings (windows or doors glazing)

U-Value of assembly	.49
Low E required (if applicable)	N / A
Door R-Value	2.0

WALLS BELOW GRADE (each assembly) (Veritcal N / A)

FLOORS OVER UNCONDITIONED SPACE (each assembly) N / A

FLOORS SLAB ON GRADE (Horizontal N/A) (Vertical ❶ Perimeter)

Interior Air Film	.68
Concrete block	.24
Vapor Barrier	.34
Rigid Perimeter (2"x24")	NONE
U-Value of total assembly	1 / 1.26 = 0.793
R-Value of Insulation	N / A
Horizontal-Vertical requirement	N / A
Slab heated	N / A

ELECTRICAL SUMMARY
(SEE ELECTRICAL DRAWINGS FOR BUILDING SUMMARY)

MECHANICAL SUMMARY
(SEE MECHANICAL DRAWINGS FOR BUILDING SUMMARY)

SCHEDULE OF SPECIAL INSPECTION SERVICES

■ No Special Inspection Required for this Project ☐ Special Inspections Needed

The following sheets comprise the required schedule of special inspections for this project. The construction divisions which require special inspections for this project are as follows.

☐ IT-1 Verification of Soils Fabricators
☐ IT-2 Excavation and Fill
☐ IT-3 Piling and Drilling Piers
☐ IT-4 Modular Retaining Walls
☐ IT-5 Reinforced Concrete
☐ IT-6 Post Tension Slab
☐ IT-7 Pre-cast Concrete Erection
☐ IT-8 Pre-stressed Concrete
☐ IT-9 Inspection of Pre-Cast Fabrication
☐ IT-10 Inspection of Structural Steel
☐ IT-11 Structural Masonry
☐ IT-12 Welding
☐ IT-13 High Strength Bolts & Steel Framing Inspection
☐ IT-14 Sprayed Fire-Resistance Materials
☐ IT-15 Exterior Insulation and Finish System
☐ IT-16 Seismic Resistance
☐ IT-17 Smoke Control
☐ IT-18 Detention Basin
☐ IT-19 Special Cases

Check the above boxes for the special inspection required for this project and list below specific special inspections required under Chapter 17.

EXISTING

NORTH CAROLINA SEAL 7883 ENGINEER DONALD RAY BRITTAIN
05/13/26

BRITTAIN ENGINEERING, INC.
CONSULTING MECHANICAL AND ELECTRICAL ENGINEERS
PO BOX 939
HICKORY, NC 28603
(828) 328-1813

HVAC REPLACEMENT FOR:
BURKE COUNTY
FOOTHILLS HIGHER EDUCATION CENTER
2128 S. STERLING ST., MORGANTON, NC 28655

JOB NO. 222150
DWN BY: RNB
DATE: 05/13/26
SCALE: AS SHOWN

SHEET
C-1

041626RB

NOTES:

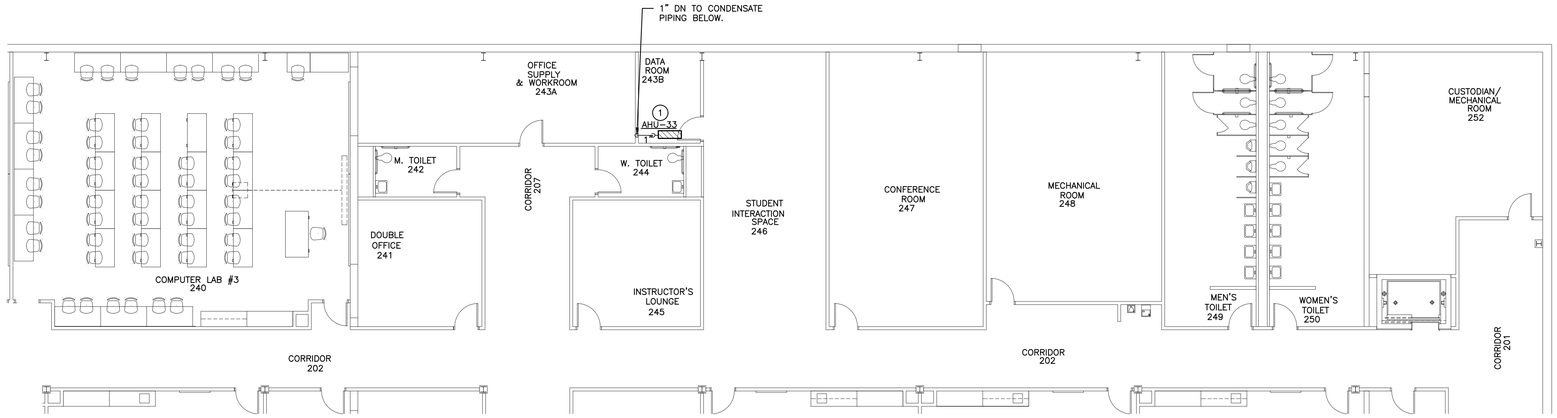
1. EXISTING AIR HANDLER AHU TO BE REPLACED COMPLETE. M.C. TO RECOVER EXISTING R410A REFRIGERANT AS REQUIRED BEFORE OPENING SYSTEMS. M.C. TO USE EXISTING ISOLATION VALVES EVERYWHERE POSSIBLE TO KEEP THE REFRIGERANT PIPING SYSTEM AS CLEAN AS POSSIBLE. M.C. TO FLUSH EXISTING REFRIGERANT PIPING AS REQUIRED TO REUSE IN R32 NEW EQUIPMENT. M.C. TO REPLACE ANY REMOVED OR DAMAGED REFRIGERANT PIPING AND REFRIGERANT PIPING INSULATION AS REQUIRED. M.C. TO REPAINT ANY REPLACED PIPING INSULATION TO MATCH EXISTING AS REQUIRED.
2. EXISTING BRANCH CONTROLLER BC TO BE REPLACED COMPLETE. M.C. TO RECOVER EXISTING R410A REFRIGERANT AS REQUIRED BEFORE OPENING SYSTEMS. M.C. TO USE EXISTING ISOLATION VALVES EVERYWHERE POSSIBLE TO KEEP THE REFRIGERANT PIPING SYSTEM AS CLEAN AS POSSIBLE. M.C. TO FLUSH EXISTING REFRIGERANT PIPING AS REQUIRED TO REUSE IN R32 NEW EQUIPMENT. M.C. TO REPLACE ANY REMOVED OR DAMAGED REFRIGERANT PIPING AND REFRIGERANT PIPING INSULATION AS REQUIRED. M.C. TO REPAINT ANY REPLACED PIPING INSULATION TO MATCH EXISTING AS REQUIRED.
3. EXISTING HEAT PUMP HP ON EXISTING ROOF TO BE REPLACED COMPLETE. M.C. TO RECOVER EXISTING R410A REFRIGERANT AS REQUIRED BEFORE OPENING SYSTEMS. M.C. TO USE EXISTING ISOLATION VALVES EVERYWHERE POSSIBLE TO KEEP THE REFRIGERANT PIPING SYSTEM AS CLEAN AS POSSIBLE. M.C. TO FLUSH EXISTING REFRIGERANT PIPING AS REQUIRED TO REUSE IN R32 NEW EQUIPMENT. M.C. TO REPLACE ANY REMOVED OR DAMAGED REFRIGERANT PIPING, REFRIGERANT PIPING EXTERIOR JACKET AND REFRIGERANT PIPING INSULATION AS REQUIRED. M.C. TO REPAINT ANY REPLACED PIPING INSULATION TO MATCH EXISTING AS REQUIRED.
4. NEW BRANCH CONTROLLER BC-2B TO BE MOUNTED AS CLOSE TO BC-2A AS POSSIBLE. M.C. TO INTERCEPT EXISTING REFRIGERANT PIPING FOR EXISTING AIR HANDLERS AND EXTEND TO NEW BC-2B AS REQUIRED. M.C. TO REPLACE ANY REMOVED OR DAMAGED REFRIGERANT PIPING, REFRIGERANT PIPING EXTERIOR JACKET AND REFRIGERANT PIPING INSULATION AS REQUIRED. M.C. TO REPAINT ANY REPLACED PIPING INSULATION TO MATCH EXISTING AS REQUIRED.

OUTSIDE AIR CALCULATIONS:

PER 2018 NORTH CAROLINA MECHANICAL CODE:

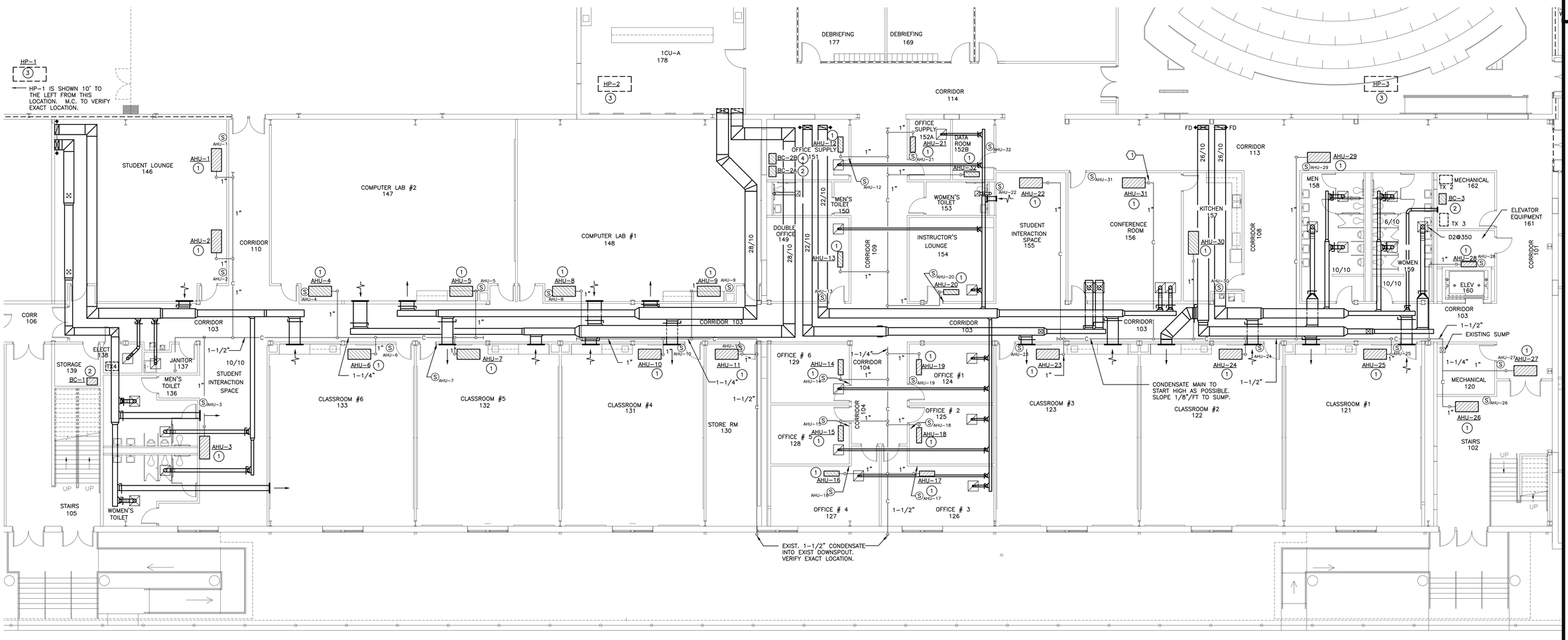
Vbz = Rp*Pz +Ra*Az
Vbz = OUTDOOR AIR RATE IN BREATHING ZONE
Az = FLOOR AREA OF SPACE
Pz = # PEOPLE IN SPACE
Rp = PEOPLE OUTDOOR AIR RATE
Ra = AREA OUTDOOR AIR RATE

EXISTING OUTSIDE AIR PROVIDED VIA EXISTING ROOFTOP UNITS AND ENERGY RECOVERY UNITS TO REMAIN AS IS. THIS PROJECT IS FOR REPLACEMENT OF EXISTING VRF INDOOR AIR HANDLERS, BRANCH CONTROLLERS AND OUTDOOR HEAT PUMPS.



PARTIAL SECOND FLOOR PLAN - HVAC

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



PARTIAL LOWER FLOOR PLAN - HVAC

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

041626RB

BRITTAIN ENGINEERING, INC.
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HICKORY, NC 28603
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NORTH CAROLINA PROFESSIONAL SEAL 7883 ENGINEER DANIEL ROBERT BRITTAIN
041626

HVAC REPLACEMENT FOR:
BURKE COUNTY
FOOTHILLS HIGHER EDUCATION CENTER
2128 S. STERLING ST., MORGANTON, NC 28655

JOB NO.	222150
DWN BY:	RNB
DATE:	05/13/26
SCALE:	AS SHOWN
SHEET	M-1

AIR HANDLING UNIT & HEAT PUMP SCHEDULE

UNIT NO.	FAN TYPE	FAN TOTAL CFM	FAN EXT. SP IN H2O	FAN MOTOR WATTS	DX COOLING CAP. BTUH TOTAL	HEATING CAP. BTUH TOTAL	O.A CFM	REFRIGERANT TYPE	REFRIGERANT LINE SIZES	ELECTRICAL VOLTAGE	ELECTRICAL MCA	ELECTRICAL MOP	WEIGHT LBS.	MANUFACTURER AND MODEL NUMBER	ACCESSORIES/ REMARKS
AHU-1	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-2	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-3	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-4	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-5	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-6	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-7	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-8	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-9	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-10	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-11	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-12	LINE FLOW	285	–	30	8,000	9,000	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	35	MITSUBISHI TPMFYP008CM1M0A	(1),(2),(3),(4)
AHU-13	LINE FLOW	285	–	30	8,000	9,000	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	35	MITSUBISHI TPMFYP008CM1M0A	(1),(2),(3),(4)
AHU-14	LINE FLOW	285	–	30	8,000	9,000	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	35	MITSUBISHI TPMFYP008CM1M0A	(1),(2),(3),(4)
AHU-15	LINE FLOW	285	–	30	8,000	9,000	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	35	MITSUBISHI TPMFYP008CM1M0A	(1),(2),(3),(4)
AHU-16	LINE FLOW	310	–	30	12,000	13,500	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	36	MITSUBISHI TPMFYP012CM1M0A	(1),(2),(3),(4)
AHU-17	LINE FLOW	310	–	30	12,000	13,500	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	36	MITSUBISHI TPMFYP012CM1M0A	(1),(2),(3),(4)
AHU-18	LINE FLOW	285	–	30	8,000	9,000	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	35	MITSUBISHI TPMFYP008CM1M0A	(1),(2),(3),(4)
AHU-19	LINE FLOW	285	–	30	8,000	9,000	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	35	MITSUBISHI TPMFYP008CM1M0A	(1),(2),(3),(4)
AHU-20	LINE FLOW	285	–	30	8,000	9,000	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	35	MITSUBISHI TPMFYP008CM1M0A	(1),(2),(3),(4)
AHU-21	LINE FLOW	225	–	30	6,000	6,700	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	35	MITSUBISHI TPMFYP006CM1M0A	(1),(2),(3),(4)
AHU-32	LINE FLOW	285	–	30	8,000	9,000	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	35	MITSUBISHI TPMFYP008CM1M0A	(1),(2),(3),(4)
AHU-33	LINE FLOW	285	–	30	8,000	9,000	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	35	MITSUBISHI TPMFYP008CM1M0A	(1),(2),(3),(4)
AHU-22	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-23	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-24	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-25	SIROCCO	990	–	160	30,000	34,000	0	R32	3/8" & 5/8"	208V/1ø	1.04	15.0	79	MITSUBISHI TPCFYP030KM1M0A	(1),(2),(3),(4)
AHU-26	SIROCCO	640	–	95	24,000	27,000	0	R32	3/8" & 5/8"	208V/1ø	0.51	15.0	71	MITSUBISHI TPCFYP024KM1M0A	(1),(2),(3),(4)
AHU-27	SIROCCO	640	–	95	24,000	27,000	0	R32	3/8" & 5/8"	208V/1ø	0.51	15.0	71	MITSUBISHI TPCFYP024KM1M0A	(1),(2),(3),(4)
AHU-28	LINE FLOW	310	–	30	12,000	13,500	0	R32	1/4" & 1/2"	208V/1ø	0.40	15.0	36	MITSUBISHI TPMFYP012CM1M0A	(1),(2),(3),(4)
AHU-29	SIROCCO	640	–	95	24,000	27,000	0	R32	3/8" & 5/8"	208V/1ø	0.51	15.0	71	MITSUBISHI TPCFYP024KM1M0A	(1),(2),(3),(4)
AHU-30	SIROCCO	460	–	90	15,000	17,000	0	R32	1/4" & 1/2"	208V/1ø	0.44	15.0	53	MITSUBISHI TPCFYP015KM1M0A	(1),(2),(3),(4)
AHU-31	SIROCCO	640	–	95	24,000	27,000	0	R32	3/8" & 5/8"	208V/1ø	0.51	15.0	71	MITSUBISHI TPCFYP024KM1M0A	(1),(2),(3),(4)

AHU-32 & 33 ADDED TO HP-2.

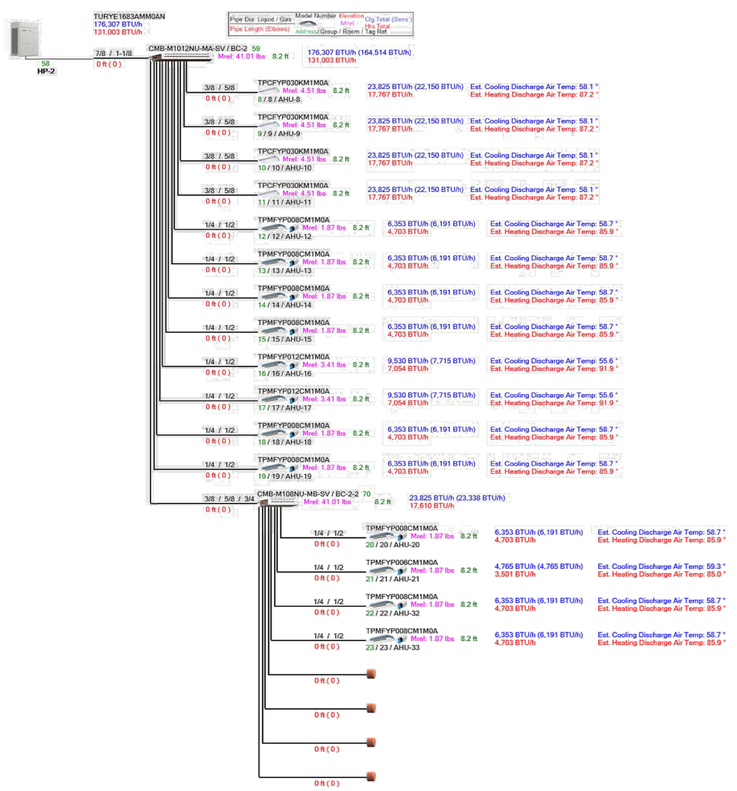
UNIT NO.	ENERGY RECOVERY HEAT PUMP CAP. MBTUH TOTAL	ENT. AIR °F. DB	ENT. AIR °F. WB	HEATING CAP. MBTUH TOTAL	ELECTRICAL VOLTAGE	ELECTRICAL MCA	ELECTRICAL MOP	REFRIGERANT PIPE SIZE	REFRIGERANT FIELD CHARGE	WEIGHT LBS.	MANUFACTURER AND MODEL NUMBER
HP-1	168,000	80	67	188,000	208V/3ø	60.0	70.0	7/8" & 1-1/8"	–	1090	MITSUBISHI TURYE1683AMM0AN
BC-1	210,000				208V/1ø	0.13	15.0	MAIN	–	37.92	MITSUBISHI CMB-M1012NU-MA-SV
HP-2	168,000	80	67	188,000	208V/3ø	60.0	70.0	7/8" & 1-1/8"	–	1090	MITSUBISHI TURYE1683AMM0AN
BC-2A	222,000				208V/1ø	0.13	15.0	MAIN	–	41.01	MITSUBISHI CMB-M1012NU-MA-SV
BC-2B	30,000				208V/1ø	0.13	15.0	SUB	–	41.01	MITSUBISHI CMB-M108NU-MB-SV
HP-3	192,000	80	67	192,000	208V/3ø	60.0	70.0	7/8" & 1-1/8"	–	1090	MITSUBISHI TURYE1923AMM0AN
BC-3	243,000				208V/1ø	0.13	15.0	MAIN	–	40.57	MITSUBISHI CMB-M1012NU-MA-SV

NOTE: ADDITIONAL REFRIGERANT CHARGE BASED ON SCHEMATIC LENGTHS. M.C. SHALL FIELD VERIFY ALL LENGTHS AND VERIFY ADDITIONAL REFRIGERANT CHARGE. EXISTING MITSUBISHI CONTROLLER MUST BE UPGRADED TO NEW TE-C400A DUE TO REFRIGERANT CHANGE.

(1) INDIVIDUAL REFRIGERANT LINE ISOLATION VALVES
(2) FACTORY BUILT-IN DRAIN PUMP KIT.
(3) FULL FACTORY ASSISTED START-UP
(4) TAR-43MAAUB MA REMOTE CONTROLLER

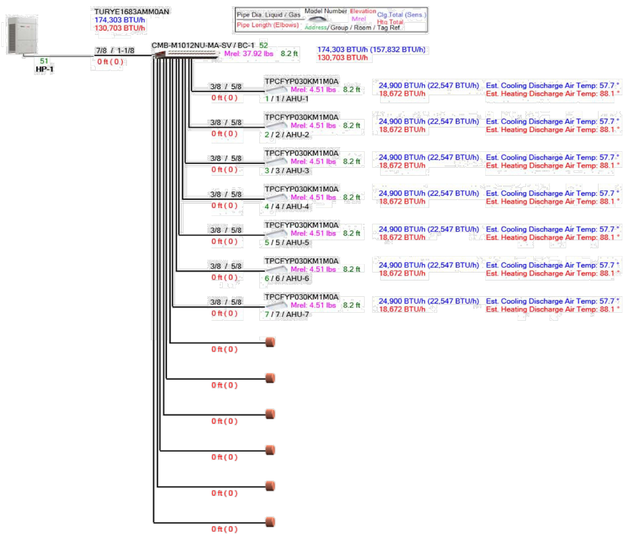
Centralized System - 1 : HP-2

Piping Diagram Image (Design View)



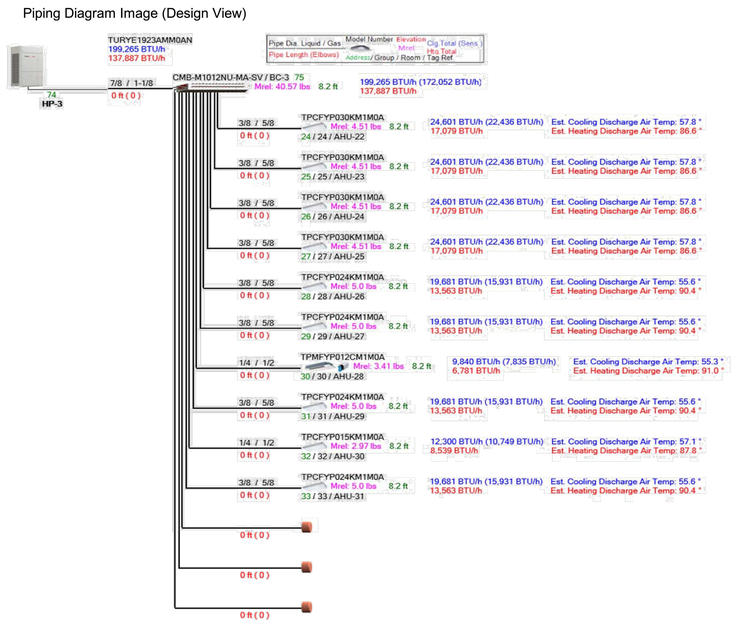
Centralized System - 1 : HP-1

Piping Diagram Image (Design View)



Centralized System - 1 : HP-3

Piping Diagram Image (Design View)



041626RB

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NORTH CAROLINA PROFESSIONAL SEAL 7883 ENGINEER DANIEL BRITTAIN 05/13/26

HVAC REPLACEMENT FOR:
BURKE COUNTY PUBLIC SCHOOLS
FOOTHILLS HIGHER EDUCATION CENTER
2128 S. STERLING ST., MORGANTON, NC 28655

JOB NO.	222150
DWN BY:	RNB
DATE:	05/13/26
SCALE:	AS SHOWN
SHEET	M-2

MECHANICAL SPECIFICATIONS

ALL MECHANICAL WORK SHALL BE PERFORMED IN COMPLIANCE WITH 2018 NORTH CAROLINA MECHANICAL CODE.

GENERAL CONDITIONS: THE GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT AND SUPPLEMENTAL GENERAL CONDITIONS BOUND WITH THE ADVERTISEMENT FOR BIDS, INSTRUCTIONS TO BIDDERS AND BID FORMS APPLY TO ALL CONTRACTS AND ARE HEREBY MADE A PART OF THE MECHANICAL CONTRACT SPECIFICATIONS.

DESCRIPTION OF WORK: FURNISH ALL LABOR, SUPERVISION, MATERIALS, EQUIPMENT AND TOOLS NECESSARY TO INSTALL COMPLETE AIR CONDITIONING SYSTEMS IN THE BUILDING.

DRAWINGS: THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS SHOWN IN THESE DRAWINGS AND DESCRIBED IN THESE SPECIFICATIONS. ALL MISCELLANEOUS MATERIAL AND HARDWARE NECESSARY FOR COMPLETE OPERATING SYSTEMS IN ACCORDANCE WITH GOOD TRADE PRACTICE AS IS OBVIOUSLY INTENDED SHALL BE FURNISHED AND INSTALLED AS THOUGH IT WERE SPECIFICALLY LISTED.

ELECTRICAL WORK: THE ELECTRICAL CONTRACTOR SHALL TAKE POWER FROM THE SOURCE AS CALLED FOR ON THE ACCOMPANYING DRAWINGS AND EXTEND THROUGH ELECTRICAL AND NECESSARY CONTROLS TO THE EQUIPMENT FURNISHED AND INSTALLED UNDER THIS CONTRACT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL WIRING FROM THE LOAD SIDE OF THE DISCONNECT THROUGH THE STARTER TO THE EQUIPMENT.

SEE ELECTRICAL PLANS FOR DEFINITION OF WIRING AND ELECTRICAL FACILITIES TO BE INSTALLED UNDER THE ELECTRICAL CONTRACT.

ALL ELECTRICAL WORK SHALL BE DONE BY OR UNDER THE DIRECT SUPERVISION OF A LICENSED ELECTRICIAN, LICENSED IN THE STATE WHERE THE WORK WILL BE PERFORMED. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND ALL ADDENDA THERETO.

ALL CONTROL VOLTAGE SHALL BE SINGLE PHASE, 120 VOLTS OR LESS AND SHALL FEED FROM ONE (1) THERMAL OVERLOAD TYPE TOGGLE BREAKER.

ALL CONTROL WIRING SHALL BE RUN IN CONDUIT.

ALL STARTERS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL AND INTERLOCK WIRING 120 VOLTS AND LESS.

PIPING:

CONDENSATE DRAIN PIPING: CONDENSATE DRAIN PIPING SHALL BE TYPE "L" HARD DRAWN COPPER PIPING WITH CAST AND/OR WROUGHT COPPER FITTINGS PER ASTM B-88, 95/5 SOLDER.

REFRIGERATION PIPING: ALL REFRIGERATION PIPING FROM THE AIR COOLED CONDENSERS TO THE REFRIGERANT COIL SHALL BE TYPE "L" HARD DRAWN COPPER PER ASTM B-88. ALL FITTINGS AND JOINTS SHALL BE MADE WITH SILVER-FOS SOLDER. PROVIDE STRAINER-DRYER COMBINATION AND LIQUID SOLENOID VALVES AT REFRIGERANT COIL. THERMOSTATIC EXPANSION VALVES AND ALL ACCESSORIES SHALL BE EQUAL TO ALCO, INC., OR APPROVED EQUAL. PROVIDE AND INSTALL DISTRIBUTORS EQUAL TO ALCO, INC., SUITABLE FOR MODULATING FLOW RATES.

PROVIDE SPECIALTIES SUCH AS SERVICE VALVES, SOLENOID VALVES, SIGHT GLASSES, AND FILTER/DRYERS AS INDICATED AND REQUIRED FOR PROPER SYSTEM OPERATION. COMPONENTS SHALL BE SPECIFICALLY DESIGNED FOR REFRIGERATION SERVICE.

REFRIGERANT PIPING SHALL BE TESTED ACCORDING TO SECTION 1108 OF THE NORTH CAROLINA MECHANICAL CODE, 2018 EDITION.

PIPING JOINTS: SCREWED JOINTS SHALL HAVE FULL CUT PIPE THREADS. JOINTS SHALL BE ASSEMBLED WITH AN APPROVED COMPOUND APPLIED TO ONLY THE MALE THREADS. A MINIMUM OF THREE PIPE THREADS SHALL REMAIN EXPOSED WHEN THE JOINT IS ASSEMBLED.

WELDED PIPE JOINTS SHALL BE FUSION WELDED BY A METALLIC ARC WELDING PROCESS THE WELDING OPERATIONS SHALL CONFORM TO THE CURRENT RECOMMENDATIONS OF THE AMERICAN WELDING SOCIETY. THIS CONTRACTOR'S WELDER, EMPLOYED ON THIS PROJECT, SHALL HAVE PASSED QUALIFICATION TESTS AS PRESCRIBED BY THE NATIONAL PIPE WELDING BUREAU OR OTHER REPUTABLE TESTING LABORATORY USING QUALIFICATION PROCEDURES AS RECOMMENDED BY THE ASME BOILER CONSTRUCTION CODE OR AMERICAN WELDING STANDARDS.

PIPING ACCESSORIES GENERAL: FLANGES SHALL BE SLIP-ON OR BUTT WELDING STANDARD WEIGHT 1/16" RAISED FACE TYPE WITH GASKETS.

UNIONS SHALL BE ALL BRONZE FOR COPPER SYSTEMS AND MALLEABLE IRON WITH GROUND JOINT FOR STEEL PIPING SYSTEMS. PROVIDE DIELECTRIC UNIONS FOR JOINING DISSIMILAR METALLIC PIPING SYSTEMS.

WELDOLETS AND THREADOLETS SHALL BE STEEL PER ANSI B16.9.

ESCUTCHEONS SHALL BE SINGLE PIECE, SET SCREW TYPE, CHROME PLATED AND SHALL COVER THE OPENING AND SLEEVE.

COPPER PIPING

NOMINAL PIPE SIZE (MAXIMUM)	HANGER SPACE
UP TO 1 1/4"	6'-0"
1-1/2" TO 2"	10'-0"
LARGER THAN 2"	12'-0"

MAXIMUM VERTICAL SPACING 10'-0"

VERTICAL LINES SHALL BE ADEQUATELY SUPPORTED AT THEIR BASES, EITHER BY A SUITABLE HANGER PLACED IN THE HORIZONTAL LINE NEAR THE RISER, OR BY A BASE FITTING SET ON A PEDESTAL OR FOUNDATION AND FROM EACH FLOOR SLAB BY MEANS OF APPROVED CLAMP TYPE SUPPORT BEARING OR THE SLAB OR BEAM.

HANGERS FOR PIPING 2" AND SMALLER SHALL BE OF THE SPLIT CAST RING TYPE WITH FASTENING DEVICE. HANGERS FOR PIPING LARGER THAN 2" SHALL BE OF THE ADJUSTABLE CLEVIS HANGER TYPE. HANGER RODS SHALL BE MINIMUM 3/8" DIAMETER AND SHALL HAVE MACHINE THREADS. BRACKETS OF APPROVED TYPE MAY BE USED ALONG WALLS. HANGER RODS FOR INDIVIDUALLY SUSPENDED HORIZONTAL PIPES SHALL BE STEEL RODS OF SIZE INDICATED ON THE FOLLOWING TABLE:

NOMINAL PIPE SIZE (MAXIMUM)	ROD SIZE
1/2" TO 2"	3/8"
2-1/2" TO 3"	1/2"
4"	5/8"
5" TO 6"	3/4"
8" TO 12"	7/8"

HANGERS FOR USE WITH COPPER PIPING SHALL BE COPPER PLATED FERROUS SIZES FOR COPPER TUBING.

HANGERS SHALL BE INSTALLED WITHIN 2'-0" OF EACH CHANGE IN DIRECTION, EITHER VERTICAL OR HORIZONTAL, OR PIPE TEE AND ON EACH SIDE OF VALVES, STRAINERS, ETC.

MULTIPLE HORIZONTAL PIPES, SMALLER THAN 12" DIAMETER PIPE, MAY BE SUPPORTED ON TRAPEZE HANGERS. TRAPEZE SPACING SHALL BE IN ACCORDANCE WITH THE SCHEDULE FOR PIPE SPACING BASED UPON THE SMALLEST PIPE. THE TRAPEZE MEMBERS SHALL BE PROPERLY SIZED FOR THE PIPING LOAD THEY ARE TO SUPPORT.

PIPE SUPPORTS SHALL BE AS MANUFACTURED BY MICHIGAN, GRINNELL OR F&S MANUFACTURING.

PIPING INSULATION:

THE CONTRACTOR SHALL COVER ALL PIPING AND APPARATUSES, AS SPECIFIED BELOW, WITH INSULATION AS MANUFACTURED BY KNAUF FIBER GLASS, JOHNS-MANVILLE, OWENS-CORNING OR EQUAL. ALL INSULATION, JACKET, FACING AND ADHESIVE SHALL HAVE COMPOSITE RATINGS NOT EXCEEDING FLAME SPREAD OF 25 AND SMOKE DEVELOPMENT OF 50.

PIPING INSULATION CONDUCTIVITY:
FIBERGLASS INSULATION THICKNESS FOR BOTH HEATING AND CHILLED WATER PIPING IS BASED ON INSULATION HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/H / SQUARE FOOT / DEGREE F.

PIPE INSULATION FITTINGS:
PIPE INSULATION FITTINGS SHALL BE EQUAL TO SPEEDLINE SMOKE SAFE PVC INSULATED FITTING COVERING SYSTEM. PVC JACKET AND FIBERGLASS INSULATION SHALL HAVE A FLAME SPREAD VALUE OF 25 OR LESS AND SMOKE DEVELOPED VALUE OF 50 OR LESS.

CONDENSATE DRAIN PIPING:
CONDENSATE DRAIN PIPING FROM AIR CONDITIONING UNITS THAT RUNS OUTSIDE OF FAN HOUSING SHALL BE INSULATED WITH 3/4" THICK ARMAFLEX INSULATION WITH ALL JOINTS GLUED AND TAPED. AUXILIARY CONDENSATE DRAIN PANS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 307.2.3 OF THE NORTH CAROLINA MECHANICAL CODE.

REFRIGERANT PIPING:
INSULATE REFRIGERATION SUCTION LINE PIPING WITH 3/4" THICK ARMAFLEX INSULATION WITH ALL JOINTS SEALED AND TAPED.

ALUMINUM METAL JACKET:
ALL INSULATION EXPOSED TO THE WEATHER SHALL BE COVERED WITH 0.016 ALUMINUM JACKET. JACKET SHALL BE SEALED WATER TIGHT.

APPLICATION:
ENGAGE THE SERVICES OF A QUALIFIED INSULATION APPLICATOR TO FURNISH AND INSTALL ALL THE INSULATION REQUIRED FOR THE MECHANICAL EQUIPMENT, PIPING, ETC., SPECIFIED HEREIN.

NAME PLATES AND IDENTIFICATION: THIS CONTRACTOR SHALL FURNISH AND INSTALL NAME PLATES WITH ENGRAVED LETTERING TO IDENTIFY EACH ITEM OF EQUIPMENT, SWITCHES AND CONTROLS INSTALLED UNDER THIS CONTRACT.

NAME PLATE IDENTIFICATION SHALL CORRESPOND WITH IDENTIFICATION OF EACH PIECE OF EQUIPMENT ON THE CONTRACT DRAWINGS UNLESS OTHERWISE DIRECTED. NAME PLATES AND/OR IDENTIFICATION SHALL BE MADE AS MANUFACTURED BY SETON NAME PLATE COMPANY OR APPROVED EQUAL. NAME PLATES SHALL BE ENGRAVED RIGID PHENOLIC PLASTIC OR NONFERROUS METAL WITH 1/4 INCH HIGH LETTERING – "TAPEWRITER" LABELS WILL NOT BE ACCEPTED.

EACH AIR HANDLING UNIT SHALL BE IDENTIFIED WITH ITS CONTRACT DRAWING DESIGNATION AND THE AREA SERVED.

PIPING SYSTEMS SHALL HAVE DESIGNATION ON TWENTY (20) FOOT CENTERS, AND CLOSER WHERE REQUIRED, TO PROVIDE ADEQUATE IDENTIFICATION. MARKERS SHALL HAVE DIRECTION OF FLOW AND SERVICE INDICATION. MARKERS SHALL MEET ANSI COLOR CODE RECOMMENDATIONS.

STOP VALVES SHALL BE IDENTIFIED WHERE THEIR INTENDED PURPOSE IS NOT OBVIOUS. NUMBERS SHALL NOT BE USED TO IDENTIFY VALVES UNLESS A KEY TO THE NUMBERS IS LOCATED NEAR THE VALVES. BRASS VALVE TAGS AND CHAIN BY SETON OR EQUAL SHALL BE USED.

TEST & BALANCING: TEST & BALANCING COVERS THE TESTING, BALANCING AND ADJUSTING OF ENVIRONMENTAL SYSTEMS INCLUDING BUT NOT LIMITED TO: HEATING, COOLING AND VENTILATION DISTRIBUTION SYSTEMS, HYDRONIC SYSTEMS, AND THE EQUIPMENT AND APPARATUS CONNECTED THERETO. THE WORK REQUIRED HEREIN SHALL CONSIST OF SETTING VOLUME (FLOW) AND SPEED ADJUSTING FACILITIES PROVIDED OR SPECIFIED FOR THE SYSTEM, RECORDING DATA, MAKING TESTS AND PREPARING REPORTS. APPARATUS AND DISTRIBUTION SYSTEMS SHALL BE TESTED AND BALANCED IN ACCORDANCE WITH THE LATEST EDITION OF NEBB PROCEDURAL STANDARDS FOR TESTING – BALANCING AND ADJUSTING OF ENVIRONMENTAL SYSTEMS PUBLISHED BY NEBB. TESTING AND BALANCING SHALL BE DONE BY AN INDEPENDENT TESTING AND BALANCING FIRM WITH AT LEAST TWO (2) YEARS VERIFIABLE EXPERIENCE. THE TESTING AND BALANCING FIRM SHALL BE CERTIFIED BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). CONTRACTOR SHALL FURNISH TO THE ENGINEER A COPY OF ALL DATA OBTAINED ON THE PROJECT.

OPERATING INSTRUCTIONS, CERTIFICATES AND WARRANTIES: THE ORIGINAL OF ALL INSPECTION CERTIFICATES SHALL BE DELIVERED TO THE OWNER AND ONE (1) COPY EACH TO THE ENGINEER PRIOR TO REQUEST FOR FINAL PAYMENT.

THREE (3) COPIES OF OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUFACTURER'S WARRANTIES FOR ALL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL BE PROVIDED TO THE OWNER PRIOR TO SUBMITTING REQUEST FOR FINAL PAYMENT.

PRIOR TO FINAL PAYMENT TO THE CONTRACT, THE CONTRACTOR SHALL BE RESPONSIBLE TO TRAIN THE AUTHORIZED PERSONNEL ON HOW TO SERVICE, START-UP AND SHUT-DOWN THE VARIOUS SECTIONS OF THE SYSTEM. UPON COMPLETION OF THIS PHASE OF THE CONTRACT, THE CONTRACTOR SHALL SECURE A LETTER OF ACCEPTANCE FROM THE OWNER THAT HE IS SATISFIED WITH THE CONDITIONS STIPULATED HEREIN. UPON ACCEPTANCE OF THIS LETTER AND AT THE DISCRETION OF THE ENGINEER, THE FINAL PAYMENT WILL BE MADE.

THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE OF ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM DATE OF SYSTEM ACCEPTANCE.

THE WORK UNDER THIS CONTRACT WILL BE ACCEPTED ONLY AS AN ENTIRE SYSTEM UPON SATISFACTORY COMPLETION OF THE REQUIRED TESTS. NO PARTIAL ACCEPTANCE OF ANY PART OR PORTION OF APPARATUS WILL BE MADE.

INSTALL AND CONNECT ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND DO ALL WORK IN A NEAT AND WORKMANLIKE MANNER AND IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE AS JUDGED BY THE ENGINEER.

ALL EQUIPMENT AND PIPING SHALL BE SO INSTALLED THAT NO OBJECTIONABLE NOISES FROM EQUIPMENT, PIPING OR AIR DISTRIBUTION ARE AUDIBLE IN THE FINISHED AREAS.

GUARANTEE: THIS CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FOLLOWING FINAL INSPECTION AND ACCEPTANCE OF THE BUILDING BY THE ENGINEER AND OWNER. THIS APPLIES TO ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT, REGARDLESS OF SOURCE.

THE ONE (1) YEAR GUARANTEE PERIOD WILL START ON THE DAY OF FINAL INSPECTION AND ACCEPTANCE BY THE OWNER. THE CONTRACTOR SHALL PROVIDE THE ENGINEER A LETTER WITH TWO (2) COPIES STATING THE BEGINNING AND ENDING DATES OF THE GUARANTEE BASED ON THE AFOREMENTIONED STARTING DATES.

EXTENDED GUARANTEE: PROVIDE AN ADDITIONAL FOUR (4) YEAR GUARANTEE ON ALL COMPRESSORS BEYOND THE ABOVE MENTIONED ONE (1) YEAR GUARANTEE PERIOD.

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NORTH CAROLINA SEAL 7883 ENGINEER DONALD ROBERT BRITTAIN 05/13/26

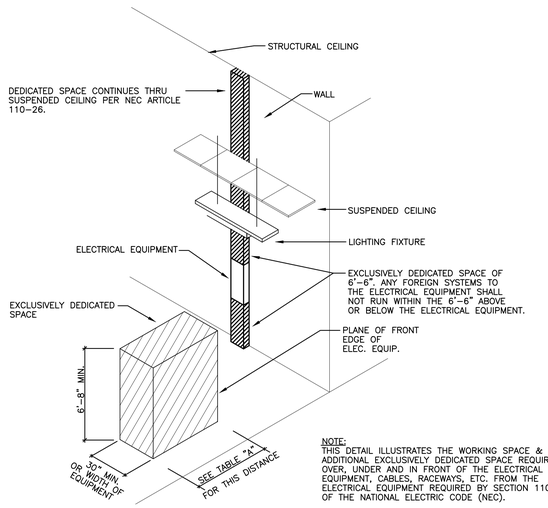
BRITTAIN ENGINEERING, INC.
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BEI

HVAC REPLACEMENT FOR:
BURKE COUNTY
FOOTHILLS HIGHER EDUCATION CENTER
2128 S. STERLING ST., MORGANTON, NC 28655

JOB NO. 222150
DWN BY: RNB
DATE: 05/13/26
SCALE: AS SHOWN

SHEET
M-3



NOTE:
THIS DETAIL ILLUSTRATES THE WORKING SPACE & THE ADDITIONAL EXCLUSIVELY DEDICATED SPACE REQUIRED OVER, UNDER AND IN FRONT OF THE ELECTRICAL EQUIPMENT, CABLES, RACEWAYS, ETC. FROM THE ELECTRICAL EQUIPMENT REQUIRED BY SECTION 110-26 OF THE NATIONAL ELECTRIC CODE (NEC).

TABLE A – CLEARANCES			
VOLTAGE TO GROUNDED NOMINAL	MINIMUM CLEAR DISTANCE (FEET) CONDITION: 1	2	3
0 – 150	3	3	3
151 – 600	3	3.5	4
600 –1000	3	4	5

NOTE: WHERE THE CONDITIONS ARE AS FOLLOWS:

CONDITION 1– EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE THAT ARE EFFECTIVELY GUARDED BY INSULATING MATERIALS.
CONDITION 2– EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE. CONCRETE, BRICK, OR TILE WALLS SHALL BE CONSIDERED AS GROUNDED.
CONDITION 3– EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE.

CLEARANCE FOR ELEC. EQUIPMENT

NTS

DETAILED ELECTRICAL SPECIFICATIONS

SCOPE: FURNISH ALL MATERIALS, LABOR, TOOLS, EQUIPMENT AND SUPERVISION NECESSARY TO INSTALL COMPLETE ELECTRICAL POWER AND LIGHTING SYSTEM IN THE BUILDING AS FURTHER DESCRIBED ON THE ELECTRICAL CONTRACT DRAWINGS.
SUPPLY ALL MATERIALS, FITTINGS AND HARDWARE NECESSARY FOR COMPLETE OPERATING SYSTEMS WITHIN THE OBVIOUS INTENT OF THE DRAWINGS. NO ATTEMPT HAS BEEN MADE TO DETAIL OR LIST EACH AND EVERY ITEM OF MATERIAL. THE ELECTRICAL CONTRACTOR IS CAUTIONED TO READ THE ENTIRE PROJECT DRAWINGS AND SPECIFICATIONS TO ASSURE HIMSELF OF A THOROUGH KNOWLEDGE OF BUILDING CONSTRUCTION, STRUCTURAL RESTRICTIONS TO ELECTRICAL CONTRACT WORK AND TO ASSURE THAT NO REFERENCE ANYWHERE IN THE PROJECT DRAWINGS AND SPECIFICATIONS TO WORK BY THE ELECTRICAL CONTRACTOR IS OVERLOOKED.
CODES, PERMITS AND INSPECTIONS: THE LATEST EDITION OF THE STATE OF NORTH CAROLINA BUILDING CODE WHICH INCLUDES THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE IS HEREBY MADE A PART OF THIS SPECIFICATION. CODE REQUIREMENTS SHALL TAKE PRECEDENCE OVER THESE SPECIFICATIONS WHERE THE CODE REQUIREMENTS EXCEED THAT OF THE SPECIFICATIONS. HOWEVER, THE SPECIFICATIONS SHALL BE FOLLOWED WHERE THEY EXCEED CODE REQUIREMENTS. THE ELECTRICAL CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, OBTAIN THE SERVICES OF THE LOCAL ELECTRICAL INSPECTOR TO MAKE ALL REQUIRED DURING CONSTRUCTION AND COMPLETED ELECTRICAL SYSTEM INSPECTIONS.
MATERIALS AND WORKMANSHIP: ALL MATERIAL BUILT INTO THIS PROJECT SHALL BE NEW OF EQUIVALENT OR BETTER QUALITY THAN THAT SPECIFIED. SPECIFIC NAMES AND CATALOG NUMBERS USED HEREIN ARE TO ESTABLISH THE ITEM FUNCTION, ARRANGEMENT AND QUALITY REQUIRED AND IS IN NO WAY TO RESTRICT COMPETITION. ALL MATERIALS SHALL BE UL APPROVED/LABELED AND/OR BE APPROVED BY A THIRD PARTY TESTING AGENCY IN THE STATE OF NORTH CAROLINA FOR THE PARTICULAR APPLICATION AS USED ON THIS PROJECT.
CONDUCTORS: ALL CONDUCTORS SHALL BE COPPER (#10 AWG AND SMALLER SHALL BE SOLID, AND #8 AWG AND LARGER STRANDED) WITH THHN/THWN INSULATION, INSTALLED IN CONDUIT. CONDUCTORS SHALL BE #12 AWG MINIMUM EXCEPT WITHIN LIGHT FIXTURES, LOW VOLTAGE CONTROLS OR COMMUNICATION/FIRE ALARM EQUIPMENT. CONDUCTOR COLOR CODE SHALL CONFORM TO THE NEC. CONDUCTORS SHALL BE CONTINUOUS FROM TERMINAL TO TERMINAL OR PULL BOX TO PULL BOX. JOINTS SHALL BE MADE WITH IDEAL "WIRENUTS." WIRING TERMINATIONS FOR ALL ELECTRICAL EQUIPMENT SHALL BE TESTED AND APPROVED FOR USE WITH 75°C RATED CONDUCTORS.
RACEWAYS: RACEWAYS SHALL BE UL APPROVED RIGID GALVANIZED STEEL WITH THREADED JOINTS OR METALLIC TUBING (EMT) WITH THREADED STEEL HEXAGONAL COMPRESSION FITTINGS – NEITHER INDENTOR TYPE OR DIE METAL FITTING WILL BE ACCEPTED. CONDUIT UNDER THE FLOOR SLAB AND UNDER GROUND OUTSIDE THE BUILDING MAY BE PVC. FITTINGS IN EMT SHALL BE WEATHER TIGHT (THOMAS AND BETTS SERIES #5123 WITH NYLON INSULATED THROATS), BENDS SHALL BE FACTORY FABRICATED OR MADE "COLD" WITH BENDING TOOL, FREE OF KINKS OR RESTRICTIONS. NO SINGLE BEND SHALL BE IN EXCESS OF 90 DEGREES. THERE SHALL BE NO MORE THAN THE EQUIVALENT OF THREE (3) 90 DEGREE BENDS IN A GIVEN RACEWAY FROM PULL BOX TO PULL BOX. RIGID RACEWAY THREADS SHALL BE CUT STRAIGHT AND TRUE – PIPE ENDS SHALL BE REAMED AND SMOOTHED INSIDE AND OUT. SUPPORT 1-1/2 INCH AND LARGER CONDUIT 10 FEET O/C OR LESS, AND 1 INCH AND SMALLER 6 FEET O/C MAXIMUM. RACEWAYS SHALL BE SUPPORTED DIRECTLY FROM BUILDING STRUCTURE WITH BOLTS, SCREWS, STRAPS, HANGER RODS AND BRACKETS. ALL METALLIC HARDWARE SHALL BE GALVANIZED OR CADMIUM PLATED. NAILS, WIRE AND/OR PERFORATED STRAPS WILL NOT BE ACCEPTED. USE THREADED LOCKNUTS OUTSIDE AND THREADED LOCKNUT AND BUSHING INSIDE ALL RACEWAY CONNECTIONS TO BOXES, DEVICES, PANELS AND GUTTERS. USE NON-METALLIC BUSHINGS ON ALL 1-1/4 INCH AND LARGER CONDUIT. EXPOSED CONDUIT SHALL BE RUN STRAIGHT AND TRUE PARALLEL AND PERPENDICULAR TO PRIMARY BUILDING LINES.
BOXES AND DEVICES: ALL BOXES, PANELS AND EQUIPMENT SHALL BE SUPPORTED DIRECTLY FROM THE BUILDING STRUCTURE AND SHALL NOT DEPEND ON THE FEEDER RACEWAYS FOR SUPPORT. ALL ITEMS SHALL BE CAREFULLY ALIGNED SO THAT COVERS WILL FINISH FLUSH AND STRAIGHT. ALL UNUSED KNOCKOUTS SHALL BE CLOSED WITH BLANKING DEVICES. BOXES IN CONCRETE OR MASONRY SHALL BE 3-1/2 INCH DEEP (MINIMUM) SQUARE 16 GAUGE GALVANIZED STEEL – STEEL CITY SERIES GW. BOXES INSTALLED IN WOOD PARTITIONS SHALL BE STEEL CITY 3-1/2 INCH DEEP GANGABLE SQUARE CORNER TYPE. SURFACE MOUNTED BOXES SHALL BE STEEL CITY #52151 AND/OR #52171 OR EQUAL. RECEPTACLES SHALL BE PASS & SEYMOUR 5362 SERIES OR EQUAL. SWITCHES SHALL BE PASS & SEYMOUR CBS20AC SERIES OR EQUAL. COVER PLATES SHALL BE STAINLESS STEEL (COORDINATE W/ OWNER). PULL BOXES SHALL BE 14 GAUGE GALVANIZED STEEL WELL WITH BLANK COVER SIZED AS REQUIRED BY NATIONAL ELECTRICAL CODE. LOCATE DEVICES AND EQUIPMENT ABOVE FINISHED FLOOR AS FOLLOWS UNLESS OTHERWISE SPECIFICALLY NOTED ON PLANS:
WALL SWITCHES – 4'-0" OR TO NEAREST MASONRY COURSE JOINT.
RECEPTACLES – 1'-6" OR TO NEAREST MASONRY COURSE JOINT.
LIGHT FIXTURES – AS NOTED ON FIXTURE SCHEDULE.
GROUNDING: THE ELECTRICAL SYSTEM AND ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. GREEN EQUIPMENT GROUND WIRE SHALL BE INSTALLED WITH ALL FEEDERS AND BRANCH CIRCUITS AND IT SHALL BE SIZED PER NEC 250.122. WHERE ONLY ONE GROUND ROD IS DRIVEN AS ALLOWED BY THE EXCEPTION IN NEC ARTICLE 250.53(A)(2), THE CONTRACTOR SHALL SUBMIT A TESTING REPORT SHOWING THE ROD PROVIDES A RESISTANCE OF 25 OHMS OR LESS TO THE ENGINEER.
SAFETY SWITCHES: SWITCHES SHALL BE EQUAL TO SQUARE D TYPE HD WITH RATINGS AND FUSING PROVISIONS AS INDICATED.
IDENTIFICATION AND NAMEPLATES: PROVIDE ENGRAVED, LAMINATED BAKELITE (WHITE LETTERS ON BLACK SURFACE) NAMEPLATES SCREWED TO EACH PIECE OF ELECTRICAL DISTRIBUTION EQUIPMENT AS FOLLOWS:
A. PANELBOARDS, SWITCHBOARDS – DESIGNATION L1, P1, ETC.,VOLTAGE, PHASE NUMBER OF WIRES, ETC.; WORDING EXAMPLE: PANEL L1–208V–3 PHASE, 4 WIRE.
B. MOTOR STARTERS, DISCONNECT SWITCHES – UNLESS MOUNTED DIRECTLY ON OR ADJACENT TO IDENTIFY EQUIPMENT: WORDING EXAMPLE: EXHAUST FAN 1, MAKE–UP AIR UNIT.
PROVIDE TYPED DIRECTORIES FOR PANELBOARD BRANCH CIRCUIT IDENTIFICATION. IDENTIFY EACH CIRCUIT BREAKER AS TO THE EXACT ROOM NUMBERS OR AREA SERVED AND THE TYPE OF CIRCUIT, I.E. "ROOMS 101–104 LIGHTS" OR "CAFETERIA EXHAUST FAN". PROVIDE ALL ADDITIONAL LABELING AS REQUIRED BY NEC ARTICLES 110.16 (ARC FLASH HAZARD) & 110.24 (AVAILABLE FAULT CURRENT).
EQUIPMENT CONNECTIONS: THIS CONTRACTOR SHALL BRING ALL REQUIRED ELECTRICAL SERVICE TO ALL EQUIPMENT ITEMS FURNISHED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS OR BY THE OWNER, MAKE FINAL CONNECTIONS, AND LEAVE EQUIPMENT READY FOR OPERATION. THIS CONTRACTOR SHALL COORDINATE WITH ANY AFFECTED TRADE TO ASSURE CORRECT OPERATION OF THE EQUIPMENT ITEM.
CONTROL AND INTERLOCK WIRING: EXCEPT AS OTHERWISE INDICATED ON THE DRAWINGS, ALL CONTROL AND INTERLOCK WIRING SHALL BE PERFORMED BY THE RESPECTIVE CONTRACTORS. THE ELECTRICAL SUBCONTRACTOR SHALL INSTALL ALL STARTERS, PILOT SWITCHES, CONTROL DEVICES AND MISCELLANEOUS ITEMS OF ELECTRICAL EQUIPMENT FURNISHED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS THAT ARE NOT INTEGRALLY MOUNTED WITH THEIR ASSOCIATED EQUIPMENT.
VIBRATION ISOLATION AND SEISMIC RESTRAINT: ALL EQUIPMENT AND CONDUIT FURNISHED AND INSTALLED UNDER THIS CONTRACT SHALL BE SEISMICALLY RESTRAINED BY CHAPTER 16 OF THE INTERNATIONAL BUILDING CODE, VOL. 1 – GENERAL CONSTRUCTION.
PROJECT CLOSE–OUT: DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS: AFTER INSTALLATION HAS BEEN COMPLETED, EQUIPMENT HAS BEEN TESTED, SYSTEMS PLACED IN PERMANENT OPERATION, AND ALL ADJUSTMENTS MADE, THIS CONTRACTOR SHALL DEMONSTRATE THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT HE HAS INSTALLED TO THE OWNER'S REPRESENTATIVE.
OPERATING AND MAINTENANCE MANUALS: THIS CONTRACTOR SHALL PROVIDE THE OWNER WITH A SET OF OPERATION AND MAINTENANCE MANUALS FOR THE EQUIPMENT HE HAS PROVIDED AND INSTALLED ON THE PROJECT. THE FIRST PAGE OF THE MANUALS SHALL IDENTIFY PROJECT AND GIVE NAME, ADDRESS AND PHONE NUMBER OF ARCHITECT, ENGINEER, MECHANICAL AND ELECTRICAL SUB–CONTRACTORS AND ANY SERVICE COMPANIES INVOLVED AND GIVE NAME AND NIGHT PHONE NUMBERS OF EACH PARTY REPRESENTING THE ELECTRICAL CONTRACTOR RESPONSIBLE FOR SERVICE DURING WARRANTY PERIOD.
WARRANTIES / GUARANTEE: THIS CONTRACTOR SHALL DELIVER TO THE OWNER ALL WARRANTIES FOR EQUIPMENT HE HAS PURCHASED AND INSTALLED. THIS CONTRACTOR SHALL ALSO GUARANTEE THAT ALL WORK PERFORMED AND/OR MATERIALS INSTALLED UNDER HIS CONTRACT IS OF THE QUALITY THAT COMPLIES WITH ALL SPECIFIC REQUIREMENTS OF THE PROJECT DOCUMENTS AND INSURES THE OWNER AGAINST ALL DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE.
FINAL CLEAN UP: DURING CONSTRUCTION THIS CONTRACTOR SHALL KEEP THE SITE CLEAR OF DEBRIS AND UPON COMPLETION OF CONSTRUCTION HE SHALL CLEAN UP THE PREMISES AND REMOVE ALL EVIDENCE OF HIS WORK.
RECORD DRAWINGS: AT THE END OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT ONE SET OF THE ELECTRICAL DRAWINGS, UPDATED TO REFLECT CHANGES THAT HAVE TAKEN PLACE DURING THE CONSTRUCTION PERIOD, TO THE OWNER FOR THEIR USE. THE CORRECTED PLANS SHALL INDICATE ALL CHANGES AND DEVIATIONS FROM THE ORIGINAL CONTRACT DOCUMENTS.

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE:

Energy Code: Prescriptive ● Performance ____
ASHRAE 90.1: Prescriptive ____ Performance ____

Lighting schedule

lamp type required in fixture — See Fixture Schedule
number of lamps in fixture — See Fixture Schedule
ballast type used in the fixture — See Fixture Schedule
number of ballasts in fixture — See Fixture Schedule
total wattage per fixture — See Fixture Schedule
total interior wattage specified vs allowed — N/A
total exterior wattage specified vs allowed — N/A

Additional Prescriptive Compliance

C406.2 More Efficient Mechanical Equipment ____
C406.3 Reduced Lighting Power Density ●
C406.4 Enhanced Lighting Controls ____
C406.5 On–Site Supply of Renewable Energy ____
C406.6 Dedicated Outdoor Air System ____
C406.7 High–Efficiency Service Water Heating ____

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
———	CONDUIT
– – – –	CONDUIT UNDERFLOOR OR UNDERGROUND
	ARROW INDICATES HOMERUN, TICKMARKS: NEUTRAL,PHASE,GND.
	POWER PANEL
J	JUNCTION BOX
	DISCONNECT SWITCH; FUSED; NONFUSED
FPN	FUSE PER NAMEPLATE
S_m	MOTOR TOGGLE SWITCH
	MOTOR
	EXISTING OR BY OTHERS
	LIGHT FIXTURE
S, S_3, S_4	SINGLE POLE SWITCH , 3 WAY, 4 WAY
S_P , S_D	PILOT LIGHT , DIMMER
AFF	ABOVE FINISHED FLOOR
	DUPLEX RECEPT , ABOVE COUNTER
WP, GFI, U	WEATHERPROOF, GROUND FAULT, USB
	QUAD–PLEX RECEPTACLE
S	SURGE SUPPRESSION
	TELEPHONE/COMPUTER COMBINATION OUTLET
	T.V. OUTLET, VERIFY HEIGHT
	DUPLEX RECEPT TV OUTLET, VERIFY HEIGHT

EXISTING PANEL P2

22,000 AMPS RMS. SYM. I.C. INTEGRATED EQUIPMENT RATING — SURFACE MOUNTED
120/208 VOLTS, 3 PHASE, 4 WIRE, 225 AMP MAIN BREAKER

SERVES	CIR LOAD	CIR NO.	A	B	C	CIR NO.	CIR LOAD	SERVES
	4.44	1				2	0.82	AHU–1 THRU AHU–7
HP–1	4.44	3	60			4	0.82	
	4.44	5			15	6	0.66	AHU–8 THRU AHU–21 & AHU–32, 33
	4.44	7				8	0.66	
HP–2	4.44	9		60		10	0.73	AHU–22 THRU AHU–31
	4.44	11			15	12	0.73	
	5.17	13				14	0.20	ELEVATOR CAR LIGHTS
HP–3	5.17	15	70			16	1.50	MICROWAVE
	5.17	17				18	1.20	REFRIGERATOR
SPARE		19				20		SPARE
		21				22		
		23				24		
		25				26		
		27				28		
		29				30		
		31				32		
		33				34		
		35				36		
SPACE		37				38		SPACE
		39				40		
		41				42		

TOTAL CONNECTED LOAD: 49.5 KVA — ALL BREAKERS ARE 1P–20A UNLESS OTHERWISE NOTED

PANEL NOTES:

RENOVATED PANEL P2

22,000 AMPS RMS. SYM. I.C. INTEGRATED EQUIPMENT RATING — SURFACE MOUNTED
120/208 VOLTS, 3 PHASE, 4 WIRE, 225 AMP MAIN BREAKER

SERVES	CIR LOAD	CIR NO.	A	B	C	CIR NO.	CIR LOAD	SERVES
	5.76	1				2	0.82	AHU–1 THRU AHU–7
HP–1	5.76	3	70			4	0.82	
	5.76	5			15	6	0.66	AHU–8 THRU AHU–21 & AHU–32, 33
	5.76	7				8	0.66	
HP–2	5.76	9		70		10	0.73	AHU–22 THRU AHU–31
	5.76	11			15	12	0.73	
	5.76	13				14	0.20	ELEVATOR CAR LIGHTS
HP–3	5.76	15	70			16	1.50	MICROWAVE
	5.76	17				18	1.20	REFRIGERATOR
SPARE		19				20		SPARE
		21				22		
		23				24		
		25				26		
		27				28		
		29				30		
		31				32		
		33				34		
		35				36		
SPACE		37				38		SPACE
		39				40		
		41				42		

TOTAL CONNECTED LOAD: 59.19 KVA — ALL BREAKERS ARE 1P–20A UNLESS OTHERWISE NOTED

PANEL NOTES:

042026DR

NORTH CAROLINA SEAL 7883 ENGINEER DONALD GRANT BRITTAIN 05/13/26
BRITTAIN ENGINEERING, INC.
CONSULTING MECHANICAL AND ELECTRICAL ENGINEERS
PO BOX 939
HICKORY, NC 28603
(828) 328-1813

BEI

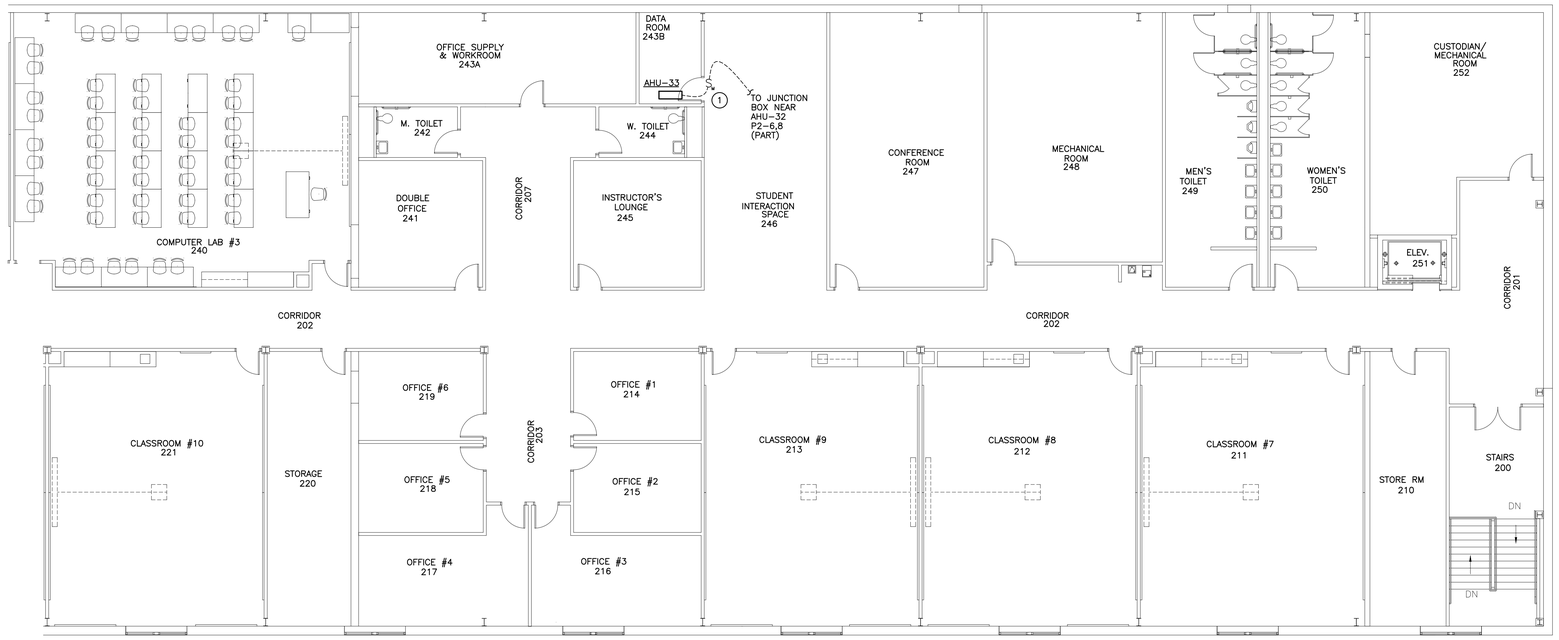
HVAC REPLACEMENT FOR:
BURKE COUNTY
FOOTHILLS HIGHER EDUCATION CENTER
2128 S. STERLING ST., MORGANTON, NC 28655

JOB NO. 222150
DWN BY: DGR
DATE: 05/13/26
SCALE: AS SHOWN

SHEET
E-1

NOTES:

1. DISCONNECT UNIT AS REQUIRED FOR UNIT TO BE REPLACED BY MC. CONNECT REPLACEMENT UNIT COMPLETE. COORD ALL WORK W/ MC. DRAWINGS INDICATE 208V, 2-POLE MOTOR RATED TOGGLE SWITCH AS LOCAL DISCONNECTING MEANS.
2. ORIGINAL DRAWINGS DO NOT INDICATE POWER CIRCUITRY OR LOCAL DISCONNECTING MEANS. DISCONNECT UNIT FROM EXIST CIRCUITRY TO ALLOW FOR MC TO REPLACE UNIT. RECONNECT NEW UNIT COMPLETE. COORD WORK W/ MC.
3. BC-2B IS A NEW UNIT TO BE INSTALLED BY MC. CONNECT TO SAME CIRCUITRY BC-2A AND PROVIDE 208V, 2-POLE MOTOR RATED SWITCH FOR LOCAL DISCONNECTING MEANS. CONNECT UNIT COMPLETE. COORD W/ MC.
4. EXIST HP IS TO BE REPLACED BY MC. EXIST ELECTRICAL DRAWINGS FOR UNIT INDICATE 240/60/3/3R FUSED DISCONNECT W/ CIRCUITRY OF (3) #2, #6 GND, 1¼"C. VERIFY. REMOVE DISCONNECT COMPLETE. INSTALL NEW 240/100/3/3R FUSED DISCONNECT AND RECONNECT TO EXIST CIRCUITRY. IF CIRCUITRY DIFFERS FROM ORIGINAL DRAWING INFORMATION, INSTALL MINIMUM CIRCUITRY OF (3) #4, #8 GND, 1"C.
5. HP IS TO BE REPLACED BY MC. EXIST ELECTRICAL DRAWINGS FOR UNIT INDICATE 240/100/3/3R FUSED DISCONNECT W/ CIRCUITRY OF (3) #2, #6 GND, 1¼"C. VERIFY. DISCONNECT UNIT AS REQUIRED. RECONNECT NEW UNIT COMPLETE.



PARTIAL SECOND FLOOR PLAN - HVAC POWER

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

GENERAL NOTES:

- A MAJORITY OF THIS PROJECT IS A DIRECT REPLACEMENT OF HVAC EQUIPMENT. EC SHALL DISCONNECT AND RECONNECT EACH UNIT OR PERFORM OTHER WORK WHERE INDICATED.
- CIRCUITRY INDICATED IS FROM ORIGINAL DRAWINGS AND SHALL BE FIELD VERIFIED. MAKE CHANGES AS REQUIRED TO ASSURE PROPER OPERATION OF ALL ELECTRICAL.

PARTIAL LOWER FLOOR PLAN - HVAC POWER

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

042126DR

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NORTH CAROLINA PROFESSIONAL SEAL 7883 ENGINEER DANIEL GRIFFIN
05/13/26

HVAC REPLACEMENT FOR:
BURKE COUNTY
FOOTHILLS HIGHER EDUCATION CENTER
2128 S. STERLING ST., MORGANTON, NC 28655

JOB NO.	222150
DWN BY:	DGR
DATE:	05/13/26
SCALE:	AS SHOWN
SHEET	E-2