

### **DEMOLITION NOTES**

1. COORDINATE ALL DEMOLITION WITH OWNER PRIOR TO COMMENCING WORK.

2. M.C. SHALL COORDINATE VERY CLOSELY WITH ALL TRADES, EACH SHEET OF CONSTRUCTION DOCUMENTS, AND SPECIFICATIONS BEFORE PERFORMING ANY DEMOLITION WORK TO AVOID REMOVING MATERIAL WHICH IS TO REMAIN AND/OR BE REUSED.

- 3. DEMOLITION INDICATED IS DIAGRAMMATIC ONLY. M.C. SHALL FIELD VERIFY EXACT LOCATION AND QUANTITY OF MATERIAL TO BE DEMOLISHED BEFORE SUBMITTING BID. COORDINATE WITH ENGINEER AND OWNER.
- 4. MECHANICAL CONTRACTOR SHALL PROVIDE SUITABLE PROTECTION FOR ADJACENT AREAS AND EQUIPMENT NOT SUBJECT TO DEMOLITION.
- 5. M.C. SHALL BE RESPONSIBLE FOR DAILY CLEAN UP OF WORK AREA AND LEGAL DISPOSAL OF ALL MATERIALS SUBJECT TO DEMOLITION.
- 6. E.C. SHALL BE RESPONSIBLE FOR DISCONNECTING EXISTING WIRING TO ALL ELECTRICAL COMPONENTS ASSOCIATED WITH EXISTING EQUIPMENT AS REQUIRED TO REMOVE/RELOCATE EXISTING EQUIPMENT PER CONSTRUCTION SCHEDULE.
- 7. M.C. SHALL DEMOLISH EXISTING AHUS, INDICATED DUCT WORK, AND ALL ASSOCIATED MATERIALS PER CONSTRUCTION SCHEDULE.

8. PATCH ALL WALL PENETRATIONS AFTER DEMOLITION OF MECHANICAL ITEMS.

SUPPLY AIR DIFFUSER

RETURN AIR DIFFUSER EXHAUST AIR DIFFUSER

HUMIDISTAT ± 0.5° RH ACCURACY

CONNECT TO EXISTING XX DUCT DEMOLITION

DEMOLITION AREA

\_\_\_\_\_ MANUAL VOLUME DAMPER SB ← GRILLE TYPE - SEE SCHEDULE 150 AIR QUANTITY - CFM

FAN CONTROL SWITCH BY E.C. THERMOSTAT  $\pm$  0.5° F ACCURACY ☐ PIPE ELBOW

CH PIPE ELBOW DOWN 나 PIPE TEE

<u>½"CW</u> (SIZE) COLD WATER

SD DUCT SMOKE DETECTOR MOUNTED ON SIDE OF DUCT, ACCESS DOOR, AND SD ACCESSIBILITY THROUGH CEILING (IF APPLICABLE). INTERLOCKED WITH

RESPECTIVE AIR HANDLING UNIT

EMERGENCY SHUTDOWN BUTTON INTERLOCKED WITH FAN CONTROLS ON ALL SUPPLY, RETURN, AND EXHAUST FANS VIA 24V CONTROL RELAYS BY M.C. MOUNT 42" A.F.F.

TEMPERATURE SENSOR. MOUNT 48" (TS) A.F.F. ± 0.5° F ACCURACY. ± 2° F ADJUSTABLE.

MOTOR OPERATED DAMPER. OPEN WHEN RESPECTIVE AHU IS ON. CLOSE WHEN RESPECTIVE AHU IS OFF.

M.C. SHALL SUBCONTRACT A LICENSED ELECTRICAL CONTRACTOR WHO SHALL PROVIDE ALL NECESSARY LOCAL DISCONNECTS, 480/3/60 AND 120/1/60 POWER WIRING IN EMT METALLIC CONDUIT. FIELD VERIFY EXACT LOCATION OF EXISTING PANELS WITH SPARE CIRCUITS PRIOR TO SUBMITTING BID. PROVIDE ENGRAVED PLASTIC LABELS FOR DISCONNECTS, LOAD SUMMARY, AND TYPED REVISED PANEL SCHEDULE. ALL WORK SHALL MEET OR EXCEED LOCAL AND STATE BUILDING CODES. ELECTRICAL PERMIT BY E.C. ALL WIRING SHALL BE THNN COPPER CONDUCTORS.

### ANY ASBESTOS ABATEMENT SHALL BE BY OWNER.

**GENERAL NOTES** . MECHANICAL CONTRACTOR (M.C.) SHALL INSTALL MANUAL VOLUME DAMPERS AT BRANCH DUCTS AND AS SHOWN IN BRANCH DUCT DETAILS. 2. M.C. SHALL FIELD VERIFY DUCT ROUTING AND NOTIFY ENGINEER OF RECORD OF ANY CONFLICTS

3. ALL DUCT SIZES ARE INSIDE CLEAR.

BE DUCTMATE OR TDL.

4. M.C. SHALL USE FOIL GRIP AFG-1403-3 DUCT TAPE ON ALL LONGITUDINAL SEAMS AND TRANSVERSE DUCT JOINTS OF CONCEALED DUCT. 5. LONGITUDINAL SEAMS SHALL BE PITTSBURGH LOCK. BUTTON PUNCH SNAP LOCK IS NOT ALLOWED. TRANSVERSE JOINTS ON RECTANGULAR DUCTS SHALL BE DUCTMATE. ALL MEDIUM PRESSURE DUCT SHALL

6. DUCT PRESSURE CLASSIFICATION IS BASED ON THE MAXIMUM VELOCITY AND STATIC PRESSURE THROUGH THE SUPPLY AND RETURN DUCT SYSTEMS. ALL SEAMS, JOINTS, FASTENER PENETRATIONS AND CONNECTIONS ARE TO BE SEALED PER SMACNA STANDARDS BASED ON DUCT CLASSIFICATION. 7. HOLD ALL DUCT WORK LEVEL AND TIGHT AGAINST BOTTOM OF STRUCTURE UNLESS OTHERWISE INDICATED. CLOSELY COORDINATE WITH LIGHTING/ELECTRICAL CONTRACTOR BEFORE ANY DUCT IS FABRICATED. M.C. SHALL BE RESPONSIBLE FOR COORDINATED DETAILED MECHANICAL SHOP DRAWINGS OF EXACT DUCT AND

PIPE ROUTING AND LOCATIONS. 8. M.C. SHALL COORDINATE WITH ALL TRADES AND PROVIDE OFFSETS AND TRANSITIONS AS NECESSARY TO CORRECT ANY INTERFERENCES.

EQUIPMENT SHALL MEET OR EXCEED THE REQUIREMENTS OF ALL STATE AND LOCAL BUILDING CODES REGARDING SEISMIC CONSIDERATIONS IN RELATION TO THEIR INSTALLATION. 10. PROVIDE AN NEBB OR AABC CERTIFIED TEST AND BALANCE OF EACH AHU SUPPLY, RETURN AND OUTSIDE

11. PROVIDE 1" ANTI-MICROBIAL NEOPRENE DUCT LINER ON OUTSIDE AIR/SUPPLY DUCTS TO/FROM AIR HANDLING UNITS. INCREASE INDICATED DUCT SIZE 1" ON ALL SIDES WHERE LINER IS INSTALLED.

HP HORSEPOWER HRS HOT ROLL STEEL IN.W.G. INCHES OF WATER GAUGE MAXIMUM MBH BTU/HR x 1000 MFR MANUFACTURER MIN. MINIMUM NOM. NOMINAL

COOLING TOWER CONDENSER WATER SUPPLY CWS CONDENSER WATER RETURN DRY BULB TEMPERATURE, DEGREES FAHRENHEIT DEW POINT TEMPERATURE,

FEET PER MINUTE

GALLONS PER MINUTE

HHWR HEATING HOT WATER RETURN

HEATING HOT WATER SUPPLY

FT.W.G. FEET OF WATER GAUGE

MAINTAIN ALL NEC, STATE

CLEARANCES. TYPICAL.

-EXISTING 36X20

RETURN DUCT

─NEW FLEXIBLE DUCT CONNECTION

- MAINTAIN MFR.

RECOMMENDED

CLEARANCES.

EXISTING 36X24

RETURN DUCT

-ROUTE NEW CONDENSATE TO

EXISTING FLOOR

DRAIN. SIZE SAME

AS UNIT CONNECTION

EXISTING 36x36 RETURN DUCT

-NEW AHU-2 OUTSIDE AIR

DUCT CONNECTION

─ NEW RETURN

EXISTING 36X30 RETURN DUCT

PLENUM

FIRST FLOOR HVAC PLAN

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

EQUIPMENT CONNECTION.

DUCT. SIZE SAME AS

AND NEC

TYPICAL

OGEE UP

AND LOCAL BUILDING CODE

- NEW RETURN PLENUM

rNEW AHU−1 OUTSIDE AIR

DUCT. SIZE SAME AS

EQUIPMENT CONNECTION

EXISTING

EXISTING 48"x84" OUTSIDE AIR INTAKE

LOUVER AND PLENUM BOX TO REMAIN

AS IS

**√**Zy

M2.1

-EXISTING 48"x84" OUTSIDE AIR INTAKE

LOUVER AND PLENUM BOX TO REMAIN

ELEC. PANELS-

EXISTING PNL-G

▲ AHU-1 VFD

FLEXIBLE

CONNECTION-

DUCT

NEW AHU-1

-NEW FLEXIBLE

AHU-2

FLEXIBLE

CONNECTION-

DUCT

DUCT CONNECTION

ROUTE NEW CONDENSATE

TO EXISTING FLOOR

DRAIN. SIZE SAME AS

UNIT CONNECTION SIZE.

NEW SUPPLY DUCT SIZE

SAME AS EXISTING.-

SUPPLY 52X24 DUCT

EXTEND NEW

CHW PIPING

TO NEW AHU

SEE PIPING

SCHEMATIC

EXISTING

AHU-2 VFD -

EXTEND NEW

TO NEW AHU

CONNECTIONS.

SUPPLY

70X24

CHW PIPING

SEE PIPING SCHEMATIC-

 $\bigcirc$ 

CONNECTIONS.

(SD)

9. ALL SUPPLY, RETURN AND EXHAUST DUCT, HOT, COLD AND CONDENSATE WATER, DRAIN PIPING AND

AIR. NO TAB WORK OUTSIDE MECHANICAL ROOM. 12. ALL CONDENSATE LINES SHALL BE INSULATED WITH 1" FIBERGLASS INSULATION WITH VAPOR BARRIER AND

13. ALL THERMOMETERS AND PRESSURE GAUGES IN MECHANICAL ROOMS SHALL BE LOCATED NEAR EYE LEVEL FOR READING.

**ABBREVIATIONS** ACCESS DOOR AD AIRFOIL FAN WHEEL ABOVE FINISHED FLOOR AIR HANDLING UNIT CFM CUBIC FEET PER MINUTE WATER COOLED CHILLER CHWS CHILLED WATER SUPPLY CHWR CHILLED WATER RETURN O.A. OUTSIDE AIR 0.C. ON CENTER O.D. DEGREES FAHRENHEIT PC DIAMETER PD PRESSURE DROP EXHAUST FAN QTY. QUANTITY ELECTRICAL CONTRACTOR R.A. RETURN AIR EFF.% MOTOR EFFICIENCY—PERCENT RETURN AIR FAN ENTERING WATER TEMPERATURE REHEAT COIL FULL LOAD AMPS RPM WATER FLOW METER DEVICE S.A. SUPPLY AIR FINS PER INCH

LWT LEAVING WATER TEMPERATURE MECHANICAL CONTRACTOR OUTSIDE DIAMETER PACKAGED AIR CONDITIONING UNIT PLUMBING CONTRACTOR REVOLUTIONS PER MINUTE

WET BULB TEMPERATURE,

DEGREES FAHRENHEIT

SUPPLY FAN STATIC PRESSURE (INCHES OF WATER) UNIT HEATER VOLUME DAMPER (MANUAL OPPOSED BLADE)

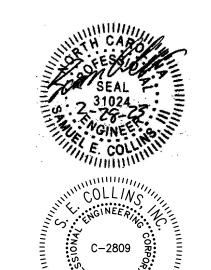
1817 E. Innes St., Suite 201 Salisbury, NC 28146 E-mail: scollins@scollinseng.com Tel: (704) 638-6337

Fax: (704) 638-6340

**DEPARTMEN** 

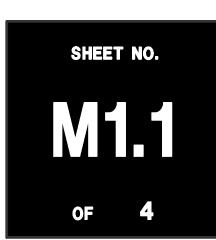
CHECKED BY:

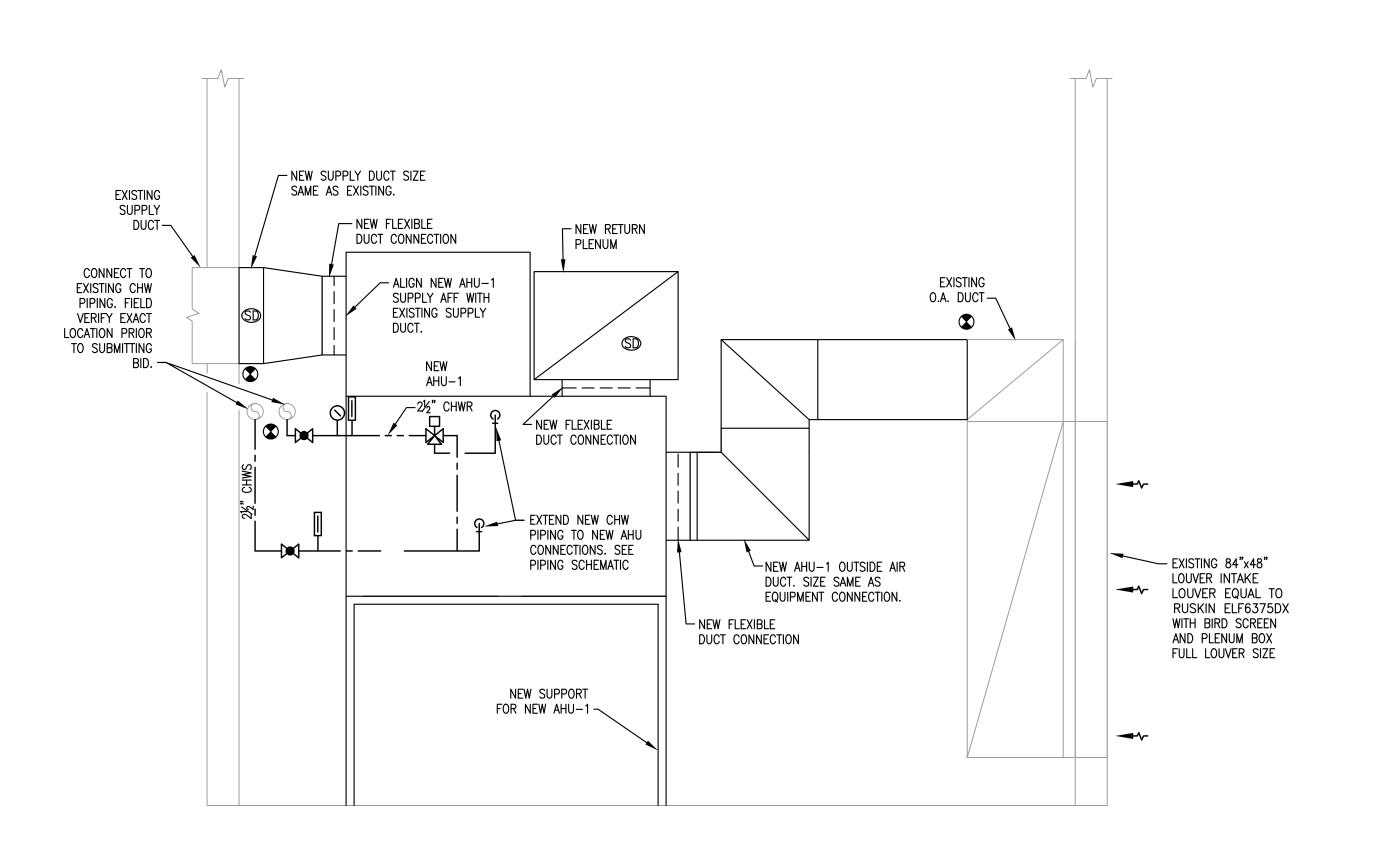
**FEBRUARY 28, 2023** 



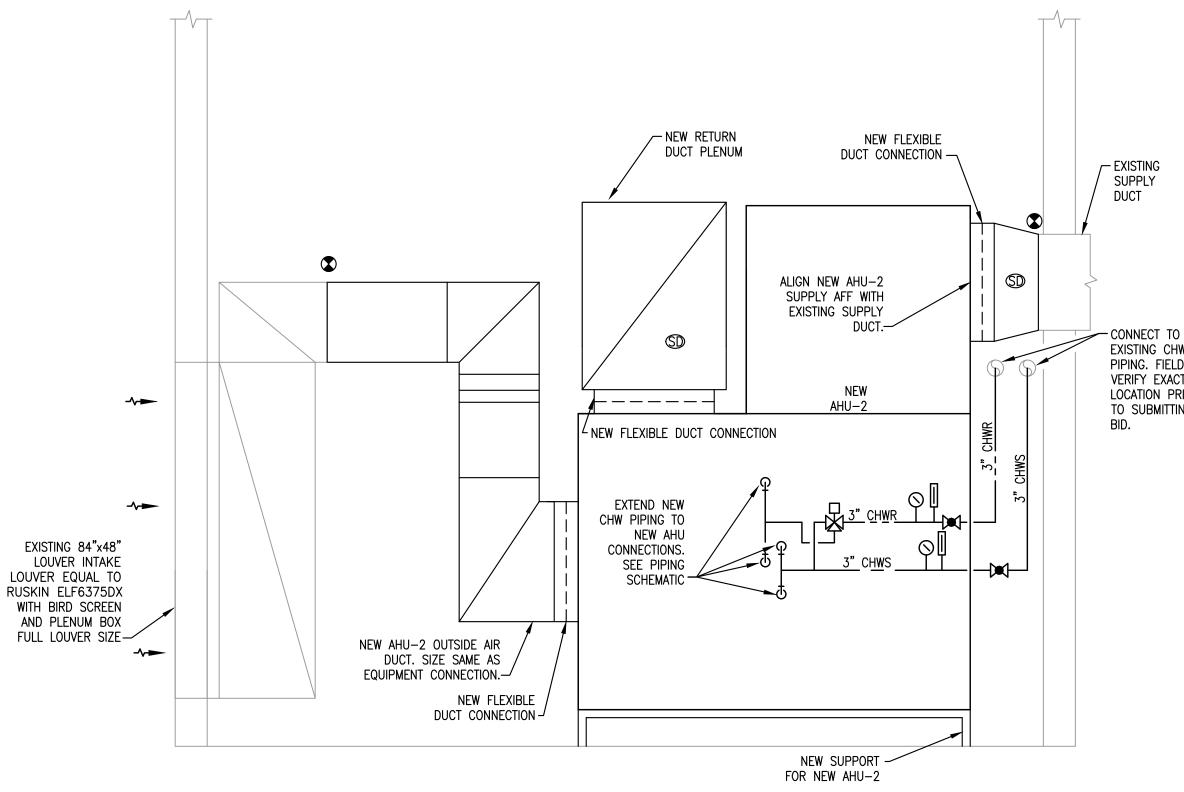
DUPLICATION OR REUSE OF THIS DRAWING IN WHOLE OR IN PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF

S. E. COLLINS, INC. ©2023 S. E. COLLINS, INC.



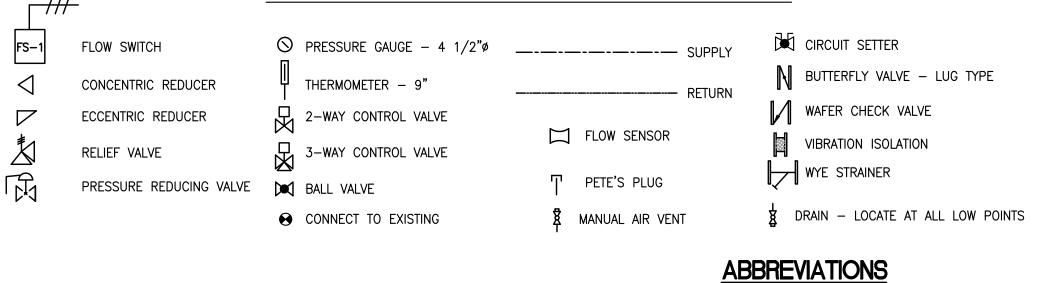


 $\frac{\text{A-A HVAC SECTION}}{\text{SCALE: } 1/2" = 1'-0"}$ 

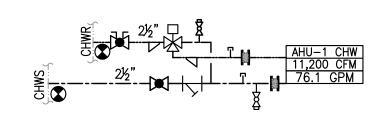


# $\frac{2}{\text{M2.1}} \frac{\text{B-B HVAC SECTION}}{\text{SCALE: } 1/2" = 1'-0"}$

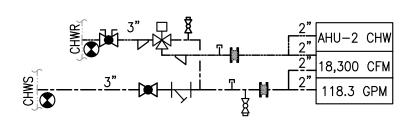
## CHILLED WATER PIPING SYMBOLS LEGEND



- TT TEMPERATURE TRANSMITTER TE — TEMPERATURE ELEMENT
- FT FLOW TRANSMITTER
- FS FLOW SWITCH
- CC CONTROL CONTRACTOR EC - ELECTRICAL CONTRACTOR
- MC MECHANICAL CONTRACTOR
- PC PLUMBING CONTRACTOR









# HOT WATER PIPING SYMBOLS LEGEND

MANUAL AIR VENT

T PETE'S PLUG

FS-2 🖒 FLOW SWITCH

PRESSURE REDUCING VALVE

SUCTION DIFFUSER

RELIEF VALVE

----- SUPPLY

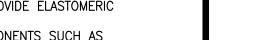
----- RETURN

- PRESSURE GAUGE 4½"ø THERMOMETER - 9"
- 以 2−WAY CONTROL VALVE 岗 3−WAY CONTROL VALVE
- **⋈** BALL VALVE
- CIRCUIT SETTER
- N BUTTERFLY VALVE LUG TYPE ✓ WAFER CHECK VALVE
- ★ CONNECT TO EXISTING
- VIBRATION ISOLATION WYE STRAINER CT — CURRENT TRANSMITTER
- FS FLOW SWITCH CC - CONTROL CONTRACTOR
- EC ELECTRICAL CONTRACTOR DRAIN - LOCATE AT ALL LOW POINTS

# **PIPING NOTES**

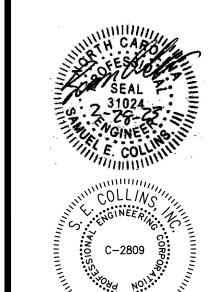
- 1. CHILLED WATER PIPING SHALL BE SCHEDULE 40 BLACK STEEL A-53 FOR 2½" AND LARGER.

  2. CHILLED WATER PIPING SHALL BE TYPE-L HARD COPPER
- FOR 2" AND SMALLER. 3. INTERIOR EXPOSED CHILLED WATER PIPING SHALL HAVE 2" FIBERGLASS INSULATION WITH VINYL JACKET WITH PREFORMED FITTINGS . SEE DETAIL SHEET FOR LABELING. 4. PROVIDE VIBRATION ISOLATION AND FLEX CONNECTIONS
- AS INDICATED ON SCHEMATICS. PROVIDE ELASTOMERIC VIBRATION ISOLATION. 5. ALL EQUIPMENT AND MAJOR COMPONENTS SUCH AS BUTTERFLY VALVES SHALL BE INSTALLED WITH FLANGE
- CONNECTIONS. 6. SEE SCHEMATIC FOR EXACT TRIM REQUIRED ON ALL



DRAWN BY: CHECKED BY:

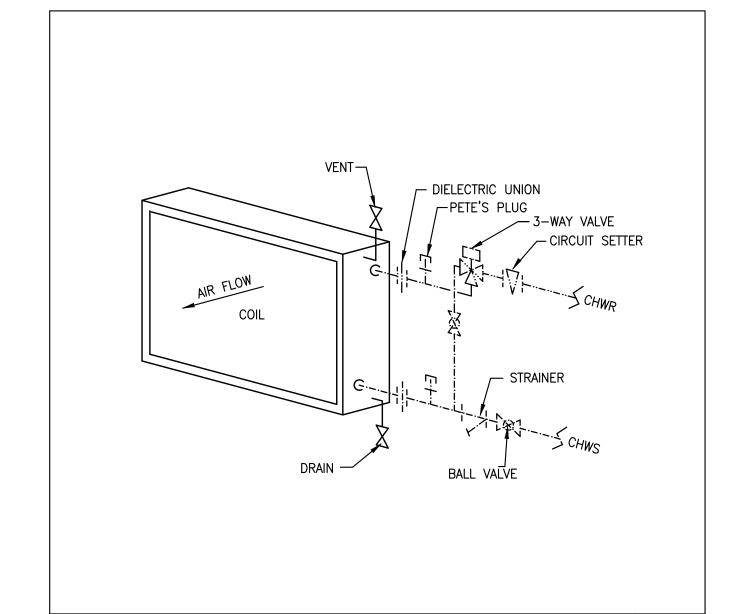
> DATE: **FEBRUARY 28, 2023**



DUPLICATION OR REUSE OF THIS DRAWING IN WHOLE OR IN PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF

S. E. COLLINS, INC. ©2023 S. E. COLLINS, INC.

SHEET NO.



TYPICAL CHILLED WATER COIL PIPING DETAIL Scale: NONE

EXISTING CHW PIPING. FIELD VERIFY EXACT LOCATION PRIOR TO SUBMITTING

MECHANICAL SECTIONS AND CHW PIPING

,S. E. COLLINS

1817 E. Innes St., Suite 201 Salisbury, NC 28146

Tel: (704) 638-6337 Fax: (704) 638-6340

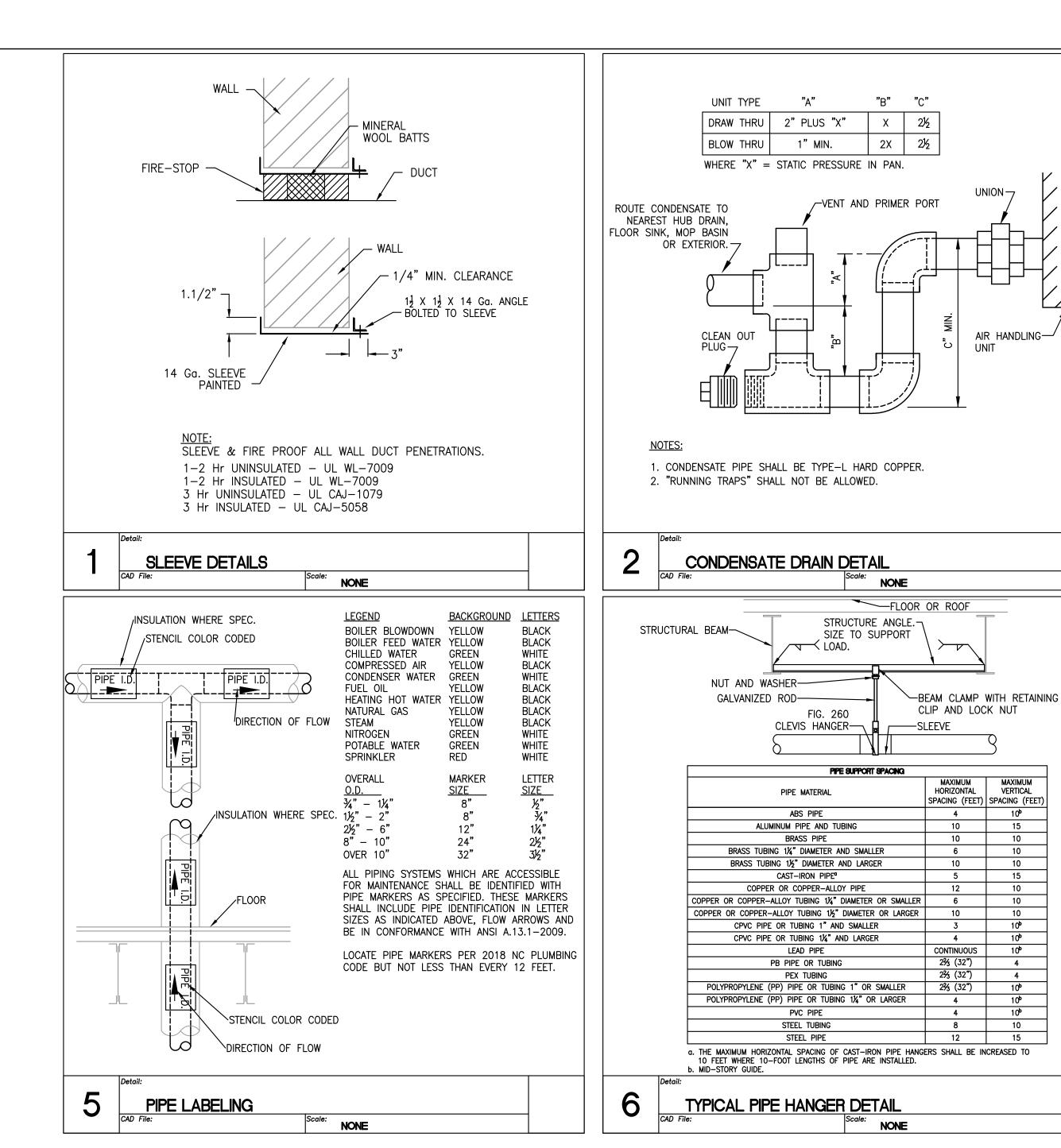
HEALTH DEPARTMENT

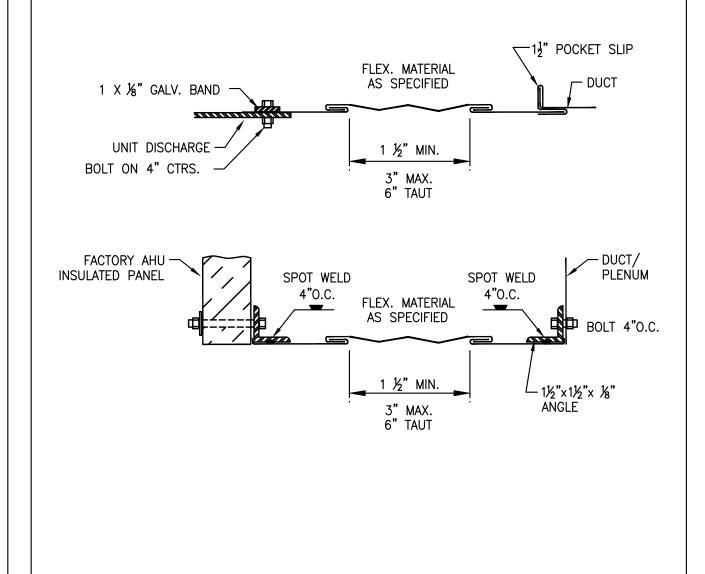
E-mail: scollins@scollinseng.com

**CONSULTING** 

**ENGINEERS** 

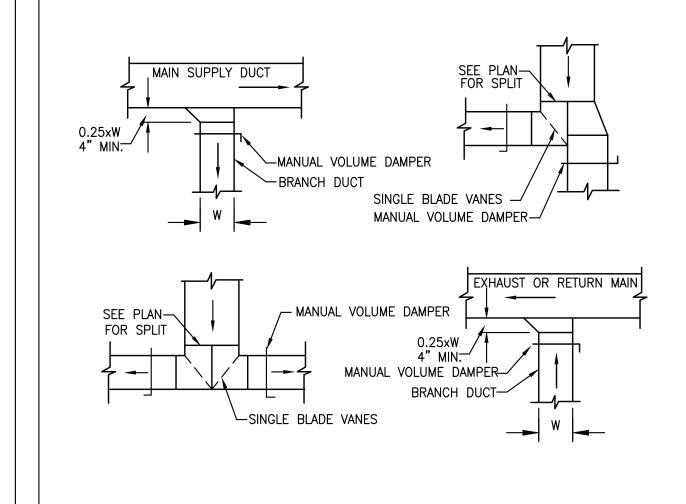
PROJECT NO





icale: **NONE** 

TYPICAL FLEX CONNECTION



NONE

FULL-LOAD MINIMUM EFFICIENCIES

OF ENERGY EFFICIENT MOTORS

HP | 2-POLE | 4-POLE | 6-POLE | 2-POLE | 4-POLE | 6-POLE

1.0 --- 80.0 77.0 72.0 80.0 77.0

1.5 80.0 81.5 81.5 80.0 81.5 82.5

2.0 81.5 81.5 82.5 81.5 81.5 84.0

 3.0
 81.5
 84.0
 84.0
 82.5
 85.5
 85.5

5.0 82.5 85.5 85.5 85.5 85.5 85.5

7.5 | 85.5 | 86.5 | 86.5 | 86.5 | 87.5 | 87.5 10.0 86.5 87.5 88.5 87.5 87.5 87.5 15.0 87.5 89.5 88.5 88.5 89.5 88.5 20.0 88.5 89.5 89.5 88.5 89.5 88.5 25.0 89.5 90.2 90.2 89.5 91.0 90.2 30.0 89.5 91.0 91.0 89.5 91.0 90.2 | 40.0 | 90.2 | 91.7 | 91.7 | 90.2 | 91.7 | 91.7 50.0 91.0 91.7 91.7 91.0 91.7 91.7 60.0 91.7 92.4 92.4 91.7 92.4 92.4 75.0 91.7 93.0 92.4 91.7 93.0 92.4

100.0 91.7 93.0 93.0 92.4 93.6 93.0

125.0 92.4 93.6 93.0 93.6 93.6 93.0

150.0 92.4 94.1 93.6 93.6 94.1 94.1 200.0 93.6 94.1 93.6 94.1 94.1 94.1

250.0 93.6 94.3 94.5 94.5 94.1 94.1

300.0 94.1 94.5 94.5 94.5 94.5 94.1 350.0 94.1 94.5 94.5 94.5 94.5 94.1

400.0 94.5 94.5 --- 94.5 94.5 ---

450.0 95.0 95.0 --- 94.5 94.5 ---500.0 95.0 95.0 --- 94.5 95.0 ---

95°F | 78°F | 75°F ± 2 | 60% ± 10 | 14°F | 10°F | 70°F ± 2 | NA

OPEN MOTORS ENCLOSED MOTORS

TYPICAL DUCT FITTINGS

DAVIDSON COUNTY AHU REPLACEMENT 915 GREENSBORO STREET LEXINGTON, NC 28144

S. E. COLLINS

**CONSULTING** 

1817 E. Innes St., Suite 201

E-mail: scollins@scollinseng.com

Salisbury, NC 28146

Tel: (704) 638-6337

Fax: (704) 638-6340

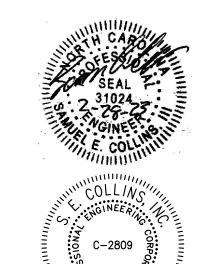
DEPARTMENT

HEALTH

**ENGINEERS** 

DRAWN BY: CHECKED BY:

DATE: **FEBRUARY 28, 2023** PROJECT NO:



DUPLICATION OR REUSE OF THIS DRAWING IN WHOLE OR IN PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF

S. E. COLLINS, INC. ©2023 S. E. COLLINS, INC.

SHEET NO.

FOR SINGLE-SPEED POLYPHASE MOTORS MINIMUM ACCEPTABLE NOMINAL FULL-LOAD EFFICIENCY HORSEPOWER MIN. EFFICIENCY % 1 – 4 78.5 84.0 5 – 9 10 - 19 85.5 20 - 49 \_\_\_50 *-* 99 90.2 100 - 124 91.7 125 OR GREATER 92.4

	NEW AIR HANDLING UNIT SCHEDULE																																		
	CHILLED WATER COIL PERFORMANCE															HOT WATER COIL PERFORMANCE								ELECTRICAL											
					SUPPLY	RETURN	EXTERNAL		MIN.	MIN.	ENTE	RING AIR	LEAV	ING AIR			ENTERING WATER					EAT	LAT		TOTAL	ENTED	INO WATER .		MAX.	SUPPLY FA	N MTR. RE	ETURN FAN	I MTR.	'	OTAL
EQUIPMENT NUMBER	MED	MODEL	SUPPLY CFM	MIN.	MOTOR	MOTOR	STATIC		TOTAL	SENSIBLE	DRY BULB	WET BULB	DRY BUL	B WET BULE DEG. F	MAX. COIL FACE VELOCIT	COILS	DEG. F	LEAVING WATE DEG. F	R FLOW RATE GPM	FLOW	PRESSURE	DRY BULB DEG. F	DRY BULB DEG. F	MAX. COIL FACE VELOCITY	CAPACITY	FLOW ENTER	DEG. F	LEAVING WATER DEG. F	PRESSURE DROP FTWG	ELA	MOCD		IOCP '	POWER WE	EIGHT
NUMBER	MILK	MODEL	CFM	U.A.	ПР	ПР	PRESSURE	FLUID	MIDIT	MIDIT	DEG. F	DEG. F	DEG. F	DEG. F	PACE VELOCIT	T KOWS/FPI	DEG. F	DEG. F	RAIL GPM	VELOCITY FP.	DROP FIWG	DEG. F	DEG. F	FACE VELOCITY	MIDIT	RAIL GPM	JEG. F	DEG. F	DROP FIWG	FLA	MOCP	FLA   N	/IOCP	/P/NZ   1	DS.
AHU-1	DAIKIN	CAH024GDAM	11,200	1,120	15.0		3.1" WC	WATER	389.98	340.26	80.0	67.0	53.9	52.9	500	4/12	44.0	54.3	76.1	4.2	0.83									18.0	35.0		46	50/3/60 2	2,458
AHU-2	DAIKIN	CAH042GDAM	18,300	1,830	20.0		3.0" WC	WATER	588.72	506.89	80.0	67.0	54.8	53.4	500	4/10	44.0	54.0	118.3	4.2	0.67									24.0	50.0		46	,0/3/60 4	4,112
AHU-2	DAIKIN	CAH042GDAM	18,300	1,830	20.0		3.0" WC	WATER	588.72	506.89	80.0	67.0	54.8	53.4	500	4/10	44.0	54.0	118.3	4.2	0.67										50.0		$\perp$	46	460/3/60 4

- 1. AIR HANDLING UNIT SCHEDULE INFORMATION IS BASED UPON DAIKIN. TRANE, VTS AND CARRIER ARE APPROVED EQUALS.
- 2. FAN MOTORS SHALL BE ODP AND RATED FOR VFD WITH SHAFT GROUNDING RINGS. 3. ALL COILS SHALL BE ARI TESTED, RATED, AND CERTIFIED.
- 4. PROVIDE TEMPERATURE SENSOR FOR EACH AHU.
- 5. PROVIDE TWO SETS OF DISPOSABLE 2" PLEATED MERV 8 FILTERS FOR EACH AIR HANDLING UNIT.
- 6. PROVIDE STAINLESS STEEL DRAIN PANS AND COIL CASING.

HVAC DESIGN DATA									
PROJECT	LOCATION	LOCATION SUMMER OUTSIDE INSIDE					WIN TSIDE	NTER INSIDE	
DAVIDSON COUNTY HEALTH DEPARTMENT ,	LEXINGTON, NC	DRY BULB W	VET BULB	DRY BULB	% HUMIDITY		WET BULB	DRY BULB	% HUMIDITY
AHU REPLACEMENT	LLAINGTON, NO	95°F	78°F	75°F + 2	60% + 10	14°F	10°F	70°F + 2	NΔ

(1) CONTROL DIAGRAM FOR AHU-1 (TYPICAL AHU-2)
SCALE: NOT APPLICABLE

Π <b>−</b> 1	MIXED AIR TEMPERATURE TRANSMITTER WITH AVERAGING ELEMENT
Π <b>−</b> 2	COOLING SUPPLY AIR TEMPERATURE TRANSMITTER WITH AVERAGING ELEMENT
TT-3	OUTSIDE AIR TEMPERATURE TRANSMITTER WITH AVERAGING FLEMENT

LL-1 LOW LIMIT FREEZE STAT WITH AVERAGING ELEMENT & MANUAL RESET (2-STAGE) SD-1 DUCT MOUNTED SMOKE DETECTOR-RETURN

SD-2 DUCT MOUNTED SMOKE DETECTOR-SUPPLY PS-1 0-2" PRESSURE SWITCH FOR PRE-FILTERS PS-2 SUPPLY AIR FAN STATUS PRESSURE SWITCH

PG-1 4.5" DWYER 2000 SERIES MAGNEHELIC AIR - RANGE 0-2"W.G.FILTER GUAGE HT-1 OUTSIDE AIR HUMIDITY TRANSMITTER V-1 CHILLED WATER 3-WAY VALVE

2. ELECTRICAL POWER TO CONTROL PANEL SHALL BE BY ELECTRICAL CONTRACTOR. 3. PROVIDE FULL POINT LIST INTERFACE AND GRAPHICS FOR ALL NEW CONTROL POINTS INTO

1. ALL CONTROLS SHALL COMMUNICATE TO EXISTING

TRIDIUM BAS SYSTEM.

EXISTING TRIDIUM BAS.

SYSTEM: Air Handling Units/CHW Pumps/Chillers SYSTEM FEATURES ANALOG PROGRAMS ALARMS NOTES SYSTEM POINT DESCRIPTION Air Handling Unit AHU-1, AHU-2 <u>IT-1 Mixed Air Temp</u> IT-2 Supply Air Temp TT-4 Return Air Temp LL—1 Low Limit Freeze Stat SD-1 Return Air Smoke Detector SD-2 Supply Air Smoke Detector PS-1 Return Air Filter DP Pre Filters PS-2 Supply Air Fan Status Communications V-1 3-Way Chilled Water Valve HT-1 Outside Air Humidity Transmitter Existing Chilled Water Pumps ∏—6 Chilled Water Supply Temperature T-7 Chilled Water Return Temperature CHWP-Chilled Water Pump Auto Reset Alarm Communications EXISTING CHILLER Communications Start/Stop 

1. Refer to control diagram for direct wired safety controls and interlocks.

2. Refer to separate sequence of operation. 3. Color graphics shall be dynamic points.

4. Binary inputs consist of 2 distinct stages of alarm condition.



# ,S. E. COLLINS **CONSULTING**

1817 E. Innes St., Suite 201 Salisbury, NC 28146 E-mail: scollins@scollinseng.com Tel: (704) 638-6337 Fax: (704) 638-6340

GENERAL NOTES:

2. ALL HVAC CONTROL COMPONENTS SHALL BE PROVIDED BY CONTROLS CONTRACTOR INCLUDING CONTROL PANELS.

4. SMOKE DETECTORS SHALL BE PROVIDED AND WIRED BY

CONTRACTOR.

11. MONITOR KWH AND DEMAND.

12. PROVIDE DEMAND LIMITING.

OR TRANE.

13. MONITOR AND CONTROL EXHAUST FANS.

CONTROL COMPONENTS SHOWN DO NOT REPRESENT ACTUAL EQUIPMENT. CONTROL COMPONENTS REPRESENT CONTROL

REFER TO ELECTRICAL PLANS FOR LOCATION OF STARTERS AND DISCONNECTS.

ELECTRICAL CONTRACTOR AND MOUNTED BY MECHANICAL

5. ALL CONTROLS SHALL BE ALERTON OR ENGINEER APPROVED

6. ALL NEW CONTROL WIRING SHALL BE INSTALLED IN EMT.

8. PROVIDE COMMUNICATION THROUGH MODEM AND ETHERNET.

9. PROVIDE COMPUTER TO MONITOR AND CONTROL SYSTEM.

14. MONITOR AND CONTROL FRESH AIR FANS AND DAMPERS.

16. PROVIDE A MINIMUM OF 12 HOURS OF INSTRUCTION TO OWNER ON OPERATIONS AND LAYOUT OF SYSTEM.

17. PREFERRED CONTROL SYSTEM TO BE ALERTON, INVENSYS

15. PROVIDE WRITTEN INSTRUCTIONS ON CHANGING TIME SCHEDULES AND TEMPERATURE SETTINGS.

10. INSTALL SYSTEM ON COMPUTER AT THE MAINTENANCE

DEPARTMENT AND ON A LAP TOP COMPUTER.

7. PROVIDE TOTAL DIRECT CONTROL WHERE POSSIBLE.

DRAWN BY: CHECKED BY:

DATE: **FEBRUARY 28, 2023** PROJECT NO:

FILE:

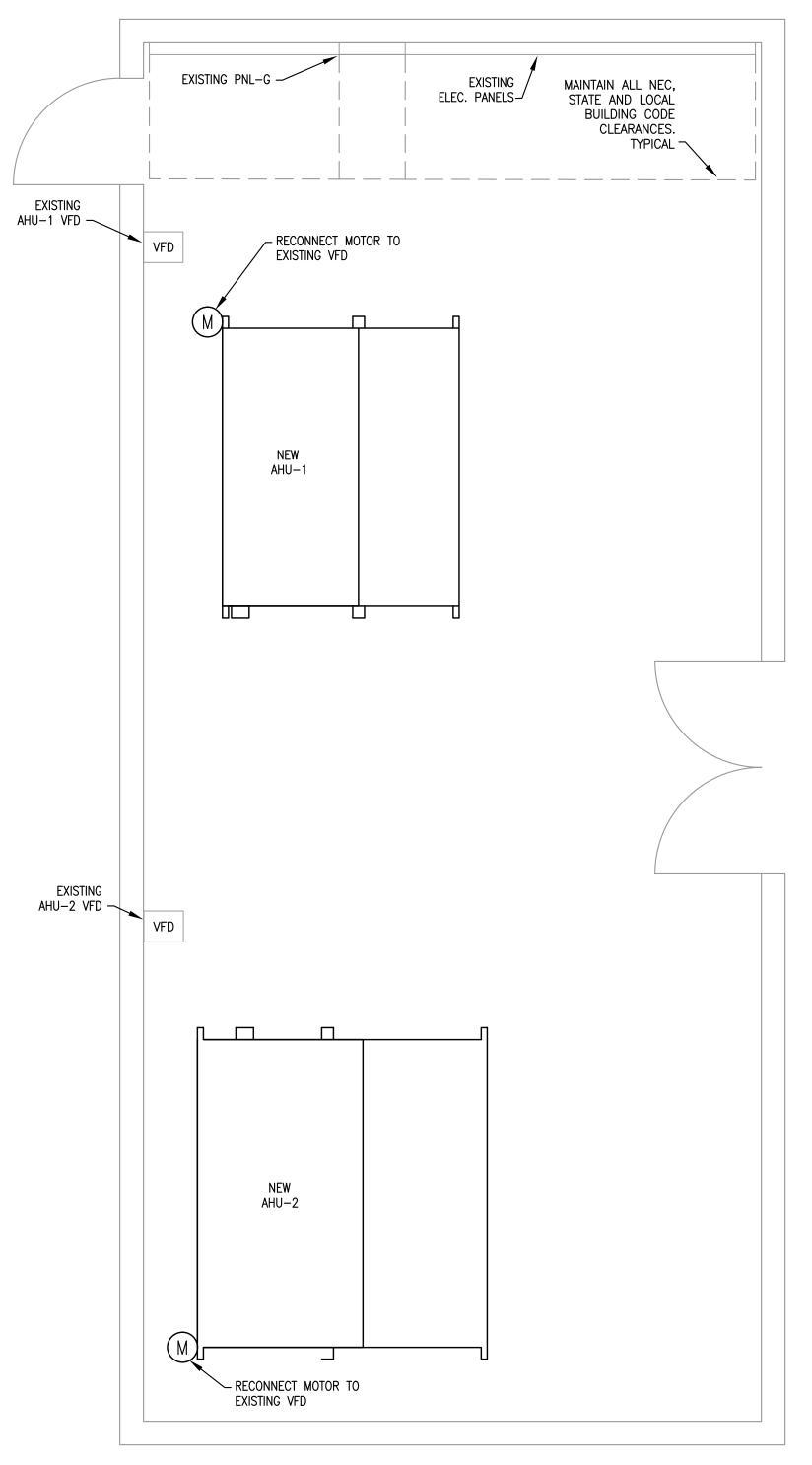
C-2809

DUPLICATION OR REUSE OF THIS DRAWING IN WHOLE OR IN PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF S. E. COLLINS, INC.

©2023 S. E. COLLINS, INC.

SHEET NO.







A LICENSED ELECTRICAL CONTRACTOR WHO SHALL PROVIDE ALL NECESSARY LOCAL DISCONNECTS, 480/3/60 AND 120/1/60 POWER WIRING IN EMT METALLIC CONDUIT. FIELD VERIFY EXACT LOCATION OF EXISTING PANELS WITH SPARE CIRCUITS PRIOR TO SUBMITTING BID. PROVIDE ENGRAVED PLASTIC LABELS FOR DISCONNECTS, LOAD SUMMARY, AND TYPED REVISED PANEL SCHEDULE. ALL WORK SHALL MEET OR EXCEED LOCAL AND STATE BUILDING CODES. ELECTRICAL PERMIT BY E.C. ALL WIRING SHALL BE THNN COPPER CONDUCTORS.

## **ELECTRICAL NOTES**

- 1. ALL WIRE SHALL BE SOLID COPPER THHN/THWN RATED FOR 75 DEGREE C. 2. 20A HOMERUN CIRCUITS ON #12 GA WIRE SHALL NOT EXCEED 60' LENGTH. IF 61'-100' USE
- #10 GA WIRE. IF 101'-160' USE #8 GA WIRE. IF 161'-220' USE #6 GA WIRE. 3. PROVIDE A GREEN GROUND WIRE FOR ALL CIRCUITS. METAL CONDUITS SHALL NOT BE
- USED AS A SOLE MEAN FOR GROUNDING. 4. PROVIDE ALL WIRING IN EMT CONDUIT WITH COMPRESSION FITTINGS.
- 5. PROVIDE PLASTIC ENGRAVED LABELS FOR ALL PANELS AND DISCONNECTS. LETTERS SHALL NOT BE LESS THAN ½" TALL
- 6. HAND LABEL ALL JUNCTION BOXES WITH PERMANENT MARKER.
- PROVIDE PRINTED LABELS ON ALL DEVICE COVERS WITH CIRCUIT # AND PANEL. PROVIDE TYPED PANEL SCHEDULE AND AFFIX TO INTERIOR OF PANEL DOOR.
- 9. MAINTAIN ALL NEC, STATE AND LOCAL BUILDING CODE CLEARANCES.
- 10. ALL WORK SHALL MEET/EXCEED NEC, STATE AND LOCAL BUILDING CODES.

# ELECTRICAL LEGEND

VFD VFD STARTER

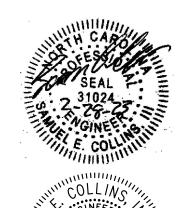
M MOTOR

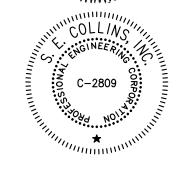
**CONSULTING** 

1817 E. Innes St., Suite 201 Salisbury, NC 28146 E-mail: scollins@scollinseng.com Tel: (704) 638-6337 Fax: (704) 638-6340

DRAWN BY: CHECKED BY:

DATE: FEBRUARY 28, 2023 PROJECT NO:





DUPLICATION OR REUSE OF THIS DRAWING IN WHOLE OR IN PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF S. E. COLLINS, INC.

©2023 S. E. COLLINS, INC.

SHEET NO.