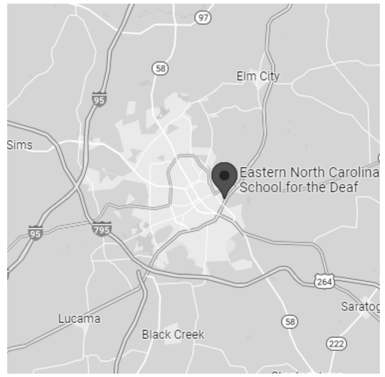
PROJECT: ENCSD Mayfield Hall HVAC



VICINITY

SCO# 22-24314-01A

CAMPUS

PROJECT LOCATION:

ENCSD MAYFIELD HALL

1311 US Hwy 301 South, Wilson, NC 27893

OWNER:

North Carolina Department of Public Instruction

1311 US Hwy 301 South,
Wilson, NC 27893

INDEX OF DRAWINGS:

Sheet Number	Sheet Name
G0.00	COVER SHEET
G0.01	BUILDING CODE SUMMARY
G1.01	RCP - DEMOLITION AND NEW WORK
G1.02	FLOOR PLAN - NEW WORK
M0.01	LEAD SHEET
M1.00	DEMOLITION PLAN
M2.00	NEW WORK PLAN
M5.01	DETAILS
M5.02	DETAILS
M5.03	DETAILS
M7.01	MECHANICAL SCHEDULES
E0.01	ELECTRICAL LEAD SHEET
E1.00	DEMOLITION PLAN
E2.00	NEW WORK PLAN
E5.01	DETAILS
E6.01	PANEL SCHEDULE & RISER DIAGRAM

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Progressive Design Collaborative, ltd.

3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

License# C-0183

PDC# 22035

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: ENCSD Mayfield Hall HVAC

Address: 1311 US HWY 301 South, Wilson, NC Zip Code 27893

Owner/Authorized Agent: Jon Long Phone # (984) 236-2923 E-Mail jon.long@dpi.nc.gov

Owned By: State of North Carolina ☐ City/County ☐ Private ■ State North Carolina

Code Enforcement Jurisdiction: ☐ City ☐ County ■ State North Carolina

CONTACT: PROGRESSIVE DESIGN COLLABORATIVE, LTD.

DESIGNER	FIRM	NAME	LICENSE#	TELEPHONE#	E-MAIL
Architectural	--	--	--	(###) ###.####	--@--.com
Civil	--	--	--	(###)###.####	--@--.com
Electrical	PDC	James T. Butkovich	024651	(919)790.9989	tbutkovich@pdcengineering.com
Fire Alarm	--	--	--	(###)###.####	--@--.com
Plumbing	--	--	--	(###)###.####	--@--.com
Mechanical	PDC	Steve Campbell	025020	(919)790.9989	scampbell@pdcengineers.com
Sprinkler	--	--	--	(###)###.####	--@--.com
Standpipe	--	--	--	(###)###.####	--@--.com
Structural	--	--	--	(###)###.####	--@--.com
Retaining Walls >5' High	N/A			( )	
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 Completions ☐ Shell/Core* ☐ Phased Construction*

*Contact the local inspection jurisdiction for possiblitional procedures and requirements.

2018 NC EXISTING BUILDING CODE: (check all that apply) ☐ Prescriptive ☐ Repair ☐ Chapter 14 ☐ Alteration Level I ☐ Alteration Level II ■ Alteration Level III ☐ Historic Property ☐ Change of Use

CONSTRUCTED: (date) 1966 **CURRENT OCCUPANCY(S)** (Ch.3): EDUCATION

RENOVATED: (date) 1981, 2007 **PROPOSED OCCUPANCY(S)** (Ch.3): EDUCATION

OCCUPANCY CATEGORY (Table 1604.5): **Current:** III **Proposed:** III

BASIC BUILDING DATA

Construction Type: ☐ I-A ☐ I-B ■ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ☐ V-B

Sprinklers: ■ No ☐ Partial ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D

Standpipes: ■ No Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry

Primary Fire District: ■ No ☐ Yes **Flood Hazard Area:** ■ No ☐ Yes

Special Inspections Required: ☐ Yes ■ No If special inspections are required, contact the local inspection jurisdiction for additional procedures and requirements.

Gross Building Area Table

FLOOR	EXISTING (SQ FT)	RENOVATION/ NEW(SQ FT)	SUB-TOTAL
First Floor	11,946 SF	N/A	N/A
TOTAL	11,946 SF		

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 ☐ I-2 I-1 & I-2 Condition ☐ 1 ☐ 2

☐ I-3 ☐ I-4 I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Mercantile ☐

Residential ☐ R-1 ☐ R-2 R-3 ☐ R-4

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

Utility and Miscellaneous ☐

Accessory Occupancy Classification(s):

Incidental Uses (Table 509):

Special Uses (Chapter 4 - List Code Sections):

Special Provisions: (Chapter 5 - List Code Sections):

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

☐ Non-Separated Use (508.3)

☐ 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 use shall not exceed 1.

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

____ + ____ + ... = ____ ≤ 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) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]
-	-	-	-	-	-

[1] Frontage area increases from Section 506.2 are computed thus:
- a. Perimeter which fronts a public way or open space having 20 feet minimum width = 668'-6" (F)
- b. Total Building Perimeter = 789'-6" (P)
- c. Ratio (F/P) = 85% (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 = *59 (%)*

[2] Unlimited area applicable under conditions of Section 5.07

[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]	Bldg A	160'	17'	
Building Height in Stories (Table 504.4)[3]	Bldg A	5	1	
Building Height in Feet (Table 504.3)[2]	Bldg B	55'	17'	
Building Height in Stories (Table 504.4)[3]	Bldg B	2	1	
Building Height in Feet (Table 504.3)[2]	Bldg C	55'	17'	
Building Height in Stories (Table 504.4)[3]	Bldg C	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

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ * REDUCTION)	DETAIL# AND SHEET#	DESIGN# FOR RATED ASSEMBLY	SHEET# FOR RATED PENETRATION	SHEET# FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North	>30'	0					
East	>30'	0					
West	>30'	0					
South	>30'	0					
Interior							
Nonbearing Walls and Partitions							
Exterior walls							
North	>30'	0					
East	>30'	0					
West	>30'	0					
South	>30'	0					
Interior walls and partitions							
Floor Construction Including supporting beams and joists		NA					
Floor Ceiling Assembly		NA					
Columns Supporting Floors		NA					
Roof Construction, including supporting beams and joists		- 0 - 0					
Roof Ceiling Assembly		- 0 - 0					
Columns Supporting Roof		- 0 - 0					
Shaft Enclosures- Exit		NA					
Shaft Enclosures- Other		NA					
Corridor Separation		1					
Occupancy/Fire Barrier Separation		NA					
Party/Fire Wall Separation		NA					
Smoke Barrier Separation		NA					
Smoke Partition		NA					
Tenant/Dwelling Unit/ Sleeping Unit Separation		NA					
Incidental Use Separation		NA					

* Indicate section number permitting reduction

EXISTING NOT APPLICABLE

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
Building A	NA/ no limit	NA	NA
Building B	NA/ no limit	NA	NA
Building C	NA/ no limit	NA	NA

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting:	No	Yes (WORK AREAS)
Exit Signs:	No	Yes
Fire Alarm:	No	Yes
Smoke Detection Systems:	No	Yes Partial (WORK AREAS)
Carbon Monoxide Detection:	No	Yes (WORK AREAS)

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #:

- Fire and/or smoke rated wall locations (Chapter 7)
- Assumed and real property line locations (if not on the site plan)
- Exterior wall opening area with respect to distance to assumed property lines (705.8)
- Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
- Occupant loads for each area
- Exit access travel distances (1017)
- Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
- Dead end lengths (1020.4)
- Clear exit widths for
- Maximum calculated (1005.3)
- Actual occupant load for each exit door
- A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
- Location of doors with panic hardware (1010.1.10)
- Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
- Location of doors with electromagnetic egress locks (1010.1.10)
- Location of doors equipped with hold-open devices
- Location of emergency escape windows (1030)
- The square footage of each fire area (202)
- The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
- Note any code exceptions or table notes that may have been utilized regarding the items above

EXISTING NOT APPLICABLE

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
	N/A						

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL# OF PARKING SPACES REQUIRED	PROVIDED	# OF ACCESSIBLE SPACES PROVIDED REGULAR WITH 5' ACCESSAISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	TOTAL# ACCESSIBLE PROVIDED
N/A						
TOTAL						

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE	WATERCLOSETS M	F	URINALS UNI	LAVATORIES MALE	FEMALE	UNISEX	SHOWERS /TUBS	DRINKING FOUNTAINS REGULAR	ACCESSIBLE

EXISTING NOT APPLICABLE

SPECIAL APPROVALS

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

XX

ENERGY SUMMARY

ENERGY REQUIREMENTS:

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

Existing building envelope complies with code: (If checked the remainder of this section is not applicable.)

Exempt Building: Provide code or statutory reference:

Climate Zone: 3A 4A 5A

Method of Compliance:

Energy Code	Performance	Prescriptive
ASHRAE 90.1	Performance	Prescriptive
Other	Performance (specify source)	

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
- Description of assembly:
- U-Value of total assembly:
- R-Value of insulation:
- Skylights in each assembly:
- U-Value of skylight:
- total square footage of skylights in each assembly:

Exterior Walls (each assembly)
- Description of assembly:
- U-Value of total assembly:
- R-Value of i
- Openings (w
- U-Value of assembly:
- Solar heat gain coefficient:
- projection factor:
- Door R-Values:

EXISTING NOT APPLICABLE

Walls below grade (each assembly)
- Description of assembly:
- U-Value of total assembly:
- R-Value of total assembly:

Floors over unconditioned space (each assembly)
- Description of assembly:
- U-Value of total assembly:
- R-Value of total assembly:

Floors slab on grade
- Description of assembly:
- U-Value of total assembly:
- R-Value of insulation:
- Horizontal/vertical requirement:
- slab heated:

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Importance Factors: Wind (I_w) Snow (I_s) Seismic (I_e)

Live Loads: Roof psf Mezzanine psf Floor psf

Ground Snow Load: psf

Wind Load: EXISTING NOT APPLICABLE

SEISMIC DESIGN CATEGORY: A B C D

Provide the following Seismic Design Parameters:

Occupancy Category (Table 1604.5) I II III IV

Spectral Response Acceleration S_S %g S_1 %g

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

Data Source: Field Test Presumptive Historical Data

Basic structural system (check one)

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:

Field Test (provide copy of test report) psf

Presumptive Bearing capacity psf

Pile size, type, and capacity

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)
~~**MECHANICAL SUMMARY**~~

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
- winter dry bulb: 20.0°F
- summer dry bulb: 94.6°F

Interior design conditions
- winter dry bulb: 70°F
- summer dry bulb: 75°F
- relative humidity: 55%

Building heating load: 228.2 MBH

Building cooling load: 19.7 TONS

Mechanical Spacing Conditioning System

Unitary
- description of unit: REFER TO SCHEDULE ON DRAWINGS
- heating efficiency: REFER TO SCHEDULE ON DRAWINGS
- cooling efficiency: REFER TO SCHEDULE ON DRAWINGS
- size category of unit: REFER TO SCHEDULE ON DRAWINGS

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

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

List equipment efficiencies: REFER TO EQUIPMENT SCHDULES FOR UNIT EFFICIENCIES

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:

Energy Code:	Prescriptive	Performance
ASHRAE 90.1:	Prescriptive	Performance

Lighting schedule (each fixture type)
- lamp type required in fixture
- number of lamps in fixture
- ballast type used
- number of balla
- total wattage pe
- total interior wattage specified vs. allowed (whole building or space by space)
- total exterior wattage specified vs. allowed

NOT APPLICABLE

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)

C406.2 More Efficient HVAC Equipment Performance
C406.3 Reduced Lighting Power Density
C406.4 Enhanced Digital Lighting Controls
C406.5 On-Site Renewable Energy
C406.6 Dedicated Outdoor Air System
C406.7 Reduced Energy Use in Service Water Heating

pdc
Progressive Design Collaborative, Ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989
License# C-0183
pdcengineers.com

NORTH CAROLINA REGISTERED SEAL 025020 ENGINEER STEVEN W. CAMPBELL
06/09/2023

SCAMPBELL@PDCENGINEERS.COM

DRAWN BY: DJL CHECKED BY: SWC

PDC 22035 06/09/2023

REVISIONS

NUMBER	DATE	DESCRIPTION

BID/PERMIT

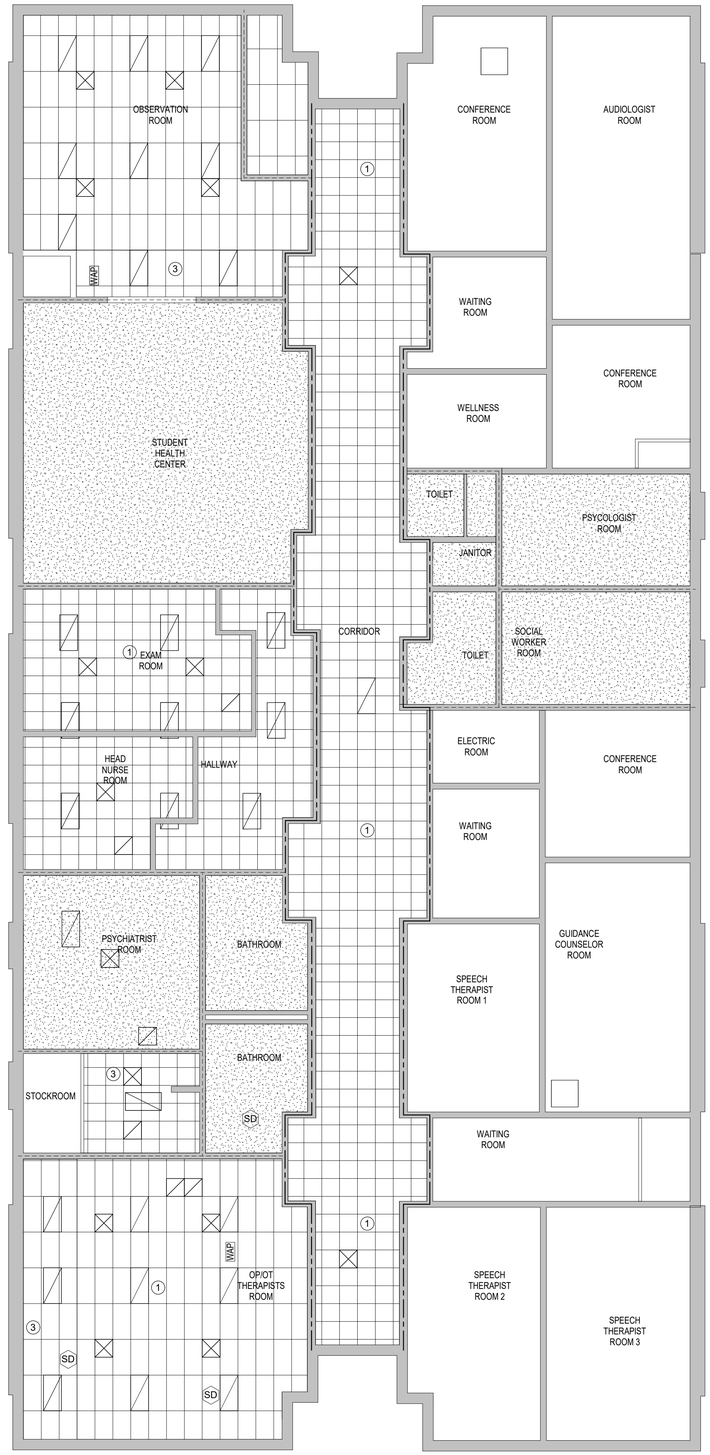
ENCSD Mayfield Hall HVAC

North Carolina Department of Public Instruction
1311 US Hwy 301 South,
Wilson, NC 27893

SCO# 22-24314-01A

BUILDING CODE SUMMARY

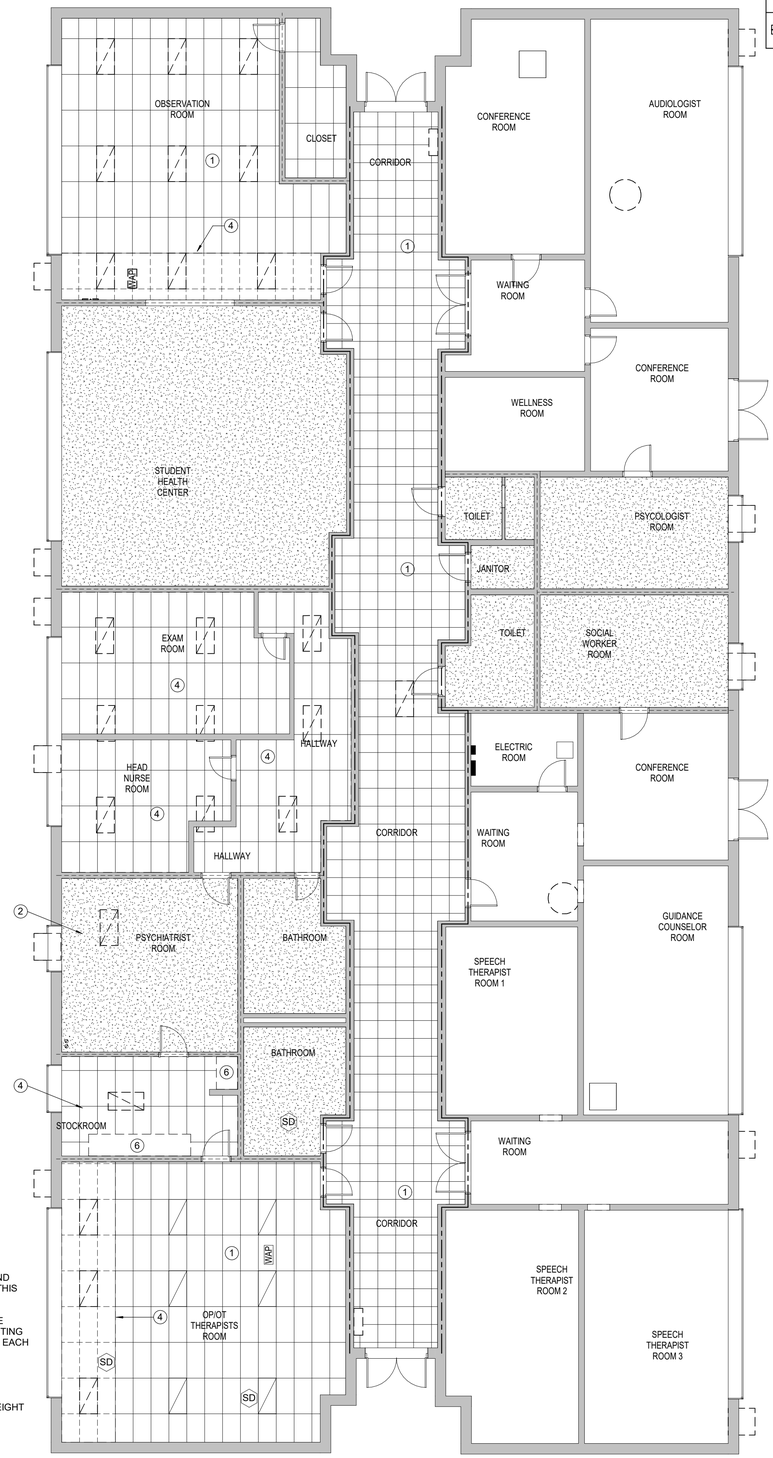
G0.01



2 First Floor

0 8' 16' 32'

1/8" = 1'-0"



1 First Floor - Demo

0 8' 16' 32'

1/8" = 1'-0"

RATED WALLS LEGEND

1 HR RATED

KEYNOTES:

1. EXISTING ACOUSTICAL TILE CEILING TO REMAIN.
2. REMOVE GYPSUM BOARD CEILING IN ITS ENTIRTY AND PREP FOR NEW CEILING. SEE NEW WORK PLAN ON THIS SHEET.
3. PROVIDE NEW ACT TYPE CEILING AND GRID AT SAME HEIGHT AS EXISTING. WHERE CONNECTING TO EXISTING GRID, CEILING GRID TO MATCH CURRENT LAYOUT IN EACH ROOM.
4. REMOVE ACT CEILING AND GRID TO THE EXTENTS INDICATED. SEE NEW WORK PLAN ON THIS SHEET.
5. PROVIDE NEW GYPSUM BOARD CEILING AT SAME HEIGHT AS EXISTING.
6. REMOVE EXISTING CASEWORK INDICATED.

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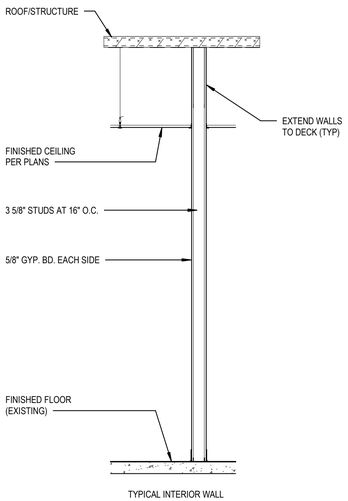
RCP - DEMOLITION AND NEW WORK

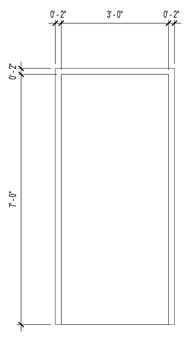
G1.01

RATED WALLS LEGEND

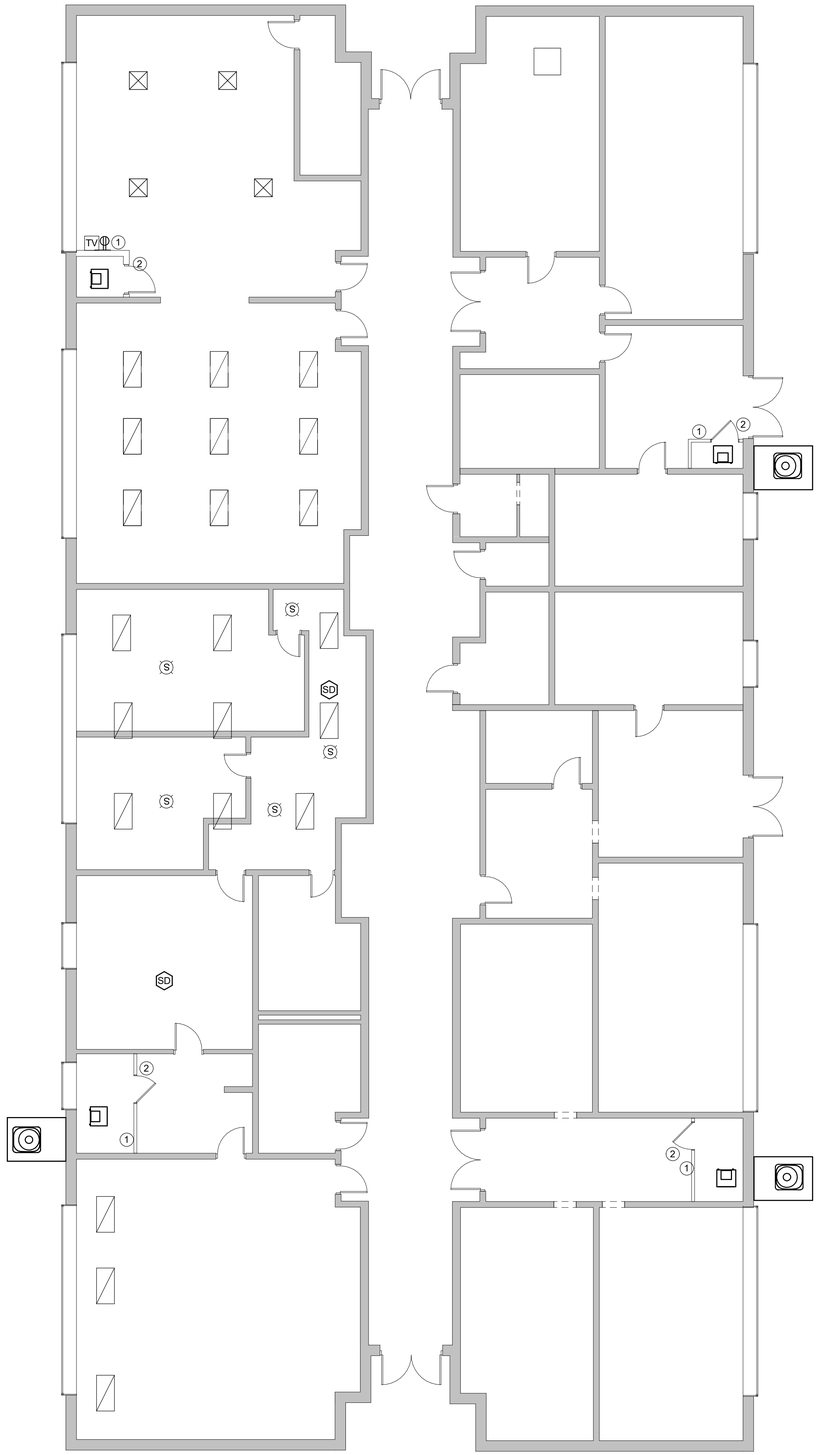
1 HR RATED



3 INTERIOR STUD WALL DETAIL
NOT TO SCALE



2 DOOR DETAIL
NOT TO SCALE



1 FLOOR PLAN - NEW WORK
0 4' 8' 16'
1/8" = 1'-0"

KEYNOTES:

1. NEW 3 5/8" STUD WALL W/ 5/8" SHEETROCK ON BOTH SIDES. STUDS 16" OC. WALLS GO TO THE DECK. PROVIDE 3'-0"x7'-0" SOLID WOOD DOOR. 2" METAL FRAME. PROVIDE TWO COATS OF PAINT ON OUTSIDE WALL. COLOR BY OWNER.
2. REFER TO SPECIFICATIONS FOR LOCKSET AND HARDWARE INFORMATION

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SCO# 22-24314-01A

FLOOR PLAN - NEW WORK

G1.02

GENERAL NOTES

1. THE CONTRACT DOCUMENTS ARE COMPLIMENTARY AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE BETTER QUALITY. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE GREATER QUANTITY OF WORK.
2. COORDINATE ALL WORK WITH THAT OF THE OTHER DISCIPLINES PRIOR TO THE INSTALLATION OF ANY PIPING, DUCTWORK, OR EQUIPMENT.
3. PERFORM A COMPLETE REVIEW OF THE CONTRACT DOCUMENTS PRIOR TO INSTALLATION OF THE MECHANICAL SYSTEMS AND REVIEW ANY CONFLICTS WITH THE ENGINEER.
4. DURING THE CONSTRUCTION PROCESS, PROTECT ALL EQUIPMENT, DEVICES, DUCTWORK, PIPING, AND APPURTENANCES FROM DIRT, DEBRIS, AND RAIN. STORE IN A COVERED LOCATION OFF OF THE FLOOR AND ABOVE STANDING WATER. ITEMS FOUND LYING IN STANDING WATER ON THE JOB SITE WILL NOT BE ACCEPTED FOR INSTALLATION.
5. ENSURE THAT ITEMS TO BE FURNISHED OR PROVIDED WILL FIT IN THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND PROVIDE SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS. PROVIDE THE ENGINEER WITH SCALED COORDINATION DRAWINGS OF ALL MECHANICAL SPACES AND ABOVE CEILING INSTALLATIONS.
6. LOCATE ALL EQUIPMENT TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
7. PROVIDE ALL ELECTRICAL AND CONTROL CONNECTIONS TO THE EQUIPMENT PROVIDED. REFER TO THE ELECTRICAL DRAWINGS FOR LOCATIONS OF JUNCTION BOXES, DISCONNECTS, CIRCUIT BREAKERS (PANELBOARDS), TYPE, SIZE, AND NUMBER OF CONDUCTORS AND CONDUITS TO EQUIPMENT SHALL BE EQUIVALENT TO THE CONDUCTORS AND CONDUITS PROVIDED BY DIVISION 26. IN CASE OF MECHANICAL EQUIPMENT CONNECTION TO A CIRCUIT BREAKER, THE NUMBER AND SIZE OF THE CONDUCTORS AND CONDUITS SHALL CONFORM TO THE LATEST NATIONAL ELECTRICAL CODE REGULATIONS. ALL MOTOR STARTERS, SWITCHES, CONTROL DEVICES, ETC., PROVIDED BY DIVISION 23 SHALL BE RECESSED IN THE WALLS, EXCEPT WHEN THESE ITEMS ARE LOCATED IN MECHANICAL SPACES. PROVIDE A NAMEPLATE FOR ALL EQUIPMENT, SWITCHES, CONTROL DEVICES, ETC. REFER TO THE GENERAL PROVISIONS SECTION OF THE DIVISION 23 SPECIFICATIONS.
8. PROVIDE ALL SUPPORT DEVICES NECESSARY FOR THE WORK. COORDINATE ALL LOCATIONS WITH OTHER DISCIPLINES PRIOR TO INSTALLATION.
9. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR PLAN DIMENSIONS AND ELEVATIONS. DO NOT SCALE THESE DRAWINGS.
10. PROVIDE ALL PENETRATIONS PERTAINING TO THE WORK THROUGH THE ROOF, WALLS, AND FLOORS. PROVIDE THE WATERPROOFING AROUND THE OPENINGS.
11. COORDINATE THE SIZE AND LOCATION OF ALL PENETRATIONS THROUGH THE ROOF WITH AUTHORIZED ROOFER AND OTHER DISCIPLINES.
12. FIRE SEAL ALL FLOOR AND FIRE WALL PIPE AND CONDUIT PENETRATIONS WITH A UL APPROVED METHOD.
13. PROVIDE ALL CUTTING AND PATCHING OF FLOORS AND WALLS FOR THE WORK UNLESS OTHERWISE INDICATED.
14. ALL WALL AND FLOOR PENETRATIONS SHALL BE SEALED. SEAL ALL RATED FLOOR AND WALL PENETRATIONS WITH A UL APPOVED METHOD. FOR NON-RATE WALLS AND FLOORS, THE ANNULAR SPACE SHALL BE PACKED WITH MINERAL WOOL, OR ANOTHER SUITABLE NON-COMBUSTIBLE MATERIAL, AND CAULKED AIR RIGHT.
15. CONDENSATE DRAINS SHALL BE A MINIMUM OF 1"∅ COPPER, INSULATED WITH A 25/50 RATED CLOSED CELL RUBBER TUBING HAVING A NOMINAL WALL THICKNESS OF 1". PROVIDE A P-TRAP WITH VENT AND CLEANOUT PLUG AT THE UNIT. ALL CONDENSATE LINES SHALL BE ROUTED TO A FLOOR DRAIN OR AS INDICATED ON THE DRAWINGS.
16. DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR UNLESS OTHERWISE INDICATED.
17. PROVIDE SHEET METAL COLLAR AT ALL LOCATIONS WHERE DUCTS PENETRATE WALLS. COLLARS SHALL BE OF A GAGE EQUIVALENT TO THE DUCTWORK.
18. ALL ACCESS DOORS IN THE DUCTWORK SHALL BE LOCATED TO EASILY ACCESS FIRE DAMPERS. COORDINATE CEILING ACCESS PANEL LOCATIONS WITH ALL OTHER DISCIPLINES. ALL ACCESS DOORS IN DUCTWORK FOR FIRE DAMPERS, DUCT-MOUNTED COILS, CONTROL DAMPERS, HUMIDIFIERS, DUCT SMOKE DETECTORS, AND OTHER DEVICES SHALL CONFORM TO THE FOLLOWING SCHEDULE:

DUCT WIDTH	ACCESS DOOR SIZE
UP TO 17" WIDE	16"x12" (OR AS LARGE AS POSSIBLE)
18" TO 22"	16"x16"
22" AND LARGER	18"x18"

19. INSTALL THERMOSTATS, SENSORS, AND OTHER CONTROLS 48" ABOVE FINISHED FLOOR OR AS INDICATED ON THE DRAWINGS. COORDINATE WITH OTHER DISCIPLINES TO ALIGN EXACTLY WITH ADJACENT DEVICES SUCH AS LIGHT SWITCHES AND CONTROLS.
20. PROVIDE ALL THERMOSTATS, SENSORS, CONTROLS, WIRING, AND CONDUIT.
21. SUPPORT ALL DUCTWORK, PIPING, EQUIPMENT, AND APPURTENANCES FROM THE BUILDING STRUCTURE AND NOT THE ROOF DECK.
22. ALL HANGER RODS SHALL BE CUT TO WITHIN 1" OF THE BOTTOM NUT. IN MECHANICAL ROOMS, ALL HANGERS OR OTHER EQUIPMENT BELOW 7'-4" SHALL BE WRAPPED WITH FOAM INSULATION FOR PERSONNEL PROTECTION.
23. INSULATE ALL SUPPLY DIFFUSERS AND DUCTED RETURN DIFFUSERS WITH 2" - 1# R.6 DUCT WRAP. CUT DIFFUSERS SO THERE IS A FOLDED 2" LAP ON ALL FOUR SIDES. TAPE WITH FSK TAPE WHERE INSULATED FLEX MEETS DUCT INSULATION, AND SO THERE ARE NO RAW EDGES OF FIBERGLASS.
24. EQUIPMENT SHALL MEET OR EXCEED ALL REQUIREMENTS IN THE 2013 VERSION OF ASHRAE STANDARD 90.1 AND THE INTERNATIONAL ENERGY CONSERVATION CODE WITH NORTH CAROLINA AMENDMENTS.
25. COORDINATE THE ROUGH-IN OF PIPING WITH THE GENERAL CONTRACTOR AND OTHER TRADES.
26. DO NOT INSTALL PIPING OR DUCTWORK OVER ANY ELECTRICAL PANEL OR SWITCHGEAR.
27. PROVIDE EQUIPMENT SUPPORT PAD (WHERE NOT EXISTING) FOR ALL BASE MOUNTED EQUIPMENT. 8" MINIMUM FROM EQUIPMENT TO END OF PAD ON ALL SIDES.
28. ALL WORK SHALL COMPLY WITH THE 2018 NC MECHANICAL CODE.
29. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS REQUIRED FOR COMMISSIONING OF THE SYSTEMS HEREIN. COMMISSIONING SHALL BE PERFORMED BY AN ENTITY HIRED BY THE OWNER. COMMISSIONING SHALL BE FINISHED PRIOR TO STATE OF COMMISSIONING REQUIRED BY C408 OF THE NC ENERGY CODE BEING ISSUED BY THE DESIGNER.

SYMBOL LEGEND

SYMBOL	DESCRIPTION
	FLEXIBLE DUCT
x	SUPPLY DUCT
x	RETURN DUCT
x	EXHAUST DUCT
x	OUTSIDE AIR INTAKE
MD	MOTORIZED DAMPER
VD	MANUAL BALANCING DAMPER
#T	TEMPERATURE SENSOR. LABEL INDICATES UNIT CONTROLLED.
R	REFRIGERANT PIPING
C	CONDENSATE PIPING
	POINT OF CONNECTION
	POINT OF DISCONNECTION / DEMOLITION
S D	DUCT SMOKE DETECTOR
FSD	COMBINATION FIRE/SMOKE DAMPER. UL 555 AND 555S. PROVIDE 120V ACTUATOR.

MECHANICAL SUMMARY
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

CODE
2018 NC ENERGY CODE: PRESCRIPTIVE ___X___ PERFORMANCE _____
ASHRAE 90.1-2013: PRESCRIPTIVE _____ PERFORMANCE _____

ADDITIONAL PRESCRIPTIVE COMPLIANCE:

_N/A_ 506.2.1 MORE EFFICIENT MECHANICAL EQUIPMENT
_N/A_ 506.2.2 REDUCED LIGHTING POWER DENSITY
_N/A_ 506.2.3 ENERGY RECOVERY VENTILATION SYSTEMS
_N/A_ 506.2.4 HIGHER EFFICIENCY SERVICE WATER HEATING
_N/A_ 506.2.5 ON-SITE SUPPLY OF RENEWABLE ENERGY
_N/A_ 506.2.6 AUTOMATIC DAYLIGHTING CONTROLS

THERMAL ZONE: 3A
WINTER DRY BULB: 20.0 DEGREES F
SUMMER DRY BULB: 94.6 DEGREES F
SUMMER WET BULB: 74.3 DEGREES F
SUMMER HR/MCDB: 129.5 / 81.2 DEGREES F

INTERIOR DESIGN CONDITIONS
WINTER DRY BULB: 70 DEGREES F
SUMMER DRY BULB: 75 DEGREES F
RELATIVE HUMIDITY: 55 %

BUILDING HEATING LOAD: 228.2 MBH

BUILDING COOLING LOAD: 19.7 TONS

MECHANICAL SPACING CONDITIONING SYSTEM

UNITARY
DESCRIPTION OF UNIT: REFER TO SCHEDULE ON DRAWINGS
HEATING EFFICIENCY: REFER TO SCHEDULE ON DRAWINGS
COOLING EFFICIENCY: REFER TO SCHEDULE ON DRAWINGS
SIZE CATEGORY OF UNIT: REFER TO SCHEDULE ON DRAWINGS

BOILER: TOTAL BOILER OUTPUT. IF OVERSIZED, STATE REASON. N/A

CHILLER: TOTAL CHILLER CAPACITY. IF OVERSIZED, STATE REASON. N/A

REFER TO EQUIPMENT SCHEDULES FOR UNIT EFFICIENCIES.

DESIGNER STATEMENT:
TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA STATE ENERGY CODE

ABBREVIATIONS

ACCU	AIR COOLED CONDENSING UNIT	HZ	HERTZ
ACU	AIR CONDITIONING UNIT		
AD	ACCESS DOOR	IF	INJECTION FAN
AF	AIR FILTER	IN	INCHES
AFF	ABOVE FINISHED FLOOR	INSUL	INSULATION
AHU	AIR HANDLING UNIT	ISDL	ISOLATION
ALUM	ALUMINUM		
AMP	AMPERE	KE	KITCHEN EXHAUST
AP	ACCESS PANEL	KW	KILOWATT
ARCH	ARCHITECTURAL		
AVG	AVERAGE	LAT	LEAVING AIR TEMPERATURE
CC	AIR COLLED CONDENSER	LBS	POUNDS
		LF	LINEAR FEET
B	BOILER	LLC	LIQUID LEVEL CONTROLLER
B.I.	BLACK IRON	LWT	LEAVING WATER TEMPERATURE
BB	BASEBOARD RADIATION		
BDD	BACKDRAFT DAMPER	MAT	MIXED AIR TEMPERATURE
BHP	BRAKE HORSEPOWER	MAX	MAXIMUM
BO	BLANK OFF	MIN	MINIMUM
BTU	BRITISH THERMAL UNIT		
BTUH	BRITISH THERMAL UNITS PER HOUR	N.C.	NORMALLY CLOSED
		N.O.	NORMALLY OPEN
CA	COMPRESSED AIR	NC	NOISE CRITERIA
CAP	CAPACITY	NIC	NOT IN CONTRACT
CAU	COMPRESSED AIR	NK	NECK
CC	COOLING COIL	NPSH	NET POSITIVE SUCTION HEAT
CFM	CUBIC FEET PER MINUTE	NTS	NOT TO SCALE
CH	CHILLER		
CI	CAST IRON	OA	OUTSIDE AIR
CL	CENTER LINE	OAI	OUTSIDE AIR INTAKE
CO	CARBON MONOXIDE	OBD	OPPOSED BLADE DAMPER
CO	CLEAN OUT	OD	OUTSIDE DAMPER
CONC	CONCRETE	OV	OUTLET VELOCITY
CT	COOLI NG TOWER		
CU	CONDENSING UNIT	P	PUMP
CUH	CABINET UNIT HEATER	PD	PRESSURE DROP
CV	CONSTANT VOLUME	PH	PHASE
CY	CYCLE	PRESS	PRESSURE
		PRV	PRESSURE REDUCING VALVE
DB	DRY BULB TEMPERATURE	PSIG	POUNDS PER SQUARE INCH
DELF	DEFLECTION	ΔP	PRESSURE DIFFERENTIAL
DIFF	DIFFUSER		
DN	DOWN	RA	RETURN AIR
DWG	DRAWING	REFRIG	REFRIGERANT
DX	DIRECT EXPANSION	REG	REGISTER
		RET	RETURN
EA	EACH	RF	RELIEF / RETURN FAN
EAT	ENTERING AIR TEMPERATURE	RH	RELATIVE HUMIDITY
EF	EXHAUST FAN	RM	ROOM
EFF	EFFICIENCY	RO	REVERSE OSMOSIS
EHC	ELECTRIC HEAT COIL	RPM	REVOLUTIONS PER MINUTE
ESP	EXTERNAL STATIC PRESSURE	RTU	ROOFTOP UNIT
ET	EXPANSION TANK		
EUH	ELECTRIC UNIT HEATER	SA	SUPPLY AIR
EWT	ENTERING WATER TEMPERATURE	SD	SMOKE DAMPER
EXH	EXHAUST	SF	SUPPLY FAN
		SM	SHEET METAL
F.D.	FLOOR DRAIN	SP	STATIC PRESSURE
FA	FREE AREA	SQ. FT.	SQUARE FEET
FCU	FAN COIL UNIT	SS	STAINLESS STEEL
FD	FIRE DAMPER	ST	SOUND TRAP
FLEX	FLEXIBLE		
FM	FLOW METER	T	TANK
FP	FAN POWERED BOX	TC	TEMPERATURE CONTROL
FPM	FEET PER MINUTE	TE	TOILET EXHAUST
FT	FEET	TG	TRANSFER GRILLE
FT2	SQUARE FEET	TSP	TOTAL STATIC PRESSURE
FT3	CUBIC FEET	TYP	TYPICAL
°F	DEGREES FARENHEIT	ΔT	TEMPERATURE DIFFERENTIAL
GA	GAUGE	UH	UNIT HEATER
GC	GENERAL CONTRACTOR		
GE	GENERAL EXHAUST	V	VOLTAGE
GPM	GALLONS PER MINUTE	VAV	VARIABLE AIR VOLUME
GR	GRILLE	VD	VOLUME DAMPER
		VEL	VELOCITY
*H	ENTHAPLY DIFFERENCE	VFD	VARIABLE FREQUENCY DRIVE
HC	HEATING COIL	VIB	VIBRATION
HORIZ	HORIZONTAL		
HP	HORSEPOWER	W	WATT
HR	HOUR	WB	WET BULB TEMPERATURE
HU	HUMIDIFIER	WC	WIRE COLUMN
HVAC	HEATING VENTILATION & AIR CONDITIONING	WMS	WIRE MESH SCREEN
		WP	WORKING PRESSURE
HX	HEAT EXCHANGER		

SHEET INDEX - MECHANICAL

SHEET NUMBER	SHEET NAME	CURRENT REVISION	CURRENT REVISION DATE
M0.01	LEAD SHEET		
M1.00	DEMOLITION PLAN		
M2.00	NEW WORK PLAN		
M5.01	DETAILS		
M5.02	DETAILS		
M5.03	DETAILS		
M7.01	MECHANICAL SCHEDULES		

pdc
Progressive Design Collaborative, Ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 025020 STEVEN W. CAMPBELL
06/09/2023

SCAMPBELL@PDCENGINEERS.COM

DRAWN BY: JAV CHECKED BY: SWC

PDC 22035 06/09/2023

REVISIONS

NUMBER	DATE	DESCRIPTION

BID/PERMIT

ENCSD Mayfield Hall HVAC

North Carolina Department of Public Instruction
1311 US Hwy 301 South,
Wilson, NC 27893

SCO# 22-24314-01A

LEAD SHEET

M0.01

GENERAL NOTES:

A. WHERE EXISTING EQUIPMENT, DUCT, AND PIPING IS BEING REMOVED, REMOVE ALL EXISTING HANGERS, RODS, AND SUPPORTING HARDWARE.

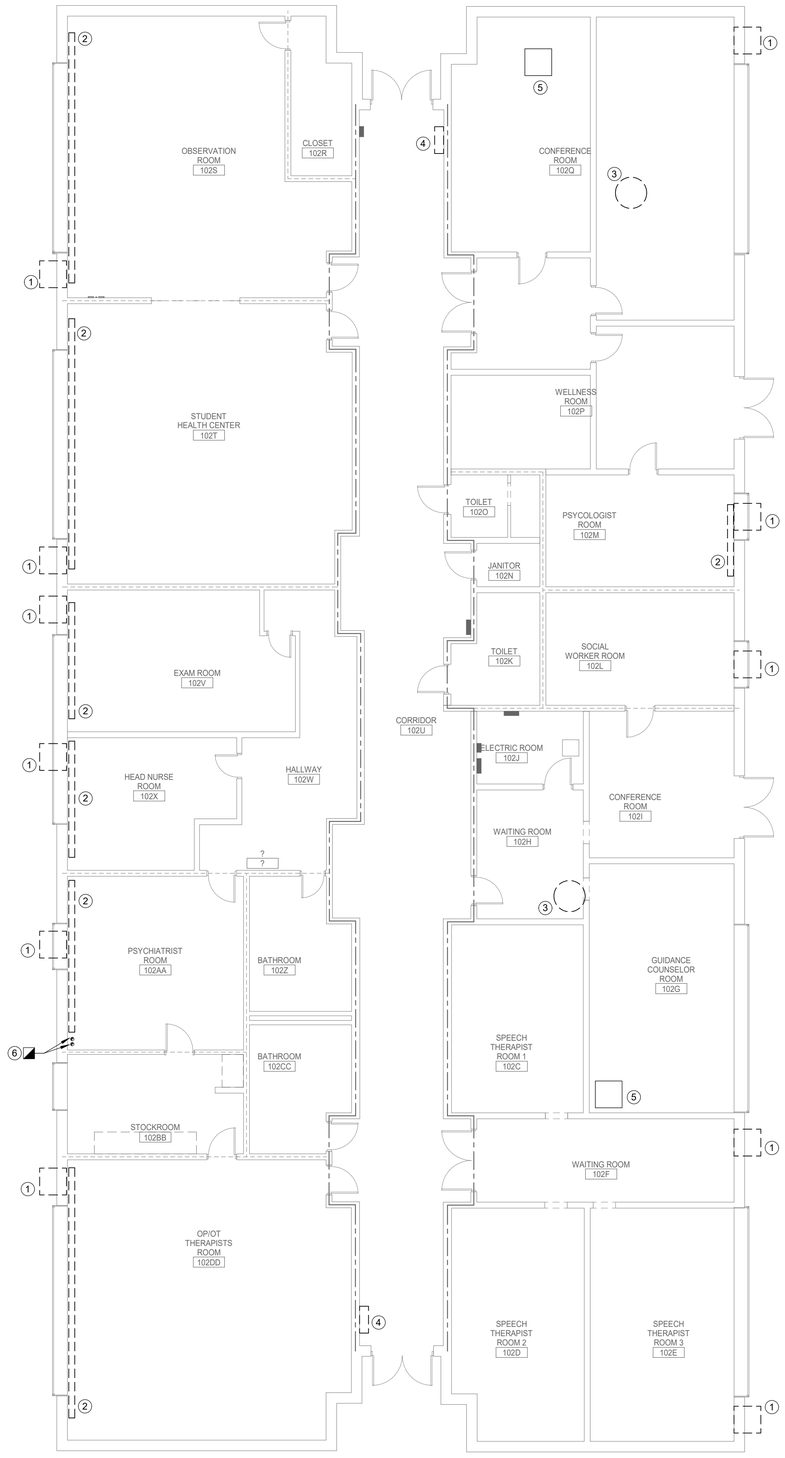
B. PATCH AND PAINT ALL SURFACES AND FINISHES IMPACTED BY THE WORK.

KEYNOTES:

1. DISCONNECT AND REMOVE EXISTING WINDOW UNIT AND TURN OVER TO THE OWNER. WHERE LOCATED IN A WALL, PATCH EXISTING WALL TO MATCH. WHERE LOCATED IN A WINDOW SECTION, REPLACE GLASS WINDOW PANE.
2. DISCONNECT AND REMOVE EXISTING RADIATOR. REMOVE PIPING BACK TO ABOVE CEILING (OR ABOVE WINDOW IF NO CEILING IS PRESENT) AND CAP. PAINT AND PATCH WALL TO MATCH EXISTING.
3. DISCONNECT AND REMOVE EXISTING OVERHEAD STEAM HEATER. REMOVE EXISTING STEAM PIPING BACK TO NEAREST FULL HEIGHT WALL AND CAP.
4. DISCONNECT AND REMOVE EXISTING CABINET HEATER.
5. EXISTING EXHAUST FAN/GRILLE TO REMAIN.
6. DISCONNECT EXISTING STEAM AND CONDENSATE PIPING AT UNDERGROUND ENTRANCE TO BUILDING AND CAP.

RATED WALLS LEGEND

1 HR RATED



1 DEMOLITION PLAN

0 4' 8' 16'

1/8" = 1'-0"

Progressive Design Collaborative, Ltd.

3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 025020 ENGINEER STEVEN W. CAMPBELL

06/09/2023

SCAMPBELL@PDCENGINEERS.COM

DRAWN BY: JAV CHECKED BY: SWC

PDC 22035 06/09/2023

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1311 US Hwy 301 South,
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SCO# 22-24314-01A

DEMOLITION PLAN

M1.00

RATED WALLS LEGEND	
	1 HR RATED

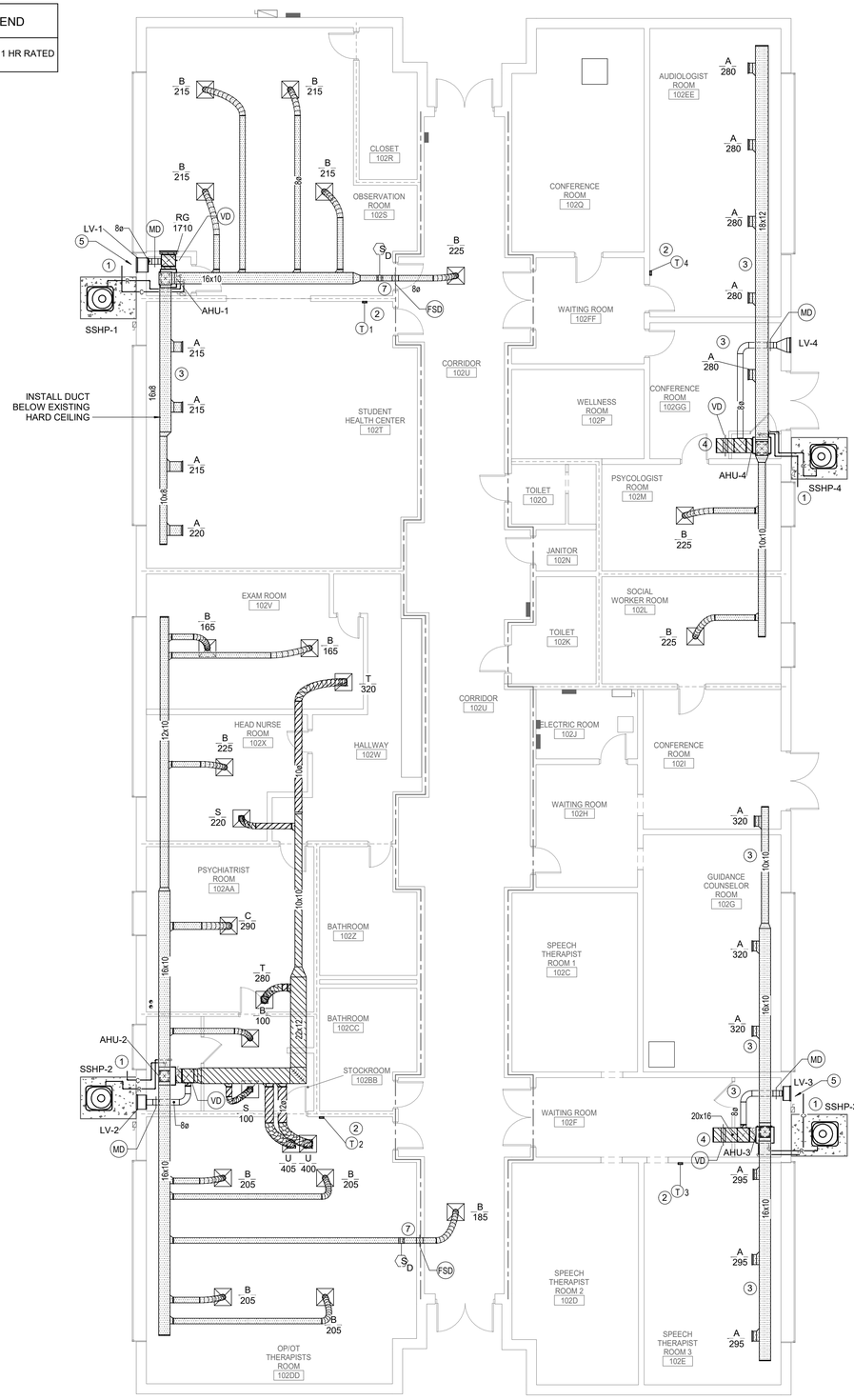
GENERAL NOTES:

A. WHERE EXISTING EQUIPMENT, DUCT, AND PIPING IS BEING REMOVED, REMOVE ALL EXISTING HANGERS, RODS, AND SUPPORTING HARDWARE.

B. PATCH AND PAINT ALL SURFACES AND FINISHES IMPACTED BY THE WORK TO MATCH EXISTING.

KEYNOTES:

1. TERMINATE CONDENSATE THROUGH WALL AND PROVIDE PRECAST SPLASHBLOCK.
2. PROVIDE THERMOSTAT WITH LCD SCREEN AND SETPOINT ADJUSTMENT.
3. PROVIDE DOUBLE-WALL DUCT WITH PAINT GRIP FINISH. PAINT DUCT TO MATCH CEILING.
4. COVER END OF RETURN DUCT WITH MESH SCREEN.
5. REUSE EXISTING WALL OPENING FROM WINDOW TYPE UNIT FOR LOUVER.
6. NOT USED
7. WHERE MINIMUM 12x12 ACCESS DOOR IS NOT POSSIBLE, PROVIDE REMOVABLE DUCT PRODUCT FOR ACCESS TO LIFE SAFETY DEVICE.



1 MECHANICAL NEW WORK PLAN

1/8" = 1'-0"

Progressive Design Collaborative, Ltd.

3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 025020 ENGINEER STEVEN W. CAMPBELL

06/09/2023

SCAMPBELL@PDCENGINEERS.COM

DRAWN BY: JAV CHECKED BY: SWC

PDC 22035 06/09/2023

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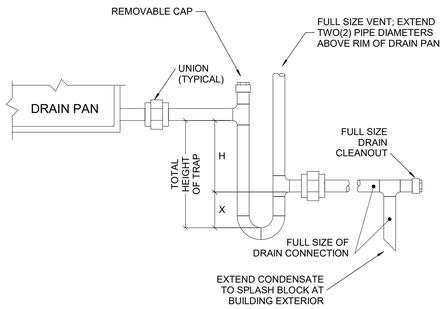
North Carolina Department of Public Instruction
1311 US Hwy 301 South,
Wilson, NC 27893

SCO# 22-24314-01A

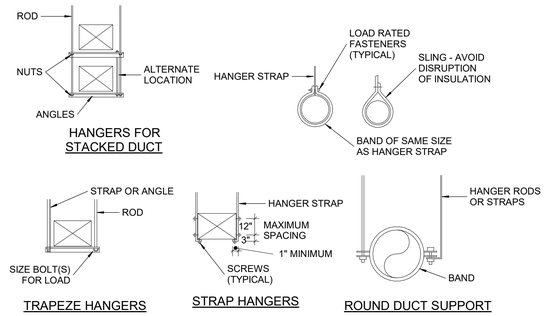
NEW WORK PLAN

M2.00



BLOW THROUGH	DRAW THROUGH
X = MINIMUM 1" PLUS CASING STATIC PRESSURE H = MINIMUM 1"	X = 1/2 "H" H = MINIMUM 1" PLUS CASING STATIC PRESSURE

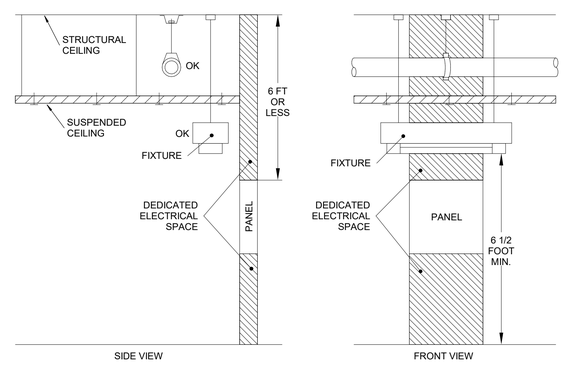
6 DETAIL - CONDENSATE DRAIN DETAIL
NOT TO SCALE



NOTES:

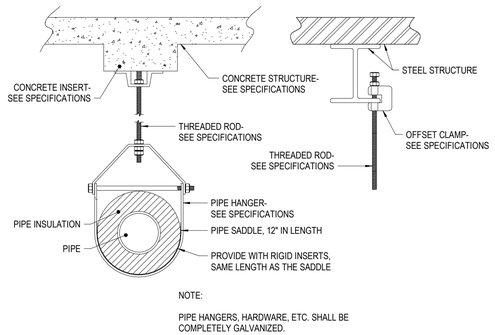
1. REINFORCEMENT MAY BE USED FOR ATTACHMENT IF IT QUALIFIES FOR BOTH DUTIES.
2. DO NOT EXCEED LOAD RATINGS FOR METHOD USED. FROM SMACNA DUCT STANDARDS

4 DETAIL - TYPICAL DUCT HANGERS
NOT TO SCALE



N.E.C ARTICLE 110-26(F)(1)

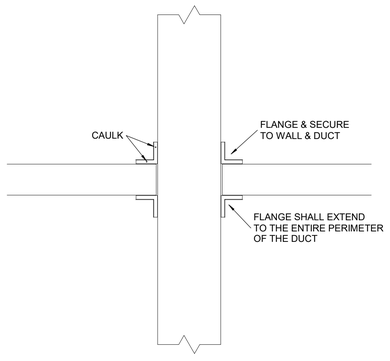
1 DETAIL - DEDICATED SPACE FOR ELECTRICAL EQUIPMENT
NOT TO SCALE



NOTE:

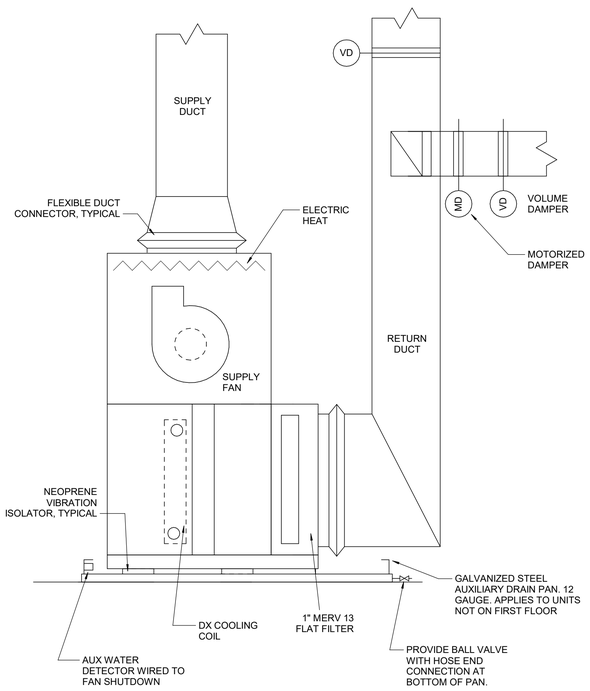
PIPE HANGERS, HARDWARE, ETC. SHALL BE COMPLETELY GALVANIZED.

7 HANGERS
NOT TO SCALE

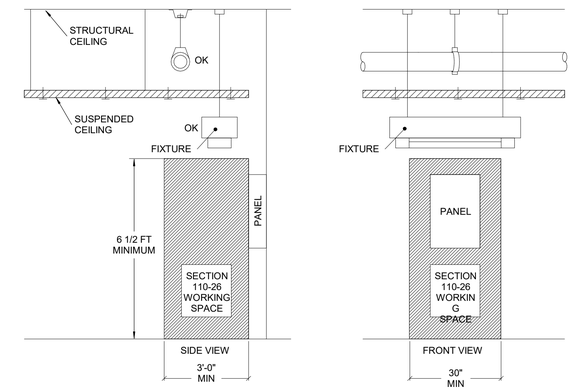


(PLAN VIEW)

8 DETAIL - NON-RATED DUCT PENETRATION
NOT TO SCALE

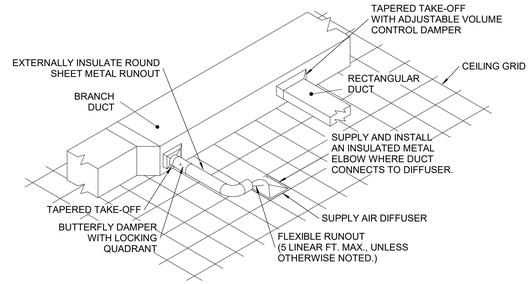


5 DETAIL - TYPICAL AIR HANDLING UNIT DETAIL
NOT TO SCALE



N.E.C ARTICLE 110-26

2 DETAIL - WORKING CLEARANCE FOR ELECTRICAL EQUIPMENT
NOT TO SCALE



NOTE:

PROVIDE TAPERED TAKE-OFF WITH ADJUSTABLE VOLUME DAMPER, AIR DISTRIBUTING GRID, OR RADIUS TAKE-OFF WITH STRAIGHTENING VANES AT TAKE-OFF.

3 DETAIL - SUPPLY, RETURN & EXHAUST AIR TAKE-OFF
NOT TO SCALE

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Progressive Design Collaborative, Ltd.

3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 025020 ENGINEER STEVEN W CAMPBELL
06/09/2023

SCAMPBELL@PDCENGINEERS.COM

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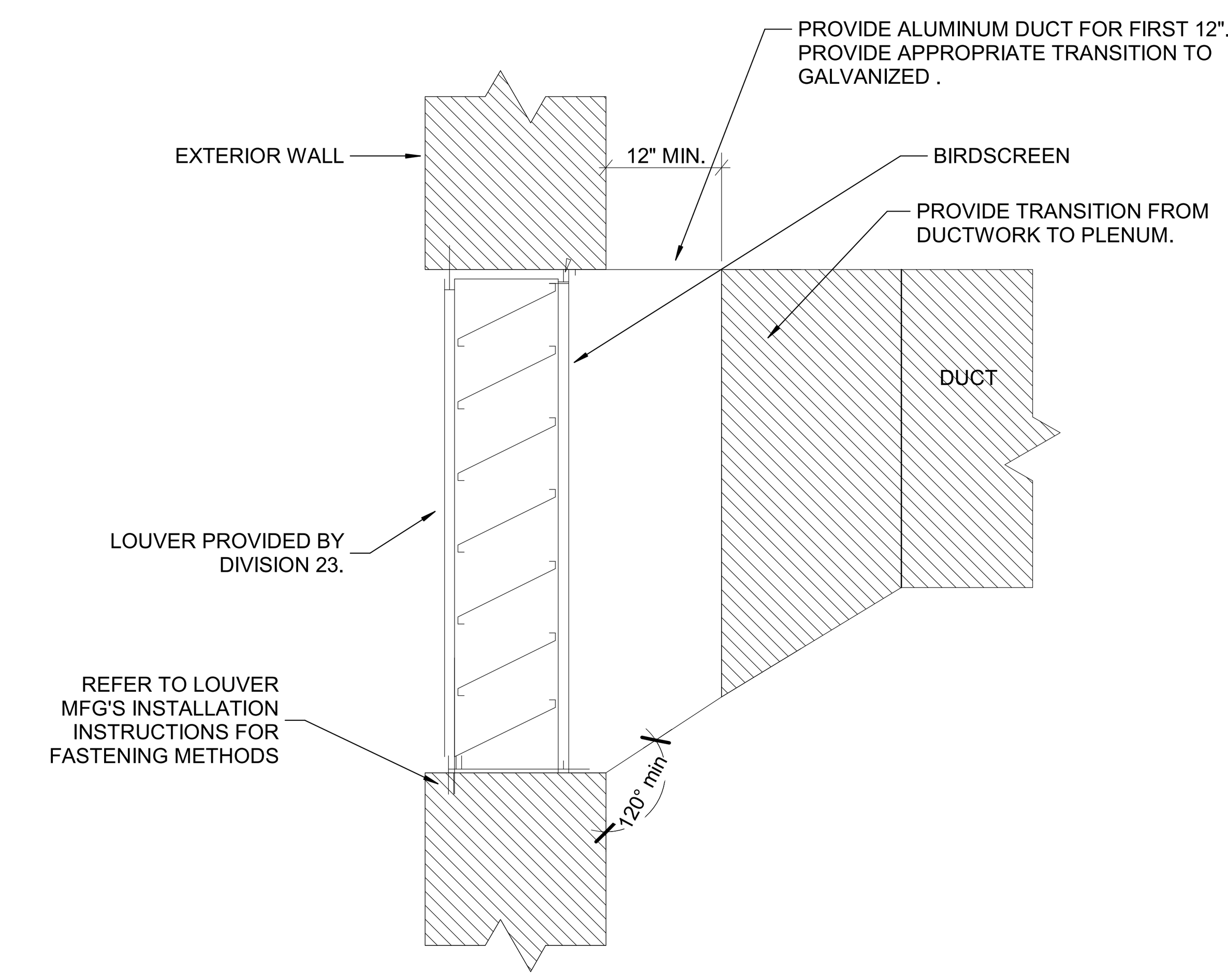
DETAILS

M5.01



NOTES:
1. WHERE EXISTING OPENINGS ARE USED, INFILL ANY EXTRA SPACE AROUND LOUVER PER DETAILS 01 AND 02/M5.03.
2. WHERE NEW OPENINGS ARE INDICATED, PROVIDE LINTEL PER DETAIL 04/M5.03

1 DETAIL - OUTSIDE AIR/EXHAUST LOUVER

NOT TO SCALE

VENTILATION CALCULATIONS

Building:
System Tag/Name: AHU-1
Operating Condition Description:
Units (select from pull-down list): IP
Delete Zone | Add Zone

Inputs for System	Name	Units	w/o diversity System	Diversity	w/ diversity System	Observation Room	Stud Health Center	*Corridor*	Check Figures / Totals/averages
Floor area served by system	As	sf	2607						
Population of area served by system	Ps	P	12 D	100%	12				4.6 P/1000 sf
Design primary supply fan airflow rate	Vpsd	cfm	1,950	100%	1,950				0.75 cfm/sf
OA req'd per unit area for system (Weighted average)	Ras	cfm/sf	0.06						0.06 ave cfm/sf
OA req'd per person for system area (Weighted average)	Rps	cfm/p	5.0						5.00 ave cfm/p
Percent increase in Vbz over minimum required			0%						
Inputs for Potentially Critical zones						Potentially Critical Zones			
Zone Name (Show Values per Zone)		Zone title turns purple italic for critical zone(s)				Observation Room	Stud Health Center	*Corridor*	Totals/averages
Zone Tag									
Occupancy Category		Select from pull-down list:				Dayroom	Office space	Corridors	
Floor Area of zone	Az	sf				852	974	781	2,607 total sf
Design population of zone	Pz	P (default value listed; may be overridden)				6	6	0	12 total P
Design total supply to zone (primary plus local recirculated)	Vdzd	cfm				860	865	225	1,950 total cfm
Induction Terminal Unit, Dual Fan Dual Duct or Transfer Fan?		Select from pull-down list or leave blank if N/A:							
Frac. of local recirc. air that is representative of system RA	Er								1.00 average
Inputs for Operating Condition Analyzed									
Percent of total design airflow rate at conditioned analyzed	Ds	%			100%	100%	100%	100%	100% average
Air distribution type at conditioned analyzed		Select from pull-down list:				CS	CS	CS	
Zone air distribution effectiveness at conditioned analyzed	Ez	Show codes for Ez				1.00	1.00	1.00	1.00 average
Primary air fraction of supply air at conditioned analyzed	Ep								1.00 average
Results									
System Ventilation Efficiency	Ev				**0.90**				
Outdoor air intake required for system	Vot	cfm			**240**				
Outdoor air per unit floor area	Vot/As	cfm/sf			**0.09**				
Outdoor air per person served by system (including diversity)	Vot/Ps	cfm/p			**20.0**				
Outdoor air as a % of design primary supply air	Ypd	%			**12%**				

Building:
System Tag/Name: AHU-2
Operating Condition Description:
Units (select from pull-down list): IP
Delete Zone | Add Zone

Inputs for System	Name	Units	w/o diversity System	Diversity	w/ diversity System	OP/OT	Stock	Psychiatrist	Head Nurse	Exam Room	*Corridors*
Floor area served by system	As	sf	3042								
Population of area served by system	Ps	P	12 D	100%	12						
Design primary supply fan airflow rate	Vpsd	cfm	1,950	100%	1,950						
OA req'd per unit area for system (Weighted average)	Ras	cfm/sf	0.04								
OA req'd per person for system area (Weighted average)	Rps	cfm/p	6.3								
Percent increase in Vbz over minimum required			0%								
Inputs for Potentially Critical zones						Potentially Critical Zones					
Zone Name (Show Values per Zone)		Zone title turns purple italic for critical zone(s)				OP/OT	Stock	Psychiatrist	Head Nurse	Exam Room	*Corridors*
Zone Tag											
Occupancy Category		Select from pull-down list:				Classrooms (age 9 plus)	Occupiable storage rooms for dry	Office space	Office space	Office space	Corridors
Floor Area of zone	Az	sf				966	219	382	253	440	782
Design population of zone	Pz	P (default value listed; may be overridden)				6	0	2	2	2	0
Design total supply to zone (primary plus local recirculated)	Vdzd	cfm				820	100	290	225	330	185
Induction Terminal Unit, Dual Fan Dual Duct or Transfer Fan?		Select from pull-down list or leave blank if N/A:									
Frac. of local recirc. air that is representative of system RA	Er										
Inputs for Operating Condition Analyzed											
Percent of total design airflow rate at conditioned analyzed	Ds	%			100%	100%	100%	100%	100%	100%	100%
Air distribution type at conditioned analyzed		Select from pull-down list:				CS	CS	CS	CS	CS	CS
Zone air distribution effectiveness at conditioned analyzed	Ez	Show codes for Ez				1.00	1.00	1.00	1.00	1.00	1.00
Primary air fraction of supply air at conditioned analyzed	Ep										
Results											
System Ventilation Efficiency	Ev				**0.85**						
Outdoor air intake required for system	Vot	cfm			**235**						
Outdoor air per unit floor area	Vot/As	cfm/sf			**0.08**						
Outdoor air per person served by system (including diversity)	Vot/Ps	cfm/p			**19.6**						
Outdoor air as a % of design primary supply air	Ypd	%			**12%**						

Building:
System Tag/Name: AHU-3
Operating Condition Description:
Units (select from pull-down list): IP
Delete Zone | Add Zone

Inputs for System	Name	Units	w/o diversity System	Diversity	w/ diversity System	Speech Ther	Speech Ther	Corridor	Speec Ther	*Guidance Couns*	Waiting	Storage
Floor area served by system	As	sf	2256									
Population of area served by system	Ps	P	17 D	100%	17							
Design primary supply fan airflow rate	Vpsd	cfm	1,845	100%	1,845							
OA req'd per unit area for system (Weighted average)	Ras	cfm/sf	0.06									
OA req'd per person for system area (Weighted average)	Rps	cfm/p	5.0									
Percent increase in Vbz over minimum required			0%									
Inputs for Potentially Critical zones						Potentially Critical Zones						
Zone Name (Show Values per Zone)		Zone title turns purple italic for critical zone(s)				Speech Ther	Speech Ther	Corridor	Speec Ther	*Guidance Couns*	Waiting	Storage
Zone Tag												
Occupancy Category		Select from pull-down list:				Office space	Office space	Lobbies	Office space	Office space	Lobbies	Occupiable storage rooms for dry
Floor Area of zone	Az	sf				372	419	268	310	451	171	265
Design population of zone	Pz	P (default value listed; may be overridden)				3	3	2	3	3	2	0.53
Design total supply to zone (primary plus local recirculated)	Vdzd	cfm				295	295	295	240	240	240	240
Induction Terminal Unit, Dual Fan Dual Duct or Transfer Fan?		Select from pull-down list or leave blank if N/A:										
Frac. of local recirc. air that is representative of system RA	Er											
Inputs for Operating Condition Analyzed												
Percent of total design airflow rate at conditioned analyzed	Ds	%			100%	100%	100%	100%	100%	100%	100%	100%
Air distribution type at conditioned analyzed		Select from pull-down list:				CS	CS	CS	CS	CS	CS	CS
Zone air distribution effectiveness at conditioned analyzed	Ez	Show codes for Ez				1.00	1.00	1.00	1.00	1.00	1.00	1.00
Primary air fraction of supply air at conditioned analyzed	Ep											
Results												
System Ventilation Efficiency	Ev				**0.94**							
Outdoor air intake required for system	Vot	cfm			**231**							
Outdoor air per unit floor area	Vot/As	cfm/sf			**0.10**							
Outdoor air per person served by system (including diversity)	Vot/Ps	cfm/p			**14.0**							
Outdoor air as a % of design primary supply air	Ypd	%			**13%**							

Building:
System Tag/Name: AHU-4
Operating Condition Description:
Units (select from pull-down list): IP
Delete Zone | Add Zone

Inputs for System	Name	Units	w/o diversity System	Diversity	w/ diversity System	Conference Room	Audiologist	Waiting	Wellness	*Storage*	Psychologist	Social Worker
Floor area served by system	As	sf	2015									
Population of area served by system	Ps	P	21 D	100%	21							
Design primary supply fan airflow rate	Vpsd	cfm	1,850	100%	1,850							
OA req'd per unit area for system (Weighted average)	Ras	cfm/sf	0.06									
OA req'd per person for system area (Weighted average)	Rps	cfm/p	5.0									
Percent increase in Vbz over minimum required			0%									
Inputs for Potentially Critical zones						Potentially Critical Zones						
Zone Name (Show Values per Zone)		Zone title turns purple italic for critical zone(s)				Conference Room	Audiologist	Waiting	Wellness	*Storage*	Psychologist	Social Worker
Zone Tag												
Occupancy Category		Select from pull-down list:				Conference/ meeting	Office space	Lobbies	Office space	Occupiable storage rooms for dry	Office space	Office space
Floor Area of zone	Az	sf				393	522	163	163	246	263	265
Design population of zone	Pz	P (default value listed; may be overridden)				5	5	2	2	3	2	2
Design total supply to zone (primary plus local recirculated)	Vdzd	cfm				420	420	280	140	140	225	225
Induction Terminal Unit, Dual Fan Dual Duct or Transfer Fan?		Select from pull-down list or leave blank if N/A:										
Frac. of local recirc. air that is representative of system RA	Er											
Inputs for Operating Condition Analyzed												
Percent of total design airflow rate at conditioned analyzed	Ds	%			100%	100%	100%	100%	100%	100%	100%	100%
Air distribution type at conditioned analyzed		Select from pull-down list:				CS	CS	CS	CS	CS	CS	CS
Zone air distribution effectiveness at conditioned analyzed	Ez	Show codes for Ez				1.00	1.00	1.00	1.00	1.00	1.00	1.00
Primary air fraction of supply air at conditioned analyzed	Ep											
Results												
System Ventilation Efficiency	Ev				**0.91**							
Outdoor air intake required for system	Vot	cfm			**248**							
Outdoor air per unit floor area	Vot/As	cfm/sf			**0.12**							
Outdoor air per person served by system (including diversity)	Vot/Ps	cfm/p			**11.8**							
Outdoor air as a % of design primary supply air	Ypd	%			**13%**							

Progressive Design Collaborative, Ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 025020 STEVE W. CAMPBELL
06/09/2023
SCAMPBELL@PDCENGINEERS.COM

DRAWN BY: JAV CHECKED BY: SWC

PDC 22035 06/09/2023

REVISIONS

NUMBER	DATE	DESCRIPTION

BID/PERMIT

ENCSD Mayfield Hall HVAC

North Carolina Department of Public Instruction
1311 US Hwy 301 South,
Wilson, NC 27893

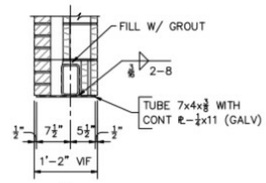
SCO# 22-24314-01A

DETAILS

M5.02

SEQUENCE OF OPERATIONS (TYPICAL SPLIT SYSTEM)

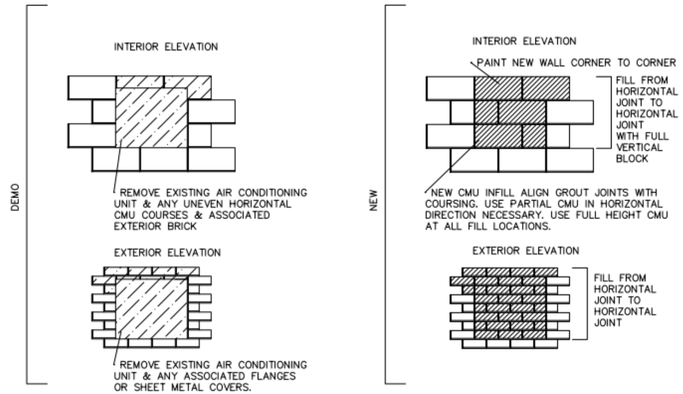
1. UNITS SHALL OPERATE PER THEIR PACKAGED CONTROLS SYSTEM BASED ON THERMOSTAT IN THE SPACE.
2. PRELIMINARY OCCUPIED SETPOINTS SHALL BE 75°F IN COOLING AND 70°F IN HEATING.
3. PRELIMINARY UNOCCUPIED SETPOINTS SHALL BE 80°F IN COOLING AND 65°F IN HEATING.
4. THE OUTSIDE AIR DAMPER SHALL OPEN WHENEVER THE FAN IS ENABLED AND CLOSE WHENEVER THE FAN TURNS OFF. THE DAMPER SHALL FAIL CLOSED.
5. THE AUXILIARY ELECTRIC HEAT SHALL BE LOCKED OUT WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 40°F.



'D' LINTEL DETAIL — NO SCALE

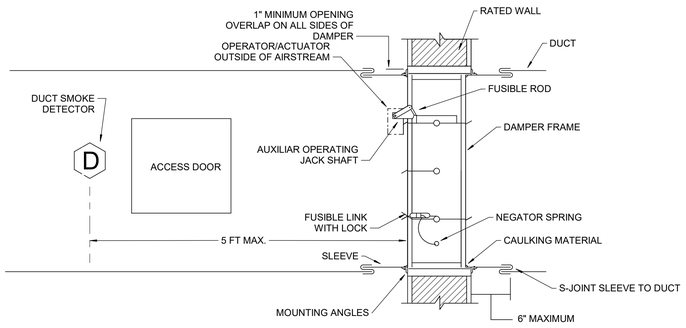
NOTES: LINTELS SHALL BE INCLUDED FOR NEW MASONRY OPENINGS.

1. SELECT LINTELS AS REQUIRED FROM THOSE SHOWN ABOVE.
2. FILL MASONRY U-BLOCKS WITH PEA GRAVEL CONCRETE.
3. FILL CELLS IN HOLLOW MASONRY AND TILE BELOW LINTEL BEARING FOR 3 COURSES WITH 3000 psi PEA GRAVEL CONCRETE.
5. SEE ARCHT & MECH DRAWINGS FOR ALL LINTELS REQUIRED.
6. SEE ARCH'T DWGS FOR MASONRY OPENINGS AND HEAD ELEVATIONS.
7. FIELD VERIFY THICKNESS AND CONSTRUCTION OF EXISTING EXTERIOR WALL.
8. SUPPORT LINTELS ON MASONRY 8" EACH END U.O.N.
9. EXISTING WALL AND JOISTS SHALL BE SHORED DURING INSTALLATION.



01 ELEVATION AT WALL MOUNTED HVAC UNIT

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

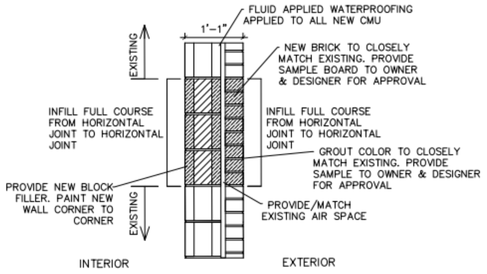


OPERATION

A. FIRE DAMPER MODE: HIGH TEMPERATURE MELTS FUSIBLE LINK, CLOSING FIRE DAMPER.
B. SMOKE DAMPER MODE: SMOKE DETECTOR UPON SENSING SMOKE OPERATES DAMPER ACTUATOR TO CLOSE DAMPER.
C. DUCT MOUNTED SMOKE DETECTOR SHALL BE FURNISHED AND WIRED BY THE FIRE ALARM CONTRACTOR. DETECTOR SHALL BE MOUNTED IN DUCT WORK BY DIVISION 23. MUST BE WITHIN 5 FT OF DAMPER.
D. ACTUATOR SHALL BE FURNISHED AND INSTALLED BY DIVISION 23. WIRING BY FIRE ALARM CONTRACTOR.

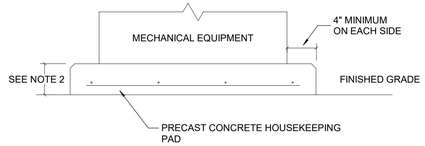
1 DETAIL - COMBINATION FIRE/SMOKE DAMPER

NOT TO SCALE



02 SECTION DETAIL AT INFILL FOR HVAC UNIT

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



NOTES:

1. ACTUAL PAD SIZE TO BE DETERMINED AFTER ALL EQUIPMENT HAS BEEN SUBMITTED AND REVIEWED.
2. PAD SHALL BE 4" HIGH.

3 DETAIL - MECH EQUIP. PAD

NOT TO SCALE

Progressive Design Collaborative, ltd.

3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 025020 ENGINEER STEVEN W. CAMPBELL

06/09/2023

SCAMPBELL@PDCENGINEERS.COM

DRAWN BY: JAV CHECKED BY: SWC

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DETAILS

M5.03

AIR DISTRIBUTION SCHEDULE

MARK	MANUFACTURER	MODEL	PURPOSE	MIN CFM	MAX CFM	FACE SIZE	INLET SIZE	REMARKS
A	PRICE	620	SUPPLY	-	275		14x6	1
B	PRICE	ASPD	SUPPLY	105	225	24x24	8	1,2,3
C	PRICE	ASPD	SUPPLY	105	225	24x24	8	1,2,3
RG	PRICE	630	RETURN		2000	24x24	24x24	1
S	PRICE	APDDR	RETURN	105	225	24x24	8	1,2,3,4
T	PRICE	APDDR	RETURN	230	375	24x24	10	1,2,3,4
U	PRICE	APDDR	RETURN	380	550	24x24	12	1,2,3,4

GENERAL NOTES:

A. BASIS OF DESIGN IS PRICE. EQUIVALENTS BY TITUS, KRUEGER, OR AS LISTED IN THE SPECIFICATION.
B. ALL AIR DISTRIBUTION SHALL BE ALUMINUM CONSTRUCTION.
C. CONTRACTOR SHALL PROVIDE ALL TRANSITIONS AND FITTINGS REQUIRED.

REMARKS:

1. PROVIDE WITH OFF WHITE ENAMEL FINISH
2. PROVIDE WITH TRIM TO MATCH CEILING TYPE.
3. PROVIDE ROUND INLET OR SQUARE TO ROUND ADAPTER
4. ALL CEILING MOUNTED RETURN GRILLES SHALL BE FULL FACED. NO LAY-IN PANELS ALLOWED.

SPLIT SYSTEM CONDENSING UNIT

MARK	MANUFACTURER	MODEL	TOTAL COOLING (MBH)	HEATING CAPACITY (MBH)	EFFICIENCY		COMPRESSOR		FAN		ELECTRICAL				WEIGHT (LBS)	DIMENSIONS (HxWxD)	REMARKS
					SEER	HSP F	QTY	RLA	QTY	FLA	MCA	MFS	V	PH			
SSHP-1	TRANE	4TWR4060G1	57.9	37.0	14.0	8.5	1	24.4	1	1.1	32.0	50	208	1	300	51x39x35	
SSHP-2	TRANE	4TWR4060G1	57.9	37.0	14.0	8.5	1	24.4	1	1.1	32.0	50	208	1	300	51x39x35	
SSHP-3	TRANE	4TWR4060G1	57.9	37.0	14.0	8.5	1	24.4	1	1.1	32.0	50	208	1	300	51x39x35	
SSHP-4	TRANE	4TWR4060G1	57.9	37.0	14.0	8.5	1	24.4	1	1.1	32.0	50	208	1	300	51x39x35	

GENERAL NOTES:

A. UNIT SHALL USE R410A REFRIGERANT.
B. LINE SIZES SHALL BE AS RECOMMENDED BY MANUFACTURER BASED ON EQUIVALENT LENGTH OF ACTUAL PIPING ROUTING. CONTRACTOR SHALL FIELD VERIFY.
C. PROVIDE HAIL GUARDS
D. PROVIDE CRANK CASE HEATERS, FACTORY INSTALLED LIQUID LINE DRIERS, PHASE LOSS/REVERSAL MONITOR, AND EVAPORATOR DEFROST CONTROL
E. PROVIDE ANTI-SHORT CYCLE TIMER
F. PROVIDE NEOPRENE VIBRATION ISOLATORS.
G. PROVIDE FACTORY INSTALLED SERVICE DISCHARGE AND SUCTION VALVES WITH GAUGE PORTS
H. PROVIDE TRANSDUCER KIT FOR HEAD PRESSURE CONTROL
I. PROVIDE OUTDOOR AIR TEMPERATURE SENSOR. SET AUXLIARY ELECTRIC HEAT TO BE LOCKED OUT ABOVE 40 DEG F.
J. UNIT SHALL BE AHRI CERTIFIED
K. EQUIVALENTS BY AAON, CARRIER, OR YORK.

LOUVER SCHEDULE

MARK	PURPOSE	DESCRIPTION	CFM	WxH	MAX APD (in wg)	MIN. FREE AREA (sf)	MAX VELOCITY (fpm)	REMARKS
LV-1	INTAKE	AHU-1 OA	240	20x16	0.04	0.81	450	
LV-2	INTAKE	AHU-2 OA	240	20x16	0.04	0.81	450	
LV-3	INTAKE	AHU-3 OA	240	20x16	0.04	0.81	450	
LV-4	INTAKE	AHU-4 OA	250	20x16	0.04	0.81	450	

GENERAL NOTES:

A. BASIS OF DESIGN IS RUSKIN EME520DD. EQUIVALENTS BY GREENHECK, AIROLITE, OR AS LISTED IN THE SPECIFICATIONS.
B. PROVIDE ALUMINUM BIRDSCREEN
C. LOUVERS SHALL BE AMCA 540 AND AMCA 550 CERTIFIED
D. PROVIDE 70% PVDF FINISH. OWNER TO SELECT COLOR FROM STANDARD OPTIONS.

AIR HANDLING UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	OUTSIDE AIR (CFM)	SUPPLY FAN								COOLING COIL							HEAT PUMP CAPACITY			AUXILIARY ELECTRIC HEAT		FINAL FILTER		ELECTRICAL				WEIGHT (LBS)	REMARKS
				CFM	QTY	HP	BHP	ESP IN. WG	TSP IN. WG	DESIGN RPM	NOMINAL RPM	CFM	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	TOTAL COOLING (MBH)	SENSIBLE COOLING (MBH)	CAPACITY (MBH)	EDB (°F)	LDB (°F)	kW	AMPS	MERV RATING	THICKNESS	V	PH	MCA	MFS		
AHU-1	TRANE	GAM5B0C60M51	240	1950	1	1.0	0.7	0.7	0.82	1050	1050	1950	77.5	66.0	57.9	56.1	57.9	40.8	35.8	62.3	79.9	7.2	34.6	13	1"	208	1	53	60	200	
AHU-2	TRANE	GAM5B0C60M51	240	1950	1	1.0	0.7	0.7	0.82	1050	1050	1950	77.5	66.0	57.9	56.1	57.9	40.8	35.8	62.3	79.9	7.2	34.6	13	1"	208	1	53	60	200	
AHU-3	TRANE	GAM5B0C60M51	240	1845	1	1.0	0.7	0.7	0.82	1050	1050	1950	77.5	66.0	57.9	56.1	57.9	40.8	35.8	62.3	79.9	7.2	34.6	13	1"	208	1	53	60	200	
AHU-4	TRANE	GAM5B0C60M51	250	1850	1	1.0	0.7	0.7	0.82	1050	1050	1950	77.5	66.0	57.9	56.1	57.9	40.8	35.8	62.3	79.9	7.2	34.6	13	1"	208	1	53	60	200	

GENERAL NOTES:

A. EQUIVALENTS BY CARRIER OR YORK
B. PROVIDE SINGLE POINT POWER CONNECTION
C. PROVIDE PROGRAMMABLE THERMOSTAT WITH LCD SCREEN
D. PROVIDE PHASE MONITORING PROTECTION
E. PROVIDE CONDENSATE OVERFLOW SWITCH
F. PROVIDE 1" FILTER RACK
G. PROVIDE 1" MERV 8 FILTERS

pdc

Progressive Design Collaborative, ltd.

3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 025020 ENGINEER STEVEN W CAMPBELL

06/09/2023

SCAMPBELL@PDCENGINEERS.COM

DRAWN BY: JAV CHECKED BY: SWC

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MECHANICAL SCHEDULES

M7.01

DEMOLITION GENERAL NOTES:

A. NOTIFY THE OWNER, IN WRITING, AT LEAST 7 DAYS IN ADVANCE OF ALL REQUIRED SHUTDOWNS ELECTRICAL UTILITIES. UPON WRITTEN RECEIPT OF APPROVAL FROM OWNER, SHUTDOWNS SHALL BE PERFORMED AS DIRECTED BY THE OWNER AND SHALL BE CONDUCTED AT NO ADDITIONAL CONTRACT COST. AT THE COMPLETION OF EACH SHUT DOWN, ALL SERVICES SHALL BE RESTORED SO THAT NORMAL OPERATION OF ALL UTILITIES CAN RESUME.

B. WHEN WORKING IN AND AROUND THE EXISTING BUILDING, EXTREME CARE SHALL BE EXERCISED IN REGARDS TO PROTECTION OF THE EXISTING STRUCTURE, MECHANICAL AND ELECTRICAL SERVICES WHICH WILL REMAIN. REPAIR, REPLACE OR RESTORE TO THE SATISFACTION OF THE OWNER/ARCHITECT/ENGINEER ALL EXISTING WORK DAMAGED IN THE PERFORMANCE OF DEMOLITION AND/OR NEW WORK.

C. ALL EXISTING WIRING, EQUIPMENT, CONDUITS AND MATERIALS NOT REQUIRED FOR RE-USE OR RE-INSTALLATION (SHOWN OR OTHERWISE) SHALL BE REMOVED. ALL EXISTING MATERIALS AND EQUIPMENT WHICH ARE REMOVED AND DESIRED BY THE OWNER, OR ARE INDICATED TO REMAIN AS THE PROPERTY OF THE OWNER, SHALL BE DELIVERED TO THE OWNER ON THE PREMISES BY THE CONTRACTOR WHERE DIRECTED BY THE ARCHITECT. ALL OTHER MATERIALS AND EQUIPMENT WHICH ARE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY THE CONTRACTOR FROM THE PREMISES.

D. EXISTING CONDITIONS (PRESENCE AND LOCATION OF PANELBOARDS, LIGHTING FIXTURES, RECEPTACLES, EQUIPMENT, MATERIALS AND CIRCUITING) INDICATED ARE BASED ON INFORMATION OBTAINED FROM AVAILABLE RECORD DRAWINGS AND FIELD SURVEYS AND ARE NOT WARRANTED TO BE COMPLETE OR CORRECT. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF ALL CONDUITS, EQUIPMENT AND MATERIALS IN THE FIELD PRIOR TO STARTING ALL WORK.

E. EXISTING EQUIPMENT SIZES NOTED ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND ARE NOT WARRANTED TO BE CORRECT. CONTRACTOR SHALL VERIFY ALL SIZES IN THE FIELD IF EQUIPMENT IS IN PROJECT SCOPE.

F. WHEN EXISTING MECHANICAL AND ELECTRICAL WORK IS REMOVED, ALL CONDUITS, WIRING AND MATERIALS SHALL BE REMOVED TO A POINT BELOW FINISHED FLOORS OR BEHIND FINISHED WALLS AND CAPPED. SUCH POINTS SHALL BE FAR ENOUGH BEHIND FINISHED SURFACES TO ALLOW FOR THE INSTALLATION OF THE NORMAL THICKNESS OF FINISHED MATERIAL.

G. EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT, CONDUIT, WIRING, DEVICES, AND MATERIALS AFFECTED BY DEMOLITION OR NEW WORK INSTALLATION AND REQUIRED TO REMAIN IN SERVICE SHALL BE REINSTALLED OR SUPPORTED AS REQUIRED IN ACCORDANCE WITH NEW WORK SPECIFICATIONS. ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF THE OWNER.

H. IN GENERAL ALL EQUIPMENT AND MATERIALS SHOWN "LIGHT" IS EXISTING TO REMAIN AND ALL EQUIPMENT AND MATERIALS SHOWN AS "HEAVY AND DASHED" IS EXISTING AND SHALL BE DEMOLISHED.

I. ENSURE THAT ALL ELECTRICAL WORK IS DONE DE-ENERGIZED. SPECIFICALLY WHERE ELECTRICAL EQUIPMENT IS OPENED EXPOSING LIVE PARTS, BREAKERS ARE REMOVED OR INSTALLED OR WHERE ELECTRICAL CONNECTIONS ARE MODIFIED, ALL POWER AT THE PANEL OR ENCLOSURE SHALL BE DE-ENERGIZED AT ITS SOURCE, PRIOR TO WORK BEING DONE.

J. ALL TESTING, TROUBLESHOOTING AND VERIFICATION OF DEENERGIZATION IS TO BE DONE IN ACCORDANCE WITH NFPA 70E INCLUDING ESTABLISHING, ISOLATING IF REQUIRED, SHOCK PROTECTIVE AND ARC FLASH PROTECTIVE APPROACH BOUNDARIES AND WEARING PERSONAL PROTECTIVE EQUIPMENT APPROPRIATE FOR THE HAZARD.

K. PRIOR TO THE REMOVAL OF A CIRCUIT FROM A PANELBOARD, THE CONTRACTOR SHALL VERIFY THAT NO EXISTING LOADS REMAIN ON THAT CIRCUIT. IF UNEXPECTED LOADS REMAIN ON THE CIRCUIT, NOTIFY EOR FOR DIRECTIONS TO PROCEED. ONCE CIRCUITS HAVE BEEN VERIFIED TO BE UNDER NO LOAD, BREAKERS IN THE CORRESPONDING PANELBOARD SHALL BE FLIPPED TO THE 'OFF' POSITION AND MARKED AS SPARE AND READY FOR FUTURE WORK. ALL CONDUIT AND WIRING SHALL BE REMOVED BACK TO SOURCE.

L. UPDATE PANEL SCHEDULES TO REFLECT NEW AND CHANGED LOAD. ALL PANEL SCHEDULES SHALL BE COMPUTER GENERATED.

M. EXISTING FIRE ALARM SYSTEM SHALL 100% TESTED AFTER ALTERATIONS MADE DURING DEMOLITION AND NEW CONSTRUCTION. FIELD TESTING REQUIRES TESTING OF ALL DEVICES DIRECTLY CHANGED AS WELL AS 10% OF INITIATING DEVICES NOT AFFECTED BY CHANGES UP TO A MAXIMUM OF 50 DEVICES MUST BE PERFORMED AS PART OF REACCEPTANCE TESTING PER 2018 NC FIRE CODE SECTION 907.8 AND NFPA 70 (2013) NATIONAL FIRE ALARM AND SIGNALING CODE 14.4.2.4 .

GENERAL NOTES

1. DO NOT SCALE FROM THESE DRAWINGS.
2. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH ALL OTHER TRADES INVOLVED IN THE PROJECT PRIOR TO THE INSTALLATION OF HIS EQUIPMENT TO AVOID CONFLICTS DURING CONSTRUCTION AND ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE.
3. ALL LIGHT FIXTURES SHALL BE SUPPORTED FROM BUILDING STRUCTURE AND IS NOT ALLOWED TO BE ANCHORED OR SUPPORTED BY ANY PART OF THE SUSPENDED CEILING SYSTEM. REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION.
4. THE USE OF THE CONDUIT SYSTEM FOR EQUIPMENT GROUNDING SHALL NOT BE ACCEPTABLE. A SEPARATE INSULATED, GREEN COLORED COPPER WIRE SHALL RUN WITH THE CIRCUIT CONDUCTORS IN EACH CIRCUIT CONDUIT.
5. IN ALL AREAS WHERE FIRE RATED WALLS, FLOORS AND CEILINGS ARE INSTALLED, ALL PENETRATIONS OF ELECTRICAL CONDUITS OR OTHER RELATED ELECTRICAL MATERIAL SHALL BE PROPERLY SEALED WITH APPROVED FIRE RATED MATERIALS TO MAINTAIN THE RATINGS OF THE BUILDING CONSTRUCTION.
6. ALL FUSES, DISCONNECT SWITCHES AND BREAKER SIZES SHOWN FOR MECHANICAL/PLUMBING/FIRE PROTECTION EQUIPMENT SHALL BE VERIFIED PRIOR TO THE PURCHASE OR INSTALLATION OF SAID EQUIPMENT, WITH THE EQUIPMENT SUPPLIER AND MECHANICAL/PLUMBING CONTRACTOR.
7. ALL WORK AND MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH STATE, LOCAL AND NATIONAL CODES AND ORDINANCES.
8. EACH CONTRACTOR SHALL PROVIDE THEIR OWN SUPPORTS FOR ALL DEVICES AND EQUIPMENT PROVIDED BY THE CONTRACTOR AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED GOVERNING CODES OR PER APPROVAL OF THE ENGINEER. UNACCEPTABLE WORKMANSHIP OF MATERIALS SHALL BE REPLACED AT THE REQUEST OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
9. ALL JUNCTION BOXES AND CONDUIT RUNS (WITH OR WITHOUT WIRES) SHALL BE COLOR CODED WITH PAINT IN ACCORDANCE WITH ELECTRICAL GENERAL PROVISIONS.
10. THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS AND JUNCTION BOXES SHALL BE REVIEWED AND COORDINATED WITH THE ENGINEER AND OWNER PRIOR TO INSTALLATION.
11. ALL WIRE AND CONDUIT SIZES ARE BASED ON 75 DEGREE CELSIUS THHN OR THWN WIRE UNLESS OTHERWISE NOTED.
12. THE NEW FIRE ALARM EQUIPMENT SHOWN SHALL BE PROVIDED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. PROVIDE ALL WIRING AS REQUIRED FOR A COMPLETE SYSTEM.
13. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND FINISHES BEFORE PURCHASING ANY LIGHT FIXTURES SO THAT THE PROPER TRIM WILL BE PROVIDED FOR THE CEILING TO BE INSTALLED. ANY CHANGES REQUIRED DUE TO INCORRECT LIGHTING FIXTURE MOUNTING HARDWARE SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
14. ALL BRANCH BREAKERS SERVING EMERGENCY LIGHTS SHALL BE PROVIDED WITH COVERS TO PREVENT BREAKERS FROM BEING TURNED OFF ACCIDENTALLY.
15. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE UTILITY POWER COMPANY FOR THE WORK REQUIRED FOR THE CONNECTION OF THE UTILITY'S NEW TRANSFORMER METERING, ETC. THE ELECTRICAL CONTRACTOR SHALL PAY ALL NECESSARY CHARGES FOR THE INSTALLATION OF THE UNDERGROUND ELECTRICAL SERVICE AS SHOWN ON THE PLANS. (ALL UTILITY WORK IS EXISTING, NOTE IS NOT APPLICABLE TO PROJECT).
16. WHERE MULTIPLE SWITCHES ARE SHOWN IN THE SAME LOCATION, THEY SHALL BE GANGED TOGETHER IN ONE MULTIPLE GANG BOX WITH MATCHING COVER AND PARTITION (IF REQUIRED). THE ELECTRICAL CONTRACTOR SHALL LOOK AT BOTH POWER AND LIGHTING PLAN TO DETERMINE WHICH SWITCH IS APPLICABLE.
17. WHERE ELECTRICAL EQUIPMENT PENETRATES EXTERIOR WALLS OR THE ROOF, THEY SHALL BE PROPERLY SEALED WITH METHODS APPROVED BY THE ENGINEER. SUBMIT DETAIL OF PROPOSED SEALING METHODS.
18. ALL EXTERIOR BUILDING LIGHTS AND EMERGENCY LIGHTING SHALL BE WIRED WITH A MINIMUM #10 AWG OR AS NOTED OTHERWISE.
19. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CHAIN HUNG FIXTURES LOCATED IN MECHANICAL OR OTHER SPACES WITH OTHER TRADES, SO AS NOT TO CONFLICT WITH OTHER EQUIPMENT.
20. ALL EMERGENCY LIGHTING, EXIT SIGNS AND NIGHT LIGHTS SHALL BE WIRED AHEAD OF ANY SWITCH AND/OR BUILDING AUTOMATION SYSTEM.
21. WHERE CONDUIT OR OUTLET BOXES CANNOT BE INSTALLED IN EXISTING WALLS FOR NEW DEVICES, NOTIFY EOR/ARCHITECT FOR AN ACCEPTABLE INSTALLATION SOLUTION PRIOR TO PROCEEDING.
22. OUTLET BOXES ON OPPOSITE SIDES OF A FIRE RESISTANT WALL OR SHAFT ENCLOSURE RATED TWO (2) HOURS OR LESS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24" AS REQUIRED BY 2018 NC BUILDING CODE SECTION 714.3.2 INCLUSIVE OF THE UPDATED INSTALLATION CRITERION SUCH AS THE (4) PERMISSIBLE SEPARATION METHODS FOR ELECTRICAL BOXES INSTALLED WITHIN OPPOSITE SIDES OF A COMMON FIRE WALL.
23. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL ACCESS PANELS AS REQUIRED FOR ELECTRICAL CODE COMPLIANCE AND TO ACCESS ANY INSTALLATION THAT WILL REQUIRE FUTURE MAINTENANCE. THESE DOORS SHALL BE 20"X20". EACH ROOM WITH A DRYWALL CEILING SHALL HAVE A MINIMUM OF ONE ACCESS DOOR PROVIDED BY THE ELECTRICAL CONTRACTOR. THE DRYWALL SUBCONTRACTOR WILL PROVIDE THE REQUIRED FRAMED OPENING AND INSTALL THE ACCESS DOORS.
24. ALL UNDERGROUND CONDUITS SHALL BE IDENTIFIED ON ASBUILT PLANS WITH DIMENSIONS LOCATING THE CONDUITS AND THEIR RESPECTIVE BURIAL DEPTHS.
25. CONDUCTORS FOR BRANCH CIRCUITS SHALL BE SIZED TO PREVENT VOLTAGE DROP EXCEEDING 3% AT THE FARTHEST OUTLET OF POWER, HEATING AND LIGHTING LOADS OR ANY COMBINATION OF SUCH LOADS. THE MAXIMUM TOTAL VOLTAGE DROP ON BOTH FEEDER AND BRANCH CIRCUITS TO THE FARTHEST CONNECTION SHALL NOT EXCEED 5%.
    A. WHERE THE CONDUCTOR LENGTH FROM THE PANEL TO THE FIRST OUTLET ON A 120V CIRCUIT EXCEEDS 50'-0", THE BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET SHALL NOT BE SMALL THAN #10 AWG. INCREASE THE BRANCH CIRCUIT CONDUCTOR SIZE AN ADDITIONAL WIRE SIZE FOR EACH ADDITIONAL 125' FOR THE ENTIRE CIRCUIT. THE GROUND CONDUCTOR SIZE SHALL BE INCREASE PROPORTIONALLY TO THE INCREASED PHASE CONDUCTORS AS PER NEC 2020 250.122(B).

SYMBOL LEGEND

SYMBOL	DESCRIPTION	REMARKS
OR OR	LUMINAIRE - LETTER DESIGNATES TYPE	SEE FIXTURE SCHEDULE
	EMERGENCY LIGHT FIXTURE - LETTER DESIGNATES TYPE	SEE FIXTURE SCHEDULE
	EXIT LIGHT - ARROW INDICATES DIRECTION & SHADING INDICATES ILLUMINATED FACE(S).	SEE FIXTURE SCHEDULE
OS	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR WITH ISOLATED RELAY AND WIDE ANGLE LENS. TIME DELAYS OF NO LESS THAN 15 MINUTES. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS.	WATTSTOPPER DT300 OR APPROVED EQUAL BY P&S OR LEVITON.
S_{OS}	DUAL TECHNOLOGY WALL SWITCH SENSOR - COVERAGE: MAJOR MOTION 35'x30', MINOR MOTION 20'x15'. TIME DELAYS OF NO LESS THAN 15 MINUTES. MOUNT AT +48" TO TOP OF OUTLET BOX. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS.	WATTSTOPPER DSW-301 OR APPROVED EQUAL BY P&S OR LEVITON.
S	SINGLE POLE TOGGLE SWITCH - 48" ABOVE FINISHED FLOOR TO TOP OF OUTLET, UNLESS OTHERWISE NOTED.	
S_D	DIMMER SLIDE SWITCH - INSTALL AT 48" ABOVE FINISHED FLOOR TO TOP OF OUTLET. SWITCH COLOR SELECTED BY ARCHITECT.	
WP S_M	120 VOLT MOTOR RATED TOGGLE DISCONNECT SWITCH WITH JUNCTION BOX. WP INDICATES TO PROVIDE NEMA-3R SWITCH.	
	DUPLEX GROUNDING TYPE RECEPTACLE - AT 16" ABOVE FINISHED FLOOR TO BOTTOM OF OUTLET, UNLESS OTHERWISE NOTED	HUBBELL 5362-X WITH 97101 COVER OR APPROVED EQUAL BY LEGRAND OR EATON
GFI WP	WEATHERPROOF DUPLEX GROUNDING TYPE RECEPTACLE - +16" ABOVE GRADE TO BOTTOM OF OUTLET BOX, UNLESS OTHERWISE NOTED.	HUBBELL GF-5362-X WITH TAYMAC HEAVY DUTY IN-USE COVER OR EQUAL BY LEGRAND OR EATON
SD	CEILING MOUNTED SMOKE DETECTOR	
DDC	DIGITAL DIRECT CONTROLS FOR HVAC BY HVAC CONTRACTOR	
J	JUNCTION BOX WITH REMOVABLE COVER - SIZE PER NATIONAL ELECTRICAL CODE	
	120/208 VOLT PANELBOARD WITH NEUTRAL AND GROUND BUS ACCESSORIES.	
SPD	SURGE PROTECTIVE DEVICE	
	DISCONNECT SWITCH, HEAVY DUTY	
	WIRING AND CONDUIT INSTALLED CONCEALED IN WALL SPACE OR ABOVE FINISHED CEILING	
	UNSWITCHED WIRING AND CONDUIT LEG ON LIGHTING PLANS. UNDER FLOOR WIRING AND CONDUIT ON POWER PLANS. UNDER GROUND WIRING AND CONDUIT ON SITE PLANS.	
	HOME RUN CIRCUIT TO PANELBOARD	
WAP	WIRELESS ACCESS POINT WITH DATA DROP. REFER TO PLANS FOR LOCATIONS.	
S	CEILING MOUNTED FIRE ALARM STROBE.	

LOAD SUMMARY

	TOTAL KVA
EXISTING BUILDING SERVICE LOAD	72.5
LOAD X 1.25%	90.6
DERIVATION - APPROXIMATE	
EXISTING LIGHTING LOAD	2.6
EXISTING RECEPTACLE LOAD	15.5
EXISTING HVAC LOAD	41.4
EXISTING MISC LOAD	13.0
NEW LIGHTING LOAD ADDED	0.0
NEW RECEPTACLE LOAD ADDED	1.2
NEW HVAC LOAD ADDED	75.3
NEW MISC LOAD ADDED	0.0
	76.5
= +76.5kVA LOAD ADDED TO BUILDING WITH NEW 600A SERVICE	167.1

SHEET INDEX - ELECTRICAL

Sheet Number	Sheet Name	Current Revision	Current Revision Date
E0.01	ELECTRICAL LEAD SHEET		
E1.00	DEMOLITION PLAN		
E2.00	NEW WORK PLAN		
E5.01	DETAILS		
E6.01	PANEL SCHEDULE & RISER DIAGRAM		

ABBREVIATIONS

ABBREV.	DEFINITION
A	AMPS, AMPERE, AMPERAGE
AC	ABOVE COUNTER
A/C	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CURRENT
AL	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE
ATSC	AUTOMATIC TRANSFER SWITCH CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
A/V	AUDIO/VISUAL
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUOTMATION SYSTEM
BFC	BELOW FINISHED CEILING
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CT	CURRENT TRANSFORMER
CU	COPPER
D	DIMMING OR DIMMER
DB	DISTRIBUTION BOARD
DC	DIRECT CURRENT
DL	DAY-LIGHTING
DISC	DISCONNECT SWITCH
E	EMERGENCY
ECB	ENCLOSED CIRCUIT BREAKER
EOR	ENGINEER OF RECORD
EWC	ELECTRIC WATER COOLER
EX	EXISTING
FUT	FUTURE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FDR	FEEDER
FPMR	FUSE PER MANUFACTURER RECOMMENDATIONS
GAA	GENERATOR ALARM ANNUNCIATOR
GAP	GENERATOR ALARM PANEL
GEN	GENERATOR
GEC	GROUNDING ELECTRODE CONDUCTOR
GFI	GROUND FAULT INTERRUPTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFEP	GROUND FAULT EQUIPMENT PROTECTION
GFP	GROUND FAULT PROTECTION
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HH	HAND HOLE
HOA	HAND-OFF AUTOMATIC
HP	HORSEPOWER
IEEE	INSTITUE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IG	ISOLATED GROUND
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPS
KW	KILOWATT
KWH	KILOWATT HOURS
LC	LIGHTING CONTACTOR
LS	LOUD SPEAKER
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS AND GROUND FAULT PROTECTION
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MIN	MINIMUM
MH	MAN HOLE
MLO	MAIN LUGS ONLY
MTS	MANUAL TRANSFER SWITCH
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
N or NEUT	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
O/H	OVER HEAD
P	POLE
PA	PUBLIC ADDRESS
PB	PULL BOX
PC	PHOTOCELL
PH	PHASE POTENTIAL TRANSFORMER
PT	POTENTIAL TRANSFORMER
RC	RECEPTACLE CONTACTOR
RSC	RIGID STEEL CONDUIT
SEC	SECURITY
SPD	SURGE PROTECTIVE DEVICE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME CLOCK
TEMP	TEMPORARY
TGB	TECHNOLOGY GROUND BAR
TGMB	TECHNOLOGY MAIN GROUND BAR
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TYP.	TYPICAL
U/C	UNDER COUNTER
U/G	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UL	UNDERWRITERS' LABORATORIES
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLTS, VOLTAGE
VFD	VARIABLE FREQUENCY DRIVE
WG	WIRE GUARD
WP	WEATHERPROOF
XFER	TRANSFER
XFMR	TRANSFORMER

pdc

Progressive Design Collaborative, ltd.

3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 024651 ENGINEER JAMES BUTKOVICH
06/09/2023

TBUTKOVICH@PDCENGINEERS.COM

DRAWN BY: RB CHECKED BY: JPT

PDC 22035 06/09/2023

REVISIONS

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ENCSD Mayfield Hall HVAC

North Carolina Department of Public Instruction
1311 US Hwy 301 South,
Wilson, NC 27893

SCO# 22-24314-01A

ELECTRICAL LEAD SHEET

E0.01

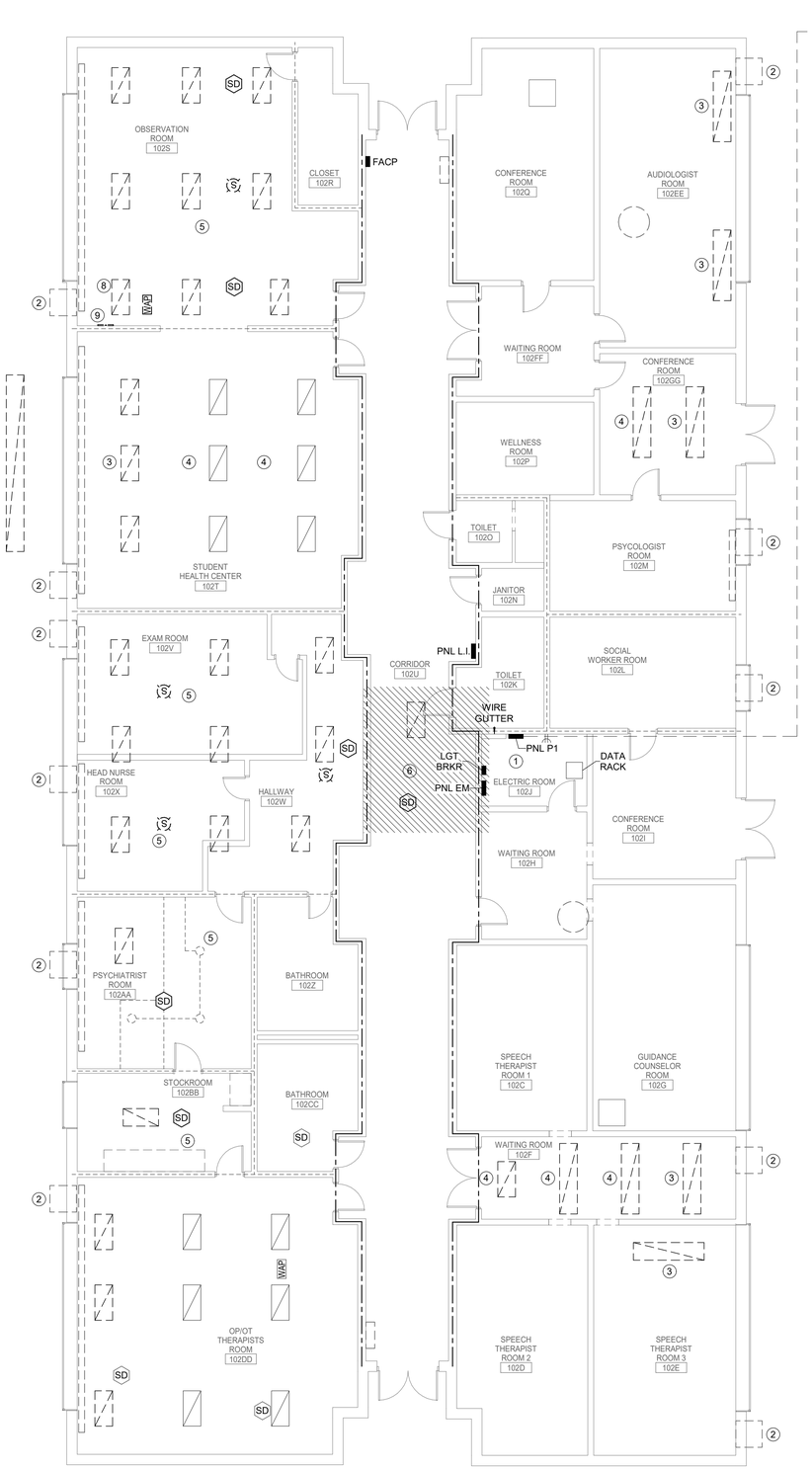
GENERAL NOTES:

A. EXISTING ELECTRICAL PANELS ARE SHOWN FOR REFERENCE ONLY, UNLESS OTHERWISE NOTED.

B. CONTRACTOR SHALL VERIFY EXISTING CIRCUITS PRIOR TO ANY DEMOLITION.

KEY NOTES:

1. DISCONNECT EXISTING FEEDER TO EXISTING DISCONNECT AT EXISTING SERVICE TRANSFORMER. DEMOLISH EXISTING DISCONNECT AND FEEDER TO MAYFIELD BUILDING AND TURN OVER TO OWNER. CAP AND ABANDON EXISTING UNDERGROUND CONDUIT IN PLACE. PREPARE SECONDARY LUGS ON TRANSFORMER FOR ADDITION OF NEW FEEDER AND NEW DISCONNECT AT THAT LOCATION.
2. REMOVE DISCONNECT, JUNCTION BOX, AND ALL ASSOCIATED CONDUIT AND WIRING FROM EXISTING A/C UNIT IN ITS ENTIRETY BACK TO SOURCE PANEL. SPARE BREAKER.
3. REMOVE EXISTING LIGHT FIXTURE AND STORE FOR RELOCATION. REMOVE ALL ASSOCIATED WIRING BACK TO NEAREST JUNCTION BOX.
4. EXISTING LIGHT FIXTURE TO REMAIN IN PLACE.
5. REMOVE EXISTING CEILING, LIGHTS, AND CEILING MOUNTED DEVICES AND STORE FOR ADDITION OF NEW DUCTWORK. KEEP ALL WIRING IN PLACE FOR RECONNECTION. PRESERVE EXISTING STRUCTURAL SUPPORTS, FIRE RATED BOXES AND OTHER ITEMS NOT DISTURBED BY DEMOLITION. PROVIDE SUPPORT FOR ANY CABLING NOT REMOVED VIA DEMOLITION OF EXISTING DEVICES.
6. IN THIS SHADED AREA ONLY - REMOVE EXISTING CEILING GRID, LIGHT, AND SMOKE DETECTOR AND STORE FOR INSTALLATION OF NEW SERVICE FEEDER. KEEP ALL WIRING IN PLACE FOR RECONNECTION. PRESERVE EXISTING STRUCTURAL SUPPORTS, FIRE RATED BOXES AND OTHER ITEMS NOT DISTURBED BY DEMOLITION. PROVIDE SUPPORT FOR ANY CABLING NOT REMOVED VIA DEMOLITION OF EXISTING DEVICES.
7. THIS FIXTURE SHALL BE RELOCATED TO NEW POSITION SHOWN ON E2.00 TO CLEAR NEW WALL FOR AIR HANDLER UNIT
8. DISCONNECT MASS NOTIFICATION SYSTEM MONITOR AND STORE PROTECTED DURING WORK. KEEP EXISTING WIRING TO RECONNECT TO DEVICE ONCE NEW WALL IS CONSTRUCTED.



1 ELECTRICAL DEMOLTION PLAN

1/8" = 1'-0"

RATED WALLS LEGEN

1 H

Progressive Design Collaborative, Ltd.

3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 024651 ENGINEER JAMES BUTKOVICH

06/09/2023

TBUTKOVICH@PDCENGINEERS.COM

DRAWN BY: RB CHECKED BY: JPT

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ENCSD Mayfield Hall HVAC

North Carolina Department of Public Instruction
1311 US Hwy 301 South,
Wilson, NC 27893

SCO# 22-24314-01A

DEMOLITION PLAN

E1.00

GENERAL NOTES:

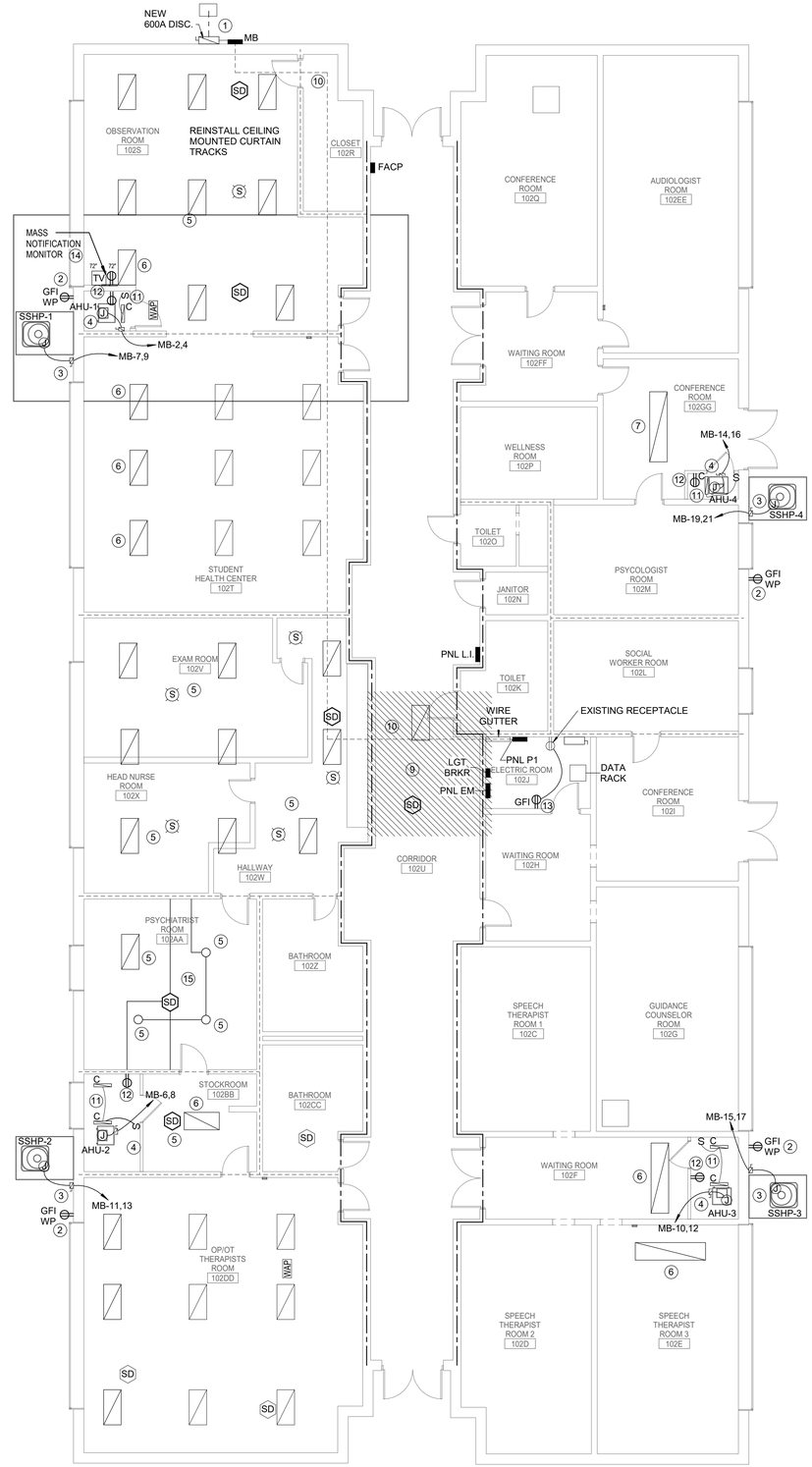
A. EXISTING ELECTRICAL PANELS ARE SHOWN FOR REFERENCE ONLY, UNLESS OTHERWISE NOTED.

B. REFER TO PANEL SCHEDULE & RISER FOR WIRE AND CONDUIT SIZES.

C. LIGHTING REPLACEMENT AND FCAP DEFICIENCY LIFE SAFETY/EGRESS ISSUES WILL BE ADDRESSED AT TIME OF CONSTRUCTION AS ENTIRE CAMPUS IS UNDERGOING A LIGHTING RETROFIT/REDESIGN.

KEY NOTES:

1. COORDINATE NEW SERVICE FEEDER TO BUILDING WITH LOCAL UTILITY. PROVIDE NEW NEMA 3R SERVICE ENTRANCE RATED 600A 3P 208V DISCONNECT ON WALL. CONNECT EXISTING FEEDERS CONTINUOUS FROM PULLBOX PROVIDED BY LOCAL UTILITY TO NEW DISCONNECT AND GROUND DISCONNECT PER NEC SERVICE REQUIREMENTS. PROVIDE 600A FUSES AT DISCONNECT. ROUTE NEW FEEDER FROM DISCONNECT TO NEW NEMA 3R PANEL "MB" MOUNTED TO EXTERIOR OF BUILDING. COORDINATE CONDUIT ROUTING AND FINAL LOCATION OF PANEL WITH SIDEWALK. REFER TO RISER DIAGRAM FOR FEEDER AND GROUND SIZES.
2. PROVIDE A WP, GFCI, COVERED SERVICE RECEPTACLE WITHIN 25 FEET OF NEW EXTERIOR HVAC UNIT. TIE IN RECEPTACLE TO NEAREST RECEPTACLE CIRCUIT AVAILABLE.
3. PROVIDE 60A, 240V, 2P, NEMA 3R, FUSED DISCONNECT FOR NEW OUTDOOR CONDENSING UNIT. EXTEND NEW CONDUIT AND FEEDER FROM NEW 208V, 50A, 2P BREAKER INSTALLED IN NEW PANEL "MB" AND PROVIDE NEW CONDUCTORS SIZED PER PANEL SCHEDULES. FUSE DISCONNECT PER MANUFACTURER RECOMMENDATIONS.
4. PROVIDE 60A, 240V, 2P, NEMA 1, FUSED DISCONNECT FOR NEW INDOOR AIR HANDLING UNIT. EXTEND NEW CONDUIT AND FEEDER FROM NEW 208V, 60A, 2P BREAKER INSTALLED IN NEW PANEL "MB" AND PROVIDE NEW CONDUCTORS SIZED PER PANEL SCHEDULES. FUSE DISCONNECT PER MANUFACTURER RECOMMENDATIONS.
5. REINSTALL STORED LIGHT FIXTURE FROM DEMOLITION WORK IN EXISTING CEILING AND RECONNECT TO EXISTING LIGHTING CONTROLS. VERIFY FIXTURE REPLACEMENT WITH FCAP LIGHTING UPGRADE, PROVIDE INDVIDUAL DISCONNECTING MEANS PER NEC ART. 410.130.(G)(1).
6. RELOCATE EXISTING LIGHT FIXTURE DISCONNECTED DURING DEMOLITION TO NEW LOCATION SHOWN. RECONNECT TO EXISTING WIRING AS REQUIRED. VERIFY FIXTURE REPLACEMENT WITH FCAP LIGHTING UPGRADE, PROVIDE INDIVIDUAL DISCONNECTING MEANS PER NEC ART. 410.130.(G)(1).
7. EXISTING LIGHT FIXTURE TO REMAIN.
8. REPLACE GRID, REINSTALL AND RECONNECT ALL LIGHTING AND CEILING MOUNTED DEVICES REMOVED IN DEMOLITION PHASE TO EXISTING WIRING LEFT IN PLACE. ENSURE ALL EXISTING ITEMS HAVE BEEN STORED AND ANY EXISTING CEILING CABLES, STRUCTURE SUPPORTS, AND FIRE RATED BOXES HAVE BEEN REINSTALLED WITH DEVICES AS REQUIRED.
9. IN THIS SHADED AREA ONLY - REPLACE GRID, REINSTALL AND RECONNECT LIGHTING FIXUTRE AND SMOKE DETECTOR REMOVED IN DEMOLITION PHASE TO EXISTING WIRING LEFT IN PLACE IN AREA FOR NEW FEEDER ROUTED ABOVE CEILING. ENSURE ALL EXISTING ITEMS HAVE BEEN STORED AND ANY EXISTING CEILING CABLES, STRUCTURE SUPPORTS, AND FIRE RATED BOXES HAVE BEEN REINSTALLED WITH DEVICES AS REQUIRED.
10. ROUTE NEW SERVICE FEEDER FROM PANEL "MB" TO EXISTING PANEL "P1" ABOVE CEILING IN PLACES WITH GRID AND CLOSE TO CEILING IN ROOMS WITH HARD CEILING. REFER TO DRAWING FOR ITEMS TO BE REMOVED AND REINSTALLED AFTER INSTALLATION. REFER TO RISER DIAGRAM FOR FEEDER SIZE.
11. PROVIDE 24" LED STRIP FIXTURE - LITHONIA CLX-L24-1500LM-HEF-FDL-MVOLT-GZ1-40K-80CRI (OR EQUAL BY COLUMBIA, SIGNIFY, OR HUBBELL) IN NEW MECHANICAL CLOSETS. CONNECT TO NEW SWITCH SHOWN, AND PROVIDE 2#12 & 1#12GND IN 3/4C FEEDER TO CONNECT TO NEAREST LOCAL LIGHTING CIRCUIT. COORDINATE MOUNTING WITH DUCTWORK ROUTING FROM UNIT.
12. PROVIDE NEW SERVICE RECEPTACLE WITHIN CLOSET OF NEW AIR HANDLER UNIT. TIE IN RECEPTACLE TO NEAREST RECEPTACLE CIRCUIT AVAILABLE.
13. PROVIDE NEW GFCI RATED RECEPTACLE SURFACE MOUNTED TO WALL IN ELECTRICAL ROOM. PROVIDE NEW CONDUIT AND FEEDER (2#12 & 1#12GND IN 3/4") SURFACE MOUNTED, AND CONNECT TO EXISTING LOCAL RECEPTACLE CIRCUIT AS SHOWN.
14. RELOCATE MASS NOTIFICATION SYSTEM MONITOR MOUNT, RECEPTACLE AND CATV OUTLET TO NEW LOCATION SHOWN. EXTEND ALL EXISTING WIRING AND RECONNECT. CONTRACTOR TO TEST SYSTEM FOR COMPLETE OPERATION.
15. REINSTALL SURFACE MOUNTED CONDUITS AND RECONNECT ALL WIRING THAT WAS MOVED DURING DEMOLITION OF HARD CEILING.



1 ELECTRICAL NEW WORK PLAN

0 4' 8' 16'

1/8" = 1'-0"

1 EXISTING UTILITY XFMR

RATED WALLS LEGEND

1 HR RATED

Progressive Design Collaborative, Ltd.

3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

License# C-0183
pdcengineers.com

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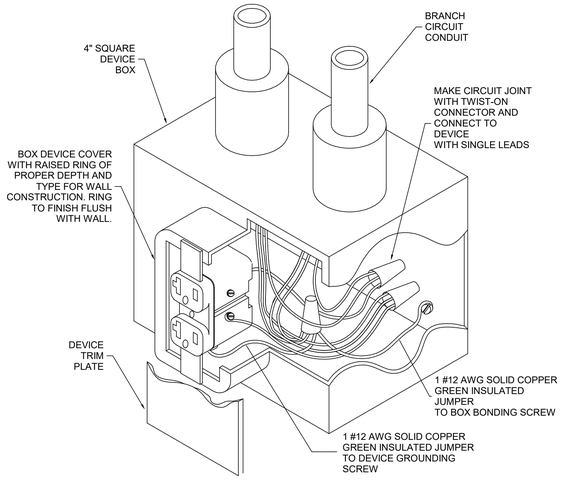
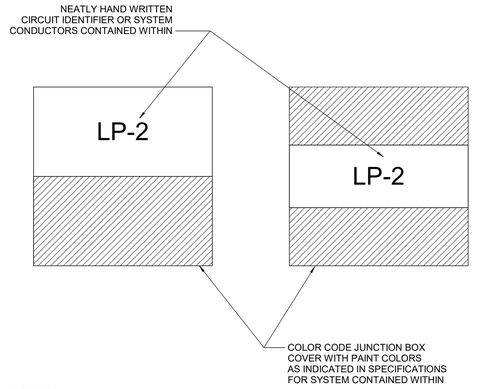
NEW WORK PLAN

E2.00



4 RECEPTACLE GROUNDING

NOT TO SCALE



NOTE:

CONTRACTOR SHALL IDENTIFY JUNCTION BOX COVERS WITH ONE OF THE TWO METHODS SHOW ABOVE, BUT NOT BOTH. ALL JUNCTION BOX COVERS SHALL BE CONSISTENTLY IDENTIFIED ACROSS THE ENTIRE PROJECT.

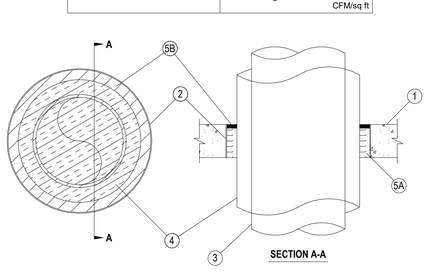
2 JUNCTION BOX LABELING

NOT TO SCALE

System No. C-AJ-5091

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Ratings — 0 and 1 Hr (See Items 2 and 4)	FT Ratings — 0 and 1 Hr (See Items 2 and 4)
L Rating At Ambient — 4 CFM/sq ft	FH Rating — 2 Hr
L Rating At 400 F — Less Than 1 CFM/sq ft	FTH Ratings — 0 and 1 Hr (See Items 2 and 4)
	L Rating At Ambient —4 CFM/sq ft
	L Rating At 400 F —Less Than 1 CFM/sq ft

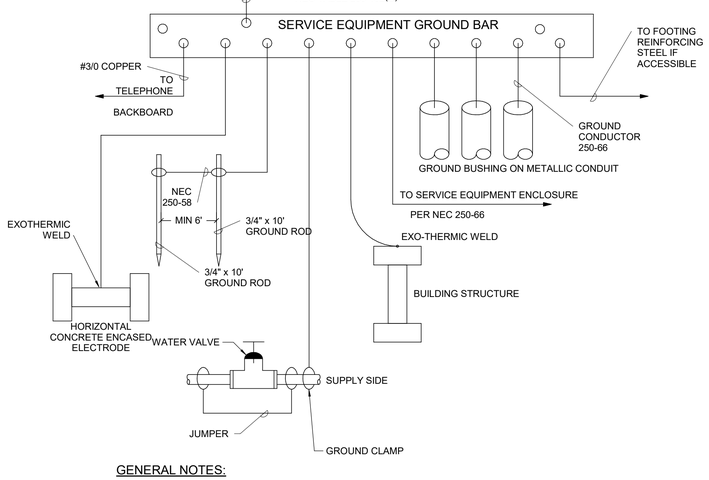
Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115



1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 29 in. (737 mm).
   See Concrete Blocks (CAZT) category in the Fire Resistance directory for names of manufacturers.
2. Metallic Sleeve — (Optional) — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces or extending a max of 3 in. (76 mm) above floor or beyond both surfaces of wall. If the steel sleeve extends beyond the top surface of the floor or both surfaces of the wall, the T Rating of the firestop system is 0 hr.
2A. Sheet Metal Sleeve — (Optional) - Max 6 in. (152 mm) diam, min 26 ga galv steel provided with a 26 ga galv steel square flange spot welded to the sleeve at approximately mid- height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. (51 mm) larger than the sleeve diam. The sleeve is to be cast in place flush with bottom surface of floor and may extend a max of 1 in. (25 mm) above the top surface of the floor.
2B. Sheet Metal Sleeve — (Optional) - Max 12 in. (305 mm) diam, min 24 ga galv steel provided with a 24 ga galv steel square flange spot welded to the sleeve at approximately mid- height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. (51 mm) larger than the sleeve diam. The sleeve is to be cast in place flush with bottom surface of floor and may extend a max of 1 in. (25 mm) above the top surface of the floor.
3. Through Penetrants — One metallic pipe or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or tubing may be used:
   A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 12 in. (305 mm) diam (or smaller) cast or ductile iron pipe.
   C. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.
   D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
4. Pipe Covering — Min 1/2 in. (13 mm) to max 2 in. (51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m³) glass fiber units jacketed on the outside with an all-service jacket. Longitudinal joints sealed with metal fasteners or factory-applied, self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space between the insulated pipe and the edge of the periphery of the opening shall be min 1/2 in. (13 mm) to max 12 in. (305 mm). When thickness of pipe covering is less than 2 in. (51 mm), the T Rating for the firestop system is 0 hr.
   See Pipe Equipment Covering — Materials — (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
4A. Pipe Covering — (Not Shown) — As an alternate to Item 4, max 2 in. (51 mm) thick cylindrical calcium silicate (min 14 pcf or 224 kg/m³) units sized to the outside diam of the pipe or tube may be used. Pipe insulation secured with stainless steel bands or min 18 AWG stainless steel wire spaced max 12 in. (305 mm) OC. The annular space shall be min 1/2 in. (13 mm) to max 12 in. (305 mm).
5. Firestop System — The firestop system shall consist of the following:
   A. Packing Material — Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.
   B. Fill, Void or Cavity Material* — Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

5 2 HR BLOCK PENETRATION

NOT TO SCALE



GENERAL NOTES:

A. THIS SCHEMATIC IS NOT INTENDED TO SHOW ALL NEC AND OTHER CODE REQUIRED BONDING AND GROUNDING. RATHER, IT IS INTENDED TO ALERT THE CONTRACTOR TO TYPICAL MISAPPLICATIONS AND/OR OVERSIGHTS THAT OCCUR IN THE FIELD. THE CONTRACTOR IS A LICENSED PROFESSIONAL AND REMAINS RESPONSIBLE FOR ADHERENCE TO ALL INSTALLATION CODES WHETHER SHOWN OR NOT.

B. ALL CONDUCTORS SHOWN ON THIS SCHEMATIC SHALL BE SIZED PER NEC 250-66 UNLESS NOTED OTHERWISE.

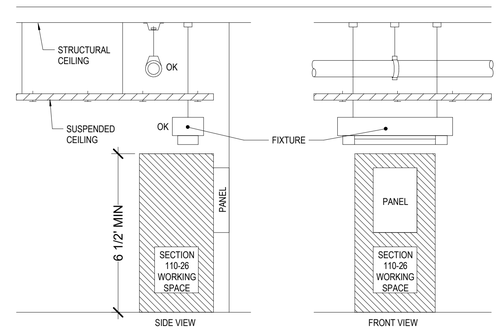
C. ALL GROUNDING AND BONDING SHOWN IS REQUIRED TO BE INSTALLED IF PRESENT ON THE PROJECT.

D. SEE OTHER DETAILS FOR ADDITIONAL GROUNDING AND BONDING OF OTHER EQUIPMENT AND/OR SYSTEMS.

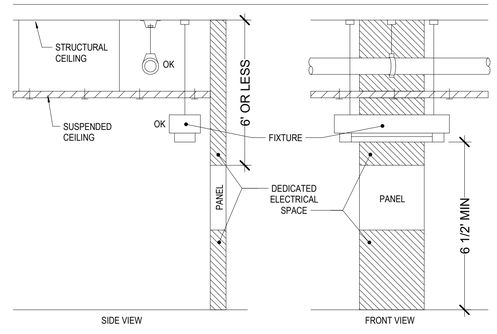
E. COORDINATE CONCRETE ENCASED ELECTRODES WITH STRUCTURAL ENGINEER.

3 DETAIL - BONDING AND GROUNDING SCHEMATIC

NOT TO SCALE



WORKING CLEARANCE FOR ELECTRICAL EQUIPMENT
N.E.C ARTICLE 110-26



DEDICATED SPACE FOR ELECTRICAL EQUIPMENT
N.E.C ARTICLE 110-26

1 ELECTRICAL EQUIPMENT CLEARANCE

NOT TO SCALE

Progressive Design Collaborative, Ltd.

3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 024651 ENGINEER JAMES T. BUTKOVICH

06/09/2023

TBUTKOVICH@PDCENGINEERS.COM

DRAWN BY: RB CHECKED BY: JPT

PDC 22035 06/09/2023

REVISIONS

NUMBER	DATE	DESCRIPTION

BID/PERMIT

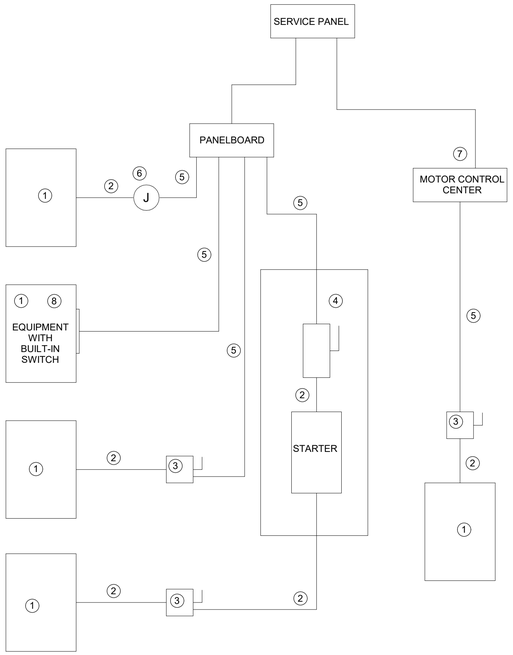
ENCSD Mayfield Hall HVAC

North Carolina Department of Public Instruction
1311 US Hwy 301 South,
Wilson, NC 27893

SCO# 22-24314-01A

DETAILS

E5.01



GENERAL NOTES:

A. IN A SINGLE PRIME CONTRACT IT IS THE RESPONSIBILY OF THE PRIME CONTRACTOR TO COORDINATE BETWEEN THE ELECTRICAL AND OTHER TRADES.

B. IN ALL CASES, THE EQUIPMENT CONTRACTOR SHALL MAKE THE FINAL CONNECTIONS, START UP, AND TEST AND COMMISSION THE EQUIPMENT.

NOTES: (AS INDICATED IN THIS DETAIL BY A NUMBER IN A ◯)

1. EQUIPMENT OF TRADES OTHER THAN ELECTRICAL.
2. CONDUIT AND WIRING BY HVAC, PLUMBING CONTRACTOR OR TRADES.
3. IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT CONTRACTOR.
4. A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPERATE DISCONNECT SWITCH AND STARTER. PROVIDE ADJACENT TO EQUIPMENT. THIS SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT CONTRACTOR. (VFDs SHALL BE PROVIDED BY CONTROLS CONTRACTOR FOR NON-PACKAGED EQUIPMENT).
5. FEEDER CIRCUIT WIRING AND CONDUIT PROVIDED IN ELECTRICAL WORK. REFER TO PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES.
6. JUNCTION BOX MAY BE INDICATED ON THE ELECTRICAL DRAWINGS FOR SOME EQUIPMENT. IF NO STARTER OR DISCONNECT IS FURNISHED BY THE EQUIPMENT MANUFACTURER, A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO THE EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING SHALL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.
7. FOR PROJECTS UTILIZING A MOTOR CONTROL CENTER (MCC), THE STARTER, CIRCUIT BREAKER, OR VFD IN THE MCC ARE PROVIDED BY THE ELECTRICAL CONTRACTOR.
8. IF THE EQUIPMENT IS NOT PROVIDED WITH A BUILT-IN DISCONNECT SWITCH, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH.

(2) DETAIL - ELECTRICAL EQUIPMENT CONNECTIONS

0 8' 16' 32'
1/8" = 1'-0"

PANELBOARD: MB

LOCATION: BUILDING EXTERIOR
MOUNTING: SURFACE
ENCL NEMA: Type 3R
MIN AIC: 42,000
MAINS: MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRES: 4
PANEL RATING: 600 A
MCB RATING: MLO
FED FROM: UTILITY
PANEL NOTES: NEW PANEL; PANEL IS TO BE SERIVCE ENTRANCE RATED

NOTES: 1. EXISTING PANEL "P1" FEEDS ENTIRE BUILDING. BACKFEED EXISTING PANEL "P1" FROM THIS PANEL.
2. HVAC LOAD REMOVED FROM EXISTING PANEL "P1" IS EQUIVALENT TO 41.4 kVA

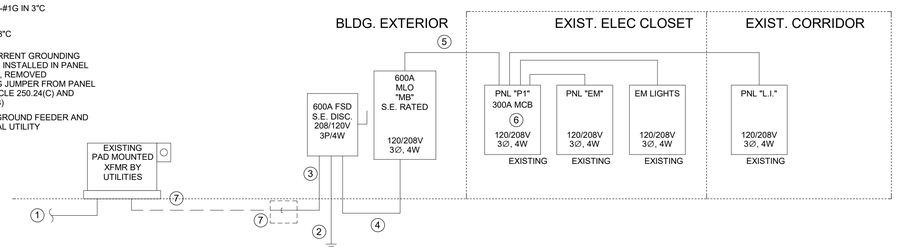
CKT	LOAD TYPE	LOAD DESCRIPTION	WIRE SIZE	CONDUIT	POLES	TRIP AMPS	A		B		C		TRIP AMPS	POLES	CONDUIT	WIRE SIZE	LOAD DESCRIPTION	LOAD TYPE	CKT
1							24.02	5.51											2
3	EXIST	EXISTING PANEL P1	4#350, 1#4GND	3"	3	300 A			24.02	5.51			60 A	2	1"	2#6, 1#10GND	AHU-1	HVAC	4
5											24.02	5.51							6
7	HVAC	SSHP-1	2#8, 1#10GND	1"	2	50 A	3.3	5.51					60 A	2	1"	2#6, 1#10GND	AHU-2	HVAC	8
9									3.3	5.51									10
11	HVAC	SSHP-2	2#8, 1#10GND	1"	2	50 A					3.3	5.51	60 A	2	1"	2#6, 1#10GND	AHU-3	HVAC	12
13							3.3	5.51											14
15	HVAC	SSHP-3	2#8, 1#10GND	1"	2	50 A			3.3	5.51			60 A	2	1"	2#6, 1#10GND	AHU-4	HVAC	16
17											3.3	--	--	1		--	SPACE		18
19	HVAC	SSHP-4	2#8, 1#10GND	1"	2	50 A	3.3	--					--	1		--	SPACE	--	20
21									3.3	--			--	1		--	SPACE	--	22
23	--	SPACE	--		1	--					--	--	--	1		--	SPACE	--	24
25	--	SPACE	--		1	--	--	--					--	1		--	SPACE	--	26
27	--	SPACE	--		1	--			--	--			--	1		--	SPACE	--	28
29	--	SPACE	--		1	--					--	--	--	1		--	SPACE	--	30
						TOTAL LOAD:	50.45 kVA		50.45 kVA		41.64 kVA								

BREAKER TYPES: LO - INDICATES "LOCK-ON" DEVICE; ST - INDICATES SHUNT TRIP DEVICE; AFCI - INDICATES ARC FAULT PROTECTED DEVICE; GFCI - INDICATES GROUND FAULT DEVICE; GFPE - INDICATES GROUND FAULT FOR EQUIPMENT

Load Classification	Connected Load (VA)	Demand Factor	Estimated Demand	Panel Totals	
Receptacle	0 kVA	0.00%	0 kVA		
Motor	0 kVA	0.00%	0 kVA	Total Connected Load:	142.54 kVA
HVAC	70 kVA	100.00%	70 kVA	Total Connected Amps:	395.65 A
Lighting	0 kVA	0.00%	0 kVA	Total Estimated Demand:	142.54 kVA
Equipment	0 kVA	0.00%	0 kVA	Total Estimated Demand Amps:	395.65 A
Kitchen Equipment	0 kVA	0.00%	0 kVA		

ELECTRICAL RISER NOTES:

1. EXISTING SERVICE PRIMARY
2. #2/0 GROUND PER NEC SPECS.
3. 2 SETS: 4-#350 IN 3"C
4. 2 SETS: 4-#350 & 1-#1G IN 3"C
5. 4-#350 & 1-#4G IN 3"C
6. EC TO VERIFY CURRENT GROUNDING BONDING JUMPER INSTALLED IN PANEL P1. IF CONFIRMED, REMOVED EXISTINGBONDING JUMPER FROM PANEL P1 PER NEW ARTICLE 250.24(C) AND ARTICLE 250.142(B)
7. EXISTING UNDERGROUND FEEDER AND PULLBOX BY LOCAL UTILITY



pdc
Progressive Design Collaborative, ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 024651 ENGINEER JAMES PATRICK BUTKOVICH
06/09/2023

TBUTKOVICH@PDCENGINEERS.COM

DRAWN BY: RB CHECKED BY: JPT

PDC 22035 06/09/2023

REVISIONS

NUMBER	DATE	DESCRIPTION

BID/PERMIT

ENCSD Mayfield Hall HVAC

North Carolina Department of Public Instruction
1311 US Hwy 301 South,
Wilson, NC 27893

SCO# 22-24314-01A

PANEL SCHEDULE & RISER DIAGRAM

E6.01