

MECHANICAL SYSTEMS AND EQUIPMENT

METHOD OF COMPLIANCE:

Prescriptive Energy Cost Budget

Thermal Zone 5A

Exterior Design Conditions
winter dry bulb 12F
summer dry bulb 94F

Interior Design Conditions
winter dry bulb 70F
summer dry bulb 75F
relative humidity 55%

Building Heating Load 2,800 BTU/hr

Building Cooling Load 5,500 BTU/hr

Mechanical Spacing Conditioning System

Unitary - The space is served by one PTAC unit with electric heat.
Boiler - Not applicable to this project.
Chiller - Not applicable to this project.

Equipment efficiencies

Efficiencies are listed on equipment schedules - See drawings.

Equipment schedules with motors.

Multispeed motors are used on this project and are included in the efficiency rating of the unit. See drawings for efficiencies.

DESIGNER STATEMENT:

To the best of my knowledge and belief, the design of this building complies with the mechanical system and equipment requirements of the 2018 NC Mechanical Code.

MECHANICAL NOTES AND SPECIFICATIONS

GENERAL REQUIREMENTS

1. THE HEATING AND AIR CONDITIONING CONTRACTOR (THE CONTRACTOR) SHALL PROVIDE ALL SPECIFIED AND MISCELLANEOUS MATERIAL AND LABOR AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
2. ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES AND RECOMMENDATIONS OF THE MANUFACTURERS. IF THERE IS A CONFLICT IN THE ABOVE REQUIREMENTS, THE MORE STRINGENT SHALL BE USED.
3. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY TO COMPLETE HIS WORK UNDER THIS CONTRACT.
4. PRIOR TO BIDDING, THE CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS AND RESOLVE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND THESE PLANS WITH THE ENGINEER.
5. ALL EQUIPMENT SHOWN ON THESE DRAWINGS IS STRICTLY DIAGRAMMATIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ITEMS FURNISHED UNDER THIS CONTRACT WILL FIT IN THE SPACE AVAILABLE. THE CONTRACTOR SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND SHALL PROVIDE SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THESE DRAWINGS AND SPECIFICATIONS. ANY CONFLICTS SHALL BE RESOLVED WITH THE ENGINEER.
6. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES. ALL DRAWINGS INDICATE THE GENERAL ARRANGEMENT DESIRED. THE EXACT LOCATIONS AND DETAILS OF CONSTRUCTION MAY BE SUCH THAT VARIANCES ARE REQUIRED. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR THE COMPLETE EXECUTION OF THIS CONTRACT. SUCH VARIANCES AND CONTINGENCIES SHALL BE ALLOWED FOR IN THE CONTRACTOR'S BID AND SHALL BE ACCOMPLISHED WITHOUT ADDITIONAL COST TO THE OWNER. PRIOR TO ORDERING EQUIPMENT, THE CONTRACTOR SHALL PREPARE COORDINATION DRAWINGS SHOWING HOW HIS EQUIPMENT IS TO BE LOCATED IN THE SPACE INDICATED. THIS DRAWING SHALL SHOW THE NEW AND EXISTING WORK OF ALL OTHER TRADES. THE CONTRACTOR SHALL CONTACT THE OTHER CONTRACTORS INVOLVED FOR DIMENSIONS, LOCATIONS, AND REQUIRED CLEARANCES OF THE EQUIPMENT THEY INTEND TO PROVIDE FOR THIS JOB. THE AFOREMENTIONED COORDINATION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
7. DO NOT SCALE THESE DRAWINGS. REFER TO THE ARCHITECTURAL PLANS FOR DIMENSIONS.
8. ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
9. ALL MATERIALS USED SHALL BE NEW AND FREE OF DEFECTS. WHERE TRADE NAMES ARE MENTIONED, THEY ARE GIVEN AS A REFERENCE TO THE QUALITY OF THE APPARATUS REQUIRED. ALL MATERIALS AND EQUIPMENT SHALL BEAR THE UL LABEL OR EQUIVALENT WHERE APPLICABLE. OTHER MARKS MAY BE USED IF APPROVED IN WRITING BY THE ENGINEER. A COMPLETE LIST OF MATERIALS AND EQUIPMENT PROPOSED FOR USE IN THIS CONTRACT TO THE ENGINEER WITHIN TEN DAYS FOLLOWING THE AWARD OF CONTRACT. IF SUCH LIST IS NOT SUBMITTED, THE CONTRACTOR SHALL SUPPLY THE MATERIALS AND EQUIPMENT SPECIFIED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE FOUR COPIES OF SUBMITTALS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING EQUIPMENT.
10. WORKMANSHIP SHALL BE FIRST-CLASS AND PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN.
11. COORDINATE EXACT LOCATION OF ALL DIFFUSERS WITH LIGHTS, SPRINKLER HEADS, AND OTHER CEILING MOUNTED DEVICES. SEE THE REFLECTED CEILING PLAN.
12. UPON COMPLETION OF THE WORK, A CERTIFIED TEST AND BALANCE SHALL BE PERFORMED IN ACCORDANCE WITH "AABC" REQUIREMENTS. FURNISH FINAL COPY OF ALL TESTING, ADJUSTING, AND BALANCING REPORTS AS A PART OF THE OPERATING AND MAINTENANCE MANUALS. INDICATE DEFICIENCIES PREVENTING PROPER TESTING, ADJUSTING AND BALANCING OF SYSTEMS AND EQUIPMENT TO ACHIEVE SPECIFIED PERFORMANCE. ADJUST AIR HANDLING SYSTEMS TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN. ADJUST TOTAL AIR TO ALL AIR OUTLETS AND INLETS TO WITHIN PLUS 10 PERCENT AND MINUS 5 PERCENT OF DESIGN TO SPACE. ADJUST INDIVIDUAL OUTLETS AND INLETS IN SPACE TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO OBTAIN REQUIRED OR DESIGN SUPPLY, RETURN AND EXHAUST AIR QUANTITIES. MEASURE AIR QUANTITIES AT AIR INLETS AND OUTLETS. VARY TOTAL SYSTEM AIR QUANTITIES BY ADJUSTMENT OF FAN SPEED. PROVIDE SHEAVE DRIVE CHANGES TO VARY FAN SPEED IF REQUIRED. VARY BRANCH AIR QUANTITIES BY DAMPER REGULATION. MEASURE STATIC AIR PRESSURE CONDITIONS ON AIR SUPPLY UNIT, LEAVING FILTER AND COIL. PRESSURE DROPS AND TOTAL PRESSURE ACROSS FAN. ALLOWANCE FOR UP TO 50 PERCENT LOADING OF FILTERS. ADJUST OUTSIDE AIR AUTOMATIC DAMPERS, OUTSIDE AIR RETURN AIR, AND EXHAUST DAMPERS FOR DESIGN CONDITIONS. AT MODULATING DAMPER LOCATIONS, TAKE MEASUREMENTS AND BALANCE AT EXTREME CONDITIONS.
13. ALL EQUIPMENT SHALL BE PROVIDED WITH PERMANENT LABELS FOR IDENTIFICATION. ALL PIPE SHALL BE LABELED TO INDICATE PIPE FUNCTION AND DIRECTION OF FLOW.
14. THE CONTRACTOR SHALL FURNISH A BOUND SET OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT TO THE OWNER UPON COMPLETION OF PROJECT.
15. THE CONTRACTOR SHALL, AT THE COMPLETION OF THE WORK, CLEAN, POLISH, AND/OR WASH ALL EXPOSED ITEMS OF MATERIALS, EQUIPMENT, AND FIXTURES IN HIS CONTRACT TO LEAVE SUCH ITEMS BRIGHT AND CLEAN. THE CONTRACTOR SHALL KEEP PREMISES CLEAR OF DEBRIS FROM HIS WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT COMPLETION OF THE CONTRACT.
16. MECHANICAL AND ELECTRICAL EQUIPMENT SHALL OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION. TERMINES BY THE ENGINEER. IF SUCH OBJECTIONABLE NOISE OR VIBRATION SHOULD BE PRODUCED AND TRANSMITTED TO OCCUPIED PORTIONS OF THE BUILDING, THE CONTRACTOR SHALL MAKE THE NECESSARY CHANGES TO CORRECT THE NOISE OR VIBRATION WITHOUT ADDITIONAL COST TO THE OWNER.
17. THE CONTRACTOR SHALL PROVIDE A COMPLETE 1-YEAR WARRANTY ON ALL LABOR AND MATERIALS UNDER THIS CONTRACT. REFRIGERATION COMPRESSORS PROVIDED UNDER THIS CONTRACT SHALL CARRY THE MANUFACTURER'S PUBLISHED 5-YEAR NON-PRORATED WARRANTY.
18. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE EQUIPMENT PROVIDED UNDER HIS CONTRACT.
19. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING FOR HIS EQUIPMENT.
20. REPLACE ALL FILTERS JUST PRIOR TO ACCEPTANCE BY THE OWNER.
21. CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW THE CONSTRUCTION DOCUMENTS. INFORMATION REGARDING THE COMPLETE WORK IS DISPERSED THROUGHOUT THE DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO THE COMPLETE DOCUMENT SETS.

MATERIALS AND EQUIPMENT

ACCESS PANELS:
THE MECHANICAL CONTRACTOR SHALL PROVIDE ACCESS PANELS AS REQUIRED FOR ACCESS TO VALVES, DAMPERS, CONTROLS, OR ANY OTHER ITEM INSTALLED UNDER THIS CONTRACT WHERE SUCH ITEM IS CONCEALED BEHIND CONSTRUCTION WHICH RENDERS THE ITEM INACCESSIBLE FOR SERVICE OR ADJUSTMENT. SAID ACCESS PANELS OR DOORS SHALL BE THE RATED AS NECESSARY TO MAINTAIN THE INTEGRITY OF THE CONSTRUCTION WHEREIN THE PANEL OR DOOR IS INSTALLED.

HVAC EQUIPMENT:
ALL EQUIPMENT SHALL BEAR THE UL, CSA, MET OR OTHER ACCREDITED TESTING LABORATORY LABEL WHERE APPROPRIATE. ALL EQUIPMENT SHALL CONFORM TO THE TYPE, SIZE, RATING, AND PERFORMANCE OF THAT LISTED ON THE DRAWINGS UNDER THIS CONTRACT. SUBMIT SHOP DRAWINGS PER THE SPECIFICATIONS.

STATEMENT OF COMPLIANCE:

AN ONSITE SYSTEM INSTALLATION COMPLIANCE REVIEW WILL BE CONDUCTED BY A DESIGN PROFESSIONAL PRIOR TO FINAL INSPECTION AND ISSUANCE OF CERTIFICATE OF OCCUPANCY. THE MECHANICAL CONTRACTOR SHALL MAKE APPROPRIATE PERSONNEL AVAILABLE DURING DESIGN PROFESSIONAL'S ONSITE INSPECTION TO ASSIST WITH REVIEW AND ADDITIONAL EQUIPMENT AND CONTROLS TESTING. CONTRACTOR SHALL SCHEDULE ONSITE INSPECTION WITH DESIGN PROFESSIONAL A MINIMUM ONE WEEK PRIOR TO VISIT. AT THE TIME OF THE VISIT THE MECHANICAL CONTRACTOR SHALL PROVIDE THE FOLLOWING FOR REVIEW BY THE LOCAL AHJ AND DESIGN PROFESSIONAL:

- A COMPLETED TEST AND BALANCE REPORT.
- A COPY OF ALL OPERATION AND MAINTENANCE MANUALS.
- DOCUMENTATION THAT EQUIPMENT INSTALLER HAS FOLLOWED THE MANUFACTURER'S RECOMMENDATIONS FOR STARTUP AND TESTING OF ALL EQUIPMENT.

GENERAL NOTES:

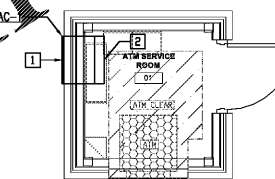
1. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF 2018 NC MECHANICAL CODE WITH REGARDS TO ALL MECHANICAL WORK.
2. MECHANICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL EQUIPMENT, PIPING, AND DUCTWORK UNDER THIS CONTRACT WITH THE BUILDING STRUCTURE. CONTRACTOR SHALL MAKE ADJUSTMENTS WHERE NECESSARY WITHOUT ADDITIONAL COST TO OWNER.

PLAN NOTES:

- 1. INSTALL THROUGH THE WALL AIR CONDITIONING UNDER MANUFACTURER'S RECOMMENDATIONS. INSTALL A MINIMUM OF 5" ABOVE FINISHED FLOOR. COORDINATE WALL FRAMING WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
- 2. COORDINATE INSTALLATION OF AIR CONDITIONING UNIT WITH ATM SERVICE CLEARANCES.



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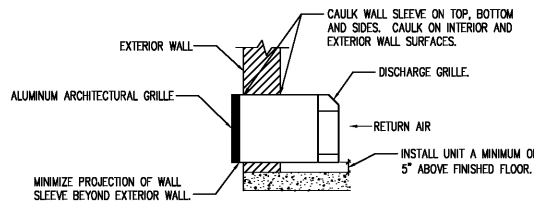


1 FLOOR PLAN - MECHANICAL
SCALE: 1/4" = 1' - 0"

PACKAGED TERMINAL A/C (PTAC) UNIT SCHEDULE

MARK	MANUFACTURER	MODEL #	COOLING BTUH	EER	ELECTRIC HEAT	HEAT BTUH	CFM	O.A.	VOLT/PH	AMPS	MOCP	WEIGHT(LB)	REMARKS
AC-1	AMANA	PBE123G35CC	11,000	9.8	2.9 KW	9,000	265	30	208/1	6.1	20	81	1, 2

- 1. PROVIDE UNIT WITH INSULATED WALL SLEEVE, BEIGE ARCHITECTURAL GRILLE (COLOR SELECTED BY ARCHITECT), CONDENSATE DRAIN KIT AND LEVELING LEGS.
- 2. PROVIDE UNIT WITH 6-20 P POWER CORD.



2 THROUGH THE WALL AIR CONDITIONING UNIT
SCALE: NONE

WALL TYPES AND RATINGS LEGEND

REFER TO ARCHITECTURAL SHEETS FOR MORE INFORMATION ON RATINGS AND ADDITIONAL RATED CONSTRUCTIONS INCLUDING COLUMNS WHERE APPLICABLE. PROTECT ALL RATED CONSTRUCTIONS AS REQUIRED.

NEW WALL TO BE CONSTRUCTED

BHDP

RALEIGH
150 FAYETTEVILLE ST.
SUITE 200
RALEIGH, NC 27601
PHONE 919.483.1024

PITTSBURGH
6432 LIVING PL.
SUITE 200
PITTSBURGH, PA
PHONE 412.450.6631

ATLANTA
715 PEACHTREE N.E. ST.
SUITE 100
ATLANTA, GA 30308
PHONE 770.545.5862

COLUMBUS
274 MARCONI BLVD
SUITE 200
COLUMBUS, OH 43215
PHONE 614.468.1940

CINCINNATI
308 WEST 3RD STREET
SUITE 500
CINCINNATI, OH 45202
PHONE 513.271.1834
website www.bhdp.com

SEPI

1 GLENWOOD AVE, SUITE 600
RALEIGH, NC 27603
PHONE 919.789.9777

11020 DAVID TAYLOR DR., SUITE 115
CHARLOTTE, NC 28262
PHONE 704.714.4880

5030 NEW CENTRE DR., SUITE B
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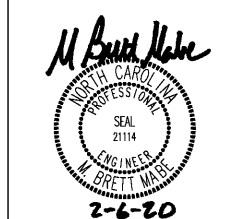
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3 WORKING DAYS
BEFORE YOU DIG
FOR THE LOCATION OF
UNDERGROUND FACILITIES

Know what's below.
Call before you dig.

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NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. WITHIN THE OWNER'S WORK THE ENGINEER SHALL BE RESPONSIBLE TO ASSURE ANY RESPONSIBILITY ON SAFETY OF THE WORK OF PERSONS EMPLOYED IN THE WORK OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.



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PROJECT:	STATE EMPLOYEES' CREDIT UNION CHARLOTTE - ALBEMARLE RD. REMOTE ATM ADDITIONS
SHEET TITLE:	MECHANICAL FLOOR PLAN
PROJECT MANAGER:	FIELD SURVEY DATE:
CHECKED BY:	DRAWING DATE: 2/6/2019
DRAWN BY:	JOB #: SE19.070

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PLAN SHOWN IS TYPICAL FOR TWO ATM KIOSKS ON THIS PROJECT SITE. SEE SITE PLANS FOR LOCATIONS AND ORIENTATIONS.

SHEET
M-11

Order Plans