

| MECHANICAL SUMMARY - MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT |   |
|---|---|
| OUTDOOR AIR DESIGN CONDITIONS   |   |
| ASHRAE CLIMATE ZONE   | 4A  |
| ELEVATION   | 2117 ft                                       |
| WINTER DRY BULB   | 15.4 °F                                       |
| SUMMER DRY BULB   | 88.0 °F                                       |
| SUMMER WET BULB   | 71.2 °F                                       |
| GENERAL INTERIOR DESIGN CONDITIONS                                      |   |
| WINTER DRY BULB   | 70.0 °F                                       |
| SUMMER DRY BULB   | 75.0 °F                                       |
| RELATIVE HUMIDITY   | 50%   |
| BUILDING HEATING LOAD   | NO ADDED LOAD                                 |
| BUILDING COOLING LOAD   | NO ADDED LOAD                                 |
| MECHANICAL SYSTEMS  |   |
| UNITARY EQUIPMENT   |   |
| DESCRIPTION OF UNIT   | REFER TO EQUIPMENT SCHEDULES FOR EFFICIENCIES |
| HEATING EFFICIENCY  |   |
| COOLING EFFICIENCY  |   |
| SIZE CATEGORY OF UNIT   |   |
| BOILER  |   |
| TOTAL BOILER OUTPUT, IF OVERSIZED STATE REASON                          | N/A   |
| CHILLER   |   |
| TOTAL CHILLER CAPACITY, IF OVERSIZED STATE REASON                       | N/A   |
| LIST EQUIPMENT EFFICIENCIES   | REFER TO EQUIPMENT SCHEDULES FOR EFFICIENCIES |

- GENERAL MECHANICAL NOTES**
- THE DRAWINGS SHOW THE LOCATION AND ARRANGEMENT OF PIPING, DUCTS, AND EQUIPMENT, TOGETHER WITH DETAILS OF CONNECTIONS OF CERTAIN PRINCIPAL ITEMS. THE LAYOUT SHOWN SHALL BE FOLLOWED AS CLOSELY AS CIRCUMSTANCES WILL PERMIT, BUT THIS CONTRACTOR SHALL REFER TO ARCHITECTURAL, STRUCTURAL, PLUMBING, AND ELECTRICAL DRAWINGS AND SHALL COOPERATE FULLY WITH OTHER CONTRACTORS AND TRADES WHILE INSTALLING DUCTS, PIPING, AND OTHER EQUIPMENT BECAUSE OF CLOSE SPACE LIMITS. IN CASE OF CONFLICT, NOTIFY DESIGNER BEFORE PROCEEDING WITH INSTALLATION. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND LOCATIONS OF PARTITION WALLS, DOORS, CHASES, CASEWORK, ETC. DO NOT SCALE MECHANICAL DRAWINGS FOR SUCH DIMENSIONS.
  - THIS CONTRACTOR SHALL PROVIDE AND INSTALL ALL OFFSETS, FITTINGS, AND ACCESSORIES THAT MAY BE REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, OR RECOMMENDED BY THE EQUIPMENT MANUFACTURER, WHETHER OR NOT THEY ARE SPECIFICALLY SHOWN OR SPECIFIED.
  - DUCTWORK SIZES INDICATED ON DRAWINGS ARE FREE INSIDE DIMENSIONS.
  - PIPING SIZES INDICATED ARE NOMINAL PIPE SIZES.
  - MAXIMUM LENGTH OF FLEXIBLE DUCT IS FIVE FEET (5').
  - IN LIEU OF RIGID PIPE CONNECTIONS, STAINLESS STEEL BRAIDED FLEXIBLE HOSE CAN BE UTILIZED AT TERMINAL UNIT LOCATIONS (VAV BOXES, HEAT PUMPS, ETC.).
  - ALL VALVES, DAMPERS, CONTROLS, AND OTHER ITEMS REQUIRED FOR OPERATION OR MAINTENANCE ARE TO BE ACCESSIBLE. PROVIDE ACCESS DOORS WHEN LOCATED ABOVE HARD CEILINGS.
  - ALL SLEEVES, OUTLET BOXES, AND OTHER ROUGH-INS FOR SUCH ITEMS AS FIRE DAMPERS, PIPE PENETRATIONS, LOUVERS, AND CONTROL ITEMS SHALL BE INSTALLED AS THE BUILDING CONSTRUCTION PROGRESSES.
  - PROVIDE AND INSTALL DUCT ACCESS DOORS AT ALL SMOKE DAMPERS, FIRE DAMPERS, DUCT SMOKE DETECTORS, AIR FLOW MONITORING STATIONS, AND OTHER DUCT ACCESSORIES REQUIRING ACCESS. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR DUCT SMOKE DETECTOR AND DUCTWORK DEVICE LOCATIONS.
  - PROVIDE AND INSTALL VOLUME CONTROL DAMPERS AT ALL SUPPLY, RETURN, AND EXHAUST BRANCH DUCT TAKE-OFFS.
  - PROVIDE AND INSTALL ISOLATION VALVES AT ALL PIPING BRANCH TAKE-OFFS WITH MORE THAN ONE PIECE OF CONNECTED EQUIPMENT.
  - THIS CONTRACTOR SHALL TAKE FIELD MEASUREMENTS BEFORE FABRICATING ANY DUCTS TO ENSURE THAT DUCT SIZES SHOWN WILL FIT INTO AVAILABLE SPACE. IN CASE OF CONFLICT, NOTIFY THE DESIGNER BEFORE PROCEEDING.
  - ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
  - COORDINATE EXACT LOCATION FOR ALL CEILING DIFFUSERS/GRILLES WITH ARCHITECTURAL REFLECTED CEILING PLAN AND ELECTRICAL CONTRACTOR'S LIGHTING LAYOUT.
  - ALL EMS SENSORS AND OTHER FIELD DEVICES MOUNTED ON WALLS TO BE PROTECTED FROM DAMAGE AS REQUIRED. PROVIDE LOCKING LEXAN COVERS IN LOCATIONS WHERE DAMAGE MAY OCCUR.
  - THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TO THE GENERAL CONTRACTOR THE QUANTITY, SIZE AND LOCATIONS OF ALL ACCESS DOORS IN WALLS, DRYWALL CEILINGS, ETC. FOR ACCESS TO VALVES, BALANCE DAMPERS OR OTHER EQUIPMENT AS REQUIRED. COORDINATE THIS WORK WITH THE REFLECTED CEILING PLANS. ALL VALVES OR OTHER DEVICES LOCATED ABOVE THE CEILING SHALL BE LOCATED IN ACCESSIBLE CEILINGS WHEREVER POSSIBLE. THERE SHOULD BE NO VALVES LOCATED ABOVE INACCESSIBLE CEILINGS.
  - COORDINATE EXACT SIZE, LOCATION, APERTURANCES, ETC. FOR ALL ROOF OPENINGS WITH GENERAL CONTRACTOR.
  - COORDINATE EXACT LOCATION FOR ALL CEILING DIFFUSERS/GRILLES WITH ARCHITECTURAL REFLECTED CEILING PLAN AND GENERAL CONTRACTOR PRIOR TO WALL CONSTRUCTION.
  - COORDINATE EXACT SIZES REQUIRED FOR ALL OPENING FOR DUCTWORK AND PIPING WITH SPACE REQUIREMENTS, FIRE DAMPER INSTALLATION INSTRUCTIONS, STRUCTURAL DRAWINGS, AND THE GENERAL CONTRACTOR PRIOR TO FRAMING FOR THE PENETRATIONS.
  - THE MECHANICAL CONTRACTOR SHALL THOROUGHLY COORDINATE DUCT / PIPE PENETRATIONS AT STRUCTURAL SHEAR WALLS / SHEAR BRACING WITH STRUCTURAL DRAWINGS AND BUILDING STEEL SHOP DRAWINGS. INSTALL LINTELS AS REQUIRED.
  - THE MECHANICAL CONTRACTOR SHALL PROVIDE 2" RIGID INSULATION BLANKET PANELS ON ALL ARCHITECTURAL LOUVERS OR PORTIONS THEREOF NOT USED AS INTAKE OR EXHAUST AS SHOWN ON THE DRAWINGS. THE MECHANICAL CONTRACTOR SHALL REVIEW THE LOCATIONS OF ALL ARCHITECTURAL LOUVERS AS SHOWN ON THE BUILDING ELEVATIONS.
  - ALL CONTROL DEVICES (SENSORS, STATs, SWITCHES, ETC) TO GENERALLY BE LOCATED ADJACENT TO LIGHT SWITCHES IN EACH ROOM, UNLESS NOTED OTHERWISE. GENERALLY, THIS SHOULD BE AS CLOSE TO DOORSTRIKE AS POSSIBLE.
  - ALL CEILING MOUNTED SMOKE DETECTORS TO BE MOUNTED AT LEAST 4" FROM ALL CEILING GRILLES / DIFFUSERS.
  - ALL STEAM PIPING TO BE SLOPED 1/8" PER 12" (1/100) DOWNWARDS IN THE DIRECTION OF STEAM FLOW.

| PACKAGED ROOFTOP UNIT SCHEDULE |          |                   |                    |                                    |                       |                        |                      |                    |               |                              |                             |      |            |              |       |        |          |     |        |
|--------------------------------|----------|-------------------|--------------------|------------------------------------|-----------------------|------------------------|----------------------|--------------------|---------------|------------------------------|-----------------------------|------|------------|--------------|-------|--------|----------|-----|--------|
| MANUFACTURER AND MODEL NUMBER  | LOCATION | OUTDOOR AIR (CFM) | SUPPLY FAN         |                                    | GAS HEATING           |                        | COOLING COIL SECTION |                    |               |                              | FILTER                      |      | ELECTRICAL | WEIGHT (LBS) | NOTES |        |          |     |        |
|                                |          |                   | AIRFLOW RATE (CFM) | EXTERNAL STATIC PRESSURE (IN. H2O) | HEATING INPUT (BTU/H) | ENTERING AIR TEMP (°F) | HEATING OUTPUT (MBH) | COOLING LOAD (MBH) | TEMP. DB (°F) | ENTERING AIR TEMP. DBWB (°F) | LEAVING AIR TEMP. DBWB (°F) | EER  |            |              |       | MEDIUM | FILTR.   | (A) | MOCP   |
| RTU-1 JOHNSON CONTROLS PCG4B48 | ROOF     | 215               | 1650               | 0.50                               | 59.4                  | 60/90                  | 47.8                 | 49.0               | 95            | 80/67                        | 59/57.5                     | 11.2 | R-410A     | MERV 8       | 30    | 45     | 230/1/60 | 450 | 1 TO 6 |
| RTU-2 JOHNSON CONTROLS PCG4B48 | ROOF     | 215               | 1650               | 0.50                               | 59.4                  | 60/90                  | 47.8                 | 49.0               | 95            | 80/67                        | 59/57.5                     | 11.2 | R-410A     | MERV 8       | 30    | 45     | 230/1/60 | 450 | 1 TO 6 |
| RTU-3 JOHNSON CONTROLS PCG4A36 | ROOF     | 200               | 1225               | 0.77                               | 45.7                  | 60/90                  | 36.5                 | 37.3               | 95            | 80/67                        | 59/57.2                     | 11.8 | R-410A     | MERV 8       | 23.9  | 35     | 230/1/60 | 359 | 1 TO 6 |
| RTU-4 JOHNSON CONTROLS PCG4B60 | ROOF     | 310               | 1700               | 0.91                               | 59.4                  | 60/90                  | 47.5                 | 58.4               | 95            | 80/67                        | 57/55.8                     | 11.2 | R-410A     | MERV 8       | 36.5  | 50     | 230/1/60 | 469 | 1 TO 6 |
| RTU-5 JOHNSON CONTROLS PCG4A36 | ROOF     | 285               | 1275               | 0.77                               | 45.7                  | 60/90                  | 36.5                 | 37.3               | 95            | 80/67                        | 59/57.2                     | 11.8 | R-410A     | MERV 8       | 23.9  | 35     | 230/1/60 | 359 | 1 TO 6 |
| RTU-6 JOHNSON CONTROLS PCG4A24 | ROOF     | 85                | 775                | 0.59                               | 45.7                  | 60/90                  | 36.5                 | 24.5               | 95            | 80/67                        | 58.3/56.8                   | 11   | R-410A     | MERV 8       | 16.9  | 25     | 230/1/60 | 316 | 1 TO 6 |

- NOTES:**
- BASIS OF DESIGN IS YORK. COMPARABLE PRODUCTS BY TRANE, DAIKIN AND AAOH AS APPROVED BY ENGINEER.
  - PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH DISPLAY. LOCATE THERMOSTAT IN EXISTING THERMOSTAT LOCATION.
  - PROVIDE FACTORY INSTALLED NON-FUSED DISCONNECT.
  - PROVIDE LOW AMBIENT CONTROL, ANTI-SHORT CYCLE PROTECTION, LOW VOLTAGE PROTECTION.
  - PROVIDE (1) YEAR WARRANTY ON COMPLETE UNIT AND (5) YEAR ON COMPRESSORS.
  - PROVIDE PHASE MONITOR KIT.
  - PROVIDE ROOF CURB.

| REVISIONS/SUBMISSIONS |      |            |
|-----------------------|------|------------|
| NO.                   | DATE | ISSUED FOR |
|                       |      |            |

SHEET TITLE:  
**MECHANICAL NOTES**

ISSUED FOR:  
**CONSTRUCTION**

|                             |                 |
|-----------------------------|-----------------|
| DRAWN BY: <b>Author</b>     | DRAWING NO.     |
| APPROVED BY: <b>Checker</b> | PROJECT #:      |
| 2023078.00                  | <b>M100</b>     |
| DATE: <b>03/15/24</b>       | OF _____ SHEETS |

**MECHANICAL SPECIFICATIONS**

IT IS THE INTENT OF THESE SPECIFICATIONS TO FURNISH A COMPLETE HEATING, VENTILATING, AND AIR CONDITIONING SYSTEM, FULLY ADJUSTED, AND READY FOR USE.

ALL MECHANICAL WORK TO BE DONE IN COMPLIANCE WITH NORTH CAROLINA BUILDING CODE AND ALL LOCAL CODES.

THIS CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL SALES TAXES, AND OTHER COSTS, IN CONNECTION WITH HIS WORK.

ALL MATERIAL AND EQUIPMENT THAT CAN BE U.L. LISTED SHALL BE FURNISHED FOR THIS PROJECT.

MATERIAL AND EQUIPMENT HAS BEEN CAREFULLY SELECTED FOR THIS PROJECT AND THE CONTRACTOR IS EXPECTED TO PROVIDE ALL ITEMS AS CLOSELY AS POSSIBLE TO THE SPECIFICATIONS AND AS CALLED FOR ON THE DRAWINGS.

SUBMIT THREE (3) SETS OF EQUIPMENT DATA SHOP DRAWINGS TO ENGINEER FOR ALL ITEMS TO BE FURNISHED AND INSTALLED FOR APPROVAL.

THIS CONTRACTOR SHALL INCLUDE IN THE WORK, WITHOUT EXTRA COST TO THE OWNER, ANY LABOR, MATERIALS, SERVICES, APPARATUS, DRAWINGS, IN ORDER TO COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES AND REGULATIONS, WHETHER OR NOT SHOWN ON DRAWINGS AND/OR SPECIFIED. NO CLAIM FOR EXTRAS WILL BE APPROVED WITHOUT PRIOR COORDINATION FOR CONFLICTS BY CONTRACTOR, AND WRITTEN REQUEST AND WRITTEN APPROVAL PRIOR TO PERFORMING WORK.

ALL WORK AND EQUIPMENT TO BE GUARANTEED BY CONTRACTOR FOR ONE (1) YEAR. AN ADDITIONAL FOUR (4) YEAR WARRANTY SHALL BE PROVIDED ON ALL COMPRESSORS.

ALL MATERIALS AND EQUIPMENT TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND GOOD RECOMMENDED PRACTICES.

ALL WORK AND MATERIALS SHALL MEET APPROVAL OF ARCHITECT/ENGINEER.

THIS CONTRACTOR SHALL GIVE FULL COOPERATION TO OTHER TRADES. WHERE THE WORK OF THIS CONTRACTOR WILL BE INSTALLED IN CLOSE PROXIMITY TO, OR WILL INTERFERE WITH WORK OF OTHER TRADES, HE SHALL ASSIST IN WORKING OUT SPACE CONDITIONS TO MAKE SATISFACTORY ADJUSTMENTS. IF THIS CONTRACTOR INSTALLS HIS WORK BEFORE COORDINATING WITH OTHER TRADES, HE SHALL MAKE THE NECESSARY CHANGES IN HIS WORK TO CORRECT THE CONDITION WITHOUT EXTRA CHARGE.

DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENTS OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. DRAWINGS ARE NOT TO BE SCALED.

ALL DUCTWORK TO BE FABRICATED FROM GALVANIZED SHEET METAL AND INSTALLED ACCORDING TO REQUIREMENTS OF NFPA 90A, SMACNA, AND ASHRAE GUIDE AND DATA BOOKS.

ALL FLEXIBLE DUCTWORK, FOR CONNECTIONS BETWEEN DIFFUSERS AND BRANCH DUCTS WHERE INDICATED, TO BE THERMAFLEX TYPE "MK".

ALL DUCT SEAMS TO BE TAPED WITH FASSON #AFTS-1003 SMACNA TAPE, OR EQUIVALENT.

VOLUME CONTROL DAMPERS (BALANCING) SHALL BE INSTALLED IN EACH BRANCH OR ZONE DUCT.

DAMPERS WHICH ARE PART OF A MANUFACTURED AIR GRILL DO NOT MEET THIS REQUIREMENT.

ALL SQUARE ELBOWS SHALL HAVE TURNING VANES INSTALLED. TURNING VANES SHALL BE APPLIED EQUALLY TO THE RETURN AIR SIDE.

DUCTWORK SIZES INDICATED ON DRAWINGS ARE AS REQUIRED FOR FREE INSIDE AREA.

ALL DUCTWORK TO BE INSULATED WITH 2" BLANKET TYPE INSULATION 1 LB. DENSITY (MIN. R=6.5) WITH VAPOR BARRIER JACKET OF .003 INCH THICK ALUMINUM FOIL LAMINATED.

ALL PIPING H.W. PIPING TO BE INSULATED WITH 1" INSULATION FOR ALL PIPING LESS THAN OR EQUAL TO 1.5" DIAMETER, AND 2" INSULATION FOR ALL PIPING OF LARGER THAN 1.5" DIAMETER. INSULATION TO HAVE A CONDUCTIVITY NOT TO EXCEED K=27. INSULATION TO BE COVERED WITH ASJ, AND LABELED WITH COLOR-CODED PIPING TAGS WITH FLOW ARROWS.

ALL PIPING AND DUCTWORK TO BE SUSPENDED WITH APPROPRIATE HANGERS, INSTALLED AND SPACED PER NC MECHANICAL CODE.

ALL SUPPLY GRILLES AND DIFFUSERS TO BE EQUIPPED WITH VOLUME CONTROLS.

AIR HANDLING EQUIPMENT SHALL BE ISOLATED FROM DIRECT CONTACT WITH SUPPLY OR RETURN AIR DUCTWORK. FLEXIBLE CONNECTIONS SHALL BE INSTALLED BETWEEN THE EQUIPMENT AND DUCT. FLEXIBLE CONNECTIONS SHALL BE MADE OF APPROVED FLAMEPROOFED FABRIC OR OTHER APPROVED NON-COMBUSTIBLE MATERIAL.

OUTDOOR EQUIPMENT LOCATED IN ALLEYS, DRIVEWAYS, PARKING AREAS, ETC., SHALL BE PROTECTED FROM DAMAGE. GRADE LEVEL EQUIPMENT SHALL BE INSTALLED ON A PRE-FORMED BASE, A STRUCTURAL FRAME, OR A CONCRETE BASE, PROPERLY INSTALLED TO INSURE ITS LEVEL BEING MAINTAINED REGARDLESS OF WEATHER CONDITIONS.

REFRIGERANT PIPING UNDERGROUND SHALL BE INSTALLED IN A PIPING CHASE. THIS CHASE MAY CONSIST OF PVC, CLAY TILE, CAST IRON, OR OTHER APPROVED PIPING MATERIALS, SUITABLE FOR UNDERGROUND USE. PIPING CHASES SHALL BE OF SUCH SIZE AS TO PERMIT THE REPLACEMENT OF THE REFRIGERANT PIPING.

EACH HEATING AND/OR COOLING SYSTEM SHALL HAVE A DEVICE, OR DEVICES, FOR CLEANING OR FILTERING BOTH RETURN AND OUTDOOR AIR.

LOW VOLTAGE WIRING (60 VOLTS OR LESS) WITHIN A STRUCTURE SHALL BE INSTALLED IN A MANNER TO PREVENT PHYSICAL DAMAGE. SUCH WIRING EXPOSED TO WEATHER SHALL BE INSTALLED BY A METHOD APPROVED FOR EXTERIOR USE.

THIS CONTRACTOR TO PERFORM ALL ADJUSTMENTS AND BALANCING OF SYSTEMS, EQUIPMENT, CONTROLS, ETC., NECESSARY FOR THE SYSTEM TO PROVIDE THE REQUIRED PERFORMANCE AND TO OPERATE SAFELY. SUBMIT "AS-BUILT" DRAWINGS TO ENGINEER SHOWING ACTUAL AIR FLOWS AT EACH GRILL INSTALLED UNDER THIS CONTRACT.

REFRIGERANT PIPING, VALVES, FITTINGS AND RELATED PARTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL LIQUID AND SUCTION LINES SHALL BE INSULATED WITH 3/4" ARMAFLEX TO PREVENT SWEATING AND HEAT GAIN. ALL EXTERIOR, VERTICAL PIPING TO BE CONCEALED WITH MITSUBISHI LINE HOSE SYSTEM (OR EQUAL).

CONDENSATE DRAINS FROM AIR CONDITIONING UNITS SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE UNIT MANUFACTURER'S RECOMMENDATIONS. CONDENSATE DRAINS SHALL BE PIPING (OR PUMPED) TO THE OUTSIDE OF BUILDING, NATURAL DRAIN, DRY WELL, LAVATORY, SERVICE SINK, ROOF DRAIN, OR STORM SEWER, CONNECTED DIRECTLY TO THE DRAINAGE PIPING BETWEEN A LAVATORY, SERVICE SINK OR LAB SINK AND ITS TRAP, OR CONNECTED INDIRECTLY (AIR GAP) TO A PROPERLY TRAPPED AND VENTED CONNECTION TO THE SANITARY DRAINAGE OR VENT SYSTEMS, IN COMPLIANCE WITH LOCAL PLUMBING CODE REQUIREMENTS.

IN ATTICS, ABOVE CEILING OR OTHER AREAS WHERE CONDENSATE DAMAGE MAY OCCUR, AN AUXILIARY DRAIN PAN SHALL BE INSTALLED UNDER THE COOLING AND / OR HEATING EQUIPMENT, WITH PAN AND EQUIPMENT HAVING SEPARATE DRAINS.

UPON COMPLETION OF ALL WORK AND ALL TESTS, INSTRUCT THE OWNER OR HIS REPRESENTATIVE FULLY IN THE OPERATIONS, ADJUSTMENTS, AND MAINTENANCE OF ALL EQUIPMENT FURNISHED.

PROVIDE OWNER MAINTENANCE INSTRUCTIONS AND SCHEDULE FOR THE PRINCIPAL ITEMS OF EQUIPMENT FURNISHED. MANUFACTURER'S ADVERTISING LITERATURE OR CATALOGS WILL NOT BE ACCEPTABLE.

GAS PIPING WITHIN THE BUILDING SHALL BE BLACK STEEL SCHEDULE 40. CONTRACTOR TO PAY UTILITY CHARGES FOR GAS SERVICE TO BUILDING.

THIS CONTRACTOR TO PROVIDE GAS PRESSURE REGULATORS FOR ALL GAS FIRED EQUIPMENT AS REQUIRED FOR PROPER OPERATION. PIPE REGULATOR RELIEF TO OUTSIDE BUILDING WITH SCREEN OVER OPENING.

**ELECTRICAL SPECIFICATIONS**

IT IS THE INTENT OF THESE SPECIFICATION FOR THE ELECTRICAL CONTRACTOR TO FURNISH A COMPLETE ELECTRICAL SYSTEM, FULLY ADJUSTED, AND READY FOR USE.

ALL ELECTRICAL WORK TO BE DONE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE OBSERVING ALL STATE AND LOCAL CODES.

ELECTRICAL CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL SALES TAXES, UTILITY COMPANY CHARGES FOR SERVICE, PERMITS, FEES, AND OTHER COSTS IN CONNECTION WITH HIS WORK.

ELECTRICAL CONTRACTOR TO ENSURE THAT ALL MATERIAL AND EQUIPMENT FURNISHED FOR THIS PROJECT SHALL BE U.L. LISTED.

THE MATERIAL AND EQUIPMENT HAS BEEN CAREFULLY SELECTED FOR THIS PROJECT AND THE ELECTRICAL CONTRACTOR IS EXPECTED TO PROVIDE ALL ITEMS AS CLOSELY AS POSSIBLE TO THE SPECIFICATIONS AND AS CALLED FOR ON THE DRAWINGS.

ELECTRICAL CONTRACTOR SHALL SUBMIT THREE (3) SETS OF EQUIPMENT DATA SHOP DRAWINGS TO THE ENGINEER FOR ALL ITEMS TO BE FURNISHED AND INSTALLED FOR APPROVAL.

ELECTRICAL CONTRACTOR SHALL INCLUDE IN THE WORK, WITHOUT EXTRA COST TO THE OWNER, ANY LABOR, MATERIALS, SERVICES, APPARATUS, DRAWINGS, INCIDENTAL CONSTRUCTION WORK, ETC., IN ORDER TO COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, AND REGULATIONS, WHETHER OR NOT SHOWN ON DRAWINGS AND/OR SPECIFIED. NO CLAIM FOR EXTRAS WILL BE APPROVED WITHOUT PRIOR COORDINATION FOR CONFLICTS BY CONTRACTOR, AND WRITTEN REQUEST AND APPROVAL PRIOR TO PERFORMING WORK.

ALL WORK AND EQUIPMENT TO BE GUARANTEED BY CONTRACTOR FOR ONE (1) YEAR.

UPON COMPLETION OF ALL WORK AND ALL TESTS, ELECTRICAL CONTRACTOR SHALL INSTRUCT THE OWNER OR HIS REPRESENTATIVE FULLY IN THE OPERATIONS, ADJUSTMENTS, AND MAINTENANCE OF EQUIPMENT FURNISHED. ELECTRICAL CONTRACTOR SHALL PROVIDE OWNER WITH MAINTENANCE SCHEDULE FOR THE PRINCIPAL ITEMS OF EQUIPMENT FURNISHED. MANUFACTURER'S ADVERTISING LITERATURE OR CATALOGS WILL NOT BE ACCEPTABLE.

ALL MATERIALS AND EQUIPMENT TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND GOOD RECOMMENDED PRACTICES.

ELECTRICAL CONTRACTOR SHALL GIVE FULL COOPERATION TO OTHER TRADES. WHERE THE WORK OF ELECTRICAL CONTRACTOR WILL BE INSTALLED IN CLOSE PROXIMITY TO, OR WILL INTERFERE WITH WORK OF OTHER TRADES, HE SHALL ASSIST IN WORKING OUT SPACE CONDITIONS TO MAKE SATISFACTORY ADJUSTMENTS. IF ELECTRICAL CONTRACTOR INSTALLS HIS WORK BEFORE COORDINATING WITH OTHER TRADES, HE SHALL MAKE THE NECESSARY CHANGES IN HIS WORK TO CORRECT THE CONDITION WITHOUT EXTRA CHARGE.

THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENTS OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. THE DRAWINGS ARE NOT TO BE SCALED.

ELECTRICAL CONTRACTOR TO VERIFY EXACT LOCATION OF EQUIPMENT, ROUTING PIPE, ETC., AND WORK CLOSELY WITH OTHER TRADES TO AVOID CONFLICTS.

ELECTRICAL CONTRACTOR TO LOCATE AND INSTALL ELECTRICAL CONTROL PANELS IN SUITABLE LOCATION WITH APPROPRIATE CLEARANCES & OVERLOAD PROTECTION FOR ALL ITEMS REQUIRED.

ELECTRICAL CONTRACTOR MAY COMBINE CONDUITS WHERE APPLICABLE, BUT MUST HOOK UP ITEMS TO PROPER CIRCUITS AS SHOWN.

THE OWNER, ARCHITECT AND ELECTRICAL CONTRACTOR TO COORDINATE FOR PROPER CUTOUT HOLES, ALL STUB-UPS AND JUNCTION BOXES, AND TO VERIFY LOCATIONS.

ALL CONDUCTORS TO BE COPPER WITH TYPE THW OR XHHW INSULATION UNLESS OTHERWISE NOTED.

WHERE ALUMINUM CONDUCTORS ARE UTILIZED THEY SHALL BE TERMINATED WITH BURNDY HY-PLUG, HYDRAULIC COMPRESSION TERMINATORS.

EXTERIOR MOUNTED BOXES SHALL HAVE APPROVED WEATHER PLATE PIPES AND/OR COVERS.

ALL SURFACE INSTALLED BOXES SHALL HAVE NYLON DECK PLATES.

ALL DEVICE OUTLETS SHALL BE FLUSH MOUNTED UNLESS SPECIFICALLY NOTED.

BALLASTS SUPPLIED WITH RECESSED FLUORESCENT FIXTURES SHALL BE APPROVED BY UNDERWRITERS' LABORATORIES AND SHALL BE ELECTRONIC TYPE, ENERGY SAVING, PREMIUM GRADE, PROPERLY APPLIED TO EACH INSTALLATION. BALLASTS SUPPLIED WITH SURFACE MOUNTED FLUORESCENT FIXTURES SHALL BE ENERGY SAVING EXTRA LOW HEAT, SUPER PREMIUM TYPES.

ALL FIXED ELECTRICAL EQUIPMENT INCLUDING RECEPTACLES SHALL BE LABELED WITH A REFERENCE TO THE CIRCUIT AND PANEL OF ORIGIN. ALL PANELS SHALL BE LABELED WITH PANEL NAME AND SOURCE OF SUPPLY. ALL PANEL DIRECTORIES SHALL USE ROOM IDENTIFICATIONS TO BE SUPPLIED BY THE OWNER, NOT THE ROOM NAMES AND NUMBERS ON THE DRAWINGS.

ALL LABELS REFERRING TO EMERGENCY POWER SHALL BE PER FACILITIES CURRENT COLOR CODE.

CONDUIT, WIRING, AND ELECTRICAL EQUIPMENT AND DEVICES CAUSED TO BE ABANDONED OR RENDERED USELESS BY CONSTRUCTION SHALL BE REMOVED BACK TO THE SOURCE. IN ADDITION, CONDUIT, WIRING, ELECTRICAL EQUIPMENT AND DEVICES DISCOVERED ABANDONED WITHIN THE LIMITS OF CONSTRUCTION SHALL BE REMOVED BACK TO THE SOURCE, EVEN IF THIS SHOULD INVOLVE REMOVAL OUTSIDE THE LIMITS OF CONSTRUCTION.

| NATURAL GAS LOAD SUMMARY   |           |
|--|-----------|
| PACKAGED ROOFTOP EQUIPMENT.....  | 315.3 MBH |
| 1. GAS PIPING SIZED FOR NATURAL GAS AT 2 PSIG INLET PRESSURE, A PRESSURE DROP OF 1 PSIG, AND A SPECIFIC GRAVITY OF 0.60.   |           |
| 2. THIS CONTRACTOR TO PROVIDE GAS PRESSURE REGULATORS AND A SHUT-OFF VALVE AT ALL EQUIPMENT.   |           |
| 3. THIS CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PROVIDING GAS SERVICE TO THE BUILDING (AS REQUIRED) AND FOR PROVIDING GAS SERVICE TO NEW EQUIPMENT. COORDINATE WITH THE GAS UTILITY COMPANY AND SITE CONDITIONS. |           |
| 4. THIS CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE CURRENT VERSION OF THE NCCMC AND NCCFC.   |           |

| PARTIAL ELECTRICAL LOAD SUMMARY |  |
|---------------------------------|--|
| EXISTING HVAC:                  | CONNECTED DEMAND<br>37.8 KVA 26.43 KVA |
| NEW HVAC:                       | 33.5 KVA 23.45 KVA                     |
| LOAD REDUCTION:                 | 4.3 KVA 2.98 KVA                       |

**LEGEND**

- A 275 CEILING SUPPLY DIFFUSER, TYPE AND CFM
- F 450 CEILING RETURN GRILLE, TYPE AND CFM
- E 95 CEILING EXHAUST GRILLE, TYPE AND CFM INDICATED
- TYPE "G" CEILING RETURN GRILLE, TYPE INDICATED
- P 605 SIDEWALL OR SIDE OF DUCT SUPPLY DIFFUSER, TYPE AND CFM
- J 625 SIDEWALL OR SIDE OF DUCT RETURN GRILLE, TYPE AND CFM
- 24x12 RECTANGULAR DUCT, WIDTH x DEPTH
- 24x8 80 FLAT OVAL DUCT WIDTH x DEPTH
- Ø8 ROUND OR SPIRAL DUCT, DIAMETER
- F DUCT BALANCE DAMPER
- DUCT TRANSITION
- DUCT MOUNTED STATIC PRESSURE SENSOR
- DUCT TAKEOFF AT 45 DEGREES
- DUCT SQUARE ELBOW WITH TURNING VANES
- FLEXIBLE DUCT, MAXIMUM Ø LENGTH
- AFMS AIR FLOW MONITORING STATION, BASIS OF DESIGN AIRFLOW MONITOR CORP. FAN-EVALUATOR
- MOTORIZED CONTROL DAMPER
- 1-HR RATED FIRE SMOKE BARRIER
- (S) EMS TEMPERATURE SENSOR, MOUNTED 48" A.F.F.
- (H) EMS HUMIDITY SENSOR, MOUNTED 48" A.F.F.
- FSD FIRE SMOKE DAMPER
- FD FIRE DAMPER
- M MOTORIZED OPERATOR
- (SD) DUCT SMOKE DETECTOR (FURNISHED AND WIRED BY E.C. - INSTALLED BY M.C.)
- EXISTING DUCT SMOKE DETECTOR
- TB-2-1 POSITIVE NEW VAV OR CV BOX (TYPE INDICATED)
- (+) TYPICAL TO ADJACENT SPACES
- (-) NEGATIVE TO ADJACENT SPACES
- 24x8 EXISTING DUCTWORK TO REMAIN
- H-1 DUCT MOUNTED HUMIDIFIER
- CONNECT NEW TO EXISTING
- SHUT-OFF VALVE
- G GAS PIPING
- PRESSURE REGULATOR
- EXISTING CEILING SUPPLY DIFFUSER
- EXISTING CEILING RETURN GRILLE

**RNM ENGINEER**  
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SEALS:

**HENDERSON COUNTY ANIMAL SHELTER  
 HVAC REPLACEMENT**

HENDERSONVILLE, NC

PROJECT:

ISSUED FOR:

DRAWING NO.

DATE:

PROJECT #:

DATE:

PROJECT:

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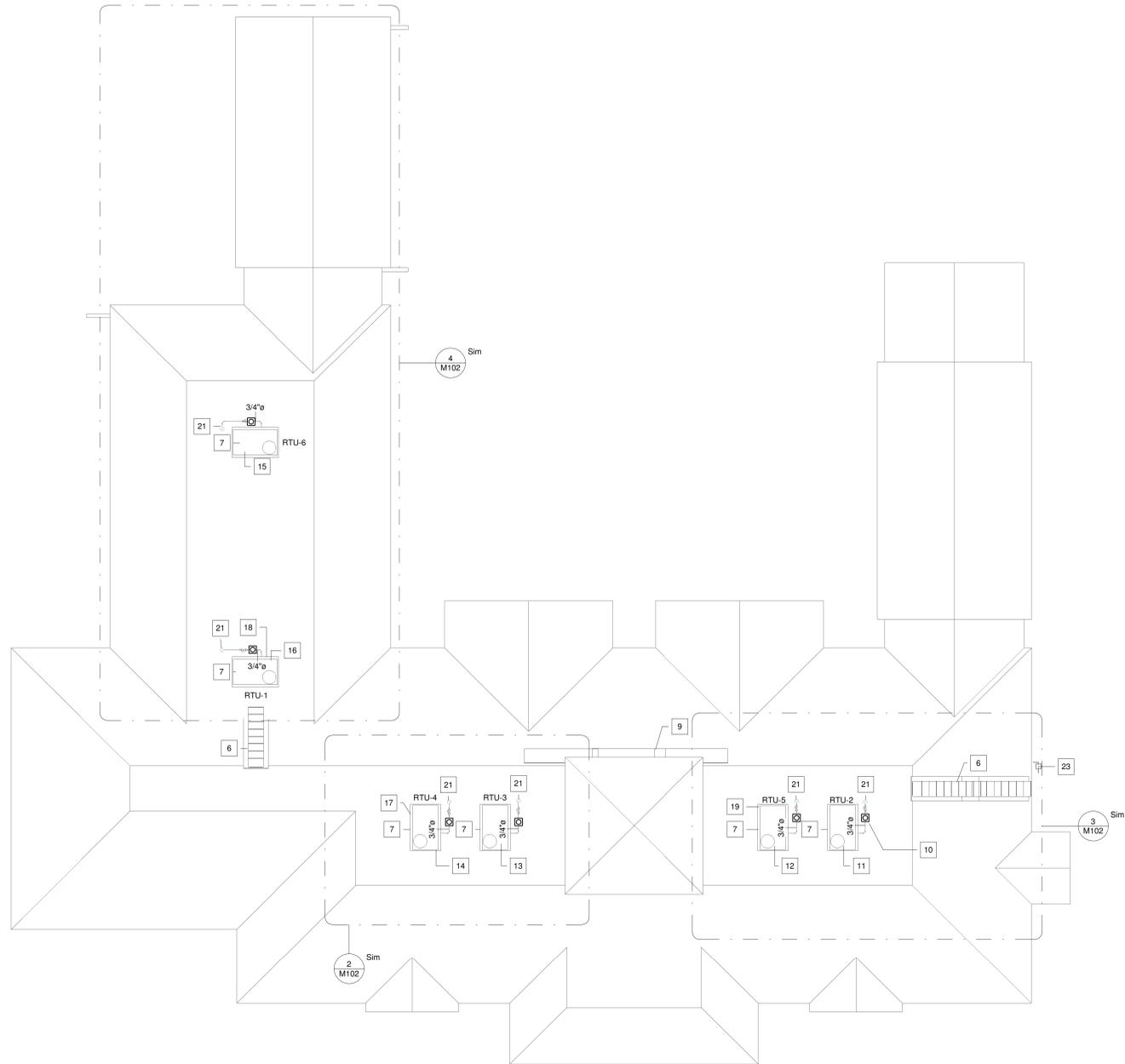
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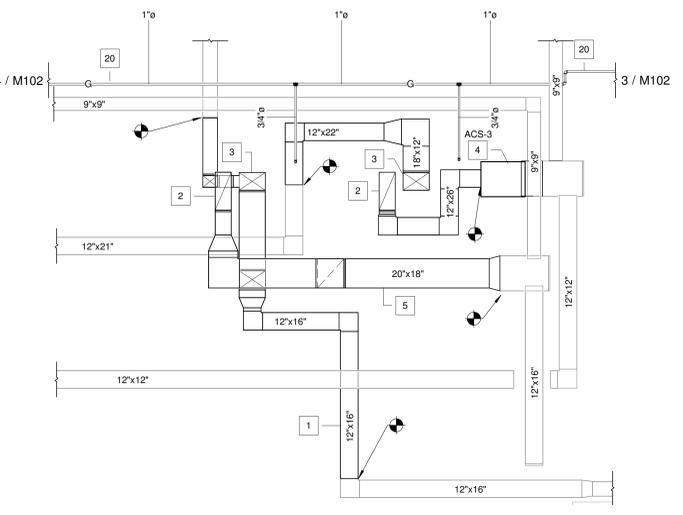
MECHANICAL NOTE SYMBOL LEGEND

- ◇ DEMOLITION NOTE
- NEW WORK NOTE

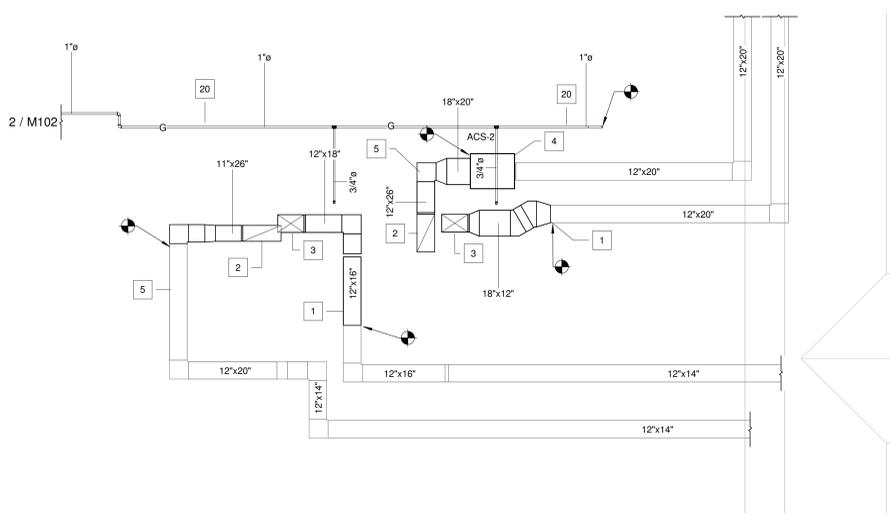
| MECHANICAL NOTES |   |
|------------------|---|
| NUMBER           | TEXT  |
| 1                | CONNECT EXISTING SUPPLY DUCT TO NEW DUCT AT POINT INDICATED. DUCT TO BE SEALED AND INSULATED TO MATCH EXISTING.   |
| 2                | ROUTE NEW RETURN DUCT DOWN THROUGH ROOF TRUSSES AND TRANSITION AS REQUIRED TO MAINTAIN AS CLEAR AS POSSIBLE WALKING HEIGHT ON ATTIC PLATFORM.   |
| 3                | ROUTE NEW SUPPLY DUCT DOWN THROUGH ROOF TRUSSES AND TRANSITION AS REQUIRED TO MAINTAIN AS CLEAR AS POSSIBLE WALKING HEIGHT ON ATTIC PLATFORM.   |
| 4                | EXISTING AIR CLEANING STATION TO BE RELOCATED AS REQUIRED FOR INSTALLATION OF NEW RETURN DUCT. EXTEND POWER WIRING AS REQUIRED.   |
| 5                | CONNECT EXISTING RETURN DUCT TO NEW DUCT AT POINT INDICATED. DUCT TO BE SEALED AND INSULATED TO MATCH EXISTING.   |
| 6                | PROVIDE NEW ROOF WALKING PLATFORMS. KEE SAFETY SYSTEMS 3M OR EQUIVALENT ATTACHED TO ROOF WITH "L" HOOKS AND FLASHING DESIGNED FOR SHINGLED ROOFS.   |
| 7                | ROOF CURBS TO BE ALIGNED OVER TRUSSES SO THAT NO TRUSS REQUIRES CUTTING TO ROUTE DUCT FROM ATTIC TO DUCT CONNECTIONS AT ROOFTOP UNIT.   |
| 8                | PROVIDE 24X36 FIRE RESISTANT DOOR IN HARD CEILING TO ALLOW ACCESS TO AIR CLEANING STATION. LOCATE AIR CLEANING STATION AND ACCESS DOOR OVER MAIN WALKING CORRIDOR TO ALLOW SERVICE ACCESS TO STATIONS WITHOUT HAVING TO ENTER GAGES.  |
| 9                | PROVIDE NEW ROOF WALKING PLATFORMS. KEE SAFETY SYSTEMS 3M TRAVERSE OR EQUIVALENT ATTACHED TO ROOF WITH "L" HOOKS AND FLASHING DESIGNED FOR SHINGLED ROOFS. TRAVERSE PLATFORM TO ALLOW LEVEL WALKING AREA BEHIND CUPOLA FOR ACCESS TO FLAT ROOF AREAS.   |
| 10               | PROVIDE GAS SHUTOFF VALVE AND REGULATOR AT EACH APPLIANCE AS REQUIRED. PROVIDE DRIP LEG PRIOR TO ENTRANCE OF EACH UNIT.   |
| 11               | REMOVE EXISTING POWER WIRING FROM AHU-2 TO DISCONNECT IN ATTIC. EXISTING DISCONNECT TO BE REMOVED AND REPLACED WITH NEW NEMA 3R 60A FUSED DISCONNECT WITH 45A FUSES INSTALLED. ROUTE 2#10, 1#10G IN 3/4" RIGID METAL CONDUIT FROM DISCONNECT, THRU ROOF PENETRATION, TO NEW NON-FUSED DISCONNECT AT ROOFTOP UNIT RTU-2. |
| 12               | REMOVE EXISTING POWER WIRING FROM AHU-5 TO DISCONNECT IN ATTIC. EXISTING DISCONNECT TO BE REMOVED AND REPLACED WITH NEW NEMA 3R 60A FUSED DISCONNECT WITH 35A FUSES INSTALLED. ROUTE 2#12, 1#10G IN 3/4" RIGID METAL CONDUIT FROM DISCONNECT, THRU ROOF PENETRATION, TO NEW NON-FUSED DISCONNECT AT ROOFTOP UNIT RTU-5. |
| 13               | REMOVE EXISTING POWER WIRING FROM AHU-3 TO DISCONNECT IN ATTIC. EXISTING DISCONNECT TO BE REMOVED AND REPLACED WITH NEW NEMA 3R 60A FUSED DISCONNECT WITH 35A FUSES INSTALLED. ROUTE 2#12, 1#10G IN 3/4" RIGID METAL CONDUIT FROM DISCONNECT, THRU ROOF PENETRATION, TO NEW NON-FUSED DISCONNECT AT ROOFTOP UNIT RTU-3. |
| 14               | REMOVE EXISTING POWER WIRING FROM AHU-4 TO DISCONNECT IN ATTIC. EXISTING DISCONNECT TO BE REMOVED AND REPLACED WITH NEW NEMA 3R 60A FUSED DISCONNECT WITH 50A FUSES INSTALLED. ROUTE 2#6, 1#10G IN 3/4" RIGID METAL CONDUIT FROM DISCONNECT, THRU ROOF PENETRATION, TO NEW NON-FUSED DISCONNECT AT ROOFTOP UNIT RTU-4.  |
| 15               | REMOVE EXISTING POWER WIRING FROM AHU-6 TO DISCONNECT IN ATTIC. EXISTING DISCONNECT TO BE REMOVED AND REPLACED WITH NEW NEMA 3R 60A FUSED DISCONNECT WITH 25A FUSES INSTALLED. ROUTE 2#12, 1#10G IN 3/4" RIGID METAL CONDUIT FROM DISCONNECT, THRU ROOF PENETRATION, TO NEW NON-FUSED DISCONNECT AT ROOFTOP UNIT RTU-6. |
| 16               | REMOVE EXISTING POWER WIRING FROM AHU-1 TO DISCONNECT IN ATTIC. EXISTING DISCONNECT TO BE REMOVED AND REPLACED WITH NEW NEMA 3R 60A FUSED DISCONNECT WITH 45A FUSES INSTALLED. ROUTE 2#10, 1#10G IN 3/4" RIGID METAL CONDUIT FROM DISCONNECT, THRU ROOF PENETRATION, TO NEW NON-FUSED DISCONNECT AT ROOFTOP UNIT RTU-1. |
| 17               | PROVIDE RECEPTACLE, SNAP CONNECT GFCI WEATHER/TAMPER RESISTANT W/IN USE COVER, 20 AMP, GROUNDING TYPE AT ROOFTOP UNIT. ROUTE 2#12, 1#12G IN 3/4" RIGID METAL CONDUIT TO NEW 1P-20A BREAKER IN PANEL L2.   |
| 18               | PROVIDE RECEPTACLE, SNAP CONNECT GFCI WEATHER/TAMPER RESISTANT W/IN USE COVER, 20 AMP, GROUNDING TYPE AT ROOFTOP UNIT. ROUTE 2#12, 1#12G IN 3/4" RIGID METAL CONDUIT TO NEW 1P-20A BREAKER IN PANEL L2.   |
| 19               | PROVIDE RECEPTACLE, SNAP CONNECT GFCI WEATHER/TAMPER RESISTANT W/IN USE COVER, 20 AMP, GROUNDING TYPE AT ROOFTOP UNIT. ROUTE 2#12, 1#12G IN 3/4" RIGID METAL CONDUIT TO NEW 1P-20A BREAKER IN PANEL L1.   |
| 20               | GAS PIPING ROUTED ACROSS ATTIC TO BE SUPPORTED AT ALL CHANGES IN DIRECTION AND EVERY 8 FEET BY HANGERS/SUPPORTS. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.  |
| 21               | GAS PIPING ROUTED DOWN THROUGH ROOF INTO ATTIC SPACE TO EXISTING GAS LINE IN ATTIC. UTILIZE PIPE PORTALS AND FLASHING DESIGNED FOR ROOF TYPE.   |
| 22               | EXTEND EXISTING POWER WIRING FOR AIR CLEANING STATION AS REQUIRED FOR RELOCATION OF UNIT.   |
| 23               | APPROXIMATE LOCATION OF EXISTING GAS METER.   |



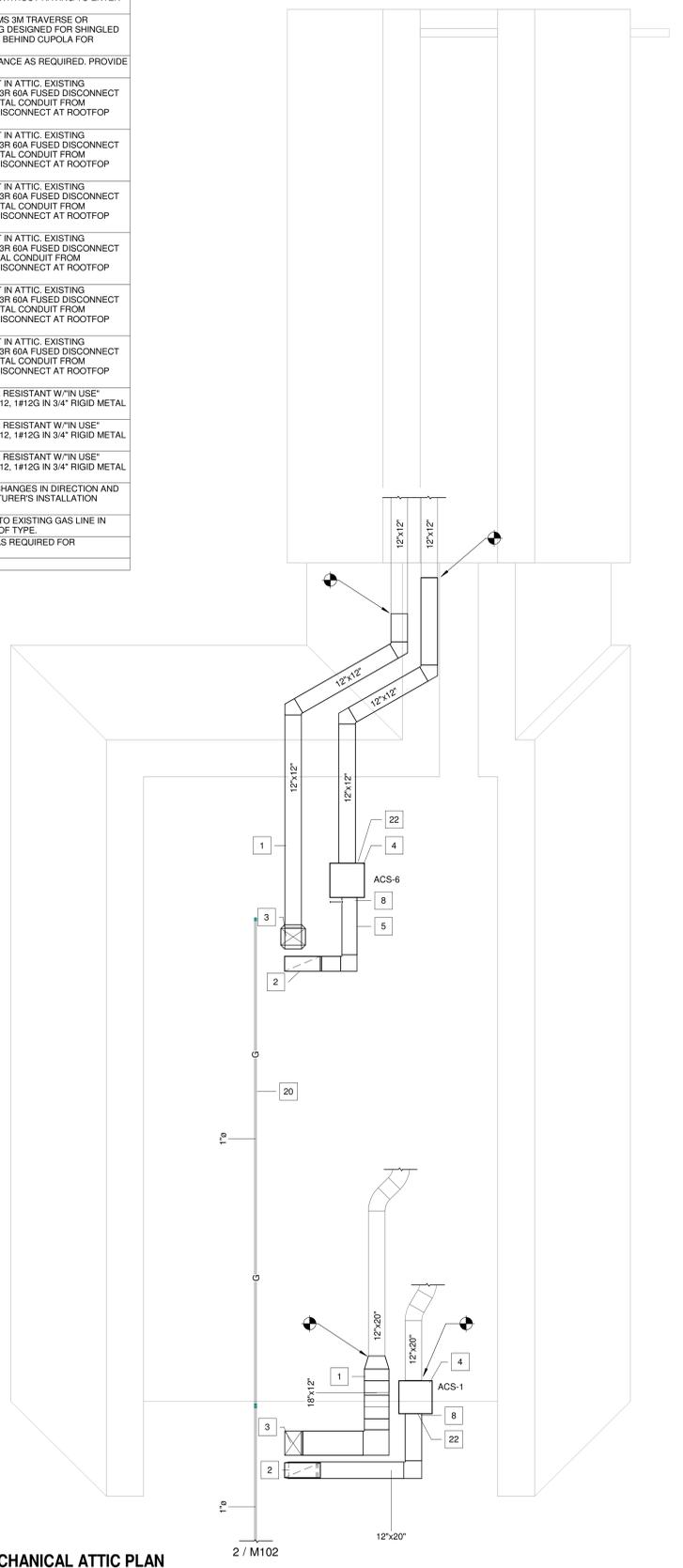
1 MECHANICAL ROOF PLAN  
 1/8" = 1'-0"



2 MECHANICAL PLATFORM A  
 1/4" = 1'-0"



3 MECHANICAL PLATFORM B  
 1/4" = 1'-0"



4 MECHANICAL ATTIC PLAN  
 1/4" = 1'-0"

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HENDERSON COUNTY ANIMAL SHELTER  
 HVAC REPLACEMENT

HENDERSONVILLE, NC

PROJECT: REVISIONS/SUBMISSIONS

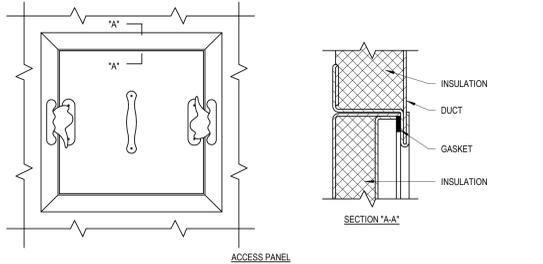
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SHEET TITLE:  
 MECHANICAL DUCTWORK PLAN

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 CONSTRUCTION

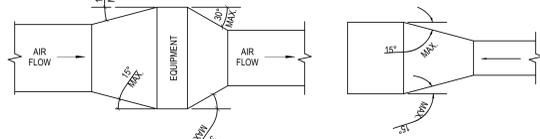
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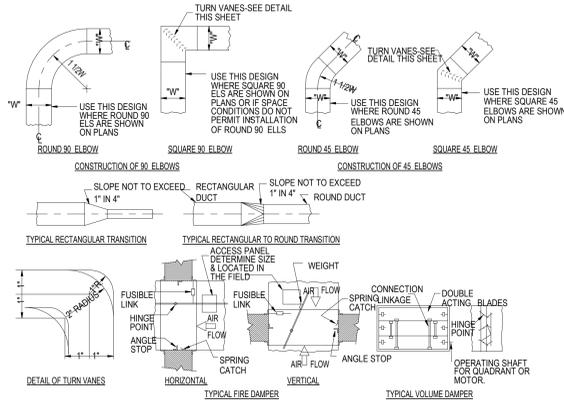
- NOTES:  
 1. LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS  
 2. TO BE FIRE RATED AND INSTALLED PER THEIR UL LISTINGS.  
 3. TIGHTLY. HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PINS. SEE SMACNA 2005, FIGURE 9-15

1 ACCESS PANEL AND DOOR DETAIL  
 M104 NTS

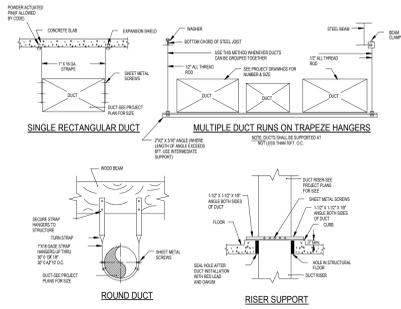


NOTE:  
 UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

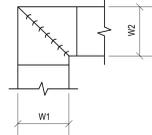
2 DUCTWORK TRANSITION DETAILS  
 M104 NTS



3 LOW PRESSURE DUCT DETAILS  
 M104 NTS

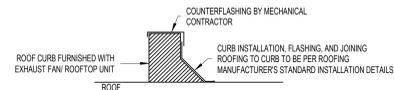


4 LOW PRESSURE DUCTWORK HANGERS AND SUPPORTS DETAIL  
 M104 NTS

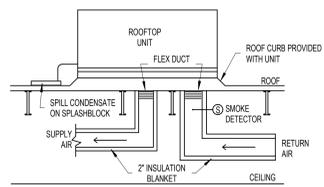


- NOTES:  
 1. ALL VANE ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA  
 2. WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE THICKNESS VANE TYPE REGARDLESS OF W DIMENSION.  
 3. ALL SINGLE THICKNESS VANES SHALL HAVE A 2" (50mm) RADIUS, 1-1/2" (40mm) MAXIMUM SPACE BETWEEN VANES AND A 3/4" (20mm) TRAILING EDGE.  
 4. WHEN W EQUALS W2 AND W1 IS GREATER THAN 20" (500mm) VANES SHALL BE DOUBLE VANE TYPE.  
 5. INSTALL TURNING VANES AT ALL TURNS IN SUPPLY AIR AND RETURN AIR DUCTS.

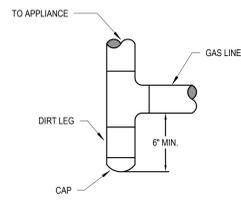
5 TURNING VANES DETAIL  
 M104 NTS



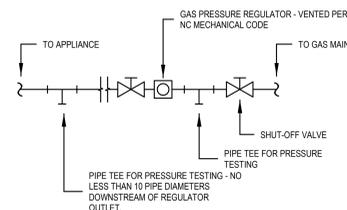
6 TYPICAL ROOF CURB INSTALLATION DETAIL  
 M104 NTS



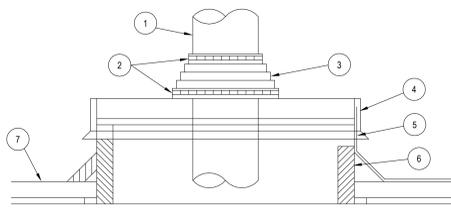
7 TYPICAL ROOF TOP UNIT DETAIL  
 M104 NTS



8 GAS DRIP LEG DETAIL  
 M104 NTS



9 GAS PRESSURE REGULATOR  
 M104 NTS



- 1 GAS LINE THRU ROOF
- 2 STAINLESS STEEL DRAWBANDS
- 3 RUBBER BOOT
- 4 ABS COVER
- 5 ROOF FLASHING
- 6 PREFABRICATED ROOF CURB
- 7 ROOF LINE

10 ROOF PIPE PENETRATION DETAIL  
 M104 NTS

HENDERSON COUNTY ANIMAL SHELTER  
 HVAC REPLACEMENT

HENDERSONVILLE, NC

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SHEET TITLE:  
**MECHANICAL DETAILS**

ISSUED FOR:  
**CONSTRUCTION**

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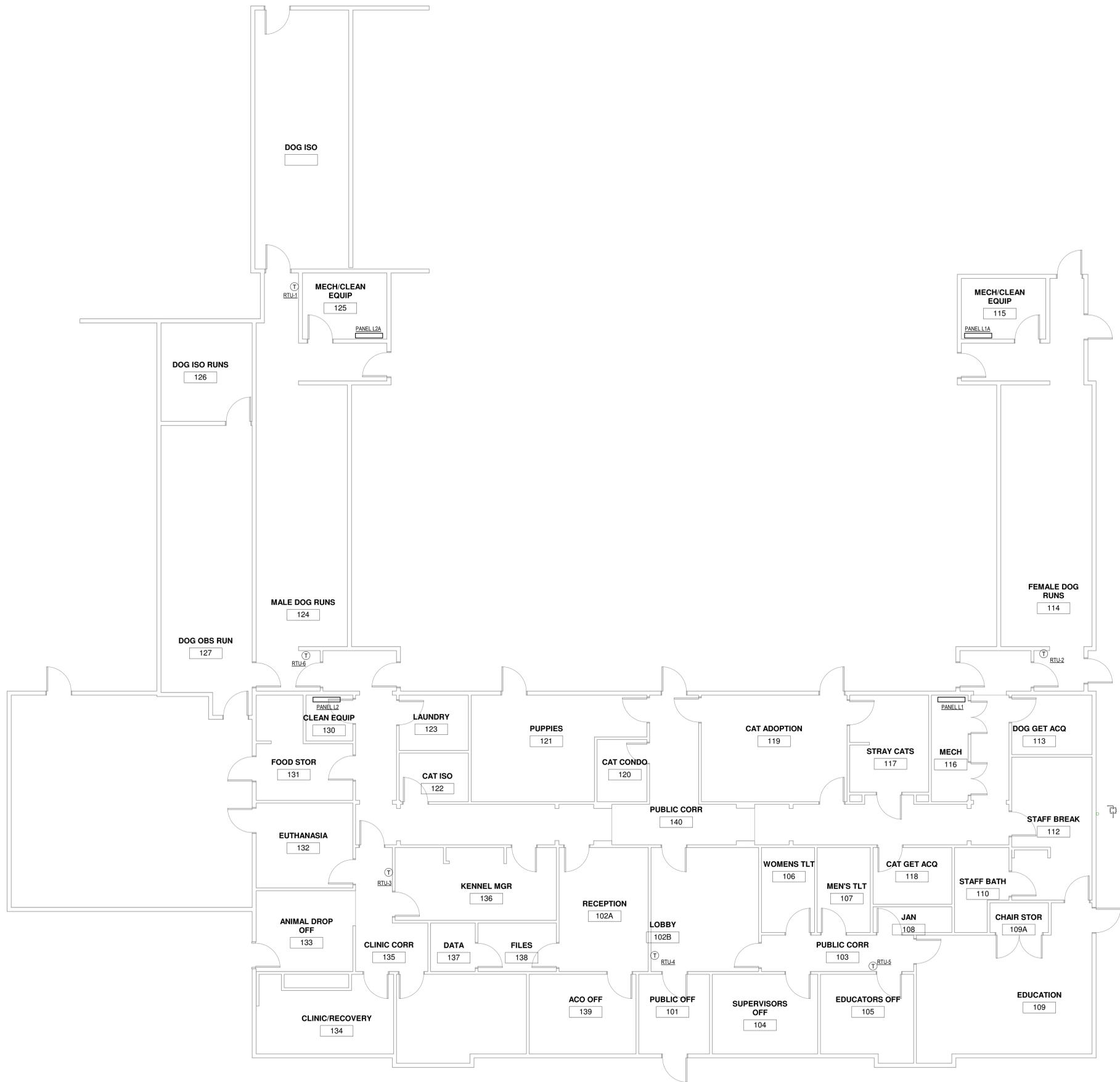
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HENDERSON COUNTY ANIMAL SHELTER  
 HVAC REPLACEMENT  
 HENDERSONVILLE, NC

THERMOSTAT AND PANEL LOCATIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY LOCATIONS PRIOR TO BEGINNING ANY WORK.



1 THERMOSTAT AND ELECTRICAL PANEL LOCATIONS  
 M103 NTS

PROJECT:

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SHEET TITLE:

MECHANICAL FIRST FLOOR PLAN

ISSUED FOR:

CONSTRUCTION

DRAWN BY: Author DRAWING NO.

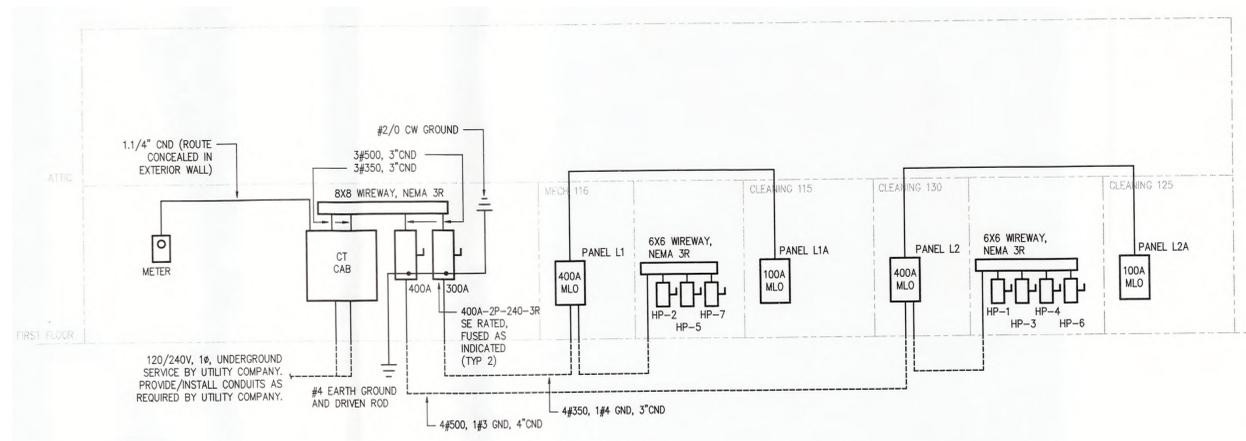
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PROJECT #: 2023078.00 M103

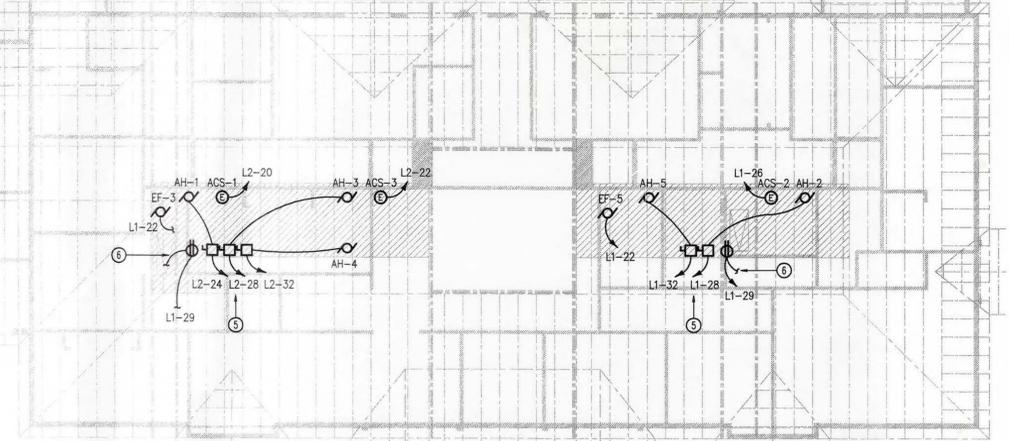
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**1 EXISTING ELECTRICAL RISER DIAGRAM**  
 M105 NTS



**6 EXISTING ATTIC POWER PLAN**  
 M105 NTS

| PANELBOARD       |           | LOCATION: | RIM 116  | VOLTS:          | 120/240   | M.L.O                   |
|------------------|-----------|-----------|----------|-----------------|-----------|-------------------------|
| L1               |           | MOUNTING: | SURF     | PHASE:          | 1         |                         |
|                  |           |           |          | MAINS AMPS:     | 400       |                         |
| LOAD SERVED      | WIRE SIZE | GND SIZE  | CND SIZE | CKT NO.         | CKT BRKR  | LOAD SERVED             |
| REC ENTRY 101    |           |           |          | 1               | 0.8 1.0   | LTS LOBBY 102           |
| LOBBY 102        |           |           |          | 3               | 0.8 1.3   | LAVATORY 107            |
| OFFICE 104       |           |           |          | 5               | 0.8 1.2   | MECH 116                |
| CORR 103         |           |           |          | 7               | 1.0 0.8   | CORRIDOR 140 (DNLTS)    |
| LAVATORY 107     |           |           |          | 9               | 1.0 0.6   | CORRIDOR 140 (SCONCES)  |
| EDUCATION 109    |           |           |          | 11              | 0.8 1.0   | RUNS 114                |
| CAT GET AQTD 108 |           |           |          | 13              | 0.6       | SPARE                   |
| STAFF BATH 110   |           |           |          | 15              | 0.2       | SPARE                   |
| BREAK 112        |           |           |          | 17              | 1.5       | SPARE                   |
| BREAK 112        |           |           |          | 19              | 1.5       | SPARE                   |
| BREAK 112 (DW)   |           |           |          | 21              | 1.2 0.5   | EF-3, EF-5              |
| BREAK 112 (MW)   |           |           |          | 23              | 0.2 0.5   | EF-2, EF-7              |
| DOG GET AQTD 113 |           |           |          | 25              | 1.0 0.4   | ACS-2                   |
| DOG RUNS 114     |           |           |          | 27              | 0.8 8.4   | AH-2                    |
| ATTIC            |           |           |          | 29              | 0.6 8.4   | AH-5                    |
|                  |           |           |          | 31              | 4.2       | AH-5                    |
|                  |           |           |          | 33              | 4.2       | AH-5                    |
|                  |           |           |          | 35              | 7.9       | OUTDOOR HEAT PUMP UNITS |
| HWRP             |           |           |          | 37              | 1.0 7.9   | HP-2, HP-5, HP-7        |
| DWH-1A           | 10        | 10        | 3/4      | 39              | 2.3 7.2   | PANEL L1A               |
|                  |           |           |          | 41              | 2.3 7.3   |                         |
|                  |           |           |          | 42              | 42.3 39.0 |                         |
|                  |           |           |          | KVA TTL=        |           | 81.3                    |
|                  |           |           |          | VOLTAGE: 240    |           | 0.240                   |
|                  |           |           |          | CONNECTED AMPS: |           | 339                     |
|                  |           |           |          | DEMAND:         |           | 0.75                    |
|                  |           |           |          | PANEL AMPS:     |           | 254                     |

**2 EXISTING PANEL L1 SCHEDULE**  
 M105 NTS

| PANELBOARD            |           | LOCATION: | RIM 130  | VOLTS:          | 120/240   | M.L.O                   |
|-----------------------|-----------|-----------|----------|-----------------|-----------|-------------------------|
| L2                    |           | MOUNTING: | SURF     | PHASE:          | 1         |                         |
|                       |           |           |          | MAINS AMPS:     | 400       |                         |
| LOAD SERVED           | WIRE SIZE | GND SIZE  | CND SIZE | CKT NO.         | CKT BRKR  | LOAD SERVED             |
| REC CAT ISOLATION 122 |           |           |          | 1               | 0.8 1.2   | LTS RUNS 124            |
| LAUNDRY 123           |           |           |          | 3               | 1.5 1.6   | CLEANING EQPT 130       |
| LAUNDRY 123           |           |           |          | 5               | 0.4 1.0   | EXTERIOR                |
| DOG RUNS 124          |           |           |          | 7               | 1.0 1.5   | SITE (NOTE 4)           |
| PREP 131              |           |           |          | 9               | 0.6       | SIGN (NOTE 2)           |
| PREP 131 (DW)         |           |           |          | 11              | 1.2       | SPARE                   |
| EUTHANASIA 132        |           |           |          | 13              | 0.8       | SPARE                   |
| CORR 135              |           |           |          | 15              | 0.8       | SPARE                   |
| RECEIVING 136         |           |           |          | 17              | 1.0 0.8   | EF-1, EF-6              |
| DATAPHONE 137         |           |           |          | 19              | 0.4 0.5   | ACS-1                   |
| DATAPHONE 137         |           |           |          | 21              | 0.4 0.5   | ACS-3                   |
| RECOVERY 134          |           |           |          | 23              | 0.4 10.3  | AH-1                    |
| ACO OFC 139           |           |           |          | 25              | 0.6 10.3  | AH-3                    |
| ACO OFC 139           |           |           |          | 27              | 0.8 4.2   | AH-3                    |
| PREP 131 (MW)         |           |           |          | 29              | 0.2 4.2   | AH-4                    |
| COOLER UNIT           | 12        | 12        | 3/4      | 31              | 1.8 8.1   | AH-4                    |
|                       |           |           |          | 33              | 1.8 8.1   | AH-4                    |
| COOLER COMPR UNIT     | 10        | 10        | 3/4      | 35              | 2.5 11.0  | OUTDOOR HEAT PUMP UNITS |
|                       |           |           |          | 37              | 2.5 11.0  | HP-1, HP-3, HP-4, HP-6  |
| REC DRYER             | 10        | 10        | 3/4      | 39              | 4.0 11.3  | PANEL L2A               |
|                       |           |           |          | 41              | 4.0 11.4  |                         |
|                       |           |           |          | 42              | 61.7 62.9 |                         |
|                       |           |           |          | KVA TTL=        |           | 124.6                   |
|                       |           |           |          | VOLTAGE: 240    |           | 0.240                   |
|                       |           |           |          | CONNECTED AMPS: |           | 519                     |
|                       |           |           |          | DEMAND:         |           | 0.75                    |
|                       |           |           |          | PANEL AMPS:     |           | 389                     |

**3 EXISTING PANEL L2 SCHEDULE**  
 M105 NTS

| PANELBOARD   |           | LOCATION: | RIM 115  | VOLTS:          | 120/240  | M.L.O          |
|--------------|-----------|-----------|----------|-----------------|----------|----------------|
| L1A          |           | MOUNTING: | SURF     | PHASE:          | 1        |                |
|              |           |           |          | MAINS AMPS:     | 100      |                |
| LOAD SERVED  | WIRE SIZE | GND SIZE  | CND SIZE | CKT NO.         | CKT BRKR | LOAD SERVED    |
| POWER WASHER |           |           |          | 1               | GF1 0.5  | SPARE          |
| SPARE        |           |           |          | 3               |          | SPARE          |
| SPARE        |           |           |          | 5               |          | SPARE          |
| SPARE        |           |           |          | 7               |          | SPARE          |
| SPARE        |           |           |          | 9               |          | SPACE ONLY     |
| SPACE ONLY   |           |           |          | 11              |          | SPACE ONLY     |
| SPACE ONLY   |           |           |          | 13              |          | SPACE ONLY     |
| SPACE ONLY   |           |           |          | 15              | 0.4      | ACS-6 (NOTE 2) |
| DWH-2A       | 10        | 10        | 3/4      | 17              | 2.8 4.1  | AH-6 (NOTE 2)  |
|              |           |           |          | 19              | 2.8 4.1  |                |
|              |           |           |          | 20              | 7.3 7.2  |                |
|              |           |           |          | KVA TTL=        |          | 14.5           |
|              |           |           |          | VOLTAGE: 240    |          | 0.240          |
|              |           |           |          | CONNECTED AMPS: |          | 61             |
|              |           |           |          | DEMAND:         |          | 0.75           |
|              |           |           |          | PANEL AMPS:     |          | 45             |

**4 EXISTING PANEL L1A SCHEDULE**  
 M105 NTS

| PANELBOARD   |           | LOCATION: | RIM 125  | VOLTS:          | 120/240   | M.L.O                 |
|--------------|-----------|-----------|----------|-----------------|-----------|-----------------------|
| L2A          |           | MOUNTING: | SURF     | PHASE:          | 1         |                       |
|              |           |           |          | MAINS AMPS:     | 100       |                       |
| LOAD SERVED  | WIRE SIZE | GND SIZE  | CND SIZE | CKT NO.         | CKT BRKR  | LOAD SERVED           |
| POWER WASHER |           |           |          | 1               | GF1 0.5   | SPARE                 |
| SPARE        |           |           |          | 3               |           | SPARE                 |
| SPARE        |           |           |          | 5               |           | SPARE                 |
| SPARE        |           |           |          | 7               |           | SPACE ONLY            |
| SPACE ONLY   |           |           |          | 9               |           | SPACE ONLY            |
| SPACE ONLY   |           |           |          | 11              | 4.1       | SANITARY PUMP STATION |
| SPACE ONLY   |           |           |          | 13              | 4.1       | (NOTE 3)              |
| SPACE ONLY   |           |           |          | 15              | 0.4       | ACS-7 (NOTE 2)        |
| DWH-2B       | 10        | 10        | 3/4      | 17              | 2.8 4.1   | AH-7 (NOTE 2)         |
|              |           |           |          | 19              | 2.8 4.1   |                       |
|              |           |           |          | 20              | 11.4 11.3 |                       |
|              |           |           |          | KVA TTL=        |           | 22.7                  |
|              |           |           |          | VOLTAGE: 240    |           | 0.240                 |
|              |           |           |          | CONNECTED AMPS: |           | 95                    |
|              |           |           |          | DEMAND:         |           | 0.75                  |
|              |           |           |          | PANEL AMPS:     |           | 71                    |

**5 EXISTING PANEL L2A SCHEDULE**  
 M105 NTS

ELECTRICAL SCHEDULES, RISER AND FLOOR PLAN SHOW APPROXIMATE LOCATIONS AND/OR LOADS. CONTRACTOR TO VERIFY ACTUAL CONDITIONS PRIOR TO BEGINNING ANY WORK.

**HENDERSON COUNTY ANIMAL SHELTER  
 HVAC REPLACEMENT**  
 HENDERSONVILLE, NC

REVISIONS/SUBMISSIONS

| NO. | DATE | ISSUED FOR |
|-----|------|------------|
|     |      |            |

SHEET TITLE:  
**ELECTRICAL DETAILS**

ISSUED FOR:  
**CONSTRUCTION**

|                          |                 |
|--------------------------|-----------------|
| DRAWN BY: Author         | DRAWING NO.     |
| APPROVED BY: Checker     |                 |
| PROJECT #:<br>2023078.00 | <b>M105</b>     |
| DATE:<br>03/18/24        | OF _____ SHEETS |