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**A NEW RANGER STATION  
AT CLAYSTONE PARK  
FOR MACON-BIBB COUNTY**

MOSLEY DIXON ROAD MACON, GEORGIA

### MECHANICAL SYMBOLS & ABBREVIATIONS LEGEND

|           |   |
|-----------|---|
|           | NEW PIPE, DUCTWORK OR EQUIPMENT   |
|           | DUCT SIZE: FIRST DIMENSION IS SIDE DRAWN  |
|           | FLEXIBLE ROUND DUCTWORK   |
|           | FIRE DAMPER, SMOKE DAMPER, SMOKE DETECTOR   |
|           | CEILING SUPPLY DIFFUSER   |
|           | CEILING RETURN OR EXHAUST AIR   |
|           | S.A. DUCT OUT OF TU BOX WITH DUCT LINER FOR THR FIRST FIVE FEET OF DUCT OUT OF TU BOX   |
|           | SIDEWALL REGISTER OR GRILLE   |
|           | CHANGE IN PIPE OR DUCT SIZE OR SHAPE  |
|           | REFRIGERANT PIPING  |
|           | CONDENSATE OR OTHER DRAIN PIPING  |
|           | ELBOW TURNED DOWN OR TURNED UP IN PIPING  |
|           | THERMOSTAT, ARROW SHOWS CONTROL WIRING PATH   |
|           | TIME CLOCK  |
|           | DIAMETER  |
|           | U.C. UNDER-CUT DOOR 3/4", UNLESS OTHER SIZE NOTED   |
|           | INDICATES EQUIPMENT ON PLANS; TOP ITEM SHOWS TYPE OF EQUIPMENT AND BOTTOM ITEM SHOWS SPECIFIC MARK NUMBER   |
|           | ITEM IN HEXAGON SHOWS AIR DEVICE MARK NUMBER, ITEM ABOVE LINE SHOWS NECK SIZE, ITEM BELOW LINE SHOWS AIR FLOW THROUGH DEVICE, AND NUMBER IN FRONT SHOWS QUANTITY IF MORE THAN ONE |
| AFF       | ABOVE FINISHED FLOOR  |
| AH        | AIR HANDLING UNIT   |
| BD        | BYPASS DAMPER   |
| BTUH, MBH | BRITISH THERMAL UNITS, THOUSAND BRITISH THERMAL UNITS   |
| CAP       | CAPACITY  |
| CFM       | CUBIC FEET PER MINUTE   |
| CLG       | CEILING   |
| CU        | CONDENSING UNIT   |
| DB, WB    | DRY BULB TEMPERATURE, WET BULB TEMPERATURE  |
| EA, EG    | EXHAUST AIR, EXHAUST GRILLE   |
| EF        | EXHAUST FAN   |
| EXT SP    | EXTERNAL STATIC PRESSURE (USUALLY EXPRESSED IN INCHES OF WATER IN GAGE)   |
| HP        | HEAT PUMP UNIT  |
| MVD, VD   | MANUAL VOLUME DAMPER  |
| OA        | OUTSIDE AIR   |
| RA, RG    | RETURN AIR, RETURN GRILLE   |
| RTU       | PACKAGED ROOFTOP UNIT   |
| SA        | SUPPLY AIR  |
| SF        | SUPPLY FAN FOR SHOP VENTILATION   |
| VAC, PH   | VOLTS ALTERNATING CURRENT, NUMBER OF PHASES   |
| W, KW     | WATTS, KILOWATTS  |
| UH        | UNIT HEATER   |
|           | AUDIBLE/VISUAL ALARM DEVICE CONNECTED TO DUCT SMOKE DETECTOR  |
|           | ACCESS DOOR   |
|           | CONTROL DAMPER-OPPOSED BLADE  |
|           | CONTROL DAMPER-PARALLEL BLADE   |
|           | BACKDRAFT DAMPER  |
|           | RADIUS ELBOW (R=1.5)  |
|           | WANED ELBOW   |
|           | MANUAL VOLUME DAMPER (MVD), MOTOR OPERATED DAMPER (MOD)   |

### ELECTRIC CABINET HEATER SCHEDULE

| MARK  | HEATER KW | VOLTS/PH | BASIS OF DESIGN | NOTES |
|-------|-----------|----------|-----------------|-------|
| EWH-1 | 4.0       | 208/1    | Q-MARK AMH4408  | 1:2:3 |
| EWH-2 | 1.5       | 208/1    | Q-MARK AMH3150  | 1:2:3 |

- MOUNT UNIT HEATERS AT 8" AFF.
- VERTICAL WALL MOUNTED EXPOSED HEATER.
- VERIFY ELECTRIC POWER REQUIREMENTS WITH ELECTRICAL PLANS, WHICH TAKE PRECEDENCE OVER THIS INFORMATION.

### DEHUMIDIFICATION UNIT

| MARK | W   | CFM | CONDENSATION CAP (GAL/HR) | REFRIGERANT | POWER/PHASE | BASIS OF DESIGN | SERVS    | NOTES     |
|------|-----|-----|---------------------------|-------------|-------------|-----------------|----------|-----------|
| DH-1 | 155 | 32  | 33                        | R134A       | 115/1       | Ultra Aire MD33 | 003 MECH | 1:2:3:4:5 |

- DEHUMIDIFIER SHALL RUN CONTINUOUSLY 24/7 TO KEEP RELATIVE HUMIDITY 50% OR LOWER.
- VERIFY ELECTRIC POWER REQUIREMENTS WITH ELECTRICAL PLANS, WHICH TAKE PRECEDENCE OVER THIS INFORMATION.
- FUNCTIONING HUMIDITY RANGE IS 35-95% FUNCTIONING TEMPERATURE RANGE 50-95°F
- UNIT WEIGHT BOLTS. MOUNT UNIT 1"-0" AFF. PROVIDE CONDENSATE PUMP TO PUMP CONDENSATE AT GROUND LEVEL.
- WALL MOUNT INSTALLATION. PROVIDE MANUFACTURER'S SURFACE MOUNTING BEZEL KIT.

### HEAT PUMP AIR HANDLING UNIT SCHEDULE

| MARK | SUPPLY AIR CFM | OUTSIDE AIR CFM | EXT. SP. IN. W.G. | EVAP. FAN HP | EVAP. COIL ENTERING AIR DESIGN CONDITIONS |      | EVAP. COIL LEAVING AIR DESIGN CONDITIONS |      | SYSTEM COOLING MAX. REQUIREMENTS (MBH) |          | SUPPL. HEAT KW | WEIGHT (LBS) | POWER VAC/PH | BASIS OF DESIGN CARRIER | NOTES             |
|------|----------------|-----------------|-------------------|--------------|---|------|--|------|--|----------|----------------|--------------|--------------|-------------------------|-------------------|
|      |                |                 |                   |              | DB F                                      | WB F | DB F                                     | WB F | TOTAL                                  | SENSIBLE |                |              |              |                         |                   |
| AH-1 | 1050           | 150             | 0.60              | 1/2          | 77.6                                      | 64.7 | 55.0                                     | 54.0 | 36.0                                   | 28.0     | 6.8            | 250          | 208/230/1#   | FV4CN0608L00            | 1:2:3:4:5:6:7:8:9 |
| AH-2 | 1400           | 225             | 0.60              | 3/4          | 78.3                                      | 65.3 | 55.0                                     | 54.0 | 47.0                                   | 35.0     | 7.5            | 250          | 208/230/1#   | FV4CN0608L00            | 1:2:3:4:5:6:7:8:9 |
| AH-3 | 1750           | 280             | 0.60              | 3/4          | 78.3                                      | 65.3 | 55.0                                     | 54.0 | 59.0                                   | 44.0     | 11.3           | 250          | 208/230/1#   | FV4CN0608L00            | 1:2:3:4:5:6:7:8:9 |

- VERIFY ELECTRIC POWER REQUIREMENTS WITH ELECTRICAL PLANS, WHICH TAKE PRECEDENCE OVER THIS INFORMATION.
- PROVIDE AIR FILTERS, FLEXIBLE DUCT CONNECTIONS AND VIBRATION ISOLATION. PROVIDE PROGRAMMABLE THERMOSTAT AND SUPP. ELEC. HEAT MODULE CONNECTED TO UNIT FOR SINGLE POINT OF CONNECTION.
- PROVIDE CONDENSATE TRAP(S) AS RECOMMENDED BY MANUFACTURER AND ROUTE CONDENSATE PIPING OUTSIDE OR TO HUB DRAIN AS SHOWN ON PLANS.
- PROVIDE AUXILIARY DRAIN PAN UNDER THE AIR HANDLERS WITH FLOAT ACTIVATED SWITCH TO SHUT THE UNIT DOWN IN CASE OF CONDENSATE OVERFLOW. REFER TO DETAIL PROVIDED.
- FLOAT ACTIVATED CONDENSATE SWITCH AND COOL OUTLET SWITCH SHALL BE PROVIDED AND INSTALLED BY HVAC CONTRACTOR.
- PROVIDE CONDENSATE PUMP FOR THE UNIT. REFER TO SPECIFICATION FOR FURTHER INFORMATION.
- AIR HANDLING UNIT WITH ECM MOTOR. PROVIDE COIL OUTLET SWITCH. COIL OUTLET SWITCH SHALL BE WIRE IN SERIES WITH FLOAT ACTIVATED SWITCH LOCATED AT DRAIN PAN. REFER TO CONDENSATE DETAIL PROVIDED.
- UNIT AT 208/1# AUXILIARY HEAT AT 208/1# UNIT SHALL HAVE SINGLE POINT CONNECTION.
- PROVIDE SMOKE DETECTOR IN SUPPLY AIR DUCT AS PER DETAIL. DETECTOR SHALL BE PROVIDED BY ELECTRICAL AND INSTALLED BY MECHANICAL.

### AIR COOLED HEATPUMP UNIT SCHEDULE

| MARK | AHU SERVED | HEAT PUMP HEATING CAP (MBH) | NOM. CAP. (TONS) | REFRIG. | OA TEMP SUMMER (DB) | OA TEMP WINTER (DB) | WEIGHT (LBS) | POWER VAC/PH | BASIS OF DESIGN CARRIER | NOTES     |
|------|------------|-----------------------------|------------------|---------|---------------------|---------------------|--------------|--------------|-------------------------|-----------|
| HP-1 | AH-1       | 36.0                        | 3.0              | R410A   | 93                  | 17                  | 350          | 208/230/1#   | 29HC836A003             | 1:2:3:4:5 |
| HP-2 | AH-2       | 35.0                        | 4.0              | R410A   | 93                  | 17                  | 350          | 208/230/1#   | 29HC848A003             | 1:2:3:4:5 |
| HP-3 | AH-3       | 59.0                        | 5.0              | R410A   | 93                  | 17                  | 350          | 208/230/1#   | 29HC860A003             | 1:2:3:4:5 |

- PROVIDE WITH DEFROST CONTROLS, LOW AMBIENT HEAD PRESSURE CONTROLS, AND ANTI-SHORT CYCLE TIMER. PROVIDE COIL GUARD.
- VERIFY ELECTRIC POWER REQUIREMENTS WITH ELECTRICAL PLANS, WHICH TAKE PRECEDENCE OVER THIS INFORMATION.
- PROVIDE LIQUID LINE SOLENOID, CRANKCASE HEATER, TV, START CAPACITOR AND RELAY AS RECOMMENDED BY MANUFACTURER FOR LONG LINE APPLICATIONS WHERE EQUIPMENT PIPE LENGTH IS 80-FEET OR MORE.
- FOR GROUND MOUNT UNITS PROVIDE MOUNTING PAD AS PER DETAIL PROVIDED.
- 2-STAGE COMPRESSOR UNIT.

### DUCTLESS SPLIT AIR CONDITIONING SYSTEM SCHEDULE

| INDOOR UNIT MARK | OUTDOOR UNIT MARK | SERVICE | COOLING CAPACITY (BTU/HR.) | SUPPLY CFM | OA TEMP (DB) | WEIGHT (LBS) | POWER VAC/PH | BASIS OF DESIGN CARRIER | MANUFACTURER & MODEL INDOOR UNIT/OUTDOOR UNIT | NOTES   |
|------------------|-------------------|---------|----------------------------|------------|--------------|--------------|--------------|-------------------------|---|---------|
| AC-1             | CU-1              | 113 IT  | 12,000                     | 320-390    | 93           | 20           | 230-1-40     | 29HC836A003             | CARRIER 40MHR12-3/38MHR12A-3                  | 1:2:3:4 |

- VERIFY ELECTRIC POWER REQUIREMENTS WITH ELECTRICAL PLANS WHICH TAKE PRECEDENCE OVER THIS INFORMATION.
- PROVIDE THERMOSTAT, DISCONNECT AND ELECTRICAL CONNECTION TO OUTDOOR UNIT PER MANUFACTURER'S INSTRUCTIONS.
- ROUTE CONDENSATE DRAIN AS SHOWN ON PLANS. PROVIDE MANUFACTURER'S INTERNAL CONDENSATE PUMP.
- WALL MOUNT AIR-CONDITIONING UNIT. PROVIDE MANUFACTURER'S WIRED THERMOSTAT. PROVIDE CONDENSATE TO OUTSIDE AS SHOWN ON PLANS.

### FAN SCHEDULE

| MARK | CFM | EXT. SP. W.G. | TYPE   | MOTOR WATTS/AMPS/PH | JULY FAN (RPM) | MAX. SONES | POWER/PHASE | BASIS OF DESIGN   | NOTES   |
|------|-----|---------------|--------|---------------------|----------------|------------|-------------|-------------------|---------|
| EF-1 | 70  | 0.25          | DIRECT | 20 W                | 690            | 1.3        | 115/1       | GREENHECK SP-B90  | 1:2:3:4 |
| EF-2 | 100 | 0.25          | DIRECT | 80 W                | 950            | 1.5        | 115/1       | GREENHECK SP-B110 | 1:2:3:4 |
| EF-3 | 100 | 0.25          | DIRECT | 80 W                | 950            | 1.5        | 115/1       | GREENHECK SP-B110 | 1:2:3:4 |
| EF-4 | 80  | 0.25          | DIRECT | 20 W                | 690            | 1.3        | 115/1       | GREENHECK SP-B90  | 1:2:3:4 |
| EF-5 | 80  | 0.25          | DIRECT | 20 W                | 690            | 1.3        | 115/1       | GREENHECK SP-B90  | 1:2:3:4 |
| EF-6 | 15  | 0.25          | DIRECT | 15 W                | 655            | 1.0        | 115/1       | GREENHECK SP-B70  | 1:2:4:5 |

- CENTRIFUGAL CEILING MOUNTED FAN. PROVIDE MANUFACTURER'S CEILING GRILL.
- VERIFY ELECTRIC POWER REQUIREMENTS WITH ELECTRICAL PLANS, WHICH TAKE PRECEDENCE OVER THIS INFORMATION.
- INTERLOCK FAN WITH LIGHT. PROVIDE 15 MINUTE TIME DELAY.
- CENTRIFUGAL CEILING MOUNTED FAN MOTOR WITH THERMAL OVERLOAD, AND SOLID STATE SPEED CONTROLLER.
- FAN SHALL BE CONTROLLED BY A SWITCH LOCATED IN THE ROOM IT SERVES.

### LOUVER SCHEDULE

| MARK | SIZE W X H (INCHES) | MIN. FREE AREA (SQ. FT.) | MAXIMUM PRESS. DROP (IN. W.G.) | FINISH (COLOR BY ARCHITECT) | BASIS OF DESIGN   | NOTES |
|------|---------------------|--------------------------|--------------------------------|-----------------------------|-------------------|-------|
| L-1  | 24"x16"             | 1.15                     | 0.08                           | ENAMEL                      | GREENHECK ESD 403 | 1:2:3 |

- REFER TO ARCHITECTURAL PLANS FOR LOUVER ELEVATION AND LOCATION.
- PROVIDE WITH INSECT SCREEN AND FACTORY BAKED ENAMEL FINISH. STATIONARY EXTRUDED ALUMINUM LOUVER. COORDINATE COLOR WITH ARCHITECT (PROVIDE COLOR SAMPLES WITH SUBMITTAL).
- PROVIDE FULL SIZE 24" DEEP SHEET METAL PLENUM BEHIND LOUVER.

### AIR DEVICE SCHEDULE

| MARK | SERVICE | NECK SIZE | SIZE          | MATERIAL | TYPE            | PATTERN | MOUNTING TYPE | LAYOUT BASIS: TITUS | NOTES |
|------|---------|-----------|---------------|----------|-----------------|---------|---------------|---------------------|-------|
| S1   | SUPPLY  | SEE PLANS | 12"x8"        | ALUMINUM | LINEAR BAR      | 1-WAY   | FLOOR MOUNT   | CT-480              | 3:4:5 |
| S2   | SUPPLY  | SEE PLANS | 12"x8"        | ALUMINUM | LINEAR BAR      | 1-WAY   | CEILING MOUNT | CT-481              | 3:6:7 |
| R1   | RETURN  | SEE PLANS | NECK + 1-3/4" | ALUMINUM | SIDEWALL GRILLE |         | SURFACE       | 350RL               | 1:2:8 |

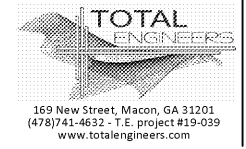
- PROVIDE STANDARD WHITE FINISH.
- INSULATE BACK OF DEVICE.
- BALANCE AIRFLOW TO QUANTITY SHOWN.
- 1/8" THICK FIXED BARS, 1/4" SPACING WIDTH. PROVIDE CLEANOUT PLENUM AS DETAILED.
- PROVIDE FRAME TYPE 6 WITH 1" FLANGE FOR FLOOR MOUNT APPLICATION.
- PROVIDE FRAME TYPE 3 WITH 1" FLANGE FOR CEILING MOUNT APPLICATION.
- 1/8" THICK FIXED BARS, 1/4" SPACING WIDTH. PROVIDE FACE OPERATED MANUAL VOLUME DAMPER. PROVIDE FULL SIZE PLENUM ON TOP OF GRILL FOR DUCT CONNECTION.
- PROVIDE MANUFACTURER'S FACE OPERATED DAMPER FOR GRILL.

Order Plans @

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| Revisions: |  |
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Sheet Title:  
RANGER STATION  
MECHANICAL  
SCHEDULES

Project #: 1819 Date: 12/23/19



**M0.2RS**