

FAN SCHEDULE

| UNIT NUMBER | FAN SERVICE | FAN TYPE | DRIVE TYPE | CFM | S.P. IN. W.G. | FAN RPM | MOTOR RPM | MAX TIP SPEED | HP | V | PH | Hz | SONES | SELECTION BASED ON | | NOTES |
|-------------|-----------------|-----------------------|------------|-----|---------------|---------|-----------|---------------|-----|-----|----|----|-------|--------------------|-------|-------|
| | | | | | | | | | | | | | | MANUFACTURER | MODEL | |
| EF-5F4 | GENERAL EXHAUST | DOWNBLAST CENTRIFUGAL | BELT | 270 | 0.375 | 1,626 | 1,725 | 4,500 | 1/4 | 115 | 1 | 60 | 10.7 | COOK | 70C2B | 1-3 |

NOTES

- PROVIDE BACKDRAFT DAMPER, BIRDSCREEN, THERMAL OVERLOAD PROTECTION AND FACTORY MOUNTED DISCONNECT SWITCH.
- BASIS OF DESIGN IS COOK, OR EQUAL.
- PROVIDE CURB ADAPTER. FIELD VERIFY EXISTING CURB SIZE.

MOTOR LABELING

ALL MOTORS FOR USE WITH VARIABLE FREQUENCY DRIVES SHALL HAVE CLASS F INSULATION AND SHALL BE SPECIFICALLY LABELED FOR THAT SERVICE; OR A LETTER FROM THE MOTOR MANUFACTURER STATING CONSTRUCTION COMPATIBILITY MAY BE INCLUDED IN THE SUBMITTAL AND O & M MANUALS.

ELECTRICAL CONNECTIONS

REFERENCE ELECTRICAL PANEL SCHEDULES AND MECHANICAL/ELECTRICAL CONNECTION SCHEDULE FOR DISCONNECT SWITCH, STARTER, WIRE AND CONDUIT SIZES.

MOTOR EFFICIENCIES

ALL MOTORS PROVIDED WITH PUMPS, AIR HANDLING UNITS, FANS, ETC. SHALL BE "PREMIUM EFFICIENCY" TYPE AND SHALL MEET THE REQUIREMENTS OF THE "COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT" SECTION OF THE SPECIFICATIONS. SHOP DRAWINGS SHALL BE SUBMITTED FOR EACH MOTOR PROVIDED WITH MOTOR TYPE AND EFFICIENCY.

AIR FLOW MEASURING DEVICE SCHEDULE

| UNIT NO. | ROOM | DUCT | DUCT SIZE | | DUCT TYPE | CFM [l/s] | | S.P. DROP [IN] | FAN SYSTEM |
|--------------|-------|------|-----------|--------|------------------------|-----------|--------|----------------|------------|
| | | | W [IN] | H [IN] | | MIN. | MAX. | | |
| 110-AFMS205S | 2E100 | S.A. | 60 | 22 | MEDIUM PRESSURE SUPPLY | 0 | 15,000 | 0.06 | 110-AHU205 |
| 110-AFMS205R | 2E100 | R.A. | 60 | 22 | LOW PRESSURE RETURN | 0 | 11,000 | 0.06 | 110-AHU205 |

SOUND ATTENUATING UNITS SCHEDULE

| UNIT NO. | W x L x H (IN.) | CFM | MAX. S.P. IN | DYNAMIC INSERTION LOSS DB OCTAVE BAND & MID-FREQUENCY [CPS] | | | | | | | | SERVICE |
|------------|-----------------|--------|--------------|---|-------|-------|-------|--------|--------|--------|--------|-------------------|
| | | | | 63 1 | 125 2 | 250 3 | 500 4 | 1000 5 | 2000 6 | 4000 7 | 8000 8 | |
| 110-SA205S | 66x60x30 | 15,000 | 0.2 | 7 | 11 | 18 | 27 | 28 | 17 | 12 | 8 | 110-AHU205 SUPPLY |
| 110-SA205R | 66x60x30 | 11,000 | 0.2 | 7 | 11 | 18 | 27 | 28 | 17 | 12 | 8 | 110-AHU205 RETURN |

- BASIS OF DESIGN KINETICS NOISE CONTROL MODEL 33VRS-F/3-60x66x30
- SOUND ATTENUATORS SHALL BE CONSTRUCTED OF 304 STAINLESS STEEL

DUCT LEAKAGE CLASSIFICATION AND ALLOWABLE LEAKAGE TABLE

| DUCT PRESSURE CLASS, W.G. IN[mm] | SEAL CLASS | APPLICABLE SEALING | SMACNA LEAKAGE CLASS | |
|----------------------------------|------------|---|----------------------|------------|
| | | | RECTANGULAR DUCT | ROUND DUCT |
| 1/2", 1", 2" [13, 25, 51] | C | TRAVERSE JOINTS ONLY | 24 | 12 |
| 3" [76] | B | TRAVERSE JOINTS AND SEAMS | 12 | 6 |
| 4", 6", 10" [102, 152, 254] | A | JOINTS, SEAMS AND ALL WALL PENETRATIONS | 6 | 3 |

DUCT PRESSURE CLASS TABLE

| FAN NO. | DUCT INVOLVED | POSITIVE (P) OR NEGATIVE (N) PRESSURE | MINIMUM PRESSURE CLASS W.G. IN. [mm] |
|----------------|--|---------------------------------------|--------------------------------------|
| AHU SUPPLY FAN | FROM DISCHARGE OF AHU TO INLET OF VAV TERMINAL UNITS | P | 6 [152] |
| AHU SUPPLY FAN | FROM TERMINAL BOXES TO ROOM OUTLETS | P | 1 [25] |
| AHU RETURN FAN | FROM CEILING REGISTER TO INLET OF AHU | N | 3 [76] |
| EXHAUST FANS | FROM ROOM INLET TO EXHAUST FAN | N | 1 [25] |

AIR TERMINAL UNIT SOUND REQUIREMENTS

| ROOM NO (SEE NOTE 1) | MAXIMUM SOUND POWER LEVEL (Re: 10-12 WATTS) FOR BOX DISCHARGE AT MAXIMUM INLET DUCT SP. (SEE NOTE 2) | | | | | |
|----------------------|--|----|----|----|----|----|
| | OCTAVE BANDS | | | | | |
| | 2 | 3 | 4 | 5 | 6 | 7 |
| 25 | 48 | 41 | 35 | 31 | 29 | 28 |
| 30 | 58 | 53 | 49 | 45 | 43 | 40 |
| 35 | 62 | 57 | 53 | 50 | 48 | 45 |
| 40 | 66 | 62 | 57 | 55 | 53 | 50 |
| 45 | 69 | 66 | 62 | 60 | 58 | 55 |

NOTES:

- THE MAXIMUM SOUND POWER LEVELS LISTED ARE BASED ON A ROOM ATTENUATION OF 5 dB AND AN ALLOWANCE FOR DISCHARGE DUCTWORK, EXCEPT UNITS SERVING AUDIO SOUND BOOTHS WHICH SHALL MEET VALUES LISTED FOR ROOM NC LEVEL OF 25.

ENERGY EFFICIENT MOTOR SCHEDULE

| SCHEDULED HP [kW] | NOMINAL NEMA EFF. | SCHEDULED HP [kW] | NOMINAL NEMA EFF. | SCHEDULED HP [kW] | NOMINAL NEMA EFF. |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 1.0 E [0.75] | 82.5 | 10 E [7.4] | 89.5 | 50 E [37.3] | 93.0 |
| 1.5 E [1.1] | 84.0 | 15 E [11.1] | 91.0 | 60 E [44.7] | 93.6 |
| 2.0 E [1.5] | 84.0 | 20 E [14.9] | 91.0 | 75 E [55.9] | 94.1 |
| 3.0 E [2.2] | 86.5 | 25 E [18.6] | 91.7 | 100 E [74.6] | 94.1 |
| 5.0 E [3.7] | 87.5 | 30 E [22.3] | 92.4 | 125 E [93.2] | 94.5 |
| 7.5 E [5.6] | 88.5 | 40 E [29.8] | 93.0 | 150 E [111.9] | 95.0 |

NOTE:

REFER TO SPECIFICATION SECTION 230512 FOR ADDITIONAL INFORMATION ON MOTORS.

RADIANT CEILING PANEL SCHEDULE

| UNIT NUMBER | LOCATION AND AREAS SERVED | PANEL SIZE (IN.) | HEATING CAPACITY (BTUH) | EWT (F) | FLOWRATE (GPM) | PRESSURE DROP (FT.) | NOTES |
|-------------|---------------------------|------------------|-------------------------|---------|----------------|---------------------|-------|
| 110-RP1 | BUILDING 110 | 24x24 | 840 | 180 | 0.5 | 2 | ALL |

NOTES:

- MATCH EXISTING RADIANT CEILING PANELS.
- ROOM TEMPERATURE SHALL BE 70 DEGREES.
- SEE PLANS FOR NUMBER REQUIRED.

WALL MOUNTED SPACE HUMIDIFICATION UNIT SCHEDULE

| UNIT NUMBER | LOCATION | CAPACITY (LBS/HR) | ELECTRICAL DATA | | | SELECTION BASED ON | | NOTES | |
|-------------|------------------|-------------------|-----------------|-------|----|--------------------|--------------|---------|-----------|
| | | | VOLTS | PHASE | Hz | AMPS | MANUFACTURER | | MODEL NO. |
| 110-WMH1 | CLEAN ROOM 2F227 | 4.0 | 120 | 1 | 60 | 12 | ARMSTRONG | EHU-701 | ALL |

NOTES:

- SEE KEYNOTE 17 ON MH101 FOR LOCATION.

AIR HANDLING UNIT SCHEDULE (SEE AHU PLANS AND ELEVATIONS ON SHEET M602)

| UNIT NUMBER | LOCATION | AREA(S) SERVED | TYPE | MINIMUM OUTSIDE AIR (CFM) | RETURN AIR FAN DATA | | | | | | | | | | AIR MIXING SECTION | | | | PRE-FILTER (PF-1) DATA | | | | PRE-FILTER (PF-2) DATA | | | | | | | | | | |
|-------------|----------|--------------------|------|---------------------------|---------------------|----------|------------------------|------------|--------------|------------|-----|---|----|------------|--------------------|-----------------|-------------------------|--|------------------------|--------|--------------------------|---------------------|------------------------|------------|--------|----------------|----------------------|--------|--------------------------|---------------------|---------------------|------------|--------|
| | | | | | RETURN AIR CFM | FAN TYPE | TOT/EXT. S.P. IN. W.G. | WHEEL DIA. | MAX. FAN RPM | MOTOR DATA | | | | STARTER BY | DISC. SW. BY | PROVIDE SECTION | PROVIDE RET. AIR DAMPER | PROVIDE U.L. LISTED RETURN AIR SMK. DMPR | PRE-FILTER BOX (Y/N) | CFM | MIN. FACE AREA (SQ. FT.) | PD (IN. W.G.) CLEAN | PD (IN. W.G.) FINAL | EFFICIENCY | TYPE | ACCESS SECTION | PRE-FILTER BOX (Y/N) | CFM | MIN. FACE AREA (SQ. FT.) | PD (IN. W.G.) CLEAN | PD (IN. W.G.) FINAL | EFFICIENCY | TYPE |
| | | | | | | | | | | MIN. | HP | V | PH | | | | | | | | | | | | | | | | | | | | |
| 110-AHU205 | 2E100 | 2ND FLOOR "F" WING | VAV | 4,000 | 11,000 | AF | 2.5 | 22" | 1,200 | 15 | 460 | 3 | 60 | VFD | VFD | Y | Y | N | Y | 15,000 | 28.22 | 0.25 | 0.65 | MERV 7 | NOTE 6 | YES | Y | 15,000 | 28.22 | 0.25 | 0.74 | MERV 11 | NOTE 7 |

AIR HANDLING UNIT SCHEDULE (CONTINUED)

| UNIT NUMBER | ACCESS SECTION | HOT WATER HEATING COIL DATA | | | | | | | | | | | | | | ACCESS SECTION | CHILLED WATER COOLING COIL DATA (MAX. FACE VELOCITY = 505 FPM) | | | | | | | | | | | | | |
|-------------|----------------|-----------------------------|--------------------|---------------|------------|------------|--------------------|--------------------|------|---------|---------|---------------|-----------|-----------|-----------|----------------|--|---------------|---------------|--------------------|--------------------|-----|---------|---------|---------------|-----------|---------|----------------------|---------|----------------------|
| | | APPROX. SECTION LENGTH | HEATING LOAD (MBH) | AIR SIDE DATA | | | | WATER SIDE DATA | | | | | | TOTAL MBH | SENS. MBH | | CFM | EAT (F) DB/WB | LAT (F) DB/WB | MAX APD (IN. W.G.) | MAX FACE VEL (FPM) | GPM | EWT (F) | LWT (F) | WPD (FT.W.G.) | MIN. ROWS | MAX PPF | MIN. TUBE VEL. (FPS) | | |
| | | | | CFM | EAT (F) DB | LAT (F) DB | MAX APD (IN. W.G.) | MAX FACE VEL (FPM) | GPM | EWT (F) | LWT (F) | WPD (FT.W.G.) | MIN. ROWS | | | | | | | | | | | | | | | | MAX PPF | MIN. TUBE VEL. (FPS) |
| 110-AHU205 | NO | 24-1/2" | 243 | 15,000 | 45 | 60 | 0.10 | 523 | 49.0 | 180 | 10.0 | 1 | 80 | 3.0 | YES | 14 | 742 | 551 | 15,000 | 83.4/66.7 | 50.0/49.9 | 1.0 | 502 | 123.2 | 44 | 56 | 15 | 8 | 125 | 2.5 |

AIR HANDLING UNIT SCHEDULE (CONTINUED)

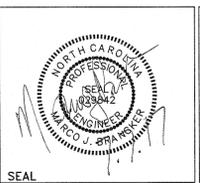
| UNIT NUMBER | SUPPLY FAN DATA | | | | | | | | | | DIFFUSER SECTION | AFTER-FILTER (AF-1) DATA | | | | DISCHARGE PLENUM SECTION | | | UNIT ELECTRICAL DATA (LIGHTS AND 20A RECEPT.) | | | | | | | | | |
|-------------|-----------------|-------------|--------------------|-----------------------------|------------------|------------|------------------------|--------------|------------|-----|------------------|--------------------------|------------|--------------|-----|--------------------------|------------------|------------------|---|---------|---------------------|------------------------|--------------------|---------|--------------------------|--------------------------------|-------|-----|
| | DESIGN FAN CFM | T&B FAN CFM | EXT. S.P. IN. W.G. | MINIMUM TOTAL S.P. IN. W.G. | FAN & WHEEL TYPE | WHEEL DIA. | MAX. OUTLET VEL. (FPM) | MAX. FAN RPM | MOTOR DATA | | | | STARTER BY | DISC. SW. BY | CFM | MIN. FACE AREA (SQ. FT.) | PD IN W.C. CLEAN | PD IN W.C. FINAL | EFFICIENCY | TYPE | PROVIDE ACCESS DOOR | MINIMUM SECTION LENGTH | MAX APD (IN. W.G.) | VOLTAGE | MINIMUM CIRCUIT AMPERAGE | MAXIMUM OVERCURRENT PROTECTION | NOTES | |
| | | | | | | | | | MIN. | HP | | V | | | | | | | | | | | | | | | | PH |
| 110-AHU205 | 15,000 | 13,200 | 3.3 | 7.0 | CENT., AFBI | 22" | 2707 | 2071 | 30 | 460 | 3 | 60 | VFD | VFD | YES | 15,000 | 28.22 | 0.25 | 1.0 | MERV 14 | NOTE 17 | Y | 46" | 0.067 | 120 | 27.0 | 33.75 | ALL |

NOTES:

- MECHANICAL CONTRACTOR SHALL INSTALL SMOKE DETECTOR IN SUPPLY AND RETURN DUCTS. INTERLOCK SMOKE DETECTORS TO SHUT DOWN FANS ON ALARM (BY CONTROLS CONTRACTOR).
- SMOKE DETECTORS SHALL BE FURNISHED AND WIRED (POWER AND FIRE ALARM) BY THE ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR SHALL INSTALL SMOKE DETECTORS IN DUCTWORK.
- MECHANICAL CONTRACTOR AND UNIT MANUFACTURER SHALL COORDINATE CAREFULLY FOR THE DUCT CONNECTIONS TO THE UNITS. SEE PLANS AND UNIT SECTIONS.
- UNIT SHALL HAVE SINGLE POINT POWER CONNECTION AND STEP DOWN TRANSFORMER FOR LIGHTS AND SERVICE RECEPTACLES.
- OUTLET VELOCITIES OF FANS SHALL NOT EXCEED 2,710 FEET PER MINUTE.
- PROVIDE MERV 7; 2-INCH THICK THROWAWAY FILTERS.
- PROVIDE MERV 11; 12-INCH THICK RIGID CARTRIDGE FILTERS.
- PROVIDE 6" HIGH BASE RAIL FRAME UNDER UNIT.
- ALL DAMPERS SHALL BE ARRANGED FOR SEPARATE OUTSIDE AIR AND RETURN AIR ACTUATORS.
- ALL UNITS SHALL BE DOUBLE WALL CONSTRUCTION WITH 2" THICK SPRAY FOAM PANELS.
- MINIMUM SCHEDULED CHILLED WATER COIL TUBE VELOCITIES ARE FOR DESIGN MAXIMUM WATER FLOW RATES, AS SCHEDULED.
- MAXIMUM APD AND MAXIMUM COIL FACE VELOCITIES SCHEDULED ARE FOR FULL FAN DESIGN AIRFLOW.
- PROVIDE MARINE LIGHT IN ALL SECTIONS WITH ACCESS DOOR.
- PROVIDE UL-555S OPPOSED BLADE SMOKE DAMPER AT THE INLET AND DISCHARGE OPENINGS OF THE AIR HANDLER. DAMPER SHALL BE FULL SIZE OF OPENING, AS NOTED, AND SHALL NOT CONSTRICT AIR FLOW.
- VFDs WITH MANUAL BYPASS AND LOCKING DISCONNECT MEANS SHALL BE PROVIDED BY DIVISION 23. VFDs SHALL BE MOUNTED AS SHOWN ON THE PLANS. COORDINATE POWER REQUIREMENTS WITH E.C.
- AHUs SHALL BE CONSTRUCTED AND PRESSURE, DEFLECTION AND LEAKAGE TESTED IN FACTORY. UNITS SHALL BE SHIPPED IN SECTIONS AS REQUIRED BY THE INSTALLATION. MECHANICAL ROOM ACCESS DIMENSIONS ARE LIMITED. MECHANICAL CONTRACTOR SHALL FIELD-VERIFY, WITH CONTRACTING OFFICER, THE ALLOWABLE DIMENSIONS. FIELD ASSEMBLE UNITS AS REQUIRED.
- PROVIDE MERV 14; 12-INCH THICK RIGID CARTRIDGE FILTERS. (NOMINAL FILTER SIZES SHALL BE 24"x24")
- PROVIDE AIR DISTRIBUTION BAFFLE WITH 0.10" STATIC PRESSURE LOSS MAXIMUM
- SUBMIT UNIT COMPONENT STATIC PRESSURE LOSSES TABULATION.
- SUPPLY AIR FAN AND MOTOR SHALL BE CAPABLE OF 8.0" STATIC PRESSURE, WITH STABLE FAN OPERATION.
- UNIT CASINGS SHALL BE CONSTRUCTED FOR 8" W.G. PRESSURE.
- BALANCE RETURN FANS TO SCHEDULED CFM, THEN REDUCE AS REQUIRED FOR POSITIVE SUITE PRESSURE.
- BASIS OF DESIGN: TRANE PERFORMANCE CLIMATE CHANGER SIZE 30.

| REVISION NO. | REVISION DESCRIPTION | DATE |
|--------------|----------------------|----------|
| 1 | AMENDMENT 02 | 07/07/17 |

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Recommended Approvals:

| | |
|----------------------------|------------------------------------|
| 1. MEDICAL CENTER DIRECTOR | 6. OPERATIONS SERVICE LINE MANAGER |
| 2. ASSISTANT DIRECTOR | 7. INFECTION CONTROL MANAGER |
| 3. CHIEF OF STAFF | 8. SAFETY MANAGER |
| 4. ASSOC. DIRECTOR | 9. GENERAL ENGINEER |
| 5. SERVICE LINE MGRS. | 10. COR |

| | | |
|--|--|----------------------------|
| Drawing Title MECHANICAL SCHEDULES | Project Title RENOVATE MENTAL HEALTH UNITS | Date February 10, 2017 |
| 100% CONSTRUCTION DOCUMENTS | Project Number 509-12-104 | DRAWING No. M601 |
| FULLY SPRINKLERED | Drawn | Building Number |
| | Checked | Reviewed |
| | | AutoCAD File Name |
| | | Const. Contract No. |

