

| 23-AIR HANDLING UNIT SCHEDULE |              |                               |              |               |                       |                          |  |              |               |                       |                          |  |      |          |                       |                |                            |      |       |     |       |       |       |   |   |
|-------------------------------|--------------|-------------------------------|--------------|---------------|-----------------------|--------------------------|--|--------------|---------------|-----------------------|--------------------------|--|------|----------|-----------------------|----------------|----------------------------|------|-------|-----|-------|-------|-------|---|---|
| MARK                          | MANUFACTURER | MODEL                         | SUPPLY FAN   |               |                       |                          |  | EXHAUST FAN  |               |                       |                          |  | TYPE | REFILTER |                       |                | ELECTRICAL CHARACTERISTICS |      |       |     |       | NOTES |       |   |   |
|                               |              |                               | FAN QUANTITY | TOTAL AIRFLOW | TOTAL STATIC PRESSURE | EXTERNAL STATIC PRESSURE | ELECTRICAL CHARACTERISTICS HP (EACH) BRAKE HP (EACH) | FAN QUANTITY | TOTAL AIRFLOW | TOTAL STATIC PRESSURE | EXTERNAL STATIC PRESSURE | ELECTRICAL CHARACTERISTICS HP (EACH) BRAKE HP (EACH) |      | MERV     | MAXIMUM PRESSURE DROP | REFILTER DEPTH | MCA                        | MOP  | MCA   | MOP | VOLTS |       | PHASE |   |   |
| AHU-1                         | INNOVENT     | NDHU-OU-PL-30000-AC-HG-IF-460 | 3            | 30000 CFM     | 4.54 in-wg            | 1.50 in-wg               | 15   | 9.8          | 2             | 18000 CFM             | 3.16 in-wg               | 1.50 in-wg   | 10   | 6.2      | PLEATED               | 8              | 0.24" w.g.                 | 2 in | 159.9 | 175 | 86.1  | 100   | 460   | 3 | 1 |

| 23-MECHANICAL SHEET LIST |  |
|--------------------------|--|
| SHEET NUMBER             | SHEET NAME                             |
| M000.0                   | MECHANICAL SCHEDULES AND LEGENDS       |
| M001.0                   | MECHANICAL DETAILS                     |
| M101.0                   | NATATORIUM MECHANICAL DEMOLITION PLANS |
| M100.0                   | NATATORIUM MECHANICAL PLANS            |
| M600                     | CONTROL SCHEMATICS - HVAC              |

| 23-AIR HANDLING UNIT COOLING COIL / HEATING COIL CHARACTERISTICS |                        |             |                                   |                                  |                                   |                                  |                       |                  |            |                                  |                                   |                             |                              |           |         |              |       |
|--|------------------------|-------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------|------------------|------------|----------------------------------|-----------------------------------|-----------------------------|------------------------------|-----------|---------|--------------|-------|
| MARK   | COOLING CAPACITY (MBH) |             |                                   |                                  |                                   |                                  |                       | HEATING CAPACITY |            |                                  |                                   |                             |                              |           | TYPE    | GAS PRESSURE | NOTES |
|  | TOTAL                  | SENSIBLE    | DRY BULB TEMPERATURE ENTERING AIR | DRY BULB TEMPERATURE LEAVING AIR | WET BULB TEMPERATURE ENTERING AIR | WET BULB TEMPERATURE LEAVING AIR | MAXIMUM FACE VELOCITY | REFRIGERANT TYPE | AIRFLOW    | DRY BULB TEMPERATURE LEAVING AIR | DRY BULB TEMPERATURE ENTERING AIR | WET BULB TEMPERATURE MBH IN | WET BULB TEMPERATURE MBH OUT |           |         |              |       |
| AHU-1  | 1,023.5                | 434.6 Btu/h | 86 °F                             | 59 °F                            | 78 °F                             | 59 °F                            | 500 FPM               | R-410A           | 30,000 CFM | 79 °F                            | 96 °F                             | 700                         | 560                          | GAS FIRED | 6-14"WC | 1            |       |

| 23-AIR HANDLING UNIT ENERGY RECOVERY SECTIONS |           |                         |                  |                   |                  |                   |                  |                         |                  |                   |                  |        |         |         |         |         |         |   |
|---|-----------|-------------------------|------------------|-------------------|------------------|-------------------|------------------|-------------------------|------------------|-------------------|------------------|--------|---------|---------|---------|---------|---------|---|
| MARK  | AIRFLOW   | SUMMER AIR TEMPERATURES |                  |                   |                  |                   |                  | WINTER AIR TEMPERATURES |                  |                   |                  |        |         | NOTES   |         |         |         |   |
|   |           | DRY BULB ENTERING       | WET BULB LEAVING | DRY BULB ENTERING | WET BULB LEAVING | DRY BULB ENTERING | WET BULB LEAVING | DRY BULB ENTERING       | WET BULB LEAVING | DRY BULB ENTERING | WET BULB LEAVING |        |         |         |         |         |         |   |
| AHU-1   | 15000 CFM | 88.0 °F                 | 85.5 °F          | 78.1 °F           | 77.5 °F          | 84.0 °F           | 86 °F            | 73.1 °F                 | 74 °F            | 6.0 °F            | 62.2 °F          | 4.0 °F | 40.8 °F | 84.0 °F | 54.4 °F | 70.3 °F | 54.4 °F | 1 |

| 23-HOT GAS REHEAT COIL SCHEDULE |              |                               |            |           |                       |                      |       |
|---------------------------------|--------------|-------------------------------|------------|-----------|-----------------------|----------------------|-------|
| MARK                            | MANUFACTURER | MODEL                         | AIRFLOW    | COIL TYPE | ENTERING AIR DRY BULB | LEAVING AIR DRY BULB | NOTES |
| AHU-1                           | INNOVENT     | NDHU-OU-PL-30000-AC-HG-IF-460 | 30,000 CFM | HOT-GAS   | 72 °F                 | 88 °F                | 1     |

NOTES:  
1. INSTALL AIR HANDLER ON ENLARGED STRUCTURAL STEEL SUPPORT SYSTEM.

| 23-EXHAUST FAN SCHEDULE |              |           |                  |          |                          |      |      |   |         |       |
|-------------------------|--------------|-----------|------------------|----------|--------------------------|------|------|---|---------|-------|
| MARK                    | MANUFACTURER | MODEL     | TYPE             | AIRFLOW  | EXTERNAL STATIC PRESSURE | RPM  | HP   | Ø | VOLTAGE | NOTES |
| EF-98-1                 | GREENHECK    | CUE-140-C | CENTRIFUGAL ROOF | 2000 CFM | 1.00 in-wg               | 1544 | 0.75 | 1 | 115 V   |       |

| 23-SPLIT DX AIR CONDITIONING UNIT SCHEDULE |              |             |                 |                             |                    |      |     |                  |                            |      |   |         |       |   |
|--|--------------|-------------|-----------------|-----------------------------|--------------------|------|-----|------------------|----------------------------|------|---|---------|-------|---|
| MARK                                       | MANUFACTURER | MODEL       | MODEL TYPE      | TOTAL COOLING COIL CAPACITY | SUPPLY FAN AIRFLOW | SEER | EER | REFRIGERANT TYPE | ELECTRICAL CHARACTERISTICS |      |   |         | NOTES |   |
|  |              |             |                 |                             |                    |      |     |                  | AMPS                       | MOCF | Ø | VOLTAGE |       |   |
| DFC-1                                      | CARRIER      | 40MAQB12B-3 | WALL MOUNTED    |                             | 380 CFM            |      |     |                  |                            |      |   | 1       | 115 V | 1 |
| ACCU-1                                     | CARRIER      | 38MAQB12R-3 | CONDENSING UNIT | 12,000.0 Btu/h              |                    |      |     | R410A            | 15                         | 20   | 1 | 115 V   | 1     |   |

NOTE:  
1. INDOOR UNIT IS POWERED BY OUTDOOR UNIT.

| 23-AIR DEVICE SCHEDULE |              |       |                                      |                 |                       |               |               |                 |           |       |
|------------------------|--------------|-------|--------------------------------------|-----------------|-----------------------|---------------|---------------|-----------------|-----------|-------|
| MARK                   | MANUFACTURER | MODEL | DIFFUSER TYPE                        | MAXIMUM AIRFLOW | MAXIMUM PRESSURE DROP | MAXIMUM SOUND | BLADE SPACING | CONNECTION SIZE | FACE SIZE | NOTES |
| RG-2                   | PRICE        | 630   | ALUMINUM LOUVERED FACE RETURN GRILLE | 3125 CFM        | 0.069 in-wg           | 29            | 3/4"          | 32" X 30"       | 32" X 30" |       |
| RG-3                   | PRICE        | 630   | ALUMINUM LOUVERED FACE RETURN GRILLE | 6250 CFM        | 0.069 in-wg           | 29            | 3/4"          | 64" X 30"       | 64" X 30" |       |
| SG-6                   | PRICE        | 620   | ALUMINUM LOUVERED FACE SUPPLY GRILLE | 2570 CFM        | 0.093 in-wg           | 24            | 3/4"          | 36" X 18"       | 36" X 18" |       |

**GENERAL NOTES**

- DRAWINGS ARE SCHEMATIC IN NATURE AND SHOW DESIGN INTENT. IF CHANGES ARE MADE DUE TO DIFFERING FIELD CONDITIONS, SUGGESTED CHANGES ARE TO BE SUBMITTED TO ARCHITECT FOR APPROVAL PRIOR TO CHANGES BEING MADE.
- REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE-RATED WALLS.
- REPAIR ANY WORK DAMAGED AS A RESULT OF WORK BY THIS CONTRACT. CONTRACTOR SHALL BE RESPONSIBLE TO SECURE AND PAY FOR FOR ALL MATERIALS, LABOR, LICENSES, PERMITS, INSPECTIONS, FEES, FINAL CLEANUP, AND QUALITY OF WORKMANSHIP AND MATERIALS REQUIRED TO PERFORM WORK DESCRIBED IN CONTRACT.
- CONTRACTOR SHALL VERIFY AND SATISFY THAT ALL EQUIPMENT FURNISHED WILL PROPERLY FIT IN THE SPACE PROVIDED, THAT IT WILL FUNCTION PROPERLY, AND THAT ALL PARTS OF EQUIPMENT REQUIRING SERVICE ARE READILY ACCESSIBLE IN COMPLIANCE WITH THE MECHANICAL CODE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL CUTTING AND PATCHING OF WALLS, FLOORS, AND ROOFS REQUIRED FOR INSTALLATION OF THE WORK. ALL OPENINGS IN WALLS, FLOORS OR CEILINGS SHALL BE PROPERLY SEALED.
- LOCATE WALL OPENINGS FOR DUCTS, GRILLES, AIR TRANSFER OPENINGS, PIPING, ETC. CENTERED BETWEEN FRAMING MEMBERS WHEN POSSIBLE.
- FOR ALL ROOF-MOUNTED MECHANICAL EQUIPMENT, THE CONTRACTOR SHALL PROVIDE THE CURB, CUT THE ROOF OPENING, AND PROVIDE ROOFING AND ROOF FLASHING AROUND CURB SO THAT ROOF WARRANTY IS MAINTAINED. ALL ROOF PENETRATIONS SHALL BE COORDINATED WITH ALL TRADES. TOPS OF ROOF CURBS SHALL BE 12" ABOVE TOP LAYER OF ROOF INSULATION OR MEMBRANE AND SUPPORTED ON STRUCTURE UNLESS NOTED OTHERWISE.
- ALL TRANSFER AIR DUCTS SHALL HAVE INTERIOR DUCT LINING. REFER TO THE SPECIFICATIONS FOR DUCT LINING REQUIREMENTS.
- ALL DUCT FITTINGS SHALL BE LOSSLESS FITTINGS. ROUND TAPS INTO SQUARE DUCT SHALL BE CONICAL OR BELLMOUTH. SQUARE ELBOWS AND SQUARE OR RECTANGULAR SPLITTERS SHALL USE TURNING VANES. NON-SQUARE ELBOWS SHALL HAVE A MINIMUM RADIUS OF 1.5 TIMES THE RADIUS OF THE DUCT. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- WHEN PENETRATING A NON-FIRE RATED WALL OR FLOOR WITH DUCTWORK OR PIPING, SEAL ANNULAR SPACE BETWEEN WALL/FLOOR AND MECHANICAL MATERIALS WITH NON-COMBUSTIBLE FIBERGLASS INSULATION AND JOINT SEALANT'S APPROPRIATE FOR SIZE AND DEPTH AND SOUND ATTENUATION CONSIDERATION. REFER TO ARCHITECTURAL SPECIFICATIONS FOR NON FIRE RATED JOINT SEALANTS.
- ALL FLOOR MOUNTED MECHANICAL EQUIPMENT SHALL BE INSTALLED ON A CONCRETE EQUIPMENT PAD.
- BALANCE AIR HANDLING UNIT MINIMUM OUTSIDE AIR TO THE OUTSIDE AIRFLOWS INDICATED ON THE VENTILATION SCHEDULE.
- LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTION OF PIPE OR DUCT UP AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR ACCURACY.
- ALL WORK SHALL BE PERFORMED AND INSTALLED PER THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL CODES, LAWS, REGULATIONS, INSPECTION AGENCIES, UTILITY COMPANIES AND OTHER AUTHORITIES HAVING JURISDICTION.
- WHEN INSTALLING LINEAR DIFFUSERS IN BLOCK WALL, PROVIDE AN INSULATED PLENUM AND EXTEND PLENUM BEYOND BLOCK SO THAT THE DUCT CONNECTION TO THE PLENUM CAN BE MADE CLEANLY WITHOUT INTERFERENCE WITH THE BLOCK. WHEN ABOVE A GYPSUM CEILING, PROVIDE HARD DUCT CONNECTION AT AIR DEVICE AND USE SHEETMETAL SCREWS AND DUCT SEALANT. DO NOT USE FLEX OR WIRE TIE AT FINAL AIR DEVICE CONNECTION WHEN ABOVE A HARD CEILING.
- OUTDOOR DESIGN CONDITIONS: SUMMER: 75 DB, 30-60% RH. WINTER: 70 DB.
- THE USE OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO AIR DEVICE CONNECTIONS AND BE A MAXIMUM OF 60" IN LENGTH.
- ALL 90° ELBOWS SHALL BE SHEET METAL.
- TURNING VANES SHALL BE INSTALLED IN ALL MITERED SUPPLY DUCT TURNS.
- COORDINATE LOCATIONS OF ALL HVAC EQUIPMENT AND ACCESSORIES WITH OTHER TRADES.
- MAINTAIN REQUIRED CLEARANCES FROM EXHAUST AND VENT LOCATIONS TO OUTSIDE AIR INTAKE AND OPERABLE DOORS & WINDOWS.
- PROVIDE DUCT LINER PER SPECIFICATIONS FOR ALL SUPPLY DUCT WITHIN 10' OF CONNECTION TO ALL AIR HANDLING EQUIPMENT INCLUDING ROOFTOP UNITS, FAN COILS, HEAT PUMPS, AND AIR HANDLERS.
- MECHANICAL CONTRACTOR TO DEMOLISH AND REMOVE ALL MECHANICAL EQUIPMENT, DUCTWORK, SUPPORTS, CONTROLS, PIPING, ETC. NOT REUSED IN THE FINAL DESIGN.
- THERMOSTATS SHALL BE MOUNTED WITH BOTTOM AT 44" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON THERMOSTAT INSTALLATION DETAIL ON ELECTRICAL SHEETS.
- ON ONE-FOR-ONE EQUIPMENT REPLACEMENT PROJECTS, CONTRACTOR SHALL VERIFY THAT EQUIPMENT BEING INSTALLED AT EACH LOCATION IS SIMILAR IN SIZE TO EQUIPMENT PREVIOUSLY IN THAT LOCATION.
- DUCTS CONNECTING TO INLET AND DISCHARGE OF VAV BOXES SHALL BE SAME SIZE AS BOX CONNECTION.
- CONTRACTOR SHALL REVIEW EACH SUBMITTAL AND CHECK FOR COORDINATION WITH OTHER WORK OF THE CONTRACT AND FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR ANY CHANGES TO PRICE AND SCHEDULE AFFECTING ANY TRADE RESULTING FROM USE OF NON-BASIS OF DESIGN EQUIPMENT. EQUIPMENT SCHEDULES SHOW BASIS OF DESIGN.
- ALL EQUIPMENT AND COMPONENTS INSTALLED IN AN AIR PLENUM SHALL BE PLENUM RATED.

**SYMBOLS AND ABBREVIATIONS LEGEND**  
(THERE MAY BE SYMBOLS LISTED IN THIS LEGEND THAT ARE NOT USED IN THIS SET OF DRAWINGS)

| PIPING SYMBOLS | DESCRIPTION                     |
|----------------|---------------------------------|
| —HHWS          | HEATING HOT WATER SUPPLY PIPING |
| —HHWR          | HEATING HOT WATER RETURN PIPING |
| —CHWS          | CHILLER WATER SUPPLY PIPING     |
| —CHWR          | CHILLER WATER RETURN PIPING     |
| —CWS           | CONDENSER WATER SUPPLY PIPING   |
| —CWR           | CONDENSER WATER RETURN PIPING   |
| —GLS           | GEO-THERMAL LOOP SUPPLY PIPING  |
| —GLR           | GEO-THERMAL LOOP RETURN PIPING  |
| —COND          | CONDENSATE DRAIN PIPING         |
| —              | GATE VALVE                      |
| —              | BALL VALVE                      |
| —              | BUTTERFLY VALVE                 |
| —              | PLUG VALVE                      |
| —              | CIRCUIT BALANCING VALVE         |
| —              | CHECK VALVE                     |
| —              | PRESSURE REDUCING VALVE         |
| —              | 3-WAY VALVE                     |
| —              | MOTORIZED CONTROL VALVE         |
| —              | MOTORIZED 3-WAY CONTROL VALVE   |
| —              | SOLENOID VALVE                  |
| —              | WYE STRAINER                    |
| —              | PIPE CONTINUATION               |

**DUCTWORK SYMBOLS**

|   |  |
|---|--|
| — | LINEAR DIFFUSER / LINEAR EXHAUST / LINEAR RETURN |
| ⊠ | SUPPLY DIFFUSER                                  |
| ⊞ | RETURN GRILLE                                    |
| ⊞ | EXHAUST GRILLE                                   |
| ⊞ | VAV BOX (WITH CLEARANCE BOX SHOWN)               |
|   | BALANCING DAMPER                                 |
| ⊞ | SMOKE DAMPER                                     |
| ⊞ | FIRE DAMPER                                      |
| ⊞ | MOTORIZED CONTROL DAMPER                         |
| — | INTERNALLY LINED DUCTWORK                        |
| ⊞ | FABRIC DUCTWORK                                  |
|   | FLEXIBLE DUCTWORK                                |
| ⊞ | CONTROL SYMBOLS                                  |
| ⊞ | THERMOSTAT                                       |
| ⊞ | WALL ADJUSTOR                                    |

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RENOVATION OF  
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**ISSUANCES**

| NO.      | DATE               | DESCRIPTION |
|----------|--------------------|-------------|
| 09-02-22 | DESIGN DEVELOPMENT |             |

**MECHANICAL SCHEDULES AND LEGENDS**

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