UMA - Katz Library HVAC Improvements
University of Maine at Augusta

20 Jewett Drive, Augusta, ME 04330
ALLIED PROJECT #21028

ISSUED FOR RE-BID
08 APRIL 2022

DRAWINGS

LOCATION MAP

160 Veranda Street
Portland, Maine 04103
T: 207.221.2260
F: 207.221.2266
Web: www.allied-eng.com
1. INTENT IS TO SALVAGE AS MANY CEILING TILES IN ENTIRETY.

2. REMOVE EXISTING CEILING TILES AS REQUIRED FOR MECHANICAL AND ELECTRICAL REMOVALS AND INSTALLATIONS. EXISTING SUSPENDED CEILING GRID TO REMAIN. GC TO CONFIRM.

3. REFER TO MEP DEMOLITION DRAWINGS FOR NOTES (TYP.).

4. ALL CARDBOARD, PLASTICS AND WOOD PRODUCTS ARE THE BE RECYCLED.

5. REMOVE ACOUSTIC PANELS, STORE FOR REUSE (TYP.).

6. REMOVE ACOUSTIC PANELS, STORE FOR REUSE (TYP.).

7. REMOVE ACOUSTIC PANELS, STORE FOR REUSE (TYP.).

8. REMOVE ACOUSTIC PANELS, STORE FOR REUSE (TYP.).

9. REMOVE ACOUSTIC PANELS, STORE FOR REUSE (TYP.).
1. DO NOT SCALE DRAWINGS.

2. FIELD VERIFY ALL DIMENSIONS PRIOR TO PROCEEDING WITH WORK.

VIF

EXPOSED UNDERSIDE OF ROOF DECK TO REMAIN A 1.2 RATED PARTITIONS AND FLOOR/CEILING ASSEMBLIES.

5. COORDINATE ALL MECHANICAL, ELECTRICAL AND PLUMBING FLOOR AND WALL ASSEMBLIES WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING ENGINEERS.

协调所有机械、电气和管道的楼板和墙装配与建筑师、结构师、机械师、电气师和管道工程师。

7. ALL CONSTRUCTION PHASING AND OPERATIONS SHALL BE COORDINATED WITH THE OWNER.

协调所有施工阶段和操作与业主。

1.2

PROVIDE NEW 2x4 SUSPENDED CEILING GRID AND TILES OR NEW TILES, NOT A COMBINATION OF BOTH.

提供新的2x4悬挂式天花板网格和瓷砖，而不是两者混合。

2. ROOMS OR AREAS WITH PATCHED GWB CEILINGS OR SOFFITS TO HAVE PATCH & PAINT SOFFIT AS REQUIRED (TYP.).

对于修补的GWB天花板或天棚的房间或区域，应进行修补和涂漆（见图）。

3. BATHROOM AND TOILET ROOMS TO RECEIVE CEILING TILE PATCH & PAINT W/ EXISTING FINISHES.

浴室和洗手间要接收天花板瓷砖修补和涂漆（见现有饰面）。

4. INFILL EXTERIOR WALL AND REINSTALL STORED CEILING TILES. REINSTALLED CEILING TILES MATCH & ALIGN W/ EXISTING FINISHES.

填充外墙并重新安装储存的天花板瓷砖。重新安装的天花板瓷砖匹配并对齐现有饰面。

5. COORDINATE ALL MECHANICAL, ELECTRICAL AND PLUMBING FLOOR AND WALL ASSEMBLIES WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING ENGINEERS.

协调所有机械、电气和管道的楼板和墙装配与建筑师、结构师、机械师、电气师和管道工程师。

6. INSTALL NEW GWB SOFFIT, PROVIDE NEW 2x4 SUSPENDED CEILING GRID AND TILES OR NEW TILES, NOT A COMBINATION OF BOTH.

安装新的GWB天棚，提供新的2x4悬挂式天花板网格和瓷砖，而不是两者混合。

7. ALL CONSTRUCTION PHASING AND OPERATIONS SHALL BE COORDINATED WITH THE OWNER.

协调所有施工阶段和操作与业主。

8. PATCH & PAINT (E) GWB CEILING AS REQUIRED (TYP.).

修补和涂漆（E）GWB天花板（见图）。

1.2

MATCH & ALIGN WITH EXISTING FINISHES.

匹配并对齐现有饰面。

3. BATHROOM AND TOILET ROOMS TO RECEIVE CEILING TILE PATCH & PAINT W/ EXISTING FINISHES.

浴室和洗手间要接收天花板瓷砖修补和涂漆（见现有饰面）。

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5. COORDINATE ALL MECHANICAL, ELECTRICAL AND PLUMBING FLOOR AND WALL ASSEMBLIES WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING ENGINEERS.

协调所有机械、电气和管道的楼板和墙装配与建筑师、结构师、机械师、电气师和管道工程师。

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协调所有施工阶段和操作与业主。

8. PATCH & PAINT (E) GWB CEILING AS REQUIRED (TYP.).

修补和涂漆（E）GWB天花板（见图）。

1.2

MATCH & ALIGN WITH EXISTING FINISHES.

匹配并对齐现有饰面。
REMOVE ALL DASHED SUPPLY AND RETURN DUCTWORK ASSOCIATED WITH (E) AHU - 2.
REMOVE ALL DASHED SUPPLY AND RETURN DUCTWORK ASSOCIATED WITH (E) AHU - 3.
REMOVE (E) RELIEF AIR LOUVER AND DUCTWORK COMPLETE.
REFER TO ARCHITECTURAL PLAN FOR PATCHING EXISTING INTERIOR/EXTERIOR FINISHES TO MATCH EXISTING.
RETURN GRILLS TO REMAIN (TYP. OF 7).

DEMOLITION KEYED NOTES:
1. REMOVE (E) 3" HWS & R UP & DN BACK PERIODICALS 212 BUILDING STOR 210 Room 48 NEW LIBRARY 201A
2. REMOVE (E) 36x20 (E) 46x26 (E) 30x18 (E) 30x18 (E) 30x18 (E) 48x24 (E) 36x20 (E) 12x8

Allied Engineering
Structural  Mechanical   Electrical  Commissioning
160 Veranda Street Portland, Maine 04103
T: 207.221.2260  F: 207.221.2266
Web: www.allied-eng.com
REMOVE (E) AHU - 3 & DUCTWORK COMPLETE

REMOVE (E) AHU - 3

REMOVE (E) HUMIDIFIER AND STEAM DISTRIBUTION PIPING COMPLETE, CAP (E) DOMESTIC WATER PIPING AT THE SOURCE.

REMOVE (E) UH MECHANICAL ROOM 301

REMOVE (E) EXHAUST FAN AND LOUVER

REMOVE (E) INTAKE LOUVER

REMOVE (E) TRANE CONDENSING UNIT TO REMAIN

REMOVE (E) EXHAUST FAN & DUCTWORK COMPLETE

REMOVE (E) 3" HWS & R DN

REMOVE (E) REHEAT COIL (IN CHASE)

REMOVE (E) HWS & HWR PIPING TO REMAIN

DESTRUCTION REVIEWS NOTES:

REMOVE (E) HWS & HWR PIPING AS REQUIRED TO FACILITATE REMOVAL OF (E) AHU AND INSTALLATION OF NEW DOAS UNIT.

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Date:
Drawn By:
Checked By:
Project Mgr:
Project No:
Cad File:

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BIM 360://21028 Katz Library HVAC upgrade/21028_MEP_R21.rvt

ISSUED FOR RE-BID

MD1.2
SET VOLUME DAMPER AT 590 CFM.

DUCT TO (E) WALL DROP AND CONNECT NEW RETURN RISER DUCT.

TIGHT TO STRUCTURE.

KEYED NOTES:

- 1/8" = 1'

- 0"

- 0"
CONNECT EA DUCT TO (E) 56"x56" LOUVER, PROVIDE NEW MOD DOAS

1. EA LOUVER AND MOD TO REMAIN
2. EA LOUVER AND FAN TO REMAIN
3. 26x16 EA AND 24x14 OA DN IN CHASE
4. 26x16E FILTER BOX
5. 20x12S 20x12R 26x14OA (E) CONDENSING UNIT TO REMAIN
6. 1/4" CONDENSATE TO FLOOR DRAIN
7. TRANSITION DUCT AS REQUIRED TO CONNECT TO DOAS UNIT (TYP. OF 4)
8. PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS THROUGH FLOOR.
9. KEYED NOTES: DOAS UNIT IS OWNER FURNISHED, CONTRACTOR INSTALLED. COORDINATE AS REQUIRED. CONTRACTOR SHALL FURNISH AND INSTALL ALL COMPONENTS NECESSARY TO INTEGRATE THE OWNER FURNISHED DOAS UNIT WITH THE VRF SYSTEM.
### System 7 
#### AIR SYSTEMS 
- **Type**: Ceiling-Cassette
- **Model**: (Ducted)
- **Width (in.)**: 12,000.0
- **Height (in.)**: 13,500.0
- **Min. Free Area (in²)**: 80.0/67.0
- **Design Cooling Capacity (BTU/h)**: 70.0 FULL DEMAND
- **Corrected Cooling Capacity (BTU/h)**: 11,845.0
- **Design Heating Capacity (BTU/h)**: 1/4 / 1/2 HIGH
- **Corrected Heating Capacity (BTU/h)**: 371.0
- **Electrical: Power Heating (208/230V kW)**: 0.6/0.6
- **Electrical: Voltage / Phase**: 208/230V / 1-phase
- **Notes / Options**: Ceiling-Cassette

### System 8 
#### AIR SYSTEMS 
- **Type**: Ceiling-Concealed
- **Model**: (Ducted)
- **Width (in.)**: 18,000.0
- **Height (in.)**: 20,000.0
- **Min. Free Area (in²)**: 80.0/67.0
- **Design Cooling Capacity (BTU/h)**: 70.0 FULL DEMAND
- **Corrected Cooling Capacity (BTU/h)**: 17,767.4
- **Design Heating Capacity (BTU/h)**: 1/4 / 1/2 HIGH
- **Corrected Heating Capacity (BTU/h)**: 600.0
- **Electrical: Power Heating (208/230V kW)**: 0.6/0.6
- **Electrical: Voltage / Phase**: 208/230V / 1-phase
- **Notes / Options**: Ceiling-Concealed

### System 9 
#### AIR SYSTEMS 
- **Type**: Ceiling-Concealed
- **Model**: (Ducted)
- **Width (in.)**: 48,000.0
- **Height (in.)**: 54,000.0
- **Min. Free Area (in²)**: 80.0/67.0
- **Design Cooling Capacity (BTU/h)**: 70.0 FULL DEMAND
- **Corrected Cooling Capacity (BTU/h)**: 47,379.8
- **Design Heating Capacity (BTU/h)**: 1/4 / 1/2 HIGH
- **Corrected Heating Capacity (BTU/h)**: 1306.0
- **Electrical: Power Heating (208/230V kW)**: 0.6/0.6
- **Electrical: Voltage / Phase**: 208/230V / 1-phase
- **Notes / Options**: Ceiling-Concealed

### System 10 
#### AIR SYSTEMS 
- **Type**: Ceiling-Cassette
- **Model**: (Ducted)
- **Width (in.)**: 6,000.0
- **Height (in.)**: 6,700.0
- **Min. Free Area (in²)**: 80.0/67.0
- **Design Cooling Capacity (BTU/h)**: 70.0 FULL DEMAND
- **Corrected Cooling Capacity (BTU/h)**: 5,922.5
- **Design Heating Capacity (BTU/h)**: 1/4 / 1/2 HIGH
- **Corrected Heating Capacity (BTU/h)**: 300.0
- **Electrical: Power Heating (208/230V kW)**: 0.6/0.6
- **Electrical: Voltage / Phase**: 208/230V / 1-phase
- **Notes / Options**: Ceiling-Cassette

### System 11 
#### AIR SYSTEMS 
- **Type**: Ceiling-Cassette
- **Model**: (Ducted)
- **Width (in.)**: 24,000.0
- **Height (in.)**: 27,000.0
- **Min. Free Area (in²)**: 80.0/67.0
- **Design Cooling Capacity (BTU/h)**: 70.0 FULL DEMAND
- **Corrected Cooling Capacity (BTU/h)**: 23,689.9
- **Design Heating Capacity (BTU/h)**: 1/4 / 1/2 HIGH
- **Corrected Heating Capacity (BTU/h)**: 883.0
- **Electrical: Power Heating (208/230V kW)**: 0.6/0.6
- **Electrical: Voltage / Phase**: 208/230V / 1-phase
- **Notes / Options**: Ceiling-Cassette
### Notes:
- This DoC shall be factory-installed, designed and approved for use with the Mitsubishi VRF system as scheduled herein.

### VRF Heat Recovery Branch Circuit Controller

#### System Tag: Doas 1
- **Tag Reference:** AURA GREEN M04i-FSE
- **Manufacturer:** Mitsubishi
- **Model:** M04i-FSE
- **Type:** Fan coil
- **S.A. Fan Motor:** ESP
- **Flange:** MCA
- **Operator:** Electric
- **Rating:** 208/60/3

#### Specifications:
- **Winter Electric Pre-Heat Coil:** Mitsubishi VRF Heating Hot Water Heating Coil Mitsubishi VRF Cooling (R410A)
- **DOAS 1 AURA GREEN M04i-FSE**
- **CFM:** 2,970
- **W.G.:** 1.5
- **BHP:** 3.28
- **HP:** 4.1
- **Sensible Capacity:** 2,970
- **MBH:** 1.5
- **GPM:** 132
- **Water Flow:** 58.75
- **Return Air:** 66
- **Outdoor Air:** 75
- **Core Supply Air:** 75
- **Total Capacity:** 62.5
- **Total Sensible Capacity:** 79.8
- **Sensible Capacity Percent:** 66
- **EAT:** 55.82
- **LAT:** 94.1
- **Total Effectiveness:** 60.63
- **Total Capacity:** 79.8
- **Total Sensible Capacity:** 66
- **Flow:** 75.9
- **Return Air:** 79.8
- **Outdoor Air:** 66
- **Core Supply Air:** 58.6
- **Total Capacity:** 62.5
- **Total Sensible Capacity:** 79.8
- **Sensible Capacity Percent:** 66

#### Notes:
- The DoC shall be factory-installed, designed and approved for use with the Mitsubishi VRF system as scheduled herein.
**E2** ELECTRICAL GENERAL NOTES

- **Conduit, 3#12**: Indicates conduit size and number of conductors.
- **A3**: POWER DISTRIBUTION
  - **4**: POWER DISTRIBUTION FROM AN INSIDE CORNER.
  - **5**: POWER DISTRIBUTION TO AN INSIDE CORNER.
  - **6**: POWER DISTRIBUTION TO AN INSIDE CORNER.
  - **7**: POWER DISTRIBUTION TO AN INSIDE CORNER.
  - **8**: POWER DISTRIBUTION TO AN INSIDE CORNER.
  - **9**: POWER DISTRIBUTION TO AN INSIDE CORNER.
  - **10**: POWER DISTRIBUTION TO AN INSIDE CORNER.
  - **11**: POWER DISTRIBUTION TO AN INSIDE CORNER.
  - **12**: POWER DISTRIBUTION TO AN INSIDE CORNER.

**Lighting Switches**

<table>
<thead>
<tr>
<th>Switch Type</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetic Switch</td>
<td>Controls lighting.</td>
</tr>
<tr>
<td>Contact Closure Switch</td>
<td>Controls lighting.</td>
</tr>
<tr>
<td>Disconnect, Remove, Reconnect Electrical Switch</td>
<td>Reconnects electrical connections.</td>
</tr>
</tbody>
</table>

**Single Receivers**

- **Special Receivers**: Special electrical receptacles designed for specific applications.
- **Normal Power**: Power receptacles designed for normal power distribution.
- **UPS Power**: Power receptacles designed for UPS power distribution.
- **GFCI Double Duplex Receptacle**: GFCI double duplex receptacle, mounted 44" aff to UNO.
- **GFCI Single Pole Receptacle**: GFCI single pole receptacle, mounted 44" aff to UNO.
- **90° GFCI Single Pole Receptacle**: 90° GFCI single pole receptacle, mounted 44" aff to UNO.

**Floor and Ceiling Devices**

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoke Detector</td>
<td>Monitors smoke levels.</td>
</tr>
<tr>
<td>Heat Detector</td>
<td>Monitors heat levels.</td>
</tr>
<tr>
<td>Horn/Strobe</td>
<td>Provides warning signals.</td>
</tr>
<tr>
<td>Security System</td>
<td>Monitors security breaches.</td>
</tr>
<tr>
<td>Motion Sensor</td>
<td>Monitors movement.</td>
</tr>
</tbody>
</table>

**Fire Alarm Transmitter**

- **Fixed Fire Alarm Transmitter**: Fixed fire alarm transmitter, mounted on wall.
- **Fixed Fire Alarm Transmitter**: Fixed fire alarm transmitter, mounted on ceiling.
- **Fixed Fire Alarm Transmitter**: Fixed fire alarm transmitter, mounted on wall.
- **Fixed Fire Alarm Transmitter**: Fixed fire alarm transmitter, mounted on ceiling.

**Electrical Removals**

- **Fire Alarm Control Panel**: Fire alarm control panel, mounted on wall.
- **Fire Alarm Transmitter**: Fire alarm transmitter, mounted on wall.
- **Fire Alarm Transmitter**: Fire alarm transmitter, mounted on wall.
- **Fire Alarm Transmitter**: Fire alarm transmitter, mounted on wall.

**HAPO**

- **HAPO** - High Altitude Pipe Overhead

**Lighting**

- **Lighting Switches**: Switches used for controlling lighting.
- **Lighting Controls**: Controls used for regulating lighting.
- **Lighting Fixtures**: Fixtures used for illuminating spaces.

**Emergency Exit Lighting**

- **Emergency Exit Lighting**: Lighting used for exit paths during emergencies.

**Typical for All Fixture Types**

- **Emergency Lighting**: Emergency lighting, located as shown on drawings.
- **Exterior Exterior Reception**: Exterior exterior reception, located as shown on drawings.
- **Interior Interior Reception**: Interior interior reception, located as shown on drawings.
- **Exterior Exterior Reception**: Exterior exterior reception, located as shown on drawings.
- **Interior Interior Reception**: Interior interior reception, located as shown on drawings.

**Notes**

- **Drawn By**: Katz Library HVAC upgrade/2100_MEP_R21.rvt
- **Date**: 9/21/2016
- **Issued For Reissue**: 9/21/2016
- **Footer**: Allied Engineering - 160 Veranda Street Portland, Maine 04103
REMOVE AHU - 3 WIRING BACK TO SOURCE.

NEW DOAS - 1 TO BE INSTALLED IN ITS PLACE.

REMOVE HUMIDIFIER AND STEAM DISTRIBUTION WIRING BACK TO SOURCE.

REMOVE EXISTING EXHAUST FAN AND WIRING BACK TO SOURCE.

New Doas 1 to be installed in its place.

Remove humidifier and steam distribution wiring back to source.

Remove exhaust fan and wiring back to source.
### ELECTRICAL SCHEDULE OF MECHANICAL EQUIPMENT

<table>
<thead>
<tr>
<th>TASK</th>
<th>DESCRIPTION</th>
<th>LOCATION</th>
<th>VOLS</th>
<th>PH</th>
<th>LOAD</th>
<th>PLA</th>
<th>MCA</th>
<th>MOOPD</th>
<th>CBD</th>
<th>POWER SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21028 Katz Library HVAC upgrade</td>
<td>21028_MEP_R21.rvt</td>
<td>UMA - KATZ LIBRARY HVAC IMPROVEMENTS</td>
<td>26 JEWETT DRIVE, AUGUSTA, ME 04330</td>
<td>ELECTRICAL SCHEDULE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### NOTES

- **ABBREVIATIONS:**
  - **CU-1** VRF OUTDOOR UNIT ROOF 208 3 57 70 90 100 3 NF 3R 26 23 (E) MDP2 3,4,5
  - **DOAS-1** SERVED BY CU-1 (LEV) PENTHOUSE 208 1 0.12KW - 0.250 15 MRT 2 - 1 26 - 23 23 (E) PNL. "F(RS)" CKT. 24,26 3,6,10
  - **AC-11** SERVED BY CU-1 ROOM 50 208 1 0.52KW - 2.13 15 MRT 2 - 1 26 - 23 23 (E) PNL. "F (RS)" CKT. 24,26 3,6,10
  - **AC-10** SERVED BY CU-1 ROOM 40 208 1 0.02KW - 0.29 15 MRT 2 - 1 26 - 23 23 (E) PNL. "G " CKT. 29,31 3,6,10
  - **AC-9** SERVED BY CU-1 ROOM 40 208 1 0.02KW - 0.29 15 MRT 2 - 1 26 - 23 23 (E) PNL. "G " CKT. 29,31 3,6,10
  - **AC-8** SERVED BY CU-1 ROOM 41 208 1 0.04KW - 2.88 15 MRT 2 - 1 26 - 23 23 (E) PNL. "G " CKT. 29,31 3,6,10
  - **AC-7** SERVED BY CU-1 ROOM 41 208 1 0.142KW - 2.88 15 MRT 2 - 1 26 - 23 23 (E) PNL. "G " CKT. 29,31 3,6,10
  - **AC-6** SERVED BY CU-1 ROOM 41A 208 1 0.82KW - 2.94 15 MRT 2 - 1 26 - 23 23 (E) PNL. "G " CKT. 29,31 3,6,10
  - **AC-5** SERVED BY CU-1 ROOM 46P 208 1 0.42KW - 1.750 15 MRT 2 - 1 26 - 23 23 (E) PNL. "G" CKT. 29,31 3,6,10
  - **AC-4** SERVED BY CU-1 ROOM 52 208 1 0.142KW - 2.88 15 MRT 2 - 1 26 - 23 23 (E) PNL. "F(RS)" CKT. 24,26 3,6,10
  - **AC-3** SERVED BY CU-1 ROOM 51 208 1 0.142KW - 2.88 15 MRT 2 - 1 26 - 23 23 (E) PNL. "F(RS)" CKT. 20,22 3,6,10
  - **AC-2** SERVED BY CU-1 ROOM 53 208 1 0.11KW - 2.94 15 MRT 2 - 1 26 - 23 23 (E) PNL. "F(RS)" CKT. 20,22 3,6,10
  - **AC-1** SERVED BY CU-1 ROOM 53A 208 1 0.34KW - 4.38 15 MRT 2 - 1 26 - 23 23 (E) PNL. "F(RS)" CKT. 20,22 3,6,10
  - **BC-2** DOAS-1 : BRANCH CIRCUIT CONTROLLER 208 1 0.061KW 0.29 0.37 15 MRT 2 - 1 26 - 23 23 (E) PNL. "F(RS)" CKT. 28,30 6
  - **BC-1** VRF (AC-1 THRU AC-16) : BRANCH CIRCUIT CONTROLLER 208 1 0.258KW 1.24 1.55 15 MRT 2 - 1 26 - 23 23 (E) PNL. "F(RS)" CKT. 28,30 6

- **SYSTEM OPTIONS:**
  - **FRAME POLES** FUSE NEMA ENCL FBD SIZE/VFD FBD