5 PARTITION CONTROL JOINT REQUIREMENTS
1. PERMITS, INSPECTIONS, LICENSES AND FEES. FURNISH ALL LABOR, EQUIPMENT, SUPPLIES AND MATERIALS NECESSARY TO REFER TO PROVIDE COMPLETE AND OPERATIONAL SYSTEMS.

2. THE DRAWINGS AND SPECIFICATIONS INDICATE THE GENERAL DESIGN AND ARRANGEMENT OF PIPES, FIXTURES, EQUIPMENT, SYSTEMS, ETC. INFORMATION SHOWN IS DIAGRAMMATIC IN NATURE AND DOES NOT NECESSARILY INDICATE EVERY DETAIL OR SPECIFICATION FROM THE EQUIPMENT TO BE FURNISHED. PIPING MAY BE RELOCATED OR OFFSET FOR PROPER CLEARANCES OR TO AVOID CANNOT BE GREATLY ALTERED WITHOUT THE APPROVAL OF THE ARCHITECT. THE COST OF THESE DEVIATIONS TO AVOID DIFFUSER, GRILLE DESIGNATION.

3. CONFER AND COOPERATE WITH ALL OTHER TRADES TO COORDINATE THEIR WORK. COORDINATION SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO MATERIALS AND EQUIPMENT ROUTED IN CEILING AND WALL CAVITIES, EQUIPMENT ARRANGEMENT ELEVATION NUMBER SHEET NUMBER.

4. BASE FINAL INSTALLATION OF MATERIALS AND EQUIPMENT ON ACTUAL DIMENSIONS AND CONDITIONS AT THE PROJECT SITE. CONTRACTOR’S FAILURE TO FIELD COORDINATE.

5. PROVIDE ACCESS DOORS, WALL CRAWLERS, NO CHANGES OR ANY OTHER CONSTRUCTION REQUIREMENTS (NOTED) SIZE AS NOTED OR SPECIFIED.

6. PROVIDE A LOCKING QUADRANT VOLUME DAMPER AT THE TAP OF EACH RUN-OUT TO DIFFUSERS FOR BALANCING PURPOSES, UNLESS OTHERWISE INDICATED. THE RUN-OUT DUCT SIZE IS THE SAME SIZE AS THE DIFFUSER OR GRILLE NECK SIZE, ROUTE AND INSULATE DX PIPING PER MANUFACTURER’S RECOMMENDATIONS AND SPECIFICATION REQUIREMENTS.

7. SEAL ALL PIPE AND DUCT PENETRATIONS THROUGH FIRE RATED BUILDING ELEMENTS WITH AN APPROVED FIRE PROOFING MATERIAL.

8. PROVIDE ALL CEILING RETURN GRILLES WITH RETURN SOUND ATTENUATOR AS DETAILED. RE: X/MXXX.

9. ALL EQUIPMENT SHALL HAVE IDENTIFICATION TAGS. TAGS SHALL BE PLASTIC LAMINATE, WHITE FACE WITH 1/2” TALL BLACK LETTERING, SURFACE PRINTED.

10. ALL PIPE AND DUCT SIZES SHOWN ON THE SCHEDULES, ETC. ARE FOR GUIDANCE ONLY. ASPECT RATIO SHALL BE NO TO EXCEED 30 DEGREES. SIZES SHOWN ON SCHEDULES, ETC. ARE FOR GUIDANCE ONLY. ASPECT RATIO SHALL BE NO TO EXCEED 30 DEGREES.

11. PROVIDE ALL ELECTRONIC REQUIREMENTS OF APPROVED MECHANICAL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR, INCLUDING, BUT NOT LIMITED TO ELECTRICAL CONNECTIONS, CABLING, INFRARED, OR OPTICAL SIGNALING SYSTEMS.

12. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL FIRE RATED WALLS AND CEILINGS. PROVIDE FIRE DAMPERS ASSEMBLY. INSTALLATION SHALL BE ACCOMPLISHED IN A NEAT AND ORGANIZED MANNER TO PREVENT STANDING WATER ON HORIZONTAL SURFACES. SEAL ALL SEAMS WITH MASTIC SEALANT UL 181 LISTED FOR THE APPLICATION USED. SEALANT SHALL BE DESIGNED FOR USE ON METAL DUCT AND FLEXIBLE DUCT.

13. ALL ELECTRONIC EQUIPMENT SHALL BE SHEET METAL FINISHED IN ACCORDANCE WITH SMACNA STANDARDS. SUPPLY AND RETURN ELECTRICAL CONNECTIVE SYSTEMS SHOWN TO CONFORM TO SMACNA STANDARDS.

14. PROCESS ELECTRIC AIR DUCT THE FIRST FOOT OF THE Duct is REQUIRED THE SAME SIZE, ROUTE AND INSULATE DX PIPING PER MANUFACTURER’S RECOMMENDATIONS AND SPECIFICATION REQUIREMENTS.

15. PROVIDE ALL ELECTRONIC REQUIREMENTS OF APPROVED MECHANICAL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR, INCLUDING, BUT NOT LIMITED TO ELECTRICAL CONNECTIONS, CABLING, INFRARED, OR OPTICAL SIGNALING SYSTEMS.

16. PROVIDE THE LOCATION OF THE BEGINNING OF THE SYSTEM, TERMINAL UNIT SHALL BE CONSTRUCTED TO 6” W.G. AND SEALED TO SMACNA CLASS A. DUCT WORK ASSOCIATED WITH CONSTANT VOLUME AHE SHALL BE CONSTRUCTED TO 2” W.G. AND SEALED TO SMACNA CLASS B.

17. PROVIDE VIBRATION ISOLATION FOR MOTOR AND DRIVE SYSTEM (SEE NOTES OTHERWISE). PROVIDE ISOLATION AS REQUIRED OR COMPLIANT TO THE EQUIPMENT SPECIFICATIONS.

18. NON-PERMITTED ACCESS DOORS AND FIRE RATING CLASSIFICATIONS MAY BE SHOWN WITH AN ANNOTATION OF CLARITY.

19. ALL EQUIPMENT SHALL HAVE IDENTIFICATION TAGS. TAGS SHALL BE PLASTIC LAMINATE, WHITE FACE WITH 1/2” TALL BLACK LETTERING. ALL TABS SHALL BE NUMBERED IN ACCORDANCE WITH THE SCHEDULES.

20. REFER TO THE ELEVATION NUMBER SHEET NUMBER.

21. PROVIDE ALL ELECTRONIC REQUIREMENTS OF APPROVED MECHANICAL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR, INCLUDING, BUT NOT LIMITED TO ELECTRICAL CONNECTIONS, CABLING, INFRARED, OR OPTICAL SIGNALING SYSTEMS.

22. ALL EQUIPMENT SHALL HAVE IDENTIFICATION TAGS. TAGS SHALL BE PLASTIC LAMINATE, WHITE FACE WITH 1/2” TALL BLACK LETTERING. ALL TABS SHALL BE NUMBERED IN ACCORDANCE WITH THE SCHEDULES.

23. PROVIDE VIBRATION ISOLATION FOR MOTOR AND DRIVE SYSTEMS (SEE NOTES OTHERWISE). PROVIDE ISOLATION AS REQUIRED OR COMPLIANT TO THE EQUIPMENT SPECIFICATIONS.

24. NON-PERMITTED ACCESS DOORS AND FIRE RATING CLASSIFICATIONS MAY BE SHOWN WITH AN ANNOTATION OF CLARITY.
### GAS FIRED FURNACE/DX SPLIT SYSTEM COOLING COIL SCHEDULE

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>TYPE</th>
<th>MANUFACTURER AND MODEL NO.</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHU-1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GAS HEAT PERFORMANCE

- **EER** (Seasonal Energy Efficiency Ratio): 13.0/15.5
- **SEER** (Seasonal Energy Efficiency Ratio): 57.94
- **Input** (MBH): 1,600
- **Output** (MBH): 400
- **Total Sensible Heat** (MBH): 0.7
- **Volume** (CFM): 39.7
- **Number of Phases**: 3
- **Service**: 208 1 60
- **Input Voltage**: 115 1 60
- **Current (A)**: 13.5
- **Power**: 20 TRANE, TUH2C120A94VA / 4TXCD063BC3HC

### ELECTRICAL CHARACTERISTICS

- **Power** (W): 59.4
- **Input Voltage**: 1/20

### COOLING COIL PERFORMANCE

<table>
<thead>
<tr>
<th>MARK</th>
<th>LOCATION</th>
<th>DEPLOYED TP</th>
<th>SERV</th>
<th>DAY</th>
<th>TEMP. (°F)</th>
<th>DIA (IN)</th>
<th>CIRC. (IN WC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHU-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DUST COLLECTION SYSTEM

<table>
<thead>
<tr>
<th>MARK</th>
<th>LOCATION</th>
<th>DEPLOYED TP</th>
<th>SERV</th>
<th>DAY</th>
<th>TEMP. (°F)</th>
<th>DIA (IN)</th>
<th>CIRC. (IN WC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHU-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DUCTLESS DX SPLIT SYSTEM SCHEDULE

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>TYPE</th>
<th>MANUFACTURER AND MODEL NO.</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHU-5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### UNIT HEATER SCHEDULE

<table>
<thead>
<tr>
<th>MARK</th>
<th>LOCATION</th>
<th>TYPE</th>
<th>GAS FIRED PERFORMANCE</th>
<th>MANUFACTURER AND MODEL NO.</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>UH-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UH-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UH-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### AIR COLLECTION SYSTEM

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>TYPE</th>
<th>MANUFACTURER AND MODEL NO.</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHU-10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### FAN SCHEDULE

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>TYPE</th>
<th>MANUFACTURER AND MODEL NO.</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHU-15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-19</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### FAN DRIVE

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>TYPE</th>
<th>MANUFACTURER AND MODEL NO.</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHU-20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DUST DEVICE SCHEDULE

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>TYPE</th>
<th>MANUFACTURER AND MODEL NO.</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHU-25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### AIR DEVICE SCHEDULE

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>TYPE</th>
<th>MANUFACTURER AND MODEL NO.</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHU-30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHU-34</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### UNIT SIZE, ROUTE, INSULATE AND PROVIDE REQUIRED APPURTENANCES FOR DX PIPING SYSTEMS IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS

- PROVIDE LOW AMBIENT CONTROLS TO ALLOW OPERATION DOWN TO 35 °F AMBIENT.
- PROVIDE UNIT MOUNTED THERMOSTAT.
- PROVIDE UNIT MOUNTED THERMOSTAT.
- PROVIDE UNIT MOUNTED THERMOSTAT.
- PROVIDE UNIT MOUNTED THERMOSTAT.
- PROVIDE UNIT MOUNTED THERMOSTAT.
- PROVIDE UNIT MOUNTED THERMOSTAT.

### UNITS SHALL BE FURNISHED WITH APPROPRIATE FRAMES, ETC FOR MOUNTING IN RESPECTIVE CEILING TYPES AND CONDITIONS

- PROVIDE FLEXIBLE CONNECTION AT INLET OF FAN AND INTAKE HOOD
- PROVIDE FLEXIBLE CONNECTION AT INLET OF FAN AND INTAKE HOOD
- PROVIDE FLEXIBLE CONNECTION AT INLET OF FAN AND INTAKE HOOD
- PROVIDE FLEXIBLE CONNECTION AT INLET OF FAN AND INTAKE HOOD
- PROVIDE FLEXIBLE CONNECTION AT INLET OF FAN AND INTAKE HOOD
- PROVIDE FLEXIBLE CONNECTION AT INLET OF FAN AND INTAKE HOOD

### UNIT SHALL BE PROVIDED WITH TXV VALVES.

- PROVIDE FACTORY CONDENSER COIL HAIL GUARDS.
- REFER TO 6/M401 FOR UNIT SUPPORT CURB.
- REFER TO 6/M401 FOR UNIT SUPPORT CURB.
- REFER TO 6/M401 FOR UNIT SUPPORT CURB.
- REFER TO 6/M401 FOR UNIT SUPPORT CURB.
- REFER TO 6/M401 FOR UNIT SUPPORT CURB.

### INDOOR UNIT IS POWERED THROUGH OUTDOOR UNIT CIRCUIT.

- PROVIDE WITH INTEGRAL DISCONNECT, AUTO BACKDRAFT DAMPER AND SPEED CONTROLLER.
- PROVIDE WITH INTEGRAL DISCONNECT, AUTO BACKDRAFT DAMPER AND SPEED CONTROLLER.
- PROVIDE WITH INTEGRAL DISCONNECT, AUTO BACKDRAFT DAMPER AND SPEED CONTROLLER.
- PROVIDE WITH INTEGRAL DISCONNECT, AUTO BACKDRAFT DAMPER AND SPEED CONTROLLER.
- PROVIDE WITH INTEGRAL DISCONNECT, AUTO BACKDRAFT DAMPER AND SPEED CONTROLLER.
- PROVIDE WITH INTEGRAL DISCONNECT, AUTO BACKDRAFT DAMPER AND SPEED CONTROLLER.

### PROVIDE LOW-AMBIENT CONTROLS TO ALLOW OPERATION DOWN TO 35 °F AMBIENT.

- PROVIDE UNIT MOUNTED THERMOSTAT.
- PROVIDE UNIT MOUNTED THERMOSTAT.
- PROVIDE UNIT MOUNTED THERMOSTAT.
- PROVIDE UNIT MOUNTED THERMOSTAT.
- PROVIDE UNIT MOUNTED THERMOSTAT.
- PROVIDE UNIT MOUNTED THERMOSTAT.

### UNITS SHALL BE FURNISHED WITH APPROPRIATE FRAMES, ETC FOR MOUNTING IN RESPECTIVE CEILING TYPES AND CONDITIONS

- OFF-WHITE BAKED ENAMEL
- OFF-WHITE BAKED ENAMEL
- OFF-WHITE BAKED ENAMEL
- OFF-WHITE BAKED ENAMEL
- OFF-WHITE BAKED ENAMEL
- OFF-WHITE BAKED ENAMEL

### SOUND VALUES SHALL NOT EXCEED NC 30 FOR ANY ROOM, UNLESS OTHERWISE NOTED.

- PROVIDE WITH INTEGRAL DISCONNECT, AUTO BACKDRAFT DAMPER AND SPEED CONTROLLER.
- PROVIDE WITH INTEGRAL DISCONNECT, AUTO BACKDRAFT DAMPER AND SPEED CONTROLLER.
- PROVIDE WITH INTEGRAL DISCONNECT, AUTO BACKDRAFT DAMPER AND SPEED CONTROLLER.
- PROVIDE WITH INTEGRAL DISCONNECT, AUTO BACKDRAFT DAMPER AND SPEED CONTROLLER.
- PROVIDE WITH INTEGRAL DISCONNECT, AUTO BACKDRAFT DAMPER AND SPEED CONTROLLER.
- PROVIDE WITH INTEGRAL DISCONNECT, AUTO BACKDRAFT DAMPER AND SPEED CONTROLLER.

### REFERENCE

- MANUFACTURER'S RECOMMENDATIONS
- MANUFACTURER'S RECOMMENDATIONS
- MANUFACTURER'S RECOMMENDATIONS
- MANUFACTURER'S RECOMMENDATIONS
- MANUFACTURER'S RECOMMENDATIONS
- MANUFACTURER'S RECOMMENDATIONS

### POWER CONNECTION

- 1 2 3 4 10
- 1 2 3 4 10
- 1 2 3 4 10
- 1 2 3 4 10
- 1 2 3 4 10
- 1 2 3 4 10

### PHVOLTS RPM HP

- 1 2 3 4 10
- 1 2 3 4 10
- 1 2 3 4 10
- 1 2 3 4 10
- 1 2 3 4 10
- 1 2 3 4 10
NOTES FOR DETAIL:
1. DIMENSIONS ARE SHOWN AS TYPICAL. USE AS INDICATED.
2. LOCATION OF OUTDOOR AIR INTAKE DEPENDED ON MANUFACTURER. USE AS INDICATED.
3. CONCENTRIC VENT THROUGH ROOF. REFER TO DETAIL 12/M6.1 FOR ADDITIONAL INFORMATION.
4. AUXILIARY DRAIN PAN. CONTRACTOR SHALL PROVIDE AND INSTALL A WATER SENSING DISK IN DRAIN PAN. DISK SHALL BE INTERLOCKED WITH AIR HANDLER UNIT STARTER TO TURN OFF AIR HANDLER UNIT WHEN DRAIN PAN FILLS WITH CONDENSATE. DISK SWITCH SHALL BE WIRED THROUGH AN INTERPOSING RELAY TO THE STARTER CIRCUIT.
5. MANUAL DAMPER, BALANCE OPEN AS SCHEDULED.
6. DUCT MUST BE SEPARATED COMBUSTION GAS APPLIANCE.
7. SUPPLY AIR DEVICE, AND OTHERWISE AS INDICATED.

TYPICAL SUSPENDED GAS FURNACE WITH DX COIL, DUCTED O/A

TYPICAL CONDENSING UNIT CLEARANCES

TYPICAL LOW-SILHOUETTE INTAKE HOOD

TYPICAL CONCENTRIC VENT DETAIL FOR SEPARATED COMBUSTION GAS APPLIANCES

TYPICAL SECTION THROUGH CONDENSING UNIT CONCRETE PAD

TYPICAL DOWNBLAST ROOF EXHAUST FAN

TYPICAL CONCENTRIC VENT DETAIL FOR SEPARATED COMBUSTION GAS APPLIANCES

SUSPENDED DIFFUSER (SPOT COOLING)

SPIN-IN TAP
1. Use flange collars to attach flexible duct. Use sheet metal screws and (2) wraps of tape to secure flange collar. Alternative method: masking tape or pleated strap. In lieu of flange collar, all single wall flexible materials shall comply with UL 181A and UL 181B specifications. All fasteners shall comply with UL 181A and UL 181B specifications.

2. Secure sheet metal drop to diffuser neck with (3) or (4) sheet metal screws and (2) full wraps of tape if required. Use screws only in metal or rigid structures.

3. All flex duct shall be installed without kinking, sagging, or short-radius bends.

**Rectangular Duct - Manual Volume Damper**

1. Typical installation detail to be applied with rectangular branch takeoff from rectangular trunk ducts. Applies to rectangular air ducts.

2. Use plenum collar with sounddeadening and sheet extension. Use sheet metal screws and (2) wraps of tape to secure plenum collar. Alternate method: bandoing device or panduit strap, in lieu of sheet metal screws. All tapes and sealing materials shall comply with UL 181A for rigid duct and UL 181B for flexible duct.

3. Use plenum collar with sounddeadening and sheet extension. Use sheet metal screws and (2) wraps of tape to secure plenum collar. Alternate method: bandoing device or panduit strap, in lieu of sheet metal screws. All tapes and sealing materials shall comply with UL 181A for rigid duct and UL 181B for flexible duct.

**Typical Square Elbow (Figure 11)**

1. Refer to plan for size and type of structure. Use applicable type method of attachment to various types of structures - use applicable type method.

2. Washer strap shall be used if required. Washer strap shall not exceed 1" in diameter. Fasteners shall comply with UL 181A and UL 181B specifications. All fasteners shall comply with UL 181A and UL 181B specifications.

3. Concrete anchors shall be rated for use in poured concrete prep. Inc.

**Typical Duct Hanger Detail (Figure 13)**

1. Washer strap shall be used if required. Washer strap shall not exceed 1" in diameter. Fasteners shall comply with UL 181A and UL 181B specifications. All fasteners shall comply with UL 181A and UL 181B specifications.

2. Use all through holes and washers. Sheet metal channel BPC.

3. Concrete anchors shall be rated for use in poured concrete prep. Inc.
SEQUENCE OF OPERATIONS FOR AHU/CU 1-5

1. SUPPLY FAN OFF.  WHEN THE FAN IS OFF, THE COMPRESSORS AND GAS-FIRED HEAT ARE OFF. THE MOTORIZED OUTSIDE AIR LOUVER IS CLOSED.

2. SUPPLY FAN OPERATING.  THE SUPPLY FANS SHALL CYCLE DURING OCCUPIED MODE TO MAINTAIN SPACE TEMPERATURE.  THE MOTORIZED O/A DAMPER SHALL OPEN UPON OPERATION OF SUPPLY FAN.

3. SAFETY SHUTDOWN OF THE UNIT.  THE CONTROL SYSTEM SHUTS DOWN THE UNIT IF SMOKE IS DETECTED AT THE UNIT.

4. TEMPERATURE CONTROL; ALTERNATE CONTROL SYSTEMS PER THE SPECIFICATIONS.
1. Perform all work in accordance with all applicable codes and authorities having jurisdiction. Provide all permits, inspections, licenses, fees, permits, certifications, and necessary documents to the owner. Provide all equipment necessary to perform the complete work.

2. The drawings and specifications indicate the general size and equipment, but no dimensions are given or required. Where required, specify the exact dimensions, tolerances, and clearances. Any changes made in the installation of equipment must be submitted to the owner and architect for approval. Any materials, colors, or finishes not shown on the drawings or specified, shall be approved by the owner and architect.

3. Each subcontractor shall cooperate with all other trades to coordinate their work. Coordination shall include, but shall not be limited to, the location of equipment and service connections. All work shall be performed in accordance with the approved plans and specifications. All work shall be performed without the approval of the architect. The cost of these deviations shall not be paid by the owner.

4. Base final installation of materials and equipment in accordance with dimensions and elevations shown on the project site. The drawings shown are diagrammatic in character and do not necessarily indicate every required offset, fitting, etc.

5. The contractor shall furnish and install water hammer arresters between the next to last and last fixture at the arrester schedule and the plumbing and drainage institute standard PDI-WH-201. Arresters on the drawings will not be accepted.

6. The contractor shall coordinate electrical requirements of plumbing equipment with the electrical contractor to facilitate the Purchasing and Installation of any electrical gear or conduit.

7. The contractor shall provide access doors or wall openings for installation of any electrical gear or conduit. Otherwise, provide isolation as recommended by the equipment manufacturer.

8. The contractor shall coordinate the location of all new construction, additions, etc. with existing installation. All other trades to installation, if a drop-in model is not available, must locate to existing model. All other trades to comply with the coordination plans.

9. Plumbing fixtures through the roof shall be at a minimum of 10 feet from all outside structures and a minimum of 3 feet from any perimeter walls.

10. Backflow preventers shall be shown with an offset for clarity.

11. Plumbing fixtures and trim of one kind shall be of the same manufacturer throughout the project. "A" type, ceramic, porcelain include the following:
   - Water closets
   - Lavatories
   - Urinals
   - Electric water controls
   - Iron pipe valves
   - Faucets
   - Lavatory, electric:
   - Omnifilter
   - Stream
   - Countertop

12. Provide water Hammer arresters between the last to last and last fixture at each story of plumbing fittings in accordance with the water hammer manufacturer. On the drawings, indicate the location of the arrester, the discharge, and the connecting line sizes.

13. Ensure all materials, colors, or finishes not shown on the drawings or specified, shall be approved by the owner and architect.

14. Provide water supply piping between the required pressure regulator shall have a minimum size of 1 inch, preferably for connection of the gas meter and regulator(s) for a complete operational system. The contractor shall verify the natural gas pressure原理 principle.

15. Schedule for the procurement of the plumbing and electrical equipment shall be provided to the architect in accordance with the specifications.

16. All floor drain traps shall be provided with removable trap seal product approved by the architect and the building official.

17. All floor drain traps shall be provided with removable trap seal product approved by the architect and the building official.

18. The contractor shall coordinate with the local natural gas company to extend natural gas service to the location indicated on the drawings. The contractor shall notify the city for pull fees and costs.

19. The contractor shall coordinate with the local natural gas company to extend natural gas service to the location indicated on the drawings. The contractor shall notify the city for pull fees and costs.

20. The contractor shall coordinate with the local natural gas company to extend natural gas service to the location indicated on the drawings. The contractor shall notify the city for pull fees and costs.

21. The contractor shall coordinate with the local natural gas company to extend natural gas service to the location indicated on the drawings. The contractor shall notify the city for pull fees and costs.
### WATERCLOSET, ADA COMPLIANT, FLOOR MOUNT, FLUSHOMETER VALVE, TOP SPUD, ELONGATED, SIPHON SPUD COUPLING AND FLANGE, CHROME PLATED ANGLE STOP WITH STOP CAP, VACUUM BREAKER FLUSH CONNECTION, CAST WALL FLANGE WITH SET SCREW, ANSI/ASME 112.19.6

**UTILITY SINK, FREE STANDING WITH FAUCET LEDGE. OWNER PROVIDED, CONTRACTOR INSTALLED.**

**UT1 2"3" -- OWNER PROVIDED, CONTRACTOR INSTALLED.**

**SLOAN, ST-2029.**

**SLOAN, OPTIMA 111-1.28 SMO; ZURN, ZER6000AV-HET-CPM.**

**--- - FIAT MODEL 889-CC; OR EQUAL**

**24"x3" STAINLESS STEEL MOP BRACKET WITH THREE RUBBER TOOL GRIPS**

**FIAT MODEL 832-AA; OR EQUAL**

**30" RUBBER HOSE (5/8"), CHROME COUPLING 1 END, 5"x3" STAINLESS STEEL BRACKET W/ RUBBER GRIP**

**VINYL BUMPER GUARD ON LEADING EDGE OF MOP SINK BASIN FIAT MODEL E-77-AA; OR EQUAL**

**HALSEY TAYLOR HTHB-HACG8BLSS-WF**

**AMERICAN STANDARD, 6590.001; KOHLER, K-4991-ET; ZURN, Z5755-U; FULLY INSULATED STAINLESS STEEL TANK, 8 GPH WITH 50°F SUPPLY TEMPERATURE AND 80°F AMBIENT,**

**AMERICAN STANDARD, 0476.028; KOHLER, K-2196-4; ZURN, Z5114; CHINA, FRONT OVERFLOW, ANSI A112.19.2.**

**SLOAN, SS-3002.**

**DEARBORN BRASS, A9701BG; KEYSAN MOEM9100; OR EQUAL**

**JOSAM SERIES 17905; WATTS, CA-431-1; OR EQUAL**

**ZURN OR JR SMITH FIXTURE CARRIER, STEEL TOP AND BOTTOM PLATES W/ ADJ. HOLES, CHROME PLATED CAP NUTS/WASHERS**

**MCGUIRE, H2165CCLK; T&S BRASS, B-1305; OR BRASSCRAFT, OCR1912A**

**SUPPLY AND STOPS, LOOSE KEY, CHROME PLATED BRASS VALVES AND CHROME PLATED COPPER RISERS**

**MCGUIRE, 8902; BRASSCRAFT, 507; OR EQUAL IN T&S BRASS; OR BRASSCRAFT**

**OFFSET TAILPIECE AND STRAINER, CHROME PLATED CAST BRASS MCGUIRE, 155WC; OR EQUAL IN T&S BRASS; OR BRASSCRAFT**

**1 1/2" 2" LAVATORY, 20"X18" VITREOUS CHINA WALL MOUNT, 4" CENTER FAUCET HOLES, FRONT OVERFLOW, JOSAM SERIES 30000-S-SS; MIFAB F1000-C-S6-3; ZURN Z-415-S6**

**FLOOR DRAIN, CAST IRON BODY, ANCHOR FLANGE, WEEPHOLES FOR DOUBLE DRAINAGE, 6" SQUARE**

**THERMOSTATIC MIXING VALVE, 0.25 GPM MINIMUM FLOW, INTEGRAL INLET CHECK VALVES AND STRAINER,**

**FAUCET, DECK MOUNT, CHROME PLATED BRASS, 4" INTEGRAL SPOUT, TWO-HANDLE, 1/4 TURN 4" WRIST**

**1/2" 1/2"**

**2-WAY GRADE CLEANOUT, TWO-RISER CLEANOUT BODY WITH HEAVY DUTY COATED CAST IRON**

**P-TRAP, CHROME PLATED CAST BRASS BODY WITH CLEANOUT, 17 GA., END-OUTLET CONTINUOUS WASTE MCGUIRE, 8912/111C16G20; OR EQUAL IN T&S BRASS OR BRASSCRAFT**

**ACCESS BODY WITH ANCHOR FLANGES, HEAVY DUTY DUCTILE IRON ACCESS COVER WITH VANDAL BREAKER, LOOSE KEY HANDLE, 3/4" MALE HOSE THREAD NOZZLE**

**DRAIN TEE FROM BASE**

### NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL SUPPLIES, STOPS, TRAPS, TAILPIECES AND ALL APPURTENANCES NECESSARY FOR A COMPLETE INSTALLATION OF ALL FIXTURES.

4. FLOOR CLEANOUT ACCESS COVERS IN ALL FINISHED AREAS SHALL BE OF THE RECESSED TYPE TO ALLOW FOR INSERTION OF FINISHED FLOOR TREATMENT. TILE OR CARPET MARKER AS NECESSARY.

7. CONTRACTOR SHALL VERIFY PLUMBING FIXTURES PROVIDED COMPLY WITH HANDICAPPED ACCESSIBILITY STANDARDS INCLUDING HEIGHT AND CLEARANCE REQUIREMENTS.

### PLUMBING FIXTURE SCHEDULE

### PUMP SCHEDULE

### DOMESTIC NATURAL GAS WATER HEATER SCHEDULE

### AIR COMPRESSOR SCHEDULE

### THERMOSTATIC MIXING VALVE SCHEDULE

### COMPRESSED AIR DRYER SCHEDULE
**FIRE PROTECTION NOTICES**

1. **PREVENTIVE MAINTENANCE (P.M.)**
   - The fire protection system shall be maintained in accordance with the manufacturer's recommendations to ensure proper function and effectiveness.

2. **INSPECTIONS AND TESTING**
   - All fire protection systems shall be inspected and tested in accordance with the applicable codes and standards.

3. **STORAGE AND HANDLING**
   - Flammable and combustible materials shall be stored and handled in accordance with the National Fire Protection Association (NFPA) 30 and NFPA 325 standards.

4. **IGNITION SOURCES**
   - All sources of ignition, including electrical equipment, shall be properly maintained to prevent accidental ignition.

5. **FIRE HOSE REEL**
   - Fire hose reels shall be periodically tested to ensure proper operation.

6. **FIRE HOSE CARTS**
   - Fire hose carts shall be inspected and maintained regularly to ensure availability for immediate use.

7. **FIRE HOSE RACKS**
   - Fire hose racks shall be properly secured and maintained to ensure hose integrity.

8. **FIRE HOSE NOZZLES**
   - Fire hose nozzles shall be checked regularly to ensure proper operation.

9. **FIRE HOSE MASTERS**
   - Fire hose masters shall be inspected and tested at regular intervals to ensure proper function.

10. **FIRE HOSE WINDERS**
    - Fire hose winders shall be inspected and maintained regularly to ensure proper operation.

11. **FIRE HOSE CARTS**
    - Fire hose carts shall be inspected and maintained regularly to ensure proper function.

12. **FIRE HOSE RACKS**
    - Fire hose racks shall be properly secured and maintained to ensure hose integrity.

13. **FIRE HOSE NOZZLES**
    - Fire hose nozzles shall be checked regularly to ensure proper operation.

14. **FIRE HOSE MASTERS**
    - Fire hose masters shall be inspected and tested at regular intervals to ensure proper function.

15. **FIRE HOSE WINDERS**
    - Fire hose winders shall be inspected and maintained regularly to ensure proper operation.

16. **FIRE HOSE CARTS**
    - Fire hose carts shall be inspected and maintained regularly to ensure proper function.

17. **FIRE HOSE RACKS**
    - Fire hose racks shall be properly secured and maintained to ensure hose integrity.

18. **FIRE HOSE NOZZLES**
    - Fire hose nozzles shall be checked regularly to ensure proper operation.

19. **FIRE HOSE MASTERS**
    - Fire hose masters shall be inspected and tested at regular intervals to ensure proper function.

20. **FIRE HOSE WINDERS**
    - Fire hose winders shall be inspected and maintained regularly to ensure proper operation.

21. **FIRE HOSE CARTS**
    - Fire hose carts shall be inspected and maintained regularly to ensure proper function.

22. **FIRE HOSE RACKS**
    - Fire hose racks shall be properly secured and maintained to ensure hose integrity.

23. **FIRE HOSE NOZZLES**
    - Fire hose nozzles shall be checked regularly to ensure proper operation.

24. **FIRE HOSE MASTERS**
    - Fire hose masters shall be inspected and tested at regular intervals to ensure proper function.

25. **FIRE HOSE WINDERS**
    - Fire hose winders shall be inspected and maintained regularly to ensure proper operation.

26. **FIRE HOSE CARTS**
    - Fire hose carts shall be inspected and maintained regularly to ensure proper function.

27. **FIRE HOSE RACKS**
    - Fire hose racks shall be properly secured and maintained to ensure hose integrity.

28. **FIRE HOSE NOZZLES**
    - Fire hose nozzles shall be checked regularly to ensure proper operation.

29. **FIRE HOSE MASTERS**
    - Fire hose masters shall be inspected and tested at regular intervals to ensure proper function.

30. **FIRE HOSE WINDERS**
    - Fire hose winders shall be inspected and maintained regularly to ensure proper operation.

31. **FIRE HOSE CARTS**
    - Fire hose carts shall be inspected and maintained regularly to ensure proper function.

32. **FIRE HOSE RACKS**
    - Fire hose racks shall be properly secured and maintained to ensure hose integrity.

33. **FIRE HOSE NOZZLES**
    - Fire hose nozzles shall be checked regularly to ensure proper operation.

34. **FIRE HOSE MASTERS**
    - Fire hose masters shall be inspected and tested at regular intervals to ensure proper function.

35. **FIRE HOSE WINDERS**
    - Fire hose winders shall be inspected and maintained regularly to ensure proper operation.

36. **FIRE HOSE CARTS**
    - Fire hose carts shall be inspected and maintained regularly to ensure proper function.

37. **FIRE HOSE RACKS**
    - Fire hose racks shall be properly secured and maintained to ensure hose integrity.

38. **FIRE HOSE NOZZLES**
    - Fire hose nozzles shall be checked regularly to ensure proper operation.

39. **FIRE HOSE MASTERS**
    - Fire hose masters shall be inspected and tested at regular intervals to ensure proper function.

40. **FIRE HOSE WINDERS**
    - Fire hose winders shall be inspected and maintained regularly to ensure proper operation.

41. **FIRE HOSE CARTS**
    - Fire hose carts shall be inspected and maintained regularly to ensure proper function.

42. **FIRE HOSE RACKS**
    - Fire hose racks shall be properly secured and maintained to ensure hose integrity.

43. **FIRE HOSE NOZZLES**
    - Fire hose nozzles shall be checked regularly to ensure proper operation.

44. **FIRE HOSE MASTERS**
    - Fire hose masters shall be inspected and tested at regular intervals to ensure proper function.

45. **FIRE HOSE WINDERS**
    - Fire hose winders shall be inspected and maintained regularly to ensure proper operation.

46. **FIRE HOSE CARTS**
    - Fire hose carts shall be inspected and maintained regularly to ensure proper function.

47. **FIRE HOSE RACKS**
    - Fire hose racks shall be properly secured and maintained to ensure hose integrity.

48. **FIRE HOSE NOZZLES**
    - Fire hose nozzles shall be checked regularly to ensure proper operation.

49. **FIRE HOSE MASTERS**
    - Fire hose masters shall be inspected and tested at regular intervals to ensure proper function.

50. **FIRE HOSE WINDERS**
    - Fire hose winders shall be inspected and maintained regularly to ensure proper operation.

51. **FIRE HOSE CARTS**
    - Fire hose carts shall be inspected and maintained regularly to ensure proper function.

52. **FIRE HOSE RACKS**
    - Fire hose racks shall be properly secured and maintained to ensure hose integrity.

53. **FIRE HOSE NOZZLES**
    - Fire hose nozzles shall be checked regularly to ensure proper operation.

54. **FIRE HOSE MASTERS**
    - Fire hose masters shall be inspected and tested at regular intervals to ensure proper function.

55. **FIRE HOSE WINDERS**
    - Fire hose winders shall be inspected and maintained regularly to ensure proper operation.
## ELECTRICAL SYMBOLS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>ABBREVIATIONS</th>
<th>LAYOUT</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## ELECTRICAL EQUIPMENT

- **Transformer**:荐用于变电所及变电容量大及容量小的场合。
- **Switchgear**:用于变电所及变电容量大及容量小的场合。

## MISCELLANEOUS

- **Drawing No. Reference**: 荐用于变电所及变电容量大及容量小的场合。
- **Grounding**: 荐用于变电所及变电容量大及容量小的场合。

## SPECIFIC EQUIPMENT CONNECTIONS

- **Panel**: 荐用于变电所及变电容量大及容量小的场合。
- **Cable**: 荐用于变电所及变电容量大及容量小的场合。

## CODE SUMMARY

- **Electrical Code**: 荐用于变电所及变电容量大及容量小的场合。
- **Electrical Load**: 荐用于变电所及变电容量大及容量小的场合。
- **Fire Protection**: 荐用于变电所及变电容量大及容量小的场合。