

October 18, 2012

CITY OF MILWAUKEE
DEPARTMENT OF PUBLIC WORKS
MILWAUKEE WATER WORKS

ADDENDUM NO. 1

The purpose of this addendum is to provide updated information to supersede and change the Contract Documents for HP-179.

PROJECT SPECIFICATIONS

1. **SECTION 01010 Summary of Work**, 1.05 Owner Occupancy:

- REMOVE A. The City will occupy the premises during the entire period of construction.
- INSERT A. The City will occupy the premises during the entire period of construction. Occupancy shall consist of the following:
- i) The City controls plant operations from Room 11. Room 11 shall be occupied seven (7) days a week and twenty-four (24) hours a day. Room 11 will need to be occupied during the entire project. No relocation is possible.
 - ii) The City will require a room to operate a laboratory. The laboratory can be located in either the Chemical Laboratory Room or the Bacteriological Laboratory Room. During the project, the laboratory may be relocated to either of these spaces.
 - iii) The City will require office space for three (3) personnel. The personnel are currently located in Office 13, Office 14 and Office 15. All three personnel can be relocated to either the Assembly Room or Office 21. During the project, the personnel may be relocated to either of these spaces.

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- REMOVE C. Schedule the work to accommodate City Occupancy.
- INSERT C. Schedule the work to accommodate City Occupancy. The schedule shall allow the City to control plant operations in Room 11, operate a laboratory, provide office space for three personnel and bathroom facilities for all personnel. The contractor has the option to work on multiple floors simultaneously.

2. **SECTION 02220 Demolition**, 3.03 Demolition:

- ADD E. The City will be responsible for removing all loose items from the rooms. Loose items shall be defined as anything that can be placed in a box and carried by a single person. The exception to this requirement shall be Room 11. All loose items shall remain in Room 11 and be protected during demolition.
- F. The City will be responsible for removing computers, printers, copiers, fax machines and laboratory equipment that are located on tables. The exception to this requirement shall be Room 11. All equipment shall remain in Room 11 and be protected during demolition.
- G. The Contractor shall be responsible for removing or protecting furniture, built-in furniture, shelving and floor mounted laboratory equipment. The exception to this requirement shall be Room 11. All furniture shall remain in Room 11 and be protected during demolition.

3. **SECTION 02220 Demolition**, 3.04 Temporary Heating:

- ADD B. Temporary heating may be provided by installing a heat source that is located in the east end of each floor's hallway. The temporary heat source shall have the capacity to maintain an indoor building temperature of 68° F when the outdoor temperature is -15° F. If rooms adjacent to the hallway are not receiving adequate heat, a fan shall be installed in the room's doorway. In addition, the Contractor shall maintain a steam connection to AHU-4 which is located in the basement and can provide a source of temporary heat. Temporary ductwork is currently connected to AHU-4 and discharges at the west end

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of each floor's hallway. The City understands that temporary heating will not provide uniformly heated rooms and there may be some cool spots.

- C. An existing and dedicated furnace and cooling coil serves Room 11. The furnace and cooling coils are located in the Mechanical Room adjacent to Room 11.

4. **SECTION 15060 Piping & Accessories**

REMOVE Section in its entirety

INSERT Please see new Section at the end of this Addendum.

5. **SECTION 15950 Control, 3.13 Control Terminal Units:**

ADD P. Control valves for convectors and fin-tube shall be located below the floor.

Q. Control wiring from the VAV shall be routed through the ceiling space, vertically along the room's wall, through a core-drilled opening in the floor and below the floor to the control valve. The floors are approximately 3-inch thick concrete. Provide a plastic fitting that covers the core-drilled opening and transitions to the wire-mold.

R. Control wiring in the room shall be run in beige-colored wire-mold. Control wiring that is routed beneath the first floor shall be run in EMT. Control wiring that is routed beneath the second floor does not have to be routed in conduit.

6. **SECTION 16721 Fire Alarm Systems**

QUESTION Does the fire alarm wiring need to be installed in conduit when it is routed through an accessible ceiling space? Should the conduit be rigid or EMT?

ANSWER All wiring for the fire alarm system shall be enclosed in galvanized rigid steel conduit. No "free-air" wiring will be permitted.

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CONTRACT DRAWINGS

1. **HP-179-03, HP-179-04, and HP-179-05:**

REVISED Demolition Notes – Electrical #4 was deleted. Please see revised contract drawing.

2. **HP-179-07 Ground Floor Plan – HVAC Piping:**

REVISED A shut-off valve was added to the Terminal Unit Detail. Please see revised contract drawing.

3. **HP-179-10 Second Floor Plan – HVAC Ductwork:**

REVISED Plan notes concerning RF-2 were revised. Ductwork and notes for fan PV-3 were added. Please see revised contract drawing.

4. **HP-179-11 Roof Plan – HVAC:**

REVISED Roof mounted fan RF-2 was relocated from an existing opening in the roof to a roof location that will require a hole to be cut in the roof. A roof mounted fan PV-3 was added and shall be installed where RF-2 was originally located. Please see revised contract drawing.

5. **HP-179-12 Schedules – HVAC:**

REVISED “Fan Schedule” was modified to reflect the relocation of RF-2 and the addition of PV-3. Remarks were added to the “Fin-Tube Schedule”. SF-A became SFG-A in the Type column of the “Convactor Schedule”. Please see revised contract drawing.

6. **HP-179-16 Ground Floor Architectural Ceiling Plan:**

REVISED “Legend” was modified: Title was changed and 2’ x 4’ Acoustic tile ceiling was changed to 2’ x 2’ Acoustic tile ceiling. Please see revised contract drawing.

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REVISED Modified note concerning Room 12. Please see revised contract drawing.

7. **HP-179-22 Ground Floor Plan – Lighting**, Administration Building Ground Floor Plan:

QUESTION What fixture type are the three (3) lights that are located in the Locker Room’s showers?

ANSWER “The three lights in the Locker Room’s shower are existing and shall remain.”

QUESTION What is the manufacturer and model of the twin-head Emergency Backup Lights (EBU) that are located in the Corridors?

ANSWER RUUD Ruud Lighting Model EM11SWHH, 120 VAC, wall mounted, complete with 5.4 watt, T5 wedge base tungsten lamps.

8. **HP-179-23 Second Floor Plan – Lighting**, Administration Building Second Floor Plan:

QUESTION What fixture type are the four (4) 2x4 lights that are located in the library and office?

ANSWER Type B

QUESTION What fixture type is the one (1) 2x4 light that is located in the Women’s Toilet?

ANSWER Type A

QUESTION What is the manufacturer and model of the twin-head Emergency Backup Lights (EBU) that are located in the Corridors?

ANSWER Ruud Lighting Model EM11SWHH, 120 VAC, wall mounted, complete with 5.4 watt, T5 wedge base tungsten lamps.

Official Notice No. 56-2012
Location: Howard Avenue Water Purification Plant
HP-179: Administration Building HVAC & Lighting Replacement

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END OF ADDENDUM NO. 1

SECTION 15060
PIPING AND ACCESSORIES

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Pipe and fittings.
 - 2. Valves & Accessories.
 - 3. Insulation.
- B. Related Sections
 - 1. Section 15950 – Controls.

1.02 REFERENCES

- A. The following documents refer to the latest edition.
- B. ASTM A53/A53M Standard Specifications for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
- C. ASTM A234/A234M Standard Specifications for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service.
- D. ASTM A307 Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- E. ASTM A563 Standard Specification for Carbons and Allow Steel Nuts.
- F. ASME/ANSI B16.9 Factory-Made Wrought Steel Buttwelding Fittings.
- G. ANSI B18.2.1 Square and Hex Bolts and Screws.

1.03 SUBMITTALS

- A. Submit under provisions of Section 01010 – Summary of Work.
- B. Product Data:
 - 1. Submit manufacturer's descriptive literature and product specifications for each product.
- C. Shop Drawings:
 - 1. Indicate typical layout including dimensions.
 - 2. Submit drawings showing field measured dimensions.
- D. Control Valve Coordination

1. Valve submittals shall be coordinated for type, quantity, size, and piping configuration to ensure compatibility with pipe design.

1.04 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Section 01700 – Contract Closeout.
- B. Record information requested in Section 01700 – Contract Closeout.

1.05 QUALITY ASSURANCE

- A. Piping shall be installed in accordance with the recognized best practices of the trade.
- B. Where weld fittings or mechanical grooved fittings are used, use only long radius elbows having a centerline radius of 1.5 pipe diameters.
- C. Assure that all pipe welding complies with the provisions of the latest revision of the ASME Boiler and Pressure Vessel Code, and the ANSI Code for Pressure Piping B31.1, or such state or local requirements as may supplement codes mentioned above. Repair or replace any work not in accordance with these specifications.
- D. Welder Qualifications: Welding procedures, welders, and welding operators for all building service piping and steam piping less than or equal to 15 psig to be in accordance with certified welding procedures of the National Certified Pipe Welding Bureau.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Comply with requirements of Section 01600 – Material and Equipment.

1.07 GUARANTEE

- A. Comply with provisions of Section 01010 – Summary of Work.

PART 2 PRODUCTS

2.01 CHILLED WATER PIPING

- A. 2" and Smaller: ASTM B88 seamless, type L, hard temper copper tube with ANSI B16.22 wrought copper solder-joint fittings. Mechanically formed tee fittings may be used in lieu of wrought copper solder-joint tee fittings for branch takeoff up to one-half (1/2) the diameter of the main.
- B. 2-1/2" and Larger: ASTM A53, standard weight (schedule 40) black steel pipe with ASTM A234 grade WPB/ANSI B16.9 standard weight, seamless, carbon steel weld fittings. Type L, hard temper copper tube with ANSI B 16.22 wrought copper solder-joint fittings is acceptable in lieu of black steel pipe.

2.02 CONDENSER WATER PIPING

- A. 2" and Smaller: ASTM A53, type F, standard weight (schedule 40) black steel pipe with ASTM A126/ANSI B16.4, class 125, standard weight cast iron threaded fittings.

- B. 2-1/2" and Larger: ASTM A53, standard weight (schedule 40) black steel pipe with ASTM A234 grade WPB/ANSI B16.9 standard weight, seamless, carbon steel weld fittings.
 - C. Contractor may use ASTM B88 seamless, type L, hard temper copper tube with ANSI B16.22 wrought copper solder-joint fittings in lieu of steel pipe for all sizes. Mechanically formed tee fittings may be used in lieu of wrought copper solder-joint tee fittings for branch takeoff up to one-half (1/2) the diameter of the main.
- 2.03 MAKE-UP WATER PIPING
- A. Extend from where left by the Plumbing Contractor with the same materials.
- 2.04 VENTS AND RELIEF VALVES
- A. Use pipe and pipe fittings as specified for the system to which the relief valve or vent is connected.
- 2.05 COOLING COIL CONDENSATE PIPING
- A. ASTM B88, type L hard temper copper tubing with ASTM B145/ANSI B16.23 cast red bronze or ASTM B75/ANSI B16.29 wrought solder-type drainage fittings. PVC schedule 40 pipe and fittings is acceptable for wall mounted split-ductless cassette units.
- 2.06 DIELECTRIC UNIONS AND FLANGES
- A. 1-1/4" and Smaller: Watts Regulator Company, Perfection Corporation, Central Plastics Company or EPCO Sales, Inc., dielectric unions with female pipe thread by solder end connections, non-asbestos gaskets, having a pressure rating of not less than 250 psig at not less than the design operating temperature of the fluid being conveyed.
 - B. 1-1/2" and Larger: Watts Regulator Company, Perfection Corporation, or EPCO Sales, Inc., dielectric flanges with steel weld neck by copper solder joint end connections, non-asbestos gaskets, having a pressure rating of not less than 125 psig at not less than the design operating temperature of the fluid being conveyed.
- 2.07 UNIONS AND FLANGES
- A. 2" and Smaller: ASTM A197/ANSI B16.3 malleable iron unions with brass seats. Use black malleable iron on black steel piping and galvanized malleable iron on galvanized steel piping. Use unions of a pressure class equal to or higher than that specified for the fittings of the respective piping service but not less than 250 psi.
 - B. 2-1/2" and Larger: ASTM A181 or A105, grade 1 hot forged steel flanges of threaded, welding neck, or slip-on pattern and of a pressure class compatible with that specified for valves, piping specialties and fittings of the respective piping service. Flanges smaller than 2-1/2" may be used as needed for connecting to equipment and piping specialties. Use raised face flanges ANSI B16.5 for mating with other raised face flanges on equipment with flat ring or full face gaskets. Use ANSI B16.1 flat face flanges with full face gaskets for mating with other flat face

flanges on equipment. Gasket material to be teflon and suitable for pressures and temperatures of the piping system.

2.08 MECHANICAL GROOVED PIPE CONNECTIONS

- A. Manufacturers: Victaulic, Anvil Corp., or Star Pipe Products, Inc.
- B. Mechanical grooved pipe couplings and fittings may be used with steel pipe on the systems indicated below. Either cut-groove or equivalent roll-groove products are acceptable providing the system temperature and pressure requirements are met. Where malleable iron fittings are indicated, they shall conform to ASTM A47. Where forged steel fittings are indicated, they shall conform to ASTM A106, Grade B. Where fabricated steel fittings are indicated, they shall conform to ASTM A53, type F in sizes 3/4" through 1-1/2" and type E or S, grade B in sizes 2" through 20". Do not use fabricated fittings where malleable iron or forged steel fittings are available. Gaskets in all cases shall be EPDM suitable for temperatures to 230 degrees F.
- C. The following services may use mechanical grooved pipe connections within the building in mechanical spaces and above accessible ceilings. Mechanical chases are not considered accessible.
 - 1. Chilled Water
 - 2. Condenser Water
 - 3. Cooling Coil Condensate
- D. Fittings and couplings must be suitable for the temperature and pressure involved. In no case is the final system to have a pressure rating of less than 125 psig at the design temperature of the fluid.
- E. Acceptable fittings and couplings are listed below, based on Victaulic. When used on galvanized piping, fittings and couplings shall be galvanized. When used on black steel piping, fittings and couplings shall have an enamel coating.
 - 1. Couplings: Malleable iron standard couplings, Style 77; lightweight couplings, Style 75; and rigid couplings. Reducing couplings are not acceptable.
 - 2. Flanges: Malleable iron Style 741 or 742 except at lug type butterfly valves where standard welding flanges shall be used.
 - 3. Fittings: Malleable iron elbows and tees of the manufacturer's standard line may be used in all sizes except bullhead tees will not be accepted. Fabricated steel fittings may be used in all sizes where fitting wall thickness conforms to standard weight pipe. Mechanical-T Style 920 fittings with malleable iron housings may be used for up to 2" outlet size.
 - 4. Expansion Joints: Credit for the inherent flexibility of mechanical grooved pipe connections when used for expansion joints may be allowed upon specific application by the Contractor. Three flexible couplings at first three connection points both upstream and downstream of pumps may be used in lieu of flexible connectors. Request shall be made in writing and shall include service, location,

line size, proposed application and supporting calculations for the intended service.

2.09 Isolation Valves

- A. 2-inch and smaller: gate valve, Crane, Model No. 428, 125-pound, bronze body, rising stem, solid wedge gate.
- B. Larger than 2-inch: gate valve, Crane, Model No. 460 if screwed or No. 461 if flanged, 125-pound, iron body, non-rising stem, wedge gate.

2.10 Blowdown and Test Valves

- A. Ball valve, Crane, 125-pound

2.11 Control Valve and Operator – Steam Radiation

- A. Manufacturer & product; Belimo, B2.
- B. Two-way.
- C. Brass body, stainless steel ball and stem.
- D. 120 V, single phase, 60 cycle.
- E. Size of steam valve shall be determined by controls contractor.

2.12 Check Valves

- A. 2-inch and smaller: Crane, Model No. 37, swing check type, 125-pound, bronze.
- B. Larger than 2-inch: Crane, Model No. 372 if screwed or No. 373 if flanged, swing check type, 125-pound, iron body.

2.13 Strainers: Y-type; manufactured by Bestobell; cast iron body; class 125.

2.14 Pressure/Vacuum Gauges: manufactured by Trerice; 690 series; 3-1/2" dial; stainless steel case; select appropriate scale.

2.15 Thermometers: manufactured by Trerice; Adjustable Angle series; Industrial Thermometers with 12" scales (0-100°F).

2.16 Pipe Supports

- A. Manufactured by Grinnell, Fee & Mason or Elcen.
 - 1. Adjustable hangers, special pipe supports, spring hangers, saddles, anchors, clamps, rods, miscellaneous iron supports and appurtenances required to hang or support the piping systems.
- B. Hangers and hardware shall be zinc plated or galvanized.

2.17 Insulation

- A. Molded glass fiber (4¼ lb. density) or molded phenolic (3 lb. density) with a K factor of 0.24 at 75°F and factory applied white fire retardant vapor barrier jacket with self-sealing lap. Apply 4-inch vapor barrier strips at all punctures with vapor-proof

adhesive. Chilled water supply piping, chilled water return piping, and steam piping to the AHU coils shall have a PVC jacket (30 mil thick).

- B. 1-1/4" and smaller piping shall have 1-inch thick insulation.
 - C. 1-1/2-inch and larger piping shall have 2-inch thick insulation.
- 2.18 Bolts: Plated; Grade 5.
- 2.19 Pipe Identification and Color Coding
- A. Manufacturers and Products
 - 1. Seton Identification Products, Setmark series.
 - B. Pipe identification labels shall be provided for the following services.
 - 1. Chilled water supply and return.
 - 2. Condenser water supply and return.
 - 3. Steam supply and return.
 - 4. Steam condensate.
 - C. Labels shall be snap-around type; label shall be properly sized for the finished outside diameter of the pipe. Each label shall contain an arrow indicating the direction of flow. Label length, background, color, letter size, and letter color shall conform to ANSI A13.1 and OSHA standards.
- 2.20 Substitutions: Under provisions of Section 01600

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine conditions and proceed with work in accordance with Section 01710.
- B. Verify size, material, joint types, elevation, horizontal location, and pipe service of existing pipelines to be connected to new pipelines or new equipment.
- C. Inspect size and location of structure penetrations to verify adequacy of wall pipes, sleeves and other openings.

3.02 PREPARATION

- A. Inspect pipe and fittings before installation, clean ends thoroughly, and remove foreign matter and dirt from inside. Clean and flush all piping before installation.
- B. Provide sufficient planning and foresight in avoidance of obstacles and interferences met in the field.

3.03 INSTALLATION

- A. General
 - 1. Install in accordance with manufacturer's written instructions.

B. Piping

1. Install all piping parallel to building walls and ceilings and at heights which do not obstruct any portion of a window, doorway, stairway, or passageway. Piping runs and risers to be perfectly straight, plumb, true, properly graded and free from depression or pockets. Where interferences develop in the field, offset or reroute piping as required to clear such interferences. In all cases, consult drawings for exact location of pipe spaces, ceiling heights, door and window openings, or other architectural details before installing piping.
2. Route piping in orderly manner and maintain gradient.
3. Install piping to conserve building space and not interfere with use of space.
4. Group piping whenever practical at common elevations.
5. Provide anchors, expansion joints, swing joints and/or expansion loops so that piping may expand and contract without damage to itself, equipment, or building.
6. Mitered ells, notched tees, and orange peel reducers are not acceptable. On threaded piping, bushings are not acceptable.
7. "Weldolets" and "Threadolets" may be used for branch takeoffs up to one-half (1/2) the diameter of the main.
8. Install drains throughout the systems to permit complete drainage.
9. Do not route piping through transformer vaults or above transformers, panelboards, or switchboards, including the required service space for this equipment, unless the piping is serving this equipment.
10. Install all valves, control valves, and piping specialties, including items furnished by others, as specified and/or detailed. Make connections to all equipment installed by others where that equipment requires the piping services indicated in this section. Install piping so that no load or movement in excess of that stipulated by equipment manufacturer will be imposed upon equipment connection.
11. Provide clearance for installation of insulation and access to valves and fittings.
12. Establish invert elevations, slopes for drainage to 1/8 inch per foot. Maintain gradients.
13. Open ends of all piping to be kept closed during construction.
14. Provide air chambers and manual air vents at all high points of the chilled water and steam systems.
15. Provide unions, flanges or grooved couplings in all connections to all equipment, so that equipment can be removed by breaking connections. Unions shall be provided where screwed valves, control equipment, etc., are

installed in continuous runs of piping. Unions shall be provided in all screwed types of piping where required for disassembly or for convenience in making repairs.

16. Where flanged connections are installed at pumps, piping shall be assembled and supported with flange bolts loose. Observe the flange alignment before tightening the flange bolts.
17. Openings around pipes penetrating required fire resistive rated floor, wall and roof assemblies shall be filled solidly with material of fire resistive rating equal to the required rating of assembly penetrated, similar to 3M Firebarrier.
18. Securely fasten in place to floors, walls and ceilings. Pipes passing through outside walls and roofs shall be properly flashed and counter flashed to provide a weather-tight seal.
19. Use eccentric fittings for changes in horizontal pipe sizes with the fittings installed for proper air venting. Concentric fittings may be used for changes in vertical pipe sizes

C. Welded Pipe Joints

1. Make all welded joints by fusion welding in accordance with ASME Codes, ANSI B31, and State Codes where applicable.
2. Electrodes shall be Lincoln, or approved equal, with coating and diameter as recommended by the manufacturer for the type and thickness of work being done.

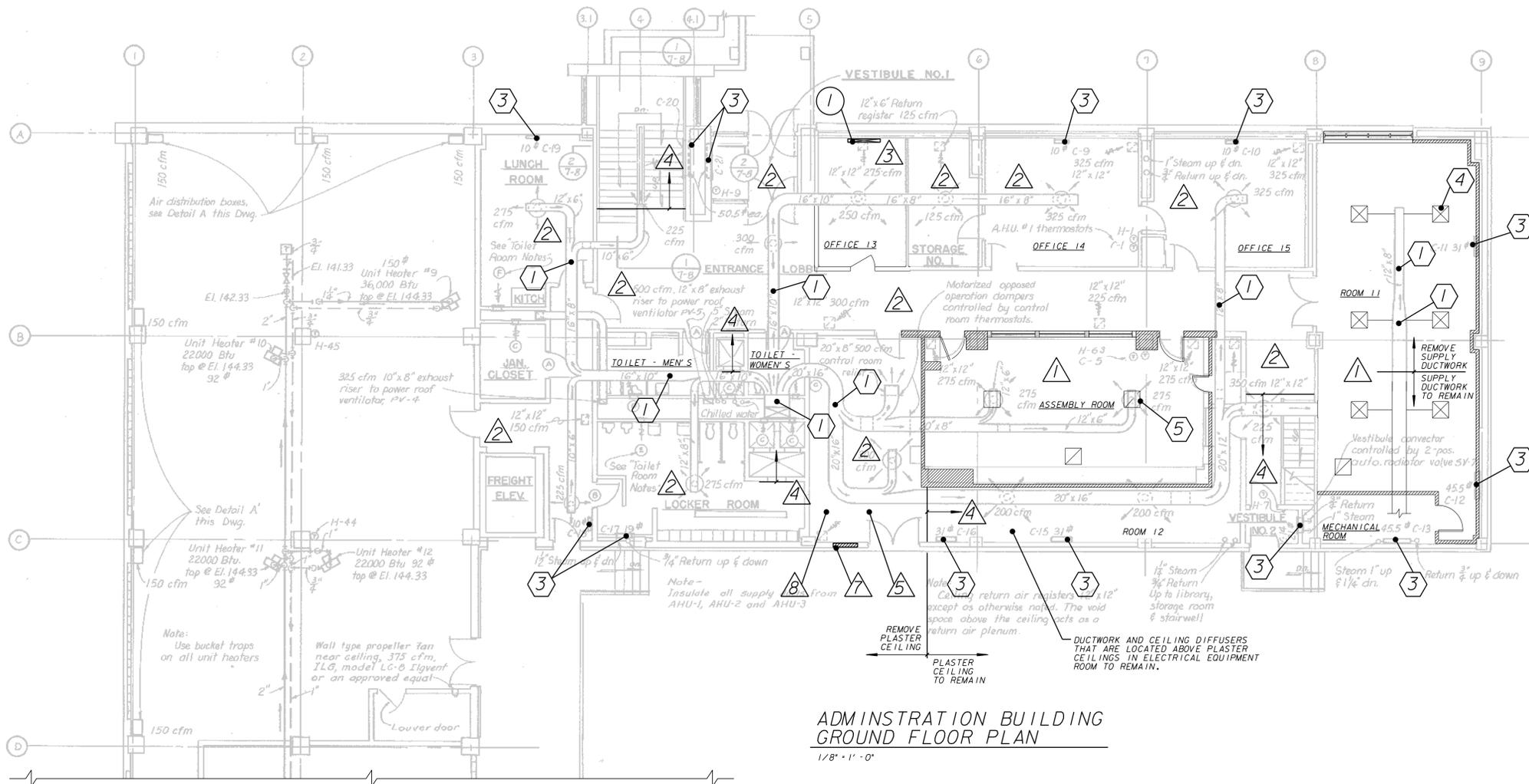
D. Threaded Pipe Joints

1. Use a thread lubricant or teflon tape when making joints; no hard setting pipe thread cement or caulking will be allowed.

E. Mechanical Grooved Pipe Connections

1. Use pipe factory grooved in accordance with the coupling manufacturer's specifications or field grooved pipe in accordance with the same specifications using specially designed tools available for the application.
2. Lubricate pipe and coupling gasket, align pipe, and secure joint in accordance with the coupling manufacturer's specifications.
3. Support pipe as indicated in these specifications except as modified below. Support each horizontal pipe section at least once between couplings and whenever a change in direction of line flow takes place. Support vertical pipe at every other floor or every other pipe length, whichever is most frequent. Set the base of the riser or the base fitting on a pedestal or foundation.
4. Follow coupling manufacturer's installation recommendations if they are more stringent than the above requirements.

F. Copper Pipe Joints



DEMOLITION NOTES - GENERAL

1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEMOLISHED EQUIPMENT AND MATERIAL OFF-SITE UNLESS OTHERWISE SPECIFIED.
2. FREIGHT ELEVATOR'S INTERIOR DIMENSIONS ARE APPROXIMATELY 5' - 6" X 8' - 0". ELEVATOR'S MAXIMUM CAPACITY IS 5,000 POUNDS.
3. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EQUIPMENT AND FURNISHINGS FROM DUST AND PHYSICAL DAMAGE WHILE CEILINGS ARE BEING DEMOLISHED. CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION FOR EQUIPMENT AND FURNISHINGS THAT ARE PERMANENTLY INSTALLED. CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOURS NOTICE PRIOR TO DEMOLISHING A SPACE'S CEILING. CONTRACTOR HAS THE OPTION OF RELOCATING MOVEABLE EQUIPMENT AND FURNISHINGS TO ANOTHER AREA OR PROVIDING TEMPORARY PROTECTION FOR SAID EQUIPMENT AND FURNISHINGS.
4. CONTRACTOR SHALL REMOVE ALL DEBRIS AND DUST THAT WAS A RESULT OF CEILING DEMOLITION. WALLS, FLOORS AND EQUIPMENT SHALL BE VACUUMED AND WIPED DOWN WITH A CLEANING SOLUTION.
5. CONTRACTOR SHALL DEMOLISH THE CEILINGS IN THE CORRIDORS, BATHROOMS, LOCKER ROOMS AND COMMON AREAS BEFORE OTHER SPACE'S CEILINGS ARE DEMOLISHED.
6. THE SUSPENDED GRID AND ACOUSTICAL TILED CEILING IN ROOM 11 AND ASSEMBLY ROOM SHALL NOT BE REMOVED UNTIL THE PLASTER CEILINGS IN ALL SPACES HAVE BEEN DEMOLISHED.
7. ONCE A SPACE'S CEILING HAS BEEN DEMOLISHED, THE CONTRACTOR SHALL PROTECT SAID SPACE FROM DUST & DEBRIS WHILE OTHER SPACE'S CEILINGS ARE BEING DEMOLISHED. NOT ALL INTERIOR WALLS EXTEND TO BUILDING'S CONCRETE STRUCTURE. THE ELEVATION ABOVE FINISH FLOOR OF SOME OF THE INTERIOR WALLS TOP IS APPROXIMATELY 9' - 0".
8. WHEN A SPACE'S CEILING IS REMOVED, THE CONTRACTOR SHALL PROVIDE TEMPORARY LIGHTING FOR THE SPACE. SEE ELECTRICAL SPECIFICATIONS AND DRAWINGS FOR MINIMUM REQUIREMENTS.

DEMOLITION NOTES - ARCHITECTURAL

1. EXISTING SUSPENDED GRID CEILING SYSTEM TO REMAIN. CONTRACTOR HAS THE OPTION TO REMOVE THE CEILING SYSTEM TO FACILITATE THE DEMOLITION AND INSTALLATION OF DUCTWORK. CEILING SYSTEMS SHALL THEN BE REPLACED WITH NEW OR ORIGINAL UNDAMAGED T-BARS. REUSE ORIGINAL UNDAMAGED ACOUSTICAL TILES.
2. REMOVE SPACE'S SUSPENDED METAL LATH AND PLASTER CEILING. REMOVE CEILING SUPPORTS.
3. REMOVE SPACE'S SUSPENDED METAL LATH AND PLASTER CEILING. REMOVE SUSPENDED GRID ACOUSTICAL TILE CEILING. REMOVE CEILING SUPPORTS.
4. PLASTER CEILING TO REMAIN. WHEN CEILINGS ARE DEMOLISHED IN SPACES WITH A SHOWER, CARE SHALL BE TAKEN TO NOT DAMAGE THE SHOWER AREA'S CEILING. THE PLASTER CEILING THAT REMAINS IN THE SHOWER AREA SHALL HAVE A STRAIGHT AND SMOOTH EDGE THAT BUTTS UP AGAINST FUTURE SOFFIT.
5. COORDINATE CEILING DEMOLITION IN THIS AREA WITH CITY. ELECTRICAL EQUIPMENT AND CONDUIT ARE MOUNTED TO THE CEILING IN THIS AREA. COMMUNICATION CABLE IS ROUTED OVER THE TOP OF THE CEILING IN THIS AREA. CITY WILL BE RESPONSIBLE FOR REMOUNTING EQUIPMENT, CONDUIT AND CABLES.
6. WHEN CEILINGS ARE DEMOLISHED IN SPACES WITH A WINDOW, CARE SHALL BE TAKEN TO NOT DAMAGE THE SOFFIT, SEE DETAIL 17/19.
7. REMOVE PORTION OF EXTERIOR WALL FOR NEW RELIEF AIR LOUVER.
8. EXTEND WALLS TO UNDERSIDE OF CONCRETE STRUCTURE WHERE CEILING HAS BEEN REMOVED. PROVIDE AN AIRTIGHT JOINT BETWEEN CONCRETE STRUCTURE AND WALL. ROOM 12'S ONLY CONNECTION TO CEILING PLENUM SHALL BE VIA THE WALL MOUNTED RETURN GRILLE.

DEMOLITION NOTES - HVAC

1. REMOVE SUPPLY-AIR DUCTWORK, CEILING DIFFUSERS, SUPPLY REGISTERS AND ASSOCIATED ACCESSORIES. REMOVE DUCT SUPPORTS.
2. REMOVE RETURN-AIR DUCTWORK, GRILLES AND ASSOCIATED ACCESSORIES. REMOVE DUCT SUPPORTS.
3. REMOVE STEAM CONVECTOR AND ASSOCIATED ACCESSORIES.
4. REMOVE SIX (6) CEILING DIFFUSERS AND ASSOCIATED BRANCH DUCTWORK. PATCH OPENINGS IN MAIN DUCTWORK THAT IS TO REMAIN. RETURN-AIR GRILLE AND RETURN DUCT WORK TO REMAIN.
5. REMOVE TWO (2) CEILING DIFFUSERS AND RETURN GRILLE.

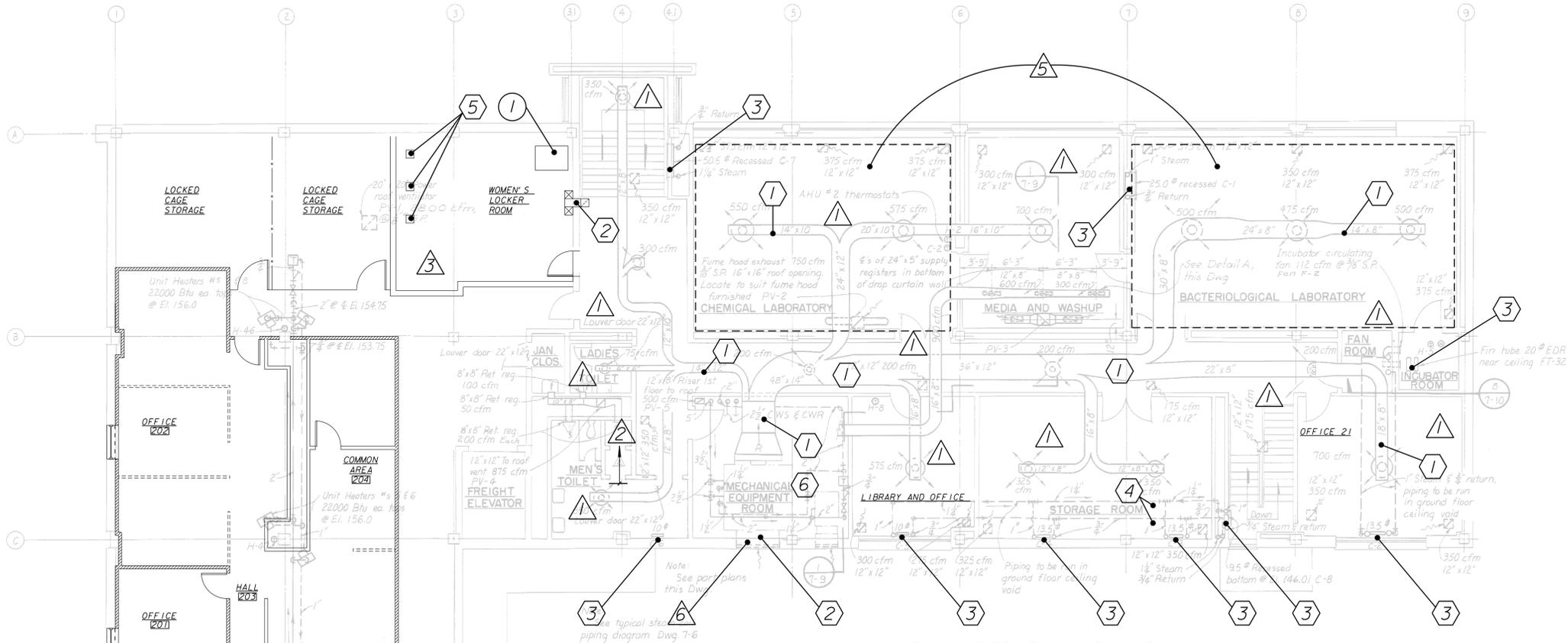
DEMOLITION NOTES - ELECTRICAL

1. REMOVE ELECTRICAL BASEBOARD, CONDUIT WIRING AND ASSOCIATED ACCESSORIES.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE ALL POWER AND CONTROL WIRING CONNECTED TO HVAC EQUIPMENT BEING DEMOLISHED; WIRING SHALL BE REMOVED BACK TO PANEL.
3. CONTRACTOR MAY REUSE EXISTING CONDUIT WHERE APPLICABLE AND IN GOOD CONDITION, HOWEVER ALL ABANDONED CONDUITS SHALL BE REMOVED.

4. CITY WORKERS SHALL BE RESPONSIBLE FOR REMOUNTING ALL LIGHTING FIXTURES AND ASSOCIATED WIRE AND CONDUIT.

Milwaukee Water Works		Water Engineering Department of Public Works	
HOWARD AVENUE PURIFICATION PLANT			
ADMINISTRATION BUILDING HVAC & LIGHTING IMPROVEMENTS			
HP-179			
GROUND FLOOR PLAN - DEMOLITION			
DESIGNED BY	M.A.G.	DATE	9-25-12
DRAWN BY	J.F.S.	PLANT'S PROJECT ENGINEER	
CHECKED BY	A.J.S.	DATE	4-25-12
SCALE	AS SHOWN	CHIEF DESIGN ENGINEER	
WORK ORDER	WT450093300	SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS	
OFFICIAL NOTICE	59-2012		
FILE NO.	B-12-2		

NO.	BY	REVISION	DATE



**ADMINISTRATION BUILDING
SECOND FLOOR PLAN**
1/8" = 1' - 0"

DEMOLITION NOTES - GENERAL

1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEMOLISHED EQUIPMENT AND MATERIAL OFF-SITE UNLESS OTHERWISE SPECIFIED.
2. FREIGHT ELEVATOR'S INTERIOR DIMENSIONS ARE APPROXIMATELY 5' - 6" X 8' - 0". ELEVATOR'S MAXIMUM CAPACITY IS 5,000 POUNDS.
3. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EQUIPMENT AND FURNISHINGS FROM DUST AND PHYSICAL DAMAGE WHILE CEILINGS ARE BEING DEMOLISHED. CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION FOR EQUIPMENT AND FURNISHINGS THAT ARE PERMANENTLY INSTALLED. CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOURS NOTICE PRIOR TO DEMOLISHING A SPACE'S CEILING. CONTRACTOR HAS THE OPTION OF RELOCATING MOVEABLE EQUIPMENT AND FURNISHINGS TO ANOTHER AREA OR PROVIDING TEMPORARY PROTECTION FOR SAID EQUIPMENT AND FURNISHINGS.
4. CONTRACTOR SHALL REMOVE ALL DEBRIS AND DUST THAT WAS A RESULT OF CEILING DEMOLITION. WALLS, FLOORS AND EQUIPMENT SHALL BE VACUUMED AND WIPED DOWN WITH A CLEANING SOLUTION.
5. CONTRACTOR SHALL DEMOLISH THE CEILINGS IN THE CORRIDORS, BATHROOMS, LOCKER ROOMS AND COMMON AREAS BEFORE OTHER SPACE'S CEILINGS ARE DEMOLISHED.
7. ONCE A SPACE'S CEILING HAS BEEN DEMOLISHED, THE CONTRACTOR SHALL PROTECT SAID SPACE FROM DUST & DEBRIS WHILE OTHER SPACE'S CEILINGS ARE BEING DEMOLISHED. NOT ALL INTERIOR WALLS EXTEND TO BUILDING'S CONCRETE STRUCTURE. THE ELEVATION ABOVE FINISH FLOOR OF SOME OF THE INTERIOR WALLS TOP IS APPROXIMATELY 9' - 0".
7. WHEN A SPACE'S CEILING IS REMOVED, THE CONTRACTOR SHALL PROVIDE TEMPORARY LIGHTING FOR THE SPACE. SEE ELECTRICAL SPECIFICATIONS AND DRAWINGS FOR MINIMUM REQUIREMENTS.

DEMOLITION NOTES - ARCHITECTURAL

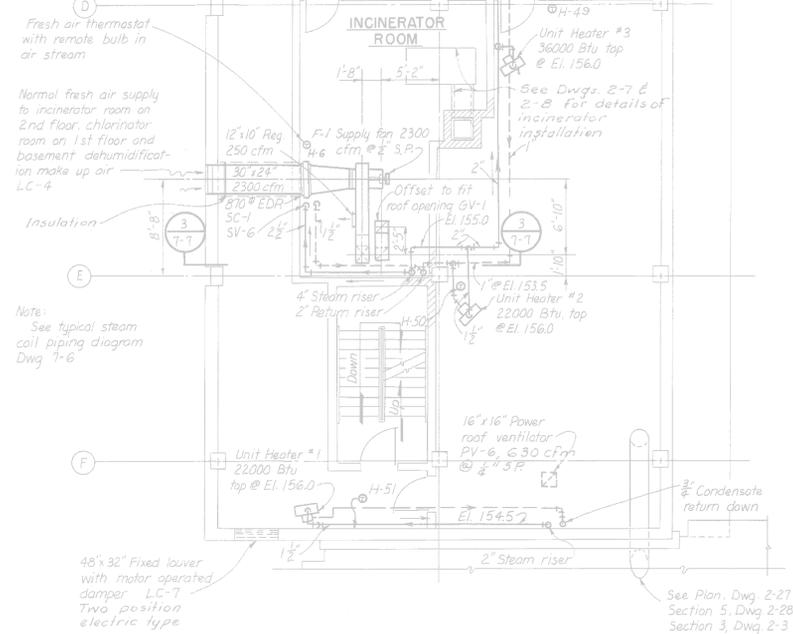
- 1 REMOVE SPACE'S SUSPENDED METAL LATH AND PLASTER CEILING. REMOVE CEILING SUPPORTS.
- 2 PLASTER CEILING TO REMAIN. WHEN CEILINGS ARE DEMOLISHED IN SPACES WITH A SHOWER, CARE SHALL BE TAKEN TO NOT DAMAGE THE SHOWER AREA'S CEILING. THE PLASTER CEILING THAT REMAINS IN THE SHOWER AREA SHALL HAVE A STRAIGHT AND SMOOTH EDGE THAT BUTTS UP AGAINST FUTURE SOFFIT.
- 3 REMOVE SUSPENDED GRID CEILING SYSTEM.
- 4 PLASTER CEILING TO REMAIN. WHEN CEILINGS ARE DEMOLISHED IN SPACES WITH A SHOWER, CARE SHALL BE TAKEN TO NOT DAMAGE THE SHOWER AREA'S CEILING. THE PLASTER CEILING THAT REMAINS IN THE SHOWER AREA SHALL HAVE A STRAIGHT AND SMOOTH EDGE THAT BUTTS UP AGAINST FUTURE SOFFIT.
- 5 THE CONTRACTOR SHALL PROVIDE A SPACE THAT DOES NOT ALLOW DUST AND DEBRIS FROM DEMOLITION AND CONSTRUCTION ACTIVITIES TO ENTER THE SPACE. EITHER THE CHEMICAL LABORATORY OR BACTERIOLOGICAL LABORATORY SHALL BE THIS SPACE. THE OPENING BETWEEN THE TOP OF THE INTERIOR WALLS AND THE UNDERSIDE OF THE ROOF DECK SHALL BE SEALED AIRTIGHT. A DUST-FREE SPACE IS REQUIRED BY AN OPERATING WATER PURIFICATION PLANT TO PERFORM DAILY TESTS.
- 6 REMOVE PORTION OF EXTERIOR WALL FOR NEW INTAKE LOUVER.
- 7 WHEN CEILINGS ARE DEMOLISHED IN SPACES WITH A WINDOW, CARE SHALL BE TAKEN TO NOT DAMAGE THE SOFFIT. SEE DETAIL 1/19.

DEMOLITION NOTES - HVAC

- 1 REMOVE SUPPLY-AIR DUCTWORK, CEILING DIFFUSERS, SUPPLY REGISTERS AND ASSOCIATED ACCESSORIES. REMOVE DUCT SUPPORTS.
- 2 REMOVE RETURN-AIR DUCTWORK, GRILLES AND ASSOCIATED ACCESSORIES. REMOVE DUCT SUPPORTS.
- 3 REMOVE STEAM CONVECTOR AND ASSOCIATED ACCESSORIES.
- 4 REMOVE STEAM BRANCH PIPING AND CONDENSATE BRANCH PIPING TO CONVECTORS. REMOVE ASSOCIATED ACCESSORIES. REMOVE PIPE SUPPORTS. ALL CONVECTORS IN ADMINISTRATION BUILDING SHALL BE REMOVED.
- 5 REMOVE EXISTING EXHAUST GRILLES AND REINSTALL IN NEW CEILING.
- 6 REMOVE AHU # 1, AHU # 2, AHU # 3 AND ASSOCIATED ACCESSORIES. REMOVE CWS, CWR AND CONDENSATE PIPING. REMOVE STEAM AND CONDENSATE PIPING. REMOVE AHU, PIPING AND DUCT SUPPORTS. REMOVE LOUVERS FOR AHU # 1, AHU # 2 AND AHU # 3.

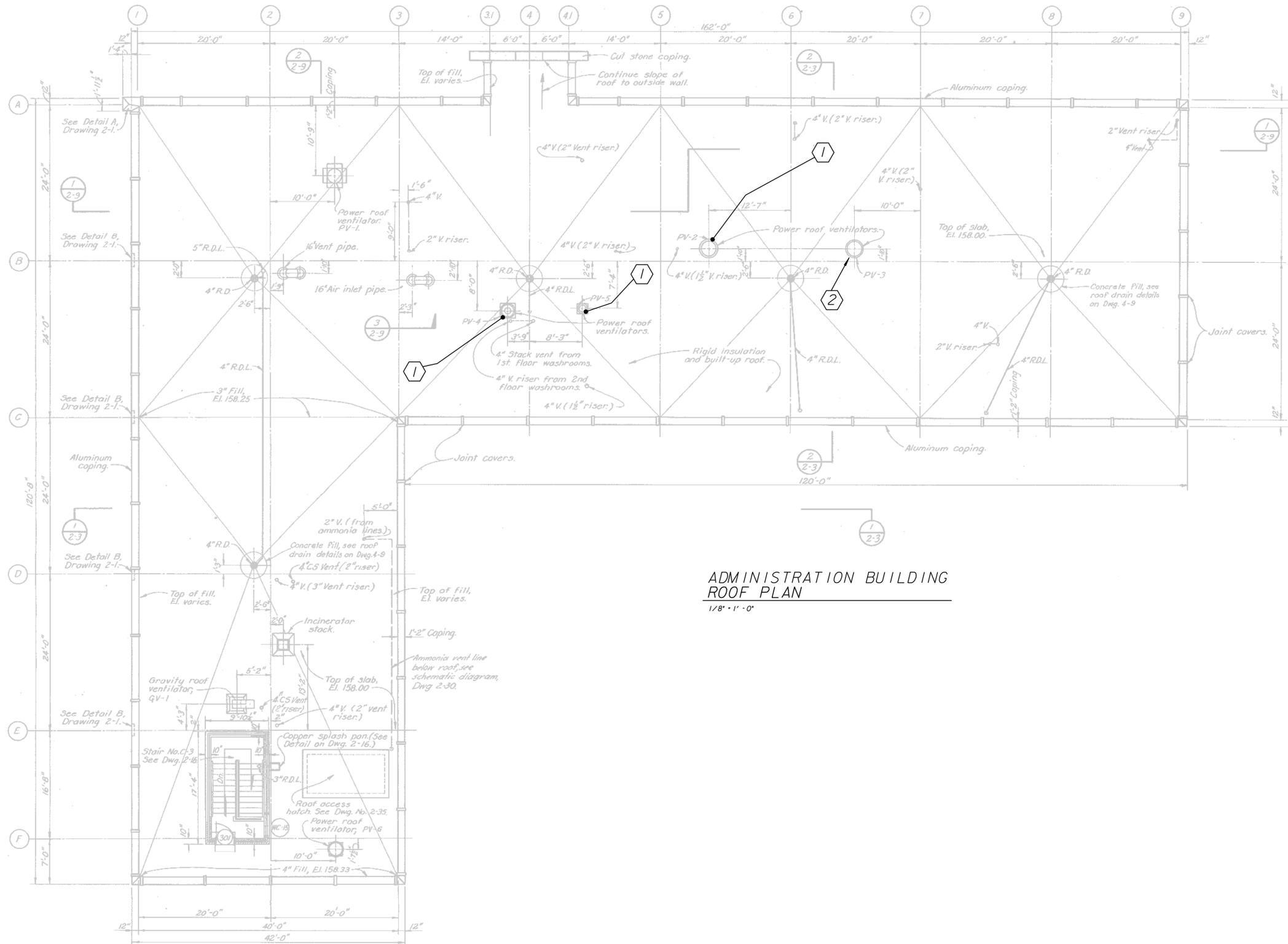
DEMOLITION NOTES - ELECTRICAL

- 1 REMOVE ELECTRICAL CABINET UNIT HEATER AND ASSOCIATED CONTROLS.
- 2 CONTRACTOR SHALL DISCONNECT AND REMOVE ALL POWER AND CONTROL WIRING CONNECTED TO HVAC EQUIPMENT BEING DEMOLISHED; WIRING SHALL BE REMOVED BACK TO PANEL.
- 3 CONTRACTOR MAY REUSE EXISTING CONDUIT WHERE APPLICABLE AND IN GOOD CONDITION, HOWEVER ALL ABANDONED CONDUITS SHALL BE REMOVED.
- 4 CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLISHING ALL LIGHTING FIXTURES AND ISOLATED WIRING AND CONDUIT.



Milwaukee Water Works		Water Engineering Department of Public Works	
HOWARD AVENUE PURIFICATION PLANT			
ADMINISTRATION BUILDING HVAC & LIGHTING IMPROVEMENTS			
HP-179			
SECOND FLOOR PLAN - DEMOLITION			
DESIGNED BY	M.A.G.	DATE	9-25-12
DRAWN BY	J.F.S.	PROJECT ENGINEER	
CHECKED BY	A.J.S.	DATE	9-25-12
SCALE	AS SHOWN	DATE	9-25-12
WORK ORDER	WT450093300	DATE	9-25-12
OFFICIAL NOTICE	56-2012	DATE	9-25-12
FILE NO.	B-12-2	DATE	9-25-12
DRAWING NO. HP-179-04		SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS	

NO.	BY	REVISION	DATE



ADMINISTRATION BUILDING
ROOF PLAN
1/8" = 1'-0"

DEMOLITION NOTES - GENERAL

1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEMOLISHED EQUIPMENT AND MATERIAL OFF-SITE UNLESS OTHERWISE SPECIFIED.

DEMOLITION NOTES - HVAC

- 1 REMOVE POWERED ROOF VENTILATOR AND DAMPER
- 2 REMOVE POWERED ROOF VENTILATOR AND DAMPER
REMOVE ASSOCIATED DUCTWORK AND SUPPORTS

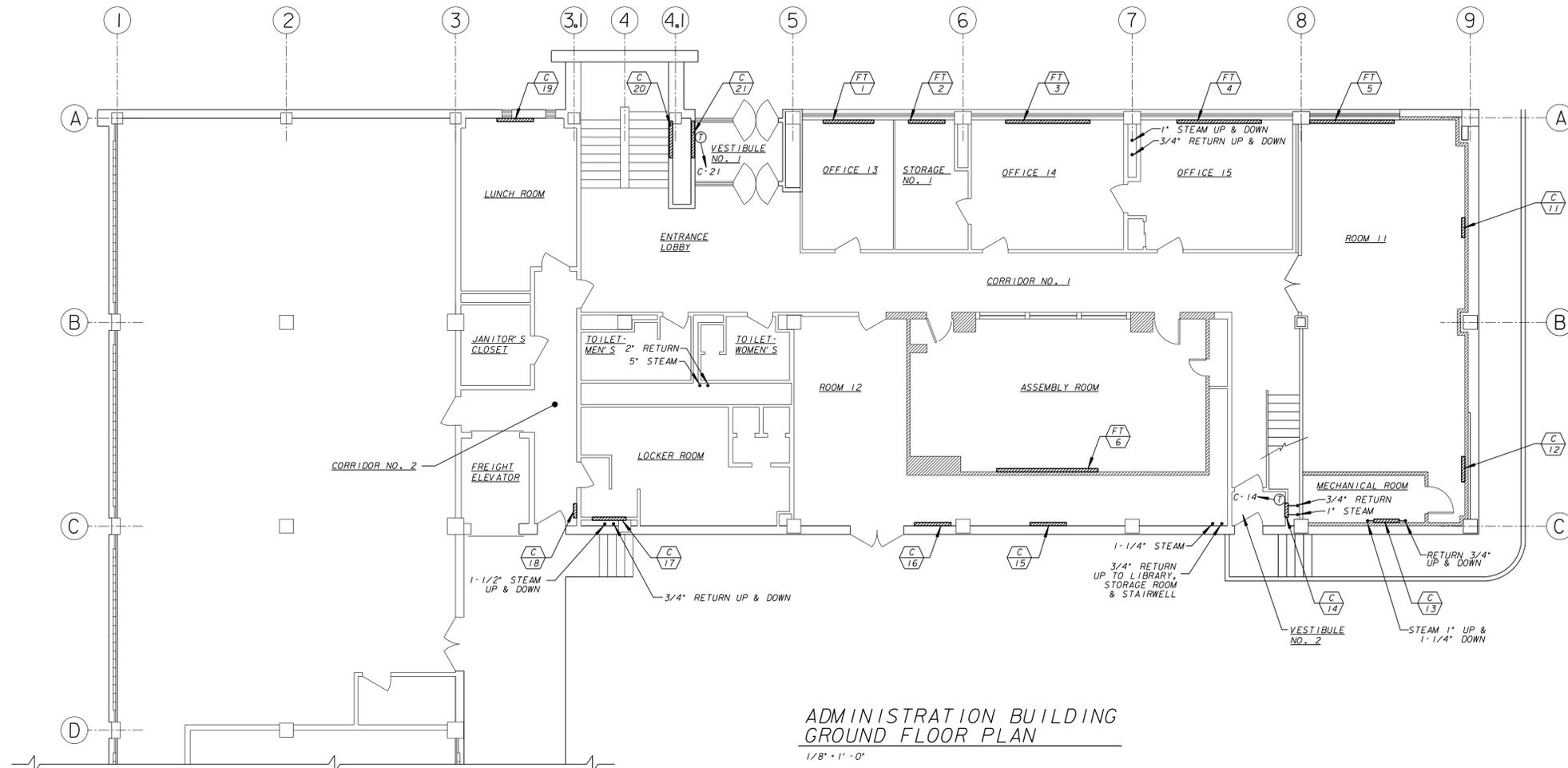
DEMOLITION NOTES - ELECTRICAL

- 1 REMOVE ELECTRICAL BASEBOARD, CONDUIT WIRING AND ASSOCIATED ACCESSORIES.
- 2 CONTRACTOR SHALL DISCONNECT AND REMOVE ALL POWER AND CONTROL WIRING CONNECTED TO HVAC EQUIPMENT BEING DEMOLISHED; WIRING SHALL BE REMOVED BACK TO PANEL.
- 3 CONTRACTOR MAY REUSE EXISTING CONDUIT WHERE APPLICABLE AND IN GOOD CONDITION, HOWEVER ALL ABANDONED CONDUITS SHALL BE REMOVED

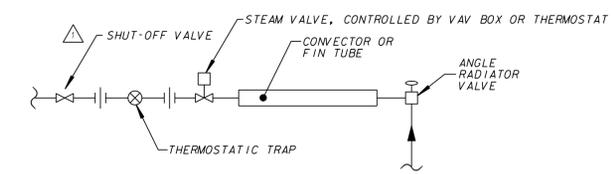


DESIGNED BY	M.A.G.	PROVED	DATE
DRAWN BY	J.F.S.	<i>Andrew Reynolds</i>	9-25-12
CHECKED BY	A.J.S.	<i>Daniel G. Hart</i>	9-25-12
DATE	4-25-12	<i>Andrew Reynolds</i>	9-25-12
SCALE	AS SHOWN	<i>Andrew Reynolds</i>	9-25-12
WORK ORDER	WT450093300	SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS	
OFFICIAL NOTICE	56-2012	DRAWING NO. HP-179-05	
NO.	BY	REVISION	DATE

Milwaukee Water Works Water Engineering
Department of Public Works
HOWARD AVENUE PURIFICATION PLANT
ADMINISTRATION BUILDING HVAC & LIGHTING IMPROVEMENTS
HP-179
ROOF PLAN - DEMOLITION

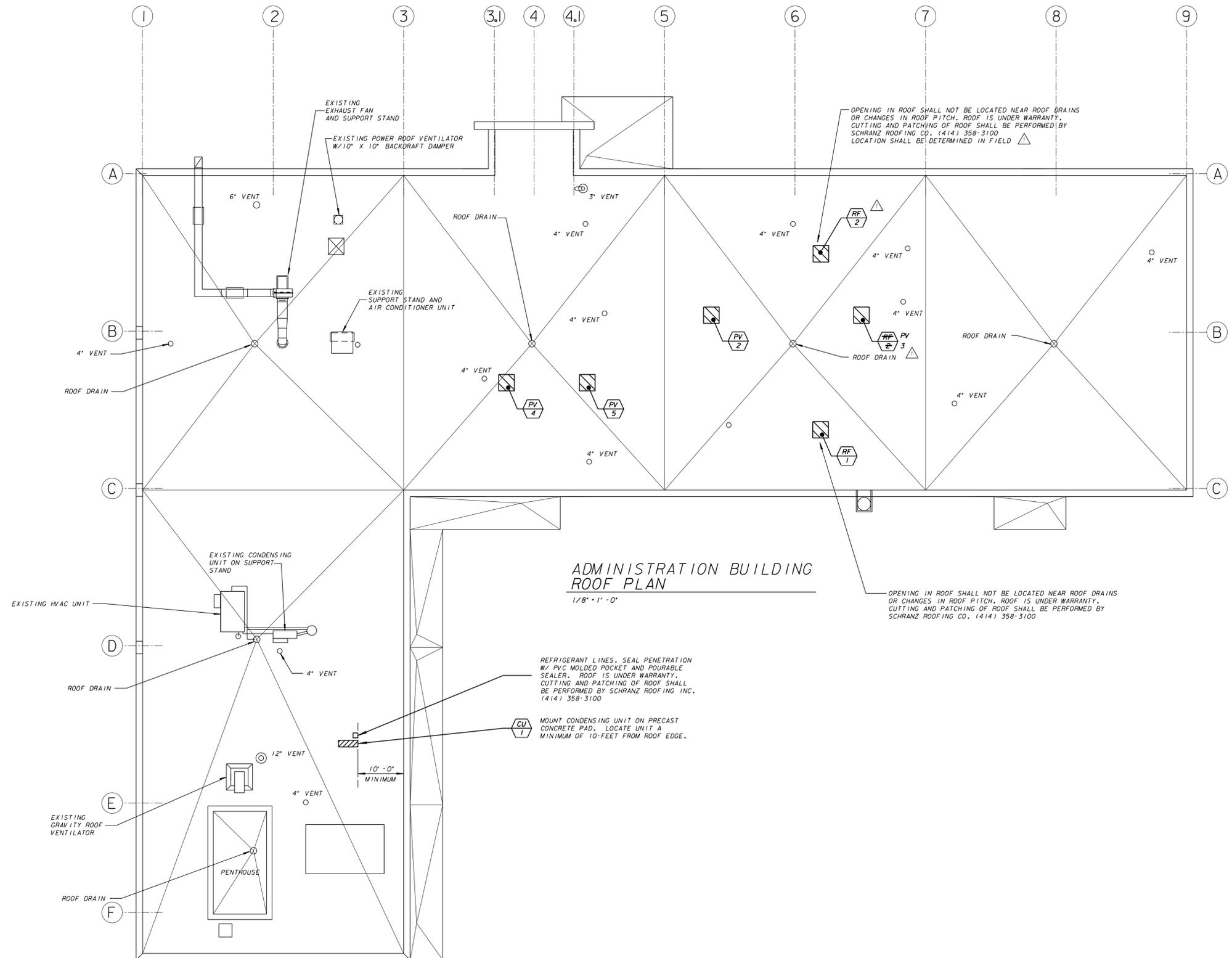


ADMINISTRATION BUILDING
GROUND FLOOR PLAN
1/8" = 1' - 0"



TERMINAL UNIT DETAIL
NOT TO SCALE

Milwaukee Water Works Department of Public Works		Water Engineering Department of Public Works	
HOWARD AVENUE PURIFICATION PLANT			
ADMINISTRATION BUILDING HVAC & LIGHTING IMPROVEMENTS			
HP-179			
GROUND FLOOR PLAN - HVAC PIPING			
DESIGNED BY	M.A.G.	APPROVED	DATE
DRAWN BY	J.F.S.	<i>Andrew Reynolds</i>	9-25-12
CHECKED BY	A.J.S.	<i>Daniel G. Hart</i>	PLANTS PROJECT ENGINEER
DATE	4-25-12	<i>William</i>	9-25-12
SCALE	AS SHOWN		CHIEF DESIGN ENGINEER
WORK ORDER	WT450093300		9-25-12
OFFICIAL NOTICE	56-2012		SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS
NO.	BY	REVISION	DATE
FILE NO.	B-12-2		
			DRAWING NO. HP-179-07



ADMINISTRATION BUILDING
ROOF PLAN
1/8" = 1' - 0"

REFRIGERANT LINES. SEAL PENETRATION W/ PVC MOLDED POCKET AND POURABLE SEALER. ROOF IS UNDER WARRANTY. CUTTING AND PATCHING OF ROOF SHALL BE PERFORMED BY SCHRANZ ROOFING INC. (414) 358-3100

MOUNT CONDENSING UNIT ON PRECAST CONCRETE PAD. LOCATE UNIT A MINIMUM OF 10'-0" FROM ROOF EDGE.

OPENING IN ROOF SHALL NOT BE LOCATED NEAR ROOF DRAINS OR CHANGES IN ROOF PITCH. ROOF IS UNDER WARRANTY. CUTTING AND PATCHING OF ROOF SHALL BE PERFORMED BY SCHRANZ ROOFING CO. (414) 358-3100. LOCATION SHALL BE DETERMINED IN FIELD.

OPENING IN ROOF SHALL NOT BE LOCATED NEAR ROOF DRAINS OR CHANGES IN ROOF PITCH. ROOF IS UNDER WARRANTY. CUTTING AND PATCHING OF ROOF SHALL BE PERFORMED BY SCHRANZ ROOFING CO. (414) 358-3100



Milwaukee Water Works Department of Public Works		Water Engineering Department of Public Works	
HOWARD AVENUE PURIFICATION PLANT			
ADMINISTRATION BUILDING HVAC & LIGHTING IMPROVEMENTS			
HP-179			
ROOF PLAN - HVAC			
DESIGNED BY	M.A.G.	DATE	9-25-12
DRAWN BY	J.F.S.	PLANT PROJECT ENGINEER	
CHECKED BY	A.J.S.	DATE	9-25-12
DATE	4-25-12	CHIEF DESIGN ENGINEER	
SCALE	AS SHOWN	DATE	9-25-12
WORK ORDER	WT450093300	SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS	
OFFICIAL NOTICE	56-2012	FILE NO.	B-12-2
DRAWING NO. HP-179-11			

NO.	BY	REVISION	DATE

AIR HANDLING UNIT SCHEDULE																						
SYMBOL	MANUFACTURER	MODEL	HEATING COIL			COILING COIL			FAN			MOTOR										
			ROWS	FIN SPACING	STEAM (psig)	EDB/ LDB (°F)	(MBH)	ROWS	FIN SPACING	TURBULATORS	FLOW (GPM)	EFT/ LFT	EDB/ EWB (°F)	LDB/ LWB (°F)	SENS/ TOTAL (MBH)	SERVICE	C.F.M.	ESP. IN H2O	DISCHARGE	VOLTAGE	H.P.	R.P.M.
AHU-1	TRANE	CSIA010	1	69	2	45/95	220	6	92	YES	33	45/55	80.0/67.0	54.0/53.8	115.8/167.3	SUPPLY	4335	2.5	FRONT-TOP	200-208/3	5	1800
AHU-2	TRANE	CSIA010	1	79	2	45/95	404	6	130	NO	60	45/55	80.0/67.0	54.0/53.8	213.4/302.9	SUPPLY	7030	2.5	FRONT-BOTTOM	200-208/3	10	1800

AIR OUTLET AND INLET SCHEDULE											
SYMBOL	MANUFACTURER	MODEL	DESCRIPTION	SLOT QTY/WIDTH	MATERIAL	DIMENSIONS (IN.)	INLET SIZE	FINISH	SERVICE	MOUNTING	REMARKS
SD-1	TITUS	TBDI-30	PLENUM SLOT	2 / 3/4"	STEEL	24 LONG	8" OVAL		SUPPLY	T-BAR	(3) (4)
SD-2	TITUS	TBDI-30	PLENUM SLOT	4 / 3/4"	STEEL	48 LONG	8" OVAL		SUPPLY	T-BAR	(3) (4) (5)
SD-3	TITUS	300 FS	REGISTER 0' DEFL.	-	ALUMINUM	14x10	-	WHITE	SUPPLY	DUCT	(1)
SD-4	TITUS	300 FS	REGISTER 0' DEFL.	-	ALUMINUM	12x10	-	WHITE	SUPPLY	DUCT	(1)
RG-1	TITUS	PAR	PERFORATED GRILLE	-	STEEL	24x24	16-INCH	WHITE	RETURN	T-BAR	
RG-2	TITUS	PAR	PERFORATED GRILLE	-	STEEL	24x24	12-INCH	WHITE	RETURN	T-BAR	
RG-3	TITUS	300 FL	GRILLE 35' DEFL.	-	ALUMINUM	48x18	-	WHITE	RETURN	WALL	

(1) OPPOSED BLADE DAMPER
(2) EQUALIZING GRID
(3) TWO T-BARS OUTSIDE EDGE
(4) INLET DAMPER
(5) CROSS NOTCH

CONDENSING UNITS			
UNITS	CU-1	NOTES	
LOCATION	ROOF		
MANUFACTURER	PANASONIC		
MODEL	CU-2S18NB-U-1		
NOMINAL CAPACITY	TONS	1.5	
SEER		18	
EER		11.5	
POWER SUPPLY	V-Ph-Hz	208/230-1-60	
MAX. FUSE SIZE	A	25	
RUNNING AMPERE	A	6.9/7.6	
POWER INPUT	W	1450	
APPROX. WEIGHT	lbs.	152	

SPLIT-DUCTLESS CASSETTE UNITS			
UNITS	CA-1, CA-2	NOTES	
LOCATION	LIBRARY		
MANUFACTURER	PANASONIC		
MODEL	CS-MKS9NKU		
NOMINAL CAPACITY	Btu/h	9000	
SUPPLY FAN			
AIR FLOW (H/MED/L)W	CFM	259/241/212	
HEAT INPUT	MBH	NA	
OUTPUT 1ST STAGE	MBH	NA	
OUTPUT 2ND STAGE	MBH	NA	
POWER SUPPLY	V-Ph-Hz	208/230-1-60	
RUNNING AMPERE	A	0.15/0.17	
POWER INPUT	W	35	
APPROX. WEIGHT	lbs.	20	

Notes:
(1) Provide condensation pump SI3100-1
(2) Provide wall-mounted wired remote controller CZRD115U
(3) Provide line set DL04060835

FAN SCHEDULE											
SYMBOL	MANUFACTURER	MODEL	SERVICE	LOCATION	AIRFLOW (cfm)	ESP (in. w.g.)	MOTOR (hp)	POWER SUPPLY (volts/phases)	DRIVE	WEIGHT (lb)	REMARKS
PV-2	GREENHECK	GB-091	EXHAUST	ROOF	750	0.20	1/4	115/60	BELT	61	(1) (2) (3) (4)
PV-4	GREENHECK	GB-091	EXHAUST	ROOF	875	0.25	1/4	115/60	BELT	61	(1) (2) (3) (4)
PV-5	GREENHECK	GB-081	EXHAUST	ROOF	500	0.25	1/6	115/60	BELT	60	(1) (2) (3) (4)
RF-1	GREENHECK	GB-121	RELIEF	ROOF	1300	0.25	1/4	115/60	BELT	66	(2) (3) (4) (5)
RF-2	GREENHECK	GB-131	RELIEF	ROOF	2200	0.125	1/2	115/60	BELT	67	(1) (2) (3) (4) (5) (6)
PV-3	GREENHECK	GB-101	EXHAUST	ROOF	1000	0.25	1/4	115/60	BELT	61	(1) (2) (3) (4)

(1) PROVIDE CURB ADAPTER /REDUCER, WELDED GALVANIZED CONSTRUCTION.
(2) PROVIDE GRAVITY DAMPER
(3) PROVIDE CURB SEAL
(4) PROVIDE DISCONNECT SWITCH
(5) PROVIDE INSULATED ROOF CURB

FIN-TUBE SCHEDULE											
SYMBOL	MANUFACTURER	MODEL	STYLE	LENGTH (ft)	TUBE SIZE (inches)	FIN SIZE (inches)	FIN / FEET	ENCL. DEPTH & HEIGHT (inches)	MTG. HEIGHT (inches)	CAPACITY (BTU/HR)	REMARKS
FT-2	STERLING	VERSA-LINE	T	4	3/4	4-1/4 x 3-5/8	50	4-3/8 x 14	18	6.960	(1) (2)
FT-1	STERLING	VERSA-LINE	T	6	3/4	4-1/4 x 3-5/8	50	4-3/8 x 14	18	10.440	(1) (2)
FT-3, FT-4, FT-5	STERLING	VERSA-LINE	T	10	3/4	4-1/4 x 3-5/8	50	4-3/8 x 14	18	17.400	(1) (2)
FT-6	STERLING	VERSA-LINE	T	12	3/4	4-1/4 x 3-5/8	50	4-3/8 x 14	18	20.880	(1) (2)

(1) PROVIDE ACCESS DOORS FOR SHUT-OFF AND FLOW CONTROL VALVES
(2) PROVIDE ENCLOSURE THAT ENCLOSES FIN-TUBE AND ALL VALVES

LOUVER SCHEDULE												
SYMBOL	MANUFACTURER	MODEL	TYPE	MATERIAL	HEIGHT (in.)	WIDTH (in.)	DEPTH (in.)	FREE AREA (sq. ft.)	FINISH	SERVICE	ACCESSORIES	REMARKS
L-1	GREENHECK	ESJ-401	STATIONARY, EXTRUDED	ALUMINUM	72	60	4	16.20	CLEAR ANODIZE (> 0.7 mil)	INTAKE	(1) (2)	

(1) EXTENDED SILL
(2) INSECT SCREEN

PUMP SCHEDULE										
SYMBOL	MANUFACTURER	MODEL	TYPE	SERVICE	LOCATION	FLOW (GPM)	HEAD (ft.)	MOTOR (hp/phase)	POWER SUPPLY (volts/phase)	REMARKS
P-1, P-2	BELL + GOSSETT	1531-1 1/2 BC	END SUCTION	CHILLED WATER	BASEMENT	110	80	5/1750	208/3	(1)

(1) BRONZE FITTED

STEAM CONVECTOR SCHEDULE									
SYMBOL	MANUFACTURER	MODEL	TYPE	HEIGHT (in.)	LENGTH (in.)	DEPTH (in.)	CAPACITY (BTU/HR)	CFM	REMARKS
C-1	STERLING	432	FWG-A	32	36	4	6,480		
C-2, C-3, C-4	STERLING	432	SFG-A SF-A	32	20	4	3,340		
C-5, C-6, C-18	STERLING	632	FWG-A	32	48	6	13,660		
C-7, C-17, C-20, C-21	STERLING	432	FWG-A	32	20	4	3,120		
C-8	STERLING	632	SFG-A SF-A	32	28	6	8,330		
C-11	STERLING	632	SFG-A SF-A	32	36	6	11,280		
C-12, C13	STERLING	632	FWG-A	32	20	6	4,850		
C-14	STERLING	632	SFG-A SF-A	32	52	6	16,900		
C-19, C-15, C-16	STERLING	632	SFG-A SF-A	32	52	6	16,900		

STEAM UNIT HEATER SCHEDULE									
SYMBOL	MANUFACTURER	MODEL	TYPE	MOTOR HP (watts)	AMPS	RPM	CAPACITY (BTU/HR)	CFM	REMARKS
UH-17, UH-18	STERLING	HS-24	HEADER	16	0.8	1350	21,600	380	(1)

(1) PROVIDE DISCONNECT SWITCH

VARIABLE-AIR-VOLUME TERMINAL UNITS										
SYMBOL	MANUFACTURER	MODEL	AIR VALVE SIZE (in.)	DESIGN AIRFLOW (cfm)	MINIMUM AIRFLOW (cfm)	REHEAT COIL			REMARKS	
						ELECTRIC HEAT (kW)	POWER (V-Ph)	FLA (A)		MCA (A)
VAV-1-1	TRANE	VariTrane VSEF	8	763	210	6.0	208-3	22.2	27.7	(1) FAN POWERED
VAV-1-2	TRANE	VariTrane VCEF	8	712	210	3.5	208-3	9.7	12.1	(1)
VAV-1-3	TRANE	VariTrane VCEF	8	500	150	2.5	208-3	6.9	8.7	(1)
VAV-1-4	TRANE	VariTrane VCEF	10	1203	360	5.5	208-3	15.3	19.1	(1)
VAV-1-5	TRANE	VariTrane VCEF	6	385	110	2.0	208-3	5.6	6.9	(1)
VAV-1-6	TRANE	VariTrane VCEF	8	813	240	3.5	208-3	9.7	12.1	(1)
VAV-2-1	TRANE	VariTrane VCEF	10	1009	300	4.5	208-3	12.5	15.6	(1)
VAV-2-2	TRANE	VariTrane VCEF	10	950	285	4.5	208-3	12.5	15.6	(1)
VAV-2-3	TRANE	VariTrane VCEF	6	497	150	2.5	208-3	6.9	8.7	(1)
VAV-2-4	TRANE	VariTrane VCEF	8	586	180	2.5	208-3	6.9	8.7	(1)
VAV-2-5	TRANE	VariTrane VCEF	6	495	150	2.5	208-3	6.9	8.7	(1)
VAV-2-6	TRANE	VariTrane VCEF	10	1193	400	5.5	208-3	15.3	19.1	(1)
VAV-2-7	TRANE	VariTrane VCEF	14	2231	700	10.0	208-3	27.8	34.7	(1)

(1) PROVIDE DISCONNECT SWITCH

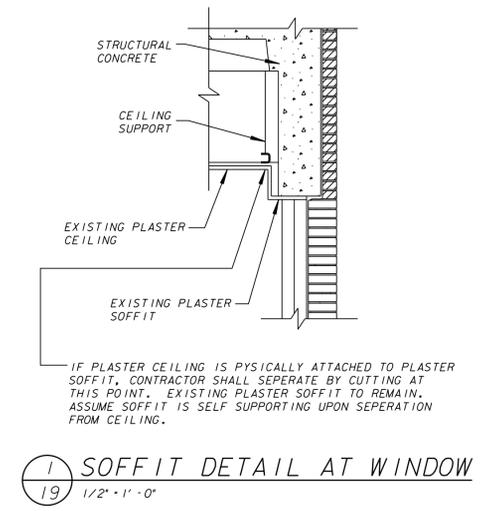
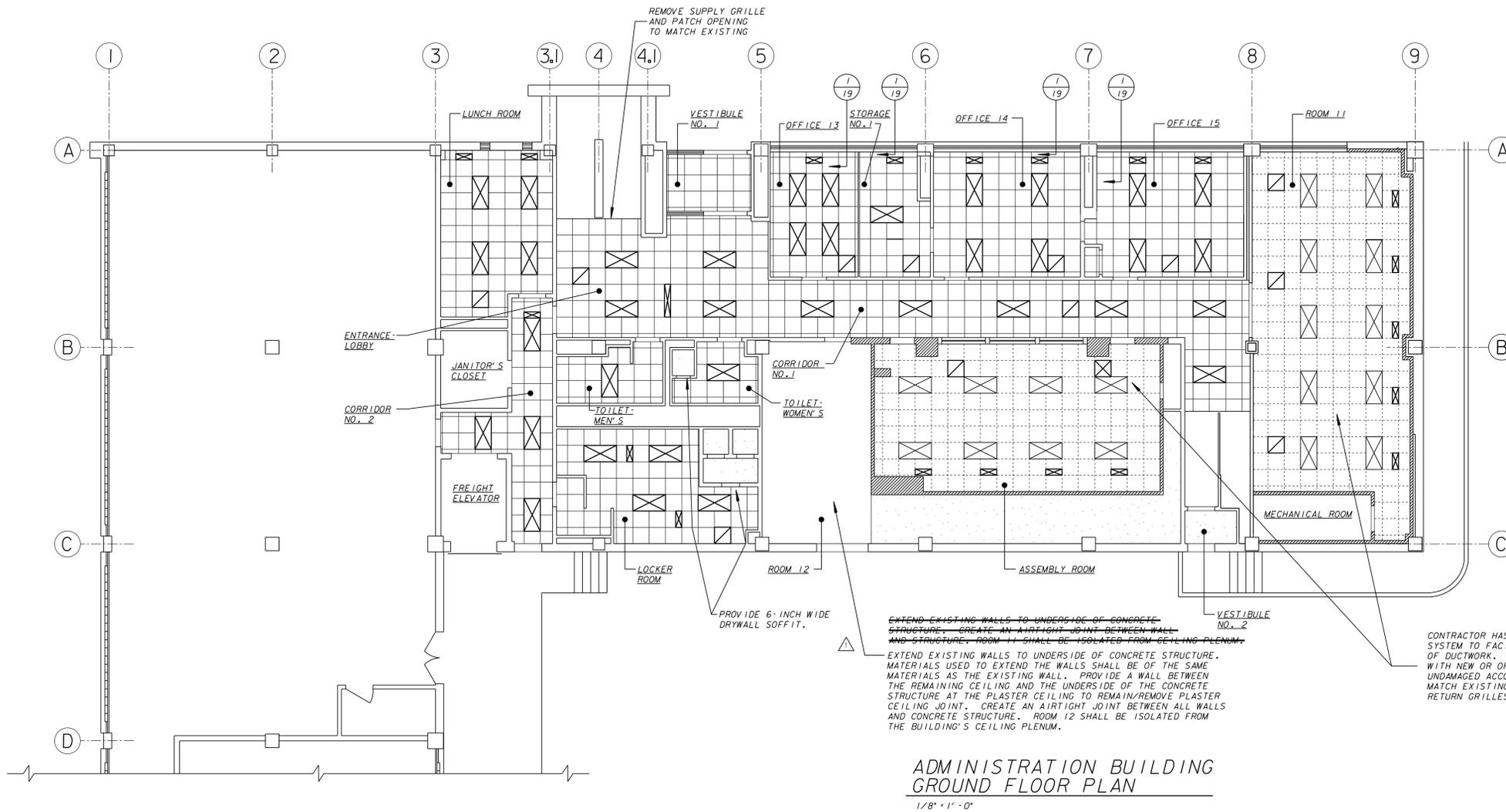
WATER COOLED PACKAGE CHILLER SCHEDULE																				
SYMBOL	MANUFACTURER	MODEL	ELECTRICAL CHARACTERISTICS	EVAPORATOR PERFORMANCE			CONDENSER PERFORMANCE					CAPACITY (BTU/HR)	COMP. POWER (kW)	FULL LOAD (TEER)						
				EVAPORATOR FLUID	TEMP. IN (°F)	TEMP. OUT (°F)	CONDENSER FLUID	TEMP. IN (°F)	TEMP. OUT (°F)	CONDENSER FLOW PER CONDENSER (GPM)	TOTAL (GPM)				PRESSURE DROP (psi)	(FL. Wtr.) (BTU/HR)	(Tons)			
CH-1	NAPPS	NWC40C	200/230-3-60	WATER	54.0	44.0	105.9	4.1	9.3	WATER	80.0	90.0	65.4	126.8	6.6	15.3	631,210	44.3	29.3	17.9

Milwaukee Water Works Water Engineering
Department of Public Works
HOWARD AVENUE PURIFICATION PLANT
ADMINISTRATION BUILDING HVAC & LIGHTING IMPROVEMENTS
HP-179
SCHEDULES - HVAC

DESIGNED BY M.A.G. DATE 9-25-12
DRAWN BY J.F.S. DATE 9-25-12
CHECKED BY A.J.S. DATE 9-25-12
DATE 4-25-12 DATE 9-25-12
SCALE AS SHOWN
WORK ORDER WT450093300 SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS
OFFICIAL NOTICE 56-2012
DRAWING NO. HP-179-12

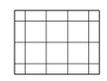
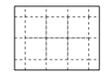
NO. BY REVISION DATE

NO.	BY	REVISION	DATE



ADMINISTRATION BUILDING
GROUND FLOOR PLAN
1/8" = 1' - 0"

LEGEND: (SHEETS HP-179-16 & HP-179-17)
~~LEGEND: (SHEETS HP-179-19 & HP-179-20)~~

-  2' x 2' ACOUSTIC TILE
CEILING AND SUSPENDED GRID SYSTEM
-  EXISTING LAY-IN
2' x 2' ACOUSTIC TILE
CEILING AND SUSPENDED
GRID SYSTEM
-  EXISTING PLASTER
CEILING TO REMAIN
-  NO CEILING, EXPOSED CONSTRUCTION
-  SUPPLY DIFFUSER
-  RETURN GRILLE

NOTES - GENERAL

1. HEIGHT OF NEW ACOUSTIC TILE CEILING AND SUSPENDED GRID SYSTEM SHALL BE AT THE SAME HEIGHT AS THE ORIGINAL PLASTER CEILING. ORIGINAL PLASTER CEILING HEIGHT IS APPROXIMATELY 8'-7"

CONTRACTOR HAS THE OPTION TO REMOVE THE CEILING SYSTEM TO FACILITATE THE DEMOLITION AND INSTALLATION OF DUCTWORK. CEILING SYSTEM SHALL THEN BE REPLACED WITH NEW OR ORIGINAL UNDAMAGED T-BARS. REUSE ORIGINAL UNDAMAGED ACOUSTICAL TILES. PROVIDE NEW TILES TO MATCH EXISTING WHERE 2x2 CEILING DIFFUSERS AND 2x2 RETURN GRILLES WERE REMOVED DURING DEMOLITION.

NO.	BY	REVISION	DATE

Milwaukee Water Engineering
Department of Public Works

HOWARD AVENUE PURIFICATION PLANT

ADMINISTRATION BUILDING HVAC & LIGHTING IMPROVEMENTS
HP-179

GROUND FLOOR ARCHITECTURAL CEILING PLAN

DESIGNED BY	M.A.G.	DATE	9-25-12
DRAWN BY	J.F.S.	PLANT'S PROJECT ENGINEER	
CHECKED BY	A.J.S.	DATE	9-25-12
DATE	4-25-12	CHIEF DESIGN ENGINEER	
SCALE	AS SHOWN	DATE	9-25-12
WORK ORDER	WT450093300	SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS	
OFFICIAL NOTICE	56-2012		
FILE NO.	B-12-2		

DRAWING NO. **HP-179-16**