

Addendum No. 1
August 12, 2021

Project: DGR Engineering
Lot 4, Block 19 Dawley Farm Village Addition
2932

Architect: Architecture Incorporated

Letting: August 19, 2021
2:00 PM
Hoogendoorn Construction Office via Sealed Envelope or electronically (see Invitation to Bid for further details)

Scope of this Addendum:

To all bidders and all others to whom drawings and specifications have been issued by Architecture Incorporated, this Addendum forms a part of the Contract Documents. Acknowledge receipt of this addendum by listing its number and date in the bidder's Form of Proposal. Failure to do so may subject bidder to disqualification. This addendum modifies the drawings and specifications as follows:

GENERAL ITEMS:

1) SPECIFICATION SECTION – 102800 TOILET, BATH AND LAUNDRY ACCESSORIES

- a) Page 04 – Replace 2.2H Public-Use Washroom Accessories, Sensor-Counter Mounted Liquid Soap Dispenser (L) with Sloan ESD-500 Foam Soap Dispenser. Satin Nickel Finish. Sensor Activated, Battery operated.

2) SPECIFICATION SECTION – 102239 – FOLDING PANEL PARTITIONS

- a) 2.2 OPERABLE ACOUSTICAL PANELS
 - i) Modify Basis-of-Design Product to [Hufcor 640 Series, Model #642 Panel] thickness – 4”

3) DRAWING 4.10 – FIRST FLOOR PLAN

- a) First Floor Plan – Corridor running adjacent to UNISEX 105, UNISEX 104 and CONF. 136 is to be labeled as HALL 107 and finished as denoted in the Room Finish Schedule.
- b) Breakroom 150 – modify casework layout and electrical service for owner supplied oven, revise interior elevation F/4.50 as shown on the attached Supplemental Drawing SD-01. Casework section at owner provided oven as shown on the attached Supplemental Drawing SD-02.
 - i) All appliances shown in SD-01 will be owner provided contractor installed. This includes (3) microwaves, (2) Refrigerators with water service (1) Dishwasher and (1) Oven. General Contractor to coordinate with owner supplier for installation.

4) DRAWING 6.10 – REFLECTED CEILING PLAN

- a) Reflected Ceiling Plan – Ceiling and soffit above IMA 137 to be painted PNT-2.
- b) Paint DFPNT-1 at structure above the full extent of CLG-1, wood ceiling, located in Lobby 101 and Hall 107.
- c) OPEN OFFICE 139 – Ceiling will start at 18' 11-3/4" above finished floor on the southwest wall and slope to the northeast at 1/2" / 12" as shown in section 4/5.40 to allow for the ceiling to hang at a constant distance below the sloping structure of the center portion of the facility.
- d) LOBBY 101/ RECEPTION 102 – CLG-1 will be mounted at the southwest wall starting at 18' 11-3/4" above finished floor sloping to the northeast wall at a rate of 1/2" / 12" to maintain a consistent distance below the sloping structure of the center portion of the facility.

GENERAL ARCHITECTURAL APPROVALS:

The following material or equipment furnished by the manufacturers listed, may be substituted as equivalent providing that each item, material, and piece of equipment conforms to the design and requirement of the specifications.

| <u>SECTION</u> | <u>ITEM</u> | <u>MANUFACTURER</u> |
|----------------|--------------------------|---------------------------------------|
| 074213 | Formed Metal Wall Panels | Pac-Clad - Highline |
| 074243 | Composite Wall Panels | Pac-Clad – PAC 3000 RS |
| 095425 | Wood Ceilings | ADI Architectural |
| 095425 | Wood Ceilings | Sound Seal – CLG Wood Grille Ceilings |

MECHANICAL ITEMS:

1) SECTION 220400 – PLUMBING:

- a. Add the following as a separate section, 1.20- WATER SOFTENER:

Provide as indicated a vertical pressure type water softener system complete with pressure vessel, softening resin, control valve, brine maker and electronic controller. The system will be of an approved design as fabricated by a manufacturer regularly engaged in the production of water treatment equipment. All equipment and material will be supplied in compliance with the specifications as intended for a complete and operational system. Qualified manufacturers will have the entire softener certified as a system to NSF/ANSI 61, NSF/ANSI 372, CSA 483.1, UL/CUL and CE.

The system specifications are based on Culligan International model CTM 90-DF 16in Tank with Hard Water Bypass and 2in configured as a Single system with either Timeclock, Water Meter or Aqua Sensor device.

The purpose of the Culligan International Culligan Top Mount Single automatic water softener will be to remove mineral hardness from a known water supply to a level not to exceed 17.1 mg/l, as determined by an accepted ASTM or EDTA test method, when the system is operated at 54 gpm and in accordance with the operating instructions. The system will be capable of supplying 5573 gallons of softened water between regenerations based on the influent water analysis listed in Section 3.1 of this equipment specification.

The systems performance is rated at a design flow rate of 54 gpm with a rated pressure drop of 13.5 psi, and will be capable of a peak flow rate of 75 gpm for sustained periods of 90 minutes with a pressure drop of 25 psi. See below for system design parameters.

DESIGN PARAMETERS (Each Tank System)

| | |
|-------------------------------------|--------------------------------|
| Normal System Flow & Pressure Drop | : 57 gpm @ 15 psi |
| Maximum System Flow & Pressure Drop | : 75 gpm @ 25 psi |
| Backwash/Rinse Flow | : 5 gpm |
| Backwash Volume | : 173 gallons nominal |
| Daily Water Usage | : 1000 |
| Operating Temperature Range | : 40-120 °F |
| Operating Pressure Range (System) | : 35-125 psi |
| Electrical Requirements | : 120 Volts AC, 50/60 Hz, 1 Ph |
| System Dimension (L x W x H) | : 50x73.5x20 |

Each system shall include (1) tank(s). Each softener tank shall be 16 in. in diameter. The overall tank height (less base) shall be 53 in., sufficient to allow for a proper freeboard space above the resin bed for adequate expansion of the resin during backwashing.

Tank(s) shall be manufactured of polyester reinforced by a continuous roving glass filament overwrap. The top opening will be 4"-8 UN threaded and the tank bottom will be supported on a molded structural base.

The upper distribution system shall be of the single point diffuser type to dispense water laterally to avoid channeling within the resin bed. The lower distribution system shall be of the single point distributor type, constructed of PVC pipe and a fine slotted strainer to provide even flow distribution through the resin bed. The distribution system shall be embedded in a two layer subfill of washed inorganic material to support the resin bed.

The main operating valve shall be of a top mount design constructed of thermoplastic resistant to attack by substances found in natural water supplies. Inlet and outlet connections to be 1.5" or 2 inch NPTE. The Cv (flow coefficient) of the main operating valve shall be equal to/greater than 32. A vacuum breaker and pressure regulating valve shall be integrated in the design of the main operating valve. The main operating valve will be of the motor driven, mechanically activated design with 5 positions to accomplish the regeneration steps of backwash, brine draw/rinse, fast rinse and brine refill in addition to the service position. The internal seals will be of a modular design for ease of replacement and service. The main operating valve will be fitted with a fixed orifice eductor to control brine draw/slow rinse. The main operating valve shall be designed by the same manufacturer as the water softener system and tested prior to shipment.

The backwash flow controller shall be a pressure-compensating orifice capable of providing and maintaining proper backwash flows over the entire listed operating pressure range of the system. The backwash flow controller shall be easily serviced without special tools and design so that service to the flow controller can be performed without disassembly of the valve body or the sequencing controller and without disconnecting existing inlet and outlet piping connections.

A fully integrated programmable microprocessor driven electronic controller shall be provided to automatically cycle the main operating valve through the regeneration sequence. The electronic controller shall be designed and manufactured by the same manufacturer as the water treatment equipment.

The controller shall be capable of initiating a regeneration by accepting an internal signal from the controller time keeping device; an external Hall-Effect flow sensor, a Culligan Aqua-Sensor®, an external device such as a remote start push-button or any combination of these methods. The controller

shall sequence all steps of an automatic regeneration and automatically return the softener to a service or stand-by mode. The initiating time and/or volume setpoints shall automatically reset upon completion of the regeneration sequence.

The controller shall include a sealed keypad, capable of programming all controller functions, located on the face of the controller. The controller display shall be a multi-line OLED display capable of full text readouts of operating status and codes. The firmware shall be capable of being updated to the latest version.

An audible alarm beeper capable of emitting a tone of ~70 dBA shall be available but capable of being disabled if so desired.

The controller shall allow for a manual initiation of the automatic regeneration sequence by utilizing a regeneration selection from the controller menu.

The controller shall operate on a low voltage electrical system. The system shall include a UL/CUL listed transformer. The entire electronic control package and its associated inputs/outputs shall require not more than 24 VAC @ 50VA. The control shall be rated for wet environments and certified to NEMA 3R.

The controller shall utilize EEPROM to save pertinent programmed data and statistical functions. The controller must retain all functionality for power interruptions of less than 72 hours. A battery backup shall be installed and capable of maintaining the time of day for a minimum of 5 years.

An operator selected volume based reconditioning for single units shall be available. A flow sensor package shall be provided consisting with an appropriately sized installation fitting. The operator shall be able to select reconditioning to occur after a specified number gallons. The electronic controller shall indicate various data that includes number of reconditionings in the last 14 days, days since last reconditioning, total number of reconditionings for the life of the unit, time of day, and unit in reconditioning.

In addition the following functions shall be provided as part of the system controller:

The controller shall have the capability of providing communications with the following external devices:

- Serial Communications (RS-232 & RS-485)
- USB
- Modbus RTU
- Profibus Communications
- BACnet Communications
- Modem (cell modem or land-line modem)
- Dry Contact Alarm Relay
- Wireless Remote (local RF wireless remote, 200 ft range)

Regeneration sequence timers: The controller shall allow control customization of individual regeneration cycle times, each programmable from 1 - 99 minutes. The regeneration cycle and time of cycle remaining shall be displayed when in regeneration.

The controller shall include a lockout to prevent unauthorized personnel from altering program data.

The controller shall include a function to direct pre-programmed regeneration after a user determined period of time (hours or 24 hour intervals) without an input signal from another regeneration initiation device.

The controller shall monitor operation of internal functions. If a fault is identified, the need for operator intervention will be signaled visually within the controller display.

Two Auxiliary Outputs shall be integral to the controller circuit board. Each Output shall be capable of being programmed to provide power to a "Normally Open" or "Normally Closed" contact (user choice). These 24VAC outputs shall be used only for the purpose of energizing a relay coil.

The controller shall be capable of indicating the flow rate of the treated water.

The controller shall include a totalizer function and a display capacity to 99,999,999 units before resetting to zero. The totalizer value shall be displayed through the controller display during operation.

The controller shall have the availability to be wall- or remote-mounted for greater accessibility.

Each softener will include a turbine-type Hall Effect flow sensor. The sensor shall be integral to the control valve. A cable shall be provided for direct connection to the system controller. The flow sensor package provided shall be functional within the flow range of 1.5 to 180.0 gpm. The flow sensor shall have an accuracy of +/- 2% over the full range.

The ion exchange resin shall be virgin high capacity "standard mesh" of sulfonated polystyrene type stable over the entire pH range with good resistance to bead fracture from attrition or osmotic shock. Each cubic foot of resin will be capable of removing 30000.0 grains of hardness as calcium carbonate when regenerated with 15.0 pounds of salt. The resin shall be solid, of the proper particle size of 16x40 mesh, U.S. standard screen and will contain no agglomerates, shells, plates or other shapes that might interfere with the normal function of the water softener. The resin shall be manufactured to comply with the food additive regulation 21 CFR 173.25 as set forth by the USFDA. The system shall include 3 cubic feet of exchange resin per vessel and a total of 3 cubic feet of resin for the system.

Provide a complete brine system consisting of a plastic tank, cover, salt platform, brine well, an automatic brine valve and all necessary fittings for operation with the water softening system. The system shall consist of a combined brine measuring and salt storage tank with salt platform. The recommended tank will be sized 24.0 in. x 50.0 in.; the system will include a total of one (1) brine tank(s). This brine tank can hold 600 of salt which provides for 33 per salt fill.

The brine tank will be equipped with a float operated non-corrosive field serviceable brine float valve for automatic control of brine withdrawal and fresh water refill.

The brine valve will automatically open to admit brine to the resin tank during eduction and close automatically providing positive shut-off to prevent air from entering the system. The brine valve will also regulate the flow of soft water into the brine tank during refill. The brine valve works with the timed fill feature of the main operating valve controls to admit the correct volume of fresh water to the brine tank in accordance with the refill time setting in the control program. The brine valve will include a float operated safety shut-off valve as a back up to the timed refill from the main operating valve control to prevent brine tank overflow.

Water Softener shall be Culligan or approved equal.

DRAWING ITEMS

Refer to attached drawings, dated August 11, 2021, for further information regarding changes, unless noted otherwise.

2) 8.10 – LEGENDS & DETAILS

- a) Revise RADIANT CEILING PANEL WITH REHEAT COIL DETAIL to clarify the piping and valving to the radiant panels in the circuit.
- b) Add a hose bibb to the irrigation system in WATER & IRRIGATION METER PIPING DIAGRAM.

3) 8.11 – SCHEDULES & DETAILS

- a) Revise REGISTER, GRILLE & DIFFUSER SCHEDULE to include selections for G6 & G7.
- b) Revise PLUMBING FIXTURE SCHEDULE as noted below:
 - a. L-1: Revise trim specification.
 - b. L-1: Remove carrier and point-of-use mixing valve from specification.
 - c. L-1: Add specification for waste & water pipe protector.
 - d. L-1: Add verbiage about trim appearance to match corresponding soap dispenser. Soap dispenser to be provided by G.C.
 - e. L-1: Add specification of temperature mixer control at the faucet.
 - f. SK-1: Revise trim model number.
 - g. SK-2: Provide additional specification information and details regarding trim.
 - h. SH-1: Revise the model number for the fixed shower head.
 - i. UB-1: Add specification of shut-off valve with utility box.

4) 8.20 – UNDERGROUND PLAN – PLUMBING

- a) Add waste and vent piping for floor drain in “Jan/Stg 134”.
- b) Remove waste and vent piping for removed hub drain in “Break Rm 150”.

5) 8.21 – FIRST FLOOR PLAN – PLUMBING & HEATING

- a) Revise irrigation meter keynote to include more detail about the irrigation meter installation per City of Sioux Falls requirements.
- b) Revise specification of boiler system expansion tank to be Bell & Gossett Model D-144V.
- c) Remove undercounter hub drain, including associated vent piping, in “Break Rm 150”.
- d) Add hose bibb, with shut-off valve, in “Mech/Elec 164”.
- e) Add isolation shut-off valves for piping serving “Jan/Stg 134”, “Unisex 131”, and “Unisex 130”.
- f) Add floor drain, including corresponding vent piping, in “Jan/Stg 134”.
- g) Add keynotes signifying electrical equipment that will require specific coordination of pipe routing with electrical contractor.

6) 8.30 – FIRST FLOOR PLAN – VENTILATION & A/C

- a) Provide thermostats for control of Radiant Ceiling Panels in the following rooms:
OFFICE 108, OFFICE 110, OFFICE 111, OFFICE 113, OFFICE 115, OFFICE 117, PRINTER
118, OFFICE 120, OFFICE 121, OFFICE 123, OFFICE 152, OFFICE 154, OFFICE 155,
OFFICE 156, OFFICE 158, OFFICE 170.

7) 8.31 – DUCT RISER

- a) Add disclaimer note: “DUCT ISO DIAGRAM IS FOR CONTRACTOR REFERENCE ONLY. THE ISO DIAGRAM DOES NOT SUPERCEDE THE FLOOR PLAN DRAWINGS. EXTENSIVE FIELD COORDINATION WITH OTHER TRADES IS STILL REQUIRED. THE CONTRACTORS SHALL PROVIDE ALL OFFSETS AND RELOCATE AS REQUIRED TO COORDINATE THE INSTALLATION OF ALL MATERIALS AND EQUIPMENT WITH OTHER TRADES.” An update of this sheet will not be included as part of the attachment to this addendum.

SUBSTITUTIONS AND PRODUCT OPTIONS

The following material or equipment furnished by the manufacturers listed may be substituted as equal, providing that each item, material and piece of equipment conforms to the design and requirements of the Drawings and Project Manual.

| SECTION | ITEM | MANUFACTURER |
|---------|-----------------------------|-------------------|
| 220400 | Water Heater Expansion Tank | Watts Regulator |
| 220600 | Hydronic Expansion Tank | American Wheatley |
| 220600 | Boilers | Lochinvar |
| 230800 | VFD | Danfoss |
| 230800 | Rooftop Unit | Valentair |
| 230800 | Louvers | Nailor |

ELECTRICAL ITEMS:

1) 9.20 – FLOOR PLAN – LIGHTING

- a) In reference to unisex restrooms 130/131, change mirror light fixture to be Type M1 in lieu of Type M. Center over top of mirror.
- b) In reference to Reception 102, mount Type P pendant lighting fixtures to be 12'-0" AFF to bottom of fixtures centered over the high part of the desk (9'-6" from the back wall) in a straight line.
- c) In reference to Open Office 151, change Type N7 to be Type N6 for reduced length of fixture from 7ft to 6ft.
- d) In reference to the front canopy, revise the exterior lighting to be Type ZE. Type ZE shall be the same as Type XE except different orientation to match the soffit/canopy construction.
- e) See attached updated lighting sheet for grid shifts associated with lighting fixture placements and other revisions listed above.

2) 9.21 – FLOOR PLAN – POWER & SIGNAL

- a) In reference to restroom groups:
 - i) 104/105: Soap dispensers changed to be battery operated. Omit undercounter receptacles keynoted #7 – no longer needed.
 - ii) Add GFCI receptacles at accessible locations within chases between restroom groups for powering cord & plug connected flush valve equipment. Typical of (3) locations as shown on the revised Drawing Sheet 9.21.
- b) In reference to Garage 181, shift CO/NO2 panel connection to north wall as shown on the attached revised Drawing Sheet 9.21.
- c) In reference to the enlarged breakroom layout, provide the following as shown on the attached revised Drawing Sheet 9.21.
 - i) Omit microwave outlet, replace with electric range outlet and circuit breaker (GFCI) in Panel B.
 - ii) Change (2) duplex above counter receptacles to be (2) quadplex receptacles each. Each duplex shall be on a dedicated circuit to serve crockpots.

3) 9.22 – ROOF PLAN – ELECTRICAL

- a) Add heat trace to the (2) roof drain assemblies. See spec section 261200-2 and plumbing drawing revisions for heat trace/drain piping location reference.

4) 9.32 – ELECTRICAL SCHEDULES

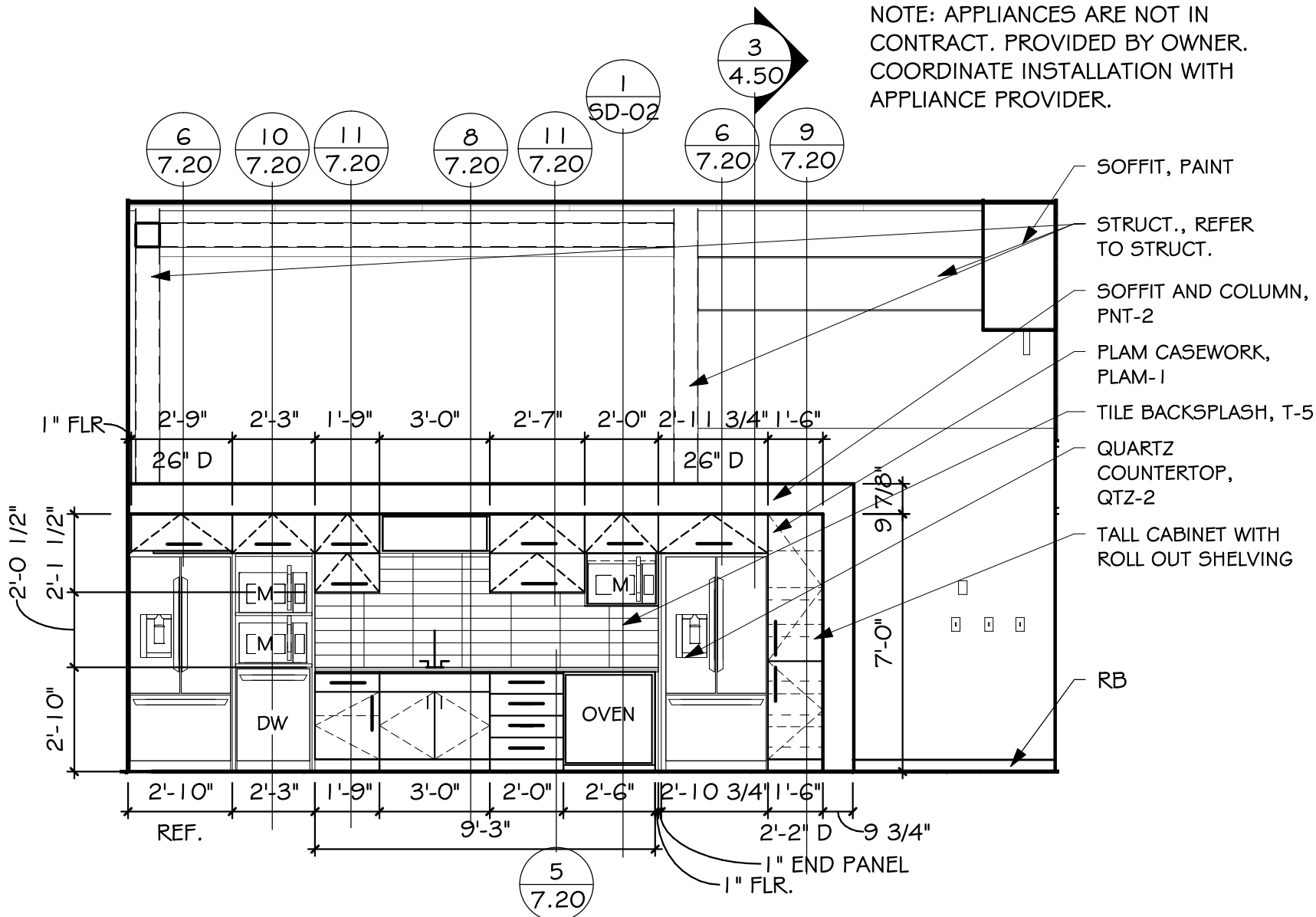
- a) In reference to the lighting fixture schedule, revise as follows:
 - i) Type L: Change to satin nickel finish.
 - ii) Type P: Change to satin nickel finish.
 - iii) Type X/XE: Change to match exterior ceiling application similar to gyp in lieu of grid mount.
 - iv) Type ZE: Same as Type XE except continuous corner linear per revised lighting drawing for canopy application.
- b) For clarification, all lighting (interior and exterior) shall be 3500K.

SUBSTITUTIONS AND PRODUCT OPTIONS - ELECTRICAL

The following material or equipment furnished by the manufacturers listed may be substituted as equal, providing that each item, material and piece of equipment conforms to the design and requirements of the Drawings and Project Manual.

| SECTION | ITEM | MANUFACTURER |
|---------|--------------|-----------------|
| 265119 | LED Lighting | |
| | Type A | Brownlee |
| | Type B/BE | Mark, Startek |
| | Type N | Mark, Startek |
| | Type Q/QE | Mark, Startek |
| | Type R | Mark, Startek |
| | Type S/SE | Mark, Startek |
| | Type T8 | Mark, Metalumen |
| | Type V/VE | Mark, Startek |
| | Type W/WE | NLS |
| | Type X/XE | Mark, Startek |
| | Type AA/AA2 | NLS |
| | Type BB | Ligman |
| 287210 | Fire Alarm | Edwards |

END OF ADDENDUM



NOTE: APPLIANCES ARE NOT IN CONTRACT. PROVIDED BY OWNER. COORDINATE INSTALLATION WITH APPLIANCE PROVIDER.

BREAKROOM CASEWORK - SD-01
 SCALE: 1/4" = 1'-0"

DRAWING

SD-01

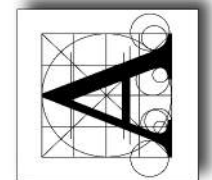
project **DGR ENGINEERING - SIOUX FALLS OFFICE**

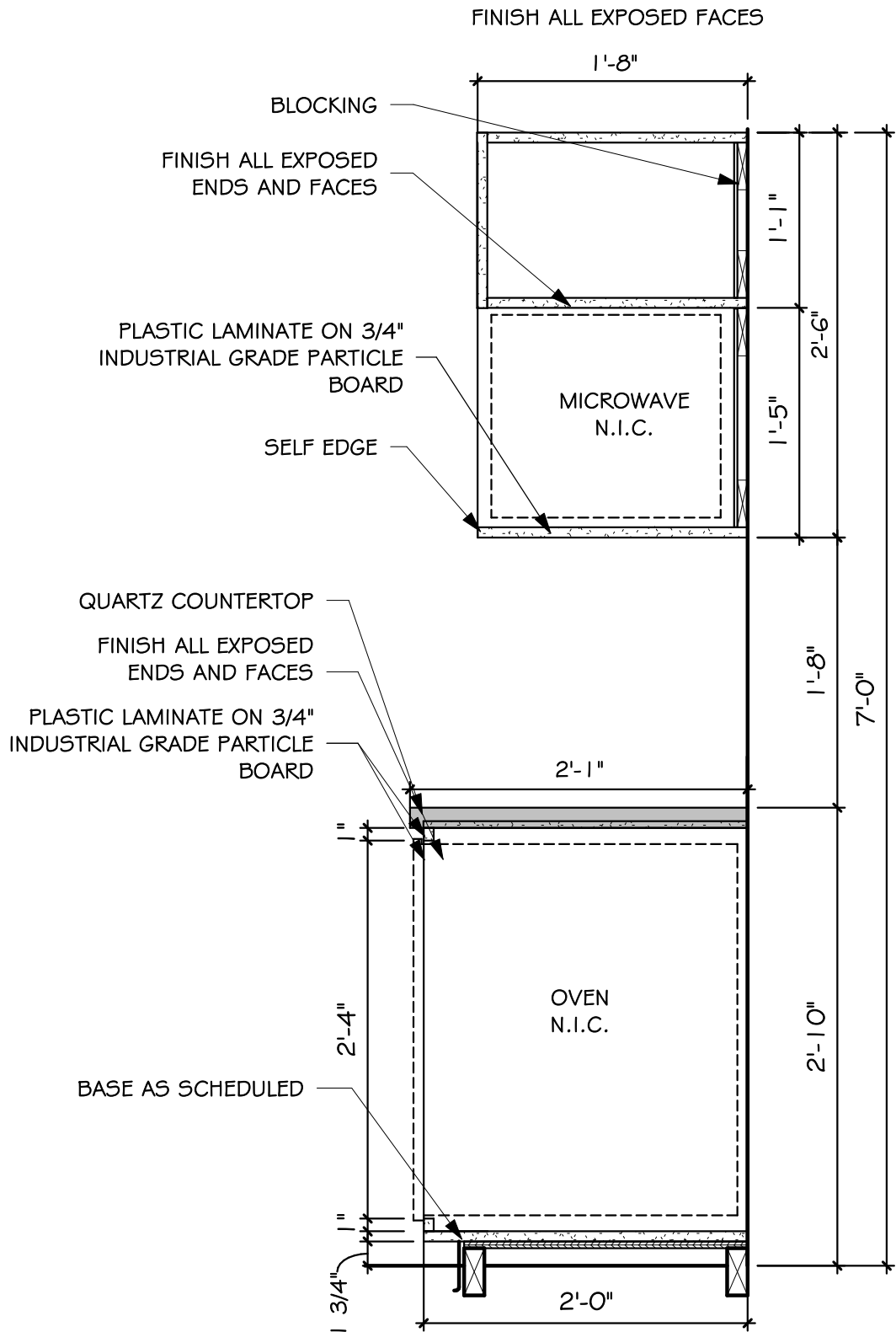
number **0329.2932.21** drawn **DMW** checked **ADE**

date **08.11.2021** revision **ADDENDUM #01**

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1 SD-02 SCALE: 1" = 1'-0" OVEN AND UPPER SHELVING



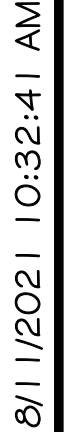
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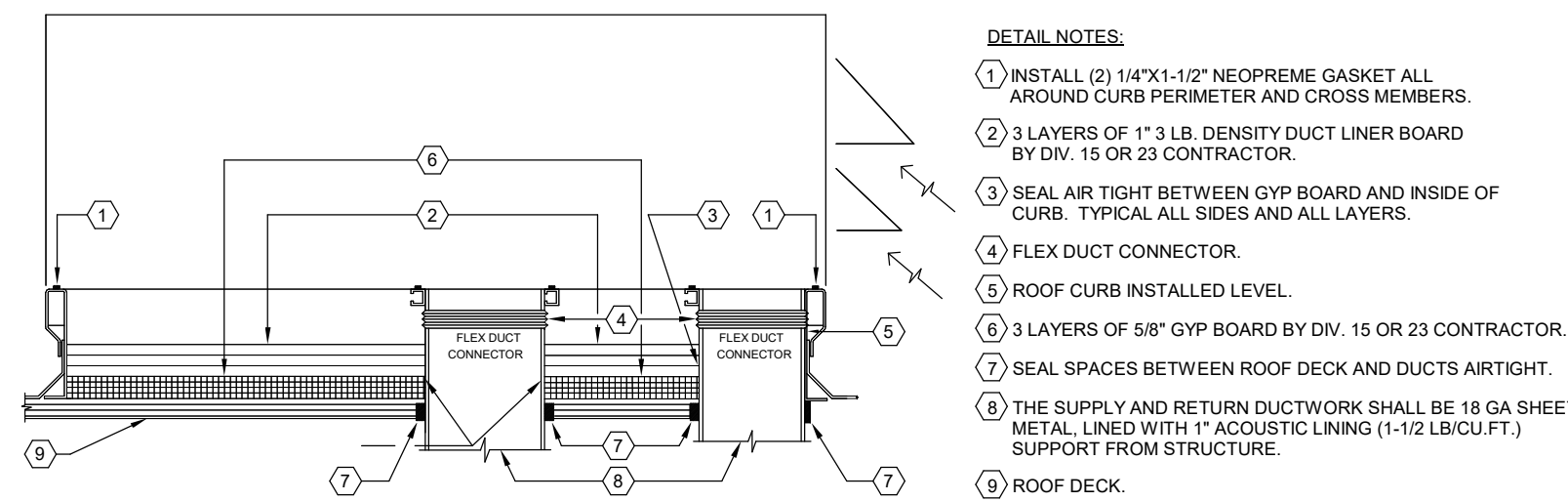
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DRAWING

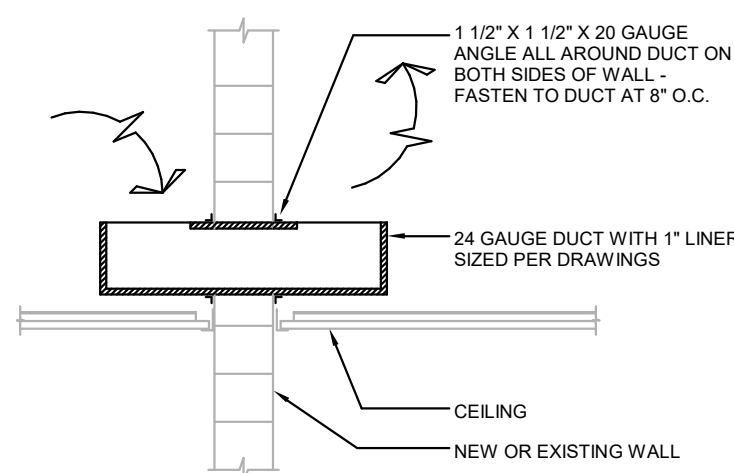
SD-02





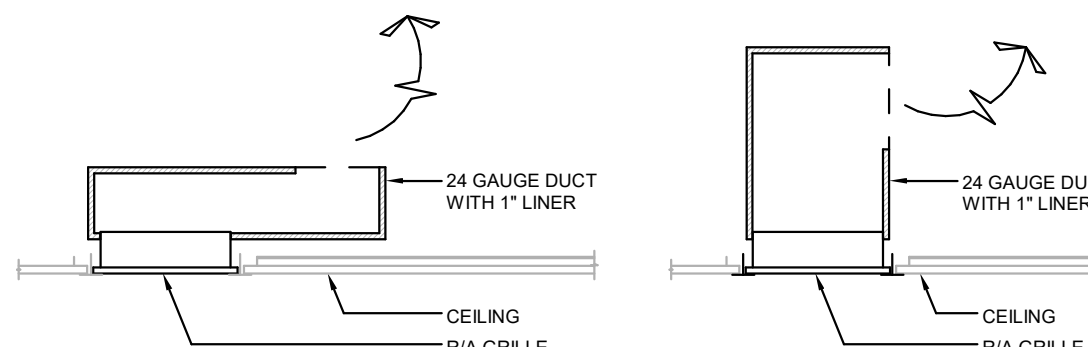
RTU SOUND ISOLATION DETAIL

NO SCALE



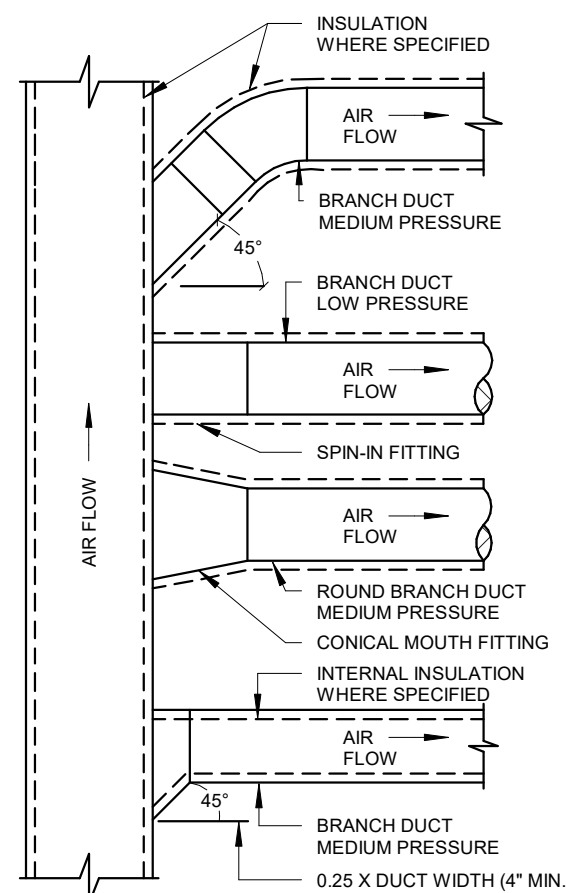
TRANSFER DUCT DETAIL

NO SCALE



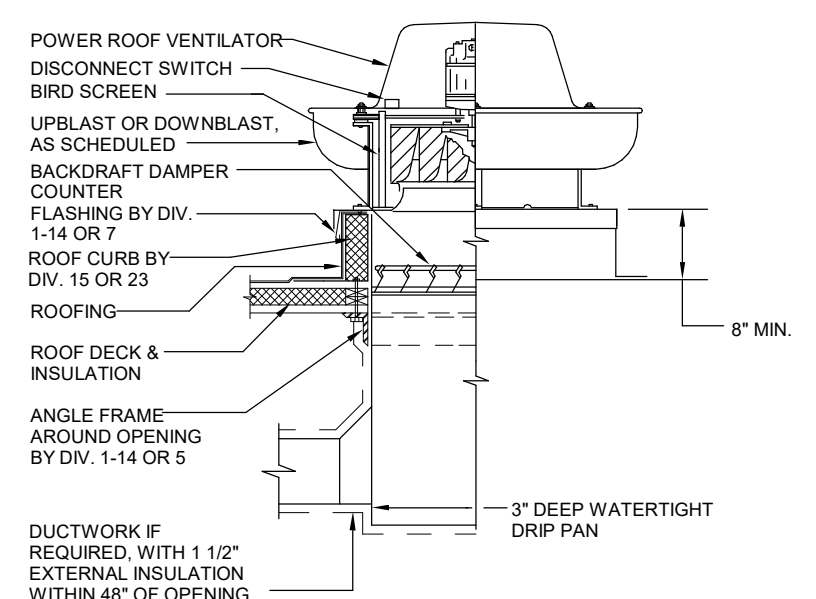
RETURN BOOT DETAIL

NO SCALE



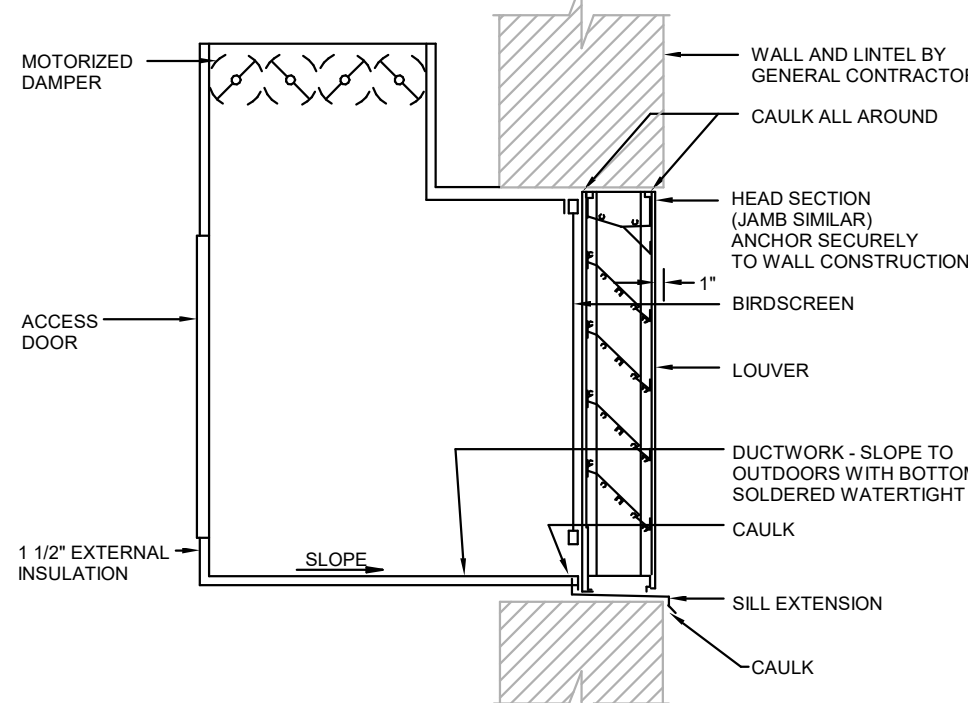
DUCT TAKE-OFF & CONNECTION

NO SCALE



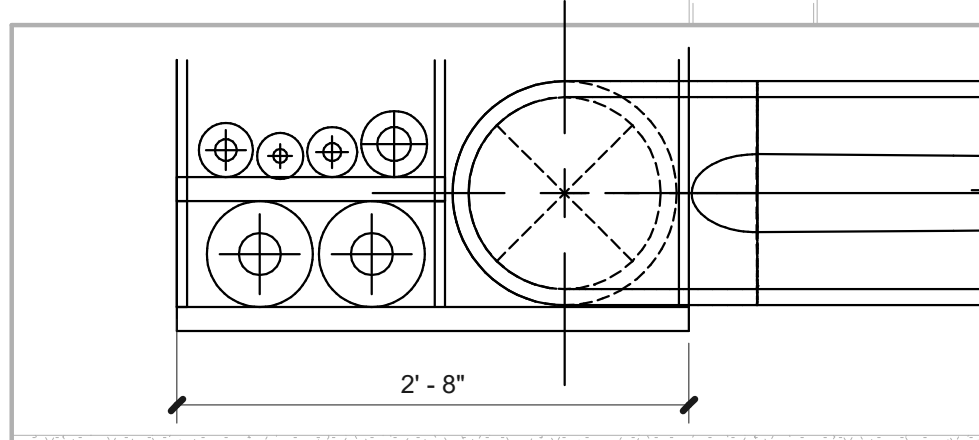
POWER ROOF VENTILATOR DETAIL

NO SCALE



INTAKE AIR LOUVER DETAIL

NO SCALE



SOFFIT DUCTWORK & PIPING DETAIL

NO SCALE

ROOFTOP UNIT SCHEDULE

| UNIT | MANUF. | MODEL NO. | SUPPLY FAN | | | | | EXHAUST FAN | | | | | HEATING COIL CAPACITY | | | | | | | | | | COOLING COIL | | | | | ELECT VOLT | | | | | FILTER | | OPER | | REMARKS | | | |
|-------|--------|---------------------|------------|-----|------|-----|------|-------------|-----|------|-----|------|-----------------------|----------|----------|--------|-----|-----|-----|-----|-----|-----|--------------|-----------|-------------|-------|-----|------------|------|----|-----|------|--------|--------|---------|-------|---------|---------|------|-----------------|
| | | | CFM | ESP | TSP | MHP | BHP | CFM | ESP | TSP | MHP | BHP | MBH | EAT | LAT | FV | APD | EWT | LWT | GPM | WPD | MBH | EAT | LAT | FV | APD | EER | IEER | AMP | PH | MCA | MCCP | TYPE | MAX FV | APD | THICK | | WT(LBS) | | |
| RTU-1 | AARON | RN-020-8-0-KB09-E-L | 8000 | 2.5 | 4.66 | 15 | 8.62 | 8000 | 0.5 | 1.28 | 7.5 | 5.51 | 258 | 58.955.9 | 89.666.2 | 1099.7 | --- | --- | 180 | 150 | 17 | 5 | 222 | 77.563.84 | 54.07/53.83 | 402.8 | --- | 13.2 | 21.5 | 95 | 208 | 3 | 148 | 175 | MERV 13 | 350 | --- | 2" | 3100 | 1,2,3,4,5,6,7,8 |
| RTU-2 | AARON | RN-020-8-0-KB09-E-L | 8000 | 2.5 | 4.66 | 15 | 8.62 | 8000 | 0.5 | 1.28 | 7.5 | 5.51 | 258 | 58.955.9 | 89.666.2 | 1099.7 | --- | --- | 180 | 150 | 17 | 5 | 222 | 77.563.84 | 54.07/53.83 | 402.8 | --- | 13.2 | 21.5 | 95 | 208 | 3 | 148 | 175 | MERV 13 | 350 | --- | 2" | 3100 | 1,2,3,4,5,6,7,8 |

REMARKS:

- HEATING AND COOLING CAPACITIES ARE BASED ON 75% WATER/25% PROPYLENE GLYCOL.
- ESP INCLUDES AN ALLOWANCE 0.5" FOR DIRTY FILTERS.
- PROVIDE SINGLE POINT POWER CONNECTION AND ELECTRICAL DISCONNECT. COORDINATE SCOR RATING WITH ELECTRICAL CONTRACTOR.
- PROVIDE 100% ECONOMIZER WITH MODULATING POWERED EXHAUST.
- PROVIDE 2 SCROLL COMPRESSORS WITH ONE COMPRESSOR BEING A VARIABLE SPEED SCROLL COMPRESSOR.
- FANS CONTROLLED BY VFD.
- PROVIDE CONVENIENCE OUTLET WIRED SEPARATELY FROM THE UNIT.
- PROVIDE STAINLESS STEEL DRAIN PAN.

FAN POWERED VAV TERMINAL SCHEDULE

| UNIT NO. | MANUF. | MODEL NO. | INLET SIZE | CFM | MIN CFM | TERM S.P. | EXT S.P. | RAD NC | DISCH NC | MOTOR HP | MOTOR VOLT | PH | MCCP | EAT | MBH | GPM | WPD | EWT | LWT | REMARKS |
|----------|--------|-----------|------------|------|---------|-----------|----------|--------|----------|----------|------------|----|------|-----|------|-----|-----|-----|-----|-------------|
| FP-140A | PRICE | FDV | 12 | 1400 | 420 | 0.25" | 0.5" | 33 | 34 | 1/2 | 120 | 1 | 15 | 64 | 30.1 | 2.1 | 5 | 180 | 150 | 1,2,3,4,5,6 |
| FP-140B | PRICE | FDV | 12 | 1400 | 420 | 0.25" | 0.5" | 33 | 34 | 1/2 | 120 | 1 | 15 | 64 | 30.1 | 2.1 | 5 | 180 | 150 | 1,2,3,4,5,6 |
| FP-150 | PRICE | FDV | 12 | 1200 | 360 | 0.25" | 0.5" | 33 | 34 | 1/2 | 120 | 1 | 15 | 64 | 30.5 | 2.1 | 5 | 180 | 150 | 1,2,3,4,5,6 |

REMARKS:

- SOUND DATA SHALL BE TAKEN FROM ARI STANDARDS 880 (LATEST PUBLISHED DATA @ 1.5" DELTA P.)
- NC RATING INCLUDE A RETURN INLET ATTENUATOR. PROVIDE RETURN INLET ATTENUATOR.
- EXT. S.P. INCLUDES A COIL APD.
- COIL CAPACITIES ARE BASED ON 75% WATER/25% PROPYLENE GLYCOL.
- PROVIDE ECM MOTOR. ELECTRICAL DISCONNECT BY ELECTRICAL CONTRACTOR.
- SIZE FAN FOR 70% OF THE MAX CFM.

VAV TERMINAL SCHEDULE

| UNIT NO. | MANUF. | MODEL NO. | INLET SIZE | CLG CFM | CLG CFM MAX | HTG CFM | TERM S.P. | RAD NC | DISCH NC | HEATING COIL EAT | MBH | GPM | WPD | EWT | LWT | REMARKS |
|----------|--------|-----------|------------|---------|-------------|---------|-----------|--------|----------|------------------|------|-----|-----|-----|-----|---------|
| VAV-101 | PRICE | SDV | 6 | 300 | 90 | 130 | 0.5" | 20 | 21 | 55 | 8.9 | 0.6 | 5 | 180 | 150 | 1,2,3 |
| VAV-103 | PRICE | SDV | 6 | 300 | 90 | 90 | 0.5" | 20 | 21 | 55 | 3.0 | 0.6 | 5 | 180 | 150 | 1,2,3 |
| VAV-106 | PRICE | SDV | 10 | 900 | 270 | 340 | 0.5" | 23 | 24 | 55 | 23.6 | 1.6 | 5 | 180 | 150 | 1,2,3 |
| VAV-109 | PRICE | SDV | 12 | 1255 | 380 | 380 | 0.5" | 25 | 26 | 55 | 16.9 | 1.2 | 5 | 180 | 150 | 1,2,3 |
| VAV-112 | PRICE | SDV | 8 | 390 | 120 | 130 | 0.5" | 24 | 25 | 55 | 8.9 | 0.6 | 5 | 180 | 150 | 1,2,3 |
| VAV-114 | PRICE | SDV | 8 | 470 | 150 | 180 | 0.5" | 24 | 25 | 55 | 12.5 | 0.9 | 5 | 180 | 150 | 1,2,3 |
| VAV-116 | PRICE | SDV | 6 | 335 | 110 | 130 | 0.5" | 20 | 21 | 55 | 8.9 | 0.6 | 5 | 180 | 150 | 1,2,3 |
| VAV-119 | PRICE | SDV | 12 | 1215 | 370 | 370 | 0.5" | 25 | 26 | 55 | 16.6 | 1.1 | 5 | 180 | 150 | 1,2,3 |
| VAV-122 | PRICE | SDV | 10 | 900 | 270 | 270 | 0.5" | 23 | 24 | 55 | 13.2 | 0.9 | 5 | 180 | 150 | 1,2,3 |
| VAV-128 | PRICE | SDV | 8 | 525 | 160 | 160 | 0.5" | 24 | 25 | 55 | 4.9 | 0.5 | 5 | 180 | 150 | 1,2,3 |
| VAV-129 | PRICE | SDV | 6 | 205 | 70 | 70 | 0.5" | 20 | 21 | 55 | 2.5 | 0.5 | 5 | 180 | 150 | 1,2,3 |
| VAV-133 | PRICE | SDV | 6 | 250 | 80 | --- | 0.5" | 20 | 21 | 55 | --- | --- | --- | --- | --- | 4 |
| VAV-135 | PRICE | SDV | 6 | 230 | 70 | 70 | 0.5" | 20 | 21 | 55 | 2.5 | 0.5 | 5 | 180 | 150 | 1,2,3 |
| VAV-136 | PRICE | SDV | 6 | 285 | 30 | 30 | 0.5" | 20 | 21 | 55 | 2.3 | 0.5 | 5 | 180 | 150 | 1,2,3 |
| VAV-139A | PRICE | SDV | 10 | 800 | 240 | 240 | 0.5" | 23 | 24 | 55 | 15.7 | 1.1 | 5 | 180 | 150 | 1,2,3 |
| VAV-139B | PRICE | SDV | 10 | 800 | 240 | 240 | 0.5" | 23 | 24 | 55 | 16.0 | 1.1 | 5 | 180 | 150 | 1,2,3 |
| VAV-151 | PRICE | SDV | 10 | 850 | 260 | 260 | 0.5" | 23 | 24 | 55 | 7.4 | 0.5 | 5 | 180 | 150 | 1,2,3 |
| VAV-153 | PRICE | SDV | 12 | 1240 | 380 | 380 | 0.5" | 25 | 26 | 55 | 16.8 | 1.2 | 5 | 180 | 150 | 1,2,3 |
| VAV-157 | PRICE | SDV | 10 | 930 | 280 | 280 | 0.5" | 23 | 24 | 55 | 12.1 | 0.8 | 5 | 180 | 150 | 1,2,3 |
| VAV-169 | PRICE | SDV | 6 | 300 | 90 | 90 | 0.5" | 20 | 21 | 55 | 5.9 | 0.5 | 5 | 180 | 150 | 1,2,3 |
| VAV-171 | PRICE | SDV | 8 | 395 | 120 | 120 | 0.5" | 24 | 25 | 55 | 7.3 | 0.5 | 5 | 180 | 150 | 1,2,3 |
| VAV-180 | PRICE | SDV | 6 | 220 | 70 | 70 | 0.5" | 20 | 21 | 55 | 1.7 | 0.5 | 5 | 180 | 150 | 1,2,3 |
| VAV-182 | PRICE | SDV | 6 | 250 | 80 | --- | 0.5" | 20 | 21 | 55 | --- | --- | --- | --- | --- | 4 |

REMARKS:

- SOUND DATA SHALL BE TAKEN FROM ARI STANDARDS 880 (LATEST PUBLISHED DATA @ 1.5" DELTA P.)
- EXT. S.P. INCLUDES A COIL APD.
- COIL CAPACITIES ARE BASED ON 75% WATER/25% PROPYLENE GLYCOL.
- COOLING ONLY VAV.

FAN SCHEDULE

| FAN NO. | MANUF. | MODEL NO. | TYPE | CFM | S.P. | RPM | TIP SPEED | MOTOR HP | BHP | ELEC. VOLTS | PH | SONES | OPER WT. (LBS) | REMARKS |
|---------|-----------|-----------|------|------|------|------|-----------|----------|------|-------------|----|-------|----------------|---------|
| EF-1 | GREENHECK | G-095-VG | PRV | 475 | 0.3 | 1466 | --- | 1/6 | 0.09 | 115 | 1 | 8.5 | 30 | 1,2 |
| EF-2 | GREENHECK | G-080-VG | PRV | 250 | 0.35 | 1459 | --- | 1/10 | 0.04 | 115 | 1 | 6.8 | 30 | 1,2 |
| EF-3 | GREENHECK | G-140-VG | PRV | 1890 | 0.3 | 1180 | --- | 1/2 | 0.31 | 115 | 1 | 10.6 | 60 | 1,2 |
| EF-4 | GREENHECK | G-097-VG | PRV | 135 | 0.3 | 1041 | --- | 1/4 | 0.03 | 115 | 1 | 4.1 | 40 | 1,2 |

REMARKS:

- PROVIDE ECM MOTOR, FAN SPEED CONTROLLER, INTEGRAL ELECTRICAL DISCONNECT.
- PROVIDE INSULATED ROOF CURB AND BACKDRAFT DAMPER.

REGISTER GRILLE & DIFFUSER SCHEDULE

| SYMBOL | MANUF. | CONSTR MAT'L | MODEL NO. | MAX CFM | OVERALL SIZE | THROAT SIZE | NC | THROW | TOTAL PD (IN.W.G.) | FRAME | PATTERNS | REMARKS |
|--------|---------|--------------|-----------|---------|--------------|-------------|-----|-------|--------------------|---------------|-----------|---------|
| D1 | KRUEGER | S | PLQ | 270 | 24/24 | 8 1/8 | 16 | 11 | 0.07 | LAY-INSURFACE | 4-WAY | --- |
| D2 | KRUEGER | S | PLQ | 380 | 24/24 | 10 1/8 | 15 | 13 | 0.08 | LAY-INSURFACE | 4-WAY | --- |
| D3 | KRUEGER | S | 1400 | 575 | 24/24 | 12 1/8 | 30 | 20 | 0.10 | LAY-IN | 4-WAY | --- |
| G1 | KRUEGER | A | EGC5 | 1000 | 24/12 | 22/10 | 25 | --- | 0.08 | LAY-INSURFACE | 1/2" GRID | --- |
| G2 | KRUEGER | A | EGC5 | 1400 | 24/24 | 22/22 | 15 | --- | 0.03 | LAY-INSURFACE | 1/2" GRID | --- |
| G3 | KRUEGER | A | EGC5 | 250 | 12/12 | 10/10 | --- | --- | 0.03 | SURFACE | 1/2" GRID | --- |
| G4 | KRUEGER | A | 5885 | 270 | 16/8 | 14/6 | 17 | 30 | 0.05 | SURFACE | DD | 1 |
| G5 | KRUEGER | A | EGC5 | 2800 | 36/24 | 34/22 | 19 | --- | 0.05 | SURFACE | 1/2" GRID | --- |
| G6 | KRUEGER | S | PTBA-1" | 200 | 4/8 | --- | 23 | 14 | 0.07 | LAY-IN | 2-WAY | 3 |
| G7 | KRUEGER | S | PTBA-1" | 450 | 4/8 | --- | 31 | 35 | 0.09 | LAY-IN | 1-WAY | 4 |
| G8 | KRUEGER | A | 5885 | 150 | 12/8 | 10/6 | --- | 23 | 0.03 | SURFACE | DD | 1,2 |
| G9 | KRUEGER | A | EGC5 | 1400 | 48/10 | 46/8 | 18 | --- | 0.058 | SURFACE | 1/2" GRID | 1 |

LEGEND:

- R - REGISTER
- G - GRILLE
- D - DIFFUSER
- SD - SINGLE DEFLECTION
- DD - DOUBLE DEFLECTION
- A - ALUMINUM CONSTRUCTION
- S - STEEL CONSTRUCTION

GENERAL NOTES:

- THROWS ARE BASED ON TERMINAL VELOCITIES AT 50 FPM.
 - NC VALUES ARE BASED UPON A 100B ROOM ATTENUATION.
 - SEE SPECIFICATIONS FOR OPPOSED BLADE DAMPER REQUIREMENTS.
- REMARKS:
- COLOR BY ARCHITECT.
 - PROVIDE WITH ANODIZED FINISH.
 - PROVIDE (3) 1" SLOTS WITH 2-WAY OPPOSITE THROW. COORDINATE FRAME TYPE WITH ARCHITECTURAL CEILING PLANS.
 - PROVIDE (4) 1" SLOTS WITH 1-WAY HORIZONTAL THROW TOWARDS EXTERIOR WINDOWS. COORDINATE FRAME TYPE WITH ARCHITECTURAL CEILING PLANS.

LOUVER SCHEDULE

| LVR NO. | MANUF. | MODEL NO. | SIZE W X H X D | FREE AREA S.F. | CFM | VEL FPM | PD IN. WG | REMARKS |
|---------|-----------|-----------|----------------|----------------|------|---------|-----------|---------|
| LVR1 | GREENHECK | ESD-635 | 48 X 27 X 6 | 4.5 | 2025 | 452 | 0.03 | 1 |

REMARKS:

- COLOR BY ARCHITECT.

WATER HEATER SCHEDULE

| UNIT NO. | MANUF. | MODEL NO. | TANK (GALLONS) | INPUT (MBH) | EFF. | RECOVERY @ 95° GPH | ELECTRICAL VOLTS | PH | REMARKS |
|----------|----------|-----------|----------------|-------------|------|--------------------|------------------|----|---------|
| WHTR-1 | AO SMITH | BTH-120 | 60 | 120 | 95% | 145 | 120 | 1 | ALL |

REMARKS:

- ASME T&P RELIEF VALVE.
- PROVIDE WITH AMTROL ST-5 EXPANSION TANK, OR EQUAL.
- DIRECT VENT/SEALED COMBUSTION. PROVIDE WITH CONCENTRIC VENT KIT. SIZE AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE CONDENSATE NEUTRALIZATION KIT.
- PROVIDE CORD & PLUG.

WATER SOFTENER SCHEDULE

| UNIT NO. | MANUF. | MODEL NO. | PEAK FLOW GPM | PSI DROP | CONT. FLOW GPM | PSI DROP | RESIN SIZE (CU. FT.) | ELECTRICAL VOLTS | PH | REMARKS |
|----------|----------|-----------|---------------|----------|----------------|----------|----------------------|------------------|----|---------|
| WS-1 | CULLIGAN | CTM-90 | 75 | 25 | 57 | 15 | 3 | 120 | 1 | ALL |

REMARKS:

- SIMPLEX WATER SOFTENER CONFIGURATION WITH BRINE TANK.
- UNIT SHALL BE CAPABLE OF MEASURING 1.0 GPM MINIMUM FLOW.
- UNIT SHALL BE CAPABLE OF METERING REGENERATION CONTROL.
- INSTALL WITH ALL MANUFACTURERS RECOMMENDED VALVES, ACCESSORIES, AND INTERCONNECTING PIPING REQUIRED TO MAKE A COMPLETE SYSTEM.
- INSTALL ON 4" CONCRETE PAD. PAD BY THE GENERAL CONTRACTOR.

BOILER SCHEDULE

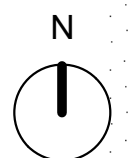
| UNIT NO. | MANUF. | MODEL NO. | AGA INPUT (MBH) | AGA OUTPUT (MBH) | OPER EFF. (%) | BURNER VOLT | PH | AMPS | OPER WT (LBS) | REMARKS |
|----------|-------------------|-----------|-----------------|------------------|---------------|-------------|----|------|---------------|---------|
| B-1 | THERMAL SOLUTIONS | EVS-500 | 500 | 431 | 87 | 120 | 1 | 4.5 | 900 | ALL |
| B-2 | THERMAL SOLUTIONS | EVS-500 | 500 | 431 | 87 | 120 | 1 | 4.5 | 900 | ALL |

REMARKS:

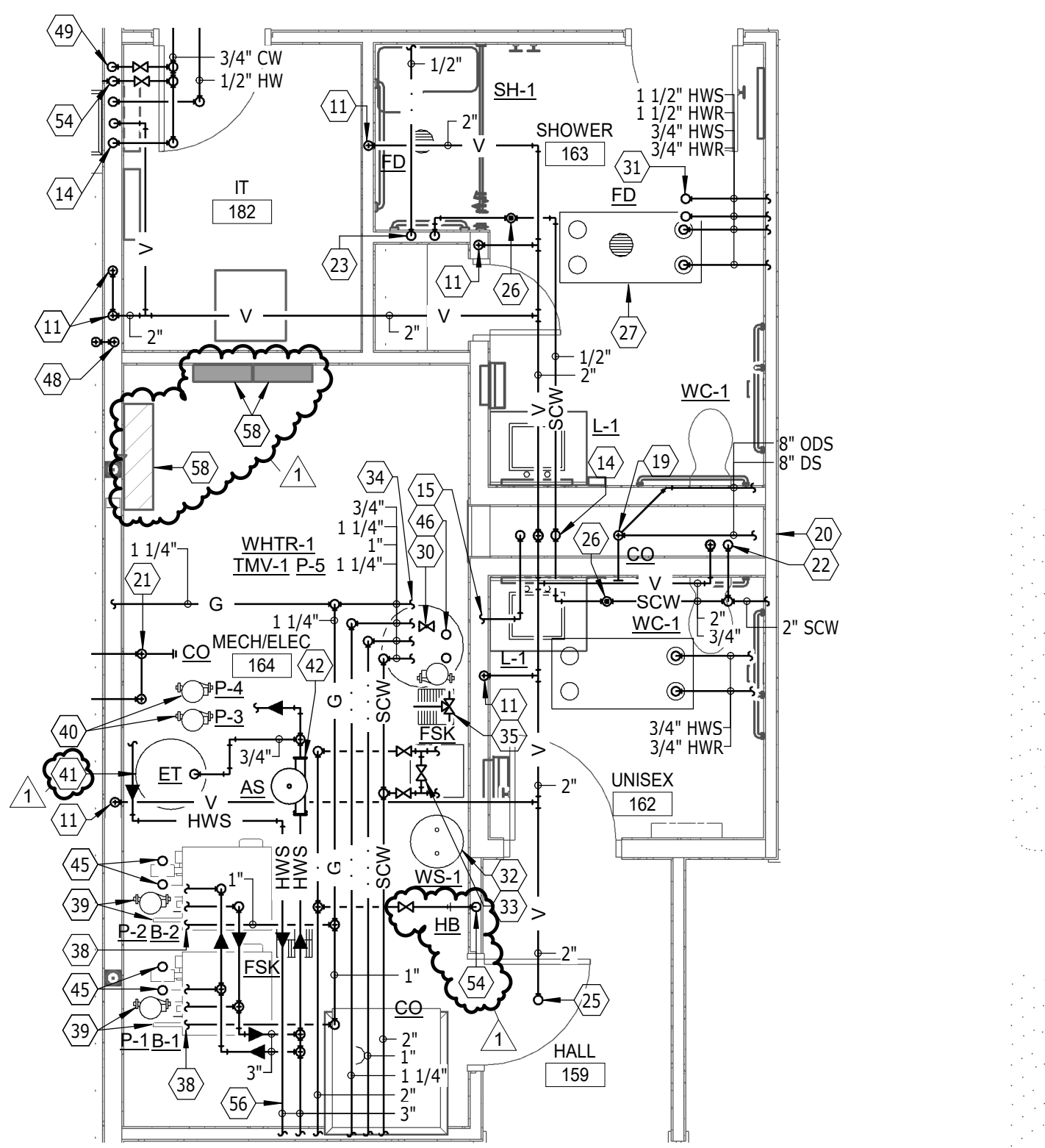
- PROVIDE CONDENSATE NEUTRALIZER.
- PROVIDE EMERGENCY SHUT-OFF MUSHROOM SWITCH.
- PROVIDE WITH VENT AND COMBUSTION AIR PIPING UP THROUGH ROOF. SIZE, MATERIALS, TERMINATIONS, AND INSTALLATION PER MANUFACTURER'S INSTRUCTIONS.

PUMP SCHEDULE

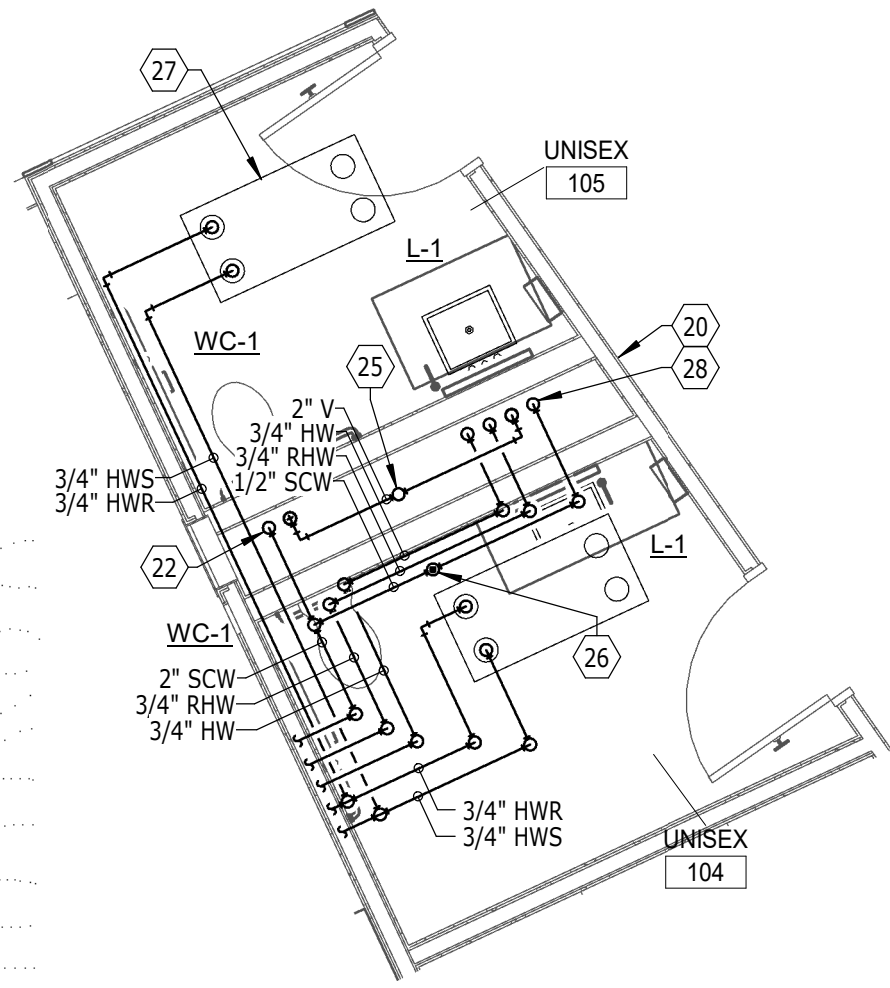
| UNIT NO. | MANUF. | MODEL NO. | DESCRIPTION | STYLE | SIZE | GPM | HEAD (FT) | MHP | BHP | RPM | ELEC VOLTS | PH | SUCTION SIZE | DISCH SIZE | REMARKS |
|----------|--------|-----------|-------------------|--------|---------|-----|-----------|------|-----|------|------------|----|--------------|------------|---------|
| P-1 | BAG | PL-55 | PRIMARY HEATING | INLINE | --- | 30 | 20 | 2/5 | --- | 3450 | 115 | 1 | 1 1/2" | 1 1/2" | 1,2 |
| P-2 | BAG | PL-55 | PRIMARY HEATING | INLINE | --- | 30 | 20 | 2/5 | --- | 3450 | 115 | 1 | 1 1/2" | 1 1/2" | 1,2 |
| P-3 | BAG | E-90 | SECONDARY HEATING | INLINE | 1.25AAB | 48 | 65 | 2 | 1.2 | 3475 | 208 | 3 | 1 1/4" | 1 1/4" | 1,3,4 |
| P-4 | BAG | E-90 | SECONDARY HEATING | INLINE | 1.25AAB | 48 | 65 | 2 | 1.2 | 3475 | 208 | 3 | 1 1/4" | 1 1/4" | 1,3,4 |
| P-5 | BAG | PL-30 | HW RECIRC. | INLINE | --- | 10 | 15 | 1/12 | --- | 2650 | 115 | 1 | 3/4" | 3/4" | 2 |



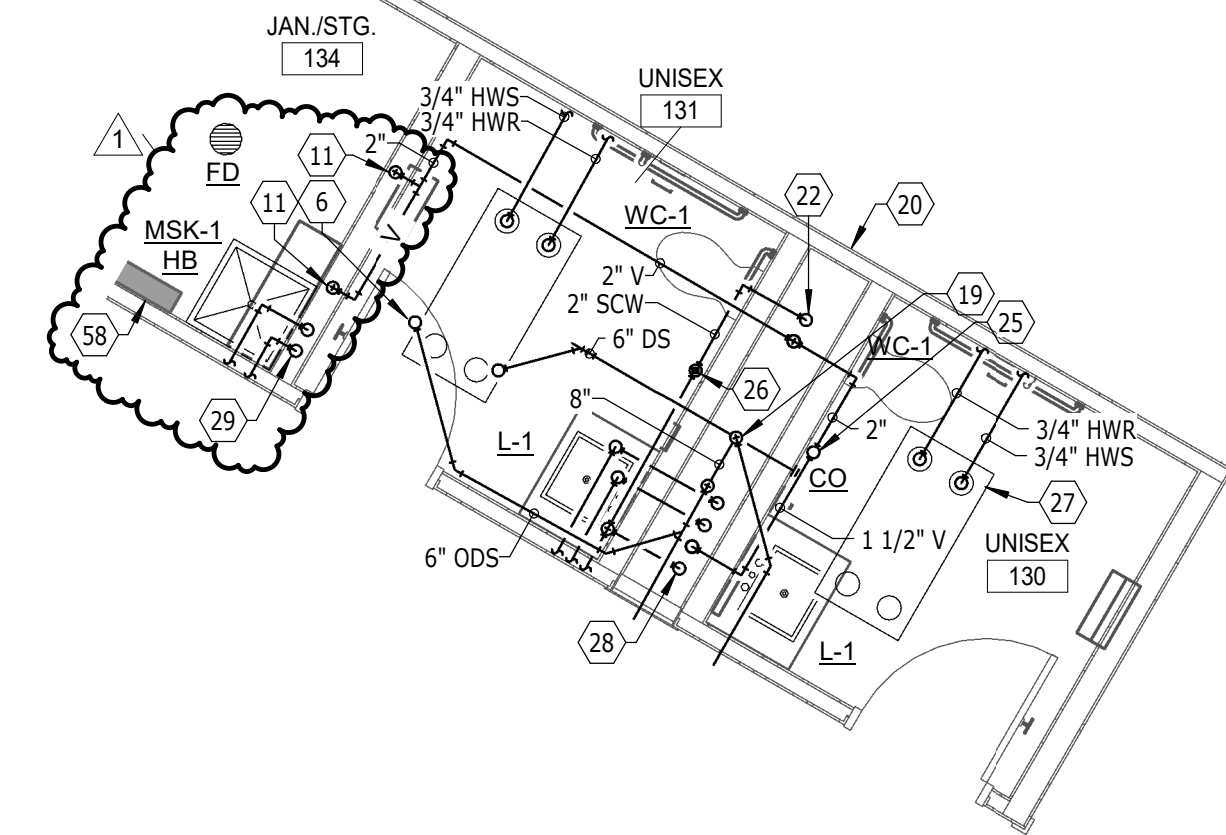
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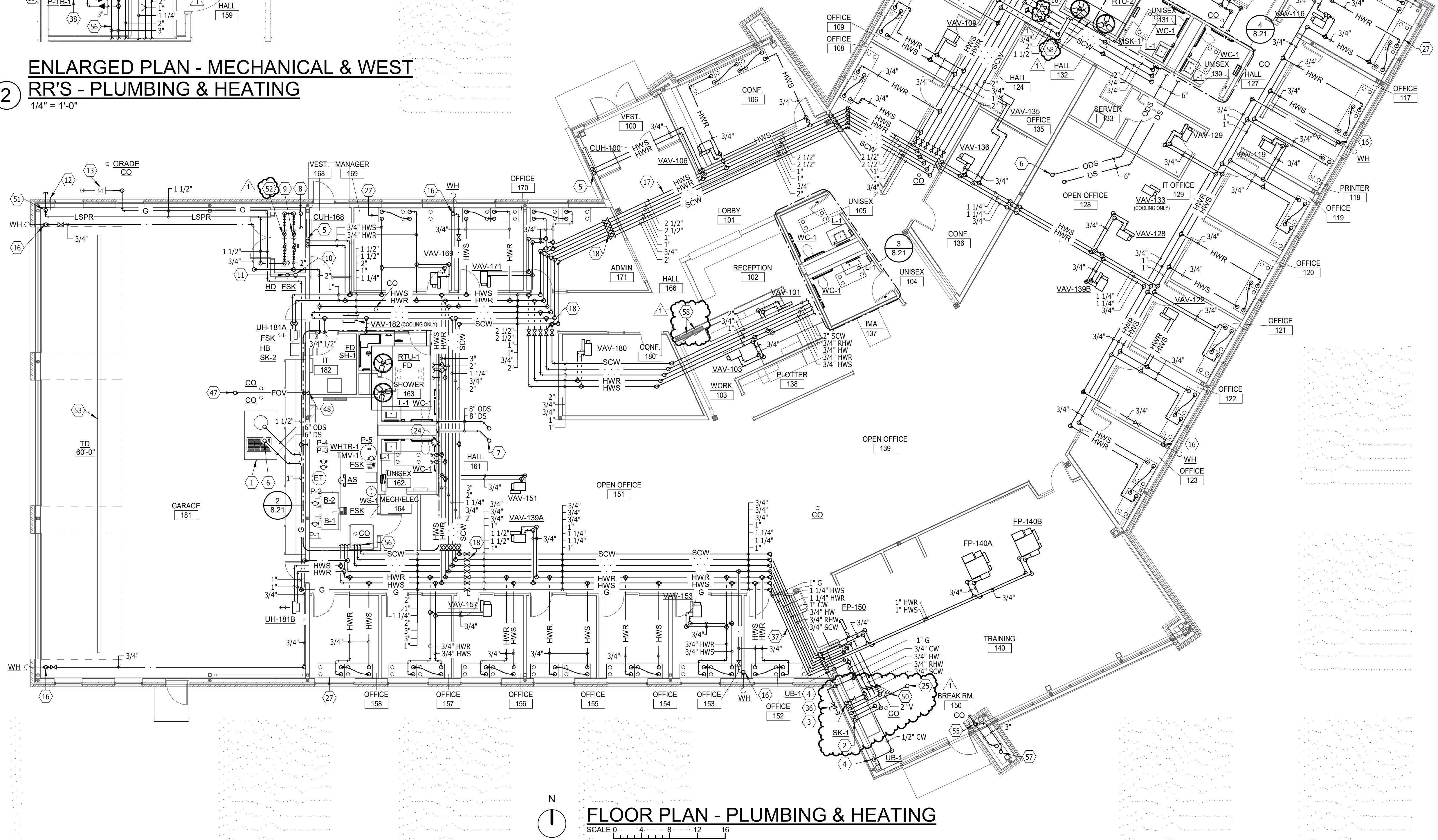
2 ENLARGED PLAN - MECHANICAL & WEST RR'S - PLUMBING & HEATING
1/4" = 1'-0"



3 ENLARGED PLAN - CENTRAL RR'S - PLUMBING & HEATING
1/4" = 1'-0"



4 ENLARGED PLAN - NORTHEAST RR'S - PLUMBING & HEATING
1/4" = 1'-0"



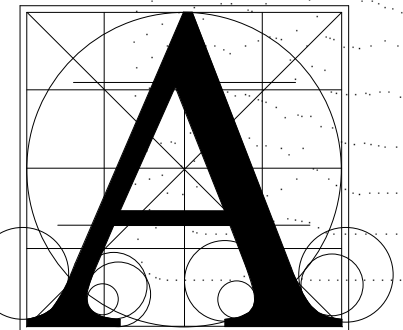
FLOOR PLAN - PLUMBING & HEATING

GENERAL SHEET NOTES

- A. THE CEILING SPACE AVAILABLE REQUIRES COORDINATION WITH OTHER TRADES. THE CONTRACTORS SHALL PROVIDE ALL OFFSETS AND RELOCATE AS REQUIRED TO COORDINATE THE INSTALLATION OF ALL MATERIALS AND EQUIPMENT WITH OTHER TRADES.
- B. ON DEMO DRAWINGS, ITEMS SHOWN LIGHT ARE EXISTING TO REMAIN, ITEMS SHOWN BOLD ARE EXISTING TO BE REMOVED.
- C. ON NEW CONSTRUCTION DRAWINGS, ITEMS SHOWN LIGHT ARE EXISTING TO REMAIN, ITEMS SHOWN BOLD ARE NEW WORK.

PLUMBING & HEATING NOTES

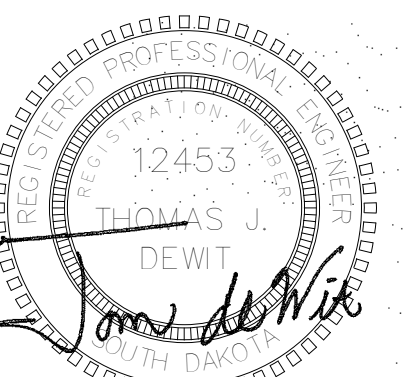
1. SAND-OIL INTERCEPTOR. SEE DETAIL.
2. 3/4" HW DN, 3/4" RHW DN, 1 1/2" V/2" W DN, 1/2" SCW, 1/2" CW DN TO SK. ROUTE HARD WATER TO WATER FILL FAUCET. ROUTE SOFT WATER TO MAIN SINK FAUCET. PROVIDE 1/2" HW TAP OFF OF RECIRCULATION LOOP DN TO FIXTURE FOR SERVICE TO FIXTURE. PROVIDE FLEXIBLE HW SUPPLY FROM RECIRCULATION LOOP AND DRAIN CONNECTION TO ADJACENT DISHWASHER. COORDINATE EXACT EQUIPMENT SELECTIONS, INSTALLATION REQUIREMENTS, ROUGH-IN LOCATIONS, ETC. WITH GENERAL CONTRACTOR AND OWNER-PROVIDED EQUIPMENT PRIOR TO WORK.
3. 1/2" CW DN TO COFFEE MAKER(S). FIELD COORDINATE EXACT NUMBER OF COFFEE MAKERS, EQUIPMENT SELECTIONS, INSTALLATION REQUIREMENTS, ROUGH-IN LOCATIONS, ETC. PRIOR TO WORK.
4. 1/2" CW DN TO UB.
5. 3/4" HWS, 3/4" HWR DN TO CUH. SEE DETAIL.
6. 6" DS UP TO RD, 6" ODS UP TO ORD.
7. 8" DS UP TO RD, 8" ODS UP TO ORD.
8. CONTINUATION BY FIRE PROTECTION CONTRACTOR. FIELD COORDINATE EXACT LOCATION OF BACKFLOW PREVENTER, VALVING, ETC.
9. 2" WATER METER WITH 2" REDUCED PRESSURE BACKFLOW PREVENTER. ROUTE RPZ DRAIN PER "BACKFLOW PREVENTER AND DRAIN DETAIL". CONFIRM THAT INSTALLATION MEETS AHI REQUIREMENTS FOR BACKFLOW PREVENTION ASSEMBLY INSTALLATIONS. PROVIDE SEPARATE SHUTOFF VALVES IN ADDITION TO THE SHUTOFF VALVES THAT ARE INTEGRAL TO THE METER/RPZ ASSEMBLY.
10. 4" V UP/DN (4" VTR), COORDINATE/CONFIRM SO THAT VENT IS AT LEAST 10' FROM NEARBY AIR INTAKES.
11. 2" V DN.
12. FIRE DEPARTMENT CONNECTION. APPROXIMATE LOCATION SHOWN FOR REFERENCE ONLY. COORDINATE LOCATION, SIZE, REQUIREMENTS, ETC. WITH FIRE SPRINKLER CONTRACTOR.
13. GAS METER, 1250 MBH TOTAL. PIPING SIZED AT 2 PSIG (350' TOTAL LENGTH). GAS SERVICE BY GAS UTILITY COMPANY. ALL PIPING AFTER METER BY PLUMBING CONTRACTOR. COORDINATE EXACT LOCATION OF METER, REGULATOR, AND SERVICE WITH GAS COMPANY AND OTHER CONTRACTORS TO ENSURE THAT ALL CLEARANCE REQUIREMENTS ARE MET, PARTICULARLY WITH ANY NEARBY BUILDING OPENINGS, INTAKES, MECHANICAL/ELECTRICAL EQUIPMENT, ETC.
14. 1/2" HW DN, 1 1/2" V/2" W DN, 1/2" CW DN.
15. ROUTE HW TO HW SUPPLY FROM WHTR. CONNECT DOWNSTREAM OF ALL VALVING. FIELD COORDINATE EXACT CONNECTION LOCATION, ROUTING, ETC. PRIOR TO WORK.
16. 3/4" CW DN TO WH.
17. ROUTE PIPING TIGHT IN SOFFIT. SHOWN OFFSET FOR CLARITY. REFER TO "SOFFIT DUCTWORK & PIPING DETAIL" AND ARCHITECTURAL PLANS FOR EXACT LOCATION, SIZE, ETC. FOR COORDINATION OF ROUTING.
18. CALIBRATED BALANCE VALVE.
19. 1" COMBINED DS/ODS DN W/ CO 24" AFF.
20. COORDINATE WITH G.C. TO PROVIDE ACCESS PANEL FOR ACCESS TO PLUMBING IN CHASE.
21. 8" COMBINED DS/ODS DN W/ CO 24" AFF.
22. 2" CW DN, 2" V DN FOR BACK-TO-BACK W.C.S. TEE 1 1/4" CW TO EACH WC.
23. 1/2" CW, 1/2" HW DN TO SK.
24. PROVIDE WITH ACCESSIBLE ISOLATION SHUT-OFF VALVE IN HALLWAY. NOT SHOWN FOR CLARITY.
25. 2" V UP (4" VTR), COORDINATE SO THAT VENT IS AT LEAST 10' FROM ANY NEARBY AIR INTAKES.
26. WATER HAMMER ARRESTOR.
27. AIRTEXT RADIANT SYSTEMS, HPH MODULAR RADIANT CEILING PANELS. 24"x48" (UNLESS SHOWN OTHERWISE), 155 MM T, 1200 BTU/Hr/4' PANEL PERFORMANCE. SMOOTH WHITE SURFACE. 1" MIN INSULATION INSTALLED AT REAR OF PANELS (TYPICAL).
28. 3/4" HW, 3/4" RHW DN, 1 1/2" V/2" W DN, 1/2" CW DN, TEE 1 1/2" HW OFF OF RECIRCULATION LOOP DN TO FIXTURE(S) FOR SERVICE TO FIXTURE(S).
29. 1/2" HW, 3/4" CW DN TO MSK. MOUNT HB AT 60" AFF.
30. CALIBRATED BALANCE VALVE. REFER TO WATER HEATER DETAIL.
31. HWSR UP THROUGH CURB TO RTU. FIELD COORDINATE EXACT LOCATION OF HEATING COIL IN UNIT. CONTINUATION, CONNECTION REQUIREMENTS, ETC. PRIOR TO INSTALLATION. INSTALL VALVING IN ACCESSIBLE LOCATION. SEE DETAIL.
32. WATER SOFTENER AND BRINE TANK SYSTEM. PROVIDE CONTINUATIONS, CONNECTIONS, AND INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.
33. NORMALLY CLOSED BYPASS VALVE.
34. REFER TO WATER HEATER DETAIL FOR CONTINUATION.
35. THERMOSTATIC MIXING VALVE. SEE WATER HEATER DETAIL.
36. G DN, WITH GAS COCK AND CAP. FOR POTENTIAL FUTURE PATIO FIXTURES. LOCATION SHOWN IS APPROXIMATE. CONFIRM/COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO WORK.
37. STACK PIPES ALONG WALL AS ABLE. SHOWN OFFSET FOR CLARITY. FIELD COORDINATE EXACT ROUTING.
38. G, HWSR DN TO BOILER. REFER TO DETAIL FOR CONTINUATION.
39. HOT WATER BOILER AND BOILER CIRCULATION PUMP. SEE DETAIL.
40. INLINE HEATING PUMPS (STACKED). SEE DETAIL.
41. EXPANSION TANK. BELL & GOSSETT MODEL D-144V, OR EQUAL.
42. AIR SEPARATOR. BELL & GOSSETT MODEL R-3, OR EQUAL. SEE DETAIL.
43. PROVIDE CUSTOM RADIANT CEILING PANEL AT THIS LOCATION, 2" WIDE AND APPROX. 6' LENGTH, 155 MM T, 1200 BTU/Hr/4' PANEL PERFORMANCE. SMOOTH WHITE SURFACE. 1" MIN INSULATION INSTALLED AT REAR OF PANEL.
44. VALVED AND CAPPED PIPES FOR FUTURE EXPANSION.
45. VENT AND COMBUSTION AIR UP THROUGH ROOF. SIZE AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE/CONFIRM THAT VENT IS AT LEAST 10' FROM NEARBY AIR INTAKES.
46. CONCENTRIC AIR INTAKE AND VENT UP THROUGH ROOF. SIZE AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE/CONFIRM THAT VENT IS AT LEAST 10' FROM NEARBY AIR INTAKES.
47. 2" FOV UP (4" VTR), COORDINATE/CONFIRM SO THAT VENT IS AT LEAST 10' FROM NEARBY AIR INTAKES.
48. 2" FOV DN.
49. 1/2" CW DN TO ICE MAKER. STUB THROUGH WALL TO ESCUTCHEON. FIELD COORDINATE EXACT EQUIPMENT LOCATION, CONNECTION REQUIREMENTS, ETC. PRIOR TO WORK.
50. PIPING SERVING BREAK ROOM FIXTURES SHOWN FOR CLARITY. PIPING TO DROP IN CHASE AND EXTEND HORIZONTALLY IN WALL BEHIND CABINET TO BE FULLY CONCEALED.
51. 1 1/2" LSPR DN OUT THRU WALL & CAPPED FOR FUTURE CONNECTION.
52. 1" IRRIGATION METER WITH 1 1/2" REDUCED PRESSURE BACKFLOW PREVENTER. ROUTE RPZ DRAIN PER "BACKFLOW PREVENTER AND DRAIN DETAIL". CONFIRM THAT INSTALLATION MEETS AHI REQUIREMENTS FOR BACKFLOW PREVENTION ASSEMBLY INSTALLATIONS. PROVIDE SEPARATE SHUTOFF VALVES IN ADDITION TO THE SHUTOFF VALVES THAT ARE INTEGRAL TO THE METER/RPZ ASSEMBLY. OFFSET IRRIGATION RPZ ASSEMBLY TO AVOID INSTALLING DIRECTLY OVER THE BUILDING WATER METER/RPZ ASSEMBLY. MAINTAIN ALL OTHER METER/RPZ ASSEMBLY CLEARANCES AS REQUIRED BY THE CITY OF SIOUX FALLS.
53. TRENCH DRAIN. ZURN Z886-GFG WITH GALVANIZED DUCTILE IRON FRAME & SLOTTED GRADE - CLASS F OR EQUAL.
54. 3/4" CW DN TO HB.
55. 4" COMBINED DS/ODS DN W/ CO 24" AFF.
56. ROUTE PIPING AROUND ROOF ACCESS HATCH LOCATION TO PROVIDE ACCESSIBILITY. ROUTING SHOWN IS FOR CLARITY ONLY.
57. 3" DS UP TO RD, 3" ODS UP TO ORD.
58. ELECTRICAL EQUIPMENT. MAINTAIN REQUIRED CLEARANCES. JOG/STACK PIPES AS NECESSARY TO MAINTAIN ADEQUATE SPACE FROM ELECTRICAL EQUIPMENT. COORDINATE WITH ELECTRICAL CONTRACTOR. TYP ALL.



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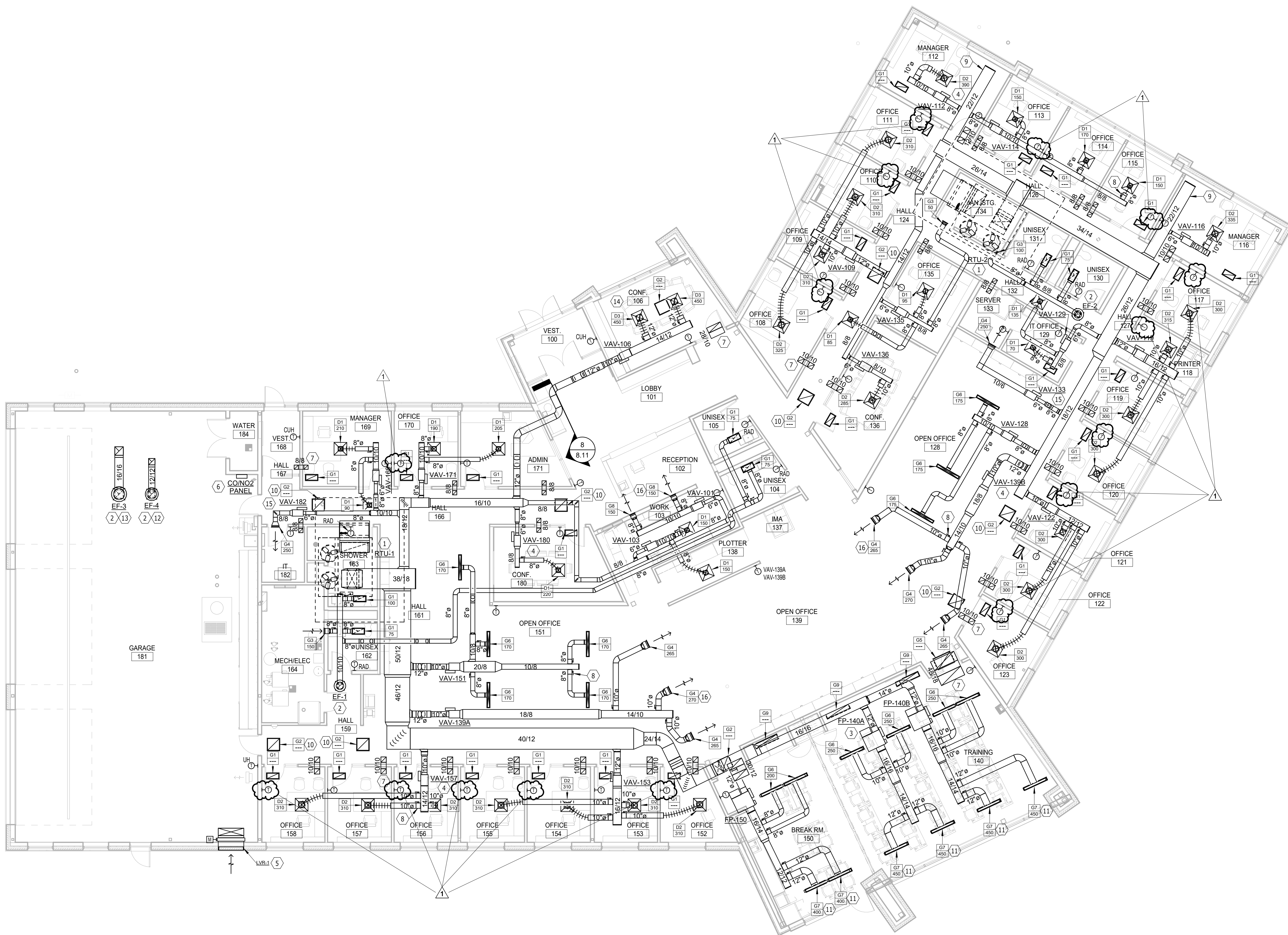
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ACEI PROJ. #121044

DGR OFFICE
FIRST FLOOR PLAN - PLUMBING & HEATING

| | | |
|----------|---------|-------------|
| number | 2932 | |
| date | 7-30-21 | |
| revision | | |
| drawn | TNS | |
| checked | Td | |
| NO. | DATE | DESCRIPTION |
| 1 | 8/11/21 | ADDENDUM #1 |

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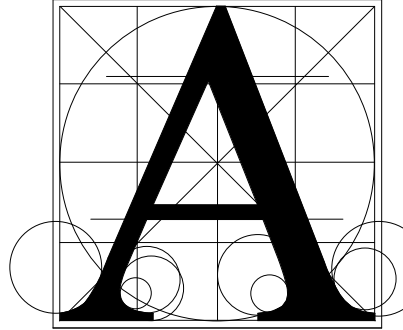
FIRST FLOOR PLAN - VENTILATION & A/C
SCALE 0 4 8 12 16

GENERAL SHEET NOTES

- A. THE CEILING SPACE AVAILABLE REQUIRES COORDINATION WITH OTHER TRADES. THE CONTRACTORS SHALL PROVIDE ALL OFFSETS AND RELOCATE AS REQUIRED TO COORDINATE THE INSTALLATION OF ALL MATERIALS AND EQUIPMENT WITH OTHER TRADES.
- B. ON DEMO DRAWINGS, ITEMS SHOWN LIGHT ARE EXISTING TO REMAIN, ITEMS SHOWN BOLD ARE EXISTING TO BE REMOVED.
- C. ON NEW CONSTRUCTION DRAWINGS, ITEMS SHOWN LIGHT ARE EXISTING TO REMAIN, ITEMS SHOWN BOLD ARE NEW WORK.

VENTILATION NOTES

- 1. ROOFTOP UNIT INSTALLED ON INSULATED ROOF CURB. SEE DETAIL. MAINTAIN MANUFACTURERS CLEARANCES.
- 2. POWERED ROOF VENTILATOR INSTALLED ON INSULATED ROOF CURB. SEE DETAIL. MAINTAIN MANUFACTURERS CLEARANCES.
- 3. FAN POWERED VAV BOX WITH REHEAT COIL INSTALLED ABOVE CEILING. PROVIDE SOUND ATTENUATION BOOT. (TYP)
- 4. SHUT-OFF TYPE VAV BOX WITH REHEAT COIL INSTALLED ABOVE CEILING. (TYP)
- 5. INTAKE LOUVER. SEE DETAIL.
- 6. COIN2Z PANEL. PROVIDE SENSORS AS REQUIRED FOR FULL COVERAGE OF GARAGE. INTERLOCK WITH ASSOCIATED FANS AND MOTORIZED DAMPER ON LVR-1.
- 7. TRANSFER AIR DUCT INSTALLED ABOVE CEILING. SEE DETAIL.
- 8. BALANCE DAMPER (TYP)
- 9. DUCTWORK SIZED FOR FUTURE EXPANSION.
- 10. PROVIDE THIS GRILLE UNDER ALTERNATE #1 ONLY.
- 11. PROVIDE WITH ONE DIRECTION AIMED TOWARDS EXTERIOR WINDOWS.
- 12. CONTINUOUS MINIMUM EXHAUST FAN. PROVIDE BIRDSCREEN OVER OPENING.
- 13. INTERLOCK EXHAUST FAN WITH COIN2Z CONTROL PANEL AND MOTORIZED DAMPER ON INTAKE LOUVER. PROVIDE BIRDSCREEN OVER OPENING.
- 14. DIFFUSER/GRILLES INSTALLED IN LAY-IN CEILING ABOVE WOOD CEILING FEATURE.
- 15. COOLING ONLY VAV (NO REHEAT COIL).
- 16. SIDEWALL SUPPLY GRILLE. COORDINATE LOCATIONS WITH GENERAL CONTRACTOR. COLOR AND FINISH BY ARCHITECT.



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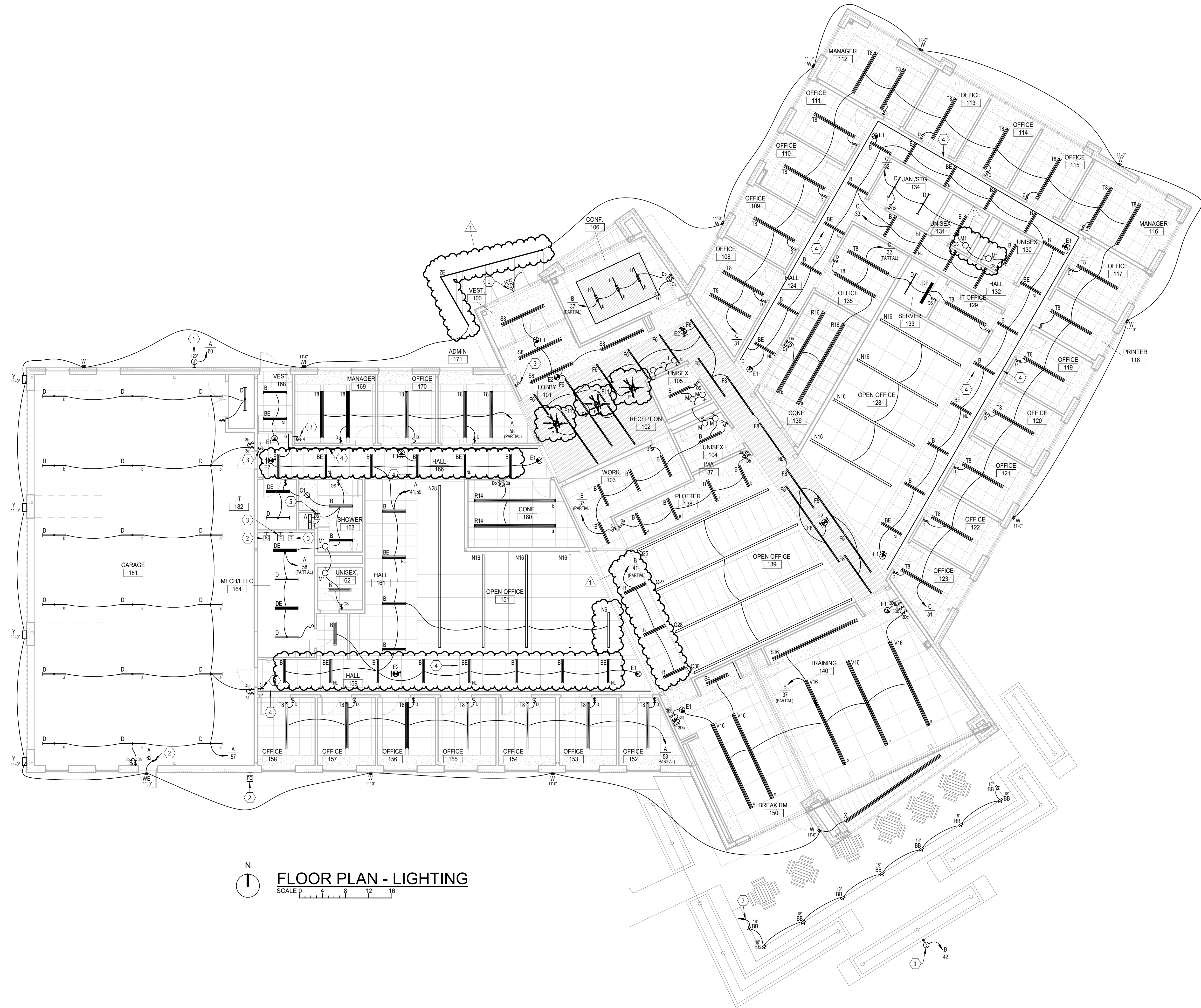
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FIRST FLOOR PLAN - VENTILATION & A/C

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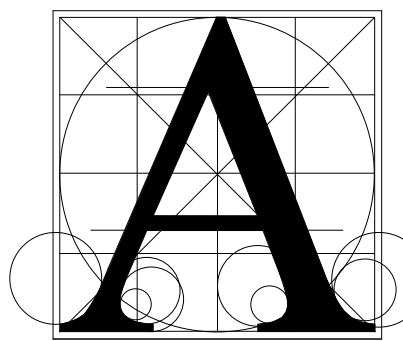
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FLOOR PLAN - LIGHTING

ELECTRICAL NOTES

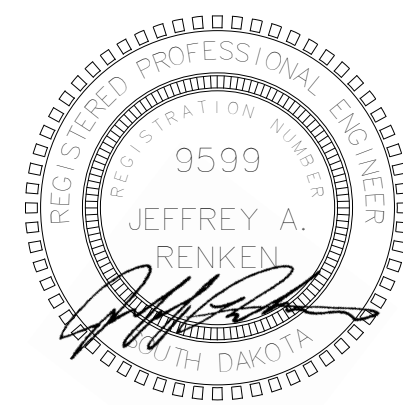
1. PROVIDE ELECTRICAL CONNECTIONS FOR BUILDING SIGNAGE. CONTROL VIA TIMECLOCK/PHOTOCELL. VERIFY EXACT REQUIREMENTS DURING INSTALL WITH SIGNAGE PROVIDER.
2. CONTROL EXTERIOR/SITE LIGHTING VIA TIMECLOCK/PHOTOCELL. SEE LIGHTING CONTROL DIAGRAM.
3. PROVIDE LIGHTING CONTACTOR INTERLOCKED WITH LOCAL OVERRIDE SWITCHES FOR ALL PUBLIC AREA INTERIOR LIGHTING. LIGHTING TO BE CONTROLLED VIA TIMECLOCK TO BE ON/OFF DURING NORMAL BUSINESS HOURS. OVERRIDE SWITCHES SHALL ALLOW AFTER HOURS ON/OFF CONTROL IN PARALLEL WITH TIMECLOCK.
4. DEDUCT ALTERNATE: BASE BID INCLUDES LIGHTING AS SHOWN. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR LIGHTING ALTERNATE RELATED TO TYPE B/B (CENTERED) AND DELETION OF TYPE G LED COVE LIGHTING.
5. PROVIDE DOOR SWITCH FOR AUTOMATIC ON/OFF CONTROL OF CLOSET LIGHT.



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Sheet Contents **FLOOR PLAN - LIGHTING**

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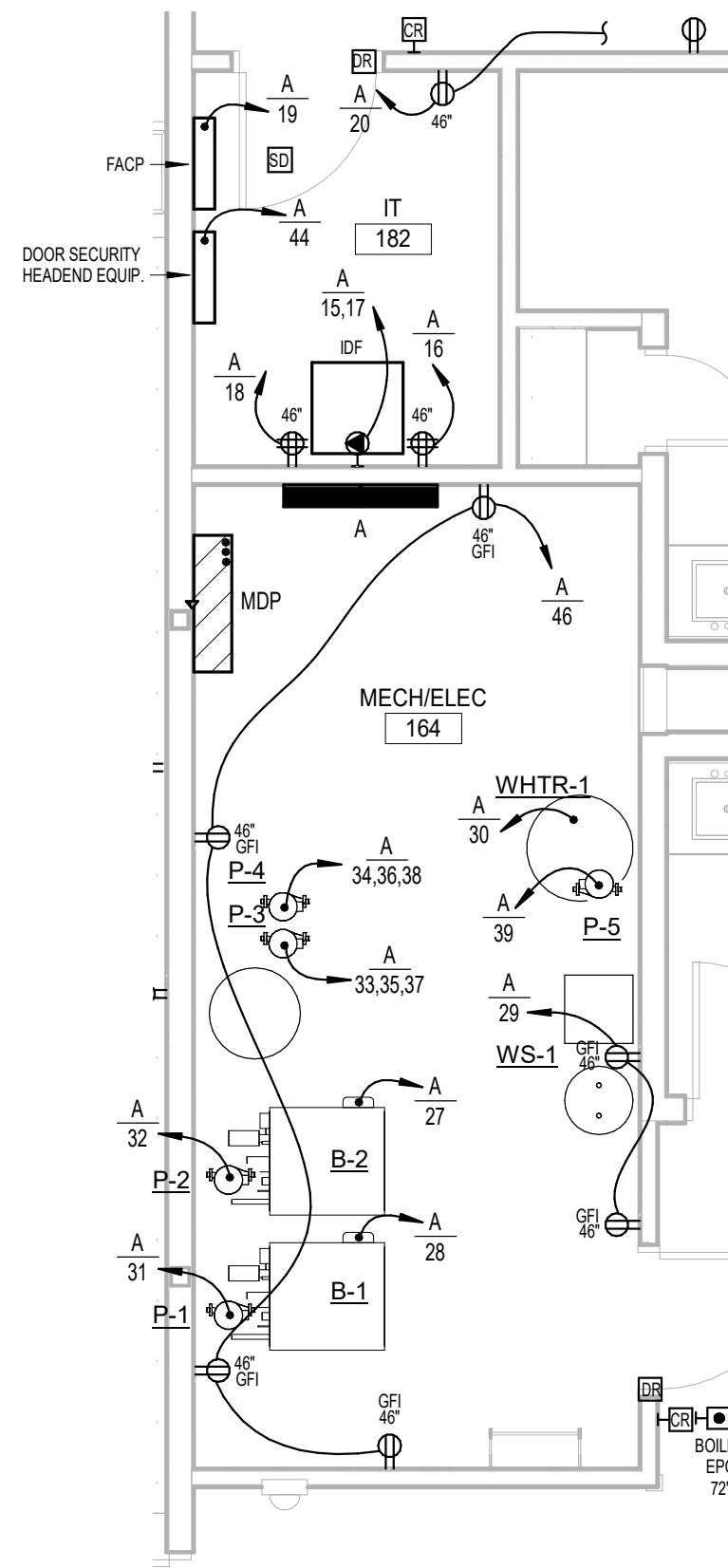
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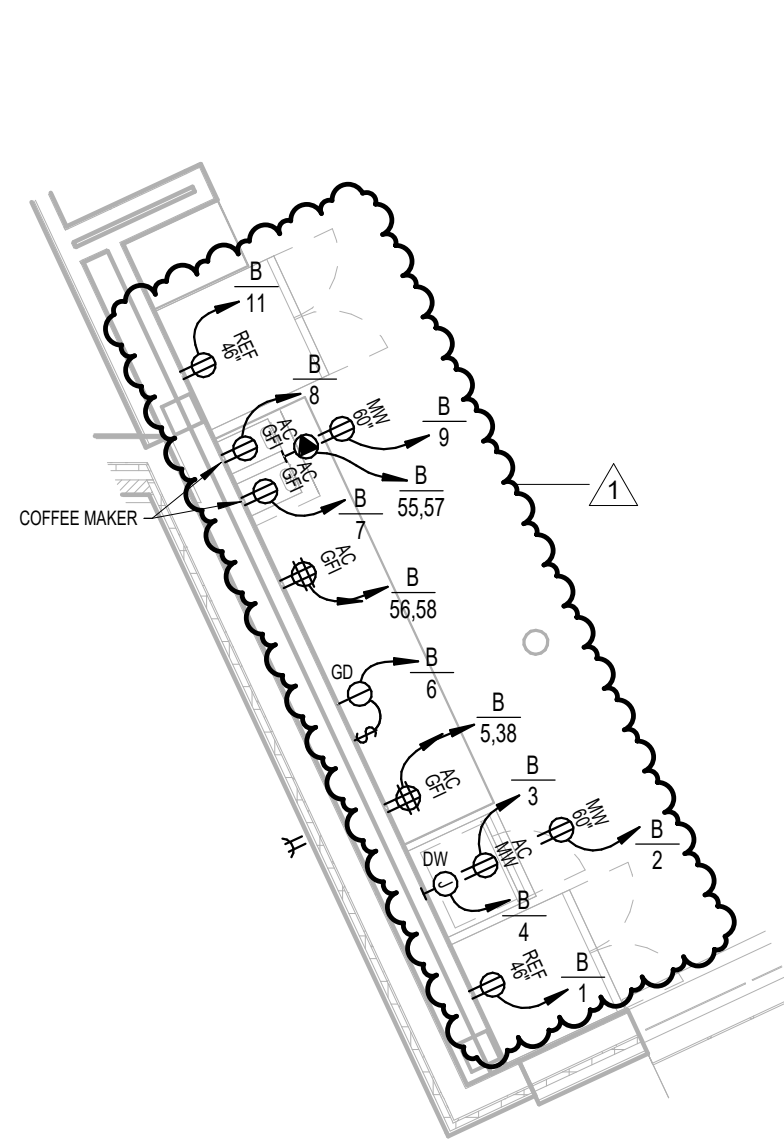
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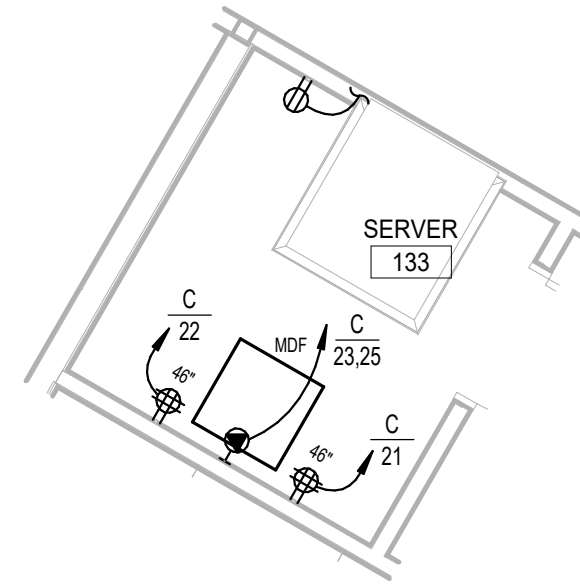
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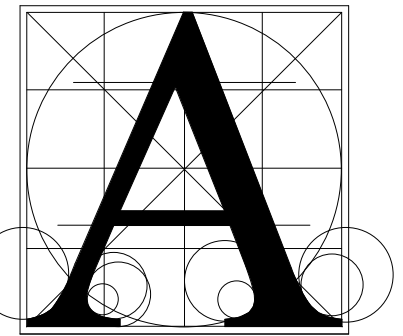
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ENLARGED SERVER 133 - POWER & SIGNAL
SCALE 0 2 4 6 8



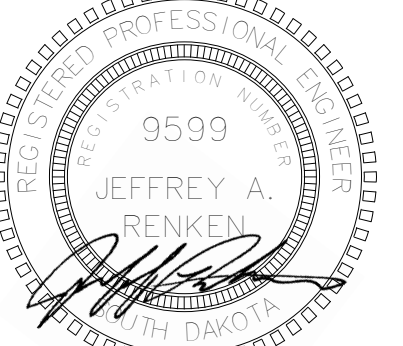
- ELECTRICAL NOTES**
1. PROVIDE POWER AND COMMUNICATIONS OUTLETS FOR SYSTEMS FURNITURE. COORDINATE EXACT REQUIREMENTS WITH FURNITURE SUPPLIER.
 2. VERIFY QUANTITY OF FLOW AND TAMPER SWITCHES WITH FIRE SPRINKLER CONTRACTOR.
 3. STUB-OUT 1" C. RACEWAY BELOW GRADE FOR LAWN IRRIGATION CONTROL WIRING.
 4. PROVIDE ELECTRICAL CONNECTIONS FOR CO/NO2 DETECTION SYSTEM. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION AND REQUIREMENTS.
 5. PROVIDE (4) 1" C. RACEWAYS FROM TELECOM. AV. ETC. TO ALLOW A PATHWAY FROM ONE SIDE OF THE BUILDING TO THE OTHER.
 6. PROVIDE 1.25" C. RACEWAY FROM FLOOR BOX TO TV LOCATION LOWER / UPPER, AND FROM TV LOCATION LOWER / UPPER TO ACCESSIBLE CEILING SPACE TO ACCOMMODATE OWNER PROVIDED AUDIO/VIDEO CABLING. PROVIDE HDMI FROM FLOOR BOX TO TV LOCATION. COORDINATE EXACT REQUIREMENTS WITH FURNITURE SUPPLIER.
 7. NOT USED.
 8. PROVIDE 120V ELECTRICAL CONNECTIONS TO POWER SHADE ASSEMBLY AND ASSOCIATED CONTROLLER. COORDINATE EXACT REQUIREMENTS AND CONNECTION LOCATION.
- GENERAL SHEET NOTES**
- A. TELECOMMUNICATIONS OUTLETS TO BE COMPRISED OF (2D) VOIP DATA DROPS PER LOCATION UNLESS OTHERWISE NOTED. CABLING TO BE CAT.6. PROVIDE ALL CONNECTIONS AND ASSOCIATED ITEMS AS REQUIRED FOR SYSTEM INTEGRITY. SEE SPECIFICATIONS.
 - B. TELEVISION OUTLET SHALL HAVE RG6 COAX CABLING. AND SHALL HAVE (1D) SHIELDED CAT.6 CABLING.
 - C. SECURITY CAMERAS SHALL HAVE (1D) SHIELDED CAT.6 CABLING.
 - D. WIRELESS ACCESS POINTS (WAP) TO HAVE (2D) CAT.6 PER LOCATION. PROVIDE CABLING AND TERMINATIONS. WAP DEVICES SUPPLIED BY OWNER. INSTALLED BY ELECTRICAL CONTRACTOR.
 - E. DUCT SMOKE DETECTORS SHALL BE PLACED IN RETURN DUCTWORK IN CEILING CAVITY BELOW UNITS AT ACCESSIBLE LOCATION WITH REMOTE INDICATOR AT VISIBLE LOCATION IN CEILING SPACE BELOW.
 - F. COORDINATE QUANTITY AND LOCATION OF FIRE SMOKE DAMPERS WITH MECHANICAL CONTRACTOR. PROVIDE ELECTRICAL CONNECTIONS, INITIATION DEVICES, ETC. AS REQUIRED.
 - G. PROVIDE ELECTRICAL CONNECTIONS FOR EXTERIOR DOOR ENTRY / ACCESS SYSTEM AND EACH DEVICE (CARD READER, DOOR RELEASE, ECT.) AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. PLENUM-RATED CABLING SHALL BE MULTI-CONDUCTOR (24V) PER MANUFACTURER RECOMMENDATIONS (CARD READER: 226 TWISTED, STRANDED, SHIELDED - ELECTRIC STRIKE: 162 TWISTED, STRANDED, SHIELDED).
 - H. GFI CIRCUIT BREAKERS ALLOWED IN LIEU OF GFI RECEPTACLES.



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Sheet Contents **FLOOR PLAN - POWER & SIGNAL**

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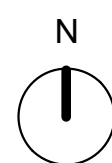
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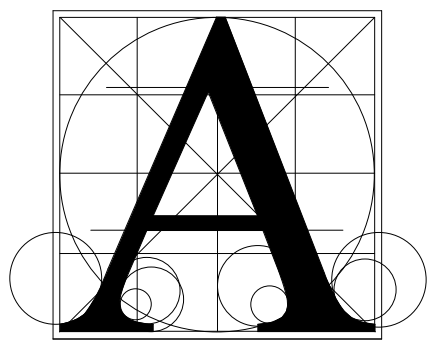
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ROOF PLAN - ELECTRICAL
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ELECTRICAL NOTES

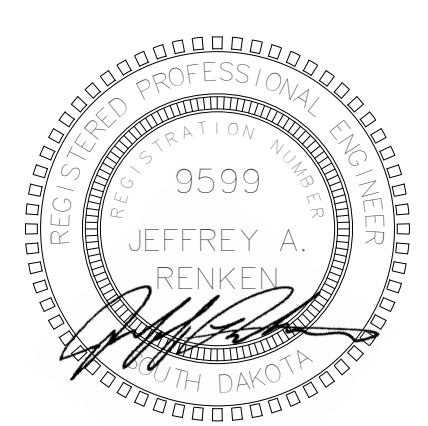
1 PROVIDE HEAT TRACE FOR ROOF DRAIN ASSEMBLY.



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