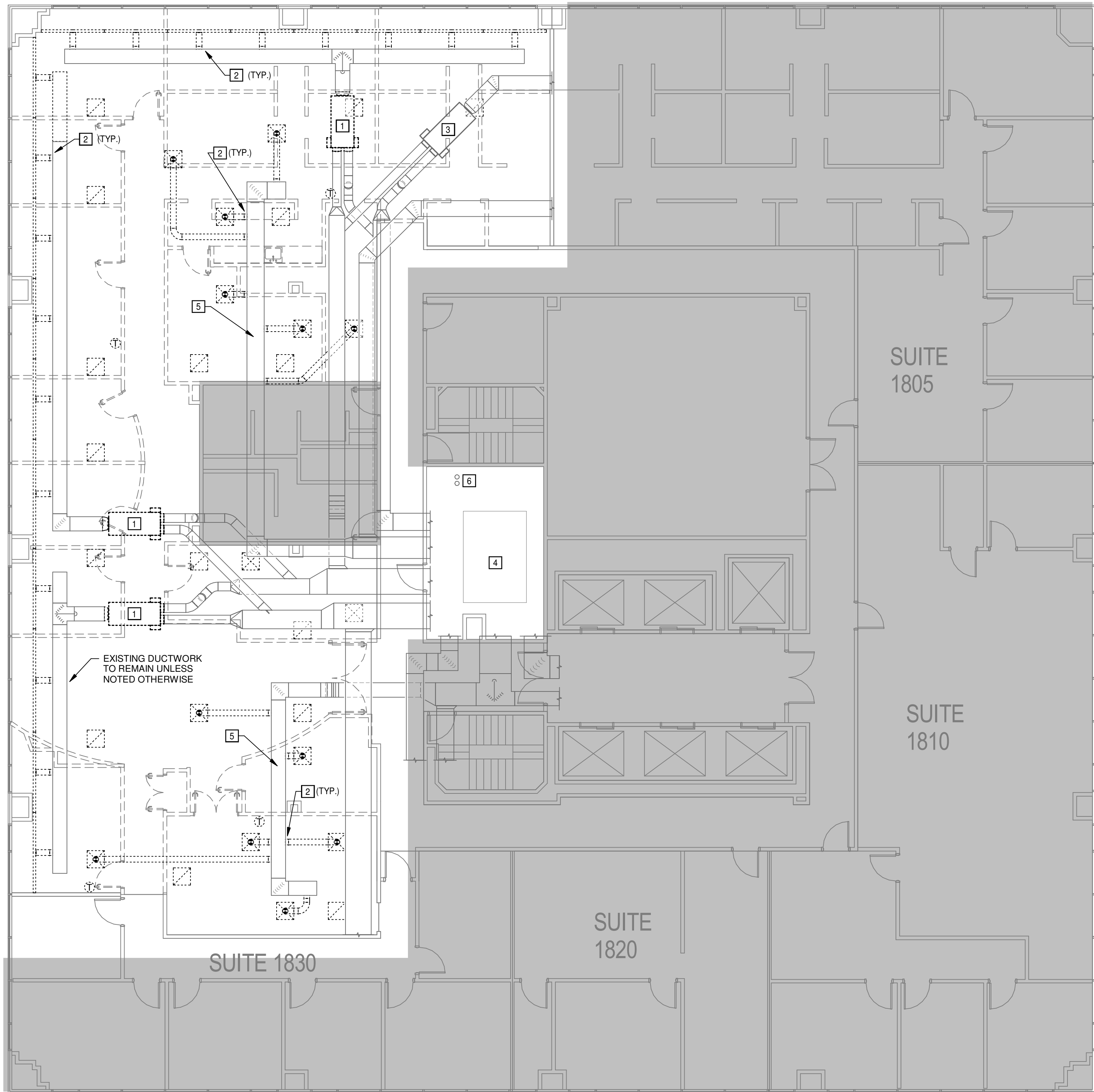


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1 DEMOLITION PLAN - HVAC
1/8" = 1'-0"

HVAC GENERAL DEMOLITION NOTES

1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.

HVAC DEMOLITION KEYED NOTES

1. EXISTING DUAL DUCT VAV TERMINAL AND ASSOCIATED CONTROLS TO BE REMOVED. CAP EXISTING PNEUMATIC TUBING.
2. CAP DUCT.
3. EXISTING DUAL DUCT VAV TERMINAL AND ASSOCIATED CONTROL TO REMAIN.
4. EXISTING AIR HANDLING UNIT TO REMAIN.
5. EXISTING COOLING ONLY MAIN DUCTWORK TO REMAIN.
6. EXISTING CHILLED WATER RISER TO REMAIN.



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HNTB
FLOOR 18
400 W CAPITOL AVE
LITTLE ROCK, AR 72201

BID-PERMIT
7.14.23
Revisions

Project Number
DEMOLITION
PLAN - HVAC

M0.1

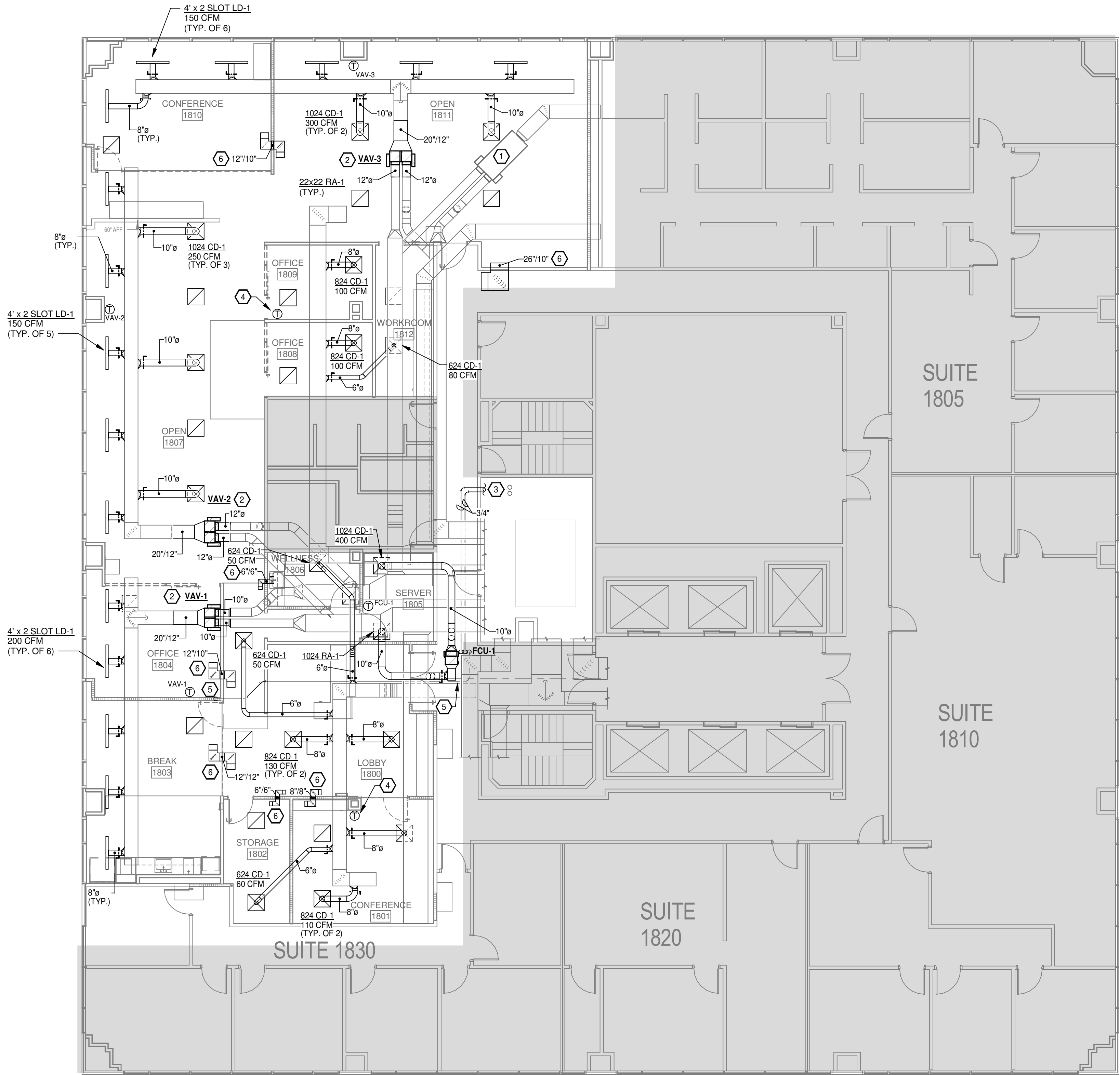
HNTB

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1 FLOOR PLAN - HVAC
1/8" = 1'-0"

DUCTWORK LEGEND

	CEILING DIFFUSER		EXTRACTOR
	RETURN AIR GRILLE (RA)		MANUAL DAMPER
	EXHAUST REGISTER (ER)		FIRE DAMPER AND ACCESS DOOR (SMOKE DAMPER S.D. SIMILAR)
	SIZE - DESIGNATION CUBIC FEET PER MINUTE		REFRIGERANT PIPES (SUCTION & LIQUID) CONDENSATE DRAIN PIPE
	FLEXIBLE DUCT CONNECTOR		DIAMETER
	TURNING VANES		TEMPERATURE SENSOR (WITH UNIT NUMBER)
	SPLITTER DAMPER (TEE)		THERMOSTAT (WITH UNIT NUMBER)
	INTERNALLY INSULATED DUCT		TOP NUMBER REFERS TO THE DETAIL NUMBER. BOTTOM NUMBER REFERS TO THE SHEET WHERE DETAIL IS SHOWN
	DUAL WALL DUCT		

HVAC GENERAL NOTES

- ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
- ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
- FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.

HVAC KEYED NOTES

- EXISTING DUAL DUCT VAV TERMINAL AND ASSOCIATED CONTROLS TO REMAIN.
- NEW DUAL DUCT VAV BOX. CONNECT TO EXISTING DUCTWORK. VERIFY EXACT SIZE OF DUCT IN FIELD.
- CONNECT NEW 3/4" CHILLED WATER PIPING WITH BALL VALVES TO 3" EXISTING CHILLED WATER PIPING SERVING EXISTING AHU. VERIFY EXACT SIZE IN FIELD. PIPING TAPS WILL HAVE TO BE ADDED DURING OFF HOURS. COORDINATE ALL WORK WITH BUILDING MAINTENANCE STAFF.
- THERMOSTAT FOR ASSOCIATED COOLING ONLY ZONE. PROVIDE NEW DDC ACTUATOR AT EXISTING AHU FOR COOLING ONLY ZONES.
- ROUTE CONDENSATE TO FIXED AIR GAP IN WALL. REFER TO PLUMBING FOR EXACT LOCATION.
- RETURN AIR TRANSFER DUCT.

CHILLED WATER SHUTDOWN NOTE

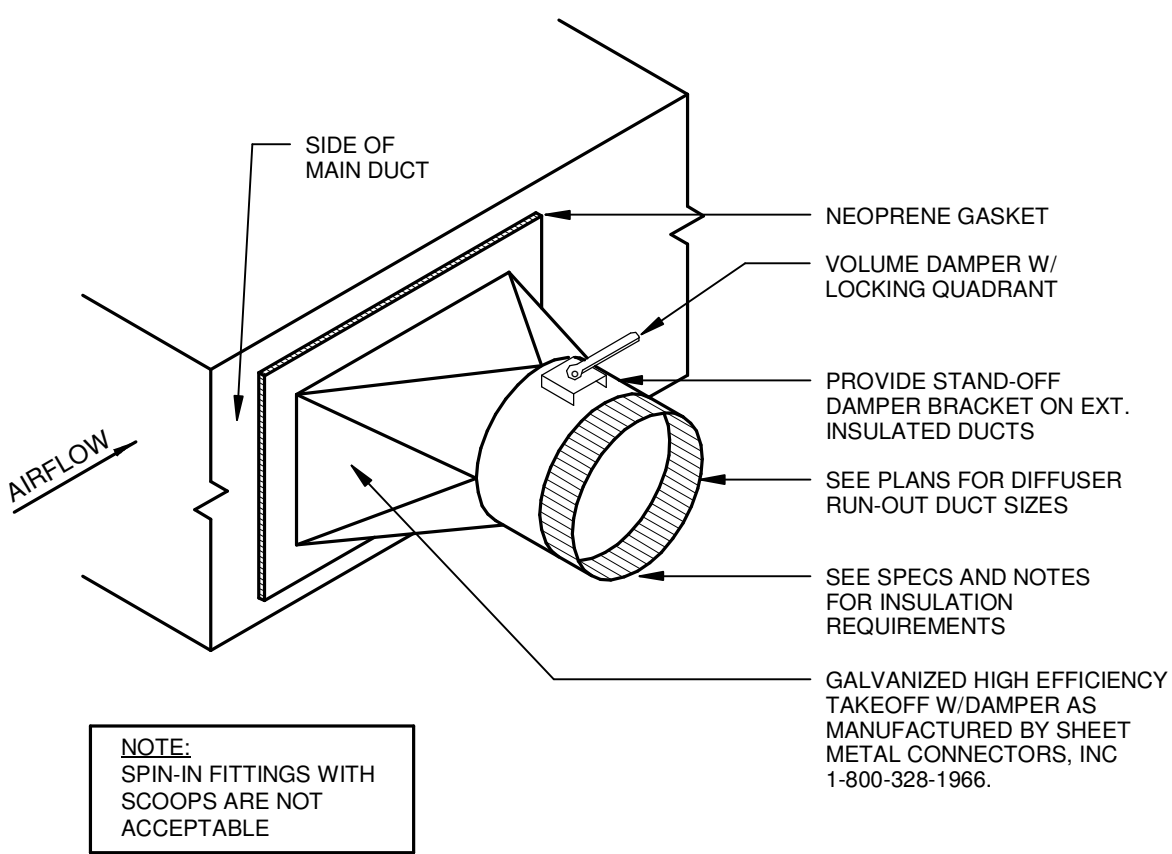
THE CONTRACTOR SHALL COORDINATE A CHILLED WATER SHUTDOWN WITH BUILDING MANAGEMENT THAT WILL OCCUR BETWEEN THE HOURS OF 6PM FRIDAY AND 12 NOON SUNDAY. DURING THIS SHUTDOWN, THE CONTRACTOR SHALL FREEZE THE 3" CHS AND 3" CHR PIPING SERVING THE AHU AND ADD 3" BUTTERFLY VALVES. THIS WORK SHALL BE PERFORMED BY A CONTRACTOR APPROVED TO PERFORM THIS TYPE OF WORK BY BUILDING MANAGEMENT. ONE SUCH CONTRACTOR IS COMFORT SYSTEMS USA, ATTN: TAD HANKINS.

HVAC GENERAL NOTES

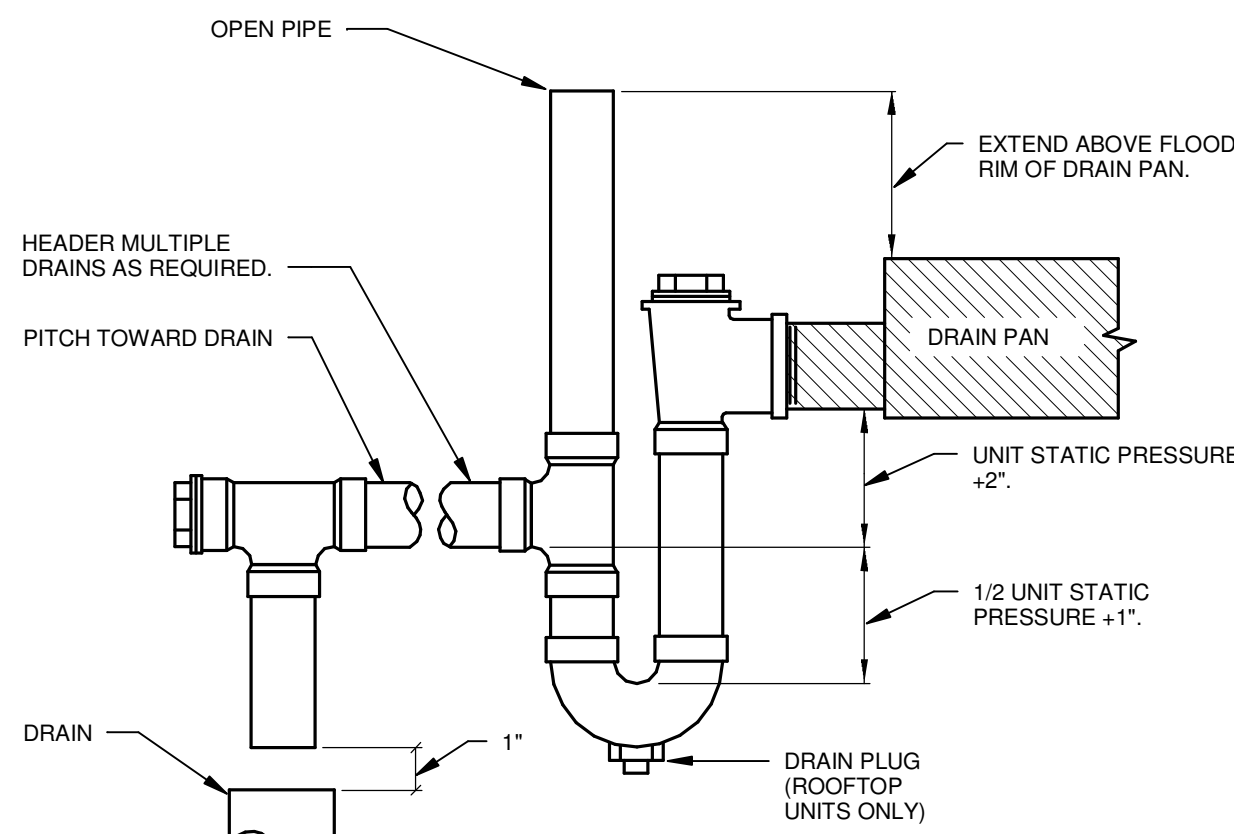
- DUE TO THE SMALL SCALE OF THIS DRAWING, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL INVESTIGATE THE STRUCTURAL AND FINISH CONDITIONS AFFECTING THE WORK AND SHALL COORDINATE AND ARRANGE HIS WORK ACCORDINGLY.
- ROUND BRANCH DUCT RUNOUTS SHALL BE SAME SIZE AS DIFFUSER THROAT UNLESS OTHERWISE NOTED.
- FLEXIBLE DUCT MAY BE USED FOR FINAL CONNECTIONS TO DIFFUSERS. A MAXIMUM LENGTH OF THREE FEET (3') SHALL BE USED. A HARD 90° ELBOW MUST BE USED WHERE DUCT TURNS DOWN ABOVE DIFFUSER.
- ALL CEILING-MOUNTED SUPPLY DIFFUSERS SHALL HAVE FOUR-WAY (4-WAY) PATTERN UNLESS OTHERWISE INDICATED.
- WHERE MANUAL DAMPERS ARE INSTALLED IN EXTERNALLY INSULATED DUCTWORK, PROVIDE STAND-OFF BRACKET TO PREVENT COMPRESSION OF INSULATION BY DAMPER OPERATOR HANDLE.
- PROVIDE TURNING VANES IN ALL 90-DEGREE MITERED ELBOWS.
- PROVIDE SLEEVES THROUGH WALLS AND FLOORS. SEAL EXCESS OPENING WITH WATER-PROOF SEALANT. COORDINATE LOCATIONS AND SIZES OF SLEEVES WITH GENERAL CONTRACTOR. SLEEVES SHALL PROVIDE A MAXIMUM OF 1" CLEARANCE BETWEEN DUCT OR PIPE AND SLEEVE. SEAL PENETRATION IN FIRE/SMOKE RATED WALLS AND FLOOR WITH AN APPROVED FIRE/SMOKE BLOCK SEALANT.
- EXTERNALLY INSULATE SUPPLY, RETURN, RELIEF, AND OUTSIDE AIR DUCTWORK UNLESS NOTED OTHERWISE.
- EXHAUST DUCTWORK SHALL BE UN-INSULATED, UNLESS NOTED OTHERWISE.
- EXTERNALLY INSULATE LOW-VELOCITY ROUND RUNOUT DUCTWORK.
- DUAL WALL DUCTWORK SHALL BE 1" THICK WITH INSULATION BETWEEN WALLS.
- INSULATE THE TOP OF ALL SUPPLY AIR DIFFUSERS WITH A MINIMUM OF 1/2" THICK FIBERGLASS DUCT WRAP.
- RUN COOLING COIL CONDENSATE DRAINS FULL SIZE TO NEAREST FLOOR OR ROOF DRAIN.
- REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE AND SMOKE RATED PARTITIONS.
- COORDINATE LOCATION OF DUCTS AND DIFFUSERS WITH STRUCTURAL FRAMING MEMBERS. OFFSET DUCTS AS REQUIRED TO CLEAR STRUCTURAL MEMBERS.
- COORDINATE LOCATIONS AND ELEVATION OF DUCT RUNS WITH PLUMBING, SPRINKLER, AND ELECTRICAL CONTRACTORS.
- COORDINATE MAKE-UP WATER AND GAS REQUIREMENTS WITH PLUMBING CONTRACTOR.
- PROVIDE ACCESS DOORS FOR ALL FIRE DAMPERS. PROVIDE CEILING ACCESS DOORS FOR DAMPERS ABOVE GYPSUM BOARD CEILINGS.
- PAINT DUCTWORK BLACK THAT MAY BE VISIBLE ABOVE PARTIAL CEILINGS. COORDINATE PAINTING OF DUCTWORK WITH ARCHITECT.
- COORDINATE CEILING DIFFUSER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS.

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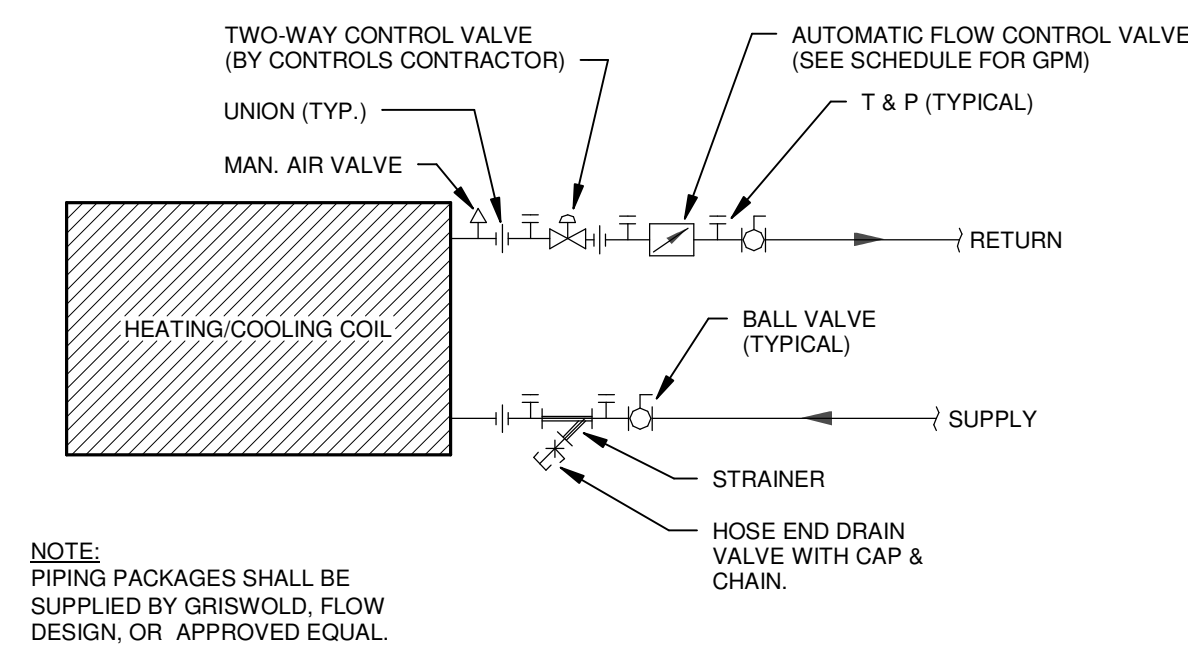




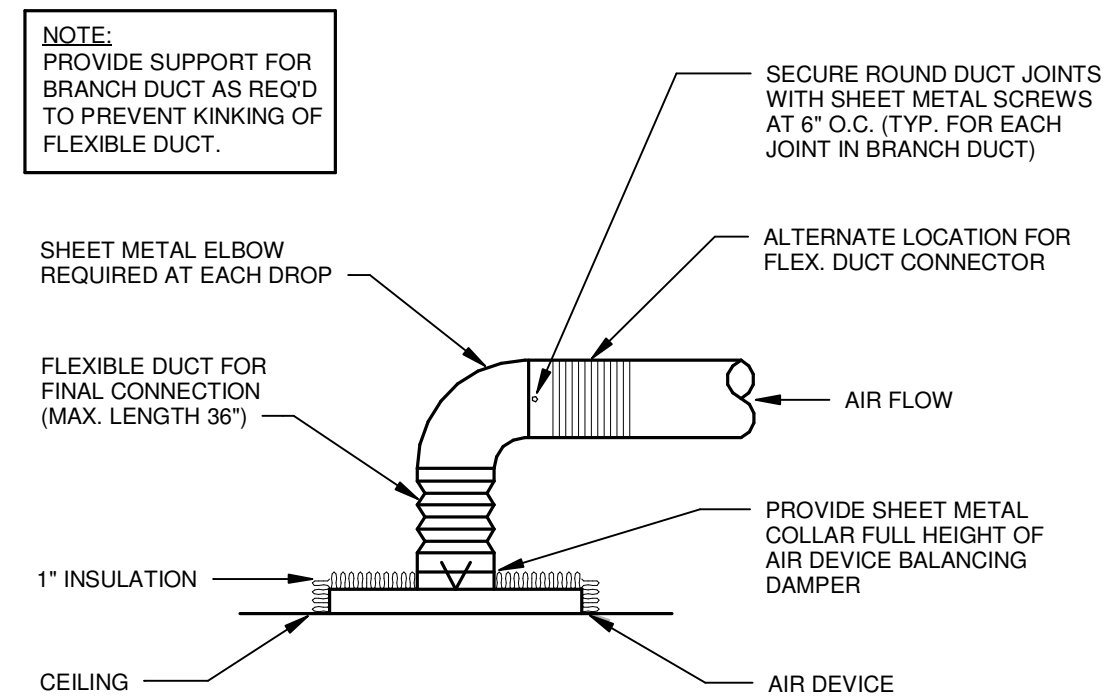
1 BRANCH DUCT TAKE-OFF DETAIL
N.T.S.



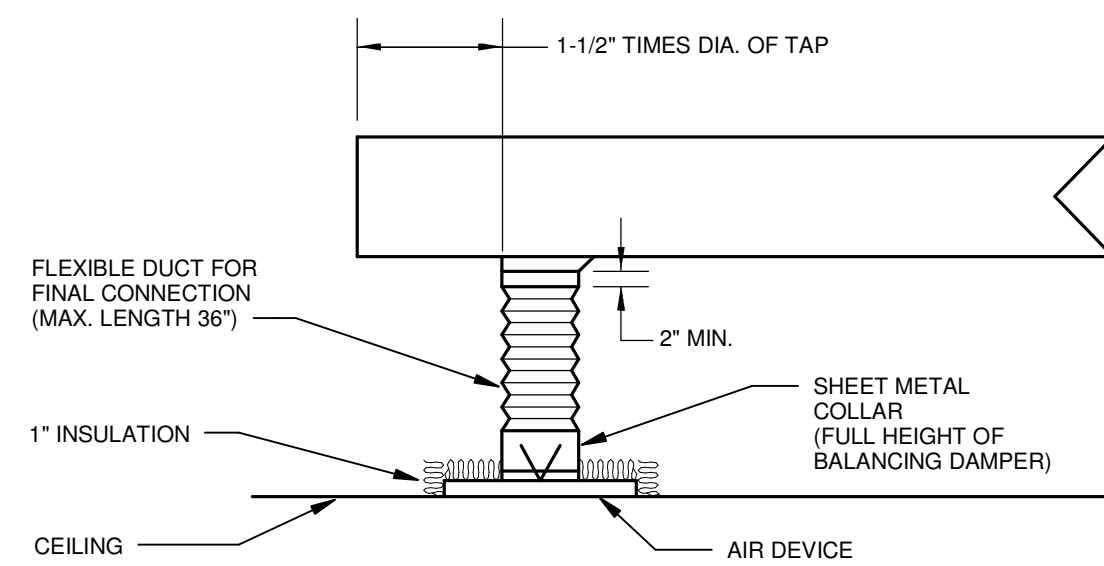
2 FAN COIL DRAIN PIPING
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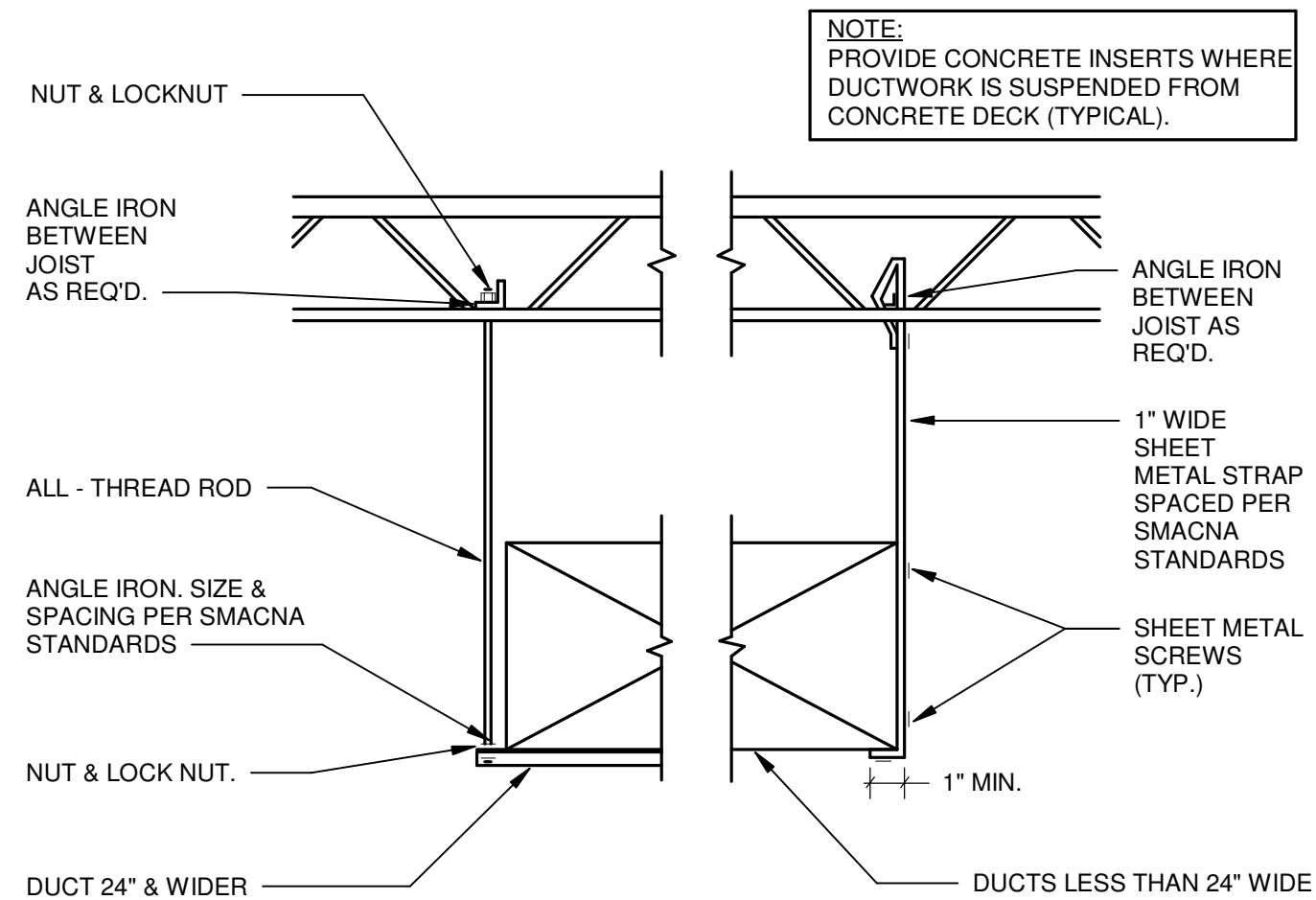
3 FAN COIL UNIT PIPING DETAIL
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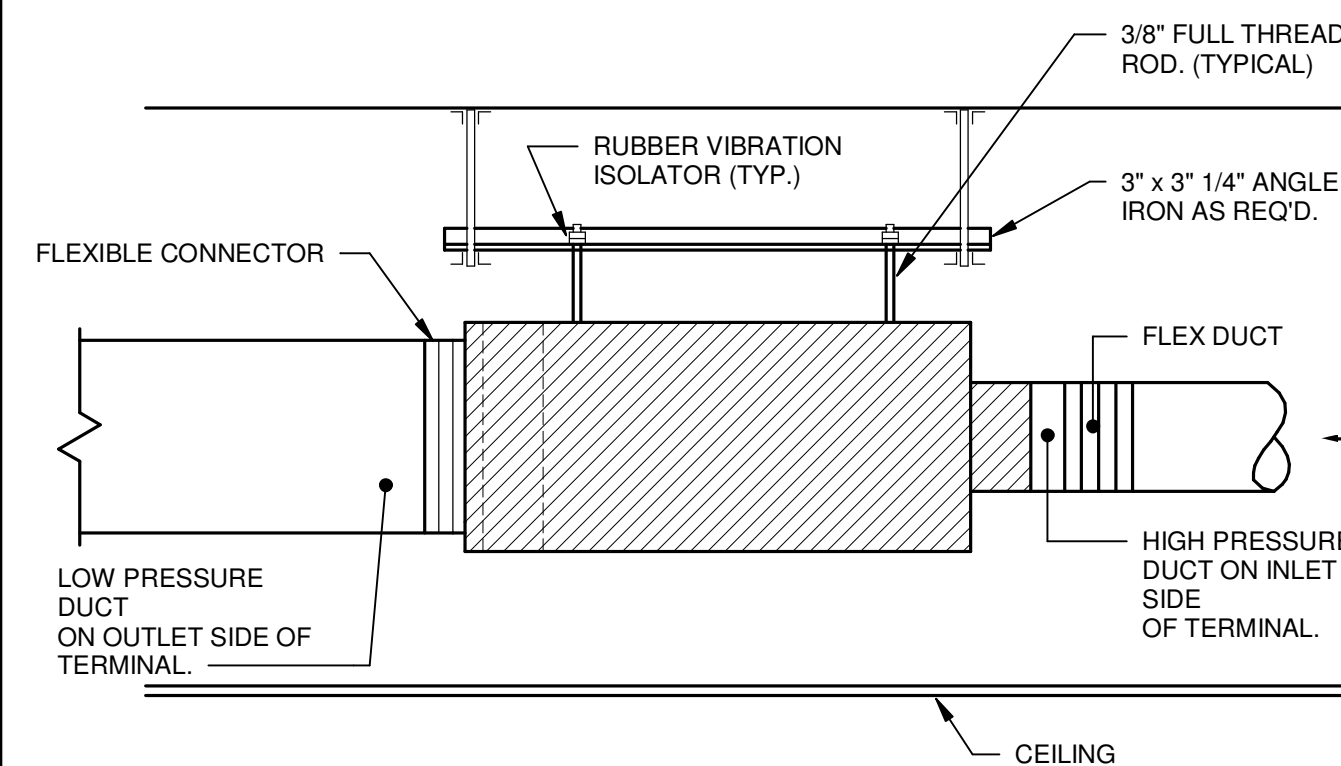
4 DIFFUSER CONNECTION DETAIL
N.T.S.



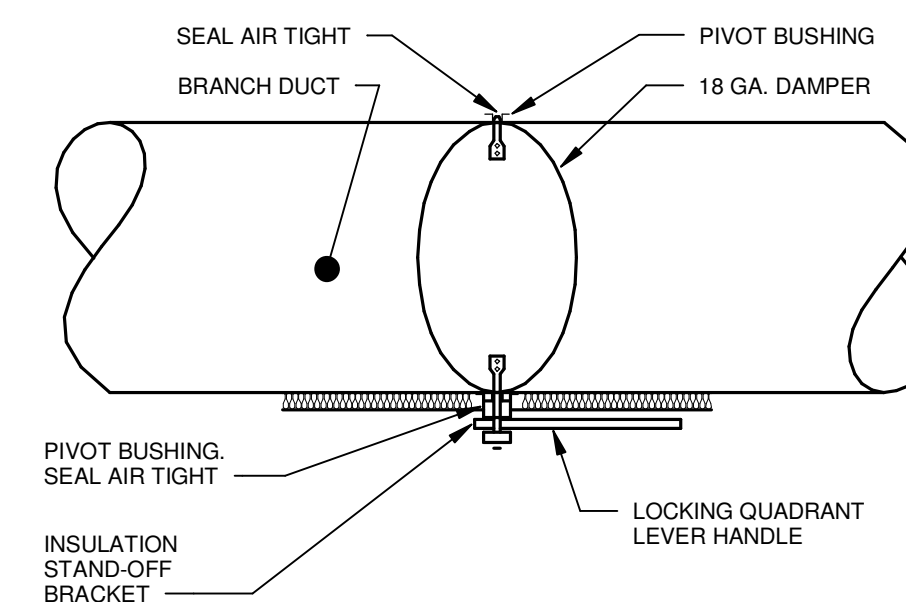
5 DIFFUSER CONNECTION END OF TRUNK DUCT
N.T.S.



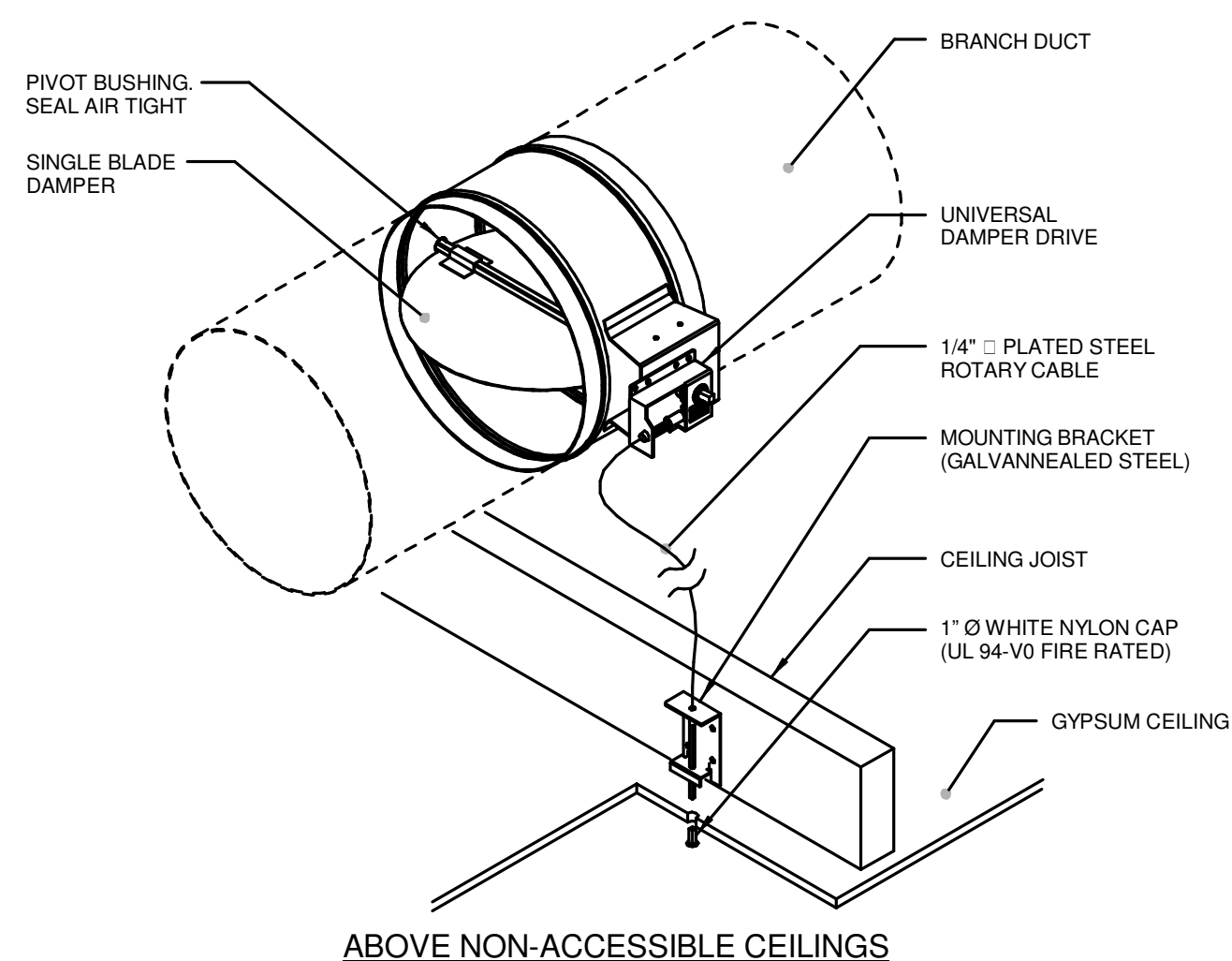
6 DUCT SUPPORT DETAIL
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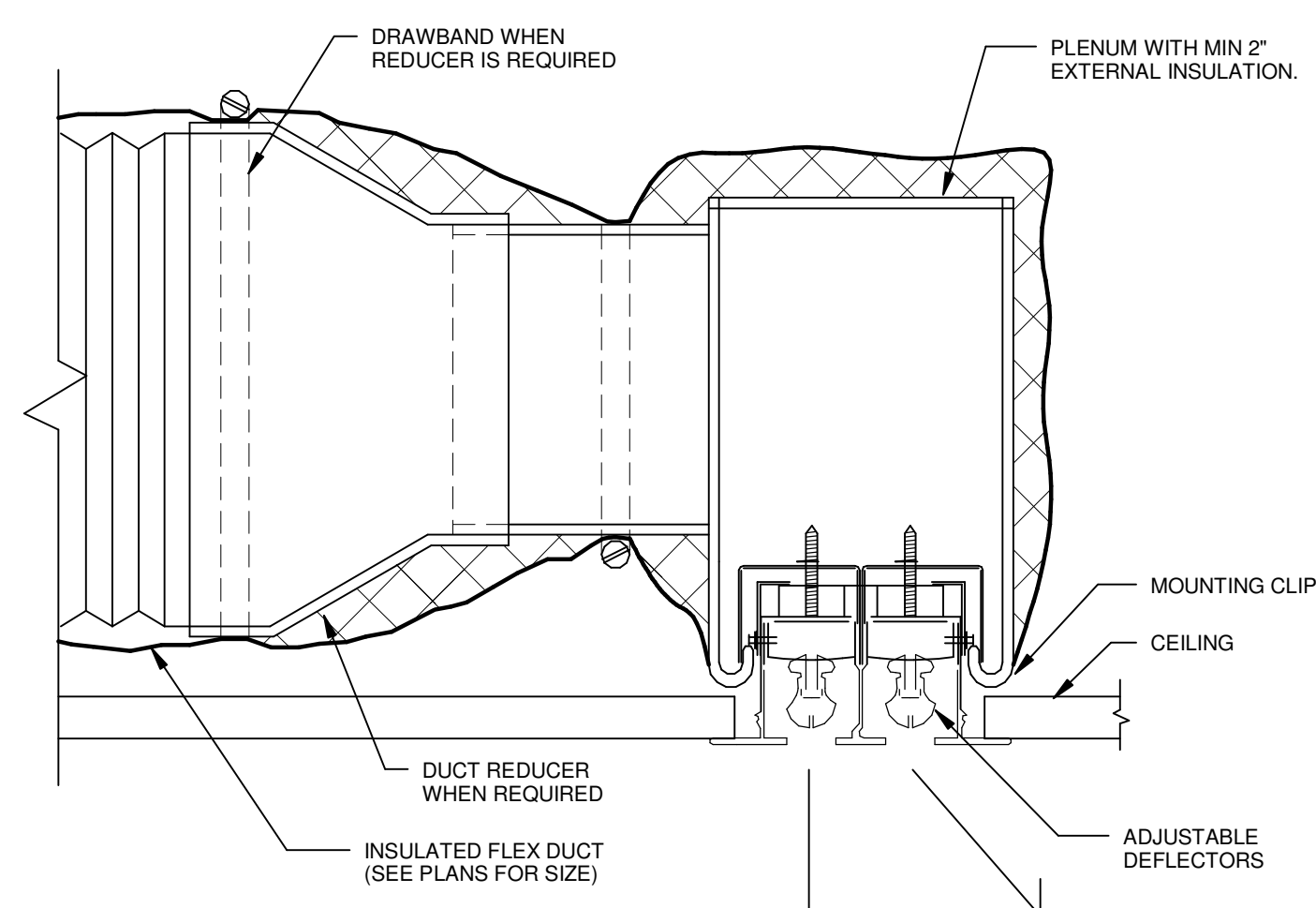
7 V.A.V. TERMINAL MOUNTING
N.T.S.



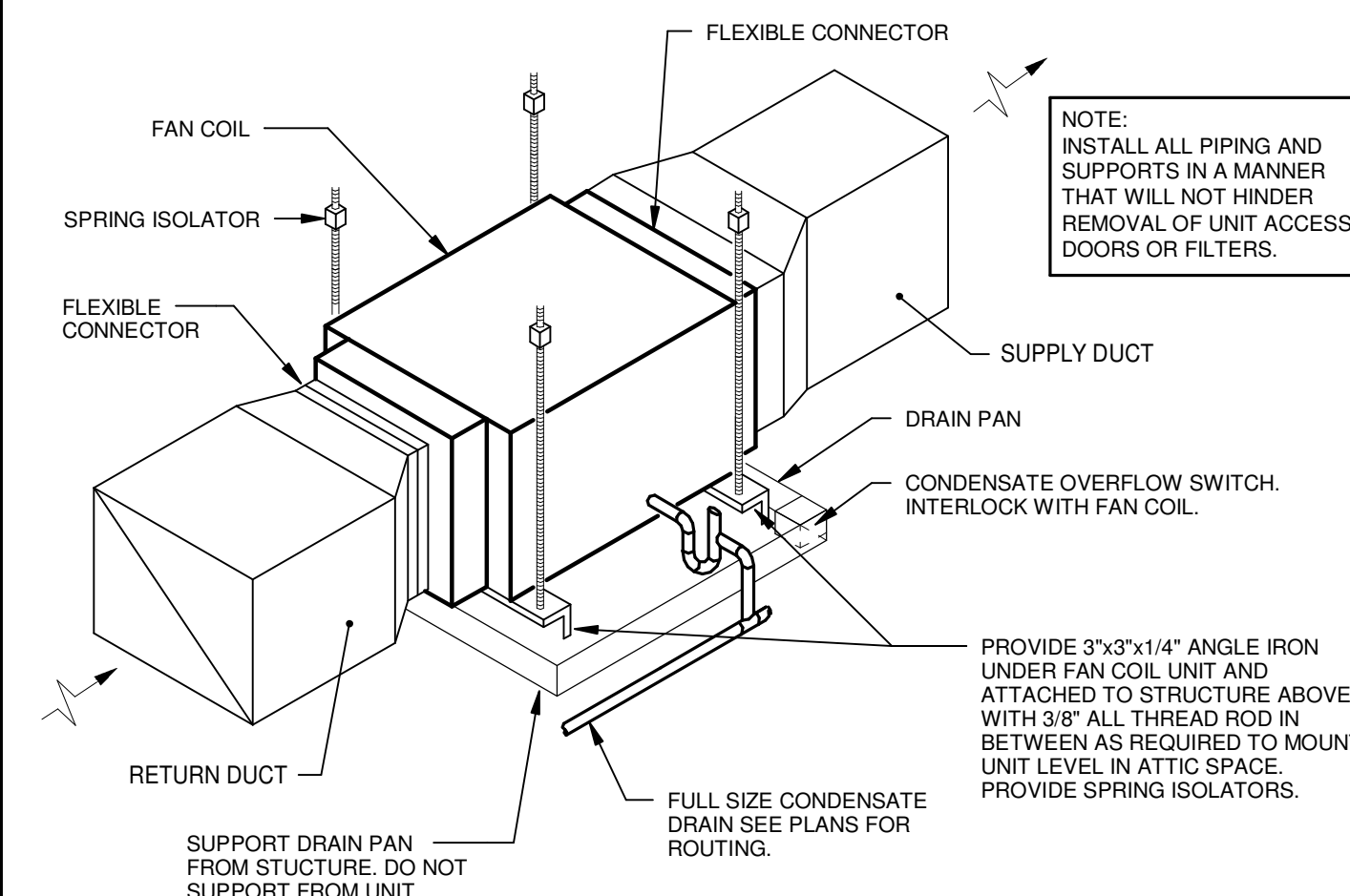
8 MANUAL DAMPER OPERATOR DETAIL
N.T.S.



9 MANUAL DAMPER OPERATOR DETAIL
N.T.S.



10 CEILING LINEAR SLOT DETAIL
N.T.S.



11 FAN COIL INSTALLATION DETAIL
N.T.S.

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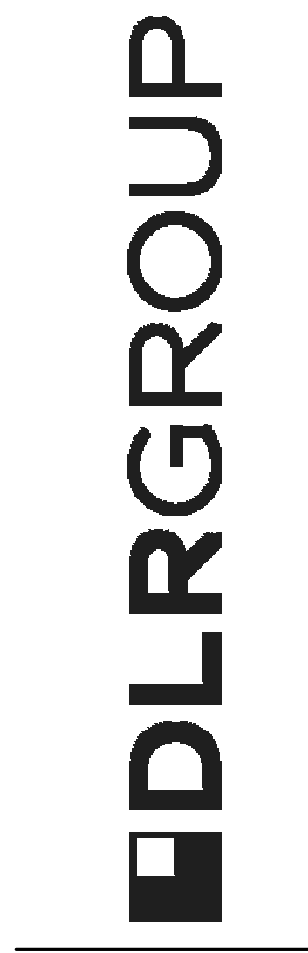
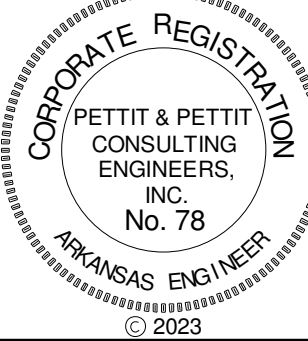
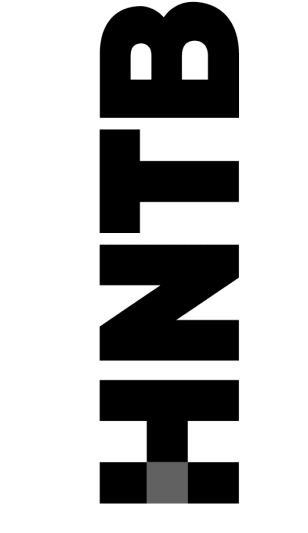
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AIR TERMINAL SCHEDULE (DOUBLE DUCT VAV)														
UNIT	MFR/MDL	TYPE	INLET DUCT SIZE		COLD CFM		HOT CFM		UNIT A.P.D.	OUTLET SIZE	NC LEVELS		WEIGHT(LBS.)	REMARKS
			COLD	HOT	MIN.	MAX.	MIN.	MAX.			RAD.	DISCH.		
VAV-1	PRICE DDV5	DOUBLE DUCT VARIABLE VOL.	10"Ø	10"Ø	400	1000	240	600	0.75"	26" x 12"	--	--	39	UNIT PROVIDED WITH 1/2" FOIL FACED INSULATION, 115/24V TRANSFORMER, & DISCONNECT. (SEE SPECS.)
VAV-2	PRICE DDV5	DOUBLE DUCT VARIABLE VOL.	12"Ø	12"Ø	600	1500	360	900	0.75"	32" x 15"	--	--	45	UNIT PROVIDED WITH 1/2" FOIL FACED INSULATION, 115/24V TRANSFORMER, & DISCONNECT. (SEE SPECS.)
VAV-3	PRICE DDV5	DOUBLE DUCT VARIABLE VOL.	12"Ø	12"Ø	600	1500	360	900	0.75"	32" x 15"	--	--	45	UNIT PROVIDED WITH 1/2" FOIL FACED INSULATION, 115/24V TRANSFORMER, & DISCONNECT. (SEE SPECS.)

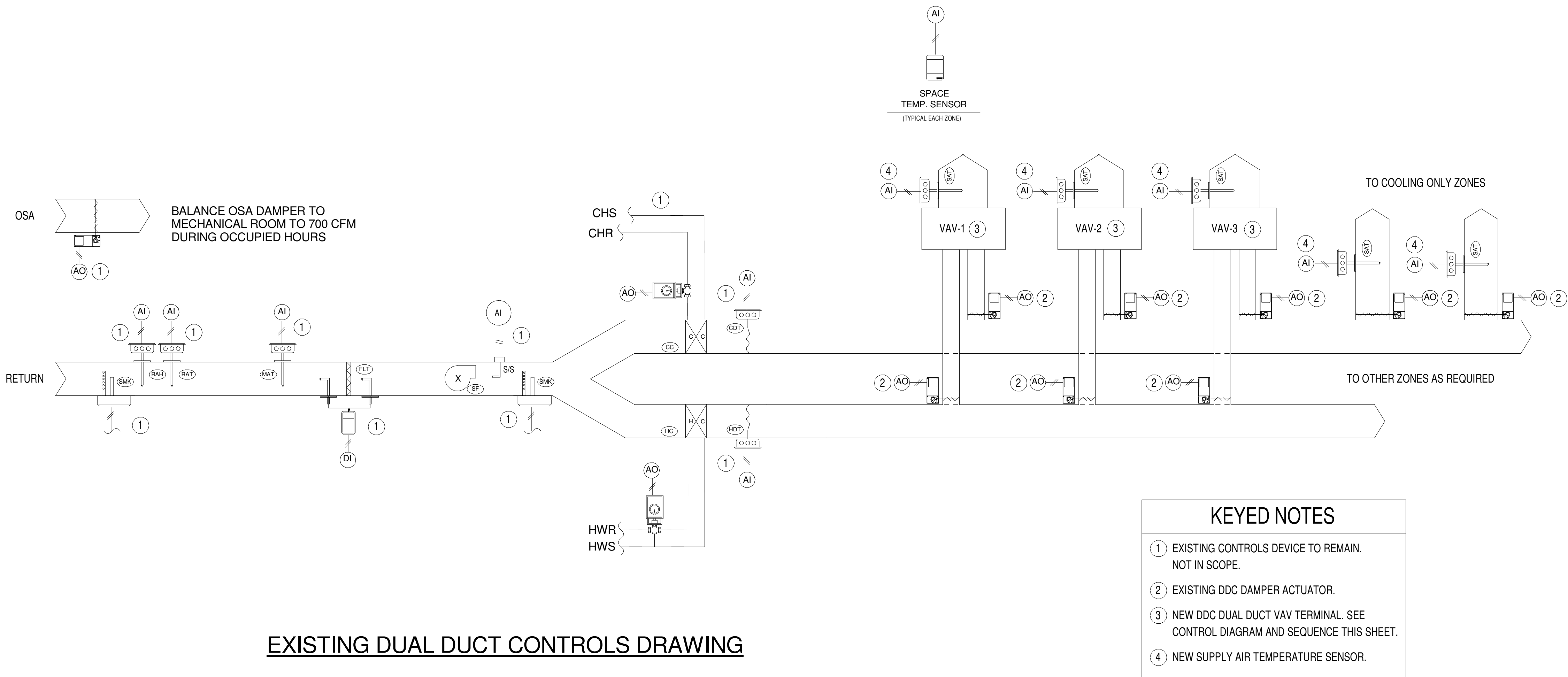
FANCOIL UNIT SCHEDULE																							
UNIT	MFR/MDL	TYPE	CFM	ESP	OSA CFM	CHILLED WATER COIL (2 ROW)								FAN MOTOR DATA					WEIGHT (LBS.)	ELECTRICAL DATA			REMARKS
						EAT	LAT	EWI	LWT	GPM	PD	TOTAL	SENSIBLE	NO.	TYPE	DRIVE	FLA	H.P.		MCA	MCOP	VOLT/PHASE	
FCU-1	IEC CPY04	HORIZONTAL RECESSED	400	.25"	--	75°F db 63°F wb	57.3°F db 55.1°F wb	45°F	54.3°F	2	10.8"	9.35 MBH	7.77 MBH	1	ECM	DIRECT	2.1	0.17	73	2.6	15	115V / 1Ø	PROVIDE CONDENSATE OVERFLOW SWITCH

AIR DEVICE SCHEDULE							
DESIG.	MFR./MDL.	TYPE	FACE SIZE	FINISH	FREE AREA	ACCESS.	REMARKS
CD-1	TITUS/TMS	SUPPLY DIFFUSER	AS NOTED	WHITE	24"x24"	INDICATED ON PLANS	ROUND NECK
RA-1	TITUS/PAR	RETURN GRILLE	AS NOTED	WHITE	24"x24"	INDICATED ON PLANS	22" x 22" NECK TYPICAL UNLESS NOTED OTHERWISE
RA-2	TITUS/PAR-FR	RETURN FILTER GRILLE	AS NOTED	WHITE	24"x24"	INDICATED ON PLANS	ROUND NECK.
LD-1	TITUS/FL-10	SUPPLY DIFFUSER	AS NOTED	WHITE	48"x3 3/4"	INDICATED ON PLANS	ROUND NECK. PROVIDE WITH 1 SLOT AT 1", BORDER TYPE 66, ECX END CAPS, AND FBFI PLENUM.

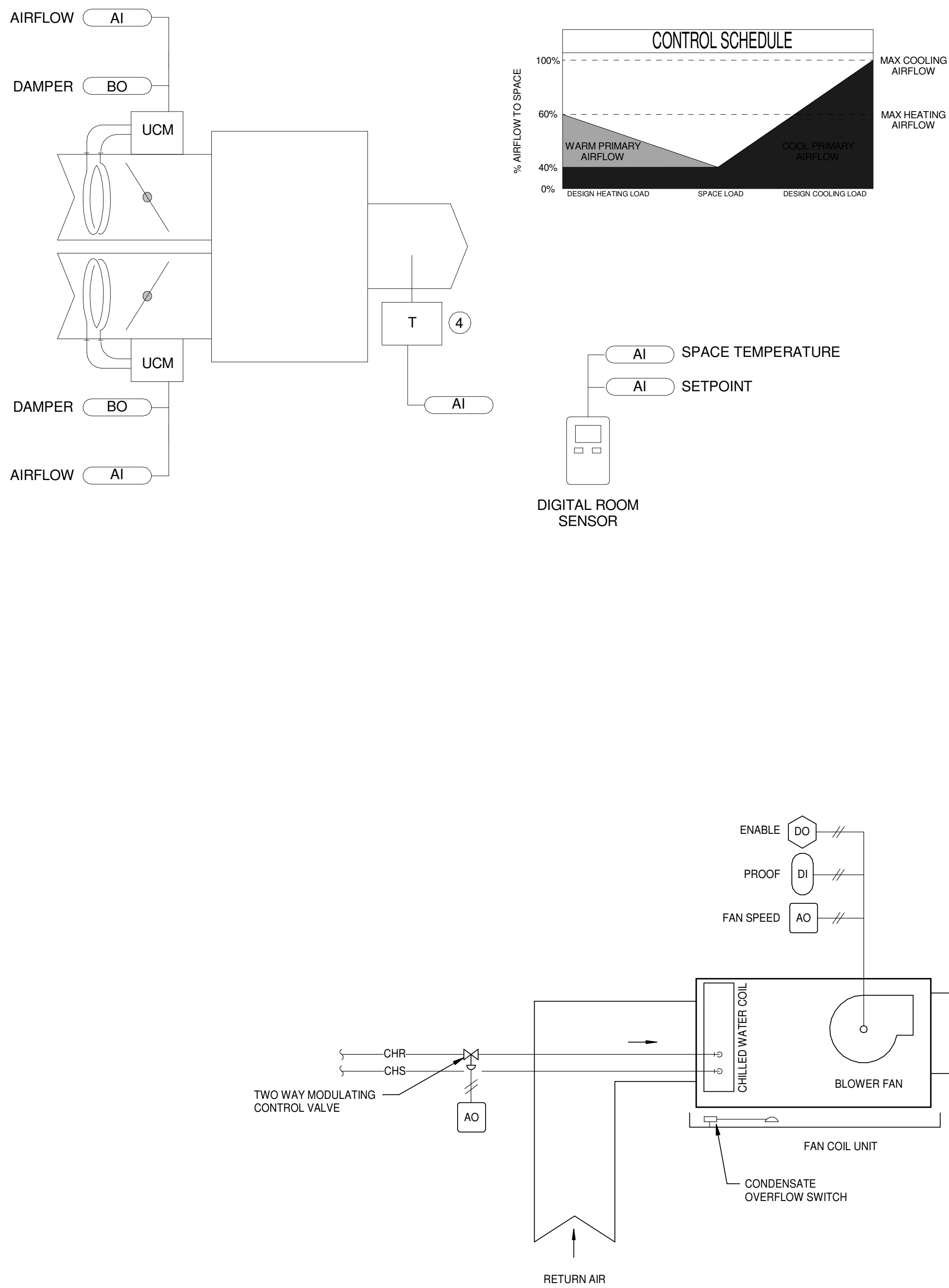
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EXISTING DUAL DUCT CONTROLS DRAWING



DUAL DUCT VARIABLE AIR VOLUME (VAV) BOX SEQUENCE OF OPERATION

- A. DIRECT DIGITAL CONTROLS**
- GENERAL. DDC CONTROLS, ACTUATOR AND FACTORY COSTS TO MOUNT, CALIBRATE, AND TEST THE SYSTEM SHALL BE THE RESPONSIBILITY OF SECTION 15950 ATC/BUILDING MANAGEMENT SYSTEM CONTRACTOR.
 - TERMINAL UNIT MANUFACTURER SHALL PROVIDE PRICE FOR A FACTORY MOUNTING, CONTINUITY CHECK, CALIBRATING, AND TESTING OF DIRECT DIGITAL CONTROLS TO THE ATC CONTRACTOR. FIELD MOUNTED DDC CONTROLS ARE NOT ACCEPTABLE.
 - MULTI-POINT, MULTI-AXIS FLOW RING OR CROSS SENSOR TO BE FURNISHED AND MOUNTED BY TERMINAL UNIT MANUFACTURER. SINGLE POINT OR FLOW BAR SENSORS ARE NOT ACCEPTABLE. SHALL BE CAPABLE OF MAINTAINING AIRFLOW TO WITHIN ±5% OF RATED UNIT AIRFLOW SETPOINT WITH 1.5 DUCT DIAMETERS STRAIGHT DUCT UPSTREAM FROM THE UNIT.
- B. VARIABLE AIR VOLUME (VAV) TERMINAL UNIT CONTROL**
- THE VAV TERMINAL UNITS SHALL BE INDIVIDUALLY CONTROLLED BY A DDC VAV CONTROLLER PER VAV TERMINAL UNIT. THE DDC VAV CONTROLLER, DAMPER MOTOR, TRANSDUCER, AND TRANSFORMER SHALL BE FACTORY MOUNTED AND TESTED BY THE VAV BOX MANUFACTURER.
 - THE BAS SHALL CONTROL THE VAV TERMINAL UNITS USING THE FOLLOWING CONTROL STRATEGIES:
 - OCCUPIED CYCLE:** ON A RISE IN SPACE TEMPERATURE ABOVE THE SETPOINT, THE VAV CONTROLLER WILL MODULATE THE COLD DECK AIR VALVE TO PROVIDE MAXIMUM CFM. AS SPACE TEMPERATURE DECREASES BELOW THE HEATING SETPOINT, THE VAV CONTROLLER WILL MODULATE THE COLD DECK AIR VALVE TO ITS MINIMUM POSITION OF 25%. AS THE SPACE TEMPERATURE CONTINUES TO FALL BELOW THE HEATING SETPOINT WITH THE COLD DECK AIR VALVE AT MINIMUM POSITION, THE HOT DECK AIR VALVE WILL MODULATE TO ITS HEATING MINIMUM AIRFLOW. AS THE SPACE TEMPERATURE CONTINUES TO FALL BELOW THE HEATING SETPOINT, THE HOT DECK AIR VALVE WILL MODULATE TO ITS HEATING MAXIMUM AIRFLOW. ONCE THE HEATING SETPOINT IS MET, THE HOT DECK AIR VALVE WILL MODULATE BACK TO ITS HEATING MINIMUM AIRFLOW. THE COLD DECK AIR VALVE WILL NEVER REDUCE BELOW ITS MINIMUM POSITION OF 25%.
 - UNOCCUPIED CYCLE:** DURING THE UNOCCUPIED CYCLE, THE COLD DECK AIR VALVE ON THE TERMINAL UNIT SHALL DRIVE CLOSED. THE SYSTEM FAN AND THE HOT DECK AIR VALVE SHALL CYCLE TO MAINTAIN A REDUCED SPACE TEMPERATURE.
- 3. THE BAS SHALL PERFORM THE FOLLOWING VAV TERMINAL UNIT CONTROL STRATEGIES:**
- GROUPING:** THE BAS SHALL BE ABLE TO GROUP VAV BOXES VIA KEYBOARD COMMANDS. THESE GROUPS SHALL MAKE IT POSSIBLE FOR THE OPERATOR TO SEND A COMMAND TO ALL BOXES IN A GROUP TO OPERATE IN THE SAME MODE. A SAMPLE OF THIS GROUP REPORT MUST BE PROVIDED IN THE SUBMITTAL PACKAGE FOR APPROVAL BY ENGINEER AND OWNER. BAS SHALL ALSO COMPILER ON A GROUP BASIS, THE FOLLOWING:
 - MINIMUM GROUP TEMPERATURE
 - MAXIMUM GROUP TEMPERATURE
 - AVERAGE GROUP TEMPERATURE
 - CURRENT AIRFLOW THROUGH BOXES IN GROUP (TOTAL)
 - SETPOINT CONTROL:** THE BAS SHALL EDIT THE ZONE SPACE TEMPERATURE SETPOINT OF EACH VAV BOX. THE ZONE TEMPERATURE SETPOINT SHALL BE OPERATOR ADJUSTABLE. INDIVIDUAL ZONE SETPOINT AND CONTROL LOGIC SHALL RESIDE AT THE ZONE LEVEL, AND NOT BE DEPENDENT UPON THE BAS FOR CONTROL. IN THE EVENT OF COMMUNICATION LOSS, THE BOX WILL CONTINUE TO CONTROL CURRENT SETPOINTS.
 - COOLING VALVE CONTROL:** THE BAS SHALL CONTROL THE COOLING AIR VALVE TO FULLY OPEN, FULLY CLOSED, MAXIMUM CFM, OR MINIMUM CFM POSITION BASED ON OPERATOR COMMANDS. THE OPERATOR SHALL ALSO HAVE THE CAPABILITY TO ADJUST THE MAXIMUM & MINIMUM AIRFLOW LIMITS OF THE AIR VALVE THROUGH THE BAS.
 - OPERATING MODE:** THE BAS SHALL PLACE THE BOX IN EITHER THE OCCUPIED OR UNOCCUPIED MODE BASED ON AN OPERATOR ADJUSTABLE TIME SCHEDULE. SEPARATE HEATING & COOLING SETPOINTS SHALL BE ENTERABLE FOR EACH MODE THROUGH THE BAS. OTHER MODES AVAILABLE FOR SPECIAL APPLICATIONS SHALL INCLUDE FULLY OPEN, FULLY CLOSED, MAXIMUM FLOW, AND MINIMUM FLOW.
 - CONTROL OFFSET:** THE BAS SHALL BE CAPABLE OF OFFSETTING THE COOLING OR HEATING SETPOINTS OF ONE OR MORE GROUPS OF BOXES BY AN OPERATOR ADJUSTABLE AMOUNT. THIS CAPABILITY WILL ALLOW FOR AUTOMATIC ZONE SETPOINT CHANGES BASED ON SYSTEM REQUIREMENTS, SUCH AS DEMAND LIMITING.
 - AUTOMATIC RECALIBRATION:** THE SYSTEM SHALL AUTOMATICALLY RECALIBRATE ITS AIR FLOW SENSING & AIR VALVE POSITION MEASUREMENT SYSTEM AT SYSTEM STARTUP AND ON A SCHEDULED BASIS.
 - REMOTE SETPOINT ADJUSTMENT:** THE BAS ZONE TEMPERATURE SETPOINT PROGRAMMED IN SOFTWARE SHALL BE CAPABLE OF BEING MANUALLY ADJUSTED BY A REMOTE ADJUSTMENT AT THE TEMPERATURE SENSOR. THIS MANUAL READJUSTMENT FEATURE MAY BE DISABLED THROUGH THE BAS, IF DESIRED.
- H. OVERRIDE BUTTON:** THE VAV BOX SHALL BE CAPABLE OF BEING PLACED IN THE 'OCCUPIED' MODE BY PRESSING AN OVERRIDE BUTTON MOUNTED ON THE ZONE TEMPERATURE SENSOR.
- I. TERMINAL UNIT STATUS REPORTS:** FOR EACH TERMINAL UNIT, THE BAS SHALL PROVIDE AN OPERATING STATUS SUMMARY OF ALL UNIT SENSED VALUES (ZONE TEMPERATURE, CFM, ETC.) SETPOINTS, AND MODES.
- J. TERMINAL UNIT GROUP REPORT:** FOR EACH GROUP OF VAV TERMINAL UNITS, THE BAS SHALL REPORT THE GROUP MODE, HEATING AND COOLING AIRFLOW, AVERAGE ZONE TEMPERATURE, MINIMUM ZONE TEMPERATURE, AND MAXIMUM ZONE TEMPERATURE. THE REPORT SHALL ALSO DISPLAY PRESENT TEMPERATURE CONTROL SETPOINTS AND CURRENT ZONE TEMPERATURE FOR EACH TERMINAL UNIT IN THE GROUP.
- 4. ZONE SENSORS**
- THE ZONE SENSOR SHALL BE ACCURATE TO WITHIN 0.5° F. THE SENSOR SHALL BE A PRODUCT OF THE VAV BOX CONTROLS MANUFACTURER AND DESIGNED SPECIFICALLY FOR THE INSTALLED CONTROLLER.
 - THE ZONE SENSOR SHALL HAVE THE FOLLOWING FEATURES:
 - ZONE SETPOINT ADJUSTMENT
 - NIGHT SETBACK TEMPERATURE OVERRIDE BUTTON TO PROVIDE OCCUPIED CONDITIONS DURING UNOCCUPIED TIMES.
 - NIGHT SETBACK OVERRIDE CANCEL BUTTON TO END THE CONDITION.
- 5. TERMINAL BOX DIAGNOSTICS**
- IF ZONE TEMPERATURE SENSOR INPUT FAILS ABOVE ITS HIGH RANGE, UNIT SHALL CONTROL AT ITS MAXIMUM CFM SETPOINT. IF SENSOR INPUT FAILS BELOW ITS LOW RANGE, UNIT SHALL CONTROL TO ITS MINIMUM CFM SETPOINT.
 - IN BOTH CASES, ALL HEAT OUTPUTS SHALL BE DISABLED. A DIAGNOSTIC MESSAGE SHALL BE DISPLAYED UPON OPERATOR INQUIRY.
 - IF FLOW MEASURING SYSTEM FAILS, UNIT SHALL AUTOMATICALLY CONVERT TO A PRESSURE DEPENDENT, DAMPER POSITION BASED ALGORITHM. DIAGNOSTIC MESSAGE SHALL BE DISPLAYED UPON OPERATOR INQUIRY.
 - IF ZONE TEMPERATURE SETPOINT POTENTIOMETER ON ZONE SENSOR FAILS, UNIT SHALL AUTOMATICALLY CONTROL TO PROGRAMMED OCCUPIED SETPOINTS. DIAGNOSTIC MESSAGE SHALL BE DISPLAYED UPON OPERATOR INQUIRY.
 - IF COMMUNICATIONS ARE LOST, CONTROLLER SHALL CONTINUE TO OPERATE IN THE CURRENT MODE OF OPERATION. ALL SETPOINTS SHALL BE RETAINED IN NONVOLATILE MEMORY. IF COMMUNICATIONS ARE NOT RESTORED WITHIN 15 MINUTES, UNIT SHALL AUTOMATICALLY INITIATE A RESET-RECALIBRATE.

FAN COIL UNIT - SEQUENCE OF OPERATIONS

AN APPLICATION SPECIFIC DDC CONTROLLER USING ELECTRIC ACTUATION CONTROLS THE FAN COIL UNIT. THE SPACE SERVED BY THE FCU IS CONTROLLED IN OCCUPIED AND UNOCCUPIED MODES AS FOLLOWS:

OCCUPIED
THE CONTROLLER MONITORS THE ROOM TEMPERATURE SENSOR, IF THERE IS A CALL FOR HEATING OR COOLING, THE FCU FAN SHALL START AND RUN AT LOW SPEED. THE HYDRONIC VALVES SHALL MODULATE OPEN AS CLOSED AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE VALVES REACHES 100% OPEN AND THE TEMPERATURE CONTINUES TO DEVIATE FROM THE SPACE TEMPERATURE SETPOINT, THE FAN SHALL MODULATE ITS SPEED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

UNOCCUPIED
THE FCU'S SHALL BE IN THE OCCUPIED MODE DURING WORKING HOURS OF 7 AM TO 5 PM (ADJ.) FAN COILS SHALL BE ABLE TO OVERRIDE UNOCCUPIED MODE VIA OVERRIDE SWITCH ON THE THERMOSTAT. OVERRIDE SHALL LAST 2 HOURS (ADJ.).

A CONDENSATE OVERFLOW SWITCH, LOCATED IN EACH DRAIN PAN, WILL STOP THE FAN COIL UNIT, CLOSE THE COOLING COIL VALVE AND GENERATE AN ALARM AT THE BAS WHENEVER AN OVERFLOW OCCURS.

CONTROLS VENDOR NOTE:

THE EXISTING BUILDING AUTOMATION SYSTEM VENDOR IS MIDDLETON/DISTECH. NO OTHER VENDORS SHALL BE ALLOWED. ALL NEW WORK SHALL BE CONNECTED TO THE BUILDING AUTOMATION SYSTEM AND INCORPORATED INTO THE DISTECH GRAPHICS.

FAN COIL UNIT - CONTROLS

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No Change

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GENERAL CONDITIONS

A. The contractor shall visit the site of the building before submitting a proposal on this work, and shall thoroughly familiarize himself with the existing conditions and operations. Failure on his part to do this will not be cause for extras after the contract is signed by reason of unforeseen conditions. Any existing electric wiring and conduit, gas, water drainage piping encountered within the building area shall be relocated or removed where required by this contractor at no extra cost to the Owner.

B. No subsequent allowance for time or money will be considered for any consequence related to failure to examine site conditions.

C. Mechanical drawings show general arrangement of piping, ductwork, equipment, etc. Follow closely as actual building construction and work of other trades will permit.

D. Consider architectural and structural drawings part of this work insofar as these drawings furnish information relating to design and construction of building. These drawings take precedence over mechanical drawings.

E. Because of the small scale of mechanical drawings, it is not possible to indicate all offsets, fittings and accessories which may be required. Investigate structural and finish conditions affecting this work and arrange work accordingly, providing such fittings, valves and accessories required to meet the conditions.

F. The naming of specified items on the drawings is intended to establish a level of quality and performance. Substitution requests may be submitted at the time of shop drawing submittal. Review of substituted equipment or material prior to the Bid Date will not be considered unless otherwise specified.

G. Perform work in accordance with applicable provisions of state and local Plumbing Code, gas ordinances and adoptions thereof. Provide materials and labor necessary to comply with rules, regulations and ordinances.

H. In case of differences between building codes, state laws, local ordinances, utility company regulations and Contract Documents, the most stringent shall govern. Promptly notify Architect in writing of such differences.

I. It is understood that while Drawings are to be followed as closely as circumstances permit, this Division will be held responsible for installation of systems according to the true intent and meaning of the Contract Documents. Anything not clear or in conflict will be explained by making application to Architect. Should conditions arise where certain changes would be advisable, secure Architect's approval of these changes before proceeding with work.

J. Coordinate work of various trades in installing inter-related work. Before installation of mechanical items, make proper provisions to avoid interferences in a manner approved by Architect. Changes required in work specified in Division 23 caused by neglect to do so shall be made at no cost to Owner.

K. Provide inserts and supports required unless otherwise noted. Furnish sleeves, inserts, supports and equipment that are an integral part of other divisions of the Work to Sections involved in sufficient time to be built into construction as the Work proceeds. Locate these items and see that they are properly installed. Expense resulting from improper location of installation of items above shall be borne by the mechanical contractor.

L. Be responsible for required digging, cutting and patching incident to work of this Division and make required repairs afterward to satisfaction of Architect. Cut carefully to minimize necessity for repairs to existing work. Do not cut beams, columns or trusses.

M. Each Section of this Division shall bear expense of cutting, patching, repairing and replacing of work of other Sections required because of its fault, error, tardiness or because of damage done by it.

N. Cutting, patching, repairing and replacing pavements, sidewalks, roads and curbs to permit installation of work of this Division is responsibility of Section installing work.

O. Adjust locations of pipes, etc. to accommodate work from interferences anticipated and encountered. Determine exact route and location of each pipe and duct prior to fabrication.

P. Make offsets, transitions, and changes in direction of pipes, as required to maintain proper headroom and pitch of sloping lines whether or not indicated on Drawings.

Q. Sits and openings through floors, walls, ceilings and roofs shall be provided by other Divisions in their respective materials. This Division shall see that they are properly located and do any cutting and patching caused by its neglect to do so.

CONTRACTOR REVISED DRAWINGS

A. The contractor shall, during the progress of the work, keep an accurate record of all changes and corrections from the layouts shown on the drawings. Record of changes may be kept by accurately making all changes on a set of prints during the progress of the job.

B. Exact location of all underground utility service entrances and their connections to utility mains, well heads, loop piping and all valves, etc., which will be concealed in the finished work shall be accurately indicated in the drawings by measured distances.

C. Upon completion of the work and prior to final payment, the contractor shall furnish to the Architect, one set of "contractor revised" prints, legibly and accurately marked to indicate all changes, additions, deletions, etc., from the contract drawings.

D. Contractor shall include all addendum items and field change order information on the revised drawings. Revise all schedules shown on the drawings to reflect the actual model numbers, capacities and electrical characteristics of substituted equipment.

GENERAL PIPING INSTALLATION

A. Furnish and install a complete system of piping. The piping drawings are diagrammatic and indicate the general location and connections. If the size of any piping is not clearly evident, obtain instructions from the Architect before proceeding with the work. The piping may have to be offset, lowered or raised as required or as directed at the site. This does not relieve the contractor from responsibility for the proper erection of systems of piping in every respect suitable for the work intended. Piping systems that are not to be installed complete shall be so noted.

B. Erection: Piping shall be cut accurately for fabrication to measurements established at the construction site. Pipe shall be worked into place without springing and/or forcing. Remove all burrs and cutting slag by reaming or other cleaning methods. Changes in direction shall be made with fittings, except that bendings of pipe will be permitted, providing a hydraulic pipe bender is used. Bent pipe showing kinks, wrinkles, or other malformation will not be acceptable. Piping shall be arranged so as not to interfere with removal of other equipment or devices nor to block access manholes or other access openings. Piping shall be installed to insure noiseless circulation.

C. Minimum slope of piping shall be in accordance with the following unless otherwise specifically shown on the drawings or specified:

Type of Piping	System Component	length for	Direction
Fluid Conveyed	Return main	1" Fall	of Fall
Condensate	Main	20 feet	Condensate flow
Freon	Main	20 feet	Direction of flow
Domestic Water	Main or Branch	40 feet	Back to Mains
Sanitary Sewer	Main or Branch	4 feet	Direction of Flow

D. Protection: Open ends of pipes and equipment shall be properly capped or plugged to keep dirt and other foreign materials out of the system. Plugs or rags, wood, cotton, concrete, waste or similar materials must not be used in plugging.

E. Installation of Underground Pipe: Bottom of trench shall be shaped to give substantially uniform circumferential support to lower third of each pipe. Pipe shall be laid true to line and grade in such manner as to form a close concentric joint with adjoining pipe and to prevent sudden offsets to flow line. As work progresses, interior of pipe shall be cleared of dirt and superfluous materials. Where cleaning after laying is difficult because of small pipe size, a suitable sweep or drain shall be kept in pipe and pulled toward pass each joint immediately after painting has been completed. Trenches shall be kept free from water until pipe jointing has set and pipe shall not be laid when condition of trench or weather is unsuitable for such work.

F. Cleaning and Flushing: Contractor shall take every precaution to remove dirt, grease, and all other foreign matter from each length of piping before making connections in the field. After each section of piping is installed, it shall be flushed with clean water except where specified otherwise.

G. Pipe Sizes: If the size of any piping is not clearly evident in the drawings, the contractor shall request instructions from the Architect as to the proper sizing. Any changes resulting from the contractor's failure to request clarification shall be at his expense.

THERMAL AND MOISTURE PROTECTION

A. Install flashing, counterflashing and caulk or seal all penetrations in exterior walls or floors as required to prevent exterior moisture from entering building.

EQUIPMENT AND MATERIALS

A. Product Approvals:

1. If approval is received to use other than those specified items, responsibility for specified capacities and insuring that items to be furnished will fit space available lies with this Division.
2. In the event other than specified equipment is used and will not fit job site conditions, this Division assumes responsibility for replacing with items named in specification.

B. Use domestic made pipe, pipe fittings and motors on project.

C. Insure that items to be furnished fit space available. Make necessary field measurements to ascertain space requirements including those for connection and furnish and install equipment of size and shape so final installation shall suit true intent and meaning of Contract Documents.

D. Follow Manufacturer's directions in delivery, storage, protection and installation of equipment and materials.

1. Promptly notify Architect in writing of conflicts between requirements of Contract Documents and manufacturer's directions and obtain Architect's written instructions before proceeding with work. Bear expenses arising from correcting deficiencies of work that do not comply with Manufacturer's directions or such written instructions from Architect.

E. Deliver equipment and material to site and tightly cover to protect against dirt, water, and chemical or mechanical injury but have readily accessible for inspection. Store items subject to moisture damage (such as controls) in a dry, heated space.

REVIEW OF MATERIALS AND EQUIPMENT

A. Furnish complete catalog data for manufactured items of equipment to be used in Work to Architect for review within 30 days after award of Contract.

B. Submit two (2) copies of data in 3-ring binders with tab indices in same order and name as they appear in specification.

1. State sizes, capacities, brand names, motor HP, accessories, materials, gauges, dimensions and other pertinent information. Pertinent information shall include as a minimum those items as scheduled on the drawings. Arrange submittal information to reflect these categories scheduled on the drawings.
2. Provide an index of tab numbers at the front of each binder. List the specification number and category included under each tab as described in the specifications and as scheduled on the drawings.
3. Provide cover sheet for each tab section. List each piece of equipment by name, model number and supplier.

D. Underline applicable data and indicate model being supplied on each submittal sheet.

C. If data is not submitted as specified or submittal is not complete, it will be returned without review.

D. Catalog data or shop drawings for equipment which are noted as being reviewed by the Architect, shall not supersede Contract Documents.

E. Review comments of Architect shall not relieve this Division from responsibility for deviations from Contract Documents unless Architect's attention has been called to such deviations in writing at the time of submission, nor shall they relieve this Division from responsibility for errors in items submitted.

F. Check work described in catalog data with Contract Documents for deviations and errors.

MECHANICAL IDENTIFICATION

A. Identify valves in main and branch piping with tags.

B. Identify piping concealed above ceiling, with stenciled painting. Identify service, flow direction, and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side of penetration of structure or enclosure, and at each obstruction.

C. Identify piping exposed in Mechanical Rooms with plastic pipe markers. Secure to piping in accordance with manufacturer's instructions. Identify service, flow direction, and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side penetration of structure or enclosure, and at each obstruction.

D. Install plastic nameplates with corrosion-resistant mechanical fasteners. Locate nameplates on service side of equipment on or front of equipment in a row. Locate nameplate above work on equipment exposed in finished rooms. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.

TESTING, ADJUSTING, AND BALANCING

A. The contractor shall employ the services of a third-party, NEBB certified air test and balance contractor.

B. All air quantities shall, after completion of the job, be adjusted to provide air quantities within +/- 10% of scheduled values on plans. After complete adjustment, additional re-adjustment shall be performed if necessary to satisfy design temperature.

C. The balance procedure shall include the checking of each supply, return and exhaust fan. As a minimum, CFM, RPM and ampere readings shall be taken. Pulley adjustments, etc., shall be performed to obtain the required CFM readings.

D. Air Balance Subcontractor shall also furnish all balancing instruments required. Air Balance Subcontractor shall provide one experienced technician to team with Contractor's technician to balance system. The Air Balance Subcontractor's Technician and the Contractor's Technician shall perform as a team during the entire field balancing operation.

E. After all adjustments and corrections have been performed to balance system as designed and required, the Air Balance Subcontractor shall prepare and submit three (3) copies of completed balance form to Architect/Engineer for approval. The TAB report shall include schedule and actual system information including system airflow, individual air device airflow, entering and leaving static pressures, running voltage and amperage, and entering and leaving air temperatures across coils/heat exchangers.

F. At the time of balancing, the Air Balance Contractor's Technician shall verify that each device is the size and pattern submitted and includes accessories such as volume controls and deflectors where specified.

G. Where project includes controlled Air Terminal Units, the Terminal Unit Manufacturer's Supplier shall be responsible for testing the automatic control devices on the Terminal.

H. After the successful completion of all equipment start-up and individual item test requirements, formal tests shall be performed on the complete Mechanical systems, measurements shall be made and reports prepared as specified below. Provide all instruments, materials and labor to perform the tests and to obtain and record the measurements specified herein, including the furnishing of all required record forms. Submit for the Architect's approval the form on which the measurements specified herein. Furnish all required record forms. Submit for the Architect's approval, complete shop drawings or catalog data for all instruments to be used for the 3-day operating test, and obtain approval at least two weeks before the forms and instruments will be required. Sample forms can be provided by the Architect if the Contractor requests.

I. First operating test by Contractor: Prove the operation of the Mechanical systems and of each individual item in the systems. At least 10 days' notice shall be given the Architect of such tests. Should any item of the systems fail to perform in an approved manner, this test shall be repeated until the operating test is approved by the Architect. During this test, balance circulation of steam, condensate, heating and chilled water, air and all other fluids conveyed to provide proper quantities to all items of equipment. Adjust and set all balancing coils, valves, dampers and similar items to insure that the systems perform as intended.

J. Checking by Owner and Architect: Following the successful completion of first operating tests by the Contractor, the Owner and Architect shall have the privilege of making such tests as they may desire during a period of three weeks to ascertain if any corrections are to be made to the system. At the end of the testing by the Owner and Architect, the Architect shall direct the Contractor in writing to make such corrections to the systems as are within the Scope of the contract.

K. Three-day operating test: An operating test shall then be performed by the Contractor to the satisfaction of the Architect for a period of three days. Should any element of the systems not perform properly, the Contractor shall make all required corrections, and the test shall be repeated until successfully performed.

L. Measurements: Make the following measurements at two hour intervals (5 measurements per 8-hour day) during the 3-day operating test.

1. Electrical: Running ampere and voltage of each motor 3/4HP or larger.
2. Air pressures at entrance and exit of each electronic air cleaner, filter, coil, fan and damper.
3. Air temperatures in each heated or air conditioned space, at the entrance and exit of each coil, downstream from each pair of dampers where air of two different temperatures is mixed and outside the structure.
4. Relative humidity at location of each humidity sensor.
5. Water pressures at each pump suction and discharge and at entrance and exit of each converter, and each heating and cooling coil.
6. Water temperature at entrance and exit of each converter and each heating and cooling coil.
7. Domestic hot water supply temperature at the fixtures closest to and farthest away from the domestic hot water heater on each system (only once during 3-day test).
8. Running ampere and voltage on recirculating pumps.
9. Static pressure of cold water line at building service connection (only once during 3-day test).

G. Report: Four copies of a written report of the 3-day operating test, on the approved form of record, shall be submitted to the Architect for approval and subsequent transmittal to the Owner.

PIPING

A. All refrigerant and condensate drain piping shall be Type "L" hard drawn copper piping with wrought copper fittings per ASTM B-88, 95/5 solder.

B. Chilled and Heating water piping shall be Schedule 40 black steel with welded fittings for all piping 2'-1/2" and larger. Chilled and Heating water piping 2" and smaller shall be Type "L" hard drawn copper piping with wrought copper fittings per ASTM B-88, 95/5 solder.

C. Escutcheons shall be provided at all locations where piping penetrates ceilings and walls. Escutcheons shall be single piece, set screw type, chrome plated and shall cover the opening and sleeve.

DUCTWORK

A. Sheet Metal: Except as otherwise indicated, fabricate ductwork from galvanized sheet steel complying with ANSI/ASTM A 527, lock forming quality, with ANSI/ASTM A 525, G90 zinc coating, mill phosphatized for exposed locations. Duct dimensions are inside "free area" dimensions and ductwork shall be enlarged to account for internal duct liner wherever applicable.

B. Assemble and install ductwork in accordance with recognized industry practices which will achieve air tight (1% leakage) and noiseless (no objectional noise) systems, capable for performing each indicated service. Install each run with minimum of joints. Align ductwork accurately at connections, within 1/8 inch misalignment tolerance and with internal surfaces smooth. Support ducts rigidly with suitable ties, braces, hangers and anchors of type which will hold ducts true-to-shape and to prevent buckling.

C. Seal ductwork, to class recommended, and method prescribed in SMACNA "HVAC Duct Construction Standards", latest edition.

D. Complete fabrication of work at project as necessary to match shop-fabricated work and accommodate installation requirements.

E. Locate ductwork runs, except as otherwise indicated, vertically and horizontally and avoid diagonal runs wherever possible. Locate runs as indicated by diagrams, details, and notations or, if not otherwise indicated, run ductwork in shortest route which does not obstruct unusable space or block access for servicing building and its equipment. Hold ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building. Limit clearances to 1/2 inch where fitting is shown for enclosure of concealment of ducts, but allow for insulation thickness, if any. Where possible, locate insulated ductwork for 1 inch clearance outside of insulation. Wherever possible in finished and occupied spaces, conceal ductwork from view, by locating in mechanical shafts, hollow wall construction or above suspended ceilings. Do not encase horizontal runs in solid partitions, except as specifically shown. Coordinate layout with suspended ceiling and lighting layouts and similar finished work. Do not locate ductwork over (parallel to) position indicated to extend to deck.

F. Electrical Equipment Spaces: Do not run ductwork through transformer vaults and their electrical equipment spaces and enclosures.

G. Where ducts pass through interior partitions and exterior walls, conceal space between construction opening and duct or duct-plus-insulation with sheet metal flanges of same gage as duct. Overlap opening on 4 sides by at least 1-1/2 inches.

H. Provide insulated blank-off plates as indicated on the drawings where ducts connect to vents or louvers.

I. Coordinate duct installations with installation of accessories, dampers, coil frames, equipment, controls and other associated work of ductwork system.

J. Support ductwork in manner complying with SMACNA "HVAC Duct Construction Standards", latest Edition.

K. Do not reroute or shorten branch ductwork to terminal or inline air devices without direct approval of design Engineer. Routings and offsets are designed to be in compliance with cross sectional area and distance from penetration through fire rated wall. Any change must be in direct compliance with Section 510 of the Standard Mechanical Code, latest Edition.

INSULATION

A. All interior supply, return, and outside air ductwork shall be insulated with 2" thick, 1# density flexible glass fiber ductwrap, equal to Owens Corning Type 100, unless otherwise indicated.

B. All exterior supply, return, exhaust, and outside air ductwork shall be insulated with 2" thick rigid glass fiber duct board, equal to Owens Corning Type 704, unless otherwise indicated. Additional insulation shall be provided on top of the duct to "crown" or slope the insulation in order to prevent water ponding on top of the duct. Exterior ductwork shall be finished with an Alumagard weatherproof duct jacket.

C. All interior supply and return chilled and heating water piping shall be insulated with 2" thick glass fiber pipe insulation, equal to Owens Corning Fiberglass, unless otherwise indicated.

D. All exterior supply and return chilled and heating water piping shall be insulated with 2" thick glass fiber pipe insulation, equal to Owens Corning Fiberglass, unless otherwise indicated. Exterior piping shall be finished with an Alumagard weatherproof pipe jacket.

E. All interior condensate drain piping shall be insulated with 3/4" thick elastomeric pipe insulation, equal to AP Armaflex, unless otherwise indicated.

F. All exterior condensate drain piping shall be insulated with 3/4" thick elastomeric pipe insulation, equal to AP Armaflex, unless otherwise indicated. Exterior piping shall be finished with two coats of UV resistant paint equal to manufacturer's recommendations.

DIRECT DIGITAL CONTROL (DDC) SYSTEM

A. General: The control system will be as indicated on the drawings. The controls for packaged equipment shall be installed by the unit manufacturer with any devices external to the units installed by mechanical contractor. The building automation system shall connect to BACnet interfaces to perform monitoring and start/stop functions as outlined in control drawings.

B. The Direct Digital Control System (DDCS) will be designed such that each mechanical system will be able to operate under stand-alone control. In the event of a network communication failure, or the loss of any other controller, the control system will continue to independently operate under control.

C. System graphics shall be updated to reflect new floor plan and equipment. All cost shall be the responsibility of the mechanical contractor.

SEISMIC CONTROLS

A. The seismic protection requirements shall be as required by Chapter 16 of the Arkansas Fire Prevention Code (International Building Code) Volume II. This building shall meet Category "D" requirements.

B. Provide restraints on all equipment, ductwork, piping, etc. as required.

C. Seismic restraint calculations must be provided for all connections of equipment to the structure. Calculations must be stamped by a registered professional engineer with at least 5 years of seismic design experience, licensed in the state of Arkansas.

OPERATIONS AND MAINTENANCE MANUAL

A. Bind two (2) Operations & Maintenance Manuals for Mechanical Systems in 3-ring, hardback binders. Spine of each binder shall have the following lettering:

OPERATION AND MAINTENANCE MANUAL
for MECHANICAL SYSTEMS OF
HNTB
LITTLE ROCK, ARKANSAS

1. Provide a master index at beginning of Manual showing items included. Include name and phone number of nearest supplier and Manufacturer's representative. Use plastic tab indexes for sections of Manual.
2. Step by step procedure to follow in putting each piece of mechanical equipment into operation.
3. Provide schematic control diagrams for each separate fan system, refrigeration system, heating system, control panel, etc. Each diagram shall show locations of start-stop switches, insertion thermostats, room thermostats, thermometers, freestats, pressure gages, automatic valves and refrigeration accessories. Mark correct operating settings for each control instrument on these diagrams.
4. Provide diagram for electrical control system showing wiring of related electrical control items such as freestats, fuses, interlocks, electrical switches and relays.
5. Provide drawings of each temperature control panel identifying components on the panels and their function.

B. Maintenance instructions shall include:

1. Manufacturer's maintenance instructions for each piece of mechanical equipment installed in project. Instructions shall include name of vendor, installation instructions, parts numbers and lists, operations instructions of equipment and maintenance and lubrication instructions.
2. Summary list of mechanical equipment requiring lubrication showing name of equipment, location, and type and frequency of lubrication.
3. List of mechanical equipment used indicating name, model, serial number and nameplate data of each item together with number and name associated with each system item.

C. Air Balance and Test Run Reports.

1. Include a copy of air balance reports and certifications.
2. Include a copy of the 3-day operating test data.
2. Provide a complete set of approved shop drawing submittals as an Appendix item.

GUARANTEE

A. The work herein specified shall be free from defects in workmanship and material under normal use and service. If, within twelve (12) months from date of substantial completion and Owner acceptance of the work herein described, any of the equipment or materials, or in the installation thereof, is found to be defective in workmanship or material, it shall be replaced or repaired free of charge.

B. The Contractor shall, after completion of the original test of the installation, and acceptance of the Architect, provide any service incidental to the proper performance of the mechanical systems under guarantees outlined above for a period of one (1) year from the date of substantial completion.

FINALLY

A. It is the intention that this specification shall provide a complete installation except as hereinbefore specifically excepted. All accessory construction and apparatus necessary or advantageous in the operation and testing of the work shall be included.

B. The omission of specific reference to any part of the work necessary for such complete installation shall not be interpreted as relieving this Contractor from furnishing and installing such parts.

BID-PERMIT
7.14.23
Revisions

Project Number
MECHANICAL
SPECIFICATIONS

M5.1

As-Builts
3/6/2024
CSUSA
No Change

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PLUMBING FIXTURE SCHEDULE	
1.	SINK S-1 - ELKAY D23222, 33 INCH BY 22 INCH BY 6-9/16 INCH SIZE, DOUBLE COMPARTMENT, 22 GAGE STAINLESS STEEL, SELF-RIMMING, HAND BLENDED SATIN FINISH, COUNTER MOUNTED; SINGLE HOLE CONFIGURATION; JUST J-35 STAINLESS STEEL CUP STRAINER, AND 1-1/2 INCH O.D. STAINLESS STEEL TAILPIECE 4 INCHES LONG; PUNCH (1) FAUCET HOLE. TRIM - ELKAY FAUCET LKAV1031, BRUSHED NICKEL, 1.75 GPM AERATOR, SINGLE LEVER HANDLE. SUPPLIES - MCGUIRE H2167LK 1/2" IPS HEAVY CAST BRASS ANGLE STOP, LOOSE KEY HANDLE, ANNEALED VERTICAL TUBE, CHROME PLATED CAST BRASS SET SCREW ESCUTCHEON, C.P. BRASS NIPPLE TO WALL; P-TRAP - MCGUIRE 8912 (1-1/2 INCH) POLISHED CHROME PLATED CAST BRASS ADJUSTABLE "P" TRAP WITH CLEANOUT AND 17-GAGE TUBING TO WALL WITH C.P. CAST BRASS SET SCREW ESCUTCHEON; SUPPORT - COUNTER MOUNTED.
2.	SINK S-2 - ELKAY D12521, 25 INCH BY 21 1/4 INCH BY 6-9/16 INCH SIZE, SINGLE COMPARTMENT, 22 GAGE TYPE STAINLESS STEEL, SELF-RIMMING, HAND BLENDED SATIN FINISH, COUNTER MOUNTED; SINGLE HOLE CONFIGURATION; JUST J-35 STAINLESS STEEL CUP STRAINER, AND 1-1/2 INCH O.D. STAINLESS STEEL TAILPIECE 4 INCHES LONG; PUNCH (3) FAUCET HOLES FOR 8" FAUCET. TRIM - ELKAY LKAV302, CLUSTROUS STEEL, 1.8 GPM AERATOR, SINGLE LEVER HANDLE. SUPPLIES - MCGUIRE H2167LK 1/2" IPS HEAVY CAST BRASS ANGLE STOP, LOOSE KEY HANDLE, ANNEALED VERTICAL TUBE, CHROME PLATED CAST BRASS SET SCREW ESCUTCHEON, C.P. BRASS NIPPLE TO WALL; P-TRAP - MCGUIRE 8912 (1-1/2 INCH) POLISHED CHROME PLATED CAST BRASS ADJUSTABLE "P" TRAP WITH CLEANOUT AND 17-GAGE TUBING TO WALL WITH C.P. CAST BRASS SET SCREW ESCUTCHEON; SUPPORT - COUNTER MOUNTED.
3.	IM-1 FIXTURE VALVE BOX - GUY GRAY RECESSED WALL BOX MODEL # BIM-875 WITH VALVE STOP (FOR ICE MAKER, REFRIGERATOR, AND COFFEE MAKER HOOK-UP).
4.	EQUIPMENT (BY OTHERS) - ROUGH-IN AND MAKE FINAL CONNECTIONS FOR EQUIPMENT AS INDICATED ON PLANS. FURNISH ENGINEERED BRASS CO., VSH158K, MCGUIRE OR KOHLER STRAIGHT STOP, 1/2 INCH (IPS) OR FEMALE INLET AND OUTLET AND POLISHED CHROMIUM PLATED CAST BRASS; KOHLER K-8988 (1-1/4" INCH) OR K-9000 (1-1/2 INCH), AMERICAN STANDARD OR ELIER POLISHED CHROMIUM PLATED CAST BRASS ADJUSTABLE GROUND JOINT. SWIVEL PATTERN WITH CLEANOUT AND OTHER TRIM AS INDICATED ON PLANS. ALL EXPOSED PIPING SHALL BE CHROME-PLATED AND ESCUTCHEONS SHALL BE C.P. CAST BRASS SET SCREW TYPE.
REFER TO ARCHITECT DRAWINGS FOR FIXTURE SPECIFICATIONS.	

GENERAL PLUMBING SPECIFICATIONS	
1.	ALL PLUMBING WORK SHALL COMPLY WITH THE ARKANSAS STATE PLUMBING CODE AND ALL LOCAL CODES.
2.	ALL WORK WILL COMPLY WITH ALL APPLICABLE CODES, AND THE CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES AND LATERAL COSTS PERTAINING TO HIS WORK.
3.	DOMESTIC WATER PIPING - TYPE "L" HARD COPPER WITH WROUGHT COPPER FITTINGS AND "BRIDGIT" LEAD FREE SOLDER MADE IN U.S.A., 1/2" THICK (MIN.) FIBERGLASS INSULATION WITH FIRE RETARDANT JACKET, HOT WATER AND HOT WATER RETURN SHALL HAVE 1" THICK INSULATION (UNDERGROUND PIPING BE TYPE "K" COPPER WITH NO JOINTS. BELOW FLOOR WHERE POSSIBLE OR SHALL HAVE 5% SILVER "SL-FOSS" BRAZED JOINTS) - ALSO A 10 MIL POLY SLEEVE IS REQUIRED ON BELOW FLOOR SLAB PIPING AND HOT WATER MUST BE INSULATED WITH "FOAMGLASS" OR EQUAL.
4.	SOIL, WASTE, DRAIN AND VENT PIPING - SHALL BE SERVICE WEIGHT CAST IRON, COATED; MAY BE HUBLESS ABOVE GRADE; MUST BE HUB AND SPIGOT BELOW GRADE AND UNDER FLOOR. 11/2" AND SMALLER SHALL BE DWV COPPER. EXTERIOR SANITARY SERVICE LINE SHALL ALSO BE CAST IRON.
5.	ESCUTCHEONS: WILL BE PROVIDED ON PIPING THAT PASSES THROUGH BUILDING CONSTRUCTION IN EXPOSED AREAS.
6.	VALVES: CONTRACTOR SHALL PROVIDE VALVES AT ALL EQUIPMENT AND EACH GROUP OF PLUMBING FIXTURES. AT EACH WATER LINE LATERAL, GATE VALVES TO BE EQUAL TO STOCKHAM NO. 13-120 OR NIBCO NO. T-134 SCREWED, BALL VAVLES, NIBCO NO. T-585-70-66, OR APOLLO NO. 77-140, GAS VALVES MCDONNELL #10686.
7.	PIPE HANGERS: ALL PIPING SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE ON APPROVED HANGERS.
8.	STERILIZATION OF WATER PIPING - THE DOMESTIC WATER PIPING SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH THE ARKANSAS STATE PLUMBING CODE AND ANY STATE OR LOCAL CODE.
9.	PROVIDE ZURN WATER HAMMER ARRESTOR ON ALL HOT AND COLD SUPPLIES TO EACH FIXTURE - SEE GENERAL NOTES.
10.	ALL VENTS THROUGH ROOF SHALL BE PROVIDED WITH 6 LB. LEAD FLASHING. (OR AS REQUIRED BY ROOFING CONTRACTOR)
11.	CLEANOUTS: FURNISH AND INSTALL ALL FLOOR, WALL, AND EXTERIOR AND CLEANOUT PLUGS WHERE SHOWN ON DRAWINGS, AND/OR AT A MAXIMUM OF 100 FT. SPACING INSIDE BUILDING. CLEANOUTS SHALL BE EQUAL TO WADE CO. OR ZURN PRODUCTS.
12.	ALL VALVES SHALL BE ACCESSIBLE, WITH ACCESS DOOR, IF REQUIRED.
13.	CUTTING AND PATCHING - SHALL BE BY GENERAL CONTRACTOR.

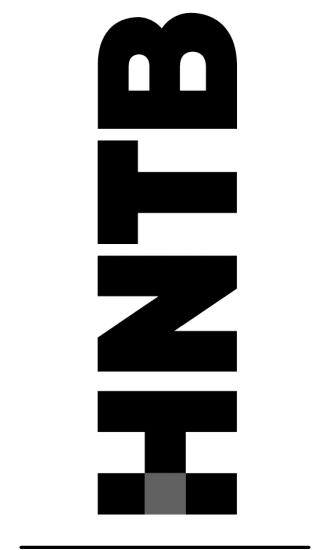
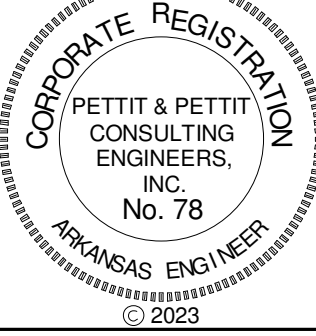
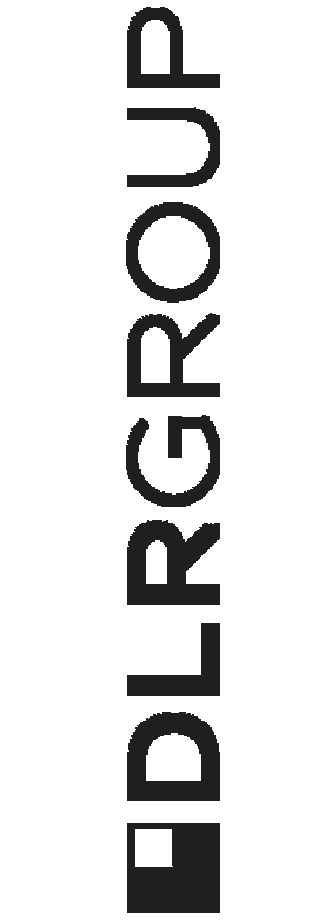
PLUMBING GENERAL NOTES	
1.	THE CONTRACTOR SHALL, PRIOR TO THE START OF ANY WORK UNDER THIS CONTRACT, JOB SITE VERIFY SIZE, LOCATION, ETC. OF ANY EXISTING PIPING NOTED, SHOWN OR IMPLIED, TO WHICH NEW PIPING IS RELATED OR CONNECTED.
2.	HOT AND COLD WATER SUPPLIES TO FIXTURES SHALL BE AS FOLLOWS, UNLESS SHOWN OR NOTED OTHERWISE. <div><div>WATER CLOSET-----1-1/4"</div><div>URINAL-----1"</div><div>LAVATORY-----1/2"</div><div>SERVICE SINK-----3/4"</div><div>ELECTRIC WATER COOLER-----1/2"</div><div>SINK-----1/2"</div><div>SHOWER-----1/2"</div><div>FREEZE-PROOF WALL HYDRANT-----3/4"</div><div>CLINICAL SINK-----1-1/4" & 1/2"</div><div>ICE MACHINE-----1/2"</div><div>SUPPLY AND DRAIN UNIT (WASHER BOX)-----1/2"</div><div>HOSE BIBB-----3/4"</div><div>EMERGENCY SHOWER EYEWASH-----1-1/4"</div></div>
3.	INSTALL WATER HAMMER ARRESTORS EQUAL TO ZURN "SHOKTROL" AT EACH QUICK CLOSING VALVE, AND AT EACH GROUP OF PLUMBING FIXTURES, AND AS NOTED ON DRAWINGS SIZED AS PER MANUFACTURERS RECOMMENDATIONS. (MUST BE ACCESSIBLE WHERE POSSIBLE, ABOVE CEILING IF NECESSARY)
4.	ALL SUPPLIES TO FIXTURE SHALL BE PROVIDED WITH HIGH EAR COUPLING EQUAL TO MUELLER CO. NO. C-100HE (1/2", 3/4" OR 1" SIZE) AT THE WALL (ANCHOR TO CROSS MEMBER SUPPORT) BEFORE PIPE ENTERS ROOM SPACE TO ASSURE NO PIPE MOVEMENT WITHIN WALL CAVITY.
5.	ALL FLOOR DRAINS SHALL BE PROVIDED WITH DEEP SEAL TYPE TRAP WITH NOT LESS THAN FOUR INCH (4") WATER SEAL AND BE PROVIDED WITH TRAP PRIMER.
6.	ALL VENTS THROUGH ROOF (V.T.R.) SHALL BE PROVIDED WITH 6# (24" X 24" FLASH) FLASHING. WHERE STANDING SEAM TYPE IS USED THE FLASHING SHALL BE IN ACCORDANCE WITH THE ROOFING MANUFACTURERS RECOMMENDATION AND AS DETAILED ON THE ARCHITECTURAL DRAWINGS. CLOSE COORDINATION WITH THE ROOFING CONTRACTOR SHALL BE MAINTAINED TO ASSURE THE VENT PENETRATION IS CENTERED WITHIN THE METAL ROOF PANELS. TYPICALLY FOR METAL OR OTHER SPECIAL MATERIAL, ROOFS - USE MANUFACTURED RUBBER BOOT WITH STAINLESS STEEL HARDWARE TYPE THAT IS ARCHITECT APPROVED AND MUST BE COMPATIBLE WITH ROOFING SYSTEM AND ROOF WARRANTY.
7.	FLUSH VALVES SHALL BE MOUNTED SUCH THAT THE DIMENSION FROM FLUSH VALVE CENTERLINE TO FINISHED FLOOR SHALL BE 36". (DOES NOT APPLY TO ELECTRONIC FLUSH VALVES) WHERE HANDICAPPED GRAB BARS ARE INSTALLED ON BACK WALL AT CLOSET, FLUSH VALVE SHALL BE MOUNTED AT STANDARD HEIGHT. SEE SPECIFICATIONS AND WATER CLOSET DETAIL.
8.	○ WHERE THIS SYMBOL OCCURS ON THE DRAWINGS, REFERENCE SHOULD BE MADE TO THE KEYED NOTES ON THAT SAME SHEET AND THE CORRESPONDING NUMBER OF THAT NOTE.
9.	WHERE PLUMBING FIXTURES ARE LOCATED ON EXTERIOR WALL, WATER PIPING SHALL BE INSTALLED ON THE THERMAL SIDE OF THE WALL INSULATION.
10.	CLOSE COORDINATION AND COOPERATION SHALL BE MAINTAINED BETWEEN TRADES WITH REGARD TO PLUMBING, HVAC, FIRE PROTECTION AND ELECTRICAL PLANS.
11.	PROVIDE CLEANOUT CLEARANCE IN ACCORDANCE WITH THE ARKANSAS STATE PLUMBING CODE, BUT DO NOT LOCATE IN FOOT TRAFFIC PATHWAYS. DO NOT LOCATE CLEANOUTS IN FLOORS WITH CARPET. (FIELD COORDINATE) LOCATE FLOOR CLEANOUT NEAR WALLS, IN JANITORS ROOM, STORAGE ROOM, ETC., DO NOT LOCATE NEAR DOORWAYS.
12.	PROVIDE FIRE STOPPING OR FIRE STOP SLEEVE DEVICES AT ALL RATED ASSEMBLIES - SEE ARCHITECTURAL SPECIFICATIONS AND ARCHITECTURAL DRAWINGS FOR DETAILS.
13.	TRAP PRIMERS- LOCATE TRAP PRIMERS REASONABLY CLOSE TO PLUMBING FIXTURE (10' TO 20'); DO NOT CONNECT TRAP PRIMER TO WATER LINE LARGER THAN 1 1/2" SIZE. TRY TO LOCATE TRAP PRIMER LOWER THAN PLUMBING FIXTURES. FIELD VERIFY EXACT TRAP PRIMER LOCATIONS AND WATER PIPE ROUTING. TRAP PRIMER SHALL TYPICALLY BE PRECISION PLUMBING PRODUCTS MODEL # P2-500. WHERE FLOOR DRAINS OCCUR NEAR WATER CLOSETS - USE VACUUM BREAKER TRAP PRIMER SLOAN "TP" - MODEL VBF-72A - EXPOSED 3/8" TUBING SHALL BE VERY MINIMAL AND CHROME PLATED WITH CAST CHROME FLANGE TO WALL.
14.	COORDINATE EXACT LOCATIONS OF ALL PLUMBING PIPING WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
15.	VERIFY WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL "ADA" PLUMBING FIXTURES
16.	ALL JANITORS ROOMS SHALL HAVE FLOOR DRAINS.
17.	ALL SANITARY SEWER RISERS SHALL HAVE CLEANOUT AT THE BASE (WALL CLEANOUT OR FLOOR CLEANOUT)
18.	ALL STORM DRAIN PIPING SHALL HAVE CLEANOUT PLUGS AT EACH 90° TURN ABV CEILINGS AND HAVE A FLOOR OR WALL CLEANOUT AT THE BASE OF ALL RISERS.
19.	INSTALL PIPING EXPANSION JOINTS IN ALL PIPING THAT CROSSES BUILDING EXPANSION JOINTS, SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND PLUMBING ROOF PLAN FOR BUILDING EXPANSION JOINT LOCATIONS.
20.	TWO-WAY CLEANOUTS SHALL BE INSTALLED AT THE JUNCTION OF THE BUILDING DRAIN AND THE BUILDING SEWER (TYP ALL AREAS) - MUST BE INSTALLED TO MEET PLUMBING CODES, EVEN IF NOT SHOWN ON DRAWING - VERIFY AND COORDINATE WITH CIVIL UTILITY DRAWINGS.

FIXTURE LEGEND	
SYMBOL	DESCRIPTION
	NEW FIXTURE
	ROUGH IN AND FINAL CONNECT ONLY
	EXISTING FIXTURE TO REMAIN
	EXISTING FIXTURE TO BE REMOVED
	EXISTING FIXTURE (RELOCATED, OR REPAIRED - SEE NOTES)

PLUMBING LEGEND			
SYMBOL	DESCRIPTION		
	SOIL, WASTE, OR SANITARY SEWER		UNION
	SANITARY SEWER (ON SITE)	FD	FLOOR DRAIN
	SANITARY VENT	RD	ROOF DRAIN
	COMBINATION WASTE AND VENT	AD	ACCESS DOOR
	WATER (ON SITE)	VTR	VENT THRU ROOF
	COLD WATER	HB	HOSE BIBB
	HOT WATER	FPWH	FREEZE PROOF WALL HYDRANT
	HOT WATER RETURN	CO	CLEANOUT PLUG
	STORM DRAIN	FCO	FLOOR CLEANOUT
	INDIRECT DRAIN	AFCO	FLOOR CLEANOUT WITH ACID RESISTANT PIPING AND FITTINGS
	NATURAL GAS (LOW PRESSURE GAS)	WCO	WALL CLEANOUT
	FLOW DIRECTION	ECO	EXTERIOR CLEANOUT
	GATE VALVE		DENOTES - SANITARY VENT STACK THRU ROOF
	GLOBE VALVE	RISER DIAGRAM LOCATION SHEET # RISER DIAGRAM #	RISER DESIGNATION
	CHECK VALVE		NEW CONNECTION TO EXISTING
	BALL VALVE		EXISTING PIPING TO BE REMOVED OR ABANDONED
	PLUG COCK - GAS COCK		EXISTING PIPING TO REMAIN
	PRESSURE REDUCING VALVE		CAP AND SEAL AIR OR WATER TIGHT
	STRANER		TERMINATION POINT OF DEMOLITION

DRAIN SCHEDULE		
SYMBOL	MANUFACTURER	REMARKS
FD-1	WADE SERIES 1100STD FLOOR DRAIN, CAST IRON BODY WITH FLANGE, CLAMPING COLLAR, SEE PAGE OPENINGS AND 7" DIA. NICKEL BRONZE STRAINER WITH TRAP PRIMER TAP	-FURNISH WITH TRAP PRIMER

WATER HEATER SCHEDULE	
1.	WH-1 & 2 WATER HEATER - CHRONOMITE MODEL SR-15L277, INSTANT-FLOW WATER HEATER, 4.1 KW INPUT 15 AMP, 35 GPM AT 81°F RISE, 277 VOLT 1 PHASE, INTEGRATED THERMOSTATIC MIXING VALVE, VANDAL RESISTANT, UL LISTED, WITH CHRONOMITE DISCONNECT.



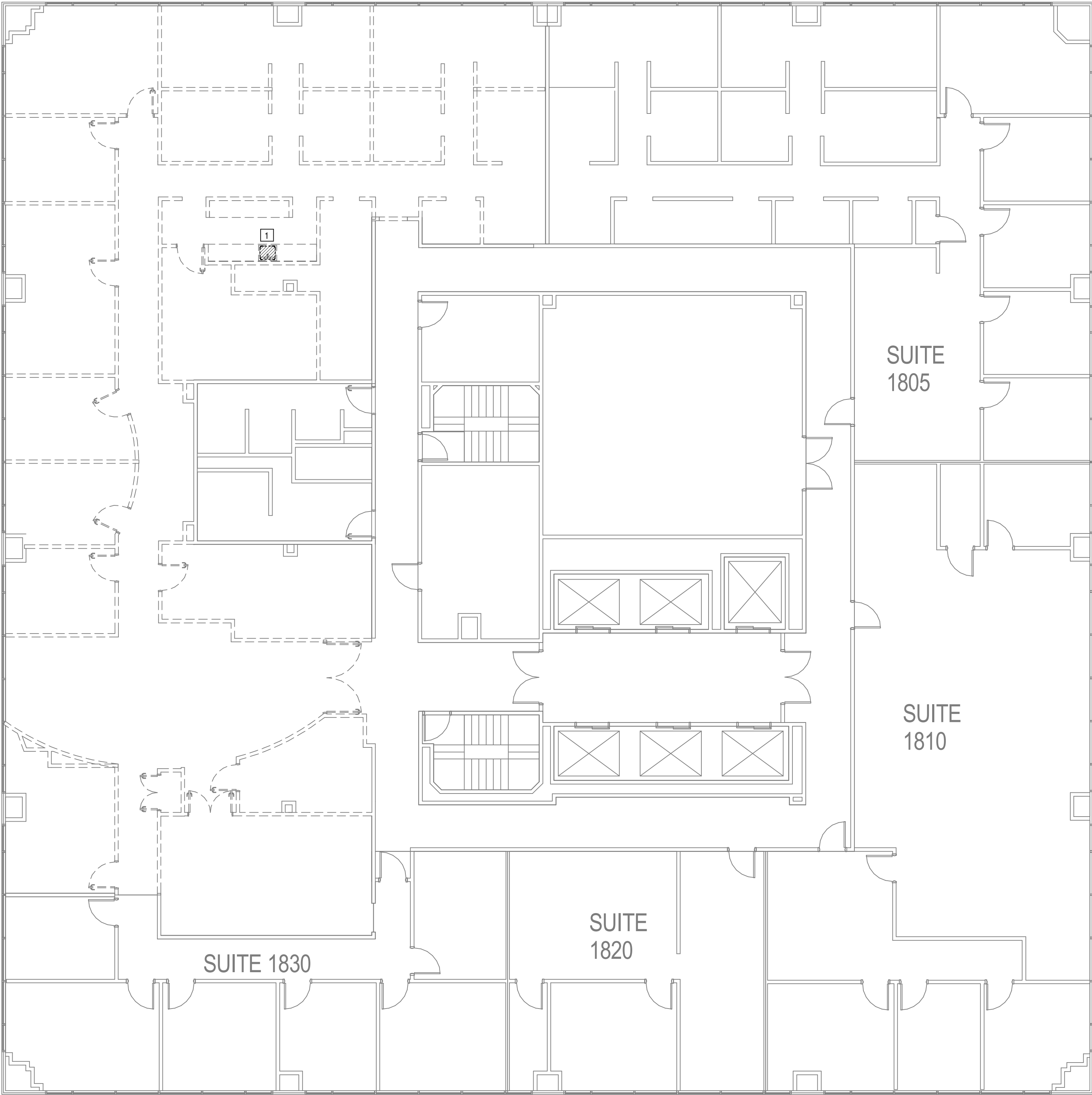
BID-PERMIT
7.14.23
Revisions

Project Number

PLUMBING
GENERAL NOTES
AND LEGENDS

P0.0

As-Built
3/6/2024
CSUSA
No Change



1 DEMOLITION PLAN - PLUMBING
1/8" = 1'-0"

**GENERAL PLUMBING
DEMOLITION NOTES**

1. ALL EXISTING PIPING AND EQUIPMENT SHOWN HAS BEEN TAKEN FROM THE BEST AVAILABLE EXISTING INFORMATION AND SITE VISITS. THE DRAWINGS ARE DIAGRAMMATIC AND ALL FIXTURES, PIPING, AND DEVICES MAY NOT BE SHOWN.
2. THE PLUMBING CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING SYSTEMS AND CONDITIONS IN AREAS OF RENOVATION. FIELD VERIFY EXISTING PLUMBING FIXTURE AND PIPING LOCATIONS, TYPES, SIZES, ETC.
3. THE PLUMBING CONTRACTOR SHALL ALSO REVIEW THE ARCHITECTURAL DEMOLITION DRAWINGS AS PART OF THIS CONTRACT FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
4. THE PLUMBING CONTRACTOR SHALL COORDINATE DEMOLITION WORK WITH THAT OF OTHER TRADES IN ORDER TO AVOID CONFLICTS.
5. THE PLUMBING CONTRACTOR SHALL REMOVE ALL PLUMBING FIXTURES, CARRIERS, TRIM, ACCESSORIES, EQUIPMENT, FLOOR DRAINS, AND PIPING AS SHOWN OR INDICATED ON THE DRAWINGS.
6. ALL PIPING TO BE REMOVED SHALL BE REMOVED TO BELOW FLOOR, ABOVE CEILING, OR IN WALLS BACK TO MANS OR SHUT OFF VALVES AT MANS AND PROPERLY CAPPED PER CODE WITHOUT LEAVING DEAD ENDED PIPING.
7. REMOVE ALL EXPOSED EXISTING PIPING WHICH IS DEEMED INOPERABLE AS A RESULT OF THIS CONTRACT UNLESS SHOWN OR NOTED OTHERWISE. NO EQUIPMENT OR DEVICES THAT HAVE BEEN DISCONNECTED OR ABANDONED SHALL REMAIN.
8. ALL PIPING TO BE REMOVED SHALL BE REMOVED COMPLETELY OR AS OTHERWISE SHOWN OR INDICATED ON DRAWINGS. ALL PIPE HANGERS, SLEEVES, RISER CLAMPS, ETC. SHALL BE REMOVED COMPLETELY WITH PIPING. NO EXISTING HANGER SYSTEMS SHALL BE REUSED FOR NEW PIPING.
9. ANY SYSTEMS OR EQUIPMENT TO REMAIN ACTIVE DURING RENOVATION SHALL BE KEPT IN OPERATION BY PROVIDING TEMPORARY PIPING CONNECTIONS AS REQUIRED UNTIL NEW SYSTEMS ARE INSTALLED AND OPERATIONAL.
10. ALL SERVICE INTERRUPTIONS SHALL BE COORDINATED AND APPROVED WITH THE OWNER PRIOR TO COMMENCEMENT OF WORK.
11. EXISTING PIPE, TO WHICH NEW PIPE IS CONNECTED, SHALL BE RODDED, FLUSHED, AND CLEANED FROM POINT OF CONNECTION TO MAIN OUTSIDE BUILDING.
12. ALL PLUMBING FIXTURES, VALVES, PIPING, AND EQUIPMENT WHICH ARE TO BE REMOVED AND NOT RELOCATED SHALL BECOME THE PROPERTY OF THE OWNER AND DELIVERED TO STORAGE ON SITE OR DISPOSED OF AS DIRECTED BY THE OWNER.

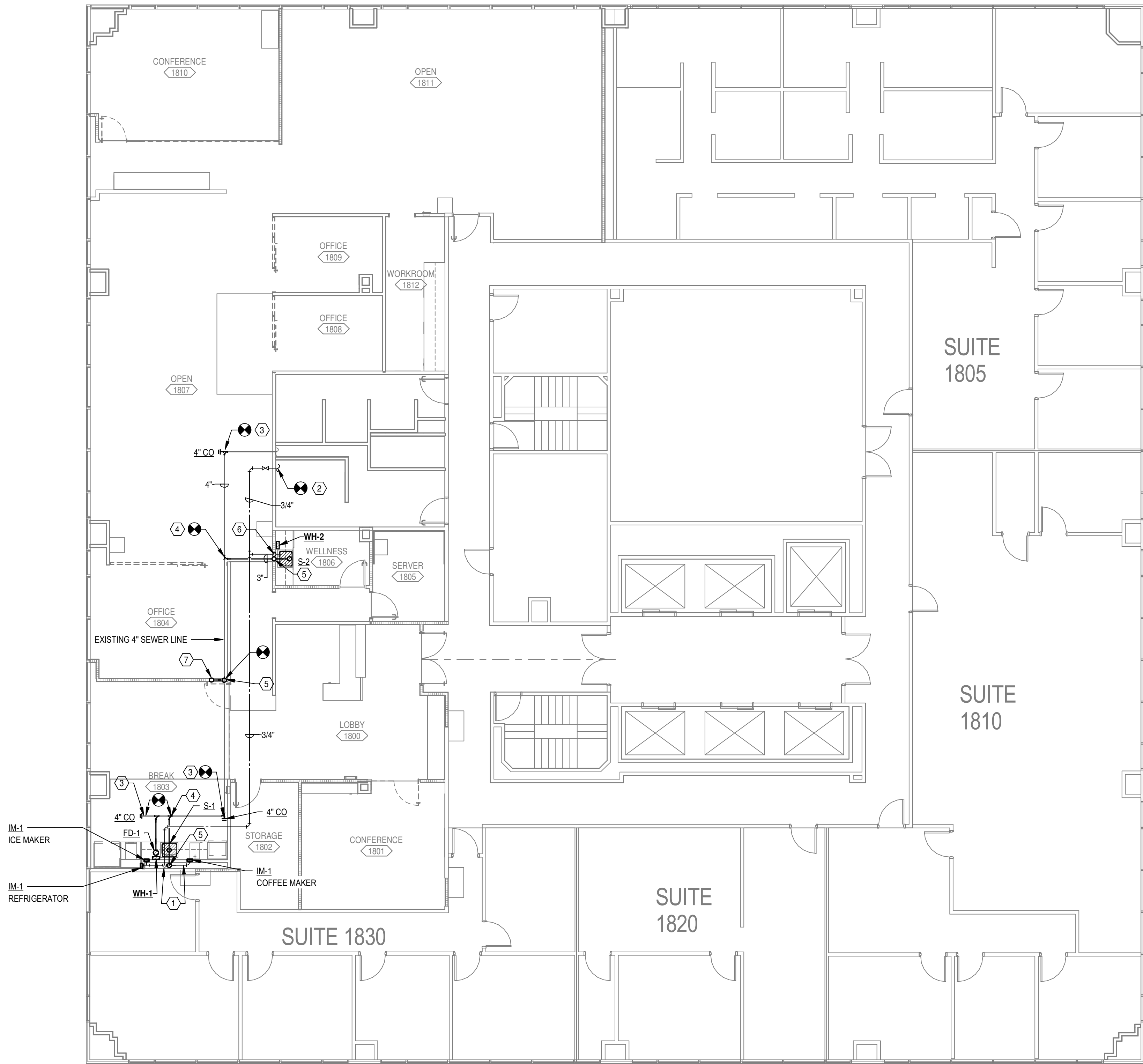
PLUMBING DEMO KEYED NOTES

- 1** EXISTING COUNTER MOUNTED SINK SHALL BE REMOVED. EXISTING SEWER LINE SHALL BE CAPPED BELOW FLOOR AND FLOOR SHALL BE REPAIRED AS DIRECTED BY ARCHITECT. REFER TO ARCHITECT FOR FLOOR PATCH AND REPAIR. EXISTING VENT, CWI, AND HWI LINES SHALL BE CAPPED ABOVE CEILING. FIELD VERIFY EXACT LOCATION OF EXISTING SEWER, VENT, AND WATER LINES.

As-Builts
3/6/2024
CSUSA
No Change



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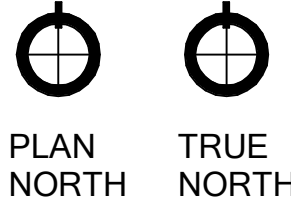
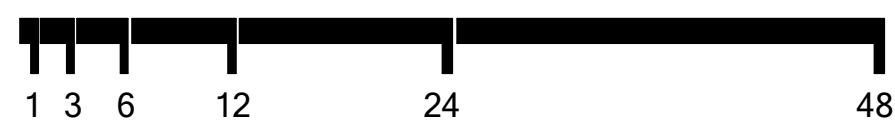


1 FLOOR PLAN - PLUMBING
1/8" = 1'-0"

PLUMBING KEYED NOTES

- 3/4" CW DOWN PLUMBING CHASE WALL TO S-1. PROVIDE 3/4" CW HEADER IN WALL AND ROUTE 1/2" CW LINE TO EACH IM-1 AND 1/2" CW LINE TO WH-1. CONNECT AS REQUIRED.
- 3/4" CW LINE CONNECTED TO EXISTING CW LINE LOCATED ABOVE EXISTING TOILET ROOM CEILING. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND SIZE OF EXISTING LINE PRIOR TO CONNECTION.
- PROVIDE 4" CLEANOUT TO EXISTING 4" SEWER LINE.
- CONNECT NEW 3" SEWER LINE FROM NEW SINK TO EXISTING 4" SEWER LINE. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING SEWER LINE PRIOR TO CONNECTION.
- PROVIDE 3" AIR ADMITTANCE VALVE AT TOP OF EACH VENT STACK ABOVE CEILING.
- 1/2" CW DOWN WALL TO S-2. PROVIDE 1/2" CW TO WH-2. CONNECT AS REQUIRED.
- 2" FIXED AIR GAP DRAIN IN WALL FOR MECHANICAL CONDENSATE. REFER TO DETAILS AND RISER SHEET P2.1.

NOTE:
ALL SANITARY SEWER CONNECTIONS TO EXISTING 4" SEWER LINE BELOW FLOOR AND ABOVE 17TH FLOOR CEILINGS SHALL BE COORDINATED WITH BUILDING MANAGEMENT. WORK WILL NEED TO OCCUR ON NIGHTS AND/OR WEEKENDS.



As-Builts
3/6/2024
CSUSA
No Change

HNTB
FLOOR 18

BID-PERMIT
7.14.23
Revisions

Project Number
FLOOR PLAN - PLUMBING

P1.1

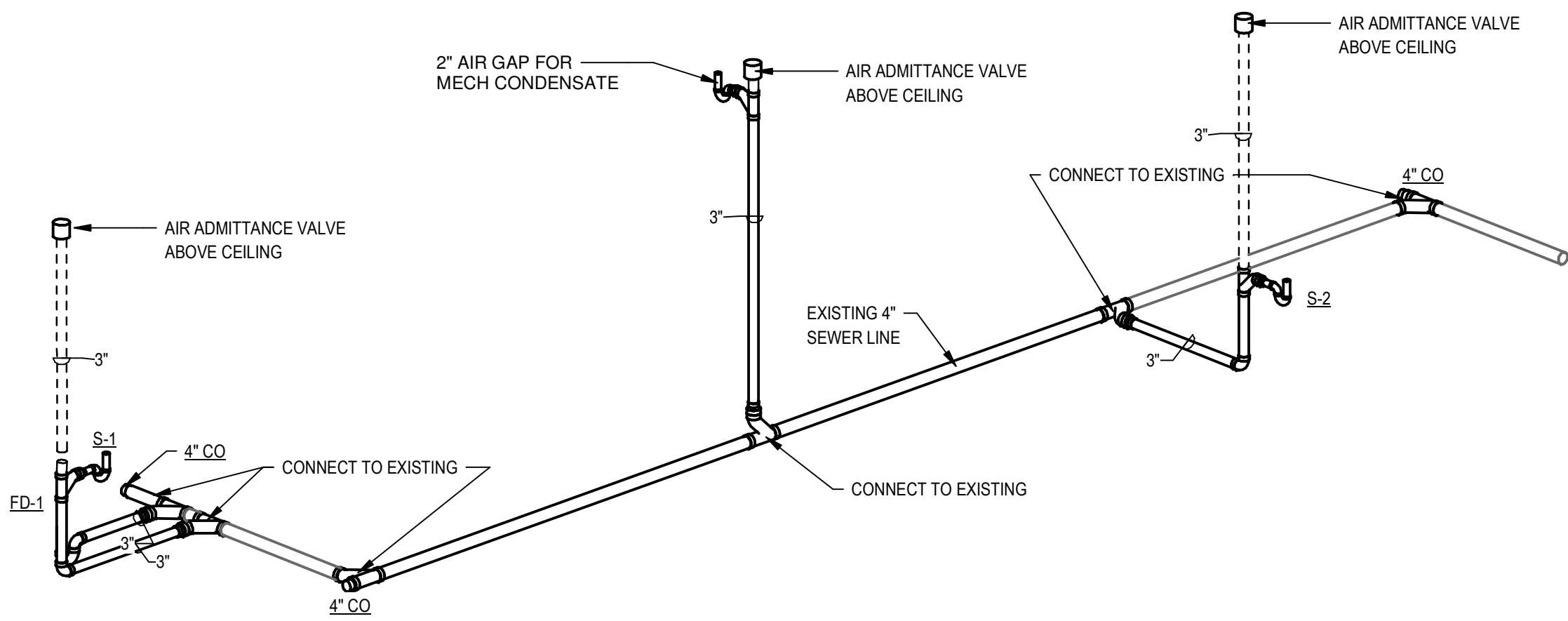
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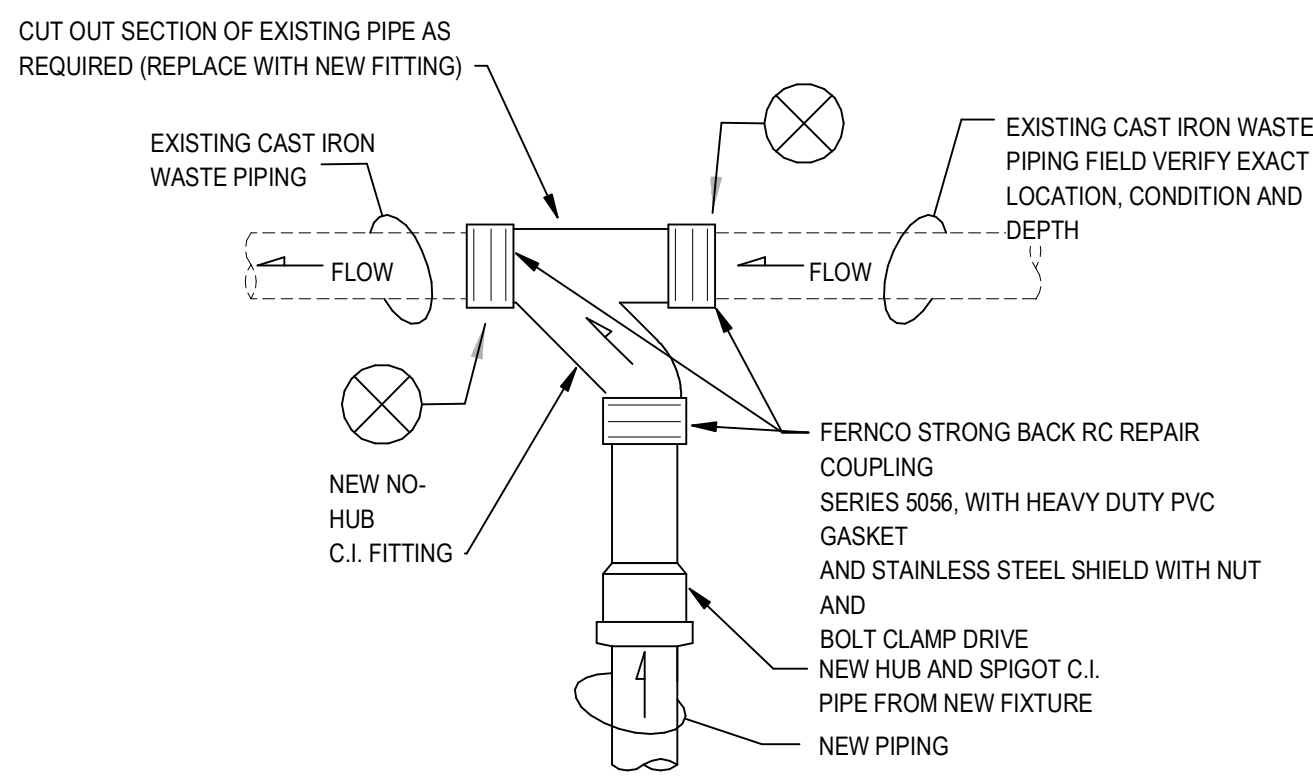
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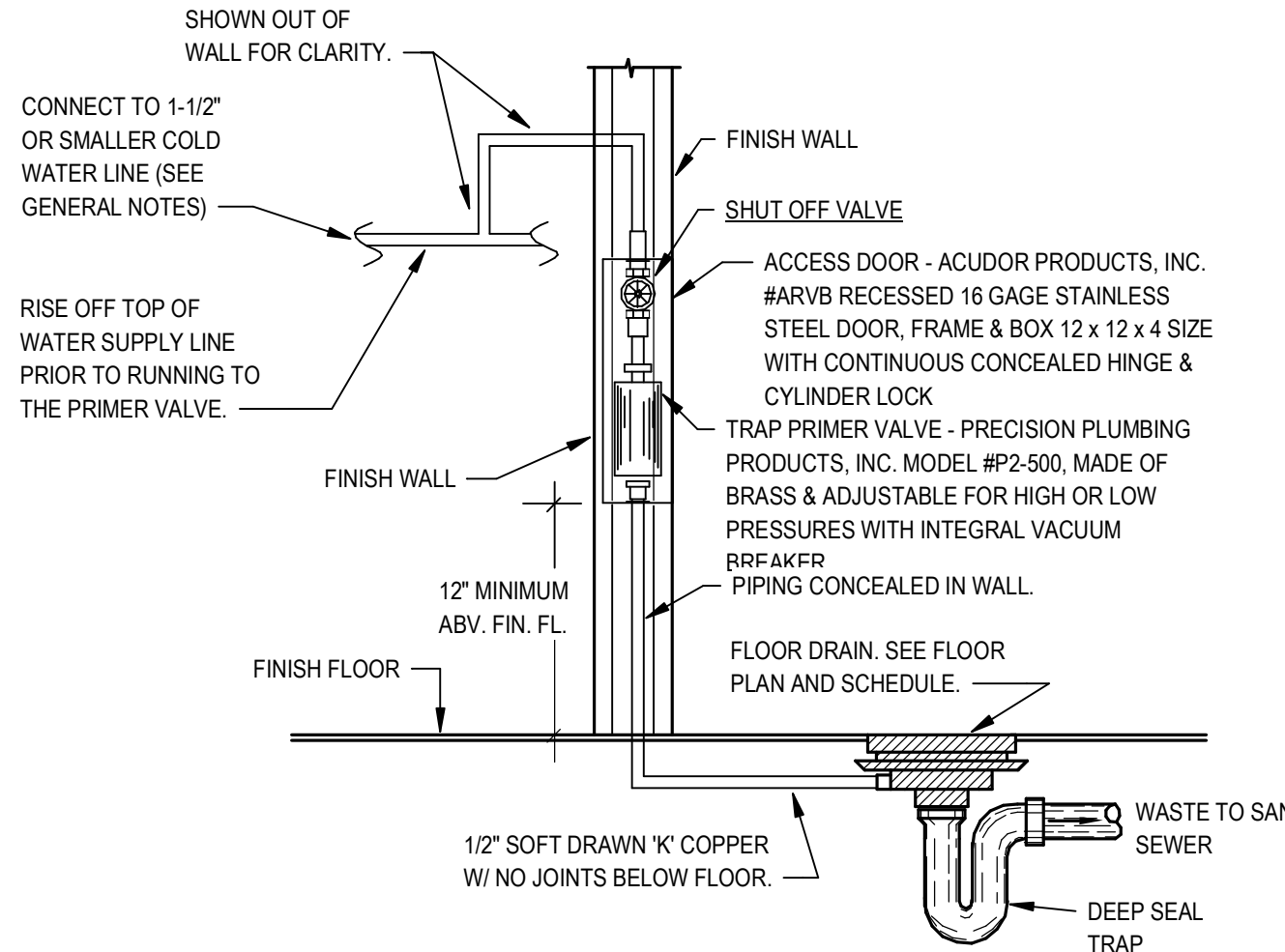
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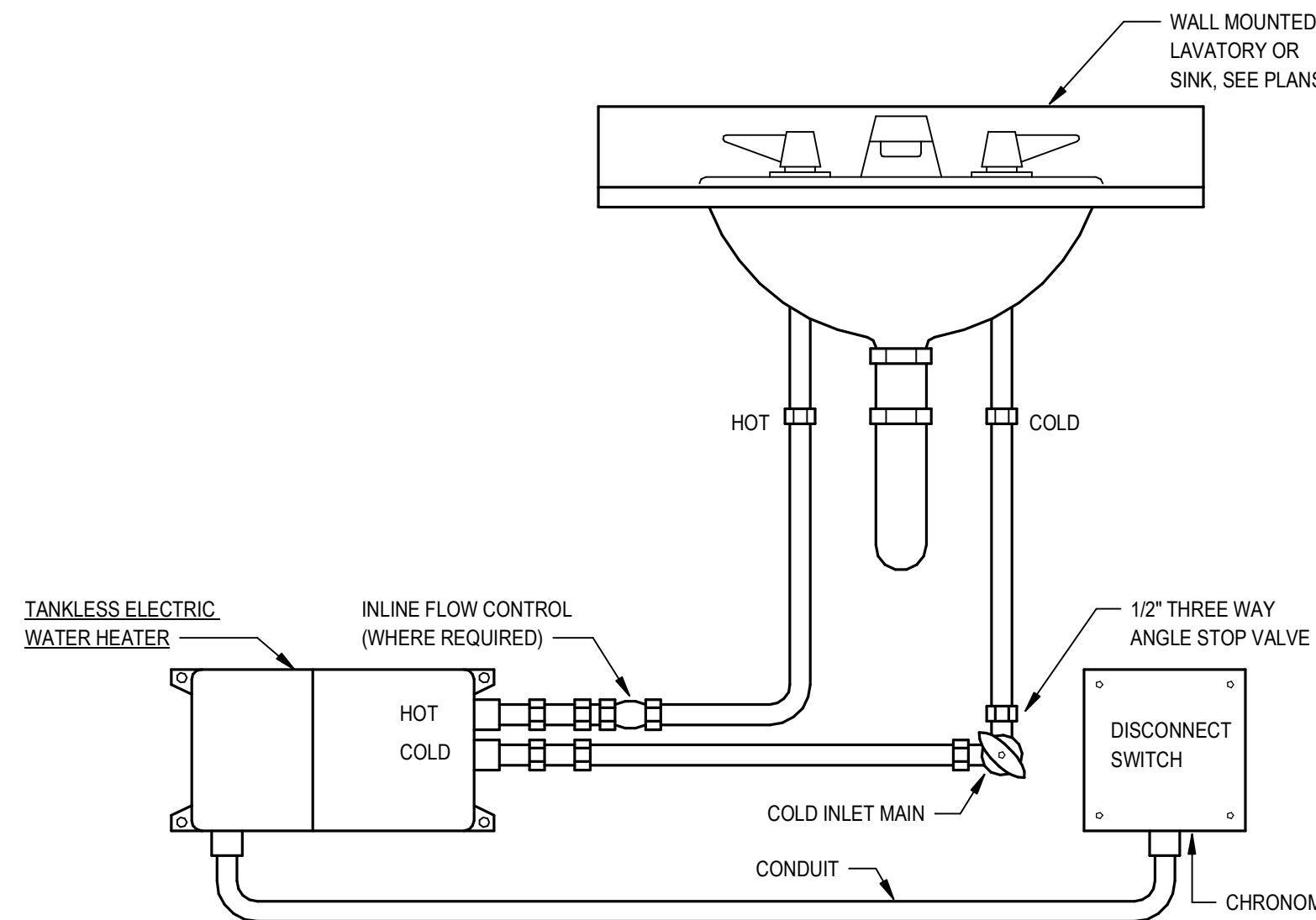
1 SANITARY SEWER RISER
NOT TO SCALE



2 CONNECTIONS OF NEW FITTINGS IN EXISTING WASTE PIPING BELOW FLOOR
SCALE: NONE

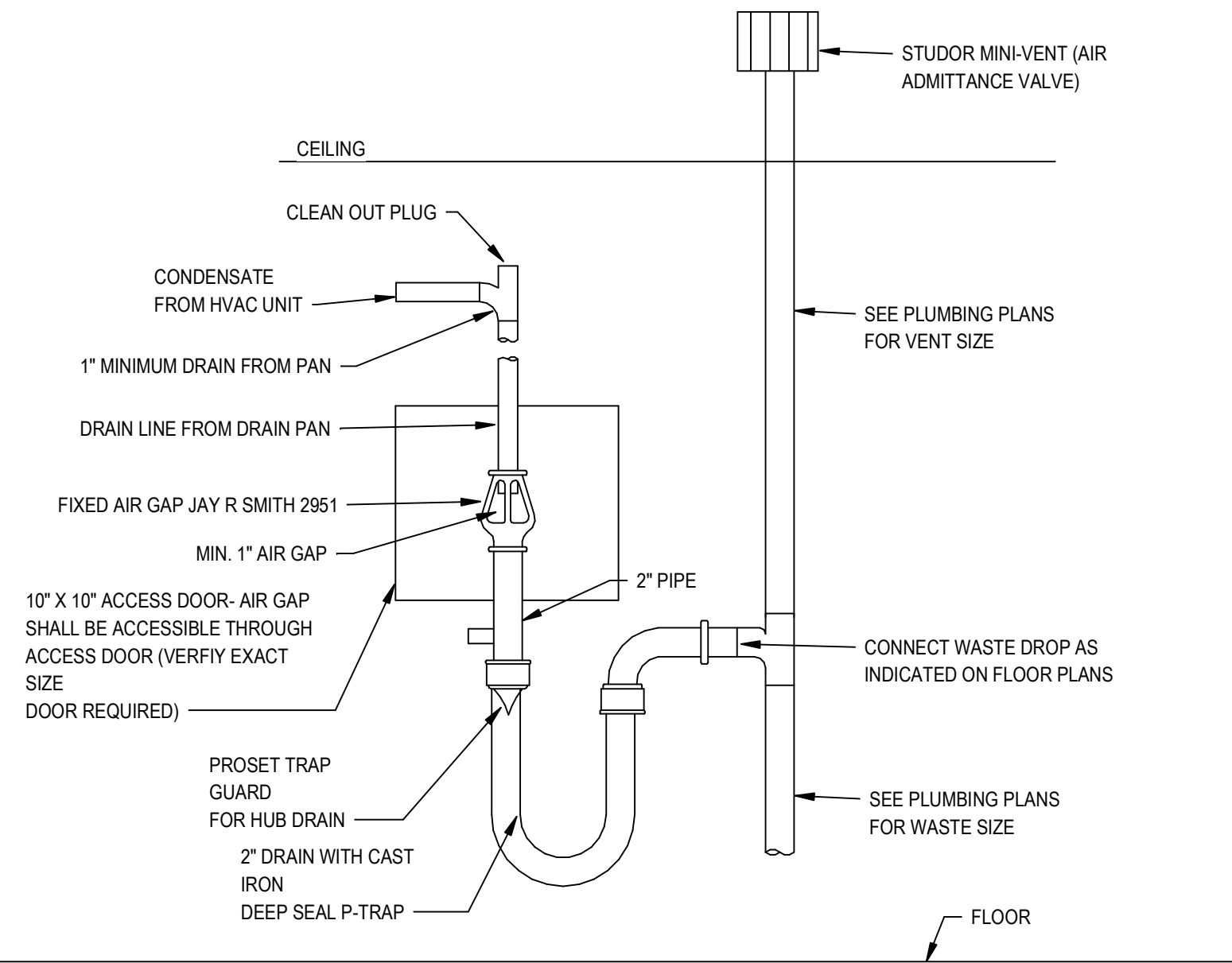


4 TRAP PRIMER DETAIL
SCALE: NONE (FOR CONCEALED LOCATIONS)



- NOTES:**
1. WHERE WATER HEATER IS MOUNTED UNDER WALL LAVATORY KEEP ALL PIPING AND ELECTRICAL NEATLY UNDER LAVATORY. ELECTRICAL CONTRACTOR
 2. WHERE WATER HEATER IS MOUNTED UNDER COUNTER MOUNTED LAVATORY OR SINK- CAREFULLY COORDINATE WITH ARCHITECTURAL MILLWORK DRAWINGS FOR ACCESS PANEL REMOVAL.
 3. WHERE ONE WATER HEATER SERVES TWO LAVATORIES- LOCATE WATER HEATER BETWEEN LAVATORIES IF POSSIBLE.
 4. WHERE POSSIBLE, WATER HEATER SHALL BE LOCATED IN STORAGE ROOM, JANITOR'S ROOM ETC. IF ADJACENT TO LAVATORIES.
 5. WATER HEATER UNDER SINKS ARE PIPED SIMILAR.

3 ELECTRIC WATER HEATER (EWH-1) DETAIL
SCALE: NONE



5 CONDENSATE WASTE DETAIL
SCALE: NONE