HVAC SPECIFICATIONS

HVAC GENERAL

Refer to all other drawings and specifications, and be responsible for all applicable provisions therein. Furnish and install all necessary labor and materials for a complete system. Any appliances or materials obviously a part of the system and necessary for its proper operation, although not specifically mentioned herein, shall be furnished and installed as if called for in detail. Workmanship and materials shall be in accordance with all state and local codes, NFPA 90A, and the building regulations. Attain and pay for all required permits and fees. Equipment and materials shall be new unless otherwise specified. Mechanical Contractor shall be licensed to handle CFC refrigerants.

Drawings are generally diagrammatic and do not necessarily show every fitting, offset, drop and rise of runs, and detail. Install ducts, equipment, and controls in a neat, workmanlike manner and in accordance with good practice for a complete, workable installation. Avoid conflict with other work; make adequate provisions for preventing noise and vibration. Drawings indicate locations of fixtures, apparatus, ductwork and piping; while these are to be followed as closely as possible, if it is necessary to change the location of same to accommodate building conditions, make changes without additional cost to the Owner and as approved by the Architect. Provide adequate access to equipment and apparatus requiring operation, service, or maintenance within the life of the system. Do not run piping or ductwork, or locate equipment (with respect to switchboards, panel boards, power panels, motor control centers, or dry type transformers) within 42 inches in front of equipment, over equipment, or within 36 inches horizontally of same space.

COORDINATION

Coordinate all work under this Division with work under other Divisions. Provide adjustments as necessary. Equipment, apparatus, ductwork, piping, etc., installed without regard for the space requirements of other trades will be reworked at the expense of the installing subcontractor if it creates an unnecessary hindrance to the installation of another trade's work. All items mounted at or below the ceiling and any item penetrating the ceiling shall be coordinated with the architectural reflected ceiling plans.

PROTECTION OF WORK DURING CONSTRUCTION

Provide protective covers, skids, plugs, or caps to protect equipment and materials from damage and deterioration during construction. Protect exposed coils with plywood or other suitable rigid covers to avoid damage to fins.

Protect all equipment and materials from damage. Any damage shall be repaired using the same materials at the Contractor's cost.

SUBMITTALS

Submit for review five copies of shop drawings on all equipment, grilles and diffusers, automatic control diagrams, ductwork layout, piping layout, and sheet metal construction standards.

Submit all shop drawings for review and approval prior to purchase, fabrication, and installation.

TESTING

Refrigerant piping shall be leak tested using nitrogen and refrigerant charge with electronic leak detector. After repairing leaks, retest as required. After leak test, dehydrate by producing and holding vacuum of 2.5 in. hg. Maintain vacuum for 24 hours with maxmum 0.05 in. pressure rise. If leakage exceeds 0.05 in., repeat all of test before dehydration.

All leaks shall be repaired by tightening, re—welding, or replacing pipe and fittings.

Adjust dampers, registers, and diffusers for proper air distribution. Check system under actual operating conditions, and make adjustments for a uniform temperature through the conditioned space.

CLEANING AND ADJUSTING

The exterior surfaces of all mechanical equipment, piping, ducts, etc., shall be cleaned of all grease, oil, paint, and other construction debris. Ducts, plenums, and casings shall be cleaned of all debris and blown free of all particles of rubbish and dust before installing outlet faces. Bearings that require lubrication shall be lubricated in accordance with the manufacturer's recommendations. All control equipment shall be adjusted to the settings indicated or required for performance as specified. Flush water piping systems until water runs clean. Remove all stickers, rust, stains, labels, and temporary covers before final acceptance. Remove foreign matter from equipment, piping and ductwork systems, and appurtenances. Clean and polish identification plates. Remove all trash and debris from the job site on a daily basis.

BALANCING

Contractor shall retain the services of an independent Test and Balance agency. Testing and balancing of the HVAC systems shall be performed in accordance with AABC or NEBB standards.

GUARANTEE

Materials and workmanship shall be guaranteed against defects for one year. Provide additional four years warranty on all compressors.

EQUIPMENT IDENTIFICATION

Provide labels for each equipment, starter and control switch. Labels to be engraved laminated bakelite nameplates with 1/4—inch high white cut letters; secure to starter or switch.

OPENINGS THROUGH ROOF AND EXTERIOR WALLS

Provide all necessary flashing and counterflashing to maintain the waterproof integrity of this building as required by the removal and/or installation of pipes, ducts, conduits, and equipment. Submit for review to the building management

HVAC INSULATION

Quality Assurance: Specified components of this insulation system, including facings, mastics, and adhesives, shall have a fire hazard rating not to exceed 25 for flame spread and 50 for smoke developed rating, as per tests conducted in accordance with ASTM E84 (NFPA 255) methods.

Pipe Insulation:

TYPE P1 ASTM C534: Flexible, closed cell elastomeric, nominal 6 P.C.F. density, K factor 0.27 maximum at 75 degrees F mean, plenum rated. Insulation located within the ceiling plenum on the basement level shall be

Approved products: Armstrong AP Armaflex, Manville Aerotube II, Nomaco Therma—Cel, Rubatex R—180—F5.

Duct Insulation:

TYPE D1 ASTM C553 TYPE 1, CLASS B3: Fiberglass, nominal 1 (one) P.C.F. density blanket, K factor 0.31 maximum at 75 degrees F mean, with factory—applied FSK (Foil—Scrim—Kraft) vapor barrier jacket, for temperatures to 250 degrees F.

Approved products: CertainTeed "Standard Duct Wrap", Manville "Microlite", Owens/Corning Fiberglass RFK-75, Knauf "Ductwrap".

HVAC INSULATION (CONTINUED)

TYPE D2: Fiberglass, nominal 2.0 P.C.F. density liner, K factor 0.26 maximum at 75 degrees F mean, black coating, for temperatures to 250 degrees F.

Approved products: CertainTeed Ultralite Duct Liner 200, Manville Linacoustic, Knauf Duct Liner M.

Installation of Pipe Insulation:

Install insulation on pipe systems subsequent to testing and acceptance of test.

Maintain integrity of vapor—barrier jackets on pipe insulation, and protect to prevent puncture or other damage. Seal open ends of insulation with mastic. Sectionally seal all butt ends of all cold water piping insulation at fittings with white vapor barrier coating.

Cover valves, flanges, fittings, and similar items in each piping system with equivalent thickness and composition of insulation as applied to adjoining pipe run. Install factory—molded, precut or job—fabricated units (at Installer's option). Finish cold pipe fittings with white vapor barrier coating and hot piping with white vinyl

Extend piping insulation without interruption through walls, floors, and similar piping penetrations, except where otherwise indicated.

Installation of Ductwork Insulation:

acrylic mastic, both reinforced with glass cloth.

Maintain integrity of vapor—barrier on ductwork insulation, and protect it to prevent puncture and other damage. Tape all punctures. Secure all ductwork with galvanized wire 12 inches O.C. Secure ductwork with outward clinching staples. Seal all longitudinal and circumferential joints with FSK tape.

Extend ductwork insulation without interruption through walls, floors, and similar ductwork penetrations, except where otherwise indicated.

Omit insulation on supply and return ductwork where internal insulation or sound—absorbing linings is installed.

All internal insulation shall be adhered to the duct with 100% coverage of approved fire—retardant mastic. All edges shall be sealed and any abrasions or tears repaired with mastic.

Increase indicated duct sizes to compensate for liner thickness.

Insulation Requirements:

Refrigerant Gas Piping: TYPE P1, 1/2-INCH THICKNESS

Interior Condensate Drain Piping: TYPE P1, 1/2—INCH THICKNESS

Ductwork, Supply and Return Air: TYPE D1, 2—INCH THICKNESS

Ductwork, Rectangular Supply and Return within 5 feet of each fan—coil unit: TYPE D2, 1—INCH THICKNESS

SHEET METAL WORK

Except as otherwise noted, all ductwork and other sheet metal work shall be installed in accordance with latest edition of the Sheet Metal and Air Conditioning Contractor National Association, Inc. (SMACNA), HVAC Duct Construction Standards manual. Ductwork shall be galvanized sheet steel, unless otherwise noted. Fiberglass ductwork is NOT acceptable.

Minimum ductwork static pressure construction shall be 2—inch W.G. All ducts shall be seal Class "C".

Low pressure flexible duct shall be similar to Flexmaster Type 5 or approved equal, with 1—inch thick insulation and shall conform to U.L. 181 and NFPA Bulletin 90A. Maximum length shall not exceed five (5) feet.

Volume Dampers: Same material as duct, per SMACNA, except provide bearing at one end of damper rod and quadrant with lever and lockscrew at other end. For insulated ducts, quadrants mounted on collar shall clear insulation; install with levers accessible outside insulation. Balancing dampers shall be the opposed blade type.

Flexible Connections: Neoprene—coated glass fabric, 30 oz. per square yard with sewed and cemented seams, similar to vent fabrics. Provide flexible connections between all equipment and rigid ductwork. Fabric connections shall be at least four (4) inches long and have metal collar at each end; allow at least one—inch slack to eliminate vibration transmission.

Turning Vanes: Galvanized steel, single thickness vanes with minimum 2—inch inside radius. All square elbows shall have turning vanes.

Duct sizes shown are clear inside dimensions. Where internal insulation is called for, dimensions shall be increased by thickness of insulation.

Portions of ductwork visible through supply and return air openings shall be painted flat black.

Transition rectangular ductwork on the bottom and the sides. Maintain ductwork level and as high as possible unless noted otherwise.

All branch ductwork shall be sized to match the inlet of the diffusers or grille served. Flexible duct runouts may NOT be used in inaccessible locations.

All duct transitions from square to round shall be smooth square—to—round transitions. Spin—in fittings at the end of capped ducts are not acceptable.

For round duct take-offs from metal ducts, use Genflex Model No. SM-1DEL "Spin-in" fitting.

PIPING

General: Piping shall be complete with pipe fittings, valves, couplings, hanger rods, hangers, supports, guides, sleeves, and accessories in conformance with the latest codes and ASME, ANSI, ASTM, and MSS Standards.

For pipe sizes not indicated on plans, see manufacturer's equipment connection details.

Avoid entry of foreign matter into piping during construction. After completion of piping, flush water system with water until clear.

Provide minimum pitch to insure adequate venting and drainage.

PIPING (CONTINUED)

Piping Material:

Refrigerant piping shall be copper ASTM #B280, factory cleaned, nitrogen charged, and capped.

Condensate discharge piping located in the ceiling return air plenum on the basement level shall be type M copper with wrought copper sweat fittings. All other condensate piping shall be schedule 40 PVC, with solvent weld fittings.

Refrigerant Pipe Size:

Liquid and gas refrigerant lines shall be sized per manufacturer's recommendations.

AIR DISTRIBUTION DEVICES

Diffusers, registers, and grilles shall be as scheduled on the drawings, Titus models noted, or equal.

Ceiling diffusers shall be 4—way throw, unless shown otherwise on drawings.

All diffusers and registers shall be furnished with opposed-blade dampers.

Exact location of all ceiling—mounted diffusers, grilles, and registers to be coordinated with lighting layout and reflected ceiling plan.

EQUIPMENT

Split system heat pump units: Direct expansion split system heat pumps consisting of an outdoor, air cooled heat pump and an indoor fan—coil unit complete with direct—driven centrifugal blower assembly, evaporator coil with drain pan, auxiliary electric resistance heater and inlet filter rack with filter. Capacities shall be as scheduled on the drawings. Units shall be provided with a seven day programmable wall thermostat with "FAN ON—AUTO" control. Split system heat pumps shall be Carrier, as scheduled, or approved equal.

Variable Refrigerant Flow (VRF) System: Direct expansion split system heat pumps consisting of a single outdoor, air cooled, variable capacity heat pump and twenty—one indoor fan—coil units complete with direct—driven blower assembly, evaporator coil with drain pan, integral condensate lift pump and inlet filter rack with filter. Capacities shall be as scheduled on the drawings. Fan—coil units shall be provided with a seven day programmable wall thermostat with "FAN ON—AUTO" control. VRF split system heat pumps shall be Mitsubishi "City Multi", as scheduled, or approved equal.

Dedicated Outside Air Unit with Energy Recovery (ERV): packaged, direct expansion heat pump unit, designed specifically for 100% outside air service, complete with centrifugal supply air fan, exhaust fan, direct expansion heating/cooling heat pump system, hot—gas reheat, energy recovery wheel, outside air intake hood, gravity relief and digital control system. Unit shall be Aaon, as specified, or approved equal. Provide accessory curb base to provide horizontal discharge and return duct connections as indicated on the drawings.

Fans: Shall be Cook, as scheduled on the drawings, or equal. Direct drive fans shall be furnished with solid state speed controls to allow balancing to the specified air flow. Speed controllers shall be mounted directly to the fan housing, unless noted otherwise. In—line cabinet fans shall be provided with acoustically insulated housings, direct—driven or belt—driven centrifugal blowers, as scheduled, and inlet/outlet duct connections. Capacities shall be as scheduled on the drawings.

AUTOMATIC CONTROLS

The intent of this section is to obtain a complete, functional control for all mechanical equipment, systems, and devices of the project. This Contractor is to furnish and install, as required, electric/electronic controls, all necessary components, control wiring, interlock wiring, contactors, relays, control transformers, alarms, control valves, etc., to achieve the desired control operation for the air conditioning systems.

Control Wiring: Shall be #12 CU. THHN installed in EMT conduit (minimum 1/2—inch diameter) or plenum—rated cable

Automatic Dampers: Automatic dampers shall be similar to Ruskin Model CD40. Automatic damper shall be factory—fabricated and sized, and provided by control manufacturer.

Sequence of Operation:

Dedicated outside air unit ERV-1 shall operate on its internal control system to supply pre-conditioned outside air to the space at a neutral (72°FDB/55%RH) condition whenever the unit is in the occupied mode. The unit shall be interlocked to operate in the occupied mode whenever HP-1 is operating in the occupied mode.

VRF split system heat pump fan—coil units shall be controlled by wall mounted, programmable thermostats. The outdoor heat pump unit shall operate on its internal controls to provide heating and/or cooling capacity to match the requirements of the indoor fan—coil units.

Each split system heat pump unit (HP—2 through HP—9) shall be controlled by a wall mounted seven—day programmable thermostat. When the system is in the occupied mode, the blower shall run continuously. In the unoccupied mode, the blowers shall cycle with the heating or cooling.

Air transfer fan F-1 shall be interlocked with ERV-1 to run whenever ERV-1 is in the occupied mode.

Toilet exhaust fan F-2 shall be interlocked with FCU-2 to run whenever FCU-2 is in the occupied mode.

Each split system fan—coil unit (FCU—2 through FCU—9) shall be equipped with a full size (10"\u00c0), two—position, motorized damper in the outside air duct. The damper shall close whenever the blower is off and open whenever the blower is running in the occupied mode.

FAYETTE
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own planning

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COMMENTS

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Prepared for FAYETTE CO.

COMMISSION NO: 1465.17

SHEET TITLE:

HVAC SPECIFICATIONS

SHEET NO:

M101
NOT ISSUED FOR CONSTRUCTION

1101

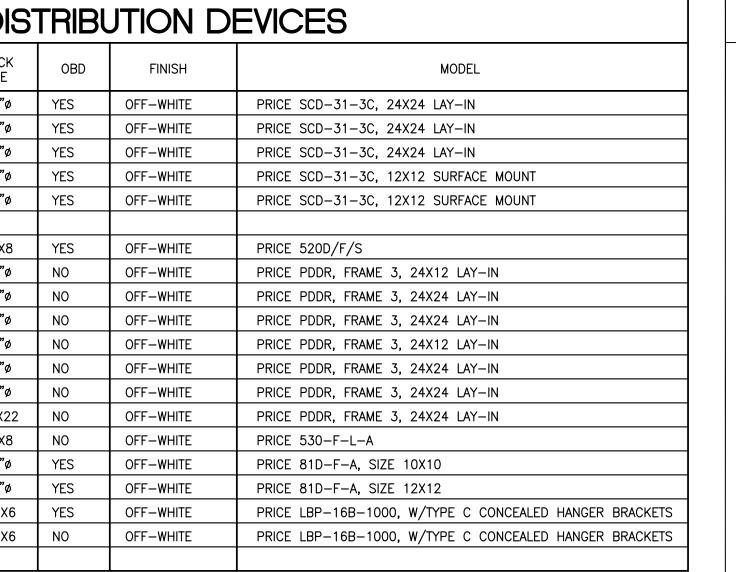
						SP		Γ (SYSTE	M	HEAT PU	MP	UNIT	S				
									INDOOR UNIT					OUTD	OOR U	NIT		
	Alf	R FLO	W DATA		С	OOLING	DATA	١	HEATING DA	TA			AMBIENT	AMBIENT				REMARKS
SYMBOL	SUPPLY CFM		E.S.P. IN. WG	MAX. HP	TOTAL MBH	SENS. MBH	EAT DB	°F WB	REFRIG. HEAT AT 47°F AMB. TEMP. (BTUH)	HEAT	MODEL	SYMBOL	AIR TEMP (COOLING)	AIR TEMP	SEER	HSPF	MODEL	REMARKS
FCU-1	425	_	-	1/10	18.0	13.5	80	67	19,000	-	MITSUBISHI PKA-A18HA	HP-1	95 ° F	47°F	15.3	9.5	MITSUBISHI PUZ-A18NHA3	1
FCU-2	1590	250	0.80	3/4	46.7	34.0	80	67	46,000	11.3	CARRIER FV4CNB006	HP-2	95 ° F	47°F	15.0	8.7	CARRIER 25HCC548	1
FCU-3	1120	300	0.80	1/2	34.4	25.6	80	67	34,800	7.5	CARRIER FV4CNF002	HP-3	95 ° F	47°F	15.0	8.7	CARRIER 25HCC536	1
FCU-4	1240	300	0.80	1/2	42.0	31.4	80	67	42,000	11.3	CARRIER FV4CNF005	HP-4	95 ° F	47°F	15.0	8.7	CARRIER 25HCC542	1
FCU-5	1400	250	0.80	3/4	46.7	34.0	80	67	46,000	11.3	CARRIER FV4CNB006	HP-5	95 ° F	47°F	15.0	8.7	CARRIER 25HCC548	1
FCU-6	1290	300	0.80	1/2	42.0	31.4	80	67	42,000	11.3	CARRIER FV4CNB005	HP-6	95 ° F	47°F	15.0	8.7	CARRIER 25HCC542	1
FCU-7	1170	300	0.80	1/2	34.4	25.6	80	67	34,800	7.5	CARRIER FV4CNF002	HP-7	95 ° F	47°F	15.0	8.7	CARRIER 25HCC536	1
FCU-8	1540	200	0.80	3/4	46.7	34.0	80	67	46,000	11.3	CARRIER FV4CNB006	HP-8	95 ° F	47°F	15.0	8.7	CARRIER 25HCC548	1
FCU-9	1760	300	0.80	3/4	57.6	43.5	80	67	57,700	11.3	CARRIER FV4CNB006	HP-9	95°F	47°F	15.0	8.5	CARRIER 25HCC560	1

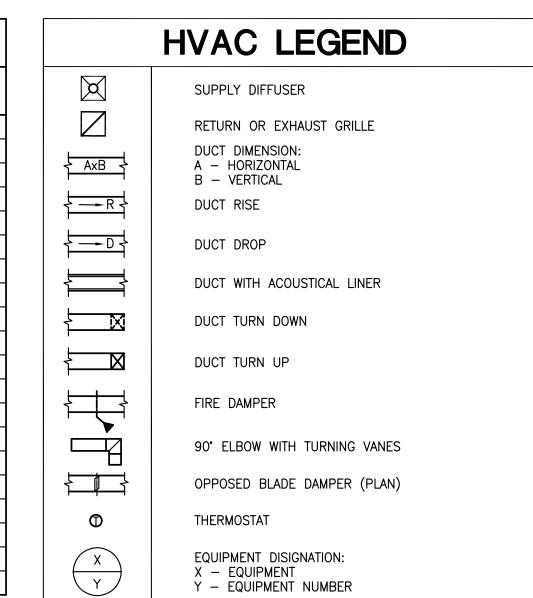
1) PROVIDE SEVEN-DAY PROGRAMMABLE WALL THERMOSTAT WITH FAN ON/AUTO CONTROL. SET FAN TO RUN CONTINUOUS DURING OCCUPIED HOURS.

								FAI	VS		
MARK	SERVICE	TYPE	CFM	ESP IN W.C.	MAX. RPM	MAX. H.P.	DRIVE	MAX. SONES	CONTROLLED BY	MODEL	ACCESSORIES
F-1	TOILET EXH	IN-LINE	450	0.50	1440	1/4	DIRECT	4.0	SEE NOTE 1	COOK GN-642	
					·	·					

NOTE 1: INTERLOCK FAN WITH FCU-2 SO THAT FAN RUNS WHENEVER FCU-2 IS IN OCCUPIED MODE.

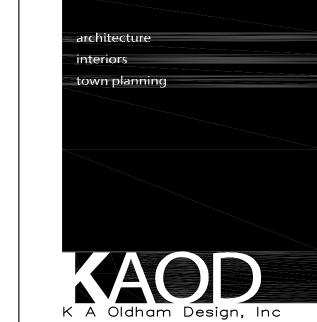
	All	R DIS	TRIB	JTION D	DEVICES
MARK	TYPE	NECK SIZE	OBD	FINISH	MODEL
Α	LAY-IN CEILING DIFFUSER	6"ø	YES	OFF-WHITE	PRICE SCD-31-3C, 24X24 LAY-IN
В	LAY-IN CEILING DIFFUSER	8"ø	YES	OFF-WHITE	PRICE SCD-31-3C, 24X24 LAY-IN
С	LAY-IN CEILING DIFFUSER	10 " ø	YES	OFF-WHITE	PRICE SCD-31-3C, 24X24 LAY-IN
D	SURFACE MOUNT CEILING DIFFUSER	6"ø	YES	OFF-WHITE	PRICE SCD-31-3C, 12X12 SURFACE MOUNT
Е	SURFACE MOUNT CEILING DIFFUSER	8"ø	YES	OFF-WHITE	PRICE SCD-31-3C, 12X12 SURFACE MOUNT
F	(NOT USED)				
G	SIDEWALL SUPPLY REGISTER	14X8	YES	OFF-WHITE	PRICE 520D/F/S
Н	LAY-IN RETURN AIR GRILLE	8"ø	NO	OFF-WHITE	PRICE PDDR, FRAME 3, 24X12 LAY-IN
J	LAY-IN RETURN AIR GRILLE	10 " ø	NO	OFF-WHITE	PRICE PDDR, FRAME 3, 24X24 LAY-IN
K	LAY-IN RETURN AIR GRILLE	12 " ø	NO	OFF-WHITE	PRICE PDDR, FRAME 3, 24X24 LAY-IN
L	LAY-IN RETURN AIR GRILLE	14 " ø	NO	OFF-WHITE	PRICE PDDR, FRAME 3, 24X12 LAY-IN
М	LAY-IN RETURN AIR GRILLE	16 " ø	NO	OFF-WHITE	PRICE PDDR, FRAME 3, 24X24 LAY-IN
N	LAY-IN RETURN AIR GRILLE	18 " ø	NO	OFF-WHITE	PRICE PDDR, FRAME 3, 24X24 LAY-IN
Р	LAY-IN RETURN AIR GRILLE	22X22	NO	OFF-WHITE	PRICE PDDR, FRAME 3, 24X24 LAY-IN
Q	SIDEWALL RETURN AIR GRILLE	14X8	NO	OFF-WHITE	PRICE 530-F-L-A
R	CEILING EXHAUST REGISTER	6"ø	YES	OFF-WHITE	PRICE 81D-F-A, SIZE 10X10
S	CEILING EXHAUST REGISTER	8"ø	YES	OFF-WHITE	PRICE 81D-F-A, SIZE 12X12
Т	SIDEWALL SUPPLY REGISTER	48X6	YES	OFF-WHITE	PRICE LBP-16B-1000, W/TYPE C CONCEALED HANGER BRACKE
U	SIDEWALL RETURN AIR GRILLE	48X6	NO	OFF-WHITE	PRICE LBP-16B-1000, W/TYPE C CONCEALED HANGER BRACKE





AIR DISTRIBUTION DEVICE: X - LETTER DEVICE

CFM — AIR QUANTITY IN FT³/MIN.



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FAYETTE COUNTY TRAINING FACILITY RENOVATION

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Prepared for FAYETTE CO.

COMMISSION NO: 1465.17

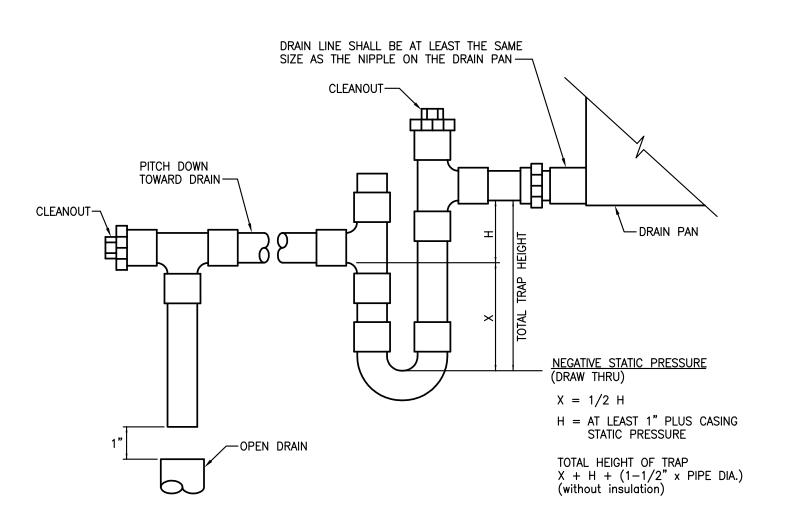
SHEET TITLE:
HVAC DETAILS
AND SCHEDULES

SHEET NO:

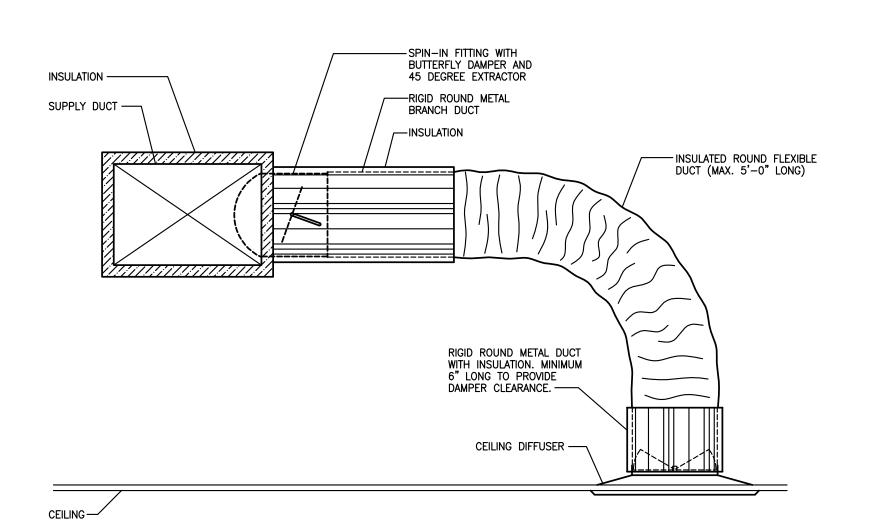
NOT ISSUED FOR CONSTRUCTION

OUTSIDE AIR DUCT WITH MOTORIZED DAMPER & MANUAL BALANCING DAMPER - FLEXIBLE CONNECTION MANUAL BALANCING DAMPER (TYPICAL) REFRIGERANT LIQUID
AND GAS PIPING TO
OUTDOOR HEAT PUMP. FAN-COIL UNIT — TRAPPED AND VENTED CONDENSATE DRAIN. EXTEND TO FLOOR DRAIN. LINED RETURN AIR PLENUM PROVIDE MOISTURE
SENSING SWITCH IN DRAIN
PAN TO DISABLE FAN—COIL
UNIT IF MOISTURE IS PRESENT. SPRING TYPE VIBRATION ISOLATOR, ONE EACH CORNER, SIZED FOR WEIGHT OF FCU. (TYP) SECONDARY DRAIN PAN 3" DEEP AND 10" LARGER THAN UNIT IN BOTH DIRECTIONS





2 CONDENSATE DRAIN TRAP DETAIL
M102 NOT TO SCALE



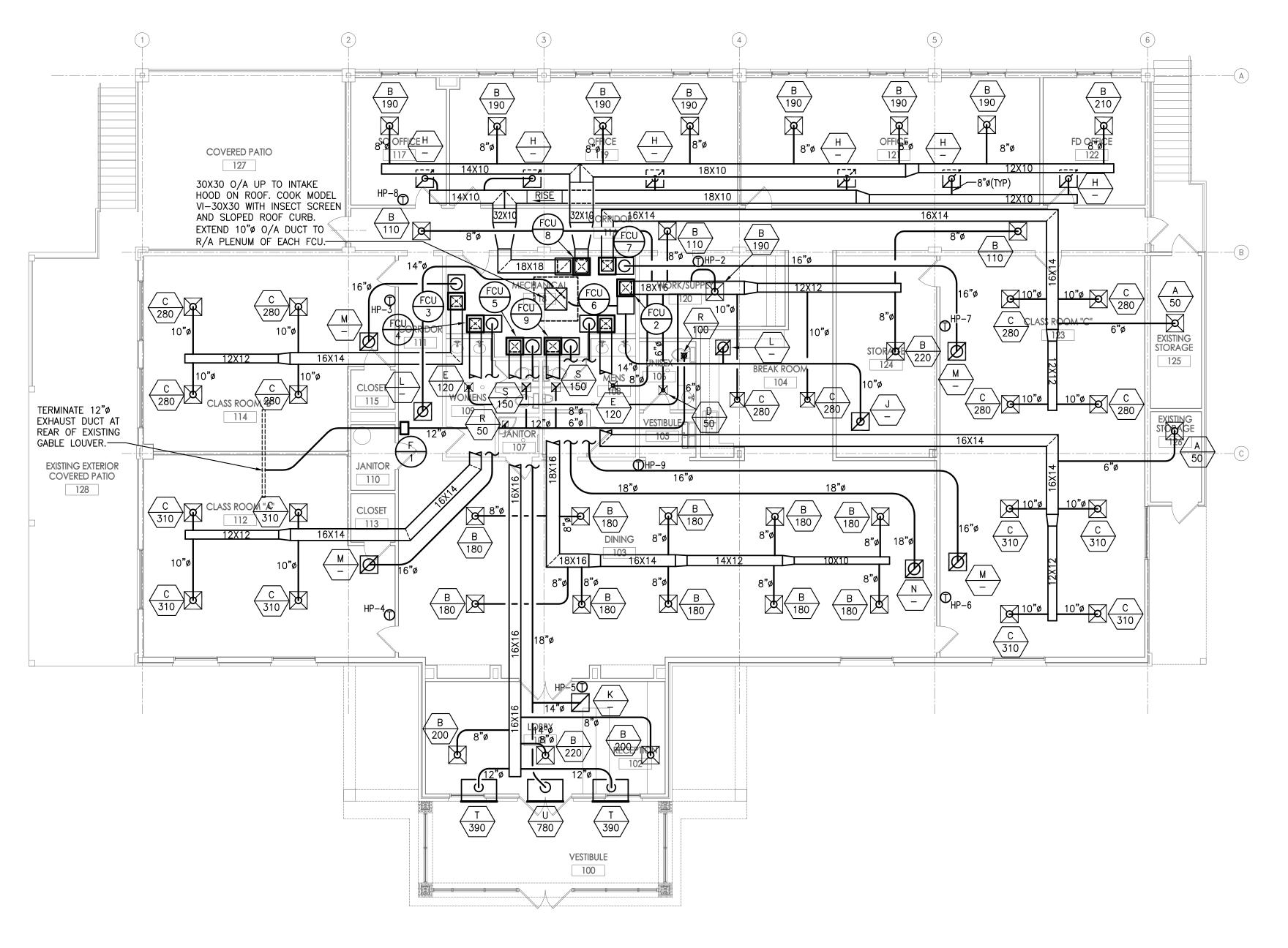
X CFM

CEILING DIFFUSER RUNOUT DETAIL

M102 NOT TO SCALE

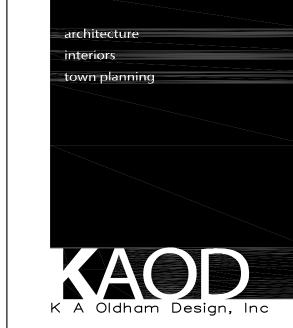
HVAC DEMOLITION NOTES

 REMOVE ALL EXISTING HVAC SYSTEMS INCLUDING EQUIPMENT, PIPING, DUCTWORK AND AIR DISTRIBUTION DEVICES.









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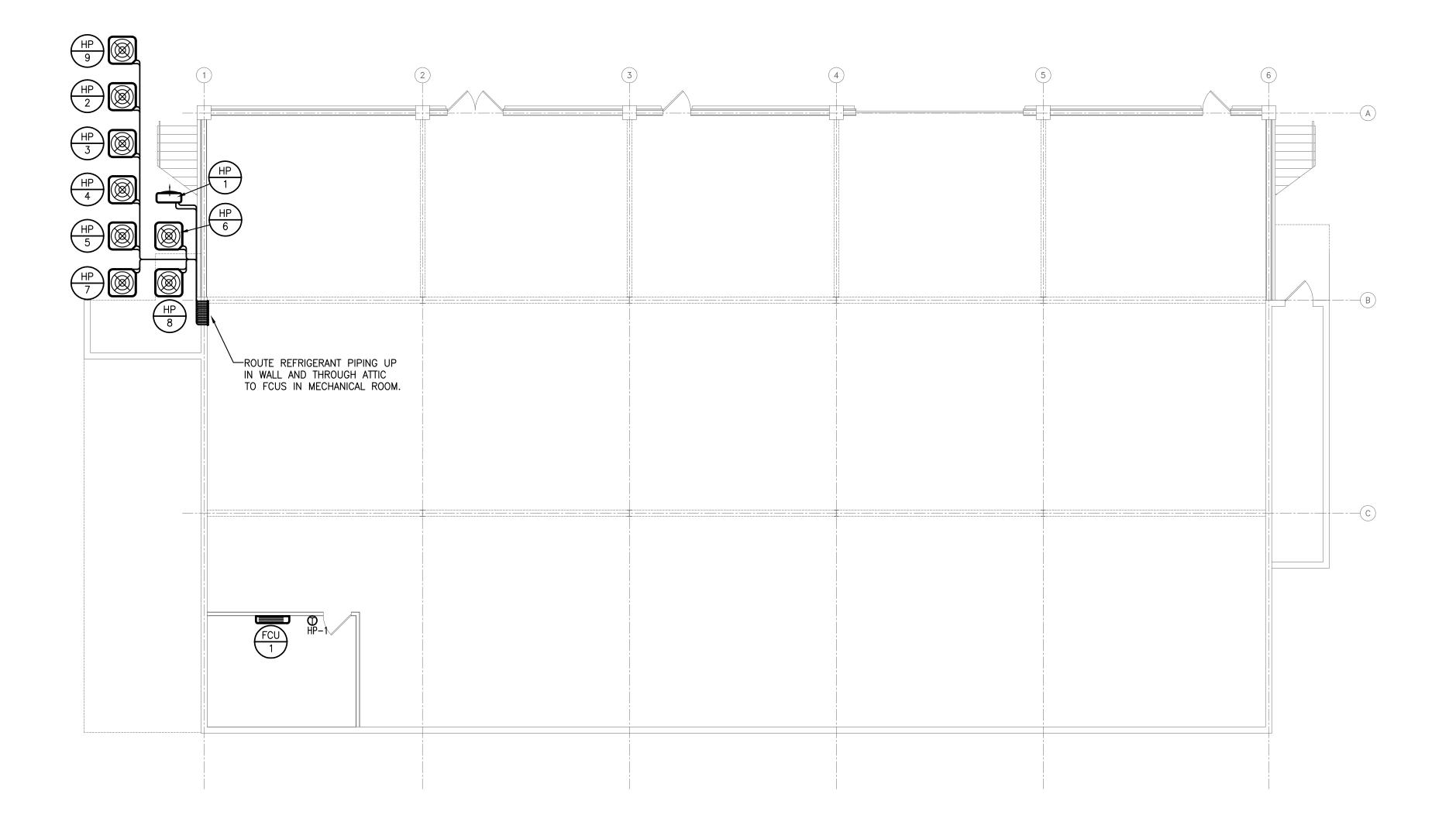
SHEET TITLE:
FIRST FLOOR PLAN
- HVAC

SHEET NO:

M201

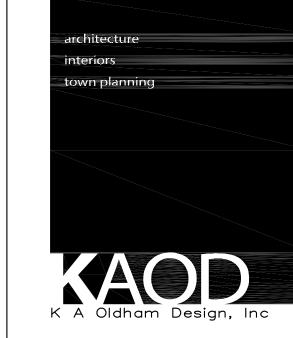
HVAC DEMOLITION NOTES

REMOVE ALL EXISTING HVAC SYSTEMS INCLUDING EQUIPMENT, PIPING, DUCTWORK AND AIR DISTRIBUTION DEVICES.









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COMMISSION NO: 1465.17

SHEET TITLE:
BASEMENT PLAN
- HVAC

SHEET NO:

PLUMBING SPECIFICATIONS

SCOPE:

THE WORK UNDER THIS SECTION SHALL BE TO PROVIDE A COMPLETE PLUMBING SYSTEM. ALL ITEMS OF WORK, OF COST AND EXPENSE OF ANY NATURE WHATSOEVER BELONGING WITH OR NECESSARY TO THE COMPLETION OF WORK CALLED FOR IN THIS SPECIFICATION OR IN THE CONTRACT DOCUMENTS ARE HEREBY SPECIFIED TO BE INCLUDED IN THIS CONTRACT.

ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE 2006 INTERNATIONAL PLUMBING CODE, AS WELL AS ANY LOCAL CODES AND ORDINANCES.

WARRANTY:

EQUIPMENT FURNISHED SHALL BE GUARANTEED FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE.

SUBMITTALS:

ALL MATERIALS AND EQUIPMENT WHICH THE CONTRACTOR PROPOSES TO FURNISH SHALL BE SUBMITTED FOR REVIEW. DATA SHALL BE COMPLETE IN ALL RESPECTS AND SHALL REFERENCE, WHERE APPLICABLE, TO THE UNIT SYMBOL UTILIZED ON THE DRAWINGS AND SPECIFICATIONS.

PIPING:

ALL SANITARY WASTE AND VENT PIPING, NOT INSTALLED IN A RETURN AIR PLENUM, SHALL BE SCHEDULE 40 DWV PVC WITH DRAINAGE TYPE FITTINGS. WHERE INSTALLED IN THE CEILING RETURN AIR PLENUM BETWEEN THE FINISHED BASEMENT CEILING AND THE FIRST FLOOR SLAB, PIPING SHALL BE SERVICE WEIGHT CAST IRON WITH HUBLESS FITTINGS AND EXTRA HEAVY CLAMPS.

DOMESTIC WATER PIPING INSTALLED ABOVE GRADE SHALL BE TYPE L COPPER TUBING WITH WROUGHT COPPER SWEAT FITTINGS AND LEAD-FREE SOLDER JOINTS. PIPING INSTALLED BELOW GRADE SHALL BE TYPE K COPPER, INSTALLED WITHOUT ANY JOINTS BELOW THE FLOOR SLAB.

VALVES:

VALVES FOR DOMESTIC WATER SYSTEM: GATE VALVES SHALL HAVE BRONZE BODY, RISING STEM, SOLID WEDGE, THREADED BONNET, AND SOLDER ENDS FOR 125# SWP. WHERE GATE 2" AND SMALLER ARE SPECIFIED, QUARTER-TURN FULL PORT BALL VALVES MAY BE SUBSTITUTED.

WATER PRESSURE REDUCING VALVE:

PROVIDE IN THE COLD WATER SERVICE TO THE BUILDING. EACH VALVE SHALL HAVE CAPACITIES AND CHARACTERISTICS AS SHOWN ON DRAWINGS. EACH PRV STATION SHALL BE PROVIDED WITH A STRAINER IN THE INLET OF EACH VALVE AND UNIONS ON BOTH SIDES. PROVIDE A 3-1/2" 0-200 PSIG DIAL PRESSURE GAUGE AT THE INLET AND OUTLET OF EACH VALVE.

BACK FLOW PREVENTER:

BACK FLOW PREVENTERS SHALL CONSIST OF TWO INDEPENDENTLY ACTING INTERNALLY FORCE LOADED CHECK VALVES; INCLUDING GATE VALVES AND TEST COCKS, WITH AN INTERMEDIATE REDUCED PRESSURE ZONE. DRAIN LINE FROM UNIT SHALL BE DWS COPPER RUN FULL SIZE TO EXTERIOR OF BUILDING.

CLEANOUTS:

PROVIDE CLEANOUTS IN SOIL AND WASTE LINES AS SHOWN, AS REQUIRED BY THE GOVERNING CODE, AT THE BOTTOM OF EACH EXPOSED FIXTURE TRAP WHICH IS NOT INTEGRAL WITH THE FIXTURE, AT THE END OF EACH BRANCH DRAINAGE LINE, AT EACH CHANGE OF HORIZONTAL DIRECTION GREATER THAN 45 DEGREES, AT THE FOOT OF EACH SOIL AND RAINWATER STACK, AND IN HORIZONTAL DRAIN LINES AT INTERVALS OF NOT MORE THAN 75'.

FLOOR DRAINS:

FLOOR DRAINS SHALL BE EQUAL TO JOSAM MODEL 30000-A. EACH FLOOR DRAIN SHALL HAVE A TRAP PRIMER.

TRAPS:

PROVIDE TRAPS FOR ALL FIXTURES AND FLOOR DRAINS, EXCEPT AS NOTED OTHERWISE. SET TRAPS TRUE AND LEVEL. PROVIDE EXPOSED TRAPS WITH BRASS CLEANING SCREWS.

INSULATION:

PIPE INSULATION SHALL BE ONE-PIECE FIBROUS GLASS SECTIONAL PIPE INSULATION WITH FACTORY APPLIED GLASS REINFORCED ALUMINUM FOIL AND WHITE KRAFT PAPER FLAME RETARDANT VAPOR BARRIER JACKET. LONGITUDINAL JACKET LAPS AND BUTT STRIPS SHALL BE SELF-SEALING. INSULATE ALL DOMESTIC WATER PIPING WITH MINIMUM 1" THICK INSULATION.

PLUMBING FIXTURES:

ALL FIXTURES SHALL BE COMMERCIAL GRADE VITREOUS CHINA, ENAMELED CAST IRON, OR STAINLESS STEEL, AS INDICATED. FOR EACH FIXTURE, PROVIDE CHROME PLATED BRASS STOP VALVES ON BOTH COLD AND HOT WATER SUPPLIES, WITH STAINLESS STEEL BRAIDED RUBBER SUPPLY HOSES FROM THE STOP VALVES TO THE FIXTURES. EACH SINK AND LAVATORY SHALL ALSO BE PROVIDED WITH A 17 GAUGE, CHROME-PLATED BRASS P-TRAP, WITH CLEANOUT PLUG. ALL FAUCETS SHALL BE CHROME PLATED

FIXTURES SHALL BE AS FOLLOWS:

F1 - WATER CLOSET (ACCESSIBLE): FLOOR MOUNTED, TANK TYPE, ELONGATED WHITE VITREOUS CHINA, 16.5" HIGH RIM, 1.28 GPF PRESSURE ASSISTED FLUSH, OPEN FRONT SEAT, ADA COMPLIANT. AMERICAN STANDARD, KOHLER, ELJER OR CRANE.

F2 - WATER CLOSET: FLOOR MOUNTED, TANK TYPE, ELONGATED WHITE VITREOUS CHINA, 15" HIGH RIM, 1,28 GPF PRESSURE ASSISTED FLUSH, OPEN FRONT SEAT. AMERICAN STANDARD, KOHLER, ELJER OR CRANE.

F3 — URINAL (ACCESSIBLE): WALL MOUNTED. WHITE VITREOUS CHINA. 14" LIP PROJECTION. 0.25 GPF SENSOR OPERATED FLUSH VALVE, ADA COMPLIANT. AMERICAN STANDARD, KOHLER, ELJER OR CRANE. FLUSH VALVE SHALL BE BATTERY POWERED, SLOAN OPTIMA PLUS, OR EQUAL ZURN.

F4 - (NOT USED)

F5 — LAVATORY (ACCESSIBLE): WHITE VITREOUS CHINA, OVAL SELF—RIMMING, COUNTERTOP TYPE, AMERICAN STANDARD, KOHLER, ELJER OR CRANE, ADA COMPLIANT. FAUCET SHALL BE CHROME PLATED BRASS, SENSOR OPERATED, WITH STANDARD SPOUT, 0.5 GPM AERATOR AND GRID DRAIN, AMERICAN STANDARD, CHICAGO, KOHLER OR MOEN. FAUCET SHALL BE BATTERY POWERED, SLOAN OPTIMA PLUS, OR EQUAL ZURN.

F6 - (NOT USED)

F7 - (NOT USED)

F8 - (NOT USED)

F9 - MOP RECEPTOR: ENAMELED CAST IRON, RADIUSED CORNER STYLE, WITH STAINLESS STEEL RIM GUARD, GRID DRAIN AND WALL MOUNTED FAUCET. FAUCET SHALL BE CHROME PLATED BRASS, WITH INTEGRAL STOPS, VACUUM BREAKER, BLADE HANDLES, HOSE THREADS, BUCKET HOOK AND ANGLE WALL BRACE. AMERICAN STANDARD, KOHLER, ELJER, CRANE, CHICAGO OR MOEN. MOUNT FAUCET AT 3'-0" AFF.

F10 - TWO COMPARTMENT SINK (ACCESSIBLE): MINIMUM 18 GAUGE STAINLESS STEEL SINK WITH TWO 13.5"X16"X6.5" DEEP BOWLS, SOUND UNDERCOAT, SINGLE LEVER FAUCET WITH SWIVEL SPOUT, DRAIN WITH REMOVABLE CRUMB CUP. ADA COMPLIANT. ELKAY, JUST, MOEN OR EQUAL.

F11 - DRINKING FOUNTAIN (ACCESSIBLE): WALL MOUNTED, BI-LEVEL REFRIGERATED DRINKING FOUNTAIN WITH FRONT AND SIDE TOUCH PADS, 8 GPF COOLING CAPACITY, ADA COMPLIANT. HALSEY TAYLOR MODEL HAC8FSBL-Q OR EQUAL.

WATER HEATER:

WATER HEATER SHALL BE ELECTRIC, STORAGE TYPE, ENERGY EFFICIENT, COMPLYING WITH ASHRAE STANDARD 90.1, WITH MANUAL DRAIN VALVE AND ASME P&T RELIEF VALVE. HEATER SHALL BE PIPED AS SHOWN IN DETAIL 1/P101. CAPACITIES SHALL BE AS SCHEDULED ON THE DRAWINGS. HEATER SHALL BE A.O. SMITH, AS SCHEDULED, OR EQUAL STATE, OR RHEEM.

	PLUME	BING F	IXTUR	E SCH	EDUL	E				
MADIC	FIVELINE	NOTEO	RIM	COLD	WATER	НОТ	WATER	SOIL/	WASTE	
MARK	FIXTURE	NOTES	HEIGHT	BRANCH	CONN.	BRANCH	CONN.	BRANCH	CONN.	
F1	WATER CLOSET (ACCESSIBLE)	1, 2, 3	16.5"	1/2"	1/2"	T -	_	4"	4"	
F2	WATER CLOSET	1, 3	15"	1/2"	1/2"	_	-	4"	4"	
F3	URINAL (ACCESSIBLE)	2, 4, 5	17"	1"	3/4"	_	_	2"	1-1/2"	
F4	(NOT USED)									
F5	LAVATORY (ACCESSIBLE)	2, 6, 7, 8	34"	1/2"	1/2"	1/2"	1/2"	2"	1-1/4"	
F6	(NOT USED)									
F7	(NOT USED)									
F8	(NOT USED)									
F9	MOP RECEPTOR	3	12"	1/2"	1/2"	1/2"	1/2"	3"	3"	
F10	SINGLE COMPARTMENT SINK (ACCESSIBLE)	2, 8, 12	34"	1/2"	1/2"	1/2"	1/2"	2"	1-1/2"	
F11	BI-LEVEL DRINKING FOUNTAIN (ACCESSSIBLE)	2, 5	34"/40"	1/2"	3/8"	_	_	2"	1-1/4"	

_				
1)	1.28	GPF	TANK	TYPF

(2) HANDICAP ACCESSIBLE FIXTURE

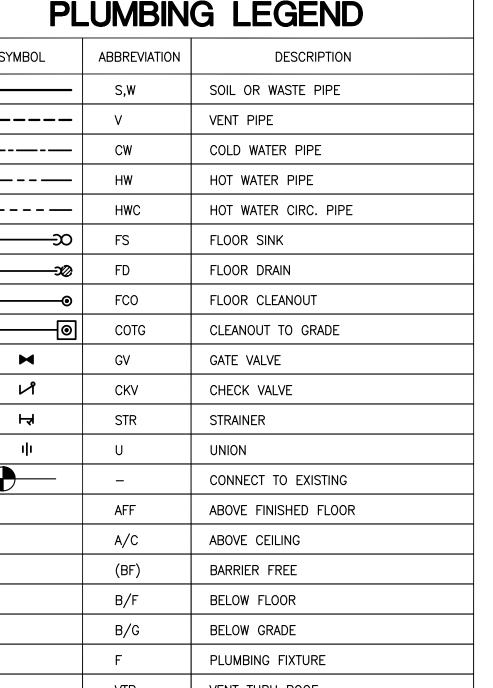
(4) 0.25 GPF SENSOR OPERATED FLUSH VALVE (8) COUNTERTOP FIXTURE

- (5) WALL MOUNTED FIXTURE (6) SINGLE LEVER FAUCET WITH STANDARD SPOUT
- (9) PRESSURE BALANCED SHOWER VALVE (10) WALL MOUNTED SHOWER HEAD

- (3) FLOOR MOUNTED FIXTURE
- (7) 0.5 GPM TAMPER-PROOF AERATOR
- (11) HAND-HELD SHOWER HEAD W/SELECTOR VALVE
- (12) SINGLE LEVER FAUCET WITH SWIVEL SPOUT

		WAT	ER HE	ATER	SCH	EDULE		
SYMBOL	HEATER SERVICE	HEATER TYPE	HEAT INPUT	STORAGE CAPACITY	RECOVERY RATE (GPH @ 60°F RISE)	DISCHARGE TEMP (*F)	MANUFACTURER & MODEL	REMARKS
WH-1	DOMESTIC HOT WATER	ELECTRIC STORAGE	12.0 KW	80 GAL	81.7	110	A. O. SMITH DRE-80-12	

PL	UMBIN	G LEGEND
SYMBOL	ABBREVIATION	DESCRIPTION
	S,W	SOIL OR WASTE PIPE
	٧	VENT PIPE
	CW	COLD WATER PIPE
	HW	HOT WATER PIPE
	HWC	HOT WATER CIRC. PIPE
	FS	FLOOR SINK
	FD	FLOOR DRAIN
─	FCO	FLOOR CLEANOUT
<u> </u>	COTG	CLEANOUT TO GRADE
H	GV	GATE VALVE
И	CKV	CHECK VALVE
H	STR	STRAINER
ıļı	J	UNION
	1	CONNECT TO EXISTING
	AFF	ABOVE FINISHED FLOOR
	A/C	ABOVE CEILING
	(BF)	BARRIER FREE
	B/F	BELOW FLOOR
	B/G	BELOW GRADE
	F	PLUMBING FIXTURE
	VTR	VENT THRU ROOF





own planning

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FAYETTE TRAINING FACILITY RENOVATION

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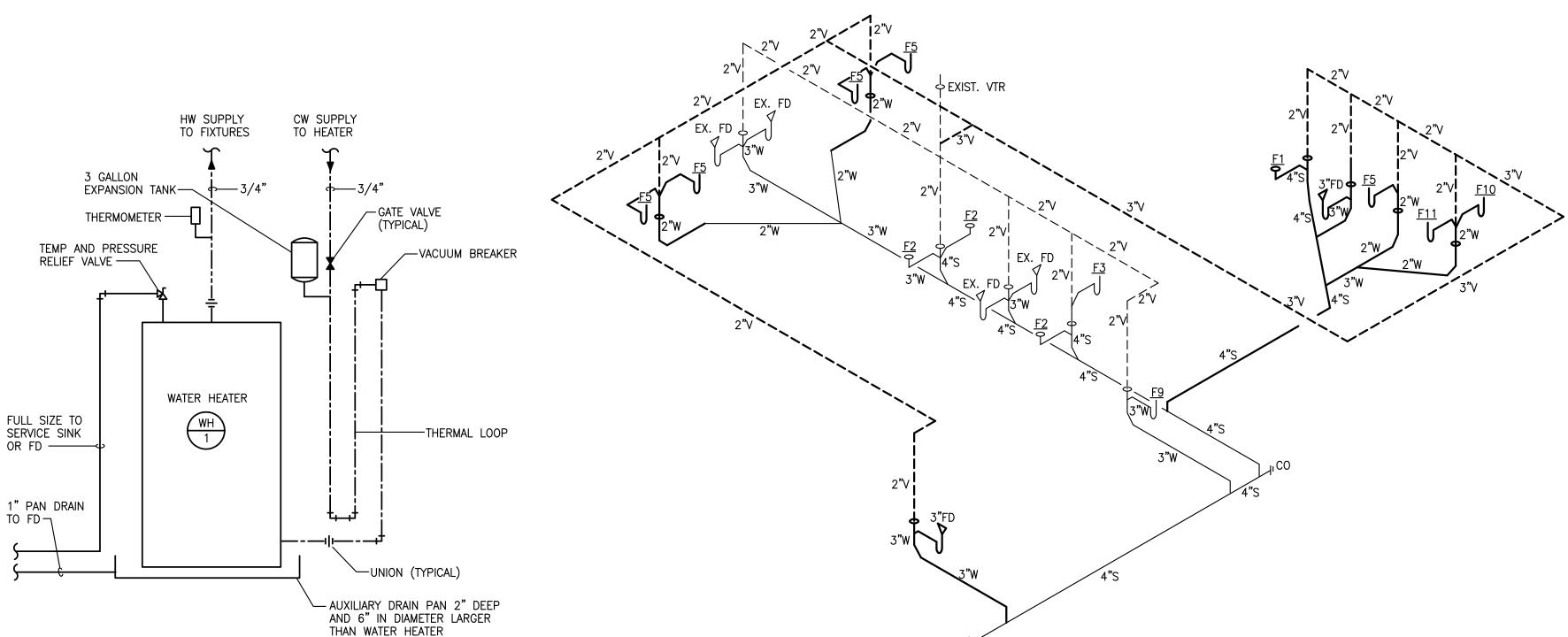
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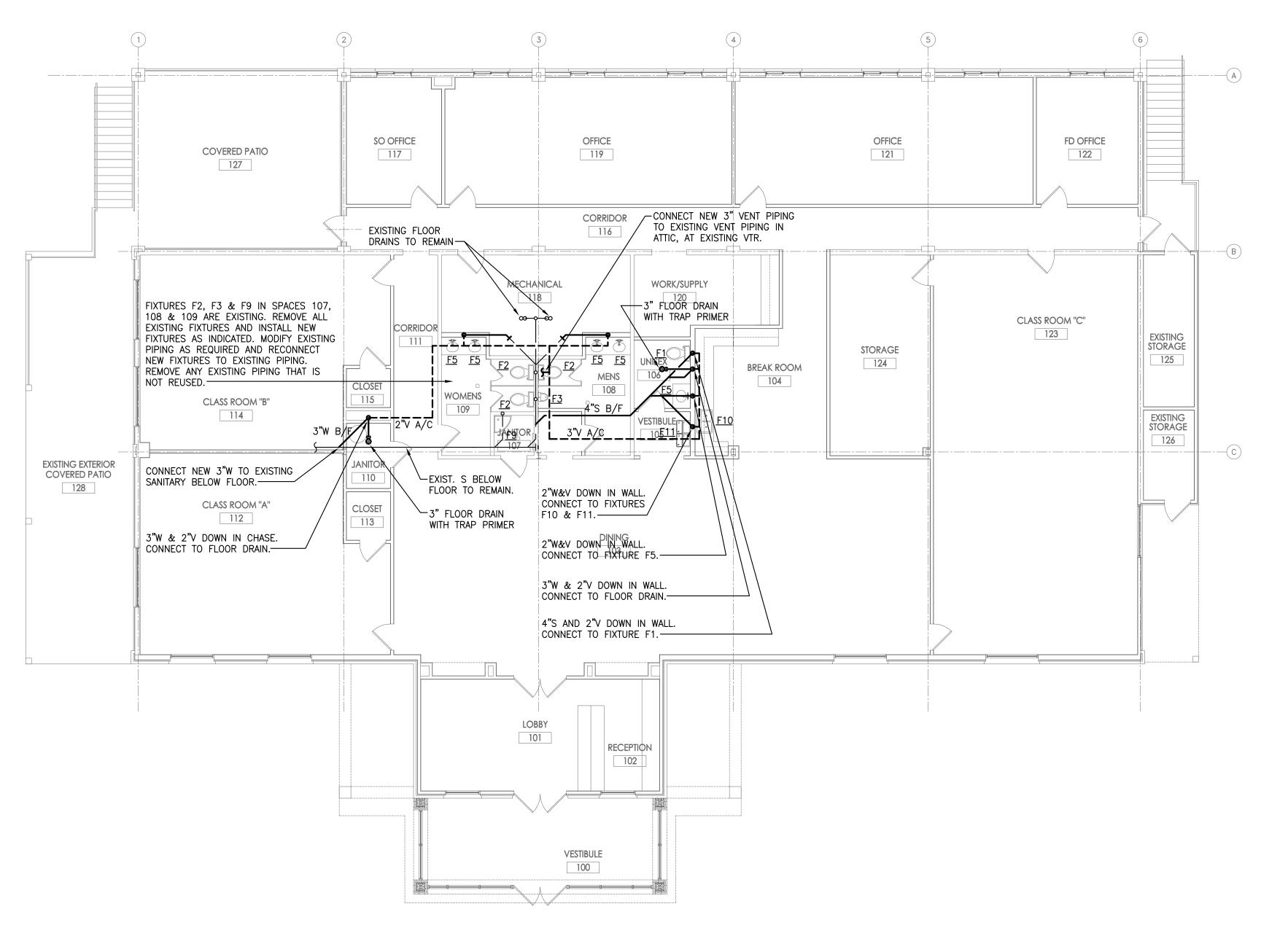
SHEET TITLE: PLUMBING DETAILS, SCHEDULES AND SPECIFICATIONS

SHEET NO:

² SANITARY PIPING RISER DIAGRAM P101 NOT TO SCALE

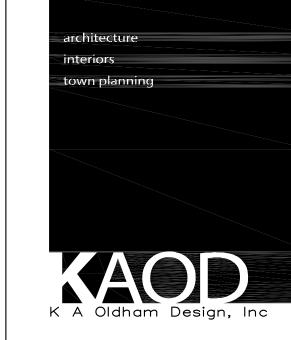


DETAIL - WATER HEATER









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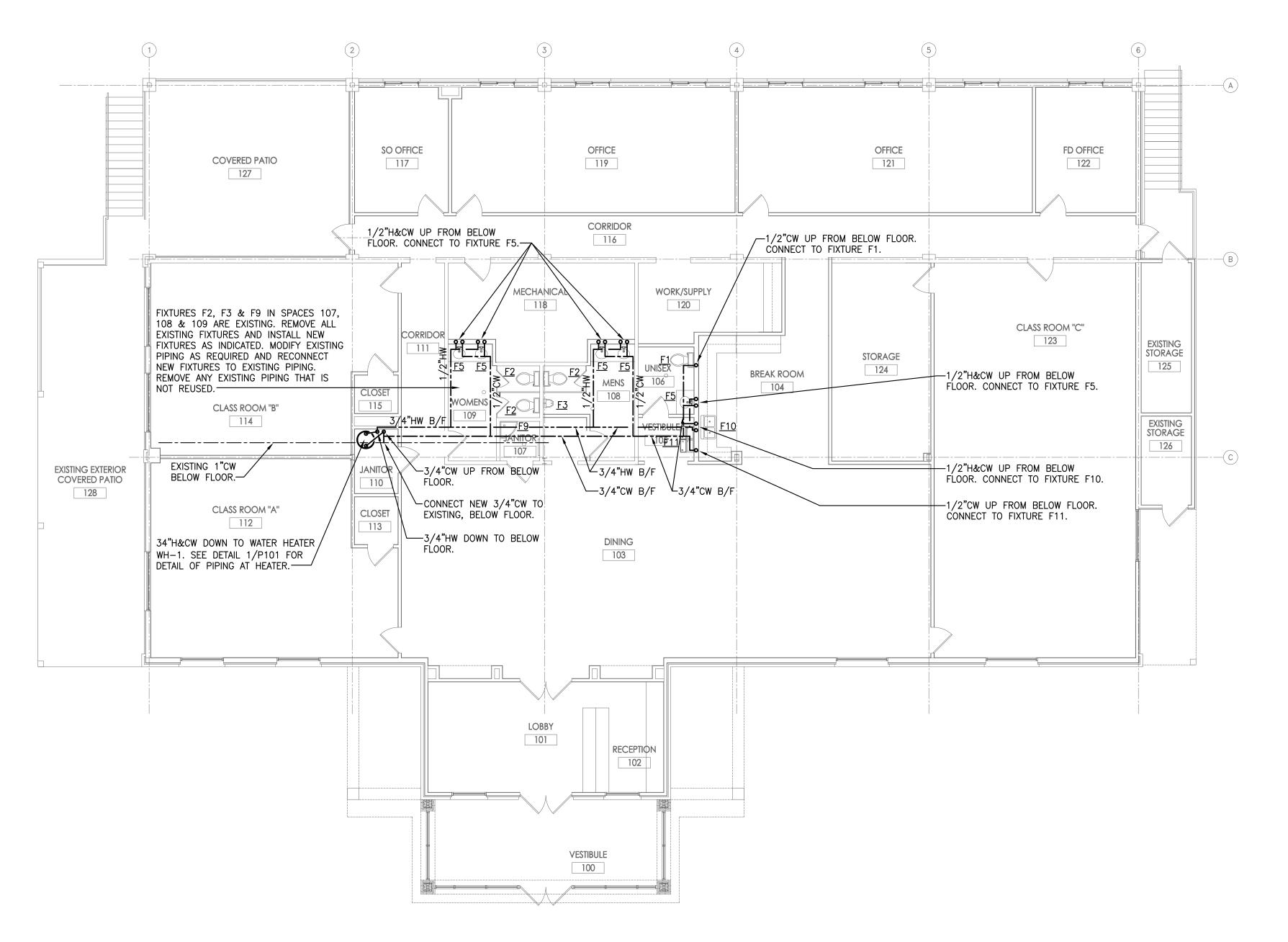
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FIRST FLOOR PLAN
- SANITARY PIPING

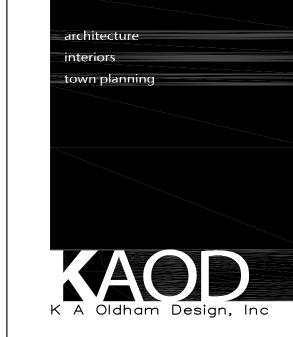
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P201









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SHEET TITLE:
FIRST FLOOR PLAN
- WATER PIPING

SHEET NO:

P202