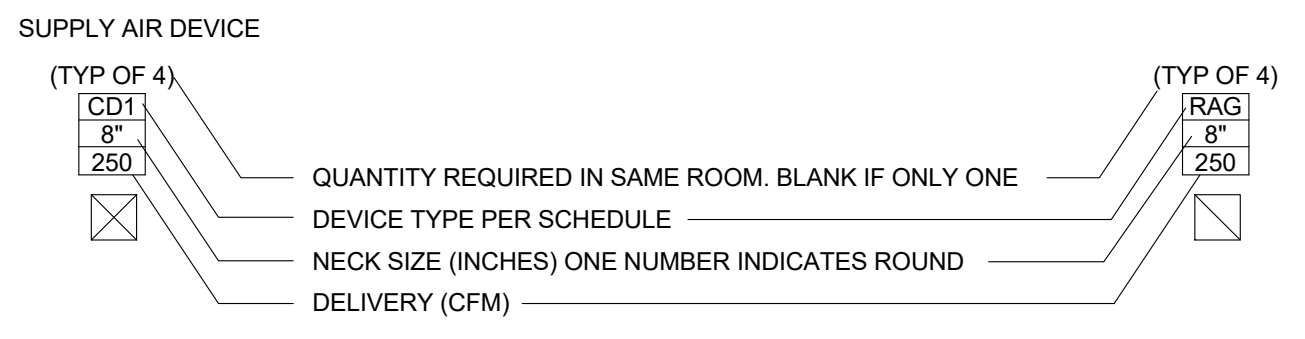
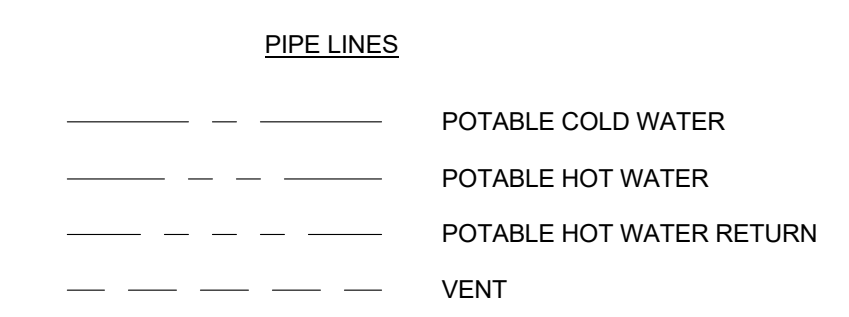


MECHANICAL	
	SUPPLY AIR DUCT, SECTION
	RETURN AIR DUCT, SECTION
	EXHAUST AIR DUCT, SECTION
	OUTDOOR AIR INTAKE, SECTION
	DUCT, WIDTH X DEPTH, PLAN
	INCLINE DUCT RISE
	INCLINE DUCT DROP
	FLEXIBLE CONNECTION
	LONG RADIUS ELBOW
	VOLUME DAMPER
	SQUARE ELBOW W/ TURNING VANES
	BRANCH TAKEOFF WITH ADJUSTABLE EXTRACTOR
	SPLITTER DAMPER
	THERMOSTAT
	SPACE TEMPERATURE SENSOR
	EXHAUST AIR INLET
	CEILING RETURN INLET
	CEILING SUPPLY DIFFUSER
	DUCT WITH INTERNAL LINING
	ELECTRIC DUCT HEATER
	SQUARE OR RECTANGULAR BRANCH TAKEOFF WITH MANUAL BALANCING DAMPER
	ROUND BRANCH TAKEOFF WITH SCOOP EXTRACTOR AND MANUAL BALANCING DAMPER
	CONICAL TEE WITH ROUND DUCTWORK
	STATIC PRESSURE SENSOR
	UNIT HEATER
	SMOKE DETECTOR
	SUPPLY AIR FLOW
	RETURN AIR OR EXHAUST AIR FLOW
	DOOR UNDER CUT
	FIXED LOUVER W/BIRD SCREEN
	OPPOSED BLADE DAMPER
	PARALLEL BLADE DAMPER
	BACKDRAFT DAMPER
	FIRE DAMPER
	MOTORIZED DAMPER
	POINT OF CONNECTION
	PRESSURE TRANSMITTER
	AIR OUTLET
	CARBON DIOXIDE SENSOR
	CARBON MONOXIDE SENSOR
	NITROGEN OXIDE SENSOR

PIPE AND FITTINGS	
	GATE VALVE
	GLOBE VALVE
	ANGLE GATE VALVE
	SOLENOID VALVE
	NON SLAM CHECK VALVE
	BUTTERFLY VALVE
	PLUG VALVE
	BALL VALVE
	TWO WAY CONTROL VALVE
	PRESSURE REGULATOR
	THREE WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	BUTTERFLY VALVE
	AUTOMATIC AIR VENT
	STRAINER, Y TYPE W/GATE VALVE OR HOSE BIBB
	FLEXIBLE CONNECTION
	JOINT
	EXPANSION JOINT
	FLOW METER
	FLOW DIRECTION
	ELBOW BASE
	ELBOW REDUCING
	UNION
	PRESSURE GAUGE WITH TRI-COCK
	PRESSURE INDICATOR
	TEST PLUG
	TEMPERATURE INDICATOR
	FLOW SWITCH
	METERED BALANCING VALVE WITH PRESSURE TAP
	PRESSURE TEMPERATURE TEST PLUG
	THERMOMETER
	THERMOMETER, DIAL
	THERMOWELL
	AUTO FLOW BALANCING VALVE
	FLOOR DRAIN W/P-TRAP
	FLOOR CLEANOUT
	WALL CLEANOUT
	BACKFLOW PREVENTER
	LUBRICATED PLUG COCK
	HOSE BIBB W/VACUUM BREAKER
	CAPPED END
	DELUGE VALVE
	PIPE SWAY BRACING
	PIPE ANCHOR SUPPORT
	BALANCING VALVE

ABBREVIATIONS				
A	ABOVE	K	KW	KILOWATT
ABV	AIR COOLED CONDENSING UNIT	L	LAB	LABORATORY
ACCU	ACETYLENE GAS	LAT	LAV	LAVATORY
ACL	AIR CONDITIONING UNIT	LB	LD	LINEAR DIFFUSER
ACU	ACCESS DOOR	LDB	LF	LINEAR FEET
AD	AIR FILTER	LFD	LP	LAMINAR FLOW DIFFUSER
AFF	ABOVE FINISHED FLOOR	LIS	LWB	LEAVING WET BULB
AHU	AIR FILTER, HIGH EFFICIENCY	LWT		LEAVING WATER TEMPERATURE
APD	AIR HANDLING UNIT	M	MAU	MAKE-UP AIR UNIT
AR	AIR PRESSURE DROP	MAX	MB	MAXIMUM
AR	ACID RESISTANT	MIX	MBH	MIXING BOX/MOP BASIN
ASSY	ASSEMBLY	MS	MD	THOUSAND BTU/HR
AUX	AUXILIARY	MECH	MS	MOTORIZED DAMPER
AV	AUTOMATIC AIR VENT	MIN	MM	MECHANICAL
B	BDD	MIN	MM	MINUTE/MINIMUM
BDD	BACKDRAFT DAMPER	MS	MS	MIL/INCHES
BHP	BACKFLOW PREVENTER	N	N	MOTOR STARTER
BP	BRAKE HORSE POWER	NC	NC	NITROGEN
BS	BIRD SCREEN	NCG	NCG	NORMALLY CLOSED
C	C	NG	NG	NATURAL GAS
CL	CONDENSATE	NIC	NIC	NOT IN CONTRACT
CL	CENTER LINE	NO	NO	NUMBER
CD	CEILING DIFFUSER	NOX	NOX	NITROGEN OXIDE
CFM	CUBIC FEET PER MINUTE	NTS	NTS	NOT TO SCALE
CH	CHILLER	O	O	OXYGEN
CHDR	CHEMICAL DRAIN	OA	OA	OUTSIDE AIR
CHP	CHILLED WATER PUMP	OAL	OAL	OUTSIDE AIR LOUVER
CLG	CEILING	OB	OB	OPPOSED BLADE DAMPER
CO	CLEANOUT	OC	OC	ON CENTER
CONC	CONCRETE	OS	OS	OVERFLOW SCUPPER
CONN	CONNECTION	OS&Y	OS&Y	OUTSIDE SCREW & YOKE
CONT	CONTINUED/CONTINUATION/CONTINUOUS	P	PD	PRESSURE DROP
COTT	CLEAN OUT TO GRADE	POC	POC	POINT OF CONNECTION
CJ	CONDENSING UNIT/COPPER	PRESS	PRESS	PRESSURE
CV	CONSTANT VOLUME	PRV	PRV	PRESSURE REDUCING VALVE
CW	COLD WATER	PSIG	PSIG	POUNDS PER SQUARE INCH
D	D	PVC	PVC	POLYVINYL CHLORIDE
DDC	DIRECT DIGITAL CONTROL	R	RA	RETURN AIR
DG	DOOR GRILLE	RAG	RAG	RETURN AIR GRILLE
DIA	DIAMETER	RAR	RAR	RETURN AIR REGISTER
DIM	DIMENSION	RC	RC	RAIN CONDUCTOR
DMPR	DAMPER	RD	RD	ROOF DRAIN
DN	DOWN	REF	REF	REFERENCE
DPS	DIFFERENTIAL PRESSURE SWITCH	RF	RF	RETURN FAN
DR	DRAIN	RL	RL	RAIN LEADER
DS	DUCT SMOKE DETECTOR	RM	RM	ROOM
DSW	DISTILLED WATER	RTN	RTN	RETURN
DWG	DRAWING	S	SA	SUPPLY AIR
E	E	SAG	SAG	SUPPLY AIR GRILLE
EAT	ENTERING AIR TEMPERATURE	SAN	SAN	SANITARY
ED	EQUIPMENT DRAIN	SAR	SAR	SUPPLY AIR REGISTER
EDB	ENTERING DRY BULB	SD	SD	SMOKE DAMPER
EER	ENERGY EFFICIENCY RATIO	COMB	COMB	COMB. SMOKE DAMPER/FIRE DAMP.
EF	EXHAUST FAN	SD/DF	SD/DF	SUPPLY FAN
EFF	EFFICIENCY	SH	SH	SHEET
EG	EXHAUST GRILLE	SP	SP	STATIC PRESSURE
EL	ELEVATION	SQ FT	SQ FT	SQUARE FEET
ELEC	ELECTRICAL	SST	SST	STAINLESS STEEL
ENT	ENTERING	T	TCU	TERMINAL CONTROL UNIT
ER	EXHAUST REGISTER	TEMP	TEMP	TEMPERATURE
EWB	ENTERING WET BULB	TG	TG	TRANSFER GRILLE
EWC	ELECTRIC WATER COOLER	TP	TP	TRAP PRIMER
EWT	ENTERING WATER TEMPERATURE	TYP	TYP	TYPICAL
EXH	EXHAUST	U	UC	UNDERCUT
EWS	EYE WASH/SHOWER STATION	V	V	VENT
F	F	VAV	VAV	VARIABLE AIR VOLUME
FCO	FLOOR CLEANOUT	VD	VD	VOLUME DAMPER
FD	FIRE DAMPER/FLOOR DRAIN	VEL	VEL	VELOCITY
FH	FUME HOOD	VERT	VERT	VERTICAL
FL	FLOOR	VFD	VFD	VARIABLE FREQUENCY DRIVE
FLEX	FLEXIBLE	VSD	VSD	VARIABLE SPEED DRIVE
FOR	FUEL OIL RETURN	VTR	VTR	VENT THRU ROOF
FOS	FUEL OIL SUPPLY	W	W	WITH
FP	FIRE PUMP	W/O	W/O	WITHOUT
FPI	FINS PER INCH	WCL	WCL	WALL CLEANOUT
FPM	FEET PER MINUTE	WC	WC	WATER COLUMN
FT	FEET	WH	WH	WALL HYDRANT
FV	FACE VELOCITY	WHA	WHA	WATER HAMMER ARRESTORS
G	G	WR	WR	WATER RISER
GA	GAUGE	WTR	WTR	WATER
GIV	GRAVITY INTAKE VENTILATOR	I	ID	INSIDE DIAMETER
GND	GROUND	IN	IN	INCHES
GPM	GALLONS PER MINUTE	INV EL	INV EL	INVERT ELEVATION
GRV	GRAVITY RELIEF VENTILATOR			
H	H			
HB	HOSE BIBB			
HORIZ	HORIZONTAL			
HP	HORSE POWER/HEAT PUMP			
HTG	HEATING			
HUMID	HUMIDISTAT			
HWS	HOT WATER SUPPLY			
HWB	HOT WATER BOILER			
HWP	HOT WATER PUMP			
HWR	HOT WATER RETURN			

NOTE:
THIS IS A STANDARD SYMBOLS & ABBREVIATIONS SHEET. THEREFORE, SOME SYMBOLS & ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT ON THE PLANS.



- ### GENERAL NOTES
- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE AND OPERABLE SYSTEM IN ACCORDANCE WITH THESE DOCUMENTS. THE APPLICABLE BUILDING CODES AND ALL OTHER APPLICABLE STATE, COUNTY AND LOCAL ORDINANCES AND THE LATEST EDITION OF THE FOLLOWING PUBLICATIONS; INTERNATIONAL BUILDING CODE-MECHANICAL, SMACNA, ASHRAE, NFPA 90A, 90B, 91 & ANSI B-9.1 MECHANICAL REFRIGERATION.
 - THE TERM "PROVIDE" USED IN THE PROJECT SPECIFICATIONS AND DRAWINGS SHALL MEAN TO FURNISH, INSTALL, CONNECT, AND PLACE IN SERVICE COMPLETELY IN THE SPECIFIED OR APPROVED MANNER THE ITEM AND/OR MATERIAL DESCRIBED.
 - THE MECHANICAL PLANS IN GENERAL, ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, PLUMBING, ELECTRICAL AND STRUCTURAL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. ALL EQUIPMENT SHALL BE INSTALLED AS PER MANUFACTURER'S SPECIFIED GUIDELINES. DUCT AND PIPING OFFSETS, BENDS AND TRANSITIONS WILL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. CHANGES IN DUCTWORK SIZE AND ROUTE WILL BE REQUIRED TO AVOID STRUCTURAL, PLUMBING, FIRE SPRINKLER AND ARCHITECTURAL BUILDING FEATURES. DUCTWORK CHANGES MAY BE MADE BY CONTRACTOR USING EQUIVALENT SIZED DUCT. CONTACT ENGINEER IN WRITING IF MECHANICAL SYSTEMS WILL NOT FIT IN AREA ALLOTTED.
 - SYMBOLS IN THE LEGEND ARE APPLICABLE GENERALLY, FOR EXACT REQUIREMENTS SEE THE APPLICABLE SCHEDULES, LAYOUTS, DETAILS, AND THE SPECIFICATIONS. UNLESS OTHERWISE NOTED, ALL DUCTS, EQUIPMENT, PIPE SIZES, AND DIMENSIONS ARE IN ENGLISH UNITS.
 - THE CONTRACTOR SHALL PAY ALL COSTS OF PERMIT, INSPECTIONS AND ALL OTHER COSTS INCIDENTAL TO THE COMPLETION AND TESTING OF THIS WORK.
 - ENGINEER OF RECORD RECOGNIZES THE GENERAL CONTRACTOR AND ALL OTHER CONTRACTORS TO BE LICENSE PROFESSIONALS IN THE STATE IN WHICH WORK IS TO BE PERFORMED. GENERAL CONTRACTOR SHALL CONSIDER THIS PROJECT AS ONE SET OF DOCUMENTS. GENERAL CONTRACTOR SHALL PROVIDE AN ENTIRE SET OF DOCUMENTS SHOWING ALL TRADES TO EACH SUBCONTRACTOR PRIOR TO BIDDING AND AN ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR POSSIBLE CONFLICTS ON THE DOCUMENTS PRIOR TO SUBMITTING FINAL BID AND COMMENCING ANY WORK. CONTRACTOR SHALL MAKE HIMSELF AVAILABLE FOR REVIEWING DOCUMENTS WITH ARCHITECT/ENGINEER UPON REQUEST.
 - THE CONTRACTOR SHALL VISIT THE SITE AND COORDINATE WORK WITH OTHER TRADES.
 - THE CONTRACTOR SHALL SUPPLY THE ENGINEER WITH "AS-BUILT" REDLINE DRAWINGS. UPON COMPLETION OF THE PROJECT AND AUTOCAD SHOP DRAWING FILES (IF APPLICABLE).
 - THE GENERAL CONTRACTOR SHALL PROVIDE IN WRITING AND ON COMPANY LETTER HEAD, ALL ITEMS VALUE ENGINEERED OR OMITTED FROM PROJECT BIDS. THIS DOCUMENT SHALL HAVE DETAILED DESCRIPTION AND TRANSPARENCY OF ALL ITEMS IN EACH DISCIPLINE AND FOR EACH TRADE. INFORMATION SHALL BE PROVIDED TO ARCHITECT AND ENGINEER FOR REVIEW PRIOR TO SUBMITTING FINAL BID. CONTRACTOR SHALL MAKE HIMSELF AVAILABLE FOR REVIEWING DOCUMENTS WITH ARCHITECT/ENGINEER/OWNER UPON REQUEST.
 - ALL EXHAUST AIR FANS AND VENTS SHALL BE LOCATED BEYOND 15'0" OF ANY OUTSIDE AIR INTAKE OR FAN. ALL EXHAUST AIR FANS SHALL BE MARKED WITH A PERMANENT PLATE TITLED "EXHAUST FAN FOR UNIT NUMBER# OR AREA". (E.G. "EF-1 FOR LOCKER ROOM", "EF-1-1 FOR GRD FL TOILET", ETC.)
 - ALL DUCT DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS.
 - ALL AIR DEVICES (E.G., DIFFUSERS, REGISTERS AND GRILLES) SHALL BE ALL ALUMINUM CONSTRUCTION WITH EXPOSED SURFACE OFF WHITE BAKED ENAMEL FINISH OR AS SPECIFIED BY ARCHITECT. PROVIDE OPPOSED BLADE DAMPERS AT ALL DIFFUSERS AND REGISTERS. PROVIDE MANUAL VOLUME DAMPERS WITH EXTRACTOR AT ALL TAKE-OFFS. COMPLY WITH IMC, FOR BALANCED AIR FLOW.
 - ALL BRANCH TAKE-OFFS TO BE PROVIDED W/ MANUAL VOLUME DAMPERS. ALL ELBOWS AND TEE'S MUST BE FURNISHED W/TURNING VANES. PROVIDE MANUAL VOLUME DAMPERS WITH EXTRACTOR AT ALL TAKE-OFFS. LOCATION OF THERMOSTATS SHALL BE ON INTERIOR WALLS APPROXIMATELY 60" AFF AND SHALL BE COORDINATED WITH SWITCHES, ETC. AT LOCATION SHOWN ON DRAWINGS.
 - ALL VALVES SHALL BE INSTALLED IN SUCH A MANNER AS TO BE EASILY ACCESSIBLE AND OPERABLE BY THE OWNERS PERSONNEL. VALVES SHALL NOT BE INSTALLED WITH OPERATORS CLOSE TO WALL, CONCRETE DECK, PIPES, DUCTWORK, OR ANY OTHER OBSTRUCTION SUCH THAT THE OPERATORS HAND MAY BE BOUND OR PINCHED.
 - PROVIDE TYPE "B" DYNAMIC FIRE DAMPERS IN ALL DUCTS OR OPENINGS PENETRATING FIRE RATED ASSEMBLIES. PROVIDE SMOKE DAMPERS IN ALL DUCTS OR OPENINGS PENETRATING SMOKE RATED ASSEMBLIES. PROVIDE RADIATION DAMPERS IN ALL DUCTS OR OPENINGS OF RATED CEILING. REFER TO ARCHITECTURAL LIFE SAFETY SHEETS FOR RATED ASSEMBLIES.
 - ALL CONDENSATE DRAIN PIPING SHALL BE PVC, ANY EXTERIOR PIPING SHALL ALSO BE PROVIDED WITH UV PROTECTION.
 - FOR ELECTRICAL OR CONTROL PANELS PROVIDE A MINIMUM OF 3'0" CLEARANCE IN FRONT OF ALL 120-240 VOLT PANELS AND 4'0" CLEARANCE IN FRONT OF ANY 480 VOLT PANEL. PROVIDE ADEQUATE SIDE CLEARANCE PER NEC. DUCTS, PIPES, AND OTHER EQUIPMENT ARE NOT ALLOWED TO RUN OVER PANELS PER NEC.
 - THE GENERAL CONTRACTOR SHALL TEST AND BALANCE THE AIR SIDE SYSTEM UPON COMPLETION. THE FINAL TEST AND BALANCE MUST BE PERFORMED BY AN INDEPENDENT FIRM CONTRACTED BY THE GENERAL CONTRACTOR AND NOT THE MECHANICAL CONTRACTOR. THE TEST AND BALANCE FIRM SHALL HOLD A CURRENT CERTIFICATION FROM A RECOGNIZED TEST AND BALANCE ORGANIZATION. THE TEST AND BALANCE OPERATION SHALL INCLUDE ALL AIR SIDE SYSTEMS REGARDLESS OF SIZE OF EQUIPMENT AND A WRITTEN REPORT TO THE ARCHITECT AND THE ENGINEER UPON COMPLETION.
 - ALL OPERATIONS / MAINTENANCE MANUALS FOR EQUIPMENT SPECIFIED SHALL BE PROVIDED TO OWNER UPON COMPLETION OF PROJECT.



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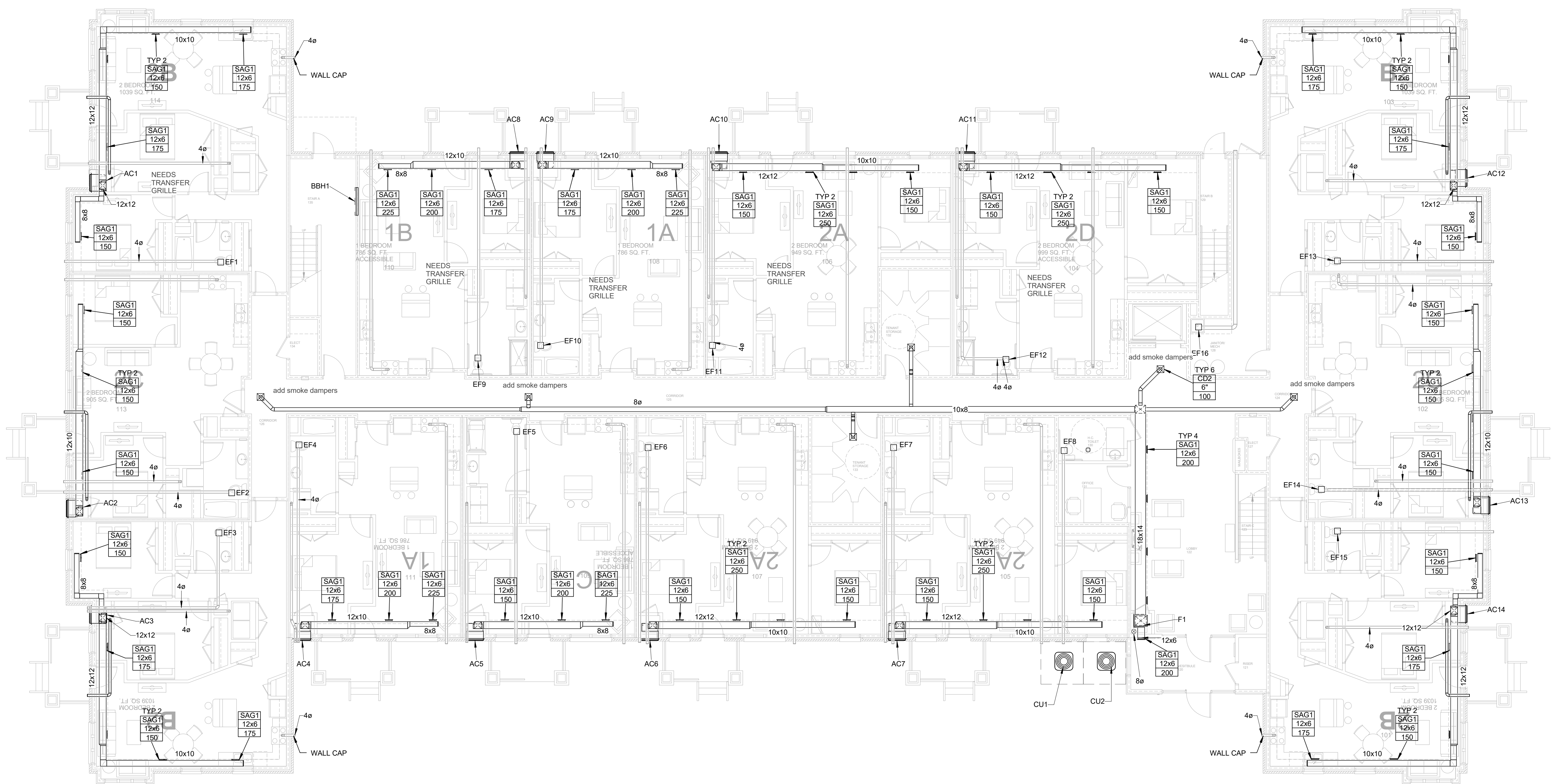
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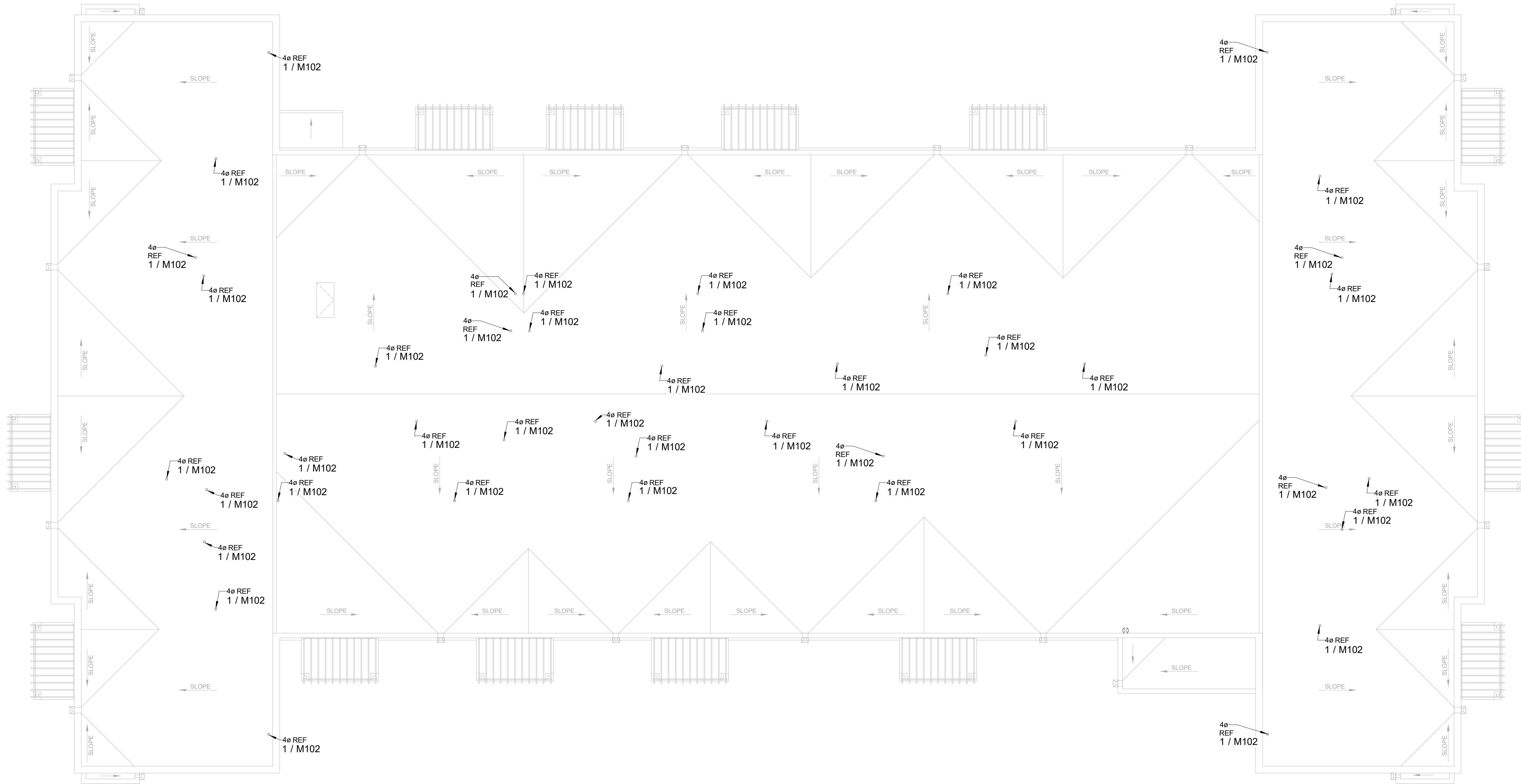
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SHEET TITLE:
FIRST FLOOR HVAC PLAN

M101



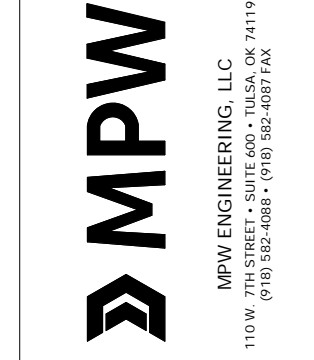
1 FIRST FLOOR HVAC PLAN
 1/8" = 1'-0"



① HVAC ROOF PLAN
1/8" = 1'-0"



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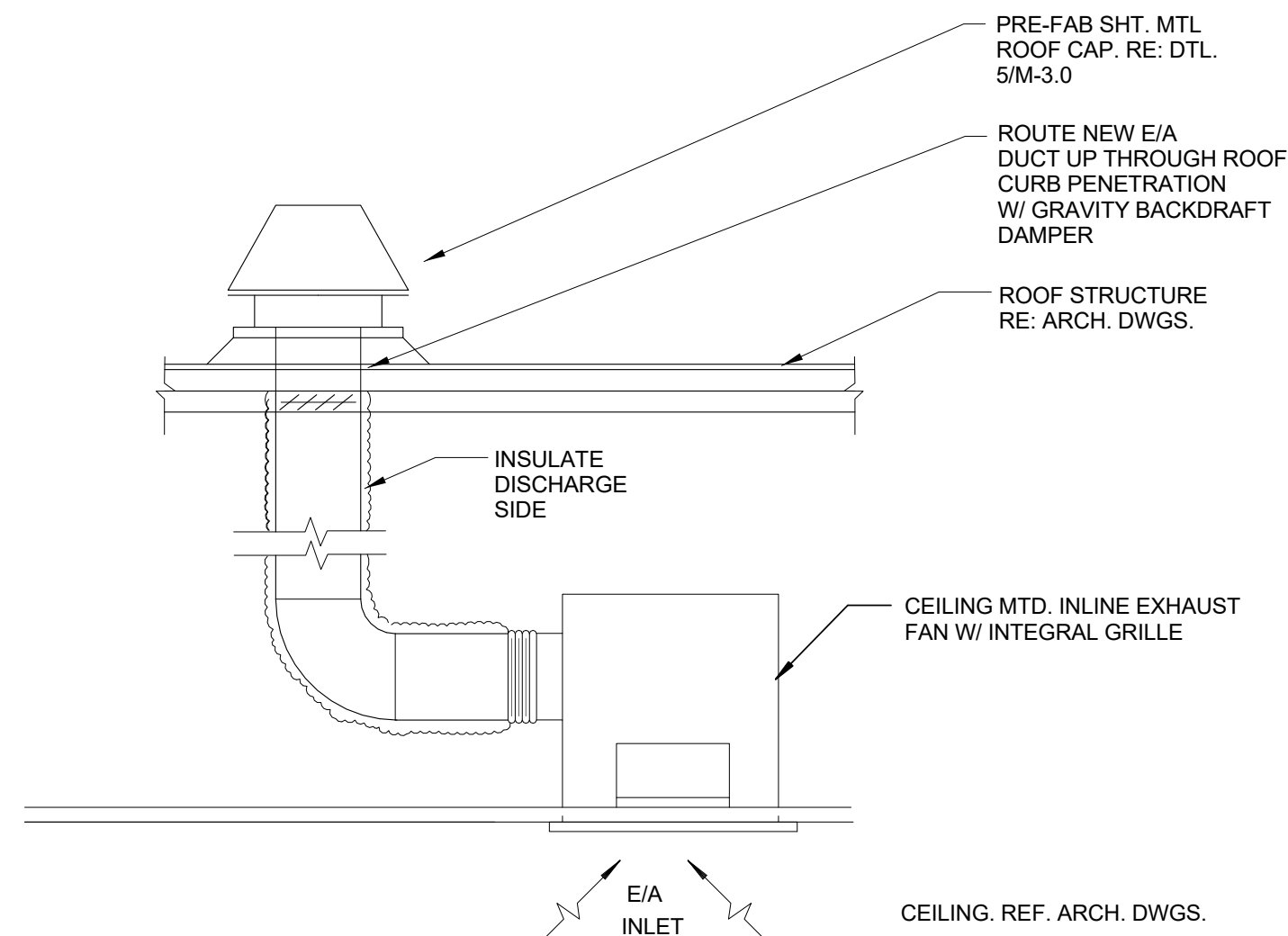
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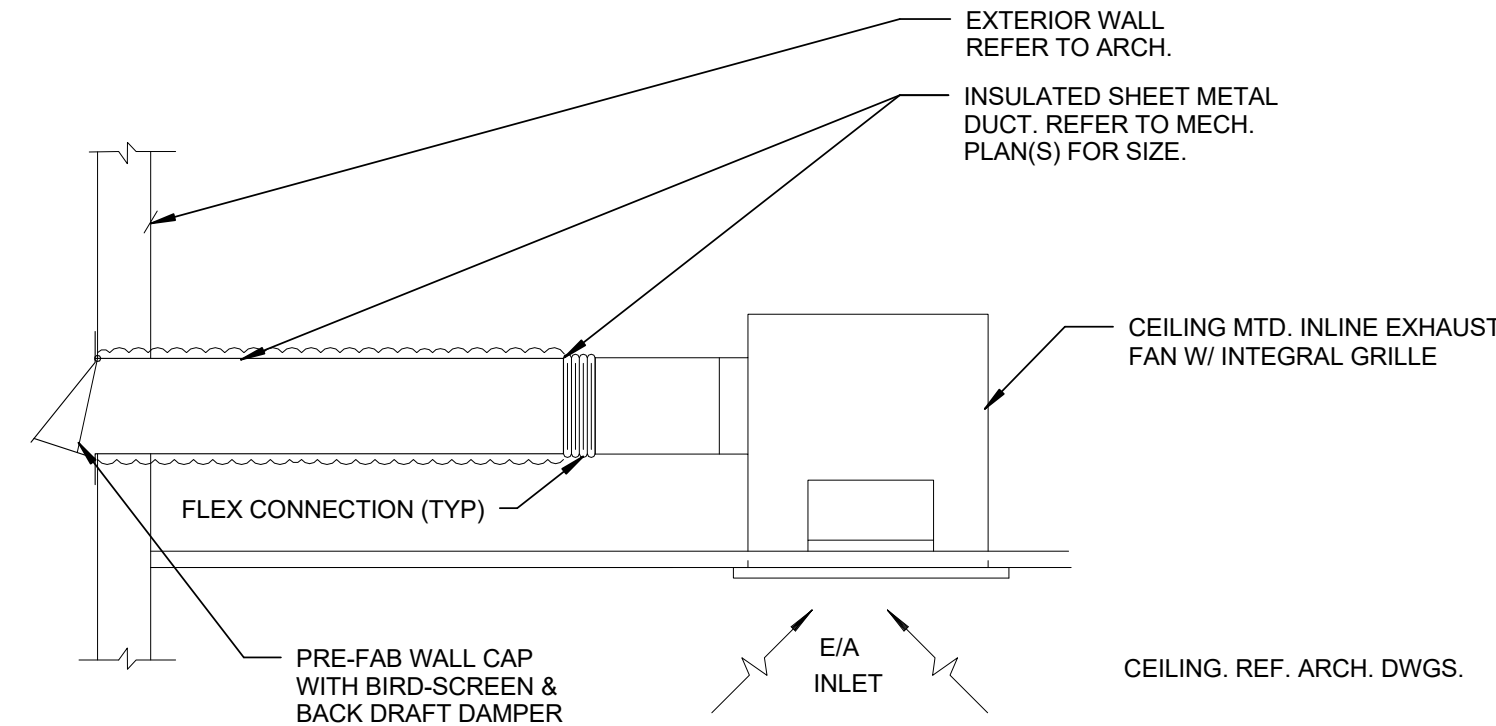
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SHEET TITLE:
HVAC ROOF PLAN

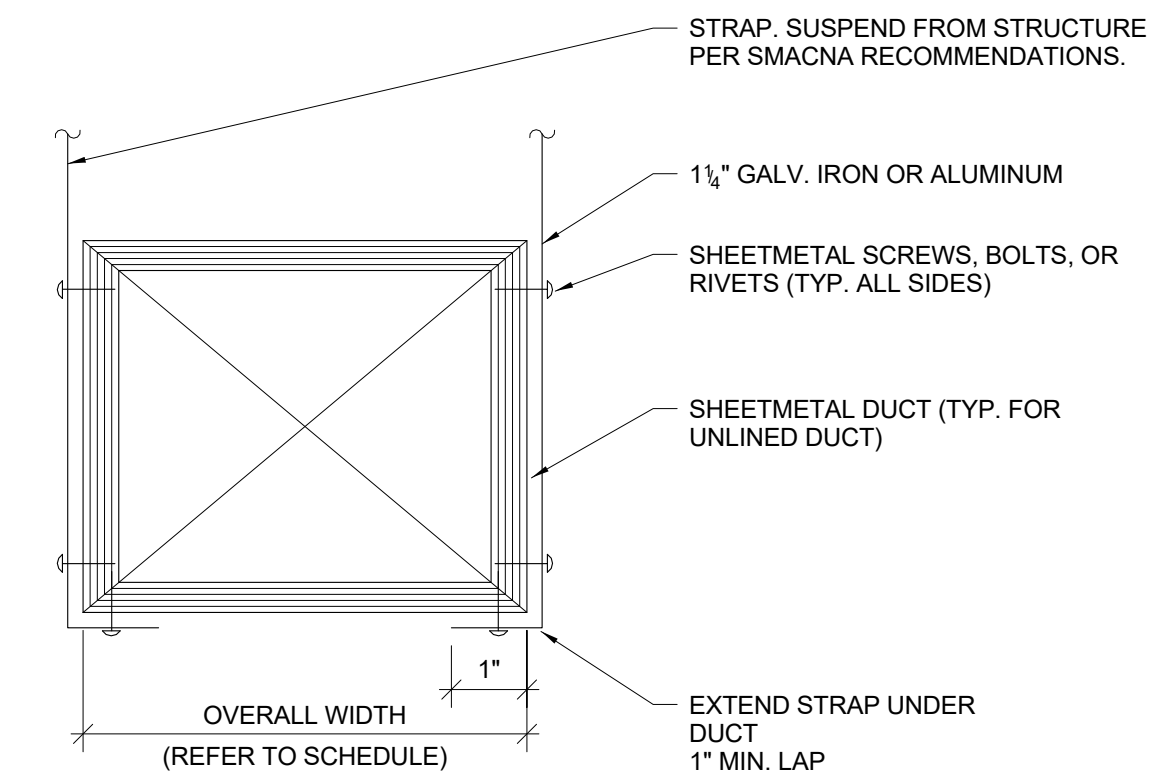
M103



1 CEILING MOUNTED EXHAUST FAN
DETAIL-ROOF OUTLET
NTS

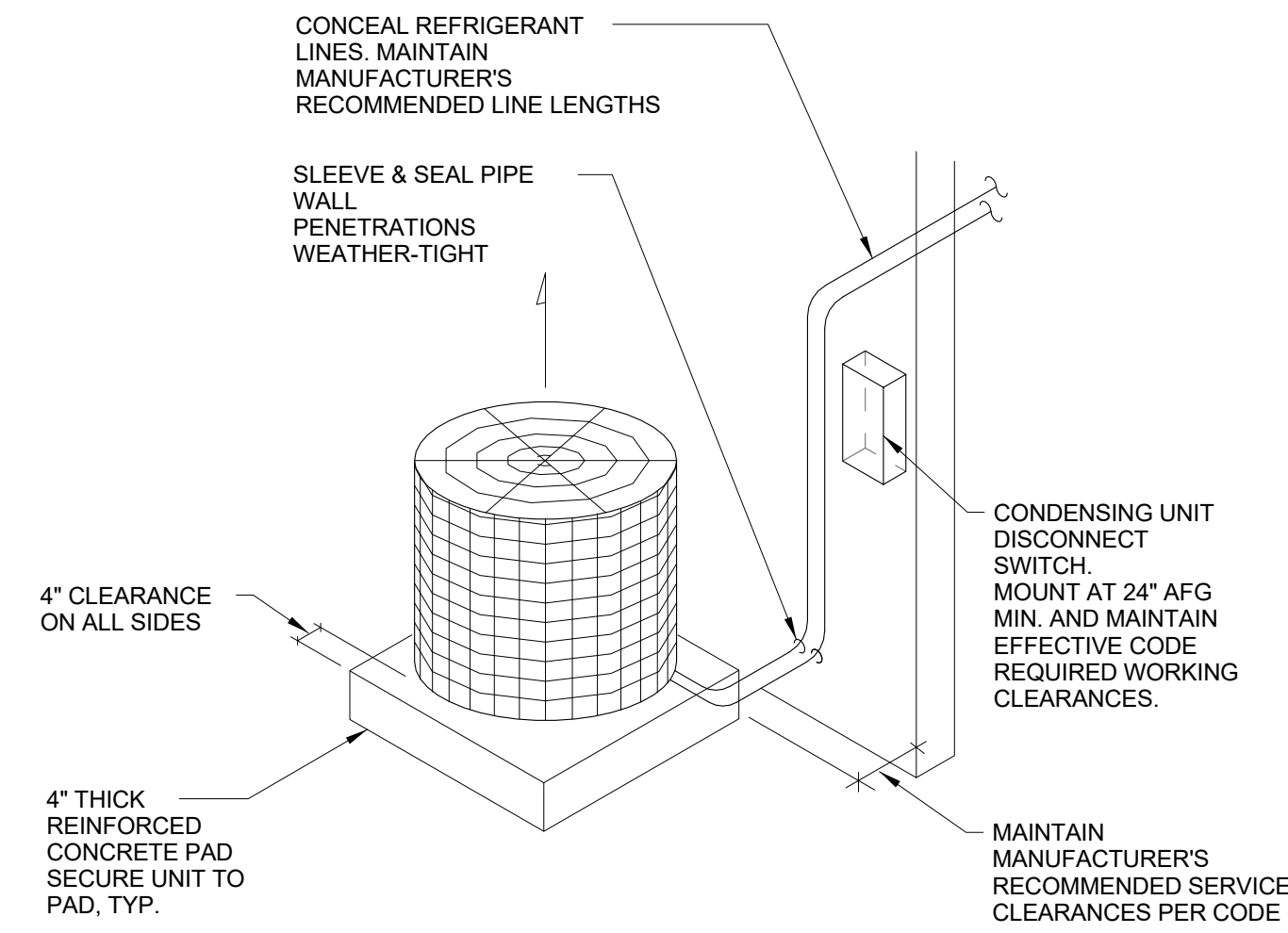


2 CEILING MOUNTED EXHAUST FAN
NOT TO SCALE

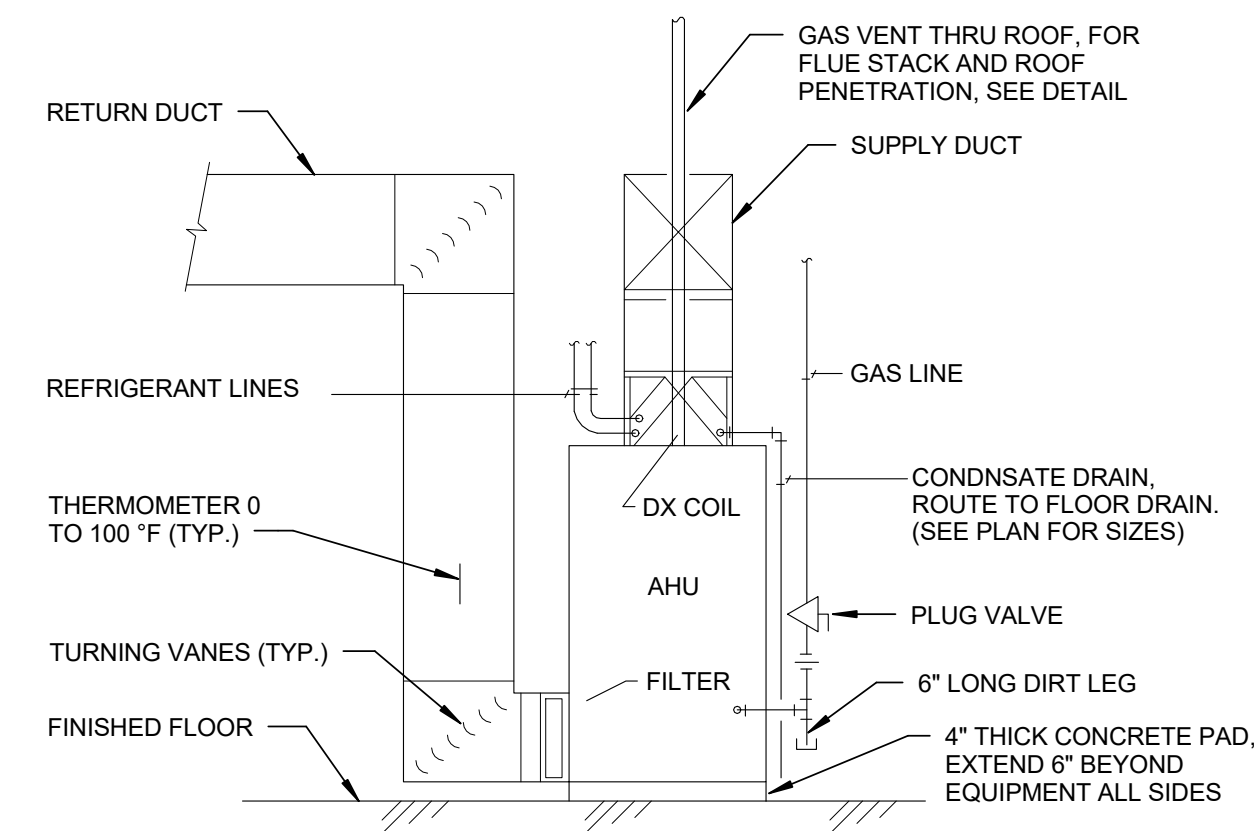


DUCT SUPPORT SCHEDULE		
OVERALL WIDTH (IN)	HANGER GAUGE	HANGER SPACING
UP THRU 60	22	8'-0"

3 DUCT SUPPORT DETAIL
NOT TO SCALE



4 CONDENSING UNIT (CU)
NTS



5 UPFLOW GAS-FIRED FURNACE DETAIL
NOT TO SCALE



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SHEET TITLE:
HVAC DETAILS

M501

V-TAC SCHEDULE

MARK	MANUFACTURER MODEL	S/A CFM	O/A CFM	COOLING CAPACITY (BTUH)	SENSIBLE CAPACITY (BTUH)	HTG (MBH) INPUT/OUTPUT	EER	ELECTRICAL						WEIGHT	NOTES
								V	P	Hz	MCA	MOCP	FLA		
AC1	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC2	HWC9N3311P18	600	50	17000 BTU/H	12580 BTU/H	33/31	11	208 V	1	60 Hz	11 A	15 A	7 A	310 lb	1
AC3	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC4	HWC9N3311P18	600	50	17000 BTU/H	12580 BTU/H	33/31	11	208 V	1	60 Hz	11 A	15 A	7 A	310 lb	1
AC5	HWC9N3311P18	600	50	17000 BTU/H	12580 BTU/H	33/31	11	208 V	1	60 Hz	11 A	15 A	7 A	310 lb	1
AC6	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC7	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC8	HWC9N3311P18	600	50	17000 BTU/H	12580 BTU/H	33/31	11	208 V	1	60 Hz	11 A	15 A	7 A	310 lb	1
AC9	HWC9N3311P18	600	50	17000 BTU/H	12580 BTU/H	33/31	11	208 V	1	60 Hz	11 A	15 A	7 A	310 lb	1
AC10	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC11	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC12	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC13	HWC9N3311P18	600	50	17000 BTU/H	12580 BTU/H	33/31	11	208 V	1	60 Hz	11 A	15 A	7 A	310 lb	1
AC14	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC15	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC16	HWC9N3311P18	600	50	17000 BTU/H	12580 BTU/H	33/31	11	208 V	1	60 Hz	11 A	15 A	7 A	310 lb	1
AC17	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC18	HWC9N3311P18	600	50	17000 BTU/H	12580 BTU/H	33/31	11	208 V	1	60 Hz	11 A	15 A	7 A	310 lb	1
AC19	HWC9N3311P18	600	50	17000 BTU/H	12580 BTU/H	33/31	11	208 V	1	60 Hz	11 A	15 A	7 A	310 lb	1
AC20	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC21	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC22	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC23	HWC9N3311P18	600	50	17000 BTU/H	12580 BTU/H	33/31	11	208 V	1	60 Hz	11 A	15 A	7 A	310 lb	1
AC24	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC25	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC26	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1
AC27	HWC9N3311P18	600	50	17000 BTU/H	12580 BTU/H	33/31	11	208 V	1	60 Hz	11 A	15 A	7 A	310 lb	1
AC28	HWC9N3311P24	800	60	22000 BTU/H	16060 BTU/H	33/31	10.0	208 V	1	60 Hz	14 A	20 A	9 A	320 lb	1

NOTES:

- CONTRACTOR SHALL PROVIDE A COMPLETE FUNCTIONING COOLING AND HEATING SYSTEM.

ACCESSORIES:

- FIELD INSTALLED DISCONNECT SWITCH BY DIVISION 26 ELECTRICAL CONTRACTOR.

ELECTRIC HEATER SCHEDULE

PLAN MARK	AREA SERVED	MANUFACTURER & MODEL	WIDTH	LENGTH	WATTS PER FT.	TOTAL KILOWATTS	VOLTAGE	PHASE	FLA	NOTES
BBH1		Q-MARK SHA-04750-DS-T-T R		0' - 0"		0 W	208 V	3		

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER & MODEL	MOUNTING	CFM	ESP	SONES	ELECTRICAL				SPEEDS	NOTES
						V	P	Hz	WATTS		
EF1	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF2	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF3	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF4	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF5	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF6	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF7	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF8	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF9	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF10	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF11	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF12	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF13	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF14	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF15	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF16	PANASONIC FV-11-15VK1	CEILING	140	0.25	0.07	120 V	1	22 W	MULTI	1.3	
EF17	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF18	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF19	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF20	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF21	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF22	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF23	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF24	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF25	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF26	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF27	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF28	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF29	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	
EF30	PANASONIC FV-05-11VK1	CEILING	50	0.25	0.03	120 V	1	7 W	MULTI	1.2	

NOTES:

- PROVIDE DUCT TO WEATHER WALL OR ROOF CAP WITH BIRDSCREEN. SEE PLANS FOR SIZES.
- FAN SHALL BE PROVIDED WITH RATED CEILING BOX AND BACK DRAFT DAMPERS. PROVIDE HUMIDASTAT WITH DEDICATED SWITCH FOR LIGHT, FAN AND HEATER.
- FAN SHALL BE THERMOSTATICALLY CONTROLLED TO OPERATE WHEN ROOM TEMP EXCEEDS 80 DEGREES.

AIR DEVICE SCHEDULE

MARK	MANUFACTURER & MODEL#	SERVICE	MATERIAL	FACE TYPE	MOUNTING LOCATION	FACE SIZE	NOISE CRITERIA (NC)	NOTES
SAG1	TITUS 301RS	SUPPLY AIR	ALUMINUM	SQUARE NECK	SIDEWALL	SEE PLANS	35	1,2,3
CD2	TITUS TMS	SUPPLY AIR	ALUMINUM	ROUND NECK	SURFACE	12"X12"	35	1,2

NOTES:

- REFER TO PLANS FOR NECK SIZES AND QUANTITY.
- PROVIDE OPTIONAL OPPOSED SLADE DAMPER WITH SCREWDRIVER ADJUSTMENT THROUGH FACE OF GRILLE.
- DOUBLE DEFLECTION GRILLE. ADJUST AIR PATTERN FOR INTERNAL AREA AND EXTERIOR WALL COVERAGE.

FAN/COIL UNIT SCHEDULE

MARK	MANUFACTURER & MODEL	S/A CFM	O/A CFM	ESP	COOLING CAPACITY (TONS)	GAS HEAT IN / OUT (MBH)	ELECTRICAL					NOTES
							V	P	Hz	MCA	MOCP	
F1	CARRIER 59SP5A080E17-080-14/CNPVP4821ALA	1600	200	0.5	4 TONS	80 / 78	115 V	1	60 Hz	13 A	20 A	1,2,3
F2	CARRIER 59SP5A080E17-080-14/CNPVP4821ALA	1600	250	0.5	4 TONS	80 / 78	115 V	1	60 Hz	13 A	20 A	1,2,3

NOTES:

- INSTALL REFRIGERANT LINES PER MANUFACTURER GUIDELINES BASED ON RUN LENGTH. PROVIDE BALANCING DAMPER ON FRESH AIR SUPPLY TO
- PROVIDE SCHEDULED OUTSIDE AIR QUANTITIES.

AIR COOLED CONDENSING UNIT SCHEDULE

MARK	MANUFACTURER & MODEL	NOMINAL CAPACITY (TONS)	NET COOLING CAPACITY TOTAL / SEN MBH	ELECTRICAL						SEER	WEIGHT	NOTES
				V	P	Hz	MCA	MOCP	FLA			
CU1	CARRIER 24ABC648A003	4	44.6 MBH	208 V	1	60 Hz	26 A	40 A	1 A	15	317 lb	1,2,3
CU2	CARRIER 24ABC648A003	4	44.6 MBH	208 V	1	60 Hz	26 A	40 A	1 A	15	317 lb	1,2,3

NOTES:

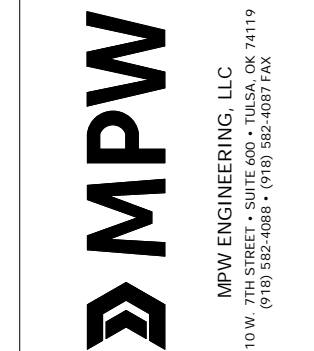
- ALL UNITS SHALL BE SUPPLIED AS COMPLETE SYSTEMS WITH EXPANSION VALVES (TXV), FILTER-DRYERS, SIGHT GLASS, LOW AMBIENT HEATER, CRANKCASE HEATER AND R410A REFRIGERANT PIPING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- CONTRACTOR SHALL VERIFY WITH THE UNIT MANUFACTURER THAT REFRIGERANT LINES ARE WITHIN THE RECOMMENDED ALLOWABLE LINE LENGTHS OF RUN AND RISE. CONTACT THE ENGINEER IF LINE LENGTHS EXCEED THESE REQUIREMENTS.
- INSTALL NEW UNITS ON 4" THICK CONCRETE PAD SUITABLE FOR HVAC SYSTEMS. ANCHOR UNIT TO PAD.
- INSTALLING CONTRACTOR SHALL BE CERTIFIED BY THE MANUFACTURER TO BID AND INSTALL THE EQUIPMENT.

ACCESSORIES (ALL UNITS SHALL INCLUDE THE FOLLOWING):

FIELD INSTALLED DISCONNECT SWITCH BY DIV. 26 ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL DRAWINGS.



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SHEET TITLE:
HVAC SCHEDULES

M601

PIPE AND FITTINGS

	GATE VALVE
	GLOBE VALVE
	ANGLE GATE VALVE
	SOLENOID VALVE
	NON SLAM CHECK VALVE
	BUTTERFLY VALVE
	PLUG VALVE
	BALL VALVE
	TWO WAY CONTROL VALVE
	PRESSURE REGULATOR
	THREE WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	BUTTERFLY VALVE
	AUTOMATIC AIR VENT
	STRAINER, Y TYPE W/GATE VALVE OR HOSE BIBB
	FLEXIBLE CONNECTION
	JOINT
	EXPANSION JOINT
	FLOW METER
	FLOW DIRECTION
	ELBOW BASE
	ELBOW REDUCING
	UNION
	PRESSURE GAUGE WITH TRI-COCK
	PRESSURE INDICATOR
	TEST PLUG
	TEMPERATURE INDICATOR
	FLOW SWITCH
	FLOW INDICATOR
	REDUCER, CONCENTRIC
	REDUCER, ECCENTRIC STRAIGHT CROWN
	REDUCER, ECCENTRIC STRAIGHT INVERT
	AUTO FLOW BALANCING VALVE
	FLOOR DRAIN W/P-TRAP
	FLOOR CLEANOUT
	WALL CLEANOUT
	BACKFLOW PREVENTER
	LUBRICATED PLUG COCK
	HOSE BIBB W/VACUUM BREAKER
	CAPPED END
	SIDEWALL SPRINKLER HEAD
	PENDENT SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD
	SIAMESE FIRE DEPARTMENT CONNECTION
	ALARM CHECK VALVE
	DELUGE VALVE
	PIPE SWAY BRACING
	PIPE ANCHOR SUPPORT
	BALANCING VALVE

ABBREVIATIONS

A	AIR	K	KW	KILOWATT
ABV	ABOVE	L	LAB	LABORATORY
ACCU	AIR COOLED CONDENSING UNIT	LAT	LEAVING AIR TEMPERATURE	
ACL	ACETYLENE GAS	LAV	LAVATORY	
ACU	AIR CONDITIONING UNIT	LB	POUND	
AD	ACCESS DOOR	LD	LINEAR DIFFUSER	
AF	AIR FILTER	LDB	LEAVING DRY BULB	
AFF	ABOVE FINISHED FLOOR	LF	LINEAR FEET	
AFH	AIR FILTER, HIGH EFFICIENCY	LPD	LAMINAR FLOW DIFFUSER	
AHU	AIR HANDLING UNIT	LP	LIQUID PROPANE	
APD	AIR PRESSURE DROP	L/S	LITERS PER SECOND	
AR	ACID RESISTANT	LWB	LEAVING WET BULB	
ASSY	ASSEMBLY	LWT	LEAVING WATER TEMPERATURE	
AUX	AUXILIARY	M	MAU	MAKE-UP AIR UNIT
AV	AUTOMATIC AIR VENT	MAX	MAXIMUM	
B	BDD	MB	MIXING BOX/MOP BASIN	
BDD	BACKDRAFT DAMPER	MBH	THOUSAND BTU/HR	
BHP	BRAKE HORSE POWER	MD	MOTORIZED DAMPER	
BP	BACKFLOW PREVENTER	MECH	MECHANICAL	
BS	BIRD SCREEN	MIN	MINUTE/MINIMUM	
C	C	MM	MILLIMETERS	
C	CONDENSATE	MS	MOTOR STARTER	
C/L	CENTER LINE	N	N	NITROGEN
CD	CEILING DIFFUSER	NC	NORMALLY CLOSED	
CFM	CUBIC FEET PER MINUTE	NG	NATURAL GAS	
CH	CHILLER	NIC	NOT IN CONTRACT	
CHDR	CHEMICAL DRAIN	NO	NUMBER	
CHP	CHILLED WATER PUMP	NOX	NITROGEN OXIDE	
CLG	CEILING	NTS	NOT TO SCALE	
CO	CLEANOUT	O	O	OXYGEN
CONC	CONCRETE	OA	OUTSIDE AIR	
CONN	CONNECTION	OAL	OUTSIDE AIR LOUVER	
CONT	CONTINUED/CONTINUATION/CONTINUOUS	OBD	OPPOSED BLADE DAMPER	
COTG	CLEAN OUT TO GRADE	OC	ON CENTER	
CU	CONDENSING UNIT/COPPER	OS	OVERFLOW SCUPPER	
CV	CONSTANT VOLUME	OS&Y	OUTSIDE SCREW & YOKE	
CW	COLD WATER	P	PD	PRESSURE DROP
D	DDC	POC	POINT OF CONNECTION	
D	DIRECT DIGITAL CONTROL	PRESS	PRESSURE	
DG	DOOR GRILLE	PRV	PRESSURE REDUCING VALVE	
DIA	DIAMETER	PSIG	POUNDS PER SQUARE INCH	
DIM	DIMENSION	PVC	POLYVINYL CHLORIDE	
DMPR	DAMPER	R	RA	RETURN AIR
DN	DOWN	RAG	RETURN AIR GRILLE	
DPS	DIFFERENTIAL PRESSURE SWITCH	RAR	RETURN AIR REGISTER	
DR	DRAIN	RC	RAIN CONDUCTOR	
DSD	DUCT SMOKE DETECTOR	RD	ROOF DRAIN	
DSW	DISTILLED WATER	REF	REFERENCE	
DWG	DRAWING	RF	RETURN FAN	
E	EAT	RL	RAIN LEADER	
E	ENTERING AIR TEMPERATURE	RM	ROOM	
ED	EQUIPMENT DRAIN	RTN	RETURN	
EDB	ENTERING DRY BULB	S	SA	SUPPLY AIR
EER	ENERGY EFFICIENCY RATIO	SAG	SUPPLY AIR GRILLE	
EF	EXHAUST FAN	SAN	SANITARY	
EFF	EFFICIENCY	SAR	SUPPLY AIR REGISTER	
EG	EXHAUST GRILLE	SD	SMOKE DAMPER	
EL	ELEVATION	SD/FD	COMB. SMOKE DAMPER/FIRE DAMP.	
ELEC	ELECTRICAL	SF	SUPPLY FAN	
ENT	ENTERING	SH	SHEET	
ER	EXHAUST REGISTER	SP	STATIC PRESSURE	
EWB	ENTERING WET BULB	SQ.FT	SQUARE FEET	
EWC	ELECTRIC WATER COOLER	SST	STAINLESS STEEL	
EWT	ENTERING WATER TEMPERATURE	T	TCU	TERMINAL CONTROL UNIT
EXH	EXHAUST	TEMP	TEMPERATURE	
EWS	EYE WASH/SHOWER STATION	TG	TRANSFER GRILLE	
F	FCO	TP	TRAP PRIMER	
F	FLOOR CLEANOUT	TYP	TYPICAL	
FD	FIRE DAMPER/FLOOR DRAIN	U	UC	UNDERCUT
FH	FUME HOOD	V	V	VENT
FL	FLOOR	VAV	VARIABLE AIR VOLUME	
FLEX	FLEXIBLE	VD	VOLUME DAMPER	
FOR	FUEL OIL RETURN	VEL	VELOCITY	
FOS	FUEL OIL SUPPLY	VERT	VERTICAL	
FP	FIRE PUMP	VFD	VARIABLE FREQUENCY DRIVE	
FPI	FINS PER INCH	VSD	VARIABLE SPEED DRIVE	
FPM	FEET PER MINUTE	VTR	VENT THRU ROOF	
FT	FEET	W	W/	WITH
FV	FACE VELOCITY	W/O	WITHOUT	
G	GA	WCO	WALL CLEANOUT	
G	GAUGE	WC	WATER COLUMN	
GIV	GRAVITY INTAKE VENTILATOR	WH	WALL HYDRANT	
GND	GROUND	WHA	WATER HAMMER ARRESTORS	
GPM	GALLONS PER MINUTE	WR	WATER RISER	
GRV	GRAVITY RELIEF VENTILATOR	WTR	WATER	
H	HB	W	W/	WITH
H	HOSE BIBB	W/O	WITHOUT	
HORIZ	HORIZONTAL	WCO	WALL CLEANOUT	
HP	HORSE POWER/HEAT PUMP	WC	WATER COLUMN	
HTG	HEATING	WH	WALL HYDRANT	
HUMID	HUMIDISTAT	WHA	WATER HAMMER ARRESTORS	
HWS	HOT WATER SUPPLY	WR	WATER RISER	
HWP	HOT WATER BOILER	WTR	WATER	
HWR	HOT WATER PUMP	I	ID	INSIDE DIAMETER
HWR	HOT WATER RETURN	IN	INCHES	
I	ID	INV EL	INVERT ELEVATION	
I	INSIDE DIAMETER			
IN	INCHES			
INV EL	INVERT ELEVATION			

DOMESTIC WATER GENERAL NOTES

- CUTOFF VALVES AND STOPS SHALL BE PROVIDED WHERE SHOWN ON DRAWINGS AND AT FIXTURE CONNECTIONS.
- TEST ALL WATER SYSTEM IN PRESENCE OF OWNER'S REPRESENTATIVE AT MIN. 100 PSIG FOR 8 HOURS. SANITARY, WASTES, AND VENTS SHALL BE TESTED WITH 10" HEAD OF WATER FOR 8 HOURS WITH LEVEL OF WATER REMAIN UNCHANGED.
- INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS.
- INSTALL ALL WATER PIPING SYSTEMS SO THAT THEY WILL NOT BE SUBJECT TO ANY UNDE STRAINS OR STRESSES. PROVISIONS SHALL BE MADE FOR EXPANSION, CONTRACTION AND STRUCTURAL SETTLEMENT.
- ALL PENETRATIONS THROUGH FIRE RATED WALLS AND FLOOR CEILING ASSEMBLY SHALL BE INSTALLED AND SEALED TO MAINTAIN FIRE RATING WITH U.L. LISTED ASSEMBLIES, MATERIALS AND SEALANTS.
- BELOW GROUND PIPE SHALL BE INSTALLED NO LESS THAN 6" BELOW FROST LINE. REFER TO STRUCTURAL DETAILS FOR FOUNDATION PENETRATION.
- DRAWING IS DIAGRAMMATIC IN NATURE AND IS NOT INTENDED TO BE SCALED FOR DIMENSIONS.
- COORDINATE LOCATION OF PLUMBING WORK WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES.
- ALL TESTING IS THE RESPONSIBILITY OF THE CONTRACTOR, WITHOUT EXTRA COST FOR THE OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A WATER FLOW AND PRESSURE TEST FOR EVALUATING INCOMING DOMESTIC AND FIRE PROTECTION SERVICE PRESSURES.
- WHERE STREET WATER MAIN PRESSURES FLUCTUATE, THE BUILDING WATER DISTRIBUTION SYSTEM SHALL BE DESIGNED FOR MINIMUM PRESSURE AVAILABLE. WHEREVER WATER PRESSURE FROM THE STREET MAIN OR OTHER SOURCE OF SUPPLY IS LESS THAN 80 PSI, A WATER PRESSURE BOOSTER SYSTEM SHALL BE INSTALLED ON THE BUILDING WATER SUPPLY SYSTEM. WHERE WATER PRESSURE WITHIN A BUILDING EXCEEDS 80 PSI STATIC, AN APPROVED WATER-PRESSURE REDUCING VALVE WITH STRAINER CONFORMING TO ASSE 1003 SHALL BE INSTALLED TO REDUCE THE PRESSURES TO BELOW 80 PSI.

PIPE LINES

----	POTABLE COLD WATER
----	POTABLE HOT WATER
----	POTABLE HOT WATER RETURN
----	VENT

PIPE TAGS

XX" CW	POTABLE COLD WATER
XX" HW	POTABLE HOT WATER
XX" HWR	POTABLE HOT WATER RETURN
XX" V	VENT
XX" CA	COMPRESSED AIR
XX" SS	SANITARY SEWER
XX" OW	OIL/WASTE WATER
XX" G	NATURAL GAS
XX" VTR	VENT THROUGH ROOF

SANITARY SEWER GENERAL NOTES

- PROVIDE CLEANOUTS AT LOCATIONS AND WITH CLEARANCES AS REQUIRED BY THE CODE NOT EXCEEDING 50' IN HORIZONTAL RUNS AT EACH CHANGE OF DIRECTION, VERTICAL OR HORIZONTAL, GREATER THAN 45°. AT THE BASE OF EACH WASTE OR VENT STACK 5' AFF. PROVIDE WALL CLEANOUTS IN LIEU OF FLOOR CLEANOUTS WHEREVER POSSIBLE. ALL INTERIOR CLEANOUTS SHALL BE ACCESSIBLE FROM WALLS OR FLOORS.
- THE FLOOR DRAIN IN TOILETS AND LOCKERS AREAS SHALL BE PROVIDED WITH BACKWATER VALVES.
- MAINTAIN MINIMUM OF 10" CLEARANCE BETWEEN ANY VTR AND OUTSIDE AIR INTAKES. WHERE HORIZONTAL CLEARANCE CANNOT BE PROVIDED, EXTEND VENTS A MIN OF 24" ABOVE EACH OUTSIDE AIR INTAKE.
- VTR'S ROOF PENETRATIONS, WATER PROOFING AND FLASHINGS SHALL BE PROVIDED BY ROOF CONTRACTOR.
- ALL TESTING IS THE RESPONSIBILITY OF THE CONTRACTOR. TEST ALL SEWER AND VENT SYSTEMS IN PRESENCE OF OWNER'S REPRESENTATIVE.
- INVERT ELEVATION SHOWN BASED ON 100.0 FT. FF ELEVATION. REFER TO CIVIL DRAWINGS FOR ACTUAL ELEVATIONS.
- SEWER PIPE SHALL BE INSTALLED NO LESS THAN 6" BELOW THE FROST LINE.

NOTE:
THIS IS A STANDARD SYMBOLS & ABBREVIATIONS SHEET. THEREFORE, SOME SYMBOLS & ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT ON THE PLANS.



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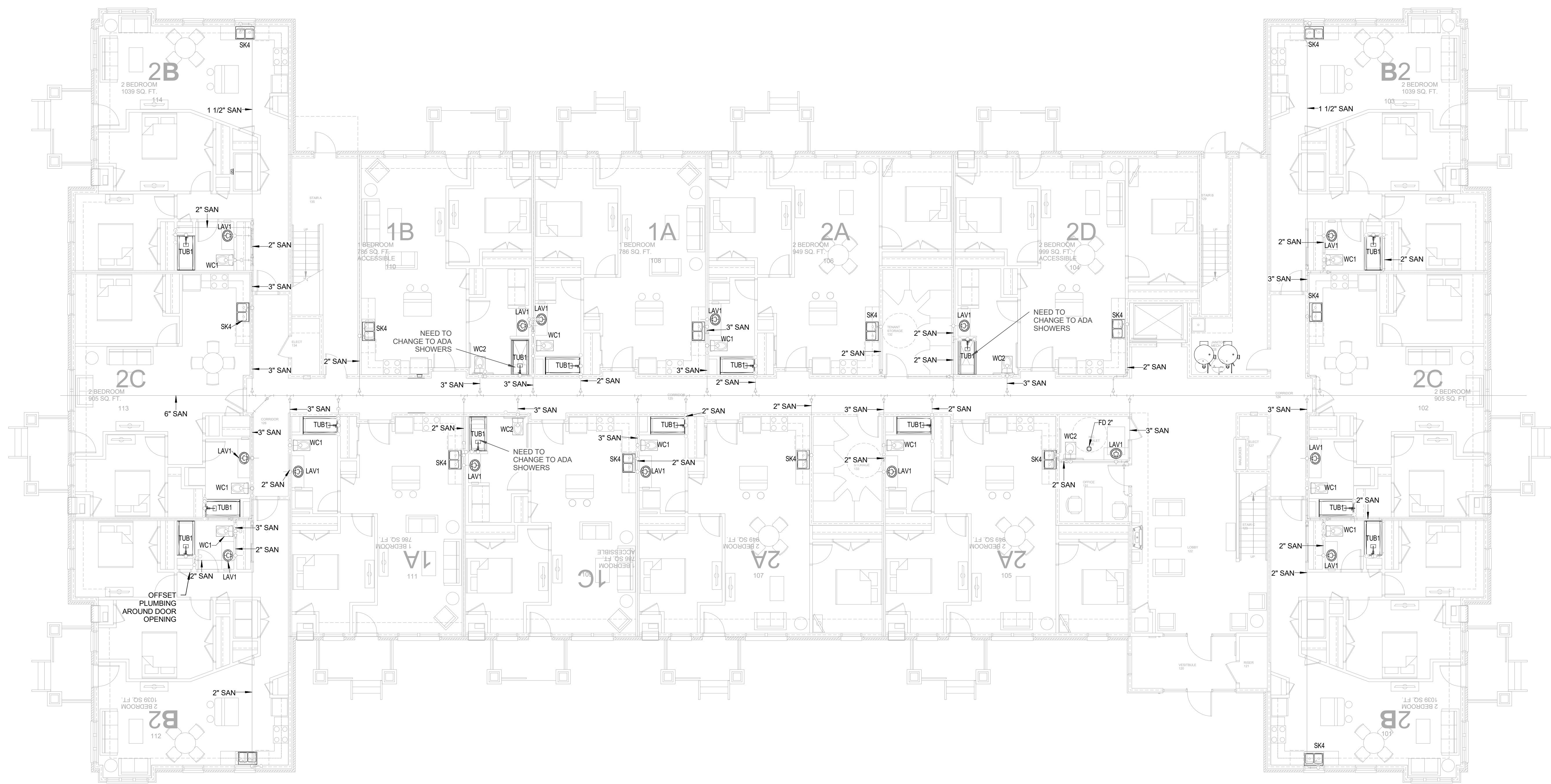
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PLUMBING NOTES

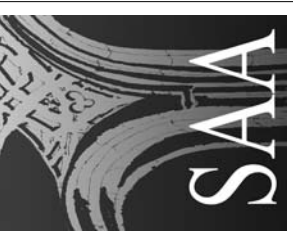
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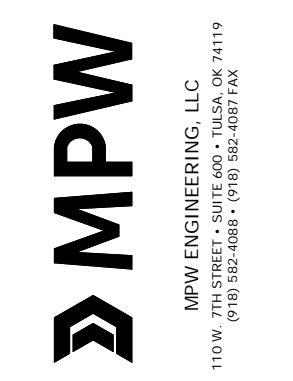
1 FIRST FLOOR SANITARY PLAN
 1/8" = 1'-0"



1 SECOND FLOOR SANITARY PLAN
1/8" = 1'-0"



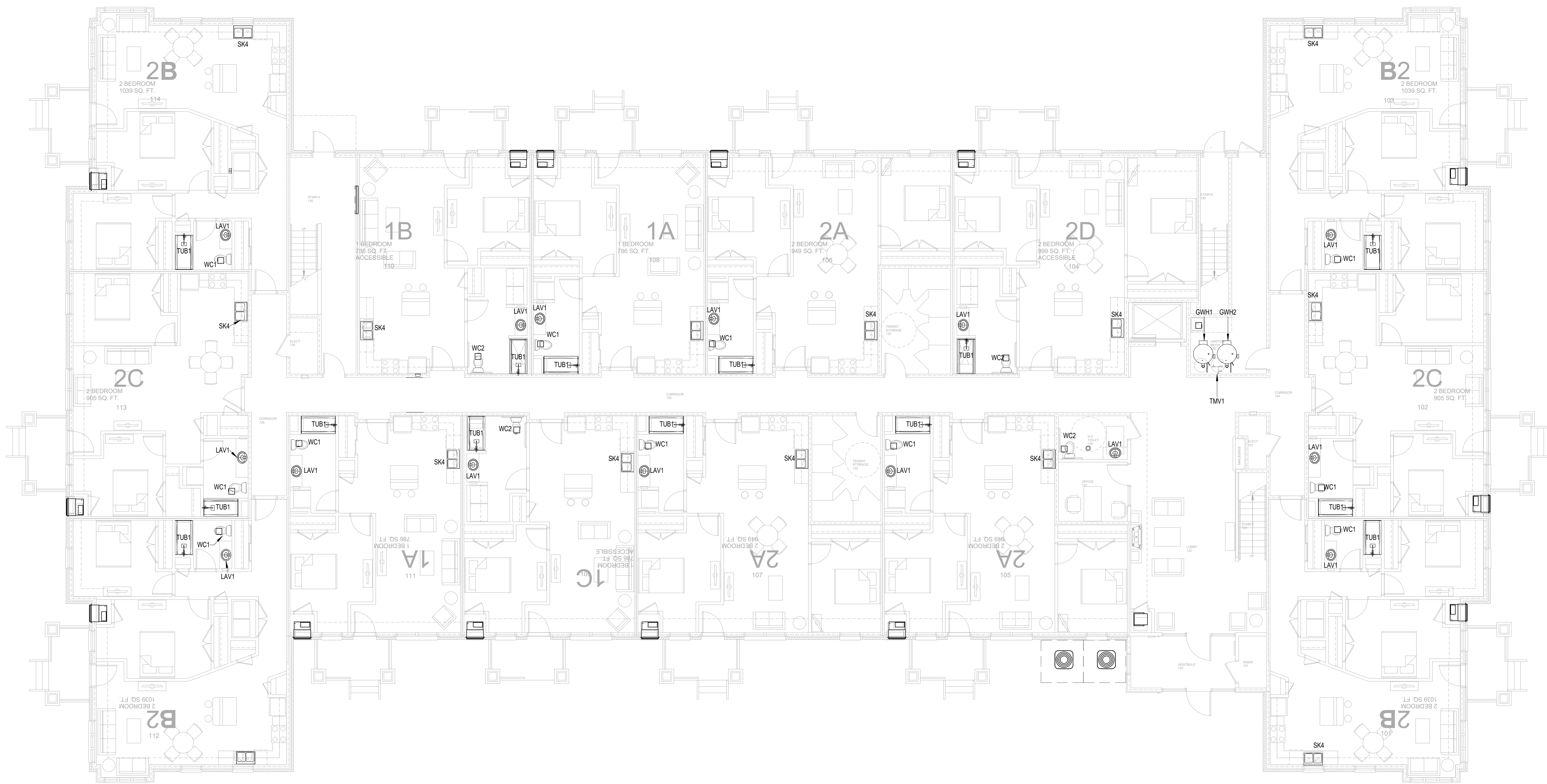
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SHEET TITLE:
SECOND FLOOR SANITARY
PLAN



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



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SHEET TITLE:
FIRST FLOOR PLUMBING
PLAN

P103



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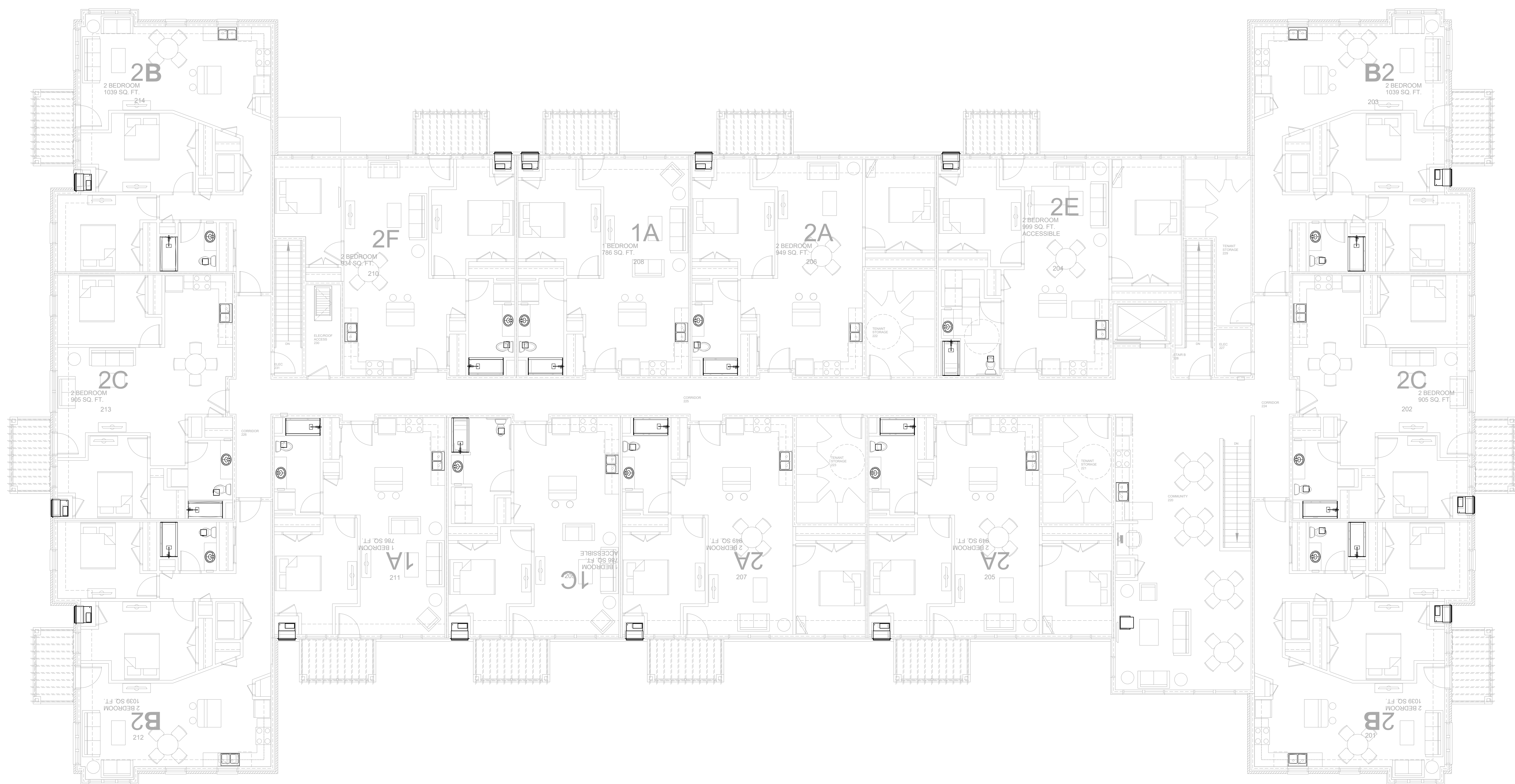


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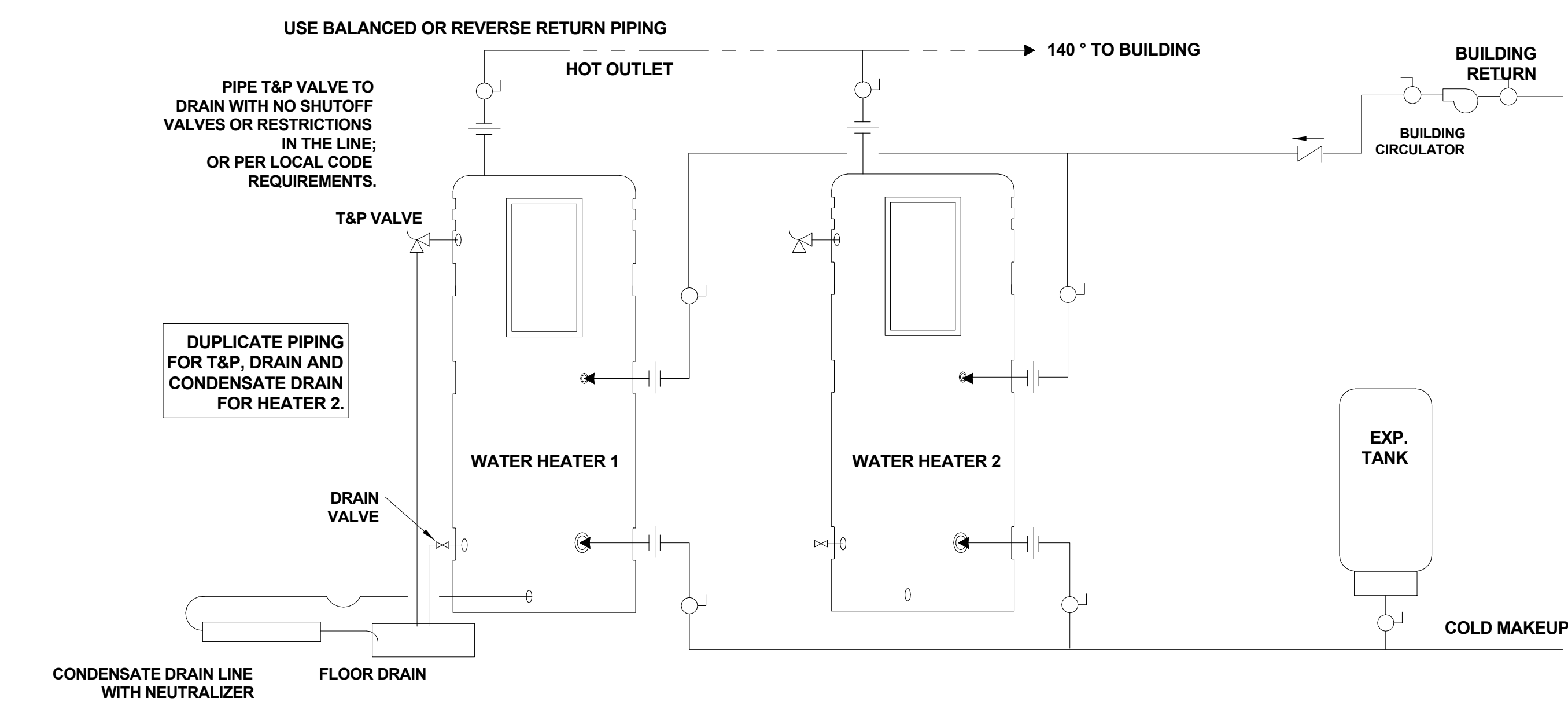
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SHEET TITLE:
 SECOND FLOOR PLUMBING
 PLAN

P104

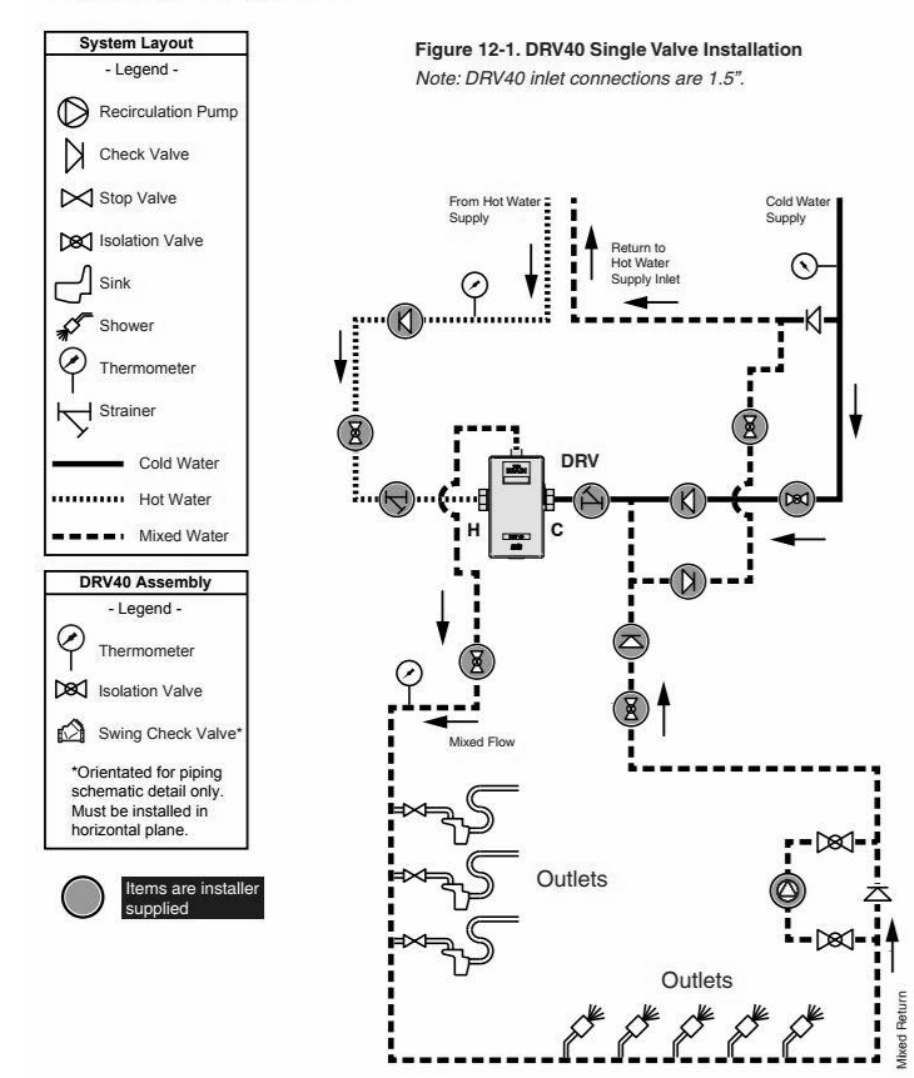


1 SECOND FLOOR PLUMBING PLAN
 1/8" = 1'-0"



1 DUAL GAS WATER HEATERS
NTS

Piping Diagrams



2 MIXING VALVE DETAIL
NTS



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SHEET TITLE:
PLUMBING DETAILS

P501

PLUMBING FIXTURE SCHEDULE

MARK	UNIT TYPE	BRANCH SIZES (MIN)				MANUFACTURER & MODEL	FAUCET	DESCRIPTION
		WASTE	VENT	CW	HW			
WC1	FLOOR MOUNTED TANK WATERCLOSET	3"	2"	3/4"		ZURN Z5552		TOILET - FLOOR MOUNTED, TANK TYPE WITH ELONGATED TOILET WITH SIPHON ACTION JETTED BOWL, WHITE COLOR WITH OPTIONAL SOFT CLOSE SEAT water closet = 1.28gpf
WC2	ADA FLOOR MOUNTED TANK WATERCLOSET	3"	2"	3/4"		ZURN Z5551		ADA TOILET - FLOOR MOUNTED, TANK TYPE WITH ELONGATED TOILET WITH SIPHON ACTION JETTED BOWL, WHITE COLOR WITH OPTIONAL SOFT CLOSE SEAT water closet = 1.28gpf
LAV1	COUNTERTOP LAVATORY	1 1/2"	1 1/2"	1/2"	1/2"	ZURN Z5114		VITREOUS CHINA, 20-1/2" X 17-1/4" X 6" COUNTER MOUNT LAVATORY, SELF RIMMING, FRONT OVERFLOW, FITTING LEDGE, SEALANT, 4" O.C. FAUCET HOLE, FAUCET: ZURN ZB1104-XL, 4" O.C. 6" WRIST BLADE HANDLES, R7308 SANITARY DASH 1 1/4" INTEGRAL PREFORATED OFFSET GRID DRAIN, PVC P-TRAP WITH CLEANOUT AND TAILPEICE, ANGLE STOPS AND WALL ESCUTCHEON, PROVIDE TRUEBRO TRAP WRAP INSULATION KIT OR SIMILAR, PROVIDE AN ASSE 1070 THERMOSTATIC MIXING VALVE
TUB1	BATHTUB WITH SHOWER	2"	2"	1/2"	1/2"	AMERICAN STANDARD CAMBRIDGE 2461.002	DELTA TRINSIC T14459	RIGHT HAND DRAIN OUTLET TUB, PROVIDE SINGLE HANDLE PRESSURE BALANCING MIXING VALVE AND DELTA SHOWER ASSEMBLY T17430 UNIT WITH STAINLESS STEEL FINISHES. VALVE SUPPLIED WITH THE DELTA RP43381 STAINLESS STEEL SHOWER HEAD WITH SPRAY ADJUSTMENT, AND DELTA RP41591 METAL DIVERTER. PROVIDE UNIVERSAL DRAIN AMERICAN STANDARD MODEL 1583470.002 WITH SATIN NICKEL FINISH STRAINER.
SK4	UNDERMOUNT DOUBLE BOWL SINK	2"	2"	1/2"	1/2"	MAINLINE MLUD775		18 GAUGE TYPE 304, 18-8 STAINLESS STEEL, 33"X22"X8" DEEP UNDERMOUNT DOUBLE BOWL SINK; JUST MANUFACTURING FAUCET J-990-LS / WF DECK MOUNTED SINGLE CONTROL GOOSENECK FAUCET, 1-1/4" POP-UP DRAIN, PVC P-TRAP WITH CLEANOUT AND TAILPEICE, ANGLE STOPS AND WALL ESCUTCHEON. PROVIDE TRUEBRO TRAP WRAP INSULATION KIT OR SIMILAR.
FD 2"	FLOOR DRAIN	2"	2"			ZURN Z-415S		ROUND CAST IRON BODY WITH FLASHING COLLAR, 6" SQUARE NICKEL BRONZE ADJUSTABLE STRAINER HEAD WITH SECURED SQUARE HOLE GRATE, BOTTOM WASTE OULET AND TRAP PRIMER CONNECTION. AUTOMATIC TRAP PRIMER MANUFACTURED BY P.P.P. OR PROSET TRAP GUARD DRAIN IF CODE ALLOWS.
WB	WASHER BOX	3"	2"	1/2"	1/2"	ZURN WM2961		ENCASED WASHING BOX WITH 1/2" (LF Brass) Valves
WB1	ICE MAKER BOX			1/4"		SIOUX CHIEF 696-G1000XF		ENCASED ICE MAKER BOX CONSTRUCTED OF ABS PLASTIC, WITH 1/4" COMPRESSION OUTLET, LF CHROME PLATED BRASS VALVES. LISTED BY UPC/IAPMO TO MEET UPC, CONFORMS TO IPC, VALVE MEETS ASME A112.18.1.

NOTES:

- CONTRACTOR TO COORDINATE FINAL SELECTIONS OF ALL PLUMBING FIXTURES WITH OWNER PRIOR TO ORDERING.
- TOILET ROOM FLOOR DRAINS SHALL BE PROVIDED WITH TRAP PRIMER.

WATER HEATER SCHEDULE

MARK	MANUFACTURER & MODEL	TANK VOLUME	HTG INPUT	RECOVERY gph 40 - 140	EFFICIENCY	VOLTAGE	PHASE	FREQUENCY	INTAKE/EXHAUST SIZE (IN)	WEIGHT	NOTES
GWH1	40 L 130A-GCL	130.0 gal	399000.0 Btu/h	471	96	120 V	1	60 Hz	4/4"	1800 lb	
GWH2	40 L 130A-GCL	130.0 gal	399000.0 Btu/h	471	96	120 V	1	60 Hz	4/4"	1800 lb	

NOTES:

- WATER HEATERS WILL PROVIDE 140 DEGREE HOT WATER DIRECTLY TO FIXTURES. HAND SINKS AND LAVATORIES SHALL HAVE DEDICATED THERMOSTATIC MIXING VALVES (TMV) AT EACH FIXTURE SET TO PROVIDE 105 DEGREE WATER.
- PROVIDE INDEPENDANT COMBUSTION AIR INTAKE AND FLUE EXHAUST FOR EACH WATER HEATER, REFER TO SPECIFICATIONS AND MANUFACTURES INSTALLATION GUIDELINES FOR WATER HEATER INSTALLATION.
- PROVIDE EXPANSION TANKS SIZED FOR THE HOT WATER SYSTEM VOLUMES.
- PROVIDE CONDENSATE TRAP WITH OPTIONAL CONDENSATE NEUTRALIZER KIT, AS RECOMENDED BY THE MANUFACTURER, LOCATED ON SAME LEVEL AS WATER HEATER.
- HOT WATER TANK, COMBUSTION CHAMBER AND FIRE TUBES WILL ARE REQUIRED TO BE UNLINED TO PROVIDE 15 YEAR WARRANTY, LINED OR PLATED WATER HEATERS WILL NOT BE ACCEPTABLE.

SPECIALTY EQUIPMENT SCHEDULE

PLAN MARK	UNIT TYPE	MANUFACTURER & MODEL	DESCRIPTION	COLD WATER CONNECTION	HOT WATER CONNECTION
TMV1	THERMOSTATIC MIXING VALVE	ARMSTRONG DRV40R	WATER TEMPERATURE CONTROL RECIRCULATION SYSTEM. PROGRAMABLE WATER TEMPERATURE CONTROL TO +/-2°F AND SET POINT RANGE OF 81-158°F. AUTOMATIC SHUT OFF OF HOT WATER FLOW IN THE EVENT OF A POWER FAILURE. ASSE 1017, CSA B 125 AND CE CERTIFIED. OPERATIONAL WATER PRESSURE OF 10-150PSIG.	1 1/2"	1 1/2"



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PLUMBING SCHEDULES

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