

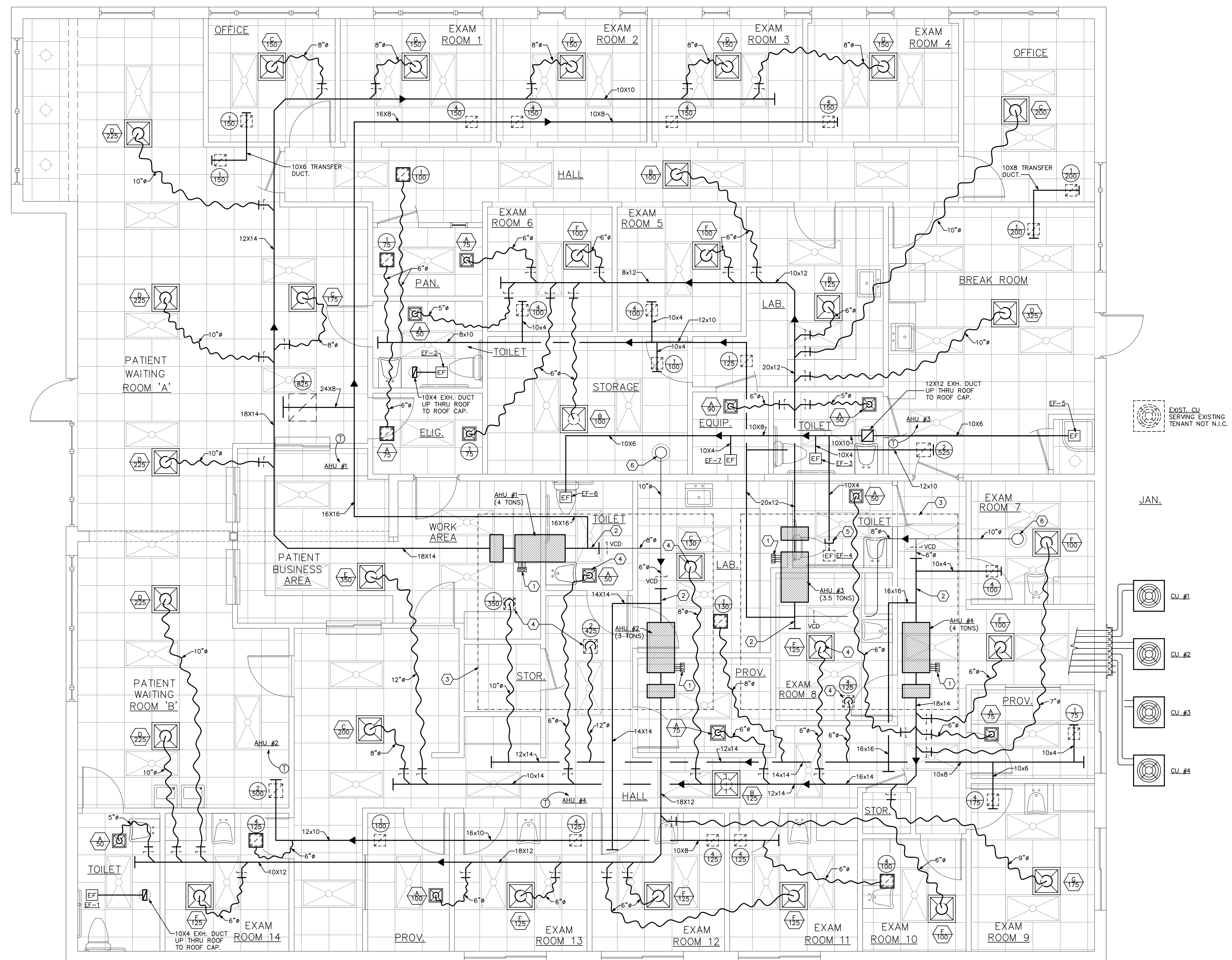
	THERMOSTAT, MTD +47° AFF
	EXHAUST FAN
	SECTION "A"—"A"
	REMOTE BULB SENSOR
	DUCT SMOKE DETECTOR
	TRANSITION
	TURNING VANE
	45° BRANCH DUCT TAKE-OFF
	FIRE DAMPER
	VOLUME CONTROL DAMPER
	RETURN REGISTER
	SUPPLY DIFFUSER
	RETURN AIR GRILLE
	SUPPLY REGISTER
	DUCTWORK TRANSITION
	ROOF MTD. EXH. FAN
	DUCT TURN DOWN
	DUCT TURN UP
	FLEXIBLE DUCT

A/C	AIR CONDITIONER	REV.	REVISION	A.H.U.	AIR HANDLING UNIT
D.N.	DOWN	N.T.S.	NOT TO SCALE	D.G.	DRAIN GRILLE
EXH.	EXHAUST	MFR.	MANUFACTURER	F.I.	FIRE
EXT.	EXTERIOR	R/A	RETURN AIR	DISP.	DISPOSABLE
E.F.	EXHAUST FAN	GR.	GRILLE	V.C.D.	VOLUME CONTROL DAMPER
A.F.F.	ABOVE FINISH FLOOR	C.D.	CEILING DIFFUSER	F/A	FRESH AIR
F.F.	FINISH FLOOR	REG.	REGISTER	S.P.	SAFE PAN
TYP.	TYPICAL	C.U.	CONDENSING UNIT	C.D.	CONDENSATE DRAIN

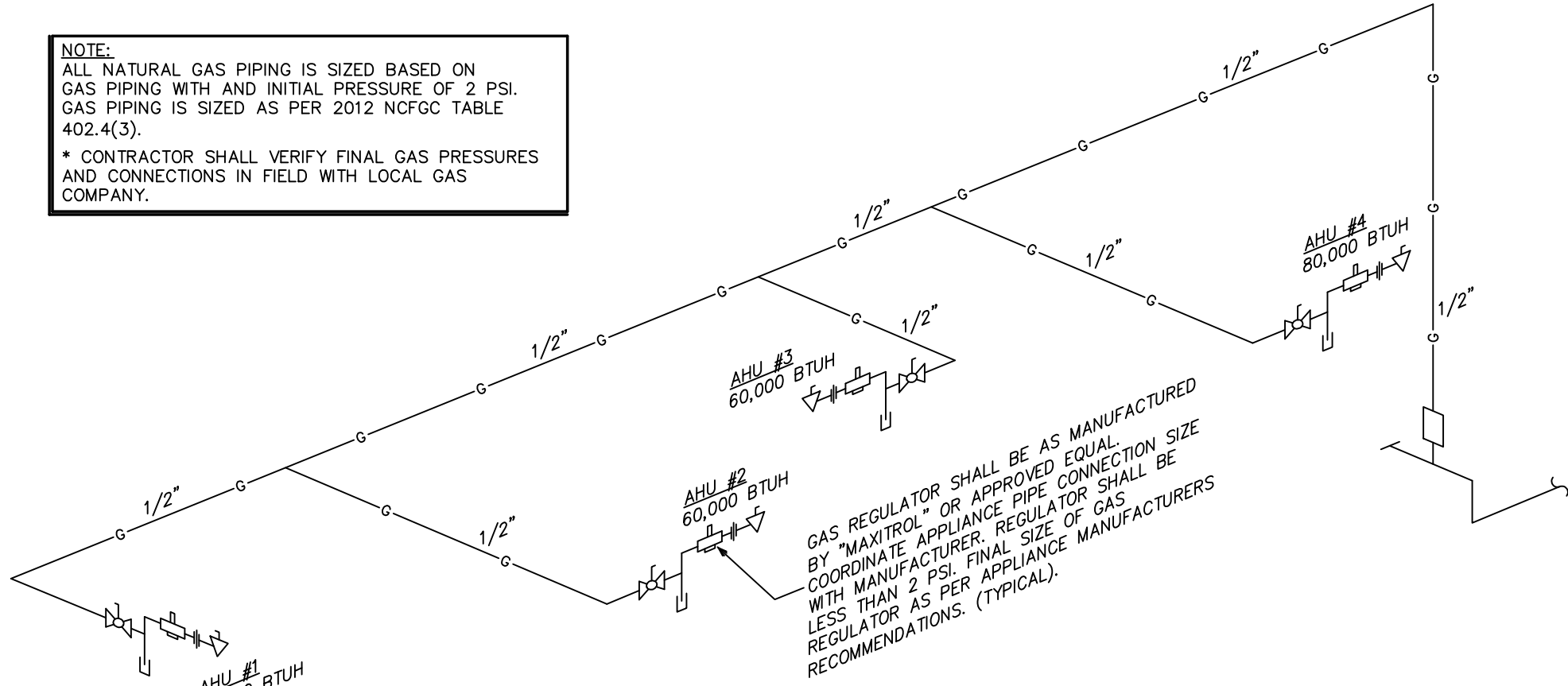
- ① 2) 2" Ø COMBUSTION AIR PIPES UP TO A CONCENTRIC VENT/INTAKE AIR ROOF TERMINATION KIT. (INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
- ② RETURN AIR DUCT PLENUM SHALL BE FULL SIZE OF AHU RETURN AIR OPENING.
- ③ EXISTING ATTIC PLATFORM. NEW AHU'S SHALL MOUNT ON PLATFORM. REFER TO AHU MOUNTING DETAIL ON SHEET M-3.
- ④ FLEX DUCT SHALL ROUTE THRU PLATFORM TO DIFFUSER/GRILLE BELOW DUE TO TIGHT CEILING SPACE BELOW PLATFORM.
- ⑤ EXHAUST DUCT SHALL ROUTE THRU PLATFORM TO EXHAUST FAN BELOW DUE TO TIGHT CEILING SPACE BELOW PLATFORM.
- ⑥ 10" Ø OUTSIDE AIR DUCT UP THRU ROOF TO ROOF CAP.

DESIGNATES LABEL FOR DIFFUSER TYPE		ALL DIFFUSERS ARE TO BE PROVIDED WITH OPTIONAL BLADE DAMPERS UNLESS OTHERWISE SPECIFIED ON PLANS.		
DESIGNATES CFM QUANTITY FOR DIFFUSER				
LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
A	TITUS TDC-AA	6"ø	0 - 125	12X12 LOUVERED FACE
B	TITUS TDC-AA	6"ø	0 - 125	24X24 LOUVERED FACE
C	TITUS TDC-AA	8"ø	130 - 200	24X24 LOUVERED FACE
D	TITUS TDC-AA	10"ø	205 - 325	24X24 LOUVERED FACE
E	TITUS TDC-AA	12"ø	330 - 450	24X24 LOUVERED FACE
F	TITUS PCS-AA	6"ø	0 - 125	24X24 PERFORATED FACE
G	TITUS PCS-AA	8"ø	130 - 200	24X24 PERFORATED FACE
H	TITUS PCS-AA	10"ø	205 - 325	24X24 PERFORATED FACE

100	DESIGNATES LABEL FOR GRILLE TYPE		FILTER SHALL BE PROVIDED AT UNIT.	
	DESIGNATES CFM QUANTITY FOR GRILLE			
LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
1	TITUS 355FL	10X10	0 - 400	LOUVER FACE
2	TITUS 355FL	12X12	400 - 600	LOUVER FACE
3	TITUS 355FL	24X24	1205 - 1450	LOUVER FACE
4	TITUS BF	10X10	0 - 350	PERFORATED FACE



NOTE:
ALL NATURAL GAS PIPING IS SIZED BASED ON
GAS PIPING WITH AND INITIAL PRESSURE OF 2 PSI.
GAS PIPING IS SIZED AS PER 2012 NFPA TABLE
402.4(3).
* CONTRACTOR SHALL VERIFY FINAL GAS PRESSURES
AND CONNECTIONS IN FIELD WITH LOCAL GAS
COMPANY.



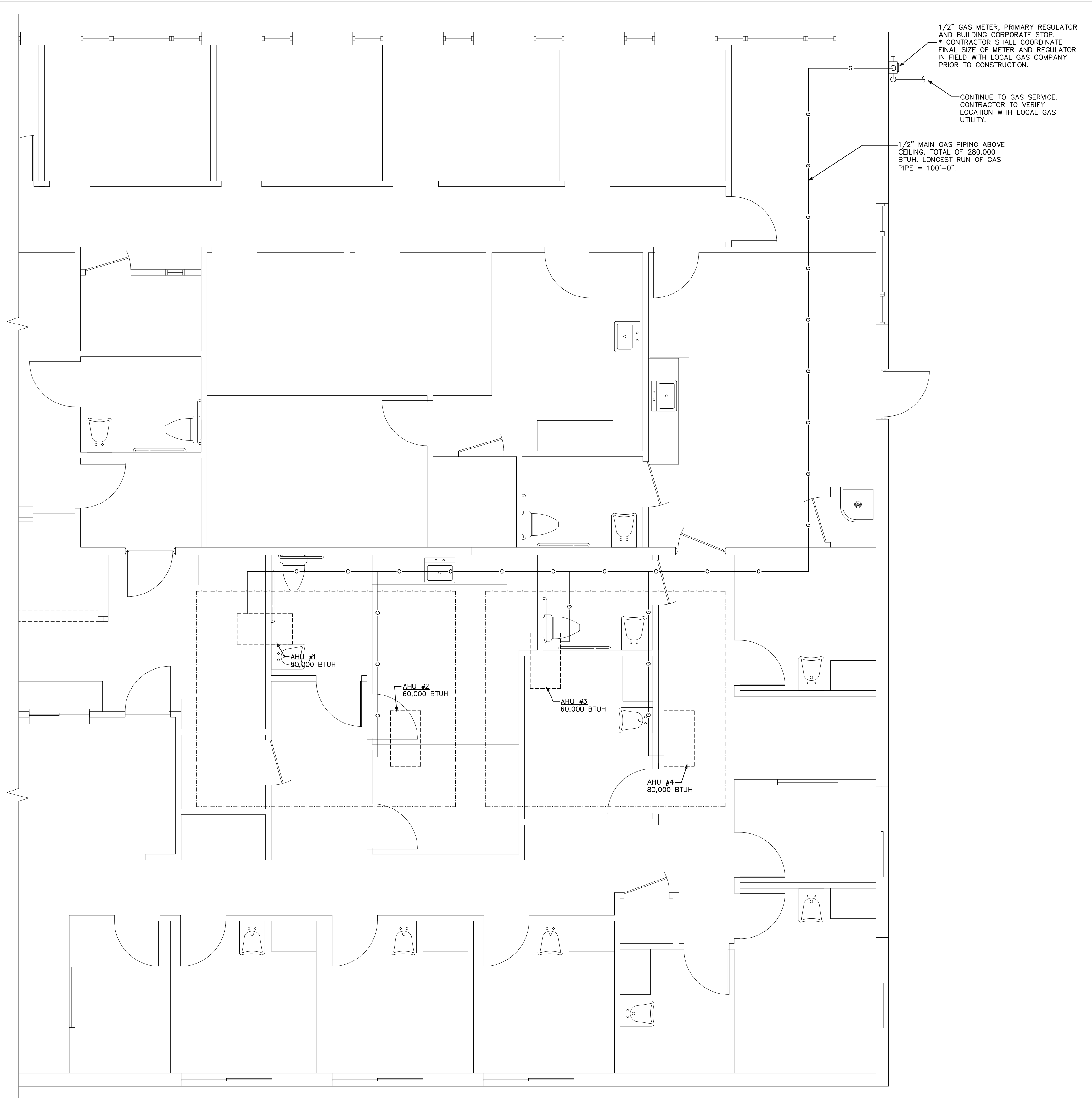
2 GAS PIPING ISOMETRIC

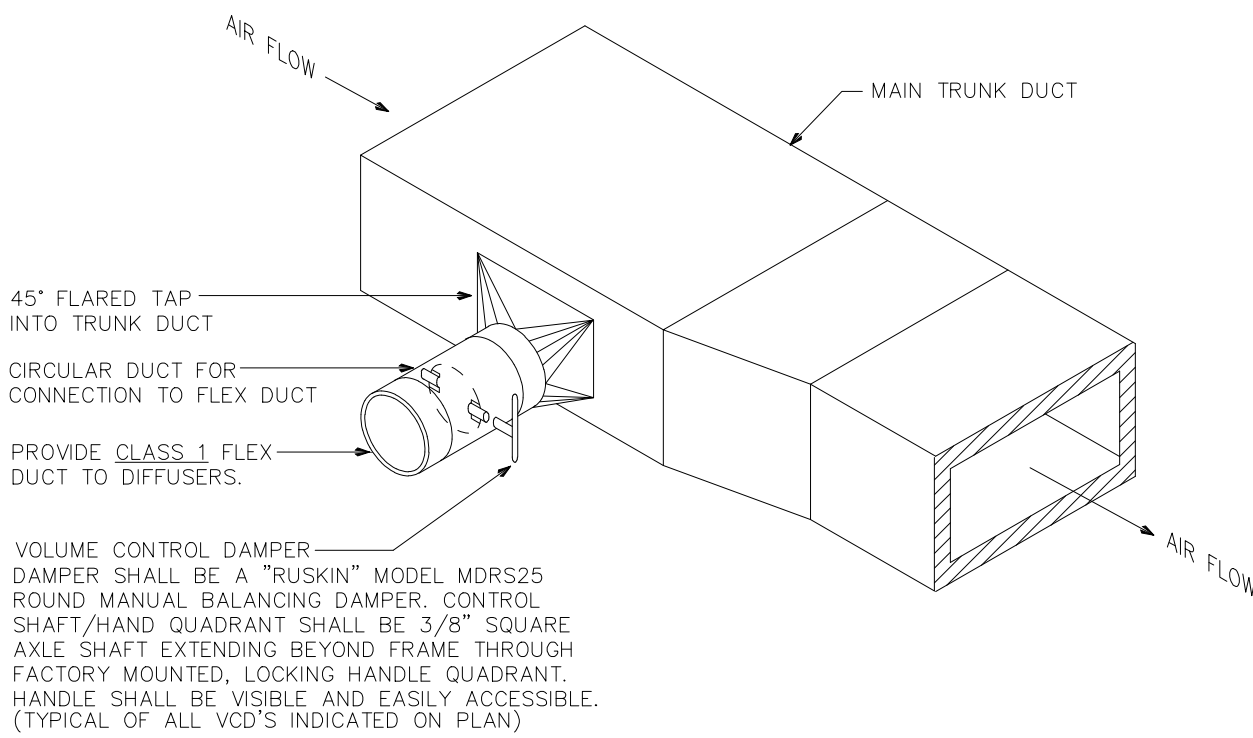
NO SCALE

GENERAL GAS PIPING NOTES

1. GAS PIPING AND FITTINGS SHALL BE SEAMLESS BLACK STEEL WITH MALLEABLE IRON FITTINGS. DIELECTRIC COUPLINGS OR UNIONS SHALL BE UTILIZED WHEN PIPING OF DISSIMILAR METAL IS CONNECTED. EXTERIOR GAS PIPING ON ROOF SHALL BE PAINTED WITH YELLOW "RUSTOLEUM" PAINT. EXPOSED GAS PIPING ON BACK WALL SHALL BE "RUSTOLEUM", PAINTED TO MATCH BUILDING. GAS PIPING CONNECTIONS SHALL BE THREADED UNLESS OTHERWISE REQUIRED BY CODE.
2. GAS PIPING SYSTEM SHALL BE INSTALLED TO THE REQUIREMENTS OF THE AGA PAMPHLET "INSTALLATION OF GAS APPLIANCES AND GAS PIPING" AND THE NFPA STANDARD #54. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS AND PAY ALL FEES WITH THE "LOCAL" GAS COMPANY FOR THE INSTALLATION OF THE GAS METER, GAS SERVICE, AND ITS ACCESSORIES NECESSARY FOR A COMPLETE SYSTEM.
3. GAS PIPING SHALL BE TESTED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN NFPA #54, AND ANY OTHER TESTS REQUIRED BY THE LOCAL BUILDING DEPARTMENT AND/OR THE LOCAL GAS UTILITY COMPANY.
4. THE INSTALLING SUBCONTRACTOR SHALL BE LICENSED BY THE STATE FOR THE INSTALLATION OF GAS PIPING.
5. RUNOUT PIPING, FROM THE MAIN PIPING TO APPLIANCES, SHALL BE WITH AN INVERTED TRAP CONNECTION AT THE MAIN.
6. A 12" DIRT LEG, AND A GAS COCK, SHALL BE PROVIDED AT ALL GAS APPLIANCES.
7. ALL EXPOSED GAS PIPING SHALL BE IDENTIFIED BY A YELLOW LABEL MARKED "GAS" IN BLACK LETTERS. THE MARKERS SHALL BE AT INTERVALS NOT EXCEEDING 5'.
8. ALL GAS BURNING EQUIPMENT SHALL BE INSTALLED PER NFPA #58, NFPA #54 (L.P.G.) OR NFPA #96 (COMMERCIAL COOKING EQUIPMENT).
9. GAS PIPE SIZES 2-1/2" AND GREATER SHALL BE WELDED, IF REQUIRED BY CODE.
10. GAS CONNECTIONS PER ANSI Z21.69

GAS PIPE LEGEND	
	BALL VALVE
	DRIP LEG
	REGULATOR/OPD AS REQUIRED
	UNION
	QUICK DISCONNECT



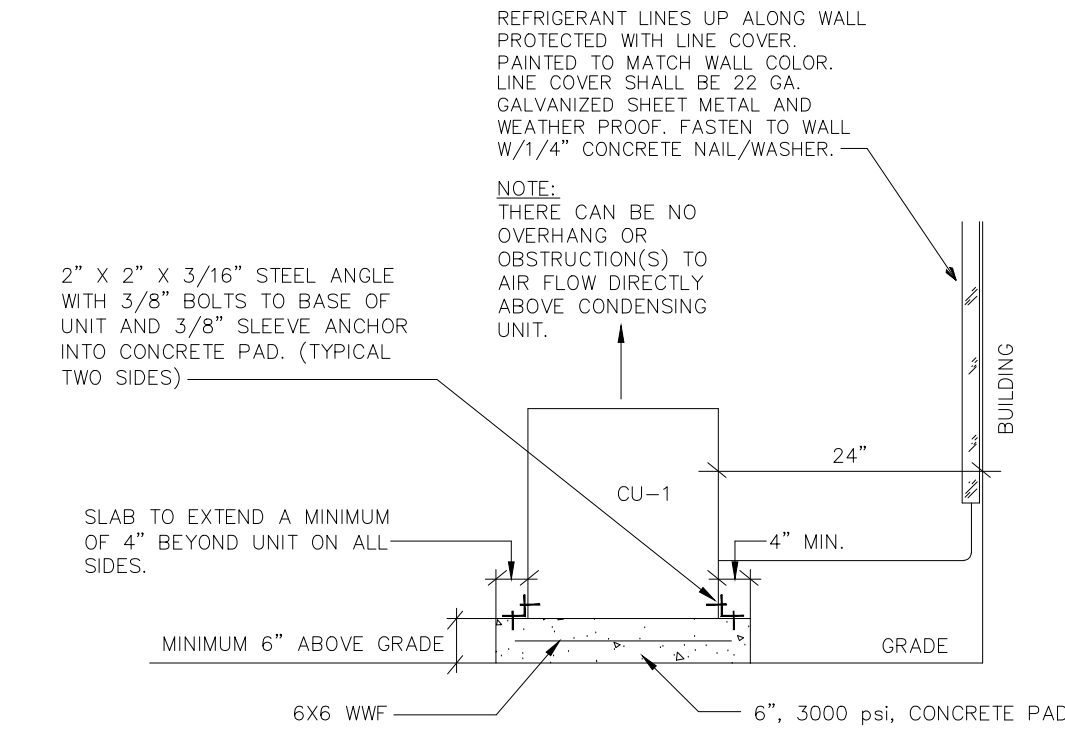


1 BRANCH DUCT DETAIL

NO SCALE

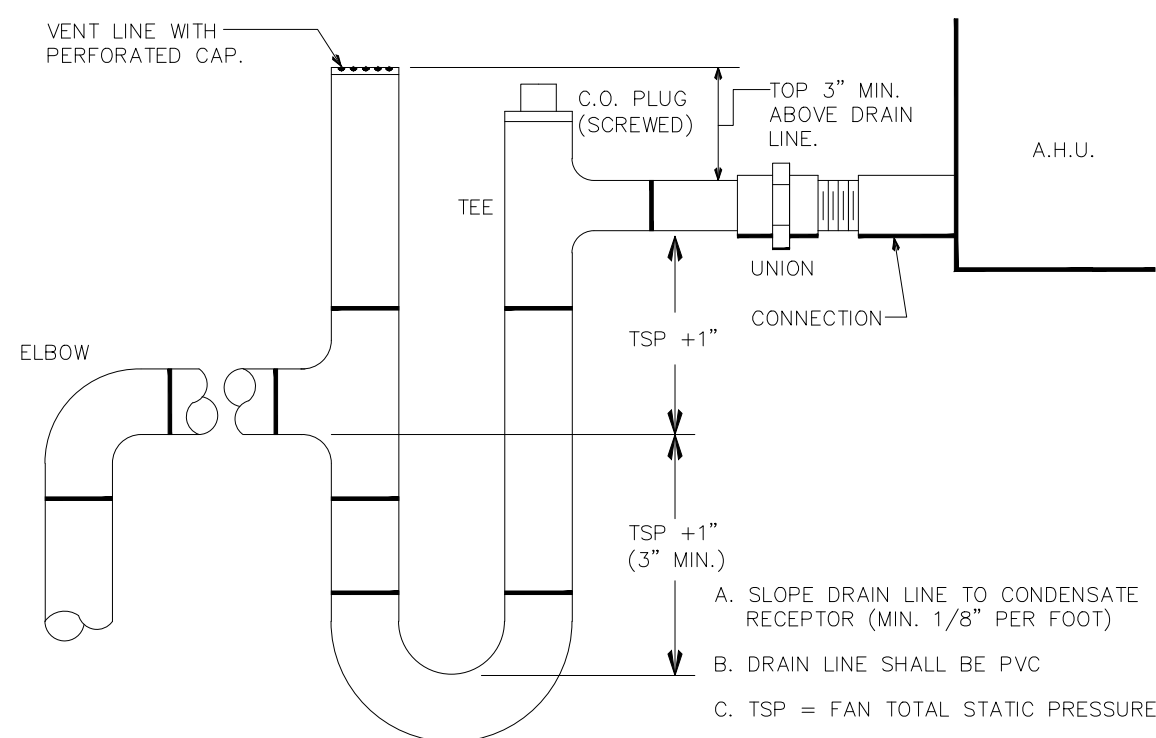
GENERAL MECHANICAL NOTES

- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE SYSTEM IN ACCORDANCE WITH THESE DRAWINGS, THE APPLICABLE BUILDING CODE AND ALL OTHER APPLICABLE STATE, COUNTY AND LOCAL ORDINANCES AND THE LATEST ADDITION OF THE FOLLOWING PUBLICATIONS: SMACNA, ASHRAE, NFPA 90A, 90B, 91 & ANSI B-9.1. ALL DUCTWORK SHALL BE FABRICATED, INSTALLED AND SUPPORTED AS PER SMACNA STANDARDS.
- THE CONTRACTOR SHALL PAY ALL COSTS OF PERMIT, INSPECTIONS AND ALL OTHER COSTS INCIDENTAL TO THE COMPLETION AND TESTING OF THIS WORK.
- THE CONTRACTOR SHALL VISIT THE SITE AND COORDINATE WORK WITH OTHER TRADES TO INSURE AN ORDERLY PROGRESS OF THIS WORK.
- THE CONTRACTOR SHALL SUPPLY THE OWNER WITH ONE SET OF "AS-BUILT" DRAWINGS UPON COMPLETION OF THIS PROJECT. CONTRACTOR SHALL ALSO LEAVE FOR ONE AT LEAST ONE SET OF THE MANUFACTURER'S INSTALLATION AND OPERATIONS MANUALS FOR ALL EQUIPMENT PROVIDED ON THE PROJECT.
- ALL PROVIDED MATERIALS SHALL BE NEW OF GOOD QUALITY. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY SKILLED WORKMAN.
- CONTRACTOR SHALL SUBMIT, FOR APPROVAL FIVE (5) COPIES OF MANUFACTURER'S DRAWINGS FOR EACH PIECE OF EQUIPMENT AND CONTROLS INCLUDED IN CONTRACT. IT IS STRONGLY PREFERRED THAT THE SUBMITTALS BE MADE IN THE FORM OF AN ELECTRONIC SUBMITTAL IN A PDF TYPE FORMAT.
- ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE GALVANIZED SHEET STEEL EXTERNALLY WRAPPED WITH WITH A MIN. OF R5 INSULATION OR R6 IF DUCTWORK IS LOCATED EXTERIOR TO BLDG INSULATION ENVELOPE. ALL FLEX DUCT SHALL BE "THERMOFLEX" WITH A MINIMUM 4.2 R VALUE, OR APPROVED EQUAL AND SHALL HAVE EQUIVALENT INSULATION.
- ALL EXHAUST DUCTS AND OUTSIDE AIR DUCTS SHALL BE GALVANIZED SHEET METAL WITH SEALED SEAMS AND JOINTS.
- DUCT SIZES SHOWN ARE INSIDE DIMENSIONS.
- ALL AIR DEVICES (DIFFUSERS, REGISTERS AND GRILLES) SHALL BE ALL ALUMINUM CONSTRUCTION WITH EXPOSED SURFACE OFF WHITE BAKED ENAMEL FINISH OR AS SPECIFIED BY ARCHITECT. DEVICES SHALL BE TITUS, METALAIR, AIRGUIDE. PROVIDE OPPOSED BLADE DAMPERS AT ALL DIFFUSERS AND REGISTERS.
- THERMOSTAT SHALL BE COMBINATION COOLING/HEATING, WITH SYSTEM "COOL-AUTO-HEAT-OFF" AND FAN "ON-AUTO" SELECTOR SWITCHES. PROVIDE PROGRAMMABLE TYPE THERMOSTAT. * CONTRACTOR SHALL FULLY INSTRUCT OWNER ON HOW TO PROPERLY PROGRAM INSTALLED THERMOSTATS. * PROGRAMMABLE THERMOSTAT SHALL BE BY MANUFACTURER OF INSTALLED AIR HANDLING UNIT. IT IS RECOMMENDED THAT DURING OCCUPIED HOURS, THE FANS BE SET TO "ON" IN LIEU OF "AUTO". * THERMOSTATS SHALL BE MOUNTED A MAX. OF 48" A.F.F.
- REFRIGERANT LINES SHALL BE COPPER, TYPE "L" HARD DRAWN WITH WROUGHT COPPER SOLDER-JOINT TYPE FITTINGS, USE 95/5 SOLDER. REFRIGERANT LINES SHALL SIZED AS PER MANUFACTURER RECOMMENDATIONS.
- SPLIT SYSTEMS (IF APPLICABLE) SHALL HAVE ARMAFLEX 3/4" INSULATION (OR APPROVED EQUAL) USED FOR SUCTION LINES. INSTALLATION SHALL BE AS PER MANUFACTURERS INSTRUCTIONS, PRE-INSULATED LINES SETS ARE ACCEPTABLE.
- ALL BRANCH TAKE-OFFS TO BE PROVIDED W/MANUAL VOLUME DAMPERS AND TAPS AS PER PLANS REQUIREMENTS.
- PROVIDE NEW FILTERS FOR ALL AIR CONDITIONING EQUIPMENT BEFORE STARTING THEM. REPLACE THEM PRIOR TO FINAL ACCEPTANCE BY OWNER.
- PROVIDE SMOKE DETECTORS WITH ACCESS DOORS IN ALL SUPPLY AIR DUCTS FOR FANS AND AHU'S SERVING A COMMON DESIGN SUPPLY OR RETURN PLENUM OF ABOVE 2000 CFM. ALL SMOKE DETECTORS SHALL BE BY ONE MANUFACTURER, COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING. UPON DETECTION, SMOKE DETECTORS SHUT DOWN ASSOCIATED AIR MOVING EQUIPMENT AND ALL AIR MOVING EQUIPMENT SERVING THAT COMMON PLENUM.
- HVAC CONTRACTOR SHALL PROVIDE A TEST AND BALANCE REPORT FOR ALL MECHANICAL EQUIPMENT, AIR DEVICES, DAMPERS, AHU'S AND FANS. THE T & B SHALL BE IN ACCORDANCE WITH THE AIR BALANCE COUNCIL STANDARDS, AND SHALL INCLUDE AIR QUANTITIES FOR ALL SUPPLY GRILLS, RETURN GRILLS, AND EXHAUST GRILLS, AND THE LEAVING AND ENTERING AIR TEMPERATURE (°F) FROM SUPPLY GRILLS AND EVAPORATORS.
- THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER BEFORE INSTALLATION.
- ALL INSULATION SHALL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
- MECHANICAL PLANS IN GENERAL, ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCH. PLUMBING, ELECTRICAL AND STRUCTURAL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. 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.
- CONTRACTOR SHALL INSTALL ALL OUTDOOR EQUIPMENT TO WITHSTAND WIND LOADING FORCES AS REQUIRED BY LOCAL CODES. REFER TO STRUCTURAL PLANS BY OTHERS FOR STRUCTURAL DETAILS.
- PROVIDE ALL NECESSARY CONTACTORS, RELAYS, ETC., FOR A COMPLETE OPERATING SYSTEM.
- THROUGHOUT THE COURSE OF THE WORK, MINOR CHANGES AND ADJUSTMENTS TO THE PLANS AND SPECIFICATIONS MAY BE REQUESTED BY THE TENANT. THE CONTRACTOR SHALL MAKE SUCH ADJUSTMENTS WITHOUT ADDITIONAL COST TO THE TENANT, WHERE SUCH ADJUSTMENTS ARE NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE SYSTEMS, AND WITHIN THE INTENT OF THE CONTRACT DOCUMENTS.
- NOTWITHSTANDING ANY OTHER PROVISIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR BEARS ULTIMATE RESPONSIBILITY FOR COMPLIANCE OF THE INSTALLATION WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
- IF ANY ERRORS, DISCREPANCIES OR OMISSIONS APPEAR IN THE DRAWINGS, SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF SUCH ERROR OR OMISSION. IN THE EVENT OF THE CONTRACTOR FAILING TO GIVE SUCH NOTICE BEFORE CONSTRUCTION AND/OR FABRICATION OF THE WORK, HE WILL BE HELD RESPONSIBLE FOR THE RESULTS OF ANY SUCH ERRORS, DISCREPANCIES OR OMISSIONS AND THE COST OF RECTIFYING SAME.



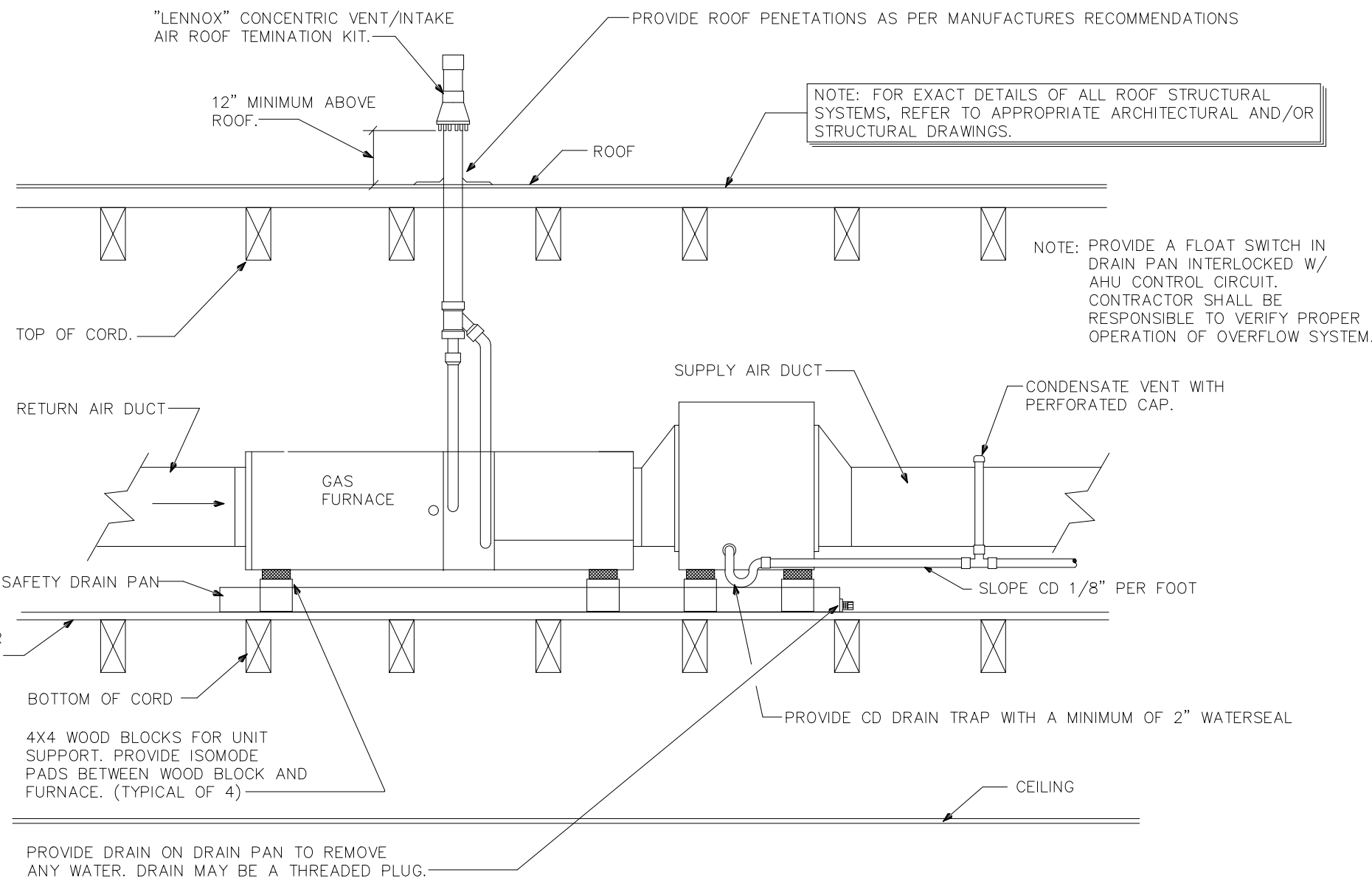
2 COND. UNIT MTG. DTL.

NOT TO SCALE



3 CONDENSATE P-TRAP DETAIL

NOT TO SCALE



4 AHU MOUNTING DETAIL

NO SCALE

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON 2012 NCMC TABLE 403.3 MINIMUM VENTILATION RATES FOR OUTSIDE AIR REQUIREMENTS

UNIT LABEL	OCCUPANCY CATEGORY	AREA	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)	E _z	TOTAL
AHU #1	OFFICE	490	5 PEOPLE PER 1,000 S.F./5 CFM PER PERSON	(3X5) + (490 X .06) = 45 PEOPLE AREA TOTAL		↓
AHU #1	ENTRANCE LOBBY	580	0.12 CFM PER SQ. FT.	(N/A) + (580 X .12) = 70 PEOPLE AREA TOTAL		↓
				AHU #1 TOTAL = 115	0.8	115/0.8 = 144
AHU #2	OFFICE	575	5 PEOPLE PER 1,000 S.F./5 CFM PER PERSON	(3X5) + (575 X .06) = 50 PEOPLE AREA TOTAL		↓
AHU #2	ENTRANCE LOBBY	275	0.12 CFM PER SQ. FT.	(N/A) + (275 X .12) = 33 PEOPLE AREA TOTAL		↓
				AHU #2 TOTAL = 83	0.8	83/0.8 = 104
AHU #3	OFFICE	825	5 PEOPLE PER 1,000 S.F./5 CFM PER PERSON	(4X5) + (575 X .06) = 55 PEOPLE AREA TOTAL		↓
AHU #3	STORAGE	150	0.12 CFM PER SQ. FT.	(N/A) + (825 X .12) = 99 PEOPLE AREA TOTAL		↓
AHU #3	CORRIDOR	210	0.06 CFM PER SQ. FT.	(N/A) + (210 X .06) = 13 PEOPLE AREA TOTAL		↓
				AHU #3 TOTAL = 167	0.8	167/0.8 = 209
AHU #4	OFFICE	800	5 PEOPLE PER 1,000 S.F./5 CFM PER PERSON	(4X5) + (800 X .06) = 68 PEOPLE AREA TOTAL		↓
AHU #4	CORRIDOR	540	0.06 CFM PER SQ. FT.	(N/A) + (540 X .06) = 33 PEOPLE AREA TOTAL		↓
				AHU #4 TOTAL = 101	0.8	101/0.8 = 127

* E_z (SYSTEM VENTILATION EFFICIENCY) AS PER 2012 NCMC TABLE 403.3.2.3.2

FAN SCHEDULE

LABEL	TYPE OF UNIT - AREA SERVED	MANUFACTURER & MODEL NO.	CFM	SP	MOUNTING ARRANGEMENT	MOTOR H.P.	ENCLOSURE TYPE	RPM	VOLTAGE	NOTES
EF-1 - 7	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z6	90	.125"	CEILING MOUNTED	50 WATTS	OPEN DRIP PROOF	1055	115V/1Ø	1

NOTES: 1.) REFER TO ELECTRICAL PLANS FOR CONTROL.

GAS FURNACE W/SPLIT SYSTEM AIR CONDITIONING SYSTEM SCHEDULE

CONDENSING UNIT									EVAPORATOR COIL UNIT		GAS FURNACE											
CU LABEL(S)	MANUFACTURER & MODEL NO.	TOTAL CAPACITY	SENSIBLE CAPACITY	COMP. RLA	FAN FLA	VOLTAGE	MOCF	EER/SEER	MANUFACTURER & MODEL NO.	AHU LABEL(S)	MANUFACTURER & MODEL NO.	TOTAL CFM	OUTSIDE AIR	E.S.P.	BLOWER SPEED	FAN HP	VOLTAGE	INPUT BTUH	OUTPUT BTUH	FLUE SIZE	NOTES	
CU #1	CARRIER 24ABB348A0050	46,000	32,880	13.1	1.4	208V/3ø	30A	13.0	CARRIER CNPH 048	AHU #1	CARRIER 59SC2B080S21131416	1,600	150	.30"	HIGH	1/2	120V/1ø	80,000	75,000	2"	1 THRU 4	
CU #2	CARRIER 24ABB336A0050	33,800	25,900	10.5	1.4	208V/3ø	20A	13.0	CARRIER CNPH 036	AHU #2	CARRIER 59SC2B060S21131412	1,200	125	.30"	MED.	1/3	120V/1ø	60,000	56,000	2"	1 THRU 4	
CU #3	CARRIER 24ABB342A0050	41,000	31,490	13.5	1.1	208V/3ø	30A	13.0	CARRIER CNPH 042	AHU #3	CARRIER 59SC2B060S21131416	1,400	225	.30"	MED.	1/3	120V/1ø	60,000	56,000	2"	1 THRU 4	
CU #4	CARRIER 24ABB348A0050	46,000	32,880	13.1	1.4	208V/3ø	30A	13.0	CARRIER CNPH 048	AHU #4	CARRIER 59SC2B080S21131416	1,600	130	.30"	HIGH	1/2	120V/1ø	80,000	75,000	2"	1 THRU 4	
GENERAL NOTES:						ABBREVIATION LEGEND:				SPECIFIC NOTES:												
* ALL RATINGS ARE AT ARI ENTERING CONDITIONS UNLESS OTHERWISE NOTED.						O/A – OUTSIDE AIR				1) SIZE AND RUN REFRIGERANT PIPING AS PER MANUFACTURERS PUBLISHED RECOMMENDATIONS.												
* PROVIDE VIBRATION ISOLATION FOR UNITS.						HP – HORSE POWER				2) INSULATE REFRIGERANT SUCTION LINE WITH 2/4" ARMAFLEX OR APPROVED EQUAL.												
* EXTERNAL STATIC PRESSURE DOES NOT INCLUDE COIL OR FILTER PRESSURE DROP.						RLA – RUNNING LOAD AMPS				3) PROVIDE 5 YEAR WARRANTY ON COMPRESSOR AND 1YEAR WARRANTY ON ALL PARTS AND LABOR.												
* CONTRACTOR MAY SUBSTITUTE MANUFACTURER FOR APPROVED EQUAL. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ANY CLEARANCE REQUIREMENTS ARE MET FOR ANY SUBSTITUTIONS.						FLA – FULL LOAD AMPS				4) FURNACE SHALL BE PROVIDED WITH CONCENTRIC VENT/INTAKE AIR ROOF TERMINATION KIT.												
						SEER – SEASONAL ENERGY EFF. RATIO																

APPENDIX B BUILDING CODE SUMMARY (MECHANICAL SUMMARY) MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT

METHOD OF COMPLIANCE:

Prescriptive ☒ Energy Cost Budget ☐

Thermal Zone Zone 4A

Exterior Design Conditions

winter dry bulb 20° F
summer dry bulb 97° F

Interior Design Conditions

winter dry bulb 68° F
summer dry bulb 74° F
relative humidity 52.9%

Building Heating Load 262,000 BTU

Building Cooling Load 174,000 BTU

Mechanical Spacing Conditioning System

Unitary
Description of unit REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
heating efficiency REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
cooling efficiency REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
heat output of unit REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
cooling output of unit REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.

Boiler N/A

total boiler output. If oversized, state reason.

Chiller N/A

total chiller capacity. If oversized, state reason.

List equipment efficiencies

Equipment schedules with motors (mechanical systems)

motor horsepower REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
number of phases REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
minimum efficiency REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
motor type REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
of poles REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.

DESIGNER STATEMENT:¹

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the North Carolina Energy Code 2012.

SIGNED:

NAME: TODD W. CAREY

TITLE: N.C. PROFESSIONAL ENGINEER #9079

VACUUM NOTES

THE VACUUM PIPING LAYOUT HAS A LARGE EFFECT ON THE EFFICIENCY AND RELIABILITY OF THE DENTAL VACUUM SYSTEM. REFER TO MANUFACTURER'S PRE-INSTALLATION GUIDE PROVIDED BY HENRY SCHEIN EQUIPMENT SALES SPECIALIST (ESS) FOR SPECIFIC SIZING OF STUB-UP, TRUNK, AND BRANCH LINES.

IT IS HIGHLY RECOMMENDED THAT VACUUM LINES RUN UNDERNEATH DENTAL EQUIPMENT BY MEANS OF TRENCHING/ CORING (CONCRETE SLAB) OR IN SUB FLOOR (BASEMENT/ CRAWL SPACE). ALL LINES ARE TO BE DESIGNED WITH PVC PIPING UNLESS DICTATED BY LOCAL CODES TO USE COPPER OR CAST IRON.

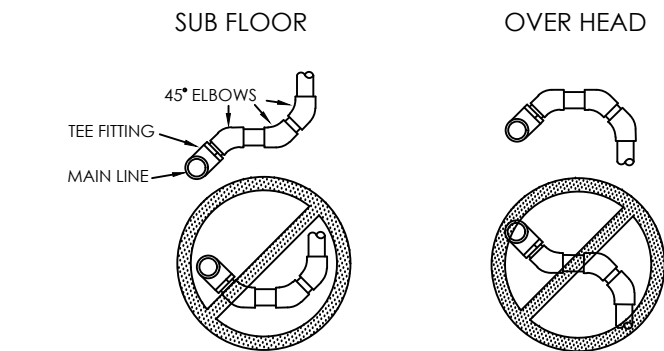
TO ENSURE OPTIMUM VACUUM PERFORMANCE, INSTALL MAIN LINE DIRECTLY BELOW THE DENTAL CHAIR, CABINET OR WALL JUNCTION BOX TO REDUCE OR ELIMINATE BRANCH LINE RUNS WHEREVER POSSIBLE.

1. STUB-UP
TERMINATE VACUUM TRUNK LINE IN MECHANICAL ROOM W/ VERTICAL STUB-UP 3" A.F.F. PLUMBING CONTRACTOR TO PROVIDE FPT ADAPTOR ON END OF STUB-UP. SIZE OF ADAPTOR TO BE DETERMINED BY TRUNK AND PUMP INTAKE PIPE SIZES. IN THE CASE OF DUAL TRUNK LINE SYSTEM, PROVIDE ENOUGH SPACE BETWEEN STUB-UPS TO INSTALL TEES ON BOTH LINES.

2. TRUNK LINE(S)
VACUUM TRUNK LINE(S) TO BE SUPPORTED EVERY 6'-0" TO PREVENT SAG AND SLOPED A MINIMUM OF 1/4" PER 10'-0" TOWARD THE VACUUM PUMP.

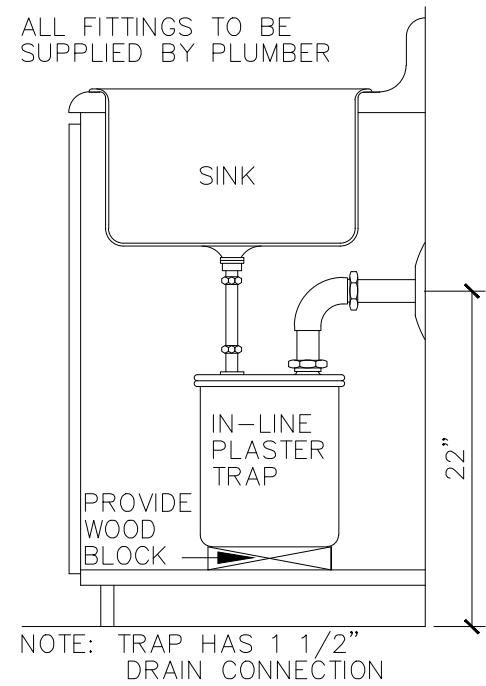
3. BRANCH LINE(S)
BRANCH LINES ARE TO BE "SWEEPING" 90 DEGREE TURNS TO AVOID VACUUM LOSS. A "Y" TEE FITTING SHOULD BE USED WHEN AVAILABLE TO BRANCH TWO LINES TOGETHER.

BRANCH LINE CONFIGURATIONS



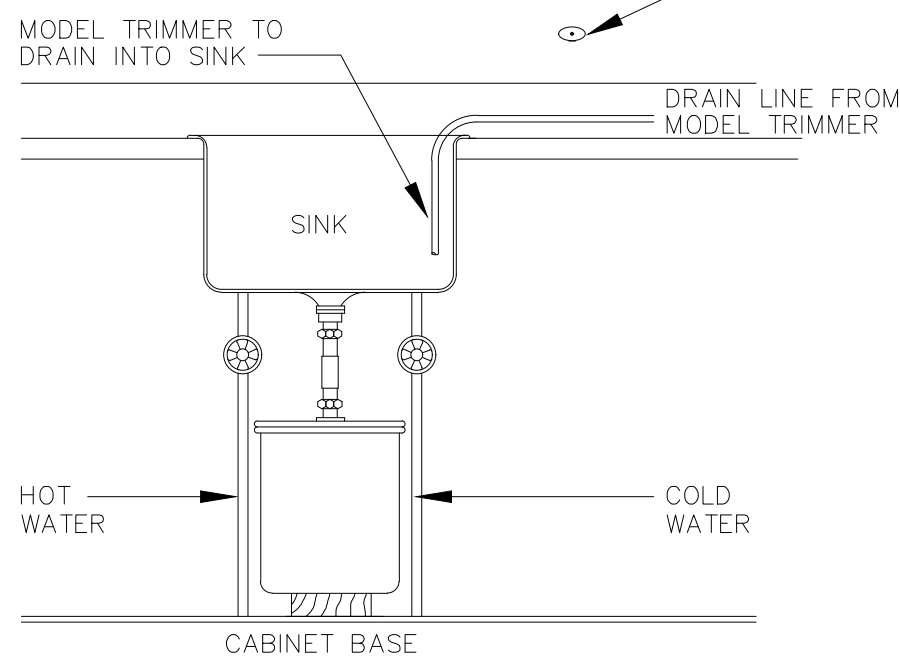
DO NOT PIPE TRUNK LINE IN A SERIES MANNER LOOPING FROM J-BOX TO J-BOX. A CONTINUOUS TRUNK LINE MUST BE MAINTAINED FROM THE PUMP TO THE FURTHEST J-BOX USING BRANCH LINES OFF OF THE TRUNK LINE TO PICK UP EACH J-BOX OUTLET. TRUNK LINE MAY FOLLOW DRAIN LINE TRENCHES WITHIN REASON. USE ONLY 45 DEGREE EL'S. DO NOT USE ANY 90 EL'S. ALL SUB FLOOR SCH 40 PVC CONNECTIONS ARE TO BE PLUMBED WITH 45 EL'S USING DETAIL A FOR TEEING BRANCH LINE CONNECTIONS INTO TRUNK LINE.

SPECIAL NOTE:
IF VACUUM LINES ENCRONCH ON EITHER A WALL OR COLUMN FOOTING, USE 45 DEGREE ELBOWS TO PIPE AROUND FOOTING SO PIPE REACHES PROPER LOCATION.



3 PLASTER TRAP
NO SCALE

INSTALL FILTERED COLD WATER LINE WITH A 1/4" CHROME ANGLE STOP ABOVE COUNTERTOP AT 46" A.F.F.



2 MODEL TRIMMER
NO SCALE

SPECIFIC NOTES

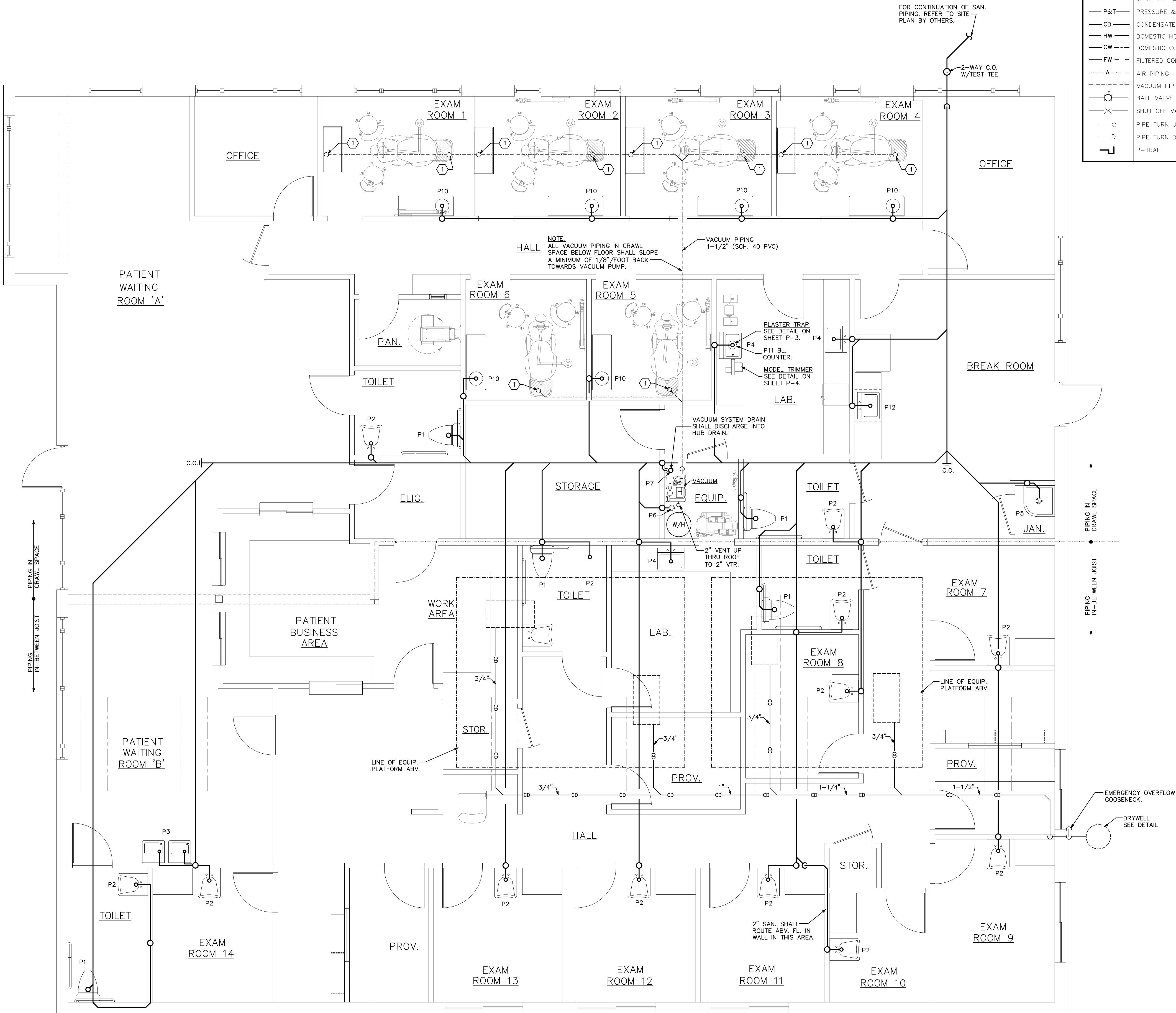
1 RUN 1-1/2" PVC TUBING STUB UP. COORDINATE FINAL CONNECTION AT CABINET WITH PATTERSON DENTAL. USE 45 DEGREE TURNS OR LESS.

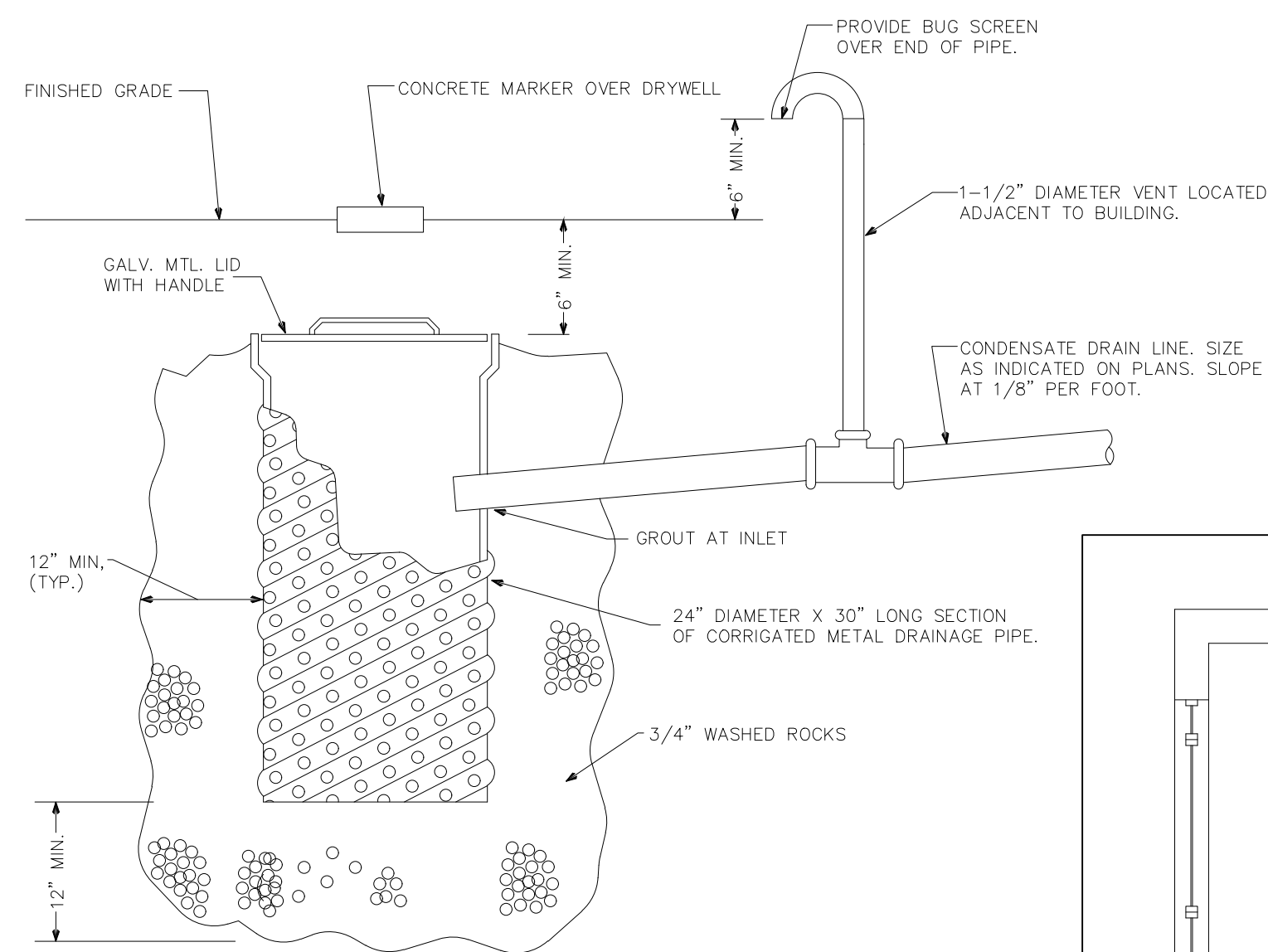
PLUMBING ABBREVIATION LEGEND

DN.	DOWN	C.C.	CENTER TO CENTER	F.U.	FIXTURE UNITS
EXT.	EXTERIOR	N.T.S.	NOT TO SCALE	H.B.	HOSE BIBBS
F.D.	FLOOR DRAIN	MFR.	MANUFACTURER	C.O.	CLEANOUT
F.F.	FINISH FLOOR	S.O.V.	SHUT OFF VALVE	E.W.H.	ELECTRIC WATER HEATER
A.F.F.	ABOVE FINISH FLOOR	W.C.	WATER CLOSET	JAN.SK.	JANITOR SINK
V.T.R.	VENT THRU ROOF	LAV.	LAVORATORY	P & T	PRESSURE & TEMPERATURE
TYP.	TYPICAL	SK.	SINK	RWL.	RAIN WATER LEADER
R.D.	ROOF DRAIN	D.W.	DISH WASHER		
REV.	REVISION	E.D.F.	ELECTRIC DRINKING FOUNTAIN		
O.C.	ON CENTER	UR.	URINAL		

PLUMBING SYMBOLS LEGEND

	FLOOR DRAIN
	RELIEF VALVE
	AIR CHAMBER
	UNION
	SOIL OR WASTE LINE
	SANITARY VENT LINE
	PRESSURE & TEMP. RELIEF LINE
	CONDENSATE DRAIN LINE
	DOMESTIC HOT WATER
	DOMESTIC COLD WATER
	FILTERED COLD WATER
	AIR PIPING
	VACUUM PIPING
	BALL VALVE
	SHUT OFF VALVE
	PIPE TURN UP
	PIPE TURN DOWN
	P-TRAP



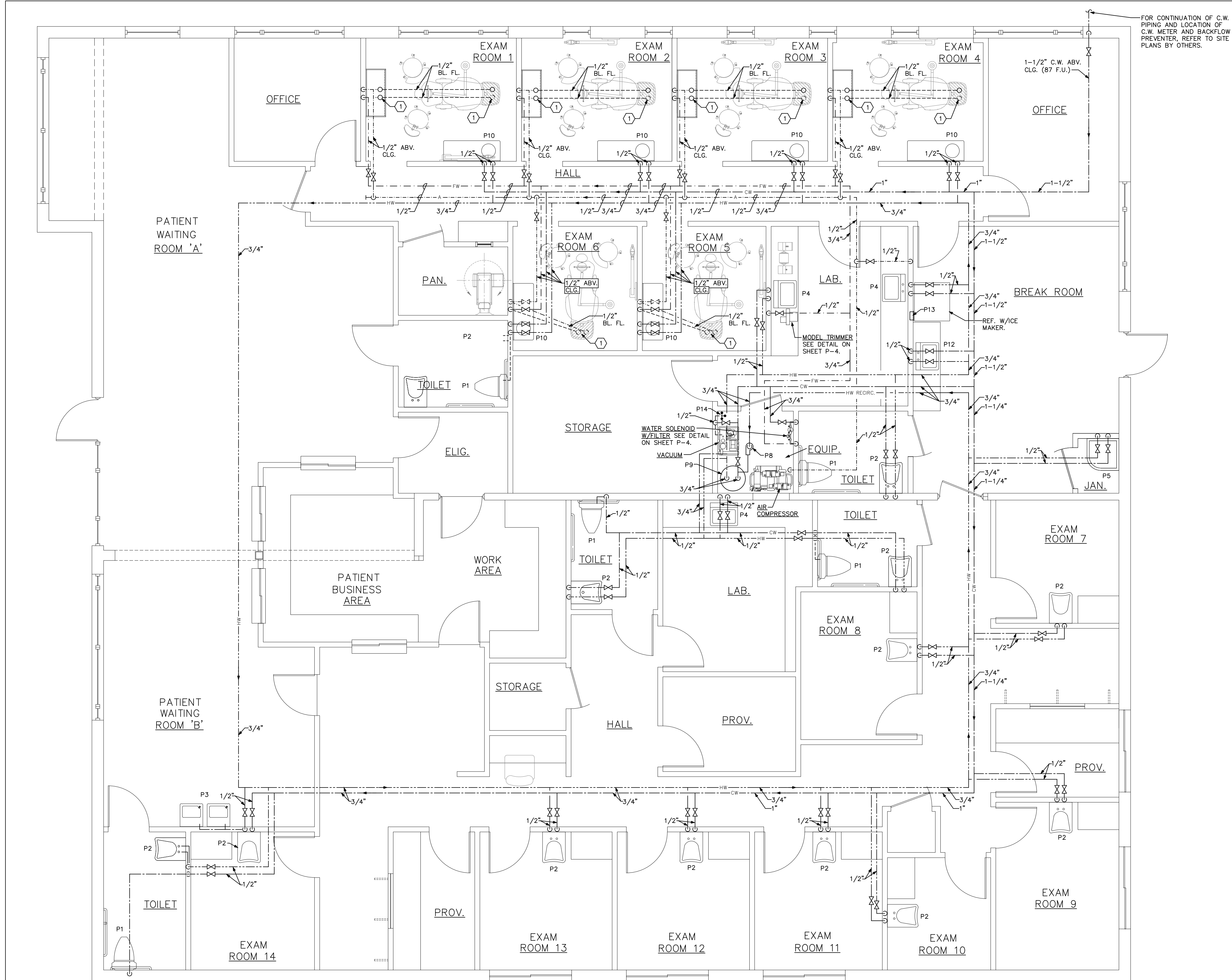


2 DRYWELL DETAIL

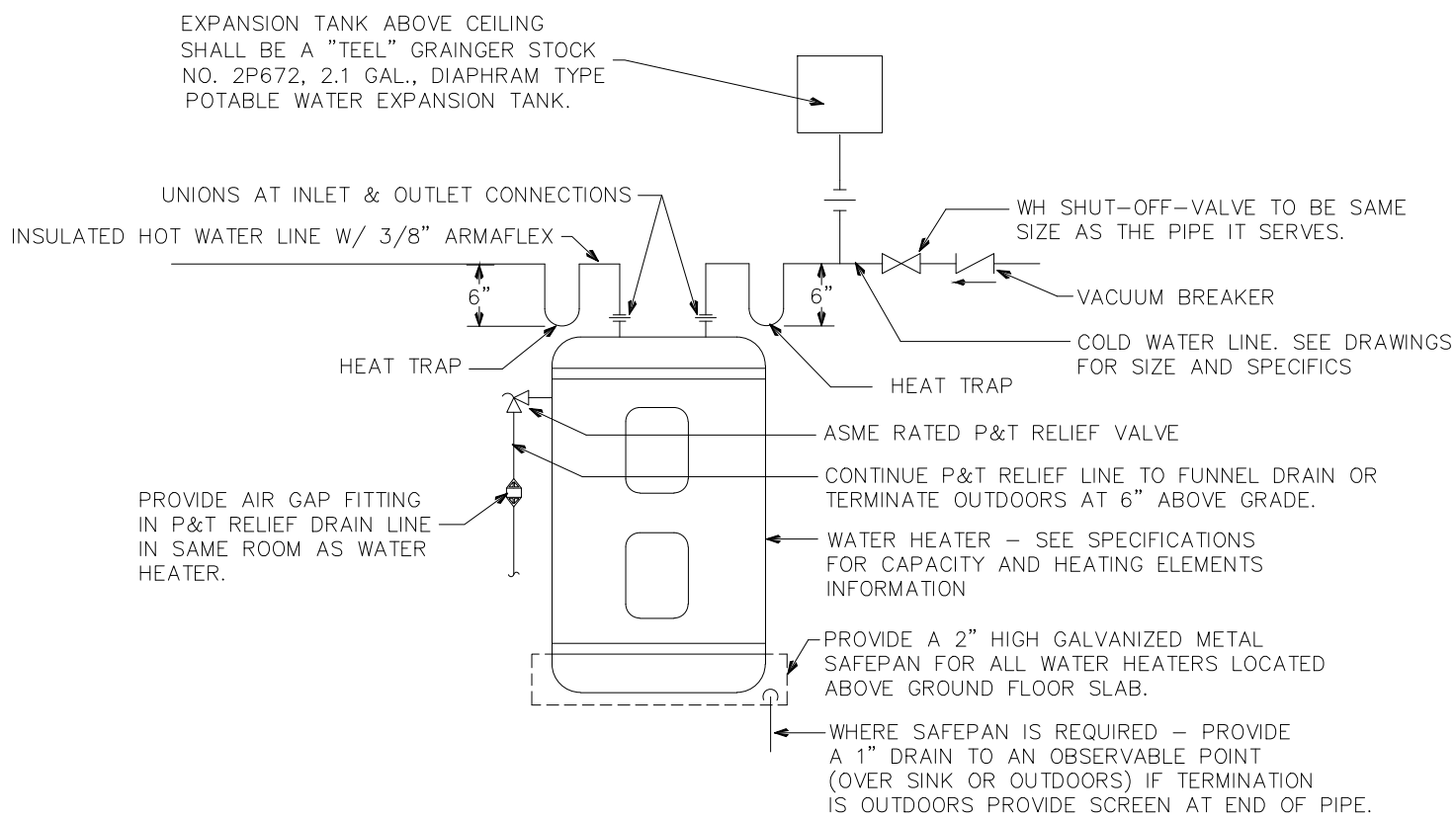
NOT TO SCALE

SPECIFIC PLUMBING NOTES

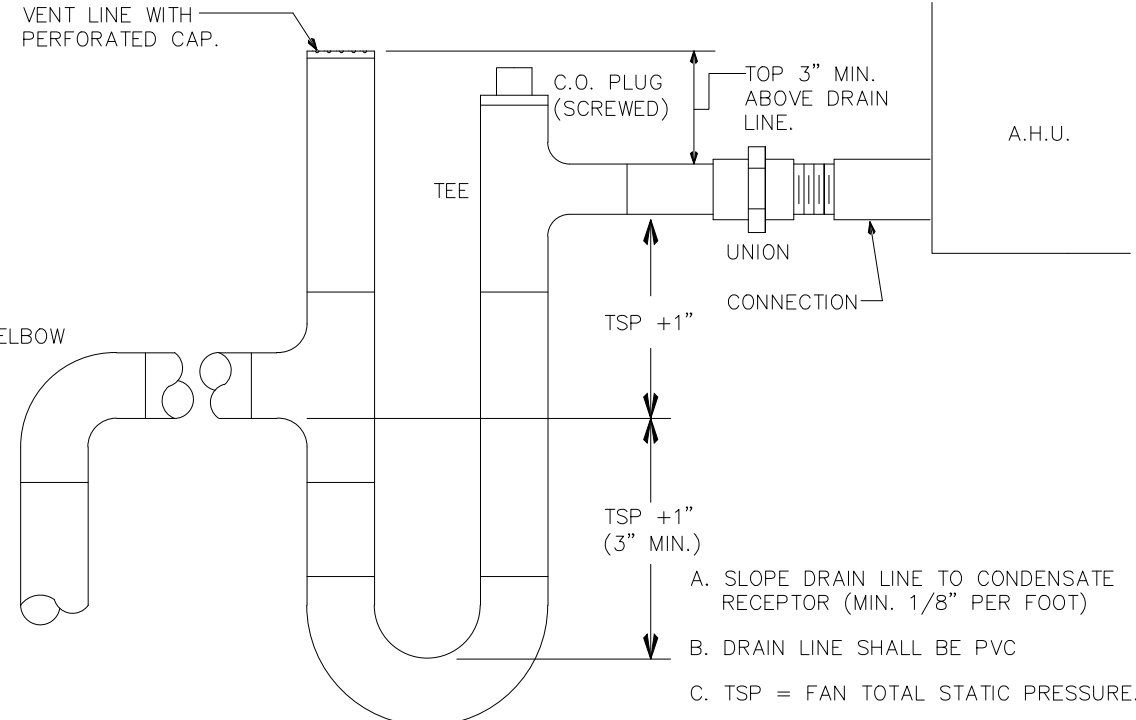
① 1/2" C.W. & 1/2" AIR PIPING STUB UP TO UTILITY CENTER. REFER TO DETAILS ON SHEET P4 FOR DETAILS.



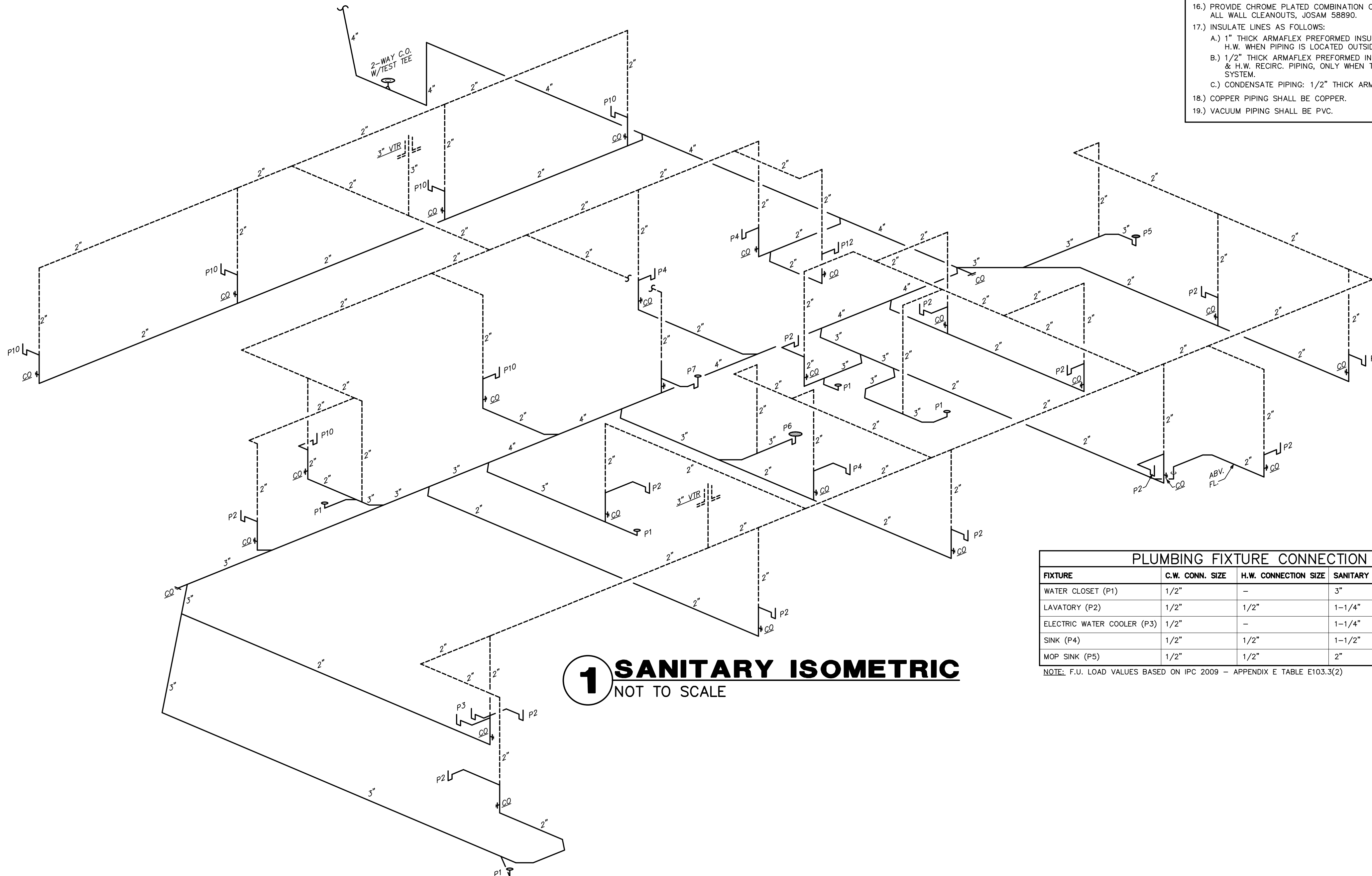
PLUMBING FIXTURE SCHEDULE
P-1 (HANDICAPPED FLOOR MOUNTED FLUSH TANK WATER CLOSET) SHALL BE AN AMERICAN STANDARD MODEL 2467.016 CADET 1.6 GPF RIGHT HEIGHT ELONGATED PRESSURE ASSISTED TOILET, VITREOUS CHINA, LOW-CONSUMPTION (1.6 GPF), CLOSE-COUPLED FLUSHOMETER TANK WITH RISE AND SHINE ELONGATED OPEN FRONT SEAT AND COVER AMERICAN STANDARD MODEL 5325.024 . * http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_2669.pdf
P-2 (HANDICAPPED WALL HUNG LAVATORY) SHALL BE AN AMERICAN STANDARD MISSOURI LAVATORY MODEL 0436.004US, VITREOUS CHINA, WALL MOUNT WITH CONCEALED ARMS SUPPORT. PROVIDE AN AMERICAN STANDARD MONTERREY MODEL 6331.170 CENTERSET FAUCET WITH 4" WRIST BLADE HANDLES. WATER PIPING AND P-TRAP SHALL BE COVERED WITH AN UNDERSINK PROTECTIVE PIPE COVER KIT BY TRUEBRO (HTTP://WWW.TRUEBRO.COM) OR APPROVED EQUAL. * http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_4486.pdf * http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_426.pdf
P-3 (HANDICAPPED ELECTRIC WATER COOLER COMBINATION H/L/O & WALL CARRIER) SHALL BE AN ELKAY MODEL EMABFTLBC, SPLIT LEVEL TWO STATION WATER COOLER WITH BARRIER FREE ACCESS. MODEL EMABFTLBC, 8.8 GPH, 4.0 FLA AT 120 VOLT. WITH ACCESSORY IN-WALL CARRIER ELKAY MODEL MLP200. H/L/O WATER COOLER: * http://www.elkaypro.com/emabftlbc IN-WALL CARRIER SYSTEM: * http://www.elkaypro.com/mlp200 WALL CARRIER INSTALLATION: * http://goo.gl/Bldzkz
P-4 (SINGLE BOWL STAINLESS STEEL SINK) SHALL BE A "JUST" MODEL SLF-2125-A-GR, 21"x35"x8" SEAMLESS DIE-DRAWN CONSTRUCTION OF TYPE 304, 18-8 STAINLESS STEEL. INTERIOR AND TOP SURFACES POLISHED TO A NONPOROUS HAND-BLENDED JUST FINISH WITH HIGHLIGHTED BOWL RIM. FULLY COATED UNDERSIDE INSULATED FOR SOUND AND REDUCES CONDENSATION. STRAIGHT-SIDED COMPARTMENT WITH RADIUS CORNERS PROVIDES GREATER CAPACITY. SELF-RIMMING TOPMOUNT GRIP-RIMPLUS WITH STAINLESS STEEL MOUNTING CHANNELS. CONFORMS TO ASME/ANSI A112.19.3M. CERTIFIED CONFORMANCE WITH ASME A112.19.3/CSA B45.4. FAUCET SHALL BE A "JUST" MODEL JWF-201. * http://www.justmfg.com/PDF/SLF2125A.pdf * http://www.justmfg.com/PDF/7-119.pdf
P-5 (FLOOR MOUNTED MOP RECEPTOR) SHALL BE A FLORESTONE #95 24X24X12" MOLDED MOP BASIN WITH 3" OUTLET. PROVIDE WITH MR-371 FAUCET WITH WALL BRACE, PAIL HOOK AND APPROVED VACUUM BREAKER, MR-370 HOSE & HOSE BRACKET, MR-372 MOP HANGER, MR-373 BUMBER GUARDS AND MR-377 STAINLESS TEEL WALL GUARD. * http://www.florestone.com/mop_sinks/model_95-96.html * http://www.florestone.com/mop_sinks/ms_accessories.html
P-6 (6" FLOOR DRAIN WITH TRAP SEAL) SHALL BE A JOSAM 30003-A-WT SERIES COATED CAST IRON FLOOR DRAIN, 3"ø PIPE CONNECTION, 6"ø DRAIN TOP, STRAINER TYPE 6A, TWO-PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WELOC INVERTIBLE NON-PUNCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET AND ADJUSTABLE SATIN NIKALLOY ROUND SUPER-FLO STRAINER. * http://www.josam.com/p/cast-iron-adjustable-round-top-floor-drain/30000-A FLOOR DRAIN TRAP SEAL SHALL BE A 3"ø "SURE SEAL" MODEL SS3000 PREASSEMBLED INLINE FLOOR DRAIN TRAP SEALER. 5 PIECES: COMMERCIAL GRADE ABS PLASTIC HOUSING AND KEEPER PIN, PROPRIETARY NEOPRENE RUBBER DIAPHRAGM, WITH 2" SOFT RUBBER SEALING GASKETS. FLOOR RATING ASSE-1072 AF-GW. * http://www.thesuresedi.com/Portals/49321/docs/pitch_sheet_ss3000.pdf
P-7 (HUB DRAIN - INDIRECT WASTE FUNNEL) SHALL BE A ZURN® Z326, 2" PIPE CONNECTION, DURA-COATED CAST IRON BODY AND BOTTOM OUTLET. CONTRACTOR SHALL VERIFY FINAL HEIGHT OF FUNNEL WITH EQUIPMENT THAT IS UTILIZING FUNNEL. DRAIN AND VERIFY PROPER CLEARANCE PRIOR TO CONSTRUCTION. COORDINATE WITH EQUIPMENT MANUFACTURER. * http://www.zurn.com/operations/specdrain/pdfs/specsheets/58975.pdf
P-8 (HOT WATER RECIRCULATING PUMP W/TIMER) SHALL BE A "GRUNDFOS" MODEL #UP15-10SU7PTLC, GRAINGER STOCK #4JA13, INLINE CIRCULATOR PUMP, OPEN LOOP SYSTEM, 1/25 HP, 1 PHASE, VOLTAGE 115, 3/4" INLET/OUTLET. INCLUDES POWER CORD, 24 HR. TIMER, COMFORT BYPASS VALVE, SUPPLY LINES. * http://www.grainger.com/product/GRUNDFOS-Hot-Water-Circulator-Pump-4JA13
P-9 (ELECTRIC WATER HEATER) SHALL BE A LOCHINVAR MODEL LTA066KK, 65 GALLON GLASSLINE STORAGE TANK, TALL TANK TYPE WATER HEATER WITH (2) - 4.5 KW ELECTRIC ELEMENTS WIRED FOR NON-CONCURRENT INDEPENDENT OPERATION AT 208 VOLTS, SINGLE PHASE INCOMING POWER. 3 YEAR LIMITED WARRANTY ON STORAGE TANK AGAINST TANK FAILURE. WATER HEATER SHALL MEET OR EXCEED ALL APPLICABLE SECTIONS OF ASHRAE STANDARD 90-80A AND NAECA REQUIREMENTS FOR ENERGY CONSERVATION. * http://lochinvar.com/_linfiles/RE.pdf
P-10 (CUSTOM CABINET WITH ROUND SINK AND FAUCET/ACCESSORIES) COORDINATE FINAL SPECIFICATIONS FOR CUSTOM CABINET WITH SINK AND FAUCET WITH OWNER/ARCHITECT PRIOR TO BID.
P-11 (PLASTER TRAP) SHALL BE A "JOSAM" 61000 SERIES NIKALLOY SOLIDS INTERCEPTOR, BOTTOM ACCESS, FIXTURE TRAP TYPE, 1-1/2" THREADED SIDE OUTLET, GASKETED COVER AND REMOVABLE PERFORATED STAINLESS STEEL BASKET.
P-12 (HANDICAPPED SINGLE BOWL STAINLESS STEEL SINK) SHALL BE A "JUST" MODEL SL-ADA-17519-A-GR, 17-1/2"x19"x6-1/2". SINGLE BOWL, SEAMLESS DIE-DRAWN CONSTRUCTION OF TYPE 304, 18-8 STAINLESS STEEL. INTERIOR AND TOP SURFACES POLISHED TO A NONPOROUS HAND-BLENDED JUST FINISH WITH HIGHLIGHTED BOWL RIM. FULLY COATED UNDERSIDE INSULATED FOR SOUND AND REDUCES CONDENSATION. STRAIGHT-SIDED COMPARTMENT WITH RADIUS CORNERS PROVIDES GREATER CAPACITY. SELF-RIMMING TOP MOUNT GRIP-RIM PLUS WITH STAINLESS STEEL MOUNTING CHANNELS. CONFORMS TO ASME/ANSI A112.19.3M. CERTIFIED CONFORMANCE WITH ASME A112.19.3/CSA B45.4. FAUCET SHALL BE A "JUST" MODEL J-1174-KS WITH 4" WRIST BLADE HANDLES. * http://www.justmfg.com/PDF/SLADA17519A.pdf * http://www.justmfg.com/PDF/7-29.pdf
P-13 (WATER CONNECTION BOX) SHALL BE A HIGH QUALITY CONNECTION BOX AS SPECIFIED ON PLUMBINGSUPPLY.COM LOCATED ON THIS PAGE "http://www.plumbingsupply.com/icemaker-outlet-boxes.html" SHALL INCLUDE 2 SUPPORT BRACKETS, HIGH IMPACT POLYSTYRENE, 1/4" BRASS BALL VALVE WITH 1/2" SWEAT CONNECTION. OR APPROVED EQUAL.
P-14 (INTERIOR HOSE BIBB W/HANDWHEEL) SHALL BE A "NIBCO" QT55X 3/4, GRAINGER STOCK #1WPV5. HOSE BIBB, NO KINK, QUARTER TURN, NOMINAL SIZE 3/4 IN, CONNECTION FIPT, RATED FOR 125 PSI CWP, MAX TEMP 180 F, OPEN HEIGHT 1 1/2 IN, MATERIAL OF CONSTRUCTION BRASS, ZINC HANDWHEELS, STANDARDS NSF/ANSI 61-9. * http://www.grainger.com/Grainger/items/1WPV5
NOTES: 1.) ALL PLUMBING FIXTURES SHALL BE AS SPECIED OR APPROVED EQUAL. 2.) PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.



3 WATER HEATER DETAIL
NO SCALE



2 COND. P-TRAP DETAIL
NOT TO SCALE



1 SANITARY ISOMETRIC
NOT TO SCALE

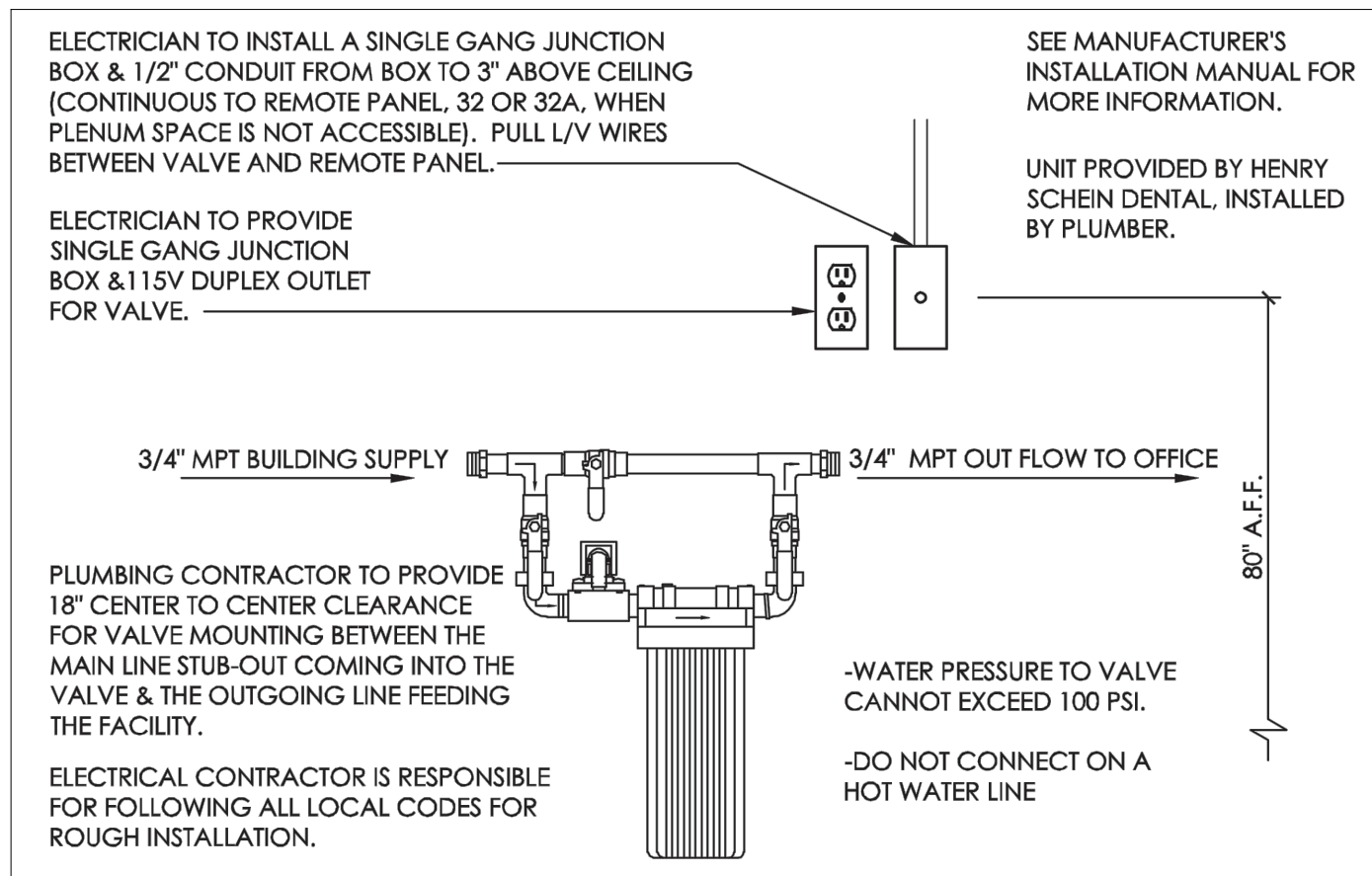
GENERAL PLUMBING NOTES

- 1.) DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION OF ALL PLUMBING FIXTURES, EQUIPMENT, ETC. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS REQUIRED FOR A COMPLETE AND ACCEPTABLE WORKING INSTALLATION. CONTRACTOR IS RESPONSIBLE TO INSTALL ALL FIXTURES AND EQUIPMENT IN STRICT COMPLIANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. THIS REQUIREMENT IS TO SUPERSEDE ANY DETAILS OR INFORMATION CONTAINED ON THESE DRAWINGS.
- 2.) ALL WORK AND MATERIALS SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL, STATE, AND ALL LOCAL CODES AND ORDINANCES HAVING JURISDICTION.
- 3.) THE PLUMBING CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS. ALL EXECUTION AND BACKFILL AS REQUIRED FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.
- 4.) ALL MATERIAL SHALL BE NEW.
- 5.) ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/ARCHITECT.
- 6.) ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY OR PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
- 7.) THE PLUMBING CONTRACTOR SHALL SECURE AND PAY ALL PERMIT FEES, INSPECTIONS, AND TESTS.
- 8.) ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.
- 9.) THE PLUMBING CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN (1) ONE YEAR FROM DATE OF ACCEPTANCE. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.
- 10.) VERIFY LOCATION, SIZE AND INVERTS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION. ADVISE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- 11.) ALL FIXTURES SHALL BE PROVIDED WITH READILY ACCESSIBLE STOPS.
- 12.) ALL BELOW FLOOR SLAB WATER PIPING SHALL BE FLEXIBLE "TEMPRITE PEX (CROSS-LINKED POLYETHYLENE)" INTALLED AS PER MANUFACTURERS RECOMMENDATIONS FOUND HERE: WWW.LUBRIZOL.COM. ALL ABOVE SLAB WATER PIPING SHALL BE "FLOWGUARD GOLD CPVC" INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS FOUND HERE: WWW.FLOWGUARDGOLD.COM. ALL WATER PIPING AS SPECIFIED OR APPROVED EQUAL. ALL WATER PIPING LARGER THAN 2" SHALL BE TYPE "L" COPPER AND TYPE "K" COPPER FOR 2 1/2" AND LARGER.
- 13.) SOIL, WASTES AND VENT PIPING SHALL BE PVC #40 DWV. WASTE AND VENT PIPING ABOVE SLAB SHALL BE PVC. IF APPROVED BY LOCAL AUTHORITIES HAVING JURISDICTION, OTHERWISE CAST IRON. PVC SHALL NOT BE INSTALLED IN A/C RETURN AIR PLENUM OR PENETRATE FIRE RATED WALLS OR FLOORS.
- 14.) AIR CONDITIONING CONDENSATE DRAIN PIPING SHALL BE PVC #40 OR COPPER DRAIN WASTE AND BENT PIPE AND FITTINGS. INSULATE ALL CONDENSATE PIPING EXCEPT EXTERIOR PIPING. INSTALL ALL CONDENSATE PIPING FOR AIR CONDITIONING UNITS AS REQUIRED PER LOCAL CODES.
- 15.) FURNISH AND INSTALL APPROVED WATER HAMMER ARRESTORS AT EACH GROUP OF FIXTURES. INSTALLATION OF WATER HAMMER ARRESTORS SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS. PROVIDE AND INSTALL AN APPROVED WATER HAMMER ARRESTOR AT EACH FIXTURE OR DEVICE THAT HAS A SOLENOID WATER CONTROL VALVE.
- 16.) PROVIDE CHROME PLATED COMBINATION COVERED PLATE AND CLEANOUT PLUG FOR ALL WALL CLEANOUTS, JOSAM 58890.
- 17.) INSULATE LINES AS FOLLOWS:
 - A.) 1" THICK ARMAFLEX PREFORMED INSULATION SHALL BE PROVIDED ON BOTH C.W. & H.W. WHEN PIPING IS LOCATED OUTSIDE OF THE INSULATED BUILDING ENVELOPE.
 - B.) 1/2" THICK ARMAFLEX PREFORMED INSULATION SHALL BE PROVIDED ON HW PIPING & H.W. RECIRC. PIPING. ONLY WHEN THERE IS A H.W. RECIRCULATING PIPING SYSTEM.
 - C.) CONDENSATE PIPING: 1/2" THICK ARMAFLEX PREFORMED OR APPROVED EQUAL.
- 18.) COPPER PIPING SHALL BE COPPER.
- 19.) VACUUM PIPING SHALL BE PVC.

PLUMBING FIXTURE CONNECTION SIZES

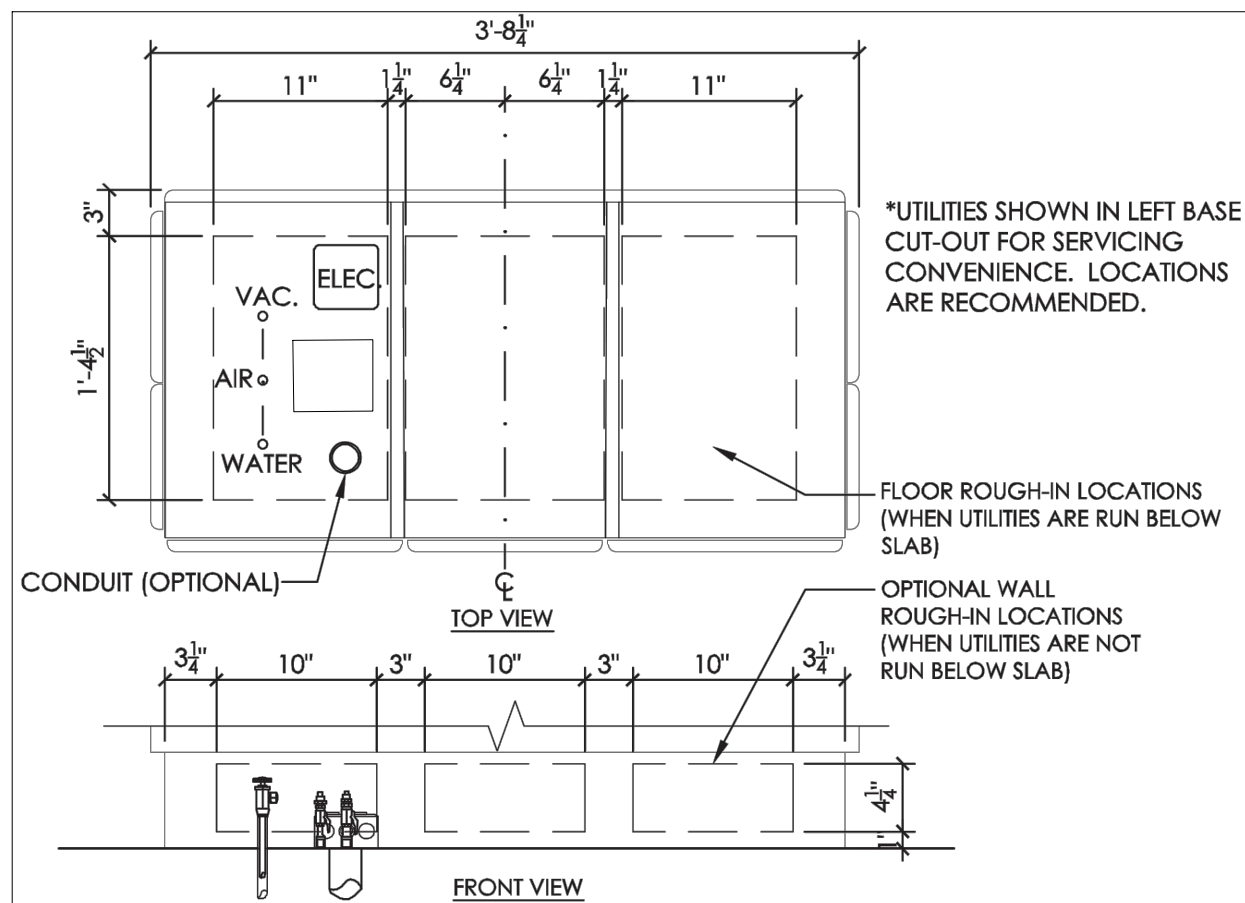
FIXTURE	C.W. CONN. SIZE	H.W. CONNECTION SIZE	SANITARY BRANCH SIZE	F.U. LOAD VALUES
WATER CLOSET (P1)	1/2"	-	3"	5.0
LAVATORY (P2)	1/2"	1/2"	1-1/4"	2.0
ELECTRIC WATER COOLER (P3)	1/2"	-	1-1/4"	0.5
SINK (P4)	1/2"	1/2"	1-1/2"	4.0
MOP SINK (P5)	1/2"	1/2"	2"	4.0

NOTE: F.U. LOAD VALUES BASED ON IPC 2009 - APPENDIX E TABLE E103.3(2)



1 WATER FILTER

NO SCALE



GENERAL NOTES:

-THIS DETAIL IS FOR INFORMATIONAL PURPOSES ONLY. DENTAL DEALER WILL PROVIDE INSTALLATION TEMPLATES FOR ANY EQUIPMENT IN QUESTION. REFER TO MANUFACTURER'S INSTALLATION GUIDE/TEMPLATE FOR ADDITIONAL INFORMATION.

-LICENSED PLUMBERS AND ELECTRICIANS SHALL INSTALL ALL UTILITIES.

-ALL UTILITIES MUST CONFORM WITH PREVAILING LOCAL CODES. NEITHER DENTAL DEALER NOR MANUFACTURER CAN BE HELD RESPONSIBLE FOR AN INSTALLATION WHICH DOES NOT MEET LOCAL ELECTRICAL AND PLUMBING CODES.

-VERIFY WITH EQUIPMENT REP WHICH UTILITIES WILL BE RUN SUB-FLOOR VS. IN WALL.

AIR: PLUMBING CONTRACTOR TO PROVIDE AND INSTALL A 1/2" COPPER (OR ACCEPTED) SUPPLY LINE FROM AIR COMPRESSOR TO THIS LOCATION. STUB-UP 1-2" FROM FLOOR AND TERMINATE WITH A 90° 1/2" x 3/8" COMPRESSION SHUT-OFF VALVE. FLUSH SYSTEM CLEAN PRIOR TO EQUIPMENT INSTALLATION.

WATER: PLUMBING CONTRACTOR TO PROVIDE AND INSTALL A 1/2" COPPER (OR ACCEPTED) COLD WATER SUPPLY LINE TO THIS LOCATION. STUB-UP 1-2" FROM FLOOR AND TERMINATE WITH A 90° 1/2" x 3/8" COMPRESSION SHUT-OFF VALVE. FLUSH SYSTEM CLEAN PRIOR TO EQUIPMENT INSTALLATION.

NOTE: MAXIMUM HEIGHT OF AIR & WATER VALVES SHOULD NOT EXCEED 5" (WHEN FULLY OPENED).

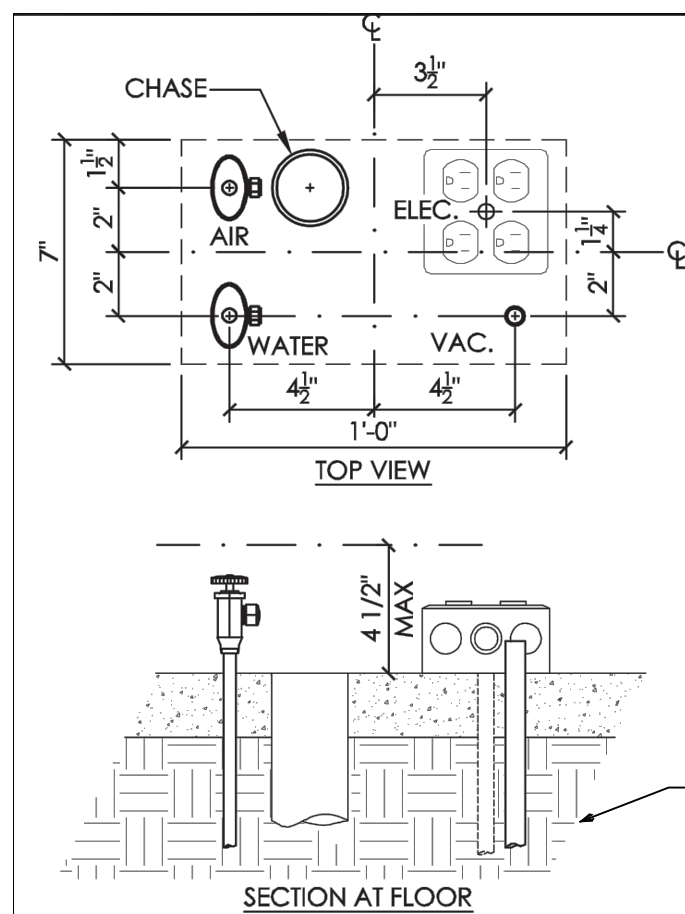
ELECTRICAL: ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL A 1/2" FLEX CONDUIT AND BOX WITH 115 QUAD (OR EQUAL) RECEPTACLE. WIRE BOX PER CODE WITH TOP NO HIGHER THAN 4-1/2" A.F.F.

CENTRAL VACUUM: PLUMBING CONTRACTOR TO PROVIDE A BRANCH LINE TO LOCATION SHOWN (SIZE PER CENTRAL VACUUM SUPPLIER). REDUCE TO A 1/2" SCH. 40 PVC (OR COPPER) RISER AT FLOOR. TERMINATE 1-2" ABOVE FINISHED FLOOR FOR CONNECTION TO EQUIPMENT.

CHASE: ELECTRICAL CONTRACTOR TO PROVIDE A GRAY ELECTRICAL PVC PIPE CHASE WITH PULL-STRING SUB-FLOOR (SEE SPECS 4, 4A SHEET SE.1 FOR SIZE AND LOCATIONS). 6" MIN. RADIUS FOR ALL BENDS. STUB-UP FLUSH WITH SUB-FLOOR. MARK LOCATION OF PIPE AT FINISH.

2 BEHIND CHAIR TREATMENT CABINET UTILITIES

NO SCALE



GENERAL NOTES:

-THIS DETAIL IS FOR INFORMATIONAL PURPOSES ONLY. DENTAL DEALER WILL PROVIDE INSTALLATION TEMPLATES FOR ANY EQUIPMENT IN QUESTION. REFER TO MANUFACTURER'S INSTALLATION GUIDE/TEMPLATE FOR ADDITIONAL INFORMATION.

-LICENSED PLUMBERS AND ELECTRICIANS SHALL INSTALL ALL UTILITIES.

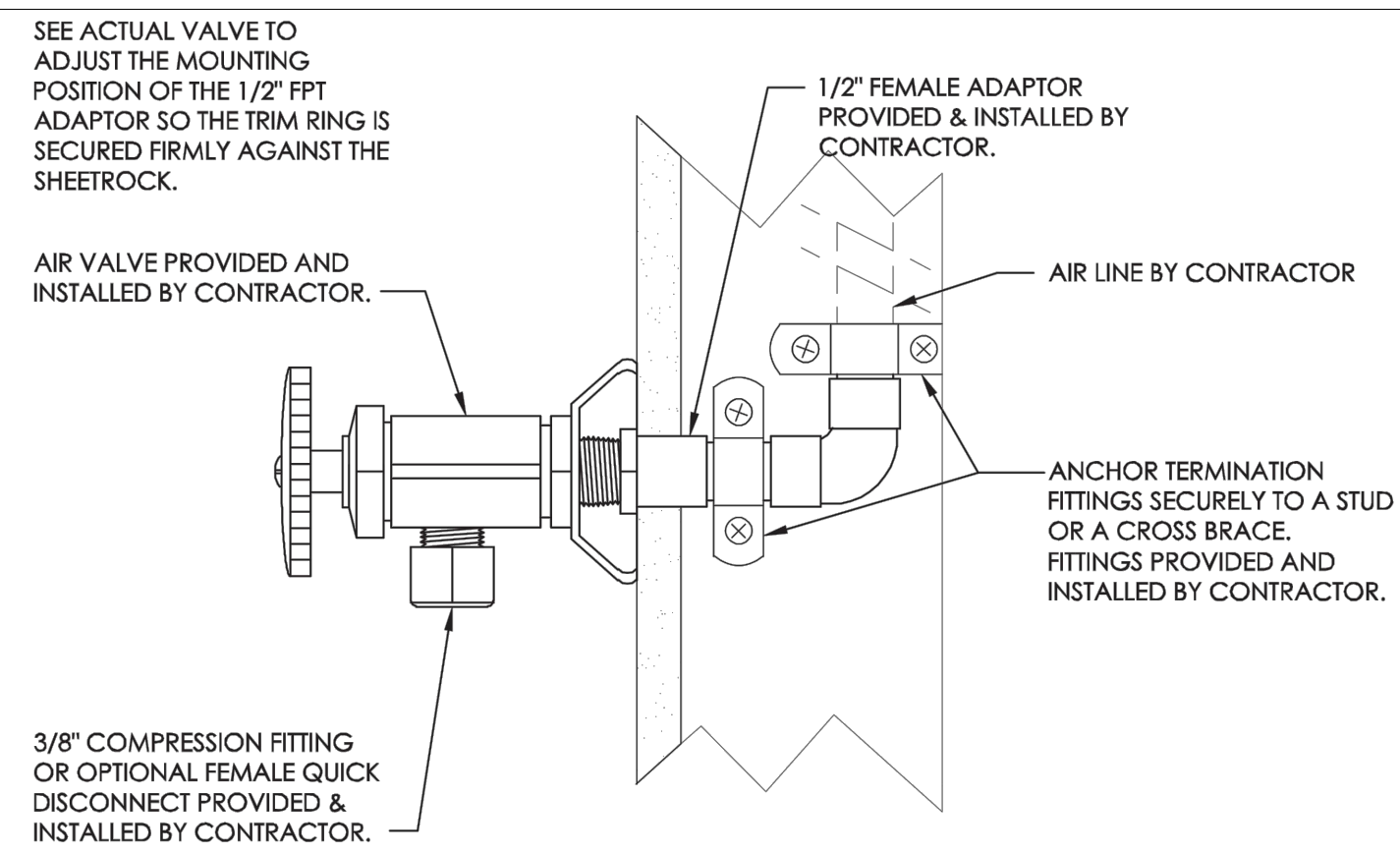
-ALL UTILITIES MUST CONFORM WITH PREVAILING LOCAL CODES. NEITHER DENTAL DEALER NOR MANUFACTURER CAN BE HELD RESPONSIBLE FOR AN INSTALLATION WHICH DOES NOT MEET LOCAL ELECTRICAL AND PLUMBING CODES.

AIR: PLUMBING CONTRACTOR TO PROVIDE AND INSTALL A 1/2" COPPER (OR ACCEPTED) SUPPLY LINE FROM AIR COMPRESSOR TO THIS LOCATION. STUB-UP 1-2" FROM FLOOR AND TERMINATE WITH A 90° 1/2" x 3/8" COMPRESSION SHUT-OFF VALVE. FLUSH SYSTEM CLEAN PRIOR TO EQUIPMENT INSTALLATION.

WATER: PLUMBING CONTRACTOR TO PROVIDE AND INSTALL A 1/2" COPPER (OR ACCEPTED) COLD WATER SUPPLY LINE TO THIS LOCATION. STUB-UP 1-2" FROM FLOOR AND TERMINATE WITH A 90° 1/2" x 3/8" COMPRESSION SHUT-OFF VALVE. FLUSH SYSTEM CLEAN PRIOR TO EQUIPMENT INSTALLATION.

ELECTRICAL: ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL A 1/2" CONDUIT AND BOX WITH 115V QUAD (OR EQUAL) RECEPTACLE. WIRE BOX PER CODE WITH TOP NO HIGHER THAN 4-1/2" A.F.F.

CENTRAL VACUUM: PLUMBING CONTRACTOR TO PROVIDE A BRANCH LINE TO LOCATION SHOWN (SIZE PER CENTRAL VACUUM SUPPLIER). REDUCE TO A 1/2" SCH. 40 PVC (OR COPPER) RISER AT FLOOR. TERMINATE 1-2" ABOVE FINISHED FLOOR FOR CONNECTION TO EQUIPMENT.

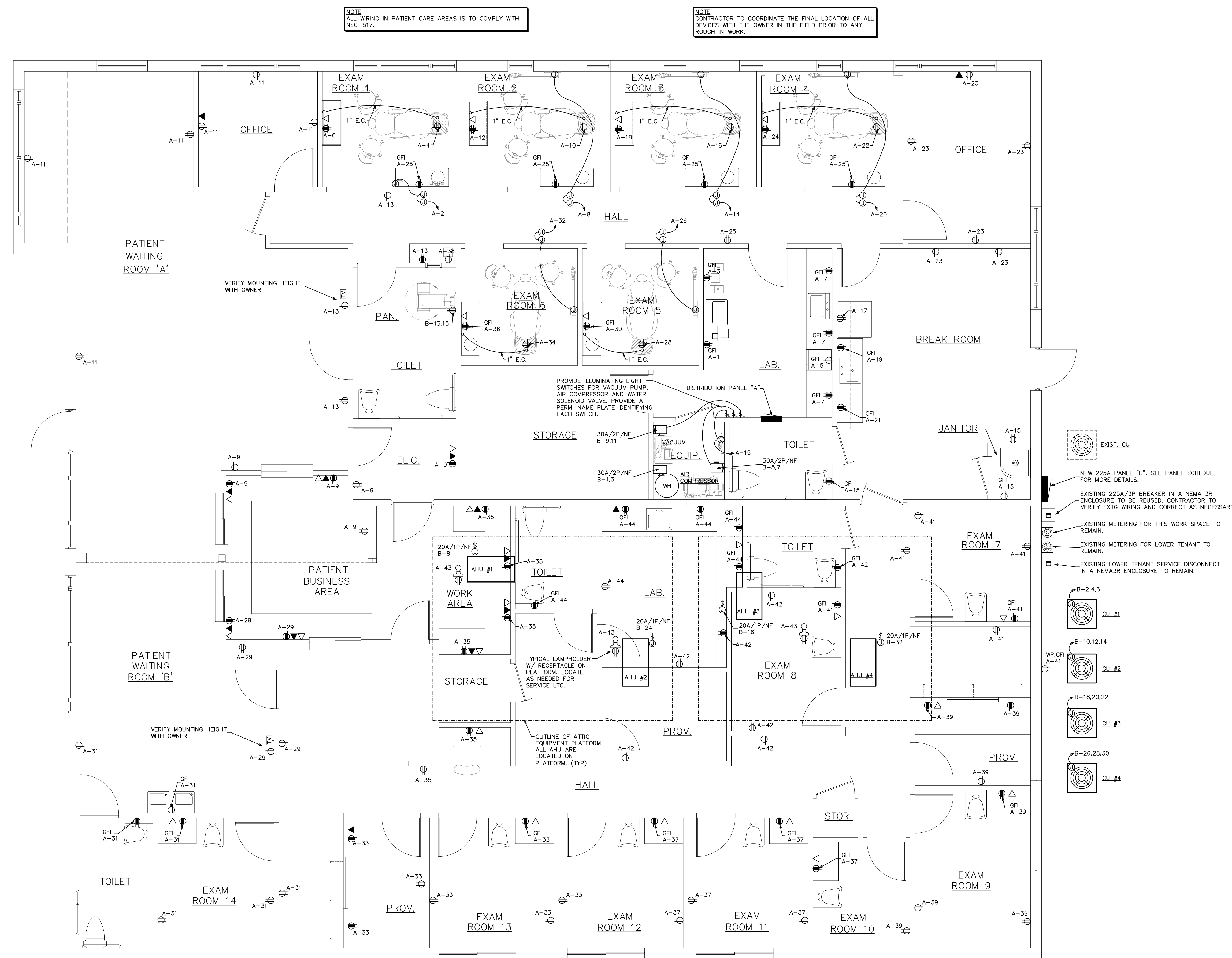


4 AIR VALVE DETAIL

NO SCALE

3 TYPICAL CHAIR UTILITY CENTER

NO SCALE



FLOOR PLAN – POWER

ELECTRICAL NOTES:

1. GENERAL: ALL WORK SHALL CONFORM TO THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL JURISDICTIONAL CODES.
- THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND ANY APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, THE CONTRACTOR SHALL NOTIFY THE OWNER OR HIS REPRESENTATIVE AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM, AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL THE OWNER HAS DIRECTED THE CORRECTIVE ACTION TO BE TAKEN.
- THE CONTRACTOR SHALL COORDINATE THE PROPOSED LOCATIONS OF ALL ELECTRICAL MATERIALS AND EQUIPMENT WITH THE REPRESENTATIVES OF THE OTHER TRADES INVOLVED BEFORE STARTING INSTALLATION OF THOSE ITEMS.
- COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES, CONDUIT, AND SLEEVES TO BE SET IN CAST-IN-PLACE CONCRETE, AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED.
- UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL SPECS ARE NOT INTENDED TO BE PROPRIETARY. SUBSTITUTIONS WILL BE ACCEPTABLE FOR EQUAL RATED AND LISTED UNITS.
2. SCOPE: EXCEPT WHERE OTHERWISE SPECIFICALLY INDICATED ON THE DRAWINGS BY "FUTURE", "BY OTHERS", OR BY A SIMILAR NOTATION, IT IS THE INTENT THAT THE CONTRACTOR FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND TOOLS NECESSARY TO PROVIDE ALL SYSTEMS IN COMPLETE AND OPERATING CONDITION.
3. EXCAVATE AS NECESSARY FOR THE INSTALLATION OF ELECTRICAL MATERIALS AND EQUIPMENT. VERIFY THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES OR STRUCTURES BEFORE EXCAVATING AND EXERCISE CARE TO AVOID DAMAGE TO SUCH ITEMS DURING EXCAVATION. BACKFILL WITH EARTH FREE OF LARGE CLODS, LARGE STONES AND FOREIGN DEBRIS, DEPOSITED IN 6" LAYERS AND COMPACTED TO A DENSITY OF NOT LESS THAN THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. MATERIALS: THE MATERIALS AND EQUIPMENT FURNISHED SHALL BE AS INDICATED ON THE DRAWINGS; SUBSTITUTIONS SHALL NOT BE MADE EXCEPT WHERE EXPRESSLY APPROVED BY THE OWNER OR HIS REPRESENTATIVE PRIOR TO STARTING INSTALLATION OF THE ITEMS. THE ELECTRICAL MATERIALS AND EQUIPMENT FURNISHED SHALL BE LISTED OR LABELED BY UNDERWRITERS LABORATORIES OR OTHER RECOGNIZED TESTING ORGANIZATION, AND SHALL BE ACCEPTABLE TO THE LOCAL BUILDING AUTHORITY.
5. GROUNDING: GROUNDING SHALL BE IN ACCORDANCE WITH ARTICLE 250, NEC.
6. SHARED NEUTRAL CONDUCTORS SHALL NOT BE ALLOWED UNLESS INSTALLED IN ACCORDANCE WITH NEC-210.4

7. CONDUITS: PROVIDE CONDUITS WHERE CALLED FOR ON PANEL SCHEDULES. ELECTRICAL METALLIC TUBING (EMT) SHALL BE INSTALLED ONLY IN DRY LOCATIONS, IN CONCRETE ABOVE GRADE, AND WHERE NOT SUBJECT TO PHYSICAL DAMAGE.
- CONDUITS INSTALLED UNDERGROUND SHALL BE POLYVINYLCHLORIDE (PVC) AND SHALL NOT BE SMALLER THAN 3/4" TRADE SIZE. WHERE PVC CONDUIT IS INSTALLED UNDERGROUND, ELBOWS TURNING UP AND CONDUIT EMERGING ABOVE GRADE SHALL BE RSC. THE TOPS OF CONDUITS SHALL NOT BE LESS THAN 24" BELOW FINISHED GRADE. PVC CONDUIT INSTALLED ABOVE GRADE OR DIRECT-BURIED IN EARTH SHALL BE NEMA TC2 TYPE EPC-40-PVC (SCHEDULE 40) EXCEPT THAT WHERE UNDER AREAS SUBJECT TO HEAVY VEHICULAR TRAFFIC, IT SHALL BE NEMA TC2 TYPE EPC-80-PVC (SCHEDULE 80).
- ALL ARMOR CLAD CABLE (AC CABLE) WIRING SHALL MEET OR EXCEED ALL NEC, OSHA AND HUD STANDARDS.
8. CONDUCTORS: CONDUCTORS SHALL BE AS SCHEDULED ON PANEL SCHEDULES. ALL POWER CONDUCTORS SHALL NOT BE SMALLER THAN #14 AWG (CU), OR #12 AWG (AL), CONTROL CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #18 AWG CU. CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET WITHOUT SPLICES EXCEPT WITHIN WIREWAY OR JUNCTION BOXES. MARK CONDUCTORS IN PANELS, PULL BOXES OR WIREWAYS AND TERMINAL STRIP TERMINALS FOR IDENTIFICATION OF CIRCUITS.
- CONDUCTORS SHALL BE JOINED USING COMPRESSION SPLICES, EXCEPT THAT CONDUCTORS #10 AND SMALLER MAY BE JOINED USING WIRE NUT TYPE CONNECTORS. CONDUCTORS SHALL BE TERMINATED USING COMPRESSION OR PRESSURE TYPE TERMINAL LUGS, OR IN PRESSURE TERMINALS. COMPRESSION SPLICES USED ON CONDUCTORS #10 AWG AND SMALLER, SHALL BE THE SELF-INSULATED TYPE; OTHER SPLICES SHALL BE INSULATED USING 3M #33+ OR #89 PLASTIC TAPE. SPLICES IN WET LOCATIONS SHALL BE INSULATED WITH ELECTRICAL TAPE AND ENCAPSULATED WITH SCOTCHCAST OR EQUAL POTTING COMPOUND.
9. PROVIDE AND INSTALL JUNCTION AND PULL BOXES WHERE INDICATED AND WHERE NECESSARY TO TERMINATE, TAP OFF, OR REDIRECT MULTIPLE CONDUIT RUNS, OF SIZE INDICATED OR AS REQUIRED BY NEC. WHERE FEEDER SPLICES ARE TO BE MADE, INSTALL BOXES LARGE ENOUGH TO PROVIDE AMPLE WORK SPACE.
10. LIGHTING FIXTURES: LIGHTING FIXTURES SHALL BE AS INDICATED ON THE DRAWINGS, AND SHALL BE INSTALLED COMPLETE WITH LAMPS. FIXTURES WITH ADJUSTMENTS AFFECTING LIGHT DISTRIBUTION SHALL BE SET TO PROVIDE THE REQUIRED LIGHT PATTERNS PRIOR TO THE FINAL DEMONSTRATION TEST.
11. TESTS: AFTER EACH SYSTEM HAS BEEN COMPLETED, A FUNCTIONAL TEST SHALL BE PERFORMED TO DEMONSTRATE THAT THE SYSTEM OPERATES IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS. THE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE.
12. TERMINALS: ALL ELECTRICAL EQUIPMENT FURNISHED ON THIS PROJECT IS TO HAVE TERMINALS RATED FOR 75° C. OPERATION.

PANEL B DIVERSIFICATION CALCULATIONS									
RECEPTACLES (120) -				21600 VA TOTAL					
FIRST 10 KVA AT 100% -				10000					
REMAINDER AT 50% -				5800					
LIGHTING -				7820 X 125% -		9775			
HVAC LOAD AT 100% -				23950					
MOTOR LOADS AT 100% -				832					
PLUS 25% OF THE LARGEST MOTOR -				1215					
MISC NON-CONTINUOUS LOADS AT 100% -				29946					
MISC CONTINUOUS LOADS AT 125% -				500					
400 X 1.25 -				500					
TOTAL DIVERSIFIED PANEL LOAD -				72958					
LOAD AT 120/208V/3-PHASE/4-WIRE -				202.7A					

PANEL SCHEDULE B

PANEL SCHEDULE B																	
225 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, M.L.D., 22000 AMPS MINIMUM A.I.C. BRACING, SURFACE MOUNTED, TYPE NEMA 3R ENCLOSURE																	
#	BKR.	WIRE AND CONDUIT				LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT				BKR.	#
		COND.	NEUTRAL	GND	C.							KEYS	C.	GND	NEUTRAL		
1	30/2	#10	---	#10	1/2	CHAL	ELECTRIC WATER HEATER	0	2250	-----							2
3								0	1740	-----							
								0	2250	-----	CONDENSING UNIT #1	CHAL	1/2	#10	---	#10	30/3
								0	1740	-----							4
5	20/2	#12	---	#12	1/2	CHAL	AIR COMPRESSOR	0	2160	-----							6
7								0	1740	-----							
								0	1800	-----	GAS FURNACE #1	CHAL	1/2	#12	#12	#12	20/1
9	20/2	#12	---	#12	1/2	CHAL	DENTAL VACUUM UNIT	1123	1123	-----							8
11								0	1800	-----							10
								0	1428	-----							
								0	1800	-----	CONDENSING UNIT #2	CHAL	1/2	#12	---	#12	20/3
13	20/2	#12	---	#12	1/2	CHAL	PAN RECEPTACLE	0	90	-----							12
15								0	1428	-----							14
								832	832	-----	GAS FURNACE #2	CHAL	1/2	#12	#12	#12	20/1
17	20/1	#12	#12	#12	1/2	CHAL	LIGHTING	1680	0	-----							16
								1680	0	-----							
19	20/1	#12	#12	#12	1/2	CHAL	LIGHTING	1520	0	-----							18
								1520	0	-----							
21	20/1	#12	#12	#12	1/2	CHAL	LIGHTING	1510	0	-----	CONDENSING UNIT #3	CHAL	1/2	#10	---	#10	30/3
23	20/1	#12	#12	#12	1/2	CHAL	LIGHTING	1510	0	-----							22
								1510	0	-----							
25	20/1	#12	#12	#12	1/2	CHAL	LIGHTING	1110	0	-----	GAS FURNACE #3	CHAL	1/2	#12	#12	#12	20/1
27								832	800	-----							24
29								800	0	-----							
31								0	1740	-----	CONDENSING UNIT #4	CHAL	1/2	#10	---	#10	30/3
33								0	0	-----							26
35								0	1740	-----							28
37								0	0	-----							30
39								0	1740	-----							
41								1123	1123	-----	GAS FURNACE #4	CHAL	1/2	#12	#12	#12	20/1
43								600	0	-----	(3) DENTAL EXAM LIGHTS	CHAL	1/2	#12	#12	#12	20/1
45								600	0	-----							34
47								600	0	-----	(3) DENTAL EXAM LIGHTS	CHAL	1/2	#12	#12	#12	20/1
49								12103	12103	-----							36
51								0	0	-----							
53								8815	0	-----	PANELBOARD "A"	CHAL	1-1/2	#6	#1	#1	125/3
55								0	0	-----							40
57								10980	0	-----							42
59								10980	0	-----							
WIRE/CONDUIT KEY								27469	22557	25822	PEAK PHASE (A) UNBALANCED NEUTRAL LOAD AMPS = 138.9 AMPS						
1234								L-TEMP RATING			NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 210.7 AMPS						
1								-CONDUIT TYPE									
1								INSULATION									
1								WIRING TYPE									
PRINTED ON PANELS PROGRAM SERIAL NUMBER 2001.4001																	
REGISTERED TO - TODD W. CAREY AND ASSOCIATES OF THE CARDINAS																	

PANEL SCHEDULE A

PANEL SCHEDULE A																		
125 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, M.L.D., 22000 AMPS MINIMUM A.I.C. BRACING, FLUSH MOUNTED, TYPE NEMA 1 ENCLOSURE																		
#	BKR.	WIRE AND CONDUIT				LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT				BKR.	#	
		COND.	NEUTRAL	GND	C.							KEYS	C.	GND	NEUTRAL			COND.
1	20/1	#12	#12	#12	1/2	CHAL	LATHE	1123	1123	-----	DENTAL XRAY UNIT	CHAL	1/2	#12	#12	#12	20/1	2
3	20/1	#12	#12	#12	1/2	CHAL	MODEL TRIMMER	1123	-----	1123	DENTAL CHAIR RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	4
5	20/1	#12	#12	#12	1/2	CHAL	STERILIZER	360	-----	360	DENTAL RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	6
7	20/1	#12	#12	#12	1/2	CHAL	LAB RECEPTACLES	1800	-----	1800	DENTAL XRAY UNIT	CHAL	1/2	#12	#12	#12	20/1	8
9	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	360	-----	360	DENTAL CHAIR RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	10
11	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	540	540	-----	DENTAL CHAIR RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	12
13	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	650	650	-----	DENTAL CHAIR RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	14
15	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	720	720	-----	DENTAL CHAIR RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	16
17	20/1	#12	#12	#12	1/2	CHAL	REFRIGERATOR	360	-----	360	DENTAL RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	18
19	20/1	#12	#12	#12	1/2	CHAL	BREAK RM COUNTER OUTLET	900	900	-----	DENTAL XRAY UNIT	CHAL	1/2	#12	#12	#12	20/1	20
21	20/1	#12	#12	#12	1/2	CHAL	BREAK RM COUNTER OUTLET	650	650	-----	DENTAL XRAY UNIT	CHAL	1/2	#12	#12	#12	20/1	22
23	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	180	-----	180	DENTAL CHAIR RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	24
25	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	1080	-----	1080	DENTAL CHAIR RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	26
27	20/1	#12	#12	#12	1/2	CHAL	HOT WATER RECIRC PUMP	360	-----	360	DENTAL RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	28
29	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	900	900	-----	DENTAL XRAY UNIT	CHAL	1/2	#12	#12	#12	20/1	30
31	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	360	-----	360	DENTAL CHAIR RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	32
33	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	1260	1260	-----	DENTAL XRAY UNIT	CHAL	1/2	#12	#12	#12	20/1	34
35	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	650	650	-----	DENTAL CHAIR RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	36
37	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	360	-----	360	DENTAL RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	38
39	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	1080	1080	-----	DENTAL PAN UNIT CONTROLS	CHAL	1/2	#12	#12	#12	20/1	40
41	20/1	#12	#12	#12	1/2	CHAL	GENERAL RECEPTACLES	400	400	-----	EXTERIOR DOOR LIGHTS *	CHAL	1/2	#12	#12	#12	20/1	42
43	20/1	#12	#12	#12	1/2	CHAL	ATTIC LIGHTS/RECEPTACLES	1260	1260	-----	GENERAL RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	44
45							SPACE	0	0	-----	SPACE	CHAL	1/2	#12	#12	#12	20/1	46
47							SPACE	0	0	-----	SPACE	CHAL	1/2	#12	#12	#12	20/1	48
49							SPACE	0	0	-----	SPACE	CHAL	1/2	#12	#12	#12	20/1	50
51							SPACE	0	0	-----	SPACE	CHAL	1/2	#12	#12	#12	20/1	52
53							SPACE	0	0	-----	SPACE	CHAL	1/2	#12	#12	#12	20/1	54
WIRE/CONDUIT KEY								12103	8815	10980	PEAK PHASE (A) UNBALANCED NEUTRAL LOAD AMPS = 100.9 AMPS							
1234 L-TEMP RATING C-20 WIRE								NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 88.6 AMPS										
L-TEMP RATING C-20 WIRE								31,898										
L-TEMP RATING C-20 WIRE								PRINTED ON PANELS PROGRAM SERIAL NUMBER 2001.4001										
L-TEMP RATING C-20 WIRE								REGISTERED TO - TODD V. CAREY AND ASSOCIATES OF THE CARDINANS										