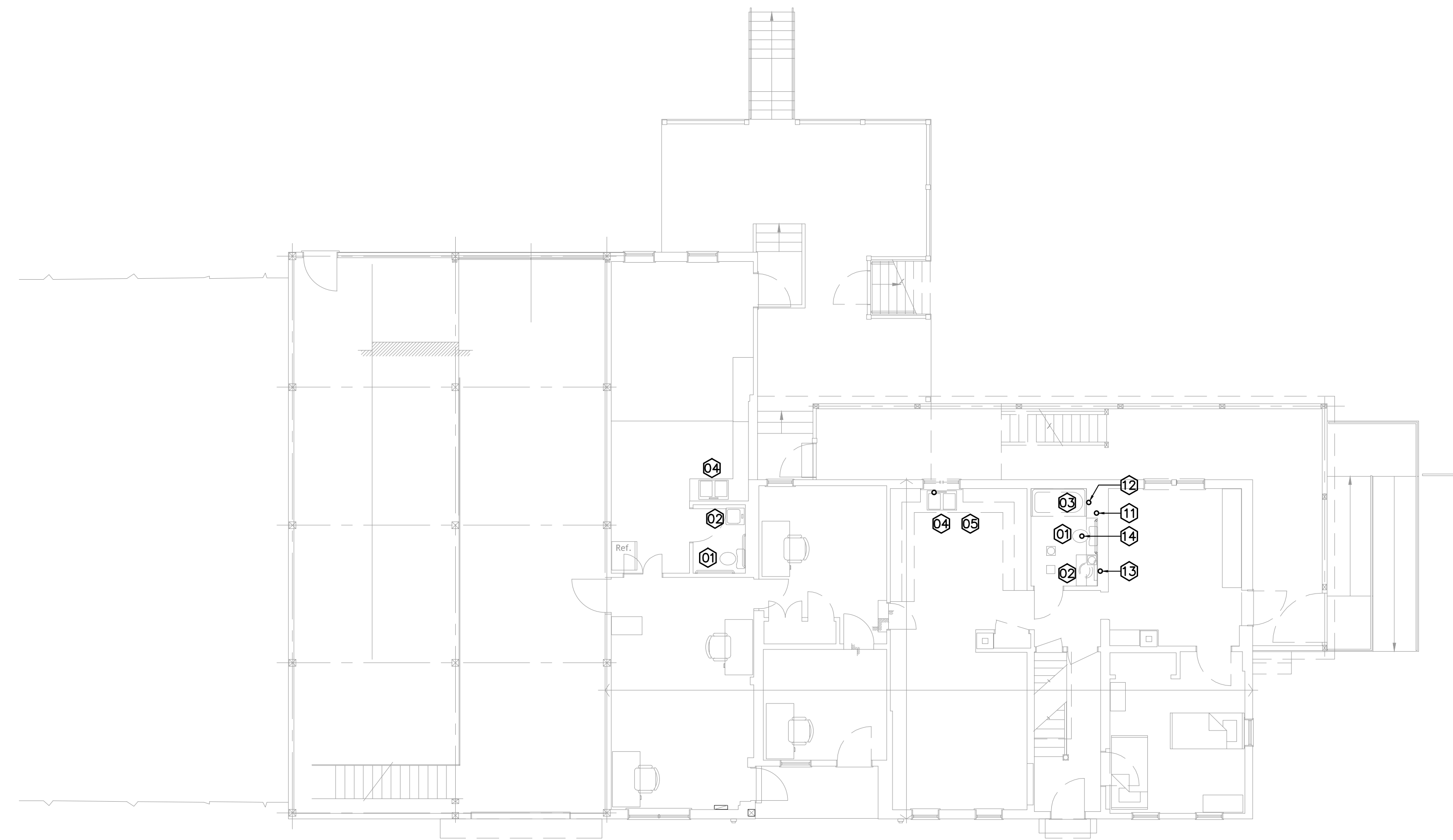
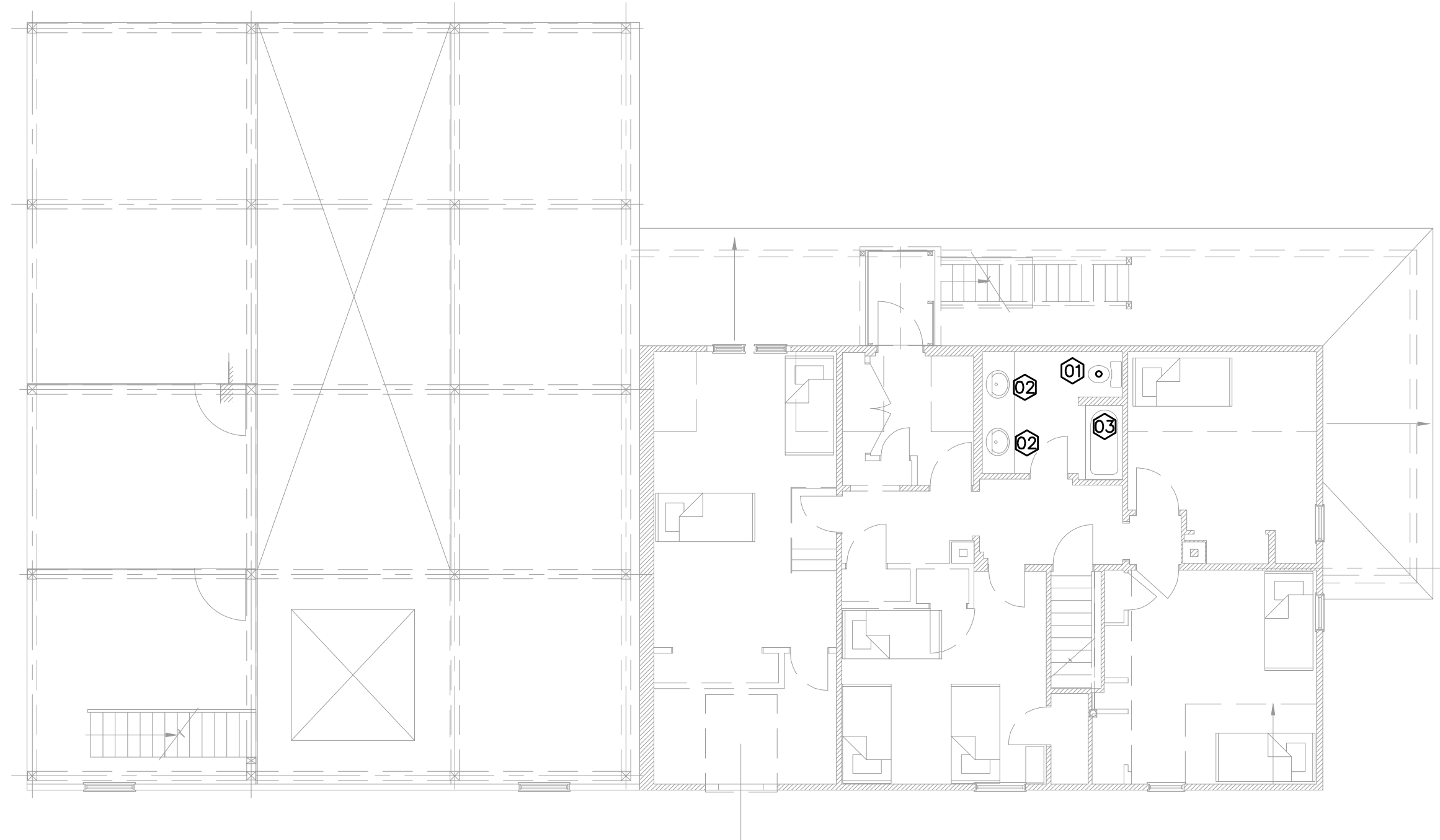


1 PLUMBING DEMOLITION - BASEMENT
 PD-100 SCALE: 1/8" = 1'-0"

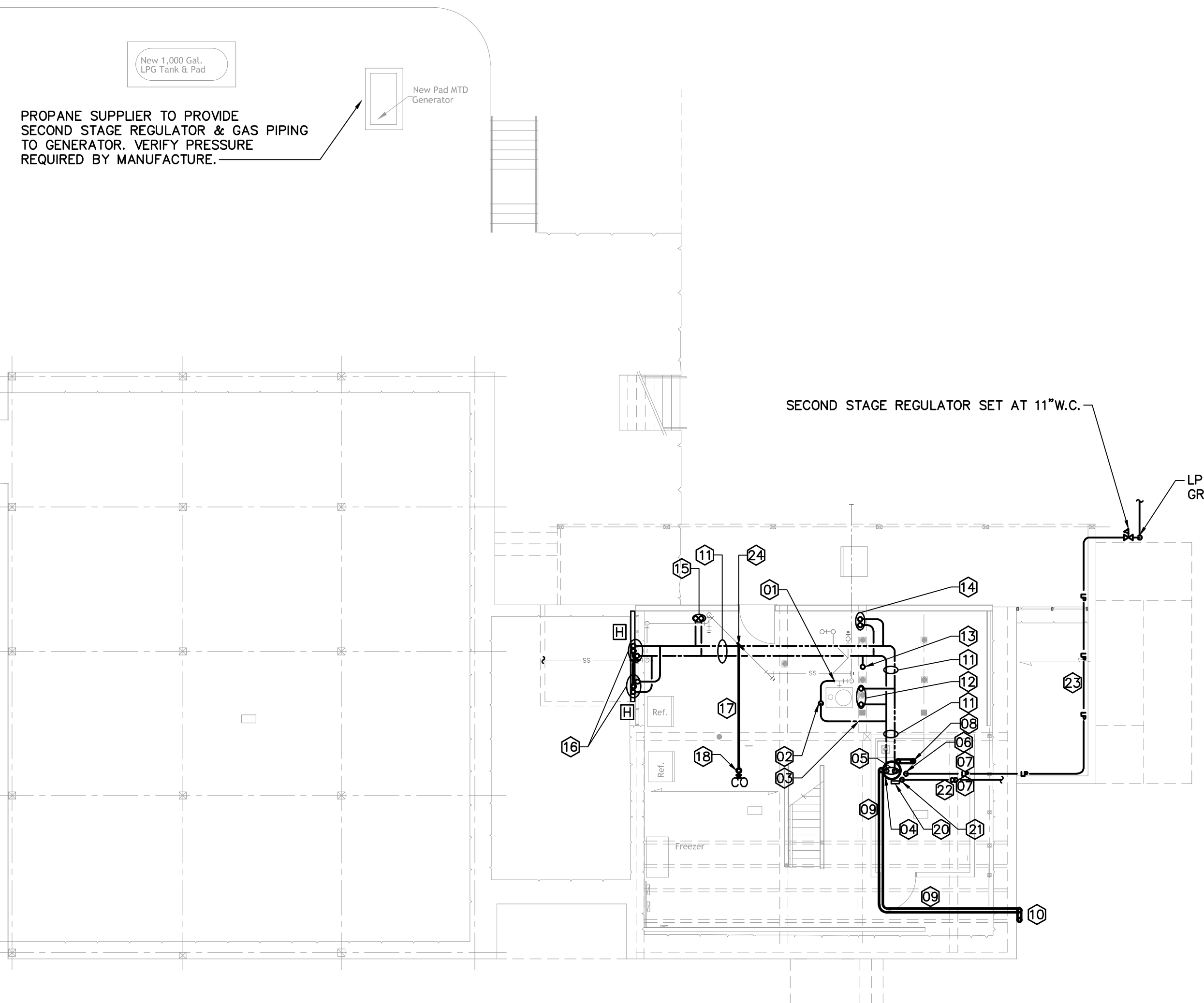


2 PLUMBING DEMOLITION - FIRST FLOOR
 PD-100 SCALE: 1/8" = 1'-0"



3 PLUMBING DEMOLITION - SECOND FLOOR
 PD-100 SCALE: 1/8" = 1'-0"

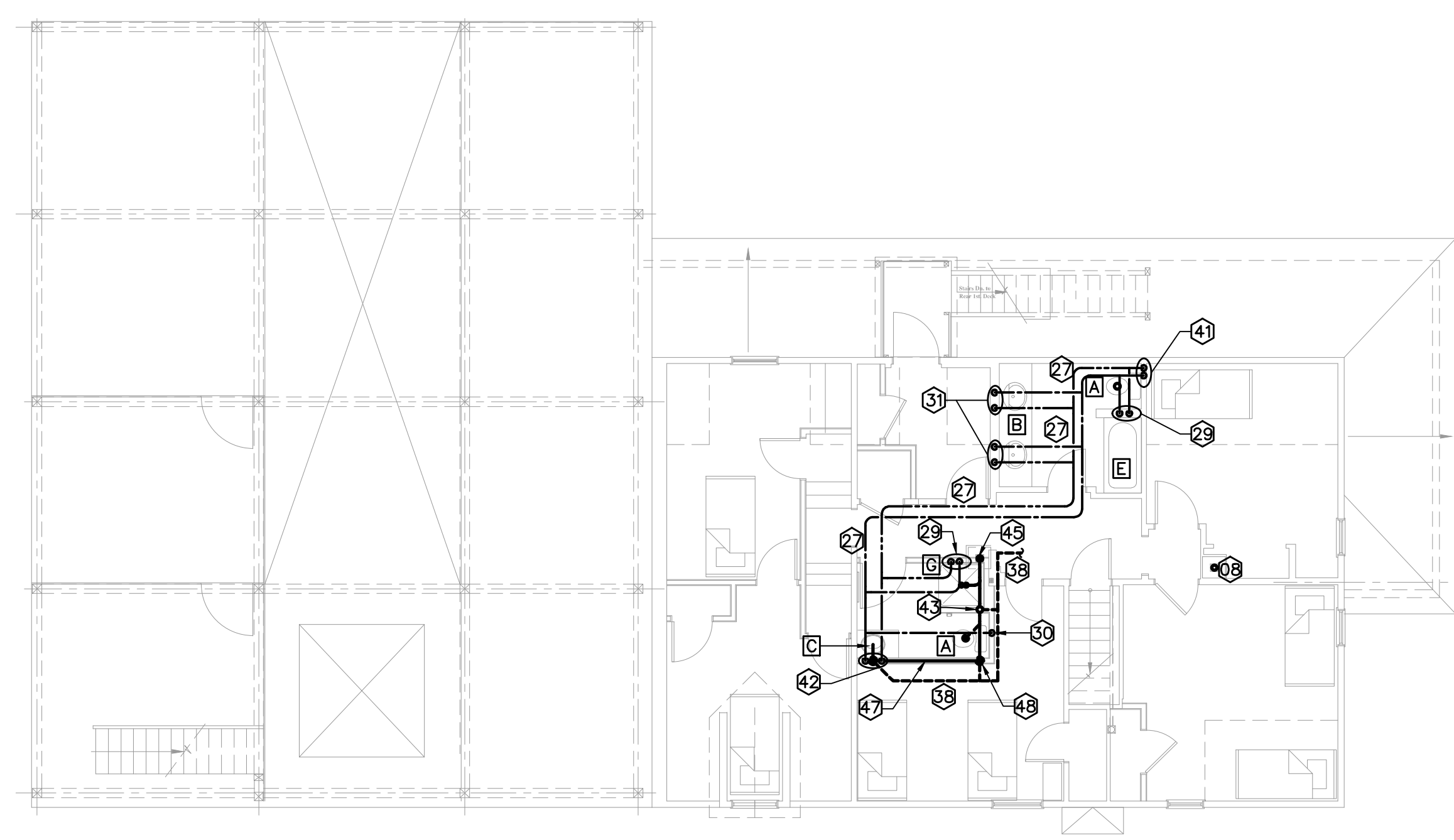
- 01 EXISTING WATER CLOSEST TO BE DEMOLISHED
- 02 EXISTING LAVATORY TO BE DEMOLISHED
- 03 EXISTING TUB/SHOWER TO BE DEMOLISHED
- 04 EXISTING SINK TO BE DEMOLISHED
- 05 EXISTING DISHWASHER TO BE DEMOLISHED
- 06 EXISTING OIL FIRED DOMESTIC WATER HEATER TO BE DEMOLISHED
- 07 ALL EXISTING DOMESTIC COLD WATER DISTRIBUTION PIPING TO BE DEMOLISHED BACK TO OUTLET SIDE OF HYDROPNEUMATIC TANK.
- 08 EXISTING COLD WATER SERVICE TO REMAIN.
- 09 EXISTING SANITARY & WASTE PIPING HIGH IN BASEMENT TO REMAIN.
- 10 EXISTING SANITARY PIPING ROUTED IN CRAWL SPACE TO REMAIN.
- 11 EXISTING 3" SANITARY RISER UP TO SECOND FLOOR
- 12 EXISTING VENT RISER TO REMAIN
- 13 EXISTING WASTE DN. TO BASEMENT.
- 14 EXISTING 3" SAN DN. TO BASEMENT.
- 15 EXITING WASTE UP TO KITCHEN SINK
- 16 EXISTING 3" SANITARY DN. TRANSITION TO 4" SANITARY BEFORE FLOOR PENETRATION. EXISTING TO REMAIN.



1 PLUMBING FLOOR PLAN - BASEMENT
P-100 SCALE: 1/8" = 1'-0"



2 PLUMBING FLOOR PLAN - FIRST FLOOR
P-100 SCALE: 1/8" = 1'-0"



3 PLUMBING FLOOR PLAN - SECOND FLOOR
P-100 SCALE: 1/8" = 1'-0"

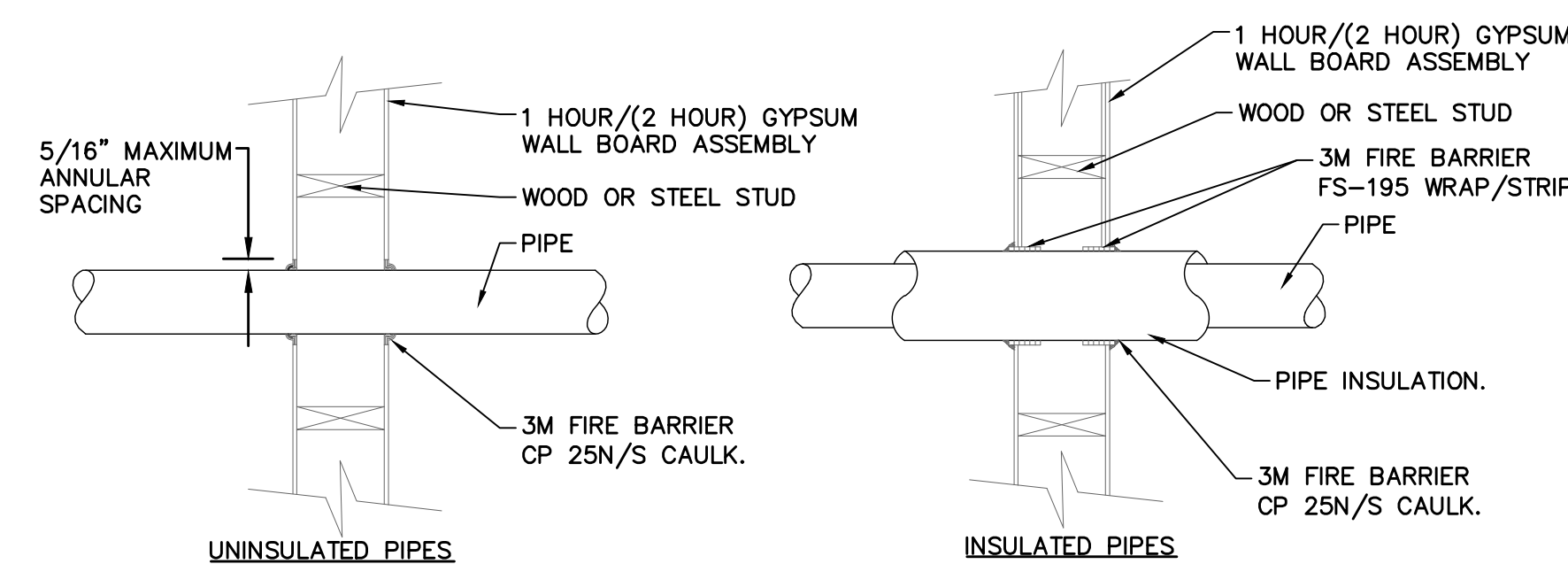
PLUMBING KEYNOTES

- 01 NEW 1" CW CONNECTED TO EXISTING CW.
- 02 1" CW DN. FROM TIGHT TO STRUCTURE
- 03 1" CW ABOVE BASEMENT TIGHT TO STRUCTURE.
- 04 DWH-1, INSTALLED ON METAL STAND, PROVIDED BY "PC"
- 05 1" CW DN. TO DWH-1, INCREASE TO 1-1/2" @ DWH-1
1-1/2" HW OUTLET FROM DWH-1 REDUCED TO 3/4" HW UP TIGHT TO STRUCTURE.
- 06 3/4" LP GAS DN. TO DWH-1
- 07 3/4" LP GAS TIGHT TO STRUCTURE HIGH IN BASEMENT.
- 08 4" EXHAUST FROM DWH-1, ROUTED UP IN EXISTING CHIMNEY.
- 09 4" INTAKE DUCT, FROM DWH-1
- 10 4" INTAKE DUCT UP ON FACE OF BUILDING @ 24" MIN. ABOVE GRADE.
GOOSENECK TERMINATION WITH BIRD SCREEN ON OPEN END.
- 11 1" CW, 3/4" HW TIGHT TO STRUCTURE IN BASEMENT.
- 12 1/2" H&CW UP TO FIRST FLOOR TOILET ROOM LAVATORY
- 13 1/2" CW UP TO FIRST FLOOR TOILET ROOM WATER CLOSET.
- 14 3/4" H&CW RISER UP TO SECOND FLOOR.
- 15 1/2" H&CW UP TO FIRST FLOOR KITCHEN.
- 16 3/4" H&CW UP IN WALL TO WASHING MACHINE WALL BOX. 2" STANDPIPE UP IN WALL
WASTE TO CONNECT TO EXISTING SANITARY IN CRAWL SPACE. VERIFY SIZE AND LOCATION IN FIELD.
- 17 3" WASTE TIGHT TO STRUCTURE
- 18 3" RISER UP TO SECOND FLOOR.
- 19 3" RISER UP TO SECOND FLOOR.
- 20 CONDENSATE NEUTRALIZATION KIT -P/N 100112380 PROVIDED BY "PC"
- 21 3/4" PUMPED CONDENSATE UP TO TIGHT TO STRUCTURE IN BASEMENT.
- 22 3/4" CONDENSATE TO CONNECT TO MECHANICAL CONDENSATE PIPING, SEE M-101 FOR REFERENCE.
- 23 3/4" LP GAS TIGHT TO BUILDING IN CRAWL SPACE.
- 24 3" W TO CONNECT TO EXISTING SANITARY PIPING HIGH IN BASEMENT, VERIFY SIZE AND LOCATION IN FIELD.
- 25 3" W TO CONNECT TO EXISTING SANITARY PIPING HIGH IN BASEMENT, VERIFY SIZE AND LOCATION IN FIELD.
- 26 3/4" H&CW DN. IN WALL, 2" STANDPIPE DN. IN WALL
- 27 1/2" H&CW ABOVE CEILING
- 28 1-1/2" V UP IN WALL, 2" VENT ABOVE CEILING
- 29 1/2" H&CW DN. IN WALL
- 30 1/2" CW DN. IN WALL
- 31 1/2" H&CW DN. EXISTING WASTE PIPEING DN TO BASEMENT, ROUTE 1/2" HW TO DISHWASHER.
- 32 1/2" H&CW DN. IN WALL, EXISTING WASTE PIPING FROM LAV DN. IN WALL TO BASEMENT, ALL EXISTING DW
PIPING TO BE FIELD VERIFIED FOR SIZE & LOCATION.
- 33 EXISTING SANITARY DN. FROM WATER CLOSET.
- 34 1/2" CW DN. IN WALL TO BASEMENT.
- 35 3/4" H&CW RISER UP TO SECOND FLOOR.
- 36 EXISTING SANITARY RISER UP TO SECOND FLOOR.
- 37 EXISTING VENT RISER UP IN CHASE.
- 38 2" VENT ABOVE CEILING TO BE CONNECTED TO CLOSEST EXISTING VENT SYSTEM, VERIFY LOCATION IN FIELD.
- 39 3" SANITARY RISER TO SECOND FLOOR.
- 40 4" DWH-1 EXHAUST UP IN EXISTING CHIMNEY.
- 41 3/4" H&CW DN. IN WALL.
- 42 1/2"H&CW DN. IN WALL.. 1-1/2" WASTE DN. IN WALL, 1-1/2" V UP IN WALL.
- 43 2" V UP IN WALL.
- 44 2" WASTE BELOW FLR.
- 45 3" SANITARY DN. TO BASEMENT.
- 46 1/2" H&CW DN. IN WALL, 2" V UP IN WALL
- 47 1-1/2" WASTE ROUTED IN WALL. 1-1/2" VENT UP IN WALL
- 48 2" WASTE DN. BELOW FLOOR, 2" VENT UP IN WALL.

PLUMBING FIXTURE SCHEDULE									
ALL FIXTURES TO BE APPROVED BY PLUMBING ENGINEER, CONSTRUCTION MANAGER & ARCHITECT BEFORE FIXTURE IS INSTALLED									
SYMBOL	FIXTURE TYPE	MANUFACTURER MODEL NUMBER	PIPE SIZES				DESCRIPTION		
			HOT (IN)	COLD (IN)	SOIL OR WASTE (IN)	VENT (IN)			
A	WATER CLOSET FLOOR MOUNTED TANK TYPE PROVIDE TRIP LEVER ON "OPEN" SIDE OF WATER CLOSET (LEFT/RIGHT)	AMERICAN STANDARD "CADET PRO" RIGHT HEIGHT #215AA.104	---	1/2	3	2	FLOOR MOUNTED, 12" ROUGH-IN, 3" FLUSH VALVE, SIPHON JET FLUSH ACTION, VITREOUS CHINA, WITH "EVERCLEAN" SURFACE ELONGATED BOWL, 16.5" RIM HEIGHT, 1.28 GALLON FLUSH, AND FRONT MOUNT CHROME TRIP LEVER. FURNISH COMPLETE WITH MOUNTING BOLTS AND CAPS. COLOR: WHITE APT. SEAT: AMERICAN STANDARD, ELONGATED CLOSED FRONT WITH COVER, ANTIMICROBIAL. COLOR: WHITE PUBLIC SEAT: AMERICAN STANDARD, ELONGATED OPEN FRONT WITHOUT COVER, COLOR: WHITE PROVIDE FLOOR FLANGE, ALL MOUNTING HARDWARE, AND C.P. BRASS SUPPLY STOP AND SUPPLY.		
B	LAVATORY DROP-IN	AMERICAN STD AQUALYN MODEL# 0476.028	1/2	1/2	1-1/2	1-1/2	DROP IN TYPE LAVATORY, SELF-RIMMING WITH CUTOUT TEMPLATE, 4" CENTERS, FRONT OVERFLOW, FAUCET LEDGE, NOMINAL DIMENSIONS: 20-3/8"x17-3/8", BOWL SIZES: 16" WIDE, 10" FRONT TO BACK, 5-5/8" DEEP. FAUCET TO BE AMERICAN STANDARD COLONY PRO, MODEL 7075.006 SINGLE CONTROL CENTERSET, METAL LEVER HANDLE, GRID DRAIN, LESS POP-UP ROAD AND HOLE. CERAMIC DISC VALVE CARTRIDGE, ADJUSTABLE HOT LIMIT SAFETY STOP, LEAD FREE, SIMPLE INSTALLATION. FLOW TO BE 1.2 GPM.		
C	LAVATORY WALL-HUNG	AMERICAN STD LUCERNE MODEL# 0355.012	1/2	1/2	1-1/2	1-1/2	WALL-HUNG, VITREOUS CHINA, FRONT OVERFLOW, D-SHAPED BOWL, SELF-DRAINING DECK AREA WITH COUNTERED BACK AND SIDE SPLASH SHIELDS, FAUCET LEDGE, NOMINAL DIMENSIONS: 20-1/2"x18-1/4", BOWL SIZES: 15" WIDE, 10" FRONT TO BACK, 6-1/2" DEEP, DRILLED FOR CONCEALED ARM CARRIER, FAUCET TO BE AMERICAN STANDARD COLONY PRO, MODEL 7075.006 SINGLE CONTROL CENTERSET, METAL LEVER HANDLE, GRID DRAIN, LESS POP-UP ROAD AND HOLE. CERAMIC DISC VALVE CARTRIDGE, ADJUSTABLE HOT LIMIT SAFETY STOP, LEAD FREE, SIMPLE INSTALLATION. FLOW TO BE 1.2 GPM.		
D	SHOWER ACCESSIBLE	BEST BATH #4LSS631A75T	1/2	1/2	1-1/2	1-1/2	4-PIECE, OPEN TOP GELCOAT SHOWER ENCLOSURE, 60"x30" INSIDE DIMENSIONS, 63"x32 1/2"x81 1/2" OUTSIDE DIMENSIONS, 3/4" THRESHOLD (1/2" MAX AFTER FLOORING), CENTER DRAIN. SHOWER SHALL MEET ANSI A117.1 AND ADA REQUIREMENTS. UNIT SHALL BE PROVIDED WITH STAINLESS STEEL GRAB BARS (PER CT CODE), INTEGRAL FULL WOOD BLOCKING, CURTAIN AND ROD, CAULKLESS DRAIN WITH CHROME STRAINER, FOLD-UP SEAT, T-SHAPED WATER STOPPER AND SEMI-PERMANENT THRESHOLD ADAPTER. COLOR SELECTED BY ARCHITECT. PROVIDE SHOWER VALVE PACKAGE INCLUDING SYMMONS 9600-PLR-X PRESSURE BALANCING MIXING VALVE WITH LEVER HANDLE, INTEGRAL SERVICE STOPS, ADJUSTABLE STOP SCREW TO LIMIT HANDLE TURN, CHROME HAND SHOWER WITH IN-LINE VACUUM BREAKER, FLEXIBLE 60" HOSE, 1.5 GPM FLOW RESTRICTOR, SUPPLY ELBOW, AND 30" X 1 1/4" STAINLESS STEEL GRAB/GLIDE BAR WITH SLIDER FOR HAND SHOWER MOUNTING.		
E	TUB/SHOWER & SURROUND	BEST BATH #4RTS6030	1/2	1/2	1-1/2	1-1/2	FOUR PIECE TUB/SHOWER MODEL, CONSTRUCTED OF GELCOAT/FIBERGLASS WITH FULLY INTEGRAL PLYWOOD BACKING IN THE WALLS, DOOR OPENING 57-1/2"x55-1/4", "REALTILE" WALL FINISH, COLOR TO BE SELECTED BY THE ARCHITECT. PROVIDE SYMMONS "ALLURA" TUB AND SHOWER SYSTEM S-4702-X-1.5-LR, PRESSURE BALANCING MIXING VALVE INCLUDES INTEGRAL SERVICE STOPS TO ALLOW WATER SHUT-OFF FOR SERVICE, SHOWERHEAD HAS 3 MODES FLOOD, MIST, PULSE SPRAY, SHOWER HEAD MOUNTING ARM & FLANGE, TUB SPOUT, SECONDARY INTEGRAL DIVERTER HANDLE, LEVER HANDLE, SHOWERHEAD HAS A 1.5 GPM FLOW RATE RESTRICTOR. POLISHED CHROME FINISH.		
F	KITCHEN SINK	ELKAY LUSTERTONE LRAD331955	1/2	1/2	1/2	1-1/2	ELKAY LUSTERTONE STAINLESS STEEL 33"x19-1/2"x5-1/2", EQUAL DOUBLE BOWL TOP MOUNT, SINK IS MANUFACTURED FROM 18 GAUGE 304 STAINLESS STEEL WITH A LUSTERTONE FINISH, REAR CENTER DRAIN, FULL SPRAY SIDES AND BOTTOM. SINGLE HOLE. FAUCET TO BE DELTA KITCHEN FAUCETS, MODEL 472-DST, SINGLE HANDLE, 8" LONG SPOUT WITH 6-1/4" PULL-OUT SPRAY, NESTLED IN ALL METAL HUB ASSEMBLY, SWINGS 120°, PULL-OUT SPOUT OPERATES IN AERATED OR SPRAY MODE VIA SIDE-TO-SIDE PUSH LEVER, CONTROL MECHANISM SHALL BE THE DIAMOND COATED CERAMIC CARTRIDGE, TOUCH CLEAN SPRAYHEAD, 1.8GPM, INTEGRAL DOUBLE CHECK VALVES IN SPOUT.		
G	SHOWER	BEST BATH #4LRS3636B5T	1/2	1/2	1-1/2	1-1/2	MOLDED, FOUR PIECE GELCOAT/FIBERGLAS SHOWER, "REALTILE" WALL FINISH, COLOR WHITE STANDARD, INTEGRAL FULL WOOD BACKING FOR STRENGTH, SHOWER TO BE 36x36. PROVIDE SYMMONS "DEGAS" SHOWER SYSTEM 5401-X-1.5, INTEGRAL SERVICES STOPS INCLUDED WITH TEMPTROL MIXING VALVE TO ALLOW WATER SHUT-OFF FOR SERVICE, -1.5 FLOW RATE RESTRICTOR, POLISHED CHROME FINISH. SHOWERHEAD IS 7-1/2" DIAMETER WITH THREE MODES, SHOWERHEAD MOUNTING BRACKET AND FLANGE.		
H	WASHING MACHINE OUTLET BOX	OATEY PN- 38540	1/2	1/2	2	2	OATEY QUADTRO@WASHING MACHINE OUTLET BOXES CAN BE USED IN COMMERCIAL OR RESIDENTIAL APPLICATIONS WHICH REQUIRE SUPPLY VALVES AND WASTE DRAIN RECESSED INTO THE WALL. AVAILABLE WATER HAMMER ARRESTOR OPTION PROVIDES WATER PRESSURE SHOCK ARRESTORS REQUIRED FOR INSTALLATION ON SUPPLY LINES TO QUICK CLOSING VALVES. 1/4" TURN BRASS HAMMER BALL VALVES COPPER SWEAT - STANDARD PACK.		

PLUMBING GENERAL NOTES

- THESE GENERAL NOTES ARE APPLICABLE TO ALL PLUMBING DRAWINGS.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FIXTURE LOCATIONS AND MOUNTING HEIGHTS.
- INSTALL ALL HANDICAP ACCESSIBLE FIXTURES IN ACCORDANCE WITH ADA AND ANSI REQUIREMENTS.
- DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL INTENT OF WORK, SEE DETAILS, SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- PLUMBING CONTRACTOR MUST REVIEW DRAWINGS OF THE OTHER TRADES AS PART OF THIS CONTRACT FOR ADDITIONAL WORK REQUIRED AND OR COORDINATION OF HIS WORK FOR OPERATIONS OR CONNECTIONS TO OTHER SYSTEMS.
- ALL BRANCH RUNOUTS SHALL HAVE ISOLATION VALVES INSTALLED WHETHER SHOWN OR NOT.
- ALL PLUMBING VALVES INSTALLED ABOVE CEILINGS SHALL BE PROVIDED WITH ACCESS PANELS (WHERE APPLICABLE).
- THE PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL AT ALL QUICK-CLOSING VALVES AND WHERE SHOWN ON THE PLANS, WATER HAMMER ARRESTORS. WATER HAMMER ARRESTORS SHALL BE PROVIDED ON ALL BRANCH LINES SERVING NEW FIXTURES.
- THE PLUMBING CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES FOR THE ROUTING AND INSTALLATION OF ALL SYSTEMS TO AVOID CONFLICTS BETWEEN PLUMBING AND OTHER TRADES.
- REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE RATED WALLS, SMOKE RESISTANT WALLS AND SEISMIC RATED WALLS.
- PROVIDE FIRE STOPPING IN PIPE PENETRATIONS OF NEW AND/OR EXISTING WALLS IN ACCORDANCE WITH ARCHITECTURAL AND PLUMBING SPECIFICATIONS.
- LOCATE SANITARY VENTS MINIMUM 10'-0" FROM ANY AIR INTAKE.



- NOTES:**
- FIRE STOPPING TO CONFORM TO UL SYSTEM #147 ASSEMBLY
 - THE SPACE BETWEEN THE PENETRATING ITEM AND WALL BOARD MUST ACCOMMODATE AT LEAST ONE WRAP OF 3M BARRIER FS-195 WRAP/STRIP.
 - FILL ANNULAR SPACE WITH FS-195 WRAP/STRIP UNTIL THE SPACE IS LESS THAN 1/4".
 - THE WALL PENETRATION FIRESTOPS MUST BE INSTALLED ON BOTH SIDES OF THE WALL.
- 1** GYPSUM WALL PENETRATION FIRESTOP DETAIL
SCALE: NOT TO SCALE

GAS FIRED WATER HEATER SCHEDULE

TAG	MFR	MODEL	LOCATION	FUEL TYPE	MBH INPUT	STORAGE CAP. (GAL.)	RECOVERY IN GPH @ 100°F	THERMAL EFFICIENCY %	STANDBY LOSSES BTU/HR	VENT SIZE	GASS CONN.	INLET/OUTLET WATER CONN.	VOLTS/φ	REMARKS
DWH-1	A.O. SMITH	BTH-120LP	MECH ROOM	PROPANE	120	60	138	95	N/A	4" AL29-4C	3/4	1-1/2"	120/1	CONTRACTOR TO PROVIDE START-UP WITH FULL WRITTEN REPORT. WATER HEATER TEMPERATURE SET AT 140°F.

GENERAL NOTES:

- THE WATER HEATER SHALL BE FACTORY ASSEMBLED, AND SHALL INCLUDE HOOKUPS FOR ELECTRICAL, GAS, VENTING AND PLUMBING. THE BURNER SHALL BE A HIGH EFFICIENCY TYPE. IGNITION SHALL BE BY AN ELECTRONIC PILOT SYSTEM WITH AUTOMATIC SAFETY CONTROLS. FOR HIGH LIMIT, GAS PRESSURE REGULATOR, VENTING SHALL BE U.L. RATED FOR USE WITH CPVC. THE WATER HEATER SHALL BE CONSTRUCTED TO ASME CODE, CERTIFIED BY CSA, AND APPROVED BY NSF FOR DOMESTIC HOT WATER USE.
- PROVIDE ASME PRESSURE/TEMPERATURE RELIEF VALVE FOR THE WATER HEATER.
- THE WATER HEATER SHALL COMPLY WITH THE ENERGY EFFICIENCY REQUIREMENTS FOR STANDBY LOSS AND THERMAL EFFICIENCY AS SPECIFIED IN THE LATEST EDITION OF ASHRAE 90.1 STANDARD.

DOMESTIC EXPANSION TANK SCHEDULE

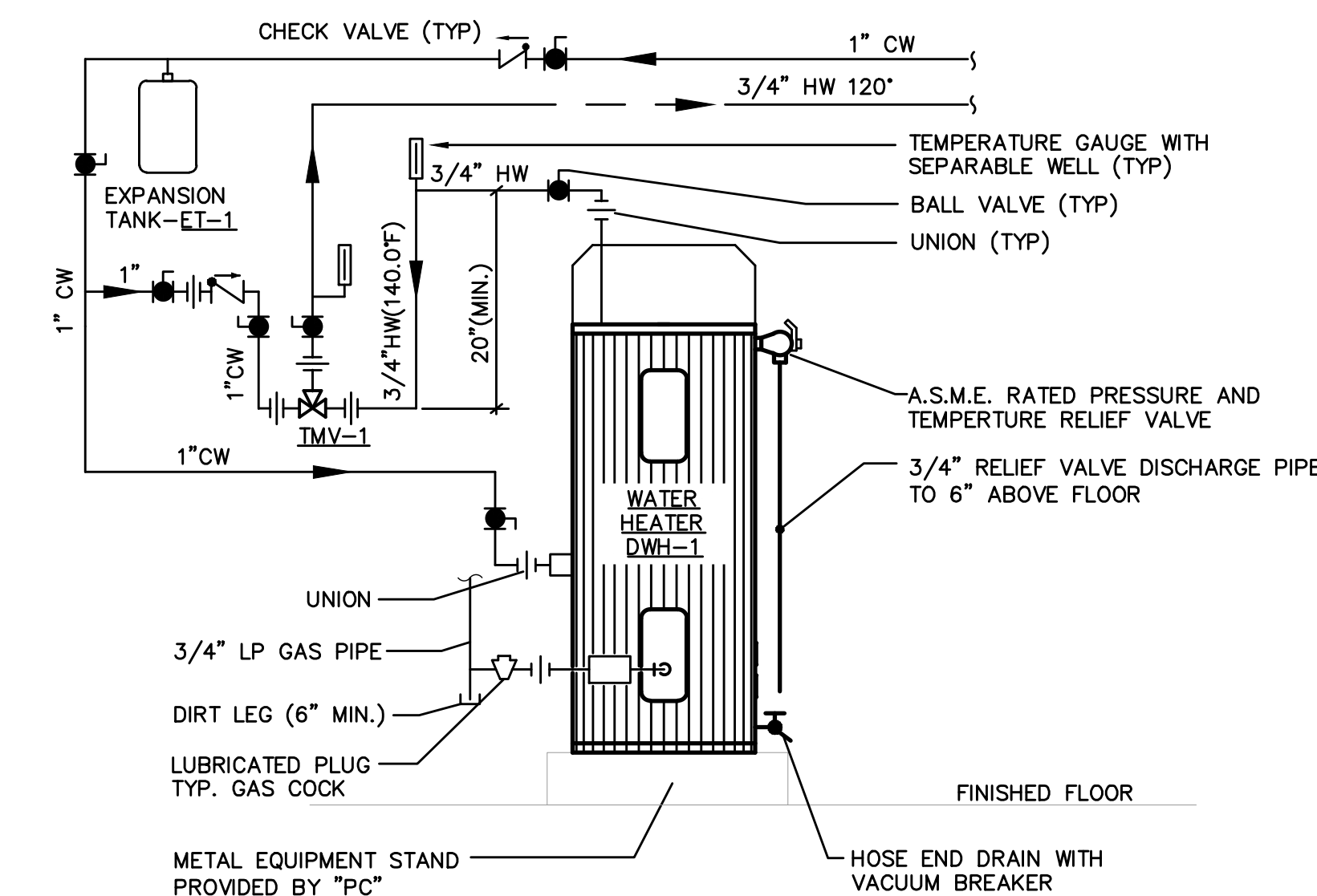
TAG	MFR	MODEL	SYSTEM SERVED	GAL	ACCEPT FACTOR	AIR PRE-CHARGE (PSIG)	MAX PRESSURE (PSIG)	REMARKS
ET-1	AMTROL	ST-8	DOMESTIC WATER HEATING	3.2	1.9	50	150	FOR POTABLE WATER, FIXED BUTYL BLADDER

MIXING VALVE SCHEDULE

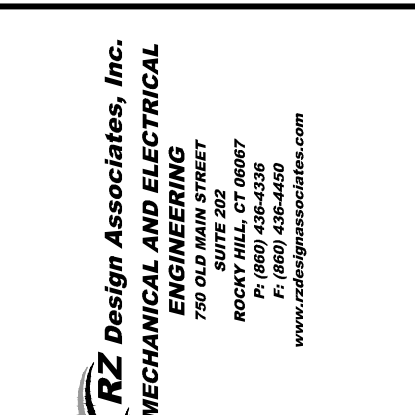
TAG	MFR	MODEL	TYPE	GPM	MAX PRESSURE DROP	MIN GPM WITH ACCURATE TEMP.	OUTLET SET TEMP. (°F)	SIZE (INLET, OUTLET)	UNIT COMPLIANCE	REMARKS
TMV-1	ACORN CONTROLS	MV17-2	BRONZE THERMOSTATIC	21.2	10	1	120°	3/4" INLET 1" OUTLET	ASSE 1017	BRASS VALVE WITH (2) 1/2" NPT BRASS BALL VALVES SHIPPED LOOSE.

CONDENSATE PUMP

TAG	MFR	MODEL	LOCATION	SYSTEM SERVED	INLET/DISCHARGE, VENT	CAPACITY GPM	CAPACITY FT. OF HD.	ELECTRICAL					REMARKS
								VOLTS	PH	HZ	HP	AMPS	
CDP-1	LIBERTY	LCU-20S	DWH-1 ROOM	DWH-	3/4"	15	15	115	1	60	1/30	1.5	2 GAL CAPACITY, BUILT IN SAFETY SWITCH



2 GAS FIRED WATER HEATER PIPING DIAGRAM
SCALE: N.T.S.



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Danielson Domestic Violence Shelter
Scheduled Renovations and Modernizations
Killingly, CT.

PLUMBING SCHEDULES & DETAILS	
PROJECT NO:	2017-03.12
SCALE:	1/8"=1'-0"
DRAWN BY:	JRB
CHECKED BY:	RZ
DATE:	DEC 23RD, 2019
P-200	

PLUMBING SPECIFICATIONS

GENERAL CONDITIONS OF THE CONTRACT

IT IS THE INTENT OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.

WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS SPECIFIED AND AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE FOLLOWING SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

ITEMS AND SERVICES NOT SHOWN ON THE DRAWINGS OR STATED IN THE SPECIFICATIONS, BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.

DRAWINGS ARE DIAGRAMMATIC AND ARE NOT TO BE SCALED. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR.

GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED.

THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES, EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION.

THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED AND PAY ALL APPLICABLE FEES. INCLUDED SHALL BE ANY UTILITY COST ASSOCIATED WITH ANY NEW OR MODIFIED SERVICES.

PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT'S GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS AS REFERENCED OR STATED.

WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIAL, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, AND ADMINISTRATIVE TASKS/DUTIES REQUIRED TO COMPLETE AND MAKE OPERABLE WORK SHOWN ON THE DRAWINGS OR SPECIFIED HEREIN.

STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.

COORDINATION

CONTRACTOR IS REQUIRED TO OBTAIN COMPLETE SETS OF THE CONTRACT DOCUMENTS FOR COORDINATION WITH ALL OTHER TRADES.

SHOP DRAWINGS

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER INITIAL REVIEW AND APPROVAL, REVISED IF REQUIRED AND RESUBMITTED AS PER ENGINEER'S COMMENTS PRIOR TO CONSTRUCTION.

ACCEPTANCE OF DEVIATIONS OR SUBSTITUTIONS FROM BASE SPECIFIED ITEMS OR EQUIPMENT SHALL BE AT THE ENGINEERS DISCRETION. ANY CHANGES REQUIRED FOR ACCOMMODATION SHALL BE AT NO ADDITIONAL COST.

OWNER'S MANUAL AND AS-BUILT DRAWINGS

UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE AN OWNER'S MANUAL WITH AS-BUILT DRAWINGS REFLECTING INSTALLED CONDITIONS.

THE OWNER'S MANUAL SHALL CONSIST OF ALL DOCUMENTATION PROVIDED AS SHOP DRAWINGS AND MANUALS PACKED WITH EQUIPMENT. THE OWNER'S MANUALS SHALL BE IN A THREE RING BINDER. PROVIDE NAMES AND PHONE NUMBERS OF SUPPLY HOUSES WHERE PARTS MAY BE PURCHASED.

AS-BUILT DRAWINGS SHALL CONSIST OF FIELD MARK-UPS TO THE CONSTRUCTION DRAWINGS AND INCLUDE ANY ADDITIONAL DETAILS TO CLEARLY REFLECT INSTALLED CONDITIONS. ANY ISSUED OR SUPPLEMENTAL SKETCHES OR DIRECTIVES SHALL BE INCORPORATED INTO THE FINAL CONSTRUCTION MARK-UPS.

CONTRACTOR SHALL MAINTAIN, ON-SITE, A FIELD MARK-UP SET OF DOCUMENTS WHICH SHALL BE KEPT CURRENT WITH ANY CHANGES FROM THE ORIGINAL CONTRACT DOCUMENTS. THESE MARK-UPS ARE TO BE PROVIDED AS AS-BUILT DRAWINGS FOR COMPARISONS.

BASES, HANGERS AND SUPPORTS

THE CONTRACTOR SHALL PROVIDE, OR CAUSE TO BE PROVIDED BY ANOTHER CONTRACTOR, ALL REQUIRED BASES AND SUPPORTS FOR PIPING AND EQUIPMENT PROVIDED UNDER THESE SPECIFICATIONS.

PROVIDE ADJUSTABLE CLEVIS HANGERS FOR ALL SINGLE RUN PIPING. WHERE REQUIRED, OVERSIZE TO ACCOMMODATE INSULATION TO PASS THROUGH. PROVIDE INSULATION SHIELDS. WHERE POSSIBLE, GROUP PIPING TO ALLOW TRAPEZE. HANGERS TO BE USED.

PROVIDE ALL ANCHORS, INSERTS AND BEAM CLAMPS REQUIRED FOR HANGERS AND SUPPORTS. IF ADDITIONAL STRUCTURAL MEMBERS OR SUPPORTS ARE REQUIRED, THE CONTRACTOR IS TO COORDINATE WITH THE STRUCTURAL CONTRACTOR FOR PROVISION OF THESE MEMBERS. ALL PIPING AND EQUIPMENT IS TO BE SECURELY FASTENED TO THE BUILDING STRUCTURE IN AN ACCEPTABLE MANNER.

PIPE SEALS AND FIRE-STOPS

SEAL ALL PIPING PASSING THROUGH FIRE AND/OR SMOKE RATED PARTITIONS, WALLS AND FLOORS WITH A UL LISTED, APPROVED AND TESTED FIRE AND/OR SMOKE SEALING MATERIAL EQUIVALENT TO THE RATING OF THE WALL, PARTITION OR FLOOR. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR COMPATIBILITY WITH WALL AND FLOOR CONSTRUCTION.

CLEANING AND PROTECTION AGAINST FOREIGN MATTER

THE JOBSITE SHALL BE KEPT CLEAN AT ALL TIMES. CAP EXPOSED PIPING AND COVER FLOOR DRAINS TO INSURE ADEQUATE PROTECTION AGAINST THE ENTRANCE OF FOREIGN MATTER.

AT COMPLETION OF THE PROJECT, ALL EQUIPMENT, FIXTURES, ETC. SHALL BE CLEANED.

GUARANTEES

IN ADDITION TO THE CONTRACTOR'S GUARANTEE, PROVIDE ALL APPLICABLE EXTENDED GUARANTEES FOR EQUIPMENT.

PLUMBING PIPING INSULATION

PROVIDE 1" GLASS FIBER INSULATION FOR ALL NEW COPPER PIPING (HOT AND COLD WATER), INCLUDES INSULATION FOR FITTINGS AND VALVES. INSULATION TO BE AS MANUFACTURED BY KNAUF, MANVILLE, OWENS-CORNING OR CERTAIN-TEED.

AT ALL FITTINGS AND VALVES PROVIDE PRE-MOLDED PVC JACKET BY ZESTON.

BEFORE INSTALLING INSULATION, ALL REQUIRED PIPING IS TO BE TESTED AND APPROVED.

INSULATION IS TO PASS CONTINUOUSLY THROUGH HANGERS, WALLS, SLEEVES AND OTHER PIPE PENETRATIONS.

AT CONTRACTORS OPTION, CLOSED CELL ELASTOMERIC THERMAL PIPE INSULATION MAY BE USED IN LIEU OF FIBERGLASS. MINIMUM 1/2" ARMAFLEX SELF-SEALING PIPE INSULATION.

PLUMBING PIPING

PIPING MATERIAL SHALL BE AS FOLLOWS:

SANITARY/WASTE PIPING ABOVE AND BELOW FLOOR SLAB:
 POLYVINYL CHLORIDE (PVC) DWV. SCHEDULE 40 SOLID CORE, ASTM D1785/ASTM D2665 DUAL MARKED, GLUED FITTINGS

VENT PIPING ABOVE AND BELOW FLOOR SLAB:
 POLYVINYL CHLORIDE (PVC) DWV. SCHEDULE 40 SOLID CORE, ASTM D1785/ASTM D2665 DUAL MARKED, GLUED FITTINGS

WATER PIPING:
 COPPER/COPPER ALLOY, TYPE "K" NSF 61, ASTM B75, ASTM B88, ASTM B251, ASTM B447, SOLDER OR PRESS FITTINGS

BALL VALVES SHALL BE BRONZE, TWO PIECE, FULL PORT, EXTENDED LEVER HANDLE FOR INSULATION, CLASS 150-400 PSI WOG, AS MANUFACTURED BY MILWAUKEE, NIBCO, WATTS OR APOLLO.

NO PIPING SHALL BE COVERED UNTIL TESTED AND APPROVED BY THE AUTHORITIES HAVING JURISDICTION.

PIPING SHALL BE RUN CONCEALED IN FURRED SPACES, CHASES, WALLS, ETC. CONTRACTOR SHALL OBTAIN PERMISSION TO RUN EXPOSED PIPING.

PROVIDE ISOLATION AND SHUT-OFF VALVES AT ALL BRANCH LINES AND EQUIPMENT.

PROVIDE LISTED AND APPROVED DIELECTRIC FITTINGS WHEN JOINING DISSIMILAR METALS.

RUN ALL SANITARY AND WASTE PIPING AT A MINIMUM OF 1/8" PER FOOT FOR PIPING. SLOPE VENT PIPING TO DRAIN.

PIPE HANGERS SHALL BE PLACED ADJACENT TO MOTOR DRIVEN EQUIPMENT. HANGERS AND SUPPORTS SPACING SHALL BE AS FOLLOWS:

COPPER PIPING

1/2" TO 1-1/4" AT MAXIMUM 6'-0" SPACING
 1-1/2" TO 3" AT MAXIMUM 10'-0" SPACING

PVC PIPING

AT MAXIMUM 4'-0" SPACING ALL SIZES.

WATER PIPING IS TO BE FLUSHED IN ACCORDANCE WITH LOCAL AND STATE HEALTH REGULATIONS. AFTER FLUSHING, THE WATER IS TO BE TESTED BY THE CONTRACTOR THROUGH AN INDEPENDENT LAB WITH A WRITTEN REPORT.

ALL NEW WATER, SANITARY, WASTE, AND VENT PIPING SHALL BE PRESSURE TESTED AS FOLLOWS:

SANITARY, WASTE, AND VENT PIPING - HYDROSTATIC TEST AT 10 FT HEAD FOR A MINIMUM 4 HOURS. SUBMIT WRITTEN/SIGNED TEST RESULTS.

WATER PIPING - HYDROSTATIC TEST AT 125 PSI OR 1-1/2 TIMES OPERATING PRESSURE (WHICHEVER IS GREATER) FOR A MINIMUM 4 HOURS WITH MAXIMUM LOSS OF 2 PSI. SUBMIT WRITTEN/SIGNED TEST RESULTS. AIR TESTING WILL NOT BE ACCEPTABLE.

PLUMBING PIPING SPECIALTIES

CLEANOUTS IN INTERIOR FINISHED FLOORS SHALL HAVE A CAST IRON BODY WITH ANCHOR FLANGE, THREADED TOP ASSEMBLY AND ROUND GASKETED SCORED COVER. FOR FINISHED FLOORS PROVIDE DEPRESSED COVER TO ACCEPT FLOOR FINISH.

WATER HAMMER ARRESTORS SHALL BE STAINLESS STEEL CONSTRUCTION, BELLOWS TYPE, PRECHARGED. AIR CHAMBERS ARE NOT ACCEPTABLE. INSTALL WATER HAMMER ARRESTORS AT ALL QUICK CLOSING VALVES, ON HOT AND/OR COLD WATER SUPPLIES TO NEW INDIVIDUAL FIXTURES OR IN BANKS OF FIXTURES.

PLUMBING EQUIPMENT AND FIXTURES

ALL PLUMBING EQUIPMENT AND FIXTURES SHALL BE NEW, COMPLETE WITH ALL TRIM AS SPECIFIED.

FOR ALL EQUIPMENT AND FIXTURES, INSTALL AS PER MANUFACTURER'S INSTRUCTIONS, AS REQUIRED BY CODE, AND IN COMPLIANCE WITH CONDITIONS FOR CERTIFICATION (IF ANY). RETAIN ALL INFORMATION, MANUALS AND PARTS DIAGRAMS PACKAGED WITH THE UNITS.

COORDINATE ALL RELATED ELECTRICAL WORK AND REQUIRED CONNECTIONS TO ACHIEVE AN OPERATIONAL SYSTEM.

ALL EQUIPMENT SHALL BE UL TESTED AND APPROVED AND IF APPLICABLE SHALL HAVE NSF CERTIFICATION.

PLUMBING FIXTURES SHALL BE INSTALLED WITH TRIM, INCLUDING BUT NOT LIMITED TO, FAUCETS, CARRIERS, WATER SUPPLIES, SUPPLY STOPS, TRAPS, TAILPIECES, HARDWARE, HANGERS/SUPPORTS, AND FASTENING DEVICES.

PLUMBING FIXTURES AND TRIM SHALL BE OF THE MANUFACTURER LISTED ON THE DRAWINGS OR AN APPROVED EQUAL MEETING THE OPERATIONAL CHARACTERISTICS, FUNCTION, SIMILAR APPEARANCE AND QUALITY OF THE SPECIFIED ITEMS.

FOR ALL EXPOSED PIPING TO FIXTURES, PROVIDE CHROME PLATED PIPES, ESCUTCHEONS AT WALLS, SUPPLY TUBES AND SUPPLY STOPS. DRAIN PIPING SHALL BE MINIMUM 17 GA, CHROME PLATED CAST BRASS, P-TRAPS SHALL HAVE CLEANOUT PLUGS.

SEAL FIXTURES TO WALLS AND FLOOR WITH APPROVED SILICONE SEALANT, COLOR TO MATCH FIXTURE COLOR OR CLEAR.

LIQUID PETROLEUM (LP) GAS PIPING SYSTEM

UNLESS OTHERWISE NOTED ON THE PLANS, GAS PIPING SHALL BE AS FOLLOWS:

GAS PIPING TO BE SCHEDULE 40 BLACK STEEL WITH MALLEABLE IRON FITTINGS, ASTM A53. PIPE THREADS TO BE TAPERED AND PIPING SHALL SLOPE TOWARDS EQUIPMENT WITH DRIPS AT LOW POINTS AND EQUIPMENT. ASME B1.20.1

ALL PIPING SHALL BE TESTED IN COMPLIANCE WITH THE CONNECTICUT GAS CODE AND NFPA 58 WITH ALL DOCUMENTATION OF TESTS SIGNED BY CONTRACTOR. TEST WITH COMPRESSED AIR OR OTHER INERT GAS.

SLOPE PIPING UPWARDS AT A MINIMUM OF 1/4" IN 15'-0" HORIZONTAL PIPE RUN.

GAS CONNECTORS TO EQUIPMENT SHALL BE MADE WITH CCST FLEXIBLE CONNECTORS.

ALL PIPING UP TO 2" SHALL BE THREADED, 2-1/2" AND LARGER SHALL BE WELDED.

VALVING SHALL BE BALL VALVES (BRONZE BODY, BRASS STEM PTFE SEAT) FOR PIPING UP TO 2" AND IRON BODY GAS COCKS (BRASS PLUG AND WASHER) FOR PIPING 2-1/2" AND LARGER. CSA CERTIFIED/UL LISTED.

ALL GAS PIPING SHALL BE PAINTED WITH PRIMER AND TWO COATS YELLOW ENAMEL WITH PIPE LABELS SPACED AT MAXIMUM 4'-0" INTERVALS. LABELS TO INDICATE LP GAS AND PSI GAS PRESSURE.

ABBREVIATIONS			
AFF	ABOVE FINISHED FLOOR	INV. ELEV.	INVERT ELEVATION
BFP	BACKFLOW PREVENTER DEVICE	PRV	PRESSURE REDUCING VALVE
BV	BALANCE VALVE	PSI	POUNDS PER SQUARE INCH
DHW, C, CW	COLD WATER	SI	SOLIDS INTERCEPTOR
CO	CLEANOUT	SAN	SANITARY
CND	CONDENSATE DRAIN PIPING	T&P	TEMP. & PRESS. RELIEF VALVE
FD	FLOOR DRAIN	TP	TRAP PRIMER
FS	FLOOR SINK	TMV	THERMOSTATIC MIXING VALVE
GPM	GALLONS PER MINUTE	V	VENT
DHW, H, HW	HOT WATER	VIF	VERIFY IN FIELD
HB	HOSE BIBB	VTR	VENT THRU ROOF
HC	HANDICAPPED ACCESSIBLE	W	WASTE
HWR	HOT WATER RECIRCULATION	WCO	WALL CLEANOUT
IW	INDIRECT WASTE	WHA	WATER HAMMER ARRESTOR

PLUMBING SYMBOL LEGEND	
	SANITARY OR WASTE PIPING
	VENT PIPING
	COLD WATER PIPING
	HOT WATER PIPING
	THERMOMETER
	PRESSURE GAUGE
	WATER HAMMER ARRESTER
	STRAINER - 'Y' TYPE
	P-TRAP
	FLOOR DRAIN
	TRAP PRIMER
	UNION
	BALANCING VALVE
	BALL VALVE
	CHECK VALVE
	ANGLE VALVE
	WALL HYDRANT (W.H.) or HOSE BIBB (H.B.)
	WATER PRESSURE REDUCING VALVE (* = PSI SETTING)
	TEMPERATURE & PRESSURE RELIEF VALVE (T&P)
	WATER METER
	CONNECT TO EXISTING
	FIXTURE TYPE (REFER TO SPECIFICATIONS OR FIXTURE SCHEDULE)
	ADA ACCESSIBLE FIXTURE