

PLUMBING ABBREVIATIONS

AHJ	AUTHORITY HAVING JURISDICTION
ASJ	ALL SERVICE JACKET
AP	ACCESS PANEL
BT	BATH TUB
BWV	BACKWATER VALVE
CA	COMPRESSED AIR
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CLDI	CEMENT LINED DUCTILE IRON
CO	CLEAN OUT
CONC	CONCRETE
CP	CHROME PLATED
CTE	CONNECT TO EXISTING
CW	COLD WATER
CWR	COLD WATER RETURN
CWS	COLD WATER SUPPLY
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DCW	DOMESTIC COLD WATER
DF	DRINKING FOUNTAIN
DHW	DOMESTIC HOT WATER
DIA	DIAMETER
DWV	DRAIN, WASTE, VENT
ELEV	ELEVATION
FCO	FLOOR CLEAN OUT
FEC	FIRE EXTINGUISHER CABINET
FHV	FIRE HOSE VALVE
FLR	FLOOR
FP	FIRE PROTECTION
FS	FLOW SWITCH
FT	FOOT OR FEET
FV	FLUSH VALVE
G	GAS
GALV	GALVANIZED
GCO	GRADE CLEAN OUT
GI	GREASE INTERCEPTOR
GPF	GALLONS PER FLUSH
GPM	GALLONS PER MINUTE
GW	GREASE WASTE
HO	HOT WATER
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
ID	INSIDE DIAMETER
INV	INVERT
IW	INDIRECT WASTE
LP	LIQUEFIED PETROLEUM
MECH	MECHANICAL
MSB	MOP SERVICE BASIN
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OD	OUTSIDE DIAMETER
OED	OPEN END DRAIN
PV	POST INDICATOR VALVE
PLBG	PLUMBING
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
RPZ	REDUCED PRESSURE ZONE
SAN	SANITARY
SD	STORM DRAINAGE
SHWR	SHOWER
SL	SANITARY SEWER, SOIL STACK, STAINLESS STEEL
TLT	TOILET
THW	TEMPERED HOT WATER
TMV	THERMOSTATIC MIXING VALVE
TS	TAMPER SWITCH
TW	TEMPERED WATER
TYP	TYPICAL
U	URNAL
V	VENT
VB	VACUUM BREAKER
VS	VENT STACK
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET (TOILET)
WCO	WALL CLEAN OUT
WS	WASTE STACK

GENERAL PLUMBING NOTES

GENERAL REQUIREMENTS

- ALL PLUMBING AND PIPING WORK ON THIS PROJECT SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE STATE PLUMBING CODE, THE FEDERAL CLEAN WATER ACT, AND ALL APPLICABLE LOCAL CODES AND ORDINANCES. IF A CONFLICT IS FOUND TO EXIST BETWEEN APPLICABLE CODES THE MORE STRINGENT SHALL APPLY.
- THE SPECIFICATIONS ARE AS BINDING ON THE CONTRACTOR AS THE DRAWINGS. THE CONTRACTOR SHALL READ THE SPECIFICATIONS AND SHALL INCLUDE ALL ITEMS REQUIRED BY THE SPECIFICATIONS BEFORE SUBMITTING A BID.
- THE SUBMISSION OF A PROPOSAL WILL BE CONSIDERED EVIDENCE THAT THE CONTRACTOR IS FAMILIAR WITH THE DRAWINGS, SPECIFICATIONS, BUILDING SITE, AND OTHER INFORMATION PRESENTED FOR THE CONSTRUCTION OF THIS PROJECT. CLAIMS MADE SUBSEQUENT TO THE PROPOSAL FOR MATERIALS AND LABOR BECAUSE OF DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED, IF THEY COULD HAVE BEEN FORESEEN HAD A COMPLETE AND THOROUGH EXAMINATION HAD BEEN MADE.
- DO NOT SCALE DIRECTLY FROM THE PLUMBING DRAWINGS. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONAL INFORMATION.
- THE CONTRACTOR SHALL GUARANTEE ALL WORK FOR WHICH MATERIALS ARE FURNISHED, FABRICATED OR FIELD ERECTED. ALL FACTORY ASSEMBLED EQUIPMENT FOR WHICH NO SPECIFIC MANUFACTURER GUARANTEE IS FURNISHED AND ALL WORK IN CONNECTION WITH THE INSTALLATION OF MANUFACTURER GUARANTEED EQUIPMENT. THIS CONTRACTOR'S GUARANTEE SHALL EXIST FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL OWNER ACCEPTANCE OF THE WORK AND SHALL APPLY TO ALL DEFECTS IN MATERIALS AND/OR WORKMANSHIP OF ANY KIND.
- ALL PERMITS AND FEES REQUIRED FOR THE WORK SHALL BE PAID FOR AND SECURED BY THE CONTRACTOR AND SHALL BE INCLUDED IN THE BID PRICE.
- ALL EQUIPMENT, FIXTURES, AND MATERIAL SHALL BE NEW AND UNUSED AND SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER RECOMMENDATIONS AND INSTRUCTIONS. PROVIDE COMPLETE WITH ALL TRIM, STOPS, HANGERS, CARRIERS, STAND-OFFS, SUPPORTS, ETC. INCLUDING PROVISIONS FOR BARRIER FREE USE WHERE REQUIRED. WHERE FIXTURES ARE ACCESSIBLE, THEY MUST COMPLY WITH ALL FEDERAL, STATE AND LOCAL ADA REGULATIONS.
- ALL EQUIPMENT, FIXTURES, DEVICES, ETC. SHALL BE AS SPECIFIED OR APPROVED EQUAL. SUBSTITUTIONS SHALL MEET ALL CRITERIA (PERFORMANCE, WARRANTY, ETC.) OF THE SPECIFIED ITEMS.
- MATERIALS, EQUIPMENT, ASSEMBLIES, AND SYSTEMS SHALL MEET ALL PERTINENT REQUIREMENTS OF NATIONALLY RECOGNIZED TESTING ORGANIZATIONS SUCH AS ASTM, ASSE, AWWA, AGA, AND NFPA AS WELL AS THE MOST RECENT VERSION OF APPLICABLE STATE AND LOCAL CODES.
- WHERE JOB CONDITIONS REQUIRE CHANGES FROM THE CONTRACT DOCUMENTS THAT DO NOT CHANGE THE SCOPE OR NATURE OF THE WORK REQUIRED, THE CONTRACTOR SHALL MAKE SUCH CHANGES WITHOUT ADDITIONAL COST TO THE OWNER. NO OTHER CHANGES WILL BE MADE WITH THE EXPRESSED WRITTEN CONSENT OF THE OWNER.
- THE CONTRACTOR SHALL SUPPLY TO THE ENGINEER DIGITAL COPIES OF MANUFACTURER'S SHOP DRAWING INFORMATION FOR APPROVAL SO THE QUALITY OF INTENDED MATERIALS OR EQUIPMENT CAN BE REVIEWED PRIOR TO INSTALLATION.
- ALL INSTALLED SYSTEMS, DEVICES AND RELATED ITEMS SHALL BE TESTED IN PLACE ON SITE. REPLACE ALL CONTRACTOR SUPPLIED DEFECTIVE DEVICES, ITEMS OR SYSTEMS AT CONTRACTOR'S EXPENSE PRIOR TO FINAL COMPLETION OF THE PROJECT.
- CONTRACTOR SHALL PROVIDE AS BUILT DRAWINGS OF ALL PLUMBING AND PIPING SYSTEMS UPON COMPLETION OF THE PROJECT.

COORDINATION

- THE CONTRACTOR SHALL VERIFY SERVICE POINTS AND METERING LOCATIONS FOR THIS PROJECT WITH ALL LOCAL UTILITY PROVIDERS (DOMESTIC WATER, FIRE PROTECTION, SANITARY SEWER, NATURAL GAS). VERIFY SEWER INVERT AT THE CONNECTION POINT TO DETERMINE THE DEPTH OF THE HIGHEST PLUMBING FIXTURE. IF INVERT IS FOUND TO BE SHALLOW CONTACT THE ENGINEER IMMEDIATELY.
- THE EQUIPMENT ROUGH-IN ITEMS AND THEIR DIMENSIONED LOCATIONS FOR ALL CONNECTIONS ARE ACCURATE TO THE BEST OF OUR KNOWLEDGE. IN SOME INSTANCES, THE OWNER OR SUPPLIER MAY MAKE SUBSTITUTIONS, OR THE EQUIPMENT ITEMS MAY VARY FROM WHAT IS SHOWN ON THE DRAWINGS. THEREFORE, THESE ITEMS AND DIMENSIONS SHALL BE VERIFIED WITH THE EQUIPMENT SUPPLIER, OWNER, AND EQUIPMENT ROUGH-IN DRAWINGS. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED PRIOR TO CONSTRUCTION OF ANY DEVIATIONS OF THAT SHOWN OR IMPLIED ON THESE DRAWINGS. FAILURE OF THE APPROPRIATE CONTRACTOR TO VERIFY ROUGH-INS OR LOCATIONS SHALL PLACE THE RESPONSIBILITY FOR ANY SUBSEQUENT RELOCATION AND/OR ADDITIONAL ROUGH-INS DIRECTLY UPON THE CONTRACTOR.
- IN MOST CASES, THE SPACE ABOVE THE CEILING, IN CHASES, AND IN OTHER CONCEALED SPACES IS EXTREMELY LIMITED. THE CONTRACTOR SHALL FULLY COORDINATE THEIR WORK WITH ALL TRADES.

GENERAL PIPING REQUIREMENTS

- PROVIDE HANGERS WHERE SHOWN ON THE DRAWINGS AND WHERE NECESSARY TO ADEQUATELY SUPPORT ALL PIPING SYSTEMS. SINGLE PIPE HANGERS SHALL BE CLEVIS TYPE WITH PROPERLY SIZED THREADED ROD AND APPROPRIATE HARDWARE AT STRUCTURE ABOVE. MULTIPLE PIPES MAY BE GROUPED ON A TRAPEZE TYPE HANGER. SECURE ALL PIPES TO TRAPEZE CROSSBAR AND SECURE CROSSBAR WITH THREADED RODS AND APPROPRIATE HARDWARE.
- ALL ROOF PENETRATIONS FOR PLUMBING SHALL BE MADE IN ACCORDANCE WITH ROOF SYSTEM MANUFACTURER'S GUIDELINES. COORDINATE WITH ALL ARCHITECTURAL PLANS AND DETAILS.
- PROVIDE UL LISTED FIREPROOF SLEEVES WHERE PIPES PASS THRU FIRE RATED ASSEMBLIES. PROVIDE PVC SLEEVES WHERE PIPES PASS THRU NON-RATES ASSEMBLIES. PIPE SLEEVES SHALL BE 2 PIPE SIZES LARGER THAN THE PIPE IN THE SLEEVE.

DOMESTIC WATER PIPING

- THE CONTRACTOR SHALL VERIFY WITH THE STATE DEPARTMENT OF HEALTH AND OR THE LOCAL WATER PROVIDER AS TO THE METER AND VALVING ARRANGEMENTS FOR THE DOMESTIC WATER SERVICE LINE WHICH ENTERS THE BUILDING. THE WATER METER SHALL BE SIZED BY THE LOCAL UTILITY COMPANY FOR THE FLOW AS INDICATED ON THE DRAWINGS. WHERE THE PIPE SERVING THE BUILDING DOMESTIC WATER SYSTEM IS LARGER THAN THE REQUIRED METER SIZE, TRANSITION TO THE PIPE SIZE INDICATED IMMEDIATELY AFTER THE METER.
- THE POTABLE WATER SUPPLY SHALL BE PROTECTED AGAINST BACK FLOW AND SIPHONAGE, BOTH NATURAL AND INDUCED. ALL EQUIPMENT CONNECTED TO THE POTABLE WATER SUPPLY BEING CAPABLE OF POLLUTING OR CONTAMINATING THE POTABLE WATER DISTRIBUTION SYSTEM OR ANY PART THEREOF BY MEANS OF A REVERSAL OF FLOW, PRESSURE DROP, PRESSURE LOSS, INDUCED VACUUM OR BY INJECTION BECAUSE OF ANY PRIMARY OR AUXILIARY PUMPING SYSTEM CONNECTED THERETO MUST BE ISOLATED AND CONTAINED BY MEANS OF AN APPROVED BACK FLOW DEVICE SUCH AS A CHECK VALVE, AIR GAP, OR VACUUM BREAKER. THE CONTRACTOR SHALL FURNISH AND INSTALL THESE DEVICES PER STATE AND LOCAL REQUIREMENTS.
- THE DOMESTIC WATER SUPPLY INTO THE BUILDING SHALL BE PROTECTED BY A REDUCED PRESSURE ZONE (RPZ) BACKFLOW ASSEMBLY EQUAL TO WATTS LF009. THE CONTRACTOR SHALL PROVIDE THE ASSEMBLY AND ALL NECESSARY COMPONENTS AND ACCESSORIES PER LOCAL AND STATE REQUIREMENTS AND ALL APPLICABLE ASEE STANDARDS.
- IF WATER PRESSURE IS FOUND TO BE IN EXCESS OF 85 PSI, PROVIDE A PRESSURE REDUCING ASSEMBLY EQUAL TO WATTS LFU58. THE DELIVERY PRESSURE SHALL BE SET TO 80 PSI OR AS DIRECTED BY THE ENGINEER.
- DOMESTIC WATER PIPE SHALL BE TYPE L COPPER UNLESS NOTED OTHERWISE. WHERE INDICATED ON THE DRAWINGS INSTALL BELOW GRADE WITH A MINIMUM DEPTH OF 18" BELOW SLAB AND 36" BELOW GRADE. ALL OTHER PIPE SHALL BE INSTALLED ABOVE GRADE AS INDICATED ON THE DRAWINGS. ALL ABOVE GRADE PIPE SHALL BE INSULATED WITH 1" THICK MOLDED FIBERGLASS INSULATION WITH VAPOR BARRIER BACKING. SEAL ALL SEAMS AND JOINTS WITH WATERPROOF MASTIC.
- CONTRACTOR SHALL VERIFY WITH LOCAL CODE OFFICIAL THAT PEX PIPING IS APPROVED FOR WATER DISTRIBUTION SYSTEMS. IF PEX PIPING IS APPROVED, ALL ABOVE GROUND WATER PIPING 2 INCHES AND SMALLER MAY BE PEX POLYETHYLENE TUBING. PIPING SIZES LARGER THAN 2 INCHES SHALL BE TYPE L COPPER OR AN ENGINEER APPROVED PEX SYSTEM. INSTALL PEX TUBING PER MANUFACTURERS INSTRUCTIONS. DO NOT STORE PEX TUBING AND FITTINGS IN DIRECT OR INDIRECT SUNLIGHT. ALL PEX ROUGH IN STUBS THRU WALL SHALL TRANSITION TO COPPER AT WALL PENETRATION AND CONTINUE TO FIXTURE AS COPPER.
- HOT AND CITY WATER SUPPLY BRANCHES FOR ALL EQUIPMENT AND FIXTURES HAVING ANY MEANS OF QUICK SHUTOFF SHALL HAVE WATER HAMMER ARRESTORS INSTALLED ON THE HIGH POINT AT THE END OF EACH BRANCH.
- PROVIDE AN ASTM RATED TEMPERATURE AND PRESSURE (T&P) RELIEF VALVE ON ALL WATER HEATERS AND SIMILAR PRESSURE VESSELS. PIPE TO THE NEAREST DRAIN, AS DIRECTED BY APPLICABLE CODE. ALL RELIEF PIPING SHALL BE TYPE K COPPER, HARD DRAIN.
- FURNISH AND INSTALL SHUT OFF ASSEMBLIES OR BALL VALVE AND UNION COMBINATIONS TO EACH FIXTURE AND PIECE OF EQUIPMENT. CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO EQUIPMENT AND FIXTURES UNLESS SPECIFICALLY INSTRUCTED OTHERWISE. COORDINATE WITH EQUIPMENT OR FIXTURE SUPPLIER FOR REQUIREMENTS. BRASS BALL VALVES SHALL BE EQUAL TO CONBRACO # 70-200. BRASS GATE VALVES SHALL BE EQUAL TO CRANE #1700S. BRASS CHECK VALVES SHALL BE EQUAL TO CRANE #78E. USE ONLY LEAD FREE SOLDER.

DRAIN, WASTE, AND VENT PIPING

- FURNISH AND INSTALL CONDENSATE PIPING FROM MECHANICAL EQUIPMENT AS REQUIRED. ANY PIPING ABOVE THE CEILING OR IN A LOCATION WHERE MOISTURE CONDENSING ON THE PIPE COULD DRIP AND CAUSE DAMAGE SHALL BE INSULATED WITH 1" FIBERGLASS WRAP AND ALL SERVICE JACKET. PIPE ALL CONDENSATE TO DRAIN AS INDICATED ON THE DRAWINGS AND AS REQUIRED BY CODE WITH 1" AIR GAP. CONDENSATE PIPE SHALL BE SCHEDULE 40 PVC OR TYPE K COPPER, HARD DRAIN.
- WASTE AND VENT PIPING SHALL BE EITHER SERVICE WEIGHT CAST IRON TYPE DWV, OR SCHEDULE 40 PVC WITH DWV FITTINGS (ASTM DESIGNATION D1784).
- ALL VENT PIPING SHALL BE COMPATIBLE WITH THE ROOF STRUCTURE AND SHALL EXTEND A MINIMUM OF 9 INCHES ABOVE THE ROOF. PROVIDE ROOF JACK COMPATIBLE WITH THE ROOF TYPE. INSTALL ROOF JACKS IN SUCH A MANNER AS TO HIDE SAME FROM VIEW FROM BELOW.
- INSTALL 4 INCH AND SMALLER SOIL AND WASTE PIPING WITH A MINIMUM SLOPE OF 1/8" PER FOOT UNLESS OTHERWISE REQUIRED BY STATE AND LOCAL CODES. PIPES LARGER THAN 4 INCHES SHALL BE INSTALLED IN ACCORDANCE WITH STATE AND LOCAL CODES.

FUEL GAS PIPING

- UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE NATURAL GAS DISTRIBUTION SYSTEM SHALL BE MEDIUM PRESSURE. REGULATOR OUTLET PRESSURE SHALL BE BETWEEN 7 IN WG AND 11 IN WG. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE LOCAL NATURAL GAS SUPPLIER AND COORDINATE EXACT METER LOCATION. THE LOCAL GAS UTILITY COMPANY SHALL PROVIDE GAS SERVICE TO THE METER AND REGULATOR ASSEMBLY. THE CONTRACTOR SHALL INSTALL ALL PIPE FROM THE METER/REGULATOR ASSEMBLY TO ALL APPLIANCES AND EQUIPMENT.
- NATURAL GAS DISTRIBUTION PIPE SHALL BE ASTM A-53 OR A-120 BLACK CARBON STEEL. PROVIDE SCREWED FITTINGS FOR 2-1/2 INCH PIPE SIZES AND SMALLER AND WELDED FITTINGS FOR PIPE SIZES 3 INCHES AND LARGER. INSTALL AND TEST ENTIRE SYSTEM IN ACCORDANCE WITH NFPA 54. PROVIDE CONBRACO SERIES 52 GAS COCKS FOR PIPING SIZES 2 INCHES AND SMALLER. PROVIDE CONBRACO SERIES 50 GAS COCKS FOR PIPING SIZES 2-1/2 INCHES AND LARGER.
- ALL GAS APPLIANCES SHALL HAVE AN ACCESSIBLE GAS SHUT-OFF VALVE WITHIN 6 FEET OF THE APPLIANCE. THE VALVE SHALL BE INSTALLED UPSTREAM OF UNION PRIOR TO ANY FLEX CONNECTIONS, AND IN THE SAME ROOM AS THE APPLIANCE.

PLUMBING FIXTURES

- PROVIDE STOP VALVES AT ALL PLUMBING FIXTURES ON BOTH HOT AND COLD WATER SUPPLY LINES. VALVES, ESCUTCHEONS, FITTINGS, ETC., SHALL BE CHROME PLATED AND INSTALLED TIGHT TO WALL. WHERE PIPING IS EXPOSED, PIPING/TRAPS SHALL BE CHROME PLATED.
- HOLD TOP OF ALL FLOOR DRAINS FLUSH WITH TOP OF FINISHED FLOOR.
- ALL EXTERIOR WALL HYDRANTS SHALL BE FREEZELESS TYPE. COORDINATE INSTALLATION LOCATION WITH WALL FRAMING TO CONCEAL OPERATING ROD ASSEMBLY WITHIN STRUCTURE UNLESS NOTED OTHERWISE.
- PROVIDE TRAP GUARD OR TRAP PRIMER ON ALL FLOOR DRAINS, FLOOR SINKS, AND HUB DRAINS THAT ARE SUBJECT TO EVAPORATION. TRAP GUARDS MUST CONFORM TO NSF 14, CSA B602-99, CSA B79-94.

PLUMBING AND PIPING SYMBOLS

P-12	FIXTURE OR EQUIPMENT TAG SEE SCHEDULES
	BACKFLOW PREVENTION VALVE
	DOMESTIC COLD WATER (DCW) PIPING
	DOMESTIC HOT WATER (DHW) PIPING
	HOT WATER RETURN (HWR) PIPING
	TEMPERED HOT WATER (THW) PIPING
	PIPING. SEE ABBREVIATIONS FOR TYPE
	POINT OF NEW CONNECTION
	DIRECTION OF FLOW
	FLEXIBLE CONNECTION
	UNION
	ELBOW UP
	ELBOW DOWN
	CAP
	TEE UP
	TEE DOWN
	VALVE
	BALL VALVE
	CHECK VALVE
	OS&Y VALVE
	BUTTERFLY VALVE
	MOTORIZED VALVE
	BALANCING VALVE
	PRESSURE REDUCING VALVE
	TEMPERATURE AND PRESSURE RELIEF VALVE
	TWO WAY CONTROL VALVE
	THREE WAY CONTROL VALVE
	PUMP
	THERMOMETER
	AIR VENT
	PRESSURE GAUGE
	FLOW SWITCH
	SENSOR
	Y-STRAINER
	Y-STRAINER WITH BLOW DOWN
	VENTURI FLOW METER
	TEST PLUG
	VALVE WITH QUICK HOSE CONNECTOR



KEY ARCHITECTURE INC.

KEY

P.O. BOX 748 FAYETTEVILLE, ARKANSAS 72702
PH: 479.444.6066 FAX: 479.444.1445

FOR PERMIT & CONSTRUCTION

Revision Schedule		Description
Rev. #	Date	
NEW Arcare MEDICAL OFFICE BUILDING 2709 Massard Rd FT. SMITH, AR 72903		
Arcare 117 S. 2ND ST. AUGUSTA, AR 72006		

TERRELL

ENGINEERING CONSULTANTS

310 W. MAIN ST. SUITE C
RUSSELLVILLE, AR 72801
PHONE (479) 595-8177

WWW.TERRELLENG.COM

AR FIRM # 3434

DATE 06-15-2026	DRAWN BY CO
PROJECT # 2517	CHECKED BY JT
SHEET P000	
NOTES AND SYMBOLS	
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