

## PLUMBING SYMBOL LEGEND

	S OR W	SANITARY OR WASTE PIPING ABOVE SLAB
	S OR W	SANITARY OR WASTE PIPING BELOW SLAB
	SV	SANITARY VENT PIPING
	GW	GREASE WASTE
	CD	CONDENSATE DRAIN
	CW	COLD WATER PIPING
	HW	HOT WATER PIPING
	CWF	COLD WATER FILTERED
	CWN	COLD WATER NANO FILTERED
	CWS	COLD WATER SOFTENED
	TW	TEMPERED WATER
	RO	REVERSE OSMOSIS WATER
	G	GAS PIPING (ON ROOF)
	RD	REFRIGERANT DISCHARGE PIPING
	RS	REFRIGERANT SUCTION PIPING
	BV	BALL VALVE
	GV	GATE VALVE
	CH. V	CHECK VALVE
	RV	RELIEF VALVE
	HB	HOSE BIBB
		SHOCK ABSORBER
	CO	WALL CLEANOUT
	FCO	FLOOR CLEANOUT
	FS	FLOOR SINK
	WM	WATER METER
	PC	CONNECT TO EXISTING
	SH	SHUT OFF VALVE W/BFP
	V	GATE VALVE

## ABBREVIATIONS

3PL	THIRD PARTY LOGISTICS
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITIES HAVING JURISDICTION
APPROX	APPROXIMATE
BLDG	BUILDING
CLG	CEILING
CONST	CONSTRUCTION
CW	DOMESTIC COLD WATER
CXA	COMMISSIONING AGENT
DEG	DEGREES
DTL	DETAIL
DN	DOWN
DWG(S)	DRAWING(S)
EA	EACH
EC	ELECTRICAL CONTRACTOR
ELEC	ELECTRICAL
EM	EMERGENCY
(E) OR (EX)	EXISTING
EXT	EXTERIOR
FD	FLOOR DRAIN
FS	FLOOR SINK
F&I	FURNISH & INSTALL
FLR	FLOOR
FT	FOOT/FEET
FCO	FLOOR CLEANOUT
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GW	GREASE WASTE
HR	HOSE REEL
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HW	HOT WATER
HS	HANDSINK
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
LL	LANDLORD
LV	LOW VOLTAGE
MAX	MAXIMUM
MECH	MECHANICAL
MC	MECHANICAL CONTRACTOR
MDP	MAIN DISTRIBUTION PANEL
MEP	MECHANICAL, ELECTRICAL, AND PLUMBING
MFG	MANUFACTURER
MIN	MINIMUM
MS	MOP SINK
NL	NIGHTLIGHT
NTS	NOT TO SCALE
	PLUMBING CONTRACTOR
PS	PREP SINK
POC	POINT OF CONNECTION
PM	PROJECT MANAGER
REF	REFERENCE
REQ(D)	REQUIRED(D)
REV	REVISION
SHT	SHEET
SPEC(S)	SPECIFICATION(S)
SF	SQUARE FEET
SST	STAINLESS STEEL
TEL	TELEPHONE
TEMP	TEMPORARY
TYP	TYPICAL
TMV	TEMPERATURE MIXING VALVE
TW	TEMPERED HOT WATER
UNO	UNLESS NOTED OTHERWISE
V	VENT
W	SANITARY WASTE
WH	WATER HEATER
WP	WEATHER PROOF
WCO	WALL CLEANOUT

## GENERAL PLUMBING NOTES:

- PLUMBING CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO PATCH AND REPAIR ALL EXISTING WALLS, FLOORS, CEILINGS OR OTHER SURFACES IDENTIFIED TO REMAIN THAT MAY BECOME DAMAGED DURING THE COURSE OF WORK.
- EXPOSED/SURFACE MOUNTED PIPING IS ONLY ALLOWED IN THE BAR AREA UNDER COUNTERTOPS, WHERE IT DOES NOT OBSTRUCT CABINETS/DEVICES AND WHERE APPROVED BY STARBUCKS CONSTRUCTION MANAGER. IF ROUTED THROUGH CABINETS, IT SHALL BE ROUTED TO MAXIMIZE STORAGE SPACE AND BE PROTECTED FROM DAMAGE.
- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL INTENT OR ARRANGEMENT OF SYSTEM(S). FURNISH AND INSTALL ALL COMPONENTS NEEDED WHETHER INDICATED OR NOT TO PROVIDE A COMPLETE AND OPERATING SYSTEM. OVERALL CASEWORK COMPONENT DIMENSIONING ON PLUMBING DETAILS ARE SHOWN FOR REFERENCE AND COORDINATION ONLY.
- CONTRACTOR TO VERIFY ALL DIMENSIONS, INCLUDING CLEARANCES REQUIRED BY OTHER TRADES, AND NOTIFY STARBUCKS CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK. ALL DIMENSIONS ARE TO THE FACE OF THE FINISHED SURFACE UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO BE TAKEN FROM ACTUAL BUILDING DIMENSIONS.
- THE PLUMBING CONTRACTOR SHALL COORDINATE PLUMBING WORK WITH OTHER TRADES. THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR FIXTURES IN CASEWORK AND PLUMBING DETAILS.
- ALL PIPING AND/OR PLUMBING DEVICES SHALL BE SUPPORTED FROM STRUCTURE (NOT FROM HVAC DUCTS OR OTHER PIPES/CONDUITS).

## GENERAL SPECIFICATION NOTES:

SCOPE  
THE INTENT OF THE SPECIFICATIONS AND THE DRAWINGS IS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL PLUMBING SYSTEM. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, AND EQUIPMENT RELATED TO THE INSTALLATION OF THE PLUMBING WORK.

SITE EXAMINATION  
THE CONTRACTOR SHALL THOROUGHLY EXAMINE ALL AREAS WHERE FIXTURES, EQUIPMENT, AND PIPING WILL BE INSTALLED AND WILL REPORT ANY CONDITION THAT, IN HIS OPINION, PREVENTS THE PROPER INSTALLATION OF THE PLUMBING WORK.

STANDARDS  
EQUIPMENT AND MATERIALS SHALL CONFORM WITH THE APPROPRIATE PROVISIONS OF CSA, UL, ASME, ASTM, UL, NEMA, ANSI, ASHRAE, NFPA, AS APPLICABLE TO EACH INDIVIDUAL UNIT OR ASSEMBLY.

CODES  
ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES. IN CASE OF CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS AND THE CODES AND ORDINANCES, THE HIGHEST STANDARD SHALL APPLY. THE CONTRACTOR SHALL SATISFY CODE REQUIREMENTS AS A MINIMUM STANDARD WITHOUT ANY EXTRA COST TO STARBUCKS.

PERMITS AND FEES  
THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY TO COMPLETE THE PLUMBING WORK.

WARRANTY  
THE CONTRACTOR SHALL UNCONDITIONALLY WARRANT ALL WORK TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY STARBUCKS AND WILL REPAIR OR REPLACE ANY DEFECTIVE WORK PROMPTLY AND WITHOUT CHARGE AND RESTORE ANY OTHER EXISTING WORK DAMAGED IN THE COURSE OF REPAIRING DEFECTIVE MATERIALS AND WORKMANSHIP.

## PLUMBING FIXTURES:

WATER HEATER  
THE PLUMBING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS TO EQUIPMENT INCLUDING REQUIRED MATERIAL SUCH AS PIPING, VALVES, FILTERS, TRAPS, CHECKS VALVES, VACUUM BREAKERS, AND FLEXIBLE AND RIGID TUBING.

CONNECTIONS  
THE PLUMBING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS TO EQUIPMENT INCLUDING REQUIRED MATERIAL SUCH AS PIPING, VALVES, FILTERS, TRAPS, CHECKS VALVES, VACUUM BREAKERS, AND FLEXIBLE AND RIGID TUBING.

SCHEDULES  
REFER TO SCHEDULES ON DRAWINGS (PLUMBING & ARCH. SCHEDULES) FOR A DESCRIPTION OF LISTED ITEMS AND FURNISH ANY AND ALL PLUMBING FIXTURES LISTED AS "GC". ANY DISCREPANCIES ABOUT WHO IS TO PROVIDE PLUMBING FIXTURES IN THE SCHEDULE SHALL BE BROUGHT TO STARBUCKS ATTENTION FOR CLARIFICATION. INSTALL ALL FIXTURES LISTED REGARDLESS OF WHO SUPPLIES.

## INSULATION:

WATER PIPING  
PROVIDE THERMAL INSULATION ON ALL HOT & COLD WATER, AND HORIZONTAL WASTE PIPING IN CEILING SPACES, AND ON ALL COLD WATER PIPING IN CASEWORK AND BAR AREAS. USE SELF-SEALING CLOSED CELL FOAM OR JACKETED FIBERGLASS INSULATION WITH MANUFACTURE APPROVED ADHESIVES, SEALERS, AND COATINGS. ALL MATERIALS USED SHALL NOT EXCEED 25 FOR FLAME SPREAD, 50 FOR FUEL CONTRIBUTED, OR 50 FOR SMOKE DEVELOPED. UNLESS OTHERWISE REQUIRED BY THE LOCAL AUTHORITY OR ENERGY CODES, THE MINIMUM INSULATION LEVELS SHALL BE AS FOLLOWS:

<b>COLD WATER PIPE SIZE (DIAMETER)</b>	<b>INSULATION THICKNESS</b>
LESS THAN OR EQUAL TO 1-1/2" (38 MM)	1" (25 MM)
2" (51 MM) OR GREATER	1-1/2" (38 MM)
<b>HOT WATER PIPE SIZE (DIAMETER)</b>	<b>INSULATION THICKNESS</b>
LESS THAN OR EQUAL TO 1-1/2" (38 MM)	1-1/2" (38 MM)
GREATER THAN 1-1/2" (38 MM)	2" (51 MM)

(INSULATION VALUE = k VALUE NOT EXCEEDING 0.27 BTU PER INCH/H\*FT2\*F

SAFETY COVERS  
INSTALL SPECIFIED NO SCALD SAFETY COVERS WITH INSULATED FOAM LINER AND TAMPER PROOF STRAP AS FURNISHED BY STARBUCKS AT ALL EXPOSED PIPING.

ICE BIN DRAIN  
INSULATE ICE BIN DRAIN LINES WITH 1/2" (13MM) THICK, SELF SEALING, SECTIONAL, CLOSED CELL FOAM.

RAIN CONDUCTORS  
INSULATE RAIN WATER CONDUCTORS WHICH PASS THROUGH OCCUPIED AREAS WITH 1/2" (13MM) THICK FIBERGLASS.

## VALVES:

GENERAL  
PLUMBING CONTRACTOR TO PROVIDE VALVES WHERE INDICATED ON PLANS AND AS NECESSARY FOR PROPER SYSTEM OPERATION AND COMPONENT ISOLATION. INSTALL VALVES FOR EACH FIXTURE AND ITEM OF EQUIPMENT. PROVIDE BRAIDED STAINLESS STEEL HOSE (UNLESS OTHERWISE NOTED) BETWEEN VALVE AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. LOCATE SHUT-OFF VALVES ADJACENT TO EQUIPMENT FOR EASY ACCESS SUCH THAT VALVES CAN BE REACHED WITHOUT MOVING EQUIPMENT. SHUT OFF VALVES TO BE BALL TYPE. VALVES SHALL BE LISTED/APPROVED FOR USE PER AUTHORITIES HAVING JURISDICTION (AHJ) AND CODE REQUIREMENTS.

VALVES  
PROVIDE VALVES FOR WORKING PRESSURE IN WATER PIPING OF 125 PSI OR GREATER. UNLESS NOTED OTHERWISE VALVES SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:

<b>VALVE TYPE</b>	<b>DESCRIPTION</b>
CHECK VALVE (UP TO 2" (51MM))	BRONZE, HORIZ. SWING, Y-PATTERN, RENEWABLE SEAT/DISC
BALL VALVE (UP TO 3" (76MM))	BRASS, FULL PORT, QUARTER TURN
GATE VALVE (UP TO 3" (76MM))	BRONZE, NON-RISING STEM, SOLID WEDGE
TEMPERATURE AND PRESSURE RELIEF VALVE	RATED FOR POTABLE WATER HEATING STORAGE VESSEL WITH SAFETY CERTIFICATION PER AHJ. PRE-CHARGED, SEALED CHAMBER
WATER HAMMER ARRESTOR	DOUBLE CHECK VALVE ASSEMBLY WITH UNION
BACKFLOW PREVENTER (WHOLE-HOUSE)	BALL VALVES AND SAFETY CERTIFICATION PER AHJ
	DOUBLE CHECK VALVE ASSEMBLY WITH SAFETY CERTIFICATION PER AHJ
BACKFLOW PREVENTER (SINGLE DEVICE)	BRASS BODY AND STAINLESS STEEL INTERNALS
VACUUM RELIEF VALVE	BRONZE, 25 TO 75 PSI REDUCE PRESSURE
PRESSURE REDUCING VALVE	RANGE AND UPSTREAM/DOWNSTREAM PRESSURE GAUGES
	BRONZE, PRESSURE BASED AUTOMATIC PRIMING
TRAP SEAL PRIMER	

SUPPLY WATER SERVICE  
IF WATER PRESSURE SUPPLIED TO STORE IS GREATER THAN AND 65 PSI, THEN PROVIDE A PRESSURE REGULATOR IN MAIN SUPPLY TO REDUCE WATER PRESSURE. PROVIDE BACKFLOW PREVENTION ON WATER SERVICE IF REQUIRED BY LOCAL CODES.

THERMOSTATIC MIXING VALVE  
PROVIDE A SINGLE THERMOSTATIC MIXING VALVE (TMV) LOCATED AT HOT WATER TANK AND SET FOR 110° (OR AS REQUIRED BY AHJ) TO SERVE HAND SINKS. MIXING VALVE TO BE INSTALLED PER MANUFACTURER'S REQUIREMENTS WITH CHECK VALVES AT HOSE INLETS.

## PIPING:

SOIL, WASTE AND VENT PIPING  
SOIL, WASTE AND VENT PIPING 10" AND SMALLER SHALL BE SERVICE WEIGHT, HUBLESS, CAST IRON PIPE AND FITTINGS WITH NEOPRENE GASKET AND STAINLESS STEEL SHIELD AND CLAMP. PROVIDE HUB & SPIGOT, SERVICE WEIGHT CAST-IRON SOIL PIPE AND FITTINGS BELOW GRADE WHERE REQUIRED BY LOCAL CODES. SCHEDULE 40 ABS OR PVC PIPE AND FITTINGS WITH SOLVENT WELD MAY BE SUBSTITUTED FOR SOIL, WASTE AND VENT PIPING ABOVE AND BELOW GRADE IF ALLOWED BY LOCAL AUTHORITY. ALL HORIZONTAL RUNS SHALL DRAIN AT A GRADE OF 1/4" PER FOOT WHERE POSSIBLE BUT IN NO CASE LESS THAN 1/8" PER FOOT.

COORDINATE WITH LOCAL AUTHORITIES FOR DRAINAGE REQUIREMENTS FOR EQUIPMENT DESIGNATED WITH INDIRECT WASTE TO FLOOR DRAINS. PROVIDE PIPED DRAIN TO SANITARY IF REQUIRED BY LOCAL JURISDICTION.

DOMESTIC WATER PIPING  
DOMESTIC WATER PIPING 2 1/2" AND SMALLER SHALL BE COPPER TUBE WITH WROUGHT COPPER SWEAT FITTINGS JOINED WITH NON-LEAD, NON-ANTIMONY SOLDER. PROVIDE TYPE "L" COPPER TUBE ABOVE GRADE AND TYPE "K" BELOW GRADE.

CONDENSATE DRAINAGE PIPING  
THE PLUMBING CONTRACTOR SHALL PROVIDE CONDENSATE DRAINS FOR AIR HANDLING UNITS AND STARBUCKS EQUIPMENT (REFER TO SCHEDULE). CONDENSATE DRAINAGE PIPING SHALL BE TYPE "M" COPPER TUBING WITH WROUGHT COPPER SWEAT FITTINGS JOINED WITH 50/50 SOLDER.

NATURAL GAS PIPING  
GAS PIPING SHALL BE SCHEDULE 40, SEAMLESS, BLACK STEEL PIPE. PROVIDE PIPING SUPPORT BLOCKING ON ROOF, COMPATIBLE WITH ROOFING SYSTEM.

HANGERS & SUPPORTS  
THE PLUMBING CONTRACTOR SHALL FURNISH ALL PIPE SUPPORTS REQUIRED FOR EQUIPMENT AND MATERIAL. ALL HORIZONTAL RUNS OF PIPING SHALL BE SUPPORTED BY PIPE HANGERS INSTALLED AS REQUIRED BY LOCAL CODES. ADDITIONAL SUPPORTS SHALL BE PROVIDED WHERE REQUIRED TO PREVENT SAGGING. HANGERS AND PIPE ATTACHMENTS TO BE FACTORY FABRICATED WITH GALVANIZED COATINGS; NONMETALLIC COATED FOR HANGERS IN DIRECT CONTACT WITH COPPER TUBING.

CONNECTIONS  
INSTALL UNIONS ADJACENT TO EACH VALVE AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT. INSTALL DIELECTRIC COUPLINGS TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS. SCREW JOINT STEEL PIPING UP TO AND INCLUDING 1-1/2". WELD PIPING USE NON-LEAD, NON-ANTIMONY SOLDER FOR SOLDERING DOMESTIC WATER COPPER PIPE.

CLEANOUTS  
PROVIDE J.R. SMITH OR EQUIVALENT FLOOR AND WALL CLEANOUTS AS INDICATED ON THE DRAWINGS OR WHERE REQUIRED BY CODE IN ALL SOIL, WASTE, AND DRAIN LINES. IN AREAS WITH CERAMIC TILE OR CARPETED FLOORING, PROVIDE CLEANOUTS WITH SQUARE, ADJUSTABLE, NICKEL BRONZE TOP. IN AREAS WITH RESILIENT FLOORING, PROVIDE CLEANOUTS WITH SQUARE, ADJUSTABLE, NICKEL BRONZE TOP WITH TILE RECESS. CLEANOUTS SHALL BE SAME SIZE AS PIPE EXCEPT THAT CLEANOUTS LARGER THAN 4" WILL NOT BE REQUIRED. WHERE CLEANOUTS OCCUR IN WALLS OF FINISHED AREAS, THEY SHALL BE CONCEALED BEHIND CHROME PLATED ACCESS COVERS.

INSTALLATION  
INSTALL EXPOSED PIPING FREE OF SAGS AND BENDS. PROVIDE BRACKET STANDOFFS FROM MOUNTING SURFACES SUFFICIENT TO ALLOW 1" CLEANING SPACE AROUND ALL PIPING, INCLUDING ANY ADDED PIPING INSULATION. INSTALL FITINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS. INSTALL SLEEVES FOR PIPES PASSING THROUGH CONCRETE AND MASONRY WALLS, GYPSUM BOARD PARTITIONS, CONCRETE FLOOR AND ROOF SLABS. SEAL PIPE PENETRATIONS THROUGH RATED CONSTRUCTION WITH FIRESTOPPING SEALANT MATERIAL. UNDERGROUND WATER AND SEWER LINES SHALL BE LAID IN SEPARATE TRENCHES WITH A MINIMUM HORIZONTAL SPACING AS REQUIRED BY CODE, EXCAVATED TO THE PROPER DEPTH AND GRADED TO PRODUCE THE REQUIRED FALL.

TESTING  
ALL PIPES SHALL BE TESTED BY AN APPROVED METHOD BEFORE THEY ARE BACKFILLED OR CONCEALED. AFTER TESTING IS COMPLETE, THE PLUMBING CONTRACTOR SHALL DISINFECT THE POTABLE WATER SYSTEM AS REQUIRED BY LOCAL AUTHORITY. TEST WATER PURITY ACCORDING TO LOCAL REQUIREMENTS AND SUBMIT CERTIFIED TEST RESULTS TO ENGINEER FOR REVIEW AND APPROVAL.



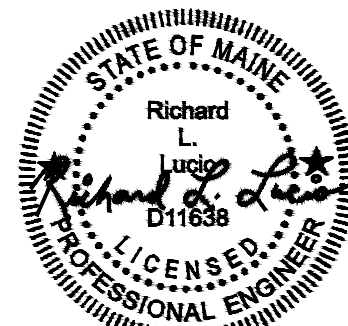
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Revision Schedule

Rev	Date	By	Description

PROJECT NAME:  
**NORTHGATE PLAZA**

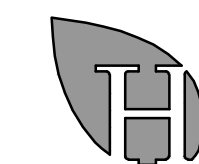
PROJECT ADDRESS:  
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PROJECT #:	22764-021
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