

**PLUMBING LEGEND**

NEW PIPING (BOLD)	EXISTING PIPING (LIGHT)
COLD WATER	HOT WATER (TEMPERATURE = 110°-130°F)
HOT WATER RETURN (TEMPERATURE = 110°-130°F)	NON-POTABLE COLD WATER
POTABLE COLD WATER	POTABLE HOT WATER (TEMPERATURE = 110°-130°F)
POTABLE HOT WATER RETURN (TEMPERATURE = 110°-130°F)	TEPID WATER
SANITARY DRAINAGE - ABOVE GRADE	SANITARY DRAINAGE - BELOW GRADE
STORM DRAINAGE - ABOVE GRADE	ACID WASTE DRAINAGE - ABOVE GRADE
ACID WASTE DRAINAGE - BELOW GRADE	INDIRECT WASTE DRAINAGE - ABOVE GRADE
VENT PIPING	ACID VENT PIPING
BALL VALVE	BRANCH OUT OF TOP OF MAIN
BRANCH OUT OF BOTTOM OF MAIN	CAP
CHECK VALVE	CLEANOUT
FLOOR CLEANOUT	GATE VALVE
NON-RISING STEM GATE VALVE	METERING BALANCING VALVE
PIPE CONTINUES	PIPE RISING
PIPE TEE TURNED DOWN	PIPE TEE TURNED UP
PIPE TURNING DOWN	PRESSURE REDUCING VALVE (PRV) OR GAS REGULATOR
PRESSURE GAUGE	REDUCED PRESSURE BACKFLOW PREVENTER
DOUBLE CHECK BACKFLOW PREVENTER	THERMOMETER
THERMOSTATIC MIXING VALVE	TEMPERATURE & PRESSURE VALVE (TRP)
UNION	WALL CLEANOUT
DESIGNATES EQUIPMENT WITH POWER	DESIGNATES EQUIPMENT WITHOUT POWER
CONNECT NEW TO EXISTING	LIMIT OF WORK
ELECTRONIC TRAP PRIMER	PIPING AND DEVICES TO BE REMOVED OR ABANDONED

**PLUMBING ABBREVIATIONS**

AV	ACID VENT
AVTR	ACID VENT THROUGH ROOF
AW	ACID WASTE
BDFG	BELOW FINISHED FLOOR
CO	CLEANOUT
CONN	CONNECTION
CONTR	CONTRACTOR
CV	CLEAN VALVE
DN	DOWN
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
EG	EMERGENCY SHOWER
FG	FLOOR CLEANOUT
G	GAS
GC	GENERAL CONTRACTOR
GCO	GRADE CLEANOUT
HP	HORSEPOWER
HW	HOT WATER
HWTR	HOT WATER RETURN
INW	INDIRECT
IW	INDIRECT WASTE
MECH	MECHANICAL
PCW	POTABLE COLD WATER
PHW	POTABLE HOT WATER
PHWR	POTABLE HOT WATER RETURN
PW	PUMPED WASTE
SA	SANITARY
SAN	SANITARY THROUGH
THRU	THROUGH
TMV	THERMOSTATIC MIXING VALVE
TPD	TEPID WATER
TW	TEMPERED WATER
TP	TYPICAL
V	VENT
VIF	VERIFY IN FIELD
VTR	VENT THROUGH ROOF
W	WASTE
WI	WITH
WS	WASTE STACK

**GENERAL NOTES**

THE FOLLOWING GENERAL NOTES APPLY TO ALL RISE-FROST SHURWAY ENGINEERING, P.C. DRAWINGS AND TRADES ASSOCIATED WITH THESE DRAWINGS INVOLVED ON THIS PROJECT:

- G-1 RISE-FROST SHURWAY ENGINEERING, P.C., WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS, AND/OR THE DESIGN INTENT TO CONVEY, OR FOR PROBLEMS WHICH ARISE FROM THE USE OF THESE PLANS, SPECIFICATIONS, AND/OR THE DESIGN OF RISE-FROST SHURWAY ENGINEERING, P.C. GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES, OR CONFLICTS WHICH ARE DISCOVERED OR ALLEGED.
- G-2 ALL WORK SHALL CONFORM TO ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS INCLUDING, BUT NOT LIMITED TO: NFPA, 800 CHR MASSACHUSETTS STATE BUILDING CODE, IMC 2006, 2009, 2012, 2015, 2018, 2021 AND PLUMBING CODE, BOCA, U.I., SWANNA, OSHA, AND LATEST EDITION OF THE NEC.
- G-3 CONTRACTOR AND ALL SUBCONTRACTORS SHALL PROTECT THE WORK SITE, SURROUNDING AREAS AND OCCUPANTS FROM DAMAGE AND INJURY.
- G-4 CONTRACTOR AND ALL SUBCONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE CONTRACT DOCUMENTS, ALL DRAWINGS OF ANY PARTICULAR TRADE SHALL BE USED IN CONJUNCTION WITH DRAWINGS OF ALL OTHER TRADES TO COORDINATE ALL CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED WORK. ANY PROPOSED CHANGES, VARIATIONS, OR SUBSTITUTIONS MUST BE REVIEWED AND ACCEPTED BY THE ENGINEER PRIOR TO IMPLEMENTATION.
- G-5 ALL DRAWINGS ARE INTENDED TO SHOW THE GENERAL ARRANGEMENT, DESIGN INTENT AND EXTENT OF THE WORK. THEY SHALL BE CONSIDERED PARTLY DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE SCALED FOR ROUGH-IN MEASUREMENTS OR TO SERVE AS SHOP DRAWINGS.
- G-6 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS (AS-BUILT OR OTHERWISE) BEFORE COMMENCING FABRICATION, AND/OR ORDERING MATERIALS.
- G-7 DETAILS SHOWN ON ANY DRAWING ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS, UNLESS OTHERWISE INDICATED.
- G-8 IN THE EVENT THE CONTRACTOR ENCOUNTERS MATERIAL REASONABLY BELIEVED TO BE HAZARDOUS WHICH HAS NOT BEEN RENDERED HARMLESS, THE CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA AFFECTED AND REPORT THE CONDITION TO THE OWNER AND ARCHITECT/ENGINEER IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED UNTIL WRITTEN VERIFICATION BY THE OWNER THAT THE MATERIAL HAS BEEN REMOVED OR OTHERWISE RENDERED HARMLESS.

**PLUMBING TRADE NOTES**

- P-1 COORDINATE LOCATION OF ALL PLUMBING EQUIPMENT WITH ALL OTHER TRADES AND EXISTING CONDITIONS.
- P-2 MAINTAIN MINIMUM REQUIRED WORKING CLEARANCES ADJACENT TO ELECTRICAL EQUIPMENT PER LATEST EDITION OF ELECTRIC CODE.
- P-3 PROVIDE PROTECTIVE MEASURES TO PREVENT DAMAGE TO FLOORS OR CEILING.
- P-4 INSTALL ALL PIPING AND WIRING NEATLY AND SQUARE WITH BUILDING FEATURES.
- P-5 ALL PENETRATIONS THROUGH NEW OR EXISTING WALLS, CEILING AND FLOORS SHALL BE EITHER CORE DRILLED OR SAW CUT, CHISELED OR HAMMERED PENETRATIONS ARE NOT ALLOWED.
- P-6 WHERE PIPING PENETRATES A FIRE-RATED WALL, FLOOR, OR CEILING, FIRE-RATED INSULATION SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR.
- P-7 THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL ACCESS PANELS.
- P-8 ALL PIPING SHALL BE INSTALLED AS HIGH AS POSSIBLE, UNLESS OTHERWISE INDICATED.

**PLUMBING DEMOLITION NOTES**

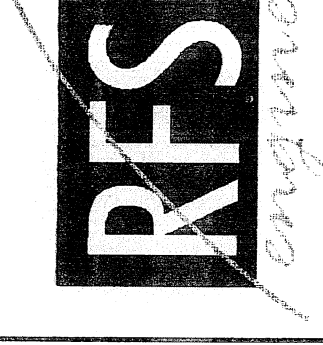
- D-1 WHERE NOTED ON THE PLANS, AND/OR IN THE PROJECT SPECIFICATIONS, PLUMBING SYSTEMS, EQUIPMENT AND APPURTENANCES LOCATED IN THE EXISTING FACILITY ARE TO BE REMOVED.
- D-2 WORK SHALL INCLUDE, BUT IS NOT LIMITED TO, THE REMOVAL OF PLUMBING PIPING SYSTEMS, PLUMBING FIXTURES, TANKS, TRAPS, VALVES, SPECIALTIES, APPURTENANCES, HANGERS, SUPPORTS, ETC.
- D-3 NO EXISTING PLUMBING EQUIPMENT, SYSTEMS, OR APPURTENANCES SHALL BE ABANDONED IN PLACE UNLESS SPECIFICALLY NOTED OTHERWISE. ALL PIPING WHICH IS FULLY DISCONNECTED FROM ANY SYSTEM INSIDE AND/OR OUTSIDE OF THE BUILDING, AND IT IS CAPPED AND FILLED WITH CONCRETE AS COMPLETELY AS POSSIBLE, LEAVE NO DEAD ENDS.
- D-4 WHERE EQUIPMENT OR APPURTENANCES ARE REMOVED WHICH WERE BUILT-IN TO THE BUILDING, THE CONTRACTOR SHALL COORDINATE WITH THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR TO REMOVE ALL UNDESIRABLE AREAS IN ACCORDANCE WITH APPROVED CONSTRUCTION METHODS AND FINISHES, AS DIRECTED BY THE CONTRACT DRAWINGS, SPECIFICATIONS, AND/OR THE ARCHITECT/ENGINEER.
- D-5 COORDINATE WITH THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR AND THE SUBCONTRACTORS IN ORDER TO DETERMINE OVERALL PROJECT PHASING AND SEQUENCING OF DEMOLITION WORK. COORDINATE REQUIRED DEMOLITION BY OTHER TRADES RESULTING FROM PLUMBING SYSTEMS.

**PLUMBING PHASING NOTES**

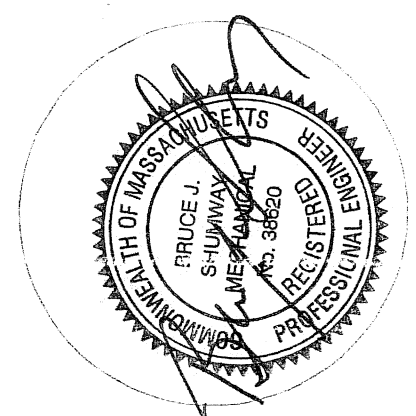
- PH-1 SITE NEUTRALIZATION SYSTEM, VAULT, DRAIN TO VAULT, DRAIN FROM VAULT TO SEWER, MANHOLE AND REPLACE SANITARY DRAIN TO MANHOLE.
- PH-2 BASEMENT NEUTRALIZATION SYSTEM, RE-DIRECT ACID WASTE DRAINS INTO SANITARY DRAIN, NEW ACID WASTE DRAINS AND NEW 4" ACID VENT RISER UP THROUGH BUILDING.
- PH-3 MORRILL II POTABLE HOT WATER SUPPLY & RETURN, MORRILL III NEW POTABLE HOT WATER, POTABLE COLD WATER & POTABLE HOT WATER RETURN MAINS.
- PH-4 TOILET CORE POTABLE HOT WATER, POTABLE COLD WATER, POTABLE HOT WATER RETURN RISERS AND FIXTURE SWITCH-OVER TO POTABLE WATER SYSTEM.
- PH-5 THERMOSTATIC MIXING VALVES, POTABLE TEPID WATER LOOPS AND END OF MAIN BLEEDS TO SERVICE SINKS.
- PH-6 MISCELLANEOUS VENT, ACID WASTE, AND WASTE REROUTING IN BUILDING.
- PH-7 REMOVE ACID NEUTRALIZATION BASINS THROUGHOUT BUILDING.

**ADDITIONAL NOTES:**

1) THIS BUILDING WILL BE OCCUPIED DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE ALL WORK AND SHUT DOWNS WITH THE UNIVERSITY AND THE DEPARTMENT HEADS.



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MORRILL III - SCIENCE CENTER  
 LAB WASTE NEUTRALIZATION AND SEPARATION OF  
 POTABLE/NON-POTABLE WATER SYSTEMS

PLUMBING TRADE NOTES, LEGEND,  
 DEMOLITION NOTES AND ABBREVIATIONS

REV. NO.	DESCRIPTION	BY	APP'D	DATE

BY	DATE	PROJECT NO.	CONTRACT NO.
DRN	ADG	8/2/10	RFS: 209-5558
APP'D	GAL	8/2/10	SCALE
CKD.	CHM	8/2/10	AS NOTED
APP'D	CHM	8/2/10	DRAWING NUMBER

CONTRACT NO.	UMA 11-06
SHEET	5 OF 21
DRAWING NUMBER	A-D-290-08-001532-P1