PROCESS GENERAL NOTES

1. ALL EQUIPMENT AND PIPING LAYOUT DIMENSIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH EQUIPMENT SUPPLIED, AND/OR EXISTING CONDITIONS. SOME INFORMATION ASSOCIATED WITH EXISTING STRUCTURES, PIPING AND EQUIPMENT LOCATIONS, ELEVATIONS AND SIZES, WERE TAKEN FROM THE RECORD DRAWINGS FOR THE PORTLAND WATER DISTRICT, POLLUTION ABATEMENT FACILITIES, CONTRACT NO. 6, DATED FEBRUARY 1973 AND THE WASTEWATER TREATMENT PLANT, NEW CHLORINATION/ DECHLORINATION FACILITIES, DATE NOVEMBER 1992, BY CAMP DRESSER & McKEE INC, OF BOSTON, MASSACHUSETTS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AS REQUIRED PRIOR TO BEGINNING CONSTRUCTION OF NEW FACILITIES, EQUIPMENT OR PIPING THAT MAY BE AFFECTED. IN SOME SPECIFIC INSTANCES, WHERE SPECIAL ATTENTION MAY BE REQUIRED BY THE CONTRACTOR, SOME DIMENSIONS, ELEVATIONS, ETC. HAVE BEEN NOTED WITH AN " * ". THIS DOES NOT HOWEVER, LIMIT THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND COORDINATED ALL NECESSARY INFORMATION FOR HIS CONSTRUCTION.

2. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DIMENSIONS, LAYOUT OR ELEVATION CHANGES REQUIRED TO SUIT THE SPECIFIC EQUIPMENT BEING PROVIDED UNDER THIS CONTRACT. FINAL EQUIPMENT SHOP DRAWINGS SHALL BE REVIEWED AND "NO EXCEPTIONS TAKEN" PRIOR TO SUBMITTING REINFORCING STEEL SHOP DRAWINGS.

3. ALL BURIED CONNECTIONS TO STRUCTURES, INCLUDING BUT NOT LIMITED TO THE CHLORINE CONTACT TANK SHALL HAVE SLEEVE TYPE FLEXIBLE CONNECTIONS APPROXIMATELY 4 FEET FROM THE STRUCTURES. ALL SLEEVE TYPE COUPLINGS ON PRESSURE LINES SHALL BE RESTRAINED (SOLID SLEEVE TYPE). REFER TO SPECIFICATION SECTION 15088.

4. PROVIDE CAST OR DUCTILE IRON WALL CASTINGS, OR GALVANIZED STEEL PIPE SLEEVES, FOR ALL PIPE PENETRATIONS MADE THROUGH CONCRETE FOUNDATIONS, WALLS AND SLABS. ALL WALL SLEEVES AND WALL CASTINGS SHALL HAVE WATERSTOPS. SEE PROCESS, MECHANICAL AND STRUCTURAL DRAWINGS FOR LOCATIONS OF PENETRATIONS. NEW PENETRATIONS THROUGH EXISTING STRUCTURE WALLS SHALL BE BY CORING MACHINE AND "LINK-SEAL" TYPE SEALS, UNLESS OTHERWISE INDICATED. OPENINGS TO BE COMPATIBLE WITH REQUIRED PIPING AND STANDARD LINK SEAL SIZES.

5. FOR PIPING MATERIAL, SEE THE PIPE SCHEDULE IN SPECIFICATION SECTION 15050.

6. PROVIDE DRIP PANS, WITH CENTRAL COLLECTION POINT AND DRAIN TO FLOOR, FOR ELECTRICAL AND INSTRUMENTATION EQUIPMENT LOCATED BENEATH LIQUID CARRYING PIPES.

7. ALL PROCESS AND PLANT WATER HOSE BIBBS SHALL BE PROVIDED WITH A HOSE RACK AND HOSE, ALONG WITH A SIGN INDICATING "NOT SUITABLE FOR DRINKING". FOR ADDITIONAL HOSE BIBB AND HOSE RACK INFORMATION SEE SPECIFICATION SECTION 15401, 15403 AND DRAWINGS. PROVIDE 50' OF HOSE AT EACH HOSE BIBB UNLESS OTHERWISE INDICATED.

8. INSTALL CORPORATION COCKS ON ALL BUILDING AND STRUCTURE INTERIOR PIPING HIGH POINTS TO PREVENT AIR BINDING. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXACT NUMBER AND LOCATIONS OF THESE CORPORATION COCKS BASED UPON INFORMATION DEPICTED ON DRAWINGS AND ACTUAL FIELD ROUTING OF PIPING. REVIEW LOCATIONS WITH ENGINEER BEFORE INSTALLATION. THESE MANUAL AIR RELEASES SHALL INCLUDE A ½-INCH BRASS CORPORATION COCK WITH ½-INCH COPPER TUBING ADEQUATELY SUPPORTED, EXTENDING TO A LOCAL AREA DRAIN. ROUTING OF TUBING AND SELECTED DRAIN TO BE REVIEWED WITH, AND ACCEPTED BY, ENGINEER.

9. PIPES 3-INCH IN DIAMETER AND UNDER SHALL BE SOLVENT WELDED ADJACENT TO EQUIPMENT AND TANKS, UNLESS OTHERWISE NOTED ON DRAWINGS. FLANGES ARE ACCEPTABLE ON 3-INCH DIAMETER PIPING.

10. ALL PIPES SHALL BE ADEQUATELY RESTRAINED AND SUPPORTED IN ACCORDANCE WITH SPECIFICATION SECTION 15094.

11. AFTER INSTALLATION, ALL PIPELINES SHALL BE PRESSURE TESTED FOR TIGHTNESS IN ACCORDANCE WITH SPECIFICATION SECTION 15050. ALL LEAKS SHALL BE CORRECTED AND RETESTED UNTIL PRESSURE TEST IS SATISFACTORY COMPLETED.

12. ALL PIPING SHALL BE CLEANED, TO THE SATISFACTION OF THE ENGINEER, BEFORE TESTING.

13. PROVIDE 4-INCH HIGH (MIN) REINFORCED CONCRETE PAD UNDER ALL EQUIPMENT, CONTROL PANELS, PIPE AND EQUIPMENT SUPPORTS, TANKS, ETC. UNLESS OTHERWISE INDICATED.

14. DO NOT SCALE DISTANCES OR DIMENSIONS FROM THE DRAWINGS. WRITTEN DIMENSIONS SHALL PREVAIL. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.

15. REFER TO SPECIFICATION SECTION 01070 AND THIS DRAWING FOR A LISTING OF COMMONLY USED ABBREVIATIONS.

16. ALL REDUCERS SHALL BE CONCENTRIC TYPE UNLESS DESIGNATED AS ECCENTRIC (ECC) ON THE DRAWINGS. ECCENTRIC REDUCERS SHALL BE INSTALLED WITH FLAT SIDE UP.

17. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ADAPTERS, FITTINGS AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE THE INSTALLATION. THE USE OF UNI-FLANGES WILL NOT BE ALLOWED.

18. CONTRACTOR TO NOTE THAT ALL EXISTING INFORMATION ON THE DRAWINGS IS SHOWN WITH A LIGHTER LINE WEIGHT AND INDICATED WITH A SLANTED TYPE TEXT. THE EXCEPTION IS WHEN SCANNED IMAGES ARE UTILIZED FROM THE PREVIOUS CONSTRUCTION PROJECTS NOTED IN GENERAL NOTE NO. 1, ABOVE. WHEN REVIEWING DRAWINGS NOTED AS "SCANNED" UNDER DRAWING TITLE, THE CONTRACTOR SHALL IGNORE ANY REFERENCE TO PREVIOUS CONTRACT WORK. SCANNED IMAGES ARE NOT TO SCALE.

19. CONTRACTOR SHOULD BE AWARE OF THE CONVENTION USED IN IDENTIFYING PIPE ELEVATIONS. IN GENERAL, UNLESS OTHERWISE INDICATED, ALL PIPES EXITING A STRUCTURE WHICH ARE CONTINUED ON CIVIL DRAWINGS, HAVE INVERT ELEVATIONS SHOWN. ALL PIPE ELEVATIONS GIVEN WITHIN A STRUCTURE ARE CENTERLINE ELEVATIONS.

20. ALL FLOW ELEMENTS SHALL BE LOCATED A MINIMUM OF TEN PIPE DIAMETERS DOWNSTREAM AND FIVE PIPE DIAMETERS UPSTREAM OF ANY HYDRAULIC DISTURBANCE.

PROCESS GENERAL NOTES CON'T

21 CONTRACTOR SHALL MAINTAIN ACCESS TO THE EXISTING CHLORINATION AND DECHLORINATION BUILDING FOR CHEMICAL DELIVERIES AND GENERAL ACCESSIBILITY AT ALL TIMES.

22. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS APPLICABLE TO CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS AND PAY THE ASSOCIATED FEES.

23. ALL NEW EXTERIOR, EXPOSED PROCESS PIPING INSTALLED ON THE CHLORINE CONTACT TANK AND NEAR EACH BUILDING INCLUDING PIPE CONDUITS, CHEMICAL LINES, SOLUTION LINES, CARRIER WATER LINES, AND SAMPLE LINES SHALL BE INSULATED AND HEAT TRACED. REFER TO THE SPECIFICATION SECTIONS 15188 AND 15402 FOR DETAILS ON EACH.

PROCESS GENERAL DEMOLITION NOTES

1. REFER TO PROCESS DRAWINGS FOR SPECIFIC DEMOLITION NOTES.

2. [ ] INDICATES EXISTING PIPING/EQUIPMENT TO BE DEMOLISHED.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL DEMOLISHED PIPING, EQUIPMENT AND MATERIALS. THE OWNER RESERVES THE RIGHT TO RETAIN ANY SUCH PIPING, EQUIPMENT AND/OR MATERIALS ON SITE FOR THEIR USE. SUCH MATERIAL TO BE RETAINED SHALL BE PLACED IN A ON-SITE STORAGE AREA, REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO THE OWNER AND ENGINEER. RETAINED EQUIPMENT SHALL BE REMOVED IN SUCH A WAY AS NECESSARY TO MAINTAIN ITS FUNCTIONAL AND PHYSICAL INTEGRITY.

4. THE CONTRACTOR SHALL KEEP A RECORD OF DEMOLITION AND LOCATION OF UTILITIES FOUND AS PART OF THE PROJECT RECORD DOCUMENTS, AS SPECIFIED IN SECTION 01720.

5. REFER TO THE DEMOLITION SPECIFICATION SECTION 02050, SUMMARY OF WORK SPECIFICATION SECTION 01010, AND SITE DEMOLITION DRAWING C-1 FOR ADDITIONAL INFORMATION REGARDING DEMOLITION REQUIREMENTS AND CONSTRUCTION SEQUENCING.

6. REFER TO DRAWING C-1 FOR ADDITIONAL INFORMATION REGARDING EXISTING UTILITIES. THE SIZES, LOCATIONS, AND MATERIALS OF CONSTRUCTION INDICATED ARE FROM THE BEST AVAILABLE INFORMATION AND MAY NOT BE COMPLETE OR ACCURATE. ALL SIZES, LOCATIONS, AND MATERIALS OF CONSTRUCTION SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD AS REQUIRED. ALL EXISTING UTILITIES THAT ARE TO REMAIN, AND ARE DAMAGED BY THE CONTRACTORS ACTIVITIES, SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

7. SEVERING THE EXISTING UTILITIES FOR ABANDONMENT, OR REMOVAL OF A SEGMENT FROM SERVICE, SHALL BE PERFORMED IN SUCH A MANNER AS TO ALLOW THE REMAINING ACTIVE SEGMENT TO CONTINUE IN ITS INTENDED SERVICE. CAP ACTIVE SEGMENTS WITH APPROPRIATE FITTING, JOINT RESTRAINT, ETC. TO ENSURE THEIR INTEGRITY. THE METHOD OF CAPPING SHALL BE REVIEWED WITH, AND ACCEPTABLE TO, THE ENGINEER.

8. ALL PIPING, EQUIPMENT AND MATERIALS TO BE DEMOLISHED AND/OR REMOVED FROM SERVICE MUST BE COORDINATED WITH THE OWNER AND ENGINEER BEFOREHAND.

9. THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO ENSURE THAT ALL FLOWS, FLOW METERING AND LEVEL CONTROLS ARE MAINTAINED DURING CONSTRUCTION. GRAVITY, PUMPED BYPASSES OR OTHER MEANS OF FLOW MAINTENANCE SHALL BE REVIEWED WITH, AND ACCEPTABLE TO, THE ENGINEER. THE CONTRACTOR SHALL COORDINATE ANY TEMPORARY STOPPAGES WITH THE OWNER AND ENGINEER. CONTRACTOR SHALL VERIFY WITH OWNER/ENGINEER ALL VALVES, GATES, EQUIPMENT, ETC. ARE FUNCTIONAL PRIOR TO ASSUMING UTILIZATION FOR FLOW ISOLATION.

10. WHERE PIPING OR CONDUIT THAT IS TO BE REMOVED PASSES THROUGH THE WALL OF THE STRUCTURE, IT SHALL BE CUT OFF AS NEAR TO THE WALL AS PRACTICAL AND PROPERLY SEALED ON EACH SIDE OF THE WALL, OR AS SHOWN ON THE DRAWINGS. SEAL METHOD SHALL BE SUBJECT TO REVIEW AND ACCEPTANCE OF THE ENGINEER.

11. ALL WALL AND/OR FLOOR PENETRATIONS REMAINING AFTER THE REMOVAL OF PIPING OR CONDUIT ARE TO BE PATCHED AND FINISHED FLUSH TO MATCH EXISTING SURFACES.

12. REMOVE ALL PUMP AND EQUIPMENT PADS NOT BEING RE-USED AND FINISH FLUSH TO FLOOR LEVEL.

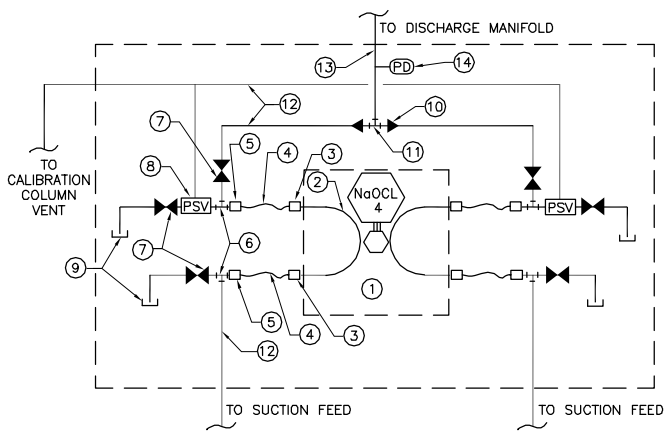
13. REMOVE ALL WALL BRACKETS, PIPE HANGERS AND PIPE SUPPORTS NOT BEING RE-USED. PATCH BOLT HOLES TO MATCH THE EXISTING SURFACE.

14. ALL WALL AND FLOOR SURFACES DAMAGED OR DISTURBED AS A RESULT OF DEMOLITION BY THE CONTRACTOR OR HIS SUB-CONTRACTORS, SHALL BE PATCHED AND PAINTED PER SPECIFICATION SECTION 09900.

15. WHERE PIPING AND/OR EQUIPMENT THAT IS NOTED AS ABANDONED INTERFERES WITH THE CONTRACTOR'S CONSTRUCTION ACTIVITIES, HE SHALL REMOVE AND DISPOSE OF AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.

ABBREVIATIONS

AE	ANALYZING ELEMENT
AIT	ANALYZING INDICATING TRANSMITTER
BF	BLIND FLANGE
BF/FC	BLIND FLANGE WITH FLUSHING CONNECTION
BV	BALL VALVE
CCT	CHLORINE CONTACT TANK
CRS	CHLORINE RESIDUAL SAMPLER
CW	CITY WATER
DEC	DECHLORINATION
DWG	DRAWING
EL	ELEVATION
FF	FINISHED FLOOR
GAL	GALLON
HYP	HYPOCHLORITE
RAS-HYP	RETURN ACTIVATED SLUDGE-HYPOCHLORITE
RED	REDUCER
SAM	SAMPLE
SO_2	SODIUM DIOXIDE
VERT	VERTICAL

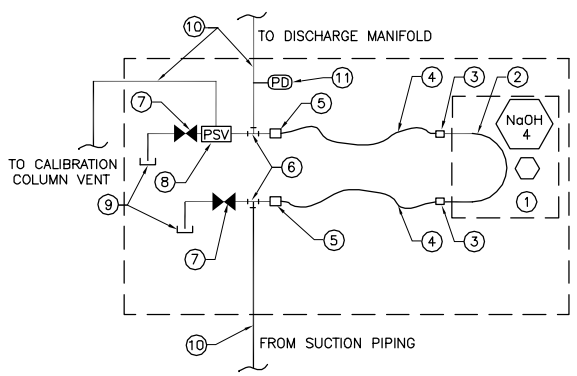


SYSTEM COMPONENTS

1. PERISTALTIC TUBING PUMP. *
2. PUMP TUBING WITH END FITTING. *
3. TUBING COUPLER. *
4. FLEX TUBING WITH END FITTING. (LENGTH PER MANUF. RECOMMENDATIONS) *
5. TUBING TO PIPE CONNECTOR.
6. 3/4" PVC TEE
7. 3/4" TRUE UNION GATE VALVE (PVC/VITON).
8. 3/4" PRESSURE SAFETY VALVE. *
9. 3/4" MALE QUICK CONNECT WITH CAP.
10. 3/4" TO 1" REDUCER.
11. 1" PVC TEE.
12. 3/4" PVC PIPE.
13. 1" PVC PIPE.
14. PULSATION DAMPENER *

* PROVIDED UNDER 11250A

DUPLEX PERISTALTIC TUBING PUMP SCHEMATIC
NTS



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10. 3/4" PVC PIPE.
11. PULSATION DAMPENER *

* PROVIDED UNDER 11250A

SIMPLEX PERISTALTIC TUBING PUMP SCHEMATIC
NTS

PROGRESS PRINTS
ISSUED FOR REVIEW: 12-15-04
ISSUED FOR BIDDING: 2-18-05
VAULT LOCATION: FF 36
LAST WORKED ON:
FILENAME:

NO	REVISIONS	APP'D	DATE
1			
2			
3			
4			

DRAWN BY SAL
CHECKED BY DWS/EFB
DATE 2-18-05
APPROVED BY EFB
DATE 2-18-05
BOOK NO. -
PROJECT NO. 10301C
SCALE AS NOTED

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PORTLAND WATER DISTRICT
PORTLAND, MAINE
EAST END WWTF DISINFECTION AND DECHLORINATION SYSTEMS UPGRADE

PROCESS NOTES, LEGEND ABBREVIATIONS AND DETAILS

DWG PR-1
9 OF 33

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