

Bulletin No. 3

**Attachment – 2:**

**Revisions to Specifications (Book 2 of 3)**

## BOOK 1 OF 3

<u>Section</u>	<u>Title</u>	<u>Number of Pages</u>
<b>PART – I CONTRACT FORMS AND CONDITIONS OF THE CONTRACT</b>		
00010	Table of Contents	00010-1 to 00010-2
00030	Advertisement	00030-1 to 00030-2
00100	Instruction to Bidders	00100-1 to 00100-10
00110	Bidder's Checklist	00110-1 to 00110-1
00120	Supplementary Instruction	00120-1 to 00120-1
00210	Information for Bidders	00210-1 to 00210-2
00300	Bid Form	00300-1 to 00300-11
00305	Executive Order No. 2003-4	00305-1 to 00305-1
00310	Bid Bond	00310-1 to 00310-1
00315	Detroit Living Wage Ordinance	00315-1 to 00315-2
00320	Non-Collision Affidavit	00320-1 to 00320-2
00325	Security Memorandum – Purchasing Division	00325-1 to 00325-2
00400	Bidders Qualification Submittals	00400-1 to 00400-1
00410	Bid Breakdown	00410-1 to 00410-1
00420	Questionnaire	00420-1 to 00420-4
00440	List Subcontractors	00440-1 to 00440-2
00450	Schedule of Manufacturers and Suppliers	00450-1 to 00450-3
Agreement -Article I-VIII		1 to 23
Exhibit A	General Description of Work and Project	A-1 to A-2
Exhibit B	Contract Documents	B-1 to B-2
Exhibit C	General Conditions - Article 1 – 18	C-1 to C-51
Exhibit D	Cost Summary	D-1 to D-3
Exhibit E	Designation of Notice Address	E-1 to E-2
Exhibit F	Insurance and Bonds	F-1 to F-7
Exhibit G	Glossary	G-1 to G-7
00825	Forms	
	00825-1 to 00825-6	

## BOOK 2 OF 3

**NOTES:**

1. All specification sections referencing DWSD Master Specifications are not issued.
2. DWSD Master Specifications can be accessed as follows:  
<http://www.dwsd.org>  
click-customer info  
click-master specifications  
click-master specifications-version 2.0 01-01-06 (pdf format, 17mb)
3. Specification sections marked with a (P) are Provisional Specifications issued with changes and sections marked with a (S) are Supplemental Specifications issued new in its entirety. Both Provisional and Supplemental specifications are included herein.

**PART- II SPECIFICATIONS**

<u>Section</u>	<u>Title</u>	<u>Number of Pages</u>
<b>DIVISION 01 – GENERAL REQUIREMENTS</b>		
01010	Administrative Provisions	01010-1 to 01010-38
01010 (P)	Administrative Provisions	01010-1 to 01010-2
01020	Documentation Standards	01020-1 to 01020-2
01020 (P)	Documentation Standards	01020-1 to 01020-2
01030	Summary of Work	01030-1 to 01030-3
01030 (P)	Summary of Work	01030-1 to 01030-4
01035 (S)	Allowances	01035-1 to 01035-4
01040	Control of Work	01040-1 to 01040-6
01040 (P)	Control of Work	01040-1 to 01040-2
01050	Progress Schedules and Pay Applications	01050-1 to 01050-4
01050 (P)	Progress Schedules and Pay Applications	01050-1 to 01050-2
01060	Quality Control	01060-1 to 01060-11
01070	Project Coordination and Meetings	01070-1 to 01070-6
01070 (P)	Project Coordination and Meetings	01070-1 to 01070-2
01080	Project Submittals	01080-1 to 01080-18
01080 (P)	Project Submittals	01080-1 to 01080-4
01100	Traffic Control	01100-1 to 01100-2
01100 (P)	Traffic Control	01100-1 to 01100-4
01110	Construction Facilities and Identification	01110-1 to 01110-10
01110 (P)	Construction Facilities and Identification	01110-1 to 01110-2
01120	Security	01120-1 to 01120-4
01140	Soil Erosion and Sedimentation Control	01140-1 to 01140-7
01140 (P)	Soil Erosion and Sedimentation Control	01140-1 to 01140-4
01150	Project Record Documents and Photographs	01150-1 to 01150-7
01150 (P)	Project Record Documents and Photographs	01150-1 to 01150-2
01160	Training and Operations & Maintenance Manuals	01160-1 to 01160-15
01170	Warranties and Bonds	01170-1 to 01170-3
01180	Equipment, Materials, Parts and Tools	01180-1 to 01180-23
01190	Contract Closeout and Cleaning	01190-1 to 01190-5
01190 (P)	Contract Closeout and Cleaning	01190-1 to 01190-2
01200 (S)	Equipment Records	01200-1 to 01200-24
<b>DIVISION 02 – SITE WORK</b>		
02050	Demolition	02050-1 to 02050-5
02084	Modifications to Existing Structures, Piping and Equipment	02804-1 to 02084-7
02140	Dewatering	02140-1 to 02140-4
02145	Sludge Removal	02145-1 to 02145-2
02211	Excavating, Filling and Grading	02211-1 to 02211-24
02231	Removing/Abandoning Utilities and Structures	02231-1 to 02231-4
02600	Manholes	02600-1 to 02600-6
02740	Bituminous Paving	02740-1 to 02740-11
02750	Concrete Pavement	02750-1 to 02750-26
02755	Removal and Replacement of Curbs and Sidewalks	02755-1 to 02755-9

**PART- II SPECIFICATIONS**

<b><u>Section</u></b>	<b><u>Title</u></b>	<b><u>Number of Pages</u></b>
<b>DIVISION 02 – SITE WORK CONTINUED</b>		
02760	Sidewalks, Sidewalk Ramps & Driveways	02760-1 to 02760-11
02820	Chain Link Fences and Gates	02820-1 to 02820-7
02085 (S)	Lead-Based Paint Removal	02850-1 to 02850-22
02900	Landscaping	02900-1 to 02900-15
<b>DIVISION 03 – CONCRETE</b>		
03100	Concrete Formwork	03100-1 to 03100-11
03200	Concrete Reinforcement	03200-1 to 03200-8
03250	Concrete Accessories	03250-1 to 03250-4
03251	Construction and Expansion Joints	03251-1 to 03251-5
03300	Cast-in-Place Concrete	03300-1 to 03300-21
03345	Concrete Curing and Finishing	03345-1 to 03345-8
03410	Plant-Precast Structural Concrete	03410-1 to 03410-12
03410 (P)	Plant-Precast Structural Concrete	03410-1 to 03410-2
03600	Grout	03600-1 to 03600-7
03700	Concrete Restoration	03700-1 to 03700-6
03800	Concrete Repair	03800-1 to 03800-5
<b>DIVISION 04 – MASONRY</b>		
04300	Unit Masonry Assemblies	04300-1 to 04300-23
<b>DIVISION 05 – METALS</b>		
05500	Metal Fabrications	05500-1 to 05500-20
05500 (P)	Metal Fabrications	05500-1 to 05500-2
05510	Metal Stairs	05510-1 to 05510-8
05510 (P)	Metal Stairs	05510-1 to 05510-6
05520	Handrails and Railings	05520-1 to 05520-9
05520 (P)	Handrails and Railings	05520-1 to 05520-4
05530	Gratings	05530-1 to 05530-13
05530 (P)	Gratings	05530-1 to 05530-2
05550	Anchor Bolts and Expansion Anchors	05550-1 to 05550-6
05550 (P)	Anchor Bolts and Expansion Anchors	05550-1 to 05550-8
<b>DIVISION 6 – WOODS AND PLASTICS</b>		
06500	Plastic Fabrications	06500-1 to 06500-3
<b>DIVISION 7 – THERMAL AND MOISTURE PROTECTION</b>		
07100	Waterproofing and Waterstops	07100-1 to 07100-9
07210	Thermal Protection and Building Insulation	07210-1 to 07210-13
07500	Flashing and Trim	07500-1 to 07500-12
07600	Caulking and Sealers	07600-1 to 07600-12

**PART- II SPECIFICATIONS**

<b><u>Section</u></b>	<b><u>Title</u></b>	<b><u>Number of Pages</u></b>
<b>DIVISION 8 – DOORS AND WINDOWS</b>		
08710	Finish Hardware	08710-1 to 08710-8
<b>DIVISION 9 – FINISHES</b>		
09900	Painting	09900-1 to 09900-19
09900 (P)	Painting	09900-1 to 09900-4
09960	High Performance Coatings	09960-1 to 09960-9
09960 (P)	High Performance Coatings	09960-1 to 09960-6
<b>DIVISION 10 - SPECIALTIES</b>		
10150	Toilet Compartments and Accessories	10150-1 to 10150-9
10400	Marker Posts and Signage	10400-1 to 10400-6
<b>DIVISION 11 – EQUIPMENT</b>		
11050	Equipment General Provisions	11050-1 to 11050-17
<b>DIVISION 15 – MECHANICAL</b>		
15010	Valve Installation	15010-1 to 15010-4
15020	Miscellaneous Piping and Accessories Installation	15020-1 to 15020-16
15025 (S)	Process Piping and Appurtenances	15025-1 to 15025-12
15050 (S)	Steel Plate Pipe and Fittings	15050-1 to 15050-14
15056 (S)	Pipe Supports	15056-1 to 15056-16
15064	Stainless Steel Pipe, Tubing and Accessories	15064-1 to 15064-6
15068 (S)	FRP Process Piping	15068-1 to 15068-4
15081 (S)	Fabricated Wedge Gate Valves	15081-1 to 15081-6
15083 (S)	Sluice Gates and Appurtenances	15083-1 to 15083-12
15110 (S)	Valves, Hydrants and Appurtenances	15110-1 to 15110-12
15181 (S)	Electric Motor Actuators and Appurtenances	15181-1 to 15181-16
15500	Heating, Ventilating, and Air Conditioning	15500-1 to 15500-47
15500 (P)	Heating, Ventilating, and Air Conditioning	15500-1 to 15500-2
15880	Air Distribution Systems	15880-1 to 15880-43
15880 (P)	Air Distribution Systems	15880-1 to 15880-2
15955	Building System Controls	15955-1 to 15955-30
15955 (P)	Building System Controls	15955-1 to 15955-2
15990	Testing, Adjusting, and Balancing	15990-1 to 15990-14
15990 (P)	Testing, Adjusting, and Balancing	15990-1 to 15990-2

**PART- II SPECIFICATIONS**

<u>Section</u>	<u>Title</u>	<u>Number of Pages</u>
<b>DIVISION 16 – ELECTRICAL</b>		
16050	Electrical General Requirements	16050-1 to 16050-31
16050 (P)	Electrical General Requirements	16050-1 to 16050-10
16110 (S)	Raceway System and Fittings	16110-1 to 16110-14
16115 (S)	Medium Voltage Cable	16115-1 to 16115-6
16120 (S)	Wire and Cable 600 Volt or Less	16120-1 to 16120-10
16160 (S)	Medium Voltage Variable Frequency Drive For Synchronous Motor	16160-1 to 16160-22
16480	600 Volt Class Motor Control Centers	16480-1 to 16480-14
16910 (S)	Magnetic Flow Metering System	16910-1 to 16910-10
16911 (S)	Vibration Monitoring System	16911-1 to 16911-16
16950 (S)	Electrical Acceptance Tests	16950-1 to 16950-8
<b>DIVISION 17 – INSTRUMENTATION AND CONTROLS</b>		
17100	Computer Control System	17100-1 to 17100-19
17100 (P)	Computer Control System	17100-1 to 17100-6
17200	Computer System Hardware	17200-1 to 17200-7
17200 (P)	Computer System Hardware	17200-1 to 17200-2
17300	Programmable Logic Controllers	17300-1 to 17300-17
17300 (P)	Programmable Logic Controllers	17300-1 to 17300-4
17400	Software Control Block Descriptions	17400-1 to 17400-3
17400 (P)	Software Control Block Descriptions	17400-1 to 17400-16
17500	Instrumentation General Requirements	17500-1 to 17500-4
17505 (S)	Instrumentation Schedules	17505-1 to 17505-28
17510	Panel Mounted Instruments	17510-1 to 17510-7
17510 (P)	Panel Mounted Instruments	17510-1 to 17510-2
17520	Flow Instruments	17520-1 to 17520-14
17530 (S)	Pressure and Level Instruments	17530-1 to 17530-4
17540	Analytical Instruments	17540-1 to 17540-12
17540 (P)	Analytical Instruments	17540-1 to 17540-4
17550	Miscellaneous Instruments	17550-1 to 17550-26
17550 (P)	Miscellaneous Instruments	17550-1 to 17550-4
17600	Panels, Consoles, and Appurtenances	17600-1 to 17600-9
17700	Uninterruptible Power Supply	17700-1 to 17700-5

**BOOK 3 OF 3****PART- III DRAWINGS**



**MASTER SPECIFICATIONS WORKSHEET**

		USE				
		AS IS	MODIFY	NEW	N/A	COMMENTS WHY TO MODIFY OR CREATE NEW
	<b>VOLUME I</b>					
	<b>DIVISION 1 – GENERAL REQUIREMENTS</b>					
01010(p)	Administrative Provisions		X			
01020(p)	Documentation Standards		X			
01030(p)	Summary of Work		X			
01035	Allowances			X		Project Specific
01040(p)	Control of Work		X			
01050(p)	Progress Schedules and Pay Applications		X			
01060	Quality Control	X				
01070(p)	Project Coordination and Meetings		X			
01080(p)	Project Submittals		X			
01100(p)	Traffic Control		X			
01110(p)	Construction Facilities and Identification		X			
01120	Security	X				
01140(p)	Soil Erosion and Sedimentation Control		X			
01150(p)	Project Record Documents and Photographs		X			
01160	Training and Operations & Maintenance Manuals	X				
01170	Warranties and Bonds	X				
01180	Equipment, Materials, Parts and Tools	X				
01190(p)	Contract Closeout and Cleaning		X			
01200(s)	Equipment Records			X		Not included in Masters
01320(s)	Maintenance of Plant Operations			X		



**USE AS IS    MODIFY    NEW    N/A    COMMENTS WHY TO MODIFY OR CREATE NEW**

VOLUME I (Continued)		USE AS IS	MODIFY	NEW	N/A	COMMENTS WHY TO MODIFY OR CREATE NEW
	<b>DIVISION 2 - SITE CONSTRUCTION</b>					
02012	Soil Boring and Testing				X	
02050	Demolition	X				
02080	Asbestos Removal	X				
02084	Modifications to Existing Structures, Piping and Equipment	X				
02085	Lead-Based Paint Removal			X		
02100	Site Clearing				X	
02140	Dewatering	X				
02145	Sludge Removal	X				
02211	Excavating, Filling and Grading	X				
02221	Trenching, Backfilling and Compacting				X	
02231	Removing/Abandoning Utilities and Structures	X			X	
02233	Adjusting and Reconstructing Structures				X	
02236	Pipe Boring and Jacking				X	
02316	Rock Removal				X	
02321	Flowable Fill				X	
02342	Soil Stabilization				X	
02462	Steel H Piles				X	
02530	Sanitary Sewers				X	
02600	Manholes	X				

		USE				COMMENTS WHY TO MODIFY OR CREATE NEW
		AS IS	MODIFY	NEW	N/A	
<b>VOLUME I (Continued)</b>						
<b>DIVISION 2 - SITE CONSTRUCTION</b>						
02620	Water Main Services				X	
02626	Steel Transmission Pipe				X	
02628	Pre-Stressed Concrete Pressure Pipe				X	
02630	Storm Drainage and Pipe Culverts				X	
02675	Disinfection of Water Distribution Sys.				X	
02730	Aggregate Base and Surface Course				X	
02740	Bituminous Paving	X				
02750	Concrete Pavement	X				
02755	Removal and Replacement of Curbs and Sidewalks	X				
02760	Sidewalks, Sidewalk Ramps & Driveways	X				
02820	Chain Link Fences and Gates	X				
02900	Landscaping	X				

<b>DIVISION 3 - CONCRETE</b>						
03100	Concrete Formwork	X				
03200	Concrete Reinforcement	X				
03250	Concrete Accessories	X				
03251	Construction and Expansion Joints	X				

		USE					
		AS	IS	MODIFY	NEW	N/A	COMMENTS WHY TO MODIFY OR CREATE NEW
<b>VOLUME I (Continued)</b>							
<b>DIVISION 3 - CONCRETE</b>							
03300	Cast in Place Concrete	X					
03345	Concrete Curing and Finishing	X					
03371	Shotcrete					X	
03410(p)	Plant-Precast Structural Concrete			X			
03600	Grout	X					
03650	Cement Stabilized Fly Ash					X	
03700	Concrete Restoration	X					
03800	Concrete Repair	X					

<b>DIVISION 4 – MASONRY</b>						X	
04065	Masonry Mortar and Grout					X	
04300	Unit Masonry Assemblies	X					
04811	Cavity Walls					X	
04813	Masonry Veneer					X	
04820	Reinforced Unit Masonry Assemblies					X	
04900	Masonry Restoration and Cleaning					X	

<b>DIVISION 5 – METALS</b>							
05120	Structural Steel					X	
05210	Steel Joists					X	

		USE				N/A	COMMENTS WHY TO MODIFY OR CREATE NEW
		AS	IS	MODIFY	NEW		
<b>VOLUME I (Continued)</b>							
<b>DIVISION 5 – METALS</b>							
05310	Metal Floor Deck					X	
05311	Steel Roof Deck					X	
05400	Cold-Formed Framing					X	
05500(p)	Metal Fabrications			X			
05510(p)	Metal Stairs			X			Specific to type of stairs for project
05520(p)	Handrails and Railings			X			Specific to type of stairs for project
05530(p)	Gratings			X			
05550(p)	Anchor Bolts and Expansion Anchors			X			
05630	Access Hatches					X	
<b>DIVISION 6 – WOOD AND PLASTICS</b>							
06100	Framing and Sheathing Carpentry					X	
06114	Wood Blocking and Curbing					X	
06170	Trusses, Joists, and Roofing Systems					X	
06200	Finish Carpentry					X	
06410	Custom Cabinets					X	
06500	Plastic Fabrications			X			
<b>DIVISION 7 - THERMAL &amp; MOISTURE PROTECTION</b>							
07100	Waterproofing and Waterstops			X			
07110	Crystalline Waterproofing					X	
07120	Polymer Monolithic Lining					X	
07200	Roofing and Accessories					X	
07210	Thermal Protection and Building Insulation			X			

		USE AS IS    MODIFY    NEW    N/A				COMMENTS WHY TO MODIFY OR CREATE NEW
<b>VOLUME I (Continued)</b>						
<b>DIVISION 7 – THERMAL &amp; MOISTURE PROTECTION</b>						
07410	Siding / Wall Panel System				X	
07500	Flashing and Trim	X				
07600	Caulking and Sealers	X				
07950	Firestopping and Smokestopping				X	

<b>DIVISION 8 – DOORS AND WINDOWS</b>						
08110	Steel Doors and Frames				X	
08120	Aluminum Doors and Frames				X	
08300	Overhead Doors				X	
08410	Aluminum Entrances and Storefronts				X	
08520	Aluminum Windows				X	
08710	Finish Hardware	X				
08800	Glazing				X	

<b>DIVISION 9 – FINISHES</b>						
09100	Framing Systems				X	
09260	Gypsum Board Assemblies				X	
09300	Floor Coverings				X	
09510	Acoustical Ceilings				X	
09720	Wall Coverings				X	
09900(p)	Painting			X		Specific to type of paint systems for project
09960(p)	High Performance Coatings			X		Specific to type of coating systems for project

		USE				COMMENTS WHY TO MODIFY OR CREATE NEW
		AS IS	MODIFY	NEW	N/A	
<b>VOLUME I</b>						
<b>DIVISION 10 – SPECIALTIES</b>						
10100	Miscellaneous Specialties				X	
10150	Toilet Compartments and Accessories	X				
10200	Louvers and Grilles				X	
10300	Visual Display Boards				X	
10400	Marker Posts and Signage	X				
10522	Fire Extinguishers, Cabinets, and Accessories				X	
10700	Storage Shelving, Partitions, and Accessories				X	
10800	Lockers				X	
<b>DIVISION 11 – EQUIPMENT</b>						
11050	Equipment General Provisions	X				
<b>Pump Applications</b>						
11100	Pump Application General Requirements				X	
11200	Vertical Turbine Pumps				X	
11210	Submersible Pumps				X	
11220	Axial Horizontal Split Pumps				X	
11300	Dry Pit Submersible Solids Handling Pumps				X	
11310	Self Priming Pumps				X	
11320	Recessed Impeller Pumps				X	
11330	Plunger Pumps (Sludge)				X	

		USE			COMMENTS WHY TO MODIFY OR CREATE NEW
		AS IS	MODIFY	NEW	N/A
<b>VOLUME I (Continued)</b>					
<b>DIVISION 11 – EQUIPMENT</b>					
11340	Dry Pit Horizontal Chopper Pumps				X
11650	Sump Pumps				X
11700	Sampling Pumps				X
11730	Mixers				X
11740	Chemical Pumps				X
11745	Chemical Feed Systems				X
<b>General Equipment Applications</b>					
11800	Centrifuges				X
11820	Comminutors				X
11975	Blowers				X
<b>DIVISION 12 – FURNISHINGS</b>					
12100	Office Furnishings and Fixtures				X
12200	Laboratory Furnishings and Fixtures				X
12800	Utility Room Furnishings				X
<b>DIVISION 13 – SPECIAL CONSTRUCTION</b>					
13110	Cathodic Protection				X
13200	Pre-Engineered Metal Units				X
13300	Pre-Engineered Precast Concrete Buildings				X
13400	Precast Concrete Vaults, Meter Pits, and Other Units				X

		USE				COMMENTS WHY TO MODIFY OR CREATE NEW
		AS IS	MODIFY	NEW	N/A	
<b>VOLUME I (Continued)</b>						
<b>DIVISION 13 – SPECIAL CONSTRUCTION</b>						
13500	Information Data Centers				X	
13700	Polyethylene Chemical Storage Tanks				X	
13750	Steel Chemical Storage Tanks				X	
<b>DIVISION 14 – CONVEYING SYSTEMS</b>						
14240	Hydraulic Freight Elevator				X	
14552	Screw Conveyors				X	
14553	Belt Conveyors				X	
14621	Chain Hoists				X	
14622	Electric Wire Rope Hoists				X	
14630	Traveling Bridge Cranes				X	
14641	Portable Gantry Cranes				X	
<b>DIVISION 15 – MECHANICAL</b>						
15010	Valve Installation	X				
15020	Miscellaneous Piping and Accessories - Installation	X				
15025(s)	Process Piping and Appurtenances			X		Supplemental – Project Specific
15050(s)	Steel Plate Pipe and Fittings			X		Supplemental – Project Specific
15056(s)	Pipe Supports			X		
15060	Miscellaneous Piping and Pipe Assembly				X	
15061	Ductile Iron Pipe				X	
15062	Steel Pipe				X	



		USE				COMMENTS WHY TO MODIFY OR CREATE NEW
		AS IS	MODIFY	NEW	N/A	
<b>VOLUME I (Continued)</b>						
<b>DIVISION 15 – MECHANICAL</b>						
15063	Light Wall Steel Pipe					
15064	Stainless Steel Pipe, Tubing and Accessories	x				
15065	Miscellaneous Steel Pipe, Tubing and Accessories - Procurement				x	
15066	Fiberglass Reinf. Plastic Pipe - (Exhaust Air Service)				x	
15067	Miscellaneous Plastic Pipe, Tubing and Accessories – Procurement				x	
15068(s)	FRP Process Piping			x		Supplemental-Project Specific
15069	Cast Iron Soil Pipe and Accessories - Procurement					
15070	Copper Tubing and Accessories – Procurement				x	
15080	Roller Gates				x	
15081(s)	Fabricated Wedge Gate Valves			x		Supplemental – Project Specific
15082	Cast-Iron Slide Gates				x	
15083(s)	Sluice Gates and Appurtenances			x		Supplemental – Project Specific
15084	Stop Logs				x	
15090	Angle Valves - Procurement				x	
15091	Miscellaneous Ball Valves - Procurement				x	
15092	Industrial Butterfly Valves - Procurement				x	

		USE				COMMENTS WHY TO MODIFY OR CREATE NEW
		AS IS	MODIFY	NEW	N/A	
<b>VOLUME I (Continued)</b>						
<b>DIVISION 15 – MECHANICAL</b>						
15093	Check Valves - Procurement				X	
15094	Backflow Preventer - Procurement				X	
15095	Solenoid Valves - Procurement				X	
15096	Globe Valves				X	
15097	Pinch Valve - Procurement				X	
15098	Plug Valves - Procurement				X	
15099	Pressure Reducing Valves				X	
15100	Miscellaneous Valves - Procurement				X	
15101	AWWA Butterfly Valves - Procurement				X	
15102	Eccentric Plug Valves - Procurement				X	
15103	AWWA Ball Valves – Procurement				X	
15104	Resilient-Sealed Gate Valves- Procurement				X	
15105	Double Disc Gate Valves - Procurement				X	
15108	Air Release and Combination Air Valves- Procurement				X	
15110(s)	Valves, Hydrants and Appurtenances			X		Supplemental – Project Specific
15130	Indicating Devices				X	
15140	Pipe Supports (With Figures)				X	
15150	Water Meters				X	
15180	Valve and Gate Actuators - Procurement				X	

		USE				COMMENTS WHY TO MODIFY OR CREATE NEW
VOLUME I (Continued)		AS IS	MODIFY	NEW	N/A	
	<b>DIVISION 15 – MECHANICAL</b>					
15181(s)	Electric Motor Actuators and Appurtenances			X		
15250	Mechanical Insulation				X	
15300	Fire Sprinkler System				X	
15310	Clean Agent Fire Suppression System				X	
15400	Plumbing				X	
15482	Laboratory Compressed Air systems				X	
15484	Laboratory Vacuum System				X	
15486	Distilled Water System				X	
15487	Fuel Dispensing System				X	
15500(p)	Heating, Ventilating, and Air Conditioning		X			
15510	Heating Boilers and Accessories				X	
15515	Hydronic Specialties				X	
15525	Digester Heating Boilers				X	
15550 (p)	Heating, Ventilating, Air Conditioning		X			
15650	Refrigeration Systems				X	
15755	Heat Exchangers				X	
15820	Dehumidification Systems				X	
15880(p)	Air Distribution Systems		X			
15890	Odor Control Systems				X	

		USE				COMMENTS WHY TO MODIFY OR CREATE NEW
		AS IS	MODIFY	NEW	N/A	
<b>VOLUME I (Continued)</b>						
<b>DIVISION 15 – MECHANICAL</b>						
15955(p)	Building System Controls		X			
15990(p)	Testing, Adjusting, and Balancing		X			
<b>DIVISION 16 - ELECTRICAL</b>						
16050(p)	Electrical General Requirements		X			
16110(s)	Raceway Systems and Fittings			X		Supplemental – Project Specific
16115(s)	Medium Voltage Cable			X		Supplemental – Project Specific
16120(s)	Wires and Cables 600 Volts and Less			X		Supplemental – Project Specific
16150	Variable Frequency Drives				X	
16160(s)	Medium Voltage Variable Frequency Drives with a By-Pass Starter for Synchronous Motor			X		Supplemental – Project Specific
16220	General Purpose Induction Motors				X	
16310	Secondary Integral Unit Substations				X	
16320	Medium-Voltage Three Phase Pad-Mounted Transformers				X	
16345	Medium-Voltage Metal-Clad Switchgear				X	
16360	Metal-Enclosed Load Interrupter Switchgear				X	
16395	Medium-Voltage Motor Control Equipment				X	
16480	600 Volt Class Motor Control Centers	X				
16500	Lighting				X	

		USE				COMMENTS WHY TO MODIFY OR CREATE NEW
		AS IS	MODIFY	NEW	N/A	
<b>VOLUME I (Continued)</b>						
<b>DIVISION 16 - ELECTRICAL</b>						
16722	Closed Circuit Television Systems				x	
16740	Telephone (Pax) System				x	
16910(s)	Magnetic Flow Metering System			x		Supplemental – Project Specific
16911(s)	Vibration Monitoring System			x		Supplemental – Project Specific
16950(s)	Electrical Acceptance Tests			x		Supplemental – Project Specific

<b>DIVISION 17 – INSTRUMENTATION AND CONTROLS</b>						
17100(p)	Computer Control System		x			
17200(p)	Computer System Hardware		x			
17250	Computer System Software				x	
17300(p)	Programmable Logic Controllers		x			
17350	Multiple Address Radio Equipment				x	
17400(p)	Software Control Block Descriptions		x			
17500	Instrumentation General Requirements	x				
17505(s)	Instrumentation Schedules				x	Supplemental – Project Specific
17510(p)	Panel Mounted Instruments		x			
17520	Flow Instruments	x				
17530(s)	Pressure and Level Instruments				x	
17540(p)	Analytical Instruments		x			

**USE AS IS    MODIFY    NEW    N/A    COMMENTS WHY TO MODIFY OR CREATE NEW**

	<b>VOLUME I (Continued)</b>								
	<b>DIVISION 17 – INSTRUMENTATION AND CONTROLS</b>								
17550(p)	Miscellaneous Instruments								
17600	Panels, Consoles, and Appurtenances								
17700	Uninterruptible Power Supply								

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## **SECTION 02085 – SUPPLEMENTAL**

### **LEAD-BASED PAINT REMOVAL**

#### **PART 1 – GENERAL**

1.1. SUMMARY OF WORK. This section includes requirements for the removal and disposal of lead-based paint from affected surfaces of Lead Containing Materials of piping in various locations at throughout the WWTP Secondary Treatment System.

#### 1.2. RELATED WORK

Divisions 0 and 1 as applicable

Division 02, Section 02080, Asbestos Removal

#### 1.3. REFERENCES

Code of Federal Regulations:

29 CFR 1910, "Occupational Safety and Health Standards" (General Industry Standards).

29 CFR 1910.134, "Respiratory Protection."

29 CFR 1910.1025, "Lead."

29 CFR 1910.1200, "Hazard Communication."

29 CFR 1926, "Safety and Health Regulations for Construction" (Construction Industry Standards).

40 CFR 50, "National Primary and Secondary Ambient Air Quality Standards."

40 CFR 60, "Standards of Performance for New Stationary Sources."

40 CFR 117, "Determination of Reportable Quantities for Hazardous Substances."

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40 CFR 122, "EPA Administered Permit Program: The National Pollutant Discharge Elimination System."

40 CFR 261, "Identification and Listing of Hazardous Waste."

40 CFR 263, "Standards Applicable to Transporters of Hazardous Waste."

40 CFR 263, "Standards Applicable to Transporters of Hazardous Waste."

40 CFR 265, "Interim Status Standards for OWNERS and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities"

40 CFR 268, "Land Disposal Restrictions."

40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan."

40 CFR 302, "Designation, Reportable Quantities and Notification."

State of Michigan Regulations:

MCLA 299.9101 - 299.11107 "Michigan Hazardous Waste Management"

National Institute for Occupational Health and Safety: NIOSH Method 7082, "Lead"

American Society for Testing and Materials:

ASTM D3335, "Test Method for Low Concentrations for Lead, Cadmium, and Cobalt in Paint by Atomic Absorption Spectroscopy"

EPA (Environmental Protection Agency) Publications:

SW-846, Test Methods for Evaluating Solid Waste - Physical/Chemical Methods.

EPA Method 3050, "Acid Digestion of Sediments, Sludges and Soils"

SSPC (Steel Structures Painting Council): Guide 61 (CON), Guide for

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“Industrial lead Paint Removal Handbook, “2nd Edition, Kenneth A. Trimber

1.4. DEFINITIONS.

1.4.01. Lead-Containing Paint. Paint containing a minimum of 1.0 mg/cm<sup>2</sup> (milligram per square centimeters) lead or containing 0.5 percent lead by weight as determined by on-site testing of the coating with a portable X-ray fluorescence (XRF) detector, or through laboratory testing in accordance with ASTM D3335.

1.4.02. Hazardous Waste. Lead paint debris is classified as hazardous due to the characteristic of toxicity, if after testing by Toxicity Characteristic Leaching Procedures (TCLP), the leachate contains any of the elements in the concentrations listed below (or greater):

Arsenic	5	ppm
Barium	100	ppm
Cadmium	1	ppm
Chromium	5	ppm
Lead	5	ppm
Mercury	0.2	ppm
Selenium	1	ppm
Silver	5	ppm

Note: Other elements can cause a material to be hazardous as defined in 40 CFR 261 and must be taken into consideration. The list above includes only those elements typically associated with paint solids. If chemical strippers are used, the debris may be hazardous waste, due to corrosivity, if the pH is less than or equal to 2 or greater than or equal to 12.5.

1.4.03. Generator. The facility OWNER or operator or person who first creates or produces the hazardous waste.

Large Quantity Generator: Generates over 2,200 pounds (1,000 kilograms) of hazardous waste or 2.2 pounds of acutely hazardous waste per month or stores more than 13,200 pounds (6,000 kilograms) of waste or more than 2.2 pound of acutely hazardous waste at the site at any one time.

Small Quantity Generator: Generates more than 220 pounds (100 kilograms), but less than 2,200 pounds (1000 kilograms) of hazardous waste per month and accumulates less than 13,200 pounds (6,000

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kilograms) at any one time.

Conditionally Exempt Small Quantity Generator: Generates less than 220 pounds (100 kilograms) of hazardous waste per month, and accumulates no more than 2,200 pounds (1,000 kilograms) of hazardous waste at any time.

1.4.04. Containment and Ventilation Systems. Includes the containment structure (i.e., containment walls, floor, supporting structure, entryways); ventilation system (i.e., air input and exhaust); and dust collection.

1.4.05. Milligram (mg). A milligram is 1/1000 of a gram.

1.4.06. Microgram (ug). A microgram is 1/1,000,000 of a gram or 1/1000 of a milligram.

1.5. SUBMITTALS. Provide the following submittals to the OWNER's Environmental Consultant a minimum of five (5) days prior to the beginning of work. The Environmental Consultant will review the submittals for compliance with the specifications:

1.5.01. Removal/Contaminant/Ventilation Plan. Provide a written plan for the methods to be employed for surface preparation, containment and ventilation, and collection of debris. When designing the system, the CONTRACTOR shall recognize the load bearing capacity and integrity of the structure to be abated. The CONTRACTOR shall have the containment and ventilation plan reviewed by a Professional Engineer and submit drawings for OWNER review.

1.5.02. Programs for the Protection of the Ambient Air and Water. Submit written testing and evaluation that will be used to confirm that the work does not violate Federal, State and local regulations. Refer to Item 1.6 for acceptance criteria.

Ambient Air Quality: Submit a written program for air monitoring at the project site to confirm that fugitive dust emissions do not exceed specified criteria. The following shall be addressed:

Particulate Matter: Monitor emissions of particulate matter equal to or greater than 10 micrometers (PM 10) in aerodynamic size in accordance with 40 DFR 50. Include the type and number of samplers

to be used, their proposed locations, provisions for background monitoring, and the duration of testing.

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Visible Emissions: Submit a written plan for the observations that will be made to verify that the visible emissions criteria of this specification are not exceeded.

Total Suspended Particulate (TSP) Lead: Submit a program for the analysis of airborne lead emissions in accordance with 40 CFR 50. Include the type and number of samplers to be used, their proposed locations, provisions for background monitoring and duration of testing.

Lead Emissions Using Personal Monitors: Submit a program that identifies the proposed monitoring sites for the use of personal monitors in accordance with NIOSH Method 7082. The duration of monitoring, provisions for background monitoring, laboratory qualifications, and evaluation procedures to be employed shall be included.

Water Analysis: Submit a written program for verification of the following:

National Pollutant Discharge Elimination System (NPDES) Permit: If waste water will be discharged to sewers or surface water, obtain an NPDES permit for the work in accordance with 40 CFR 122, and that its requirements will be strictly followed. NOT REQUIRED

Reportable Releases: Prepare a program for reporting releases of lead into the water in accordance with 40 CFR 117. NOT REQUIRED

Water and Sediment Analysis: Outline the sampling and testing protocol proposed for the pre-job and post-job analysis of lead in the water and sediment, and provide the qualifications of testing laboratory to be used. NOT REQUIRED

Handling, Disposal and Analysis of Debris Criteria: Submit the following:

Handling and Site Storage: A written plan that addresses the handling and site storage of lead-containing debris in accordance with the requirements of 40 CFR 262 and 40 CFR 265. The CONTRACTOR shall confirm that an EPA identification number shall be obtained if one has not already been assigned to the facility,

that proper manifesting of the waste shall be addressed, and that all site storage limitations, including the time of storage, container

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requirements, contingency plan, and personnel training, shall be observed.

Sampling and Testing of Debris: Written procedures that will be followed for the sampling and testing of debris to determine if it is a hazardous waste. The sampling procedure shall be in accordance with the requirements of SW 846, with the testing accomplished by TCLP, as defined in Appendix II of 40 CFR 261. The program shall include the name of the testing laboratory to be utilized.

Transportation: Written confirmation that proper transportation of the debris shall be accomplished in accordance with the requirements of 40 CFR 263. The name of the transporter shall be included.

Disposal: Written confirmation that the debris will be treated and disposed of in accordance with the requirements of 40 CFR 264 and 40 CFR 268. The program shall provide assurance that the debris is handled properly from cradle to grave, and include the necessary notifications and certifications on shipments, provide the name of the disposal facility, and include a schedule for the submittal of the completed manifests to the OWNER.

Clearance Testing: The CONTRACTOR shall provide written programs for the decontamination for reusable items prior to removal from the project site, or for the proper testing and disposal of the materials if decontamination is not possible or desirable.

1.5.03. Prior to final payment: Submit the abatement project records specified in Item 1.9.

1.6. CRITERIA FOR CONTAINMENT SYSTEMS. Design a containment system for the work area to control environmental emissions according to the criteria listed Item 1.6 and control the working environment within containment according to the criteria listed in Item 1.7.

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Thoroughly examine the structure to be prepared to verify its ability to support a containment system, including the wind loads, if any that can be imparted by such a system. Submit containment drawings for OWNER review in accordance with the requirements of Item 1.4.

### 1.7. CRITERIA FOR CONTROL OF ENVIRONMENTAL EMISSIONS

1.7.01. Ambient Air Quality - Particulate Matter and Visible Emissions. Monitor and control ambient air particle matter and visible emissions in accordance with the following criteria:

Ambient Air Quality for Particulate Matter (40 CFR 50): Emissions in excess of 150 ug/m<sup>3</sup> of PM 10 over a 24-hour period shall be cause for shut down of the project, until corrections to the containment are made to comply with this level. Use high volume air samplers in accordance with 40 CFR 50 to monitor for this level. Prior to project startup, perform a minimum of three days of baseline monitoring to determine pre-existing conditions.

Ambient Air Quality - Visible Emissions: Visible emissions shall be used as a criterion for project shut down until corrections to the containment are made. Visible emissions shall be determined in accordance with 40 CFR 60. As determined by SSPC Guide 61, visible emissions in excess of 20 percent opacity for any 3-minute period in 60 minutes shall be cause for shut down of the project until corrections to the containment are made to comply with this level.

1.7.02. Ambient Air Quality - Lead Emissions. Monitor and control ambient airborne lead concentration to conform to the EPA Limit of 1.5 ug/m<sup>3</sup> average over a 90 day period. Emissions of lead in excess of 15 ug/ m<sup>3</sup> over an eight hour period shall be cause for shut down of the project until correction are made to comply with this level. Airborne lead monitoring shall be accomplished using high volume air samplers in accordance with 40 CFR 50. (Refer to Item 1.4 A.2.a.)

1.7.03. Ambient Air Quality for Lead - Personal Air Monitoring to Establish Regulated Areas. Establish a regulated area surrounding activities where lead exposures exceed the OSHA Personal Exposure Level (PEL) (refer to Item 1.7). This includes the paint removal area, dust collection equipment, abrasive recycling equipment, and locations where lead-containing debris is handled or transferred to storage containers.

Demarcate the regulated area by use of ropes, tape, walls, or other similar means, and post appropriate warning signs. Limit access to these areas to those persons properly trained and protected.

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1.7.04. Water Quality. Do not allow the release of lead into bodies of water or storm sewers. Stop work if spills or emissions are observed entering into bodies of water, or are found in areas where storm water run-off could carry the debris into bodies of water or storm sewers.

NPDES Permit: If waste water is discharged to storm sewers or surface water, an NPDES permit shall be obtained in accordance with the requirements of 40 CFR 122. The requirements of the permit shall be strictly followed.

The CONTRACTOR is advised that certain discharges of lead compounds into water are a violation of the Clean Water Act. More specifically, 40 CFR 117.3 establishes reportable quantities of hazardous substances released in a 24-hour period, and 40 CFR 117.21 requires immediate notification of the release of a reportable quantity to the appropriate agency (in Michigan, the Michigan Department of Natural Resources). Examples of reportable quantities of lead compounds include: lead arsenate > 1 lb., lead sulfate > 10 lb., lead acetate > 10 lb., and lead stearate > 10 lb.

Provide protection at drains to prevent paint debris from entering the storm sewer system.

1.8. CRITERIA FOR CONTROLS OVER WORKER PROTECTION. Submit written program for worker protection consistent with OSHA lead standard for construction (29 CFR 1926.62).

In addition to the requirements of the OSHA lead standard for construction, the written program shall:

Name the individuals responsible for implementing the various requirements of the written program.

Specify that analyses of air monitoring filters shall be performed by an American Industrial Hygiene Association (AIHA) accredited laboratory.

Require that blood level testing shall be conducted by an OSHA-approved laboratory.

Include the name, address, and telephone number of the hospital to which injured workers will be taken, and a map showing the route to be traveled.

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Include the telephone number of the ambulance service to be used.

Include the emergency telephone numbers of the local police and fire departments.

Include specifications for the construction of work area containment. The containment shall be designed to contain debris generated by the removal process applied (such as dust, waste paint, waste abrasive, and water), in accordance with Item 1.5. Information on the design of containment can be found in Appendix F of OSHA Asbestos Standards for the Construction Industry, 29 CFR 1926.58, and Chapter 6 of the "Industrial Lead Paint Removal Handbook".

Identify the location at which Material Safety Data Sheets (MSDS) will be maintained and identify the individual responsible for compliance with the OSHA hazard communication standard (29 CFR 1910.1200).

Include the following minimum emergency response requirements:

The site Health and Safety (H&S) coordinator (or site superintendent if no H&S coordinator is designated) shall assure someone trained in first aid and cardiopulmonary resuscitation (CPR) is present during normal working hours. The site H&S coordinator shall assure that a first aid and appropriate fire extinguishers are available at the site and shall inform site workers of their location. The H&S coordinator shall contact the medical facility identified in Item 1.7 to determine if it has facilities to accept workers contaminated with debris present at the site.

In the event of a worker injury, the responding worker shall inform the site H&S coordinator. The site first-aider shall perform first aid. If the worker should be taken to a medical facility, the designated first-aider shall decide whether to decontaminate the worker beforehand, or transport the worker without being clean.

In the event of a fire, the site H&S coordinator shall determine whether conditions warrant assistance from the fire or police department and shall call for assistance. In the absence of the H&S coordinator, the site superintendent shall make the determination.

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1.9. CRITERIA FOR HANDLING OF HAZARDOUS WASTE AND REPORTING RELEASES. The OWNER is considered to be the generator of the waste for this project. The CONTRACTOR is responsible for implementing the following:

1.9.01. Sampling and Testing of Debris. Representative samples of the debris shall be tested by TCLP according to method EPA SW-846 to determine if it is hazardous in accordance with Appendix II of 40 CFR 261.

In the case of wet methods of preparation, the use of chemical strippers, or containerized hygiene water, all liquids and sludge shall be tested, including pH to determine corrosivity, if appropriate.

1.9.02. Hazardous Waste. If the tests of the sampled debris indicate the waste to be hazardous, the following requirements apply:

Site Storage and Handling: Store and handle the on-site hazardous waste debris in accordance with the requirements of 40 CFR 262 and 40 CFR 265, with special attention given to proper labeling, time of storage, amount of material stored at any one time, use of proper containers, and personnel training. Confirm that an EPA identification number will be obtained, if one has not already been assigned to the facility. Do not place paint debris on the unprotected ground. Adequately shield paint debris to prevent dispersion of the debris by wind or rain water. Provide preparedness, prevention, and contingency plans (PPCP) in accordance with 40 CFR 265 Subpart C and Subpart D for the steps to be taken in the event of an unplanned release or emergency. Evidence of improper storage shall be cause for immediate shutdown of the project until corrective action is taken.

Transportation and Disposal of Debris: Arrange to have the debris transported from the site in accordance with the requirements of 40 and 40 CFR 268. Use only licensed transporters and disposal facilities. Provide the OWNER with signed manifests to verify that all steps of the handling and disposal process have been completed properly.

Clearance Testing: Thoroughly vacuum, wash, or otherwise decontaminate reusable items prior to removal from the project site. Items include, but are not limited to, equipment, containment materials, ground covers, scaffolding, and change and shower facilities. If adequate cleaning is not possible, the materials shall be treated as waste and tested and disposed of properly.

CERCLA Release: The CONTRACTOR is advised that the discharge of one or more pounds of lead waste or dust (4 mils or less in diameter) into the

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atmosphere or water within a 24-hour period is considered a reportable release in accordance with 40 CFR 300 and 40 CFR 302.

1.10. RECORD KEEPING AND ABATEMENT MANAGEMENT. Document and maintain records of the abatement process. Submit the records to the Engineer and the OWNER for their use upon completion of the abatement of the unit, and prior to final payment. The records for each abated unit shall clearly describe in non-technical language where the lead was found, and how it was abated. At a minimum, the records shall also include the following:

- Complete identification of units receiving abatement.
- Results of testing.
- General description of abatement methods.
- Results of abatement clearance tests.
- Chronology of project-specific abatement from beginning of planning through final clearance testing.
- Pertinent Federal, State, and local requirements under which abatement was undertaken.
- Abatement photographs of before and after on digital media

1.11. OWNER'S ENVIRONMENTAL CONSULTANT. The OWNER's Environmental Consultant will perform the following activities:

Review the CONTRACTOR's submittals for compliance with the specifications (refer to Item 1.4)

Perform any applicable tests to review compliance with the intent of the specification.

Perform a preliminary visual inspection as specified in Item 3.4.04, Preliminary Visual Inspection.

Perform final inspection and clearance testing as specified in Item 3.4.04, Final Inspection.

The OWNER's Environmental Consultant has the right to stop any work that does not comply with the intent of the specifications.

## **PART 2 – PRODUCTS**

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2.1. EQUIPMENT

2.1.01 HEPA Vacuums: HEPA (High Efficiency Particle Air) vacuums differ from conventional vacuums in that they contain high-efficiency filters that trap extremely small, micron-sized particles. These filters can filter out particles of 0.3 microns or greater (from a body of air) at 99.97 percent efficiency or greater. Lead dust tends to break down into extremely fine, micron-sized particles. Vacuuming by conventional means is unacceptable at any time, especially in lead-paint abatement final cleanup, because much of the fine lead dust will simply be exhausted back into the environment. Consequently, the use of a HEPA vacuum is required.

Related Attachments: As necessary for the conditions encountered, and including items such as brushes of various sizes, crevice tools, and angular tools.

Other equipment, including personal safety equipment, as necessary to comply with the requirements of this specification.

2.1. MATERIALS.

2.1.01. High-Phosphate Detergent: Detergents with a high-phosphate content (containing at least 5 percent trisodium phosphate (TSP)).

Related Cleaning Supplies: As necessary to accommodate the conditions encountered, and including such items as wringer buckets, mops, squeegee sponge mops, variously sized hand sponges, and rags.

Polyethylene sheeting: 4-mil and 6-mil thicknesses.

Polyethylene spray: Product approved by the Environmental Consultant.

Miscellaneous materials such as storage drums, framing lumber, masking, adhesive tapes, spray glues, stapling devices, as necessary to meet the requirements of this specification.

**PART 3 – EXECUTION**

3.1. SITE PREPARATION: PRIOR TO WORK START. Post warning signs at all entrances and exits to work areas. The warning signs shall read as follows:

**“CAUTION LEAD HAZARD - DO NOT ENTER WORK AREA UNLESS  
AUTHORIZED”**

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Ensure that heat, electricity, and water are available in the areas to be abated.  
Ensure that there are no existing water leaks of any type (including from such sources as roofs, windows, or plumbing related components).

Correct other conditions that can impede abatement or cause the abatement to fail.

Initiate containment procedures to protect surfaces and contain and control lead dust debris as specified in Item 3.2.

3.2. CONTAINMENT. If the abatement plan necessitates the breaking or disturbing of leaded surfaces or other dust generating procedures, and therefore the generation of lead dust, provide containment procedures in accordance with the criteria in Items 1.5 and 1.6 and as indicated below. If abatement does not break or disturb lead-painted surfaces, provide containment measures only as necessary to protect surfaces from damage.

The following materials may be used for containment:

Polyethylene (plastic) sheets at least 6 mils thick;

Heavy duty tape (e.g., duct tape) to fasten plastic sheets;

Staple gun with heavy duty staples for fastening plastic sheets.

Alternate products include:

Polyethylene spray instead of plastic sheeting (the dry film can be removed later by peeling);

Spray glue in aerosol can for fastening plastic sheets.

### 3.3. CONTROLLING OFF-SITE DISPERSAL

3.3.01. Limiting Access. Prior to satisfactory clearance testing, limit access to the abatement work areas to the following:

CONTRACTOR and designated employees;

State, county or local enforcement officials, or their designees;

Inspectors with a security interest in the building; and,

Federal, State or local officials, or their designee, engaged in research on

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lead.

3.3.01. Limiting Tracking of Dust and Debris. Persons entering a work area during a lead abatement project that involves breaking or disturbing lead-painted surfaces shall wear disposable shoe covers. The shoe covers shall be removed upon leaving the work area and placed with abatement waste.

Persons entering a work area during lead paint removal activity (e.g., by heat gun, scraping, HEPA sander, or chemical) or during replacement and during the cleanup process shall also wear appropriate respirator protection. Worker protection shall be in accordance with Item 1.7.

3.3.02. Program of On-Going Cleanup. Implement a program of on-going cleanup in the lead abatement work area. The frequency and intensity of cleaning will be the greatest with on-site paint removal methods, and methods that create a lot of construction debris. On-going cleanup shall include the regular cleaning of all tools, equipment, and worker protection gear to minimize worker exposure, and the risk of transferring lead to other job sites.

#### 3.4. CLEANUP.

3.4.01. General. Perform cleanup activities as previously specified and as indicated in this item.

Coordinate abatement activities to ensure proper conformance to the project cleanup requirements.

3.4.02. Cleanup Methods and Procedures. The following two (2) basic cleaning methods shall be used to clean the surfaces of the galleries at the conclusion of the active lead based paint abatement activities:

##### Dry Cleaning Method, Using HEPA Vacuums:

Operation instructions: Operate the HEPA vacuum in accordance with the requirements and recommendations of the vacuum manufacturer. If possible, arrange training sessions with the manufacturer's representative.

Special attachments needed: Ensure that a variety of vacuum attachments (such as brushes of various sizes, crevice tools, and angular tools) are available to accommodate the conditions encountered. Ensure that the attachments are properly used.

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HEPA vacuuming procedures: Include all rooms of the property in this HEPA process, except for rooms that were found free of lead paint and lead dust before the abatement process began; and were never entered during the process:

Thoroughly and completely vacuum all abated surfaces in the abatement area. These surfaces include, but are not limited to: ceilings, walls, floors, pipes and fixtures of any kind (light, electrical).

Thoroughly and completely vacuum all unabated surfaces exposed to lead dust generated by the abatement process.

Start vacuuming at the ceilings and work down to the floors. Pay particular care to rough or porous surfaces, such as weathered or worn surfaces and masonry surfaces, particularly concrete, where lead dust tends to tenaciously adhere.

Maintenance of the HEPA vacuum: Properly maintain HEPA vacuums in accordance with the vacuum manufacturer's instructions.

Use extreme caution when opening the HEPA vacuum for filter replacement or debris removal, due to the high potential for accidental release of accumulated lead dust into the environment. This can occur if the vacuum's seal has been broken and the vacuum's bag is disturbed.

Operators shall wear a full set of protective clothing and equipment, including appropriate respirators, when performing these maintenance functions.

Wet Cleaning Method, Using a High-Phosphate Detergent Wash:

Manufacturer's Instructions: Carefully follow the specific manufacturer's instructions for the proper use of the product, especially the dilution ratio recommended. Wear waterproof gloves when handling the detergent wash to prevent skin irritation.

Cleaning Equipment: Ensure that a variety of cleaning equipment is

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available (such as wringer buckets, mops, squeegee sponge mops, variously sized hand sponges, and rags) to accommodate the conditions encountered. Ensure that the cleaning equipment is properly used.

Wet Cleaning Procedures:

After the HEPA vacuuming, thoroughly and completely wash all surfaces in the abatement area with the high phosphate solution. These surfaces include, but are not limited to: ceilings, walls, floors, doors and fixtures of any kind (light, electrical).

Thoroughly and completely wash all unabated surfaces exposed to lead dust generated by the abatement process.

Begin the washing activities at the ceilings and work down to the floor.

Change cleaning mixture regularly: To avoid re-contaminating the area by using overly dirty water, users should carefully follow the surface area limits provided by the manufacturer and change the cleaning mixture accordingly. In cases where the manufacturer does not indicate surface area limits, the cleaning mixture should be changed at least after each room has been washed. Each time the cleaning mixture is changed, users must ensure that the dirty water does not re-contaminate the environment.

3.4.03. Special Procedures During Abatement. Daily cleanup: Perform the following cleanup activities daily. Handle, store, and dispose of debris in accordance with Items 1.8 and 1.9.

Small Debris: Spray the affected surfaces with a fine mist of water, to keep surface dust from becoming airborne. Place the swept debris in double 4-mil or single 6-mil plastic bags, properly seal the bags, and move them to the designated trash storage area. Do not overload trash bags to ensure that no ruptures or punctures occur during handling and transport.

During daily cleanup activities, workers shall wear protective clothing and equipment. Also, during daily cleanup activities, abatement workers shall inspect for areas of the plastic requiring repair. Holes and rips found shall be patched with 6-mil plastic and duct tape immediately after cleaning.

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3.4.04. Special Procedures After Abatement. Preliminary final cleanup: Prior to final cleanup and painting or sealing of the abated surfaces, remove and properly dispose of the plastic sheeting used for containment.

Begin removals with the upper-level plastic. Spray or mist the plastic with water to hold down dust and then fold the plastic in upon itself to trap any dust residue inside.

Before removal of floor plastic, spray the plastic and sweep as indicated in Item 3.4.03. Fold the plastic carefully from the corners/ends to the middle to trap any remaining lead dust. Place the plastic into double 4-mil or single 6-mil plastic bags; properly seal the bags, and remove the bags from the premises.

As with daily cleanups, this plastic removal process requires the use of protective equipment, especially appropriate respirators.

Do not remove plastic sheets used to isolate contaminated rooms from non-contaminated rooms at this time. These sheets shall remain in place until after the preliminary final cleanup is complete and then be carefully removed as described above.

After the plastic has been removed from the contaminated area, perform the following cleanup activities:

HEPA vacuum the entire area as specified in Item 3.4.03., Clean Methods and Procedures. Start with the galleries farthest from the entrance to avoid re-tracking dust through the already-cleaned area. In each gallery, begin vacuuming at the ceilings and proceed down the walls, making sure every surface is treated, including, but are not limited to: ceilings, walls, floors, pipes and fixtures of any kind (light, electrical).

Wash down the entire affected area with a high phosphate detergent as specified in Item 3.4., wet cleaning, method using a high-phosphate detergent wash. HEPA-vacuumed the affected area again, as specified in Item 3.4.02., Cleanup Methods and Procedures.

#### **Cleaning of Workers, Tools, Equipment and Vehicles:**

Personal Hygiene: Workers shall carefully follow the personal hygiene procedures of 29 CFR 1926.62.

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Supplies: Regularly replace consumable/disposable supplies, such as mop heads, sponges, and rags, at least at the end of each abatement project or monthly, whichever comes first. Treat soiled items as contaminated debris.

Equipment: Clean durable equipment, such as power and hand tools, generators, and vehicles, at least at the end of each abatement project or monthly, whichever comes first. This cleaning shall consist of a thorough HEPA vacuuming and washing with a high phosphate solution.

Preliminary Visual Inspection:

After the preliminary final cleanup effort is completed, the OWNER's Environmental Consultant will visually inspect the entire affected area to ensure that all surfaces requiring abatement have been addressed, and all visible dust and debris have been removed. If the results of the visual inspection are unsatisfactory, affected surfaces shall be re-abated and/or re-cleaned, in accordance with the inspector's instructions, at the CONTRACTOR's expense, until satisfactory results are achieved.

Final Cleanup: After painting/sealing is complete, perform the following final cleanup activities in the entire affected area:

HEPA-vacuum the area as specified in Item 3.4.02., Cleanup Methods and Procedures.

Wash down the area with a high phosphate detergent as specified in Item 3.4, wet cleaning method using a high-phosphate detergent wash.

HEPA-vacuum again as specified in Item 3.4.02, Cleanup Methods and Procedures.

Final Inspection:

After the final cleanup is complete, the OWNER's Environmental Consultant will perform a final inspection to:

Verify that the abatement work is in compliance with the specifications.

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Detect the presence of lead dust.

The OWNER's Environmental Consultant will perform both a visual inspection and clearance testing of lead levels in surface dust as specified in Items 3.5 and 3.6.

3.5. POST-ABATEMENT VISUAL INSPECTION. The OWNER's Environmental Consultant will confirm job completeness by determining whether all surfaces have been abated according to the approved abatement plan. Special attention will be given to areas where lead paint has been removed adjacent to paint that is intact (for example, where paint has been removed from a door frame but non-lead paint is left on the baseboard). Ensure that paint at this joint is sound. The Environmental Consultant will verify that all abated surfaces and floors have been repainted or otherwise sealed.

The Environmental Consultant will determine whether the gallery has been adequately cleaned by observing all surfaces for dust and debris.

3.6. TESTING ASSOCIATED WITH THE CLEARANCE PROCESS. Upon completion of final cleanup and post-abatement visual inspection, the OWNER's Environmental Consultant will test remaining surface dust to verify that only acceptable levels of lead dust remain before returning the galleries to active operation. This surface dust testing process is referred to as clearance criteria.

3.6.01. Surface Dust Sampling: The Environmental Consultant will perform surface dust sampling no sooner than 24 hours after completion of post-abatement cleanup activities, to allow any airborne lead dust present to settle onto the surfaces to be tested.

The surface wipe sampling method will be used for surface dust sampling. This method uses commercial wipes moistened with a non-alcohol wetting agent. Surface dust sampling will not be performed if there is a visible accumulation of dust or debris. In this case, surface wipe sampling will be deferred until the CONTRACTOR completes a thorough cleanup.

3.7. WASTE DISPOSAL – GENERAL. Prior to the start of abatement operations, determine which waste materials may be hazardous. Keep hazardous waste segregated from solid waste, so that proper disposal of the waste material can be achieved.

Do not leave waste on the property in an unsecured area. Do not dump waste by the

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roadside, or in a nearby unauthorized dumpster. Do not burn or incinerate waste, due to the danger from lead fumes.

Do not flush lead-contaminated wash water into storm drains or sanitary sewers. All contaminated wash water should be properly disposed of off-site.

3.8. SOLID WASTE (NON-HAZARDOUS) DISPOSAL. Dispose of solid waste which has been evaluated and determined not to be hazardous in a State approved landfill. Wrap large debris in 6-mil plastic, seal with tape, and move to the trash storage area.

Transport the waste to the disposal facility in covered vehicles. Do not use residential or commercial trash collection services without approval of State and local authorities. Covered dumpster services are acceptable, if the service company is informed of the presence of lead, and that appropriate disposal methods are used.

3.9. HAZARDOUS WASTE DISPOSAL. Dispose of hazardous waste at a hazardous waste disposal facility, usually called a treatment storage and disposal facility (TSD). A TSD shall have an EPA ID Number and authorization (either a permit or "interim status") to operate. It is the responsibility of the abatement CONTRACTOR to ensure that the TSD meets all legal requirements. The TSD can advise on appropriate packaging of waste, restrictions on disposal (e.g., liquids in landfills), and technical issues, such as methods for removing liquids from wastes.

Transporters shall have an EPA ID Number and must meet U.S. Department of Transportation (DOT) requirements for shipping containers. A good transporter will be able to advise the abatement CONTRACTOR on bagging and special handling of hazardous wastes.

Take special care when removing hazardous waste from the abatement site, in order to avoid environmental contamination or injury to workers or residents. While in the work area, the exterior of the filled waste containers shall be HEPA vacuumed and wet-wiped to remove residual contamination. If plastic bags are used, they shall be bagged again as they come out of the work area. Remove waste from work areas at times when employee use of hallways and stairwells is low. The path from the work area to the truck or dumpster shall be planned in advance to minimize contacts with employees.

Containers shall be moved and packed into the truck with care. When possible, use hand trucks, dollies, or pull cars, along with ramps or trucks with lift gates. These procedures will help minimize container breakage and consequent exposure of residents or employees to hazardous waste.

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Submit signed manifests to the Engineer to verify that all steps of the handling and disposal process have been completed properly.

End of Supplemental Section

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Water and Sewerage Department

City of Detroit

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## **SECTION 15110 – SUPPLEMENTAL**

### **VALVES, HYDRANTS AND APPURTENANCES**

#### **PART 1 - GENERAL**

1.1. DESCRIPTION. Furnish, install and test valves, hydrants and appurtenances as indicated and specified.

Provide sizes and capacities as indicated on the valve schedule on DRAWINGS.

#### 1.2. RELATED WORK.

Division 1, General Requirements

Division 9, Master Specification, Section 09900, Painting

Division 9, Master Specification, Section 09960, High Performance Coating

Division 15, Master Specification, Section 15020, Miscellaneous Piping and Accessories Installation

Division 15, Supplemental Specification, Section 15050, Steel Plate Pipe and Fittings

Division 15, Master Specification, Section 15060, Miscellaneous Piping and Pipe Assembly

Division 15, Master Specification, Section 15061, Ductile Iron Pipe

Division 15, Supplemental Specification, Section 15083, Sluice Gates and Appurtenances

Division 15, Master Specification, Section 15140, Pipe Supports

Division 15, Supplemental Specification, Section 15181, Electric Motor Actuators and Appurtenances

Division 17, Master Specification Sections, Instrumentation and Controls

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1.3. REFERENCES.

- ASTM            American Society for Testing and Materials
- ASTM A48: Specification for Gray Iron Castings.
- ASTM A126: Standard Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings.
- ASTM A536: Specification for Ductile-Iron Castings.
- ASTM B98: Standard Specification for Copper-Silicon Alloy Rod, Bar, and Shapes.
- ANSI            American National Standards Institute
- ANSI B2.4: Hose Coupling Screw Threads.
- ANSI B16.1: Cast-Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800.
- ANSI B16.4: Cast-Iron Threaded Fittings, Class 125 and 250.
- ANSI B16.10: Face-to-Face and End-to-End Dimensions of Ferrous Valves.
- AWWA          American Water Works Association
- AWWA C500: Standard for Gate Valves, 3 inches through 48 inches NPS, for Water and Sewage System.
- AWWA C502: Standard for Dry-Barrel Fire Hydrants.
- AWWA C509: Standard Specifications for Resilient-Seated Gate Valves, 3 inches through 12 inches NPS, for Water and Sewage Systems.
- SSPC          Steel Structures Painting Council
- SP10: Surface Preparation Specifications, No. 10 Near White Blast Cleaning.

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#### 1.4. SUBMITTALS.

1.4.01. Shop Drawings: Submit the following in accordance with Division 1, Master Specification, Section 01080, Project Submittals and as specified herein.

Certified shop and erection DRAWINGS.

Data, regarding valve characteristics and performance:

Shop drawing data for accessory items.

Manufacturer's literature as needed to supplement certified data.

Operating and maintenance instructions and parts lists.

Listing of reference installations as specified with contact names and telephone numbers.

Valve shop test results.

Qualifications of field service technician.

Shop and Field inspections reports.

List of recommended spare parts other than those specified.

Recommendations for short and long term storage.

Special tools.

Shop and field testing procedures and equipment to be used.

Number of service technician days provided and per diem field service rate.

Manufacturer's product data and specifications for shop painting.

Provide layout drawing showing orientation of gate, check and ball valves and actuator and nearest obstruction.

Manufacturer's product data and specifications for shop painting.

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Provide a listing of the materials recommended for each service specified and indicated. Provide documentation showing compatibility with process fluid and service specified and indicated.

The most recent ISO 9000 series certification or quality system plan.

1.4.02. Material Certification:

Provide certification from the equipment manufacturer that the materials of construction specified are recommended and used for the service conditions specified and indicated. If materials other than those specified are proposed based on incompatibility with the service conditions, provide technical data and certification that the proposed materials are recommended and used for the service conditions specified and indicated including an installation list of with five (5) installations in operation for five (5) years. Provide proposed materials at no additional cost to the Authority.

Where materials are not specified, provide technical data and certification that the materials are recommended and used for the service conditions specified and indicated.

A copy of this specification section with addenda and all referenced specification sections with addenda, with each Paragraph check-marked to indicate specification compliance or marked to indicate requested deviations and clarifications from the specified requirements.

If deviations and clarifications from the specifications are indicated, therefore requested by the Construction Subcontractor, provide a detailed written justification for each deviation and clarification.

Failure to include a copy of the marked-up specification sections and or the detailed justifications for any requested deviation or clarification will result in submittal return without review until marked up specification and justification are resubmitted with the entire package.

1.5. QUALITY ASSURANCE.

Provide in accordance with Division 1, Master Specification, Section 01060, Quality Control and as specified herein.

Provide enclosures for atmospheres as specified and indicated.

Construction Subcontractor responsible for verifying outside diameter of pipe to be

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tapped.

1.6. DELIVERY, STORAGE AND HANDLING. Provide in accordance with Division 1, Master Specification, Section 01060, Quality Control and as specified herein.

1.6.01. Shipping: Ship equipment, material and spare parts complete except where partial disassembly is required by transportation regulations or for protection of components.

Pack spare parts in containers bearing labels clearly designating contents and pieces of equipment for which intended.

Deliver spare parts to the Authority after completion of WORK.

1.6.02. Receiving: Inspect and inventory items upon delivery to site.

Store and safeguard equipment, material and spare parts in accordance with manufacturers written instructions.

1.7. SPECIAL REQUIREMENTS. Refer to the applicable specification sections with regard to providing the following:

Special Tools as specified in Division 1, Master Specification, Section 01180, Equipment, Materials, Parts and Tools.

Bolts, Anchor Bolts, and Nuts as specified in Division 5, Master Specification, Anchor Bolts and Expansion Anchors, Section 05550.

## **PART 2 - PRODUCTS**

2.1. GATE VALVES - 4-INCHES AND LARGER.

2.1.01. General:

Non-potable water service: Provide resilient seat gate valves.

Provide resilient seated valves conforming to AWWA C509 and as specified herein.

Provide bronze grades A, D or E of AWWA C509 for wetted bronze parts.

Working water pressure: Minimum:

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<u>Valve Size</u>	<u>Pressure</u>
4 to 12 inches.	175 psi
14 inch and larger	150 psi

Provide full port flanged valves with non-rising stem. Face-to-face dimensions in accordance with ANSI B16.10 and flanges with ANSI B16.1.

Provide gate boxes, Type 316 stainless steel extension stems or universal-joint operating rods with 2-in. square operating nuts at upper end with coupling connected to valve stem to bring operating nut to within 6 inches of ground surface.

Provide counterclockwise rotation to open valves for non-potable water service.

Provide handwheels with arrow and word "open" to indicate open direction or "shut" to indicate closed direction.

Provide gear operators for all valves 12-in. and larger. Gears shall be of steel with enclosed cases. Provide bevel gears by position of valve.

Provide chainwheels with stainless steel chain and chain guides for all valves with handwheels higher than 6 ft. - 6 in. above operating floor. Provide beveled gear operator to mount chainwheel in vertical position.

Provide conventional packing or double O-rings in non-rising stem valves.

Provide valves capable of being repacked or O-ring replaceable, while under pressure.

Provide type 316 stainless steel bolts and bronze nuts for stuffing box follower.

Manufacturers:

- . American R/D Valve Company
- . Clow Valve Company
- . J&S Valve Inc.

Provide resilient seats of materials that are resistant to liquid in valve.

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2.2. GATE VALVES – 3 INCHES AND SMALLER. 200-lb. WOG CF8M stainless steel valves having screwed ends, union bonnet, rising stem, inside screw, solid wedge gate with Type 316 stainless steel stem.

2.3. SPLIT DISC TYPE CHECK VALVES.

Manufacturers: TRW Mission, Houston, TX; Valve and Primer Corp., Schaumburg, IL; or acceptable equivalent product.

Wafer type cast iron body, 150 lb. WOG minimum working pressure. Bronze disc segments and 316 SS hinge pin and stop pin. Inconel spring suitable for 350 degrees F. operating temperature.

Seat made of Viton-A or other material suitable for 350 degrees F. operating temperature.

2.4. BUTTERFLY VALVES – LIQUID SERVICE.

Manufacturers: Milliken; DeZurik, Inc.; Henry Pratt Co.; or acceptable equivalent product.

Conform to AWWA Standard C504 for Rubber Seated Butterfly Valves except as herein modified.

Valve design utilizing: 1) Continuous rubber lining on the internal body surfaces and extending over the flanges, or 2) a disk which sits at an angle to the axis of the pipe, NOT acceptable.

Class 150A.

Body of ASTM A126 Class B cast iron or ductile iron.

Exposed or submerged service: Flanged short body valve.

Wafer, lug wafer or tapped wafer valves may be used only where (indicated on the drawing).

Seats for return sludge service of molded neoprene, Buna-N or other synthetic elastomer resistant to oil and grease.

Seat mounted on disc or in body.

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Seats offset from shaft and field replaceable for all valves 24 inches and larger.

Seats mounted on disc, mechanically fastened to disc with stainless steel hex head screws. Rubber seat reinforced with stainless steel retaining ring. Seats vulcanized or bonded to the disc not acceptable.

Mating surfaces for valves with seat on disc, type 304 or 316 stainless steel. Mating surface mechanically retained in body and sealed with O-ring.

Seats mounted on body, clamped or mechanically secured with stainless steel fasteners or bonded to the body by an approved process.

Mating surfaces for valve with seat in body, type 304 or 316 stainless steel or plasma applied nickel-chromium material containing 80 percent nickel, 20 percent chrome.

Plated or sprayed on mating surface material not acceptable.

If seat on disc, disc of ASTM A126 Class B cast iron or ductile iron. If seat in body, disc of ASTM A126 Class B cast iron, ductile iron or 304 or 316 stainless steel. Stainless steel edge on cast or ductile-iron discs secured with stainless steel threaded fasteners, heat shrunk on disc, a welded-on overlay, or a plasma applied nickel-chrome material.

Shaft Type 304 or 316 stainless steel shaft. Either one piece extending completely through disc or stub shafts inserted into valve disc stubs.

Shaft seal of the split-V type or O-ring type. Seal replaceable without disassembly of valve.

2.4.01. Manual Operators: Operator capable of valve operation at rated pressure with 80 lb. pull on actuator. Operator to be self-locking.

Valves 8 inches and smaller, lever operator, 18 inches maximum length.

Valves 10 inches and larger, or where chain wheels are required, traveling nut operator. Provide position indicator.

2.4.02. Motor Operator: Provide in accordance with Division 15, Supplemental Specification, Section 15181, Electric Motor Actuators and Appurtenances.

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2.5. ELECTRIC MOTOR ACTUATORS. Provide in accordance with Division 15, Supplemental Specification, Section 15181, Electric Motor Actuators and Appurtenances.

2.6. BALL VALVES.

2.6.01. Manufacturers:

Kitz.  
Worcester Controls.  
Flowserve.  
Or equal.

2.6.02. Materials:

Body: Type 316 stainless steel.  
Seat: TFE.  
Ball: Type 316 stainless steel.  
Stem: Type 316 stainless steel.  
Ends: 2-in. and Smaller: Screwed or flanged.

2.6.03. Actuators:

Manual:  
Valves 3 inches and smaller: Lever  
Valves 4 inches and larger: Geared hand-wheel

2.7. PAINTING. Provide in accordance with Division 9, Master and Provisional Specifications, Section 09900, Painting and as specified herein.

Clean and shop coat, interior surfaces of all valves and hydrants with an asphalt varnish.

Shop finish interior surfaces of all hydrants, iron body gate valves, the exterior surfaces of buried or submerged valves and gates, and miscellaneous piping appurtenances with asphalt varnish.

### **PART 3 - EXECUTION**

3.1. GENERAL.

Prior to installation, protect stored valves and appurtenances from damage due to

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exposure to sunlight, heat, dirt, debris, freezing and thawing, vandalism, etc.

Clean all debris, dirt, gravel, etc., from inside of piping before placing valves in place.

Erect and support valves in respective positions free from distortion and strain on appurtenances during handling and installation. Inspect material for defects in workmanship and material. Clean out debris and foreign material from valve openings and seats, test operating mechanisms to check functioning, and check nuts and bolts for tightness. Repair, valves and other equipment which do not operate or are otherwise defective at no additional cost to the Authority.

Set plumb and support valves in conformance with instructions of manufacturer. Shim valves mounted on face of concrete vertically and grout in place. Install valves in control piping for access.

Provide sleeve type coupling or flexible type grooved coupling on downstream side of buried valves to assist in valve removal.

Provide valves with extension stems for operation. Provide extension stems for valves installed underground and elsewhere so that operating wrench does not exceed six (6) feet in length.

Provide chain wheel operators on all valves where handwheel or gear operator exceeds six (6) feet, six (6) inches above floor or operating platform. Provide geared operator to position chainwheel in vertical position.

Stainless steel chain of chain operators to extend within three (3) feet of operating floor. Provide two (2) S-shaped hooks for each chain to enable chain to be hooked away from personnel traffic.

3.2. GATE VALVES. Install gate valve stem as indicated or with stems between horizontal and vertical up. Valves installed with stems below horizontal are not acceptable.

3.3. CHECK VALVES. Install swing check valves horizontally in pipelines.

3.4. BUTTERFLY VALVES.

Install valves in horizontal pipes with shaft vertical for aeration service and horizontal for all other services.

Install offset seat valves with seats facing the source of pressure to permit valve seal and bearing equipment.

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3.5. FIELD PAINTING. Furnished and applied by Painting Subcontractor as specified in Division 9, Master and Provisional Specifications, Section 09900, Painting.

End of Supplemental Section

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## SECTION 15500 - PROVISIONAL

### HEATING, VENTILATING, AIR CONDITIONING

***Provisional Specification Summary:***

- 1.1- Replace this subsection with a new subsection as shown below.*
- 2.4.1 thru 2.4.13- Delete these subsections (not applicable)*
- 2.4.21 thru 2.4.23- Delete these subsections (not applicable)*
- 2.4.24.03 thru 2.4.09- Delete these subsections (not applicable)*
- 2.4.25 thru 2.4.28- Delete these subsections (not applicable)*
- 3.3.01 thru 3.3.06- Delete these subsections (not applicable)*
- 3.3.11 thru 3.3.14- Delete these subsections (not applicable)*

***(Update text as shown.)***

- 1.1. **SCOPE.** This section covers the demolition, furnishing, and installation of ventilation equipment, ductwork, duct mounted devices, associated with the project requirements and applicable general and specific paragraphs in this section. Work includes:
  - 1.1.01. Removal of ductwork and equipment noted on the drawings
  - 1.1.02. Inspection, repair, and cleaning of existing air handling units and dampers (in accordance with National Air Duct Cleaning Association (NADCA)).
  - 1.1.03. Furnish and installation of ductwork, dampers, and damper actuators
  - 1.1.04. Wiring of damper actuators
  - 1.1.05. Installation of PLC I/O cards and reprogramming of existing PLC
  - 1.1.06. Test air handling unit air flows as indicated on the drawings and re-set air handling unit variable frequency drives speed to accommodate new air flow settings.
  - 1.1.07. Test VFD Blowers air flows.

End of Provisional Section

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*Provisional Specifications—which are issued separately from the Master Specifications on a per contract basis—shall supersede and govern over all other specifications or contract documents. All other wording in the Master Specifications that is not specifically stated to be modified in the Provisional Specifications shall remain in effect as is. The Provisional Specification Summary is included to clarify and/or highlight changes.*

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## SECTION 15880 - PROVISIONAL

### AIR DISTRIBUTION SYSTEMS

***Provisional Specification Summary:***

- 1.1- Replace this subsection with a new subsection as shown below.
- 1.3.03- Delete this subsection (not applicable)
- 1.3.04- Delete this subsection (not applicable)
- 2.4- Delete this subsection (not applicable)
- 2.5- Delete this subsection (not applicable)
- 2.6- Delete this subsection (not applicable)
- 2.7- Delete this subsection (not applicable)
- 2.8- Delete this subsection (not applicable)
- 2.9- Delete this subsection (not applicable)
- 2.10- Delete this subsection (not applicable)
- 2.11.04 thru 2.11.06- Delete these subsections (not applicable)
- 2.12.02- Delete this subsection (not applicable)
- 2.16- Delete this subsection (not applicable)
- 2.17- Add aluminum ductwork to the subsection below.
- 2.18- Delete this subsection (not applicable)
- 2.19- Delete this subsection (not applicable)
- 2.20- Delete this subsection (not applicable)
- 2.21- Delete this subsection (not applicable)
- 2.22- Delete this subsection (not applicable)
- 2.23- Delete this subsection (not applicable)
- 2.24- Delete this subsection (not applicable)
- 3.6- Delete this subsection (not applicable)
- 3.3.01 thru 3.3.06- Delete these subsections (not applicable)
- 3.3.12 thru 3.3.14- Delete this subsection (not applicable)

***(Update text as shown.)***

- 1.1. **SCOPE.** This section covers the furnishing, and installation of ventilation equipment, ductwork, duct mounted devices, associated with the project requirements and applicable general and specific paragraphs in this section.  
Work includes:

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*Provisional Specifications—which are issued separately from the Master Specifications on a per contract basis—shall supersede and govern over all other specifications or contract documents. All other wording in the Master Specifications that is not specifically stated to be modified in the Provisional Specifications shall remain in effect as is. The Provisional Specification Summary is included to clarify and/or highlight changes.*

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- 1.1.01. Furnish and installation of ventilation ductwork, 3” Pressure Class minimum.
- 1.1.02. Motorized volume control dampers
- 1.1.03. Supply Grilles
- 1.1.04. Duct Connections to existing equipment.

## 2.17 SHEET METAL DUCTWORK

**Add** the following to the end of this section.

Aluminum ductwork shall be constructed of aluminum sheet, ASTM B209, alloy 1100, 3003 or 5052. Comply with SMACNA Standards.

End of Provisional Section

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*Provisional Specifications—which are issued separately from the Master Specifications on a per contract basis—shall supersede and govern over all other specifications or contract documents. All other wording in the Master Specifications that is not specifically stated to be modified in the Provisional Specifications shall remain in effect as is. The Provisional Specification Summary is included to clarify and/or highlight changes.*

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## SECTION 15990 - PROVISIONAL

### TESTING, ADJUSTING, AND BALANCING

***Provisional Specification Summary:***

1.1- Replace this subsection with a new subsection as shown below.

***(Update text as shown.)***

- 1.1. SCOPE. This section covers the labor and materials and associated with the project requirements and applicable general and specific paragraphs in this section. Work includes (Refer to Sheet 504):
- 1.1.01. Air Handling Units fan motor, sheave/belt replacement. Resetting/assist in reprogramming existing air handling unit variable frequency drives.
  - 1.1.02. Setting motorized air control dampers
  - 1.1.03. Testing airflow of the VFD Blowers.

End of Provisional Section

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*Provisional Specifications—which are issued separately from the Master Specifications on a per contract basis—shall supersede and govern over all other specifications or contract documents. All other wording in the Master Specifications that is not specifically stated to be modified in the Provisional Specifications shall remain in effect as is. The Provisional Specification Summary is included to clarify and/or highlight changes.*

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