

## **SPECIFICATIONS**

### **Section 11 83 01 – Process Water, Drain, and Air Piping Systems**

Page 11 83 01 - 6, 2.2 Ductile Iron Fittings, B. Joints, 1. Mechanical:

**Delete** the sentence that reads as follows:

Mechanical and push-on joints including accessories shall conform to ANSI/ AWWA C111/A21.11.

and **Replace** it with the following sentence:

Mechanical joint fittings shall conform to ANSI/AWWA C153/A21.53, latest revision.

Page 11 83 01 - 21 to 11 83 01 – 22, 3.6 Pressure Tests:

**Delete** the allowable leakage formula that reads as follows:

$$L = \frac{SDP^{1/2}}{133,200}$$

and **Replace** it with the following allowable leakage formula:

$$L = \frac{SDP^{1/2}}{148,000}$$

Page 11 83 01 - 22, 3.6 Pressure Tests:

**Delete** the table for “Minimum Holding Time in Minutes and Seconds Required for Pressure to Drop 1.0 PSIG” in its entirety.

### **Section 11 83 02 – Chemical Piping Systems**

Page 11 83 02 - 2, 2.1 Materials, A. True Union Ball Valves:

**Delete** Item 1 that reads as follows.

1. Ball Valves shall be TB Series True Union Ball Valves as manufactured by Hayward Industries, Inc., or approved equal.

**Replace** it with the following:

1. Ball valves for sodium hypochlorite service shall be TBZ Series Z-Ball Ball Valves as manufactured by Hayward Industries, Inc., or approved equal. Ball Valves for all other chemicals shall be TB Series True Union Ball Valves as manufactured by Hayward Industries, Inc., or approved equal.

## Section 11 83 06 – Stainless Steel Piping and Tubing

Page 11 83 06 - 1, 1.2 Submittals:

**Add** the following to the end of subsection 1.2 Submittals:

The Membrane System Supplier shall be provided with a copy of all submittals associated with the stainless steel piping for review.

Page 11 83 06 - 3, 2.1 Service and Type Requirements, A. General:

**Add** the following to the end of Item 4:

Joints for piping 2-1/2 inch diameter and smaller piping may be threaded.

## Section 11 83 08 – Chemical Storage Tanks and Scales

Page 11 83 08 - 5, 2.2 Chemical Storage Tanks, C. Tank Fittings:

**Delete** the last line on the page that reads as follows:

Flexible connectors shall be installed at all tank pipe connections

and **Replace** it with the following:

Flexible expansion joints shall be provided at tank connections where shown on the Drawings. Flexible expansion joints shall be compatible with the chemicals stored in the associated tank and shall be designed to compensate for misalignment, absorb expansion and contraction, and isolate the vibration and shock. Flexible expansion joints shall be supplied by the tank manufacturer.

## Section 11 83 12 – Membrane Filtration Equipment - System Summary

Page 11 83 12 - 2, 1.1 Work Included, Item E.11:

**Delete** the phrase that reads as follows:

11. Panel-mounted CIP and Neutralization chemical transfer systems consisting of:

and **Replace** it with the following phrase:

11. CIP and Neutralization chemical transfer systems consisting of:

Page 11 83 12 - 4, 1.3 Design Criteria, A. Design Conditions:

**Delete** the row from the table that reads:

5.	Maximum instantaneous flux at 33°F	24 GFD
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and **Replace** it with the following row:

5.	Maximum instantaneous flux at 33°F	27 GFD
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Page 11 83 12 - 20, Part - 3 Execution:

**Add** the following to the end of Part 3 of the specification:

### 3.3 MONTHLY MEETINGS

The Membrane Supplier shall participate in the monthly construction meetings with the Contractor and the Owner via conference call.

Page 11 83 12 - 16, 2.5 System Integrity, Item I:

**Delete** the Item I paragraph that reads as follows:

- I. The Membrane System Supplier shall provide the valves, piping, and other appurtenances required for membrane isolation capability. In order to provide sufficient operational flexibility, the Membrane Filtration System shall provide the ability to isolate 0.5%, or less, of the membrane area within the system with the operation of a single valve.

Page 11 83 12 - 16, 2.6 Tools, Supplies, and Spare Parts:

**Delete** the paragraph that reads as follows:

The Membrane System Supplier shall furnish all special tools necessary to disassemble, service, and repair the membrane modules. The Membrane System Supplier shall furnish one spare valve and one valve rebuild kit for each size valve furnished in the Membrane System Supplier's scope of supply. The Membrane System Supplier shall provide a spare parts list with Shop Drawing Submittals. All spare parts for the membrane and membrane rack assembly shall be stocked in the United States of America. The Membrane System Supplier shall provide the name, address and phone number of the spare parts supplier for all equipment furnished herein.

and **Replace** it with the following paragraph:

The Membrane System Supplier shall furnish all special tools necessary to disassemble, service, and repair the membrane modules. The Membrane System Supplier shall provide a spare parts list with Shop Drawing Submittals. The Membrane System Supplier shall provide the name, address and phone number of the spare parts supplier for all equipment furnished herein.

Page 11 83 12 - 17, 3.2 Inspection, Testing, and Training, A. General:

**Delete** the paragraph that reads as follows:

The testing and startup of the equipment shall be performed under the direction of the Commissioning Agent and the Contractor and Membrane System Supplier shall coordinate these activities with the Commissioning Agent. The equipment sections contain requirements

for shop and field testing. Pumps and compressors shall be shop tested prior to shipping and certified curves shall be submitted as specified in the General Conditions and Division 01. Reports of all shop tests shall be submitted prior to shipment. No equipment shall be shipped to the site until the Engineer approves, in writing, that the shop test reports are acceptable.

and **Replace** it with the following paragraph:

The testing and startup of the equipment shall be performed under the direction of the Commissioning Agent and the Contractor and Membrane System Supplier shall coordinate these activities with the Commissioning Agent. The equipment sections contain requirements for shop and field testing. Pumps shall be shop tested prior to shipping. Reports of all shop tests shall be submitted prior to shipment. No equipment shall be shipped to the site until the Engineer approves, in writing, that the shop test reports are acceptable.

Page 11 83 12 - 17, 3.2 Inspection, Testing, and Training, A. General:

**Delete** the paragraph that reads as follows:

The Membrane System Supplier shall provide the services of field service technicians from the pump, blower and compressor suppliers to assist with the commissioning and startup of these equipment. At a minimum, provide the services listed in the equipment schedule in appendix to Section 11 83 13.

and **Replace** it with the following paragraph:

The Membrane System Supplier shall provide field service technicians to assist with the commissioning and startup of all membrane system equipment, including pumps, blowers, and compressors.

Page 11 83 12 - 20, 3.2 Inspection, Testing, and Training, B. Services of Membrane System Supplier Representative, Item 4:

**Delete** the Item 4 paragraph that reads as follows:

The Membrane System Supplier shall have no claim for additional payment related to on-site services in excess of its budgeted time.

#### **Section 11 83 13 – Membrane Equipment Supply**

Page 11 83 13 - 5, 2.3 Membrane Rack(s):

**Delete** the first bullet that reads as follows:

- capable of holding no less than 24 membranes

and **Replace** it with the following bullet:

- capable of holding no less than 36 membrane modules

Page 11 83 13 - 12, 2.6.5 Chemical Dosing Pumps:

**Delete** the phrase from the first paragraph of 2.6.5 that reads as follows:

The cleaning and neutralization chemicals requiring chemical dosing panels are:

and **Replace** it with the following phrase:

The cleaning and neutralization chemicals requiring chemical dosing are:

Page 11 83 13 - 28, 2.12 Additional Equipment and Appurtenances:

**Delete** paragraph 2.12 in that reads as follows:

#### 2.12 ADDITIONAL EQUIPMENT AND APPURTENANCES

The Membrane System Supplier shall provide all equipment and appurtenances as listed in the Equipment Schedule in the Appendix of this Section.

#### Section 11 83 14 – Packaged Plate Settler System

Page 11 83 14 - 2, 1.5 Quality Assurance, A. Supplier Qualifications and Experience, Item 2:

**Delete** Item 2 that reads as follows:

2. Prior to bid each manufacturer must provide a list of at least ten (10) installations of all stainless steel complete package units of the design specified and used in municipal applications along with names and phone numbers of references to be contacted. A list of tilt or vertical tank installations will not be acceptable.

#### Section 11 83 16 – Granular Activated Carbon Adsorption System

Page 11 83 16 - 11, 2.3 Granular Activated Carbon:

**Delete** the phrase from the end of the first paragraph on the page that reads as follows:

The activated carbon shall be Calgon Carbon Type Filtrasorb F-S00AR Acid Rinsed Granular Activated Carbon, or approved equal

and **Replace** it with the following phrase:

The activated carbon shall be Calgon Carbon Type Filtrasorb F-300AR Acid Rinsed Granular Activated Carbon, or approved equal

#### Section 27 54 00 – Measurement and Control Instrumentation

**Delete** Specification Section 27 54 00 in its entirety. Refer instead to Specification Section 40 90 00 – Instrumentation and Control for Process Systems.

#### Section 27 54 01 – Functional Descriptions

**Delete** Specification Section 27 54 01 in its entirety. Refer instead to Specification Section 40 90 01 – Functional Descriptions.

#### Section 27 54 02 – Measurement and Control Instrumentation Materials and Methods

**Delete** Specification Section 27 54 02 in its entirety. Refer instead to Specification Section 40 95 73 – Process Control Wiring.

#### Section 27 54 03 – Instruments

**Delete** Specification Section 27 54 03 in its entirety. Refer instead to Specification Section 40 91 00 – Primary Measurement Devices.

#### Section 27 54 04 – Instrumentation and Control Boxes, Panels, and Control Centers

**Delete** Specification Section 27 54 04 in its entirety. Refer instead to Specification Section 40 95 00 – Process Control Hardware.

#### Section 27 54 06 – Central Control Hardware, Software and Programming

**Delete** Specification Section 27 54 06 in its entirety. Refer instead to Specification Section 40 94 00 – Digital Process Controllers.

#### Appendix A – Geotechnical Evaluation – June 2014

**ADD** the attached Appendix A to the end of the Specifications

#### Appendix B – Geotechnical Evaluation – March 2015

**ADD** the attached Appendix B to the end of the Specifications

### **DRAWINGS**

#### Tier 1 Drawing C-011 – Site Process Piping Plan (B/O 11 of 124)

**Delete** Drawing C-011, and

**Replace** with the attached revised Drawing C-011

#### Tier 1 Drawing DI-006 – Membrane Process Skid (Typical for 2 Trains) (B/O 89 of 124)

**Add** the following note:

10. PROCESS PUMP VFD'S SHALL BE FURNISHED BY THE GENERAL CONTRACTOR.

#### Tier 1 Drawing DI-010 – Membrane Air Scour Blowers (B/O 93 of 124)

**Add** the following note:

5. BLOWER VFDS SHALL BE FURNISHED BY THE GENERAL CONTRACTOR.

Tier 1 Drawing DI-015 – Membrane Clean In Place Skid (B/O 98 of 124)

**Add** the following note:

4. CIP PUMP MOTOR STARTERS SHALL BE FURNISHED BY THE GENERAL CONTRACTOR.

Tier 1 Drawing DI-021 – Chemical Feed System – Blended Phosphate, Citric Acid, Hydrochloric Acid, Sodium Bisulfite (B/O 104 of 124)

**Delete** “M” designation next to the following:

51-MP-510-B  
50% CITRIC ACID DRUM  
15% HYDROCHLORIC ACID DRUM  
38% SODIUM BISULFITE DRUM

**Add** the following note:

3. ALL CHEMICAL DRUM WEIGH SCALES SHALL BE FURNISHED BY THE GENERAL CONTRACTOR. PLC I/O FOR ALL DRUM WEIGH SCALES ARE PART OF PLC-001 LOCATED IN CONTROL PANEL RTU-001.

Tier 1 Drawing D-001A – Hydraulic Profile (B/O 111A of 124)

**ADD** the attached Drawing D-001A to the Tier 1 set of drawings

Tier 1 Drawing D-013 – Details - Sheet 2 of 3 (B/O 123 of 124)

**Delete** Drawing D-013, and

**Replace** with the attached revised Drawing D-013

### **SHEET ADDENDUM 1 CHANGES**

1. MDE PROJECT NO. MDE16-SF-0134 added to applicable drawings C-001 THRU DRAWING E&SC-3.

2. MDE EROSION NOTE "EROSION AND SEDIMENT CONTROL WILL BE STRICTLY ENFORCED" added to drawings listed.

3. Three (3) drawings have been added to the drawing set for ADDENDUM1 for a total of 127 drawings. Due to the large number of drawings in the set, the total number of drawings will not be changed on individual drawings sheets.

C-001 - No change except for MDE project number and erosion note added.

C-002- Revised list of drawings, C-015, E&SC-002, D-001A & E&SC-003 added ADDENDUM 1.

C-003 - No change except for MDE project number and erosion note added.

C-004 - Existing conditions and general site plan-revised-addendum1.

- micro bio-retention pond on "GENERAL SITE PLAN" eliminated on east side of new WTP.

- segmented block retaining on "GENERAL SITE PLAN" added on west side of new WTP.

- bench mark information added on "existing conditions plan"

C-005 - DEMOLITION PLAN.

Entire drawing C-005 replaced with new C-005-ADDENDUM1.

C-006 - SITE CONSTRUCTION AND LAYOUT PLANS

Entire drawing C-006 replaced with new C-006-ADDENDUM1.

C-007 - Sheet number changed to C- C-008 SITE GRADING and STORMWATER MANAGEMENT PLANS

Entire drawing C-007 replaced with new C-008-ADDENDUM1.

C-008 - UTILITY PLAN. Sheet number changed TO C-007.

Entire drawing C-008 replaced with new C-007-ADDENDUM1.

C-009 – SITE DETAILS

Entire drawing C-009 replaced with new C-009-ADDENDUM1.

C-010 – SITE DETAILS – no change except for MDE project number and erosion note added.

C-012 - SITE DETAILS - no change.

C-013 - SECURITY FENCE DETAILS - no change.

C-014 – SECURITY FENCE DETAILS – no change.

C-015 – STORMWATER MANAGEMENT DETAILS and NOTES ADDED-ADDENDUM1.

E&SC-1- S&EC-1 deleted from set and replaced with E&SC-1, SOIL EROSION AND SEDIMENT CONTROL PLAN and NOTES, SHEET16A OF 127, ADDENDUM1.

E&SC-2 – SOIL EROSION and SEDIMENT CONTROL DETAILS and NOTES, SHEET 16B OF 127, added to ADDENDUM1.

E&SC-3 – SOIL EROSION and SEDIMENT CONTROL NOTES, SHEET16C OF 127, added to ADDENDUM1

D-001A - HYDRAULIC PROFILE, SHEET111A OF 127, added to ADDENDUM1 drawing set.