## SECTION 17540 – PROVISIONAL

## ANALYTICAL INSTRUMENTS

***Provisional Specification Summary:***

*1.1 – Replace this section as shown below*
*3.2.01 – Delete this subsection*
*3.2.02 – Delete this subsection*
*3.2.03 – Delete this subsection*
*3.2.04 – Delete this subsection*
*3.2.05 – Delete this subsection*
*3.2.06 – Delete this subsection*
*3.2.07 – Replace this subsection as shown below*
*3.2.08 – Delete this subsection*
*3.2.09 – Replace this subsection as shown below*
*3.2.10 – Delete this subsection*
*3.2.11 – Delete this subsection*

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

1.1 SCOPE. This section covers the furnishing of instrumentation equipment required for the Secondary Clarifiers RAS Pumps and MCC Improvements as indicated in the Contact Documents.

Principal components of the instrumentation system shall be as indicated on the P&ID drawings.

3.2.01 Dissolved Oxygen. **Delete – Not Applicable.**

3.2.02 Turbidity Surface Scatter. **Delete – Not Applicable.**

3.2.03 Chlorine. **Delete – Not Applicable.**

3.2.04 pH Transmitter and pH Probe. **Delete – Not Applicable.**

3.2.05 pH Element (Flow). **Delete – Not Applicable.**

3.2.06 Chlorine Multipoint Detector/Alarm. **Delete – Not Applicable.**

3.2.07 Density (Solids) Indicating Transmitter.
Instrument Category: Analytical

Instrument Type: Sludge Blanket Level Detector and Controller

Signal Input: N/A

Signal Output: 4-20 mA

Process Connection: N/A

Classification: NEMA 4X

Description: The unit shall consist of a hinged probe assembly and a controller unit.

Probe Assembly: (25 required)
316 Stainless Steel
Ultrasonic
Self cleaning wiper
Integral 90 deg scattered light pulse LED Turbidity sensor
Range of 0.6 ft to 40 ft, user selectable
User adjustable response time of 2 to 10 seconds

Controller Unit: (4 required)
Graphical LCD display, 128x64 pixels with LED backlighting
Three SPDT relays with 120 VAC, 5A rated contacts
Two 4-20 mA Output
1 – level measurement
1 – turbidity measurement
Ethernet - RJ45 Connector
Non-volatile EEPROM memory
Fully Integrated ZigBee Compliant RF Network Transmitter

Power Suppy Unit(s): (25 required)
Input: 120 VAC
Two 4-20 mA Output,
1 – level measurement
1 – Turbidity measurement
Fully Integrated ZigBee Compliant RF Network Transmitter
With LCD Display for level measurement

Remote LCD display to be connected to the power supply unit's 4-20ma (25 required) output (above), to be located in the Pump control building at DWSD's direction. Where suitable existing displays and wiring exist, they may be used in place of new.

*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.*

Echo Smart Console Program (2 required) - All programming, monitoring, and control functions shall be available at the console program when loaded on licensed computers with access to the Internet as long as the cell phones are active.

Remote Cell Modem Factory Service:

The Controller(s) shall be outfitted with an integrated data cell modem for remote monitoring and control of all sensors in the Wireless RF Network. The instrument supplier shall provide remote factory start up and monthly instrument evaluation and diagnostics for a period of five years after installation.

Manufacturer(s): Entech Design Inc. Binminder; HACH SONATAX sc sludge blanket level probe with sc100 Controller

Warranty: The manufacturer shall provide a full five year performance warranty.

Spare Parts: One spare transducer, one spare controller and one spare power supply (not included in listed quantities)

3.2.08 Combustible Toxic Gas Detector. **Delete – Not Applicable.**

3.2.09 Density (Solids) Indicating Transmitter.

Instrument Category: Analytical

Instrument Type: Turbidity and Suspended Solids Indicating Transmitter

Power Supply: 120 VAC

Signal Input: N/A

Signal Output: 4-20 mA

Process Connection: N/A

Classification: NEMA 4X

Description: The unit shall consist of a controller, optical sensor with wiper, and a insertion mounting kit.

Range: 0.001-4000 NTU
Accuracy: Less than 1% of reading or ±.001 NTU, whichever is greater
Repeatability: Less than 1% of reading
Detection Limit: 0.001 NTU
Response Time: Initial response in 1 second
Signal Average Time: 1 to 300 seconds, user selectable
Mounting: Suspended from the top of the wet well
Flow Velocity: 9.8 ft/sec maximum
Sample Pressure: 87 psi maximum
Probe Material: Stainless Steel
Controller Unit: Graphic LCD display, 128x64 pixels with LED backlighting
Three SPDT relays with 120 VAC, 5 A rated contacts
Two 4-20 mA Outputs
Non-volatile EEPROM memory

Manufacturer(s): HACH Solitax sc Turbidity and Suspended Solids Analyzer, No. 69403-00 with fixed point installation kit Cat.#57344-00 with extension tube Cat.# BRO068 or equal.

3.2.10 Density (Solids) Measuring Probe. **Delete – Not Applicable.**

3.2.11 Conductivity Analyzer. **Delete – Not Applicable**

End of Provisional Section