Addendum No. 2 (CBBEL 11/15/2016)

1. **Size of Electrical Transformer TR-2, Drawing 30** - change the size of proposed electrical transformer TR-2 from 20KVA to 75KVA.

2. **Breaker between 500 KW Diesel Portable Generator Receptacle and 1200 A MTS, Drawing 30** – remove the word "Motorized" and replace with "Thermomagnetic (Double Kirk Key Operated)".

3. **To the "Service Entrance MCC Distribution Section", Drawing 30** – add a 3-pole 480 volt, 100AF, 60AT circuit breaker to feed the "Proposed MCC Starter Section". Feed is 4-1/C #2 in 2 ½" RGS.

4. **To Drawing 36** – change the conductor(s) between the "Generator Receptacle" and the "Control Panel PLC" from "(1) CAT5E" to "2#14" to indicate circuit breaker open or closed.

5. **To Drawing 36** – Change the designations below Digital Input VFD 1, 2, 3, and 4 from "In Auto", "In Auto", "In Auto", "In Auto" to "In Auto", "Pump Run", "Pump Fail", "Overtemp"

   Add a note stating: VFD cabinets shall include sufficient space for mounting the safety relays provided by the pump supplier.

6. **Drawing 4, Step 4** – As clarification to a question received, the Maximum Continuous Duration for a Short Duration Shut Down is 18 hours as stated on Drawing 4. Two Short Duration Shut Downs are allowed as stated on Drawing 4.

7. **Average Daily Flow of the East Main Pump Station** – In response to a question received, the average daily flow of the East Main Station is 3.9 MGD, (with significant variation typical for large sewer tributary areas with high occurrence of Inflow and Infiltration variations).

8. **Contractor's Use of Existing Overhead Crane in Control Room** - In response to a question received, the Contractor will be allowed to use the existing overhead crane in the Control Room under the supervision of Lake County personnel or as supervision may be designated to the Owner's Representative during construction.

9. **AISC Requirement** - In response to a question received: "Can the AISC requirement be removed"; the response is: "The specified AISC requirements for Fabrication and Welding of Miscellaneous Metals Specified in Section 05120 will not be waived; the specified AISC Installer Qualifications are waived."

10. **To Specification Section 16480 Variable Frequency Control System:**

    Add to 1.01, B. Related Work: "VFD cabinets shall include sufficient space for VFD supplier to mount and wire safety relays provided by the pump supplier. Pump Supplier provided safety relays are to be mounted in the VFD cabinets. Coordinate

with the Pump Supplier, Control Panel Supplier, and Electrical Sub-Contractor as required."

11. To Specification Section 15210 Sluice and Slide Gates:

Add to 1.03, A.:

"4. RW Gate Co. of Troy, New York has been found to be an acceptable qualified manufacturer of sluice and slide gates. (All conditions of Specification Section 15210 must be met).
5. Fontaine Gates has been found to be an acceptable qualified manufacturer of sluice and slide gates. (All conditions of Specification Section 15210 must be met)."

12. To Specification Section 15150 Raw Sewage Pumps:

Change 2.03, A., 1., 2nd Bullet Point from "Maximum Nominal Speed 880 rpm" to "Maximum Nominal Speed 1180 (1200) rpm".

Add to 1.02, A. Acceptable Manufacturers; the 1200 rpm pumps for ABS (Sulzer), KSB, Xylem (Flygt), and Grundfos as follows:

5. ABS (SULZER) Model XFP305J-CB2-PE860/6-12" Dry Pit
6. KSB KRT K 250-401/1006XNG-D Dry Pit
7. Xylem (Flygt) NT-3315 LT 3 ~627 Dry Pit
8. Grundfos S2.45.A100.1070.8.70H.D.520.G.EX.D.Z 60 Hz, Dry Pit (1200 rpm nominal)

Add to 2.03, A., 1. Following the bullet points: "Pump Supplier shall provide safety relays to the VFD supplier to be mounted and wired in the VFD cabinets by the VFD supplier. Coordinate with the VFD Supplier, Control Panel Supplier, and Electrical Sub-Contractor as required".

13. To Specification Section 16430 Level Process Measurement Devices:

Add the following specifications for the Pressure Switches on all 4 pump discharge headers and for the Pump Station Temperature Sensing and Transmitter to Section 16430 Level Process Measurement Devices:

2.04 <u>PRESSURE SWITCH (STANDARD OR DIFFERENTIAL)</u>

A. Transmitter General Specifications

1. Type: Diaphragm Actuated.
2. Setpoint Adjustment: Field Adjustable
3. Deadband Adjustment: Field Adjustable

4. Contact Rating: General Purpose DPDT, 10A at 120VAC.
5. Enclosure Rating: Nema 4X.
6. Over-Range / Burst Pressure: >Max Process Line Pressure
7. Connection Port Material: Stainless Steel. Contractor to verify compatibility with required liquids.
8. Wetted Parts: Teflon-Coated or Viton
9. Conduit Connection: 3/4" NPT
10. Process Connection: 1/2" NPT

B. Accessories

1. Snubber

a. Size and Pressure: Compatible w/ switch served
b. Manufacturer / Model:

1) Ashcroft "Pulsation Dampers"
2) Approved Equal

2. Diaphragm Seal

a. Thread-attached type, Allow for removal of the switch
b. Removable diaphragm
c. Compatible with the process fluid
d. Diaphragm seal along w/ switch shall be factory assembled, filled with a suitable fluid, and calibrated as a unit.
e. Lower housing shall include a tapped and plugged 1/4" NPT flushing connection

C. Manufacturer/Model:

1. Ashcroft
2. Barksdale
3. Mercoid Controls

2.05 TEMPERATURE TRANSMITTER AND SENSOR

A. Transmitter General Specifications

1. Stability: ± ≤ 0.1 °C/year (≤ 0.18 °F / year)
2. Enclosure Rating: NEMA Type 4X. IP66 and IP68 Rated
3. Electrical Connections: One (1) 1/2" NPT Conduit Entry
4. Electrical: 12 to 42.0 VDC
5. Signal Output: 4-20 mA w/ HART
6. Display: 5-digit LCD w/ 0-100% bar graph.

B. Sensor/thermowell General Specifications

1. Senor Conformance: IEC 60751
2. Class B Sensor Pt100
3. Range: -58 to 392 F
4. Stability: ± 0.11%
5. Temperature coefficient: 0.00385 ohm/ohm/degree C
6. Sensor Type: Spring-loaded
7. Extension Type / Length: Nipple Union w/ 3" or 4" Extension
8. Sensor/Immersion Length: As need for each individual application
9. Response time: 63% as per ASTM E644
10. Thermowell Material: 316 Stainless Steel
11. Thermowell Style: 3/4"-14 NPT Tapered

C. Ambient Sensors:

1. Shall have sensor well designed for ambient temperature measurement
2. Hart
3. Transmitter same as process transmitter
4. Wall mount bracket

D. Transmitter and Sensor shall come pre-assembled.

E. Manufacturer/Model:

1. Rosemount – 3144P Series w/ Series 68 RTD
2. Endress+Hauser TH13
3. Endress + Hauer TST434 Ambient sensors

F. Warranty

1. Provide a two (2) year full replacement warranty to correct equipment defects of all equipment from the Date of Substantial Completion.

14. To Specification Section 16400 Programmable Logic Controller (PLC) & Accessories:

Add the non-inclusive, non-binding sample (at the end of this Addendum) of the PLC programming control narrative as an example of the control programming narrative that will be provided after the award of the contract. The control narrative to actually be provided will include input, comments and additions from the Owner's Operators, Maintenance and Integrators Staff. The PLC provider is responsible for all programming to fully operate the East Main Pump Station and for integrating the station into the Owner's other facilities including communication with the Round Lake

Sanitary District Excess Flow Facility, the Fox Lake Treatment Plant and the Mill Creek Plant.

15. **Question/Response:**
    Sheet #36: For each VFD, the "in auto" signal is called out 4 times. Please confirm this is the intent.
    R: See No. 5 Above

16. **Question/Response**:
    Sheet #31: Panel schedule for MDP calls out Air Conditioner unit S2 & S3. These units are not called out on the 1-line (sheet 30) or on the power plan (sheet 26). Please clarify the location of these loads, along with their respective conduit & cable size
    R: S2 and S3 are existing combination HVAC combination units mounted on the roof (See Drawing 7 for photos). S3 is above the lunch room and shown on the original design drawings on Drawing 23. S2 is connected to the ductwork shown on the lower right hand corner of the original design drawing shown on Drawing 23. S2 and S3 are currently fed out of HPNL-1. New conductors for each unit S2 & S3 are to be 4-1/C #8 AWG.

17. **Question/Response**:
    Sheet #30: Note #4 calls out existing panel HPNL-1 to be removed. Please confirm location of this panel, along with existing loads within this panel that need to be consolidated into a new panel
    R: HPNL-1 is located on the east wall of the Mechanical Room (same location as the proposed MDP. HPNL-1 has 12 spaces, 3 are ON and active (S2 30 amp, S3 30 amp, and Power Panel A (PPA) 60 amp). PPA is to be removed with loads consolidated. PPA currently feeds Bathroom Wall Heater, Bathroom Wall Heater, Air Handling Units S-1 and R-1. All the PPA loads are shown in the MDP Schedule on Drawing 31.

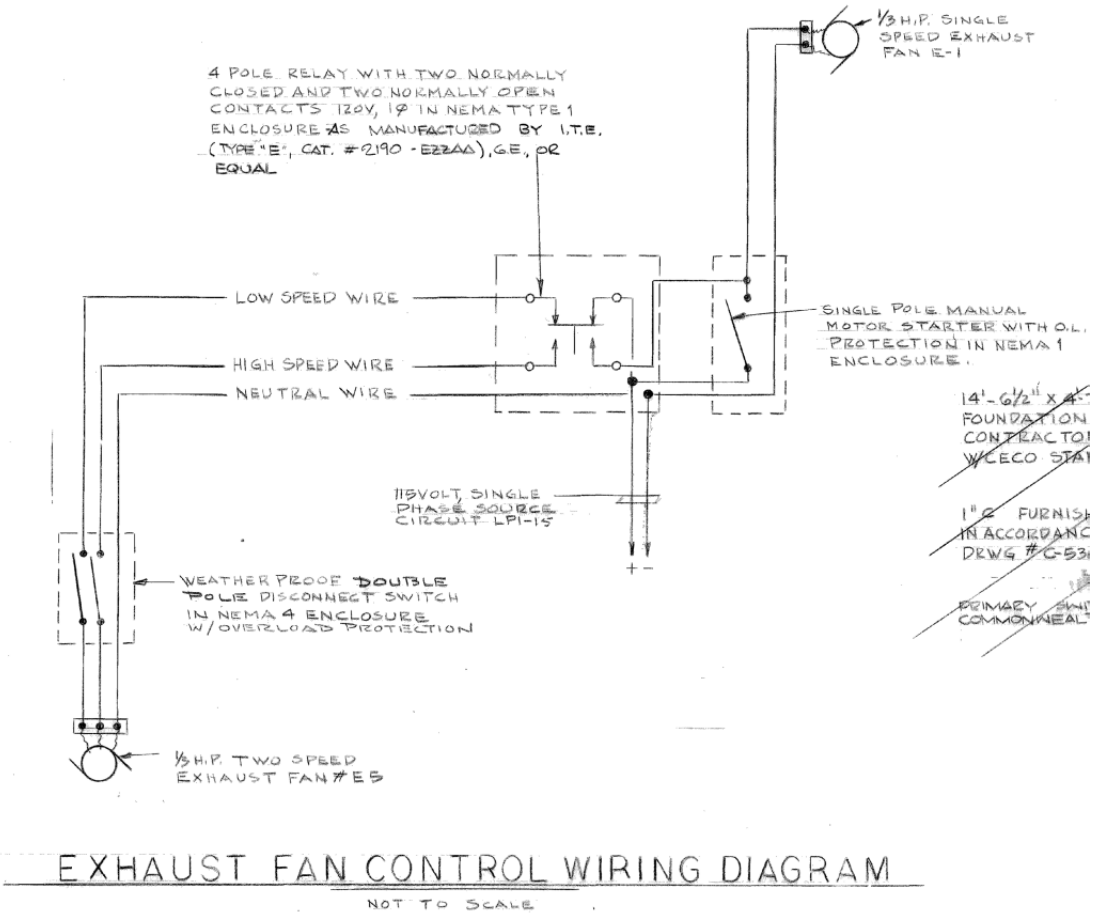
18. **Question/Response**:
    Sheet #30: Note #3, please list all loads that need to be consolidated into new MDP
    R: The (existing) loads to be consolidated into new MDP are shown on the Schedule on Drawing 31 (LPA, S-1, S-2, S-3, ER-1, Bathroom Wall Heater 1, Bathroom Wall Heater 2). Note Bathroom Wall Heater 1 & Bathroom Wall Heater 2 should be indicated faded and as existing with " * " by each.

19. **Question/Response**:
    Sheet #30: The incoming service cables are called out to be "(4) parallel sets in existing (3) 4" conduits". Is the intent to install (1) new 4" conduit to allow for (4) sets, as there are only (3) existing sets (per the plans)? Please confirm the intent of this note.
    R: The intent is not to provide a new conduit. The 3 existing conduits will be used for the new conductors for each service. As a clarification, the conduit and conductors (4 Parallel Sets of 3-1/C 350 MCM in (3) 4" RGS conduits) between the Service Entrance Motor Control Center and the 500KW Diesel Portable Generator Receptacle shown on Drawings 26 and 30 are new/proposed (not existing).

20. **Question/Response**:
    Sheet #30: Please confirm that the Com Ed transformers 2D9 & 2D8 , Existing Com Ed switchgear are not to be replaced
    R: The existing Com Ed transformers are not to be replaced. Com Ed switchgear located outside the pump station is not to be replaced. As a clarification, the (non-ComEd) Automatic Transfer Switch between the 2 utility lines located inside the pump station is being replaced as shown on Drawing 30 – Service Entrance Motor Control Center.

21. **Question/Response**:
    Sheet #30: Please confirm that the contractor is not responsible for any work associated with the Com Ed primary cables
    R: The Work does not include any work associated with Com Ed primary cables.

22. **Question/Response**:
    Sheet #23: Note #3, calls out to automate control of existing fan "E-2". This fan is not called out on the 1-line (sheet 30). Please confirm where this fan is fed from electrically, and if a new motor starter is needed for this fan
    R: E-2 is an existing mushroom style fan, roof top mounted above the chimney chase between the Garage and the Control Room, see photo on Drawing 7. E-2 is fed from existing LP1. The original design drawings show 3#12 in a ¾" conduit from E-2 to a 4 pole relay in the screen room (see below). No new motor starter is required.



EXHAUST FAN CONTROL WIRING DIAGRAM

NOT TO SCALE

23. Question/Response:

Sheet #23: Note #4,5,6, these units are called out on the 1-line (sheet 30) as well. Do these units need to interface with any exhaust fan starters, or are they self-contained units not needing any control wiring?

R: Damper motors are 120V, 1 Phase fed out of LP-2. No starters are required. Control Schematic is shown on Drawing 24. Drawing 36 has Note 3 for control wiring for dampers. Each of 3 duct air temperature sensors is anticipated to require a 2/C TSP to the PLC in Control Panel from the Mechanical Room. Each Damper Motor anticipated to require 2 #14's from Mechanical Room to PLC in Control Panel for on-off positioning of the dampers. The duct fans ER-1 and S-1 run 24/7, there is no need to interface the damper motors with the exhaust fan starters.

24. Question/Response:

Sheet #24: do any of the devices noted on this sheet (RH1, RH2, RH3, E2,) require new electrical conduit & cable as none is called out on the 1-line, or panel schedules

R: No new conduit or conductors are anticipated for RH1, RH2, RH3. (Any 120 volt, 1 phase control conductors and conduit from LP-1 will remain). For E2 see response to No. 22.

25. Question/Response:

Sheet #24: Is the "odor control" the same unit as called on the 1-line (sheet 30) to be fed from the new MCC starter "existing odor control fan outside building)?

R: Yes, it is the same unit.

26. To Specification 16400:

The Owner has approved the following Systems Integrators:

A. Wunderlich Malec, Minnetonka, MN
B. Allan ICS, East Troy, WI

27. Question/Response:

Sheet #8: What type of material shall be used to replace the (5/8") thick D.F.P.A sheating called out to be removed in the detail?

R: Replace with (5/8") thick treated plywood.

28. Question/Response:

Sheet 8: Are the wood shakes on the mansard roof to be removed?.

R: No.

29. Clarificaton:

On Drawing 32 below the Existing Disconnect removal note, add the following: "Existing Disconnects and existing conduit to the conduit intercept point are also to be removed for Pumps 2 & 3."

30. Non-Binding, Non-Inclusive Sample of Control Narrative (see No 14):

NON-BINDING NON-INCLUSIVE SAMPLE CONTROL NARRATIVE (OWNER INPUT TO BE ADDED)

November 14, 2016

SUBJECT: East Main - System Operation Narrative Sample
(CBBEL Project No. 10-0599)

I. PUMP START/STOP CONTROL & VARIABLE SPEED OPERATION

A. Description of Pump Starts and Pump Stop Control Cycle:

General Description: The East Main Pump Station utilizes cone valves rather than check valves on the pump discharge lines. Cone valves are hydraulically powered open and powered closed. Control for starting and pumps must be coordinated with the cone valve operation such that no reverse flow occurs on pump starts/stops or during a power failure.

Pump Start Description: Sequence:

- Station Controls call for a pump to start
- Pump is ramped up to speed with the cone valve closed
- A pressure switch on the pump discharge line confirms that the pump has developed pressure (sufficient to overcome the back pressure in the forcemain) and provides contact closure that signals for the cone valve to open *Note: new pressure switches matching the existing pressure switches are to be provided by the control system provider for all 4 pumps.*
- Controls open the cone valve
- Limit switches provide signal to controls to confirm that cone valve is open

Pump Stop Description: Sequence:

- Station Controls call for a pump to stop
- Pump is ramped down to a minimum speed (to be determined in field) whereby the pump is still contributing flow - cone valve remaining open

- Once minimum speed from previous step is reached, cone valve shall be closed with the pump still running.
- Upon full closure of the cone valve as confirmed from cone valve limit switches, the pump shall be stopped

Power Failure: The new cone valve actuators are provided with an option that allows the cone valves to be closed in the event of loss of power at the pump station. Upon loss of power, the cone valves are to be immediately closed within the closing time limits specified in the specification for the cone valve hydraulic actuators. (Control for restarting the pumps/cones valves upon return of power through either utility power automatic transfer or activation of portable emergency generator shall include a time delay such that the cone valves have been fully closed upon the initial power loss and the hydraulics in the forcemain have stabilized).

B. Normal Lead Lag Start/Stop East Main PS Operating Mode:
(Variable Speed Flow Matching In Response to Wet Well Level)

General Description: Vary the number of pumps operating and the pumps' operating speed within an adjustable upper and lower set point speed limit (operator may change upper and lower speed set points) to maintain a constant level (operating range) in the wet well (see "Wet Well Level Operating Range" heading for additional information). Varying the pump speed shall result in the pump(s) discharge flow rate essentially matching the pump station influent flow rate.

Maximum Speed Limit: Programing shall include an operator set point which shall allow the operator to select, set and change the maximum pump speed (in percent speed). This feature shall allow the operator to select a maximum pumping rate based on actual observed hydraulic conditions in the discharge forcemain system (by observing forcemain pressure and flow meter readings).

Minimum Speed Limit: Programing shall include an operator set point which shall allow the operator to select, set and change the minimum pump speed (in percent speed) for 1 pump operating alone to maintain cleansing velocity in the forcemain. This feature shall allow the operator to

select a minimum pumping rate based on actual observed downstream hydraulic conditions in the downstream forcemain (flow meter reading). The minimum allowable velocity in the forcemain piping shall not be less than 2 feet per second. For the existing 30-inch PCCP forcemain the minimum flow rate to maintain at least 2 feet per second is approximately 4,400 gallons per minute (6.4 MGD).

Wet Well Level:

In the normal operating mode, the level in the wet well shall be determined from an analog signal from the "active" new level transducer. A 2nd level transducer is to be provided and used as an automatic redundant "backup" device for sensing wet well level should the active transducer fail or provide erroneous readings.

Wet Well Level Operating Range:

The **minimum operating level** in the wet well is **727.50**. Reference Station Elevations are:

- Floor - Wet Well Hopper – 722.0
- Floor - Basement Pump Gallery – 722.0
- Floor - Screen Channels – 726.5
- Floor - Ground Floor Pump Gallery – 744.0
- Floor Screen Room – 744.0
- Center Line 30" FM – 734.0
- Invert Station Inflow Sewer – 728.20 (Source: As-Built Drawing 73)

The **maximum operating level** in the wet well shall be **729.33**. (*Note: Prior to the East Main improvements, the HWL in the wet well shown on the original design drawings was 731.5. The new (lower) HWL of 729.33 is to keep the operating range within acceptable limits for the new shredders for proper operation and to prevent overtopping of the shredders).*

Programing for control levels/elevations shall be within the operating range of the minimum and maximum operating levels as indicated above and shall include:

- starting condition (level) for lead pump
- stopping condition (level) for lead pump
  (*Note: when station influent rate is below the minimum forcemain cleansing flow rate, the lead pump will be cycled on and off.)*

- starting conditions (levels) for each of 3 lag pumps (started sequentially as needed in response to increasing influent flow)
- stopping conditions (levels) for each of 3 lag pumps (stopped sequentially as needed in response to decreasing influent flow).

All operating setpoints shall be operator adjustable from the station operator interface terminal and the SCADA system at the Mill Creek WRF.

Pump Control Pump Starts with Increasing Flow:

With all pumps off, the wet well level will rise until the start lead pump level is reached. The lead pump shall be started and ramped up to speed (ramp rate to be adjustable in the VFD settings). The PLC shall vary the speed of the lead pump to maintain a set wet well level, increasing the lead pump speed in response to increasing wet well level and decreasing the lead pump speed in response to decreasing wet well level.

When the lead pump reaches maximum set point speed and the pump station influent flow rate is higher than the pumping rate, the level in the wet well will continue to rise until the start lag pump condition is triggered. The 1st lag pump shall be started and ramped up to speed (ramp rate to be adjustable in the VFD settings). The PLC shall vary the speeds of the lead and 1st lag pumps together (same speed for both) to maintain a set wet well level, increasing both pump speeds in response to increasing wet well level and decreasing both pump speeds in response to decreasing wet well level.

Should the level in the wet well continue to rise with both the lead and 1st lag pumps together at maximum set point speed, the 2nd lag shall be started in similar fashion as the 1st lag pump was started.

Starting the third pump will enable flow diversion at the Round Lake Sanitary District Excess Flow Facility. Provide all programming to coordinate operations of this facility with the NWRWRF influent wet well and the RLSDEFF to limit influent flow to the East Main Street Pumping Station.

In similar fashion, with increasing influent pump station flow, the 3rd lag pump shall be started, at such point all 4 pumps at the East Main Station shall be running.

A station high flow alarm shall be given if the lead, 1st lag, 2nd lag and 3rd lag pumps have all been started. When the lead, 1st lag, 2nd lag and 3rd lag pumps reach maximum speed and the wet well influent flow rate is higher than the pumping rate, the level in the wet well shall continue to rise and a high level alarm shall be given.

Pump Control Pump Stops with Decreasing Flow:

When the lead, 1st lag, 2nd lag and 3rd lag pumps reach set point minimum speed and the wet well influent flow rate is lower than the pumping rate, the level in the wet well will decrease until the stop 3rd lag pump condition is reached and the 3rd lag pump speed shall be ramped down and shut off.

In similar fashion with decreasing influent flows the 2nd and 1st lag pumps shall be stopped in succession.

When the lead pump operating alone reaches minimum set point speed and the wet well influent rate is lower than the pumping rate, the level in the wet well will decrease until the lead pump off level is reached and the lead pump speed shall be ramped down and shut off. When this low flow condition is reached the lead pump will be cycled on and off.

C. <u>Pump Alternation:</u>

Pump Alternation (Manual Selection):

The programming shall allow the operator to place any pump in any lead, 1st lag, 2nd lag or 3rd lag position. (Similar to a Pin Matrix peg board)

Pump Alternation (Normal) The control logic shall allow the operator rotate all 4 pumps through the lead position. Alternation shall be operator selectable for 1) Each time all 4 pumps are stopped, 2) on a time clock for either daily or weekly rotation.

Pump Alternation (Use of new Pumps Option):

The new Pumps at East Main (Pump 1 and Pump 4) are anticipated to normally be used as the lead and 1st lag pumps with the remaining existing pumps (Pump 2

and Pump 3) used as the 2nd and 3rd lag pumps. The designated lead and 1st lag pumps, shall be alternated on (an operator adjustable) time interval initially set for 24-hours, and the designated 2nd and 3rd lag pumps, shall be alternated on the same time interval. If the pump(s) are running when the pumps are set to be alternated, the PLC logic/controls shall alternate the pump positions after all pumps are stopped through the normal operating sequence.

Pump Alternation (Manual) — The controls shall allow the operator to select any combination of pumps in lead and lag1 to lag 3 positions without any automated alternation. (See first heading under this ¶).

D. Pump Operation – Station Power Fail:

Instantaneous Utility Source Power Transfers:

With the Improvements for the East Main Pump Station the station will have available 2 utility line sources for station power with automatic power transfer upon loss of the primary utility source. Pump station operation during utility source transfers which are for all practical purposes instantaneous will continue in the operating mode that existed prior to the power transfer.

Non-instantaneous Utility Source Power Transfers:

Close cone valves as indicated under other headings. Automatically restart when power (utility or generator) is available.

E. VFD Fail - Single VFD Failure Operating Mode

General Description: The VFD's are to include full reduced voltage, solid state (RVSS) by-pass contactors to allow the pumps to operate as constant speed pumps upon a failure or fault of the VFD(s).

Operating Description: If a single VFD is faulted or failed, the available VFD(s) and pump(s) shall become the lead pump (and subsequent lag(s)) and no lead lag alternation shall occur while the single VFD is faulted/failed. Other than the failed VFD pump being rotated into the last lag position and operated as an across the line constant speed pump, the pumps shall be operated as described in the normal operating mode.

F. All VFD's Failed Operating Mode

General Description: If all VFD's are faulted or failed, the pumps shall operate across the line, constant speed and as described in the normal operating mode without the variable speed features. Pump starts and stops shall be sequential based on wet well level.

II. LEVEL TRANSDUCERS (ACTIVE AND BACKUP)

A. <u>Level Transducer Failure & Transfer (Independent PLC to Operate Pumps from Wet Well Level)</u>

General Description:

Two (2) wet well level transducers. One "Active" transducer and one "Backup/Standby" transducer. "Backup PLC" to provide pump control from wet well level in event of "Primary PLC" failure through use of a backup level control system PLC.

One of the wet well level transducers to be installed in South Wet Well, one to be installed in North Wet Well. Both transducers shall be located in Screen Room in existing channel opening near Mechanical Room wall.

Should the "active in-service" level transducer fail, an alarm shall sound and the level sensing controls shall automatically transfer to the backup level transducer for control.

A sensed wet well high level (above the normal wet well operating range) shall also cause an automatic transfer to the backup level transducer for control.

A backup level control system PLC in the Control Panel shall be provided which shall provide automated transfer to the backup PLC for the pump operating controls based on wet well level in the event the primary PLC is failed or unavailable.

Selector Switch: A Transducer selector switch shall be provided to allow the operator to select the use of:

- Auto Position – Primary Transducer Control with automatic transfer to back-up systems in the event of a transducer failure, high level or PLC failure

- Transducer 1 Position – Pump Control using Transducer 1
- Transducer 2 Position – Pump Control using Transducer 2

A PLC selector switch shall be provided to allow the operator to select the use of:

- Auto Position – Primary PLC Control with automatic transfer to back-up systems in the event of a transducer failure, high level or PLC failure
- Primary PLC Position – Pump Control using the primary PLC only
- Backup PLC Position - Pump Control using the backup PLC only

III. SCREENINGS SHREDDERS AND SLIDE GATES CONTROLS

A. <u>Start (Automated and Manual) of RLSD Excess Flow Facilities (RLSD EFF)</u>
[To be added.]

Normal flow condition anticipated for one active Shredder (with open slide gate) and one standby shredder (with closed slide) gate.

High flow from either number of pump running or station flow meter anticipated to activate standby shredder. High differential water level also anticipated to activate standby shredder.

Normal control anticipated to include adjustable time of operation for active shredder (e.g. one 10 minute run per hour)

IV. LEAD / LAG SHREDDER CONTROL
[To be added.]

Automatic alternator control anticipated similar to pump alternator control.

V. STATION POWER STATUS

General Description: [To be added]

IV. HVAC CONTROL

General Description: [To be added]