

NOTICE

TO: All plan holders

DATE: August 28, 2021

FROM: Jenny Calderon, P.E.
Cory Christiansen, P.E.
Water Works Engineers, LLC
1955 W. Grove Parkway, Ste 102
Pleasant Grove, UT 84062
(385) 288-1465 Email: jennyc@wwengineers.com

SUBJECT: Changes to the Contract Documents between the 90% and 100% design, and budget related scope changes for the Provo WATRR Center Package 2 design

Transmitted herewith are changes to the contract documents for the above mentioned project.

Notes:

1. This document addresses changes that have been made subsequent to the Provo WATRR Center Package 2 90% submittal as a result of comments from and coordination with Provo City and its program manager (See Part 2). Also included are proposed changes to the scope to address budgetary considerations (See Part 3).

PROVO WATRR CENTER PACKAGE 2

Changes between the 90% and 100% Design and Scope Changes to the Contract Documents

PART 1 - GENERAL

1.1 DOCUMENT INCLUDES

- A. Changes to the Bid Documents.

1.2 CONSTRUCTION CONTRACT

- A. Provo WATRR Center Package 2 Design
- B. City Project No. PW-4566-2020-2
- C. Date: August 28,2021

PART 2 - CHANGES TO THE 90% SUBMITTAL BASED ON 90% DESIGN REVIEW COMMENTS

2.1 CHANGES TO SPECIFICATIONS

- A. Changes to Specification shall be indicated as follows:
 - 1. Added text shall be indicated in **bold**.
 - 2. Deleted text shall be indicated in ~~strikethrough~~.
- B. General Specifications
 - 1. 09 97 23.24, Coatings for Wastewater Structures
 - a. Modify Coatings Schedule in Paragraph 3.11.A. as follows:

SCHEDULE	SURFACE PREPARATION	LINING SYSTEM	SCHEDULE OF AREAS TO BE COATED
316	<p>Abrasive Blast to remove laitance, form release agents, curing compounds, sealers, and other contaminants and to provide surface profile in accordance with SSPC-SP13/NACE6, ICRI CSP5.</p> <p>Level or grind concrete substrates to produce a uniform and smooth surface, including removal of sharp edges, ridges, form fins, and other concrete protrusions.</p>	<p>Underlayment: epoxy modified cementitious resurfacer - parge coat of entire surface at a minimum thickness of 1/16-inch</p> <p>Primer: Epoxy primer / sealer (if required by manufacturer) - 10 MDFT minimum</p> <p>Topcoat: elastomeric aromatic polyurethane - 125 MDFT</p>	<ol style="list-style-type: none"> 1. Bioreactor RAS fermentation zones: coat underside of concrete deck and beams, and basin interior walls and columns from top of wall/column to 15 ft above finished floor. 2. DAF launders. 3. Interior walls of all liquid service manholes. 4. Membrane Tank Nos. 1–8 through 7: coat floors and walls from floor to top of wall. Membrane Tank No. 8 shall be prepped and coated as part of a future project when the tank is to be equipped and brought online. 5. Fine Screen Pump Station Wetwell: coat underside of concrete deck and beams, floor, and walls from 3" above finished floor to top of wall. 6. Fine Screen Building: coat all channels and wetwells located within the Fine Screen Building, including floors and walls from floor to top of wall. 7. Plant Lift Station Wetwell: coat underside of concrete deck and beams, and walls from floor to 3 inches above finished floor.

2. 40 05 23.26 Piping System Data Sheet – Stainless Steel Pipe 316
 - a. Added **Press Joint for field couplings**
3. 40 05 51, Valves
 - a. Replaced all instances of ~~MSS~~ with **Supplier**.
4. 40 05 51, Valves
 - a. The following text was added to Paragraph 2.14, Miscellaneous Valves:

F. MV-02 Mud Valves

- 1. Mud valve shall be stainless steel body, frame, plug, operating stem and yoke.**
- 2. Bolts and nuts shall be corrosion resistant.**
- 3. Mud valves shall have flanged ends for mounting on a flat surface.**
- 4. Non-rising stem ending in 2-inch square operating nut. Length as indicated on drawings.**
- 5. Where required, the manufacturer shall provide valve operating stems, floor stands, and stem guides as shown on contract drawings.**

6. Manufacturers and Models:

- a. Troy**
- b. Or Equal**

C. Phase 1 Package 2 Specifications

1. 23 31 11, High Pressure Ductwork
 - a. Paragraph 1.3.C. and 1.3.D to be deleted as follows:
 - ~~C. Written program outlining protection of ductwork from contamination with dirt and procedures for cleaning contaminated ductwork.~~
 - ~~D. Submit documentation that the minimum two weeks building 100% outside air flush-out was completed, including dates when the flush-out was begun and completed and what steps were taken to guarantee 100% outside air usage~~
 - b. Paragraph 3.4.A.1 to be deleted as follows:
 1. ~~Follow control measures of SMACNA IAQ Guidelines for Occupied Buildings Under Construction, Chapter 3, latest edition and as described below.~~
2. 40 05 59 SC, Fabricated Slide Gates Schedule
 - a. Changed **operating floor elevation of gates P43-SLG-001, P44-SLG-001, P45-SLG-001, P46-SLG-001, P47-SLG-001, P48-SLG-001, P49-SLG-001, P45-SLG-001 from 4507.00 ft to 4510.00 requiring 3 ft longer stem length.**
 - b. Changed operating floor elevation of gate **P55-SLG-010 from 4509.00 ft to 4509.33 requiring 0.33 ft longer stem length.**
3. 40 05 10 PS, Pipe Schedule.
 - a. Change the table in Paragraph 1.2 as follows:

DR	Drain	Chemical	Exposed	All	PVC1	SLV	N/A	None	
			Buried	All	PVC4	PO	N/A	None	
		Plant Drain	Exposed	Less than 4 inches	PVC1	SLV	100 psi	None	
				Exposed	All	PVC1	SLV	N/A	None
			Buried	4 inches or greater	PVC4	PO	N/A	None	
		Water, Compressor Condensate	Exposed	Less than 4 inches	GSP or BSP	THR	110 psi	None	
				Under Slab	4 inches or greater	PVC4	PO	N/A	None

4. 40 05 10 VS, Valve Schedule:
 - a. Change the table in Paragraph 1.2 as follows:

Valve Tag Number	Diameter	Ends	Installation	Actuator	Valve Type
P29-MV-001	4"	FLG	CH	N -HW	MV-01
P29-MV-002	4"	FLG	CH	N -HW	MV-01
P29-PLV-010	8"	FLG	EX	HW	PLV-10
P29-PLV-011	8"	FLG	EX	HW	PLV-10
P29-PLV-020	8"	FLG	EX	HW	PLV-10
P30-BFV-010	10"	LUG-FLG	EX	HW	BFV-01
P30-MOV-010	10"	LUG-FLG	EX	Type 101	BFV-02

Valve Tag Number	Diameter	Ends	Installation	Actuator	Valve Type
P30-BFV-011	16"	LUG-FLG	EX	HW	BFV-01
P30-MOV-011	16"	LUG-FLG	EX	Type 101	BFV-02
P30-BFV-012	18"	LUG-FLG	EX	HW	BFV-01
P30-MOV-012	18"	LUG-FLG	EX	Type 101	BFV-02
P30-MOV-020	10"	LUG-FLG	EX	Type 101	BFV-02
P30-BFV-021	16"	LUG-FLG	EX	HW	BFV-01
P30-MOV-021	16"	LUG-FLG	EX	Type 101	BFV-02
P30-BFV-022	18"	LUG-FLG	EX	HW	BFV-01
P30-MOV-022	18"	LUG-FLG	EX	Type 101	BFV-02
P33-BFV-001	18"	LUG-FLG	EX	HW	BFV-20
P33-BFV-010	6"-4"	LUG-FLG	EX	L	BFV-20
P33-MOV-010	4"	LUG-FLG	EX	Type 101	BFV-20
P33-BFV-020	10"	LUG-FLG	EX	L	BFV-20
P33-MOV-020	6"	LUG-FLG	EX	Type 101	BFV-20
P33-BFV-030	6"	LUG-FLG	EX	L	BFV-20
P33-MOV-030	4"	LUG-FLG	EX	Type 101	BFV-20
P33-BFV-040	10"	LUG-FLG	EX	L	BFV-20
P33-MOV-040	6"	LUG-FLG	EX	Type 101	BFV-20
P33-BFV-050	8"	LUG-FLG	EX	L	BFV-20
P33-MOV-050	4"	LUG-FLG	EX	Type 101	BFV-20
P33-BFV-060	4"	LUG-FLG	EX	L	BFV-20
P33-MOV-060	4"	LUG-FLG	EX	Type 101	BFV-20
P34-BFV-001	18"	LUG-FLG	EX	HW	BFV-20
P34-BFV-010	6"	LUG-FLG	EX	L	BFV-20
P34-MOV-010	4"	LUG-FLG	EX	Type 101	BFV-20
P34-BFV-020	10"	LUG-FLG	EX	L	BFV-20
P34-MOV-020	6"	LUG-FLG	EX	Type 101	BFV-20
P34-BFV-030	6"	LUG-FLG	EX	L	BFV-20
P34-MOV-030	4"	LUG-FLG	EX	Type 101	BFV-20
P34-BFV-040	10"	LUG-FLG	EX	L	BFV-20
P34-MOV-040	6"	LUG-FLG	EX	Type 101	BFV-20
P34-BFV-050	8"	LUG-FLG	EX	L	BFV-20
P34-MOV-050	4"	LUG-FLG	EX	Type 101	BFV-20
P34-BFV-060	4"	LUG-FLG	EX	L	BFV-20
P34-MOV-060	4"	LUG-FLG	EX	Type 101	BFV-20
P35-BFV-001	18"	LUG-FLG	EX	HW	BFV-20
P40-PLV-010	12"	FLG	EX	HW	PLV-10
P42-PLV-102	12"-10"	FLG	EX	HW	PLV-10
P42-PLV- 104 ø10	4"-6"	FLG	EX	HW	PLV-10

Valve Tag Number	Diameter	Ends	Installation	Actuator	Valve Type
P63-MV-100	4"	FLG	EX	N	MV- 02-0±
P65-MV-100	4"	FLG	EX	N	MV- 02-0±

5. 40 75 00, Process Control System Instrumentation Index.

a. PI-P29001 is to be changed as follows:

Tag (Area-Type-Number)	Type	Status	Device	Size / Rating	Signal	Range	Eng. Unit	Setpoint / Range
PIT-P29001	Analog	New	Pressure Indicating Transmitter		4-20 mA	0 - 10	in.wg	10 (A single process connection with multiple diaphragms is acceptable.)
PSH-P29001	Discrete	New	Pressure Switch		Discrete	NA	in.wg	11 (A single process connection with multiple diaphragms is acceptable.)
PSH-P42010	Discrete	New	Pressure Switch		Discrete		psi	45
PSH-P42010	Discrete	New	Pressure Switch		Discrete		psi	45
PSH-P42010	Discrete	New	Pressure Switch		Discrete		psi	45
PSH-P42010	Discrete	New	Pressure Switch		Discrete		psi	45

6. 41 22 13.13, Bridge Crane.

a. Change Paragraph 2.2.A.7. as follows:

- 1) Provide a crane with a configuration and weight that does not result in a load exceeding the design capacity of the runway beams. The runways are designed for a maximum wheel load, including impact allowances, when there are two wheels per end truck spaced 10'-6" **apart** at 7.5 ton crane ~~apart and 3'-7" at 1 ton crane apart.~~

b. Change Paragraph 2.2.D.5. as follows:

- 1) Bearing Life: B10 life of ~~100,000~~ **10,000** hours based on 75 percent of the wheel load, and the full rated speed of the propelled carriers.

c. Change Paragraph 2.2.E.5. as follows:

- 1) Hoist Brake: Weston multiple disc type **or Regenerative brake type.**

d. Change Paragraph 2.3.A. as follows:

- 1) Pushbutton Control: Control of the bridge, trolley and hoist shall be by means of a pendant six button pushbutton control box suspended from the trolley. Steel cable shall provide strain relief for the electric control cable. ~~An isolating transformer shall reduce voltage to 24 volts in the control circuits~~ **A 115V, single phase power supply is required....** Pushbutton station shall be mounted from the hoist trolley as indicated in drawings.

Alternately, a track supported festoon system may be used provided that the pushbutton box can be accessed from anywhere along the crane beam and can be stored out of the way of operations.

7. 43 24 13.33, Vertical Axial Mixed Flow Pumps.
 - a. Change Paragraph 1.3.F.2.d. as follows:
 - 1) ~~Run pump dry~~ Verify proper rotation, alignment and mechanical integrity.
 - b. Paragraph 2.3.B. shall be deleted.
 - 1) ~~Pumps shall have capacity no less than 98% and no greater than 103% of the specified capacity at each of the total dynamic head operating conditions.~~
 - c. Change Paragraph 2.4.J.10. as follows:
 - 1) Shaft bearings shall be oil lubricated or **permanently grease packed** as per Manufacturer's standard design used in previous successful operating installations. **Bearings shall have a minimum design life of 100,000 hours.**
8. 40 05 51 VS- Valve Schedule
 - a. Changed valve type for **P63-MV-100, P64-MV-100 and P65-MV-100 to MV-02.**
 - b. Changed actuator type for **P29-MV-001 and P19-MV-002 to 2" Nut.**
 - c. Changed valve end connection for **P30-BFV-010, P30-MOV-010, P30-BFV-011, P30-MOV-011, P30-BFV-012, P30-MOV-012, P30-BFV-020, P30-MOV-020, P30-BFV-021, P30-MOV-021, P30-BFV-022, P30-MOV-022 to Lugged end.**
 - d. Changed valve size of **P33-BFV-010 to 6".**
 - e. Changed valve end connection for **P33-BFV-001, P33-BFV-010, P33-MOV-010, P33-BFV-020, P33-MOV-020, P33-BFV-030, P33-MOV-030, P33-BFV-040, P33-MOV-040, P33-BFV-050, P33-MOV-050, P33-BFV-060, P33-MOV-060 to Lugged end.**
 - f. Changed valve end connection for **P34-BFV-001, P34-BFV-010, P34-MOV-010, P34-BFV-020, P34-MOV-020, P34-BFV-030, P34-MOV-030, P34-BFV-040, P34-MOV-040, P34-BFV-050, P34-MOV-050, P34-BFV-060, P34-MOV-060, P35-BFV-001 to Lugged end.**
 - g. Changed valve size of **P42-PLV-102 to 10".**
 - h. Changed valve size of **P42-PLV-104 to 4".**

2.2 CHANGES TO DRAWINGS

A. GENERAL CHANGES:

1. Standard details number 2102, 3143, 3405B, 3415A, 5402, 7132, and 11109 have been added to the standard detail package.
2. Standard details number 2807, 3701, 11100A, 11100B, 11101A, and 11101B have been modified.

B. CIVIL AND SITE CHANGES

1. Drawing C-CD-100, C-CD-102, C-YP-100, C-YP-102
 - a. Spacing of generator pads was changed to allow 9 feet between the Phase 1, Package 2 generator and the future generators.
2. Drawing C-CD-102
 - a. Key note number 7 added as follows:
 - 1) **Spill Curb and Gutter per Detail 2/C-CD-301.**
3. Drawing C-CD-103
 - a. Control points added to paving.
 - b. Existing contour elevations added.

- c. Keynote number 2 added as follows, and keyed at new pavement:
 - 1) **Asphalt concrete pavement per STD detail 2501.**
- 4. Drawing C-CD-106
 - a. Key note number 2 is changed as follows:
 - 1) Curb and Gutter per detail 1/C-CD-~~300~~**301.**
 - b. Key note number 6 is changed as follows:
 - 1) Typical flush to 6" concrete curb per detail-~~3~~**4/C-CD-301, sim.**
 - c. Key note number 14 added as follows, and keyed at intersection of the roads North and West of the equalization and surge basins:
 - 1) **Typical valley gutter per detail 6/C-CD-301.**
 - d. At the road North of the equalization and surge basins:
 - 1) Note key referencing key note 2 is changed to key referencing key note 3.
 - 2) Note key referencing key note 3 is changed to key referencing key note 2.
 - 3) A section cut referencing detail C on sheet C-CD-300 was added.
 - e. Control elevation and slope data added to the valley gutter East of the blower building.
 - f. Elevation data is added to the contour representing 4500 feet (West of the bioreactor complex).
- 5. Drawing C-CD-109
 - a. Key note number 1 added as followed and keyed at the new pavement:
 - 1) Asphalt concrete pavement per STD detail 2501.
- 6. Drawing C-CD-110
 - a. Key note number 1 keyed at pavement South of the membranes building.
 - b. Key note number 8 keyed East of the membrane building between the building and gravel surfacing.
 - c. Key note number 8 keyed at the sidewalk West of the final clarifiers.
 - d. Key note number 11 added as follows and keyed at intersection of the roads South and West of the equalization and surge basins and the road South and East of the contractor and engineer trailer staging area:
 - 1) Typical valley gutter per detail 6/C-CD-301.
 - e. At the road South of the equalization and surge basins:
 - 1) The reference to key note number 9 South of this road is changed to reference key note number 11.
 - 2) A section cut referencing detail C on sheet C-CD-300 was added.
 - f. The arrow from the reference to key note 5 was changed to point to the concrete swale running West of the membranes building.
 - g. Control elevation and slope data are added to the concrete swale running West of the membranes building.
 - h. The reference to key note number 2 Southeast of the chemical storage building is changed to reference key note number 3.
 - i. Design details have been keyed for the concrete pads and catch basins at the West wall of the chem storage building have been added to the drawing.
- 7. Drawing C-CD-300
 - a. Detail A
 - 1) Total road width from back of curb to back of curb revised from 20 feet to 28 feet.
 - 2) Road width from centerline to front of curb revised from 8 feet to 12 feet.
 - 3) Slope from centerline to front of curb at left of detail revised from 2% to "Varies 0.5% to 5.4%.
 - 4) Slope from centerline to front of curb at right of detail revised from 2% to "Varies 0.1% to 4.6%.
 - b. Detail B
 - 1) Road width from centerline to front of curb revised from 8 feet to 12 feet.

- 2) Slope revised from 2% to "Varies 2.0% to 2.2%.
- c. Detail D
 - 1) Road width from centerline to front of curb revised from 8 feet to 12 feet.
- 8. Drawing C-PP-201
 - a. In profile on the righthand side of the page, the pipe at station 10+31.61 was revised from a 2-inch NG line to a 2 1/2 -inch NG line.
- 9. Drawing C-PP-202
 - a. Station of the 84" manhole corrected to 10+23.50.
- 10. Drawing C-PP-203
 - a. The 6-inch IPW line between stations 10+00.00 and 10+20.00 added to the profile view.
 - b. The 10-inch drain line running West of station 12+00.00 added to the profile view.
 - c. The 1-inch NG line between station 12+17.1 and 12+31.48 added to the profile view.
- 11. Drawing C-PP-204
 - a. The IPW line at station 10+37.50 revised from a 1.75-inch to a 1 1/2-inch IPW line.
 - b. The NPW line at station 11+88.0 to be revised from a 2-inch to a 4-inch NPW line.
- 12. Drawing C-PP-205
 - a. The NG line at station 10+45.36 revised from a 2-inch to a 2 1/2-inch NG line.
- 13. Drawing C-YP-102
 - a. Note number 5 is changed as follows:
 - 1) See 2000 for pipeline bedding and backfill of pipes ~~below 8" depth~~ **placed 8" or greater below grade.**
 - b. DR 43
 - 1) The 18" storm drain line between the manhole at point DR 43 and the catch basin at point DR 41 has been eliminated. A manhole at point DR 45 has been added on the existing plant drain pipe between the catch basins at points DR 40 and DR 41 to which will convey the storm drain flow to the existing manhole at point DR 43. The point tables on C-YP-801 have been updated accordingly.
- 14. Drawing C-YP-105
 - a. The gate valves on the 2-inch natural gas line have been changed to ball valves, type BAV-01, which shall be buried according to standard detail 2239.
 - b. The point labels NG-4 and NG-5 are switched to match what is presented on drawing C-YP-801.
 - c. Note number 9 added as follows:
 - 1) Buried natural gas line shall be installed with tracer wire. All natural gas line valves shall be ball valve type BAV-01 per the specifications, and shall be buried according to standard detail 2239.
- 15. Drawing C-YP-106
 - a. The 4-inch check valve on the 4-inch centrate line has been deleted from the project scope.
 - b. A 60-inch PI line has been added extending from the west wall of the fine screen pump station influent box westward to 6 feet beyond the edge of the asphalt. Pipe is keyed to reference key note number 6.
 - c. A ball valve is added to the 2-inch natural gas line entering the west side of the fine screen facility. The wall penetration is changed to be above grade (see changes to C-YP-801).
 - d. Note number 9 added as follows:

- 1) Buried natural gas line shall be installed with tracer wire. All natural gas line valves shall be ball valve type BAV-01 per the specifications, and shall be buried according to standard detail 2239.
 - 2) Where the 30-inch piping penetrates the North and West wall of the equalization basin, the text for standard detail 15802 is modified as follows:
 - a) FRPM pipe flexible connection, **sim. See mechanical plans for wall penetration.**
 - 3) Where the 4-inch centrate line penetrates the West wall of the equalization basin, the text for standard detail 15804 is modified as follows.
 - a) HPDE pipe flexible connection, **sim. Wall penetration per standard detail 15132D.**
 - 4) Where the 48-inch ML piping penetrates the West wall of the equalization basin, the text for standard detail 15802 is modified as follows:
 - a) FRPM pipe flexible connection, **sim. Wall penetration per standard detail 15132D.**
 - 5) The process ID for the 54-inch piping coming from the West wall of the fine screens facility is changed from SPE to PE.
16. Drawing C-YP-109
- a. Note number 9 added as follows:
 - 1) Buried natural gas line shall be installed with tracer wire. All natural gas line valves shall be ball valve type BAV-01 per the specifications, and shall be buried according to standard detail 2239.
17. Drawing C-YP-110
- a. A ball valve is added to the 2 1/2-inch NG line penetrating the East wall of the membranes building. The wall penetration is changed to be above grade (see changes to C-YP-801).
 - b. Note number 9 added as follows:
 - 1) Buried natural gas line shall be installed with tracer wire. All natural gas line valves shall be ball valve type BAV-01 per the specifications, and shall be buried according to standard detail 2239.
 - c. The 2-inch IPW line connecting to a 3-inch yard hydrant at the South wall of the permeate weir box has been changed to a 1 1/2-inch IPW line connecting to a 1 1/2-inch yard hydrant.
 - d. The IPW line, gate valve, and yard hydrant South of the membranes building at the far west of the drawing, are to be changed to 1 1/2-inch.
 - 1) Key not number 5 is modified as follows:
 - a) Provide ~~3"~~**1 1/2"** no-freeze yard hydrant per std. detail 15201A.
 - e. The drain line flowing from DR 4 to DR 7 is changed from an 8-inch to a 6-inch DR line.
 - f. The drain line flowing from DR 7 to DR 18 is an 18-inch line.
 - g. Key note number 12 has been added as follows, and keyed at the concrete pads west of the Chemical Storage building:
 - 1) **Concrete pads per std. detail 3200E. Catch basin and subgrade compaction and fill per detail 2102.**
 - h. Detail 1, Poured Concrete Joint Detail is changed as follows:
 - 1) The ~~48" PRM~~ label has been changed to **"Size as indicated."**
 - 2) For the 72" pipe the process ID, PRM, has been removed and replaced with **RCP** to describe the pipe material.
18. Drawing C-YP-801
- a. The elevation column of all tables has been changed to "CL Elevation" or "Invert Elevation" as appropriate.
 - b. Point CEN-6 is deleted from table (see related change to C-YP-106).

- c. Elevation at Point CEN-7 changed from 4493.16 to 4493.46 feet.
- d. Point CA-1 is lowered by 2 inches so a low point blow off can be installed at this point.
- e. DR 3 rim elevation 4498.78 v. 4498.36.
- f. DR 20 rim elevation is 4499.81 feet.
- g. DR 24 rim elevation is 4500.14 feet.
- h. Point DR 17 "invert in" column changed to indicate an 8-inch rather than a 6 inch line as indicated on C-YP-106.
- i. DR 30 and DR 31 have been added to the point table.
- j. PW-7 description changed as follows:
 - 1) ~~6" X 6" X 2" tee~~ **2" Service saddle.**
- k. PW-9 changed to PW-11 and its description changed as follows:
 - 1) ~~6" 45° bend~~ **Fire hydrant**
- l. PW-10 changed to PW-9 and its description changed as follows:
 - 1) ~~4" 6" X 6" X 4" tee~~ **6" wye**
- m. PW-11 changed to PW-10 and its description changed as follows:
 - 1) 6" gate valve
- n. PW-16 description changed as follows
 - 1) 6" X-4" **6" tee**
- o. PW-17 description changed as follows
 - 1) ~~4" tee~~ **6" gate valve**
- p. PW-19 changed to PW-20 and its description changed as follows:
 - 1) ~~6" 45° bend~~ **4" gate valve**
- q. PW-20 changed to PW-19.
- r. PW-22 description changed as follows:
 - 1) ~~Fire hydrant~~ **6" gate valve**
- s. The description for IPW-2 changed as follows:
 - 1) ~~4" 6" gate valve~~
- t. The description for IPW-14 changed as follows:
 - 1) ~~6" 4" gate valve~~
- u. The description for IPW-30 changed as follows:
 - 1) ~~6" 4" solvent welded cap~~
- v. Elevation for IPW-31 and IPW-34 both changed to 4496.84'.
- w. SPE-1 through SPE-10 and SPE-13 through SPE-16 to be changed to PE-1 through PE-10 and PE-13 through PE-16, respectively.
 - 1) SPE-2 and SPE-3 descriptions changed as follows:
 - a) 54" x ~~48"~~ **54" tee** as shown on drawing C-YP-106
- x. NG-4 and NG-8 descriptions changed as follows:
 - 1) ~~2" gate~~ **ball valve**

C. ARCHITECTURAL CHANGES

- 1. All finish schedules have been updated to reflect the following:
 - a. Chemical containment areas are to be coated in accordance with Section 09 89 00 of the general specifications.
 - b. Wastewater structures and channels shall be painted in accordance with Section 09 97 23.24 of the general specifications.
 - c. All areas not requiring special coatings shall be coated in accordance with Section 09 90 00 of the general specifications.

D. STRUCTURAL CHANGES

- 1. Fine Screen Facility and Membrane Facility drawing have been updated to indicate FRP covers or grating at the membrane tanks, fine screen channels, etc.
- 2. S-FS-111

- a. Primary effluent valve vault dimensions increased in the east west direction.
- 3. S-FS-131
 - a. Extra rebar added in the wall between overhead rolling door and manned door along grid E1.
- 4. S-FS-182
 - a. 3 beam sizes changed from W21x68 to W21x57.
 - b. Roof deck changed from 20GA to 18GA between grids 5 and 11.
 - c. HSS 5x2x1/2 beam lengths increased between grids C1 and B1.
- 5. S-FS-202
 - a. Puddle welds called out for deck attachment on top of wall.
- 6. S-FS-203
 - a. #5 @ 8" O.C dowels changed to #6 @ 6" O.C at EL 4511.00 along Grid D1.
 - b. #6 @ 8" O.C dowels changed to #8 @ 12" O.C at EL 4511.00 along Grid E1.
 - c. Wall rebar changed from #6 @ 8" O.C to #8 @ 12" O.C vertical and #7 @ 12" O.C horizontal below EL 4500.00.
- 7. S-FS-204
 - a. Missing slab rebar called out at EL 4524.00
 - b. Additional reinforcement added below columns on the slab between grids E1 and D1
 - c. Vertical wall rebar changed from #7 to #8 and horizontal wall rebar changed from #8 to #7.
- 8. S-FS-205
 - a. #8 @ 12" O.C form saver dowels added to wall on grids E1 and D1.
 - b. Additional reinforcement added below columns on the slab between grids C1 and D2.
- 9. S-FS-206
 - a. #8 @ 12" O.C form saver dowels added to wall on grids E1 and B1 at EL 4517.00.
- 10. S-FS-207
 - a. Slab rebar changed from #7 @ 8" O.C to #6 @ 12" O.C at EL 4500.00.
 - b. #5 vertical wall rebar spacing changed from 8" to 6" on grids 2 and 3.
 - c. #6 dowel spacing changed from 8" to 12" O.C along grid 3 at EL 4500.00.
 - d. #5 dowels @ 8" O.C added on grid 11 at EL 4517.00.
 - e. Additional reinforcement added below columns on the slab between grids 4 and 11.
- 11. S-FS-208
 - a. Horizontal wall rebar changed from #7 @ 10" O.C to #7 @ 12" O.C and vertical wall rebar changed from #7 @ 10" O.C to #8 @ 12" O.C along grid 3.
 - b. #8 dowels @ 12" O.C added along grid 3 at EL 4511.00.
 - c. Vertical wall rebar changed from #7 @ 12" O.C to #8 @ 12" O. along grid 4.
 - d. Additional reinforcement added below columns in slab between grids 4 and 11.
- 12. S-FS-209
 - a. Wall rebar modified to #7 @ 12" O.C along grids 5 between EL 4524.00 to EL 4508.64.
 - b. #5 @ 8" O.C form saver dowels added to wall on grids 5 at EL 4517.00.
 - c. #9 dowels @ 8" O.C dowels changed to #8 at 12" O.C at grids 4 and 5 at EL 4491.50.
 - d. #8 dowels @ 8" O.C changed to #10 dowels @ 8" O.C at the footing along grid 11 at EL 4485.00.
 - e. Slab rebar changed from #6 @ 10" O.C to #8 @ 12" O.C at EL 4508.64
- 13. S-FS-210
 - a. #6 @ 6" O.C form saver dowels added to wall on grids D2 and B2 at EL 4491.50.
- 14. S-FS-211

- a. Missing column footing added at grid 5.
 - b. #6 @ 8" O.C form saver dowels added to wall on grids 11 at EL 4491.50.
 - c. #8 dowels @ 8" O.C changed to #10 dowels @ 8" O.C at the footing along grid 11 at EL 4485.00.
15. S-FS-212
- a. #5 @ 8" O.C vertical dowels added to CMU wall at EL 4512.50 in between grids 11 and 12.
 - b. 3#5 bar added to stem wall below CMU wall between grids 11 and 12.
16. S-FS-303
- a. New detail 17 showing metal deck connection on top of CMU wall added.
17. S-FS-304
- a. Section A- #5 @ 6" O.C horizontal wall rebar changed to #5 @ 8" O.C along grid 3. #6 @ 8" O.C dowels changed to #6 @ 12" O.C along grid 3 at EL 4500.00. #5 @ 6" O.C horizontal wall rebar changed to #5 @ 8" O.C along grid 5. #5 @ 8" O.C dowels changed to #5 @ 6" O.C along grid 5 at EL 4508.64.
18. S-FS-305
- a. Section B- #5 @ 6" O.C horizontal wall rebar changed to #5 @ 8" O.C along grid 5. #5 @ 8" O.C vertical wall rebar changed to #5 @ 6" O.C along grid 5. #5 @ 8" O.C vertical wall rebar changed to #5 @ 6" O.C along grid 3. #6 @ 12" O.C dowels added along grid 3 at EL 4500.00. #5 dowels @ 8" O.C changed to #6 dowels @ 12" O.C along grid 3 at EL 4500.00.
19. S-FS-306
- a. New detail 2 showing beam attachment to wall added.
20. S-BR-301
- a. Detail 1- Slab thickness changed to 2'-6" form 2'-0".
 - b. Detail 2- Slab rebar changed from #7 @ 8" O.C to #7 @ 6" O.C.
 - c. Detail 3- Slab rebar changed from #7 @ 8" O.C to #8 @ 6" O.C at EL 4485.00.
 - d. Detail 4- #7 dowels @ 6" O.C changed to #8 @ 6" O.C at EL 4510.00. Wall rebar changed from #7 Vert and #6 Hori @ 6" O.C to #8 @ 6" O.C. Slab rebar changed from #7 @ 8" O.C from #7 @ 6" O.C at EL 4485. #9 dowels changed to #10 dowels at EL 4485.00.
 - e. Detail 5- #10 dowels changed to #8 dowels at EL 4485.00. Slab rebar changed from #7 @ 8" O.C to #8 @ 6" O.C. at EL 4485.00.
 - f. Detail 6- Wall rebar changed from #7 Vert and #6 Hori @ 6" O.C to #8 @ 6" O.C.
21. S-BR-302
- a. Detail 7- Slab rebar changed from #6 @ 10" O.C to #8 @ 12" O.C. #6 form saver dowels added at EL 4491.50.
 - b. Detail 8- Vert Wall rebar changed from #7 @ 8" O.C to #8 @ 6" O.C and horizontal wall rebar changed from #7 @ 8" O.C to #8 @ 6" O.C. #7 and #9 dowels changed to #10 dowels at 6" O.C. Slab rebar changed from #7 @ 8" O.C to #7 @ 6" O.C.
 - c. Detail 9- Slab rebar changed from #7 @ 8" O.C to #7 @ 6" O.C. #6 form saver dowels added at EL 4491.50.
 - d. Detail 10- Vert Wall rebar changed from #7 to #8 and Horizontal wall rebar changed from #6 to #7. Slab rebar changed from #7 @ 8" O.C to #7 @ 6" O.C at EL 4485.00. #9 dowels changed to #10 dowels at EL 4485.00.
22. S-BR-303
- a. Detail 11- Vert wall rebar changed from #7 to #8 and Horizontal wall rebar changed from #6 to #7. Slab rebar changed from #7 @ 8" O.C to #7 @ 6" O.C at EL 4485.00. #9 dowels changed to #10 dowels at EL 4485.00.
 - b. Detail 12- Vert wall rebar changed from #6 @ 6" O.C to #7 @ 8" O.C. Slab rebar changed from #7 @ 8" O.C to #7 @ 6" O.C at EL 4485.00.

- c. Detail 13- Stirrup spacing changed from 4" O.C to 8" O.C.
 - d. Detail 14- #5 stirrups changed to #4 stirrups.
- 23.S-BR-304
- a. Detail 15- #4 @ 8" O.C bars added at the top of wall. #7 dowels @ 8" O.C added at EL 4490.50.
- 24.S-BR-306
- a. Detail 20- Slab rebar spacing changed from #7 @ 8" O.C to #7 @ 6" O.C at EL 4485.00.
 - b. Detail 21- Wall rebar spacing changed from 8" to 6" along grid C2. #8 dowels @ 8" O.C changed to #10 dowels @ 6" O.C. at EL 4485.00. Slab rebar spacing changed from #7 @ 8" O.C to #7 @ 6" O.C at EL 4485.00. #5 form saver dowels added along grid 12 at EL 4513.50. #6 dowels spacing changed from 12" O.C to 8" O.C along grid 13 at EL 4485.00.
- 25.S-BR-307
- a. Detail 22- Slab rebar spacing changed from #7 @ 8" O.C to #7 @ 6" O.C at EL 4485.00.
 - b. Detail 23- Vert wall rebar changed from #7 to #8. Horizontal wall rebar changed from #7 @ 8" O.C to #7 @ 6" O.C. #4 stirrups @ 6" O.C added at the bottom of wall. Slab rebar spacing changed from 8" O.C to 6" O.C at EL 4485.00. #10 dowels @ 8" O.C changed to 6" O.C. Rebar per keynote 1 changed from #5 @ 8" O.C to #7 @ 6" O.C.
- 26.S-BR-310
- a. Plan- #5 @ 8" O.C rebar changed to #7 @ 6" O.C.
 - b. Section A- Slab thickness changed from 12" to 8" and rebar changed from #4 @ 8" O.C to #5 @ 8" O.C at EL 4508.00.
 - c. Section B- #5 @ 8" O.C form saver dowels added at EL 4508. Slab rebar changed from #4 @ 8" O.C to #5 @ 8" O.C at EL 4508.00. Vert wall rebar changed from #7 @ 8" O.C to #8 @ 6" O.C. Horizontal wall rebar changed from #7 @ 8" O.C to #7 @ 6" O.C. #4 stirrups @ 6" O.C added at the bottom of wall. Slab rebar spacing changed from 8" O.C to 6" O.C at EL 4485.00. #7 and #9 dowels @ 8" O.C changed to #10 @ 6" O.C. #5 @ 8" O.C additional rebar changed to #7 @ 6" O.C.
- 27.S-BR-311
- a. New detail 28 showing u bolt connection to bent plate added.
 - b. New detail 29 showing u bolt connection to bent plate added.
 - c. Section F- Vert wall rebar changed from #7 @ 8" O.C to #7 @ 6" O.C. #7 dowels @ 8" O.C added at EL 4490.50. #8 dowels @ 8" O.C changed to #8 @ 6" O.C at EL 4485.00. Slab rebar changed from #7 @ 8" O.C to #7 @ 6" O.C at EL 4485.00.
- 28.S-MB-001
- a. Slab openings on RAS Channels shown with FRP panels and FRP Grating.
- 29.S-MB-101
- a. Section A- Stem wall and slab rebar shown on detail 1.
- 30.S-MB-132
- a. 8" CMU wall changed to 12" CMU along grid 24.
- 31.S-MB-183
- a. The north wall 8" CMU wall changed to 12".
- 32.S-MB-301
- a. Detail 2- Footing extended by 2' at EL 4496.00.
 - b. Detail 3- #5 @ 8" O.C T&B Slab rebar shown along with #5 @ 8" O.C dowels.
 - c. Detail 8- #4 @ 12" O.C dowels changed to 24" O.C. at EL 4510.00.
- 33.S-MB-303

- a. Detail 20- #5 @ 8" O.C T&B rebar shown at EL 4507.00.
 - b. Detail 21- #6 dowels @ 16" O.C shown at EL 4500.00.
 - c. Detail 22- CJ between wall and slab shown and form saver dowels removed at EL 4500.00.
- 34.S-MB-304
- a. Detail 23- 2-#5 horizontal rebar spacing changed from 36" to 32". Slab rebar spacing changed from 10" to 8" at EL 4507.00. Additional rebar below slab shown in detail and increased from 22 bars to 30 bars.
 - b. Detail 24- Detail corrected to show #8 dowels @ 6" O.C instead of #6. Additional rebar below slab shown in detail and increased from 22 bars to 30 bars.
 - c. Detail 25- 2-#5 horizontal rebar spacing changed from 36" to 32". Slab rebar spacing changed from 10" to 8" at EL 4507.00. Additional rebar below slab shown in detail and increased from 22 bars to 30 bars.
- 35.S-MB-305
- a. Detail 28- 2-#5 horizontal rebar spacing changed from 36" to 32". #5 dowels @ 10" O.C. changed to #6 dowels.
- 36.S-MB-306
- a. Detail 32- 4-#7 bars at top and 3-#6 bars at bottom with #4 ties @ 8" O.C called out on top of wall at EL 4504.00.
 - b. Detail 35- Square column size changed to 16" from 18".
- 37.S-MB-307
- a. Detail 37- 3-#7 top bars increased to 4-#7. Stirrups changed to 8" from 6".
 - b. Detail 38- #5 @ 8" O.C T&B slab rebar called out at EL 4507.00.
 - c. Detail 40- #4 @ 6" stirrups spacing called out.
- 38.S-MB-308
- a. Detail 41- Diagonal rebar removed from detail. Concrete wall rebar called out below EL 4500.00.
 - b. Detail 43- New detail showing wall and slab rebar added.
 - c. Detail 44- Missing beam rebar called out below EL 4510.00.
 - d. Detail 45- Wall diagonal rebar removed.
- 39.S-MB-309
- a. Detail 48- #10 rebar changed to #6.
- 40.S-MB-310
- a. Detail 1- New detail 1 showing column base plate and attachment added.
- 41.S-MB-311
- a. Detail 55- 4x4x3/8" angle brace added to column.
- 42.S-MB-313
- a. Detail 57- 4 additional #6 bars added to the top of slab.
 - b. Detail 1- New equipment pad detail for the chem building shown.
 - c. Detail 2- New detail at chem building with concrete wall and slab rebar added.
- 43.S-MB-314
- a. Detail 3- C12x7.41 landing beam changed to AAI 8x6.181. Beam and column plate and anchors called out.
- 44.S-MB-315
- a. MB Stair 8 Plan- Adhesive anchors called out.
- 45.S-MB-316
- a. MB Stair 11 Plan- Change in stair dimensions.
- 46.S-MB-318
- a. MB Stair 13 Plan- Change in stair dimensions. C12x7.41 frame beam changed to AAI 12x11.672. New detail 1 showing beam to column moment connection added.
- 47.S-MB-320

- a. Section A- Missing bent plate (6.5x9x3/8") dimensions called out.
- b. Detail 61- Missing bent plate (6x3x3/8") dimensions called out.
- 48.S-MB-321
 - a. Detail 64- Missing fillet weld lengths called out.
 - b. Detail 65- Missing expansion bolt embedment depth called out.
- 49.S-MB-323
 - a. Detail 74- L6x6 angle brace thickness reduced from 1 to 3/8".
- 50.S-MB-325
 - a. Detail 79- #5 slab rebar spacing changed from 10" to 8" at EL 4507.00. #6 dowels at 6" O.C added.
 - b. Detail 80- Missing slab rebar called out. Slab rebar changed from #5 @ 10" O.C to #6 @ 8" O.C. #6 dowels at 8" O.C added to slab.
 - c. Detail 81- Missing slab rebar called out. Slab rebar changed from #5 @ 10" O.C to #6 @ 8" O.C. #6 dowels at 8" O.C added to slab.
 - d. Detail 1- New detail showing column and slab rebar.
- 51.S-OC-111
 - a. Foundation Plan- Footing thickness increased from 1'-0" to 1'-3".
- 52.S-OC-201
 - a. Section A- Missing footing rebar information provided.
 - b. Section B- Horizontal wall rebar spacing changed from 48" to 24".
- 53.S-OC-301
 - a. Detail 1- Structural fill modified below the footing.

E. MECHANICAL, PLUMBING, AND HVAC CHANGES

- 1. P-MB-103
 - a. Changed **PW line** (south of chemical building) **size** in chemical building from **1"** to **2"**.
- 2. M-FS-131, M-FS-201, M-FS-204, N-29-602
 - a. The 8" SCR piping from Fine Screen No. 1 to Washer/Compactor No. 1 and from Fine Screen No. 2 to Washer/Compactor No. 2 are to be connected by a length of overhead 8" pipe near the Washer/Compactors. The connecting pipe will have an 8" plug valve, as will each 8" SCR line downstream of the connection. These three valves will allow screenings to from either fine screen unit to flow to either washer compactor.
- 3. The basin drain wetwell and membrane drain wetwells are modified with filleted corners and a vent pipe has been added to the basin drain wetwells for venting odors to the exterior of the facility.
 - a. Drawings affected: M-MB-101, M-MB-103, M-MB-111, M-MB-141, M-MB-201, M-MB-202, M-MB-203, and M-MB-204. S-MB-204, S-MB-211, H-MB-101.
- 4. M-EQ-101, M-EQ-102, M-EQ-201
 - a. The FWC couplings are eliminated from the 48" ML pipe.
 - b. A flanged joint and a flange coupling adapter is added to the 48" ML pipe in each pass to provide more restrained connections.
 - c. The mechanical seals around the 48" ML pipe at the two openings between Passes 1 and 2 and Passes 2 and 3 are eliminated.

F. ELECTRICAL AND INSTRUMENTATION CHANGES

- 1. N-GN-012, Blower Building Network Architecture, and N-GN-013, Existing Blower Building Network Architecture have been added to the drawing set.
- 2. N-GN-020, Air Scour Blowers No. 3 & 4 breakers and SST's upsized from 50AT/600AF to 150AT/600AF. Feeder sizes upsized from 3#2 (5kV), 1#6 G to 3#1 (5kV), #4 G.

3. N-15-601 Has been revised to accurately reflect the network architecture. References to BC-RTU-001 have been removed.
4. N-42-601:
 - a. The flow path has been revised to accurately reflect the basin drain pump station construction depicted in the mechanical drawings.
 - b. Pressure switches PSH-P42010, PSH-P42020, PSH-P42030, and PSH-P42040 have been added on the discharge piping for Basin Drain Pump No. 1, No. 2, No. 3, and No. 4, respectively. The instrument index, Section 40 75 00, has been updated accordingly. See Paragraph 2.5, herein.
5. The pressure instrument indicated on N-63-601 as PI-P63001 has been retagged as PI-P63002.
6. The local control panel shown on N-29-602 will be updated to from P29-LCP-001 to P29-LCP-002.
7. The level switch and level switch alarm on N-42-601 will be changed from LSH-P42001 and LAH-P42001 to LSH-P42002 and LAH-P42002, respectively.
8. Drawing E-SE-102
 - a. The 15 kV Vista switch indicated between the existing power distribution building and the primary digesters has been eliminated from the Package 2 scope of work.
9. Drawing E-SE-132
 - a. The label for PB-GEN-002 has been updated to indicate future installation, consistent with PB-GEN-003 and PB-GEN-004

PART 3 - SCOPE OF WORK CHANGES BASED ON BUDGETARY CONSIDERATIONS

3.1 CHANGES TO DESIGN

- A. The intent of the changes listed in this section is to deliver to the City a plant capable of meeting its design treatment goals while allowing the City additional time to secure funds for the complete upgrades. In light of this, all buried and under slab piping and electrical ductbanks and conduits shall be installed and stubbed out to allow for future connections to equipment and processes that have been delayed to minimize future disruption as the 100% design is completed.
- B. Eliminate WAS pipe slip lining.
 1. Utilize existing WAS piping for conveying WAS from the existing and new process without installing slip lining system.
 2. Drawings affected: C-YP-102 and C-YP-106.
- C. Delay paving
 1. Delay provision and installation of all asphalt paving and concrete curb and gutter until a future project.
 2. Drawings affected: C-CD-100 through C-CD-114.
- D. Delay installation of storm drain
 1. Delay installation of storm drain piping and associated catch basins and manholes until a future project.
 2. Drawings affected: C-YP-102, C-YP-106, C-YP-110.
- E. Delay installation of centrate piping
 1. Delay installation of 4-inch centrate pipeline and associated valves.
 2. Drawings affected: C-YP-102 and C-YP-106.

- F. Eliminate retrofitting existing aeration basins for equalization and surge.
 - 1. Eliminate demolition of the aeration basin diffusers and concrete.
 - 2. Drawings affected: G-GN-015, D-EQ-101, D-EQ-301, S-EQ-101, S-EQ-201, S-EQ-202, and S-EQ-203, M-EQ-101, M-EQ-102, M-EQ-201, E-EQ-001, E-EQ-101, E-EQ-102, N-14-601.

- G. Eliminate bypass valve and valve vault.
 - 1. Eliminate installation of the 54-inch plug valve and associated valve vault. Install a pipe section between tee denoted PE-2 and tee denoted PE-3. Include a coupling in pipe section to allow the pipe to be removed in the future to allow installation of the valve and vault.
 - 2. Drawings affected: C-YP-106, S-FS-100, S-FS-111.

- H. Eliminate stub out piping for future connections.
 - 1. Eliminate 54-inch PE pipe from tee denoted PE-2 to cap denoted PE-9, and the 54-inch PE pipe from tee denoted PE-3 to cap denoted PE-10.
 - 2. Drawings affected: C-YP-106.

- I. Accepted HVAC Value Engineering Proposals
 - 1. Eliminate the provision of the foul air system as described in this document, including the odor control building, associated HVAC system, and the odor control system controls.
 - 2. Aluminum conduit is acceptable in all areas except the following:
 - a. Fine Screen Pump Station
 - b. Fine Screens
 - c. Washer/Compactor Room
 - d. Chemical Building
 - 3. Simplification of level of control is acceptable for all buildings. HVAC control will include the use of thermostats and humidity where shown in the HVAC design documents. Touch screen controls for the HVAC systems in all areas are not required.
 - 4. Louver size on the East wall of the Blower Building may be changed to 66x66 to match the fan size.
 - 5. Duct, supports, and plenum framing
 - a. The following changes are acceptable in all areas except the following:
 - Fine Screen Pump Station
 - Fine Screens
 - Washer/Compactor Room
 - Chemical Building
 - 1) Duct supports may be aluminum
 - 2) Plenum framing, reinforcing and support material may be aluminum
 - 3) Filter box framing, reinforcing, and support material may be aluminum
 - 4) Miscellaneous duct supports may be aluminum
 - b. Duct coordination drawings will not be coordinated. Coordinate duct routing with Engineer and Owner in the field prior to installation.
 - c. A 2-week building flush out will not be required
 - d. Eliminate the "Big Ass" fans from the scope of the project

- J. Eliminate odor control system.
 - 1. Eliminate odor control system including the odor control scrubber, odor control blower building, associated yard piping, and associated piping internal to the fine screen and fine screen pump station facility. Place piping and/or sleeves within the

- Fine Screen Pump Station and Fine Screen buildings to accommodate installation of odor control piping/duct in the future.
2. Drawings C-YP-106, S-OC-111, S-OC-112, S-OC-121, S-OC-201, S-OC-301, M-FS-100, M-FS-131, M-FS-132, M-FS-142, M-FS-201, M-FS-202, M-FS-203, M-FS-204, M-FS-205, M-OC-111, M-OC-201, M-OC-202, M-OC-301, P-FS-102, H-OC-111, E-FS-001, E-OC-101, N-29-603.
- K. Modify bioreactor basin drain piping.
1. Eliminate basin drain piping and associated mud valves shown on drawing M-BR-121. Eliminate 20-inch basin drain piping and associated wyes shown on M-BR-122 associated with eliminated piping on drawing M-BR-121. Provide a 6-inch by 6-inch block out in the wall between the North half of the DO depletion channel and the RAS weir box into the anoxic zone, allowing the North portion of the channel to drain into the anoxic zone. Provide a 12-inch x 12-inch block out in the weir wall between the RAS fermentation and anaerobic zones to allow the RAS fermentation zone to drain into the anaerobic zone.
 2. Drawings affected: M-BR-121 and M-BR-122.
- L. Eliminate bioreactors and modify existing aeration basins.
1. Eliminate the construction of the new bioreactors and procurement and installation of the bioreactor mixing system. Modify the existing aeration basins to provide an anaerobic zone using the A pass of the existing aeration basins. Modify piping to carry flow from the fine screens to the aeration basins, from the aeration basin effluent weirs to the membranes, and from the RAS pumps to the existing aeration basin RAS piping. Modify the equalization basin for mixing of the A pass of the existing aeration basins.
 2. Drawings affected: All drawings with a BR area designation, G-GN-111, G-GN-112, G-GN-113, C-YP-102 through C-YP-111, C-PP-201 through C-PP-206A, S-FS-122, S-FS-161, S-FS-210, S-FS-212, M-FS-121, M-FS-133, M-FS-143, M-FS-211, M-FS-212, M-FS-213, M-EA-101A, M-EA-102A, M-EA-201A, M-EA-401A, P-FS-102, H-FS-133, E-FS-130, E-FS-131, N-13-601, N-29-601, N-30-601, N-33-601, N-33-602, N-34-601, N-34-602, N-40-601, N-41-601.
- M. Eliminate basin drain pump station equipment.
1. Eliminate Basin Drain Pump Nos. 3 and 4 (P42-PMP-030 and P42-PMP-040) and associated suction and discharge piping, electrical power, and controls. Cast a 3-foot by 3-foot opening in the dividing wall between the two wetwells to hydraulically connect the wetwells. Bottom of opening at elevation 4479.50 feet. Eliminate the 16-inch basin drain piping installed within the wetwell. Provide a 3-foot wide by 1-foot tall opening between each membrane tank and the RAS Channel. Bottom of opening to be at El 4505.50 feet.
 2. Drawings affected: S-MB-001, S-MB-111, S-MB-112, S-MB-141, S-MB-142, S-MB-204, S-MB-205, S-MB-211 THROUGH S-MB-216, M-MB-101, M-MB-103, M-MB-202, M-MB-203, M-MB-204, N-42-601.
- N. Eliminate the cementitious waterproofing required in Specification Section 07 16 00.
- O. Eliminate the provision and installation of coatings within the membrane tanks required in Specification Section 09 97 23.24.
- P. Eliminate the provision of start-up chemicals. Chemicals will be provided by Owner during commissioning and start-up.

- Q. Provide framed walls in the membrane control and electrical rooms
 1. Replace the masonry walls in the Membrane Building with steel stud framed walls and sheetrock.

- R. Provide a metal building for membrane building.
 1. Replace the membrane building superstructure with an engineered metal building. Crane and crane support columns to remain in scope and must be coordinated with metal building supplier's design.

- S. Eliminate all Process Air Blowers
 1. Eliminate all Process Air Blower. Utilize the existing Aeration Basins and associated blowers.
 2. Drawings affected: All drawings with a BL area designation, N-39-601 through N-39-603.

- T. Provide a metal building for the blower building for the blower building. Provide sound enclosures for blower and metal building for electrical room.
 1. Replace the blower building superstructure with an engineered metal building.
 2. Drawings affected: All drawings with a BL area designation.

- U. Modify encasement material to CLSM
 1. Eliminate high strength concrete required for pipe encasement and encase all under slab piping with CLSM.

- V. Electrical Changes:
 1. Delay provision of security cameras and magnetic door locks. Provide conduit and junction boxes necessary for future installation.
 2. Replace the requirement for PRC conduit in all exposed areas to allow aluminum conduit in all areas except the chemical room and fine screens facility. Conduit in these areas may be FRP or PRC as specified.
 3. All instruments shall be powered with 24V DC power.
 4. Remove OITs on all provided panels.
 5. Eliminate post-commissioning support. Support to be provided as needed on a time and materials basis.
 6. Use CompactLogix PLCs in FP-RTU-001, PBL-RTU-001, and PBC-RTU-001 instead of ControlLogix.
 7. Use Endress+Hauser Flow Meters instead of Provo's preferred ABB.
 8. Modify M1-CTR-001A to remove spare fuses and monitoring relay.
 9. Elimination of electrical for bioreactors and associated process air blowers
 10. Elimination of electrical for modifying the existing aeration basin No. 1 for equalization.

W. The following valves are not to be installed:

Valve Tag Number	Diameter	Ends	Installation	Actuator	Valve Type
P13-PLV-002	54"	FLG	EX	HW	PLV-10
P29-BDP-010	10"	Refer to Section 23 33 13 Dampers			
P29-VDP-012	10"	Refer to Section 23 33 13 Dampers			
P29-BDP-011	10"	Refer to Section 23 33 13 Dampers			
P29-VDP-013	10"	Refer to Section 23 33 13 Dampers			
P29-BDP-020	10"	Refer to Section 23 33 13 Dampers			

Valve Tag Number	Diameter	Ends	Installation	Actuator	Valve Type
P29-VDP-022	10"	Refer to Section 23 33 13 Dampers			
P29-BDP-021	10"	Refer to Section 23 33 13 Dampers			
P29-VDP-023	10"	Refer to Section 23 33 13 Dampers			
P29-VDP-014	8"	Refer to Section 23 33 13 Dampers			
P29-VDP-024	8"	Refer to Section 23 33 13 Dampers			
P30-AVV-010	See Section 40 05 51		EX	N/A	CARV-02
P30-BFV-010	10"	LUG	EX	HW	BFV-01
P30-MOV-010	10"	LUG	EX	Type 101	BFV-02
P30-BFV-011	16"	LUG	EX	HW	BFV-01
P30-MOV-011	16"	LUG	EX	Type 101	BFV-02
P30-AVV-011	See Section 40 05 51		EX	N/A	CARV-02
P30-BFV-012	18"	LUG	EX	HW	BFV-01
P30-MOV-012	18"	LUG	EX	Type 101	BFV-02
P30-PLV-013	10"	FLG	EX	HW	PLV-10
P30-MOV-013	10"	FLG	EX	Type 101	PLV-10
P30-BFV-020	10"	LUG	EX	HW	BFV-01
P30-MOV-020	10"	LUG	EX	Type 101	BFV-02
P30-AVV-020	See Section 40 05 51		EX	N/A	CARV-02
P30-BFV-021	16"	LUG	EX	HW	BFV-01
P30-MOV-021	16"	LUG	EX	Type 101	BFV-02
P30-AVV-021	See Section 40 05 51		EX	N/A	CARV-02
P30-BFV-022	18"	LUG	EX	HW	BFV-01
P30-MOV-022	18"	LUG	EX	Type 101	BFV-02
P30-PLV-023	10"	FLG	EX	HW	PLV-10
P30-MOV-023	10"	FLG	EX	Type 101	PLV-10
P33-MV-002	12"	FLG	BR	N	MV-01
P33-MV-003	12"	FLG	BR	N	MV-01
P33-MV-004	12"	FLG	BR	N	MV-01
P33-MV-005	12"	FLG	BR	N	MV-01
P33-MV-006	12"	FLG	BR	N	MV-01
P33-BFV-001	18"	LUG	EX	HW	BFV-20
P33-BFV-010	6"	LUG	EX	L	BFV-20
P33-MOV-010	4"	LUG	EX	Type 101	BFV-20
P33-BFV-020	10"	LUG	EX	L	BFV-20
P33-MOV-020	6"	LUG	EX	Type 101	BFV-20
P33-BFV-030	6"	LUG	EX	L	BFV-20
P33-MOV-030	4"	LUG	EX	Type 101	BFV-20

Valve Tag Number	Diameter	Ends	Installation	Actuator	Valve Type
P33-BFV-040	10"	LUG	EX	L	BFV-20
P33-MOV-040	6"	LUG	EX	Type 101	BFV-20
P33-BFV-050	8"	LUG	EX	L	BFV-20
P33-MOV-050	4"	LUG	EX	Type 101	BFV-20
P33-BFV-060	4"	LUG	EX	L	BFV-20
P33-MOV-060	4"	LUG	EX	Type 101	BFV-20
P34-MV-002	12"	FLG	BR	N	MV-01
P34-MV-003	12"	FLG	BR	N	MV-01
P34-MV-004	12"	FLG	BR	N	MV-01
P34-MV-005	12"	FLG	BR	N	MV-01
P34-MV-006	12"	FLG	BR	N	MV-01
P34-BFV-001	18"	LUG	EX	HW	BFV-20
P34-BFV-010	6"	LUG	EX	L	BFV-20
P34-MOV-010	4"	LUG	EX	Type 101	BFV-20
P34-BFV-020	10"	LUG	EX	L	BFV-20
P34-MOV-020	6"	LUG	EX	Type 101	BFV-20
P34-BFV-030	6"	LUG	EX	L	BFV-20
P34-MOV-030	4"	LUG	EX	Type 101	BFV-20
P34-BFV-040	10"	LUG	EX	L	BFV-20
P34-MOV-040	6"	LUG	EX	Type 101	BFV-20
P34-BFV-050	8"	LUG	EX	L	BFV-20
P34-MOV-050	4"	LUG	EX	Type 101	BFV-20
P34-BFV-060	4"	LUG	EX	L	BFV-20
P34-MOV-060	4"	LUG	EX	Type 101	BFV-20
P35-BFV-001	18"	LUG	EX	HW	BFV-20
P39-BFV-010	6"	FLG	EX	Equipment Supplier	
P39-BFV-020	6"	FLG	EX	Equipment Supplier	
P39-BFV-030	6"	FLG	EX	Equipment Supplier	
P39-BFV-011	16"	FLG	EX	Equipment Supplier	
P39-BFV-021	16"	FLG	EX	Equipment Supplier	
P39-BFV-031	16"	FLG	EX	Equipment Supplier	
P39-CKV-011	16"	FLG	EX	Equipment Supplier	
P39-CKV-021	16"	FLG	EX	Equipment Supplier	
P39-CKV-031	16"	FLG	EX	Equipment Supplier	
P41-MV-011	12"	FLG	DO	N	MV-01
P41-MV-021	12"	FLG	DO	N	MV-01
P41-MV-012	12"	FLG	DO	N	MV-01
P41-MV-022	12"	FLG	DO	N	MV-01
P42-CKV-010	8"	FLG	EX	N/A	CKV-10
P42-CKV-020	8"	FLG	EX	N/A	CKV-10

Valve Tag Number	Diameter	Ends	Installation	Actuator	Valve Type
P42-PLV-030	10"	FLG	EX	HW	PLV-10
P42-PLV-031	8"	FLG	EX	HW	PLV-10
P42-PLV-040	10"	FLG	EX	HW	PLV-10
P42-PLV-041	8"	FLG	EX	HW	PLV-10

X. The following gates are not to be installed:

Tag	Service	Actuator Type	Size (W x H)
P33-SLG-001	ML	HW	30"x30"
P34-SLG-001	ML	HW	30"x30"
P41-SLG-010	RAS	HW	36"x36"
P41-SLG-020	RAS	HW	36"x36"

Y. The following instruments are not to be installed:

Tag (Area-Type-Number)	Type	Device	Signal	Range	Eng. Unit	Setpoints / Range
FE-P13001	Analog	Magnetic Flowmeter		0.1 - 52	MGD	20
FIT-P13001	Analog	Flow Indicating Transmitter	4-20 mA	0.1 - 52	MGD	20
FE-P29001	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0 - 2000	fpm	2000
FIT-P29001	Analog	Thermal Mass Flow Transmitter	4-20 mA	0 - 2000	fpm	2000
PI-P29004	Instrument	Pressure Gauge	NA	0 - 100	psi	100
PI-P29010	Instrument	Pressure Gauge	NA	-15 - 0	in.wg	15
PI-P29020	Instrument	Pressure Gauge	NA	-15 - 0	in.wg	15
PIT-P29001	Analog	Pressure Indicating Transmitter	4-20 mA	0 - 10	in.wg	10 (A single process connection with multiple diaphragms is acceptable.)
PSH-P29001	Discrete	Pressure Switch	Discrete	NA	in.wg	11 (A single process connection)

Tag (Area-Type-Number)	Type	Device	Signal	Range	Eng. Unit	Setpoints / Range
						with multiple diaphragms is acceptable.)
LSHH-P30001	Discrete	Level Float Switch	Discrete	0-5	feet	5
LSH-P30001	Discrete	Level Float Switch	Discrete	0-5	feet	5
LSL-P30001	Discrete	Level Float Switch	Discrete	0-5	feet	5
FE-P30010	Analog	Magnetic Flowmeter		0-5	mgd	5
FE-P30011	Analog	Magnetic Flowmeter		0-15	mgd	15
FE-P30012	Analog	Magnetic Flowmeter		0-11	mgd	11
FE-P30013	Analog	Magnetic Flowmeter		0-1.5	mgd	1.5
FE-P30020	Analog	Magnetic Flowmeter		0-5	mgd	5
FE-P30021	Analog	Magnetic Flowmeter		0-15	mgd	15
FE-P30022	Analog	Magnetic Flowmeter		0-11	mgd	11
FE-P30023	Analog	Magnetic Flowmeter		0-1.5	mgd	1.5
FIT-P30010	Analog	Flow Indicating Transmitter	4-20 mA	0-5	mgd	5
FIT-P30011	Analog	Flow Indicating Transmitter	4-20 mA	0-15	mgd	15
FIT-P30012	Analog	Flow Indicating Transmitter	4-20 mA	0-11	mgd	11
FIT-P30013	Analog	Flow Indicating Transmitter	4-20 mA	0-1.5	mgd	1.5
FIT-P30020	Analog	Flow Indicating Transmitter	4-20 mA	0-5	mgd	5
FIT-P30021	Analog	Flow Indicating Transmitter	4-20 mA	0-15	mgd	15
FIT-P30022	Analog	Flow Indicating Transmitter	4-20 mA	0-11	mgd	11
FIT-P30023	Analog	Flow Indicating Transmitter	4-20 mA	0-1.5	mgd	1.5
LSH-P30001	Discrete	Conductivity Type Level Switch	Discrete	NA	feet	0.1
AE-P33010	Analog	Analytical Element	4-20 mA	10 to 20,000	mg/L	19990
AE-P33011	Analog	Analytical Element	4-20 mA	-1500 to 1500	mV	3000

Tag (Area- Type- Number)	Type	Device	Signal	Range	Eng. Unit	Setpoints / Range
AE-P33012	Analog	Analytical Element	4-20 mA	0 to 14	NA	14
AE-P33020	Analog	Analytical Element	4-20 mA	0 to 14	NA	14
AE-P33021	Analog	Analytical Element	4-20 mA	-1500 to 1500	mV	3000
AE-P33040	Analog	Analytical Element	4-20 mA	0 - 100	mg/L	100
AIT-P33010	Analog	Analytical Indicating Transmitter	4-20 mA	N.A.	N.A.	N.A.
AIT-P33020	Analog	Analytical Indicating Transmitter	4-20 mA	N.A.	N.A.	N.A.
AIT-P33030	Analog	Analytical Indicating Transmitter	4-20 mA	N.A.	N.A.	N.A.
AE-P33050	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0 - 20	mg/L	20
AE-P33051	Analog	Analytical Element	4-20 mA	0 - 20	mg/L	20
AE-P33052	Analog	Analytical Element	4-20 mA	0 - 20	mg/L	20
AE-P33053	Analog	Analytical Element	4-20 mA	0 - 20	mg/L	20
AIT-P33050	Analog	Analytical Indicating Transmitter	4-20 mA	0 - 20	mg/L	20
FE-P33010	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0-10000	fpm	10000
FE-P33020	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0-10000	fpm	10000
FE-P33030	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0-10000	fpm	10000
FE-P33040	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0-10000	fpm	10000
FE-P33050	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0-10000	fpm	10000
FE-P33060	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0-10000	fpm	10000
FIT-P33010	Analog	Flow Indicating Transmitter	4-20 mA	0-10000	fpm	10000

Tag (Area-Type-Number)	Type	Device	Signal	Range	Eng. Unit	Setpoints / Range
FIT-P33020	Analog	Flow Indicating Transmitter	4-20 mA	0-10000	fpm	10000
FIT-P33030	Analog	Flow Indicating Transmitter	4-20 mA	0-10000	fpm	10000
FIT-P33040	Analog	Flow Indicating Transmitter	4-20 mA	0-10000	fpm	10000
FIT-P33050	Analog	Flow Indicating Transmitter	4-20 mA	0-10000	fpm	10000
FIT-P33060	Analog	Flow Indicating Transmitter	4-20 mA	0-10000	fpm	10000
AE-P34010	Analog	Analytical Element	4-20 mA	10 to 20,000	mg/L	19990
AE-P34011	Analog	Analytical Element	4-20 mA	-1500 to 1500	mV	3000
AE-P34012	Analog	Analytical Element	4-20 mA	0 to 14	NA	14
AE-P34020	Analog	Analytical Element	4-20 mA	0 to 14	NA	14
AE-P34021	Analog	Analytical Element	4-20 mA	-1500 to 1500	mV	3000
AE-P34040	Analog	Analytical Element	4-20 mA	0 - 100	mg/L	100
AIT-P34010	Analog	Analytical Indicating Transmitter	4-20 mA	N.A.	N.A.	N.A.
AIT-P34020	Analog	Analytical Indicating Transmitter	4-20 mA	N.A.	N.A.	N.A.
AIT-P34030	Analog	Analytical Indicating Transmitter	4-20 mA	N.A.	N.A.	N.A.
AE-P34050	Analog	Analytical Element	4-20 mA	0 - 20	mg/L	20
AE-P34051	Analog	Analytical Element	4-20 mA	0 - 20	mg/L	20
AE-P34052	Analog	Analytical Element	4-20 mA	0 - 20	mg/L	20
AE-P34053	Analog	Analytical Element	4-20 mA	0 - 20	mg/L	20
AIT-P34050	Analog	Analytical Indicating Transmitter	4-20 mA	0 - 20	mg/L	20
FE-P34010	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0-10000	fpm	10000
FE-P34020	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0-10000	fpm	10000

Tag (Area-Type-Number)	Type	Device	Signal	Range	Eng. Unit	Setpoints / Range
FE-P34030	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0-10000	fpm	10000
FE-P34040	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0-10000	fpm	10000
FE-P34050	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0-10000	fpm	10000
FE-P34060	Analog	Insertion Type Thermal Mass Flowmeter	4-20 mA	0-10000	fpm	10000
FIT-P34010	Analog	Flow Indicating Transmitter	4-20 mA	0-10000	fpm	10000
FIT-P34020	Analog	Flow Indicating Transmitter	4-20 mA	0-10000	fpm	10000
FIT-P34030	Analog	Flow Indicating Transmitter	4-20 mA	0-10000	fpm	10000
FIT-P34040	Analog	Flow Indicating Transmitter	4-20 mA	0-10000	fpm	10000
FIT-P34050	Analog	Flow Indicating Transmitter	4-20 mA	0-10000	fpm	10000
FIT-P34060	Analog	Flow Indicating Transmitter	4-20 mA	0-10000	fpm	10000
P39-ZSC-001	Discrete	Limit Switch				
P39-TE-001	Analog	Temperature Element				
P39-TIT-001	Analog	Temperature Indicating Transmitter				
P39-PDSH-010A	Discrete	Differential Pressure Switch	By Vendor			
P39-TE-010M	Analog	Temperature Element	By Vendor			
P39-PIT-010B	Analog	Pressure Indicating Transmitter	By Vendor			
P39-PDSH-020A	Discrete	Differential Pressure Switch	By Vendor			
P39-TE-020M	Analog	Temperature Element	By Vendor			
P39-PIT-020B	Analog	Pressure Indicating Transmitter	By Vendor			
P39-PDSH-030A	Discrete	Differential Pressure Switch	By Vendor			
P39-TE-030M	Analog	Temperature Element	By Vendor			

Tag (Area- Type- Number)	Type	Device	Signal	Range	Eng. Unit	Setpoints / Range
P39-PIT-030B	Analog	Pressure Indicating Transmitter	By Vendor			
P39-TE-070	Analog	Temperature Element				
P39-TIT-070	Analog	Temperature Indicating Transmitter				
P39-PIT-070	Analog	Pressure Indicating Transmitter				
AE-P41010	Analog	Analytical Element	4-20 mA	0 - 20	mg/L	20
AE-P41011	Analog	Analytical Element	4-20 mA	0 - 100	mg/L	100
AE-P41020	Analog	Analytical Element	4-20 mA	0 - 20	mg/L	20
AE-P41021	Analog	Analytical Element	4-20 mA	0 - 100	mg/L	100
AIT-P41010	Analog	Analytical Indicating Transmitter	4-20 mA	N.A.	N.A.	N.A.
AIT-P41020	Analog	Analytical Indicating Transmitter	4-20 mA	N.A.	N.A.	N.A.
LE-P41011	Analog	Radar Level Element	4-20 mA	0-2.5	feet	2.5
LE-P41021	Analog	Radar Level Element	4-20 mA	0-2.5	feet	2.5
LIT-P41011	Analog	Level Indicating Transmitter	4-20 mA	0-2.5	feet	2.5
LIT-P41021	Analog	Level Indicating Transmitter	4-20 mA	0-2.5	feet	2.5
LE-P42010	Analog	Radar Level Element		0-33	feet	33
LE-P42020	Analog	Radar Level Element		0-33	feet	33
LIT-P42020	Analog	Level Indicating Transmitter	4-20 mA	0-33	feet	33
LSH-P42001	Discrete	Conductivity Type Level Switch	Discrete	NA	feet	0.1
LSHH-P42020	Discrete	Level Float Switch	Discrete	n/a	feet	29.50
LSLL-P42020	Discrete	Level Float Switch	Discrete	n/a	feet	5.50
PSH-P42010	Discrete	Pressure Switch	Discrete		psi	45
PSH-P42020	Discrete	Pressure Switch	Discrete		psi	45

Tag (Area- Type- Number)	Type	Device	Signal	Range	Eng. Unit	Setpoints / Range
PI-P56010A	Instrument	Pressure Indicating Element	NA	0-160	psi	160
PT-P56010A	Analog	Pressure Transducer	4-20 mA	0-150	psi	150
PI-P56020A	Instrument	Pressure Indicating Element	NA	0-160	psi	160
PT-P56020A	Analog	Pressure Transducer	4-20 mA	0-150	psi	150
PI-P56030A	Instrument	Pressure Indicating Element	NA	0-160	psi	160
PT-P56030A	Analog	Pressure Transducer	4-20 mA	0-150	psi	150
PI-P59001	Instrument	Pressure Gauge	NA	0-175	psi	175
PIT-P59001	Analog	Pressure Indicating Transmitter	4-20 mA	0-175	psi	175

PART 4 - ACKNOWLEDGEMENT

4.1 ACKNOWLEDGEMENT

- A. This document is submitted as part of the 100% design submittal. No acknowledgement of receipt is required.

END OF CONTRACT CHANGES