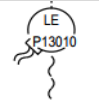


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1		Bioreactors	Alder/Waterworks	5/1/2021	Are there coatings or field painting required for the mixers in the Bioreactors? In reviewing the submittal from Enviromix it does not appear like there are any coatings for the mixers in the bioreactors but wanted to double check that this is the case.		MIXING SYSTEM SYSTEM IS CONSTRUCTED OF STAINLESS STEEL AND DOES NOT REQUIRE COATINGS.
2	09 97 23.24	FSPS	Alder/Waterworks	4/30/2021	A value engineering suggestion: Table A, Para 3.11 of section 09 97 23.24 indicates that we should coat the floors in the Fine Screen Pump Station Wet Wells and Channels. We have not in the past coated the floors in these areas since the concrete floors will be under water at all times and are not subject to deterioration due to sewer gases. Our coatings rep would recommend to terminate the coating in these areas to 3" AFF.		TERMINATING COATINGS 3 INCHES ABOVE FINISHED FLOOR PER RECOMMENDATION IS ACCEPTABLE. SPECIFICATION SECTION 09 97 23.24 WILL BE UPDATED ACCORDINGLY.
3	09 97 23.24	Manholes/Structures	Alder/Waterworks	4/30/2021	Specification 09 97 23.24 Table 3.11 Item #3, SCHEDULE OF AREAS TO BE COATED, indicates that the Interior walls of all liquid service manholes be coated. The only manholes shown are the 48" primary effluent, 48" permeate (page C-PP-201 and 30" north plant drain, page C-PP-202, 6" and 18" South Plant Drain. Although these lines carry liquid, logic dictates that one is effluent which should not have H2S and the other is plant drain. Please indicate, if any, which manholes should be coated?		ALL MANHOLES SHALL BE COATED AS SPECIFIED.
4	09 97 23.24	Membrane Tanks	Alder/Waterworks	4/30/2021	Same schedule indicates all (1-8) membrane tanks should be coated. The manufacture has stated that the scheduled coating does not do well in areas not place in service for an extended period of time. It is suggested, for budgetary reasons that tank number 8 only receive the sandblast surface prep and not be coated until placed in service.	Not coat number 8 tank until ready for service. Sand blast only.	AS PROPOSED, LEAVE MEMBRANE TANK NO. 8 UNCOATED UNTIL IT IS BEING PREPARED TO BE PLACED INTO SERVICE. BECAUSE PREPARING THE CONCRETE WITH A SANDBLAST FINISH WILL BE REQUIRED AT THE TIME OF COATING, SANDBLASTING WILL NOT BE REQUIRED AS PART OF THE PACKAGE 2 WORK. SPECIFICATION SECTION 09 97 23.24 WILL BE UPDATED TO REFLECT THIS.
5	43 23 00	Submersible Pumps	Alder/Waterworks	4/29/2021	What is the length of cable required from the pump? And are they planning to have these pumps run in parallel to hit the highest point or run individually?		FROM DRAWINGS A MAXIMUM OF 50 FEET IS ANTICIPATED, BUT ACCORDING TO SPECIFICATION SECTION, THE CABLE LENGTH SHALL BE COORDINATED WITH THE DRAWINGS AND FIELD INSTALLATION. THE INTENT OF THIS STATEMENT IS TO ALLOW THE CABLE TO BE SHORTENED DURING THE SUBMITTAL PROCESS TO FIT THE ACTUAL INSTALLATION. ONLY ONE BASIN DRAIN PUMP MAY BE OPERATED AT ANY GIVEN TIME.
6	41 22 13.13	Bridge Crane	Alder/Waterworks	4/28/2021	1. The scope of work states there is one bridge crane. In Para 2.2.A.7 a comment is made about wheel spacing for a 7.5 Ton crane and a 1 Ton crane. We need this clarified.		THE 1-TON CRANE HAS BEEN ELIMINATED FROM THE PROJECT SCOPE. SPECIFICATION SECTION WILL BE MODIFIED ACCORDINGLY.

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7	41 22 13.13	Bridge Crane	Alder/Waterworks	4/28/2021	2. Para 2.2.D.5 states the B-10 life of the bearings is to be 100,000 hours. We believe this is a mistake. We think it should be 10,000 hours.		A B-10 LIFE OF 10,000 HOURS FOR THE BEARINGS IS ACCEPTABLE. SPECIFICATION SECTION WILL BE MODIFIED ACCORDINGLY.
8	41 22 13.13	Bridge Crane	Alder/Waterworks	4/28/2021	3. Para 2.2.E.5 calls out a Weston Multiple Disc Type brake. Both OSHA and CMAA cite ASME requirements regarding the types of brakes that are required. They dictate that there must be a holding brake and a control brake for every hoist. The Weston type brake is a control brake and is only used by a very few manufacturers because of the heat they create and the difficulty in adjust them. Another control type brake that is used extensively in the industry, today, is a Regenerative Brake. And the holding brake requirement is normally met with a DC rectified motor brake. We are asking if we provide the industry standard dual braking system.		INDUSTRY STANDARD BRAKING SYSTEM IS ACCEPTABLE. SPECIFICATION SECTION WILL BE MODIFIED ACCORDINGLY.
9	41 22 13.13	Bridge Crane	Alder/Waterworks	4/28/2021	4. Para 2.3.A states the control voltage shall be 24 volts. The Equipment Data Sheet state the control voltage is 115V, 1 PH. Please clarify.		A 115V, SINGLE PHASE POWER SUPPLY IS REQUIRED. SPECIFICATION WILL BE MODIFIED ACCORDINGLY.
10	41 22 13.13	Bridge Crane	Alder/Waterworks	4/28/2021	5. Para 2.3.A also states that the pushbutton is to be suspended from a trolley mounted cable reel. The description of the retraction shutting the control system off is impractical. It is not possible for the pendant to be raised above the height a person can reach. We would strongly recommend eliminating the cable reel and make the pushbutton independent of the trolley hoist. This is done by using a track supported festoon system. The PB will be able to be used anywhere along the crane beam and will have an on/off button that controls a mainline magnetic disconnect. And it can be stored out of the way at one end of the bridge or the other. Please clarify that this is acceptable in lieu of a cable reel and shut-off.	We would strongly recommend eliminating the cable reel and make the pushbutton independent of the trolley hoist.	PROPOSED OPERATION IS ACCEPTABLE. SECTION 41 22 13.13 WILL BE MODIFIED TO ALLOW THIS OPERATOR.
11	S-BR-001	Bioreactors	Alder/Waterworks	5/3/2021	The construction joint/expansion joint plan does not match what we discussed in our structural discussion between Alder and Waterworks. During this time we also discussed the areas to use form savers that are not shown. Alder would like to submit a plan for how we propose to do the construction joints and form savers for constructability. Is this acceptable?		IT IS ACCEPTABLE FOR THE CONTRACTOR TO SUBMIT A CONSTRUCTION JOINT PLAN FOR APPROVAL.
12	S-BR-122	Bioreactors	Alder/Waterworks	5/3/2021	This sheet shows an elevation of 4485. However, there are no dimensions shown going east to west lines. What are these dimensions?		THE MEASUREMENTS ARE AS FOLLOWS: FROM THE BREAK LINE TO GRIDLINE 15: 34'-1"; GRIDLINE 15 to GRIDLINE 16: 31'-1"; and GRIDLINE 16 to GRIDLINE 17: 33'-4". DRAWING S-BR-122 WILL BE UPDATED TO INCLUDE THESE DIMENSIONS.
13		ALL	Alder/Waterworks	5/10/2021	There are no coordinates shown for building corners. Please provide coordinates for structures.		STRUCTURAL PLANS SHALL BE UPDATED TO INDICATE THE BUILDING CORNER COORDINATES OF THE EXTERIOR STRUCTURE WALLS.
14	E-SE132	Site Electrical	Alder/Waterworks	5/10/2021	Drawing E-SE-132 shows two future generators in PB-GEN-003 and 004 but shows PB-GEN-002 with not future tag. We assume this generator is future. Please clarify.		PB-GEN-002 IS FUTURE AS INDICATED BY LINE TYPE. THE LABEL ON THIS DRAWING WILL BE UPDATED TO INDICATE FUTURE INSTALLATION, CONSISTENT WITH PB-GEN-003 AND PB-GEN-004.

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15	M-OC-201	Blower Building	Alder/Waterworks	5/5/2021	Please verify that FRP material Shown on Sheet M-OC-201 is adequate for the temperatures produced by the blowers. (is 180 F design temp adequate- -See also Pipe Schedule 40-05-10 for FA and Section 23 31 15)		MAXIMUM BLOWER AIR TEMPERATURE IS ESTIMATED TO BE 112.5 DEGREES F AT AN AMBIENT TEMPERATURE OF 100 DEGREES F. THE FRP MATERIAL IS SUITABLE FOR TEMPERATURES UP TO 180 DEG F.
16	09 89 00	Coatings	Alder/Waterworks	5/5/2021	Chemical Resistant Coatings. The finish schedule indicates that all areas in the chemical room is to receive this coating. However, specification 09 89 00 para 2.3 A indicates that CRC is for secondary containment areas only. I would like to propose that only the areas within and including the interior and top of the containment walls receive the CRC for the three tank areas and common floors and walls in the chemical room to receive only the clear sealer.		PAINT ALL CHEMICAL CONTAINMENT AREAS IN ACCORDANCE WITH SECTION 09 89 00, PER RECOMMENDATION. ARCHITECTURAL FINISH SCHEDULES WILL BE MODIFIED ACCORDINGLY.
17	09 89 00	Coatings	Alder/Waterworks	5/5/2021	The finish schedule indicates that we are to paint all concrete stem walls, concrete walls and concrete ceilings. I would recommend that we clarify that concrete walls and ceilings in areas not requiring special coatings, i.e., CRC or coatings for wastewater structures, walls containing liquids, such as bioreactor, be sealed only with the same floor sealer we are using in the previous phase.		PAINT ALL CHEMICAL CONTAINMENT AREAS IN ACCORDANCE WITH SECTION 09 89 00. PAINT WASTEWATER STRUCTURES AND CHANNELS ACCORDING TO SECTION 09 97 23.24. ARCHITECTURAL FINISH SCHEDULES WILL BE MODIFIED ACCORDINGLY. CONCRETE WALLS AND CEILINGS IN AREAS NOT REQUIRING SPECIAL COATINGS SHALL BE COATED IN ACCORDANCE WITH SECTION 09 90 00. FINISH SCHEDULES WILL BE MODIFIED ACCORDINGLY.
18	S-MB-001, S-MB-121	Membrane/Chem	Alder/Waterworks	5/9/2021	Looking at the 90% there is nothing showing either grating on the Membrane Pits, or handrail around them. The 60% showed grating, FRP I believe. We need to know what the plan is in these areas. None of the details show a recession area for the grating to go in. If we are going to be doing hanrail we need to have that show to get quotes on it. The same applies to the the chemical tank area in the Chemical Room. Please provide detail of where grating needs to be installed and what material the grating is made of.		DRAWINGS / DETAILS WILL BE PROVIDED.
19	40 05 10	Pipe Schedule	Alder/Waterworks	5/5/2021	Please verify that FRP material Shown on Sheet M-OC-201 is adequate for the temperatures produced by the blowers. (is 180 F design temp adequate- -See also Pipe Schedule 40-05-10 for FA and Section 23 31 15)		MAXIMUM BLOWER AIR TEMPERATURE IS ESTIMATED TO BE 112.5 DEGREES F AT AN AMBIENT TEMPERATURE OF 100 DEGREES F. THE FRP MATERIAL IS SUITABLE FOR TEMPERATURES UP TO 180 DEG F.
20	M-MB-113	Membrane Building	Alder/Waterworks	5/5/2021	Could you recommend a transition/connection detail for the connection between the 48" ML and the 30" ML shown on M-MB-113?		PER PREVIOUS DISCUSSIONS WITH THE CONSTRUCTION TEAM, WATER WORKS IS EXPECTING THAT THE 48" ML LINE WILL CONNECT TO THE 30" ML LINE USING AN INSERTA TEE, WITH A FERNCO TYPE COUPLING. THIS CONNECTION SHALL BE CONCRETE ENCASED.

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21	M-OC-111	Odor Control	Alder/Waterworks	5/5/2021	Notes 3 & 4 on Sheet M-OC-111 and Note 4 on sheet M-OC-202 refers to lateral as PVC, is the intent for the main header to be HDPE as required in the pipe schedule or header and laterals to all be PVC in the Biofilter?		WITHIN THE INTERIOR OF THE ODOR CONTROL BIOFILTER, ALL PIPING SHALL BE PVC. OUTSIDE THE BIOFILTER, EXTERIOR PIPING SHALL BE AS DESIGNATED IN THE PIPE SCHEDULE, OR PER VALUE ENGINEERING ALTERNATE SUGGESTED AT CONTRACTOR'S DISCRETION.
22		Site Lighting	Alder/Waterworks	5/7/2021	It has come to our attention that Provo Water wants all of the exterior lights on the new buildings , including the Plant Lift Station and Power Building, controlled via the existing Plant site lighting system. The control center for all the site lighting is now in the Ops building. We propose in Package 1 we add a Lighting Control Panel capable of eventually controlling the entire plant .		THIS IS ACCEPTABLE, AND THE PANEL SHALL BE LOCATED IN THE POWER DISTRIBUTION BUILDING. THIS SHALL BE COORDINATED BETWEEN THE CONSTRUCTION AND ELECTRICAL ENGINEERING TEAMS.
23	07 21 13	Insulating Panels	Alder/Waterworks	5/7/2021	Spec says 4" thick, but R value says 15? I see plans call for 36" wide panel, what gauge do we need on the faces? What specific panel profile is required (see attached brochure).		CORRECT SPECIFICATION SECTION IS 07 42 13, PARAGRAPH 2.2.A. EXTERIOR WALL PANELS. THE PANELS SHALL BE 4" THICK AND 36" WIDE. NO R VALUE IS CALLED OUT IN THE SPECIFICATION. NOMINAL METAL THICKNESS REQUIRED IS 22 GAUGE PER SPECIFICATION.
24	A-BC-271	Coatings	Alder/Waterworks	5/8/2021	The finish schedule of all building indicate that the ceiling is to be left exposed and not painted. However, sections on page A-BC-271 indicates that the metal decking and steel framing is to be painted for the membrane building. Could you verify what they want coated for each ceiling. The fine screen building has us painting the concrete walls in the pump areas and leaving the concrete ceiling uncoated. From a VE perspective I would apply a clear penetrating sealer on all concrete ceilings and concrete walls and only paint the exposed CMU.		METAL CEILING DECKING AND JOISTS, AND EXPOSED STRUCTURAL STEEL IS TO BE BE COATED IN ALL AREAS PER THE REQUIREMENTS OF SECTION 09 90 00. THE FINISH SCHEDULES FOR EACH ROOM WILL BE UPDATED ACCORDINGLY. A CLEAR PENETRATING SEALER IS ACCEPTABLE FOR CONCRETE CEILINGS, WALLS, AND FLOORS AS RECOMMENDED IN AREAS, EXCLUDING CHEMICAL CONTAINMENT AREAS AND WASTEWATER STRUCTURES AS DETAILED IN DIVISION 09.
25	Landscaping	Landscaping	Alder/Waterworks	5/10/2021	We have have multiple landscapers reach out for Package 2. Please verify there will not be a need for landscaping in Package 2.		LANDSCAPING IS NOT REQUIRED FOR THE PACKAGE 2 DESIGN.
26	E-SE-102	Site Electrical	Alder/Waterworks	5/10/2021	Drawing E-SE-102 shows a 15kV Vista Switch in between the Existing Power Dist Building and the Primary Digesters. Per conversations with the team, the Vista Switch is no longer going to be in Package 2. Please confirm.		THE VISTA SWITCH INDICATED IS A RELIC OF A PREVIOUS ITERATION OF THE DESIGN, AND HAS BEEN ELIMINATED FROM THE PACKAGE 2 DESIGN. THE SITE ELECTRICAL DRAWINGS HAVE BEEN UPDATED ACCORDINGLY. THE ELECTRICAL WILL BE COMPLETED AS SHOWN IN THE WORK CHANGE DIRECTIVE.

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27	N-GN-001	Instrumentation	Alder/Waterworks	5/11/2021	Do you know what type of instrument is meant by the instrument symbol shown here? In the Package 1 drawings it represented an ultrasonic meter, but now it represents a radar meter in Package 2. It's not included in the P&ID legend that precedes the instrument section. My suspicion is that it should represent a radar instrument, but if that is the case should the Package 1 meter be changed to a radar-type as well?		THE SYMBOL INDICATES RADAR LEVEL ELEMENTS PER SHEET N-GN-001. RADAR ELEMENTS ARE THE OWNER'S PREFERENCE. ALL LEVEL SENSORS SHALL BE RADAR TYPE FOR BOTH PACKAGE 1 AND PACKAGE 2.
28	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/11/2021	The table on page 6 of Section 43 24 13.33 Vertical Axial/Mixed Flow Pumps lists the "Minimum Available NPSH" as 30.5 Feet. A open sump wet pit pump as this cannot have an NPSHA below atmospheric pressure as indicated. Please confirm and modify the pump specification table to read Maximum Required NPSH = 30.5 Feet.		AT THE SITE ELEVATION ATMOSPHERIC PRESSURE IS 28.81 FEET.
29	01 61 00	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/11/2021	Section 01 61 00 paragraph 1.6A specifies that lubrication systems shall require attention more frequently than weekly during continuous operation, and shall not waste lubricants. Section 43 24 13.33 paragraph 2.4 J 10 states that the shaft bearings shall be oil lubricated, and the table on page 6 of states that all types of seals shall be mechanical. We interpret the specifications as the Vertical Axial/Mixed Flow Pumps shall not waste oil (must prohibit pump shaft lube oil to openly discharge to the water) and must utilize mechanical seals (oil system in pump must be sealed system using mechanical seals). Please confirm either (a) these specifications do not permit pump lube oil flow to the water and fine screens or (b) confirm that the lubrication oil in the pump can have open flow (no seals) to the water being pumped and therefore to the fine screens. Please note that without a specified oil seal system, not only will the oil flow to the water being pumped and violate 01 61 00, but also water will be mixed into the lubricating oil, drastically reducing pump bearing life.		THE INTENT OF THE SPECIFICATION IS TO PREVENT LUBRICATION OIL FROM BEING INTRODUCED INTO THE PUMPED WATER, AND PREVENT WATER FROM BEING INTRODUCED INTO THE BEARINGS. VENDOR TO RECOMMEND STANDARD LUBRICATION SYSTEM TO MEET THE SPECIFICATION, OR CLEARLY NOTE ANY EXCEPTIONS TO THE SPECIFICATION AND RECOMMEND STANDARD LUBRICATION SYSTEM.
30	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/11/2021	Section 43 24 13.33 paragraph 2.4 J 10 specifies that the pump shaft bearings shall be oil lubricated, yet paragraph 2.4 H 5 allows the pump shaft bearing in the suction bell to be a "permanently grease-packed metallic bearing." If a permanently grease-packed shaft bearing is permitted, what is the specified minimum life requirement of this bearing? 100,000 hours?		PERMANENTLY GREASE-PACKED SHAFT BEARING IS PERMITTED. MINIMUM LIFE REQUIREMENT OF THE BEARING SHALL BE 100,000 HOURS.
31	C-YP-106	60" Influent Line	Alder/Waterworks	5/11/2021	There is nothing shown in the yard pipe drawings for the 60" Influent Line going into the northwest side of the Fine Screen pump station. We would anticipate installing a portion of that future line so when the city goes to tie it in at a later date, the contractor doesn't tear through everything to tie that in. What is the plan there?		AS INDICATED, THIS LINE SHALL BE STUBBED OUT AND EXTENDED APPROXIMATELY 6 FEET BEYOND THE EDGE OF ASPHALT. CIVIL DRAWINGS SHALL BE UPDATED ACCORDINGLY.
32	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	1.2.C/F - Confirmation: Motors will be supplied with TEFC Explosion Proof Enclosures. If this is not correct, please advise, as Explosion Proof Enclosures are costly.		THE INSTALLATION IS IN A CLASS 1, DIVISION 2 AREA. ALL ENCLOSURES MUST BE RATED FOR THIS AREA DESIGNATION. TEFC MOTORS ARE REQUIRED.
33	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	1.2.E - Significant Clarification: Please note that Vertical Axial Flow / Mixed Flow pumps are not true solids handling pumps. The impeller vane leading edge specifically is not thick/blunt, and may hang up stringy material. Removal of stringy material through a reliable screening process is mandatory to ensure reliable pump operation.		THERE IS A COARSE SCREENING PROCESS UPSTREAM OF THE PUMP STATION.
34	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	1.3.F.2.b - Exception: For a low head, high flow (high Specific Speed, Ns) pump, the HP at shut-off is very high due to the underlying physics of the low impeller vane angles. As such, the pump test cannot be performed at flows lower than the point where the HP limit of the driver is exceeded.		UNDERSTOOD. PLEASE NOTE EXCEPTION ON PROPOSAL.

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35	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	1.3.F.2.b - Minor Clarification: NPSHR data is not be determined during a performance test, as specified. A special dedicated NPSHR test is required. If an NPSH test is required, it should be clearly specified as a separate test. Please see ANSI-HI 14.6 2001 Section 14.6.5.8 and Appendix F for specified as a separate test. Please see ANSI-HI 14.6 2001 Section 14.6.5.8 and Appendix F for guidance on NPSHR testing. Unless a NPSHR Test is specifically called out, NPSHR data on test curves will be based on historical reference data.		HISTORICAL NPSHR DATA IS ACCEPTABLE. PLEASE NOTE EXCEPTION ON PROPOSAL.
36	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	1.3.F.2.c - Exception: A vertical pump of this type can not be "run dry".		RUN DRY VERIFICATION IS NOT REQUIRED. CONTRACTOR WILL BE RESPONSIBLE FOR VERIFICATION OF PROPER ROTATION, ALIGNMENT AND MECHANICAL INTEGRITY ON INSTALLATION. SPECIFICATION WILL BE UPDATED ACCORDINGLY.
37	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	1.3.F.5 - Minor Clarification: It is assume that PE witnessing applies only to pump testing, and not to motor testing		THIS IS ACCEPTABLE.
38	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	2.3.C – Significant Clarification: Please note that Vertical Axial Flow / Mixed Flow pumps are not true solids handling pumps. The impeller vane leading edge specifically is not thick/blunt, and may hang up stringy material. Removal of stringy material through a reliable screening process is mandatory to ensure reliable pump operation.		THERE IS A COARSE SCREENING PROCESS UPSTREAM OF THE PUMP STATION.
39	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	2.3.B - Minor Clarification: This requirement contradicts the Test Tolerance 1U as specified under 1.3.F.c: It is assumed that the more stringent ANSI-HI 1U Test Tolerance shall apply.		THE MORE STRINGENT ANSI-HI 1U TEST TOLERANCE SHALL APPLY.
40	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	2.3.D - Minor Clarification: Per 2.4.O, motors are provided with Non-Reverse Ratchets. As such, reverse runaway speed shall not be applicable		THE INTENT OF THIS REQUIREMENT IS TO VERIFY THAT IF WATER IS FLOWING BACKWARDS THROUGH THE PUMP, THE PUMP DESIGN WILL PREVENT DAMAGE. ALTHOUGH REVERSE FLOW IS NOT ANTICIPATED, PLEASE VERIFY THAT THE RATCHET DESIGN WILL PREVENT DAMAGE TO THE PUMP IN THE EVENT OF REVERSE FLOW.
41	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	2.4.B - Significant Clarification: In vertical pump construction there are a number of locations that differing materials are in contact. These locations cannot accommodate insulating gaskets/devices or localized anodes for galvanic protection. Experience has shown that these material contact points are not sources of galvanic corrosion. Some of these interfaces include the following: • Bronze bearings pressed into cast iron bowls and suction bell. Significant galvanic potential difference, but experience has shown that galvanic corrosion does not occur. • Bronze bearings threaded into enclosing tube (for enclosed lineshaft pumps). Significant galvanic potential difference, but experience has shown that galvanic corrosion does not occur. • 316 Fasteners against cast iron and steel flanges. Significant galvanic potential difference, but experience has shown that galvanic corrosion does not occur. • Cast Iron flanges against Steel flanges. Minimal galvanic potential difference. • Sacrificial Anodes, mounted to lower column assembly, can be provided to provide overall galvanic protection.		THE INTENT OF THIS REQUIREMENT IS TO PREVENT CORROSION TO THE METALS WITHIN THE PUMP. IF THE CONTACT BETWEEN DISSIMILAR METALS DOES NOT RESULT IN CORROSION, THIS IS NOT A PROBLEM.
42	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	2.4.F.1 - Significant Clarification: Please note that Vertical Axial Flow / Mixed Flow pumps are not true solids handling pumps. The impeller vane leading edge specifically is not thick/blunt, and may hang up stringy material. Removal of stringy material through a reliable screening process is mandatory to ensure reliable pump operation.		THERE IS A COARSE SCREENING PROCESS UPSTREAM OF THE PUMP STATION.

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43	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	2.4.1.5 / 2.4.1.6 / 2.4.J.8 / 2.4.K.8 / 2.4.J.10 / 2.4.K.5/6 - Significant Clarification: • Contradictory construction features are called out. • 2.4.J.10 states that bearings shall be oil lubricated. • All detailed specification requirements are consistent with open lineshaft / product lubricated construction. These include the following: o Bearing Retainers o Shaft Sleeves o Packed Box or Mechanical Seal o No mention of enclosing tube or enclosing tube bearings, which are required for oil lube (or water flush) construction. • During previous communication with Engineer, Water Flush Lubrication was discussed. Cascade still strongly suggests that Water Flush Injection Lubrication be considered. o Oil lube construction does not protect bowl bearings completely, and does not protect the lower stage bowl bearings at all. o Cascade Pump is concerned that the bowl bearings will not provide adequate life and reliability in an oil lubricated configuration. o Water Flush Lubrication utilized construction similar to an enclosed line shaft oil lube design. Instead of relying on oil under gravity pressure to lubricate bearings, #3 Plant Water is injected at the pump discharge head to flush all bearings. o Water Flush Lubrication utilizing #3 Plant Water at 2 GPM and 40 psig will be adequate to protect the pump and provide reliable operation. Water Flush may be turned on shortly before pump starts, and should remain on for a short period after pump is shut down.		THE INTENT OF THE SPECIFICATION IS THAT AN OIL LUBRICATION SYSTEM BE PROVIDED. IF VENDOR PROPOSES ANOTHER SYSTEM, IT MAY BE PROPOSED AS AN ALTERNATE FOR CONSIDERATION.
44	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	2.4.L - Minor Clarification: There are no rolling element bearings in the pump. The only rollingelement bearings are in the vertical motor. L-10 life is only applicable to rolling element bearings. Also note that the bearing life contradicts the requirement stated under 2.4.O.9.		IF THE PUMP HAS NO ROLLING ELEMENT BEARINGS, THE L-10 LIFE IS NOT APPLICABLE. FOR THRUST BEARINGS A B-10 LIFE OF 50,000 HOURS IS REQUIRED.
45	43 24 13	Vertical/Mixed Flow Pumps	Alder/Waterworks	5/14/2021	2.4.O.8 - Minor Clarification: Starts per hour are not applicable to a motor utilized on a VFD. With a VFD, there is no slip inducted heating due to inrush current, as the line frequency and rotor speed are never far apart. When operated on a VFD, starts per hour are essentially infinite. Starts per hour are meaningful when a motor is started at line frequency, not variable frequency.		PLEASE VERIFY THAT THIS PUMP IS CAPABLE OF OPERATING AT 10 OR MORE STARTS PER HOUR WITHOUT RISK OF DAMAGE.
46	C-YP-105	Yard Pipe Drawings	Alder/Waterworks	5/14/2021	1. Sheet C-YP-105 calls for two valves on a buried gas line. The only note on the page refers to all buried gas valves as GAV-10. The Specification for GAV-10 indicates that the service is water. Please provide a specification for buried gas valves that will meet the RMGA and Dominion Energy requirements.		GAS VALVES SHALL BE BURIED ACCORDING TO STANDARD DETAIL 2239. THE VALVE FOR NATURAL GAS SERVICE SHALL BE BAV-01. DRAWING WILL BE UPDATED ACCORDINGLY.
47	01 11 00	Summary of Work	Alder/Waterworks	5/14/2021	We have many subs and suppliers asking what the substantial and final completion dates are for this project. We have heard Spring/Summer of 2024. Please clarify when Package 2 is to be substantially complete.		SUBSTANTIAL COMPLETION IS ANTICIPATED AS SPRING 2024; FINAL END OF 2024.
48	40 61 96	Equipment Schedule	Alder/Waterworks	5/14/2021	Is there a full equipment schedule for Package 2. We would request a complete equipment schedule be provided that shows equipment numbers that coorespond with the P&IDs and scope designation for vendor supplied equipment.		THE CONTRACT DOCUMENTS DO NOT INCLUDE AN OVERALL EQUIPMENT SCHEDULE.
49	40 05 10	Pipe Schedule	Alder/Waterworks	5/12/2021	Neither the general spec nor the project specific spec call out a DR for system FA and System WAS. Please recommend a DR.		USE THE MATERIALS SPECIFIED FOR THE PLANT DRAIN SYSTEM.
50	C-YP-110	Yard Pipe Drawings	Alder/Waterworks	5/14/2021	Sheet 36 on the IPW line there is a call-out for a 2" Connection to a 3" Yard Hydrant. Please verify connection size. Also, A 3" Yard Hydrant is probably not available, if required please provide a make and model for the required unit. Woodford does make a 1-1/2" FHT hydrant (the largest I am aware of that is not a fire hydrant)		DRAWING WILL BE REVISED TO REFLECT A 1-1/2" CONNECTION TO A 1-1/2" YARD HYDRANT.
51	M-FS-132, M-FS-204	Fine Screen PS	Alder/Waterworks	5/15/2021	What system does the 4" DR line belongs. It shows up on plan sheets 245 & 253. The pipe schedule does not cover a 4" size DR line. The pipe schedule indicates that Plant Drain 4"and larger be PVC 4 Material where Buried but does not indicate what material for Exposed.		FOR EXPOSED DRAIN LINES, USE PVC1. CONTRACTOR MAY, AT ITS DISCRETION, PROPOSE AN ALTERNATE MATERIAL WHICH IS SUITABLE FOR EXPOSED SERVICE.

Design Drawings - Constructability Review Comments Master List							
Item #	Dwg. / Spec. No.	Structure / Area	SENT TO	SENT WHEN	Question	Alternative Solution or Proposal	ARCHITECT/ENGINEER RESPONSE
					ACTION DISPOSITION CODES (OWNER / OWNER REP USE ONLY) A= Consultant will Comply B= Consultant to Evaluate C= Owner to Evaluate D= No Further Action		
52	40 05 50	All	Alder/Waterworks	5/19/2021	SECTION 40 05 50 for the air valves does not seem to be included in either volume of the specifications.		THERE IS NOT A SEPARATE SPECIFICATION SECTION FOR GAS AND LIQUID PROCESS VALVES. ALL ARE SPECIFIED IN SECTION 40 05 51 OF THE GENERAL SPECIFICATION.
53	N-15-601	Instrumentation	Alder/Waterworks	5/20/2021	BC-RTU-001 is referenced on N-15-601. Does this panel already exist? Only one Ethernet input is shown for this panel. If it does not already exist, who is responsible for providing it?		
54		Instrumentation	Alder/Waterworks	5/20/2021	MB-MCP-001, FS-MCP-001, and FS-MCP-002 are assumed to be vendor-provided. Is this correct?		THIS ASSUMPTION IS CORRECT.
55	N-39-601	Instrumentation	Alder/Waterworks	5/20/2021	An Ethernet connection from PBC-MCP-002 PLC to PBL-RTU-001 is shown on N-39-601, N-39-602, and N-39-603. Has this connection been duplicated three times, or are there three separate connections?		
56	N-39-601	Instrumentation	Alder/Waterworks	5/20/2021	An Ethernet connection from PBC-MCP-003 PLC to PBL-RTU-001 is shown on N-60-601, N-60-602, and N-60-603. Has this connection been duplicated three times, or are there three separate connections?		
57	N-30-601	Instrumentation	Alder/Waterworks	5/20/2021	Tag LSH-P30001 on page N-30-601 is described as "Bioreactor Valve Gallery A P30-MOV-010 Closed". There are 7 other modulating valves, should there be 7 additional level switches for those valves as well?		THE LEVEL SWITCH LSH-P30001 INDICATED ON N-30-601 IS A FLOOD SENSOR SWITCH, AND ITS POSITION IS INDICATED ON DRAWING E-FS-130. THE LEVEL SWITCH IS NOT ASSOCIATED WITH A VALVE BUT WITH THE ROOM ITSELF.
58		Instrumentation	Alder/Waterworks	5/20/2021	Tags PI-P42010, PI-42020, and PI-63003 are listed in the instrument table but not shown in the drawings. Please advise on the inclusion or exclusion of these gauges in the provided instrumentation package.		THESE PRESSURE GAUGES ARE A RELIC OF A PREVIOUS DESIGN ITERATION AND ARE NOT TO BE INCLUDED IN THE THE INSTRUMENT PACKAGE. PRESSURE INDICATION IS NOT REQUIRED FOR THE PUMPS.

Design Drawings - Constructability Review Comments Master List								
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59		Instrumentation	Alder/Waterworks		5/20/2021	LSL-P42001, LSH-P42001, LSHH-P42001, TSH-P42010, TSH-P42020, TSH-P42030, TSH-P42040, PDI-P59001, PI-59010, PSL-P59011, PI-65040, and PSH-P65040 are not listed in the instrument list but are included in the drawings and are assumed to be in the contractor scope for this project. Please advise if any of these instruments should be vendor-provided. Note that PI-65040 and PSH-P65040 are not shown explicitly in the drawings but assumed to be present based on the note at the top of N-65-602 that reads: "P65-PMP-010 shown. Typical for 020, 030, 040". Can relevant process ranges and units be provided for the above-listed instruments?		LSL-P42001, LSH-P42001, AND LSHH-P42001 ARE TO BE PROVIDED AS PART OF THE DUPLEX SUMP PUMP STATION PACKAGE AS INDICATED IN SECTION 43 25 60 OF THE SPECIFICATIONS HIGH-HIGH LEVEL WILL BE AT 2'-3" AND HIGH WILL BE AT 2'-0", LOW WILL BE AT 2". TSH-P42010, TSH-P42020, TSH-P42030, TSH-P42040 ARE TO BE SUPPLIED BY THE SUBMERSIBLE PUMP SUPPLIER PER SECTION 43 24 00 OF THE SPECIFICATIONS. THE SWITCH SETPOINTS WILL BE DETERMINED ACCORDING TO MANUFACTURER RECOMMENDATIONS. PDI-P59001, PI-59010, AND PSL-P59011 ARE TO BE PROVIDED AS PART OF THE COMPRESSOR PACKAGE AS INDICATED IN SECTION 40 12 00 OF THE SPECIFICATIONS. PI-65040 AND PSH-P65040 ARE FUTURE PIECES OF EQUIPMENT FOR WHEN BIOREACTOR NO. 3 IS CONSTRUCTED. THEY ARE NOT IN THE PACKAGE 2 SCOPE OF SUPPLY.
60		Instrumentation	Alder/Waterworks		5/20/2021	Several instrument types require a HART programming unit. Should a HART programming unit be provided for every reference in the instrument specifications? Or should a specified number of programming units be provided? If so, how many should be provided to Provo?		
61	40 91 40 D.D.3.b.2	Instrumentation	Alder/Waterworks		5/20/2021	Specification 409140.DD.3.b.2 requires an integral transmitter on radar level transmitters, but the transmitters currently used by the City do not have integral displays. Are integral displays required?		THIS PARAGRAPH DOES NOT REQUIRE AN ELEMENT WITH AN INTEGRAL TRANSMITTER BUT RATHER IT STATES THAT TRANSMITTERS SHALL HAVE AN INTEGRAL DISPLAY. TRANSMITTER LOCATIONS ARE INDICATED ON THE ELECTRICAL DRAWINGS.
62		Instrumentation	Alder/Waterworks		5/20/2021	The range and setpoint for PIT/P29001 and PSH-P29001 is listed as 10 inches water gauge (in.wg). These cannot share a single diaphragm due to the displacement required for such a low range. Please confirm that this range is correct. If so, the instruments will be provided on separate seals, but still share a process connection.		A SINGLE PROCESS CONNECTION WITH MULTIPLE DIAPHRAGMS IS ACCEPTABLE.
63		Instrumentation	Alder/Waterworks		5/20/2021	What process connection type will be used for the radar transmitters?		TRANSMITTERS SHALL BE MOUNTED SIMILAR TO THOSE IN STANDARD DETAILS 13253 AND 13252, DEPENDING ON THE INSTALLATION LOCATION.
64		Instrumentation	Alder/Waterworks		5/20/2021			THIS ROW WAS BLANK.
65	N-63-601	Instrumentation	Alder/Waterworks		5/20/2021	Tags PI-P63010 and PSH-P63010 appear on pages N-63-601 as well as N-63-602. Which pair should be updated, and what should the new tag numbers be?		N-63-601 HAS PI-P63010 AND PSH-P63010. N-63-601 IS UPDATED TO HAVE PI-P63002 AND PSH-P63010.

Design Drawings - Constructability Review Comments Master List							
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66	N-29-602,603	Instrumentation	Alder/Waterworks	5/20/2021	Two LCPs with the same tag (P29-LCP-001) appear on pages N-29-602 and N-29-603. Which LCP has the incorrect tag, and what should it be updated to?		ON N-29-602, THE LCP TAG WILL BE UPDATED TO P-29-LCP-002. P29-LCP-001 WILL REMAIN ON N-29-603.
67	N-42-601	Instrumentation	Alder/Waterworks	5/20/2021	The tag LSH-P42001 is used twice for two separate instruments on N-42-601. Which instrument should be changed, and what should the updated tag be?		LSH-P42001 AT THE SUMP PUMP STATION WILL REMAIN UNCHANGED. THE FLOOD SWITCH AND ALARM ON N-42-601 SHALL BE CHANGES AS FOLLOWS: LAH-P42001 AND LSH-P42-001 WILL BE UPDATED TO LAH-P42-002 AND LSH-P42003 RESPECTIVELY.
68	40 12 00	Compressed Air System	Alder/Waterworks	5/21/2021	In looking the requirements, our tank mounted unit with dryer fits everything but one part of the specs, they ask that the motor/compressor to run at a max of 1800 rpm. I wanted to find out if there is flexibility with there? Many manufacturers including our compressors run at 3600 rpms and we run very conservatively never into the service factor?		THIS IS ACCEPTABLE. PLEASE NOTE THIS EXCEPTION IN THE PROPOSAL.
69	40 05 59	Gates	Alder/Waterworks	5/24/2021	It is just the basic question below regarding Section 40 05 59, Paragraph I.K.2 This section requires engraving the plastic stem covers as this is not possible. We would like confirmation that we can provide the industry standard (a decal with numbers on it).		THIS IS ACCEPTABLE. PLEASE NOTE THIS EXCEPTION IN THE PROPOSAL.
70	23 31 00 / 23 31 11		Alder/Waterworks	5/27/2021	Section 23 31 11, Paragraph 2.1.A Steel Ductwork says "Unless noted otherwise, all ducts shall be constructed with G-90 or better galvanized steel . . ." Section 23 31 00, Paragraph 1.1 says "Ductwork material of construction will be called out on the drawings." Note on H-BL-101 calls for all duct in blower room to be aluminum. no duct or support material notes were found for the other buildings / rooms. Both specs also provide construction requirements for aluminum and 304 stainless steel. Please confirm if it is correct to make all HVAC ductwork from galvanized G-90 except for the blower room on H-BL-01		SECTION 23 31 11 REFERS ONLY TO HIGH PRESSURE DUCTWORK (GREATER THAN 2 INCHES WATER COLUMN). HIGH PRESSURE DUCTWORK IS REQUIRED ONLY ON THE DISCHARGE SIDE OF MAKEUP AIR UNITS (MAU). REFER TO THE HVAC SCHEDULE H-GN-600 FOR MAKEUP AIR UNITS. FOR ALL OTHER DUCTWORK, SECTION 23 31 00 OF THE GENERAL SPECIFICATION APPLIES. FOR ALL DUCTWORK WITH PRESSURE LESS THAN OR EQUAL TO 2 INCHES WATER COLUMN, SECTION 23 31 00 OF THE GENERAL SPECIFICATION APPLIES, AND ALUMINUM DUCTWORK SHALL BE USED UNLESS OTHERWISE INDICATED IN THE DRAWINGS.
71	Sheet 34	HVAC	Alder/Waterworks	5/20/2021	On SHEET 34 there is a 4" check valve (CEN-6) called out , but it appears to be buried . There does not appear to be a spec for a buried check valve.		
72	A-BC-271	Roofing	Alder/Waterworks	5/28/2021	Sheet A-BC-271 is calling out detail 4 on A-BC-872 which a METAL ROOF PANEL that has the insulation in it. The structural drawings S-MB-182 callout detail 63 on S-MB-321 which is a STANDING SEAM METAL ROOF...which one do you want? I think it will save the city money in labor to and material to go with the insulated panel but we may not be able to match the color exactly.		