CITY OF FERNDALE WASTEWATER TREATMENT PLANT UPGRADE

ADDENDUM NO. 5 (9 pages total) Issue Date: January 6, 2020

General: Recitations of each and every section of the bid documents impacted by this addendum are not given. The described changes impact all relevant portions of the bid documents whether specifically cited below or not.

PART 1 BIDDING REQUIREMENTS

- **QUESTION**: As specified in the SRF Specifications Insert, the Contractors are required to follow the Six Good Faith Efforts (40 CFR Part 33 Subpart C), but we have a question as to if there is a specific minimum DBE % required?
- **ANSWER**: No specified minimum DBE percentage.
- **QUESTION**: Form 6100-4 (DBE Subcontractor Utilization Form): We realize this needs to be included with the bid. Does this need to include all subcontractor quotes? Or just the subcontractors that the General is planning to use?
- **ANSWER**: Form 1600-4 is include all subcontractors the General is planning to use.
- **QUESTION**: <u>Attachment 4 Notice to Labor Unions or Other Organization of Workers:</u> <u>Non-Discrimination in Employment</u>: When is this form needed? Anytime during the project when the General executes contracts with subcontractors that are unionized?
- **ANSWER**: Attachment 4 is only required when contracts with union subcontractors and contractor are executed.

PART 3 - TECHNICAL SPECIFICATIONS:

• **REPLACE** entire Section 03 01 30 – Repair of Headworks Concrete with attached.

SECTION 26 12 19 – PAD-MOUNTED, LIQUID-FILLED, MEDIUM-VOLTAGE TRANSFORMERS

• **REMOVE** Section 261219.2.03.G.6. K-factor ratings are not required for liquid-filled pad mount **transformers**.

SECTION 26 80 00 - INSTRUMENTATION AND CONTROL

- **QUESTION**: Section 26 80 00-2.05-C lists the requirements for Operator Interface Units, however no Operator Interfaces are shown in the control panel drawings. See Network Diagram on sheet E9.04 and the typical control panel diagram on sheet E9.05. Please confirm that the System Integrator furnished control panels do not require Operator Interface Units.
- **ANSWER**: NO OPERATOR INTERFACES ARE REQUIRED.
- **QUESTION**: Section 26 80 00-2.05-D lists the requirements for Network Switches however, per Appendix F the preselected programmer is furnishing all PLC network switches. Please

confirm that these will be furnished, installed, and configured as a part of the pre-negotiated SCADA/PLC programmer services.

• **ANSWER**: THE NETWORK SWITCHES WILL BE PROVIDED BY THE CITY NETWORK INTEGRATOR PER SECTION 268000.1.05.F.

SECTION 45 05 00 – VALVES, 2.012, B, FOR EXPOSED, DUCTILE IRON, OR STAINLESS AIR PIPE SYSTEMS:

• **CHANGE** the first sentence to "Butterfly valves are to be Bray Series 31 (lug style), **Dezurik**, or approved equal with stainless steel components for all exposed valves"

SECTION 46 53 00 – BIOLOGICAL TREATMENT SYSTEM, 2.01, B, 6

• **ADD** Butterfly valves shall be provided per Valve specification 45 05 00.

SECTION 46 53 00 – BIOLOGICAL TREATMENT SYSTEM, 2.01, B, 7

• **CHANGE** the second sentence of the Aeration Header Electric Valve Actuators (WAVE-OX OPTIONS ONLY) section from "All actuators shall be Promation, P Series or equal" to "All actuators shall be Auma or Rotork per Specification 40 05 57 and this section."

DRAWINGS:

- **REPLACE** Drawing S2.16 with attached.
- **REPLACE** Drawings A8.10 with attached.

DRAWING S7.05

• **REMOVE** Note 1: ALL INTERIOR CONCRETE SURFACES TO BE PROTECTED WITH COATING. SEE SECTION 09910 CONCRETE PROTECTIVE COATING.

DRAWING A8.10

• **CLARIFICATION**: The Room Finish Schedule has been revised to clarify elastomeric paint is required in the UV Treatment Room, see revised sheet A8.10 Room Finish Schedule for additional information.

SECTION 03 01 30 – REPAIR OF HEADWORKS CONCRETE

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Work involves the removal of existing grout, repair of portions of the concrete at the existing headworks as necessary, and re-grouting the existing channels, as shown on drawing S2.15 and S2.16, including but not limited to the following:
 - 1. Removal of the grout forming a semicircular channel for the Archimedes screws, preparation of the existing substrate in those areas defined on the drawings, -and resurfacing with new repair mortar, and re-grouting with new grout to reform a semi-circular channel within original design tolerances. This is defined for the purposes of this Specification section as "Class 1" repair.
 - 2. Preparation of all surfaces shown on the drawings as "Extent of Work" (including those from Class 1 repair) and coating with an epoxy-based per these Specifications. This is defined for the purposes of this Specification section as "Class 2" repair.

1.02 RELATED SECTIONS

- A. Coordinate related work specified in other parts of the Project Manual, including but not limited to following:
 - 1. Section 09 91 10 Repainting Headworks Machinery

1.03 REFERENCES

A. O'Dea, "Thin-Patch Repair of Concrete in Wastewater Environments Using Commercially Available Cementitious Resurfacers," *ICRI Concrete Repair Bulletin*, January / February 2008.

1.04 CODES AND STANDARDS

- A. Comply with the Drawing Structural Notes, they are part of the contract documents and take precedence over less specific requirements in these specifications.
- B. *American* Concrete Institute (ACI)
 - 1. ACI-546R Guide to Concrete Repair
 - 2. ACI-347-04 *Recommended Practice for Concrete Formwork*
 - 3. ACI-305.1-14 Specification for Hot Weather Concreting
 - 4. ACI-306.1-90 Standard Specification for Cold Weather Concreting (Reapproved 2002)
- C. International Code Council, International Building Code, 2016.
- D. US Department of the Interior, Bureau of Reclamation, BR MERL Report #12-17 Best Practices for Preparing Concrete Surfaces Prior to Repairs and Overlaying
- E. WSDOT Standard Specifications for Road, Bridge and Municipal Construction, M 41-10, 2012 Edition.
- F. Washington State Department of Ecology August 2012 Stormwater Management Manual

for Western Washington.

1.05 SUBMITTALS

- A. Material Certificates: Signed by manufacturer and Contractor; Submit in lieu of laboratory test reports as acceptable to Engineer, demonstrate compliance with requirements.
- B. Manufacturers of multi-layer coatings: Where a coating (Class 2 repair) is applied over a grout (Class 1 repair) the materials shall be from the same manufacturer, unless the Contractor submits letters signed by both product manufacturers stating that the products are compatible.
- C.-B. Submit references from a minimum of five municipal agencies or ports regarding previous concrete repair work done (see 1.07 A). Provide reference contact names, addresses, and telephone numbers.

1.06 QUALITY ASSURANCE

- A. The Contractor or his Concrete Repair subcontractor shall have a minimum of five years experience in concrete repair for port or municipal structures.
- B. The Owner and the Engineer reserve the right to require an observation by the product manufacturer(s) at no cost to the Owner, to verify that products are applied per manufacturer(s) instructions.
- C. The work is subject to periodic or continuous Special Inspection, as may be appropriate, by the Owner's Inspector. This includes the preparation of surfaces, mixing, handling, and application of materials.
- D. Daily reports by the Inspector shall include quantities of Class 1 repair material used.
- E. The tolerances (see S2.15 and S2.16) between the steel Archimedes screws and their concrete channels are more stringent than normal for concrete construction, but are required for the efficient operation of the machinery. They are material to the contract.

The Owner and Engineer reserve the right to independently verify the tolerances of the Class 1 repair material as applied. Work not within tolerances shown on the design documents shall be rejected and redone at no cost to the Owner.

1.07 PROJECT SITE CONDITIONS

- A. The Owner shall operate at least one-two Archimedes screw pumps at all times, except for a short time to allow the safe removal of one screw for its reconditioning. Concrete repair in the screw channels shall be done generally with at least one other screw operating.
- B. It is the responsibility of the Contractor to coordinate the subcontractor performing the coating for the Archimedes screws with the concrete repair subcontractor. It is not possible to perform the concrete repairs without removing the Archimedes screws.

PART 2 - PRODUCTS

2.01 GENERAL

A. Comply with Quality Assurance provisions, Industry Codes and Standards, and

Specifications. Where these may be in conflict, the more stringent requirements govern.

2.02 **REPAIR MORTAR (Class 1 Repair)**

- A. See Drawings S2.15 and S2.16 for the extent of the work.
- B. Concrete repair mortar shall be modified cementitious:
 - 1. SikaTop 123 PLUS
 - 2. Or an approved equal with the following minimum properties
 - a. Freeze-thaw resistance (300 cycles) per ASTM C666 of 98% or better
 - b. Direct bond strength of minimum 375 psi per ASTM C1583
 - c. Shrinkage per ASTM C157, 3x3x11 1/4, 28 days, 0.04% maximum

2.03 TROUGH GROUT (Class 1 Repair)

e.A. Grout mix used for re-grouting the screw pump troughs shall be per Specification 04 60 00 Basin Bottom and Other Grout 2.02, C, Basin Bottom Grout. Slump shall not exceed $1^{"} - 2^{"}$.

2.03 2.04 OVERCOATING (Class 2 Repair)

- A. See Drawings S2.15 and S2.16 for the extent of the work.
- B. Material shall be a colored epoxy-based coating (color choice by Owner):
 - 1. Sikagard 62
 - 2. Or an approved equal
 - 2.

PART 3. EXECUTION

3.01 EXAMINATION

- A. Verify installation conditions as satisfactory to receive work of this Section. Beginning work constitutes acceptance of conditions as satisfactory.
- A.B. Notify the Engineer a minimum of one week in advance of the beginning of Class 1 work on each channel so that inspections may be scheduled.

3.02 PREPARATION OF WORK AREA

- A. Provide temporary shores, guys, braces, and other supports for staging before beginning reconditioning of concrete. In design and construction of staging, account for temporary construction loads and other loads as may be required. Remove temporary supports when reconditioning work is finished, without damage to the work.
- B. Provide temporary shores, guys, braces, and other supports for containment of debris before beginning reconditioning of concrete. In design and construction of containment, account for temporary construction loads and other loads as may be required. Remove temporary supports when reconditioning work is finished, without damage to the work.

- C. The containment shall be sufficient to keep debris from entering the environment, either by falling into the wastewater below or by blowing dust onto land or water.
- C.D. Workers shall be provided with a safe and healthy site, including but not limited to fall support, access to protective clothing and devices, sanitation, MS-DS sheets on materials, and eyewash facilities as may be indicated by the MS-DS information. Meet or exceed all state and federal health and safety standards.

3.03 **REPAIR MORTARGROUT REMOVAL AND CONCRETE REPAIR (Class 1 work)**

- A. See Drawings S2.15 and S2.16 for the extent of the work.
- B. Concrete or remaining existing mortar surfaces for repair grout shall be prepared as follows:
 - 1. Remove mortar existing grout to bare concrete as shown on drawings in those places indicated on the drawings, using a concrete saw and/or a 120 volt, 8 ampere (maximum) electric jackhammer. Care should be exercised to avoid cracking concrete.
 - 2. The remaining mortar-grout semicircle and the concrete exposed in step 1 (above) shall be roughened to 1/4 inch minimum amplitude. If electric tools are used, they shall not the exceed limitations per step 1 above. In addition, for roughening, a pointed (not chisel) tip shall be used.
 - 3. Power wash with water (400 psi to 1000 psi) to remove loose small aggregate and grit.
 - 4. Material which is removed by steps 1 3 above shall be contained from entering the basin (below Archimedes screws) and being carried into the wastewater treatment stream. See Section 3.02 above.
 - 5. In places in which reinforcing steel may be exposed, prime coat steel with a product recommended by the manufacturer of the concrete paint. Submit a letter from the manufacturer regarding the suitability of the steel priming product to be used.
- C. Repair damaged concrete as necessary with the repair mortar specified per the manufacturers recommendations.
- C.-D. Mix the repair mortar per manufacturer's instructions. Do not mix quantities beyond that which may be applied before the handing and application time has expired.
- **D.**E. If bonding agents are included as part of the manufacturer's instructions, use them in the recommended manner, including limits of working time. Repair mortar applied over bonding agent with expired working time shall be redone (to freshly prepared substrate) at no cost to the Owner.
- E.F. Apply the repair mortar product per the existing screw pump's installation manual as supplied with Addendum 2, and as per grout manufacturer's instructions. Apply in thicknesses that are lie within the minimum to maximum range stated by the manufacturer. Apply smoothly and without creating voids or bugholes.
- G. Do not apply repair mortar past the working life stated in the manufacturer's instructions. Repair mortar so applied shall be removed, with the substrate re-prepared, and the work redone at no cost to the Owner.

3.04 **RE-GROUT CHANNEL TROUGH (Class 1 work)**

- A. Regrout the screw pump channels using the screw pumps to spread and form the grout. Grout shall be installed per manufacturer requirements, per original installation instructions included in Addendum 3, and as directed in this specification.
- B. Surface preparation includes sandblasting, washing, and applying bonding agent as recommended by grout manufacturer. Thoroughly clean the trough surface, removing all loose particles, grease, oil, paint, or other materials that would interfere with a good bond.
- C. Apply in thicknesses that lie within the minimum to maximum range stated by the manufacturer. Apply smoothly and without creating voids or bugholes.
- **F.**D. Do not apply grout past the working life stated in the manufacturer's instructions. Grout so applied shall be removed, with the substrate re-prepared, and the work redone at no cost to the Owner.

3.04-3.05 COATING (Class 2 work)

- A. See Drawings S2.15 and S2.16 for the extent of the work.
- B. Surfaces shall be clean, dry, and free from grease. Prepare surfaces per the product manufacturer's recommendations.
- C. Store, mix, and handle coating materials per manufacturer's recommendations.
- D. Apply the number of coats to get the recommended dry film thickness (DFT) per the manufacturer.
- E. Do not apply coating material that has an expired working life. Any area so coated shall be removed, the surface prepared again, and the work (including Class 1 repairs) shall be redone at no cost to the owner.

END OF SECTION



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12' - 0"

12' - 0"

10' - 0"

11' - 10"

0' - 2"

UV Shop Level 1

UV Shop Level 1

2B

2C

DOOR SCHEDULE LEGEND:

GLAZING:	
TYPE 1 TYPE 2 TYPE 3 TYPE 4	1/4" CLEAR 1/4" CLEAR, TEMPERED 1" INSULATED, TEMPERED 1/4" CLEAR, RATED TYPE TO MATCH WALL ASSEMBLY

PAINTED (# INDICATES COLOR) PER MANUFACTURER OR PAINTED

PLASTIC LAMINATE

MATERIALS

PT# MFR/PTD

PLAM

					Door			Frame						
	Door		Size								Hardware			
	Number	Level	Width	Height	Thickness	Туре	Finish	Туре	Finish	Fire Rating	Glazing	Group	Comments	
	UV Shop L	evel 1												
ſ	1	UV Shop Level 1	3' - 8"	7' - 0"	0' - 1 3/4"	1	PT3	1	PT3	-	3	02		
ſ	1A	UV Shop Level 1	3' - 0"	7' - 0"	0' - 1 3/4"	3	PT1	2	PT1	-	2	08		
	1B	UV Shop Level 1	12' - 0"	10' - 0"	0' - 2"	5	MFR / PTD	4	PT3	-	-	01	OVERHEAD SECTIONAL TYPE	
	1C	UV Shop Level 1	12' - 0"	10' - 0"	0' - 2"	5	MFR / PTD	4	PT3	-	-	01	OVERHEAD SECTIONAL TYPE	
	1D	UV Shop Level 1	12' - 0"	10' - 0"	0' - 2"	5	MFR / PTD	4	PT3	-	-	01	OVERHEAD SECTIONAL TYPE	
	2	UV Shop Level 1	3' - 8"	7' - 0"	0' - 1 3/4"	1	PT3	1	PT3	-	3	02		
	2A	UV Shop Level 1	3' - 8"	7' - 0"	0' - 1 3/4"	1	PT3	1	PT3	-	3	02		

DOOR SCHEDULE - UV MAINTENANCE

PT1

PT3



MFR

MFR



Door Frame Types

FINISH SCHEDULE LEGEND: **ROOM FINISH SCHEDULE - UV MAINTENANCE** ACOUSTIC CEILING TILE BRUSHED / SATIN CHROME CONCRETE MASONRY UNIT Finish ACT BSC CMU CP FRP GWB PLY PT# RB SC SRC Finish - Floor Finish - Base Wall Finish - North Wall Finish - East Wall Finish - South Wall Finish - West Number Room Name Ceiling Comments CEMENTITIOUS PANEL FIBERGLASS REINFORCED PANEL UV Shop Level 1 GYPSUM WALLBOARD BROOM FINISH SLAB, CLEAR SEALER AT CMU, PT-1 AT PLYWOOD AND CEMENTITIOUS CMU, PLY (PT-1) CMU, PLY (PT-1) CP, PLY, PT-1 CMU, PLY (PT-1) N/A SHOP N/A PLYWOOD PAINTED, # INDICATES TYPE / COLOR RUBBER PANELS BROOM FINISH SLAB, ELASTOMERIC PAINT AT CMU, PAINT WALL AREAS PRIOR TO INSTALLATION OF SURFACE MOUNTED ITEMS UV TREATMEN SC N/A CP. PT-1 CMU (PT-1) CMU (PT-1) CMU (PT-1) N/A SEALED CONCRETE SLIP RESISTANT COATING TOILET N/A FRP FRP FRF FRP GWB, PT-1 BROOM FINISH SLAB SC NOTE: REFER TO PLANS, SECTIONS, ELEVATIONS FOR EXTENTS 6' - 8 7/8" 2' - 0" FRP PANELING TM FRP PANELING ę - TILTED MIRROR 3' - 3" 3'- 3 FULL HEIGHT -FULL HEIGHT FRP7 12"X12" ACCESS HATCH, SEE PLUMBING 2' - 1 1/4" MIN. 1'-3" • ☐ACCESSORIES LEGEND: - ADA GRAB BARS (3) ◙ TOILET PAPER DISPENSER, FOIO SANITARY NAPKIN DISPOSAL TOWEL DISPENSER, FOIO TILTED MIRROR SOAP DISPENSER, FOIO WASTE RECEPTACLE WALL MOUNTED WASH BASI - ADA TOILET WR 2'-2" TPE SNE TD TM SD ADA GRAB BARS -6" MIN. KNEE CLR. f alla (SND) PROVIDE ADA COVER 卪 GUARD AT EXPOSED P TRAP & CONTROL, TYP -UV Shop Level 1 26' - 10" $\overline{1}$ UV Shop Level 1 UV Shop Level 1 26' - 10" ADA TOILET _____ ₽ ₽ MAX - 5" MIN. DEPTH - 6" RUBBER BASE **TOILET 3 - South Interior Elevation TOILET 3 - North Interior Elevation TOILET 3 - West Interior Elevation** 2 3

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VT = .6

OVERHEAD SECTIONAL TYPE

COILING TYPE

01

2A