



**ADDENDUM NO. 1
TO SPECIFICATIONS AND PLANS FOR THE
SOUTHGATE-WYANDOTTE RELIEF DRAINS DRAINAGE DISTRICT
RETENTION TREATMENT BASIN EFFLUENT CHANNEL FLAP GATE**

ISSUED: October 8, 2023

HRC Job No. 20171165

This Addendum is issued prior to receipt of bids to provide for certain changes and clarifications to the Specifications and/or the Drawings, as herein specified, and is hereby made a part of the Contract Documents and shall be taken into consideration in preparing the Proposal. All other conditions remain the same.

The Bidder shall acknowledge the receipt of this Addendum in the Proposal form.

GENERAL:

1. Pre-Bid Meeting - Meeting Minutes: The information in the attached Meeting Minutes shall be incorporated into the Bidding Documents.

SPECIFICATION MANUAL CHANGES:

2. SECTION 01950 – SEQ. OF CONST. AND SPECIAL PROJECT REQUIREMENTS (ISSUED)
 - Replace this Section entirely. All changes have been shown as tracked changes.
3. SECTION 02050 – DEMOLITION WORK (Not Issued)
 - Page 02050 / 6, in Section 3.6.A, delete “Gate Stem” from the existing items to be removed and salvaged to the Owner.

DRAWING CHANGES:

4. SHEET C-1 SITE PLAN AND DETAILS (Not Issued)
 - Replace Isolation of Flow in Effluent Pipe Note #3 with the following: “Once isolated, the contents upstream of the point of isolation including the effluent channel must be pumped downstream of the point of isolation or into the RTB by the Contractor.”
5. SHEET S-8 PROPOSED REPAIR DETAILS (Not Issued)
 - Add callout and point to proposed concrete on right side of Header Beam Repair Type 7 detail: “FORMWORK REQ'D”
 - Add the following bullet note under Repair Type 7 Note 5: FURNISHING AND REMOVAL OF FORMWORK (NOT OPTIONAL).
6. SHEET R-5 HYDRAULIC PROFILE (Not Issued)
 - In the Estimated Hydraulic Grade Line through the Southgate Wyandotte CSO RTB Table, change the far-right column header text to “Plan Sheet for Structure(s) Adjustment Work”.

END OF ADDENDUM



MEETING MINUTES FOR MANDATORY PRE-BID MEETING RETENTION TREATMENT BASIN EFFLUENT CHANNEL FLAP GATE SOUTHGATE-WYANDOTTE RELIEF DRAINS DRAINAGE DISTRICT (SWRDDD)

Date: September 27, 2023

HRC Job No. 20171165

Time: 10:00 AM

Meeting Held: Downriver Wastewater Treatment Facility Administration Building Conference Room
797 Central Street, Wyandotte, Michigan 48192

PURPOSE: Pre-Bid Meeting. Attendance was mandatory for General Contractors submitting a bid on this project. See Meeting Sign-In Sheets attached with these meeting minutes.

The following items were discussed:

1. This project generally involves the replacement of the retention treatment basin (RTB) slide gate, modifying chambers on site, replacing the bar screens in Pump Station No. 5 (PS5), as well as some civil work. The estimated cost of this project is approximately \$2M.
2. **Bids are due Tuesday October 17 at 3:00 pm – hard copy delivered to the Plant at 797 Central Street, Wyandotte, Michigan 48192.** Electronic/email/submission to HRC, Wayne County, or Veolia is not acceptable.
3. Per the advertisement, Bidder **questions are due** via email to **Nate Coffin, by Thursday, October 12 at 5:00 pm.**
4. Anticipated project Construction Schedule:
 - a. The bid opening is October 17, 2023. The SWRDDD (the Drainage District) board will need to meet after this date and agree on the cost of the project before a Notice to Proceed can be issued to the selected bidding Contractor. The Drainage District has a meeting scheduled for Friday, October 27, 2023.
 - b. The preconstruction meeting is anticipated to be held approximately 2-3 weeks after the Drainage District board approves the project.
 - c. No escalation clauses in the General Contractor's pricing or a subcontractor's pricing will be allowed.
 - d. Due to the long lead time anticipated for the flap gates and bar screens, that work is anticipated to begin in the late spring or early summer of 2024.
 - e. Bar screen work needs to be performed while the PS5 wet well is accessible, and flap gate work requires installing the stop logs and dewatering the effluent channel as outlined in Specification 01950.
 - f. The expectation is that the shop drawing submittals take place in the Fall and Winter of 2023 and Construction begins Spring 2024 unless materials can be delivered to the site sooner.
 - g. The Substantial Completion date is 330 calendar days from the issued notice to proceed date, which is expected to be late fall of 2024.

- b. A Performance Bond, Labor and Material Bond, and Maintenance and Guarantee Bond will all be required as part of the signed Contract.
- c. Insurances must be provided for project per the General Supplementary Conditions, including Builders Risk.

11. Use of premises by Owner and Contractors

- a. Specific staging areas are shown on drawing C-1 and the difference between these areas is described in Specification 01950.
- b. Owner's working hours are also included in 01950 which is 7:00 AM to 3:00 PM. Work requiring access to the pump station must be performed within this time frame.
- c. A sign-in sheet will be required during construction. The General Contractor's foreman or superintendent must be on site at all times during active construction.

12. Construction facilities and controls provided by Owner.

- a. The Contractor shall provide Construction Facilities in accordance with Specification 01500, including sanitary facilities and potable water. There is no restroom on site for the Contractor to utilize.
- b. There is an instance where the Owner can operate equipment for the Contractor during construction which is when the screens in the wet well are being cleaned. That work is outlined in Specification Section 01950.
- c. Veolia may be able to provide limited operational assistance for specific work items during construction.

13. Temporary utilities provided by Contractor and by Owner.

- a. Electrical hookup for the Contractor's trailer is available in Staging Area 2 behind PS5 as shown on drawing C-1.
- b. Supply water for leak testing the flap gate could be made available, but depending on means and methods, Contractor could also remove the stop logs and let the Detroit River back up to the gate instead.

14. Survey and layout.

- a. The design Drawings are built per the Plant Datum and a conversion for the Plant Datum to NAVD 88 is provided on the Drawings. However, because all work is relative to existing structures, most if not all of the work can be completed by measuring off existing conditions. Per Specification Section 00700, above grade structure elevations are to be established by the Contractor; however, the Engineer can provide some assistance upon request from the Contractor.

15. Security and housekeeping procedures.

- a. Access to the PS site and RTB is restricted by gates which Veolia locks at the end of the day. Logistics on site access can be addressed prior to construction by working with Veolia. Veolia indicated key fobs or physical lock and keys can be signed out by and loaned to the Contractor during construction.

16. Responsibility for testing.

- a. Per spec 01400, the Contractor is to hire and provide third-party testing services where

necessary.

17. An optional site visit is scheduled a week from today, 10/4/2023, from 8-11 AM. If the PS is in operation, access to the PS5 wet well may not be available.
18. Addendum #1 will be issued and include these notes. Addenda will be available to download for free from HRC's website under Bid Info. A list of Plan Holders is available in this same location on the website. The Contractor must be a registered plan holder with HRC to bid on this project.
19. Contractor Questions.
 - a. Responses will generally be provided in Addendum #1 and additional addenda as needed.
 - b. Any additional questions may be emailed to HRC as noted on the Advertisement, which is ncoffin@hrceengr.com. Questions will be answered via Addendum.

20. Post Meeting Questions

Q1: To leak test the flap gates, can Plant water be used to fully submerge the gate?

A1: Specification Section 11282 includes the leakage rates and also indicates the Contractor to provide a leak test plan to observe and quantify the leaks observed. Plant water will not be supplied. The Contractor may pump any treated water stored in the effluent channel upstream of the new flap gate or river water downstream of the flow isolation stop logs / plates into the effluent channel between the flap gate and stop logs / plates to fully submerge the gates for the leak test.

Q2: Flap Gate Note #1 on Drawing P-1 indicates the Contractor shall field measure all aspects of the work prior to fabricating the flap gates, and field measurement shall take place following demolition of the existing slide gate. Is the Contractor expected to have the stop logs installed and slide gate demolished for the full fabrication phase of the flap gates which includes shop drawing review and procurement?

A2: In addition to Note #1 on Drawing P-1, per Specification Section 11282, the Contractor shall field verify the actual channel dimensions prior to gate shop drawing submittal and fabrication. Without performing the demolition work on D-1, the Contractor will only be able to verify the channel width immediately upstream and downstream of the concrete structure for the slide gate intruding into the channel. Demolition of the existing slide gate and structure will require flow isolation to be in place until the proposed flap gate is installed. The Contractor must work with the manufacturer to determine what information is needed for the manufacturer to submit P.E. stamped design calculations per Specification 11282.

Q3: Please clarify if Allowances and Alternates are to be included in the Lump Sum Base Bid.

A3: The three (3) allowances (City Construction Permits, Owner Controlled Changes, Total Lump Sum of All Unit Price Allowances for Concrete Repairs) are to be included in the Lump Sum Base Bid. The two (2) alternates are not to be included in the total Lump Sum Base Bid.

21. Site Visit Questions / Discussion

Q1: What is the depth of Structure E-1B?

A1: Per Section I on Drawing C-1, the invert elevation is 561.5' Plant Datum, and the top of the existing structure is 579.0' Plant Datum.

Q2: Does the Owner have equipment to remove the stop logs?

A2: No – it is the responsibility of the Contractor to have equipment and personnel on site for removal of the flow isolation stop logs / gates.

Q3: Bar Screen Note #6 on Drawing S-7B states to field measure all dimensions prior to preparing shop drawings and fabrication. Specification Section 01950 states only one side of screens can be removed from service at a time, so how is the Contractor to provide shop drawings for both screen sides in the beginning of the project?

A3: Please see Specification Manual Changes to Specification Section 01950 – Sequence of Construction and Special Project Requirements issued with Addendum #1.

These minutes are intended to be a summary of those items discussed. Any corrections and/or comments should be noted to the writer within seven (7) calendar days of these minutes' distribution otherwise said minutes shall be deemed accurate.

Respectfully submitted,

HUBBELL, ROTH & CLARK, INC.



Nathaniel Coffin, P.E.
Staff Engineer

NAC/sld

Attachment: Meeting Sign-In Sheets

pc: All Present
Michigan EGLE; Gus Vazquez
SWRDDD; Pat Cullen
HRC; Thomas Maxwell, File



HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

Meeting Sign-In Sheet

Project Name: Retention Treatment Basin Effluent Channel Flap Gate for SWRDDD
Date of Meeting: 9/27/2023
Job Number: 20171165

Purpose of Meeting: Mandatory Pre-Bid Meeting

Client: Southgate-Wyandotte Relief Drains Drainage District (SWRDDD)

Location of Meeting: Downriver Wastewater Treatment Facility Administration Building Conference Room
797 Central Street, Wyandotte, Michigan 48192

No.	Name	Agency/ Company	Phone Number	Email
1	Adil Siddiqi	Wayne County	734-277-1903	asiddiqi@waynecounty.com ✓
2	Duane Russow	Veolia	313-468-0087	duane.russow@veolia.com ✓
3	Jason Tapp	Veolia	734-318-5635	jason.tapp@veolia.com ✓
4	Travis Tuma	Veolia		travis.tuma@veolia.com ✓
5	Sally Duffy	HRC	734-776-7336	sduffy@hrcengr.com ✓
6	Nate Coffin	HRC	248-318-9410	ncoffin@hrcengr.com ✓
✓ 7	BRIAN PASS	Titus Welding	248-724-6775	brian@tituswelding.com
✓ 8	BRIAN PASS	J.F. Carbaugh	248-724-6775	brian@jfeav.com
✓ 9	Chuck Kronk	Waterworks System	810/923-7778	ckronk@waterworkssystem.com WWS
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3	Jason Tapp	Veolia	734-318-5635	jason.tapp@veolia.com
4	Travis Tuma	Veolia		travis.tuma@veolia.com
5	Sally Duffy	HRC	734-776-7336	sduffy@hrcenr.com
6	Nate Coffin	HRC	248-318-9410	ncoffin@hrcenr.com
7	Dan Chenoweth	Reliance Bldg Co	(248) 207-6983	dan@reliancebc.com
8	Travis Tuma	Veolia	734-368-7000	Travis.Tuma@veolia.com
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HUBBELL, ROTH & CLARK, INC
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5	Sally Duffy	HRC	734-776-7336	sduffy@hrcengr.com
6	Nate Coffin	HRC	248-318-9410	ncoffin@hrcengr.com
✓ 7	KEVIN ANDERSON	Z CONTRACTORS	580-625-8899	kanderson@z-contractors.com
✓ 8	JASON TAPP	WNA	734 318 5635	JASON.TAPP@VEOLIA.COM
✓ 9	Margaux Holtem	Midwest powers	248 770 5127	midwestpowersystems@gmail.com
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SECTION 01950

SEQUENCE OF CONSTRUCTION AND SPECIAL PROJECT REQUIREMENTS

PART 1 - GENERAL

1.1 GENERAL

- A. Pumping Station No. 5 (PS No. 5) was constructed in 1929, including the outfall to the Detroit River. The Retention Treatment Basin (RTB) was constructed in 1975, including the RTB effluent pipe, which connects to the PS No. 5 outfall at the Effluent Structure E-1. The outfalls are completely full of water, which reflects the current Detroit River surface elevation. To ready the effluent channel for flap gate construction, temporary stop log/plates and pumping of the RTB effluent channel and outfall are required. Note: flow isolation and control are considered Contractor's means and methods.
- B. Dry weather flow from the SW district is handled at the adjacent Downriver Wastewater Treatment Facility (DWTF) and the SWRDDD facilities handle combined sewage when the wet weather flow exceeds 20.5 MGD. The RTB outfall must be operational for wet weather events. Thus, the stop logs/plates used to isolate flow must be removed in time for wet weather pumping in response to rainfall and snowmelt precipitation events.
- C. The RTB effluent slide gate was installed in 1986 when the Detroit River reached historic high levels. This gate prevented Detroit River water from entering the basins and must open prior to RTB discharge. The effluent slide gate has deteriorated and will be removed and replaced with a flap gate. All structural elements, electrical components and I&C/SCADA associated with the slide gate will be removed. The seven outlet boxes surrounding the pump station, the influent box, and the two chambers at the confluence of both outfalls are also to be raised by the Contractor per the Contract Drawings.
- D. The wet well, effluent channel and outfall are confined spaces and work must be performed in compliance with MIOSHA-STD-1328 requirements and/or other safety regulations or Contractor Safety Program guidelines associated with all related work items under this contract.
- E. Landscaping work is to be performed by the Contractor for all disturbed areas but primarily in the site area surrounding the influent structure and the outlet box structure immediately west of the influent structure. The Contractor shall schedule and arrange his/her work such that all structural work and repairs to the Influent Structure I-1 and affected Outlet Box #1 are performed prior to the civil site and landscaping work.
- F. The existing concrete topping over the RTB effluent channel is to be removed and replaced with new 3" thick topping, sloped to drain. See Section 1.7, "Special Project Requirements," in this Specification for limitations on the storage and positioning of construction materials and equipment on the site.
- G. All damage, including but not limited to, fencing, sidewalk, curb, grade/subgrade or any other existing utilities and structures is to be repaired by the Contractor at no cost to the Owner.

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Fencing between the RTB and 7th street may be removed provided the fencing is reinstalled to existing conditions or new fencing is provided at no cost to the Owner and is approved by the Owner/Engineer.

- H. Pump Station No. 5 is a combined sewage pump station which will need to operate during rain events. During rain events, the possibility exists for sewage to overflow the outlet boxes and overflow onto the RTB. No construction is to be performed for this Project during rain events. All equipment and structures are to be operable by the end of each construction date unless a shutdown request is issued and approved by the Owner per Specification Section 01300.

1.2 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01210 – Allowances
- C. Section 01300 – Submittals
- D. Section 01310 – Schedule
- E. Section 01400 – Quality Control
- F. Section 02050 – Demolition Work
- G. Section 02040 – Structural Capacity Evaluation and Protection Requirements
- H. Section 03310 – Concrete Work

1.3 SUBMITTALS

- A. Shut Down Notices for all shutdowns.
- B. Contractors Safety Plan, for receipt and file only.
- C. Stop Plate/Log Isolation System Drawing and Calculation Package

1.4 COORDINATION

- A. The provisions contained herein, particularly the Sequence of Construction, shall be coordinated, and incorporated into the Construction Schedule.
- B. The Owner shall be notified at least 5 days in advance of any planned pump, tank, equipment, or electrical shutdowns, switchovers, or lockouts. The Contractor shall submit a Shut-down Notice on the form provided by the Engineer.
- C. Other contractors may be on-site during the construction of this work. The bidding Contractor must cooperate with these other contractors. When necessary, the Contractor shall coordinate any cooperation activities with the Engineer or Owner.

1.5 EQUIPMENT OPERATION AND MAINTENANCE

- A. Existing facilities and equipment which are required to be in service during their modification will be operated and maintained by the Owner.
- B. New facilities and equipment which are required to be in service before they are completed and/or accepted by the Owner, will be operated and maintained by the Contractor.
- C. Operation of new or modified facilities by the Owner before these facilities are completed, tested, and accepted does not imply acceptance of these facilities by the Owner.
- D. New or modified facilities and equipment which have been accepted by the Owner as Substantially Complete, will be operated and maintained by the Owner as of the date of Substantial Completion.

1.6 TEMPORARY FACILITIES

- A. All temporary structures, pumping, piping, electrical / instrumentation and control, or other construction required to maintain wastewater treatment in the existing facilities and to operate new facilities prior to completion of construction shall be furnished and installed by the Contractor.
- B. Temporary equipment and/or facilities, such as pumps, piping, flumes, valves and gates, electrical generators, etc. required for any wastewater treatment and/or conveyance will be sized, installed, operated, maintained, and removed by the Contractor.
- C. The Contractor shall provide required instructions for the operation of temporary facilities in writing to the Engineer. Temporary equipment utilized in the wastewater treatment process shall be operated 24 hours per day, if required to maintain the wastewater treatment process.
- D. The Contractor shall include in his bid and bear all expenses incurred, including temporary pumping and piping required to maintain wastewater treatment if such action becomes necessary during construction of new facilities.

1.7 SPECIAL PROJECT REQUIREMENTS

- A. Site Access
 - a. All Contractor/subcontractor personnel shall comply with any daily personnel sign-in or orientation training requests by the Owner.
 - b. Trailers, material laydown and other work logistics shall be confined to the staging area shown on the Drawings. The actual trailer siting and utility hookups shall be coordinated with the Owner following the pre-construction meeting.
 - c. Two (2) staging areas are shown on the contract drawings. Staging Area 1 is for Contractor vehicles and equipment. Staging Area 2 is for Contractor trailers and vehicle traffic for superintendents and/or foreman exclusively. All personal vehicles shall be confined to the staging areas shown on the Drawings. All construction vehicles shall always have company logos and shall park in areas not affecting Owner vehicles or traffic.
 - d. Facility traffic speed limits must be adhered to by all project personnel including deliveries.

- e. The Contractor must inform suppliers and install temporary signage that all deliveries must be made to the Contractor's trailers and not to the Owner. The Owner will not be responsible for lost deliveries.
 - f. Owner's working hours are 7:00 am to 3:00 pm Monday through Friday; therefore, all work which requires the Contractor to have access to inside the pump station facility must be completed during these times. Contractor may choose to work at any other time for work being completed outside of the facility. Staff will not be available after normal working hours nor weekends or county holidays.
- B. Maintain Road Traffic
- a. All roads must remain open for Owner operations.
- C. Storage of Construction Materials and Equipment:
- a. Staging areas for trailers, parking, stockpiled materials, construction equipment and vehicles are shown on the Contract Drawings. The Contractor's staging areas shall be confined to those identified on the Drawings.
 - b. Storage of construction materials or equipment on the exposed top slabs of the Retention Treatment Basin (RTB), including the Effluent Channel, or other below-grade structures is prohibited.
 - c. Storage of equipment or materials in the grass area over the RTB may be permitted, contingent upon the review and acceptance by the Engineer. See Specification Section 02040 for submittal requirements.
 - d. Contractor's storage may not interfere with the Owner's storage in any case.
- D. Protection of Existing Structures:
- a. The Contractor shall make every effort to minimize and/or distribute the effects of construction loads to the existing structures including but not limited to locating equipment as far from below-grade structures as possible and the use of timber or interlocking composite crane mats.
 - b. Wherever practical, cranes and/or any other equipment involved in the operations for removing portions of demolished structure or placing proposed systems or equipment shall be parked off the buried roofs of below-grade structures in the adjacent grass or paved areas at a horizontal distance away from the structure equal to no less than the buried depth of the structure. See reference drawings in the Contract Documents for depths of below-grade structures.
- E. Construction Logistics Submittals:
- a. The Contractor is required to submit construction logistics schematics and details for review and acceptance by the Engineer in advance of any construction activities.
 - b. Submittals shall describe proposed construction logistics including haul routes, staging plans, stockpile and equipment storage locations.
 - c. See Specification Section 02040 for additional requirements.
- F. Proposed Construction Loads for Evaluation of Existing Structures Submittals:
- a. The Contractor is required to submit all information necessary to illustrate proposed equipment and locations relative to existing buried structures and foundations for review and acceptance by the Engineer in advance of any construction activities.
 - b. See Specification Section 02040 for additional requirements.

- G. Temporary Shoring and Bracing Submittals:
 - a. The Contractor is responsible for means and methods relating to temporary shoring or bracing required in order to complete the work.
 - b. The Contractor is required to submit shoring and bracing schematics for review and acceptance by the Engineer in advance of any construction activities.
 - c. See Specification Section 02040 for additional requirements.
- H. Material Testing
 - a. All required soil and concrete testing shall be performed by an independent third party testing firm and shall be included in the bid price.
 - b. The Contractor shall arrange to have all soil compaction tests and concrete quality control including slump, air, compression tests and any ASR tests for aggregate performed. The material testing firm shall be reviewed and accepted by the Engineer prior to performing testing.
 - c. Concrete cylinder tests shall be as specified in Section 03310.
 - d. Copies of test reports shall be promptly posted and furnished to the on-site Engineer and Owner.
 - e. For other material testing requirements, see Section 01400.

1.8 EFFLUENT CHANNEL DEBRIS

- A. The effluent channel may contain grit, some settled material, or other debris associated with combined sewage and RTB effluents. Channel velocities and turbulence are generally high and excessive amounts of debris are not anticipated. All grit or debris in the immediate area of construction can be hosed or flushed downstream – removal by Contractor is not anticipated.
- B. Demolition debris shall be contained and disposed of off-site in accordance with all Specifications and applicable regulations. Contractor is to prevent debris of all kinds from entering the RTB and Pump Station channels, outfalls, etc.

PART 2 – PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. Demolition of key equipment cannot begin until replacement equipment is on-site unless otherwise authorized by the Owner.
- B. All permanently installed materials and equipment including those installed for the purposes of construction sequencing, shall be in accordance with the applicable sections of these Specifications.
- C. Temporary materials and equipment including demolished materials shall be selected by the Contractor and shall conform to the intent of this Section.

PART 3 – EXECUTION (SEQUENCE OF CONSTRUCTION)

3.1 GENERAL

- A. Procedures and constraints set forth herein establish guidelines to construct the Work. This sequence shall not be construed as mandatory, nor shall the Contractor rely on it solely for the basis of determining sequencing as required to accomplish all the work as shown on the Drawings or described in the specifications.
- B. The Contractor may use procedures other than those set forth herein with prior review and acceptance of the Engineer. The review and acceptance of the Engineer shall be only for compliance with the intent of maintaining full operation of the pump station and retention treatment basin facilities.
- C. Any variance to the sequencing presented herein does not relieve the Contractor from any costs to provide and maintain any or all temporary facilities and equipment that may be required to maintain Pump Station and RTB operation during the construction period.
- D. The Contractor is responsible for the Schedule, Demolition, Staging, Sequencing, etc., required to complete the work in the time specified.
- E. Shutdown notices are required for each area of the work requiring a utility, equipment, or process shutdown. No shutdown or demolition can begin until the replacement equipment, piping, valves, control panels, ancillary equipment etc. are stored or on-site. The Contractor shall schedule and sequence any shutdowns to minimize the shutdown period. Lock out / tag out measures to be coordinated with the Owner.

3.2 CIVIL – SITE WORK

- A. Paving Replacement and New Construction (If required due to damage during construction)
 - a. Paving replacement and new construction shall be sequenced to minimize disruption to facility operators and vehicle traffic.
 - b. Replacement shall be sequenced to only shut down localized areas at a time, allowing full traffic access to the remaining facility areas.
 - c. Perform paving replacement and new construction after underground work is complete where applicable. Cutting and patching of newly placed pavement is not allowed.
 - d. Provide and maintain temporary pavement restoration using maintenance aggregate, cold patch, temporary concrete, or other material approved by the Engineer. Temporary restoration and maintenance will not be paid for separately.
- B. Turf Restoration
 - a. Turf restoration shall be completed as soon as possible following the completion of work in a specific area.

3.3 STRUCTURAL – PROPOSED WORK AND REPAIRS

- A. Concrete repairs and replacements are required site-wide, as detailed in the Structural Drawings.

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- B. Additional structural items including installation of new grating and support framing, fixed ladders, guardrail modifications, core and patch repairs at existing anchorages, concrete infills, etc. are required site-wide, as detailed in the Structural Drawings.
 - C. Every effort has been made to identify quantities and locations of all joint and concrete repairs/replacements on the Drawings.
 - D. See repair details for pre-construction walk-throughs with the Field Engineer to confirm quantity and location of repairs and pre- and post-construction condition surveys, as applicable.
 - E. All necessary shoring, bracing, rigging and support for debris containment and work platform-including submittals- shall be included in the lump sum price total for the project on the bid form.
 - F. Sequencing requirements to avoid impacting service to the Pump Station to perform structural repairs are required for, but not limited to:
 - a. The Influent Structure, I-1
 - b. Effluent Structures, E-1A and E-1B
 - c. Outlet Boxes #1-7
 - d. Overflow Bypass Structure
 - e. Screen and Wet Wells
 - G. Structural Repairs to the Overflow Bypass Gate Structure cannot impede gate operation.
 - 1. Contractor shall install shoring for the gate operator platform and stairs prior to the removal of deteriorated concrete and performing of structural concrete repairs.
 - 2. Contractor is responsible for means and methods and shall design a shoring scheme in accordance with the load capacity criteria indicated on Sheet S-6. Submit shoring package for review and acceptance a minimum of 4 weeks prior to mobilization in this area of the work.
 - 3. Contractor shall provide and install temporary support and protection of existing elements to remain, including but not limited to, electrical conduit/panels and guardrail.
 - H. Water surface elevations are impacted by the Detroit River elevations and surge dynamics of pump operation. The Contractor and Engineer will discuss the status of the Detroit River elevations at the time of construction to determine if the demolition of the PS No. 5 chambers may cause overflows when pumps are operated. If overflows may occur, the Contractor is required to install the new chamber formwork immediately following concrete demolition. Formwork shall be constructed to be watertight to prevent overflows. Contractor is responsible for means and methods and shall submit a materials and method statement for watertight forms for review and acceptance prior to construction.
 - I. Coarse and fine bar screens in the pump station wet well will need to be cleaned and screenings/debris removed, screens removed, and new screens installed as shown on the contract drawings.
 - a. The Contractor will be responsible for removing debris from the screens prior to demolishing the screens. Pump station staff typically clean the screens by power washing and using a refuse rake to remove debris.

1. The Contractor may remove debris from the bar screens and the bar screens themselves by their own means and methods; however, any damages to the pump station wet well or Owner equipment during the screen and screen debris removal process will be repaired by the Contractor at the Contractor's expense. Care shall be taken if power washing is performed to remove debris such that the water pressure is not too high resulting in damage to any joint sealants or concrete.
 2. Pump Station Staff have access to a crane used to remove pumps. This crane can be used to haul debris out of the wet well from the service and motor room access hatches at the southwest portion of the pump station as shown on the contract structural drawings. The Owner is amenable to coordinate screen work with the Contractor; the Owner can operate the crane to remove debris. The Contractor will still be responsible for the safety of their employees and subcontractors associated with using the crane including, but not limited to, proper access hatch security, fall protection around the access hatch, and protection against debris falling while being lifted out of the wet well. Any changes to these procedures shall be requested from the Contractor and require Owner acceptance in writing.
 3. Screenings can be placed in a dumpster designated by the Owner. The Owner will haul the screenings and debris off site provided that screenings only are placed in the Owner's dumpster.
 4. To protect the wet well pumps, no screenings removed from the bar screens prior to demolition of the screens are permitted to remain or be left in the wet well.
- b. Once the bar screens are removed, the Contractor shall coordinate with the Engineer's Resident Project Representative to schedule a structural inspection of the bar screen seats. The Contractor must remove both fine screens in their entirety, and a minimum of five (5) feet laterally but no more than 10 feet laterally of each coarse screen in order for a structural inspection to occur. The Contractor shall assist as necessary to allow the structural engineer to perform a proper inspection. These seats are to be protected as indicated on the contract drawings. The new screens cannot be installed until written authorization is given by the Engineer and a site visit has occurred. Preparation of shop drawings cannot begin until the Engineer's determination of the seats is final. After the inspection is complete and written authorization is given by the Engineer, the removed sections of both the coarse screens and fine screens shall be sealed such that incoming debris cannot bypass the remaining coarse screens and damage the wet well pumps. Sealing off the removed sections is the Contractor's means and methods provided materials used (boards, steel plates, anchors, grout, etc.) can withstand pressure from incoming flows and installation does not damage surrounding concrete in the wet well. Materials used for sealing the removed sections are to be removed the same day new screen installation work occurs.
- J. The Contractor shall schedule his/her work such that only one screen side is removed from service at a time. Contractor shall remove all materials and equipment and vacate the wet well prior to a storm event.

3.4 FLAP GATE INSTALLATION

- A. As stated above, the RTB effluent slide gate was installed in 1986 when the Detroit River reached historic high levels. When closed, this gate prevents Detroit River water from entering

the basins and must be opened prior to RTB discharge. If the Detroit River is below the elevation of the RTB effluent weirs at the time of construction, flow will not enter the RTB from the river and demolition of the Effluent Slide Gate structure can be performed prior to flow isolation. If the river elevation is higher than the RTB effluent weirs, the slide gate must remain in place until flow isolation is performed.

- B. Flow Isolation: The water in the effluent channel and RTB outfall must be isolated and pumped to the PS No. 5 outfall. Contractor will perform channel isolation at Effluent Structure E-1B by cleaning the grooves sufficiently to ensure the temporary stop logs or plates can properly seat, installing temporary stop logs or plates in the existing stop log grooves, then pumping the channel / outfall into the downstream PS. No. 5 outfall continuously throughout construction. Where low points exist in the effluent channel and the channel can no longer be pumped downstream of Effluent Structures E-1A and E-1B, the Contractor may pump any remaining water back into the RTB provided this added water does not exceed the weir trough elevations resulting in recirculating of water back into the channel. The approximate volume of the effluent channel at full capacity from Effluent Structures E-1A and E-1B to the north end of the RTB effluent channel is approximately 134,000 cubic feet.
- C. The Owner does not have the original stop plates or logs for the Contractor to use for this work; therefore, the Contractor must install his or her own stop plates or logs as part of this work.
- a. The Owner is interested in taking Ownership of the stop plates or logs furnished by the Contractor at the end of the project, which would be processed as a change condition at the end of the project.
 - b. The Contractor shall submit shop drawings and calculations of the stop plate/log isolation system for Engineer's review.
 - c. Package shall be submitted to the Engineer for review and acceptance a minimum of four (4) weeks before intended installation of the stop plates/logs.
 - d. Drawings and calculations shall be signed and sealed by the licensed professional engineer, currently registered in the State of Michigan, who is responsible for the design.
 1. The minimum design height for the lateral fluid load shall be 23 feet.
 2. Maximum deflection shall not exceed 1/360 of the span under maximum head conditions.
 3. Submittal shall clearly indicate physical properties for the material that the stop plate/logs are fabricated of.
 4. Design of all aluminum construction shall take into consideration the reduction of the material strength in the vicinity of welds. The allowable stress of the welded aluminum material shall be reduced within the heat-affected zone (HAZ).
 5. Submittal shall clearly indicate allowable versus maximum calculated deflection.
 6. Submittal shall clearly indicate allowable versus maximum calculated bending and shear stress, as applicable.
 7. Submittal shall clearly indicate design standard being followed and safety factors being used in the calculations.
 8. All fasteners and hardware shall be Type 316 stainless steel.
- D. The Effluent Structures E-1A and E-1B must be raised and the watertight bolt down covers must be installed across the Structure E-1A opening prior to flow isolation. Stop [plates or](#)

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logs must be installed to at least 1 ft above the Detroit River at the time of construction. If the plates or logs are to be turned over to the Owner at the end of the project per Section 3.4.C of this specification, the stop plates or logs height must equal the distance from the existing stop log seat to the top of the new grooves installed per Drawing S-4.

- E. The conditions of the stop log grooves are unknown. A Go-Pro video of the stop log channel was performed on September 7, 2019 and will be made available at the pre-bid meeting. The video is informational only and may not reflect the current conditions of the stop log channels.
- F. Isolating stop log leakage is the Contractor's means and methods. This leakage can be pumped to the PS No. 5 outfall.
- G. Slide gate removal and flap gate installation must be performed during period of prolonged dry weather flow when PS No. 5 does not operate. When rainfall is expected during flow isolation, the Contractor shall remove the stop logs and any pumps, tools, equipment, or materials in the effluent channel and ready the outfall for use.
 - a. Historically, flows from the RTB discharge to the effluent channel approximately twice a month, ranging from back to back discharge events to periods of no discharge for two (2) months.
 - b. The Contractor is permitted to work around the clock during this period assuming all local ordinances are met.
 - c. The Contractor shall submit a Flow Isolation Plan of their means and methods to the Engineer and Owner for review and acceptance prior to performing flow isolation. The Plan shall incorporate the following:
 - 1. The expected duration of flow isolation.
 - 2. Methods for removal and reinstallation of the stop logs / plates. All logs or plates, sandbags, pumps, and any other equipment or materials needed for flow isolation must be able to be removed in 30 minutes or less by the Contractor.
 - 3. Name and contact information for Contractor personnel to be on site to remove flow isolation materials and equipment to ready the outfall for use. The 'on-call' operator must be a qualified operator who can be on site within 30 minutes of being requested by the Owner / Engineer.
 - a-d. The Owner reserves their right to direct the Contractor to remove all flow isolation materials and equipment in anticipation of a rain event.

3.5 SUBSTANTIAL COMPLETION

- A. Substantial Completion will occur under the following, and warranties will begin when the Substantial Completion requirements (per Section 01650) are met for the following:
 - a. Flap Gate Installation
 - b. All Other Work.

END OF SECTION