

MOTT MACDONALD
Engineers, Architects, Surveyors

ADDENDUM:

Project:

Addendum Number: 3

MM398476

Date: March 27, 2019

Eslava Lift Station Bar Screen Replacement

This addendum contains modifications and/or clarifications to the bidding and construction documents. These items shall be included in all proposals for Mott MacDonald project number 398476 Eslava Lift Station Bar Screen Replacement and will become part of the contract for construction of the project. Acknowledgment of receipt of this addendum is required on the Bid Proposal. The contractor shall also acknowledge receipt of this addendum via email as well as on the bid form. It is the responsibility of the General Contractors to forward all addenda to his/her subcontractors and material suppliers.

Addendum number 3 consists of four 8-1/2 x 11 page(s) (including the Addendum)

CLARIFICATIONS:

1. During construction while in by-pass operation, by-pass pumps shall be monitored by on-site personnel 24-hours per day until normal station operation is achieved.

CONTRACT DOCUMENTS:

1. DIVISION IV –
 - a. SECTION 30- Remove SECTION 30 – ADDITIONAL BYPASS PUMPING REQUIREMENTS from the Project Manual and replace with SECTION 30 – ADDITIONAL BYPASS PUMPING REQUIREMENTS attached herein.

END OF ADDENDUM NUMBER THREE

SECTION 30

ADDITIONAL BYPASS PUMPING REQUIREMENTS

Refer to Section 13.2.13 BY-PASS PUMPING for MAWSS standard by-pass pumping requirements.

During by-pass operation, by-pass pumps shall be monitored by on-site personnel 24-hours per day until normal station operation is achieved.

These specifications cover the hydraulic performance and operational requirements for bypass pumping as described. The Contractor is solely responsible for, and at all times shall comply with all requirements of the NFPA, including NFPA 70, as well as all State and Local regulations, including permitting if applicable.

O&M recommendations for the pumping equipment shall follow strict adherence to the supplier and manufacturer recommendations.

Pressure and suction gauges shall be installed on each pump.

Sufficient fuel shall be stored onsite such that ALL pumps may operate for 72 uninterrupted hours PLUS fuel usage for normal operation for several days accounting for normal fuel delivery schedule. Contractor shall submit proposed fuel storage volume and supporting calculation for approval.

The Bypass pump requirement is founded on Mott MacDonald's recommendation for and OWNER's concurrence of an N+1 pumping configuration, where N is the number of pumps required to achieve the required discharge capacity and one fully redundant spare is provided in case of a single largest pump failure. This approach is industry standard for wastewater pumping facilities. For example, if pumps of differing size are proposed, the total discharge capacity must be achieved with one of the largest pumping units out of service, but may include all smaller pumps as applicable.

Due to the complexity of this bypass operation, if proposed prime pumps cannot operate without cavitation or air-entrainment at low flow conditions, jockey pumps shall be provided in a configuration of 1 jockey + 1 standby arrangement. The conceptual configuration shown on the drawings assumes a configuration of 3 + 1 prime duty pumps are required AND 1 + 1 jockey pumps are required, for a total of six pumps installed under this assumption. Alternate pumping configurations and arrangements may be allowed if demonstrated by calculation to the satisfaction of the Engineer. However structural modification to existing bypass structure are not permitted. Engineer shall solely determine the adequacy of proposed bypass configuration, arrangement and control settings, including the use of 3 ft of safety factor in all suction and NPSH calculations as applicable. Regardless of bypass configuration proposed by contractor, detailed headloss calculations for peak flow and low flow conditions shall be provided to engineer for review and approval.

Bypass system performance requirements

Total Required System Capacity:

24 MGD at 124 ft TDH (TDH includes assumed head losses associated with suction and discharge piping of 18 ft. Actual calculated losses of contractor's proposed system greater than this value shall increase total pumping TDH accordingly)

Max allowable NPSHr at any operation point or flow rate proposed is 18 ft.

Max allowable water surface elevation in bypass structure or manhole = 3.1 ft

Additional System Conditions:

System Static head = 9 ft to 12 ft

Min flow condition = 4 MGD at 17 ft TDH

Avg. flow condition = 13 MGD at 33 ft TDH

All bypass pumps shall be controlled by a single PLC controller, that will control the speed of all pumps when called to operate. All pumps of the same type (Prime or Jockey) shall always operate at the same speed. PLC shall be provided with a local Human Machine interface to facilitate program, level and speed changes without the use of another computer or device. Battery backup shall be provided with reserve capacity to fully operate the PLC and control pumps for a minimum of 7 days.

Two pressure transducers shall be used to determine level; their values shall be averaged. An alarm shall be initiated if the reported levels of the devices increases above 0.25 ft. An alarm shall be initiated if either device fails.

The Controller shall have the ability for the Contractor to set the following values:

Parameter	Value
Min and Max Prime Pump speeds:	TBD
Min and Max Jockey Pump speeds (if applicable):	TBD
Desired Water elevation to maintain:	TBD or as shown on drawings
Pump on and Pump off El.	TBD or as shown on drawings
Pump Cool down time	5 secs to 120 min
Pump Warm up time	5 secs to 120 min

In addition to single PLC control for all pumps, each pump shall have an independent controller with two floats or pressure transducer that will call the pump to start at full speed and stop accordingly. If pressure transducer, the same signal used by the PLC shall not be used by each pump-controller.

Piping sizes and materials shall comply with drawings, unless otherwise approved by Engineer.

Only flanged or HDPE fused connections shall be allowed. HDPE shall be DIP size DR 21 or DR26. Thicker wall DR's may be used with demonstration of acceptable head loss calculations and approved by Engineer.

All manifolded discharge pipe shall be successfully pressure tested with water to 75 psi, losing not more than 4 psi for 2 hours, before allowed to be placed into service. Pre-pressurizing the pipe prior to start of official test is acceptable and recommended. All suction pipes shall be tested by priming each pump and demonstrating that each pump maintains prime without subsequent air evacuation for 24 hours, before system may be placed into operation.

Mechanically restrained adaptors are PROHIBITED on the discharge side of pumps, discharge header or FM.

Electrofusion couplings are not allowed on pipe size larger than 12 inch. They may be used on smaller pipes where the butt fusion method cannot be used. Electrofusion couplings and fittings shall be PE4710 HDPE, Cell Classification of PE 445574C as determined by ASTM D3350-05. Electrofusion couplings or fittings shall have a manufacturing standard of ASTM F1055. Couplings and fittings shall have the same pressure rating as the pipe unless otherwise specified on the plans. Approved manufacturers are Friatec, Central Plastics and Plasson.

The access hatch on top of the existing bypass structure is approximately 30" x 40" clear opening and may also be used for pump suction access.