

**RIVER STREET PUMP STATION UPGRADE
ROCHESTER, NH**

ADDENDUM NO. 3

To be considered as part of the contract drawings and specification for the River Street Pump Station Upgrade, Bid No. 20-14.

SPECIFICATIONS

1. In the Table of Contents:
 - a. **DELETE** reference to Specification Section 23 09 13 under Division 13
 - b. Under Division 15 **ADD** reference to Specification Section 15116, *Ball Valve, Stainless Steel Flanged*, attached.
 - c. Under Division 15 **ADD** reference to Specification Section 15427, *Davit Cranes*, attached.
2. **DELETE** Specification Section C-410, *Bid Form* in its entirety and **REPLACE** with C-410, *Bid Form*, attached.
3. In Specification Section C-800, *Supplemental Conditions*, **ADD** the follow after SC 10.03:

SC-13.02:
In Paragraph 13.02.B.2, add "Except where Contractor's costs are allowed in the description of the bid item in Section 01 20 05 - Measurement and Payment," prior to the first sentence.
4. **DELETE** Specification Section 01 20 05, *Measurement and Payment* and **REPLACE** with Specification 01 20 05, *Measurement and Payment* attached.
5. **ADD** Specification Sections 01 32 16, *Construction Progress Schedule* and 01 32 23, *Survey and Layout Data* after Specification Section 01 20 05, *Measurement and Payment*, attached.
6. In Specification Section 02730, **DELETE** paragraph 2.01.B.1.1 in its entirety and **REPLACE** with the following:

Bypass pumping system shall have sufficient capacity to pump a peak flow of 2,000 gallons per minute (gpm). The Contractor shall provide all pipeline plugs, pumps of adequate size to handle peak flow, and temporary discharge piping to ensure that the total flow of the main can be safely diverted around the section to be repaired. Bypass pumping systems will be required to be operated 24 hours per day
7. In Specification Section 04090, **DELETE** paragraph 1.01.C.1. in its entirety.

8. In Specification Section 11002, **DELETE** paragraph 2.03.A.2 in its entirety.
9. In Specification Section 11002, **DELETE** paragraph 2.03.B.2. in its entirety and **REPLACE** with the following:

Equipment anchor size, embedment, and edge distance shall comply with the International Building Code.

10. In Specification Section 11002, **DELETE** paragraph 2.02.B.5. and paragraph 2.02.B.6. in their entirety.
11. **ADD** Specification Section 15116, *Ball Valve, Stainless Steel Flanged*, attached.
12. **ADD** Specification Section 15427, *Davit Cranes*, attached.
13. In Specification Section 13322, *Control Strategies*, under Control Strategies Notes, **DELETE** the following in its entirety:
 - 2) Any PLC/OIT programming revisions after the site meeting(s) shall be furnished by the contractor at no additional costs to the Owner

Drawings

1. On Drawing D-02 **DELETE** all references to “3” SCH80 PVC DRAIN”. At the pump drains, after the stainless steel ball valve, **PROVIDE** 1-½ inch male quick connect camlock fitting and 30 feet of 1-½ inch lay flat PVC drain hose, wall thickness 0.075 inches.
2. On Drawing D-02, **ADD** reference to Detail M7002, attached.

QUESTIONS

- Q-1. Specs 01 32 16 – Construction Progress Schedule and 01 32 23 – Survey and Layout Data are listed in the Project Manual table of contents but do not appear to be included in the package. Please provide these specifications or confirm they are not required on this project.
 - A-1. *Specification Sections 01 32 16 and 01 32 23 are required and are attached hereto.*
- Q-2. Spec 02730 – Maintaining Existing Wastewater Flows section 1.01.B.3. requires minimum pump rate of 1500 GPM @ 30’ TDH and peak rate of 2000 GPM @ 35’ TDH. Section 2.01.B.1.1. requires peak flow of 1000 GPM. Please clarify the required pump capacity. Please provide the River Street Pump Station normal and peak flow rates as well.
 - A-2. *The required peak flow rate is 2,000 gallons per minute. There is no “normal” flow rate.*

Q-3. Spec 11002 – Rigid Equipment Mounts section 2.03.A.2. requires post installed anchors to meet the requirements of Section 05 05 23. This Div 5 spec does not appear to be a part of the Project Manual. Please provide this specification or confirm that all anchor bolts are to meet the requirements of Spec 05 05 01.

A-3. *Anchor bolts shall conform to specification section 05501.*

Q-4. Spec 11002 – Rigid Equipment Mounts section 2.03.B.2. reference Spec 01 73 23. Spec 01 73 23 does not appear to be a part of the Project Manual. Please provide this specification or confirm the Seismic/Structural Requirements for the Project (shown on drawing G-06).

A-4. *The reference to Specification Section 01 73 23 does not apply and has been deleted.*

Q-5. Spec 11344 section 2.07.C. and D. refer to standard details M7001 – M7005 and M7006 – M7008, respectively. These standard details do not appear on the process drawings. Please provide these details for the pump equipment mounts.

A-5. *Pumps shall be anchored to the house keeping pad per detail M7002, attached. The detail for the housing keeping pad can be found on S-03 detail 14.*

Q-6. Spec 13322 – Pump Station I&C Control Strategies, page 5, “Control Strategies Notes” number 2 requires that Contractor is to provide programming changes after project award at no extra cost to the Owner. This is an indeterminate value. To keep all bidders on a level playing field, it is recommended that an allowance be provided for all bidders to carry for any extra PLC/OIT programming post contract award, or change the spec so that any extra programming to be provided post contract award to be performed via change order in accordance with the project General Conditions.

A-6. *An allowance for additional programming has been added to the bid form.*

Q-7. Spec 15010 multiple sections (1.05.4. and 2.06.A. for example) refer to Piping System Schedules in Sections 15050.00 through 15050.99. Spec 15050 section 4.01.A. references piping system schedules. These schedules do not appear to be included in the Project Manual. Please provide the applicable piping schedules for any systems that are not covered in other specification sections.

A-7. *All required piping systems are specified in Specification Sections 15010, 15050, 15062, 15065 and 15068.*

Q-8. Spec 15010 section 3.15.A. for insulation references spec 404200. This spec was not provided. Please provide insulation specs as necessary and clarify which piping systems are to be insulated, including insulation type, thickness, and jacket type (as necessary).

A-8. *Insulated pipe is not required on this project.*

Q-9. Spec 16900 contains the requirements for the “packaged” Pump Control Panel and all field I&C instruments. This spec requires all design, drawings, panel construction, etc. to be supplied by the GC via specification 11344 and 13322. Is it the intent for the pump vendors to supply this panel and all associated control instrumentation? If not, please provide a list of approved control system suppliers for this “packaged” control system.

A-9. It is the intent that the pump supplier shall provide the control systems.

Q-10. Spec 16930 section 1.02.D. references hazardous material that must be removed as part of the demolition work. Without a hazardous waste survey being performed well in advance of the bid date, pricing of the amount and type of hazardous material removal cannot be quantified. It is recommended that an allowance be included on the bid form to account for hazardous material survey, abatement, and removal inclusive.

A-10. An allowance for the hazardous material survey, abatement and removal has been added to the bid form.

Q-11. Project Manual table of contents includes a spec number 230913 – HVAC Automatic Controls listed under division 13. This spec does not appear to be included in the Project Manual. Please provide this spec if it is applicable to the project.

A-11. The referenced Specification Section 23 09 13 does not apply to this project.

Q-12. Project structural drawings show new concrete foundations. Spec 04090 section 1.01.C.1. references spec 03200 – Concrete Reinforcement. The Project Manual does not appear to include any concrete specifications. Please provide concrete specifications applicable to the project if different than notes on drawing G-06.

A-12. The notes on drawing G-06 apply. The reference to Specification Section 03200 has been deleted.

Q-13. Drawing D-02 shows two davits required for fall protection. There are no specs for fall protection davits included in the Project Manual. Please provide a spec or model number to establish a baseline for acceptable davit.

A-13. Refer to Specification Section 15427 added via Addendum 3.

Q-14. Drawing D-02 shows stainless steel ball valves for the pump relief piping and pump drain piping. There are no stainless-steel valve specs included in the Project Manual. There are brass/bronze specs included, please confirm if brass/bronze ball valves are acceptable.

A-14. Stainless steel valves are required. Refer to Specification Section 15116 added via Addendum 3.

Q-15. What is the pipe material to be used on the centrifugal pump equipment drains and relief

pipings shown on D-02 before they transition to the PVC floor drain and tubing, respectively?

A-15. The hard pipe 3" SCH80 PVC connection has been deleted per Addendum 3. Refer to DRAWINGS, Item 1 in Addendum 3.

Q-16. Spec 11002 section 2.02.B. requires 2" equipment pad drains to be installed for equipment and routed below the finished floor elevation and that exposed drain lines mounted on floor are not acceptable. Drawing D-02 specifically shows pump drains routed to a 3" floor drain above the finished floor. Please confirm that the pump drain piping may be run as shown on D-02.

A-16. The reference to paragraphs 2.02.B.5 and 2.02.B.6. in Specification Section 11002 have been deleted..

Q-17. Drawing D-02 shows a 3" double wye and a horizontal run of 3" PVC drain piping on the plan view. The section view on the same page implies that the 1" pump drains are to be run to a 3" PVC floor drain. Please confirm if each pump is to have 3" floor drains installed near the pumps with separate 3" below slab drains to each side of the wet well, or if it is acceptable to run the 1" pump drain piping from each pump to a single 3" floor drain located between the pumps and run the 3" to one side of the wet well.

A-17. The design intent was for 1" piping to be run from each pump to a single 3" floor drain to one side of the wet well.

Q-18. Instead of running the centrifugal pump relief valve outlet piping (converting to tubing) to its own penetration on each side of the wet well, would it be acceptable to terminate hard piped relief valve outlets to the 3" floor drain(s)?

A-18. This is not acceptable. Piping shall be installed as per the design drawings.

Q-19. Due to the very limited amount of mechanical/piping work on the job, please confirm that the table and other requirements listed in section 1.08 of specification 15010 are applicable to this project. Requiring a separate design professional to meet these requirements will add significant cost to the project—which given its size—may not be necessary.

A-19. The requirements of Specification Section 15010, Paragraph 1.08 apply to this project.

Q-20. On sheet G-04 please confirm there are two (2) 10" suction lines from the existing wet wall to the existing pump station.

A-20. There are two suction lines from the wet well to the dry well.

Q-21. On sheet C-01 please confirm the depth of the existing force mains to which the 12" and 16" plug valve replacements are to be done.

A-21. The exact depth of the valves is unknown.

Q-22. On sheet C-01 please confirm that the circle shown outside the existing pump station south of the wet well is a manhole. In addition, please confirm the size and depth of the piping going in and out of this manhole.

A-22. The structure is a manhole and is shown on G-03 with pipe size and invert data provided.

Q-23. Please confirm that when the existing wet well sluice gate is removed that it does not need to be replaced.

A-23. The sluice gate is not slated to be replaced as part of this project.

Q-24. Spec 15065 provides multiple options for ductile iron lining and external coatings. Please confirm which internal lining and which external coating systems are required for the site piping, the piping inside the wet wells, and piping inside the pump station.

A-24. Both ceramic epoxy and cement mortar, as specified, are acceptable lining systems. External coatings shall be as specified in Specification Section 09900, paragraph 2.02.C. and 2.02.D.

Q-25. Spec 15065 limits the connection type of 4" through 36" Class 53 pipe to grooved connections. Drawings indicate piping is flanged. Please confirm that flanged piping is acceptable for ductile iron piping and fittings.

A-25. All DI Class 53 piping shall have flanged connections, except for buried conditions.

Q-26. In order to be able to respond to the answers to this RFI and as requested by some of the subcontractors and vendors, it is respectfully requested that the bid date be extended by two weeks.

A-26. The bid opening has been rescheduled, per Addendum No. 2.

END OF ADDENDUM 3

BY ORDER CITY OF ROCHESTER, NH

**SC-410
BID FORM**

Biosolids Dewatering Facility and Carbon Building

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

***City of Rochester, NH
31 Wakefield Street
Rochester, NH 03867***

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum, Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related

reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 - 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 BID ITEMS

A. Bidder acknowledges the following Work will be the basis of bid .

- Construction of the River Street Pump Station Upgrade as detailed in the project documents.
- Base Bid items shall include all surface restoration work and incidental work in the above locations.

5.02 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

BASE BID

Bid Item No.	Description	Item Quantity	Units	Unit Price	Total Value of Item (\$)
1	Construct River Street Pump Station Upgrade	1	LS		
2	Furnish and install the EOS Research Limited SCADA System complete as specified.	1	LS		
3	Excavation of Unsuitable Materials	100*	CY		
4	Additional Crushed Stone Backfill	100*	CY		
5	Hazardous Material Survey, Abatement and Removal	1	Allowance	\$5,000.00	\$5,000.00
6	Additional PLC / Controls Programming	1	Allowance	\$2,500.00	\$2,500.00
	Total Bid				\$

*Estimated quantity for comparison of bids.

Bid Alternate No. 1 – Specification Section 11344

For Bid Alternate 1 provide the *incremental* ADD or DEDUCT cost to supply equipment specified in Specification Section 11344 from Gorman-Rupp. The incremental cost is the cost to provide equipment from Gorman-Rupp, minus the cost of the equipment carried in the base bid. If the result is a positive number, the incremental cost will be an ADD and if the result is a negative number, the incremental cost will be a DEDUCT.

Provide the name of the manufacturer carried in the base bid:

Bid Alt 1 Bid Item No.	Description	Item Quantity	Units	Add / Deduct	Incremental Cost (\$)
7	Provide equipment specified in Specification Section 11344 from Gorman-Rupp	1	LS		

Bid Alternate No. 2 – Specification Section 16620

For Bid Alternate 2, provide the *incremental* ADD or DEDUCT cost to supply equipment specified in Specification Section 16620 from Caterpillar. The incremental cost is the cost to provide equipment from Caterpillar, minus the cost of the equipment carried in the base bid. If the result is a positive number, the incremental cost will be an ADD and if the result is a negative number, the incremental cost will be a DEDUCT.

Provide the name of the manufacturer carried in the base bid:

Bid Alt 2 Bid Item No.	Description	Item Quantity	Units	Add / Deduct	Incremental Cost (\$)
8	Provide equipment specified in Specification Section 16620 from Caterpillar	1	LS		

BASIS OF AWARD

The bid, if awarded, will be awarded to the lowest responsible bidder based on the base bid price or any combination of base bid and bid alternate prices.

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete on or before **September 15, 2020**, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **September 30, 2020**.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The BIDDER hereby certifies, by checking the boxes below, that the following documents are included with this bid proposal:
- Required Bid security;
 - List of Proposed Subcontractors;
 - List of Proposed Suppliers;
 - List of Project References;
 - Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids; and
 - Required Bidder Qualification Statement with supporting data.

ARTICLE 8 – DEFINED TERMS

- 8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By:
[Signature] _____

[Printed name] _____
(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Required Bidder Qualification Statement

The Bidder shall state below what works of a similar character to that of the proposed contract he has performed, and provide such references as will enable the Owner to judge his experience, skill, and business standing.

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, add separate sheets.

1. Name of Bidder.
2. Permanent Main Office address.
3. When organized?
4. Where incorporated?
5. Is bidder registered with the Secretary of the State to do business in New Hampshire?
6. For how many years has your firm engaged in the contracting business under its present name? Also state names and dates of previous firm names, if any.
7. Contracts on hand. (Schedule these, showing gross amount of each contract and the approximate anticipated dates of completion.)
8. General character of work performed by your company.
9. Have you ever failed to complete any work awarded you in the scheduled contract time, including approved time extensions? ___(Yes) ___(No).
If so, where and why?
10. Have you ever defaulted on a contract? ___(Yes) ___(No).
If so, where and why?
11. Have you ever had liquidated damages assessed on a contract? ____ (Yes) ____ (No).
If so, where and why?

- 12. List the more important contracts recently executed by your company, stating approximate cost for each, and the month and year completed.

- 13. List your major equipment available for this contract.

- 14. List your key personnel such as Project Superintendent and foreman available for this contract.

- 15. List any subcontractors whom you would expect to use for the following (unless this work is to be done by your own organization):
 - a. Civil Engineering _____
 - b. Paving _____
 - c. Other work _____

- 16. With what banks and bonding/surety companies do you conduct business?

Bank: _____
Bank Reference Name: _____
Bank Reference Phone Number: _____

Bonding/Surety Company: _____
Bonding/Surety Company Reference Name: _____
Bonding/Surety Company Phone Number: _____

Do you grant the Engineer permission to contact this (these) institutions? ___(Yes) ___(No)

NOTE: Bidders may be required to furnish their latest financial statement as part of the award process.

Respectfully submitted:

Signature

Address

Title

Date

Being duly sworn, deposes and says that he is

_____ of _____

(Name of Organization)

and that the answers to the foregoing questions and all statements contained therein are true and correct.

Sworn to before me this _____ day of _____, 20 _____

Notary Public

My commission expires _____

(Seal - If BID is by Corporation)

ATTEST: _____

SECTION 01 20 05

MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.01 SCOPE

A. MEASUREMENT AND PAYMENT

Bid Items shall be lump sums or unit prices as indicated, complete and paid for on the basis of percentage of completion, or quantities of work performed as specified herein and in accordance with paragraph 1.05.

1.02 PAYMENT

A consistent Payment application form shall be used by the Contractor to request payment. The application for payment shall be submitted at the end of each month and shall cover work completed in the preceding month time period.

1.03 DESCRIPTION OF BID ITEMS

A. GENERAL

1. Bid Items are presented to indicate major categories of the work for purposes of comparative bid analyses and payment breakdown for monthly progress payments. Bid Items are not intended to be exclusive descriptions of work categories and the Contractor shall determine and include in its pricing all materials, labor, and equipment necessary to complete each Bid Item (work phase) as shown and specified.
2. Measurement and payment for the Base Bid work will be based on the portion of the work completed and accepted at the lump sum bid cost or unit prices.
3. PAYMENT ITEMS

ITEM DESCRIPTION

Base Bid

1. Construction of the River Street Pump Station Upgrade;
2. Furnish and install the EOS Research Limited SCADA System complete as specified;
3. Excavation of Unsuitable Materials as Directed by the Engineer;
4. Additional Crushed Stone Backfill as Directed by the Engineer;
5. Hazardous Material Survey, Abatement and Removal, as Directed by the Engineer;
6. Additional PLC and Control Programming, as Directed by the Engineer.

Bid Alternates

7. Provide Gorman-Rupp equipment as specified in Section 11344;
8. Provide Caterpillar equipment as specified in Section 16620;

1.04 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

The methods of measurement and basis of payment for the Payment Items listed above are specified in the following section.

A. BID ITEM	DESCRIPTION	PAY UNIT
1	Construct River Street Pump Station Upgrade	Lump Sum
1.	<u>Measurement:</u> The Work of this section shall be measured on a Lump Sum basis based on the amount of work performed for the construction of the River Street Pump Station Upgrade. The payable quantity will be for the percentage of work performed and shall include all the work as shown in the Contract Documents: mobilization, demolition, construction of new building, new equipment supply and installation, HVAC, electrical, equipment startup, systems training, demobilization, and closeout.	
2.	<u>Payment:</u> The Work of this section shall be paid for at the Lump Sum price under Bid Item No. 1. - " Construct River Street Pump Station Upgrade ".	

B. BID ITEM	DESCRIPTION	PAY UNIT
2	Furnish and install the EOS Research Limited SCADA System Complete as Specified.	Lump Sum
1.	<u>Measurement:</u> The Work of this section shall be measured on a unit basis. The payable quantity will be for the supply, installation, programming, testing, startup and training for the EOA Research Limited SCADA System.	
2.	<u>Payment:</u> The Work of this section shall be paid for at the Lump Sum price under Bid Item No. 2.- " Furnish and install the EOS Research Limited SCADA System Complete as Specified ".	

C. BID ITEM	DESCRIPTION	PAY UNIT
3	Excavation of Unsuitable Materials	Unit Price
1.	<u>Measurement:</u> The Work of this section shall be measured based on a unit price per cubic yard basis. Payment under this item shall constitute full compensation for all work involved and all labor, materials, equipment, and incidentals required to excavate unsuitable materials, as directed by the Engineer.	
2.	<u>Payment:</u> Payment shall be made for work under this section at the unit price under Bid Item No. 3 – " Excavation of Unsuitable Materials ".	

D. BID ITEM	DESCRIPTION	PAY UNIT
4	Additional Crushed Stone Backfill	Unit Price
1.	<u>Measurement:</u> The Work of this section shall be measured based on a unit price	

per cubic yard basis. Payment under this item shall constitute full compensation for all work involved and all labor, materials, equipment, and incidentals required to install additional crushed stone backfill, as directed by the Engineer.

2. Payment: Payment shall be made for work under this section at the unit price under Bid Item No. 4- **“Additional Crushed Stone Backfill”**.

D. BID ITEM	DESCRIPTION	PAY UNIT
5	Hazardous Material Survey, Abatement and Removal	Allowance

1. Measurement: The Work of this section shall be measured based on actual work performed as directed by the Engineer. Payment under this item shall constitute full compensation for all work involved and all labor, materials, equipment, and incidentals required to Survey Abate and Remove hazardous material as directed by the Engineer.
2. Payment: Payment shall be made for work under this section at the cost, plus allowable markup, and shall be paid for under Bid Item No. 5. - **“Hazardous Material Survey, Abatement and Removal”**.

D. BID ITEM	DESCRIPTION	PAY UNIT
6	Additional PLC / Controls Programming	Allowance

1. Measurement: The Work of this section shall be measured based on actual work performed as directed by the Engineer. Payment under this item shall constitute full compensation for all work involved and all labor, materials, equipment, and incidentals required to Survey Abate and Remove hazardous material as directed by the Engineer.
2. Payment: Payment shall be made for work under this section at the cost, plus allowable markup, and shall be paid for under Bid Item No. 6. - **“Additional PLC / Controls Programming”**.

E. BID ITEM	DESCRIPTION	PAY UNIT
7	Provide Equipment Specified in Specification Section 11344 from Gorman-Rupp	Lump Sum

1. Measurement: The Work of this section shall be measured on a Lump Sum basis based on the incremental bid price to provide equipment specified in Specification Section 11344 from Gorman-Rupp.
2. Payment: The Work of this section shall be paid for at the Lump Sum price under Bid Item No. 7 - **“Provide Equipment Specified in Specification Section 11344 from Gorman-Rupp”**. The incremental cost shall be the cost difference between the cost of the equipment manufactured by Gorman-Rupp less the cost carried for equipment in the base bid.

F. BID ITEM	DESCRIPTION	PAY UNIT
8	Provide Equipment Specified in Specification Section 16620 from Caterpillar	Lump Sum

1. Measurement: The Work of this section shall be measured on a Lump Sum basis based on the *incremental* bid price to provide equipment specified in Specification Section 16620 from Caterpillar.
2. Payment: The Work of this section shall be paid for at the Lump Sum price under Bid Item No. 8 – **“Provide Equipment Specified in Specification Section 16620 from Caterpillar”**. The incremental cost shall be the cost difference between the cost of the equipment manufactured by Caterpillar less the cost carried for equipment in the base bid.

1.05 CONTRACTOR'S COST BREAKDOWN

- A. For work to be performed for a lump sum amount, the Contractor shall submit a cost breakdown to the Owner and Engineer prior to the first payment and within ten (10) days after Notice to Proceed. The cost breakdown, as agreed upon by the Contractor and the Engineer, shall be used for preparing future estimates for partial payments to the Contractor, and shall list the major items of work with a cost fairly apportioned to each item. Mobilization, overhead, bond, insurance, other general costs and profit shall be prorated to each item so that the total of the prices for all items equal the lump sum price. At the discretion of the Engineer, mobilization, bond and insurance costs may be provided for separately if accompanied by invoices to verify actual expenses. The cost breakdown shall not be considered in determining payment or credit for additional or deleted work.
- B. The cost breakdown shall be generally in the same format as the Contract Specifications divisions and subdivisions, with major items of work listed individually. The cost breakdown shall be by structure, civil, landscaping, or other logical division of work. The cost breakdown for architectural, structural, mechanical, and electrical work shall include separate items for identifiable portions of the structures. The cost breakdown shall include separate allowances for any testing and startup work required. Measurable approximate quantities of work performed by the Contractor or its subcontractors shall be provided. For quantities that are the sum total of several individual quantities, backup summaries shall be provided which list the individual descriptions and quantities. These summaries then will be used to determine the quantities of work in place in subsequent partial payment requests.
- C. The above is a statement of the intent of the Contract Documents to provide a moderate level of detail, acceptable to the Engineer, to allow a fair and reasonable estimate to be made of the value of work installed. The detail of the cost breakdown must be sufficient to provide timely processing of the monthly partial payment request.
- D. The cost breakdown will be subject to the approval of the Engineer, and upon request, the Contractor shall substantiate the cost for any or all items and provide additional level of detail, including quantities of work. The cost breakdown shall be sufficiently detailed to permit its use by the Engineer as one of the bases for evaluating requests for payments. The Engineer shall be the sole judge of the adequacy of the cost breakdown.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01 32 16
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SCOPE

- A. This section specifies the procedures for preparing and revising the cost-loaded construction schedule used for planning and managing construction activities. The schedule provides a basis for determining the progress status of the project relative to the completion time, specific dates, and for determining the acceptability of the Contractor's progress payment estimates.

1.02 DESCRIPTION

- A. The Contractor shall prepare a time scale network schedule using a critical path method. A general guide for preparing such a schedule is contained in "The Use of CPM in Construction, a Manual for Contractors," published by the Associated General Contractors of America.
- B. The schedule shall depict all significant construction activities and all items of work listed in the breakdown of contract prices submitted by the Contractor in accordance with the General Conditions of the Contract Documents. Assigned values for each part of the work shall be indicated. The dependencies between activities shall be indicated so that it may be established what effect the progress of any one activity has on the schedule.
- C. Completion time and all specific dates given in the Contract Documents, and sequencing requirements described in Section 01 12 16, shall be shown on the schedule. Activities making up the critical path shall be identified.
- D. No activity on the schedule shall have a duration longer than 21 days or assigned value greater than \$100,000, except activities comprising only fabrication and delivery may extend for more than 21 days. Activities which exceed these limits shall be divided into more detailed components. The scheduled duration of each activity shall be based on the work being performed during the normal 40-hour work week with allowances made for legal holidays and normal weather conditions.

1.03 SUBMITTAL PROCEDURES

- A. Within 20 days after the date of the Notice to Proceed, the Contractor shall complete a construction schedule conforming to paragraph 1.02 Description and representing in detail all planned procurement and on-site construction activities. The schedule shall be prepared on reproducible paper and may be in draft form with legible freehand lines and lettering. Upon completion of the schedule, the Contractor shall submit the original and two copies to the Engineer in accordance with Section 01 33 00.
- B. Within 7 days after receipt of the submittal, the Engineer shall review the submitted schedule and return one copy of the marked up original to the Contractor. If the Engineer finds that the submitted schedule does not comply with specified requirements, the corrective revisions will be noted on the submittal copy, returned to the Contractor for corrections and resubmitted as specified in Section 01 33 00. Upon receipt of a

schedule and breakdown of contract prices per the General Conditions of the Contract Documents, the Engineer will computerize the Contractor's scheduling and cost data. Within 14 days, the Engineer will deliver three computer reports to the Contractor. The reports will be on 8-1/2-inch by 11-inch sheets as follows:

1. Tabular listing of activities showing early and late start and finish dates.
 2. Bar chart schedule of all activities.
 3. Report on cost and payment status for each activity.
- C. These reports will serve as the basis for the Contractor's progress payment requests. Computerization of the Contractor's schedule and furnishing reports to the Contractor by the Engineer shall not relieve the Contractor of responsibility for the adequacy of the schedule and for managing all construction activities including those of subcontractors and suppliers.

1.04 SCHEDULE REVISIONS

- A. Revisions to the accepted cost-loaded construction schedule may be made only with written approval of the Contractor and Owner. Changes in timing for activities which are not on the critical path may be modified with written agreement of the Contractor and Engineer. A change affecting the contract value of any activity, the timing of any activity on the critical path, the completion time and specific dates in the Contract Documents and work sequencing (Section 01 12 16) may be made only in accordance with applicable provisions of the General Conditions of the Contract Documents.

1.05 PROJECT STATUS UPDATE

- A. Within 7 days of acceptance by the Engineer of the Contractor's written progress report specified in the General Conditions of the Contract Documents, the Engineer will process the update data by computer and generate the reports outlined in paragraph 1.03 Submittal Procedures. These reports will reflect the current status of the work and will be provided to and used by the Contractor as the basis of his progress payment request.

END OF SECTION

SECTION 01 32 23
SURVEY AND LAYOUT DATA

PART 1 GENERAL

1.01 SURVEY AND LAYOUT

- A. The Owner will establish reference benchmarks and baselines as specified.
- B. From the information provided, the Contractor shall develop and make such additional surveys as are needed for construction, such as control lines, slope stakes, batter boards, stakes for pipe locations and other working points, lines, and elevations.
- C. Survey work shall be performed under the supervision of a licensed land surveyor or registered civil engineer. Contractor shall reestablish reference benchmarks and survey control monuments destroyed by his operations at no cost to the Owner.

END OF SECTION

15116

BALL VALVE, STAINLESS STEEL FLANGED

GENERAL
<ol style="list-style-type: none">1. Line Size: 1 through 24 inches2. Rated Limits: Pressure 170 psi; Temperature 120 °F
VALVE MATERIALS
<ol style="list-style-type: none">1. Body: Stainless Steel (316)2. Ball: Stainless Steel (316)3. Seats: PTFE4. Packing: RPTFE5. Stem: Stainless Steel (316); blowout-proof stem
VALVE CONFIGURATION
<ol style="list-style-type: none">1. Valve End/Connections: Flange, ANSI 16.1 Class 1502. Pattern: Full Port, Split Body3. Ball Mount: provide trunnion-mounted ball on all valves sizes 8 inches and greater, provide floating ball on all valves sizes 6 inches and smaller4. Manual Operator: Lever/Handwheel; provide lever operators for valves 4 inches and less, provide geared operators for valves 6 inches and greater
SUBMITTALS
<ol style="list-style-type: none">1. Action Submittals:<ol style="list-style-type: none">a.2. Information Submittals:<ol style="list-style-type: none">a.3. Closeout Submittals:<ol style="list-style-type: none">a.
CANDIDATE MANUFACTURERS
<ol style="list-style-type: none">1. Kitz 150UTDZM2. Velan SB-1503. Elite E9200

SECTION 15427

DAVIT CRANES

PART 1 GENERAL

1.01 DESCRIPTION

A. Scope:

1. Contractor shall provide all professional services, labor, materials, tools, equipment, and incidentals as shown, specified, and required to furnish and install portable Davit cranes and mounting equipment.
2. Contractor shall be responsible for field verifying that the size, orientation and final field location of the lifting equipment is appropriate for full lifting and removal of the final equipment selected and as listed in this specification from the installed position to location identified in this specification. Alignment of lifting equipment shall be directly over center of mass of installed equipment for removal. Notice of any conflicts shall be provided in written form to the Engineer or Owner.

B. Coordination:

1. Review installation procedures under this and other Sections and coordinate installation of items that must be installed with or before davit equipment Work.

C. Related Sections:

1. Section 05501 Anchor Bolts.
2. Section 09900, Painting and Coating.

1.02 REFERENCES

A. Standards referenced in this Section are:

1. American Gear Manufacturers' Association (AGMA).
2. AISC, Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings.
3. ASME B30.2, Overhead and Gantry Cranes.
4. HMI 100, Hoist Manufacturers Institute (Electric Wire Rope Hoists).
5. MMA, Underhung Cranes and Monorail Systems.
6. NEC Article 610, Standards of National Electric Code.
7. NEMA, Standard of National Electric Manufacturers Association.
8. OSHA, Occupational Safety and health Administration.

1.03 QUALITY ASSURANCE

- A. Experience: Manufacturer shall have a minimum of 5 years' experience producing similar equipment.
- B. Material: Crane boom, mast, and base shall be fabricated meeting ASTM standards.
- C. Finish: Crane boom, mast, and base shall have a corrosion-resistant finish.

1.04 SUBMITTALS

- A. Submittals will be processed in accordance with Section 01 33 00.
 - 1. Manufacturer's Qualifications.
 - 2. Product Data:
 - a. Manufacturer's literature, illustrations, specifications, and engineering data including:
 - 1) Complete description in sufficient detail to permit comparison with the product requirements in Specifications.
 - 2) Dimensions and required clearances.
 - 3) Weights.
 - 4) Performance characteristics.
 - 5) Manufacturer's installation and testing instructions.
 - 6) Affidavits of compliance with referenced standards and codes.
 - 7) Manufacturer's standard guarantee.
 - b. List of any deviations from the Contract Drawings.
 - 3. Shop Drawings:
 - a. Drawings showing fabrication methods, assembly, accessories, and installation details.
 - b. Dimensions and required clearances.
 - c. Contractor to provide documentation in the form of dimensioned drawings demonstrating the field location of the lifting equipment is appropriate for full removal of the final equipment selected.
 - 4. Testing Plans: Prior to performing tests, submit and obtain approval of test procedures for field operating tests.
 - 5. Quality Control:
 - a. Test procedures for field tests.
- B. Informational Submittals:
 - 1. List of spare parts recommended by the manufacturer. The list shall describe each part, the quantity recommended and the unit price of each part.
- C. Closeout Submittals: Submit the following:
 - 1. Operational and Maintenance Data:
 - a. Furnish operation and maintenance manuals per Section 01 78 23.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Installation must be designed for outdoor use.

PART 2 PRODUCTS

2.01 PERSONNEL CONFINED SPACE ENTRY SYSTEM

- A. Portable confined space entry davit type.
 - 1. Quantity: One.
 - 2. Rated Capacity: 450 pounds.

3. Vertical Support Post: 38" to 53-1/2" adjustable.
 4. Arm Assembly: Articulated side entry system.
 5. Winch Assembly: Manual crank with 25 feet of 1/4-inch (min) stainless steel cable.
 6. Materials of construction: Welded Steel (HR Mild Steel)/ Aluminum (6061-T6).
 7. ISO 9001 certification.
- B. Floor mount -davit base.
1. Locate bases near hatches as shown on drawings. Quantity: Two
 2. Stainless steel flush floor mount sleeve sized to fit support posts.
 3. Provide stainless steel cap for each base.
- C. Manufacturer
1. DBI SALA, 38" to 53-1/2" Adjustable Support Post Side Entry System, Model # 8514796.
 2. Or equal.

2.02 TAGGING

- A. Label with a stainless steel metal identification plate labeled or imprinted with the manufacturer's name, model number, serial number, capacity rating, and other essential information.

2.03 FACTORY FINISHING ALL EQUIPMENT AND PERSONNEL DAVIT SYSTEMS

- A. Prepare and prime coat in accordance with manufacturer's standard.

2.04 SOURCE QUALITY CONTROL

- A. Factory Inspections: Inspect equipment for required construction and intended function.
- B. Factory Tests and Adjustments: Test and adjust equipment for required and intended function.

PART 3 EXECUTION

3.01 INSPECTION

- A. Examine conditions under which products are to be installed and notify ENGINEER in writing of conditions detrimental to proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions are corrected.
- B. Inspect and verify that no part of the building, structure, piping, mechanical systems including ductwork, electrical systems including lighting and conduit, or other elements that will interfere with proper operation of davit crane.

3.02 INSTALLATION

- A. Manufacturer's representative shall check and approve the installation prior to operation. Manufacturer's representative shall field test and calibrate the equipment to assure that the system operates to the Owner's satisfaction.

- B. Lubricate, adjust, test and leave crane in proper operating condition.
- C. Install all power and control, conductors, wire, cables and connectors on the load side of the manual safety switch. Receive approval from Engineer, in writing, before wiring.

3.03 FIELD TESTS

- A. Site Tests:
 - 1. After installing equipment, perform at tests for davit crane and appurtenances. Should testing indicate malfunction, make repairs and adjustments as required.
 - 2. Load Test:
 - a. Perform load tests in presence of Engineer.
 - b. Weights used in load testing shall be as specified for each location.
 - c. Load Test Report: Submit results of load testing as report that lists tests performed, data collected, and results of each test.

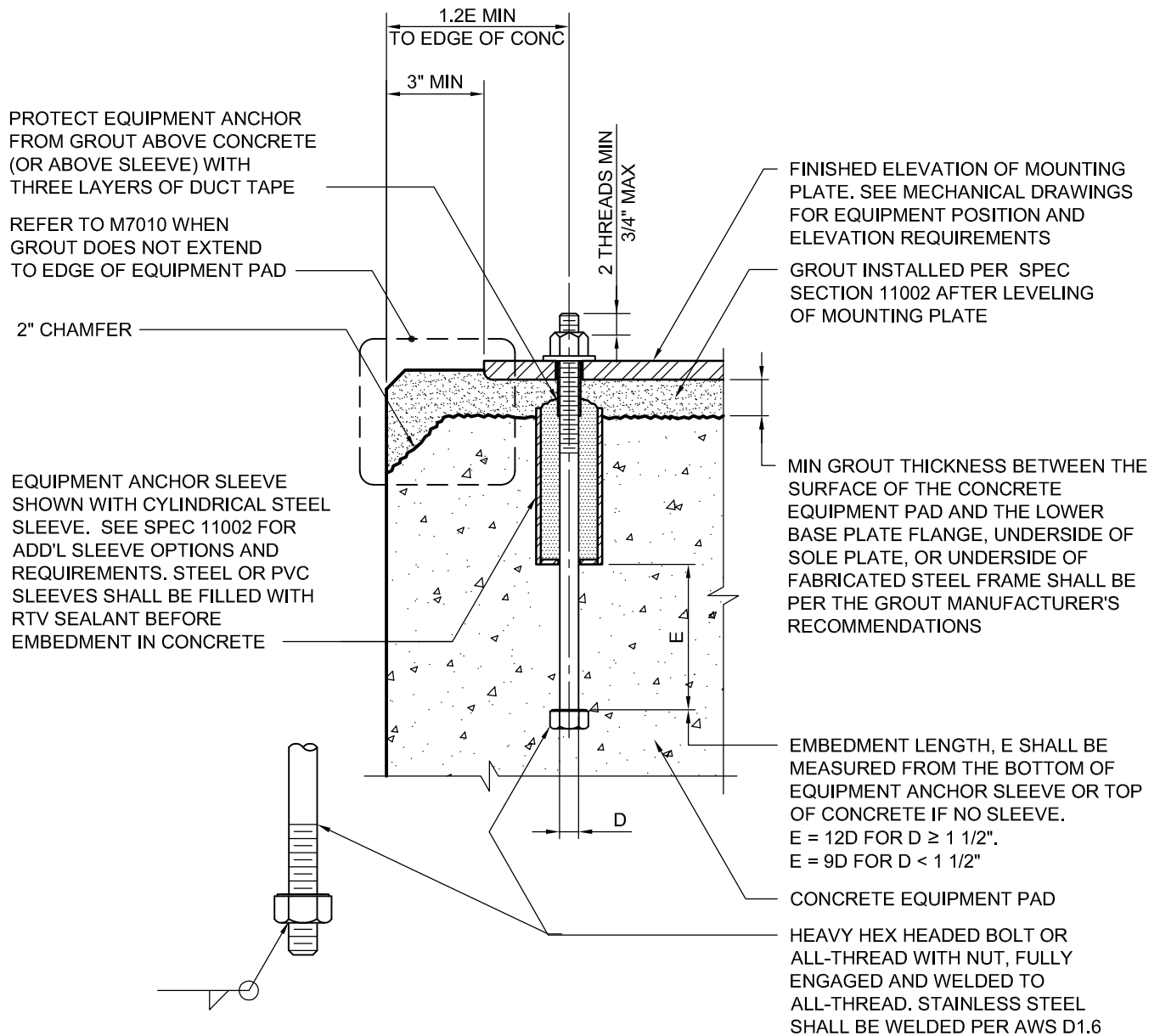
3.04 MANUFACTURER'S SERVICES

- A. A qualified, factory trained representative shall be provided for installation supervision, start-up and test services. The manufacturer's representative shall make a minimum of one visit.
- B. Reports: Submit report by manufacturer of visit to the site that provides complete information on time, schedule, tasks performed, persons contacted, test results, training, instruction and all other pertinent information.

END OF SECTION

NOTES TO DESIGNER:

1. ANCHOR BOLT EDGE DISTANCE CAN BE LARGE. THE SIZE OF THE EQUIPMENT PAD MAY NEED TO BE INCREASED TO ACCOMMODATE ANCHOR EDGE DISTANCE REQUIREMENTS.



CAST-IN-PLACE EQUIPMENT ANCHOR BOLTS FOR RIGID EQUIPMENT MOUNTS

DETAIL (M7002)

NO SCALE

PLOT DATE: Friday, February 01, 2013 2:00:30 PM
 DRAWN BY: STURGES, GREG
 FILE LOCATION: G:\02-BC PROJECTS\TECH SYSTEMS-DIANE\BC STANDARD DETAILS\MECHANICAL\M7002.DWG

Brown AND Caldwell

STANDARD DETAIL

M7002

DISCIPLINE:
MECHANICAL

NUMBER CATEGORY: 70

EQUIPMENT MOUNTING

VER: A

GUIDE APPROVED

TSG: MECHANICAL

SUPERCATEGORY:
EQUIPMENT

DETAIL ID AND TITLE: 02

CAST-IN-PLACE EQUIPMENT ANCHOR BOLTS FOR RIGID EQUIPMENT MOUNTS

APPROVED BY: ZIMRI MOORE

DATE: DECEMBER 2012

