

**ADDENDUM NO. 1**

December 5, 2017

223998

RE: **GRAFTON COUNTY COMMISSIONERS, NH  
FORCE MAIN REPLACEMENT**

FROM: DuBOIS & KING, INC.  
P.O. Box 339  
Randolph, Vermont 05060  
(802) 728-3376

TO: **Prospective Bidders**

This Addendum forms part of the Contract Documents and modifies the original Bidding Documents issued by the Grafton County Commissioners, NH, for the Force Main Replacement project dated October, 2017. **Acknowledge receipt of this Addendum in the space provided on Page 1 of the Bid Form. Failure to do so will subject the Bidder to disqualification.**

**I. Pre-Bid Meeting**

A Pre-Bid meeting was held at the Project Site on November 13, 2017 at 10:00 a.m. Attendees are listed on the attached Pre-Bid Meeting Attendance Log, which also included interested parties who have visited the site through November 29, 2017. Chuck Goodling, P.E., of DuBois & King, Inc. described key elements of the project. **Subsequent to the Pre-Bid Meeting, no questions were received. The following provides additional information and clarifications.**

**II. Additional Information/Clarifications**

1. Sheet C3: **CHANGE** the forth sentence of Note 3 to read as follows:

“Costs associated with **removing** the existing foundation walls.....”

The Contractor shall **remove** any foundation walls encountered in the vicinity of the replacement force main to achieve a minimum clearance between the remaining foundation wall and the replacement force main, to achieve the clear dimensions identified in the Rock Trench Section on sheet C7, as modified in Clarification 6 below.

2. Sheet C4: In the Replacement Force Main Profile on sheet C4, Contractor shall maintain a negative slope from Sta 0+00 to Sta. **1+45**, and a positive slope from Sta **1+45** to 8+00 (i.e., the low point is at the Bluff-off Manhole, which is located at Sta 1+45). The reference to Sta 1+14 and Sta 1+15 in the pipe slope notes are incorrect.

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3. Sheet C4: **DELETE** the air release valve and manhole at Sta 4+75. The quantity for Pay Item 3 has been reduced from 2 to 1, and a **new Bid Form is attached**. See also note 7 below.
4. Sheet C4: **DELETE** the two-way cleanout at Sta 5+00. This pay item has been removed from the bid form and the remaining pay items renumbered. A **new Bid Form and Measurement and Payment Specification Section 01150 are attached**.
5. Sheet C4 and C5: In the Replacement Force Main Profiles, reference to providing a minimum of 6 inches of vertical separation between existing storm drain pipes and the replacement force main shall be **increased to a minimum of 12 inches of vertical separation**, so that the standard dimension of the pipe envelope can be maintained through the pipe crossing area. Rigid insulation is still required as shown.
6. Sheet C7: **DELETE** Detail No. 2 and No. 4 from the Water/Sewer Crossing Details. In the Rock Trench Section, the thickness of pipe bedding shall be a minimum of **12 inches**. Pipe bedding and trench backfill materials shall comply with the requirements of Env-Wq 704.11 (a) and (b); a copy of these requirements is attached.
7. Sheet 7: **REPLACE** the Air Release Valve Manhole Detail with the attached SK-001. It is noted that the concrete manholes utilized for the Air Release Valve and the Force Main Blow-Off shall be tested in accordance with Specification Section 01666.
8. Specification Section 01150: **REPLACE** this specification section with the attached.
9. Specification Section 02316: Pipe bedding and trench backfill materials shall comply with the requirements of Env-Wq 704.11 (a) and (b).
10. Specification Section 02605: **DELETE** 1.02G.
11. Specification Section 02706:
  - **DELETE** the second sentence of 1.08B.
  - **DELETE** alternatives 2) and 3) of 1.08E.
  - **DELETE** the second and third sentences of 1.08F.
12. Air Release Valve: 2" Sewage Combination Air Valve, Model 445 as manufactured by APCO with a 7/32" orifice, including isolation valve and back flushing kit (including inlet and blow off valves, quick disconnect couplings and minimum 5-ft hose for flushing).

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Materials of construction shall be certified to the following ASTM specifications:

- Body & Cover: Ductile Iron ASTM A536 GR 65-45-12
- Float: Stainless Steel ASTM A240 T316
- Stem: Stainless Steel Series T300
- Needle and Seat: Buna-N Nitrile Rubber
- Plug: Stainless Steel ASTM A240 T304
- Leverage Frame: Stainless steel ASTM A240 T316
- Exterior Paint: 3 mils minimum (non-stainless steel parts) of Blue DeZURIK Enamel on Exterior and Standard (SP10) surface prep

13. The following additional information was discussed at the Pre-Bid Meeting:
  - a. Average daily wastewater flows are approximated at 20,000 gallons per day.
  - b. The pump nametag suggests the following operating condition:  
275 gallons per minute @ 75 feet of head
  - c. Confined space entry permitting and related requirements are the responsibility of the Contractor.
  - d. The existing curbing at the edge of the parking lot on sheet C5 is actually granite not concrete.
  - e. The Engineer's Opinion of Probable Cost is \$200,000 to \$250,000.
  
14. A **new Bid Form and Qualification Statement** are attached to this Addendum dated December 5, 2017, which replaces the original Bid Form and Qualification Statement. This form has been revised as follows:
  - **ADJUST** the quantity of Pay Item 3 from 2 to 1.
  - **DELETE** the Pay Item labeled as Two Way Cleanout.
  - **RENUMBER** the remaining Pay Items.

**Please ensure that you use the revised Bid Form that is attached to this Addendum when submitting your Bid. Only Bid Forms with the following label in the footer will be accepted:**

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**This document constitutes Addendum 1 for this project.**







NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

- (4) Capable of reducing all components in typical domestic sewage, including a reasonable number of foreign objects, including but not limited to wood, paper, plastic, glass, and rubber, to a size that will pass through pump passages and a 1.25-inch nominal diameter pipe;
  - (5) Positioned so solids are fed into pump from the bottom in an upward flow;
  - (6) Capable of processing foreign objects without jamming, stalling, or overloading;
  - (7) Accessible for maintenance and replacement;
  - (8) Installed within a manhole meeting the requirements of Env-Wq 704.12 through Env-Wq 704.17 or in a tank meeting the requirements of Env-Wq 704.10(d); and
  - (9) Equipped with:
    - a. Non-fouling sensing devices for high level alarms;
    - b. A visible alarm light; and
    - c. An audible alarm.
- (d) A grinder pump tank shall consist of:
- (1) A manhole meeting the requirements of Env-Wq 704.12 through Env-Wq 704.17;
  - (2) A reinforced concrete tank meeting HS-20 requirements;
  - (3) A high density polyethylene tank; or
  - (4) A fiberglass-reinforced polyester resin using a filament wound process, layup and spray technique.

Source. (See Revision Note at chapter heading for Env-Wq 700) #8590, eff 3-25-06; ss by #10693, eff 10-15-14

Env-Wq 704.11 Trench Construction.

(a) Pipe trench bedding material for excavation below grade shall be screened gravel or crushed stone meeting the ASTM C33/C33M stone size No. 67 standard in effect when the stone is used, available as noted in Appendix D.

(b) Subject to (c), below, the pipe sand blanket material shall be graded sand free from organic materials, graded such that 100 percent passes a ½-inch sieve and a maximum of 15 percent passes a #200 sieve.

(c) In lieu of the sand blanket specified in (b), above, a stone envelope 6 inches thick completely around the pipe using ¾-inch stone may be used.

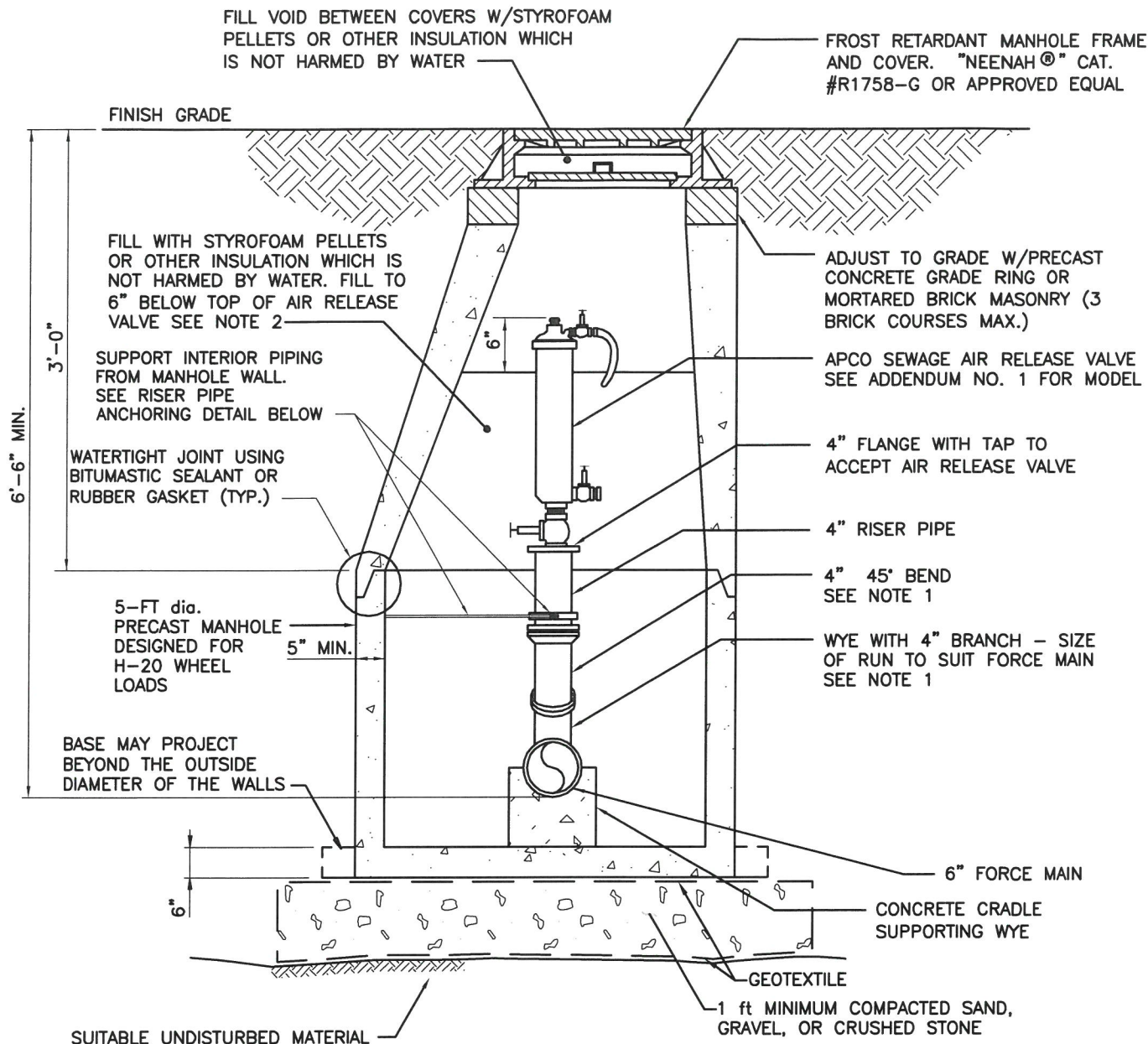
(d) Pipe bedding material shall extend from a horizontal plane through the pipe axis to 6 inches below the bottom of the outside surface of the pipe.

(e) Pipe sand blanket material shall cover the pipe a minimum of 12 inches above the crown of the outside surface.

(f) Compaction shall be in 12-inch layers for bedding and blanket materials.

(g) Backfill material shall be compacted in no more than 3-foot thick layers to the ground surface except for road construction where the final 3 feet shall be compacted in no more than 12-inch thick layers to the road base surface.

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Env-Wq 700

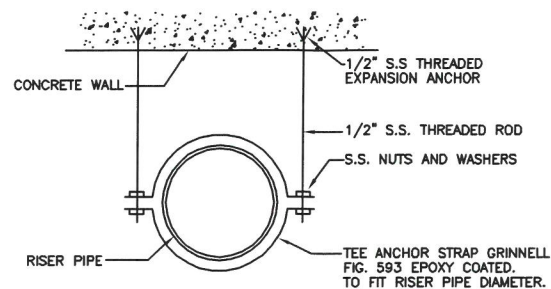


## AIR RELEASE VALVE MANHOLE DETAIL

NOT TO SCALE

### NOTES:

1. ALL INTERIOR PIPING SHALL BE FLANGED DUCTILE IRON. TRANSITION FROM PVC TO DI AT FLEXIBLE COUPLING LOCATED 2- FEET OUTSIDE OF STRUCTURE AND PROVIDE FLEXIBLE PIPE SLEEVE AT MANHOLE WALL PENETRATION (SIMILAR TO FORCEMAIN BLOW-OFF STRUCTURE).
2. CONTRACTOR SHALL PLACE STYROFOAM PELLETS IN HEAVY-DUTY CONTRACTOR, 42 GALLON, 3-MIL THICKNESS GARBAGE BAGS. BAGS SHALL ONLY BE PARTIALLY FILLED TO ALLOW FOR TIGHT PLACEMENT AROUND AIR RELEASE VALVE.
3. USE ANTI-SEIZE LUBRICANT ON ALL THREADED CONNECTIONS



### RISER PIPE ANCHORING DETAIL

NOT TO SCALE



ENGINEERING • PLANNING •  
MANAGEMENT • DEVELOPMENT

**GRAFTON COUNTY COMMISSIONERS  
FORCE MAIN REPLACEMENT  
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SKETCH TITLE

**AIR RELEASE VALVE  
MANHOLE DETAIL**

DRAWN BY EBS	DATE DEC. 5, 2017	SHEET REFERENCE
CHECKED BY CKG	PROJ. NO. 223998	<b>C7</b>
PROJ. ENG. CKG	DRAW. FILE NO.	
DESIGN FIRM DUBOIS & KING, INC.	<b>SK-001</b>	

SKETCH NUMBER



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**BID FORM**

Grafton County Commissioners, NH

Force Main Replacement

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**ARTICLE 1 – BID RECIPIENT**

1.01 This Bid is submitted to:

***Grafton County Commissioners, 3855 Dartmouth College Highway, Box 1, North Haverhill, NH 03774***

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

Item No.	Brief Description - Unit or Lump Sum Price (in both words and numerals)	Estimated Quantity	Total Price φ (in numerals)
1.	<b><u>Mobilization, per lump sum;</u></b> _____ Dollars and _____ Cents (\$_____)	1 L.S.	\$_____
2.	<b><u>Sanitary Sewer Force Main</u></b>		
2a.	<b><u>4" Sanitary Sewer Force Main, per linear foot;</u></b> _____ Dollars and _____ Cents (\$_____)	10 L.F.	\$_____
2b.	<b><u>6" Sanitary Sewer Force Main, per linear foot;</u></b> _____ Dollars and _____ Cents (\$_____)	1,050 L.F.	\$_____
3.	<b><u>Air Release Valve Manhole, per each;</u></b> _____ Dollars and _____ Cents (\$_____)	1 EA	\$_____
4.	<b><u>Force Main Blow Off, per each;</u></b> _____ Dollars and _____ Cents (\$_____)	1 EA	\$_____

Item No.	Brief Description - Unit or Lump Sum Price (in both words and numerals)	Estimated Quantity	Total Price φ (in numerals)
5.	<b><u>Connect New Sewer System to Existing Sewer System, per lump sum;</u></b>		
	_____ Dollars and	1	
	_____ Cents (\$ _____)	L.S.	\$ _____
6.	<b><u>Additional Trench Insulation, per square foot;</u></b>		
	_____ Dollars and	200*	
	_____ Cents (\$ _____)	S.F.	\$ _____
7.	<b><u>Rock Excavation and Disposal, per cubic yard;</u></b>		
	_____ Dollars and	50*	
	_____ Cents (\$ _____)	C.Y.	\$ _____
8.	<b><u>Miscellaneous Earth Excavation, per cubic yard;</u></b>		
	_____ Dollars and	200*	
	_____ Cents (\$ _____)	C.Y.	\$ _____
9.	<b><u>Bituminous Pavement</u></b>		
9a.	<b><u>Granular Subbase, Fine Graded, per cubic yard;</u></b>		
	_____ Dollars and	40	
	_____ Cents (\$ _____)	C.Y.	\$ _____
9b.	<b><u>Granular Subbase, Course Graded, per cubic yard;</u></b>		
	_____ Dollars and	80	
	_____ Cents (\$ _____)	C.Y.	\$ _____

Item No.	Brief Description - Unit or Lump Sum Price (in both words and numerals)	Estimated Quantity	Total Price φ (in numerals)
9c.	<b><u>Hot Bituminous Pavement, per ton;</u></b> _____ Dollars and _____ Cents (\$ _____)	30 Tons	\$ _____
10.	<b>Excavation in Abandoned Building Foundation Area</b>		
10a.	<b><u>Foundation Demolition and Disposal, per cubic yard;</u></b> _____ Dollars and _____ Cents (\$ _____)	10* C.Y.	\$ _____
10b.	<b><u>Rubble Excavation and Disposal, per cubic yard;</u></b> _____ Dollars and _____ Cents (\$ _____)	50* C.Y.	\$ _____
11.	<b>Granular and Stone Materials</b>		
11a.	<b><u>Sand, per cubic yard;</u></b> _____ Dollars and _____ Cents (\$ _____)	100* C.Y.	\$ _____
11b.	<b><u>Bank Run Gravel, per cubic yard;</u></b> _____ Dollars and _____ Cents (\$ _____)	100* C.Y.	\$ _____
11c.	<b><u>Crushed Gravel, per cubic yard;</u></b> _____ Dollars and _____ Cents (\$ _____)	100* C.Y.	\$ _____



Item No.	Brief Description - Unit or Lump Sum Price (in both words and numerals)	Estimated Quantity	Total Price φ (in numerals)
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11d. **Crushed Stone, per cubic yard;**

\_\_\_\_\_ Dollars and 100\*  
 \_\_\_\_\_ Cents (\$ \_\_\_\_\_) C.Y. \$ \_\_\_\_\_

11e. **Select Fill, per cubic yard;**

\_\_\_\_\_ Dollars and 50\*  
 \_\_\_\_\_ Cents (\$ \_\_\_\_\_) C.Y. \$ \_\_\_\_\_

12. **Removal of Unsuitable Material, per cubic yard;**

\_\_\_\_\_ Dollars and 100\*  
 \_\_\_\_\_ Cents (\$ \_\_\_\_\_) C.Y. \$ \_\_\_\_\_

Total of All Unit Price Bid Items	(BASE BID)	(\$ _____)Φ
_____	Dollars	
And _____	Cents	

**Notes:**

1. Bidder acknowledges that (a) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (b) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.
2. Unit Prices have been computed in accordance with Paragraph 13.03.B of the General Conditions.
3. In the event that there is a discrepancy between the lump sum or unit prices written in words and figures, the lower cost shall govern.
4. BIDDERS must bid on each item. All entries in the entire BID must be made clearly and in ink; prices bid must be written in both words and figures.
5. Bidders must insert extended item prices obtained from quantities and unit prices.
6. Bids shall include all applicable taxes and fees.
7. Owner reserves the right to award a contract based upon any combination of Base Bid and Bid Alternative as Owner chooses.

Φ – For informational comparison only.

\* - Indeterminate, Quantity assumed for comparison bids

**ARTICLE 6 – TIME OF COMPLETION**

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 7 – ATTACHMENTS TO THIS BID**

- 7.01 The following documents are submitted with and made a condition of this Bid:
  - A. Required Bid security; **(A Certified Check or Bid Bond for 5% of the Total Amount of Bid).**
  - B. **List of Proposed Subcontractors;**
  - C. **List of Proposed Suppliers;**
  - D. **List of Project References; (4 project references who can attest to Bidders Qualifications to Construct Work of this Nature).**
  - E. **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;**
  - F. **LEFT BLANK INTENTIONALLY;**
  - G. **Required "Bidder Qualification Statement with Supporting Data"; and at least 4 projects of similar nature.**

**NOTE: ALL ITEMS A THROUGH G MUST BE CLEARLY SUBMITTED WITH THIS BID OR BIDDER WILL BE DETERMINED AS NON-RESPONSIVE.**

**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: \_\_\_\_\_  
\_\_\_\_\_

Bidder's License No.: \_\_\_\_\_

*(where applicable)*



## **Bidder Qualification Statement with Supporting Data**

The Bidder is requested to state below what works of a similar character to that included in the proposed contract he has done to give references that 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. How many years have you engaged in the contracting business under your present firm name?
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 every 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 who you would expect to use for the following (unless this work is to be done by your organization):
- a. Civil Engineering
  - b. Utility Installation
  - c. Earth Placement and Compaction
  - d. Handling of Water
  - e. Cold-plane Asphalt Roadway and Repaving

16. With what banks do you do business?

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.

Respectively 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 \_\_\_\_\_, 2017

\_\_\_\_\_  
 Notary Public

My commission expires \_\_\_\_\_

(Seal – If BID is by Corporation)

ATTEST: \_\_\_\_\_

SECTION 01150 - MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 DESCRIPTION

- A. This Section covers the requirements for measurements and records for payment purposes, and describes the items under which payments will be made for all work performed under this Contract.
- B. Items not specified to be measured or paid for shall be included in an appropriate unit price item or in a Lump-sum item.

1.02 MEASUREMENT REQUIREMENTS

- A. Where payments will be made for removing rock and existing materials, notify Engineer so that he may inspect the materials to be removed, so that he may witness the measuring, and so that he may approve the record of measurements. All materials removed without conforming to the above procedures, and which Engineer cannot verify or substantiate, will not be paid for.
- B. Maintain complete, neat, clean, and legible field notes for all measured items. Notes shall contain spaces for Contractor's and Engineer's signatures plus additional space for comments. An original and a copy shall be made for all notes and one copy shall be turned over to Engineer daily. The Engineer's signature shall not be construed as an acceptance of the Work, or the measurements made, but shall mean that he was present when the measurements were made.

1.03 SUBMITTALS

- A. See Section 01300.
- B. Field notes of all measurements for payment purposes delivered to Engineer daily.
- C. Copies of all invoices required for payments out of cash allowance(s).
- D. Monthly Applications for Payment, on the forms included under contract forms.

1.04 SCHEDULING

- A. Notify Engineer, as far in advance as possible, of the making of measurements so that the Engineer may observe existing conditions, work being performed, and measurements being made.



- B. Allow for and afford Engineer ample time, space and equipment to observe measurements and to verify measurements and elevations.

## PART 2 PRODUCTS

### 2.01 GENERAL

- A. Provide all labor, materials, facilities, levels, measuring devices and all other equipment and items necessary to properly and accurately perform all measurements for payment purposes.

## PART 3 EXECUTION

### 3.01 GENERAL REQUIREMENTS & STIPULATIONS

- A. Perform all measuring required under this Section.
- B. No separate payments will be made for work under this Contract except for the pay items stipulated in this PART 3. All costs in connection with the Work shall be included in one or more of the pay items as appropriate.
- C. Each pay item shall be full compensation for all costs in connection with the item including but not limited to:
  - 1. The furnishing of all materials, labor, equipment, tools, and all incidentals.
  - 2. The installation of all materials, equipment, facilities, accessories and appurtenant items.
  - 3. The proper share of overhead and profit.
  - 4. Any excavation, trenching, backfilling, dewatering, shoring or testing required.
  - 5. The restoration of unpaved surfaces.
  - 6. Any temporary facilities or controls required including Uniform Traffic Officers and flaggers.
  - 7. All erosion and dust control measures.
  - 8. All related and incidental work and items necessary or required to complete the Work and to provide completely connected, operational and approved systems capable of performing as required.
- D. Each pay item which specifically involves excavation shall be considered to include full compensation for:
  - 1. Excavation in earth.
  - 2. Disposal of any surplus.
  - 3. Handling of water as specified.
  - 4. Installation and removal of sheeting and bracing.

- E. If solid rock excavation is required, additional compensation will be paid under the item "Rock Excavation and Disposal," with the exception of items which specifically include payment for rock excavation.

### 3.02 MEASUREMENT & PAYMENT ITEMS

- A. The names of the following items are abbreviated forms of the Bid Items as contained on the Price Schedule in the Bid Form. The names, as shown below or on the Bid Form, shall not be construed to represent a complete description of all of the Work included under such items and are provided only as a means of identification and for ease of conversation.

#### 1. MOBILIZATION

No measurement required.

Payment shall be lump sum for work items necessary for the movement of personnel, equipment and materials to the project site, establishment of all field office's and related facilities necessary to perform the work on the project and for all other costs and operations which must be performed prior to the beginning of the work. In addition, this pay item will include all costs associated with movement of personnel, equipment and materials from the project site by final acceptance of the project and all cleanup work as required herein.

Payment of the lump sum Bid price will be made in two equal installments. The first installment will occur at the time the first payment requisition is submitted after the Contractor has initiated full-time construction activity. The second installment will occur when the Contractor has completed all construction activity including final cleanup and punch list items.

#### 2. SANITARY SEWER FORCE MAIN

Measure actual length installed within each pipe diameter classification. Measurements shall commence and terminate at inside face of existing pump station, new air release valve manholes, force main blow-off manhole, and existing force main junction structure. Do not deduct for adapters, fittings and other pipe appurtenances.

Payment shall be per linear foot installed. Include costs for bypass pumping as required, adapters, breaking and disposal of pavement (exclusive of reinforced concrete pavement), sawing of concrete or bituminous concrete pavements as required, excavation and backfill, removal and disposal of existing surplus materials, pipe bedding or envelope within normal excavation limits, geotextile fabric, rigid insulation where indicated on the drawings, polyethylene encasement of buried ductile iron pipe, tracer wire system and appurtenances for non-metallic piping, flushing, all testing, unpaved surface restoration, and digging up, protecting, and replanting hedges, shrubs, trees, and plants.

Also include cost for preliminary trench excavations made for verifying location and elevation of existing utilities at all crossings indicated on the Drawings. Excavation beyond 15 linear feet at each location, if authorized in writing by the Engineer, will be paid for under Miscellaneous Earth Excavation.

3. AIR RELEASE VALVE MANHOLE

Count the actual number installed.

Payment shall be per each air release valve manhole installed, as detailed in the plans. Include costs for breaking and disposal of pavement (exclusive of reinforced concrete pavement), sawing of concrete or bituminous concrete pavements as required, removal and disposal of existing surplus materials, bedding material and geotextile, pipe cradle/support, manhole structure, damp proofing, brick and mortar, frames and covers, insulation, all interior piping, fittings, and work between interior faces of structure, insulation, and air release valve including appurtenances, installation, testing and start-up.

4. FORCE MAIN BLOW-OFF

Count the actual number installed.

Payment shall be per each force main blow-off installed, as detailed on the plans. Include costs for breaking and disposal of pavement (exclusive of reinforced concrete pavement), sawing of concrete or bituminous concrete pavements as required, removal and



disposal of existing surplus materials, bedding material and geotextile, pipe cradle/support, manhole structure, damp proofing, brick and mortar, frames and covers, all work between interior faces of structure including interior piping, plug valves, Camlock fitting, adapters and appurtenances, installation, testing and start-up.

5. CONNECT NEW SEWER SYSTEM TO EXISTING SEWER SYSTEM

No measurement required.

Payment shall be lump sum for all work associated with all points of interconnection between the new sewer system and the existing sewer system. Include costs for bypass pumping as required, maintaining function of existing wastewater collection system until new system is installed, tested, accepted, and placed into service (including hauling/disposal of wastewater if necessary), excavation and backfill, reducers, adaptors, flexible connections, penetrating existing structures, repairing openings in existing structures, all interior piping, fittings, and work between interior faces of pump station and force main junction structure piping, abandonment of existing utilities as required, and unpaved surface restoration.

Also include costs for preliminary exploratory excavation for the purpose of locating existing sewers. Excavation beyond 15 linear feet at each location, if authorized in writing by the Engineer, will be paid for under Miscellaneous Earth Excavation.

6. ADDITIONAL TRENCH INSULATION

Measure the area of additional trench insulation installed.

Payment shall be per square foot installed. Include costs of providing and installing rigid insulation. This pay item is for additional insulation that is not shown on the drawings and accounted for in other pay items. This is for additional rigid insulation ordered by the Engineer.

7. ROCK EXCAVATION AND DISPOSAL

Compute cubic yardage of solid rock excavation and disposal on the basis of the in-place volume of rock occurring within the stipulated payment limits shown on the Drawings and as specified below.

Depth - Measure depths from the rock surface, as determined from profiles and cross sections made by Contractor and approved by Engineer, to (1) pipe bedding subgrades, (2) bottom line structure subbases, (3) 6-inches below pavement subgrades, topsoil, riprap and other subgrades and (4) elevations specified, shown on the Drawings or directed by the Engineer.

Width - Measure 12-inches beyond and parallel to outside face of structure footings and per stipulated payment limits shown on the Drawings or as authorized by the Engineer in writing.

Length - Measure length as actual length removed.

Payment shall be per cubic yard of solid rock authorized to be removed. Include reinforced concrete pavement (not including concrete sidewalk and curb, and unreinforced concrete pavement) and boulders in excess of one cubic yard for payment under this item. Excavated material under this item which has not been disposed of shall not be included for payment. Also include costs associated with developing a Vibration Monitoring Plan and performing the Pre-Construction Condition Survey as required.

Include in the Bid for other items involving excavation, the cost of doing the entire excavation as earth. The price for this item being intended to cover the difference between the cost of rock excavation and the cost of earth excavation.

8. MISCELLANEOUS EARTH EXCAVATION

Measure the volume, in place, as specified below:

Depth - Measure vertically from the bottom of the excavation as approved or ordered by the Engineer.

Width - Measure horizontally from the limits of the excavation as approved or ordered by the Engineer.

Length - Measure the actual length of trench.

Payment shall be per cubic yard ordered, specified, or authorized by the Engineer to be excavated for test pits and test holes. Include backfilling with material from excavation. Select material for backfill, as ordered by the Engineer, will be paid for under Granular Materials.

9. PAVEMENT REPLACEMENT

9a. GRANULAR SUBBASE, FINE GRADED

Road granular subbase materials will not be measured in the field, but shall be the number of cubic yards of the specified material in the complete and accepted work, as determined by the plan dimension of the compacted material, including fine grading prior to pavement installation.

9b. GRANULAR SUBBASE, COURSE GRADED

Road granular subbase materials will not be measured in the field, but shall be the number of cubic yards of the specified material in the complete and accepted work, as determined by the plan dimension of the compacted material.

9c. HOT BITUMINOUS PAVEMENT

The accepted quantity of hot bituminous pavement will be paid per ton based on the payment limits identified in the "Pavement Replacement Detail" in the plans. All sawing of concrete pavements or bituminous concrete pavements as required is subsidiary to this item. The application of emulsified asphalt between the binder course and the wearing course, and use of any temporary pavement will not be measured separately but will be subsidiary to this item.

10. EXCAVATION IN ABANDONED BUILDING FOUNDATION AREA

10a. FOUNDATION DEMOLITION AND DISPOSAL

Measure the volume, in place, as specified below, of any foundation demolition required in the immediate vicinity of the two previously abandoned buildings at

the specific locations shown on the drawings, if encountered, which needs to be removed in order to route replacement sewer force main through the foundation.

Depth - Measure vertically from the top of foundation wall, if encountered, to the bottom of the foundation wall, or to the depth necessary to install the force main at the depth identified on the plans, unless otherwise approved or ordered by the Engineer.

Width - Shall not exceed three feet wide (regardless of the width actually demolished), unless otherwise approved or ordered by the Engineer.

Length - Measure the thickness of the foundation wall along the centerline of the force main, from the starting point to the ending point of foundation demolition as approved or ordered by the Engineer. The identification of the starting and ending points shall be as determined by the Engineer.

Payment shall be per cubic yard of foundation authorized to be removed, including cutting any reinforcing steel encountered. Excavated material under this item which has not been disposed of shall not be included for payment. Select material for backfill, as ordered by the Engineer, will be paid for under Granular Materials.

Include in the Bid for other items involving excavation, the cost of doing the entire excavation as earth. The price for this item being intended to cover the difference between the cost of rubble excavation and the cost of earth excavation.

#### 10b. RUBBLE EXCAVATION AND DISPOSAL

Measure the volume, in place, as specified below, of any rubble excavation in the immediate vicinity of the two previously abandoned buildings at the specific locations shown on the drawings, if encountered, which needs to be removed in order to route the replacement sewer force main through the foundation.

Depth - Measure vertically from the top of rubble, if encountered, to the bottom of rubble, or to the depth necessary to install the force main at the depth



identified on the plans, unless otherwise approved or ordered by the Engineer.

Width - Shall not exceed three feet wide (regardless of the width actually excavated), unless otherwise approved or ordered by the Engineer.

Length - Measure length along the centerline of the force main, from the starting point to the ending point of rubble excavation as approved or ordered by the Engineer. The identification of the starting and ending points shall be as determined by the Engineer.

Payment shall be per cubic yard of rubble authorized to be removed. Excavated material under this item which has not been disposed of shall not be included for payment. Select material for backfill, as ordered by the Engineer, will be paid for under Granular Materials.

Include in the Bid for other items involving excavation, the cost of doing the entire excavation as earth. The price for this item being intended to cover the difference between the cost of rubble excavation and the cost of earth excavation.

#### 11. GRANULAR AND STONE MATERIALS

Measure the volume, in place, as specified below.

Depth - Measure vertically from the bottom of the excavation as approved or ordered by the Engineer.

Width - Measure horizontally from the limits of the excavation as approved or ordered by the Engineer.

Length - Measure length as actual length.

Payment shall be per cubic yard ordered or authorized by the Engineer. No granular materials specifically paid for under other items are to be included for payment under this item.

12. REMOVAL OF UNSUITABLE MATERIAL

Measure the volume, in place, as specified below:

Depth - Measure vertically from the bottom of the excavation as approved or ordered by the Engineer.

Width - Measure horizontally from the limits of the excavation as approved or ordered by the Engineer.

Length - Measure the actual length of trench.

Payment shall be per cubic yard ordered, specified, or authorized by the Engineer to be excavated, removed from the project site, and properly disposed of as unsuitable material. Select material for backfill, as ordered by the Engineer, will be paid for under Granular Materials.

END OF SECTION