UNIONCOUNTY
north carolina

# Invitation for Bid No. 2024-049

# 762 Pressure Zone Water Transmission Main and Finished Water Pump Station

## ADDENDUM No. 1

## ISSUE DATE: January 23, 2024

Responding Offerors on this project are hereby notified that this Addendum shall be made a part of the above named IFB document.

The following items add to, modify, and/or clarify the IFB documents and shall have the full force and effect of the original Documents. This Addendum shall be acknowledged by the Offeror in the IFB document.

ADDENDUM NO. 1

TO PROSPECTIVE BIDDERS UNDER
762 Pressure Zone Water Transmission Main and Finished Water Pump Station
Invitation for Bid No. 2024-049
NCDEQ#: SRP-D-ARP-0161
Union County, NC

RECEIPT OF THIS ADDENDUM MUST BE ACKNOWLEDGED IN THE SPACE PROVIDED IN THE BID FORM IN SECTION C-410

| Addendum Item | Page or Drawing | Location and Description of Change |
|---|---|---|
| | | PART A - TECHNICAL SPECIFICATIONS |
| 1. | Div 00 | Modify the following:<br><br>Add Appendix A 31 CFR Part 21 – Certification Regarding Lobbying, attached hereto. |
| 2. | C-410 | Modify the following:<br><br>Delete existing Section C-410. Add new Section C-410, attached hereto. |
| 3. | 01 11 00 | Modify the following:<br><br>Delete existing Part 1.08.B and 1.08.C. Add new Part 1.08.B and 1.08.C., as follows:<br><br>*B. The Bidder shall have successfully completed a minimum of one (1) project demonstrating experience with water pump stations and pipeline projects having a total construction value of greater than $3 million and with the installation and operation of vertical turbine pumps. These projects shall have been performed within the past twenty (20) years from the date of the Invitation to Bid.*<br><br>*C. The Bidder's proposed project manager shall have successfully completed a minimum of two (2) projects demonstrating project management experience with water pump stations or pipeline projects having a total construction value (for each project) of greater than $15 million. These projects shall have been performed within the past ten (10) years from the date of the Invitation to Bid.* |
| 4. | 01 12 50 | Modify the following:<br><br>Delete existing Part 1.11.B.1. Add new Part 1.11.B.1, as follows:<br><br>*Installation of new pipe of the size indicated by open-cut trench method, complete as specified, including but not limited to utility potholing, existing improvement protection, excavation (including rock and boulder removal), joint and pipe restraints, bedding foundation support materials (except in unsuitable soil conditions – see trench stabilization), thrust blocks, anti-seep collars, backfill (except in unsuitable soil conditions – see trench stabilization), compaction (except in unsuitable soil conditions – see trench stabilization), inspection trenches as required for compaction testing, dewatering, warning/tracer tapes and wires, filter fabrics, approved support of* |

| | | |
|---|---|---|
| | | *existing utilities, removal and disposal of trench spoils, old pipes and old structures required to be removed, surface restoration in the trench repair area prior to final paving, cleanup, testing of new pipe, and all labor, equipment, materials and incidentals required for the work. No separate payment will be made for modifying the original horizontal or vertical alignment to avoid existing utilities, mains or services not shown, except where authorized for additional pipe and/or fittings.* |
| 5. | 01 12 50 | Modify the following:<br><br>Delete existing Part 1.13.B.1. Add new Part 1.13.B.1, as follows:<br><br>*The bid item for boring and jacking steel casing includes all work necessary for the installation of a steel casing at the size indicated. The work shall include site preparation, pit excavation, shoring, sheeting and bracing, installing the casing as specified in Section 33 05 07.24 and on the Drawings, restoration, clean-up and testing. Payment for bore and jack steel casing shall be made at the quantity authorized, in linear feet, for the specified casing diameter at the unit price indicated on the Bid. No payment will be issued for unsuccessful bore or the work associated with the abandonment of an unsuccessful bore.* |
| 6. | 01 12 50 | Modify the following:<br><br>Add new Part 1.24.C, as follows:<br><br>*C. RAILROAD CROSSING EXPENSES*<br>*1. This allowance is for the procurement of railroad personnel required for flagging and inspection operations during the bore beneath the CSX railroad. This allowance also includes any monitoring requirements and Railroad Protective Liability Insurance. This allowance does not cover the bore or any additional work associated with performing the bore specifically for the railraod, as it shall be paid for under Bore and Jack.* |
| 7. | 01 12 50 | Modify the following:<br><br>Add new Part 1.24.D, as follows:<br><br>*D. ADDITIONAL LENGTH FOR HORIZONTAL DIRECTIONAL DRILL*<br>*1. This allowance is for potential* additional *length of horizontally directionally drilled HDPE water transmission main if Contractor's design (to be reviewed and approved by Engineer) indicates additional length would be required. due to geotechnical conditions. Contractor shall take all efforts to keep HDD length to a minimum, and any additional HDD length above that shown on the drawings will be subject to Engineers approval. This unit price shall be the same as the unit price for work under Part 1.15.* |
| 8. | 01 22 13.01 | Modify the following:<br><br>Delete existing Part 1.03.A.5.b. Add new Part 1.03.A.5.b., as follows: |

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| | | *Upon either detecting vibration levels reaching 2.0 inches per second or damage to the structure, immediately stop the source of vibrations, backfill any open excavations, notify the Engineer and provide a corrective action plan for acceptance by the Engineer.* |
| 9. | 31 23 00 | Modify the following:<br><br>Delete existing Part 1.02.B. Add new Part 1.02.B., as follows:<br><br>*The Engineer will take samples and perform moisture content, gradation, compaction, and density tests during placement of backfill materials to check compliance with these specifications. The Contractor shall remove surface material at locations designated by the Engineer and provide such assistance as necessary for sampling and testing. The Engineer may direct the Contractor to construct inspection trenches in compacted or consolidated backfill to determine that the Contractor has complied with these specifications. Payment for inspection trenches shall be as specified in the General Conditions of the Contract Documents. If a test fails twice at the same location, additional tests shall be paid for by the Contractor.* |
| 10. | 31 23 16 | Modify the following:<br><br>Delete existing Part 1.07.A. Add new Part 1.07.A., as follows:<br><br>*Where blasting is approved by Engineer, pre-blasting and post-blasting surveys shall be conducted on and reported for all major structures within the influence range of any blasting operations or within a minimum of 500 feet, whichever is greater, from any blast site. The surveys shall consist of a visual inspection and recording by notes and photographs of structures, to include specifically cracks or other structural damage previously sustained. Pre-blast surveys shall be conducted by a qualified technician approved by the Owner. The preconstruction survey will not damage equipment or facilities. A copy of all notes and photographs shall be submitted to the Contractor prior to the beginning of blasting operations and prior to final payment. The records so obtained shall be retained in the Contractor's file for at least 1 year after completion of the Contract. In the event of any damage claim, a report shall be prepared by the Contractor on the particular structure involved to include those notes and photographs and submitted to the Engineer.* |
| 11. | 33 05 23.16 | Modify the following:<br><br>Add new Section 33 05 23.16 in its entirety, attached hereto. |
| 12. | 40 05 67.17<br>40 05 65.32 | Delete existing Section 40 05 67.17 in its entirety. Add new Section 40 05 65.32, attached hereto. All references within the Technical Specifications to Section 40 05 67.17 shall be replaced with Section 40 05 65.32. |

| PART B – CONSTRUCTION DRAWINGS | | |
|---|---|---|
| 13. | C-00-801 | Modify the following:<br><br>Delete Note 1 on Detail A. Add new Note 1 to Detail A, as follows:<br><br>*In the areas where groundwater is encountered in the pipe zone, and Type C material would normally be suitable for bedding and initial backfill, the Owner or Engineer may direct the Contractor, as additional trench stabilization, to use Compacted Stone (Type D1) backfill up to the static groundwater table level plus additional 1-foot.* |
| 14. | C-00-801 | Modify the following:<br><br>Delete existing Detail F. Add new Gravel Surfacing Detail (F1), attached hereto. |

| PART C – QUESTIONS AND ANSWERS | |
|---|---|
| 1. | On the bid for Project references are to be listed what type of references do they need to be? Any project references? Similar size and scope project references?<br><br>**See Section 01 11 00, Part 1.08.B & C.** |
| 2. | For the temp. stream crossing would a culvert be allowed instead of what is shown in the detail on page C-00-703?<br><br>**Stream crossings must be performed according to detail on Sheet C-00-703.** |
| 3. | What is the engineer's estimate?<br><br>**Engineer's estimate of construction cost is approximately $28-32 Million.** |
| 4. | Vent Tech #03WTW25SCS-4 as an acceptable C-ARV valve?<br><br>**Vent Tech #03WTW25SCS-4 is viewed it as an acceptable C-ARV.** |
| 5. | For the well replacements, is there a specification that you can share for the flow rate required and the depth for the new well to be drilled?<br><br>**There is no information on residence's existing wells at this time. This item is paid for via an allowance and will require the Contractor to investigate the performance of the property owner's existing well in order for a new comparable well to be drilled for each property owner.** |
| 6. | How will it be handled if the costs associated with the wells and septic system relocation exceeds the allowance in the bid form?<br><br>**See Section 01 12 50, Part 1.24, which reads: Should the cost of the allowance be great or less than the amount shown, the Contract will be adjusted as needed in accordance with the provisions of the Contract Documents.** |

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| 7. | Does the 790-day contract duration start with the notice to proceed? Would you please consider a material procurement period before issuing the NTP? We feel as if 790 days may not be enough time after you account for the material lead time. If no procurement period is attainable, would you consider adding days to the contract duration?<br><br>**The 790 contract duration does start with the issuance of the Notice to Proceed. No additional days will be added to the contract at this time.** |
| 8. | Are there any work hour restrictions? Are there work hour restrictions if the contractor has to flag traffic?<br><br>**Regular working hours are defined as Monday through Friday, excluding Owner's legal holidays between the hours of 7am and 6pm (See Section C-800). There may be work hour restrictions on varying activities and under varying permits all outlined in the Technical Specifications.** |
| 9. | Confirming that the fittings are to be MJ wedge action restraint, not factory restrained?<br><br>**Restrained joints for the transmission main shall be in accordance with Part 2.07.B.3 of Section 33 05 31.** |
| 10. | Is thrust blocking required at bends, even when using restrained joints?<br><br>**Thrust blocks are not required at bends when using restrained joint fittings.** |
| 11. | Is there any special water valve testing required? Witness testing?<br><br>**Testing of water valves shall be in accordance with Part 3.04 of Section 40 05 60.** |
| 12. | Spec Section 01 22 13.01 states that settlement monitoring survey must be done daily during compaction operations. Does this apply to daily backfill and compaction of the pipe trench?<br><br>**No, this does not apply to daily backfill and compaction of the pipe trench.** |
| 13. | It is clearly stated that all ductile iron pipe is to be domestically produced, due to the project's funding source. Please confirm if this also includes ductile iron fittings.<br><br>**Ductile iron pipe shall be domestically manufactured as stated in Specification Section 33 05 31, however ductile iron fittings do not have this same requirement, and may be non-domestically manufactured.** |
| 13. | Will we be able to install a mixture of gate valves and butterfly valves as needed to keep the pipeline moving without moving back to install?<br><br>**See Section C-200, Article 11 and C-700, General Conditions, Part 6.05.** |
| 14. | Will we be allowed to make minor adjustments to the alignment to avoid existing utilities and other objects if needed? |

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| | **See Section 40 05 01, Part 3.08.E.** |
| 15. | Will a 24”x12” tee be allowed in lieu of the 12” tangential outlet shown on the detail for the blowoff?<br>**Tangential outlet is required.** |
| 16. | Can you provide a detail for butterfly valve installation, or do they just get the valve box and concrete protector ring as shown on the standard detail?<br>**See Specification Section 40 05 60 and Detail H on Drawing C-00-802.** |
| 17. | Section 01 32 33, 1.02B outlines some very cumbersome and time-consuming photographic measures to monitor construction. Please confirm whether this will actually be required to the extent described in this section.<br>**Section 01 32 33, Part 3.03 indicates that the Owner and Engineer are not responsible if claims are made, and preconstruction photos were not taken by the Contractor.** |
| 18. | How soon do you expect to give the notice to proceed for the project?<br>**See Specification Section C-200, Article 19 and Section C-410, Article 2.** |
| 19. | Where is the break line for 24” DIP paid under bid item 1 and pipe/material to be included in bid item 38 - High Service Pump Station? Is it station 0+00?<br>**See Section 33 05 31, Part 1.01.A.1.** |
| 20. | Spec section 31 23 00 – Excavation and Fill, says to use fill class A1 or D1 for bedding and initial backfill. Type D1 is specified as #57 stone. But A1 does not give a typical gradation. Can you specify what type of stone A1 is?<br>**See Specification Section 31 23 00, Part 2.01.A. for Type A description that meets gradation.** |
| 21. | Is the annular space between the carrier and casing pipe to be filled with flowable fill?<br>**No. See Detail J on Drawing Number C-00-802.** |

This addendum shall be incorporated into and made a part of the Contract Documents

**END OF SECTION**

## APPENDIX A, 31 C.F.R. PART 21 – CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of the undersigned's knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, or the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

4. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31 of the U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The Bidder, _____, certifies and affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Bidder understands and agrees that the provisions of 31 U.S.C. Chapter 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

_____
Signature of Bidder's Authorized Official

_____
Name and Title of Bidder's Authorized Official

_____
Date

## TABLE OF CONTENTS

**Page**

**ARTICLE 1 – BID RECIPIENT**

1.01 This Bid is submitted to:

**UNION COUNTY**
**Attention: Vicky Watts**
**500 N. Main Street**
**Monroe, NC 28112**

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:

| Addendum No. | Addendum, Date |
|---|---|
| 1 | |
| | |
| | |
| | |

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 e 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. | Description | Unit | Estimated Quantity | Bid Unit Price | Bid Price |
|---|---|---|---|---|---|
| 1 | 24” Ductile Iron Pipe | LF | 38,425 | | |
| 2 | 24” HDPE Pipe, Directionally Drilled | LF | 975 | | |
| 3 | 8” Ductile Iron Pipe | LF | 225 | | |
| 4 | 36” Steel Casing, Bore & Jack | LF | 1291 | | |
| 5 | 36” Steel Casing, Open Cut | LF | 220 | | |
| 6 | 18” Steel Casing, Bore & Jack | LF | 40 | | |
| 7 | 8” Gate Valve & Box | EA | 11 | | |
| 8 | 12” Gate Valve & Box | EA | 7 | | |
| 9 | 16” Butterfly Valve & Box | EA | 2 | | |
| 10 | 24” Butterfly Valve & Box | EA | 16 | | |
| 11 | 8”x8” Tapping Sleeve & Valve | EA | 1 | | |
| 12 | 3” Air Release Valve | EA | 31 | | |
| 13 | 6” MJDI 90° Bend | EA | 1 | | |
| 14 | 8” MJDI 45° Bend | EA | 1 | | |
| 15 | 8” MJDI 90° Bend | EA | 1 | | |
| 16 | 16” MJDI Sleeve | EA | 2 | | |
| 17 | 24” MJDI 11¼° Bend | EA | 8 | | |
| 18 | 24” MJDI 22½° Bend | EA | 18 | | |
| 19 | 24” MJDI 45° Bend | EA | 25 | | |
| 20 | 8”x8” MJDI Tee | EA | 2 | | |
| 21 | 16”x16” MJDI Tee | EA | 1 | | |
| 22 | 24”x24” MJDI Tee | EA | 3 | | |
| 23 | 12”x8” MJDI Reducer | EA | 3 | | |
| 24 | 24”x12” MJDI Reducer | EA | 3 | | |
| 25 | 24”x16” MJDI Reducer | EA | 1 | | |
| 26 | 8” MJDI Cap | EA | 12 | | |
| 27 | Blowoff Assembly | EA | 7 | | |
| 28 | Fire Hydrant Relocation | EA | 1 | | |
| 29 | Remove & Replace Asphalt Pavement | LF | 100 | | |
| 30 | Remove & Replace Concrete Pavement | LF | 160 | | |
| 31 | Remove & Replace Gravel Driveway | LF | 1,110 | | |
| 32 | Clearing & Grubbing | AC | 11 | | |
| 33 | Gravel Access Driveway | EA | 33 | | |
| 34 | Trench Stabilization | TN | 1,000 | | |

| Item No. | Description | Unit | Estimated Quantity | Bid Unit Price | Bid Price |
|---|---|---|---|---|---|
| 35 | Erosion, Sedimentation, & Dust Control | LS | 1 | | |
| 36 | Mobilization & Demobilization (5% maximum) | LS | 1 | | |
| 37 | Well (4 total) and Septic Tank (1 total) Relocation and Reconnection Allowance | LS | 1 | $200,000 | $200,000 |
| 38 | Fence and Gate Replacement and/or Modifications Allowance | LS | 1 | $175,000 | $175,000 |
| 39 | Railroad Crossing Expenses Allowance | LS | 1 | $100,000 | $100,000 |
| 40 | Allowance for Additional Length for Horizontal Direction Drill (unit price must match Item No. 2) | LF | 350 | | |
| 41 | High Service Pump Station | LS | 1 | | |
| 42 | Construction Contingency Allowance | LS | 1 | $1,500,000 | $1,500,000 |
| **Total of All Unit Price Bid Items** | | | | | $ |

Bidder acknowledges that (1) 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 (2) 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.

**Total of Lump Sum and Unit Price Bids = Total Bid Price** $ _____

**ARTICLE 6 – TIME OF COMPLETION**

6.01 Bidder agrees that the Work will be substantially complete within 730 calendar days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 790 calendar days after the date when the Contract Times commence to run.

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;

B. List of Proposed Subcontractors;

C. List of Proposed Suppliers;

D. List of Project References;

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. Contractor's License No.: _____ **[or]** Evidence of Bidder's ability to obtain a State Contractor's License and a covenant by Bidder to obtain said license within the time for acceptance of Bids;

G. Required Bidder Qualification Statement with supporting data;

H. Non-Collusion Affadavit

I. And *[List other documents and edit above as pertinent]*

J. Minority Participation Forms

1. Identification of HUB Certified/Minority Business Participation Form

2. Affidavit A or Affidavit B, as applicable

K. Appendix A, 31 C.F.R. Part 21 - Certification Regarding Lobbying

**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)*

*NOTE TO USER: Use in those states or other jurisdictions where applicable or required.*

SECTION 33 05 23.16

BORED AND JACKED PIPE INSTALLATION

## PART 1 GENERAL

### 1.01 SCOPE

A. The work covered by this Section consists of the complete installation of casing and carrier pipe across State/County highway and railroad rights-of-way, and/or streams/creeks as detailed on the Drawings and described in these Specifications. Casing pipe shall be of steel construction and shall be bored/tunneled and jacked into its location by conventional bore/tunnel and jack methods. Casing pipe shall be welded at joints and be straight across alignment indicated on the Drawings.

B. Furnish all labor, material, equipment, and incidental items necessary to excavate the jacking and receiving pits and complete the work as shown on the Drawings and as specified herein.

C. Perform any general excavation required prior to placing the casing pipe. Material resulting from any excavation shall be disposed of in a suitable manner.

D. Provide all necessary access including access ladders, ramps, etc. to jacking and receiving pits prior to the commencement of the jacking and boring/tunneling operations.

E. The highway/railroad crossing(s) shall comply with standards set forth in the "Policies and Procedures for Accommodating Utilities on Highway Rights of Way" from the N.C. Department of Transportation, Division of Highways (Latest Revision), “Standard Specifications for Pipelines Conveying Flammable and Non-Flammable Substances” from the American Railway Engineering Association, and the "Standard Specifications for Highway Bridges" from AASHTO (Latest Revision).

F. The materials covered by these Specifications are intended to be standard materials of proven reliability and as manufactured by reputable manufacturers having experience in the production of such materials. The materials furnished shall be designed, constructed, and installed in accordance with the best practices and methods.

G. Adhere to all the special provisions stipulated in the State/County roadway and railroad encroachment agreements

### 1.02 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00 Submittals:
   1. Casing pipe shop drawings and material data from casing pipe manufacturer.
   2. Jacking and receiving pit excavation details including footprint drawing of jacking and receiving pit, design and calculations for any sheeting or shoring utilized signed and sealed by a professional engineer registered in the State of North Carolina.
   3. Construction sequence plan including drilling, casing, and grouting placement procedures.

4. Casing Spacer manufacturer's data and shop drawings.

B. Submit the proposed method of installation, detailed layout information, methods to be implemented if unusual or adverse soil conditions (i.e.: running sand, water, etc.) are encountered during installation. Design certifications for installation method shall be sealed and signed by a professional engineer registered in the State of North Carolina to the Engineer for submittal to the N.C. Department of Transportation, Special Design Services prior to starting work. Where soils indicate a mixed face condition which indicates it would be difficult to maintain alignment, approval from State/County DOT and/or respective railroad companies will be required not to use a full face tunnel shield.

## 1.03 QUALITY ASSURANCE

A. All steel welding shall be performed by welders certified in accordance with AWS D1.1. All aluminum welding shall be performed by welders certified in accordance with AWS D1.2. All stainless steel welding shall be performed by welders certified in accordance with AWS D1.6. Certifications of field welders shall be submitted prior to performing any field welds.

## 1.04 ENVIRONMENTAL CONDITIONS

A. Piping systems shall be subjected to environmental conditions in accordance with Section 01 11 80 – Environmental Conditions.

# PART 2 PRODUCTS

## 2.01 MATERIALS

A. Steel Casing Pipe
   1. Steel casing pipe interior diameter shall be as indicated on the Drawings or shall, in all cases, be great enough to afford easy removal of the carrier pipe without disturbing the casing pipe or roadbed. The casing pipe shall be smooth wall or spiral welded steel pipe. Casing pipe shall be leak-proof construction and be capable of withstanding highway or railroad loadings where applicable.
   2. Casing pipe shall be steel pipe in sizes 12-inches and larger manufactured from steel having a minimum yield stress strength of 35,000 psi. The minimum pipe size and minimum wall thickness shall be as indicated on the Drawings.
   3. All joints shall be butt welded with a full depth, 45° double bevel groove weld with a ¼" ± gap at the weld root and performed by a certified welder. A weld backing plate may be utilized at the Contractor's discretion.
   4. All joints in casings in railroad rights-of-way, and the first joint for NCDOT right-of-way crossings, shall be radiographically tested in accordance with AWS by an independent testing agency at the Contractor's expense. All test reports shall be submitted to the Engineer. Inadequate welds shall be corrected or redone and retested and inspected at no additional cost to the Owner. Upon approval of initial radiographically inspected roadway joint, the same welder(s) shall be utilized for all remaining joints of the casing. All remaining roadway joints, and casings at non-roadway locations, shall be visually inspected for general quality and for verification that full depth weld penetration was achieved at the weld root.

5. The casing pipe shall conform to ASTM A 139, Grade C and AWWA C200-75. The carrier pipe shall be ductile iron restrained joint pipe as specified in Section 40 05 19, unless otherwise noted herein or as shown on the Drawings.
6. Upon completion of carrier pipe installation, seal each end with a masonry wall (refer to Paragraph 2.04 for details).

B. Casing Spacers
1. Install and prevent the carrier pipe from floating by the use of casing spacers. Casing spacers shall be stainless steel, carbon steel, high-density polyethylene or combination thereof. The model of casing spacers shall correspond to the diameter of the carrier pipe and encasement pipe. Casing spacers shall fasten tightly onto the carrier pipe so that when the carrier pipe is being installed, the spacers will not move along the carrier pipe. Casing spacer placement along the carrier pipe shall be in accordance with the manufacturer's recommendations, minimum three spacers per pipe joint. Maximum distance between casing spacer and internal wall of casing pipe shall be 2-inches. The proposed procedure to install the carrier pipe is to "bell-up" the pipe outside the casing and push the carrier pipe through the casing. Casing spacers shall be manufactured by Advance Products and Systems, Cascade Waterworks Mfg. Co., Pipeline Seal and Insulator, Public Works Marketing, or approved equal.

C. Jacking/Receiving Pits
1. Jacking/Receiving pits shall be excavated and backfilled in accordance with federal and state OSHA requirements for a safe excavation. Jacking/Receiving pits shall be located so as to not undermine pavements or railroad tracks and ballast.

D. End Seals
1. End seals constructed of 1/8" thick neoprene rubber with ½" thick T304 stainless steel bandings and 100% non-magnetic worm gear mechanisms. Casing end seals shall be APC Model AC or Approved Equal.

## PART 3 EXECUTION

### 3.01 INSTALLATION

A. Provide a bored and jacked casing pipe installation in accordance with these specifications, the Drawings and the approved State/County DOT and/or railroad encroachment agreements.

B. The recommended methods and details shown on the Drawings and specified herein, are intended to indicate the minimum acceptable standard of quality required for the casing and bore/tunnel installation. Other methods of installation, based on acceptable industry standards and techniques, may be acceptable for the installation. Under no conditions shall jetting or wet boring of the casing and bore/tunnel be allowed.

C. All excavations and pits shall be well sheeted and braced as necessary for safe and adequate access for workmen, inspections, and materials and shall be of a size suitable to equipment and material handling requirements.

D. Plans, specifications and design computations for pit shoring shall be sealed and signed by a Professional Engineer registered in the State of North Carolina.

E. All pits required for the installation of the casing, bore/tunnel, and carrier pipe within State/County DOT and/or railroad right-of-way shall be completely isolated from the roadway/railroad traffic with precast concrete barriers installed in accordance with the State/County DOT and respective railroad companies details and requirements.

## 3.02 BORING AND JACKING

A. Boring and jacking installations shall be jacked through dry bores slightly larger than the pipe bored progressively ahead of the leading edge of the advancing pipe as spoil is mucked by the auger back through the pipe. As the dry boring operation progresses, each new section of the casing pipe shall be 360° butt welded, using a full depth, 45° double bevel groove weld with a ¼" ± gap at the weld root, to the next section previously jacked into place.

B. The boring equipment to be used for installing the jacked casing shall be of such size and capacity to allow the boring to proceed in a safe and expeditious manner. The installation of the casing and boring of the hole shall be done as rapidly as possible and shall be done simultaneously to avoid voids, cave ins or settlement and for safety of traffic above.

C. A special lubricant may be used to facilitate movement or lessen the danger of jacked pipe from freezing.

D. If voids are encountered or occur outside the casing pipe, grout holes shall be installed in the top section of the casing pipe at 4 foot (maximum) centers and the voids filled with 1:3 Portland Cement to sand grout with sufficient water added to produce a flowable mixture and at sufficient pressure to prevent settlement. The Contractor shall be prepared to bore and jack through weathered or partially weathered rock, if encountered, with a specialized bit or hand-mine. Costs associated with this provision shall be deemed as included in the unit price bid and no additional payment will be made.

E. In the event an obstruction is encountered during the boring and jacking operation, and the casing pipe is at least 30 inches in diameter, the auger shall be withdrawn and the obstruction removed. If a bolder is encountered and is removed by blasting or other approved method, the void shall be filled with grout. For NCDOT roadway crossings, no blasting shall be permitted until a detailed blasting plan is submitted to and approved by the NCDOT, and the Engineer. No blasting shall be permitted within any railroad right-of-way. Costs associated with this provision shall be deemed as included in the unit price bid and no additional payment will be made.

## 3.03 CASING/BORING/TUNNEL ALIGNMENT

A. Check the vertical and horizontal alignment of the casing/bore/tunnel by survey instrument after the initial 20 feet of advance, then every 80 feet thereafter.

## 3.04 CARRIER PIPE INSTALLATION

A. For all casing installations the carrier pipe shall be installed with adequately designed and spaced pipe alignment guides "spiders", secured, and bulkheaded. The proposed procedure to install the carrier pipe is to "bell up" the pipe outside the casing and push the carrier pipe through the casing.

B. Following completion of the casing installation, the carrier pipe shall be installed, secured, bulkheaded. The proposed procedure to install "restrained joint" type carrier pipe is to "bell up" the pipe outside the tunnel and push the carrier pipe through the tunnel. Blocking to prevent flotation shall be attached to the casing/tunnel prior to the installation of the restrained joint carrier pipe. Stationing of the blocking shall be such that when the pipe installation is complete, the blocks are located at the pipe bells. Blocking shall be set so that as the pipe slides through the tunnel, the pipe bells will have a clearance of +1/2". In lieu of the wood cradle, adequately designed and spaced pipe alignment guides may be used to slide the carrier pipe along the concrete pipe cradle.

C. The ends of the casing shall be sealed by installing casing end seals.

## 3.05 SURFACE SETTLEMENT MONITORING

A. Prior to the beginning of any casing/bore/tunnel excavation, a surface settlement monitoring grid system shall be installed on each roadway and railroad that is bored/tunneled under. This grid shall consist of PK nails installed along the casing/bore/tunnel centerline at 10-feet intervals. Additional lines of PK nails shall be installed 10-feet each side of the centerline. These points shall be initially read and the elevations recorded prior to the start of the casing/bore/tunnel construction. If no visible settlement is occurring during casing/bore/tunnel excavations, these points shall be read only at such times as the surveyor is present to transfer the line and grade into the casing/bore/tunnel. These points shall be checked and elevations recorded on a semi-weekly (i.e., twice per week) basis, until the casing/bore/tunnel installation is completed.

## 3.06 SPECIAL CONSTRUCTION REQUIREMENTS FOR EXISTING EASEMENTS AND RIGHTS-OF-WAY

A. Refer to encroachment requirements when working within State/County DOT and railroad existing easements and/or rights-of-way.

**END OF SECTION**

SECTION 40 05 65.32

DUCTILE IRON, ELASTOMERIC FLAP CHECK VALVES WITH SPRING ASSISTED CLOSURE

## PART 1 GENERAL

### 1.01 SUMMARY

A. Section includes: Requirements for Ductile Iron, Elastomeric Flap Check Valves with Spring Assisted Closure are specified in this Section. Comply with the provisions of Section 40 05 60 - Valves in addition to the requirements specified herein.

### 1.02 SUBMITTALS

A. Submittals as specified in Section 40 05 60 - Valves.

B. In addition to submittals specified in 40 05 60 - Valves, provide the following Action Submittal items:

1. Certified copy of test results demonstrating check valve closure characteristics conforming to the limits specified in this Section.

## PART 2 PRODUCTS

### 2.01 CANDIDATE MANUFACTURERS

| | Manufacturer | Model/Series |
|---|---|---|
| A. | APCO | CRF 100SA or CRF 100 SR w/Disc Position Indicator & Hold Open Device |
| B. | Flomatic | Model 745 ASC |
| C. | Valmatic | Surgebuster Series 7200 w/Mechanical Indicator & Backflow Actuator |
| D. | Approved Equal | |

### 2.02 VALVE TYPE

A. Rubber flap check valve with spring assisted closure and flexible flap connection between the disc and valve body. Flexure of the flap connection between the disc and valve body permits disc travel through an arc of motion not exceeding 40 degrees. Hinged or pinned discs are specifically prohibited.

B. Spring assist/return and short disc stroke provide rapid valve closure to prevent valve slam. Spring assist/return capable of valve closure before reverse flow velocity through the piping system exceeds 0.50 ft/s with a reverse flow acceleration rate from pump stoppage not less than 16 ft/s$^2$.

C. Designed for low head loss and clog free operation. Valve port area not less than cross section area of connecting pipe.

D. Drop tight disc seating. Valve seat plane at 45 degree angle from the axis of the connecting pipe.

E. Equipped with Backflow Actuator and a Mechanical Disc Position Indicator. Backflow Actuator manually lifts the disc off the valve seats to permit backflow through the valve.

## 2.03 VALVE CONFIGURATION

| Component | Configuration Requirement |
|---|---|
| A. Design, Manufacture, and Testing | AWWA C508 |
| B. Valve End/Connections | Flanged, ASME B16.1 Class 125 Flange |
| C. Pattern | Swing Check with short disc stroke and flexible flap |
| D. Disc and flexible flap | One piece construction, rigid disc |
| E. Valve actuation | Spring assisted closure |

## 2.04 VALVE MATERIALS

| Component | Material |
|---|---|
| A. Body | Ductile Iron, ASTM A536 Grade 65-45-12 |
| B. Disc | ASTM A36 steel encapsulated in elastomer |
| C. Disc coating and flexible flap | Reinforced Nitrile/NBR/Buna-N or Reinforced EPDM |
| D. Lining and Coating | NSF 61 compliant epoxy |
| E. Disc closure spring | Stainless Steel |
| F. Seat | Welded Nickel seat on Valve body |
| G. Disc Position Indicator | Lead Free Bronze and Stainless Steel |
| H. Nuts, Bolts, Hardware, and Fasteners | Stainless Steel |
| I. Backflow Actuator | Lead Free Bronze and Stainless Steel |

## 2.05 DESIGN REQUIREMENTS

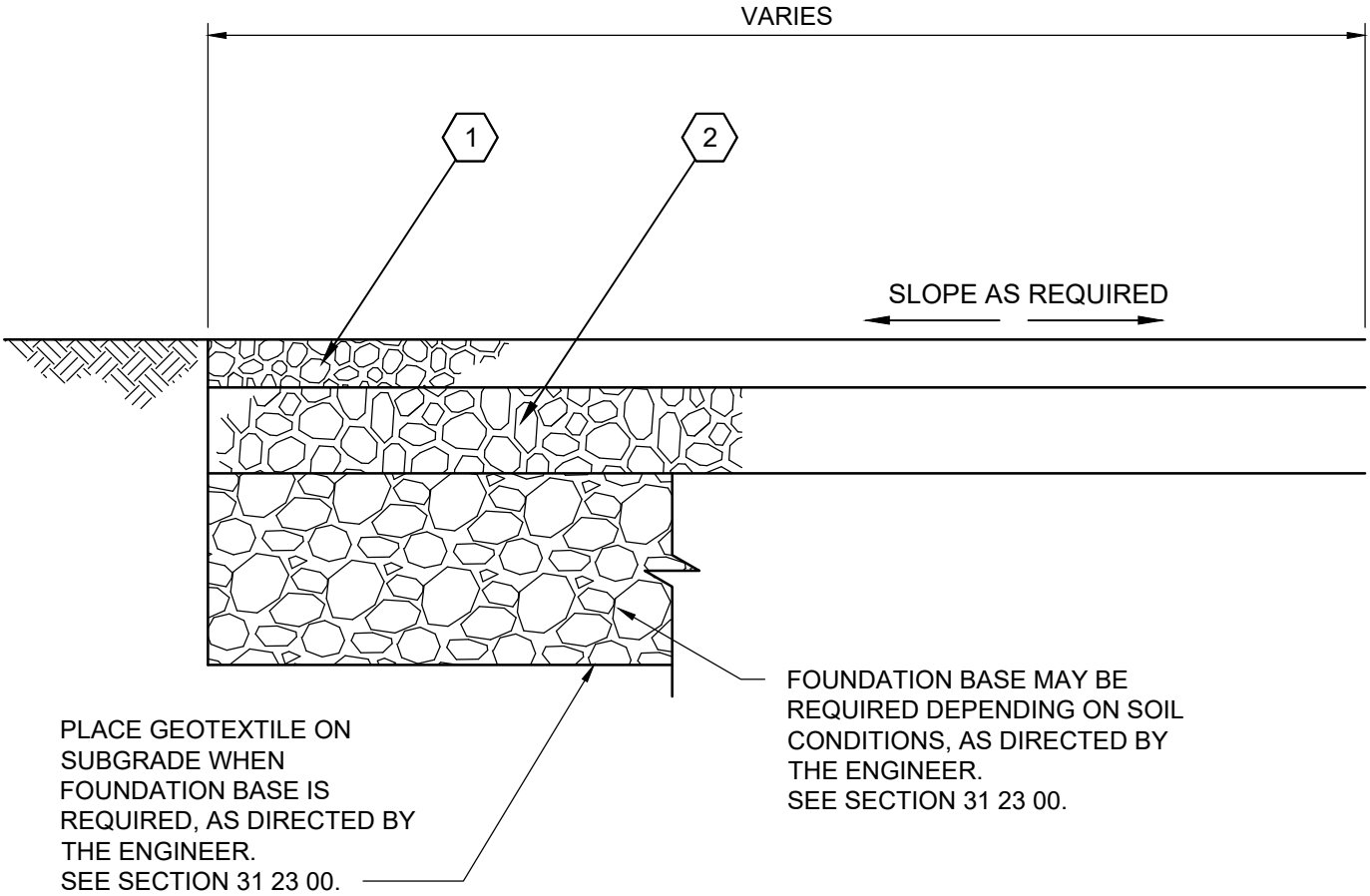
| Item | Value |
|---|---|
| **Valve End Connections** | |
| A. Line Size, Inches | 3 thru 24 |
| **Rated Limits** | |
| B. Pressure, psi | 250 |
| C. Temperature, degrees Fahrenheit | 100 |

**END OF SECTION**

# KEYNOTES:

1 FOR REPAIRS TO EXISTING DRIVEWAYS, MATCH EXISTING MATERIALS AT A DEPTH OF 8". DISCUSS WITH PROPERTY OWNER IF NEEDED.

2 IMPROVED AREAS: UNLESS OTHERWISE SPECIFIED, SELECT GRANULAR BACKFILL (CLASS B1, C1, D1, OR F1) SHALL BE USED UNDER ALL PAVED AND UNPAVED ROADWAYS AND PAVED AND UNPAVED ROADWAY SHOULDERS, ROADWAY EMBANKMENTS, AND IN ALL PUBLIC RIGHT-OF-WAYS AND EASEMENTS. THE TRENCH SHALL BE BACKFILLED TO AN ELEVATION WHICH WILL PERMIT THE PLACEMENT OF THE SPECIFIED SURFACE OR PAVING. SEE SECTION 31 23 00 SUB SECTION 3.04 3B OF THE SPECIFICATIONS.




## GRAVEL SURFACING DETAIL

F
VARIES

SCALE: NTS

| | | | |
|---|---|---|---|
| Brown AND Caldwell | SCALE: NTS<br>JOB NO. 156094<br>DATE: 01/10/2024 | UNION COUNTY, NC 762 PZ<br>WATER TRANSMISSION<br>MAIN & FW PS<br>ADDENDUM 1 | FIGURE<br>F1 |

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