



architects + engineers

CONTRACT AND SPECIFICATIONS

**RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK**



DIRECTIONAL DRILLING SERVICES CONTRACT

Project No: RDWD2302 (DR)

TOWN SUPERVISOR
Yvette Aguiar

TOWN BOARD
Frank Beyrodt
Kenneth Rothwell
Robert Kern
Timothy Hubbard

SUPERINTENDENT
Frank Mancini

ASSISTANT SUPERINTENDENT
John Flynn

TOWN CLERK
Diane Wilhelm

NOVEMBER 2023

H2M architects + engineers
538 Broad Hollow Rd, 4th Floor East
Melville, NY 11747
tel 631.756.8000 fax 631.694.4122

www.h2m.com

TABLE OF CONTENTS

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

001113	NOTICE TO BIDDERS
002113	INFORMATION FOR BIDDERS
004105	BIDDER'S DECLARATION
004116	PROPOSAL
004313	BID SECURITY
004350	APPROVAL OF SUBCONTRACTORS/SUBCONTRACT LIMITS
004355	INDEMNITY, LIMITATION OF LIABILITY
004519	NON-COLLUSIVE BIDDING CERTIFICATE
004546	VENDOR RESPONSIBILITY QUESTIONNAIRE
004547	IRAN DIVESTMENT ACT CERTIFICATION
004548	STATEMENT ON SEXUAL HARASSMENT PREVENTION
004550	QUALIFICATION OF BIDDERS
005209	CONTRACT
007200	GENERAL CONDITIONS
007306	WATER MAIN & APPURTENANCES GENERAL SPECIFICATIONS
007343	WAGE RATES

DIVISION 01 - GENERAL REQUIREMENTS

011100	SUMMARY OF WORK
011400	WORK RESTRICTIONS
012900	PAYMENT PROCEDURES
014100	REGULATORY REQUIREMENTS
015719	TEMPORARY ENVIRONMENTAL CONTROLS

DIVISION 31 - EARTHWORK

312323	BACKFILLING
312333	TRENCHING
315000	EXCAVATION SUPPORT & PROTECTION

DIVISION 32 - EXTERIOR IMPROVEMENTS

321123	AGGREGATE BASE COURSE
321216	ASPHALT PAVING
321313	PORTLAND CEMENT CONCRETE SIDEWALK
321613	PORTLAND CEMENT CONCRETE CURB

DIVISION 33 - UTILITIES

330507.13	UTILITY HORIZONTAL DIRECTIONAL DRILLING
331300	DISINFECTION OF WATER UTILITY DISTRIBUTION
331411	WATER UTILITY DISTRIBUTION PIPING
331417	WATER SERVICE CONNECTIONS

APPENDICES

APPENDIX A – WORK ORDER FORM

APPENDIX B – BULLETIN PP802 - LEAK TESTING OF POLYETHYLENE PIPE
FOR MUNICIPAL & INDUSTRIAL APPLICATIONS

The Town Board of the Town of Riverhead on behalf of the Riverhead Water District will receive bids for:

ANNUAL MAINTENANCE AND EMERGENCY SERVICES CONTRACTS:

**ELECTRICAL
MECHANICAL
HYDRAULIC CONTROL VALVE
PROCESS CONTROL SYSTEM
WATER DISTRIBUTION SYSTEM
DIRECTIONAL DRILLING SERVICES**

PROJECT NO. RDWD2302

Bids will be received at the office of the Town Clerk, Riverhead Town Hall, 4 West Second Street, Riverhead, New York 11901, until **11:00 AM, on Thursday, December 7, 2023** at which time and place all bids will be publicly opened and read aloud.

Specifications may be examined on or after **November 16, 2023** by visiting the Town of Riverhead website: <http://townofriverheadny.gov> and click on "Online Services -> Bids". Specifications are available in electronic format only and can only be downloaded from the aforementioned website. Specifications can only be obtained from this website and vendors submitting bids without registration on said site, shall be disqualified.

Each proposal must be accompanied by a bid bond in the amount of five percent (5%) of the total bid, or a certified check made payable to the TOWN OF RIVERHEAD as assurance that the bid is made in good faith.

The Owner reserves the right to reject any or all bids, to waive any informality, and to accept the lowest responsible bid.

BY ORDER OF THE TOWN BOARD
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK

ACTING AS THE GOVERNING BODY
OF THE RIVERHEAD WATER DISTRICT

TOWN CLERK, TOWN OF RIVERHEAD

DATED: NOVEMBER 16, 2023

END OF SECTION 001113

BIDS FOR PROJECT

The Town of Riverhead, at the Town Clerk's office, will receive SEALED PROPOSALS for:

**RIVERHEAD WATER DISTRICT
DIRECTIONAL DRILLING SERVICES CONTRACT
PROJECT NO.: RDWD2302 (DR)**

TIME AND PLACE OF BID

Bids are to be submitted in sealed opaque envelopes, and will be received by the Town of Riverhead, at the Town Clerk's office, Town Hall, 200 Howell Avenue, Riverhead, New York, not later than **11:00 A.M. prevailing time, on Thursday, December 7, 2023** at which time and place they will be publicly opened and read aloud. Use of the mails shall be at the Bidder's own risk. The Bidder shall be responsible for physical delivery of the bid at the time and place set for opening of bids

BID ENVELOPE

All proposals and either the certified check or bid bond must be placed in a sealed opaque envelope bearing the Bidder's firm name and address and marked, "PROJECT NO.: RDWD2302 (DR), DIRECTIONAL DRILLING SERVICES CONTRACT FOR THE RIVERHEAD WATER DISTRICT, TOWN OF RIVERHEAD, SUFFOLK COUNTY, NEW YORK", but otherwise unmarked.

Bid package shall include TWO (2) COPIES each of Spec Book Cover Page; Section 004105 - Bidders Declaration; Section 004116 - Proposal; Section 004313 - Bid Security; Section 004519 - Non-Collusive Bidding Certificate; Section 004546 - NYS Vendor Responsibility Questionnaire; Section 004547 - Iran Divestment Act Certification; Section 004548 - Statement on Sexual Harassment Prevention and Section 004550 - Qualifications of Bidders.

CONTRACT AND SPECIFICATIONS

Specifications may be examined on or after **Thursday, November 16, 2023** by visiting the Town of Riverhead website: <http://townofriverheadny.gov> and click on "Online Services -> Bids".

Specifications are available from the aforementioned Town of Riverhead website only. All contractors who intend to submit a bid package are required to register on the web site.

VERBAL ANSWERS

The Town Board, its agents, servants or employees, or the Engineer, will not be responsible in any manner for verbal answers to any inquiries regarding the meaning of the contract drawings or Specifications given prior to the awarding of the contract.

EXAMINATION OF SITE

Individual sites are open for inspection by bidders. Such site visits shall be scheduled through the District. The District shall reserve the right to reject request if not made 48 hours in advance.

Work will be performed within the Riverhead Water District, Riverhead, New York. Bidders shall be generally familiar with conditions that may be encountered.

PROPOSAL

The Proposal contained herein shall be used in making out bids. Any proposal not in accordance with these instructions or containing bids not asked for may be rejected. While separate prices are required for various items under this contract, it is understood that the contract will be awarded as a whole.

As the estimates of quantities of items stated in the Proposal are approximate only, bidders are required to submit their proposal upon and in the following express conditions, which shall apply and become part of every proposal received.

Bids will be compared by total amounts, said total amount being the sum of the products of the quantities multiplied by the unit price bid for the various items, with due consideration being given to the lump sum prices bid for any contingent or optional items. Unbalanced bids will not be accepted.

Each bidder shall fill out in ink, in both words and figures, in the spaces provided, its unit or lump sum bid, as the case may be, for each item in said Proposal for which it is submitting a bid. If there is any discrepancy between the prices in words and figures, the prices in words shall govern as unit and lump sum prices. If the Total Project Cost reported differs from the sum of all individual items, the sum of all individual items shall govern.

A bid which does not include bids for all items in the Proposal may not be considered valid.

If the contract is not awarded by the Town Board within forty-five (45) days after the receipt of bids, the obligation of the bidder under this Proposal may terminate at its option and it shall thereupon be entitled to a refund of its certified check or release of its bid bond furnished by it as security with its proposal.

BID BOND OR CERTIFIED CHECK

Each proposal from a Contractor shall be accompanied by a bid bond or certified check on a solvent bank of the STATE OF NEW YORK, in the amount of five percent (5%) of the total bid. Such check shall be made payable to TOWN OF RIVERHEAD and the amount thereof shall be the measure of liquidated damages which the Town may sustain by failure, neglect or refusal of the bidder to execute and deliver the contract, should the contract be awarded to it. The checks of all unsuccessful bidders will be returned upon the rejection of bids and the awarding of the contract; also, the check of the successful bidder will be returned upon the execution of the contract and the furnishing of the required bond.

NAME OF BIDDER

Each bidder must state, in its proposal, its full name and business address, and the full name of every person, firm or corporation, interested in same, and the address of every person or firm, or president and secretary of every corporation, interested with it.

QUALIFICATIONS OF BIDDERS

- (1) The Town Board reserves the right to waive any informalities in, or reject any and all bids. The Board reserves the right to reject any and all bids which do not conform to the Proposal.
- (2) All bidders must prove to the satisfaction of the Town Board that they are reputable, reliable and responsible, and that they possess the necessary qualifications (financial, labor, equipment and otherwise) to complete successfully the proposed work.

- (3) In determining the qualifications of a bidder, the Town Board will consider its record in the performance of any contracts entered into by it for the work contemplated or of similar nature, may make such investigation as it deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Board all such information and data for this purpose as the Town Board may request.
- (4) The Town Board shall be the sole judge of the qualifications of the bidders and of the merits thereof and reserves the right to reject any bid if the record of the bidder in the performance of contracts, payment of bills and meeting of obligations to subcontractors, material men or employees is not satisfactory to the Town Board, or if the evidence submitted by, or the investigation of, such bidders fails to satisfy the Town Board that it is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.

PERFORMANCE BOND

The Contractor shall furnish a Performance Bond, Labor and Materials Bond each in an amount equal to one hundred (100%) percent of the total contract price as security for its faithful performance of this contract, for the payment of all persons performing labor or furnishing materials in connection with this contract. Such bonds shall also cover any penalties, interest charges and assessments levied by any governmental unit for failure to comply with laws and/or regulations governing public work. The contractor shall be required to furnish all guarantees and warranties of manufacturers of products in connection with this contract, but no manufacturer's limitation of time shall act to limit the responsibility of the contractor or its surety hereunder.

The surety must be licensed in the State of New York and have a BEST A rating, or the surety shall present information satisfactory to the TOWN/DISTRICT to permit the TOWN/DISTRICT to accept the bond.

At the time of submission of bonds or at any time thereafter, the TOWN/DISTRICT may evaluate the surety or sureties proposed, and demand a change of surety if it determines that the financial position of such surety does not provide for a proper protection of the interests of the TOWN/DISTRICT. The TOWN/DISTRICT shall be guided by its legal counsel, and insurance industry consultants in determining proper sureties for TOWN/DISTRICT public works contracts. If the TOWN/DISTRICT notifies the contractor in writing that a surety is unacceptable for any reason, then the contractor shall replace the surety and the bond in question within five (5) business days with a surety and bond deemed suitable by the said TOWN/DISTRICT. The premiums charged for all such bonds shall be a cost of the contractor and not the TOWN/DISTRICT. Upon notice to change surety being forwarded to a contractor, no further payments shall be made until a new bond in proper form naming an acceptable surety is provided.

SIGNATURE OF CONTRACTOR

The bidder to whom a contract may be awarded shall attend at the office of the Town Board, with the sureties offered by it, within seven (7) days, (weekends & holidays excepted), after date of notification of the acceptance of its proposal, and there sign the contract in quadripartite for the work and furnish insurances and approved security for its performance.

In case of failure to do so, the bidder shall be considered as having abandoned the same, and the check accompanying its proposal shall be forfeited to the Town Board, or the penalty of the bid bond shall be invoked.

CONTRACTOR'S INSURANCE

The Contractor shall not commence any work until it has obtained and had approved by the Town all of the insurance specified and required by the Contract.

The Contractor shall not permit any subcontractor to commence any operation on the site until satisfactory proof of carriage of the above required insurance has been posted with, and approved by, the Town Board.

RESPONSIBILITY OF BIDDER

Attention is hereby particularly directed to the provisions of the contract whereby the Contractor will be responsible for any loss or damage that may happen to the work or any part thereof during its progress; and also whereby the Contractor shall make good any defects or faults that may occur during the progress of the work or within twelve (12) months after date of the Town's approval of the final payment request.

LABOR RATES

The Contractor shall pay not less than the minimum hourly wage rates on this contract as established in accordance with Section 220 of the Labor Law. This project has been registered with the New York State Department of Labor. Bidders interested in this project are required to visit www.labor.ny.gov to access the prevailing wage schedule (See Section 007343 - Wage Rates for PRC #2023011540). Employees must be paid the minimum rate indicated on the schedule for the appropriate title or in accordance with current prevailing schedule at the time of construction.

APPRENTICESHIP PROGRAM

Pursuant to Section 816-(b) of the New York Labor Law, the Riverhead Water District has adopted a Resolution relating to approved apprenticeship programs. If the successful bidder's bid hereunder exceeds the sum of \$250,000.00, such bidder shall, prior to entering into a contract with the District, be required to have an appropriate apprenticeship agreement that has been registered with and approved by the Commissioner of the New York State Department of Labor pursuant to the requirements found in Article 23 of the New York Labor Law. Any subcontractors under this contract shall also, in all respects, comply with these provisions.

COMPLETION OF WORK

Work is required to be completed to the satisfaction of the Engineer, and in substantial accordance with the Specifications hereunto annexed and the Change Orders amended to the Contract.

RESPONSIBILITY OF CONTRACTOR

Attention is hereby particularly directed to the provisions of the contract whereby the Contractor will be responsible for any loss or damage that may happen to the work or any part thereof during its progress; and also whereby the Contractor shall make good any defects or faults that may occur during the progress of the work or within twelve (12) months after its completion and acceptance. Any progress payments made by the Town during the completion of this contract by the Contractor shall not be a waiver of the foregoing provision.

TOWN BOARD
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK

END OF SECTION 002113

BIDDER'S DECLARATION:

The undersigned, as Bidder, declares that the only person or persons interested in this bid or proposal as principal or principals is or are named herein; and that no other person than herein named has any interest in this proposal or in the contract proposed to be taken; that this bid or proposal is made without any connections with any other person or persons making a bid or proposal for the same purpose; that the bid or proposal is in all respects fair and without collusion or fraud; that it has examined the site of the work and the Contract Documents; and fully understands all the same; and it proposes and agrees, if this proposal is accepted, it will contract with the Riverhead Water District in the Contract accompanying this bid to furnish all the material, implements, etc., and perform all the work required in accordance with the Contract Documents; and it will accept in full payment therefore the following sums to wit:

Acknowledgement that the foregoing Bidder's Declaration is true and factual.

SIGNATURE	PRINT NAME	TITLE	DATE
-----------	------------	-------	------

END OF SECTION 004105

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)

RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023

DIRECTIONAL DRILLING SERVICES CONTRACT

SCOPE OF WORK AND PROPOSAL

I. Location of Work

Various locations across the service area of the Riverhead Water District, including plant and water storage tank sites, public right-of-ways, easements, private communities, etc. within the Town of Riverhead, New York.

II. Scope of Work

1. Perform scheduled Installation of water distribution mains and water service lines using directional boring technology, including restoration services for the Riverhead Water District in accordance with the requirements stipulated herein and all prevailing federal, state, and local safety and labor regulations.
2. Services may include but not be limited to water main break repair, installation and repair of service lines, water main replacement, installation of new water main and pavement repairs. The installation of high density polyethylene water distribution (HDPE) mains and services and HDPE casings (where directed) beneath railroad tracks, roadways, wetlands or where directed by the Town / District. Work shall include all labor, equipment and material necessary to complete the directed task.
3. ***Work will be performed on an as-needed basis when authorized by the Water District in writing.*** Prior to any authorization, the District will establish a preliminary task review meeting with the contractor and any interested parties to review the scope of work, define the limits of the drill and identify any issues. Within five (5) days following this meeting the contractor shall provide a preliminary cost estimate based on the unit prices provided here-in. The District will use this estimate to generate a Purchase Order specific to the task order. The contractor shall commence with the work within fourteen (14) consecutive calendar days of receipt of Purchase Order.
4. ~~Scheduled maintenance or repair is non-emergency work and will be scheduled by the District at least 48 hours in advance of the start of the work.~~
5. ~~Emergency service shall be provided to the Water District on a request basis. For emergency service the Contractor shall report to the site in need of service within three (3) hours after notification from the Water District including nights, weekends, and holidays.~~
6. Notification from the Water District may also be via phone call and a fax/email transmission of the work order for the service requested. A copy of the work order form is included in Appendix A.
7. Contractor will be required to maintain the proper bonds and insurance as specified herein. ~~The Bonds shall remain in full force and effect for a period of one (1) year after the date of the bond. Contractor shall promptly remedy any defects or faults that may occur within twelve (12) months after completion and acceptance of the work performed by the Contractor pursuant to this Contract.~~

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)

RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023

8. The Contractor shall arrange for all mark outs within the public right-of-ways related to the work. Where applicable, the District will be responsible for coordination of the required mark-out of facilities associated with the MTA/LIRR utility mark-out.
9. Prior to commencement of the work, the contractor shall provide District with an environmental plan identifying steps to be taken upon frac-out of drill slurry. Prior to the authorization of final payment, the contractor shall provide the District with as-built records of the drill including plan and profile showing pipe size, material, length and depth of work performed for the District's records

III. Specifications

This contract is for the provision of water distribution maintenance and service, both scheduled and emergency in the Town of Riverhead.

1. Work and materials authorized by the Water District, shall conform to District standards.
2. The Contractor shall have sufficient qualified personnel, equipment and experience to perform the work as detailed here-in. The District may require the submission of resumes for key personnel (foreman and superintendents) and reserves the right to deny these persons if sufficient experience in directional drilling is not demonstrated.
3. Scheduled work must be completed in a timely fashion.
4. ~~Routine and emergency service is expected to center around, but not be limited to, the repair of the District's water distribution system in public right-of-ways, roadways and on plant sites. Work may also include the installation of new water mains within the existing distribution system.~~
5. Contractor shall comply with all OSHA regulations relative to safe operations for his work, the safety of his workers, District / Town personnel, inspectors, and pedestrians. All employees must have completed the OSHA 40 hour course. Submit all employee OSHA certification cards prior to employees accessing site and with each payment request.
6. Task Orders may require the crossing beneath railroad tracks and right-of-ways. In these instances all workers shall comply with MTA/LIRR requirements including completion of all required certifications, training and safety courses. ~~Certain facilities may require contractor to enter confined space to perform the work required. The contractor shall employ personnel trained in confined space safety and shall be responsible for supplying all equipment necessary for entering and working within a confined space. A confined space entry plan is required prior to entrance.~~
7. Contractor shall abide by the New York State Department of Transportation standards and the Manual of Uniform Traffic Control Devices in establishing the maintenance and protection of traffic on all public roadways. In some instances a traffic control plan and details may be required by the governing road agency. In these cases these details shall be provided by the contractor at no additional costs to the Town/District.
8. Road opening permits for scheduled work shall be secured by and in the name of the contractor. All costs for securing of said permits to be the responsibility of the contractor.
9. The contractor is responsible for the establishment of meetings between themselves, the Water District and local road agency prior to final restoration. Limits of the final restoration shall be

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)

RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023

agreed upon prior to completion. The contractor risks forfeiture of a portion of payment for any final restoration performed without prior agreement of Water District.

10. Prior to final payment, the bidder shall provide the Town with a Maintenance Bond equal to one hundred percent (100%) of the total value of each task order completed. The Maintenance Bond shall remain in full force and effect for a period of one (1) year after the date of the bond
11. The bond, which shall be executed by the Contractor and issued by a reliable, solvent surety company authorized to do business in the State of New York shall guarantee to the Town that the Contractor shall promptly remedy any defects or faults that may occur within twelve (12) months after completion and acceptance of the work performed by the Contractor pursuant to this Contract.
12. The cost of the Maintenance Bond shall be reimbursed to the contractor upon its acceptance from the Town. The contractor shall not be eligible for overhead or profit to be paid on the bond and shall provide the Town with copies of invoicing from its Surety upon submission of reimbursement.

IV. Duration of Contract

Contract duration is from January 1, 2024 through December 31, 2024 with options for two (2) successive one (1) year periods (January 1, 2025 through December 31, 2025 and January 1, 2026 through December 31, 2026) at the discretion of the Town Board.

V. Payment

1. The Contractor, when authorized in writing by the Water District, will only be reimbursed for the ~~actual labor and equipment provided and actual materials furnished and installed~~ agreed bid price.
2. Payment will be made in accordance with the unit pricing schedule established in Section VI of this document.
3. ~~Labor and equipment reimbursement (where hourly rates are applied) will be based on the actual time spent at the work location.~~
4. Mobilization to the work site shall be paid in accordance with the lump sum amount under Item 1. The item shall include all costs associated with labor transportation to and from the work site, tools and small equipment necessary to perform the work and any other related mobilization costs. Item 1 shall only be billed once per work order. ~~If additional days are required for work the appropriate hourly rates will be utilized for billing. Chargeable time will be documented time on-site only.~~
5. The contractor shall provide the District with an invoice for work performed within 30 days of completion of service.
6. The Riverhead Water District / Town of Riverhead will not compensate the contractor for fuel surcharges.
7. The cost of the Maintenance Bond shall be reimbursed to the contractor upon its acceptance from the Town. The contractor shall not be eligible for overhead or profit to be paid on the bond and

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)

RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023

shall provide the Town with copies of invoicing from its Surety upon submission of reimbursement. The cost of the Maintenance Bond will be reimbursed with no mark-up assessed.

5. **Failure of the contractor to provide appropriate billing to the District within sixty (60) days of completion of service may subject contractor to forfeiture of payment without notice from the Town/District.**
7. The Contractor shall pay not less than the minimum hourly wage rates on this contract as established in accordance with Section 220 of the Labor Law Rates shall be in accordance with the current prevailing rates paid at the time of construction. This project has been registered with the New York State Department of Labor under PRC# 2023011540.
8. ~~Contractor shall provide District with dimensional sketch of all work performed for the District's records prior to payment authorization.~~

VI. Bidders' Proposal / Declaration

The party named as Bidder declares that the only person or persons interested in this bid or proposal as principal or principals is or are named herein; and that no other person than herein named has any interest in this proposal or in the contract proposed to be taken; that this bid or proposal is made without any connections with any other person or persons making a bid or proposal for the same purpose; that the bid or proposal is in all respects fair and without collusion or fraud; that it has examined the site of the work, the bid documents hereto attached; and it proposes and agrees, if this proposal is accepted, it will contract in the form as approved to perform all the work mentioned in said bid documents; and it will accept in full payment therefore the following sums to wit.

A. Labor & Equipment:

Item No.	Description	Unit Price Schedule		
		Jan. 1, 2024 through Dec. 31, 2024	Jan. 1, 2025 through Dec. 31, 2025	Jan. 1, 2026 through Dec. 31, 2026
1	Basic minimum mobilization charge. Lump sum per work order to and from site.	\$	\$	\$
2	Traffic control flagman – hourly rate	\$	\$	\$
3	Traffic control arrow board - daily rate	\$	\$	\$
4	Attenuator Truck with chauffeur – daily rate	\$	\$	\$
5	Exploratory Work – hourly rate (1)	\$	\$	\$

- I. Work under Item 5 shall include all preliminary work, labor, material and equipment required to locate utilities prior to drill operations and includes test holes, trenches, mark outs and any other work performed to locate, expose, and identify size, depth, and material of utilities to be crossed prior to drill operations.

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023**B. Miscellaneous Tasks:**

Item No.	Description	Unit Price Schedule		
		Jan. 1, 2024 through Dec. 31, 2024	Jan. 1, 2025 through Dec. 31, 2025	Jan. 1, 2026 through Dec. 31, 2026
6a	Directional boring of 1" diameter DR11 polyethylene carrier pipe - price per liner foot (◆)	\$	\$	\$
6b	Directional boring of 1" DR11 diameter polyethylene carrier pipe in 2" DR17 HDPE sleeve. - price per liner foot (◆)	\$	\$	\$
7a	Directional boring of 2" DR11 diameter polyethylene carrier pipe - price per liner foot (◆)	\$	\$	\$
7b	Directional boring of 2" diameter DR11 polyethylene carrier pipe in 4" DR17 HDPE sleeve. - price per liner foot (◆)	\$	\$	\$
8a	Directional boring of 4" diameter DR11 HDPE carrier pipe - price per liner foot (◆)	\$	\$	\$
8b	Directional boring of 4" diameter DR11 HDPE carrier pipe in 6" DR17 HDPE sleeve. - price per liner foot (◆)	\$	\$	\$
9a	Directional boring of 6" diameter DR11 HDPE carrier pipe, less than 80 linear feet. - price per liner foot (◆)	\$	\$	\$
9b	Directional boring of 6" diameter DR11 HDPE carrier pipe, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	\$	\$	\$
9c	Directional boring of 6" diameter DR11 HDPE carrier pipe, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	\$	\$	\$
9d	Directional boring of 6" DR11 HDPE carrier pipe in 10" DR17 HDPE sleeve, less than 80 linear feet. - price per liner foot (◆)	\$	\$	\$
9e	Directional boring of 6" diameter DR11 HDPE carrier pipe in 10" DR17 HDPE sleeve, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	\$	\$	\$
9f	Directional boring of 6" diameter DR11 HDPE carrier pipe in 10" DR17 HDPE sleeve, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	\$	\$	\$

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023

10a	Directional boring of 8" diameter DR11 HDPE carrier pipe, less than 80 linear feet. - price per liner foot (◆)	\$	\$	\$
10b	Directional boring of 8" diameter DR11 HDPE carrier pipe, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	\$	\$	\$
10c	Directional boring of 8" diameter DR11 HDPE carrier pipe, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	\$	\$	\$
10d	Directional boring of 8" DR11 HDPE carrier pipe in 12" DR17 HDPE sleeve, less than 80 linear feet. - price per liner foot (◆)	\$	\$	\$
10e	Directional boring of 8" diameter DR11 HDPE carrier pipe in 10" DR17 HDPE sleeve, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	\$	\$	\$
10f	Directional boring of 8" diameter DR11 HDPE carrier pipe in 10" DR17 HDPE sleeve, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	\$	\$	\$
11a	Directional boring of 10" diameter DR11 HDPE carrier pipe, less than 80 linear feet. - price per liner foot (◆)	\$	\$	\$
11b	Directional boring of 10" diameter DR11 HDPE carrier pipe, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	\$	\$	\$
11c	Directional boring of 10" diameter DR11 HDPE carrier pipe, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	\$	\$	\$
11d	Directional boring of 10" diameter DR11 HDPE carrier pipe in 16" DR17 HDPE sleeve, less than 80 linear feet. - price per liner foot (◆)	\$	\$	\$
11e	Directional boring of 10" diameter DR11 HDPE carrier pipe in 16" DR17 HDPE sleeve, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	\$	\$	\$
11f	Directional boring of 10" diameter DR11 HDPE carrier pipe, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	\$	\$	\$
12a	Directional boring of 12" diameter DR11 HDPE carrier pipe, less than 80 linear feet. - price per liner foot (◆)	\$	\$	\$
12b	Directional boring of 12" diameter DR11 HDPE carrier pipe, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	\$	\$	\$
12c	Directional boring of 12" diameter DR11 HDPE carrier pipe, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	\$	\$	\$

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023

12d	Directional boring of 12" diameter DR11 HDPE carrier pipe in 18" DR17 HDPE sleeve, less than 80 linear feet. - price per liner foot (◆)	\$	\$	\$
12e	Directional boring of 12" diameter DR11 HDPE carrier pipe in 18" DR17 HDPE sleeve, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	\$	\$	\$
12f	Directional boring of 12" diameter DR11 HDPE carrier pipe in 18" DR17 HDPE sleeve, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	\$	\$	\$
13	Saw Cutting Pavement - per lf	\$	\$	\$
14a	Removal and legal disposal of unsuitable excavated material - per cy	\$	\$	\$
14b	Furnish and Deliver Clean Fill - per cy	\$	\$	\$
15	Temporary Asphalt Paving Hot or Cold Patch (up to 4 inches thick) - per sy (◆◆)	\$	\$	\$
16a	Repave Town Roads in accordance with Town of Riverhead Highway Dept. requirements (asphalt base & asphalt top) - per sy (◆◆)	\$	\$	\$
16b	Repave Town Roads in accordance with Town of Riverhead Highway Dept. requirements (finished concrete pavement up to 6" thick) include reinforcing - per sy (◆◆)	\$	\$	\$
16c	Repave Suffolk County Roads in accordance with Suffolk County DPW requirements (asphalt base & asphalt top) - per sy (◆◆)	\$	\$	\$
16d	Repave New York State Composite Roads in accordance with NYSDOT standard details (concrete base up to 8" thickness & asphalt top) including reinforcing, insulation, dowels, etc. - per sy (◆◆)	\$	\$	\$
16e	Repave New York State Asphalt Roads in accordance with NYSDOT standard details (asphalt base up to 6" thickness & asphalt top) - per sy (◆◆)	\$	\$	\$
17a	Concrete Sidewalks with wire mesh - per sf (◆◆)	\$	\$	\$
17b	Concrete Aprons w/ wire mesh - per sf (◆◆)	\$	\$	\$
17c	Concrete Curb (Town or County) - per lf (◆◆)	\$	\$	\$
17d	Concrete Curb (State) - per lf (◆◆)	\$	\$	\$

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023

17e	Belgian Block Curb - per lf (◆◆)	\$	\$	\$
18	Grass restoration – per sf (◆◆)	\$	\$	\$

(◆) - Include labor, equipment and materials for complete installation including but not limited to excavation, shoring, backfilling, compaction, disposal of excess or unsuitable materials, MPT, and restoration. Crew size shall be dictated by the contractor and include all personnel required to complete the work under the bid item. Extra personnel required for traffic control purposes shall be paid separately under Item 2. The annular space between the carrier and casing shall be sealed with backer rod and non-shrink grout or by other approved means to prevent the intrusion of soil or water. All carrier pipes shall be fitted with size x size HDPE by MJ adapters and capped. Includes hydrostatic testing. (Do not include costs related to restoration items. Such costs will be reimbursed under the appropriate bid item).

(◆◆) - Include labor, equipment and materials for complete installation including but not limited to excavation, shoring, backfilling, compaction, disposal of excess or unsuitable materials, MPT, and restoration. Crew size shall be dictated by the contractor and include all personnel required to complete the work under the bid item. Extra personnel required for traffic control purposes shall be paid separately under Item 2.

~~Note — The percent differential shall be applied to the unit price provided where applicable. For purposes of this contract, the following definitions of time apply:~~

~~Straight Time: Monday through Friday, 7:00 AM to 4:30 PM~~

~~Nighttime Differential: 4:30 PM to 7:00 AM~~

~~Overtime Differential: Time in excess of 8 hours daily, Monday through Friday & Weekends~~

~~Holiday Differential: Legal and/or Contract Holidays observed by contractor and/or trade union. A list of holidays observed shall be submitted to the District at the time of bid.~~

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023**D. Bid Summarization:**

Item No.	Description	Number of Units	Total Price		
			Jan. 1, 2024 through Dec. 31, 2024	Jan. 1, 2025 through Dec. 31, 2025	Jan. 1, 2026 through Dec. 31, 2026
1	Basic minimum mobilization charge.	4 each	\$	\$	\$
2	Traffic control flagman – straight time hourly rate	8 hrs	\$	\$	\$
3	Traffic control arrow board - daily rate	2 days	\$	\$	\$
4	Attenuator Truck with chauffeur – daily rate	1 day	\$	\$	\$
5	Exploratory Work – hourly rate (1)	8 hrs	\$	\$	\$
6a	Directional boring of 1" diameter DR11 polyethylene carrier pipe - price per liner foot (◆)	100 ft	\$	\$	\$
6b	Directional boring of 1" DR11 diameter polyethylene carrier pipe in 2" DR17 HDPE sleeve. - price per liner foot (◆)	40 ft	\$	\$	\$
7a	Directional boring of 2" DR11 diameter polyethylene carrier pipe - price per liner foot (◆)	100 ft	\$	\$	\$
7b	Directional boring of 2" diameter DR11 polyethylene carrier pipe in 4" DR17 HDPE sleeve. - price per liner foot (◆)	40 ft	\$	\$	\$
8a	Directional boring of 4" diameter DR11 HDPE carrier pipe - price per liner foot (◆)	100 ft	\$	\$	\$
8b	Directional boring of 4" diameter DR11 HDPE carrier pipe in 6" DR17 HDPE sleeve. - price per liner foot (◆)	50 ft	\$	\$	\$
9a	Directional boring of 6" diameter DR11 HDPE carrier pipe, less than 80 linear feet. - price per liner foot (◆)	100 ft	\$	\$	\$
9b	Directional boring of 6" diameter DR11 HDPE carrier pipe, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
9c	Directional boring of 6" diameter DR11 HDPE carrier pipe, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023

9d	Directional boring of 6" DR11 HDPE carrier pipe in 10" DR17 HDPE sleeve, less than 80 linear feet. - price per liner foot (◆)	100 ft	\$	\$	\$
9e	Directional boring of 6" diameter DR11 HDPE carrier pipe in 10" DR17 HDPE sleeve, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
9f	Directional boring of 6" diameter DR11 HDPE carrier pipe in 10" DR17 HDPE sleeve, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
10a	Directional boring of 8" diameter DR11 HDPE carrier pipe, less than 80 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
10b	Directional boring of 8" diameter DR11 HDPE carrier pipe, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	100 ft	\$	\$	\$
10c	Directional boring of 8" diameter DR11 HDPE carrier pipe, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
10d	Directional boring of 8" DR11 HDPE carrier pipe in 12" DR17 HDPE sleeve, less than 80 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
10e	Directional boring of 8" diameter DR11 HDPE carrier pipe in 10" DR17 HDPE sleeve, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	100 ft	\$	\$	\$
10f	Directional boring of 8" diameter DR11 HDPE carrier pipe in 10" DR17 HDPE sleeve, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
11a	Directional boring of 10" diameter DR11 HDPE carrier pipe, less than 80 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
11b	Directional boring of 10" diameter DR11 HDPE carrier pipe, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
11c	Directional boring of 10" diameter DR11 HDPE carrier pipe, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
11d	Directional boring of 10" diameter DR11 HDPE carrier pipe in 16" DR17 HDPE sleeve, less than 80 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023

11e	Directional boring of 10" diameter DR11 HDPE carrier pipe in 16" DR17 HDPE sleeve, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
11f	Directional boring of 10" diameter DR11 HDPE carrier pipe, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
12a	Directional boring of 12" diameter DR11 HDPE carrier pipe, less than 80 linear feet. - price per liner foot (◆)	100 ft	\$	\$	\$
12b	Directional boring of 12" diameter DR11 HDPE carrier pipe, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
12c	Directional boring of 12" diameter DR11 HDPE carrier pipe, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
12d	Directional boring of 12" diameter DR11 HDPE carrier pipe in 18" DR17 HDPE sleeve, less than 80 linear feet. - price per liner foot (◆)	100 ft	\$	\$	\$
12e	Directional boring of 12" diameter DR11 HDPE carrier pipe in 18" DR17 HDPE sleeve, greater than 80 linear feet up to 150 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
12f	Directional boring of 12" diameter DR11 HDPE carrier pipe in 18" DR17 HDPE sleeve, greater than 150 linear feet up to 320 linear feet. - price per liner foot (◆)	50 ft	\$	\$	\$
13	Saw Cutting Pavement	100 lf	\$	\$	\$
14a	Removal and disposal of unsuitable excavated material	20 cy	\$	\$	\$
14b	Furnish and Deliver Clean Fill	20 cy	\$	\$	\$
15	Temporary Asphalt Paving Hot or Cold Patch (up to 4 inches thick)	50 sy	\$	\$	\$
16a	Repave Town Roads (asphalt base & asphalt top)	100 sy	\$	\$	\$
16b	Repave Town Roads (finished concrete pavement up to 6" thick)	10 sy	\$	\$	\$
16c	Repave Suffolk County Roads (asphalt base & asphalt top)	20 sy	\$	\$	\$
16d	Repave New York State Composite Roads	20 sy	\$	\$	\$

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023

16e	Repave New York State Asphalt Roads	20 sy	\$	\$	\$
17a	Concrete Sidewalks	20 sy	\$	\$	\$
17b	Concrete Aprons	5 sy	\$	\$	\$
17c	Concrete Curb (Town or County)	10 lf	\$	\$	\$
17d	Concrete Curb (State)	10 lf	\$	\$	\$
17e	Belgian Block Curb	10 lf	\$	\$	\$
18	Grass Restoration	200 sf	\$	\$	\$
Item No.	Description	Number of Units	Jan. 1, 2024 through Dec. 31, 2024	Jan. 1, 2025 through Dec. 31, 2025	Jan. 1, 2026 through Dec. 31, 2026
TOTAL:			\$	\$	\$

Notes:

The total sum reported in Section D is for comparison purposes only. All prices for bid items and escalators will be considered in awarding the contract in the best interest of the Town/District. The contractor reporting the lowest total bid under Section D is not guaranteed award of the contract.

1. Quantities provided are estimates only and will vary. Actual equipment and material cost will vary based on work authorized in writing by the Water District. The Water District will issue a purchase order for each specific work order.
2. The qualified bidder will be required to provide the appropriate references (5 minimum) and documentation of qualifications.
3. The Town Board reserves the right to award work that serves in the best interest to the Riverhead Water District. **Unbalanced bids will be rejected.**
4. The Town Board / Water District reserves the right to award this contract to multiple entities based on what is in their best interest. If awarded to multiple entities, it is at the District's discretion as to which entity they elect to perform selected work orders and will act in their best interest.
5. The option to extend the contract an additional year (from January 1, 2025 through December 31, 2025) or two (from January 1, 2026 through December 31, 2026) can be exercised solely at the discretion of the Riverhead Town Board. Should the Town Board decide to renew the contract for an additional period, written authorization will be provided by the Riverhead Water District.
6. The Water District reserves the right to do some of the work with its own personnel, and this contract is only for the additional work it cannot or will not handle.

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)

RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023

7. Where work is requested by the District that it is not included under the bid items provided, the District will request a separate proposal. This District is under no obligation to accept this proposal and reserves the right to perform the work themselves or secure the services of an outside contractor.
8. The Town of Riverhead reserves the right to extend the pricing and requirements of this contract to other Town Departments or agencies.
9. The Water District retains the discretion to develop and separately bid other projects with an element of the type of work under this contract.
10. The District will reimburse the contractor for the expense of the maintenance bond. The cost of the maintenance bond (dollar for dollar) will be reimbursed by the District upon receipt. The maintenance bond will cover all work performed in that year and will be dated to begin coverage at the end of current contract term.
11. Within ten (10) days (weekends and legal holidays excepted) after acceptance of this bid by the Town/District, the bidder shall execute the contract. The bidder shall furnish the required bonds and insurances to the water district's attorney within the same time frame.
12. The bidder represents herewith that he is aware of the working conditions, has carefully reviewed the proposal and specifications, has checked and certifies the accuracy of the bid.
13. The contractor shall coordinate all work with the District to minimize disturbances to District operation.
14. The basic mobilization charge (Item 1) shall be billed once per task order and shall include labor charges for the first two hours on-site.

DIRECTIONAL DRILLING SERVICES CONTRACT
H2M PROJECT NO.: RDWD2302 (DR)

RIVERHEAD WATER DISTRICT
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
BID DATE: DECEMBER 7, 2023

G. Bidder Information and Certification:

Company Name: _____

Address: _____

Telephone Number: _____ Fax Number: _____

Emergency Number: _____ Email: _____
_____ Email: _____

Federal I.D. or SS Number: _____

Authorized Representative Signature

Title

Print Name

Date

Enclosed is a certified check or bid bond for five percent (5%) of the total amount of the bid as required in the foregoing "Information for Bidders".

The Bidder hereby agrees to appear with its sureties at the office of the Town of Riverhead, Town Clerk's office within ten (10) calendar days (weekends & legal holidays excepted) after due notice from the Town Board that the Contract has been awarded to it and is ready for signature; such notice to be given in writing within forty five (45) days of opening of the bids; and, on the signing of such Contract by the Bidder, to furnish the indemnifying bonds as provided in the Contract.

The Bidder hereby further agrees that in the event of its failure or refusal to enter into a contract in accordance with this bid within ten (10) days (weekends & legal holidays excepted) after due notice from the Board that the Contract has been awarded to it and is ready for signature, as given in accordance with the Contract Documents and/or its failure to execute and deliver the bond for the full amount of the Contract price, as provided in said Contract Documents, the Bidder's check or bid bond which is herewith deposited with the Board (at the option of said Board) become due and payable as ascertained and liquidated damages for such default; otherwise, said check or bid bond will be returned to the undersigned.

The full names and residences of all persons and parties interested in the foregoing bid as principals are as follows:

NAME

ADDRESS

NAME OF BIDDER: _____

BUSINESS ADDRESS OF BIDDER: _____

Telephone number where the bidder or a competent representative can accept a telephone message and provide a reasonable reply as soon as possible, but no later than twenty four (24) hours:

DAY: _____

EVENING: _____

DATED AT: _____ THE ____ DAY OF _____, 20_____

END OF SECTION 004313

Riverhead Water District**Suffolk County, New York**

Bidders shall submit to the Owner the names of the Subcontractors which the Bidder proposes to use on the project. The Owner reserves the right to disapprove the use of any proposed subcontractor and in such event the Bidder shall submit the name of another Subcontractor in the like manner and in the time specified by the Owner. Such disapproval shall not result in additional costs to the Owner. The Owner reserves the right to reject any bid if the name of the proposed Subcontractors, or additional subcontractor information, is not submitted as required.

BIDDER:

FIRM NAME: _____

ADDRESS: _____

PREPARED BY: _____

SIGNED BY: _____

TITLE: _____

END OF SECTION 004350

1.0 - INDEMNITY

The Contractor and all subcontractors performing work in connection with this Contract shall HOLD HARMLESS, INDEMNIFY and DEFEND the Owner and Engineer, their consultants and each of their officers, agents and employees from any liability, claims, losses or damage including reasonable costs of defense arising out of or alleged to arise from the Contractor's or subcontractor's negligence in the performance of the work described in the Contract Documents, but not including liability that may be due to the sole negligence of the Owner, the Engineer or their officers, agents and employees.

2.0 - LIMITATION OF LIABILITY

The Contractor and all subcontractors agree to limit the liability of the Owner and the Engineer due to the Engineer's professional negligent errors or omissions such that the total aggregate liability of the Engineer to those named shall not exceed Fifty Thousand Dollars (\$50,000) or five percent (5%) of the Contract award amount, whichever is greater.

3.0 - NO CLAIM FOR DELAY

The Contractor and all subcontractors agree to HOLD HARMLESS from any and all claims for loss or damages of any nature against the Owner or Engineer for delays in commencement, performance or completion of the Contract, regardless of whether said delays are, or may be, caused by the Owner, Engineer or any governmental agency.

END OF SECTION 004355

NON-COLLUSIVE BIDDING CERTIFICATE

Pursuant to Section 103-D of the General Municipal Law, the Contractor makes the following statement under penalty of perjury, and by submission of this bid or proposal, the Bidder certifies that:

(a) this bid or proposal has been independently arrived at without collusion with any other bidder or with any competitor or potential competitor; (b) this bid or proposal has not been knowingly disclosed and will not be knowingly disclosed prior to the opening of the bids or proposals for this project to any other bidder, competitor or potential competitor; (c) no attempt has been or will be made to induce any other person, partnership or corporation to submit or not to submit a bid or proposal; (d) the person signing this bid or proposal certified that he has fully informed himself regarding the accuracy of the statements contained in this certification, and under the penalties of perjury, affirms the truth thereof, such penalties being applicable to the Bidder as well as to the person signing in its behalf; (e) attached hereto (if a corporate bidder) is a certified copy of resolution authorizing the execution of this certificate by the signatory of the bid or proposal on behalf of the corporate bidder.

Resolved that _____
(Name of Corporation)
be authorized to sign and submit the bid or proposal of this corporation for the following project:

DIRECTIONAL DRILLING SERVICES CONTRACT
(Name of Project)

and to include in such bid or proposal the certificate as to non-collusion required by Section 103-D of the General Municipal Law as the act and deed of said corporation; and for any inaccuracies or misstatements in such certificate, this corporate bidder shall be liable under the penalties of perjury.

The foregoing is a true and correct copy of the resolution adopted by _____

at a meeting of its Board of Directors held on the _____ day of _____, 20____

Secretary: _____
(Seal of the Corporation)

Respectfully submitted,

FIRM NAME: _____

FIRM ADDRESS: _____

SIGNED BY: _____

TITLE: _____

END OF SECTION 004519

Vendor Responsibility Questionnaire begins on the following page.

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

You have selected the For-Profit Construction questionnaire, commonly known as the "CCA-2," which may be printed and completed in this format or, **for your convenience, may be completed online using the [New York State VendRep System](#).**

COMPLETION & CERTIFICATION

The person(s) completing the questionnaire must be knowledgeable about the vendor's business and operations. An owner or owner's official representative authorized to legally bind the Reporting Entity, must certify the truth of the questionnaire answers.

NEW YORK STATE VENDOR IDENTIFICATION NUMBER (VENDOR ID)

The Vendor ID is a ten-digit identifier issued by New York State when the vendor is registered on the Statewide Vendor File. This number must now be included on the questionnaire. If the business entity has not obtained a Vendor ID, contact the IT Service Desk at ITServiceDesk@osc.state.ny.us or call 866-370-4672.

DEFINITIONS

All underlined terms are defined in the "New York State Vendor Responsibility Definitions List," found at <http://www.osc.state.ny.us/vendrep/documents/questionnaire/definitions.pdf>. These terms may not have their ordinary, common, or traditional meanings. Each vendor must read the respective definitions for any and all underlined terms. By submitting this questionnaire, the vendor agrees to be bound by the terms as defined in the "New York State Vendor Responsibility Definitions List" existing at the time of certification.

RESPONSES

Every question must be answered fully. Each response must provide all relevant information to appropriately explain the answer. If you have concerns as to the legal requirements behind your answers, please seek clarification from your counsel. However, information regarding a determination or finding made in error which was subsequently corrected or overturned, and/or was withdrawn by the issuing government entity, is not required to be identified. Individuals and Sole Proprietors may use a Social Security Number but are encouraged to obtain and use a federal Employer Identification Number (EIN).

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)

BUSINESS ENTITY INFORMATION	
Legal Business Name	<u>EIN</u> _____
Address of the <u>Principal Place of Business</u> (street, city, state, zip code) NO P.O. Boxes	<u>New York State Vendor Identification Number</u>
	Telephone ext. Fax
	Website (include all)

Authorized Contact for this Questionnaire

Name	Telephone ext.	Fax
Title	Email	

Additional Business Entity Identities: If applicable, list any other DBA, Trade Name, Former Name, Other Identity, or EIN used in the last five (5) years, the state or county where filed and the status (active or inactive).

Type	Name	EIN	State or County where filed	Status

I. BUSINESS CHARACTERISTICS

1.0 Business Entity Type – Check appropriate box and provide additional information:

a) <input type="checkbox"/> <u>Corporation</u> (including <u>PC</u>)	Date of Incorporation
b) <input type="checkbox"/> <u>Limited Liability Company</u> (<u>LLC</u> or <u>PLLC</u>)	Date Organized
c) <input type="checkbox"/> <u>Limited Liability Partnership</u>	Date of Registration
d) <input type="checkbox"/> <u>Limited Partnership</u>	Date Established
e) <input type="checkbox"/> <u>General Partnership</u>	Date Established County (if formed in NYS)
f) <input type="checkbox"/> <u>Sole Proprietor</u>	How many years in business?
g) <input type="checkbox"/> Other	Date Established

If Other, explain:

1.0 Was the <u>Business Entity</u> formed in New York State?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If "No," indicate jurisdiction where the <u>Business Entity</u> was formed:	

**NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)**

I. BUSINESS CHARACTERISTICS				
<input type="checkbox"/> United States	<input type="checkbox"/> State			
<input type="checkbox"/> Other	<input type="checkbox"/> Country			
1.2 Is the <u>Legal Business Entity</u> publicly traded?			<input type="checkbox"/> Yes <input type="checkbox"/> No	
If "Yes," provide the <u>CIK</u> code or Ticker Symbol:				
1.3 Is the <u>Business Entity</u> currently <u>registered to do business in New York State</u> ? <i>Note: Select "Not Required" if the Business Entity is a Sole Proprietor or General Partnership</i>			<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	
If "No," explain why the <u>Business Entity</u> is not required to be <u>registered to do business in New York State</u> :				
1.4 Is the responding <u>Business Entity</u> a <u>Joint Venture</u> ? Note: If the submitting <u>Business Entity</u> is a <u>Joint Venture</u> , also submit a separate questionnaire for each <u>Business Entity</u> comprising the <u>Joint Venture</u> .			<input type="checkbox"/> Yes <input type="checkbox"/> No	
1.5 If the <u>Business Entity's Principal Place of Business</u> is not in New York State, does the <u>Business Entity</u> <u>maintain</u> an office in New York State? <i>(Select "N/A" if Principal Place of Business is in New York State.)</i>			<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
If "Yes," provide the address and telephone number for one office located in New York State.				
1.6 Is the Business Entity a New York State certified <u>Minority-Owned Business Enterprise</u> , <u>Women-Owned Business Enterprise</u> , <u>Service-Disabled Veteran-Owned Business</u> , <u>New York State Small Business</u> , or federally certified <u>Disadvantaged Business Enterprise</u> ?			<input type="checkbox"/> Yes <input type="checkbox"/> No	
If "Yes," check all that apply:				
<input type="checkbox"/> New York State certified <u>Minority-Owned Business Enterprise</u> (MBE) <input type="checkbox"/> New York State certified <u>Women-Owned Business Enterprise</u> (WBE) <input type="checkbox"/> New York State certified <u>Service-Disabled Veteran-Owned Business</u> (SDVOB) <input type="checkbox"/> <u>New York State Small Business</u> <input type="checkbox"/> Federally certified <u>Disadvantaged Business Enterprise</u> (DBE)				
1.7 Identify each person or Business Entity that is or has been within the past five (5) years, a Business Entity Official, or a <u>Principal Owner</u> of 5.0% or more of the Reporting Entity's shares; or one of the five largest shareholders, if applicable. <i>(Attach additional pages if necessary.)</i>				
Joint Ventures: Provide information for all firms involved. Each Business Entity identified as a Principal Owner must also submit a Vendor Responsibility Questionnaire. (Add additional sheets if necessary.) For each person, include name, title, date of birth, percentage of ownership, and employment status. For each Business Entity that is a Principal Owner, include name, address, EIN, and percentage of ownership.				
If there is no person or <u>Business Entity</u> that owns 5% or more of the Reporting Entity, check here: <input type="checkbox"/>				
Name <i>(For each person, include a middle initial)</i>	Title	Date of Birth	Percentage of ownership <i>(Enter 0%, if not applicable)</i>	Employment status with the firm

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)

I. BUSINESS CHARACTERISTICS				
				<input type="checkbox"/> Current <input type="checkbox"/> Former <input type="checkbox"/> N/A
				<input type="checkbox"/> Current <input type="checkbox"/> Former <input type="checkbox"/> N/A
				<input type="checkbox"/> Current <input type="checkbox"/> Former <input type="checkbox"/> N/A
				<input type="checkbox"/> Current <input type="checkbox"/> Former <input type="checkbox"/> N/A
Name of <u>Each Business Entity</u> owning 5% or more of <u>Reporting Entity</u>	Address	EIN	Percentage Ownership	

II. AFFILIATE and JOINT VENTURE RELATIONSHIPS		
2.0 Are there any other <u>construction</u> -related firms in which, now or in the past five years, the submitting <u>Business Entity</u> or any of the individuals or business entities listed in question 1.7 either owned or owns 5.0% or more of the shares of, or was or is one of the five largest shareholders or a director, officer, partner, or proprietor of said other firm?		<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, identify below and if there is more than one, <i>attach additional pages with required information.</i>		
Firm/Company Name	Firm/Company EIN (If available)	Firm/Company's Primary Business Activity
Firm/Company Address		
Explain relationship with the firm and indicate percent of ownership, if applicable (enter N/A, if not applicable):		
Are there any shareholders, directors, officers, owners, partners or proprietors that the submitting <u>Business Entity</u> has in common with the disclosed firm(s)?		<input type="checkbox"/> Yes <input type="checkbox"/> No
Individual's Name (<i>Include middle initial</i>)	Position/Title with Firm/Company	

**NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)**

II. AFFILIATE and JOINT VENTURE RELATIONSHIPS

2.1 Does the Business Entity have any construction-related affiliates not identified in the response to question 2.0 above?

If yes, identify below and if there is more than one, *attach additional pages with the required information.*

Affiliate Name	Affiliate EIN (If available)	Affiliate's Primary Business Activity
Affiliate Address		
Explain relationship with the affiliate and indicate percent of ownership, if applicable (<i>enter N/A, if not applicable</i>):		
Are there any shareholders, directors, officers, owners, partners or proprietors that the submitting Business Entity has in common with the disclosed affiliate(s)?		<input type="checkbox"/> Yes <input type="checkbox"/> No
Individual's Name (<i>Include middle initial</i>)	Position/Title with Firm/Company	
2.2 Has the <u>Business Entity</u> participated in any <u>construction-related Joint Ventures</u> within the past three (3) years?		<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, identify below and if there is more than one, <i>attach additional pages with the required information.</i>		
Joint Venture Name	Joint Venture EIN (If available)	Identify parties to the Joint Venture

III. CONTRACT HISTORY

3.0 Has the Business Entity completed any construction contracts?

Yes No

If "Yes," list the ten most recent construction contracts the Business Entity has completed for government clients using Attachment A – Completed Construction Contracts, found at www.osc.state.ny.us/vendrep/documents/questionnaire/ac3294s.doc.

At the Business Entity's option, it may include construction contracts completed for private clients. If less than ten, include most recent subcontracts on projects up to that number.

3.1 Does the Business Entity currently have uncompleted construction contracts?

Yes No

If "Yes," list all current uncompleted construction contracts for government clients by using Attachment B – Uncompleted Construction Contracts, found at www.osc.state.ny.us/vendrep/documents/questionnaire/ac3295s.doc.

Note: Ongoing projects must be included. At the Business Entity's option, it may include construction contracts uncompleted for private clients.

IV. INTEGRITY – CONTRACT BIDDING

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

4.0 Been <u>suspended or debarred</u> from any <u>government contracting process</u> or been <u>disqualified</u> on any <u>government procurement</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.1 Been subject to a denial or revocation of a government prequalification?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.2 Had any bid rejected by a <u>government entity</u> for lack of qualifications, responsibility or because of the submission of an informal, non-responsive or incomplete bid?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.3 Had a proposed subcontract rejected by a <u>government entity</u> for lack of qualifications, responsibility or because of the submission of an informal, non-responsive or incomplete bid?	<input type="checkbox"/> Yes <input type="checkbox"/> No

**NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)**

IV. INTEGRITY – CONTRACT BIDDING

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

4.4 Had a bid rejected on a <u>government contract</u> for failure to make <u>good faith efforts</u> on any <u>Minority-Owned Business Enterprise, Women-Owned Business Enterprise, Service-Disabled Veteran-Owned Business or Disadvantaged Business Enterprise</u> goal or <u>statutory affirmative action requirements</u> on a previously held contract?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.5 Agreed to a voluntary exclusion from bidding/contracting with a <u>government entity</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.6 Requested or been permitted to withdraw a bid submitted to a <u>government entity</u> or made any claim of an error on a bid submitted to a <u>government entity</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No

For each “Yes,” provide an explanation of the issue(s), the Business Entity, affiliate, predecessor company or entity involved, the relationship to the submitting Business Entity, the government entity involved, project(s), relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses to explain each “YES” response.

V. INTEGRITY – CONTRACT AWARD

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

5.0 Defaulted on or been <u>suspended</u> , cancelled or <u>terminated for cause</u> on any contract?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.1 Been subject to an <u>administrative proceeding</u> or civil action, including arbitration, seeking specific performance or restitution (except any disputed work proceeding) in connection with any <u>government contract</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.2 Entered into a formal monitoring agreement, integrity agreement, consent decree, or stipulation, settlement as specified by, or agreed to with, any <u>government entity</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.3 Had its surety called upon to complete any contract whether government or private sector?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.4 Forfeited all or part of a standby letter of credit in connection with any <u>government contract</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No

For each “Yes,” provide an explanation of the issue(s), the Business Entity, affiliate, predecessor company or entity involved, the relationship to the submitting Business Entity, the government entity/owners involved, project(s), contract number(s), relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses to explain each “YES” response.

VI. CERTIFICATIONS/LICENSES

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

6.0 Had a revocation or <u>suspension</u> of any business or professional permit and/or license?	<input type="checkbox"/> Yes <input type="checkbox"/> No
6.1 Had a denial, decertification, revocation or forfeiture of New York State certification of <u>Minority-Owned Business Enterprise, Women-Owned Business Enterprise, Service-Disabled Veteran-Owned Business</u> or a federal certification of <u>Disadvantaged Business Enterprise</u> status, for other than a change of ownership?	<input type="checkbox"/> Yes <input type="checkbox"/> No

For each “Yes,” provide an explanation of the issue(s), the Business Entity affiliate, predecessor company or entity involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses to explain each “YES” response.

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)

VII. LEGAL PROCEEDINGS/GOVERNMENT INVESTIGATIONS

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

7.0 Been the subject of a criminal <u>investigation</u> , whether open or closed, or an indictment for any business-related conduct constituting a crime under local, state or <u>federal</u> law?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.1 Been the subject of: <ul style="list-style-type: none"> (i.) An indictment, grant of immunity, <u>judgment</u> or conviction (including entering into a plea bargain) for conduct constituting a crime; or (ii.) Any criminal <u>investigation</u>, felony indictment or conviction concerning the formation of, or any business association with, an allegedly false or fraudulent <u>Minority-Owned Business Enterprise</u>, <u>Women-Owned Business Enterprise</u>, Service-Disabled Veteran-Owned Business, or a <u>Disadvantaged Business Enterprise</u>? 	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.2 Received any <u>OSHA</u> citation, which resulted in a final determination classified as <u>serious</u> or <u>willful</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.3 Had a <u>government entity</u> find a willful prevailing wage or supplemental payment violation?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.4 Had a New York State Labor Law violation deemed willful?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.5 Entered into a consent order, monitoring agreement or other type of oversight with the New York State Department of Environmental Conservation, or a <u>federal</u> , state or local government enforcement entity involving a violation of <u>federal</u> , state or local environmental laws?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.6 Other than previously disclosed, been the subject of any <u>citations</u> , notices or violation orders; a pending administrative hearing, proceeding or determination of a violation of: <ul style="list-style-type: none"> • <u>Federal</u>, state or local health laws, rules or regulations; • <u>Federal</u>, state or local environmental laws, rules or regulations; • Unemployment insurance or workers compensation coverage or <u>claim</u> requirements; • Any labor law or regulation, which was deemed willful; • Employee Retirement Income Security Act (ERISA); • <u>Federal</u>, state or local human rights laws; • <u>Federal</u>, state or local security laws; • <u>Federal</u>, state, or local tax laws? 	<input type="checkbox"/> Yes <input type="checkbox"/> No

For each "Yes," provide an explanation of the issue(s), the Business Entity, affiliate, predecessor company or entity involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses to explain each "YES" response.

Note: Information regarding a determination or finding made in error, which was subsequently corrected or overturned, and/or was withdrawn by the issuing government entity, is not required.

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)

VIII. LEADERSHIP INTEGRITY

If the Business Entity is a Joint Venture Entity, answer “N/A - Not Applicable” to questions in this section.

Within the past five (5) years has any individual previously identified or any individual currently or formerly having the authority to sign, execute or approve bids, proposals, contracts or supporting documentation on behalf of the Business Entity with any government entity been:

8.0 <u>Sanctioned</u> relative to any business or professional permit and/or license?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
8.1 <u>Suspended, debarred or disqualified</u> from any <u>government contracting process</u> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
8.2 The subject of a criminal <u>investigation</u> , whether open or closed, or an indictment for any business-related conduct constituting a crime under local, state or <u>federal</u> law?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
8.3 Charged with a misdemeanor or felony, indicted, granted immunity, convicted of a crime or subject to a judgment for: <ul style="list-style-type: none"> (i.) Any business-related activity, including but not limited to theft, fraud, coercion, extortion, bribe or bribe-receiving, giving or accepting unlawful gratuities, immigration or tax fraud, racketeering, mail fraud, wire fraud, price-fixing or collusive bidding; or (ii.) Any crime, whether or not business-related, the underlying conduct of which related to truthfulness, including but not limited to the filing of false documents or false sworn statements, perjury or larceny 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

For each “Yes,” provide an explanation of the issue(s), the individual involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses to explain each “YES” response.

IX. FINANCIAL AND ORGANIZATIONAL CAPACITY

9.0 Within the past five (5) years, has the <u>Business Entity</u> or any <u>affiliate</u> received any <u>formal unsatisfactory performance assessment(s)</u> from any <u>government entity</u> on any contract?	<input type="checkbox"/> Yes <input type="checkbox"/> No
---	--

If “Yes,” provide an explanation of the issue(s), the Business Entity or affiliate involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses to explain the “Yes” response.

9.1 Within the past five (5) years, has the <u>Business Entity</u> or any <u>affiliate</u> had any <u>liquidated damages</u> assessed over \$25,000 for any reason, including failure to meet <u>Minority-Owned Business Enterprise</u> , <u>Women-Owned Business Enterprise</u> , <u>Service-Disabled Veteran-Owned Business</u> , or <u>Disadvantaged Business Enterprise</u> goals?	<input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

If “Yes,” provide an explanation of the issue(s), the name of the Business Entity or affiliate involved, the relationship to the submitting Business Entity, relevant dates, the contracting party involved, the amount assessed and the current status of the issue(s), and the balance of the assessment not yet paid. Provide answer below or attach additional sheets with numbered responses.

9.2 Within the past five (5) years, has the <u>Business Entity</u> or any <u>affiliate</u> had any <u>liens, claims or judgments</u> over \$25,000 filed against the <u>Business Entity</u> which remain undischarged or were unsatisfied for more than 90 days? (Note: Including but not limited to tax warrants or liens. Do not include UCC filings.)	<input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

**NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)**

IX. FINANCIAL AND ORGANIZATIONAL CAPACITY

If "Yes," provide an explanation of the issue(s), the name of the Business Entity or affiliate involved, the relationship to the submitting Business Entity, relevant dates, the Lien holder or Claimants' name(s), the amount of the lien(s), the current status of the issue(s), and the balance of the lien, claim or judgment not yet paid. Provide answer below or attach additional sheets with numbered responses.

9.3 In the last seven (7) years, has the Business Entity or any affiliate, or official initiated or been the subject of any bankruptcy proceedings, whether or not closed, or is any bankruptcy proceeding pending? Yes No

If "Yes," provide the name of the Business Entity, affiliate or official involved, the relationship to the submitting Business Entity, the bankruptcy chapter number, the court name and the docket number. Indicate the current status of the proceedings as "Initiated," "Pending" or "Closed." Provide answer below or attach additional sheets with numbered responses to explain the YES response.

9.4 What is the Business Entity's Bonding Capacity?

a. Single Project	b. Aggregate (All Projects)
-------------------	-----------------------------

9.5 List Business Entity's Gross Sales for the previous three (3) Fiscal Years:

1st Year (Indicate year) Gross Sales	2nd Year (Indicate year) Gross Sales	3rd Year (Indicate year) Gross Sales
--	--	--

9.6 List Business Entity's Average Backlog for the previous three (3) fiscal years:

(Estimated total value of uncompleted work on outstanding contracts)

1st Year (Indicate year) Amount	2nd Year (Indicate year) Amount	3rd Year (Indicate year) Amount
-------------------------------------	-------------------------------------	-------------------------------------

9.7 Attach Business Entity's most recent annual financial statement and accompanying notes or complete Attachment C – Financial Information, found at www.osc.state.ny.us/vendrep/documents/questionnaire/ac3296s.xls.

(This information must be attached.)

X. FREEDOM OF INFORMATION LAW (FOIL)

10.0 Indicate whether any information provided herein is believed to be exempt from disclosure under the Freedom of Information Law (FOIL). Yes No

Note: A determination of whether such information is exempt from FOIL will be made at the time of any request for disclosure under FOIL. Attach additional pages if necessary.

If "Yes," indicate the question number(s) and explain the basis for the claim.

Authorized

XI. AUTHORIZED CONTACT FOR THIS QUESTIONNAIRE

Name	Telephone ext.	Fax
Title	Email	

**NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)****Certification**

The undersigned: (1) recognizes that this questionnaire is submitted for the express purpose of assisting New York State government entities (including the Office of the State Comptroller (OSC)) in making responsibility determinations regarding award or approval of a contract or subcontract and that such government entities will rely on information disclosed in the questionnaire in making responsibility determinations; (2) acknowledges that the New York State government entities and OSC may, in their discretion, by means which they may choose, verify the truth and accuracy of all statements made herein; and (3) acknowledges that intentional submission of false or misleading information may result in criminal penalties under State and/or federal law, as well as a finding of non-responsibility, contract suspension or contract termination.

It being acknowledged and agreed that all responses included in this questionnaire are to the knowledge, information and belief of the Business Entity, the undersigned certifies under penalties of perjury that they:

The undersigned certifies that he/she:

- are knowledgeable about the submitting Business Entity's business and operations;
- have legal authority to bind the Business Entity;
- have read and understand all of the questions contained in the questionnaire, including all definitions;
- have not altered the content of the questionnaire in any manner;
- have reviewed and/or supplied full and complete responses to each question;
- have provided true, accurate and complete responses, including all attachments, if applicable;
- understand that New York State government entities will rely on the information disclosed in the questionnaire when entering into a contract with the Business Entity; and
- are under an obligation to update the information provided herein to include any material changes to the Business Entity's responses at the time of bid/proposal submission through the contract award notification, and may be required to update the information at the request of the New York State government entities or OSC prior to the award and/or approval of a contract, or during the term of the contract.

Signature of Owner/Official _____

Printed Name of Signatory _____

Title _____

Name of Business _____

Address _____

City, State, Zip _____

Date _____

NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT A – COMPLETED CONSTRUCTION CONTRACTS

Vendor Name:

NYS Vendor ID:

Question 3.0: List the ten most recent construction contracts the Business Entity has completed. If less than ten, include most recent subcontracts on projects up to that number:						
1.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
2.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
3.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
4.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
5.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable

NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT A – COMPLETED CONSTRUCTION CONTRACTS

Vendor Name:

NYS Vendor ID:

Question 3.0: List the ten most recent construction contracts the Business Entity has completed. If less than ten, include most recent subcontracts on projects up to that number:						
6.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
7.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
8.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
9.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
10.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable

NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT B – UNCOMPLETED CONSTRUCTION CONTRACTS

Vendor Name:

NYS Vendor ID:

Question 3.1: List all current uncompleted construction contracts:						
1.	Agency/Owner				Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount	
2.	Agency/Owner				Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount	
3.	Agency/Owner				Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount	
4.	Agency/Owner				Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount	

NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT B – UNCOMPLETED CONSTRUCTION CONTRACTS

Vendor Name:

NYS Vendor ID:

Question 3.1: List all current uncompleted construction contracts:						
5.	Agency/Owner				Award Date	
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
			Total Contract Amount	Amount Sublet to others		Uncompleted Amount
6.	Agency/Owner				Award Date	
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
			Total Contract Amount	Amount Sublet to others		Uncompleted Amount
7.	Agency/Owner				Award Date	
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
			Total Contract Amount	Amount Sublet to others		Uncompleted Amount
8.	Agency/Owner				Award Date	
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
			Total Contract Amount	Amount Sublet to others		Uncompleted Amount

NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT B – UNCOMPLETED CONSTRUCTION CONTRACTS

Vendor Name:

NYS Vendor ID:

Question 3.1: List all current uncompleted construction contracts:						
9.	Agency/Owner				Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount	
10.	Agency/Owner				Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount	
Grand Total All Uncompleted Contracts						\$0.00

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT C - FINANCIAL INFORMATION

NYS Vendor ID: _____

As of Date: _____

ASSETS

Current Assets

1. Cash	\$ _____ -
2. Accounts receivable - less allowance for doubtful accounts	\$ _____ -
Retainers included in accounts receivable	\$ _____ -
Claims included in accounts receivable not yet approved or in litigation	\$ _____ -
Total Accounts Receivable	\$ _____ -
3. Notes receivable - due within one year	\$ _____ -
4. Inventory - materials	\$ _____ -
5. Contract costs in excess of billings on uncompleted contracts	\$ _____ -
6. Accrued income receivable	
Interest	\$ _____ -
Other (list) _____	\$ _____ -
Total Accrued Income Receivable	\$ _____ -
7. Deposits	
Bid and Plan	\$ _____ -
Other (list) _____	\$ _____ -
Total Deposits	\$ _____ -
8. Prepaid Expenses	
Income Taxes	\$ _____ -
Insurance	\$ _____ -
Other (list) _____	\$ _____ -
Total Prepaid Expenses	\$ _____ -
9. Other Current Assets	
Other (list) _____	\$ _____ -
Total Other Current Assets	\$ _____ -
10. Total Current Assets	\$ _____ -
11. Investments	
Listed securities-present market value	\$ _____ -
Unlisted securities-present value	\$ _____ -
Total Investments	\$ _____ -

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT C - FINANCIAL INFORMATION

NYS Vendor ID: _____

12. Fixed Assets

Land	\$ _____	-
Building and improvements	\$ _____	-
Leasehold improvements	\$ _____	-
Machinery and equipment	\$ _____	-
Automotive equipment	\$ _____	-
Office furniture and fixtures	\$ _____	-
Other (list)	\$ _____	-
 Total	 \$ _____	 -
Less: Accumulated depreciation	\$ _____	-
 Total Fixed Assets - Net	 \$ _____	 -

13. Other Assets

Loans receivable		
Officers	\$ _____	-
Employees	\$ _____	-
Shareholders	\$ _____	-
Cash surrender value of officers' life insurance	\$ _____	-
Organization expense – net of amortization	\$ _____	-
Notes receivable - due after one year	\$ _____	-
Other (list)	\$ _____	-
 Total Other Assets	 \$ _____	 -

14. TOTAL ASSETS

	\$ _____	-
	\$ _____	-
	 \$ _____	 -

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT C - FINANCIAL INFORMATION

NYS Vendor ID: _____

LIABILITIES

Current Liabilities

15. Accounts payable	\$ _____ -
16 a. Loans from shareholders - due within one year	\$ _____ -
16 b. Other Loans - due within one year	\$ _____ -
17. Notes payable - due within one year	\$ _____ -
18. Mortgage payable - due within one year	\$ _____ -
19. Other payables - due within one year	\$ _____ -
Other (list) _____	\$ _____ -
Total Other Payables - due within one year	\$ _____ -
20. Billings in excess of costs and estimated earnings	\$ _____ -
21. Accrued expenses payable	
Salaries and wages	\$ _____ -
Payroll taxes	\$ _____ -
Employees' benefits	\$ _____ -
Insurance	\$ _____ -
Other	\$ _____ -
Total Accrued Expenses Payable	\$ _____ -
22. Dividends payable	\$ _____ -
23. Income taxes payable	
State	\$ _____ -
Federal	\$ _____ -
Other	\$ _____ -
Total Income Taxes Payable	\$ _____ -
24. Total current liabilities	\$ _____ -
25. Deferred income taxes payable	
State	\$ _____ -
Federal	\$ _____ -
Other	\$ _____ -
Total Deferred Income Taxes	\$ _____ -
26. Long Term Liabilities	
Loans from shareholders - due after one year	\$ _____ -
Other Loans - due within one year	
Principle	\$ _____ -
Interest	\$ _____ -
Notes payable - due after one year	\$ _____ -
Mortgage - due after one year	\$ _____ -
Other payables - due after one year	\$ _____ -
Other (list) _____	\$ _____ -
Total Long Term Liabilities	\$ _____ -

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT C - FINANCIAL INFORMATION

NYS Vendor ID: _____

27. Other Liabilities

Other (list) _____

\$ _____ -
\$ _____ -

Total Other Liabilities _____

\$ _____ -
\$ _____ -

28. TOTAL LIABILITIES

NET WORTH

29. Net Worth (if proprietorship or partnership)

\$ _____ -

30. Stockholders' Equity

Common stock issued and outstanding

\$ _____ -

Preferred stock issued and outstanding

\$ _____ -

Retained earnings

\$ _____ -

Total

\$ _____ -

Less: Treasury stock

\$ _____ -

31. TOTAL STOCKHOLDERS' EQUITY

\$ _____ -

32. TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY

\$ _____ -

END OF SECTION 004546

IRAN DIVESTMENT ACT CERTIFICATION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to paragraph (b) of subdivision 3 of section 165-a of the state finance law.

Dated: _____

(Name of corporation or partnership)

(Signature of Individual)

(Officer stating title) (Partner)

(Print Name of Individual)**END OF SECTION 004547**

I have been advised that the Board of the Riverhead Water District requires that vendors and contractors submitting a competitive bid on a purchase or public works contract or a proposal on a purchase or public works contract that does not require competitive bidding file with the Owner at the time of bid or proposal submission a statement in the form required for contractors by the State of New York under State Finance Law § 139-l relative to compliance with requirements for employer sexual harassment prevention programs.

On behalf of myself and my firm or corporation I make the following statement.

By submission of this bid or proposal, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all of its employees. Such policy shall, at a minimum, meet the requirements of section two hundred one-g of the labor law.

I recognize that my failure to submit this statement may result in the rejection of my bid.

If I need to qualify this statement under State Finance Law § 139-l, subparagraph (3) I hereby state the reasons why I must qualify this statement:

I have been advised that pursuant to State Finance Law § 139-l this statement and my signature below shall be deemed to have been authorized by the board of directors of my firm or corporation, and such authorization shall be deemed to include the signing and submission of such bid or proposal and the inclusion of such statement as the act and deed of the corporation.

I, hereby affirm under the penalties of perjury that the foregoing statement is true.

Signature

Print Name

State of New York)
) ss.:
County of)

On the _____ day of _____ in the year 20____ before me personally came _____ to me known, who, being by me duly sworn, did depose and say that he/she/they reside(s) in _____ (place of residence); that he/she/they is (are) the _____ (office held) of the _____ (name of corporation), the corporation described in and which executed the above instrument; that he/she/they know(s) the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by authority of the board of directors of said corporation, and that he/she/they signed his/her/their name(s) thereto by like authority.

NOTARY PUBLIC

END OF SECTION 004548

**Riverhead Water District
Suffolk County, New York**

The Owner may make such investigation as the Owner deems necessary to determine the responsibility of any Bidder or to determine the ability of any Bidder to perform the Work. Bidders shall furnish to the Owner all information and data required by the Owner, including complete financial data, within the time and in the form and manner required by the Owner. The Owner reserves the right to reject any bid if the evidence required by the Owner is not submitted as required or if the evidence submitted by or the investigation of any Bidder fails to satisfy the Owner that the Bidder is responsible, or is able or qualified to carry out the obligations of the Contract or to complete the Work as contemplated. At the discretion of the Owner, any bidder may be required to complete and submit the enclosed New York State Vendor Responsibility Questionnaire to assist in determining the bidder's qualifications.

The following is a list showing the name of the Owner, Location, Date of Construction, General Description of Work, Amount of the Contract and Contract Period for projects of similar nature in size, construction method and construction procedure, which have been completed by the undersigned as the prime contractor, and which have been in operation for a period of not less than one year, (minimum of five such projects).

PROJECT NO. 1

Owner: _____

Contact Name and Phone Number: _____

Location: _____

General Description: _____

Contract Amount: _____

Contract Period: _____

PROJECT NO. 2

Owner: _____

Contact Name and Phone Number: _____

Location: _____

General Description: _____

Contract Amount: _____

Contract Period: _____

PROJECT NO. 3

Owner: _____

Contact Name and Phone Number: _____

Location: _____

General Description: _____

Contract Amount: _____

Contract Period: _____

PROJECT NO. 4

Owner: _____

Contact Name and Phone Number: _____

Location: _____

General Description: _____

Contract Amount: _____

Contract Period: _____

PROJECT NO. 5

Owner: _____

Contact Name and Phone Number: _____

Location: _____

General Description: _____

Contract Amount: _____

Contract Period: _____

The following is a list of the major areas of construction work under this contract to be performed by subcontractors to the bidder, showing the Type of Work and the name of the Owner, Location and Date of Construction for work of similar nature in size, construction method and construction procedure, which have been completed by the undersigned, and which have been in operation for a period of not less than one year, (minimum of five such projects).

Subcontractor Name: _____

Type of Work: _____

<u>Owner</u>	<u>Contact Name</u>	<u>Phone Number</u>	<u>Location</u>	<u>Contract Amount</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Subcontractor Name: _____

Type of Work: _____

<u>Owner</u>	<u>Contact Name</u>	<u>Phone Number</u>	<u>Location</u>	<u>Contract Amount</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Subcontractor Name: _____

Type of Work: _____

<u>Owner</u>	<u>Contact Name</u>	<u>Phone Number</u>	<u>Location</u>	<u>Contract Amount</u>

Subcontractor Name: _____

Type of Work: _____

<u>Owner</u>	<u>Contact Name</u>	<u>Phone Number</u>	<u>Location</u>	<u>Contract Amount</u>

The Riverhead Water District reserves the right to reject any and all bids which do not include a completed qualifications section and/or do not meet the necessary qualifications criteria, for both prime contractor and subcontractors, as described within this qualifications section, for construction work to be performed and completed as required by the contract documents.

BIDDER

FIRM NAME: _____

ADDRESS: _____

PREPARED BY: _____

SIGNED BY: _____

TITLE: _____

END OF SECTION 004550

SECTION 005209 – CONTRACT

CONTRACT IN QUADRUPLETCATE FOR _____
_____; FOR THE TOWN OF RIVERHEAD, SUFFOLK COUNTY, NEW YORK, dated
_____, BY AND BETWEEN THE TOWN BOARD OF THE TOWN OF RIVERHEAD,
SUFFOLK COUNTY, NEW YORK, acting for and in behalf of the RIVERHEAD WATER DISTRICT
(herein called the TOWN/DISTRICT), and _____
_____ (herein called the CONTRACTOR).

WITNESSETH, that the TOWN/DISTRICT and the CONTRACTOR, in consideration of the premises and of the mutual covenants, considerations and agreements herein contained, agree as follows:

This Contract is hereby awarded to the CONTRACTOR, as per Town Board Resolution No. _____ dated _____, for the work and material called for under his bid in the Proposal section of the Contract and designated as Items: _____

and if required by the District, Items: _____

for the sum of: _____
_____ (\$)

for the unit and/or lump sum price(s) as listed in the Proposal herein.

SECTION 005209 – CONTRACT

1. CONTRACT DOCUMENTS AND DEFINITIONS

The Notice to Bidders, Information for Bidders, Proposal, General Conditions, Contract, and Specifications, together with any Addenda, shall form part of this Contract, and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth. The titles, headings, headlines and marginal notes contained herein are solely to facilitate reference to the various provisions of the contract documents and in no way affect, limit or cast light upon the interpretation of the provisions to which they refer. Whenever the term "contract documents" is used, it shall mean and include this Contract, Specifications, any Addenda, and the Notice to Bidders, Information for Bidders, General Conditions and Proposal. In case of any conflict or inconsistency between the provisions of the Contract and those of the Specifications, the provisions of the Contract shall govern.

TOWN/DISTRICT: The term TOWN/DISTRICT shall refer to the Town of Riverhead acting in its capacity as administrators of the Riverhead Water District. Where used independently, the terms shall refer to the Town of Riverhead (Town) and Riverhead Water District (District).

WORK: The term WORK, as used herein, refers to all of the work proposed to be accomplished at the site of the project and all such other work as is in any manner required to accomplish the completed project, and includes all plant, labor, materials, supplies, equipment and other facilities and acts necessary or proper for or incidental to the carrying out and completion of the terms of this Contract. The term WORK PERFORMED shall be construed to include material delivered to and suitably stored at the site of the project.

EXTRA WORK: The term EXTRA WORK, as used herein, refers to and includes all work required by the TOWN/DISTRICT which, in the judgment of the Engineer, with the Town's approval, involves changes in or additions to work required by the contract, Specifications and any Addenda in their present form.

SUBCONTRACTOR: The term SUBCONTRACTOR, as used herein, shall mean any person, firm or corporation applying labor and material for work at the site of the project, but not including the parties to this Contract.

ENGINEER: In the performance of the work, the TOWN/DISTRICT shall be represented by its Consulting Engineer H2M architects + engineers (herein called the ENGINEER).

NOTICE: The term NOTICE, as used herein, shall mean and include written notice. Written notice shall be deemed to have been duly served when delivered to, or at the last known business address of, the person, firm or corporation for whom intended or to his, their, or its duly authorized agents, representatives or officers, or when enclosed in a postage prepaid wrapper or envelope addressed to such person, firm, or corporation at his, their, or its last known business address and deposited in a United States Mail Box.

DIRECTED, REQUIRED, APPROVED, ACCEPTABLE: Whenever they refer to the work, or its performance, "directed", "required", "permitted", "ordered", "designated", "prescribed", and words of like import shall imply the direction, requirement, permission, order, designation or prescription of the Engineer, and "approved", "satisfied", or "satisfactory", "in the judgment of", and words of like import, shall mean approved or acceptable to, or satisfactory to, in the judgment of the Engineer.

2. SCOPE OF THE WORK

The Contractor will furnish all plant, labor, material, supplies, equipment and other facilities and things necessary or proper for or incidental to, the work contemplated by this Contract as required by, and in strict accordance with, the applicable Contract, Specifications and Addenda prepared by the Engineer

SECTION 005209 – CONTRACT

and/or required by and in strict accordance with, such changes as are ordered and approved pursuant to this Contract, and will perform all other obligations imposed on him by the Contract.

3. COMPENSATION TO BE PAID TO THE CONTRACTOR

- A. Agreed Prices: It is understood and agreed that the Contractor will accept as payment in full the summation of products, of the actual quantities in place upon the completion of the work, as determined by the Engineer's measurements by the unit prices bid, no allowance being made for anticipated profit or for reason of variations from the estimated quantities set forth in the Proposal.
- B. Extra Work and/or Changes: The TOWN/DISTRICT may, at any time, by a written order, and without notice to the sureties, require the performance of such extra work or changes in the work as it may find necessary or desirable. The amount of compensation to be paid to the Contractor for any extra work, as so ordered, shall be determined as follows:
 - (1) By such applicable unit prices, if any, as set forth in the contract; or
 - (2) If no such unit prices are set forth, then by unit prices or by a lump sum mutually agreed upon by the TOWN/DISTRICT and the Contractor; or
 - (3) If no such unit prices are set forth, and if the parties cannot agree upon unit prices or a lump sum, then by actual net cost in money to the Contractor of the materials, permits, wages, or applied labor, premium for Workers' Compensation Insurance, payroll taxes required by law, rental for plant and equipment used (excluding small tools) to which total cost will be added 20% as full compensation for all other items of profit, costs and expenses, including administration, overhead, superintendence, insurance, insurance other than Workers' Compensation Insurance, material used in temporary structures, allowances made by the Contractor to subcontractors, additional premiums upon the Performance Bond of the Contractor and the use of small tools.

4. TIME OF ESSENCE

Inasmuch as the provisions of this Contract relating to the time for performance and completion of the work are for the purpose of enabling the TOWN/DISTRICT to proceed with the construction of a public improvement, in accordance with a predetermined program, such provisions are of the essence of this Contract.

5. COMMENCEMENT OF WORK

The Contractor agrees that he will commence work in accordance with contract periods described herein.

6. TIME FOR COMPLETION

The time for completion of this Contract shall be in accordance with contract periods described herein. The TOWN/DISTRICT reserves the right to order the Contractor to suspend operations when, in the opinion of the Engineer, improper weather conditions make such action advisable, and to order the Contractor to resume operations when weather and ground conditions permit. The days during which such suspension of work is in force are not chargeable against the specified completion time.

SECTION 005209 – CONTRACT

7. LIQUIDATED DAMAGES FOR DELAY

The time limit being essential to and of the essence of this Contract, the Contractor hereby agrees that the TOWN/DISTRICT shall be, and is hereby authorized to deduct and retain out of the money which may be due or may become due to said Contractor under this agreement, the sum of ONE THOUSAND DOLLARS (\$1,000.00) per day, which amount is hereby agreed upon, fixed and determined by the parties hereto as the LIQUIDATED DAMAGES, including overhead charges, services, inspector's wages, and interest on the money invested, that the TOWN/DISTRICT will suffer by reason of such default, for each and every day during which the aforesaid work may be incomplete over and beyond the time herein stipulated for its completion. The TOWN/DISTRICT shall have the right to extend the time for the completion of said work.

8. EXTENSIONS OF TIME - NO WAIVER

If the Contractor shall be delayed in the completion of his work by reason of unforeseeable causes beyond his control and without his fault or negligence, including but not restricted to Acts of God or of any public enemy, acts or neglect of the TOWN/DISTRICT, acts or neglect of any other Contractor, fires, floods, epidemics, quarantine restrictions, strikes, riots, civil commotion or freight embargoes, the period herein above specified for completion of his work shall be extended by such time as shall be fixed by the TOWN/DISTRICT.

No such extension of time shall be considered a waiver by the TOWN/DISTRICT of its right to terminate the Contract for abandonment or delay by the Contractor as hereinafter provided or relieve the Contractor from full responsibility for performance of his obligations hereunder.

9. CONTRACT SECURITY

- A. The Contractor shall furnish a Performance Bond for each respective year in an amount equal to one hundred percent (100%) of the total contract price as security for the faithful performance of this Contract, and for the payment of all persons performing labor or furnishing materials in connection with this Contract. The first Performance bond shall be furnished upon contract signing, the bond for the following year shall be supplied on the first of that year.
- B. Additional or Substitute Bond - If, at any time, the TOWN/DISTRICT shall be or become dissatisfied with any surety or sureties, then upon the Performance Bond, or if, for any other reason, such bond shall cease to be adequate security to the TOWN/DISTRICT, the Contractor shall, within five (5) days after notice from the TOWN/DISTRICT, substitute an acceptable bond in such form and sum, and signed by such other surety as may be satisfactory to the TOWN/DISTRICT. The premiums on such bonds shall be paid by the Contractor. No further payments shall be deemed due, nor shall be made until the new surety shall have been qualified.
- C. Prior to release of the Performance Bond, The Contractor shall deliver to the TOWN/DISTRICT a Maintenance Bond equal to one hundred percent (100%) of the total Contract price. This Maintenance Bond shall remain in full force and effect for a period of one (1) year after the date of the Engineer's approval of the final payment request and such bond, which shall be executed by the Contractor and issued by a reliable, solvent surety company authorized to do business in the State of New York shall guarantee to the TOWN/DISTRICT that the Contractor shall promptly remedy any defects or faults that may occur within twelve (12) months after completion and acceptance of the work performed by the Contractor pursuant to this Contract. The date of the Maintenance Bond shall be the date of final payment or other agreed upon date of acceptance by the Engineer and District. All extra work performed under the terms of this Contract shall be

SECTION 005209 – CONTRACT

covered under the Maintenance Bond and as such the bond shall represent the value of these items.

10. CONTRACTOR'S INSURANCE:

The Contractor shall not commence work under this Contract until he has obtained and had approved by the TOWN/DISTRICT the insurance required under this contract. Contractor shall maintain at a minimum the following insurance giving evidence of same, on the Acord form Certificates of Insurance, Acord Form 855 – New York Construction Certificate of Liability Insurance Addendum; copy of the Additional Insured Endorsements; provide 30 days' notice of cancellation, non-renewal or material change; C105.1 form or State Insurance Fund Certificate or Self-Insured SI-12 for Workers Compensation and DB120.1 Certificate for NYS Disability.

The insurance coverage limits set forth in Schedule below are minimum coverage requirements, not limitations of liability. New York State licensed admitted carrier is preferred; any non-licensed/non-admitted carriers will be accepted at TOWN/DISTRICT's discretion. The insurance carrier must have an A.M. Best Rating of at least A. All subcontractors must adhere to the same insurance and indemnification requirements.

The certificate holder for all policies shall be the Riverhead Water District. The Contractor shall not permit any subcontractor to commence any operation on the site until satisfactory proof of carriage of required insurance has been posted with and approved by the TOWN/DISTRICT.

Certificate Holder for all policies: Riverhead Water District
1035 Pulaski Street
Riverhead, NY 11901

Additional Insured to read: Town of Riverhead, Riverhead Water District, all elected and appointed officials, employees and volunteers of the TOWN/DISTRICT, and H2M architects + engineers using ISO Form CG2026 or equivalent including products and completed operations coverage ISO Form CG2037 or equivalent.

Additionally insured shall be listed and covered under the Commercial General Liability including Contractual Liability and Products and Completed Operations, Automobile Liability and Excess Liability. Insurance Coverage is to be primary and non-contributory to any insurance carried by any additional insured. Waiver of Subrogation is included on the Workers Compensation and General Liability in favor of the Additional Insureds.

- A. Workers Compensation & Employers Liability - The Contractor shall take out and maintain during the life of this Contract, Workers' Compensation Insurance for all of his employees employed at the site of the project, and in any case of any of the work being sublet, the Contractor shall require the subcontractor similarly to provide Workers' Compensation Insurance for all of the latter's employees, unless such employees are covered by the protection afforded by the Contractor. Minimum limits for each accident, employee and disease of \$1,000,000.
- B. Commercial General Liability and Insurance - The Contractor shall take out and maintain during the life of this Contract such insurance as shall protect him and any subcontractor performing work covered by this Contract for claims for damages for personal injury, including accidental death, as well as from claims for property damage which may arise from operations under this Contract, whether such operations be by himself or by any subcontractor, or by any one directly or indirectly employed by either of them, and the amounts of such insurance shall be as follows:

Occurrence – ISO Form CG2001 10-01 or equivalent

SECTION 005209 – CONTRACT

General Aggregate	\$2,000,000
Products & Completed Operations	\$2,000,000
Personal & Advertising Injury	\$1,000,000
Per Occurrence Limit	\$1,000,000
Damage to Rented Premises	\$ 100,000
Medical Expense (any one person)	\$ 10,000

The above policies for commercial general liability and umbrella liability insurance must be so written as to include Contractor's Protective Liability Insurance to protect the contractor against claims arising from the operations of any subcontractor.

Extensions - Mandatory:

- Aggregate Limits to apply per project.
- Full Contractual Liability extending to Hold Harmless Agreement.
- Contractual Liability Insurance is afforded per the definition of "insured contract" as defined in Form CG0001 with no endorsements that amend or restrict the definition of "insured contract".
- The general liability is to be primary and non-contributory to any insurance carried by any additional insured.
- The general liability must not include any exclusion, limitation or restriction pertaining to interior or exterior work height; "action over" type claims; or "injury to employee or subcontractor" exclusions, nor any exclusions for Claims that fall within the Purview of New York Labor Law Sections 200, 240 &241.
- Waiver of Subrogation in favor of all additional insureds.

C. Umbrella Liability - The Contractor shall maintain for the life of the contract excess coverage for bodily injury and property damage in an amount not less than FIVE MILLION DOLLARS (\$5,000,000.).

D. Commercial Automobile Liability - The Contractor shall take out and maintain during the life of the Contract such automobile public liability insurance as shall protect him and any subcontractor performing work covered by this Contract from claims for damages for personal injury, including accidental death as well as from claims for property damage which may arise from operations under this Contract, whether such operations be by himself or by any subcontractor, or by any one directly or indirectly employed by either of them and the amounts of such insurance shall be in an amount not less than ONE MILLION DOLLARS (\$1,000,000.) for bodily injuries, including wrongful death per occurrence.

E. Blanket Waiver of Subrogation - The above policies for workers' compensation insurance as well as comprehensive general liability insurance, automobile insurance, and excess umbrella liability insurance shall include waiver of transfer of rights of recovery against the Town of Riverhead, The Riverhead Water District, and H2M architects + engineers. Such waiver of subrogation shall be evidenced by certificate of insurance or copy of endorsement to the appropriate policy.

F. Owner's Protective Liability Insurance - (TOWN/DISTRICT, and/or TOWN BOARD, TOWN OF RIVERHEAD as OWNER and H2M architects + engineers as engineer) - If the Town of Riverhead, Riverhead Water District deem necessary, the Contractor shall furnish to the TOWN/DISTRICT with respect to the operations he or any of his subcontractors perform, a regular Owner's Protective Liability Insurance Policy for and in behalf of the TOWN/DISTRICT and/or TOWN BOARD, TOWN OF RIVERHEAD as OWNER, providing for a limit of not less than ONE MILLION DOLLARS (\$1,000,000.)

SECTION 005209 – CONTRACT

~~each occurrence, a total limit of TWO MILLION DOLLARS (\$2,000,000.) general aggregate for all damages arising out of bodily injuries to, or death of, two or more persons in any one accident; and regular Protective Property Damage Insurance providing for a limit of not less than ONE HUNDRED THOUSAND DOLLARS (\$100,000.) for all damages. The insurance must fully cover the legal liability of the TOWN/DISTRICT, TOWN BOARD, TOWN OF RIVERHEAD as OWNER and H2M architects + engineers as ENGINEER. The coverage provided under this policy must not be affected if the TOWN/DISTRICT performs work in connection with the project either for, or in cooperation with, the Contractor or as an aid thereto, whether the same be a part of the Contract or separate therefrom, by means of its own employees or agents, or if the TOWN/DISTRICT directs or supervises the work to be performed by the Contractor.~~

G. Pollution Liability (where applicable) - If contract involves environmentally regulated substances or Hazardous material exposure(s) and/or the disposal of waste or other hazardous substance from the worksite, the contractor shall maintain Contractor's Pollution Liability including Pollution Legal Liability insurance in the amount of at least \$5,000,000. per occurrence for 3rd party liability and clean-up. This coverage is to remain in effect for a minimum of (5) five years following the completion of work. If written on a claim made basis, the retroactive date must pre-date the inception of the contract or agreement.

11 PROOF OF CARRIAGE OF INSURANCE

The Contractor shall furnish the TOWN/DISTRICT with certificates of each insurer insuring the Contractor or any subcontractor under this Contract, except with respect to subdivision D. of paragraph 10. In respect to this paragraph, the Contractor shall furnish the TOWN/DISTRICT with the original insurance policy and a copy to the Engineer.

Both certificates, as furnished, and the insurance policy, as required, shall bear the policy numbers, the expiration date of the policy and the limit or limits of liability thereunder. Both the certificates and the policy shall be further endorsed to provide the TOWN/DISTRICT and Engineer with any notice of cancellation at least ten (10) days prior to the actual date of such cancellation.

12. COMPLIANCE WITH LABOR AND PENAL LAWS

The Contractor hereby expressly agrees to comply with all the provisions of the Labor Law and any and all amendments thereto, insofar as the same are applicable to this Contract. The Labor Laws, as amended, provide that no laborer, worker or mechanic in the employ of the Contractor, subcontractor or other person doing or contracting to do the whole or a part of the work contemplated by this Contract, shall be permitted or required to work more than eight (8) hours in any one calendar day, except in cases of extraordinary emergency caused by fire, flood, or danger to life or property; that no such person shall be employed more than eight (8) hours in any day or more than five (5) days in any week, except in such emergency; that the wages to be paid for a legal day's work as hereinbefore defined, to laborers, workers, or mechanics upon the work called for under this Contract, or for any materials used upon or in connection therewith shall not be less than the prevailing rate for a day's work in the same trade or occupation in the locality within the State where such work is to be done and each laborer, worker, or mechanic employed by the Contractor, subcontractor, or other person about or upon the work shall be paid the wages herein provided; that employees engaged in the construction outside the limits of cities and villages are no longer exempt from the provisions of the Labor Laws which required the payment of the prevailing rate of wages and the eight (8) hour day.

Section 220A of the Labor Law, as amended by Chapter 472 of the Laws of 1932, provides that before payment is made by or on behalf of the State or any City, County, Town or Village or other civil division of the State, of any sums due on account of a contract for a public improvement, it is the duty of the Comptroller or the financial officer of the Municipal Corporation to require the Contractor and each

SECTION 005209 – CONTRACT

and every subcontractor to file a certified statement in writing, in satisfactory form, certifying to the amounts then due and owing to any and all laborers for daily or weekly wages on account of labor performed upon the work of the Contract, setting forth therein the names of the persons whose wages are unpaid and the amount due each, respectively.

Section 220B of the Labor Law, as amended, provides that any interested person who shall have previously filed a protest in writing objecting to the payment to any Contractor or subcontractor to the extent of the amount or amounts due or to become due to him for daily or weekly wages for labor performed on the public improvement for which the Contract was entered into, or if, for any other reason, it may be deemed advisable, the Comptroller of the State or other financial officer of the Municipal Corporation may deduct from the whole amount of any payment on account thereof the sum or sums admitted by any Contractor or subcontractor in such statement or statements so filed to be due and owing by him on account of labor performed and may withhold the amount so deducted for the benefit of the laborers for daily or weekly wages, whose wages are unpaid as shown by the verified statements filed by any Contractor or subcontractor and may pay directly to any person the amount or amounts so shown to be due for such wages.

Section 220C of the Labor Law, as amended, provides the penalty for making a false oath or verification.

Section 220D of the Labor Law provides that the advertised specifications for every Contract for the construction, reconstruction, maintenance and/or repair of highways to which the State, County, Town and/or Village is a party shall contain the provision stating the minimum rate of hourly wage that can be paid, as shall be designated by the Industrial Commissioner, to the laborers employed in the performance of the Contract, either by the Contractor, subcontractor or other person doing or contracting to do the whole or part of the work contemplated by the Contract, and the Contract shall contain a stipulation that such laborers shall be paid not less than such hourly minimum rate of wage. Any person or corporation that willfully pays after entering into such Contract less than such stipulated minimum hourly wage scale shall be guilty of a misdemeanor and, upon conviction, shall be punished for a first offense by a fine of Five Hundred Dollars (\$500.00) or by imprisonment for not more than thirty (30) days, or by both fine and imprisonment for a second offense by a fine of One Thousand Dollars (\$1,000.) and, in addition thereto, the Contract on which the violation has occurred shall be forfeited; and no such person or corporation shall be entitled to receive any sum or nor shall any officer, agent or employee of the State pay the same or authorize its payment from the funds under his charge or control to any person or corporation for work done upon any contract, on which the Contractor has been convicted of second offense in violation of the provisions of this Section.

The minimum wage rates are established by the Industrial Commissioner, State of New York, for this Contract, and are as set forth in the INFORMATION FOR BIDDERS.

All excavation shall be done in compliance with Article 36 of the General Business Law and notices given as provided by GBL Section 761.

13. PAYMENT OF EMPLOYEES

The Contractor and each of his subcontractors shall pay each of his employees engaged in work on this project under this Contract in full (less deductions made mandatory by law) in cash and not less often than once each week.

14. ESTIMATES AND PAYMENTS

- A. Scheduled or Emergency Work: Upon completion of the work required under each work order, the Contractor shall submit to the District a payment request with the appropriate invoicing. In consideration of the work done and the materials furnished, the TOWN/DISTRICT will pay or cause to be paid to the Contractor the amount due to him.

SECTION 005209 – CONTRACT

The making of any such estimate or payment made thereon shall not be taken or construed as an acceptance by the TOWN/DISTRICT of any work so estimated and paid for. All payments are subject to correction in any subsequent payment.

- B. Preventive Maintenance Assessment: Upon completion of the work required under the Preventive Maintenance Assessment, the Contractor shall submit to the District a payment request with the appropriate invoicing. In consideration of the work done and the materials furnished, the TOWN/DISTRICT will pay or cause to be paid to the Contractor the amount due to him. The making of any such estimate or payment made thereon shall not be taken or construed as an acceptance by the TOWN/DISTRICT of any work so estimated and paid for. All payments are subject to correction in any subsequent payment. Partial payments will be accepted.
- C. Maintenance Bond: At the end of each contract period, the contractor shall submit to the Town a one year Maintenance Bond for the full value of the work performed during the contract period. The TOWN/DISTRICT will reimburse the Contractor for said bond based on a dollar for dollar value.

15. ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE

The acceptance by the Contractor of the final payment shall be, and shall operate as a release to the TOWN/DISTRICT from all claims and all liabilities to the Contractor for all things done or furnished in connection with this work, and for every act and neglect of the TOWN/DISTRICT and other relating to, or arising out of, this work, excepting the Contractor's claims for interest upon the final payment, if these payments be improperly delayed. No payment, however, final or otherwise, shall operate to release the Contractor or his sureties from any obligations under this Contract or the Performance Bond.

16. INSPECTION AND TESTS

All material and workmanship shall be subject to inspection, examination and test by the Engineer and other representatives of the TOWN/DISTRICT at any time during the construction and at any and all places where manufacturing of materials used and/or construction is carried on.

Without additional charge, the Contractor shall furnish promptly all reasonable facilities, labor and materials necessary to make tests so required safe and convenient.

If, at any time, before final acceptance of the entire work, the Engineer, with the TOWN/DISTRICT's approval, considers necessary or advisable an examination of any portion of the work already completed, by removing or tearing out the same, the Contractor shall, upon request, furnish promptly all necessary facilities, labor and materials for such examination. If such work is found to be defective in any material respect, due to the fault of the Contractor or any subcontractor, or if any work shall be covered over without the approval or consent of the Engineer, with the TOWN/DISTRICT's approval, whether or not the same shall be defective, the Contractor shall be liable for the expenses of such examination and of satisfactory reconstruction.

If, however, such approval and consent shall have been given, and such work is found to meet the requirements of this Contract, the Contractor shall be recompensed for the expense of such examination and reconstruction in the manner herein provided for the payment of costs of extra work pursuant to a Change Order signed by the TOWN/DISTRICT and the Contractor.

The selection of laboratories and/or agencies for the inspection and tests of supplies, materials or equipment shall be subject to the approval of the Engineer. Satisfactory documentary evidence that the

SECTION 005209 – CONTRACT

material has passed the required inspection and test must be furnished the Engineer prior to the incorporation of the material in the work.

Any rejected work shall be removed from the site of the project completely at the expense of the Contractor.

17. CONTRACTOR'S TITLE TO MATERIALS

No material or supplies for the work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies used by him in the work.

18. SUPERINTENDENCE BY CONTRACTOR

No material or supplies for the work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies used by him in the work.

19. PROTECTION OF WORK, PERSONS AND PROPERTY

Precaution shall be exercised at all times for the proper protection of all persons, property and work. The safety provisions of applicable laws, building and construction codes shall be observed. Machinery equipment and all hazards shall be guarded or eliminated in accordance with the safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America, to the extent that such provisions are not in contravention of applicable law. The Contractor shall furnish entirely at his own expense any and all additional safety measures deemed necessary by the TOWN/DISTRICT or its Engineer to adequately safeguard the traveling public. The Contractor shall give notice to the owners of all utilities which may serve the area and request their assistance in predetermining the location and depth of the various pipes, conduits, manholes and other underground facilities.

The Contractor shall, at all hours of the day, safely guard and protect his own work and adjacent property from any damage and shall replace or make good any such damage, loss or injury unless such be caused directly by errors contained in the contract documents, or by the TOWN/DISTRICT or its duly authorized representatives.

The Contractor shall provide and maintain such watchers, barriers, lights, flares and other signals, at his own expense, as will effectively prevent any accident in consequence of his work for which the TOWN/DISTRICT might be liable. The Contractor shall be liable for all injury or damage caused by his act or neglect, or that of his employees.

20. PATENT RIGHTS

As part of his obligation hereunder and without any additional compensation, the Contractor will pay for any patent fees or royalties required in respect to the work or any part thereof and will fully indemnify the TOWN/DISTRICT for any loss on account of any infringement of any patent rights, unless prior to his use in the work of a particular process or a product of a particular manufacturer, he notifies the TOWN/DISTRICT in writing that such process or product is an infringement of a patent.

21. REPRESENTATIONS OF CONTRACTOR

The Contractor represents and warrants:

SECTION 005209 – CONTRACT

- A. That he is financially solvent and that he is experienced in and competent to perform the type of work involved under this Contract and able to furnish the plan, materials, supplies and/or equipment to be furnished for the work; and
- B. That he is familiar with all Federal, State and Municipal Laws, ordinances and regulations which may in any way affect the work of those employed hereunder, including but not limited to any special acts relating to the work; and
- C. That such work required by these contract documents as is to be done by him can be satisfactorily constructed and used for the purpose for which it is intended and that such construction will not injure any person or damage any property; and
- D. That he has carefully examined the Contract, Specifications, and the site of the work, and that from his own investigation he has satisfied himself as to the nature and location of the work, the character, location, quality and quantity of surface and subsurface materials, structures and utilities likely to be encountered, the character of equipment, and other facilities needed for the performance of the work, the general local conditions which may in any way affect the work or its performance.

22. AUTHORITY OF THE ENGINEER

In the performance of the work, the Contractor shall abide by all orders and directions and requirements of the TOWN/DISTRICT and shall perform all work to the satisfaction of the TOWN/DISTRICT, at such time and places, by such methods, and in such manner and sequence as he may require. The TOWN/DISTRICT shall determine the amount, quality, acceptability and fitness of all parts of the work, shall interpret the Contract, specifications, contract documents and any extra work orders and shall decide all other questions in connection with the work. Upon request, the TOWN/DISTRICT shall confirm in writing any oral orders, directions, requirements or determinations. The enumeration herein or else-where in the contract documents of particular instances in which the opinion, judgment, discretion or determination of the TOWN/DISTRICT shall control, or in which work shall be performed to his satisfaction or subject to his approval, or inspection, shall not imply that only matters similar to those enumerated shall be so governed and so performed, but without exception all the work shall be governed and so performed. Nothing herein shall be construed to give the Contractor a claim for extra work unless prior thereto an appropriate Change Order has been executed by the TOWN/DISTRICT and Contractor for such work.

23. SURVEYS

The Contractor shall provide all layouts, measurements, lines, and grades necessary for the execution of the work, and will furnish the necessary stakes and spikes for laying out such lines and grades and the unskilled labor necessary to place same and/or assist in measuring.

24. CHANGES AND ALTERATIONS

The TOWN/DISTRICT reserves the right to make alterations in the location, line, grade, Contract, form or dimensions of the work, or any part thereof, either before or after the commencement of the construction. If such alterations diminish the amount of work to be done, no claim for damages or anticipated profits will be warranted on the work which may be dispensed with. If such alterations increase the amount of work, such increases shall be paid for according to the quantity of work actually done and at the unit prices for such work as contained in the schedule of prices.

If such alterations decrease the amount of work, such decreases shall be a credit to the TOWN/DISTRICT based on the quantity of work not performed as agreed to by the TOWN/DISTRICT and the Contractor and at the unit prices for such work as contained in the Schedule of Prices.

SECTION 005209 – CONTRACT

25. CORRECTION OF WORK

All work and all materials, whether incorporated into the work or not, all processes of manufacture and all methods of construction shall be, at all times and places, subject to the inspection of the Engineer who shall be the final judge of quality, materials, processes of manufacture and methods of construction suitable for the purpose for which they are used. Should they fail to meet his approval they shall be forthwith reconstructed, made good and replaced and/or corrected as the case may be, by the Contractor at his own expense. Rejected materials shall immediately be removed from the site.

If, in the opinion of the Engineer, it is not desirable to replace any defective or damaged materials or to reconstruct or correct any portion of the work injured or not performed in accordance with the contract documents, the compensation to be paid to the Contractor hereunder shall be reduced by such amount as, in the judgment of the Engineer, shall be equitable.

The Contractor expressly warrants that his work shall be free from any defects in materials or workmanship, and agrees to correct any defects, settlements, or shrinkages which may appear within one (1) year after the date of the Maintenance bond. By December 31 of each calendar year, the bidder shall provide the Town with a Maintenance Bond equal to one hundred percent (100%) of the total value of the work performed in the prior year. Neither the acceptance of the completed work nor payment therefor shall operate to release the Contractor or his sureties from any obligations under or upon this Contract or the Performance Bond.

26. WEATHER CONDITIONS

The Contractor will and will cause his subcontractors to protect carefully his and their work and materials against damage or injury from the weather. If any work or materials shall have been damaged or injured by reason of the failure on the part of the Contractor or any of his subcontractors to protect his, or their work, such work and materials shall be removed and replaced at the expense of the Contractor.

27. THE TOWN/DISTRICT'S RIGHT TO WITHHOLD PAYMENTS

The TOWN/DISTRICT may withhold from the Contractor so much of any approved payments due him as may, in the judgment of the TOWN/DISTRICT, be necessary:

- A. To assure the payment of just claims then due and unpaid of any persons supplying labor or materials for the work.
- B. To protect the TOWN/DISTRICT from loss due to defective work not remedied; or
- C. To protect the TOWN/DISTRICT from loss due to injury to persons or damage to the work or property of other contractors or subcontractors or others, caused by the act or neglect of the Contractor or any of his subcontractors. The TOWN/DISTRICT shall have the right, as agent for the Contractor, to apply any such amount so withheld in such manner as the TOWN/DISTRICT may deem proper to satisfy such claims or to secure such protection. Such application of such money shall be deemed payments for the account of the Contractor.

28. THE TOWN/DISTRICT'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

The TOWN/DISTRICT may terminate the contract, if:

- A. The Contractor shall file for any form of bankruptcy relief or make an assignment for the benefit of creditors; or

SECTION 005209 – CONTRACT

- B. A receiver or liquidator shall be appointed for the Contractor for any of his property and shall not be dismissed within twenty (20) days after such appointment, or the proceedings in connection therewith shall not be stayed on appeal within the said twenty (20) days; or
- C. The Contractor shall violate any provision of this Contract; or
- D. The Contractor shall fail or refuse to regard laws, ordinances, regulations, or the instructions of the Engineer and/or the TOWN/DISTRICT.
- E. The Contractor is deemed non-responsive by the TOWN/DISTRICT.

Then, and in any such event, the TOWN/DISTRICT without prejudice to any other rights or remedy it may have, and after seven (7) days written notice to the Contractor and Contractor's Surety may terminate the employment of the Contractor and take possession of the premises and all material, tools and appliances therein, and complete the work by contract or otherwise, as the TOWN/DISTRICT solely may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished.

If the unpaid balance of the compensation to be paid the Contractor hereunder shall exceed the expense of so completing the work (including compensation for additional managerial, engineering, administration, legal, testing and observation services and any damages for delay), such excess shall be paid to Contractor.

If the expense shall exceed the unpaid balance, the Contractor and his sureties shall be liable to the TOWN/DISTRICT for such excess.

29. CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

If the work shall be stopped by order of the Court or any public authority, Federal or State agency, for a period of three (3) months through no act or fault of the Contractor or any of his agents, servants, employees, materialmen, or subcontractors, the Contractor may, upon ten (10) days notice to the TOWN/DISTRICT, discontinue his performance of the work and/or terminate the Contract.

Upon termination by the Contractor the TOWN/DISTRICT may take possession of the work and complete the work by Contract or otherwise, as the TOWN/DISTRICT solely may deem expedient.

If the Contract is terminated by the Contractor, the liability of the TOWN/DISTRICT to the Contractor shall be for all work executed and for any proven loss sustained upon any materials, equipment, tools, construction equipment, including reasonable profit and damages.

30. RESPONSIBILITY OF WORK

The Contractor agrees to be responsible for the entire work embraced in this Contract until its completion and final acceptance, and that any unfaithful or imperfect work that may become damaged from any cause, either by act or commission or omission to properly guard and protect the work that may be discovered at any time before the completion and acceptance shall be removed and replaced by good and satisfactory work without any charge to the TOWN/DISTRICT and that such removal and replacement will be performed immediately on the requirement of the Engineer, notwithstanding the fact that it may have been overlooked by the proper inspector, and partial payment made thereon. It is fully understood by the Contractor that the inspection of the work shall not relieve him of any obligation to do sound and reliable work as herein prescribed, and that any omission to disapprove of any work by the Engineer at or before the time of a partial payment or other estimate shall not be construed to be an acceptance of any defective work.

SECTION 005209 – CONTRACT

31. USES OF PREMISES AND REMOVAL OF DEBRIS

The Contractor expressly undertakes at his own expense:

- A. To take every precaution against injury to persons or damages to property.
- B. To store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any of his subcontractors, or other contractors.
- C. To place upon any of the completed work only such superimposed loads as are consistent with the safety of that portion of the work.
- D. To frequently clean up all refuse, rubbish, scrap materials and debris caused by the operations to the end that at all times the site of the work shall present a neat and orderly and workmanlike appearance.
- E. Before the Engineer's approval of the Final Payment Request, to remove all surplus material, temporary structures, plants of any description and debris of any and every nature resulting from his operations and to put the site in a neat and orderly condition.

32. POWER OF THE CONTRACTOR TO ACT IN AN EMERGENCY

In case of an emergency which threatens loss or injury to property and/or safety to life, the Contractor will be permitted to act as he sees fit without previous instructions from the TOWN/DISTRICT. He shall notify the TOWN/DISTRICT thereof immediately thereafter and any compensation claimed by the Contractor due to extra work made necessary because of his acts in such emergency shall be submitted to the TOWN/DISTRICT for approval and Change Order executed by the TOWN/DISTRICT and the Contractor.

Where the Contractor has not taken action but has notified the Engineer of an emergency indicating injury to persons or damage to adjoining property or to the work being accomplished under this Contract, then upon authorization from the Engineer to prevent such threatened injury or damage, he shall act as instructed by the Engineer. The amount of reimbursement claimed by the Contractor on account of any such action shall be determined in the manner provided herein for the payment of extra work and shall be incorporated into a Change Order executed by the TOWN/DISTRICT and Contractor.

33. SUITS AT LAW

The Contractor shall indemnify and save harmless the TOWN/DISTRICT from and against all suits, claims, demands or actions for any injury sustained or alleged to be sustained by any party or parties in connection with the construction of the work or any part thereof, or any commission or omission of the Contractor, his employees or agents or any subcontractors and in case any such action shall be brought against the TOWN/DISTRICT, the Contractor shall immediately take care of and defend the same at his own cost and expense.

34. PROVISIONS REQUIRED BY LAW DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein, and, if through mistake or otherwise, any such provision is not inserted or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

35. SUBLETTING, SUCCESSOR AND ASSIGNS

SECTION 005209 – CONTRACT

The Contractor shall not sublet any part of the work under this Contract, nor assign any money due him hereunder without first obtaining the written consent of the TOWN/DISTRICT. This Contract shall inure to the benefit of and shall be binding upon the parties hereunder and upon their respective successors and assigns, but neither party shall assign or transfer his interest herein in whole or in part without consent of the other.

SECTION 005209 – CONTRACT

IN WITNESS WHEREOF, the parties hereto have set their hands and seals the day and year first above written.

RIVERHEAD WATER DISTRICT:

BY: _____
YVETTE AGUIAR, SUPERVISOR

(TOWN SEAL)

CONTRACTOR:

BY: _____

TITLE: _____

(SEAL)

STATE OF NEW YORK)
) ss:
COUNTY OF SUFFOLK)

On the _____ day of _____, 20____, before me personally came YVETTE AGUIAR, to me known, who being by me duly sworn, did depose and say that he is the duly elected SUPERVISOR of the TOWN OF RIVERHEAD, COUNTY OF SUFFOLK, NEW YORK, and that at a meeting of the Town Board of the Town of Riverhead, duly held on the _____ day of _____, 20____, the said Board, also acting in its capacity as the Governing Body of the Riverhead Water District, authorized the said SUPERVISOR to execute all and any contracts on behalf of the Board; that he knows the seal of said Town, and that the said Water District seal is also the seal of the Town of Riverhead; that the seal affixed to the foregoing instrument is its corporate seal; that it was affixed thereto by order of the said Board, and that he signed his name thereto and executed the said instrument on behalf of the said Water District by like order and authority.

NOTARY PUBLIC

SECTION 005209 – CONTRACT

ACKNOWLEDGMENT OF CONTRACTOR, IF A CORPORATION

STATE OF NEW YORK)
) ss:
COUNTY OF)

On this _____ day of _____, 20____, before me personally came and appeared
_____, to me known, who by me being duly sworn, did depose and say
that he resides at _____ that he is the _____ of
_____, the Corporation described in and
which executed the foregoing instrument, that he knows the seal of said corporation, that one of the seals
affixed to said instrument is such seal, that it was so affixed by order of the Directors of said Corporation,
and that he signed his name thereto by like order.

NOTARY PUBLIC

ACKNOWLEDGMENT OF CONTRACTOR, IF A PARTNERSHIP

STATE OF NEW YORK)
) ss:
COUNTY OF)

On this _____ day of _____, 20____, before me personally came and appeared
_____, to me known, and known to me to be one of the members of the firm of
_____, described in and who executed
the foregoing instrument, and he acknowledged to me that he executed the same as and for the act and
deed of said form.

NOTARY PUBLIC

END OF SECTION

1. GENERAL CONDITIONS

The "General Conditions" are hereby made a part of these specifications and are attached herein.

Where any article of the General Conditions is supplemented hereby, the provisions of such article shall remain in effect. All the supplemental provisions shall be considered as added thereto. Where any such article is amended, voided or superseded thereby, the provisions of such article not so specifically amended, voided or superseded shall remain in effect.

Work, materials, plant, labor and other requirements of the General Conditions shall be furnished by the contractor. No direct payment shall be made for these General Conditions, and payment shall be deemed to be included in the Contract price or various items of the entire Contract.

2. CONTRACT DOCUMENTS

The Contract Documents include, but are not limited to, the General Conditions, General Specifications, Detailed Specifications, Plans, Proposal Form, Contract and other sections as either cited on the Index page(s) or actually included in the bound documents.

Each section of the Contract Documents is intended to be complementary to the other sections. It is intended that they include all items of labor and materials and everything required and necessary to complete the work, even though some items of work or materials may not be particularly mentioned in every section or may have been inadvertently omitted from the Drawings or Specifications or both.

3. APPROVAL OF SUBCONTRACTORS AND MATERIALS

Prior to commencing any work under this Contract, the contractor shall submit to the Engineer for approval a list of all the subcontractors and material suppliers it proposes to use for this Contract. No subcontractor or material supplier will be permitted to deliver materials or perform any work on this Contract until it has been approved by the Engineer.

4. INTERPRETATION OF DRAWINGS, ETC.

In the event of discrepancies between the Drawings and the Specifications, the following order shall be given preference when making interpretations:

- a. Addenda (later dates to take precedence over earlier dates).
- b. Drawings (schedules or notes to take precedence over other data shown on Drawings).
- c. Technical Specifications
- d. General Specifications
- e. General Conditions

On all Plans, Drawings, etc., the figure dimensions shall govern in the case of discrepancy between the scales and figures.

The contractor shall take no advantage of any error or omission in the Plans, or of any discrepancy between the Plans and Specifications, and the Engineer shall make such corrections and interpretations as may be deemed necessary for the fulfillment of the intent of the Specifications and of the Plans as construed by him, and his decision shall be final.

All work that may be called for in the Specifications and not shown on the Plans, or shown on the Plans and not called for in the Specifications, shall be furnished and executed by the contractor as if designated

in both. Should any work or material be required which is not denoted in the Plans and Specifications, either directly or indirectly, but which is, nevertheless, necessary for the proper carrying out of the intent thereof, it is understood and agreed that the same is implied and required, and that the contractor shall perform such work and furnish such materials as if they were completely delineated and described.

5. ADDITIONAL WORK

Additional work, if required to be performed under this Contract, will be in accordance with the applicable paragraphs of the Contract. The Engineer shall be the sole judge as to whether such work was intended as part of the Contract or is in addition thereto.

6. SAFETY PROVISIONS

The contractor shall take every precaution and shall provide such equipment and facilities as are necessary or required for the safety of its employees. In case of an accident, first aid shall be administered to any who may be injured in the progress of the work. In addition, the contractor shall also be prepared for the removal to the hospital for treatment of any employee either seriously injured or ill.

7. SANITARY REGULATIONS

In addition to compliance with the Occupational Safety and Health Act, the contractor shall erect and maintain necessary sanitary conveniences for the use of employees on the work. Such conveniences shall be properly secluded from observation, and their use shall be strictly enforced. Such sanitary conveniences shall be constructed in compliance with all laws, ordinances or regulations governing these facilities. The contents of same shall be removed with sufficient frequency to prevent nuisance, and disposed of to the satisfaction of the Engineer.

The contractor shall obey and enforce such other sanitary regulations and orders and shall take such precautions against infectious diseases as may be deemed necessary. In case any infectious diseases occur among its employees, it shall arrange for the immediate removal of the patient from the work and his isolation from all persons connected with the work.

8. RESPONSIBILITY OF ENGINEER AND CONTRACTOR DURING CONSTRUCTION

By means of the on-site observations of the work in progress, the Engineer will endeavor to provide protection for the Owner against defects and deficiencies in the contractor's work, but the furnishing of such services shall not include construction review of the contractor's construction means, methods, techniques, sequences or procedures, or of any safety precautions and programs in connection with the work.

The contractor is responsible for complete conformance to the Plans and Specifications, proper construction procedures, coordination with subcontractors, other contractors and utilities, and safe working conditions for its employees.

9. LABOR

All contractors and subcontractors employed upon the work shall and will be required to conform to the Labor Laws of the State of New York and the various acts amendatory and supplementary thereto; and to all other laws, ordinances and legal requirements applicable thereto. All contractors and subcontractors shall submit original copies of certified payroll records for each period worked at the site. In addition all contractors and subcontractors shall provide a completed Affidavit of Labor Form 220 and Riverhead Town Wage Disclaimer Form for each payroll week prior to issuance of any partial or final payment.

All labor shall be performed in the best and most workmanlike manner by mechanics skilled in their respective trades. The standards of the work required throughout shall be of such grade as will bring results of the first class only.

Pursuant to Section 816-(b) of the New York Labor Law, the Riverhead Water District has adopted a Resolution relating to approved apprenticeship programs. If the successful bidder's bid hereunder exceeds the sum of \$250,000.00, such bidder shall, prior to entering into a contract with the District, be required to have an appropriate apprenticeship agreement that has been registered with and approved by the Commissioner of the New York State Department of Labor pursuant to the requirements found in Article 23 of the New York Labor Law. Any subcontractors under this contract shall also, in all respects, comply with these provisions.

10. CLAIMS OR PROTESTS

If the contractor considers any work required of him to be outside the requirements of the Contract, or considers any record or ruling of the Engineers or Inspectors as unfair, he shall ask for written instructions or decisions immediately, and then file a written protest with the Owner against the same within five days thereafter, or be considered as having accepted the record or ruling.

11. NOTIFICATION, INTERFERENCE AND INJURY TO UTILITIES

The contractor shall cooperate in every way with the utility companies. All excavation shall be done in compliance with Article 36 of the General Business Law and notices given as provided by GBL, Section 761.

All conduits, water mains and gas mains encountered in the construction shall be properly and safely taken care of by the contractor, who shall, upon encountering same, notify the public corporation to whom they belong, in order that they may be changed in such a manner as not to interfere with the final construction.

In case any damage shall result to any service pipe for water or gas, or any private or public sewer or conduit by reason of negligence on the part of the contractor, he shall, without delay and at his own expense, repair same to the satisfaction of the Engineer, and in case such repairs are not made promptly or satisfactorily, the Owner may have the repairs made by another contractor or otherwise, and deduct the cost of same from any monies due or to become due the contractor.

12. INFRINGEMENT OF PATENTS

The contractor further agrees to hold himself responsible for any claims made against the Owner for any infringement of patents by the use of patented articles in any one phase of construction of the work and the completion of same, or any process connected with the work agreed to be performed under this Contract, or of any materials used upon said work and to save harmless and indemnify the Owner from all costs, expenses and damages which the Owner shall be obliged to pay by reason of any infringement or patents used in the construction and completion of the work.

13. DAMAGES

All damage, direct or indirect, of whatever nature resulting from either the performance of, or resulting to the work under, this Contract during its progress from whatever cause, shall be borne and sustained by the contractor, and all work shall be solely at his risk until the date of the final payment request.

14. GUARANTEE/WARRANTY

This contractor shall guarantee and warrant his work and that of his subcontractors shall be free from any defects in materials or workmanship, and agrees to correct any defects, settlements, or shrinkages which may appear within one (1) year after the date of the Maintenance bond. By December 31 of each calendar year, the bidder shall provide the Town with a Maintenance Bond equal to one hundred percent (100%) of the total value of the work performed in the prior year. Upon written notification from the

Engineer, the contractor shall repair, replace or reconstruct such defects to the satisfaction of the Engineer at no cost to the Owner.

15. STANDARDIZATION

The general items specified with the Technical Specifications indicate specific manufacturers and/or catalog numbers etc., for the purpose of standardization within the District in order to minimize the stockpiling of replacement parts.

END OF SECTION

CONSTRUCTION MONITORING

The Contractor shall, at all times, provide convenience of access and safe and proper facilities for the observation of all parts of the work. No work, except such shop work as may be so permitted, shall be done except in the presence of the Engineer or his assistants.

The Contractor shall notify the Engineer 24 hours in advance as to when he intends to start or resume the work.

No material of any kind shall be used upon the work until it has been monitored and accepted by the Engineer. Rejected materials shall be immediately removed from the work and not again offered for use.

Any materials or workmanship found at any time to be defective shall be remedied at once, regardless of previous monitoring. The observation of the work by the Engineer is intended to aid the Contractor in applying labor and materials in accordance with the contract, but such observation shall not operate to release the Contractor from any of its contract obligations.

COOPERATION

All contractors and subcontractors shall coordinate their work with adjacent work and with other trades so as to facilitate the general progress of the work. Each trade shall afford other trades every reasonable opportunity for the installation of their work and for the storage of their material.

PROTECTION OF WORK

The Contractor shall place a sufficiency of yellow, Type C steady burn lights on or near any work accessible to the public, and keep them burning sunset to sunrise. It shall erect suitable railings or barriers, and shall provide watchmen on the work by day or night, as required and deemed necessary for the safety of the work on public or adjoining property.

The District reserves the right to remedy any neglect on the part of the Contractor regarding the protection of the work which may come to its attention, after 24 hours notice in writing; except that in cases of emergency, it shall have the right to remedy any neglect without notice; and, in either case, to deduct the cost of such remedy from any money due the Contractor.

REPRESENTATIVE ALWAYS PRESENT

The Contractor, in case of its absence from the work, shall have a competent representative or foreman present, who shall follow, without delay, all instructions of the Engineer or his assistants in the prosecution and completion of the work in conformity with this Contract, and shall have full authority to supply labor and materials immediately. The Contractor shall also have a competent representative available to receive telephone messages and provide a reasonable reply as soon as possible, but not later than 24 hours.

SIGNS

No signs or advertisements will be allowed to be displayed unless a permit is obtained from the Town Building Department and the sign is approved by the Engineer.

PERMITS AND REGULATIONS

The Water Main Contractor shall obtain and pay for all permits necessary to conduct the work and complete this contract. Work shall be performed in strict accordance with the regulations and

requirements of the various civil agencies having jurisdiction. Upon completion of the work provided for in this Contract, and before final payment shall be made, the Contractor shall furnish the Engineer with any necessary certificates of approval issued by these various agencies.

LABOR

All contractors and subcontractors employed upon the work shall and will be required to conform to the Labor Laws of the State of New York and the various acts amendatory and supplementary thereto, and to all other laws, ordinances and legal requirements applicable thereto.

All labor shall be performed in the best and most workmanlike manner by mechanics skilled in their respective trades. The standards of the work required throughout shall be of such grade as will bring results of the first class only.

TEMPORARY LIGHTS, WATER, ETC.

The Water Main Contractor shall provide its own temporary light, power and water supply. The Contractor shall pay for all current for temporary power and lighting. The District will not charge for water used.

GRADES, LINES, LEVELS AND SURVEYS

The Developer will establish the lines and grades for the water mains and appurtenances. All grades, lines, levels and bench marks shall be maintained by this Contractor, who shall be responsible for same.

The Contractor shall verify grades, lines, levels and dimensions shown on the plans, and he shall report any errors or inconsistencies in the above to the Engineer before commencing work.

BOUNDARIES OF WORK AND CONTIGUOUS WORK

The District will obtain from the Developer rights-of-way for the work specified in this Contract, and the Contractor shall not enter or occupy with men, tools or materials any private ground outside the easements and rights-of-way without the consent of the property owner and the approval of the Engineer. Other contractors of the District may, for all purposes required by their contracts, enter upon the work and premises used by the Contractor, and the Contractor shall give to other contractors of the District all reasonable facilities and assistance for the completion of adjoining work.

Where the work called for extends upon or through private property, the Developer shall procure all necessary rights and deeds for access to the property for the District. The Contractor shall not proceed with this part of the work until the Developer has completed its negotiations with the property holders and all necessary papers are in the hands of the District.

CLEANING AND FINAL INSPECTION

All pipelines and other structures shall be kept clean during construction. As work approaches completion, the Contractor shall systematically and thoroughly clean the site and structures and make any needed repairs.

The Contractor shall furnish, at its own expense, suitable tools and labor for cleaning out all dirt, mortar and foreign substances from the structures, and the water for cleaning by flushing. Any leakage of water into any structure exceeding the limits specified, or any deviation from the proper grade for alignment to the structure, or any other defect such as to make the work, in the opinion of the Engineer, fall short of first-class work, shall be properly corrected by the Contractor at its own expense.

Cleaning and repairs shall be arranged, so far as practicable, to be completed upon finishing the construction work. Notice to begin this cleaning and repairing, if such is needed, will be given in due season by the Engineer who, at the same time, will make his final inspection of the work.

The Engineer will not prepare the Contractor's final payment request until after the final inspection is made. During this final inspection, the Contractor, at its own expense, shall furnish suitable provisions as to needed drainage, workers and appliances.

CHANGE ORDERS

During the construction period of this Contract, the Engineer may order, in writing, changes in sizes of (prior to release of water mains and appurtenances from the manufacturer) and/or changes in locations of (prior to delivery of materials) and/or additional water mains and appurtenances. The prices as bid for the respective sizes installed shall also be applicable to any such changes or additions ordered by the Engineer. The total cost of additional water mains and appurtenances shall be limited to not more than 30% of the total bid (including alternate bids) of all items.

END OF SECTION

The **Wage Rates** schedule can be accessed and downloaded through the NYSDOL website:
<https://dol.ny.gov/public-work-and-prevailing-wage> using the job-specific PRC# 2023011540.

END OF SECTION 007343

PART 1 - GENERAL

1.01 BRIEF PURPOSE OF PROJECT / GENERAL

- A. The purpose of the project is to provide scheduled work via the installation of facilities by directional drilling for the Town of Riverhead.
- B. All work shown and specified in the Contract Documents shall be the work of this Construction Contract. The Owner does not anticipate awarding other prime contracts for the project as shown.
- C. This Section provides an abbreviated summary of the work for the Contract.

1.02 NOMENCLATURE

- A. Where the terms "Engineer/Architect", "Architect/Engineer", "Engineer", or "Architect" are used throughout these Contract Documents, they shall mean the firm of H2M architects + engineers as may be abbreviated by H2M or H2M Group.
- B. The terms "Contractor" and/or "Prime Contractor" where used shall refer to the individual or company who has entered into an agreement with the Owner to perform the work contained within these Contract Documents. The lack of word capitalization shall be incidental.
- C. The CONTRACTOR may be referred to as the "Drilling Contractor", "Prime Contractor" or similar wording. The lack of word capitalization shall be incidental
- D. Routine maintenance and repair shall refer to work deemed by the District that is not of an urgent nature. Routine maintenance and repair may include directional drilling work not considered to be of an urgent nature, etc. This work shall be scheduled at least 48 hours prior to the start of the work.
- E. Emergency repairs shall refer to work that is deemed by the District to be of an urgent nature. This work shall be scheduled on a 3-hour notice to the Contractor 24 hours/day, 7 days/week, 365 days/year.
- F. The term "crew" where used shall refer to a two (2) man team of a journeyman and an apprentice or laborer. The crew shall only be required when the work entails effort that the journeyman cannot exercise on his own.

1.03 ABBREVIATED SUMMARY OF WORK

- A. Furnish all labor, equipment, materials, tools, means, methods, and incidentals necessary to complete the Work as required by the Contract Documents for this Construction Contract. The contractor shall coordinate, through the Owner/Engineer, the work of their contract with any work by others.
- B. This following abbreviated summary is provided in order to briefly describe the work covered by the Contract Documents for this Construction Contract. It is not all inclusive of the work under the Contract.
- C. The work includes, but is not limited to, all labor, equipment and material costs necessary to complete the work in accordance with the Contract and Specifications.
- D. All other work shown and specified in the Contract Documents.

1.04 PARTIAL LISTING OF SPECIFIC CONTRACT REQUIREMENTS

- A. The Contract Documents detail the work included in the Contract. Related requirements and conditions covered by the Contract Documents include, but are not limited to, the following:
 - 1. Guidelines and requirements of the New York State Department of Environmental Conservation (NYSDEC).
 - 2. Guidelines and requirements of the New York State Department of Health and Suffolk County Department of Health Services.
 - 3. Local laws and ordinances of the County of Suffolk, Town of Riverhead and Riverhead Water District.

1.05 PARTIAL LISTING OF OVERALL CONTRACT REQUIREMENTS

- A. The Contract Documents detail the work included in the Contract. Related requirements and conditions covered by the Contract Documents include, but is not limited to, the following:
 - 1. Debris removal and daily and final cleaning up.
 - 2. Coordination with the District is necessary to schedule utility mark-out services and in the event of damage to existing facilities; their subsequent repair.
 - 3. Site safety in accordance with all applicable federal, state, and local regulations.

1.06 OWNER SUPPLIED PRODUCTS AND UTILITIES

- A. The Owner will not be supplying equipment, labor, or tools for the project.

1.07 EXISTING CONDITIONS

- A. When possible the Owner will provide plans for proposed work locations. These plans may or may not show certain information that has been obtained by the Owner and various utilities regarding the location of various pipelines, utilities, and structures that exist at the location of the project both below and above grade.
- B. The Owner and the Engineer expressly disclaims all responsibility for the accuracy or completeness of the information given on the Drawings with regard to existing facilities.
- C. In the case where the Contractor discovers an obstruction not indicated on the Drawings or not described via specification reference, then the Contractor shall immediately notify the Engineer of the obstructions' existence.
- D. The Engineer will determine if the obstruction is to be relocated or removed.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 011100

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Site access and control of areas outside of site.
- B. Work hours, employee conduct and miscellaneous employee requirements.
- C. Contract requirements related to maintaining Owner's current operations and excess inspection required.

1.02 SITE ACCESS AND CONTROL

- A. The Contractor shall not close any road for any period in time unless approved ahead of time by appropriate road agency. The Contractor shall take whatever measures are necessary to not cause any inconvenience to the area's residents.
- B. The Contractor is responsible to employ methods to prevent construction materials and/or debris from leaving the site. The Contractor is responsible to routinely monitor the areas surrounding the site during the day as well as at the end of the work-day and to immediately clean up any area to its previous condition.
- C. The Contractor shall employ methods to prevent the transmission of dirt from vehicles driving on exposed areas of the site from reaching the surrounding roadways. The Contractor will be responsible to immediately clean the roadway, should the measures being taken by the Contractor not satisfactorily control the transmission of any dirt to the roadway.
- D. Any damages to areas outside the site, spills of soil, liquid, or any other material shall immediately be repaired, cleaned and restored to its previous condition.
- E. The Contractor shall comply with all state and local requirements for allowable weight limits of vehicles on all roads.
- F. The Owner reserves the right to back charge the Contractor for all costs associated with maintaining the grounds as well as maintaining areas outside the site, which may be disturbed by the Contractor should the Contractor fail to maintain or repair the aforementioned in a condition acceptable to the Owner.
- G. The Contractor shall maintain the premises in a safe condition throughout the construction period. Compliance with OSHA regulations and site safety shall be the responsibility of the Contractor as it relates to work of the Contract. The posting of all applicable OSHA safety signs shall be the responsibility of the Contractor.
- H. Contractor shall be responsible for protecting private property. All existing buildings, structures, shrubs, trees, lawn fixtures, sculptures and misc. equipment shall be protected at all times. Any removals or relocation of said objects, if allowed shall be as directed by the Engineer or District. Contractor shall protect all of the physical structures, property and improvements from damage by their Work and shall immediately repair or replace damage caused by construction operations, employees or equipment employed by the Contractor. All labor, materials and equipment and outside contractors that are employed by the Owner to repair damage caused by the Contractor shall be billed to the Contractor directly or withheld from money due the Contractor for work already completed.
- I. The Contractor is responsible for cleaning up the work area. Failure to maintain a clean work site daily, will result in others performing the work and the Contractor being back charged for the cleaning cost plus construction administration fees.

- J. Do not discard or dispose of any waste on-site.
- K. The Contractor shall be responsible for managing dust.

1.03 WORK HOURS, EMPLOYEE CONDUCT AND MISCELLANEOUS EMPLOYEE REQUIREMENTS

- A. The Contractor will be permitted to schedule working days and hours as specified in the General Terms and Conditions, if no times are specified therein then the work hours shall be Monday - Friday 7:30 am - 4:00 pm. Emergency maintenance or repairs will be performed on an as-needed basis.
- B. Employees are to act in a professional manner. Any employee using inappropriate language or who is disruptive to the work environment will be banned from the site.
- C. Proper work attire is required. Shirts are to be worn at all times and no short pants are permitted.
- D. Any employee found under the influence of any drug or alcohol will be banned from the site.

1.04 CONTRACT REQUIREMENTS RELATED TO MAINTAINING OWNER'S CURRENT OPERATIONS AND EXCESS INSPECTION REQUIRED

- A. The Contractor shall schedule routine maintenance working days and hours as specified. The Contractor shall pay all excess costs for inspection services provided by the Owner/Engineer/Architect for working beyond the times specified.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 011400

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work under this Section specifies the procedures used to process payments.

1.02 APPLICATIONS FOR PAYMENT

- A. The form of application for payment shall be AIA Document G702, application and certificate for payment supported by AIA Document G703, Continuation Sheet.
- B. Submit one (1) copy of each payment application, completed, signed and notarized.
- C. Submit certified payroll receipts for all works and subcontractors. Payroll receipts shall be submitted with every application for payment. All payroll receipts shall be certified correct and notarized by a Notary in the State of New York. Application for Payment will not be processed unless all payroll receipts are received.
- D. The District will not pay for any stored materials and equipment that is not installed.
- E. Contractor shall pay all workers and have all subcontractors pay all workers the prevailing New York State Dept. of Labor wage rates.
- F. The District may conduct on-site interviews with all workers to verify payment of prevailing wage rates is enforced.
- G. The Contractor may submit payment requests as the specific work order is completed.

1.03 TERMS OF PAYMENT

- A. CREW
 - 1. Payment will be made in accordance with the unit pricing schedule established in 004116 - proposal. Travel time will not be reimbursed.
- B. MATERIALS/EQUIPMENT
 - 1. The Owner reserves the right to provide parts and materials from its own stock to the Contractor for installation, with no mark up.
- C. Contractor's Tools & Equipment:
 - 1. No payment will be made for any small tools or power equipment necessary for the Contractor to perform the work.
 - 2. No payment will be made for any expendable tools, fuel or lubricants (i.e., saw blades, drill bits, etc.).
- D. Subcontractors:
 - 1. The use of subcontractors requires approval in advance from Owner/Engineer.
 - 2. No more than 25% of the value of any individual work order shall be permitted to be contracted out without prior approval.
 - 3. Payment for subcontractors shall be at the Contractor's cost, less all taxes, plus a maximum 20% mark up for coordination, overhead and profit.
 - 4. The requirements of Sections 1.03 A, B and C shall apply to all subcontractors.
 - 5. Contractors and subcontractors shall maintain appropriate insurances.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION 012900

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Codes
- B. Governing agencies
- C. Permits

1.02 CODES

- A. Comply with the requirements of the various codes referred to in these Specifications. Such codes shall be the date of the latest revision in effect at the time of receiving bids.
- B. If there is a conflict between local, state, and/or Federal regulatory requirements, seek a consultation with the State Department of Labor. Resolve conflicts to the satisfaction of the State Department of Labor prior to commencing work.

1.03 GOVERNING AGENCIES

- A. All work shall conform to and be performed in strict accordance with all governing agencies such as, but not limited to:
 - 1. Occupational Safety and Health Act - OSHA
 - 2. State Department of Environmental Conservation
 - 3. Suffolk County Department of Health Services.
 - 4. Town of Riverhead Codes and Requirements
 - 5. Riverhead Water District Codes, Rules, Laws and Ordinances.

1.04 PERMITS AND INSPECTIONS

- A. Representatives of the Owner shall have access to the work for inspection purposes. The Contractor shall provide facilities suitable to the Owner to facilitate inspections of the installed work.
- B. Obtain and pay for all permits, fees, licenses, certificates, inspections and other use charges required in connection with the work.

1.05 COORDINATION WITH GAS/ELECTRIC/TELEPHONE/CABLE UTILITY COMPANY

- A. Comply with the gas/electric/telephone/cable utility companies regarding excavation around or in the vicinity of existing facilities.

1.06 COORDINATION WITH WATER UTILITY

- A. Comply with the water utility requirements for water and fire service connections. Obtain and pay for all necessary permits from the water utility. Obtain authority to connect to the existing water mains.
 - 1. Make necessary connections to existing public water mains under supervision of the water utility representative.

1.07 UTILITY WORK WITHIN RIGHT-OF-WAY

- A. Utility Work, either overhead or underground, within the boundaries of the state highway right-of-way, shall conform with procedures set forth in the Department of Transportation publications "Department Rules and Regulations Governing the Accommodation of Utilities

Within State Highway Right-of-Way (Part 131 - Title 17 Transportation) and "Issuance of Highway Work Permits" (Code 7.12-2).

- B. Utility Work, either overhead or underground, within the boundaries of the Town right-of-way, shall conform to procedures set forth by the applicable permits.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 014100

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Control of environmental pollution and damage that the Contractor must consider for air, water, and land resources in preparing a bid and while constructing the project. This Section includes management of site aesthetics, noise, solid and liquid waste and wastewater, and other pollutants that may be generated by the Contractor.
- B. Include all costs associated with environmental protection as specified herein and as specified in other Sections of these specifications in the total price bid.

1.02 DEFINITIONS

- A. Environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents which:
 1. Adversely effect human health or welfare,
 2. Unfavorably alter ecological balances of importance to human life,
 3. Impact wetlands,
 4. Effect other species of importance to man, or;
 5. Degrade the utility of the environment for aesthetic, cultural, and historical purposes.
- B. Definitions of Pollutants:
 1. Sediment: Soil and other debris that has been eroded and transported by runoff water.
 2. Solid Waste: Rubbish, debris, garbage, and other discarded solid materials resulting from industrial, commercial, and agricultural operations and from community activities.
 3. Rubbish: Combustible and noncombustible wastes such as paper, boxes, glass and crockery, metal and lumber scrap, tin cans, and bones.
 4. Debris: Combustible and noncombustible wastes, such as leaves, tree trimmings, ashes, and waste materials resulting from construction or maintenance and repair work.
 5. Chemical Waste: Petroleum products, bituminous materials, salts, acids, alkalies, herbicides, pesticides, organic chemicals, and inorganic wastes.
- C. Sanitary Wastes:
 1. Sewage: Domestic sanitary sewage and human and animal waste.
 2. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 PROTECTION OF ENVIRONMENTAL RESOURCES

- A. Protect environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire period of this Contract. Confine activities to areas defined by the Contract Documents.
- B. Protection of Land Resources: Prior to construction, identify all land resources to be preserved within the work area. Do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, top soil, and land forms without permission from the Engineer. Do not fasten or attach ropes, cables, or guys to trees for anchorage unless specifically authorized, or where special emergency use is permitted.

- C. **Work Area Limits:** Prior to any construction, mark the areas that require work to be performed under this Contract. Mark or fence isolated areas within the general work area that are to be saved and protected. Protect monuments, works of art, and markers before construction operations begin. Convey to all personnel the purpose of marking and protecting all necessary objects.
- D. **Protection of Landscape:** Protect trees, shrubs, vines, grasses, land forms, and other landscape features shown on the drawings to be preserved by marking, fencing, or using any other approved techniques.
 1. Box and protect from damage existing trees and shrubs to remain on the construction site.
 2. Immediately repair all damage to existing trees and shrubs by trimming, cleaning, and painting with antiseptic tree paint.
 3. Do not store building materials or perform construction activities closer to existing trees or shrubs than the farthest extension of their limbs.
- E. **Reduction of Exposure of Unprotected Erodible Soils:** Plan and conduct earthwork to minimize the duration of exposure of unprotected soils. Clear areas in reasonably sized increments only as needed to use. Form earthwork to final grade as shown. Immediately protect side slopes and back slopes upon completion of rough grading.
 1. **Temporary Protection of Disturbed Areas:** Construct diversion ditches and berms to retard and divert runoff from the construction site to protected wetlands areas as defined in the Clean Water Act and federal, state and local regulations.
 2. **Erosion and Sedimentation Control Devices:**
 - a. Construct or install all temporary and permanent erosion and sedimentation control features as shown or specified in the Contract Documents and as required by the Owner pursuant to direction of the regulatory authority.
 - b. Maintain temporary erosion and sediment control measures such as berms, dikes, drains, hay bales, erosion control fencing, sedimentation basins, grassing, and mulching, until permanent drainage and erosion control facilities are completed and operative.
 3. Manage borrow areas on and off Owner property to minimize erosion and to prevent sediment from entering nearby property, watercourses and local streets.
 4. Manage and control spoil areas on and off Owner property to limit spoil to areas shown on the Environmental Protection Plan and prevent erosion of soil or sediment from entering nearby property, watercourses or streets.
 5. Protect adjacent areas from degradation by temporary excavations and embankments.
- F. Handle and dispose of solid wastes in such a manner that will prevent contamination of the environment.
 1. Place solid wastes (excluding clearing debris) in containers that are emptied on a regular schedule.
 2. Transport all solid waste off Owners' property and dispose of waste in compliance with Federal, State, and local requirements.
 3. Store chemical waste away from the work areas in corrosion resistant containers and dispose of waste in accordance with Federal, State, and local regulations.
 4. Handle discarded materials other than those included in the solid waste category as directed by the Engineer.
- G. **Protection of Water Resources:** Keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters and sewer systems. Implement management techniques to control water pollution by the listed construction activities that are included in this Contract.

- H. Washing and Curing Water: Do not allow wastewater directly derived from construction activities to enter water areas. Collect and place wastewater in retention ponds allowing the suspended material to settle, the pollutants to separate, or the water to evaporate.
- I. Control movement of materials and equipment during construction to prevent violation of water pollution control standards of the Federal, State, or local government.
- J. Monitor water areas affected by construction.
- K. Protection of Fish and Wildlife Resources:
 - 1. Keep construction activities under surveillance, management, and control to minimize interference with, disturbance of, or damage to fish and wildlife.
- L. Protection of Air Resources: Keep construction activities under surveillance, management, and control to minimize pollution of air resources.
 - 1. Burning is not permitted on the job site. Keep activities, equipment, processes, and work operated or performed, in strict accordance with the State and Federal emission and performance laws and standards.
 - 2. Maintain ambient air quality standards set by the Environmental Protection Agency and State, for those construction operations and activities specified.
- M. Particulates: Control dust particles, aerosols, and gaseous by-products from all construction activities, processing, and preparation of materials (such as from asphaltic batch plants) at all times, including weekends, holidays, and hours when work is not in progress.
- N. Particulates Control: Maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and all other work areas within or outside the project boundaries free from particulates which would cause a hazard or a nuisance. Sprinkle, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators, or other methods are permitted to control particulates in the work area.
- O. Hydrocarbons and Carbon Monoxide: Control monoxide emissions from equipment to Federal and State allowable limits.
- P. Odors: Control odors of construction activities and prevent obnoxious odors from occurring.
- Q. Reduction of Noise: Minimize noise using every action possible. Perform noise-producing work in less sensitive hours of the day or week as directed by the Engineer. Maintain noise-produced work at or below the decibel levels and within the time periods specified in accordance with OSHA and local ordinances, whichever is more restrictive.
 - 1. Perform construction activities involving repetitive, high-level impact noise only between 8:00 a.m. and 5:00 p.m unless otherwise permitted by local ordinance or by the Engineer.
 - 2. Repetitive impact noise on the property shall not exceed the following dB limitations:
 - 3. Provide sound-deadening devices on equipment and take noise abatement measures that are necessary to comply with the requirements of this Contract, consisting of, but not limited to, the following:
 - a. Use shields or other physical barriers to restrict noise transmission.
 - b. Provide soundproof housings or enclosures for noise-producing machinery.
 - c. Use efficient silencers on equipment air intakes.
 - d. Use and maintain efficient intake and exhaust mufflers on internal combustion engines.
 - e. Line hoppers and storage bins with sound deadening material.

- f. Conduct truck loading, unloading, and hauling operations so that noise is kept to a minimum.

END OF SECTION 015719

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Site piping backfilling to sub-grade elevations.
- B. Site filling and backfilling.
- C. Consolidation and compaction.

1.02 RELATED SECTIONS

- A. Section 315000 - Excavation Support & Protection.

1.03 REFERENCES

- A. ANSI/ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.
- B. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.54 kg) Rammer and 18-inch (457-mm) Drop.

1.04 QUALITY ASSURANCE

- A. Do not backfill wet or frozen materials.

PART 2 - PRODUCTS

2.01 FILL MATERIALS

- A. Type C - Sand: Natural river or bank sand; washed, free of silt, clay, loam, friable or soluble materials, or organic matter; graded in accordance with ANSI/ASTM C136, within the following limits:

Sieve Size	Percent Passing
No. 4 (4.75 mm)	100
No. 16 (1.18 mm)	10 - 100
No. 50 (0.30 mm)	5 - 90
No. 100 (0.15 mm)	4 - 30
No. 200 (0.075 mm)	0 - 1

- B. Type D - Subsoil: Reused, excavated material, graded, free of lumps, rocks and gravel larger than 3 inches (75 mm) in size, debris and contaminants.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions and substrate.
- B. Verify fill materials to be reused are acceptable.
- C. Verify items to be buried during backfilling process have been inspected prior to backfilling.
- D. Verify subgrade has been properly compacted and is ready to receive work of this section.

3.02 PREPARATION

- A. Compact subgrade to 95 percent maximum dry density in accordance with ANSI/ASTM D1557.
- B. Cut out soft areas of subgrade not capable of in situ compaction. Backfill with Type C fill and compact to density equal to or greater than requirements for subsequent backfill material.

3.03 COMPACTION - METHODS

- A. Trench compaction on all water main trenches shall be by mechanical tamping methods. Jetting of trenches will not be permitted, unless specifically authorized by the Engineer and/or Owner.

3.04 BACKFILLING - GUIDELINES

- A. Backfill areas to contours and elevations with unfrozen materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy materials.
- C. Place and compact materials in continuous layers not exceeding 6 inches (150 mm) compacted density.
- D. All backfilled materials shall be compacted to 95 percent maximum dry density in accordance with ANSI/ASTM D1557. Maintain optimum moisture content to attain required density.
- E. Employ a placement method that does not disturb or damage structures or other items against which material is backfilled.
- F. Backfill against supported structures. Do not backfill against unsupported structures. Backfill simultaneously on each side of structure.
- G. Make grade changes gradual. Blend slope into level areas.
- H. Remove surplus backfill materials from site.
- I. Remove temporary sheeting, as backfilling progresses, under provisions of Section 315000.

3.05 FIELD QUALITY CONTROL

- A. Perform field tests and analysis of fill material in accordance with ANSI/ASTM D1557. If tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to Owner.

3.06 TOLERANCES

- A. Maximum variation from top surface of backfilling: 1-inch.
- B. Maximum variation from top surface of backfilling under paved areas: 1/4-inch from required elevations.

3.07 PROTECTION

- A. Recompact fills subjected to vehicular traffic.

END OF SECTION 312323

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Trench excavation for piping and utilities.
- B. Bedding for piping and utilities.
- C. Backfilling and compaction.

1.02 RELATED SECTIONS

- A. Section 312323 - Backfilling
- B. Section 315000 - Excavation Support & Protection.

1.03 REFERENCES

- A. ANSI/ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.
- B. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.54 kg) Rammer and 18-inch (457 mm) Drop.

1.04 QUALITY ASSURANCE

- A. Do not excavate wet or frozen materials without written approval from the Engineer.
- B. Do not backfill over or with wet or frozen materials.
- C. Provide safety barricades around open excavations.

1.05 COORDINATION

- A. Coordinate work with the District as required.
- B. Coordinate trenching with installation of pipe or conduit.
- C. Coordinate trenching with installation and removal of sheeting.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Bedding: Natural river or bank sand; washed; free of silt, clay, loam, friable or soluble materials, or organic matter; graded in accordance with ANSI/ASTM C136; within the following limits:

Sieve Size	Percent Passing
No. 4 (4.75 mm)	100
No. 16 (1.18 mm)	10-100
No. 50 (0.30 mm)	5-90
No. 100 (0.15 mm)	4-30
No. 200 (0.075 mm)	0-1

- B. Subsoil: Reused, excavated material, graded, free of lumps, rocks and gravel larger than 3 inches (75 mm) in size, debris and contaminants.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing site conditions and substrate.
- B. Verify fill materials to be reused are acceptable.
- C. Verify items to be buried during backfilling process have been inspected prior to backfilling.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Maintain and protect existing utilities remaining which pass through work area.
- C. Protect plant life, lawns, rock outcropping and other features remaining as a portion of final landscaping.
- D. Protect benchmarks, existing structures, fences, sidewalks, paving and curbs from excavation equipment and vehicular traffic. Any item damaged by the contractor shall be promptly repaired at the contractor's expense.
- E. Protect above and below grade utilities which are to remain.
- F. Cut out soft areas of subgrade not capable of in situ compaction. Backfill with subsoil fill and compact to density equal to or greater than requirements for subsequent backfill material.
- G. Pavement cutting and milling to be in accordance with the limits shown on the plans.

3.03 EXCAVATION

- A. Excavate subsoil required for piping.
- B. Cut trenches to the dimensions shown on the plans.
- C. Excavation shall not interfere with normal 45 degree bearing splay of foundations.
- D. Hand trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.
- E. Maintain sides and slopes of excavations and trenches in a safe condition until completion of backfilling. Comply with Code of Federal Regulations Title 29-Labor, Part 1926-OSHA Standards.
- F. Remove lumped subsoil, boulders, and rock.
- G. For trenches made in solid rock, excavate to a depth of 1 foot (300 mm) below the proposed pipe invert.
- H. Correct unauthorized excavation at no cost to Owner in accordance with Section 312333.
- I. Stockpile excavated material in area designated on site and remove excess material not being used from site. Remove excavated material from site.
- J. All trenches deeper than 5 feet (1.5 m) shall require sheeting. Sheet is to be installed under provisions of Section 315000.

3.04 BACKFILLING

- A. Support pipe and conduit during placement and compaction of fill material.
- B. For trenches made in solid rock, place an additional 1 foot (300 mm) of fill material under pipe or conduit.
- C. Place fill material to the dimensions and limits as shown on the plans.
- D. Compact fill material to 95 percent maximum dry density in accordance with ANSI/ASTM D1557. Maintain optimum moisture content to attain required density.
- E. Place fill material simultaneously on both sides of the pipe or conduit. Backfill to the dimensions and limits shown on the plans with reused subsoil.
- F. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- G. Place and compact material in continuous layers not exceeding 6 inches (150 mm) compacted depth.
- H. Employ a placement method that does not disturb or damage conduit or pipe.

3.05 FIELD QUALITY CONTROL

- A. Perform field tests and analysis of fill material in accordance with ANSI/ASTM D1557.
- B. If tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to Owner.

3.06 CLEANING

- A. Remove surplus backfill materials from site.

3.07 PROTECTION

- A. Recompat fills subjected to vehicular traffic.

END OF SECTION 312333

PART 1 - GENERAL**1.01 SECTION INCLUDES**

- A. Wood and steel sheeting.
- B. Sheetng box.

1.02 RELATED SECTIONS

- A. Section 312323 - Backfilling.
- B. Section 312333 - Trenching.

1.03 REFERENCES

- A. Occupational Safety and Health Standards - Excavations; Final Rule (29 CFR Part 1926) - OSHA Standards.

1.04 QUALITY ASSURANCE

- A. Perform all work of this section in accordance with OSHA Standards and approved shop drawings.

1.05 COORDINATION

- A. Coordinate work the District as required.
- B. Coordinate work with all other sections requiring temporary sheeting and bracing.

PART 2 - PRODUCTS**2.01 MATERIALS**

- A. Wood Sheetng: Hardwood species of size and dimensions capable of being driven to the required depths and capable of supporting excavation sides and soil pressures when braced; free from wormholes, wind shakes, loose knots, decayed or unsound portions or defects which would impair its strength or tightness; 2 inches (50 mm) thick minimum.
- B. Steel Sheetng: Corrugated "Z" shape cross-section; of size and dimensions capable of being driven to the required depths and capable of supporting excavation sides and soil pressures when braced; structurally sound; special shapes for corner construction and transition points.
- C. Sheetng Boxes: Steel, of size and dimensions capable of supporting excavation sides and soil pressures; structurally sound.

PART 3 - EXECUTION**3.01 EXAMINATION**

- A. Verify existing substrate and site conditions.
- B. Verify elevations and grades are as indicated on the plans.
- C. Verify proposed locations of excavations are as indicated on the plans.

3.02 PREPARATION

- A. Excavate to a depth no greater than 4 feet (1.2 m) from existing grade.
- B. Assemble and drive the sheeting in accordance with approved shop drawings.

3.03 INSTALLATION - SHEETING

- A. Drive sheeting in place to thoroughly support both sides of the excavation using a sheeting hammer. Use a steam or pneumatic hammer for steel sheeting.
- B. Water jetting of sheeting will not be permitted. Do not loosen adjacent ground which might result in collapse.
- C. Install walls and braces or shores tight and in accordance with approved shop drawings.

3.04 INSTALLATION - SHEETING BOX

- A. Place box in trench utilizing a means which will not damage structural integrity of the box.
- B. Excavate ahead of the sheeting box only enough to advance the sheeting box and only immediately prior to moving the sheeting box.
- C. Backfill on both sides of the sheeting box as it is moved.

3.05 REMOVAL OF SHEETING

- A. Remove sheeting only as backfilling progresses.
- B. Carefully remove sheeting such that compacted backfill is not displaced. Add additional backfill to the areas vacated by the sheeting.
- C. All sheeting is to be removed from the site once its use is no longer required.

3.06 CLEANING

- A. Clean site of any debris from work of this section

END OF SECTION 315000

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Recycled concrete aggregate base course.

1.02 REFERENCES

- A. ANSI/ASTM C88 - Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
- B. ANSI/ASTM C136 - Sieve Analysis of Fine and Coarse Aggregates.
- C. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.54 kg) Rammer and 18-inch (457mm) Drop.
- D. ASTM D4318 - Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Do not handle aggregate in any manner which will cause segregation of large or fine particles.

PART 2 - PRODUCTS

2.01 2.01 - MATERIALS

- A. Aggregate Base Course: Angular, crushed, recycled concrete; free of shale, clay, friable materials and debris; graded in accordance with ANSI/ASTM C136 within the following limits:

Sieve Size		Percent Passing
1½ inches	(38 mm)	100
1 inch	(25 mm)	90-100
½ inch	(13 mm)	65-85
3/8 inch	(9 mm)	55-75
No. 4	(4.75 mm)	40-55
No. 8	(2.36 mm)	30-45
No. 16	(1.18 mm)	22-36
No. 30	(0.60 mm)	16-27
No. 40	(0.30 mm)	12-19
No. 100	(0.15 mm)	7-13
No. 200	(75 micro m)	3-7

- B. Material retained on the 1/2 inch (13 mm) sieve is coarse aggregate.
- C. Coarse aggregate shall not have more than 10 percent by weight of flat or elongated pieces. A flat or elongated piece is defined as being three times greater in the largest dimension as compared to its least dimension.
- D. The portion of the aggregate base course which passes the No. 40 (0.30 mm) screen shall have a plasticity index of one as tested in accordance with ASTM D4318.

PART 3 - EXECUTION**3.01 EXAMINATION**

- A. Verify elevations of subgrade are as indicated on the plans.
- B. Verify that subgrade is properly compacted and ready to receive work of this section.

3.02 PREPARATION

- A. Fine grade and compact subgrade to 95 percent maximum dry density in accordance with ANSI/ASTM D1557.

3.03 AGGREGATE PLACEMENT

- A. Spread course aggregate over prepared subgrade to a total compacted thickness as indicated on the plans.
- B. Place aggregate in 3 inch (75 mm) layers and compact by roller.
- C. Level and contour surfaces to elevations and gradients indicated.
- D. Add small quantities of fine aggregate to coarse aggregate as appropriate to assist compaction.
- E. Compact placed aggregate materials to achieve 95% maximum dry density in accordance with ANSI/ASTM D1557. Maintain optimum moisture content to attain required density.
- F. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
- G. Use mechanical vibrating tamping in areas inaccessible to compaction equipment.
- H. New pavement must be placed on the properly compacted aggregate base course within 24 hours of final compaction. If aggregate base course is left open for more than 24 hours, recompact and retest in accordance with ANSI/ASTM D1557.

3.04 TOLERANCES

- A. Maximum Variation from Flatness: 1/4 inch measured with 10 foot straight edge.
- B. Maximum Variation from Scheduled Compacted Thickness: 1/4 inch
- C. Maximum Variation from True Elevation: 1/4 inch

3.05 FIELD QUALITY CONTROL

- A. Perform compaction testing in accordance with ANSI/ASTM D1557.
- B. If tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to Owner.

END OF SECTION 321123

PART 1 - GENERAL**1.01 SECTION INCLUDES**

- A. Asphalt paving; wearing, binder, or base course within the Town of Riverhead roadways.

1.02 RELATED SECTIONS

- A. Section 321123 - Aggregate Base Course.

1.03 REFERENCES

- A. AI MS-2 - Mix Design Methods for Asphalt Concrete and Other Hot Mix Types.
- B. AI MS-8 - Asphalt Paving Manual.
- C. ASTM D242 - Mineral Filler for Bituminous Paving Mixtures.
- D. ASTM D546 - Test Method for Sieve Analysis of Mineral Filler for Road and Paving Materials.

1.04 SUBMITTALS

- A. Submit data to the District as requested.
- B. Supplier: Submit name of asphalt supplier to be used on the project prior to placement of any asphalt on the project.
- C. Design Data: Submit asphalt mix design for each asphalt type to be used.
- D. Testing Firm: Submit name of testing firm.

1.05 QUALITY ASSURANCE

- A. Obtain materials from the same supplier throughout the duration of the project.
- B. Do not alter from mix design requirements.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle products to the site as required.
- B. Deliver asphalt in sealed, tight, metal containers covered with suitable material to protect the asphalt from the elements
- C. Lightly lubricate the inside surface of the container with a thin oil or soap solution before loading asphalt.
- D. All containers must be cleaned of all foreign materials prior to loading.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not place asphalt when base surface temperature is less than 40 degrees F (4 degrees C), or if surface is wet or frozen.
- B. Do not place asphalt when precipitation is occurring.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Asphalt Cement: AC-20; homogeneous, and shall not foam when heated to 347 degrees F (175 degrees C).
- B. Fine Aggregate: Material passing the 1/8 inch sieve; natural sand of hard, strong, durable particles which are free from coatings or injurious amounts of clay, loam or other deleterious substances.
- C. Coarse Aggregate: Material retained on the 1/8 inch sieve; crushed stone or gravel; clean, durable, sharp angled fragments of rock of uniform quality.
- D. Mineral Filler: ASTM D242, finely ground particles of limestone, hydrated lime or other mineral dust, free of foreign matter; 100 percent shall pass the No. 30 (0.60 mm) sieve; a minimum of 85 percent shall pass the No. 80 (0.18 mm) sieve; and a minimum of 65 percent shall pass the No. 200 (0.075 mm) sieve as measured in accordance with ASTM D546.

2.02 EQUIPMENT

- A. Rollers: Minimum weight of 10 tons (89kN) equipped with lubricating devices for the roller wheels.
- B. Pavers: Equipped with a vibratory device.

2.03 ACCESSORIES

- A. Tack Coat: Homogeneous, medium curing, liquid asphalt.
- B. Wheel Lubricant: Oil-water mixture containing maximum 10 percent lubricating oil.

2.04 MIXES

- A. Use dry material to avoid foaming. Mix uniformly.
- B. Binder Course: NYSDOT Type 3; 4.5 to 6.5 percent of asphalt cement by weight in mixture in accordance with the following gradation:

SIEVE SIZE	PERCENT PASSING
1-1/2 INCHES	100
1 INCH	95-100
1/2 INCH	70-90
1/4 INCH	48-74
1/8 INCH	32-62
NO. 20	15-39
NO. 40	8-27
NO. 80	4-16
NO. 200	2-6

A. Wearing Course: NYSDOT Type 6F; 5.8 to 7.0 percent of asphalt cement by weight in mixture in accordance with the following gradation:

SIEVE SIZE	PERCENT PASSING
1 INCH	100
1/2 INCH	95-100
1/4 INCH	65-85
1/8 INCH	36-65
NO. 20	15-39
NO. 40	8-17
NO. 80	4-16
NO. 200	2-6

2.05 SOURCE QUALITY CONTROL

- A. Obtain asphalt materials from same source throughout the project.
- B. Provide asphalt in accordance with the approved mix design for each type of asphalt.
- C. Test samples in accordance with AI MS-2.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions and substrate.
- B. Verify that compacted subbase is dry and ready to receive work of this section.
- C. Verify gradients and elevations of base are correct.
- D. Verify that all castings are properly installed and are at the correct elevations.
- E. Beginning of installation means installer accepts existing conditions.

3.02 PREPARATION

- A. Pavement removal shall be kept to a minimum and not to exceed the authorized trench width plus the minimum required cut-backs as outlined in this section. Saw cutting shall be performed to ensure the breakage of pavement along straight lines.
- B. Apply tack coat at uniform rate of 0.03 to 0.07 gal/sq yd (0.14 to 0.32 L/sq m) to contact vertical surfaces of curbs, gutters and any asphalt or concrete material
- C. Do not apply tack coat to wet or frozen surfaces.
- D. Coat surfaces of manhole and catch basin frames with oil to prevent bond with asphalt pavement. Do not tack coat these surfaces.

3.03 INSTALLATION

- A. Install work in accordance with AI MS-8.

- B. Maintain asphalt temperature between 250 and 325 degrees F (121 and 163 degrees C) during placement.
- C. Place asphalt within 24 hours of applying tack coat.
- D. Place asphalt to compacted thicknesses as identified on plans. If a multiple course pavement is to be used, place top course within 24 hours of placing bottom course. If more than 24 hours elapse, a tack coat will be required to be placed over the entire surface of the bottom course prior to any additional paving.
- E. Utilize the vibratory device on the paver at all times.
- F. Compact pavement by rolling. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.
- G. Compact pavement to a minimum of 94% maximum density.
- H. Develop rolling with consecutive passes to achieve even and smooth finish, without roller marks.
- I. A minimum cut back of 12-inches is required on all water main trenches. All pavement restoration areas shall be rectangular or square in shape with the edges perpendicular to the centerline of the roadway.
- J. All trenches made in asphalt road areas shall receive temporary asphalt paving at the end of each work day. Temporary asphalt must be maintained in good condition throughout the contract work. No additional payment will be made for multiple (repeat) placements of temporary asphalt on deteriorated and spalling areas of asphalt.

3.04 TOLERANCES

- A. Maximum Variation from Flatness: 1/8 inch measured with 10 foot straight edge.
- B. Maximum Variation from Scheduled Compacted Thickness: 1/8 inch
- C. Maximum Variation from True Elevation: 1/4 inch

3.05 FIELD QUALITY CONTROL

- A. Perform field inspection and testing per District request and as required.
- B. Take samples and perform tests in accordance with AI MS-2.
- C. Testing to include percent compaction, gradation and asphalt content.
- D. Cost of testing are to be borne by the contractor.
- E. Provide an asphalt thermometer for determining the asphalt temperature during paving operations.

3.06 PROTECTION

- A. Immediately after placement, protect pavement from mechanical injury until project is accepted by the Owner.

END OF SECTION 321216

PART 1 - GENERAL**1.01 SECTION INCLUDES**

- A. Concrete sidewalks, handicap ramps, driveway aprons.
- B. Formwork.

1.02 REFERENCES

- A. ACI 301 - Structural Concrete for Buildings.
- B. ANSI/ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.
- C. ANSI/ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction.
- D. ASTM C33 - Concrete Aggregates.
- E. ASTM C94 - Ready Mix Concrete.
- F. ASTM C150 - Portland Cement
- G. ASTM C260 - Air-Entraining Admixtures for Concrete.
- H. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
- I. ASTM C494 - Chemical Admixtures for Concrete.

1.03 SUBMITTALS

- A. Submit data as requested by the District.
- B. Product Data: Provide data on joint filler, admixtures and curing compounds.
- C. Supplier: Submit name of concrete supplier prior to the placement of any concrete on the project.
- D. Design Data: Provide a design mix for each type of concrete to be used on the project.
- E. Certificates: Submit receipts of all concrete deliveries, indicating source, date, contractor, amount of concrete, concrete strength, truck number and time load was batched.
- F. Testing Firm: Submit name of testing firm to be performing tests on concrete.

1.04 PROJECT RECORD DOCUMENTS

- A. Accurately record locations of each day's concrete pour.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301.
- B. Obtain concrete only from approved suppliers and maintain the same source throughout the project.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver concrete in accordance with ASTM C94, Alternative No. 2.
- B. Place all concrete within 90 minutes of time load was batched.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not place concrete when base surface temperature is less than 40 degrees F, or if surface is wet or frozen.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Cement: ASTM C150, air entraining, Type 1A Portland, gray color.
- B. Aggregates: ASTM C33.
- C. Water: Potable and not detrimental to concrete.
- D. Reinforcement: ANSI/ASTM A185 plain welded steel wire fabric; in flat sheets; uncoated finish.

2.02 ACCESSORIES

- A. Forms: Douglas Fir plywood type; solid, sound, undamaged sheets.
- B. Joint Filler: ANSI/ASTM D1751; 1/2 inch thick.
- C. Air Entraining Admixture: ASTM C260.
- D. Chemical Admixture: ASTM C494, type as required.
- E. Curing Compound: ASTM C309, Type 1, Class A.
- F. Form Release Agent: Colorless material which will not stain concrete or absorb moisture.
- G. Detectable Warning Surface: SAFTI-TRAX Mats or equal.
- H. Joint Sealant: ASTM C920,,Type M, Grade P; SL-2 by Sonneborn or equal.

2.03 MIXES

- A. Concrete shall be mixed and prepared in accordance with the approved mix design and ASTM C94, Alternative No. 2.
- B. The mix shall be such that the concrete shall attain the following characteristics:
 1. Compressive Strength (28 days): 4,000 psi.
 2. Slump: 2½ to 3½ inches.
 3. Air Entrainment: 6% ±1%.
- C. Use chemical admixtures only when approved by the Engineer. Use of admixtures will not relax placement requirements.

PART 3 - EXECUTION**3.01 EXAMINATION**

- A. Verify existing conditions and substrate.
- B. Verify datum and all elevations are as indicated on the plans.
- C. Verify compacted granular subbase has been properly prepared and is ready to receive work of this section.
- D. Beginning of installation means installer accepts existing conditions.

3.02 PREPARATION

- A. Compact base to minimum 95 percent maximum dry density in accordance with ANSI/ASTM D1557.
- B. Moisten base to a minimum depth of 1/2 inch to minimize absorption of water from fresh concrete.
- C. Coat surfaces of manhole and catch basin frames with oil to prevent bond with concrete pavement.
- D. Place and secure forms to correct location, dimension and profile.
- E. Assemble formwork to permit easy stripping and dismantling without damaging concrete. Coat forms with form release agent.

3.03 INSTALLATION

- A. Place joint filler vertical in position in straight lines. Secure to formwork during concrete placement.
- B. Place reinforcement as indicated on the plans. Interrupt reinforcement at expansion joints.
- C. Place concrete in accordance with ACI 301.
- D. Ensure reinforcement and formed joints are not disturbed during concrete placement.
- E. Place concrete continuously between predetermined construction joints. Do not break or interrupt successive pours such that joints occur.
- F. Vibrate concrete adjacent to forms.
- G. Place concrete to pattern indicated.
- H. Place expansion joints with joint filler at 20 foot intervals.
- I. Place scored contraction joints at 4 foot intervals.
- J. Place joint filler between paving components and building or other appurtenances and in expansion joints.
- K. Apply a light broom finish perpendicular to traffic.

- L. Place curing compound on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.

3.04 FIELD QUALITY CONTROL

- A. Field inspection and testing shall be performed under provisions of Section 014500.
- B. Take four concrete test cylinders for every 50 cu. yds. or fraction thereof of each class of concrete placed each day.
- C. Cure test cylinders on site under same conditions as concrete sidewalk.
- D. Take one slump test for each set of test cylinders taken.
- E. Concrete not meeting slump requirements will be rejected.
- F. Concrete represented by cylinders which do not meet required strength will be removed and replaced at no additional cost to the Owner.

3.05 PROTECTION

- A. Immediately after placement, protect sidewalk from premature drying, excessive temperatures and mechanical injury.
- B. Protect sidewalk from damage until project is accepted by the Owner.

END OF SECTION 321313

PART 1 - GENERAL**1.01 SECTION INCLUDES**

- A. Reinforced concrete curb.
- B. Formwork.

1.02 REFERENCES

- A. ACI 301 - Structural Concrete for Buildings.
- B. ANSI/ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction.
- C. ASTM A615 - Deformed and Plain Billet Steel for Concrete Reinforcement.
- D. ASTM C33 - Concrete Aggregates.
- E. ASTM C94 - Ready Mix Concrete.
- F. ASTM C150 - Portland Cement
- G. ASTM C260 - Air-Entraining Admixtures for Concrete.
- H. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
- I. ASTM C494 - Chemical Admixtures for Concrete.

1.03 SUBMITTALS

- A. Submit data as requested by the District.
- B. Product Data: Provide data on joint filler, admixtures and curing compounds.
- C. Supplier: Submit name of concrete supplier prior to the placement of any concrete on the project.
- D. Design Data: Provide a design mix for concrete to be used on the project.
- E. Certificates: Submit receipts of all concrete deliveries, indicating source, date, contractor, amount of concrete, concrete strength, truck number and time truck load was batched.
- F. Testing Firm: Submit name of testing firm to be performing tests on concrete.

1.04 PROJECT RECORD DOCUMENTS

- A. Accurately record locations of each day's concrete pours.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301.
- B. Obtain concrete only from approved suppliers and maintain the same source throughout the project.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver concrete in accordance with ASTM C94, Alternative No. 2.
- B. Place all concrete within 90 minutes of time load was batched.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not place concrete when base surface temperature is less than 40 degrees, or if surface is wet or frozen.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Cement: ASTM C150, Type 1 Portland, gray color.
- B. Aggregates: ASTM C33.
- C. Water: Potable and not detrimental to concrete.
- D. Reinforcement: ANSI A615 steel; 60 ksi yield grade; deformed billet steel bars; uncoated finish.
- E. Dowels: ASTM A615 steel; 60 ksi yield grade; plain steel, uncoated finish.

2.02 ACCESSORIES

- A. Steel Forms: Minimum 16 gauge thick, stiffened to support weight of concrete with a minimum deflection.
- B. Wood Forms: Douglas Fir species; solid, sound, undamaged sheets; minimum 2 inches (50 mm) thick.
- C. Joint Filler: ANSI/ASTM D1751; 1/2 inch thick.
- D. Air Entraining Admixture: ASTM C260.
- E. Chemical Admixture: ASTM C494, type as required.
- F. Curing Compound: ASTM C309, Type 1, Class A.
- G. Form Release Agent: Colorless material which will not stain concrete or absorb moisture.
- H. Joint Sealant: ASTM C920, Type S, Grade NS; NP-1 by Sonneborn or equal.

2.03 MIXES

- A. Concrete shall be mixed and prepared in accordance with the approved mix design and ASTM C94, Alternative No. 2.
- B. The mix shall be such that the concrete shall attain the following characteristics:
 1. Compressive Strength (28 days): 4,000 psi.
 2. Slump: 2½ to 3½ inches.
 3. Air Entrainment: 6% ±1%.

- C. Use chemical admixtures only when approved by the Engineer. Use of admixtures will not relax placement requirements.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions and substrate.
- B. Verify datum and all elevations are as indicated on the plans.
- C. Verify compacted granular subbase has been properly prepared and is ready to receive work of this section.
- D. Beginning of installation means installer accepts existing conditions.

3.02 PREPARATION

- A. Excavate to the required depth and compact surface.
- B. Place and secure forms to correct location, dimension and profile.
- C. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- D. Moisten base to a minimum depth of 1/2 inch to minimize absorption of water from fresh concrete.
- E. Coat forms with form release agent.

3.03 INSTALLATION

- A. Place joint filler vertical in position and at equal spaces not exceeding 20 feet. Secure to formwork during concrete placement.
- B. Place dowels through joint filler as indicated on the plans. One end of dowel is to be greased or set in a capped sleeve to allow longitudinal movement.
- C. Place reinforcement as indicated on the plans. Interrupt at expansion joints.
- D. Place concrete in accordance with ACI 301.
- E. Ensure reinforcement, dowels, joint filler or forms are not disturbed during concrete placement.
- F. Place concrete continuously between construction joints. Do not break or interrupt successive pours such that cold joints occur.
- G. Vibrate concrete adjacent to forms.
- H. After concrete sets, but prior to curing, remove front forms without damaging concrete and apply a light broom finish to the top and face of the curb.
- I. Place curing compound on exposed surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.

3.04 FIELD QUALITY CONTROL

- A. Field inspection and testing shall be performed as requested by the District and as required.
- B. Take four concrete test cylinders for every 50 cu. yds. or fraction thereof of concrete placed each day.
- C. Cure test cylinders on site under same conditions as curb.
- D. Take one slump test for each set of cylinders taken.
- E. Concrete not meeting slump requirements will be rejected.
- F. Concrete represented by cylinders which do not meet required strength will be removed and replaced at no additional cost to the Owner.

3.05 PROTECTION

- A. Immediately after placement, protect curb from premature drying, excessive temperatures, rain and mechanical injury.
- B. Protect curb from damage until project is accepted by the Owner.

END OF SECTION 321613

PART 1 - GENERAL

1.01 - SECTION INCLUDES

- A. High Density Polyethylene casing and carrier pipes.
- B. Drilling Slurry
- C. Construction of receiving pits and installation of sleeve and carrier pipe.

1.02 - RELATED SECTIONS

- A. Section 015719 - Temporary Environmental Controls
- B. Section 315000 - Excavation Support and Protection
- C. Section 312323 - Backfilling

1.03 - REFERENCES

- A. AWWA C906 - Standard for Polyethylene Pressure Pipe and Fittings, 4" through 63" for Distribution and Transmission.
- B. AWWA C901 - Standard for Polyethylene Pressure Pipe and tubing, 3/4" through 3" for Water Service.
- C. ASTM D1248 - Standard Specification for Polyethylene Plastic Extrusion Materials for Wire and Cable.
- D. ASTM D2774 - Standard Practice for Underground Installation of Thermoplastic Pressure Piping.
- E. ASTM D3350 - Standard Specification for Polyethylene Plastic Pipe and Fittings Materials.
- F. ASTM F714 - Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter.
- G. PPI TR-4/2004 - PPI Listing of Hydrostatic Design Basis (HDB), Strength Design Basis (SDB), Pressure Design Basis (PDB) and Minimum Required Strength (MRS) Ratings for Thermoplastic Piping Materials or Pipe.
- H. PPI Handbook of Polyethylene Pipe.

1.04 - SUBMITTALS

- A. Submit data as requested by the District.
- B. Product Data: Provide data on pipe materials, pipe fittings, and accessories.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements
- D. Include detailed procedure of method of drilling operation including; size, type, manufacturer and model number of drilling rig, maximum rated pullback and thrust capacity of the machine, maximum and minimum rate of pumping drilling mud, spindle, torque capacity and proposed profile of drilled pipeline crossing. Indicate the entry and exit angles of the directional drill and pipe.

- E. The drill profiles shown on the contract drawings are provided for information only. The contractor shall be responsible for providing the drill path in profile which he intends for the installation of the HDPE sleeve and/or carrier pipe (water main). This shall be subject to approval by the engineer.

1.05 - PROJECT RECORD DOCUMENTS

- A. After completion of the project, the contractor shall furnish a drilling log documenting drill pipe joint lengths, inclination angle, azimuth, right (deviation from design path reference line), elevation, station number and measured distance for every joint of drill pipe installed. In addition, the radius of curvature for each joint of drill path installed shall be calculated by the contractor and supplied to the Owner. The bit to probe distance, rig setback and bottom hole assembly length shall also be documented on the drill log, and provided to by the Owner.
- B. The accuracy of the horizontal directional drilling (HDD) path shall be within two (2) pipe diameters in any dimension and within 18" of the location and depth of the end point on the receiving pit side as indicated by the District.
- C. Identify and describe discovery of uncharted utilities.

1.06 - QUALITY ASSURANCE

- A. HDPE Pipe: Manufacturer's name, manufacturer's production code including day, month, year extruded, and manufacturer's plant and extrusion line shall be stamped on pipe
- B. The manufacturer shall have manufacturing and quality control facilities capable of producing and assuring the quality of the pipes and fittings required by these specifications. Given reasonable notice, the manufacturer's production facilities shall be open for inspection by the owner or his authorized representative. Qualified manufacturers shall be approved by the engineer and the Owner.
- C. The Owner reserves the right to have any material furnished tested by an independent testing laboratory for specification compliance at the contractor's expense.
- D. The contractor must have performed a minimum of three (3) directional drilling projects with 12" or larger pipe, 300 feet or longer within the last five years to be eligible for award of the contract. Documentation of the successful completion of past projects shall be provided to be considered for acceptance.
- E. The contractor shall warrant that all material and workmanship furnished by him and entering into the work as provided for in this contract shall be the best in every respect and agrees to correct at his own expense any defects traceable to defects in materials and/or workmanship which may show themselves within one (1) year after the final in service date of the project. This shall be in addition to pressure testing of the system once installed.
- F. The manufacturer of the HDPE pipe and fittings shall have an established quality control program responsible for inspecting incoming and outgoing materials. Incoming polyethylene materials shall be inspected for density, melt flow rate and contamination. The cell classification properties of the material shall be certified by the supplier and be provided at request, to the Owner. Incoming materials shall be approved by Quality Control before processing into finished goods. Outgoing products shall be tested as required by AWWA C-906.
- G. The manufacturer shall maintain permanent Quality Control (QC) and Quality Assurance (QA) records. Certification of test results shall be made available to the Owner or its designated purchaser on request.

- H. The contractor shall be responsible for the determination of soil characteristics in the project area prior to commencing the drilling operation.
- I. The material used in the production of potable water pipe shall be approved by the National Sanitation Foundation (NSF).
- J. Polyethylene pipe shall be manufactured in accordance with AWWA C-901 for sizes 1/2" through 3" and in accordance with AWWA C-906 for sizes 4" through 63".
- K. All piping systems shall comply with the latest AWWA Specification for Water Transmission and Distribution Piping Systems.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. HDPE Pipe:
 - 1. Materials used for the manufacturing of polyethylene pipe and fittings shall be PE 4710 High Density Polyethylene (HDPE) meeting the ASTM D3350 cell classification of 445574C.
 - 2. The material shall have a minimum Hydrostatic Design Basis (HDB) of 1000 psi at 73 degrees Fahrenheit when tested in accordance with PPI TR-3 and shall be listed in the name of the pipe and fitting manufacturer in PPI TR-4.
 - 3. Permanent identification of piping service shall be provided by co-extruding a marking, such as a stripe, etc., into the pipe's outside surface. The marking material shall be the same material as the pipe material except for color. Markings printed or painted on the pipe exterior surface shall not be acceptable.
 - 4. Manufacturer of HDPE carrier piping shall be Performance Pip; Driscoplex 4000 DIPS Series for Ductile Iron Pipe or specifically approved equal. Manufacturer of HDPE sleeve piping shall be Performance Pipe; Driscoplex 4000 DIPS or 4100 IPS Series for Ductile Iron Pipe or specifically approved equal. In a sleeve and carrier pipe configuration, the sleeve pipe shall have a maximum dimension ratio of 17; the carrier pipe shall have a minimum dimension ratio of 11.
 - 5. The carrier pipe shall be manufactured from non-recycled materials.
 - 6. The contractor shall supply all piping materials. This shall include butt-fused M.J. adapter on each side of the directionally drilled carrier HDPE.
- B. Equipment: The directional drilling system used shall incorporate the following features:
 - 1. The system shall be remotely steerable with electronic monitoring of the depth and location. The electronic monitoring system shall be accurate to within +2" of the cutting head. The system shall be able to control the depth and direction of the drill pipe within a window equal to two pipe diameters.
 - 2. The system shall utilize a fluid cutting process, or a fluid assisted mechanical cutting process using a liquid clay, such as bentonite. This clay shall be totally inert and contain no risk to the environment.
 - 3. Drilling equipment shall be fitted with a permanent alarm system capable of detecting electric current. The system shall have an audible alarm to warn the operator when the drill head nears electrified cables.
 - 4. The contractor shall supply a vacuum truck to empty or recover drilling mud from the sending and receiving pits.
 - 5. The contractor shall also be responsible for supplying any special tools and equipment necessary to perform the work associated with directional drilling. This shall include all required excavation equipment, loaders or backhoes to handle pipe, fusion equipment, as well as all associated personnel or labor to operate same.

6. If the machinery and equipment used during the drilling process could damage the plastic pipe or tubing, then padding of the machinery and equipment, or other suitable protective section shall be taken, at no cost to the Owner.
- C. Slurry Mixture:
 1. The contractor shall use an inert substance such as Bentonite for the drilling slurry. The contractor shall supply information on the type of slurry material to be used.
 2. The contractor shall arrange and be responsible for providing the fresh water supply for mixing the drilling mud. Sea water shall not be acceptable for use. There shall be no exceptions.
- D. Tracer Wire:
 1. Copper clad hard drawn high carbon steel wire, #12 AWG solid, 45 mil high molecular weight HDPE jacket complying with ASTM D1248, 30 volt rating, 1,150 pound average break load, blue jacket.

PART 3 - EXECUTION

3.01 GENERAL

- A. Verify location and depth of all underground utilities prior to commencement of drilling operation.
- B. It shall be the contractor's responsibility to notify all the appropriate local authorities prior to commencing work, as required in the construction permit and/or the Owner's engineer. Agencies to be notified shall include, but are not limited to, the Long Island Rail Road (LIRR), the issuer of the permit (State, County, City, Town, Villages, NYSDOT, NYSDEC, USCG, USACE, etc.), the police departments, fire departments and local schools.
- C. The contractor shall be responsible to fulfill all traffic control criteria.
- D. Make frequent checks during the drilling operation so that any departure from the required line and grade shall be detected at the outset and corrective measures used to prevent further deviation.
- E. Field conditions may require that the drilling operation be continued on an around-the-clock basis. In the event the Engineer and/or the Owner orders such uninterrupted operation, any additional costs incurred shall be incurred in the price bid.
- F. Pits shall be backfilled, barricaded and restored with temporary asphalt before leaving work at night for safety. The contractor may elect to install steel road plates in lieu of the placement of temporary asphalt.
- G. The carrier pipe shall be assembled and pulled through the sleeve following completion of the drill and sleeve installation. The method of installation of the carrier pipe within the casing by means of pulling by cable or other means shall be approved by the Engineer prior to commencing this portion of the work.
- H. Install carrier pipe so that it is not in tension.
- I. Abandonment of Drilling Operation: In the event obstructions are encountered during the drilling operation and it is deemed impossible to advance the casing, the drilling operation shall cease and the casing pipe removed. The contractor may need to employ a secondary auger head capable of boring through rock or other debris. The Engineer shall then indicate an alternate location for the work in order that the drilling operation may be completed.

- J. Should pipe pull-back be unsuccessful, the contractor shall abandon the drilling operation at his own cost, and complete another directional drill, at no additional expense to the Owner.
- K. All damaged sections of pipe and tubing shall be removed and replaced by the contractor at his expense. Sections of pipe having been discovered with cuts or gouges in excess of 10% of the pipe wall thickness shall be cut out and removed. The undamaged portions of the pipe shall be rejoined by butt fusing.
- L. Close ends of casing with non-toxic, non-shrink grout after installation of carrier pipe. Verify grade prior to closing ends of casing.

3.02 INSTALLATION OF DIRECTIONAL DRILL PIPE

- A. Research has documented that certain pipe materials (such as polyethylene, polybutylene, polyvinyl chloride, and asbestos cement) and elastomers, such as used in jointing gaskets and packing glands, may be subject to permeation by lower molecular weight organic solvents or petroleum products. Products supplied under this Specification Section assume that petroleum products or organic solvents will not be encountered. If during the course of pipeline installation the Contractor identifies, or suspects the presence of petroleum products or any unknown chemical substance, **notify the District immediately**. Stop installing piping in the area of suspected contamination until direction is provided by the Engineer.
- B. Mechanical pneumatic or water-jetting drilling methods shall not be acceptable due to the risk of surface subsidence and damage.
- C. A pilot shall be drilled first. Back reaming may be done in a single or multiple stages at the discretion of the contractor. The casing or sleeve shall then be installed within the back reamed hole. The pull-back of the HDPE pipe shall immediately follow the back reamer. The drilling fluids shall be collected within the drive pit, reception pit or a specially constructed spoils collection pit.
- D. The sleeve pipe shall be connected to the back reamer for pull-back with a substantial mechanical connection.
- E. The contractor shall provide for a remote navigation system capable of accurately tracking the position of the drill, reamer and pipe at all times during the drilling and pull-back operation, in both the vertical and horizontal planes.
- F. The starter or launching ditch used to begin the directional boring operation shall be large enough to allow the installation of the water main to begin and progress without buckling or bending of the plastic pipe and tubing in excess of the established bending radius allowable in standard practice.
- G. The contractor shall be required to maintain the depth as defined in this project specification and as shown on the drawings.
- H. The contractor shall report the drill stem locations when requested as well as document the location of the drilled pipe on as-built project drawings. The contractor shall also be responsible for locating and identifying each fusion on the drilled pipe and relating it via permanent landmarks on the as-built project drawing.
- I. The contractor shall conduct his directional drilling operation in such a manner that the drilling slurry is not forced through a soil fracture, or any area along the path of the drilling operation. Should a "blow out" occur and drilling mud comes to the surface, the contractor shall immediately cease and desist drilling operations and take necessary containment and mitigation measures. Such measures shall include, but not be limited to, excavating collection pools,

setting up barriers of hay bales and silt screens to prevent the mud from spreading into surrounding areas and cleaning up any spill on the job site. The contractor shall be responsible for all environmental clean-up operations required as a result of his drilling operation at no expense to the Owner.

- J. The appropriate high density polyethylene HDPE pipe may have to be strung out along the work area. Pipes shall be set on rollers to prevent damage to the pipe during pull-back. The rollers shall be spaced such that the point loading on the pipe is distributed over enough rollers to prevent damage to the pipe.
- K. The contractor shall allow for contingency plans for collection of slurry that might rise through the ground during drilling operations and outside the containment area of slurry pits as described above.
- L. The leading six (6) feet of pipe shall be pulled through the receiving pit and inspected. If any abrasions, gouges or lacerations are present which violate the minimum allowable wall thickness of the pipe as defined below, the bore shall be abandoned at no expense to the Owner.
- M. Should the leading six feet of water main evidence damage as described above, the contractor, at his option, may pull a sleeve through the bore and insert a new water main through the sleeve at no cost to the Owner. The sleeve shall have an inner diameter no less than 1" greater than the outer diameter of the water main, and shall have the same DR rating. All required labor and material shall be included and be at the contractor's expense.
- N. The Owner shall reserve the right to have the contractor excavate a test hole to examine the condition of the pipe. If the pipe fails the criteria detailed above, the installation shall be abandoned as described herein.
- O. Sufficient overlap of plastic pipe and tubing shall be provided at tie-in and connection locations to allow for shrinkage of the plastic pipe. The plastic pipe and tubing will shrink or expand depending on the temperature difference between the installation temperature of the polyethylene pipe and steady temperature of the surrounding existing soil.
- P. Install two (2) tracer wires along with the pipe. Protect wire against damage or breakage during the drilling installation. The tracer wire shall be continuous through the bore. Upon testing, if both tracer wires are found not to be continuous, the contractor shall furnish and install new tracer wire at no expense to the Owner.
- Q. In lieu of two (2) tracer wires, a single tracer wire may be installed inside a $\frac{1}{2}$ " plastic conduit and pulled in conjunction with the carrier pipe. The contractor shall provide a detail on how the $\frac{1}{2}$ " conduit shall be connected to the pulling head.
- R. Install butt fusion transition coupling on each end of the HDPE carrier pipe. Coupling shall be size x size; HDPE x MJ flange adapter (DIPS) with 316 stainless steel stiffener. DR ratio shall match pipe installed.

3.03 FUSIONS

- A. Joints between plain ends of polyethylene pipe shall be made by butt fusion. Electrofusion couplings will not be permitted. The pipe manufacturer's fusion procedures shall be followed at all times as well as the recommendations of the Fusion Machine manufacturer. The wall thickness of the adjoining pipes and fittings shall have the same DR at the point of fusion.
- B. The butt fusion equipment used in the joining procedures shall be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, temperature requirements of 400 degrees Fahrenheit, alignment, and an interfacial fusion pressure of 75 psi.

The butt fusion joining shall produce a joint weld strength equal to or greater than the tensile strength of the pipe itself. Butt fusion equipment shall be equipped with a Data logger. Records of each weld (including, as a minimum, heater temperature, fusion pressure, and a graph of the fusion cycle) shall be appropriately identified and provided to the Engineer. Submit project Data Logger data as part of the Quality Control records.

- C. Maintain a log for each butt fusion. Log shall consist of stationing for each main line fuse. Provide Engineer with a copy of this log on a daily basis.
- D. Saddle fusion connections shall not be permitted.
- E. On each day butt fusions are to be made, the first fusion of the day shall be a trial fusion. The trial fusion shall be allowed to cool completely, then fusion test straps shall be cut out. The test strap shall be 12" or 30 times the wall thickness in length (minimum) and 1" or 1½ times the wall thickness in width (minimum). Bend the test strap until the ends of the strap touch. If the fusion fails at the joint, a new trial fusion shall be made, cooled completely and tested. Butt fusion of pipe to be installed shall not commence until a trial fusion has passed the bent strap test. There shall be no exceptions.
- F. If mechanical fittings (which are designed for, or tested and found acceptable for use with polyethylene pipe) are utilized for transitions between pipe materials, repairs, joining pipe sections, saddle connections or at other locations; the recommendation of the Mechanical Fitting manufacturer shall be followed. These procedures may differ from other pipe material.
- G. Socket fusions shall be tested by a bent strap test as described by the pipe manufacturer. The pipe manufacturer shall provide visual guidelines for inspecting the butt and socket fusion joints.
- H. All fusions that are contained in the pipe or tubing to be pulled shall be allowed to cool down for a minimum of 20 minutes in accordance with the cool-down times in the fusion procedures or as specified in manufacturer's literature, of the pulling operation.
- I. Electrofused couplings shall only be permitted on the lead end of the drill pipe when attaching transition coupling and only with the prior approval of the District.

3.04 SLURRY

- A. During the drilling operation, all drilling mud shall be contained within the sending and receiving pits and/or specific mud pits excavated for this purpose. All excess flows of mud shall be pumped into a vacuum truck provided for this purpose. If excess mud flows out of the containment pits, the drilling operation shall be shut down, at no expense to the Owner, until the flow of mud is contained within the pits and all excess mud has been cleaned from and removed from the site.
- B. During the drilling operations at the launching and receiving slurry collection pits, the contractor shall make all necessary arrangements for the safe and clean collection and removal of slurry. Prior to the slurry reaching within 2-feet to the top of grade, the contractor shall take all necessary precautions to empty the slurry pot and remove the slurry from the construction area. The slurry shall be properly transported and disposed of in accordance with all State and/or Federal requirements.
- C. Silt screening and hay bales shall be placed in a line surrounding all construction activity at the launching and receiving areas as shown on the drawings. These items shall be provided to contain any spills within the launching and receiving areas shown on the construction drawings, at no expense to the Owner. Hay bales and silt screens shall be installed 2-feet away and around the slurry pits.

- D. All slurry shall be collected in the excavated slurry pits. Slurry pits shall be excavated only in the launching and receiving areas.
- E. Upon completion of boring and pipe installation, the contractor shall remove all spoils from the starting and termination pits and dispose of same in a lawful manner at no expense to the Owner. The pits shall then be restored to their original condition.
- F. Once directional drilling has been completed, the slurry pits shall be backfilled in accordance with Section 312323.

3.05 TESTING

- A. The pipe shall be inspected for, and protected from cuts, voids, cracks, inclusions, scratches and other defects or damage prior to, during and after installation.
- B. Pressure testing shall be conducted in accordance with the manufacturer's recommendations as provided in Bulletin PP802 - Leak Testing of Polyethylene Pipe for Municipal & Industrial Applications. Pressure testing shall use water as the test media. Pneumatic (air) testing is prohibited.
- C. Following successful pressure testing, all water shall be evacuated from main.

END OF SECTION 330507.13

PART 1 - GENERAL**1.01 SECTION INCLUDES**

- A. Disinfection of water piping and valves.

1.02 REFERENCES

- A. ANSI/AWWA B300 - Standard for Hypochlorites.
- B. ANSI/AWWA B301 - Standard for Liquid Chlorine.
- C. ANSI/AWWA C651 - Disinfecting Water Mains.
- D. ANSI/AWWA C655 - Field Dechlorination.

1.03 SUBMITTALS

- A. Submit proposed method for introducing disinfectant into water piping.
- B. Test Reports: Indicate results comparative to specified requirements.

1.04 PROJECT RECORD DOCUMENTS

- A. Disinfection Report: Record:
 - 1. Type and form of disinfectant used.
 - 2. Date and time of disinfectant injection start and time of completion.
 - 3. Test and injection locations.
 - 4. Initial and 24-hour disinfectant residuals (quantity in treated water) in ppm for each outlet tested.
 - 5. Date and time of flushing start and completion.
 - 6. Disinfectant residual after flushing in ppm for each outlet tested.
- B. Bacteriological, Chemical and Organic Chemical Report: Record:
 - 1. Date issued, project name and testing laboratory name, address and telephone number.
 - 2. Time and date of water sample collection.
 - 3. Name of person collecting samples.
 - 4. Test locations.
 - 5. 24-hour and 48-hour disinfectant residuals in ppm.
 - 6. Coliform bacteria and chemical test results.
 - 7. Certification that water conforms or fails to conform to New York State drinking water standards.
 - 8. Laboratory Director's signature and authority.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with ANSI/AWWA C651, latest edition.

1.06 QUALIFICATIONS

- A. Water Treatment Firm: Company specializing in disinfecting potable water systems specified in this Section with minimum three (3) years experience.
- B. Testing Firm: Laboratory specializing in testing potable water systems, approved by the New York State Department of Health.

1.07 REGULATORY REQUIREMENTS

- A. Conform to Recommended Standards for Water Works and applicable codes or regulations for performing the work of this Section.
- B. Water quality to conform to New York State drinking water standards after completion of disinfection.

PART 2 - MATERIALS

2.01 DISINFECTION CHEMICALS

- A. ANSI/AWWA B300, Hypochlorites.
- B. ANSI/AWWA B301, Liquid Chlorine.

PART 3 - DISINFECTION & TESTING

3.01 EXAMINATION

- A. Verify that all piping systems have been cleaned, inspected and pressure tested.

3.02 EXECUTION

- A. Provide required equipment to perform the work of this Section. The Owner will provide the water required for the initial disinfection and filling of the piping, and valves, etc. The Contractor shall pay for the water required for any subsequent filling of these systems based on the Owner's retail water rate.
- B. The preferred method of chlorinating the new water mains is the continuous feed method using calcium hypochlorite granules in accordance with Section 4.4.3 of AWWA C651, latest edition. Granules shall be placed at a minimum in accordance with Table 1 of the applicable Section. The slug method of chlorination is also acceptable and shall be performed in accordance with Section 4.5 of AWWA C651, latest edition. The use of tablets for disinfection is prohibited.
- C. The use of calcium hypochlorite granules specifically intended for swimming pool use is prohibited. The contractor shall utilize only those chemicals which are NSF 60/AWWA approved for disinfection.
- D. The newly laid main shall be properly chlorinated to at least 200 ppm (mg/l) for a minimum of 24 hours, to ensure the chlorine residual at the pipe extremities and at other representative points after the retention period, is at least 200 ppm (mg/l). Treated water shall be retained in the pipe long enough to destroy all non-spore-forming bacteria.
- E. After completion of retention period, new mains shall be flushed in order to neutralize residual chlorine with a suitable quantity of one of the following neutralizing agents: sodium bisulfite, sodium sulfide or sodium thiosulfate, prior to disposal to prevent damage to the environment, in accordance with ANSI/AWWA C655. Bacteria samples may not be collected until a chlorine residual representative of the existing distribution system is achieved. New mains shall be flushed at a velocity of no less than 3.0 ft/sec.
- F. Collect samples 24 & 48-hours after flushing disinfectant and refilling with potable water. Samples shall not be collected if a chlorine residual inconsistent with that of the existing distribution system is present. Any portion of the sample set which tests positive for total coliform and/or e-coli bacteria constitutes failure of the entire set with no exceptions.

- G. Field chlorine residual checks shall be performed for each sample and shall be recorded on the laboratory sampling form for inclusion in the sampling results report.
- H. Two (2) consecutive sets of bacteriological samples, taken 24 hours apart, must be collected from every 1,000 ft of new main, the end of the line and from each branch. Samples should be collected after final flushing and when the chlorine concentration in the water leaving the main is no higher than that generally prevailing in the distribution system (ANSI/AWWA C651 Standard, latest edition).
- I. Sample tap locations shall be as directed by the Engineer. Taps shall be installed to sample at a frequency as described above.
- J. If water quality in system does not meet the requirements of the Department of Health for potable water, the Contractor shall re-chlorinate or take other steps necessary to provide acceptable water quality. Samples shall be collected and analyzed after each attempt.

3.03 QUALITY CONTROL

- A. Test samples in accordance with the latest edition of ANSI/AWWA C651 and Department of Health requirements.

END OF SECTION 331300

PART 1 - GENERAL**1.01 SECTION INCLUDES**

- A. Water Utility Pipe
- B. Special Castings; Mechanical Joint Fittings
- C. Buried Valves & Valve Boxes

1.02 RELATED SECTIONS

- A. Section 312333 - Trenching
- B. Section 312323 - Backfilling
- C. Section 331300 - Disinfection of Water Utility Distribution

1.03 REFERENCES

- A. ANSI/AWWA C104 - Cement-Mortar Lining for Ductile Iron Pipe and Fittings for Water.
- B. ANSI/AWWA C110 - Ductile Iron and Grey Iron Fittings.
- C. ANSI/AWWA C111- Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings.
- D. ANSI/AWWA C150 - Thickness Design of Ductile Iron Pipes
- E. ANSI/AWWA C151 - Ductile-Iron Pipe, Centrifugally Cast for Water Service.
- F. ANSI/AWWA C153 - Ductile-Iron Compact Fittings for Water Service.
- G. ANSI/AWWA C509 - Resilient Seated Gate Valves for Water Supply Service.
- H. ANSI/AWWA C515 - Reduced-Wall Resilient-Seated Gate Valves for Water Supply Service.
- I. ANSI/AWWA C600 - Installation of Ductile Iron Water Mains and Their Appurtenances.

1.04 SUBMITTALS

- A. Submit data as requested by the District.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves and accessories.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.05 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of water mains, valves, fittings, connections, and invert elevations.
- B. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.06 QUALITY ASSURANCE

- A. Perform work in accordance with the local water utility company requirements.

- B. The tone-out, mark-out, locating and verification of existing utilities on private property and within public Right-of-Ways are the responsibility of the contractor. All known utilities and facilities shall be verified by test holes or other means prior to commencing water main installation. No compensation will be paid to the contractor for lost time due to improper or inadequate utility investigation.
- C. The contractor shall conform to the standard traffic requirements of the New York State Manual of Uniform Traffic Control Devices for work in Public Roadways.
- D. Valves: Manufacturer's name and pressure rating marked on valve body.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect and handle products to ensure they are kept free from damage.
- B. Store piping and valves to ensure that their interiors are kept free of debris, organics or animals.
- C. Deliver and store valves in shipping containers with labeling in place.

PART 2 - PRODUCTS

2.01 WATER UTILITY PIPING

- A. Cement-Lined Ductile Iron Pipe
 - 1. Approved Manufacturers:
 - a. US PIPE
 - b. McWANE DUCTILE
 - 2. Cement-Lined Ductile Iron Pipe meeting AWWA C150/C151 :
 - a. Special Class 52 for all pipe 14 inches and smaller.
 - 3. Interior lining shall be double-thick cement with a minimum thickness of 1/8" (125 mils) in accordance with AWWA C104.
 - 4. Exterior of pipe shall have an exterior bituminous coating measuring 1 mil in thickness and be marked with the manufacturer name, date of casting and pressure class.
- B. Pipe Accessories:
 - 1. Joints: ANSI/AWWA C111, vulcanized rubber gaskets for push-on pipe; mechanical joint with rods and wedge-type restraining glands for fittings.
 - 2. Field lock gaskets by US Pipe Model 350 or approved equal shall be utilized on the last push-on joint of all dead-end mains, where a bell falls within 10 feet of a mechanical joint connection or as indicated on the plans or as directed by the Engineer.
 - 3. Gaskets shall be free from porous areas, foreign materials and visible defects. No reclaimed rubber shall be used
 - 4. Lubricant for Joints: Nontoxic, NSF-61 certified, shall not support the growth of bacteria, and shall have no deteriorating effects on the gasket or pipe material.
 - 5. Wedges: Bronze, installed at each push-on joint.

2.02 SPECIAL CASTINGS

- A. Manufacturers:
 - 1. US PIPE
 - 2. SIGMA CORP.
 - 3. TYLER UNION
 - 4. APPROVED EQUAL
- B. Material:

1. Fittings shall be in accordance with ANSI/AWWA C153 (compact). The use of full body fittings (AWWA C110) requires approval from the Water District and Engineer prior to installation.
2. Fittings shall be ductile iron.
3. Ductile iron fittings shall have a pressure rating of 350 psi.
4. Fittings shall be cement lined.

C. Mechanical Joint fittings shall be used with "push-on" joint pipe with the joint conforming to AWWA Specifications.

D. Rubber gaskets shall be used at each pipe connection. Rubber gaskets shall be vulcanized rubber that is free of porous areas, foreign materials and visible defects. No reclaimed rubber shall be used. The size, mold number, gasket manufacturer's mark, the letters "MJ" and the year of manufacture shall be molded in the rubber.

E. Wedge type restraining glands shall be required at all mechanical joints.

1. Manufacturer:
 - a. EBAA IRON WORKS
 - b. FORD METER BOX CO.
 - c. SIGMA CORPORATION
 - d. TYLER UNION
 - e. US PIPE
 - f. Approved equal
2. Wedge type restraining glands shall be secured to fittings using alloy steel T-head bolts and hex-head nuts.

2.03 BURIED VALVES

A. Resilient Wedge Gate Valves (up to 12")

1. Acceptable Manufacturers:
 - a. MUELLER COMPANY; A-2361/2362 (M.J. x M.J. Connections)
 - b. CLOW VALVE COMPANY; Model 2639
 - c. KENNEDY VALVE CO.; Model KS-FW(8571)/KS-RW(7571)
2. All vertical gate valves up to and including 12-inch diameter shall conform to latest revision of AWWA Specification C509 or C515, and shall be specified as follows:
 - a. Material: Ductile Iron body, bronze mounted.
 - b. Pressure: 250 psi minimum working pressure.
 - c. Wedge: Cast iron wedge with urethane rubber coating (encapsulated). The rubber/metal bond shall be tested to meet ASTM D429.
 - d. Stem: Forged bronze, non-rising stem with two "O" ring seals.
 - e. Wrench Nut: Two-inch square (at base) wrench nut opening to the left or counterclockwise.
 - f. Mechanical Joint Ends: Mechanical joint ends complete with all joint accessories including rubber gaskets.
 - g. Painting: The body and bonnet shall be coated with a fusion coating both interior and exterior to meet AWWA Standard C550.
 - h. Markings: Markings shall be cast on the bonnet or body of each valve, and shall show the manufacturer's name or mark, the year the valve casting was made, the size of the valve, and the designation of working water pressure for 4 to 12-inch valves.
 - i. Affidavit of Compliance: The Contractor shall have the manufacturer provide an affidavit directly to the Engineer that all valves supplied on this project comply with all applicable provisions of AWWA Specification C509, and that each valve was subjected to and passed the 500 psi hydrostatic test without leakage. No final payment for valves will be made until this Affidavit of Compliance is received by the Engineer.

B. Valve Boxes

1. Manufacturer:
 - a. BINGHAM & TAYLOR
 - b. SIGMA CORPORATION
 - c. TYLER UNION
2. Valve boxes shall be two piece, sliding type with 8" x 4-7/8" cast iron flanged bottom section, 9" x 6-1/8" ductile iron top section and 7" ductile iron drop lid with "WATER" cast on cover.

PART 3 - EXECUTION**3.01 INSTALLATION - PIPE**

- A. Remove scale and dirt, on inside and outside, before assembly.
- B. Bevel plain ends of cut pipe at push-on joints.
- C. Excavate pipe trench in accordance with Section 312333 for work of this section. Hand trim excavation for accurate placement of pipe to elevations indicated.
- D. Place bedding material at trench bottom; level fill materials in one continuous layer not less than 6 inches compacted depth; compact to 95 percent maximum dry density.
- E. Maintain optimum moisture content of bedding material to attain required compaction density.
- F. The Contractor shall be responsible for verifying the location of the existing water mains and other utilities along the entire route of the project.
- G. The Contractor must have experienced personnel in his employ to perform the cut-ins and connections to the existing water mains and have available equipment necessary for cutting ductile iron, cast iron, asbestos cement and miscellaneous piping in the existing distribution system.
- H. Suitable facilities shall be available for proper dewatering, drainage and disposal of water removed from dewatered lines and excavations, without damage to adjacent properties. Exposed ends of the water main shall never be submerged either partially or fully.
- I. Maintain a 10 foot horizontal and 18 inch vertical separation of water main from all storm and sanitary sewer facilities. The Contractor shall install the water main with the minimum cover indicated in the Contract Documents. The Contractor shall verify the depth of any existing service laterals to the structures prior to crossing of same.
- J. Pipe trenches shall be of minimum width and allow six (6) inches on each side of the bell with sufficient width to allow straight alignment of pipe and provide sufficient room for jointing as required and to allow the backfill to be placed as specified.
- K. Only new full-lengths of pipe shall be delivered to and utilized on this project. Field cut pieces with bell ends shall be a minimum of 5 feet in length. Smaller pieces shall not be permitted for use and shall be removed from site.
- L. Pipe shall be laid with the bell end facing in the direction of laying. Where pipe is laid on a grade of 10% or greater, the laying shall start at the bottom and shall proceed upward with the bell ends of the pipe up gradient.
- M. Install pipe to indicated elevation to within tolerance of 1/2 inch.

- N. Clean bell end of pipe prior to placing gasket. Apply lubricant to both gasket and plain end of pipe.
- O. Do not field cut pipe within 24 inches of bell or 8 inches of spigot end. Verify the pipe diameter of cut end.
- P. Route pipe in straight line where possible. Joint deflections are permitted as outlined in ANSI/AWWA C600.
- Q. Install and test ductile iron piping and fittings to ANSI/AWWA C600.
- R. For installation of CLDIP, at each joint, two serrated silicon bronze wedges shall be driven into the rubber gasket after the pipe is pushed into place. The wedges shall be installed on opposite sides of the joint on a horizontal plane. Both wedges shall be started in together and driven with a hammer with blows on alternate sides so as not to displace the spigot end to one side of the pipe.
- S. Establish elevations of buried piping to ensure not less than 4 feet of cover unless otherwise indicated on plans or specifically approved by Engineer or Owner in field.
- T. Trench widths shall not exceed the following authorized widths prior to cut-back:
 - 1. Less than 12-inches diameter mains: 30 inches
 - 2. 12-inch & 16-inch diameter mains: 36 inches
- U. Pavement removal shall be kept to a minimum and not exceed the preceding authorized widths. Sawing, drilling or chipping shall be used to ensure the breakage of pavement along straight lines. Final restoration limits shall include a 12-inch cut-back on all sides of the trench.
- V. Backfill trench in accordance with Section 312323. Backfill around sides and to top of pipe with fill, tamped in place and compacted to 95 percent maximum dry density.
- W. The contractor shall restore, replace and/or reposition all decorative lawn ornaments, and miscellaneous items disturbed during water main installation including but not limited to the following: stones, brick driveway pavers, fences, signs, sprinklers, shrubs and trees.

3.02 DISINFECTION AND BACTERIA SAMPLING OF WATER UTILITIES

- A. Flush and disinfect system in accordance with Section 331300.

3.03 PRESSURE TESTING

- A. Perform hydrostatic pressure testing after disinfection, but prior to bacteria sampling.
- B. Expel all air from piping system, including pipe, valves and appurtenances. All new water mains shall be pressure tested to a minimum of 150 psi or 1.5 times line pressure, whichever is greater. The pressure test shall be held for a minimum of two hours with no leakage.
- C. Remove and replace any defective pipe, fittings, valves, and appurtenances. Repeat pressure test until satisfactory to Engineer.

3.04 INSTALLATION - SPECIAL CASTINGS

- A. Tighten glands in accordance with manufacturers direction.
- B. Ensure that fittings are free of dirt and debris prior to installation.

- C. Support fitting with solid blocking in areas of over excavation. Wood wedges, blocking and supports are prohibited.
- D. The contractor shall install a minimum of two $\frac{3}{4}$ -inch steel tie rods on mechanical joint fittings. Additional tie-rods may be requested on vertical pipe or by Engineer in areas of high pressure.
- E. Steel tie rods shall be secured to fittings using $\frac{3}{4}$ " steel eye-bolts, washers and nuts. The use of ductile iron "Duc-Lugs" is prohibited. Steel tie rods shall be secured to pipe using half-moon pipe clamps, restraints, washers and nuts.
- F. Bell ends of pipe shall not be installed within 5 feet of a mechanical joint assembly without being further restrained by locking gaskets or tie rods.
- G. Concrete blocking shall be applied on all pipe lines 4-inch in diameter and larger at all hydrants, tees, plugs, caps, and at bends deflecting 22-1/2 degrees or more. Blocking shall be placed between solid ground and the fitting to be anchored. The blocking shall be so placed that the pipe and fitting joints will be accessible for repair. Size of blocking and minimum bearing area shall be in accordance with the Bearing Area Table within this specification section.
- H. Form and place concrete for thrust blocks at each elbow or change of direction of pipe.

BEARING AREA TABLE

Pipe Size	Dead End of Tee	90 Degree Bend	45 Degree Bend	22 $\frac{1}{2}$ Degree Bend
4 in	1 ft2	1 ft2	3/4 ft2	$\frac{1}{2}$ ft2
6 in	2 ft2	3 ft2	2 ft2	1 ft2
8 in	4 ft2	5 $\frac{1}{2}$ ft2	3 ft2	1 $\frac{1}{2}$ ft2
10 in	6 ft2	8 $\frac{1}{2}$ ft2	4 $\frac{1}{2}$ ft2	2 $\frac{1}{2}$ ft2
12 in	9 ft2	12 ft2	6 $\frac{1}{2}$ ft2	3 $\frac{1}{2}$ ft2
>16 in	15 ft2	22 ft2	12 ft2	6 ft2

- I. Concrete for Thrust Blocks: Portland Cement Concrete; 2,000 psi minimum strength at 28 days. Solid precast concrete blocking meeting the compressive strength requirement shall also be acceptable for use. When solid blocking is utilized, the contractor shall fill all annular spaces with cement or mortar. The use of wood wedges or blocking is not permitted.

3.05 INSTALLATION - VALVES

- A. Set valves on solid bearing.
- B. Contractor is responsible for ensuring that all valve boxes are plumb and centered over the operating nut until after final asphalt restoration is complete.
- C. Contractor shall adjust boxes prior to final restoration. The use of "Rite-Hite" type adapters is not permitted on new construction.

3.06 NOTIFICATIONS

- A. The Engineer and local water utility shall be notified at least 24 hours in advance and immediately prior to any of the following:
 - 1. Commencing work or starting again after more than a 72-hour shutdown.
 - 2. Admitting water to a new section.
 - 3. Flushing or blowing off water mains.
 - 4. Chlorination of water mains.

5. Shutting down water mains or service to consumers. Consumers should also be informed at least 24 hours in advance and immediately prior to shutting down service.
6. Disinfection and reconnection of house services.
7. The permanent shutting down of existing water mains or house services.

3.07 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed in accordance with Owner requirements.
- B. Leakage testing shall be in accordance with ANSI/AWWA C600.
- C. Compaction testing shall be in accordance with ANSI/ASTM D1557.
- D. If tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to Owner.

END OF SECTION 331411

PART 1 - GENERAL

1.01 RELATED SECTIONS

- A. Section 312333 - Trenching.
- B. Section 331411 - Water Utility Distribution Piping.
- C. Section 331300 - Disinfection of Water Utility Distribution.

1.02 REFERENCES

- A. ASTM B88 - Seamless Copper Tube.
- B. AWWA C800 - Underground Service Line Valves and Fittings.

1.03 SUBMITTALS

- A. Submit data as requested by the District.
- B. Product Data: Provide data on pipe materials, pipe fitting and accessories.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.04 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of piping mains, valves, connections, and invert elevations.
- B. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with the local water utility company requirements.

PART 2 - PRODUCTS

2.01 COPPER PIPING AND ACCESSORIES

- A. All underground copper piping, for potable water shall be soft annealed Type "K" with fittings per ANSI/AWWA C800.
- B. Copper Tubing: ASTM B88, Type "K" annealed and AWWA C800, with the following accessories:
 1. Fittings: ANSI/ASME B62, cast bronze
 2. Joints: AWWA, Compression Gasket
- C. Couplings for 1" shall be copper to copper (compression-type) by FORD METER BOX COMPANY Model No. C44-44 QNL, or MUELLER COMPANY, Model Nos. P-15403N or H-15403N.
- D. Insulated adaptor shall be installed on the outlet side of the meter yoke on 1 inch water services only. Insulated adaptor shall be as manufactured by MUELLER COMPANY No. H-35428 or specifically approved equal.

2.02 CORPORATION STOP

- A. Corporation stops to be FORD METER BOX COMPANY, Model No. F1000-4-G QNL, or MUELLER COMPANY, Model No. P-15008N for 1-inch, or specifically approved equal.
- B. Water service bronze body with AWWA standard thread inlet and copper AWWA outlet, complete with straight coupling nuts. Ball valve type corporation stops may also be utilized.

2.03 CURB STOPS

- A. All curb stops shall be by FORD METER BOX COMPANY, Model No. B44-444 QNL, or MUELLER COMPANY, Model No. P-25209N, or specifically approved.
- B. All metal parts shall be constructed of water service bronze. The curb stop shall have a combined tee and cap and an inverted tapered key with 1/4-inch hole drilled in cap for attaching a stationary rod. The valve shall open to the left (counterclockwise).

2.04 EXTENSION SERVICE BOXES

- A. Extension service boxes shall be constructed of extra grade gray iron cover and base, steel extension pipe; with a small arch pattern base for 1/2-inch through 1-1/2-inch curb stops; adjustment between 4 and 5 feet; complete with stationary inside stop rod; one-piece lid with two holes for removal with spanner wrench.
- B. Curb valve shall be located within a No. 6 round, three-piece cast iron, 5-1/4 inch shaft, sliding type valve box with "WATER" cast on the cover.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Before tapping, the pipe to be tapped shall be thoroughly cleaned by removing all dirt and scale. The main shall be tapped on the side facing the house. All copper service pipes shall be installed at 4'-6" minimum cover with slack left at the corporation stop.
- B. The Contractor shall furnish and install all materials and incidentals as outlined herein including the copper tubing, complete from the new corporation stop to within 5 feet of the existing building face and/or as indicated on the plans. The new installation shall include all costs to furnish and install the corporation stop, saddle, 'K'-copper, and union.
- C. The curb box shall be centered over the curb stop and shall be plumb with the cover slightly above grade.
- D. In making cuts in copper service pipe, the most modern equipment shall be used to produce a square cut. The tubing, after cutting, shall be cut square, burrs removed and reamed. Fittings, sockets and tube ends shall be thoroughly cleaned to a bright finish. All solder joints shall be fluxed using either 95/5 tin/antimony or silver solder. NO LEAD SOLDER WILL BE PERMITTED.
- E. On completion of the service connection, the corporation stop shall be left on.
- F. All new copper service piping crossing existing drainage piping, etc. shall be installed at a 4'-6" minimum cover wherever possible. In areas where 4'-6" cover cannot be maintained, the Contractor will be allowed to cross the drainage piping with an absolute minimum cover of 3'-6", otherwise the new service shall be installed under the drainage piping, etc. All new services installed with cover between 3'-6" and 4'-6" due to drain interference, etc., shall be wrapped with

felt wrapping and tar paper or other approved frost wrap protection. A minimum of ten-foot horizontal separation shall be maintained between the new water service and any sanitary sewer facilities including; pipes, tanks and pools.

- G. The Contractor shall take all necessary precautions to minimize damage to any underground utility. Damage to any utility shall be immediately repaired and the cost of such repair shall be the responsibility of the Contractor. No water service shall be accepted which has been installed through any storm drain, etc.

3.02 FIELD QUALITY CONTROL

- A. Flush new service line prior to installing meter, backflow device and connecting to existing service.
- B. Before piping is concealed, recheck it for leaks.

END OF SECTION 331417

APPENDIX A

WORK ORDER FORM

WORK ORDER FORM

To: _____
Fax No.: _____
Address: _____

W.O. # _____
Date: _____
Time: _____

**Re: Riverhead Water District
Directional Drilling Services Contract
Contract No.: RDWD2302 (DR)**

Dear [Contractor]:

This will confirm that your firm has been assigned the following work under the above referenced contract:

Commence On or After: _____

Complete Work by: _____

Work Description: _____

Please sign below to confirm that you have received and accepted this assignment and that you agree to complete the work in accordance with the above schedule.

Very truly yours,

Riverhead Water District

Frank Mancini

AGREED AND CONSENTED:

Contractor

P.O. # _____

Date

APPENDIX B

BULLETIN PP802 - LEAK TESTING OF POLYETHYLENE PIPE FOR MUNICIPAL & INDUSTRIAL APPLICATIONS

Technical Note 802 – Leak Testing of Polyethylene Pipe For Municipal and Industrial Applications

Part 1 – Pre-Test Considerations

Leak testing may be used to find leaks in a newly constructed or newly modified piping system or in an established system where an apparent loss of integrity has been experienced. If they exist, leaks typically occur at joints or connections in the system.

Leak testing does not verify pressure rating or potential long-term performance, nor is it intended to supplement or replace product standard test requirements. The system design and the pressure ratings of the installed components are the sole determinants of system pressure rating and long-term performance.

For M&I applications, leak testing of pressure piping systems is done by filling the piping system or a section of the piping system with a liquid and applying a pressure. Pneumatic (air) testing of pressure piping systems is not within the scope of this technical note. Information on testing with a compressible fluid such as air is discussed in ASTM F2786.

The common hydrostatic leak test used for polyethylene pipe is a “modified pressure rebound method.” In this testing method, the test section is filled with water and pressurized to a specified test pressure. The pressure is maintained for a certain duration, then slightly reduced and observed for one hour to assure the pressure remains essentially constant (within 5% variation) to achieve an acceptable test. Slightly reducing the test pressure suspends expansion of the PE piping, allowing a leak-free PE system to maintain a steady test pressure. This leak testing method and procedure is described in ASTM F2164, “Standard Practice for

Field Leak Testing of Polyethylene (PE) and Crosslinked Polyethylene (PEX) Pressure Piping Systems Using Hydrostatic Pressure.” Additional information on leak testing can be found in PPI TN-46 “Guidance for Field Hydrostatic Testing of High Density Polyethylene Pressure Pipelines: Owner’s Considerations, Planning, Procedures, and Checklists.”

Safety

Safety is of paramount importance when performing leak tests. Leak tests can apply high stress to untried joints and parts in the system. Failure can occur by leaking or by catastrophic rupture that can cause sudden, violent movement. In some cases, leakage may immediately precede catastrophic rupture.

WARNING – Death or serious injury and property damage can result from failure at a joint or connection during pressure leak testing. Keep all persons a safe distance away during testing. The test section is to be supervised at all times during the test.

Ensure that all piping is restrained against possible movement from catastrophic failure at a joint or connection. When pressurized, faulty joints or connections may separate suddenly, causing violent and dangerous movement of piping or parts. Correctly made joints do not leak. Leakage at a joint or connection may immediately precede catastrophic failure. Never approach or attempt to repair or stop leaks while the test section is pressurized. Always depressurize the test section before making repairs.

Restrain Against Movement

Before applying pressure, all piping and all components in the test section must be restrained. This means that if piping or parts move or separate during the test, any movement of components or parts is sufficiently constrained such that it will not result in damage or injury. Common restraints include backfill, anchors, external clamps and tie rods, pipe guides, etc. **Never conduct leak tests on unrestrained piping.**

Additional guidance for preparing connections and joints for leak tests include:

- Heat fusion joints must be properly cooled before testing.
- Mechanical connections must be completely installed and tightened per manufacturer's instructions.
- If backfill provides restraint, it must be properly placed and compacted. Joints and connections may be exposed for inspection.
- End closures must be suitable for pressure service and pressure-rated for the test pressure.
- Ensure that all connections to test equipment are secure. Disconnect or isolate all low-pressure filling lines and all other parts that are not to be subjected to test pressure. Restraining, isolate or remove expansion joints before leak testing.
- Testing against closed valves is not recommended due to the potential for leakage and/or trapped air. Best practice is to blind-flange before the closed valve.

Test Section

Testing may be conducted on the full piping system or in sections. Test section length is generally limited by the capacity of the testing equipment. Lower capacity pressurizing or filling equipment may not be

capable of completing the test within permissible time limits. In addition, the test section should be filled at a slow rate (typically less than 10-feet per minute) to minimize air entrapment. Considering test time limits and fill rate, pipelines longer than 3000 feet may need to be tested in several sections (see PPI TN-46).

Before applying test pressure, allow time for the test fluid and the test section to equalize to a common temperature.

Test Pressure

The maximum test pressure should be measured at the lowest elevation in the test section. For pressure piping systems that include polyethylene pipe or fittings, the maximum permissible test pressure is the lower of:

- a) 150% of the PE pipe system's design pressure rating for the application and application service temperature, provided that all components in the test section are rated for the test pressure.
- b) The pressure rating of the lowest pressure rated component in the test section. Lower pressure-rated components or devices may include pipe or fittings made from other plastics or metals, appurtenances such as valves, hydrants, regulators, and pressure relief devices, or some types of mechanical connections such as lower pressure-rated compression couplings or flanges with lower pressure-rated back-up rings.

Do not subject lower pressure rated, non-polyethylene parts or devices to pressures above their pressure rating. Lower pressure rated parts may be removed or isolated from the test section to avoid damage or failure. Vent isolated parts or equipment to atmosphere.

Test Temperature

The pipe should be allowed to thermally stabilize and equalize before pressurizing the pipe to test pressure. All thermoplastic pipes have reduced strength at elevated temperature. Test pressure must

be reduced when the test section is at elevated temperature either from service conditions or from environmental conditions such as being warmed by the sun. Multiply the test pressure by the Table 1 multiplier to determine the allowable elevated temperature test pressure.

Table 1 Elevated Temperature Multiplier

Test Section Temperature °F (°C)	≤ 80 (≤ 27)†	≤ 90 (≤ 32)	≤ 100 (≤ 38)	≤ 110 (≤ 43)	≤ 120 (≤ 49)	≤ 130 (≤ 54)	≤ 140 (≤ 60)‡
Multiplier	1.0	0.9	0.8	0.8	0.7	0.7	0.6

† Use the 80°F (27°C) multiplier for 80°F (27°C) and lower temperatures.
 ‡ The maximum service temperature for Performance Pipe PE pressure piping is 140°F (60°C).

Test Duration

When testing at pressures above the system design pressure up to 150% of the system design pressure, the maximum test duration is eight (8) hours including time to pressurize, time for initial expansion, time at test pressure, and time to depressurize the test section. If the test is not completed due to leakage, equipment failure, or for any other reason, depressurize the test section completely, and allow it to relax for at least eight (8) hours before pressurizing the test section again. **CAUTION – Testing at excessive pressure or for excessive time may damage the piping system.**

When testing at the system design pressure or less, test duration including time to pressurize, time for initial expansion, time at test pressure, and time to depressurize should be limited to a practical time period (72 hours or less is suggested) given that the test section is not to be left unsupervised at any time during leak testing.

Test Fluid

Hydrostatic Testing

The test liquid should meet appropriate industry standards for safety and quality so that the environment, system, test equipment and disposal (if necessary) are not adversely affected. The recommended test liquid is water.

Pneumatic Testing

WARNING – Failure during a pneumatic (compressed gas) leak test can be explosive and result in death or serious bodily injury.

If failure occurs when using compressed gas as the test fluid, both the pressure stress on the system and the energy used to compress the gas are released. Such failure can be explosive and dangerous. Compared to hydrostatic testing, pneumatic testing can be more dangerous because failure during pneumatic testing releases more energy. For safety reasons, pneumatic testing is not within the scope of this technical note. Refer to ASTM F2786.

Part 2 – Hydrostatic Leak Testing Procedure

Read all of this publication and observe all safety precautions before conducting any leak test.

Hydrostatic Leak Testing

This hydrostatic leak test procedure consists of filling, an initial expansion phase, a test phase, and depressurizing.

Filling

Fill the restrained test section completely with test liquid. The test section is usually filled from the lowest point of the pipeline and at a slow fill rate to minimize air entrainment. A fill rate of 10-feet per minute axial velocity or less is suggested in PPI TN-46. After filling, allow time for the system to reach thermal equilibrium and allow for any dissolved air to exit the system air vents.

WARNING – Ensure that there is no air trapped in the test section. Failure with entrapped air can result in explosive release and result in death or serious bodily injury. Use equipment vents at high points to remove air. A firm urethane foam pig or swap, pushed by the fill water, may be used to assist in air removal.

Initial Expansion Phase

Gradually pressurize the test section to test pressure, and add make-up water as necessary to maintain maximum test pressure for four (4) hours. During the initial expansion phase, polyethylene pipe will expand slightly due to elasticity and Poisson effects. Additional test liquid will be required to maintain pressure. The amount of additional test liquid will vary because expansion in the PE pipe is not linear.

It is not necessary to monitor the amount of water added during the initial expansion phase.

If test pressure cannot be attained, or if it takes an unreasonably long time to reach test pressure, there may be faults such as excessive leakage, entrapped air, or open valving, or the pressurizing equipment may be inadequate for the size of the test section. If such faults exist, discontinue pressurizing and correct them before continuing.

Test Phase

Immediately following the initial expansion phase, reduce test pressure by 10 psi and stop adding test liquid. Monitor the pressure for 1 hour.

If no visual leakage is observed and test pressure remains steady (within 5% of the target value) for one (1) hour, no leakage is indicated.

Depressurization

Depressurize the test section by reducing pressure or releasing test liquid at a controlled rate. Sudden depressurization can cause water hammer.

Part 3 – Additional Leak Testing Procedures

Low Pressure Air Testing of Gravity Flow Systems

For gravity flow and low or intermittent pressure applications such as sewer and odor control, leak testing in accordance with ASTM F1417 is recommended.

High Pressure Air Testing

For applications requiring high pressure air (pneumatic) testing, leak testing in accordance with ASTM F2786 is recommended.

Initial Service Leak Testing

An initial service leak test may be acceptable when other types of tests are not practical, when leak tightness can be demonstrated by normal service, or when an opportunity is afforded by performing initial service tests of other equipment. An initial service leak test may apply to systems where isolation or temporary closures are impractical, or where checking out pumps and other equipment allows the system to be examined for leakage prior to full-scale operations.

The piping system should be gradually brought up to normal operating pressure, and held at normal operating pressure for at least ten (10) minutes. During this time, joints and connections may be examined for leakage.

At the conclusion of the test, depressurize the test section by the controlled release of fluid from the test section. Controlled release avoids the potential for pressure surge.

Systems that are Not Suitable for Pressure Leak Testing

Some systems may not be suitable for pressure leak testing. These systems may not be designed or intended for internal pressure such as vacuum systems, or they may contain parts that cannot be isolated, or temporary closures to isolate the test section may not be practical.

Systems that are not suitable for pressure leak testing should not be pressure tested, but should be carefully inspected during and after installation. Inspections such as visual examination of joint appearance, mechanical checks of bolts and joint tightness, and other relevant examinations should be performed.

NOTICE. This publication is for informational purposes and is intended for use as a reference guide. It should not be used in place of the advice of a professional engineer. This publication does not contain or confer any warranty or guarantee of any kind. Performance Pipe has made every reasonable effort towards the accuracy of the information contained in this publication, but it may not provide all necessary information, particularly with respect to special or unusual applications. This publication may be changed from time to time without notice. Contact Performance Pipe to ensure that you have the most current edition.