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June 5, 2012

Mr. Howard Arden, Supervisor
Town of North Castle
15 Bedford Road
Armonk, NY 10504

Re: Proposal for Professional Services
Water System Improvements - Windmill Farms
Town of North Castle, New York

Dear Supervisor Arden:

GHD is pleased to present this proposal for design services for improvements to The Windmill Farms Water District (Water District No. 2). The goal of this effort is toward implementation of Priority I & II improvements as recommended in the report, "Town of North Castle, NY Water District No. 2 (Windmill Farms) Modeling Study", May 2012. Based upon our discussions and your review of the report, we have added the remaining portion of Evergreen Row, approximately 2,075 linear feet (LF), to Priority II work. This pipeline was identified as having a high consequence of failure based on information discussed at the meeting with the Town on May 30, 2012. Accordingly, this project now consists of replacement of approximately 20,000 LF of existing water distribution piping, including hydrants and valves.

Please note that the addition of this pipeline has affected the opinion of cost presented in the above referenced Engineering Report. Accordingly, we have revised Tables 7-1 and 7-2 from the report and provide them as an enclosure with this letter.

Please also note, that these opinions of costs were initially based on the use of Class 52 ductile iron pipe, which is an industry standard and a GHD standard. The Town has subsequently requested the use of Class 56 ductile iron pipe (DIP) instead. Class 56 DIP is a heavier pipe with a greater wall thickness that may provide additional service life. However, it is available at a higher cost. Thus, the above referenced tables have been modified to consider the use of Class 56 DIP.

The distribution mains scheduled for replacement are located beneath existing roadways. We understand that several of these roadways are scheduled to be re-paved, and that the contract for this paving has been awarded. Since it would be advantageous to construct the underground piping prior to paving the road surface above, there is impetus to accelerate the design phase of this project.

We propose to complete the design of both Priority I & II improvements within an approximate eight (8) week period. We plan to meet with the involved agencies early in the project in order to determine the extent to which implementation may proceed without final approvals. Once design documents are complete, and preliminary regulatory approvals have been attained, we understand that the replacement of pipe segments that are located in roads currently scheduled for paving may be added to the existing paving contract via change order. We understand that the paving contractor has provided the Town with a preliminary proposal to do this piping construction. The remaining portion of the project would proceed with the Town's conventional bidding/award process.



PROJECT BACKGROUND

It is the objective of this project to improve drinking water supply and fire flow to customers of the District system. The table below presents the locations of the proposed work. Note that lengths are approximated.

Street Name	New Pipe Diameter	Approximate Length (LF)
Evergreen Row (from storage tank to North Lane)	12-inch	1,220
Evergreen Row (from storage tank to North Lake Road)	8-inch	2,650
Evergreen Row (from North Lane to Upland Lane)	8-inch	1,570
North Lane	8-inch	1,130
North Lake Road	8-inch	3,690
Windmill Road	8-inch	2,460
Mill Lane	8-inch	510
Pond Lane	8-inch	2,060
Long Pond Road	8-inch	2,490
Spruce Hill Road	8-inch	1,990
Total (Approximate)	---	19,770

SCOPE OF SERVICES

Task 1 - Preliminary Design - Survey and Base Mapping

1. Attend a kick-off meeting with representatives of the Town to review budget, schedule, design criteria, and project constraints.
2. Begin topographic survey (by a licensed surveyor) for approximately 20,000 LF of waterline replacement design. Survey will include the right-of-way and aboveground features and utilities based on field location and available maps. Base mapping will include surface elevations, existing utilities and location of surface features.
3. Begin geotechnical soil borings to establish soil conditions for the proposed water line replacement. Soil borings will be provided at approximately 500-foot intervals to a 6-foot depth.
4. Attend one (1) coordination meeting with the contractor (Bilotta) currently engaged in road work located within the involved area of the project.
5. Provide a preliminary design layout for Town review. The alignment of the new water main replacements will be established based on the topographic survey, geotechnical investigation, and the GHD Engineering report. Preliminary design will be based on approximately 20,000 linear feet (LF) of pipeline replacement and the following:



- Hydrant locations 500-foot intervals (approximate)
- Water main valves as appropriate
- Standardize hydrants per Town
- Minimum pipe size 8-inch diameter
- Class 56 ductile iron cement lined pipe (per Town standard)
- Services tie-in to new main (to the existing curb valve)
- Road and sidewalk restoration (only as required)

5. Attend one (1) meeting with the Town to review the preliminary design layout.

Task 2 - Design Development and Design Documents

1. Develop design documents consisting of plans and specifications in accordance with Westchester County Department of Health required format. The design development will include the following:
 - Design of approximately 20,000 linear feet (LF) of pipeline as described in Task 1 above.
 - Development of Engineer's opinion of construction cost
 - Development of an implementation schedule
 - Coordination with Westchester County Department of Health
 - Coordination with funding agencies
 - Coordination with NYSDEC and USACE for wetlands permitting (as required)
 - Coordination with Town of North Castle DPW
 - Assistance with public outreach (one (1) public meeting budgeted)
 - Assistance in obtaining regulatory approvals
2. Attend one (1) progress meeting with the Town during the design development phase.
3. Provide "draft" design submittals at the 60 and 90 percent completion milestones for Town review.
4. Prepare twenty-five (25) sets of bid-ready Contract Documents for approximately 10,000 LF of pipeline replacement as described under Item 1 above to be used by the town for the public bidding and award process. The remainder of the design (approximately 10,000 LF) is anticipated to be constructed via a Change Order to the existing, on-going construction contract for road paving (as described in Item No. 5 below). The bid package will include boilerplate (EJCDC standard): advertisement, bid proposal and bid page, contract insurance requirements, bid and payment bond requirements, prevailing wages, contract agreement, notice of award and notice to proceed sample letters, and ASCE standard General Conditions. The bid package will be based on one (1) construction contract (General).
5. Prepare a Change Order to add approximately 10,000 LF of pipeline replacement (described under Item 1 above) to the existing paving contract. This portion will not be included in the bid package described in Item 3 above. A new NYSDEC permit for work in these areas is not included in the scope since work in these areas is currently in progress.
6. Provide an Engineer's opinion of construction cost after the design has been completed and prior to the public bid process.



Task 3 - Regulatory Approvals (To be performed concurrently with Tasks 1 and 2)

1. Attend pre-application meeting with New York State Department of Environmental Conservation (DEC) to review project.
2. Prepare and submit information requests to the NYSOPRP and NYNHP to identify potential cultural resources and rare species, respectively, in the project area.
3. Prepare letter to the Town of North Castle confirming proposed action is classified as a Type II Action since the work consists of a rehabilitation of a facility, in place and kind. Preparation of an Environmental Impact Statement is not included.
4. Provide draft Type II SEQR resolution for Town review and use.
5. Identify and field delineate wetlands and watercourses located within the Rights-of-way of the proposed pipeline.
6. Prepare wetland delineation report in accordance with the US Army Corps of Engineers (COE) Wetland Delineation Manual and Northeast Regional Supplement.
7. Complete one Joint Application for Permit in support of a DEC freshwater wetland and stream protection permit as well as US Army Corps of Engineers Nationwide Permit No. 12 for utilities.
8. Prepare a Wetland Impact Assessment Report in support of permit application to the DEC. Report shall include a narrative of proposed work, figures and site photographs.
9. Prepare a basic Stormwater Pollution Prevention Plan including Contractor requirements.
10. Meet with Westchester County Department of Health during the preliminary design phase to discuss the project and approval timelines (one (1) meeting budgeted).
11. Submit design documents to Westchester County Department of Health for review (one (1) submittal budgeted).
12. Address and respond to Westchester County Department of Health comments and revise design documents as necessary (one (1) re-submittal budgeted).

PROJECT FEE

The Town of North Castle shall pay GHD a lump sum fee of \$310,000 for the above listed scope of services. The scope of services, as stated, will be completed for the following lump sum totals per task.

• Task 1 - Preliminary Design - Survey and Base Mapping	\$130,000 ⁽¹⁾
• Task 2 - Final Design	\$145,000
• Task 3 - Regulatory Approvals	<u>\$ 35,000</u>
Total	\$310,000

⁽¹⁾ Task 1 includes an allowance of \$60,000 for survey and subsurface investigation. We are seeking competitive quotes for these services. This cost may change based on the actual costs of those services.



PROJECT SCHEDULE

Tasks 1 and 2 of the above Scope of Services will be performed within eight (8) weeks of authorization by the Town. Task 3 will be conducted concurrently with Tasks 1 and 2. Time of completion for Task 3 may be contingent upon constraints of the involved regulatory agencies. Bid and Construction Phase services will proceed as mutually agreed upon by the Town and GHD.

We look forward to working with the Town on this project. If you have any questions related to this proposal, please do not hesitate to call.

Sincerely,

GHD CONSULTING ENGINEERS, LLC

A handwritten signature in black ink, appearing to read 'Robert Butterworth', written over a horizontal line.

Robert Butterworth, P.E., BCEE
Principal

RB/mrv

Enclosure

cc: Sal Misiti, Town of North Castle
Jan Salzman, P.E., BCEE, GHD Consulting Engineers, LLC



7 Opinion of Project Costs

Table 7-1 represents an opinion of project cost to implement Priority 1 replacements.

Table 7-1 Priority 1 Improvements, Opinion of Probable Costs

Item	Opinion of Cost (Class 52 Pipe)	Opinion of Cost (Class 56 Pipe)
New installed 8-inch DIP (push-on joint, cement lined, includes trenching, excavation, bedding, backfill, and fittings), <u>+8,000 LF</u>	\$700,000	\$940,000
New installed 12-inch DIP (push-on joint, cement lined, (includes trenching, excavation, bedding, backfill, and fittings), <u>+1,000 LF</u>	\$110,000	\$140,000
New installed fire hydrants (includes removal of existing fire hydrant when necessary)	\$110,000	\$110,000
New installed isolation valves	\$25,000	\$25,000
New service lateral connections	\$80,000	\$80,000
Labor, Material, Equipment Subtotal	\$1,000,000	\$1,300,000
Mobilization	\$50,000	\$70,000
General Conditions	\$80,000	\$100,000
Overhead and Profit	\$120,000	\$160,000
Fiscal, Legal, Administrative, Engineering	\$300,000	\$300,000
Construction Subtotal	\$1,500,000	\$2,000,000
Project Contingency	\$400,000	\$400,000
PROJECT COST	\$1,900,000	\$2,400,000

Notes:

- 1) New fire hydrant installation and removal of old fire hydrant every 500 LF.
- 2) New service lateral connection every 100 LF.
- 3) New isolation valve installed every 1000 LF and at every major intersection.
- 4) All pipe installation is in asphalt roadway.
- 5) New pipe installed adjacent to existing pipe with abandonment of existing pipe (does not include cost of removing existing piping).
- 6) Figures are rounded.

Table 7-2 presents an opinion of cost for the replacement of Priority 2 pipelines.



Table 7-2 Priority 2 Improvements, Opinion of Probable Costs

Item	Opinion of Cost (Class 52 Pipe)	Opinion of Cost (Class 56 Pipe)
New installed 8-inch DIP (push-on joint, cement lined, includes trenching, excavation, bedding, backfill, and fittings), +10,200 LF	\$900,000	\$1,200,000
New installed fire hydrants (includes removal of existing fire hydrant when necessary)	\$140,000	\$140,000
New installed isolation valves	\$30,000	\$30,000
New service lateral connections	\$130,000	\$130,000
Labor, Material, Equipment Subtotal	\$1,200,000	\$1,500,000
Mobilization	\$60,000	\$80,000
General Conditions	\$100,000	\$120,000
Overhead and Profit	\$140,000	\$140,000
Fiscal, Legal, Administrative, Engineering	\$340,000	\$340,000
Construction Subtotal	\$1,800,000	\$2,200,000
Project Contingency	\$360,000	\$440,000
PROJECT COST	\$2,200,000	\$2,600,00

Notes:

- 1) New fire hydrant installation and removal of old fire hydrant every 500 LF.
- 2) New service lateral connection every 100 LF.
- 3) New isolation valve installed every 1000 LF and at every major intersection.
- 4) All pipe installation is in asphalt roadway.
- 5) New pipe installed adjacent to existing pipe with abandonment of existing pipe (does not include cost of removing existing piping).
- 6) Figures are rounded.