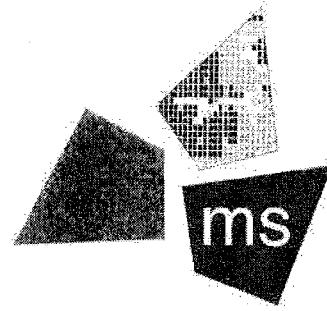


ms consultants, inc.

engineers, architects, planners

2221 Schrock Road
Columbus, Ohio 43229-1547
p: 614.898.7100
f: 614.898.7570
www.msconsultants.com

July 2, 2013



Mr. Jeff Feltz
Water Resources Engineer
City of Gahanna
200 South Hamilton Road
Gahanna, OH 43230

**RE: Proposal for Engineering Services
City of Gahanna
Taylor Road Booster Station Replacement**

Dear Mr. Feltz:

Per your request, ms consultants, inc. is pleased to submit our proposal to perform final design services associated with replacement of the Taylor Road Booster Station, the construction of approximately 4,300 lineal feet of 16-inch water main from the Taylor Road Booster Station to Science Boulevard, and the addition of stand-by power at the Claycraft Booster Station.

Attached for your review and consideration is Exhibit A, our suggested Scope of Services, which summarizes our understanding of the current situation and approach to design distribution system improvements necessary to meet water demands of a new industrial customer. Exhibit B - Labor Summary summarizes the anticipated hours per staff category. Exhibit C - Compensation summarizes our anticipated level of effort and costs based on the Scope of Services provided. Exhibit D - Terracon Proposal summarizes the Scope of Services our subconsultant Terracon will provide.

For those items identified as "Basic Services" in our Scope of Services, we propose a lump sum, not to exceed cost of one hundred sixty-five thousand one hundred ninety-five dollars (\$165,195.00) for these activities.

We look forward to your favorable review of our proposal, which will allow us to continue our working relationship with the City of Gahanna on this important assignment. If you have any questions, please feel free to call Shawn Arden or myself.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth W. Ricker".

Kenneth W. Ricker, P.E.
Senior Project Manager

KWR/cw

cc: SWA

61-04C04-00 File

Attachments

N:\61\04C04\Admin\Contracts\Client\Phase 2\Proposal Letter.docx

EXHIBIT A

City of Gahanna, Ohio

Taylor Road Booster Station Replacement Project

SCOPE OF SERVICES

GENERAL PROJECT UNDERSTANDING:

The City of Gahanna, Ohio (hereinafter City) contracted with **ms consultants** to complete a water system investigation of the City's Intermediate Pressure Zone 2 (IPZ2). The investigation was conducted to:

- Review and evaluate the existing water distribution, pumping and storage system and its capacity to meet additional average day and peak day demands of a new industrial customer whose facilities will be located on Eastgate Parkway in the extreme eastern portion of IPZ2. Specifically, the *additional* average daily demand and peak demands of this user will be 1.53 mgd and 1800 gpm, respectively.
- Evaluate and perform preliminary design activities for a new booster station to replace the existing Taylor Road Booster Station that will operate in conjunction with the existing Claycraft booster station to meet the specified additional water demand conditions.
- The above assessments shall also consider the distribution system's ability to provide adequate fire flows to businesses along Science Boulevard north of Claycraft Road. Fire flow demand was assumed at 3500 gpm for a period of three (3) hours per day per 2012 Model Update Report.
- Summarize assessment findings and provide recommendations for improvements to the distribution system, the booster pumping stations and/or the systems current storage capacity.

ms consultants presented our findings in a Water Improvement Recommendation Report dated May 14, 2013. Results of the study showed that the existing water distribution system is currently incapable of meeting fire flow demands at 3500 gpm on Science Boulevard under existing conditions with the new industrial user operating at capacity. Model results showed that under existing conditions, the system can provide 750 gpm at 20 psi to the high point on Science Boulevard. Given this, short term recommendations were made that would provide adequate fire flow under 2012 ADD on Science Boulevard with the following improvements to the IPZ2:

- Improve the Taylor Road booster station to two pumps at 1500 gpm at 90 feet TDH. The second 1500 gpm pump is required per Ten State Standards to provide redundancy to the

system in case one pump is out of service. A preliminary booster station layout on City of Gahanna property at the corner of Taylor Road and Helmbright Drive was presented.

- Provide a 16-inch fire line from the Taylor Road booster station discharge to the elevation high point on Science Boulevard.
- To satisfy the Ten States Standards for system reliability, standby power is also required for the existing Claycraft Road booster station.

Model results also showed pressures on the suction side of the improved Taylor Road booster station during 2012 and 2030 ADD and MDD are around or greater than 35 psi when there is no fire demand. If the Claycraft Road booster station goes out of service, or if there is a fire, then pressures of the suction side of the Taylor Road booster station fall between 20 and 30 psi. In addition, system minimum pressures go below acceptable levels of 20 psi throughout the IPZ2 when fire flow is needed on Science Boulevard during 2030 ADD and MDD conditions with the new user completely online. To improve upon these conditions, two options were recommended to be completed within the next five (5) years which include either: a) the addition of a second 1 MG water tower near the new industrial user on the eastern edge of the IPZ2 or b) a new connection to the City of Columbus's water system to the eastern side of IPZ2.

The City has verbally accepted the findings of the Water Improvement Recommendation Report, and has requested a proposal for the following:

1. Basic Services: Basic services are to include:
 - a. Final design and submission of bid-ready plans and specifications for the following recommended improvements:
 - i. Taylor Road Booster Station Replacement which includes two pumps at 1500 gpm at 90 TDH.
 - ii. Approximately 4,300 LF of new 16-inch waterline from the new Taylor Road Booster Station to the elevation highpoint of Science Boulevard, along with connections to the existing 12-inch waterline in Taylor Road.
 - b. It has been assumed that the booster station and waterline improvements will be bid as a single construction contract.
2. As-Authorized Services: As-Authorized Services will include:
 - a. For the Taylor Road Booster Station and Waterline Improvements
 - i. Easements
 - ii. Utility Locating
 - iii. Bidding Assistance
 - iv. Construction Engineering and Administration, Inspection, record plans and start-up assistance.
 - b. Assist the City in final determination and implementation of additional long-term improvements:

- i. the addition of a second 1 MG water tower near the new industrial user on the eastern edge of the IPZ2 or
- ii. a new connection to the City of Columbus's water system to the eastern side of IPZ2.

BASIC SERVICES - SCOPE OF WORK:

Based on our general understanding of this Project and of the City's needs, we have prepared the following SCOPE of WORK.

1. **Kick-off meeting:** We would begin the assignment with an initial kick-off meeting with representatives from the City of Gahanna to:
 - Verify the City's project goals and expectations.
 - Discuss the project's schedule, collect available information and records, and discuss other administrative items.
2. **Project Schedule:** We have prepared a preliminary schedule of activities for completion of this project. We acknowledge the project schedule is important because the new industrial user is currently online at less than full capacity. The schedule outlines the expected duration of each task, with start and finish dates based on predecessors as appropriate. The time line shows the number of months allocated for each task, allowing exact dates to be entered into the schedule, starting with the Notice-to-Proceed and ending with the City's desired completion date and submission of record drawings. Upon identification of a Notice to Proceed date, firm dates can be applied to the schedule to create a critical path. We anticipate construction will be substantially complete within two years of commencement of the design tasks.

The ms Project Manager, Mr. Ricker, will maintain the engineering schedule. Although the schedule will formally be submitted to the City as part of monthly invoicing, the schedule will be updated frequently, with the City's Project Manager advised of the project status at all times. The monthly progress report will include an updated schedule reflecting all completed design work.

The project specifications will require that the selected contractor be responsible for preparing and maintaining a critical path construction schedule. During the construction period, we will maintain our engineering services schedule for invoicing purposes and for consistency with construction and post construction activities.

3. **Meetings:** We have budgeted for a total of three (3) design review meetings and two (2) meetings with the City of Columbus Division of Water. It is also anticipated that up to two (2) additional meetings may be required for coordination with building officials and

regulatory agencies during the plan approval and permitting process. The **ms consultants team** anticipates participating in pre-bid, pre-construction, and progress meetings during the construction period on an as-authorized basis.

4. **Site Survey:** The **ms consultants** survey team will perform a site survey of the original booster station site for demolition plans, the Claycraft booster station for generator placement, and the new booster station location at 926 Taylor Road (Parcel Number 025-003926-00). The original booster station site is located within existing right-of-way at 1015-1025 Taylor Road. Additional field survey may be warranted at 926 Taylor Road to confirm that any site work completed as part of the new booster station construction will not adversely impact the existing storm water detention basin.

In addition, survey will be completed along the proposed 16-inch water main alignment. In general, the survey will begin at the new booster station site and then go east within the existing Taylor Road right-of-way approximately 1650 l.f., then turn south and continue approximately 1650 l.f. to the intersection of Tech Center Drive and Science Boulevard, where it will continue south along Science Boulevard to the tie in location to the existing 8-inch water main approximately 1,000 l.f. south of the intersection of Tech Center Drive and Science Boulevard.

Prior to any field survey, **ms** will acquire all available records (i.e. plans, tap cards, etc.) pertaining to the projects and an OUPS request will be made for utilities to mark their lines within the project areas. The following field surveying activities will be performed to obtain topographic features and contours within the project limits:

- Horizontal control shall be based on the Ohio State Plane Coordinate System, South Zone and the North American Datum (NAD) 83, and vertical control based on North American Vertical Datum (NAVD) 88. All existing Franklin County and USGS monumentation within the project limits will also be obtained.
- Perform an OUPS request to obtain public and private utility information within the specified project limits for planning information and field markings to incorporate the utilities in the design.
- Run a main-control traverse along the roadways proposed to have waterline improvements. A baseline corresponding to the right-of-way centerline will be established with appropriate reference points and three-point ties.
- Two permanent survey control monuments (iron pins) shall be set at the beginning and end of each section of water main and shall be visible between each other. If visibility is restricted between the two, additional monuments will be installed.
- Perform a thorough topographic survey for the project area, which is suitable for base mapping at 1-in.=30' with contours at 1-foot intervals. The limits of the mapping will be extended 25 feet beyond either side of the existing road right-of-way and 100 feet

beyond the project terminus points. In areas outside of the right-of-way, a 50-foot corridor will be surveyed. Existing topographic features will be located using data collectors to identify features such as pavement, curbs, fence, culvert pipes, manholes, utility poles, trees, and landscaping amenities. Water service valves, fire hydrants, curb boxes, gas meters/valves, and telephone pedestal locations will be identified as well.

- Field survey shall obtain right-of-way monuments, property pins, etc.
- Obtain street addresses for all properties along the affected corridor.

After the base map has been created, the plans will show northing and easting information on all benchmarks and control. Additionally, a survey chart will be used to locate design and record information for such features as bends, tees, deflections, valves, fire hydrants, etc.

Establishment of the existing right-of-way lines shall be performed by researching state, county, and local right-of-way and property records to establish the current existing right-of-way for the project limits. Proposed right-of-way lines by the County will also be incorporated into the drawings. The use of the Franklin County Auditors GIS will only be utilized as a tool in depicting the existing right-of-way. Finally, if conflict between field survey and records exist, then field survey shall govern.

5. Geotechnical Investigations: Geotechnical work for the proposed water line improvements will be performed by our subconsultant, Terracon Consultants, Inc.

Borings would be performed to identify the subsurface conditions in order to provide recommendations concerning booster station and trench excavations, lateral support, groundwater control, suitability for alternative construction methods such as bored services, HDD, and other pertinent factors. To accurately provide a cost as requested in the RFP, a scope of investigation limited to:

- Two borings within the proposed booster station footprint extending to depths of 30 feet.
- Five borings along the proposed 16-inch waterline alignment extending to depths of 10 feet.

Upon completion of drilling, all borings would be backfilled with grout and the appropriate patch placed at the surface.

In addition, laboratory testing will be performed on soil samples to further classify the soils. Laboratory testing will also include laboratory resistivity, pH, redox potential, and sulfides in the vicinity of the pipe zone. These analyses will aid in the identification of corrosive soil conditions.

A geotechnical report containing: descriptions of the site, field work, and general

subsurface conditions; a discussion of the expected excavations, including required equipment types; potential problem soils; lateral support recommendations; and groundwater considerations will be provided to the City.

OUPS will be contacted to locate underground utilities prior to drilling. It is assumed that the boring locations will be accessible with a truck-mounted drill rig. It is expected that some borings will be performed in existing street right-of-way, and that at least one-way traffic will need to be maintained. Traffic control will be accomplished using signs, cones, and flaggers, as outlined as Typical Applications 10 (TA-10) in the Uniform Traffic Control Manual (OMUTCD).

Should the initial borings indicate the competency of rock will meet the definition in CMS 813 for payment as rock excavation at the majority of the sites, we will discuss the need to consider additional geotechnical investigation on the project for cost-containment purposes associated with differing site condition claims during construction. Geophysical investigation through seismic refraction surveys may be a more cost-effective means to supplement boring data to define rock depths and density. The team can generate a budgetary quote for these additional investigations upon the City's request.

6. Plan Preparation: Upon receipt of the survey data and base map from the **ms** survey team, **ms consultants** will prepare 30% Design Plans which will include preliminary alignment and profile of the proposed 16-inch water main and general layout drawings of the proposed booster station. The general layout drawings for the booster station will include the following elements:

- Building layout;
- Pump and piping layout;
- Preliminary site work and grading;
- Electrical One-line Diagram;
- Claycraft Booster Station Generator site plan;
- Permit requirements;
- Technical Specification Table of Contents and updated Drawing List; and,
- Existing Booster Station demolition plan and specifications.

Preliminary water line plans will be drafted based on record drawing research and surveyed features. The plans will reflect the following:

- Alignment alternatives and preferences based on technical, environmental, right-of-way or other evaluation criteria;

- Geotechnical concerns and recommendations for additional investigations during final design;
- Easement requirements;
- The waterline will be designed to be 4.5 feet deep beneath the pavement of Taylor Road, Tech Center Drive, and Science Boulevard, which has curb and gutter. The waterline will be designed to be 6 feet deep in unapproved areas not beneath the roadway and in the area between Tech Center Drive and Science Boulevard;
- The waterline design shall be based on either ductile iron or AWWA C-900 PVC pipe. DIP and HDPE pipe may also be considered if horizontal directional drilling installation is desired.
- We anticipate that detail plan and profile sheets will be at a scale of 1 inch = 30 feet horizontal, 1 inch = 10 feet vertical and shall be on 22-inch by 34-inch size sheets;
- Alternative construction methods to conventional trenching and surface restoration may be considered on this project; and,
- Waterline technical specifications will conform to the latest City of Columbus CMS as well as the latest Standard Construction Drawings.

ms will field check the recommended horizontal alignment with City representatives to identify and resolve site-specific conflicts. We will present 30% plans of the final horizontal alignment to the City for approval prior to initiation of detail plan and profile development.

When the 30% plans have been reviewed, **ms** will recommend any locations where SUE may be warranted based on critical clearance issues between existing utilities and proposed waterlines.

Review comments will be incorporated into each subsequent submittal as appropriate.

The construction cost estimate will be provided with each submittal.

7. Submission of Prints: **ms** will submit to the City of Gahanna the number of prints for each deliverable as required by the RFP:

- Preliminary Stage (30% Submittal) – 1 set
- Detail Design Stage & City/Utility 1st Review Stage (60% Submittal) – Up to 12 sets
- City/Utility 2nd Review Stage (90% Submittal) – Up to 12 sets
- Signature Stage (100% Submittal) – Mylar set and CD of drawings in .pdf format

ms will provide submittal prints to other local, state, and federal departments and other political subdivisions and private entities that have plan approval or permitting jurisdiction.

ms has prepared the following list of drawings based on preliminary information:

Drawing No.	Drawing Title
	Cover Sheet w/Project Title, Location Map, & Signatures
G-1	General Notes & Drawing Index
G-2	Abbreviations & General Details
C-1	Site Plan and Yard Piping Plan
C-2	Site Grading, Drainage, and Erosion Control
C-3	Site Fencing & Details
C-4 through C-7	Offsite Water Main Plan and Profile (4 sheets)
D-1	Site Demolition
D-2	Demolition Details, Notes, & Schedules
A-1	Architectural Notes & Schedules
A-2	Building Elevations, Floor Plan & Roof Plan
A-3	Building Sections & Details
S-1	Structural Notes & Schedules
S-2	Foundation Plans & Sections
S-3	Roof Plan & Sections
M-1	Mechanical Notes & Schedules
M-2	Mechanical Plan & Sections
M-3	Mechanical Details
M-4	Monorail Details
P-1	Plumbing & HVAC Notes & Schedules
P-2	Plumbing & HVAC Plans & Sections
E-1	Electrical Notes & Abbreviations
E-2	Electrical Site Plan & Schedules
E-3	Proposed Electrical Power & Lighting, One Line Diagram, & Schedules
E-4	Telemetry Interconnection Diagram, Plan and Schedule
E-5	Single Line Diagrams

8. **Permits:** Since the project involves replacement of the existing booster station and construction of water lines after the master meters, we anticipate the following regulatory permits may be needed.
 - a. 90% complete documents will need to be submitted to Ohio EPA for drinking water plan approval to ensure a PTI is in hand before construction notice to proceed is issued.
 - b. Building Permit
 - c. Electrical Service
 - d. Floodplain Permit through the City
 - e. The contractor will be required by specification to submit a Notice of Intent (NOI), to obtain coverage under the Ohio EPA Stormwater Construction general permit, and to prepare a Stormwater Pollution Prevention Plan (SWPPP).
 - f. We anticipate one stream crossing classified as Waters of the US, which require a Section 404 permit. It is anticipated that the project can be processed under the Nationwide Permit Program (Nationwide #12) of Section 404.

AS- AUTHORIZED SERVICES:

The following As-Authorized services will be performed upon written directive by the City.

1. **Easements:** It is the City's goal to construct all of the water line projects in existing road right-of-way and on properties currently owned by the City. However, the final design activities may determine temporary construction or permanent utility easements are necessary. Upon receipt of written concurrence from the City to proceed with an alignment outside of public right-of-way, the **ms team** will furnish three (3) original sets of easement documents as may be necessary for easement acquisition purposes. This will include a legal description as well as a sketch of the easement, illustrating permanent and temporary easement areas.

We have assumed that all easement negotiation and acquisition activities will be performed by the City subsequent to preparation of the descriptions. Easement boundaries can be staked in the field to aid in negotiations with the property owners when requested. Labor resources associated with these tasks have not been budgeted at this time. Should the City desire assistance in the easement preparation, acquisition or staking process, the **ms team** can provide a fee proposal at that time.

2. **Utility Locating:** Subsequent to authorization from the City to investigate critical clearance areas identified during the design phase, non-destructive underground utility

investigations shall be performed through the use of Quality Level A Subsurface Utility Engineering, Vacuum Excavations. These excavations shall be performed by a subconsultant and will consist of a pneumatic or hydrostatic process to expose utilities or anomalies. The excavations are based on a depth of 10 feet for **up to 3** locations. It is assumed that traffic control and flash fill will be required if this task is authorized and it will be included in the price for Utility Locating.

3. Bid Assistance: Following City approval of the design deliverables, **ms** will perform the following activities:

- Attend a pre-bid meeting for the project. If the City desires, a site tour for prospective bidders can be scheduled in conjunction with the pre-bid meeting.
- Furnish printed detailed plans and specifications packages to prospective bidders and suppliers. It is assumed that electronic media will not be restricted during the bidding phase, unless warranted by City security protocols.
- Maintain a bidders list based on those parties obtaining plans.
- Prepare and distribute addenda as required, at least five (5) days prior to the opening of bids. Maintain a record of written acknowledgement of receipt of addenda from all prospective bidders and suppliers of record.
- Assist in the evaluation of bids and make recommendations relative to the low, responsive, responsible bidder.
- If necessary, consult with the City on the acceptability of substitute materials and equipment proposed by bidders. During design, the **ms team** and the City will have determined what substitutions may be allowable per the bid documents.

4. Construction Engineering Services: Upon receipt of the City's request for engineering assistance and coordination services during construction for this project, the **ms team** will provide such services, which are envisioned to include:

- Preparation of the required number of contract documents for execution and for distribution as "Issued for Construction" sets.
- Attend and prepare minutes for the pre-construction meeting and construction progress meetings for the project. For budgetary purposes, resources have been allocated assuming a maximum of 12 construction progress meetings.
- Upon receipt by the contractor, submittals and shop drawings for the project will be reviewed and processed. It is assumed that all submittals will be based on material or equipment standards named in the contract documents, with no time budgeted for a detailed review of substitutions, etc.

Should the City desire assistance in the following construction engineering services, acquisition or staking process, the **ms team** can provide a fee proposal at that time.

- Coordination associated with the continued operation of the existing booster station and its subsequent demolition.
- Interpretation of intent of drawings and specifications, and/or responses to Requests-for- Information (RFIs), as necessary.
- Preparation of Requests for Proposals (RFP's).
- Assistance in review and processing of Change Orders and Construction Contract Modifications.
- Conducting periodic site visits to observe construction progress and conformance with the contract documents.
- Assistance in review of claims and disputes, upon request.
- Assist in Start-ups and Commissioning of Equipment and Systems.
- Assist in training of City staff on new equipment and systems.

5. Construction Administration Services: If authorized, the **ms team** will provide a fee proposal to conduct project administration activities, including:

- Attending periodic progress meetings and site visits.
- Review Contractor partial and final pay requests.
- Prepare any change orders required during the construction period.
- Advise the City of the project status based upon these activities and reports from the resident representative. Conduct final inspection, develop punchlist, and perform contract closeout activities for the project.

6. Owner's On-Site Representative: If authorized, **ms** will provide fee proposal to provide a qualified on-site representative knowledgeable in City of Columbus 2012 CMS, DOW and City of Gahanna requirements during the construction period to:

- Conduct on-site investigations of the work in progress to determine if the work is proceeding in accordance with the contract documents.
- Report to the project manager whenever the resident representative feels that work is unsatisfactory, defective, or does not conform to the contract documents.
- Report when clarifications or interpretations to the contract documents are required and transmit the Owner's/Project Manager's response to the contractor.

- Maintain adequate records of correspondence and a daily log sheet relative to job conditions, activities, and other general observations. Copies are to be provided to the City through the project manager on a regular (i.e. weekly) basis.

7. **Record Drawings:** When construction is complete, **ms consultants** will review the contractor prepared as-built drawings, construction photographs, daily reports, and other construction documentation. From this information **ms** will prepare record drawings that may include modifying or redrawing the original contract drawings to assure details are properly shown. This effort will enable the City to have a usable record of the final booster station system. When complete, the record drawings will be dated and marked as “RECORD DRAWINGS.”

8. **New Storage or Additional Feed/Master Meter:** **ms consultants**’ water model findings showed that additional improvements are needed within the next five years to provide reliable water service to the IPZ2. Recommendations were provided which included completing one of the following options:

1. the addition of a second 1 MG water tower near the new industrial user on the eastern edge of the IPZ2 or
2. a new connection to the City of Columbus’s water system to the eastern side of IPZ2.

Upon receipt of the City’s request for engineering assistance and coordination services, the **ms team** will provide such services, which are envisioned to include

1. Assist the City in the final determination and implementation of a long-term improvement;
2. If a new connection with the City of Columbus is desired,
 - a. **ms** will attend two (2) coordination meetings with the City of Columbus Division of Water staff. The first meeting at the start of the project will notify Columbus of Gahanna’s intent to connect to the Waggoner Road water main and then run a transmission main to the eastern side of the IPZ2. This meeting will also give Columbus the opportunity to identify any constraints they may have on the preferred alternative. A second meeting will be scheduled after the 30% plan submittal to discuss the alignment and to address any questions from Columbus.
 - b. Up to two (2) additional meetings are envisioned with the Jefferson Township officials including the Parks and Recreation Department, as a potential alignment through the Olde Quarry Park.
3. If a new water tower is desired, **ms** will work with the City to evaluate proposed site locations. Specifically, **ms** will evaluate each site alternative for the following:
 - a. Site availability;

- b. Site accessibility;
- c. Airspace impacts;
- d. Compatibility with neighboring uses;
- e. Grade elevation to minimize standpipe size, i.e., the higher the grade, the shorter the tower, and the smaller capital cost;
- f. Easement and right-of-way requirements;
- g. Permitting requirements;
- h. Soil and bedrock conditions to identify possible foundation constraints through an existing record search

EXHIBIT B
CITY OF GARANNA
TAYLOR ROAD BOOSTER STATION IMPROVEMENTS

LABOR SUMMARY

A. PROJECT MANAGEMENT

NO	ACTIVITY	PRINCIPAL ENGINEER	PROJECT MANAGER	PROJECT ENGINEER	REGISTERED SURVEYOR	SURVEY CREW (2-MAN)	TRAFFIC ENGINEER	STRUCTURAL ENGINEER	ELECTRICAL ENGINEER	ARCHITECT	ENG TECHNICIAN	SUPPORT SERVICES	RESIDENT REPR.		
	<u>Kick Off Meeting</u>			4	4							2		10	
	<u>Status Reports & Schedule Updates (6)</u>			6	12							6		24	
	<u>Progress Meetings (up to 5)</u>			20	20							3		48	
	<u>Coordination Meetings with Rldg Officials/Regulatory Agencies (2)</u>			8	8							4		20	
	TOTAL LABOR HOURS			0	38	44		0	0	0	0	0	20	0	102

B. SURVEYING & GEOTECHNICAL INVESTIGATIONS

NO	ACTIVITY	PRINCIPAL ENGINEER	PROJECT MANAGER	PROJECT ENGINEER	REGISTERED SURVEYOR	SURVEY CREW (2-MAN)	TRAFFIC ENGINEER	STRUCTURAL ENGINEER	ELECTRICAL ENGINEER	ARCHITECT	ENG TECHNICIAN	SUPPORT SERVICES	RESIDENT REPR.			
	<u>Establish Vertical/Horizontal Control; Bench Circuit</u>				2	24								26		
	<u>Topographic Verification Survey</u>				48	52								100		
	<u>Utility Coordination</u>				1	4						16				
	<u>Field Locate Boring/Coring Locations</u>													5		
	<u>Soil Borings/Geotech Analysis & Foundation Recommendations</u>	2	4		8				4			32	2	12		
	<u>Prepare Base Mapping</u>	2												42		
	TOTAL LABOR HOURS			0	4	4		59	80	0	4	0	48	2	0	185

EXHIBIT B
CITY OF GAHANNA
TAYLOR ROAD BOOSTER STATION IMPROVEMENTS

LABOR SUMMARY

C. CONSTRUCTION DOCUMENTS PHASE

NO.	ACTIVITY	PRINCIPAL ENGINEER	PROJECT MANAGER	PROJECT ENGINEER	REGISTERED SURVEYOR	SURVEY CREW (2-MAN)	TRAFFIC ENGINEER	STRUCTURAL ENGINEER	ELECTRICAL /MECH ENGINEER	ARCHITECT	ENG. TECHNICIAN	SUPPORT SERVICES	RESIDENT REPR.	
PLAN SHEETS														
	TITLE SHEET (1)		1	2							4		7	
	GENERAL NOTES (2)		1	8							16	8	41	
	DEMOLITION PLAN & DETAILS (2)		2	16							32		50	
	PROPOSED SITE PLAN & DETAILS (3)		1	24							48		73	
	WATERLINE PLAN & PROFILES (4)	1	4	32							64		101	
	ARCHITECTURAL PLANS & DETAILS (3)	1	3							16	48		68	
	STRUCTURAL PLANS & DETAILS (3)	1	3						16		48		68	
	MECHANICAL PLANS, ELEVATIONS & DETAILS (4)	1	4	32							64		101	
	HVAC & PLUMBING PLANS & DETAILS (2)	1	2							12	32		47	
	ELECTRICAL & SITE LIGHTING PLANS & DETAILS (6)	1	4						32		80		117	
	TECHNICAL SPECIFICATIONS	2	8	40					8	16	8	40	0	
	CONTRACT DOCUMENTS	2	4	16							16		122	
	CONSTRUCTION COST ESTIMATE	1	2	8				4	4	8	4		38	
	PLAN REVIEW SUBMITTALS / COORDINATION		4	24							16		35	
	REVISIONS/FINAL BID DOCS SUBMITTAL	1	1	8				2	2	4	2	40	52	
												4	64	
	TOTAL LABOR HOURS	12	44	210	0	0	14	30	72	22	500	80	0	984

D. BID & CONSTRUCTION ASSISTANCE SERVICES

NO.	ACTIVITY	PRINCIPAL ENGINEER	PROJECT MANAGER	PROJECT ENGINEER	REGISTERED SURVEYOR	SURVEY CREW (2-MAN)	TRAFFIC ENGINEER	STRUCTURAL ENGINEER	ELECTRICAL /MECH ENGINEER	ARCHITECT	ENG. TECHNICIAN	SUPPORT SERVICES	RESIDENT REPR.	
BID ASSISTANCE														
	REPRODUCTION OF BID DOCUMENTS			3							8	8	19	
	PREBID MEETING		8	8							1		17	
	RESPOND TO INQUIRIES FROM VENDORS/BIDDERS		4	12							16		32	
	PREPARE ADDENDA		2	16					2	2	4	8	34	
	BID TABULATION & AWARD RECOMMENDATIONS	1	2	4							2		9	
CONSTRUCTION SERVICES														
	ATTEND PRECONSTRUCTION MEETING		4	4							2		10	
	SHOP DRAWING REVIEWS	1	4	24				8	8	16			69	
	CONSTRUCTION ADMINISTRATION												0	
	CONSTRUCTION RESIDENT REPRESENTATIVE												0	
	FINAL INSPECTION & PROJECT CLOSEOUT												0	
	1 YEAR ANNIVERSARY INSPECTION												0	
	PREPARE AS BUILTS		1	3	12						40	2	58	
	TOTAL LABOR HOURS	3	27	83	0	0	8	10	18	8	52	39	0	248

EXHIBIT C
CITY OF GAHANNA
TAYLOR ROAD BOOSTER STATION IMPROVEMENT

COST SUMMARY

A. PROJECT MANAGEMENT

28-Jun-13

A. LABOR COSTS			
LABOR CATEGORY	HOURS	RATE 2013	COST
PRINCIPAL ENGINEER	0	\$215.00	\$0.00
PROJECT MANAGER	38	\$180.00	\$6,840.00
REGISTERED PROJECT ENGINEER	44	\$125.00	\$5,500.00
REGISTERED SURVEYOR	0	\$93.00	\$0.00
SURVEY CREW (2-MAN)	0	\$135.00	\$0.00
TRAFFIC ENGINEER	0	\$140.00	\$0.00
STRUCTURAL ENGINEER	0	\$171.00	\$0.00
ELECTRICAL/MECHANICAL ENGINEER	0	\$169.00	\$0.00
ARCHITECT	0	\$130.00	\$0.00
ENGINEERING TECHNICIAN	0	\$85.00	\$0.00
SUPPORT SERVICES	20	\$52.00	\$1,040.00
TOTAL LABOR COST			\$13,380.00
B. DIRECT COSTS			
DIRECT CATEGORY	QUANTITY	UNIT CHARGE	ITEM COST
MILEAGE	600	\$0.51	\$306.00
REPRODUCTION	1000	\$0.15	\$150.00
REPRODUCTION- DEEDS & PLATS	1	\$75.00	\$75.00
PLAN SHEETS	50	\$1.00	\$50.00
MYLAR	0	\$20.00	\$0.00
TELEPHONE/FAX/POSTAGE (ESTIMATED)	2	\$50.00	\$100.00
PHOTOS/DEVELOPMENT	2	\$50.00	\$100.00
SUBTOTAL DIRECT COSTS			\$781.00
SUBTOTAL LABOR & DIRECTS			\$14,161.00

C. SUBCONSULTANTS	
None	\$0.00
SUBCONSULTANT TOTAL	
TOTAL COST	\$14,161.00

EXHIBIT C
CITY OF GAHANNA
TAYLOR ROAD BOOSTER STATION IMPROVEMENT

COST SUMMARY

B. SURVEY & GEOTECHNICAL INVESTIGATIONS

28-Jun-13

A. LABOR COSTS			
LABOR CATEGORY	HOURS	RATE 2013	COST
PRINCIPAL ENGINEER	0	\$215.00	\$0.00
PROJECT MANAGER	4	\$180.00	\$720.00
REGISTERED PROJECT ENGINEER	4	\$125.00	\$500.00
REGISTERED SURVEYOR	59	\$93.00	\$5,487.00
SURVEY CREW (2-MAN)	80	\$135.00	\$10,800.00
TRAFFIC ENGINEER	0	\$140.00	\$0.00
STRUCTURAL ENGINEER	4	\$171.00	\$684.00
ELECTRICAL/MECHANICAL ENGINEER	0	\$169.00	\$0.00
ARCHITECT	0	\$130.00	\$0.00
ENGINEERING TECHNICIAN	48	\$85.00	\$4,080.00
SUPPORT SERVICES	2	\$52.00	\$104.00
TOTAL LABOR COST			\$22,375.00
B. DIRECT COSTS			
DIRECT CATEGORY	QUANTITY	UNIT CHARGE	ITEM COST
MILEAGE	600	\$0.51	\$306.00
REPRODUCTION	500	\$0.15	\$75.00
3-RING BINDERS	0	\$8.00	\$0.00
PLAN SHEETS	10	\$1.00	\$10.00
MYLAR	0	\$20.00	\$0.00
TELEPHONE/FAX/POSTAGE (ESTIMATED)	1	\$50.00	\$50.00
PHOTOS/DEVELOPMENT	0	\$50.00	\$0.00
SURVEY SUPPLIES-GPS RECEIVERS(DAYS)	1	\$400.00	\$400.00
SURVEY SUPPLIES-TOTAL STATION	66	\$10.00	\$660.00
SURVEY SUPPLIES (LUMBER, FLAGGING, PAINT)	2	\$50.00	\$100.00
SUBTOTAL DIRECT COSTS			\$1,601.00
SUBTOTAL LABOR & DIRECTS			\$23,976.00
C. SUBCONSULTANTS			
TERRACON- Subsurface Investigations & Report			\$12,375.00
SUBCONSULTANT TOTAL			\$12,375.00
TOTAL COST			\$36,351.00

EXHIBIT C
CITY OF GAHANNA
TAYLOR ROAD BOOSTER STATION IMPROVEMENT

COST SUMMARY

C. CONSTRUCTION DOCUMENTS PHASE

28-Jun-13

A. LABOR COSTS			
LABOR CATEGORY	HOURS	RATE 2013	COST
PRINCIPAL ENGINEER	12	\$215.00	\$2,580.00
PROJECT MANAGER	44	\$180.00	\$7,920.00
REGISTERED PROJECT ENGINEER	210	\$125.00	\$26,250.00
REGISTERED SURVEYOR	0	\$93.00	\$0.00
SURVEY CREW (2-MAN)	0	\$135.00	\$0.00
TRAFFIC ENGINEER	14	\$140.00	\$1,960.00
STRUCTURAL ENGINEER	30	\$171.00	\$5,130.00
ELECTRICAL/MECHANICAL ENGINEER	72	\$169.00	\$12,168.00
ARCHITECT	22	\$130.00	\$2,860.00
ENGINEERING TECHNICIAN	500	\$85.00	\$42,500.00
SUPPORT SERVICES	80	\$52.00	\$4,160.00
TOTAL LABOR COST			\$105,528.00
B. DIRECT COSTS			
DIRECT CATEGORY	QUANTITY	UNIT CHARGE	ITEM COST
MILEAGE	3000	\$0.51	\$1,530.00
REPRODUCTION	10000	\$0.15	\$1,500.00
3-RING BINDERS	0	\$8.00	\$0.00
PLAN SHEETS	450	\$1.00	\$450.00
MYLAR	30	\$20.00	\$600.00
OEPA PLAN REVIEW FEES (\$150+ (.0035 x \$1,050,000.00))	1	\$3,825.00	\$3,825.00
BUILDING PERMIT ALLOWANCE	1	\$1,000.00	\$1,000.00
TELEPHONE/FAX/POSTAGE (ESTIMATED)	3	\$50.00	\$150.00
PHOTOS/DEVELOPMENT	2	\$50.00	\$100.00
SUBTOTAL DIRECT COSTS			\$9,155.00
SUBTOTAL LABOR & DIRECTS			\$114,683.00
C. SUBCONSULTANTS			
NONE			\$0.00
SUBCONSULTANT TOTAL			\$0.00
TOTAL COST			\$114,683.00

EXHIBIT C
CITY OF GAHANNA
TAYLOR ROAD BOOSTER STATION IMPROVEMENT

COST SUMMARY

D. BID & CONSTRUCTION ASSISTANCE SERVICES

28-Jun-13

A. LABOR COSTS			
LABOR CATEGORY	HOURS	RATE 2014	COST
PRINCIPAL ENGINEER	3	\$221.45	\$664.35
PROJECT MANAGER	27	\$185.40	\$5,005.80
REGISTERED PROJECT ENGINEER	83	\$128.75	\$10,686.25
REGISTERED SURVEYOR	0	\$95.79	\$0.00
SURVEY CREW (2-MAN)	0	\$139.05	\$0.00
TRAFFIC ENGINEER	8	\$144.20	\$1,153.60
STRUCTURAL ENGINEER	10	\$176.13	\$1,761.30
ELECTRICAL ENGINEER	18	\$174.07	\$3,133.26
REAL ESTATE SPECIALIST	8	\$133.90	\$1,071.20
ENGINEERING TECHNICIAN	52	\$87.55	\$4,552.60
SUPPORT SERVICES	39	\$53.56	\$2,088.84
RESIDENT REPRESENTATIVE	0	\$51.50	\$0.00
TOTAL LABOR COST			\$30,117.20
B. DIRECT COSTS			
DIRECT CATEGORY	QUANTITY	UNIT CHARGE	ITEM COST
MILEAGE	1200	\$0.51	\$612.00
REPRODUCTION	5000	\$0.15	\$750.00
3-RING BINDERS	0	\$8.00	\$0.00
PLAN SHEETS	300	\$1.00	\$300.00
MYLAR	30	\$20.00	\$600.00
TELEPHONE/FAX/POSTAGE (ESTIMATED)	4	\$50.00	\$200.00
PHOTOS/DEVELOPMENT	8	\$50.00	\$400.00
SUBTOTAL DIRECT COSTS			\$2,862.00
SUBTOTAL LABOR & DIRECTS			\$32,979.20
C. SUBCONSULTANTS			
SUBCONSULTANT TOTAL			\$0.00
TOTAL COST			\$32,979.20

EXHIBIT C
CITY OF GAHANNA
TAYLOR ROAD BOOSTER STATION IMPROVEMENT

COST SUMMARY

ITEM	COST
<i>BASIC SERVICES</i>	
A. PROJECT MANAGEMENT	\$14,161.00
B. SURVEY & GEOTECHNICAL EVALUATIONS	\$36,351.00
C. CONSTRUCTION DOCUMENT PHASE	\$114,683.00
	SUBTOTAL
	\$165,195.00
<i>AS-AUTORIZED SERVICES</i>	
D. BIDDING & CONSTRUCTION SERVICES	\$32,979.20
	SUBTOTAL
	\$32,979.20
ESTIMATED TOTAL COST	\$198,174.20



June 27, 2013

ms consultants, inc
2221 Schrock Road
Columbus, Ohio 43229-1547

Attn: Mr. Ken Ricker, P.E.

Re: Proposal for Geotechnical Engineering Services
City of Gahanna Waterline Improvements
Gahanna, Ohio
Terracon Proposal No. PN4130341

Dear Mr. Ricker:

Terracon Consultants, Inc. (Terracon) appreciates the opportunity to submit this proposal to provide geotechnical engineering services for the City of Gahanna Waterline Improvements project located in Gahanna, Ohio.

The purpose of these services will be to develop subsurface information in the vicinity of the project site in order to provide geotechnical engineering recommendations concerning booster station and trench excavations, lateral support, groundwater control, suitability for alternative construction method and other pertinent design and construction factors. Information provided in your email dated June 20, 2013 was used to develop this proposal.

This proposal outlines our understanding of the project and scope of services and provides a lump sum fee for our services.

A. PROJECT INFORMATION

Site Location

ITEM	DESCRIPTION
Location	The project site is located in the City of Gahanna, Ohio.
Existing improvements	The proposed alignment is within a developing suburban area. Existing roadways, a bike path and associated infrastructure are located in the vicinity of the project alignment.
Current ground cover	Varies – wooded, grass and paved areas are anticipated across the project alignment
Existing topography	Appears generally level to slightly sloping

Project Description

ITEM	DESCRIPTION
Proposed waterline improvements	A new Taylor Road booster station is proposed for construction on the City of Gahanna property at the corner of Taylor Road and Helmbright Drive. A new 16-inch diameter waterline is also proposed for construction. The proposed alignment for the 16-inch diameter waterline will begin at the new booster station site and proceed east within the exiting Taylor Road right-of-way for approximately 1,650 l.f., then turn south and continue approximately 1,650 l.f. to the intersection of Tech Center Drive and Science Boulevard, where it will continue south along Science Boulevard to tie into the existing 8-inch diameter water main located approximately 1,000 l.f. south of the intersection of Tech Center Drive and Science Boulevard.
Requested geotechnical services	<p>Seven (7) borings were requested by ms consultants:</p> <ul style="list-style-type: none">• Two (2) borings within the proposed booster station footprint extending to depths of 30 feet below existing grade• Five (5) borings along the proposed 16-inch waterline extending to depths of 10 feet below existing grade. <p>Laboratory testing was requested to be performed on soil samples for further classification along with laboratory resistivity, pH, redox potential, sulfides in the vicinity of the pipe zone to aid in identification of corrosive soil conditions.</p> <p>The requested geotechnical report content consists of: descriptions of the site, field work and general subsurface conditions; a discussion of the expected excavations, including required equipment types; potential soil problems; lateral support recommendations; and groundwater considerations.</p>

Should any of the above information or assumptions be inconsistent with the planned construction, please let us know so that we may make any necessary modifications to this proposal.

B. SCOPE OF SERVICES

The services to be provided by Terracon are summarized in the following paragraphs.

Field Program – As requested, we propose to perform a total of (7) soil borings for this project. Two (2) borings will be drilled within the proposed booster station footprint to depths of 30 feet below existing grade. Five (5) borings will be drilled along the proposed 16-inch diameter waterline alignment to depths of 10 feet below existing grade. Thus, up to 110 lineal feet of soil auger drilling is estimated for this project. The locations of the borings will be established in

consultation with ms consultants, inc. based on a provided preliminary waterline alignment drawing and considering drill rig access considerations. Rock coring was not requested for this project, however rock coring can be provided on a unit rate basis as described in the "Compensation" section below. The actual boring locations and depths will be determined by the geotechnical engineer in consultation with the Client prior to mobilizing the drill rig to the site.

Sampling will be in general accordance with industry standard procedures wherein split-barrel samples are obtained. Sampling will be performed at two and a half feet intervals to the boring termination depth or refusal conditions if bedrock is encountered prior to the planned boring termination depth. Rock coring, if requested, will be performed using double tube, diamond bit core barrels.

In addition we will observe and record groundwater levels during and after drilling. Once the samples have been collected and classified in the field, they will be placed in appropriate sample containers for transport to our laboratory.

Conditions encountered in the field may warrant modification to the field program summarized above.

Conditions/Items to be provided by Client: Items to be provided by the client include the right of entry to conduct the exploration and an awareness and/or location of any private subsurface utilities existing in the area. We will contact the Ohio Utilities Protection Service (OUPS) for location of utilities in public easements. Location of private lines on the property is not part of the OUPS or Terracon scope. Any private lines should be marked by others prior to commencement of drilling. We request that City Personnel personnel mark any city utilities near the boring locations prior to the arrival of our drill crew on-site. Terracon can provide for a private utility locator, if requested by the Client.

Terracon will obtain the necessary permits for working within in the City of Gahanna right-of-ways. We will also provide for traffic controls at the boring locations that require these services for safety and maintenance of traffic considerations. It is anticipated that traffic control can be accomplished using signs, cones and flagger, as outlined as Typical Application 10 (TA-10) of the Uniform Traffic Control Manual.

Some of the boring may be located in areas with nearby trees. Our proposal does not include dozer services associated with clearing access to the boring locations. Our drill crews may use chain saws and other hand tools to clear light brush and small tree limbs for drill rig access to the boring locations.

Terracon will take reasonable efforts to reduce damage to the property, such as rutting of the ground surface. We have not budgeted to restore the site beyond backfilling our boreholes. Boring drilled through existing pavement will be surface patched with cold mix asphalt patch or

Quikrete®. If there are any restrictions or special requirements regarding this site or exploration, these should be known prior to commencing field work. Our fee is based on the site being accessible to our truck or rubber tired ATV mounted drilling equipment and Terracon providing layout of the borings using coordinates provided by ms consultants, inc.; additional costs may result if this is not the case.

For safety purposes, all borings will be backfilled with grout immediately after their completion. Excess auger cuttings would be disposed of on the site. Because backfill material often settles below the surface after a period of time, we recommend the boreholes be checked periodically and backfilled if necessary.

Laboratory Testing – The samples will be tested in our laboratory to determine physical engineering characteristics. Testing will be performed under the direction of a geotechnical engineer and will include visual classification, Atterberg Limits, grain size and strength tests (pocket penetrometer readings), as appropriate. Additionally, corrosivity testing will include pH, laboratory resistivity, redox potential and sulfide tests.

Engineering Analysis and Report – The results of our field and laboratory programs will be evaluated by a professional geotechnical engineer licensed in the State of Ohio. Based on the results of our evaluation, an engineering report will be prepared that details the results of the testing performed, provides logs of the borings, and a diagram of the site/boring layout. The report will include the following:

- Computer generated boring logs with soil stratification based on visual soil classification.
- Summarized laboratory data.
- Groundwater levels observed during and after completion drilling.
- Boring location plan.
- Subsurface exploration procedures.
- Encountered soils and bedrock conditions.
- Discussion of the expected excavations.
- Discussion of potential problem soils
- Discussion of groundwater considerations
- General recommendations for excavation and waterline construction based on the findings in the borings, including typical construction equipment for excavation and recommendation for lateral support

Schedule – We anticipate that a drilling rig and crew can be mobilized to the site to drill the borings within 5 to 7 business days of our authorization to proceed. The field exploration is anticipated to take 1 to 2 days. We anticipate that the final geotechnical report will be provided upon completion of the laboratory testing within 5 to 7 business days after the borings are completed. In situations where information is needed prior to submittal of our report, we can

provide verbal information or recommendations for specific project requirements after we have completed our field and laboratory programs.

C. COMPENSATION

Terracon proposes to complete the required scope of work as described herein and includes all Terracon professional labor costs, travel and direct client expenses required to complete this scope of work using the project assumptions described above for the following unit rates fees:

Item	Estimated Quantity	Units	Unit Cost	Extended Cost
Private Utility Location Subcontractor ¹	--	hour	\$230	--
Boring Layout, drilling and utility location coordination with Client	1	Lump sum	\$750	\$750
Mobilization & Demobilization – track mounted drilling rig and two-person crew	1	Lump sum	\$300	\$300
Soil drilling and sampling, grout backfilling, pavement patching – truck or ATV mounted mounted drilling rig ³	2	Day	\$2,000	\$4,000
Rock Coring	--	Per lineal foot	\$50	--
Atterberg Limits Test	7	Per Test	\$65	\$455
Grain Size Analyses (Sieve and Hydrometer)	7	Per Test	\$120	\$840
Moisture Content Test	35	Per Test	\$8	\$280
Corrosivity Testing Suite (laboratory resistivity, pH, redox potential, sulfide tests)	5	Per Test	\$250	\$1,250
Traffic Control (signs, cones, flaggers, City of Gahanna police cruiser) ³	1	Day	\$1,500	\$1,500
Geotechnical Engineering Analyses and Report	1	Lump Sum	\$3,000	\$3,000
Estimated Not to Exceed Total:				\$12,375

1. If requested by Client
2. Hourly fee for drill crew if standby time is requested/required by Client
3. Invoiced per ½ day basis

The estimated Not to Exceed fee for the project is \$12,375. Our invoice would be based on the units performed. We will obtain Client authorization prior to proceeding with any additional services in excess of the Not to Exceed fee. If we are authorized to proceed and the client subsequently postpones or cancels the work, we will invoice the client for the costs of project set up and mobilization incurred prior to notice of cancellation.

Should it be necessary to expand our services beyond those outlined in this proposal, we will notify you, then send a supplemental proposal stating the additional services and fee. We will not proceed without your authorization, as evidenced by your signature on a Supplemental Agreement form. We will obtain your specific authorization prior to providing any additional services.

D. AUTHORIZATION

As a formal authorization to proceed we request that the Client return an executed version of attached Agreement for Services for our records. This proposal is valid only if authorized within sixty days from the listed proposal date.

We appreciate your request to provide this proposal and look forward to the opportunity to be of service.

Sincerely,
Terracon Consultants, Inc.



Kevin M. Ernst, P.E.
Geotechnical Department Manager



Prasad S. Rege, P.E.
Principal / Office Manager

Attachments: Agreement for Services