

## **DRAFT SCOPE OF SERVICES**

### **DESCRIPTION OF PROJECT**

The proposed project consists of analyzing existing sanitary sewer connection points from the City of Canton to Stark County and the City of North Canton. If existing average daily flows at these connection points exceed 25,000 gallons per day (gpd), the Consultant shall design all components of a permanent metering station at that point. Components of these permanent metering stations are further described in the tasks listed below. Detailed specifications for Stark County's existing metering stations will be available for review and use in this project.

### **GIS FILES**

The City of Canton is currently developing a Geographic Information System (GIS) based mapping of the City's sanitary sewer system. This GIS will be utilized to better determine potential permanent metering sites.

### **TASKS**

At a minimum, the consulting engineering firm shall complete the following tasks:

1. Hold a kick-off meeting with the City of Canton, Stark County and North Canton representatives.
2. Hold subsequent progress meetings at key points in the project. A minimum of 4 progress meetings shall be held.
3. Conduct site visits at each potential site to determine the most appropriate location for installation of the proposed metering station.
4. Review existing flows at each potential site to determine the appropriate permanent meter to be installed at the site. If a connection point has a theoretical flow less than 30,000 gpd, the consultant shall perform preliminary flow metering to determine if a permanent metering station is necessary. If preliminary flow metering exhibits average daily flows in excess of 25,000 gpd, a permanent metering station shall be designed for that location.
5. Develop plans and specifications, including detailed topographic surveys, for installation of new permanent metering stations meeting the requirements of City of Canton and Stark County specifications. Plans and specifications shall include a custom structure to enhance metering capability, access to meter probes and access for maintenance and calibration. All bypass pumping requirements and specifications shall also be provided to facilitate the construction of each station.
6. Consultant shall show all existing utilities on the plans. Following completion and approval of Line, Grade and Typical Section plans, the Consultant shall submit preliminary plans to all utility companies for their planning purposes. Any comments provided by utility companies (including City owned utilities) shall be addressed by the consultant. Final design plans (approved by the City) shall also be sent to all utility companies by the Consultant. The City of Canton will review and approve all relocation plans proposed by the utilities.

7. Ensure proper utilities are available to serve the permanent metering facilities and design/coordinate the connections necessary for the proposed metering stations. If required utilities are not available, the consultant shall coordinate and recommend the most cost effective method to provide the required utility service.
8. Provide detailed plans and specifications for a new magnetic flow meter at the City of Canton's Water Reclamation Facility. The plans must also include all components of a bypass pumping plan to facilitate the replacement of this meter.
9. Design Supervisory Control and Data Acquisition (SCADA) components at each new permanent metering station. This SCADA system shall be designed to send flow information to Stark County's existing SCADA system. SCADA components may also be required at existing sanitary lift stations (2 potential sites) which already contain permanent magnetic flow meters. The proposed magnetic flow meter at the City's WRF shall also be connected to the County's SCADA system. The information provided to the County from each of these sites shall match the existing SCADA format of the County's metering stations in their system.
10. The consultant shall incorporate the City's General Notes sheets (AutoCAD format), provided by the City Engineer, into the construction plans.
11. Front end documents shall be prepared by the City of Canton. The Consultant shall prepare detailed specifications for all non-standard ODOT or City items. The Consultant shall also prepare a Bid Form to be included in the City's front end documents.
12. Develop a detailed engineer's opinion of probable construction costs for the proposed improvements.

Additional tasks may be added as requested and approved by the City.

The City anticipates design of 6 permanent metering stations. If more or less stations are required, adjustments will be made to the contract to reflect this change.

### **Plan Preparation**

Scales:            Plan: 1" = 20' (Full Size Sheet)  
                      Profile: 1" = 20' Horizontal, 1" = 5' Vertical (Full Size Sheet)

Sheet Size:      22" x 34" (Full Size)  
                      11" x 17" (Quarter Size)

Designer should prepare plans keeping in mind that the 22" x 34" tracings will be reproduced to 11" x 17" prints prior to distribution.

## **Field Surveys**

At a minimum, the project shall include the following:

- Re-establish right-of-way centerline and right-of-way lines, and limited access lines, as applicable
- Establish profile over proposed sanitary sewer rehabilitation and replacement
- Establish bench marks on NAVD 1988 datum (Third Order accuracy)
- Copy of survey notes and adjustments to be submitted to the City
- Topographic identification of all man-made improvements, landscaping, and natural relief extending a minimum of **25** feet beyond the right-of-way line and construction limits
- Locate and identify all existing public and private utilities, including inverts
- Survey Control Points shall be shown and referenced on the Construction Plans

## **Right-of-Way Survey Plat**

Include with the design a right-of-way survey plat re-establishing the right-of-way; and right-of-way acquisition parcels, if applicable. The plat shall be prepared under the supervision of, and signed and stamped by, and Ohio Registered Surveyor. Submit copies of survey field notes and computations/adjustments with the plat. The right-of-way plat is to meet, at minimum, the following criteria:

- Establish the centerline and right-of-way lines of subject street and centerline intersections with side street right-of-ways.
- Centerline is to be labeled with stations at all intersections, deflections, point of curvatures, and point of tangencies. Centerlines should include bearings (degrees, minutes, seconds) from a referenced basis of bearings and curve data (radius, central angle, tangent, chord bearing and distance, and arc length).
- Right-of-way lines are to be labeled with station/offsets at intersections, deflections, point of curvatures, and point of tangencies and curve data at side streets, if applicable.
- Monuments found are to be labeled with size and type, and station/offset from centerline. Specify monuments used to control right-of-way survey.
- Show lot numbers, property owners, house numbers, lot lines and property lines (said lines may be plotted onto plat from record information if right-of-way acquisitions are not necessary). Show current deed instruments for those parcels which will be affected by right-of-way acquisitions or permanent easements.
- Right-of-way acquisition parcels, when applicable, shall be platted and legal descriptions prepared in accordance with the Stark County standards governing conveyances (1998)
- Reference all centerline intersections, deflections, intersections, deflections, point of curvatures, and point of tangencies using existing improvements or setting #4 rebars, 30" long (or greater) outside the construction limits. Minimum 3 references per point.
- Survey of right-of-way is to be performed to Third Order, Class I Accuracy (1:10,000)

### **Right-of-way Acquisitions**

All permanent takes necessary for right-of-way as a result of the design are to be delineated on the Right-of-Way Survey Plat (see "Right-of-Way Survey Plat" section). A separate parcel description shall be prepared for each acquisition. The descriptions and plat are to comply with the Stark County standards governing conveyances.

A separate cost per acquisition parcel shall be included with the fee schedule since the number of parcels to be acquired by the City is unknown.

### **Permanent Easements**

All permanent easements required for underground utilities are to be delineated on the Right-of-Way Survey Plat. A separate description shall be prepared for each easement on the Consultant's letterhead and stamped by a Registered Surveyor or Engineer.

A separate cost per easement area shall be included with the fee schedule since the number of easements to be acquired by the City is unknown.

### **Temporary Easements**

In the event private property adjoining the project will be adversely affected as a result of designed improvements (i.e., tree removal, severe sloping of lawn or drive, or removal of an improvement without replacement, etc.); the Consultant shall designate the area necessary for a Temporary Easement. The easement areas, along with the construction limits, are to be delineated on the plans. A separate description for the easement area shall be prepared on the Consultant's letterhead and stamped by a Registered Surveyor or Engineer.

A separate cost per easement area shall be included with the fee schedule since the number of easements to be acquired by the City is unknown.

### **Work Agreements**

In the event a Contractor may need to enter upon private property to complete the improvements as designed by the Consultant (i.e., restoration of lawns and driveways, minor sloping); the Consultant shall designate an appropriate area for a Work Agreement. The work agreement areas, along with the construction limits, are to be delineated on the plans. Descriptions for the Work Agreements are not required.

The cost for establishing and plotting work agreements shall be inherent to the general design costs. No separate fee shall be paid.

## **Final Plans/Deliverables**

Following approval of final plans, the Consultant shall provide the City with the following:

- Mylar reproducible (one set, full size 22" x 34", ammonia mylars will not be accepted) signed and stamped by the authorized engineer
- Quarter size (two sets, 11" x 17") plan sheets on bond paper
- Final Engineer's Estimate of Probable Construction Costs
- Bid Forms (two sets, 8½" x 11") to be used in the City of Canton's front end documents
- AutoCAD drawings (release 14 or higher), electronic version of Bid Form (Microsoft Word Format) and Engineer's Estimate (Microsoft Excel Format) on compact disc

The Consultant is not required to provide additional plan sets.