

SCHEDULE 1
SCOPE OF SERVICES
TERRACE/BROAD STORMWATER SYSTEM IMPROVEMENTS
CAPITAL IMPROVEMENT PROJECT (CIP) NO. 611009

BACKGROUND

The City of Columbus Division of Sewerage and Drainage (DOSD) initiated CIP 611009 in response to resident complaints of structural and intersection flooding at Broad Street and Terrace Avenue. Upon completing the initial stormwater analysis it became apparent that the solution to the roadway and structural flooding would be much more involved due to the lack of flood routing and undersized stormwater system. In order to create the proper flood routing to eliminate the structural flooding at the intersection of W. Broad and Eldon Ave, a much larger system is required than originally anticipated. Because of this, the entire roadway would have to be rebuilt (sidewalk to sidewalk), and all subsurface utilities would have to be relocated to accommodate the larger pipe at DOSD's cost. In order to significantly reduce construction costs, an alternate alignment was studied that would utilize Eureka Ave. This alignment will split the stormwater flow at the intersection W. Broad and Eldon which will allow for the reuse of the existing storm sewer in Eldon and reduce the diameter of the new sewer that will flow north along Eureka. This will prevent the entire roadway from being replaced and greatly reduce the construction costs. Additional work will also include replacement of water lines as detailed in section A6.11 and the construction of new sidewalks as described in section A6.12.

PROJECT SCHEDULE

Within fourteen (14) days of contract award, the consultant shall prepare a schedule of activities showing task duration, deliverables, and project milestones. The schedule shall specifically show all information to and/or from others necessary to complete the work. The schedule will be updated monthly and submitted with the progress report. Updates should reflect the project schedule as of the last day of the month in which it is prepared.

SCOPE OF SERVICES

Work to be completed by the Engineer shall include but not be limited to the following:

- Review background information, collect DOSD complaint history for the portion of the new stormwater alignment.
- Conduct public meeting to solicit information from area residents about locations of stormwater-related problems;
- Perform field surveys to locate existing utilities and topographic features;
- Perform H&H analyses for the new alignment;
- Prepare construction documents for authorized improvements;
- Prepare easement descriptions and exhibits – if authorized.
- Prepare record drawings (as-built drawings).
- Construct new water mains on Eureka Ave and Steele Ave in accordance with the detailed task below;
- Install new sidewalks from xxxx to xxxx in accordance with the detailed task below;

Detailed descriptions of the required tasks are as follows.

DETAILED DESCRIPTION OF TASKS:

TASK A1: REVIEW EXISTING INFORMATION

Review pertinent reports, construction plans, and other Division of Sewerage and Drainage (DOSD) records that have a bearing on the new alignment and interview DOSD employees who are familiar with the problem. **At a minimum review the following: project manager's files, complaint records, DOPW records and DOSD plans & maps. Interview residents and distribute questionnaires within study area to verify scope and limits of stormwater-related problems.**

TASK A2: FIELD INVESTIGATIONS

Perform such field investigations, site visits, and research necessary to prepare the H&H analysis, construction plans and easements. This work shall be performed under the direction of a professional surveyor licensed in the State of Ohio. **This work will include but not be limited to courthouse research required to identify plats, deeds and easements.**

TASK A3: HYDROLOGIC AND HYDRAULIC ANALYSES

Perform hydrologic and hydraulic calculations (using rainfall data presented in Bulletin 71 entitled, Rainfall Frequency Atlas of the Midwest, published by the Midwest Climate Center, dated 1993) necessary to design the stormwater system improvements in accordance with the Division of Sewerage and Drainage's Stormwater Drainage Manual. Prepare a map generated from Franklin County Auditor's mapping that delineates tributary drainage areas to each structure. Prepare a letter report that presents the hydrologic and hydraulic calculations, tributary map, construction cost estimate, and meeting minutes from any public meetings held to date.

Investigate and evaluate various environmentally beneficial construction methods and special techniques. This evaluation shall include the use of the maximum practicable amount of recovered materials consistent with the performance requirements, availability, price reasonableness, and cost-effectiveness. Where appropriate, the Engineer shall also consider energy conservation, pollution prevention, and waste reduction to the maximum extent practicable in developing the construction design specifications.

TASK A4: CONSTRUCTION PLAN SURVEYING

Generate project base mapping from the digital format of the Franklin County Auditor's facet maps made available by the City of Columbus. Perform all fieldwork necessary for the development of the construction plans. **Survey shall be in State Plane coordinates and roadway cross sections shall extend from face of building to face of building.** This work shall be performed under the direction of a professional surveyor licensed in the State of Ohio. This includes verification of topography (trees, structures, ornamentals, etc, not shown on the base mapping but **within the limits specified above**), location of existing right-of-way, easements (sanitary sewer, storm sewer, platted utility or drainage easements), property lines, waterlines, storm sewers and sanitary sewers; **and the location, size and depth of existing utilities including water service and sanitary sewer laterals.** Power and light pole owners will be determined and shown along with the names of the utilities being carried. Open channel (ditch) cross-sections shall be obtained at 50 foot intervals maximum, and, in addition, at all critical points. **As defined by the City of Columbus Transportation Division Utility Manual, Subsurface Utility Engineering (SUE) level A shall be used to determine the location of underground utilities potentially in conflict with proposed improvements; assume 20 test holes.**

All field survey information shall be recorded in field survey books. If the Engineer utilizes electronic data collection, information that can be provided in a fixed column ASCII file format will not require entry into field survey books. The ASCII file(s) shall contain the following information: point number, northing, easting, elevation, survey code and description (optional) fields. The Engineer shall provide the City with a printout of all electronic data submitted on 8 1/2" by 11" pages bound in a 3-ring binder with insertable cover. The data will also be accompanied by a legend of survey codes, an electronic points plot drawing(s) of all survey points obtained and a disk(s) containing the ASCII file(s) and drawing file(s). All survey information submitted to the City by means of field books and electronic data shall be complete in every detail. All survey data shall be based on State Plane Coordinates and the most current USGS datum. USGS and/or Franklin County Engineers Monuments (at least two) shall be used for horizontal and vertical control. All manhole and structure locations shall be provided with State Plane Coordinates. Control points shall be spaced 1000 feet apart maximum or more frequently if the line of sight conditions in the field dictate closer spacing, and three point referenced. Any additional information required to re-create the survey that cannot be derived through the submitted information shall be re-established by the Engineer at no additional cost to the City. Establish adequate horizontal and vertical controls for the development of the construction drawings and easements.

Develop a list of affected residents, institutions and businesses to generate mailings informing them of upcoming survey work in their neighborhood. Obtain all necessary street occupancy permits required for surveying. Provide the necessary traffic control/maintenance of traffic plans as required by such permits.

TASK A5: EASEMENTS

Determine the limits for permanent, temporary construction, and access easements over private property. Under the direction of a professional surveyor licensed in the State of

Ohio, prepare legal descriptions and pictorial exhibits (plats) for the required easements. Prepare a property acquisition map (at 1" = 100' scale or otherwise appropriate scale) to indicate the location of the easements, adjacent properties, and property addresses. Provide one (1) original and four (4) copies of the easement descriptions and plats to the City, and one (1) copy of the construction plans to the City for easement acquisition purposes. Upon authorization by the City, stake all proposed temporary and permanent easements for use during easement acquisition phase.

It is anticipated that most of the construction will be performed within existing road right-of-ways or within City-owned property. **For proposal purposes, it is to be assumed that a permanent and a temporary easement will be prepared for 50 properties. This is an "if authorized" item.**

TASK A6: DRAFT CONSTRUCTION PLANS

- A6.1: Prepare engineering and right-of-way drawings in Autocad format (version 14 minimum) to show the detail and scope of work for the PROJECT herein called "Drawings" in accordance with the current Construction and Materials Specifications, The Standard Construction Drawings of the City of Columbus, and the Division of Sewerage and Drainage's **Procedures and Standards for Creation and Submittal of Sewer Drawing Plans**. Plan format shall be "CC" Plans (22"x34") at 1"=30' horizontal scale and 1"=5' vertical scale (or other scale if approved by the City). Generate project base mapping from the digital format of the Franklin County Auditor's facet maps made available by the City of Columbus. Drawings shall include, but be not limited to, Title Sheet, General Notes Sheet, Plan and Profile Sheets, Open Channel Sections, Erosion Control Sheets, **ADA Curb Ramp Design Sheets, Demo Plan, Restoration Plan & Detail Sheets**.
- A6.2: Prepare Maintenance of Traffic drawings at the scale and detail as required by the regulatory agency.
- A6.3: Coordinate all field survey, easement development, and other supplemental services for the development of the Drawings.
- A6.4: Evaluate information and comments received from the City, public and private utility companies, other agencies, and the soils report in the development of the details for the improvement.
- A6.5: Establish the horizontal alignment of the improvement with its location relative to critical clearance points and property lines. For each proposed stormwater system, develop the vertical profile and determine the location of all appurtenances. Review the alignment in the field with the City. Minutes of the field tour are to be recorded by the Engineer with the approved alignment noted.
- A6.6: Develop the topography and easement survey for the drafting of the Drawings. Review special construction items and details affecting the easements and construction costs. All topography within **the right of way** and/or easements shall be shown on the Drawings. Show location of the centerline relative to the property lines, the easement and access

easement widths, and the pay items for the work. Provide adequate details for special construction procedures.

A6.7: Submit two (2) sets of draft (50% complete) construction plans to the City for review. **The 50% plans will include complete base mapping and the proposed plan & profile.** *The City will require 1 (one) month for draft (50%) construction plan review.*

A6.8: Participate in a draft construction plan review meeting with the City. Prepare and submit minutes of the meeting to the City.

A6.9: Upon satisfactory resolution of all review comments and completion of design, submit twelve (12) sets of draft final construction plans to the City for review by various City Divisions. Submit two (2) sets to all private utility companies for their review. Provide the City with a letter that summarizes the disposition of all private utility company review comments. *The City will require 1.5 (one and a half) months for draft final construction plan review.*

A6.10: Participate in a draft final construction plan review meeting with the City. Prepare and submit minutes of the final review meeting to the City.

A6.11: The following water lines shall be included:

1. Construct an 8-inch water line along Eureka Avenue from West Broad Street to Glenview Boulevard. Cross connect to existing 6-inch line in alley north of Broad Street. Replace fire hydrants, transfer all services, and abandon the existing 6-inch water line. (Approximately 2,250 feet of 8-inch pipe)

2. Construct an 8-inch water line along Steele Avenue from Terrace Avenue to Wayne Avenue. Cross connect to existing 8-inch line in Eldon Avenue. Transfer all services, and abandon the existing small diameter water lines. (Approximately 1,000 feet of 8-inch pipe)

The *“Design Guidelines for Water System Capital Improvement Projects”* shall be utilized for design of the water main portion of the project. This includes record plan preparation.

Water line design shall be on separate plans sheets from the sewer line design. Plans sheets can be formatted to allow for 2 water plan sheets to be placed on the larger formatted sewer line plan sheets.

A6.12 Conduct CCTV of the existing storm system in Eldon Ave, assess its current condition and prepare rehabilitation plans as necessary.

A6.13 The following sidewalk improvements shall be included:

1. Construct new sidewalk on the west side of Eureka Avenue from Steele Avenue to Glenview Avenue, including handicap accessible ramps or PAR’s where necessary.

TASK A7: REVISED CONSTRUCTION PLANS

Upon satisfactory resolution of all review comments, submit two (2) sets of revised final construction plans and the title sheet tracing to the City for compliance review and signatures. The City will provide the Engineer with the Front End Documents (Bidders Checklist, Advertisement For Bids, Bid Forms, Contract Proposal) and Prevailing Wage Rates. The Engineer shall prepare Supplemental Specifications (as needed), Unit Price Bid Forms (in Excel format supplied by the City) and Standard Drawings. Bidders Checklist, Advertisement For Bids, Bid Forms, Contract Proposal, Prevailing Wage Rates, Supplemental Specifications and Standard Drawings shall be assembled by the Engineer into a single bound book, hereinafter called "Specifications". Prepare an itemized construction cost estimate and an estimated time for the contractor to complete the work. Submit one (1) set of the Specifications, cost estimate and the estimated time for completion to the City for review. *The City will require 1.5 (one and a half) months for final construction plan/bid document (compliance) review.*

TASK A8: STORMWATER POLLUTION PREVENTION PLAN AND NOI

If the construction to be performed includes clearing, grubbing, excavating, and/or filling activities that result in the disturbance of more than one (1) acre of total land, the Engineer shall prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with City of Columbus Erosion and Sediment Control Guidelines. The Engineer shall also prepare a Notice of Intent Application form (NOI) for City signature and submit the signed NOI, SWPPP, and applicable fees to the Ohio Environmental Protection Agency (OEPA). The SWPPP shall be included as a part of the bid documents. The Engineer will be reimbursed for the amount of the actual application fee (not subject to administrative and overhead markup, etc.). **If the proposed improvements will result in the disturbance of less than one acre, the construction plans will contain all appropriate sediment & erosion controls in accordance with the current City and OEPA requirements**

TASK A9: BID DOCUMENTS

When directed by the City, update the bid documents to reflect any remaining City review comments. Prepare a complete set of bid documents which include all construction drawings, specifications, proposal and contract documents, prevailing wage rates, soils reports and appropriate standard drawings. The City will provide the Engineer with the prevailing wage rates and compliance regulations. Submit thirty (30) copies of the construction plans, and thirty (30) copies of the bid book to the City for distribution. Submit project tracings, Autocad files, field books and field survey information to the City; these materials become the property of the City.

TASK A10: BIDDING AND CONSTRUCTION SERVICES

Prepare all contract **addenda**, attend the bid letting, and attend the pre-construction conference. Provide advice and direction on design-related issues during the bidding process, during construction and review all submitted shop drawings.

TASK A11: PROGRESS MEETINGS AND PROGRESS REPORTS

The Engineer shall attend the kick-off meeting and one progress meeting each month.

The Engineer shall prepare and submit monthly progress reports and minutes of the progress meetings to the City. This Task concludes once the Engineer successfully accomplishes Tasks **A1-A8**.

TASK A12: PUBLIC MEETINGS

Prepare presentation materials, attend and assist the City in conducting two (2) public meetings. The Engineer shall advertise and secure the meeting location. If there are costs associated with the advertising and providing a meeting location, receipts shall be submitted to the City for the fees that were paid. The Engineer will only be reimbursed for the amount of the actual charges (not subject to administrative and overhead markup, etc.). Prepare and submit minutes of these meetings to the City.

TASK A13: RECORD PLANS

The Engineer shall provide the technical personnel necessary to fully prepare record plan drawings using construction drawing images in .TIF Group 4 format, headsheets in .TIF Group 4 format, fieldbook notes, and progress plan data furnished by the CITY. All survey information to be used for record plan purposes shall be provided by the field personnel performing construction inspection services. All record plan drawings shall be created in accordance with "Procedures and Standards for Creation and Submittal of Sewer Drawing Plans" manual. All revisions to the plans shall also be made in accordance with the Submittal manual. The work shall include but not be limited to the following:

A13.1 As-built Profile information shall incorporate the following:

- Cross out the proposed top of casting and invert elevations, structure stations, and pipe slopes;
- Cross out the information on the datum line (station, surface, invert and cut). This information shall not be recalculated;
- Add the as-built top of casting and invert elevations at the appropriate structure next to the crossed out elevations;
- Add the as-built structure stations at the appropriate structure next to the crossed out stations;
- Update the pipe size, material (PVC, RCP, VCP, etc.) and slope used for each run between structures and note this on the appropriate profile- Example: 8" PVC @ 0.45%. If a backflow is indicated by a negative grade, note this on the profile along with the actual direction. Notify the City of all instances of negative grade situations;
- Redraw structure and pipe to show actual elevation if actual elevation differ by more than 1 foot from construction drawing elevations, and cross out proposed pipe and structures. Notify the City of the discrepancies.

A13.2 As-built Plan View information shall incorporate the following:

- Mark the structure station and structure type (MH, CB, etc.) at each structure, labeling perpendicular to the pipe whenever possible;
- Add the as-built state plane coordinate information in the state plane coordinate table under the "As-built" heading.

A13.3 As-built Title Block information shall incorporate the following:

- Add the Record Plan Number in the “Record Plan #” box;
- Cross out the CC number in the “Contract Drawing #” box;
- Erase “DIVISION USE ONLY” in the “Owner” box and add City of Columbus;
- Add the Contractor’s name in the “Contractor” box;
- Add the Inspector’s names in the “Inspector” box;
- Add N/A in the “Agreement” box;
- Add the completed date in the “Completed” box;
- Add the drafter’s initials in the “RPD” box;
- Add N/A in the “CID” box;
- Add the CC# in the “CON. DR.” box;
- Add the Planning Map Number in the “Index Detail” box;
- Add the Record File Number in the “Record File” box;
- Add a separate title block for each section of sewer that was completed in phases, parts or sections all on the same CC plan;
- Add Easement Reference Information in the “Easement Reference” box;
- Review all updates in-house for accuracy and completeness;
- Tracings of all drawings and .TIF images of the same on industry standard portable media (i.e. 3.5” floppy, CD, etc.) shall be delivered to the CITY.

TASK A14: IF AUTHORIZED

Due to the uncertain nature of various work elements in this contract, it may be necessary to authorize additional work beyond the scope as written. Such work would be performed only upon the approval of a cost estimate for such services prepared by the Engineer (under the rates and costs established by this agreement) and subsequent written authorization by the City.