

ATTACHMENT A
CITY OF CANTON, GEORGIA
OLD BALLGROUND SANITARY SEWER,
CULLWELL PUMP STATION PARALLEL FORCE MAIN
AND WATER MAIN

APPROACH

Our approach for this project includes providing engineering services to design and bid the project. After the bidding phase, Atkins will provide services during construction as described later in this document.

The project includes three key elements.

- Approximately 6,800 feet of 30" and 24" parallel sanitary sewer from Juniper Street up Old Ball Ground Highway to the Cherokee WSA Airport No. 2 lift station.
- Approximately 1,300 feet of parallel 16" D.I.P. force main from Cullwell Pump Station to the wastewater treatment plant headworks. Our approach assumes the new force main will connect to the existing 16" force main near the Cullwell Pump Station and terminate at a 16" connection currently being constructed near the Canton wastewater treatment plant. The new force main connection near Cullwell Pump Station will consist of fittings and manually-operated valves that will enable the City to select either parallel force main operations or combined force main operations.
- 600 feet of 6" water main from Highway 5 to the wastewater treatment plant.

Our scope of work includes preliminary engineering, design and preparation of detailed construction plans and specifications, permits and permit applications, assisting the City of Canton during the bid process, and providing limited design services during construction.

At the City's request, we have included suggested budget amounts for preparation of easement drawings and plats, and wetlands delineation and permitting.

Task 100 – Design Documents

Sanitary Sewer:

The proposed relief 30" and 24" sanitary sewer will parallel the existing 15" sanitary sewer which will remain in service. The two sewers will be connected where main lines cross Riverstone Parkway.

Atkins shall design the proposed sanitary sewer. The slope shall be selected to obtain practical velocities to minimize settling. All manholes will have bolt down, water tight rings and covers. The velocity shall be calculated using the Manning Formula with an "N" factor of 0.013.

Ductile iron pipe will be specified when the sanitary sewer has less than three feet of cover, crosses a stream, passes laterally within one foot of a storm sewer, has in excess of 18ft of fill or is less than six feet and under a road. The remainder of the sewer will be specified as PVC.

Force Main:

Atkins shall confirm the necessary diameter of the force main (currently assumed to be 16") to provide reasonable force main velocities given that the Cullwell and Harmon Fields Pump Stations may operate separately in the two force mains or may jointly use both force mains. The force main will be specified as ductile iron. The scope of work include preparation of plan and profile drawings, details of connection points and hydraulic grade analysis of pump operation in combination with single and parallel force main operation.

Water Main:

The scope of work includes preparation of plan and profile drawings, and details of connection points. Material of construction for the water main shall be ductile iron pipe.

Soil and Erosion Control:

Best management practices will be used for the erosion control plans as described in the Manual for Erosion and Sediment Control in Georgia (Green Book) by the State Soil and Water Conservation Commission. The soil erosion and sediment control plan shall comply with the Georgia NPDES Permit and the Georgia Soil Conservation Service.

Specifications:

Specifications will be in CSI format, 17 Division, and will utilize front end documents provided by the City. If the City prefers, Atkins will incorporate the Engineers Joint Contract Document Committee (EJCDC) front end documents.

Upon completion of the construction documents, Atkins will submit three sets of documents (plans and specifications) to the City of Canton for review. We shall revise the construction documents as appropriate based on the City of Canton's review. We shall submit six (6) sets of the final construction documents to the City of Canton. An estimate of the proposed force main construction cost will be provided.

Task 200 – Ground Run Survey

Ground surveys are required to obtain topographic and right of way information for the project and locate the existing sanitary sewer from Juniper Street up to the Cherokee WSA Airport No. 2 lift station. The surveyor will produce base maps of the project at a sufficient accuracy for construction base plans at a scale of 1"= 50'. The surveying services will be performed in accordance with the Georgia Minimum Technical Standards for Land Surveying, and will include the following:

- A. Control: A traverse will be run along the existing sanitary sewer and force main corridor. Control points will be set at a maximum distance of 1,500 feet along the route and will be tied to State Plane Coordinates. The control points shall

include a sufficient number of recorded monuments (i.e., land lot corners, street centerlines, property corners, etc.) to define the project's relative position and be related to applicable recorded maps. All control points will be referenced to at least three points to allow reestablishing of the baseline.

- B. Benchmarks: Recover recorded benchmarks (BMs) and establish temporary benchmarks (TBMs) at 1,500 foot (maximum) intervals along the project corridor, outside the anticipated limits of construction. TBMs may be a nail/spike in a hardwood tree, chiseled marks, or some other fixed vertical point. Property corner monuments which may be disturbed and reset should not be used for TBMs. Elevations will be established on all TBMs, tied to know City, County, Department of Transportation or National Geodetic Survey BMs.
- C. Topography: Locate topographic features within the project limits including, but not limited to; pavement lines with type, curb lines, sidewalks, dirt roads or trails, buildings with type of construction, railroad lines, walls, fences, trees with species and breast height diameter (BHD), signs with description, power or telephone poles, visible evidence of utilities, manholes, inlets and drainage structures. Connectivity, pipe sizes and pipe material of sanitary sewer and storm drainage structures will be shown to the next structure outside of the project area. Profile shots will be taken every 50 feet along the existing alignment as well as in areas where we believe the proposed sewer line will be rerouted.
- D. Right of Way and Easement Lines: Right of way and easement lines will be plotted on the plans. These lines will be shown in accordance with available information, including tax assessor maps, right of way maps, subdivision plats, and adjoining property deeds. Right of way and easements lines will be verified by field locations in areas where additional right of way and easements will be obtained.

Task 300 – Permits

Atkins will submit the construction documents through the City of Canton Plan Review Department and we will make necessary revisions to obtain plan approval. Atkins will also apply for the Georgia DOT permit and will make any necessary revision to receive the DOT permit.

Task 400 – Bidding Phase

Services during the bidding phase will include: issuance of invitations to bid to contractors, handling of Contractor and vendor inquiries, preparation and distribution of contract documents to Contractors, preparation of the tabulation of bids, evaluation of the bids and bonds, and recommendation of contract award letter.

Task 500 – Design Services During Construction

Following the contract award, Atkins will serve as the City of Canton's representative for construction services. Services shall include arranging and conducting pre-construction meeting, issuing the notice to proceed, making periodic site visits assumed to be once per week, issuing any interpretations and clarifications of the contract documents,

reviewing shop drawings, verifying contractors request for payments, coordinating with the resident inspector and performing the final inspection for project closeout.

Task 600 – Easements

Atkins shall research and collect information on the owners of each piece of property that will be affected by the location of the proposed sanitary sewer, force main, and water main. This proposal includes provision for 18 property owners. The contract fee will be adjusted to reflect greater or fewer properties depending of the final number of property owners discovered.

Task 700 – Environmental Permits

Waters of U.S. Field Survey

A routine wetland and stream survey will be performed within the project corridor. The project corridor is defined as the area needed to place 6,800 feet of sanitary sewer from Juniper Street up to the Cherokee WSA Airport No. 2 lift station and 1,300 feet of force main line in the area between Cullwell pump station and the head works of the waste water treatment plant in the City of Canton, Cherokee County, Georgia. Jurisdictional wetland areas found within the staked project corridor will be delineated using the methodology specified in the United States Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory 1987) and supplemental guidance (Department of the Army 1992) for making routine wetland determinations. The field survey also includes an assessment of ecological features such as streams and protected species habitat. Wetlands will be flagged in the field, and wetlands and streams within the project area will be described and drawn in on project plans.

All wetland field data gathered during our delineation will be recorded on USACE wetland data forms. A Jurisdictional Determination (JD) request letter with attached maps and forms will be prepared for submittal to the USACE. If the project corridor changes following the field survey, the revised corridor can be surveyed for an additional fee. If protected species or habitat is identified, if regulatory approval requires a survey to be completed during a different time of year or if an aquatic survey is required, Atkins can provide these services for an additional fee.

Nationwide Permit

If applicable, impacts to wetlands or waters of the U.S. will be quantified and one Nationwide Permit (NEP) Preconstruction Notification (PCN) or notification letter will be prepared and submitted to the USACE. The PCN outlines the type of project, the amount and type of impact, avoidance and minimization measures employed, and a summary of mitigation offered (if applicable). If the USACE has questions or comments regarding the project, Atkins will assist in addressing these issues. After precise adverse impacts can be quantified, the PCN or notification letter will be submitted to the USACE. If impacts exceed the maximum allowed by a NEP, an Individual USACE Permit could be required and Atkins could coordinate and prepare the permit application for an additional fee.

Cultural Resources Literature Search

To comply with the terms of the PCN, a literature search will be conducted to determine if any previously identified cultural resources (archeological sites and/or historic structures) are located within or immediately adjacent to the project site. This literature search will include a background check of the Georgia Archeological Site Files, housed at the University of Georgia in Athens. Also included in the literature search will be the Georgia Historic Preservation Division (HPD) county historic structures surveys, HPD previously identified sites and National Register of Historic Places (NRHP) files. A memo detailing any previously identified cultural resources, along with a location map, will be provided. Additional detailed studies, including coordination with the Georgia State Historic Preservation Office, coordination with potential consulting parties, field surveys for historic and archeological resources and any reports required for Section 106 compliance are not included, but can be provided for an additional fee.

Stream Buffer Variance

This scope includes the following services for a stream buffer variance:

- 1) Coordinate with the local Issuing Authority to determine if the project requires a State buffer variance.
- 2) Prepare and submit the application to the Georgia Environmental Protection Division (EPD)
- 3) Follow-up coordination with the EPD
- 4) Provide the written description of the project to be published in the local newspaper as required for the 30-day public comment period.

*This scope does not include the calculation of and assistance with obtaining mitigation credits. If required, Atkins can coordinate the purchase of mitigation credits from an existing mitigation bank for an additional fee.

Attachment B

City of Canton, Georgia Old Ballground Sanitary Sewer, Cullwell Pump Station Parallel Force Main and Water Main

Task 100 - Engineering Design

Sr. Project Manager	168 hours @	\$180 /hr	=	\$30,240
Sr. CADD Operator	360 hours @	\$115 /hr	=	\$41,400
Project Manager	48 hours @	\$135 /hr	=	\$6,480
Sr. Scientist	24 hours @	\$180 /hr	=	\$4,320
Sub-Total				\$82,440

Task 200 - Survey

Survey Crew	58 hours @	\$160	=	\$9,280
Sub-Total				\$9,280

Task 300 - Permits (City Plan Review)(DOT)

Sr. Project Manager	8 hours @	\$180 /hr	=	\$1,440
Engineering Assistant	40 hours @	\$115 /hr	=	\$4,600
Mileage	104 miles @	\$0.57 /mile	=	\$59
Sub-Total				\$6,099

Task 400 - Bidding Phase

Sr. Project Manager	40 hours @	\$180 /hr	=	\$7,200
Engineering Assistant	24 hours @	\$115 /hr	=	\$2,760
Project Manager	16 hours @	\$135 /hr	=	\$2,160
Mileage	52 miles @	\$0.57 /mile	=	\$30
Sub-Total				\$12,150

Task 500 - Construction Management Services

Sr. Project Manager	180 hours @	\$180 /hr	=	\$32,400
Project Manager	146 hours @	\$130 /hr	=	\$18,980
Mileage	1600 miles @	\$0.57 /mile	=	\$912
Sub-Total				\$52,292

Task 600 - Easements

Sr. Project Manager	8 hours @	\$180 /hr	=	\$1,440
Sr. CADD Operator	56 hours @	\$115 /hr	=	\$6,440
Engineer I	12 hours @	\$115 /hr	=	\$1,380
Sub-Total				\$9,260

Task 700 - Environmental Permits

Project Scientist	106 hours @	\$82 /hr	=	\$8,692
Principal Scientist	20 hours @	\$130 /hr	=	\$2,600
Mileage	104 miles @	\$0.57 /mile	=	\$59
Sub-Total				\$11,351

Total \$182,872

BUDGET SUMMARY

Task 100	Design	\$82,440
Task 200	Survey	\$9,280
Task 300	Permits	\$6,099
Task 400	Bidding Phase	\$12,150
Task 500	Construction Management Services	\$52,292
Task 600	Easements	\$9,260
Task 700	Environmental Permits	<u>\$11,351</u>
Total		\$182,872

SCHEDULE

City Contract Approval	Jul-2015
Survey	Aug-2015
Design	Sep - Nov 2015
Permits	Dec 2015 - Feb 2016
Easement Drawings	Dec-2015
Bidding	Feb-2016
Award	Mar-2016
Construction Management	April - Nov 2016