

Scope of Work submitted to City of Alpharetta Department of Public Works for Task Order #7: Bethany & Mayfield Intersection Improvements Project

Submitted to:

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A. Introduction

The City of Alpharetta (City) has requested the design of a roundabout at the intersection of Bethany Road and Mayfield Road. The current configuration of this intersection has a stop condition on all approaches (4-way stop). This intersection experiences significant vehicle back-ups along Mayfield Road and Bethany Road during peak traffic times. The intent of this project is to improve traffic flow through this intersection and reduce the vehicle back-ups experienced.

The proposed improvements will consist of a single lane roundabout to accommodate a tractor trailer (AASHTO WB-67) as the design vehicle. The design will incorporate modifications to the drainage system as well as identifying utility conflicts. A sidewalk connection, with detailed grading, will be included in the proposed work from the improved intersection to Chantilly Drive along both Bethany Road and Mayfield Road. A 4' bicycle lane will also be incorporated in the improvements along Mayfield Road. The posted speed limit on Mayfield Road is 35 MPH. The posted speed limit on the south approach of Bethany Road is 35 MPH and the posted speed limit on the north approach of Bethany Road is 40 MPH. Some of the known existing site conditions to be considered during the design are listed below.

- Numerous utility cabinets located in the NE corner of the intersection.
- Gas vaults to the SE of intersection as well as other overhead and underground utilities.
- Existing driveway connecting in NE corner of the intersection.

This project is being performed in accordance with the City of Alpharetta/Tetra Tech On-Call Engineering Contract (16-1009) executed August 19, 2016.

B. Scope of Work

This project includes the survey, design, plans and specifications for the construction of single lane roundabout as described above. Below is a description for each task including in this work.

Task 1. Pre-Design Survey:

- A. UNDERGROUND UTILITY MAPPING – Provide underground power, water, gas, and communications utility location within the project limits. Underground utilities shall be researched and marked by a third-party consultant utilizing Radio Frequency technique with field location and measurement of the markings provided by RAI personnel. This scope of work includes performing hydro vacuum excavation bores (SUE Level “A”) in six locations. It is assumed that traffic control necessary to perform the hydro vacuum bores will be provided by the City and is therefore not included in this scope of work. The marked locations provided by said third-party consultant shall be field located and measured within reasonable survey tolerances.

B. GROUND RUN TOPOGRAPHIC SURVEY – Prepare a field run topographic survey of the intersection and its approaches up to 1,000 linear feet in each direction from the center of the intersection. The data will be collected at appropriate intervals to produce two-foot contours. Topographic mapping and survey will show and include ground identifiable planimetric features. The survey will extend from Right-of-Way to Right-of-Way plus an additional 25'-50'. The survey data will be placed on the Georgia State Plane Coordinate System (NAD 83) and the Vertical Datum for the topographic survey will be NAVD 88. The database of survey will provide the following information:

- Utility locations as marked under Item B above.
- Trees 8" and larger.
- Property parcels abutting corridor right-of-way, as needed.
- Location and sizes of storm sewer systems, manhole, catch basin, drop inlet, curb inlet with rim and invert elevations, if accessible; pipe size; inverts and material, if accessible; headwalls, flared end sections; other drainage structures, if accessible and as needed.
- Sanitary sewer systems; manhole rims and inverts, pipe sizes and materials, if accessible and as needed.
- Location of valves, meters and other gas main appurtenances, if accessible and surface evident.
- Location of overhead electric lines, telephone lines and appurtenances.
- Location of other underground utilities on or adjacent to the project site, if surface evident in the field.
- Rock outcrops or other outstanding site features, if evident in the field.
- Location of fences and walls, and materials of which they are constructed.
- Location of existing signs

Task 2. Design and Construction Documents:

The proposed roundabout intersection design will be performed in accordance with the City of Alpharetta requirements and GDOT Design Policy Manual along with the National Cooperative Highway Research Program (NCHRP) Report 672, Roundabouts: An Informational Guide, 2nd Edition, which GDOT has adopted as the guidance for roundabout design.

- A. CONCEPT PLAN – A conceptual horizontal road alignment based on input from the City and results of the field survey performed under Task 1 will be prepared. This conceptual layout will include the proposed horizontal layout of the roundabout. This concept will also serve as a 30% design for review and comment from the City.
- B. CONSTRUCTION DRAWINGS – Based on the conceptual layout prepared as described above and comments received from the City, construction drawings will be developed. Construction Drawings will be submitted for City review and comment at 60%, 90% and 100% design stages. The drawings listed below are anticipated to be included in the Construction Drawings as part of this project. Additional plans to be included with these Construction Drawings are further described below.

- Cover Sheet
 - General Notes
 - Existing Conditions/Demolition Plans
 - Layout Plans
 - Roadway Plan and Profiles
 - Grading and Drainage Plans
 - Utility Plans (Water, Sanitary & Storm Sewer only; others by utility owner)
 - Storm Sewer Plan & Profiles
 - Sanitary Sewer Plan & Profiles
 - Signage and Striping Plans
 - Construction Details
- C. EROSION AND SEDIMENT POLLUTION CONTROL PLAN (ESPC Plan) – Prepare ESPC Plans for the site development in conformance with NPDES, Georgia EPD and City of Alpharetta Erosion Control Ordinances. Work shall include a narrative description summarizing existing conditions, proposed uses, maintenance issues and activity schedules. Work shall also include the preparation of the Notice of Intent (NOI) applications to be signed by the Client and any contractor involved in a land disturbance activity.
- D. OPINION OF PROBABLE CONSTRUCTION COST – RAI will develop an opinion of probable construction cost and estimate construction duration for the work based at the 60%, 90% and 100% design submittals for the above mentioned scope of service.
- E. SPECIFICATIONS – RAI will prepare technical specifications for the project based upon the design drawings and other input provided by the City. RAI will provide the technical specifications to the Client to combine with the City’s contract and bidding documents and compilation of a bid manual.

Task 3. Bidding and Construction Assistance:

- A. EROSION CONTROL SITE VISIT – As the design professional for the ESPC Plan, RAI will perform one site visit after the Phase I erosion control measures have been installed in accordance with NPDES permit requirements to monitor the effectiveness of the silt & erosion control measures provided in the construction plans. RAI will provide a report of any deficiencies in the siltation and erosion control measures within 7 days of the site visit. The Client must notify RAI within 7 days of the installation of Phase I erosion control measures.
- B. It is our understanding that the City of Alpharetta and its project manager will be responsible for bidding the project. The Tetra Tech team will be available to answer any questions from bidders as requested by the City.

- C. It is our understanding that the City of Alpharetta and its project manager will be responsible for construction administration and oversight. The Tetra Tech team will be available to answer any questions from the contractor as requested by the City.

Task 4. Landscape Design:

- A. LANDSCAPE PLANS – If requested by the City, landscaping plans for the islands and approaches will be prepared in accordance with the City of Alpharetta’s requirements. It is our understanding that the City may elect to do this work with its own staff.

Task 5. Rendered/Animated Exhibits:

- A. Tetra Tech will prepare a traffic simulation model of the existing and proposed traffic conditions during the PM peak hour. Tetra Tech will utilize VISSIM and GEOPAK or similar software to generate the model. In addition to the existing and proposed roadway, roundabout and approaches, 3-4 different view perspectives and the major roadside topography will be included in the simulation. The visualization will assist the City in presenting the intent and design of the project to the project stake holders.

C. Project Cost

The costs are based on our current understanding of the project requirements and best estimates of level of effort required to perform the basic services and may be subject to change upon agreement between City of Alpharetta and Tetra Tech. This project will be billed on a Lump Sum basis at a Firm Fixed Price of \$127,670.

Task #	Description	Fee
Task 1	Pre Design Survey	\$29,200
Task 2	Design and Construction Documents	\$74,380
Task 3	Bidding and Construction Assistance	Hourly
Task 4	Landscape Design	\$6,500
Task 5	Rendered/Animated Exhibits	\$18,040
TOTAL		\$127,670

D. Project Schedule

The approximate duration noted for each task is based on our current understanding and best estimates of time required to perform the basic services and may be subject to change upon agreement between City of Alpharetta and Tetra Tech.

Task #	Description	Estimated Duration
Task 1	Pre Design Survey	2 weeks
Task 2	Design and Construction Documents	12 weeks
Task 3	Bidding and Construction Assistance	As Requested
Task 4	Landscape Design	3 weeks
Task 5	Rendered/Animated Exhibits	5 weeks

E. Assumptions

The scope of services and project costs shown above were developed with the following assumptions and exclusions:

- City of Alpharetta will provide existing survey and GIS information available.
- City of Alpharetta will provide AutoCAD files of standard details, city standard specifications, and city notes.
- City of Alpharetta will organize and perform stakeholder meetings as needed.
- Schedule includes 1-week review times for the 30%, 60% and 90% submittals.
- City of Alpharetta will provide traffic control if needed for survey work, including hydro vacuum bores.
- City of Alpharetta will prepare any necessary exhibits and documents needed for any proposed easement or Right-Of-Way acquisition.