



WESTCOTT, SMALL
— & ASSOCIATES —

ENGINEERING | PLANNING | CONSULTING

July 14, 2020

Mr. Brian Boyd
City of Greensboro
Water Resources Department
PO Box 3136
Greensboro, NC 27402-3136

RE: CONTRACT FOR ENGINEERING SERVICES (v4)
KNOX AND BETHEL CHURCH RD. WATERLINE IMPROVEMENTS

Dear Mr. Boyd:

Westcott, Small & Associates, PLLC ("WSAA") is pleased to submit this contract to provide the requested civil engineering services at Knox Rd. and Bethel Church Rd. in Greensboro. The project includes design of approximately 3600 lf of 16" waterline and 8000 lf of 12" waterline beginning from the intersection of Burlington Road and Knox Road along Knox Road to the intersection of Knox Road and Bethel Church Road then along Bethel Church Road to Simmons Lake Drive in Guilford County, North Carolina per the planning comment previously provided to us via email. Waterline construction is planned to be in or directly adjacent to public right-of-way.

SCOPE OF SERVICES:

Based on our understanding of the project, we will provide the following services:

Pre-Design Phase

1. WSAA will attend a kickoff meeting with the owner and will provide project management services related to subconsultants throughout the pre-design phase.
2. Within the proposed design corridor, our subconsultant, JC Waller & Associates, PC (JCW), will provide up to three (3) control points for establishing vertical and horizontal control for the ground survey. All information will be provided using the North Carolina Grid system (Horizontal datum –NAD 83(2011) and Vertical datum NAVD88) and the Standards of Practice for Land Surveying in North Carolina Title 21, Chapter 56, Section .1600 of the North Carolina Administrative Code.
3. JCW will conduct property research on approximately 57 properties to determine property owners affected by the proposed water main extension.
4. JCW will provide SUE Level B (excluding Ground Penetrating Radar) for up to five (5) utilities (gas, fiber optic, telecom and power) within the road right-of-way.
5. JCW will provide horizontal location, invert information, pipe size, and materials of sanitary and storm sewer structures within the road right-of-way. The information obtained shall be for the structures within the corridor and pipes that cross the corridor. Pipes that cross the corridor on structure upstream and downstream will be obtained.
6. JCW will provide a field location survey of the front property corners of all properties along the proposed water main extension routing.
7. JCW will provide a Topographical and Location Survey of the road right-of-way within the corridor, including up to 50 wetland flags and five (5) geotechnical borings.
8. JCW will provide three (3) creek cross-section surveys extending 50' upstream and 50' downstream of the proposed waterline stream crossing for a total length of 100-feet. The cross-section survey should encompass the width of the stream plus 50' on each side as measured from the top-of-bank.
9. JCW will provide boundary surveying services for five (5) properties to identify the location of all property corners needed to establish existing property lines and existing easements that will be a part of any proposed easements.

10. Our subconsultant, Falcon Engineering, Inc. will complete a field investigation program consisting of advancing up to twenty-four (24) Standard Penetration Test (SPT) borings along the proposed waterline alignments. We anticipate all SPT borings to be advanced to a depth of up to 10 feet. Total drilling footage is on the order of 240 feet. If rock is encountered, borings may be terminated prior to achieving boring depth. Falcon geotechnical staff will be present on site during the investigation to direct and coordinate drilling operations, to obtain as-drilled boring coordinates with GPS, and to log boring data including classifying soil samples using manual-visual methods. Soil test borings will be performed in general accordance with ASTM D1586 "Penetration Test and Split Spoon Sampling of Soils". Following completion of drilling, boreholes will be inspected for the presence of groundwater. Borings located outside of active roadways and in areas not subject to heavy pedestrian traffic may be covered and left open for at least 24 hours to obtain static groundwater measurements and final borehole cave-in depths. Otherwise, boreholes will be backfilled immediately after taking initial groundwater observations. Following completion of all borehole readings, boreholes will be backfilled with soil cuttings or bagged sand. Cuttings will be evenly dispersed around the ground surface surrounding the borehole. Borings in paved areas will be patched with asphalt cold patch. Excess cuttings will be hauled offsite. No additional site restoration efforts aside from backfilling boreholes are included in this cost estimate.
11. Soil samples obtained during drilling will be collected in moisture retarding containers and transported to Falcon's laboratory. Select split spoon and bulk samples will be selected for testing. Tested samples will be retained in Falcon's office for a period of seven (7) days and untested samples will be retained in Falcon's office for a period of thirty (30) days unless otherwise requested. The laboratory testing program will consist of the following tests: Natural Moisture Content (Qty. 27), Atterberg Limits (Qty. 13), Grain Size Analysis (Qty. 13), and standard Proctor compaction (Qty. 3).
12. Upon completion of the geotechnical field investigation and laboratory testing program, Falcon will prepare a Subsurface Report of Geotechnical Investigation for the project, including but not limited to the following information:
 - Descriptions of the Project, Site, and Site Geology;
 - Description of field and laboratory testing methods;
 - Discussion of subsurface conditions encountered including soil, rock and groundwater;
 - Discussion of noted areas of geotechnical interest;
 - Discussion of anticipated design and construction difficulties associated with the encountered site and subsurface conditions;
 - Design recommendations and construction considerations for earthmoving, shoring excavation, groundwater, backfilling, trenchless construction, and trench patching;
 - Appendix with supporting documentation.
13. JCW will prepare up to three (3) G-Drawings, five (5) easement maps and five (5) legal descriptions sufficient for the City to secure easements for the proposed improvements. JCW will respond to up to two (2) rounds in total of comments on each document. Once the document/drawings are approved by the Client and/or the City of Greensboro, any requested changes will require the authorization of additional services.
14. JCW will provide the following deliverables:
 - PDF copy of existing conditions topographical and location survey
 - AutoCAD files of the topographical and location survey
 - PDF and AutoCAD files of G-Drawings and Easement Exhibit Maps
 - Microsoft Word Document and PDF of the Legal Descriptions
15. Our subconsultant, Three Oaks Engineering, Inc. (Three Oaks) will conduct a wetland and stream delineation along the design corridor using United States Army Corps of Engineers (USACE) and North Carolina Division of Environmental Quality (NCDEQ) methodology. Any potential jurisdictional features will be flagged in the field.
16. Three Oaks will prepare a draft and a final Preliminary Jurisdictional Determination package to be submitted to appropriate authorities for review. Three Oaks will request and coordinate field verification with the regulatory agencies.

Engineering Design Phase

17. WSAA will meet with City staff to verify the scope of the project.
18. WSAA will prepare the coversheet, existing conditions plans, water main plan and profile and erosion control plan with associated construction details to City of Greensboro standard and submit to the owner for review and comment at the 50% design stage.

19. WSAA will revise the plans to incorporate owner comments and resubmit to the owner for review and comment at the 75% design stage.
20. WSAA will revise the plans to incorporate owner comments and submit for City of Greensboro Engineering review.
21. WSAA will develop erosion control calculations and complete the financial responsibility form and will submit to NCDEQ Land Quality section for review and comment
22. WSAA will quickly address review comments and resubmit for approval.
23. WSAA will prepare a water permit application for the extension.
24. Our subconsultant, Ramey Kemp Associates (RKA), will prepare 90% traffic management plans based on North Carolina Department of Transportation (NCDOT) and City of Greensboro Standards for owner review and comment.
25. RKA will submit plans to the City of Greensboro Department of Transportation (GDOT) and NCDOT for review as required and will promptly address review comments and resubmit for approval.
26. Upon concurrence of the jurisdictional features identified in the surveying phase, Three Oaks will complete and submit the 401/404 permit application packages.
27. Utilizing our subconsultant, Palacio Collaborative Inc., WSAA will develop quantities associated with the waterline construction and submit cost estimates for the scope of work at the 50%, 75% and 100% design stages.
28. WSAA will coordinate with the City's Legal Department and Engineering Department to develop an NCDOT encroachment agreement for the waterline and associated temporary construction measures.

Bidding Phase

29. WSAA will prepare 100% drawings and provide PDF versions of the approved plans to the owner for dissemination to interested bidders.
30. WSAA and relevant subconsultants will prepare applicable technical specifications (including project special provisions by RKA) and provide the owner with PDF versions of the specifications for inclusion in the project manual.
31. WSAA will coordinate with the Engineering Department during their development of the project manual and cost estimate.
32. WSAA will attend a prebid meeting and will provide the City with written answers to contractors' questions during the bid period in order for the City to issue addenda.
33. WSAA will attend the bid opening and assist the owner in evaluating the bids received.
34. If required due to the number of bids received or M/WBE protocols, WSAA will attend a second bid opening.

Construction Administration Phase

35. Assuming 4 months of construction, WSAA will attend a preconstruction meeting, up to sixteen (16) construction site visits, a punch list site visit and a final inspection site visit.
36. WSAA will review the contractor's schedule, schedule of values, shop drawings and pay application requests.
37. WSAA will answer contractor questions that arise during construction.
38. Utilizing the contractor's markup, WSAA will prepare an asbuilt drawing. The City will receive one paper copy, one mylar copy and an AutoCAD version of the asbuilt.

Septic Evaluation Phase (Allowance)

39. If requested, Three Oaks will provide a Phase I Soil and Site Evaluation to locate septic system components using ground penetrating radar, hand augers and tile probes. A report for each lot assigned will be developed. Cost per lot is \$1045.00 (assume 15).
40. If required, Three Oaks will provide a Phase II Soil and Site Evaluation that includes field delineating the septic system relocation area, septic system layout report, application submittal and site visit with Guilford County Environmental Health (GCEH). Cost per lot is \$3245.00 (assume 5).

SPECIFICALLY EXCLUDED FROM THIS FEE:

1. Review, permit & inspection fees
2. Prints
3. Off-site improvements
4. Construction stakeout
5. Flood Study and FEMA Permitting

6. Gas, Cable, Fiber optic, Sewer, Television, Electrical and Irrigation Design
7. Downstream Analysis
8. Advertisement, Preparation & Dissemination of Bid Sets, Rebid
9. Retaining Wall Design
10. Landscape Design
11. Site design
12. Water demand or fire flow calculations
13. Stormwater Control Measure
14. Roadway improvements/temporary roads/lanes
15. Materials Testing
16. Well Permits
17. Septic system design including pump tank, pressurized manifold, subsurface drip systems, systems with engineered components or systems requiring certified operator
18. Traffic control during geotechnical analysis beyond 4 working days
19. Rock coring to reach proposed boring depths
20. Addressing comments on surveying documents in excess of two (2) rounds
21. G Drawings, easement maps, Legal descriptions and surveying items in excess of limits described in scope of services

BASIS FOR FEE:

1. The survey and design corridor is limited to beginning from the intersection of Burlington Road and Knox Road along Knox Road to the intersection of Knox Road and Bethel Church Road then along Bethel Church Road to Simmons Lake Drive in Guilford County, North Carolina.
2. The City of Greensboro will obtain right-of-entry as needed for all sites.

FEES:

We propose to perform the scope of services described above for the lump sum fee as follows:

Pre-Design Phase	\$184,923
Engineering Design Phase	\$135,900
Bidding Phase	\$15,000
Construction Administration Phase	\$29,840
Septic Evaluation Phase (Allowance)	\$31,900
Total	\$397,563

Certified M/WBE subconsultant participation is estimated at 47% (approximately 30% MBE and 17% WBE). M/WBE subconsultant fees included within the lump sum fee are:

JC Waller MBE	\$118,958
Falcon Engineering WBE	\$29,950
3 Oaks Engineering WBE	\$38,500

If additional services become necessary, we will acquire written authorization in advance from the Client, and bill for these services in accordance with the attached Schedule of Rates (Attachment A) or at an agreed to lump sum fee. WSAA reserves the right to temporarily install a sign on the site during construction identifying WSAA as the contracted engineer and to use images of the site and project in marketing materials. We look forward to working with you on this project.

Sincerely Yours,
Westcott, Small & Associates, PLLC



Victoria Waldron Small, PE
Principal