CONTINUING PROFESSIONAL CONSULTING AGREEMENT
SERVICES AUTHORIZATION #19968(4)

THIS SERVICES AUTHORIZATION is made and entered into this _____ day of _____, 20_____, by and between the **City of Orlando, Florida,** a municipal corporation existing under the laws of the State of Florida (CITY), and **Carollo Engineers, Inc.**, doing business locally at 200 East Robinson Street, Suite 1400, Orlando, Florida 32801 (CONSULTANT).

WHEREAS, the CITY and the CONSULTANT have previously entered into an agreement for the CONSULTANT's professional services (AGREEMENT) effective January 30, 2019; and

WHEREAS, the CITY and the CONSULTANT shall refer to the AGREEMENT herein, and desire to have it incorporated by reference; and

WHEREAS, the CITY and the CONSULTANT now wish to memorialize their understanding for the CONSULTANT's professional services for the North Orange Avenue Sanitary Sewer Replacement Project (PROJECT).

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and given one to the other, the sufficiency of which is hereby acknowledged, the parties agree as follows:

I. SCOPE OF WORK

The scope of work has been agreed to by the parties, and is attached hereto and incorporated herein by reference, as APPENDIX I.

II. FEE

The not-to-exceed fee of $226,708.57 has been agreed to by the parties, as set forth on APPENDIX I.

III. TERM

Consultant shall complete all work in accordance with the timeframes set forth in APPENDIX I, provided however, all work and the term of this SERVICES AUTHORIZATION shall be completed by the end of business (5:00 pm) four hundred twenty (420) days from issuance of Notice to Proceed. It is also agreed that the CITY shall have an option for extension of this SERVICES AUTHORIZATION, as necessary to complete the present scope of services (APPENDIX I) or to provide additional services**.**

IV. **ENTIRE AGREEMENT**

This SERVICES AUTHORIZATION issued pursuant to the Agreement supersedes all previous authorizations, agreements, or representations, either verbal or written, heretofore in effect between the CITY and the CONSULTANT that may have concerned the matters covered herein, except that this SERVICES AUTHORIZATION shall in no way supersede or amend the AGREEMENT or other authorizations issued thereunder except as specifically provided herein. No additions, alterations, or variations to the terms of this SERVICES AUTHORIZATION shall be valid, nor can the provisions of this SERVICES AUTHORIZATION be waived by either party, unless such additions, alterations, or waivers are expressly set forth in writing in a document duly executed by the parties. CONSULTANT acknowledges and agrees that any proposals or proposed agreements from subconsultants attached to this SERVICES AUTHORIZATION are attached solely to reflect the scopes of work to be performed and the fees to be charged by such subconsultants. By executing this SERVICES AUTHORIZATION, the CITY does not become a party thereto or bound by the terms thereof.

IN WITNESS WHEREOF, the parties hereto have executed this SERVICES AUTHORIZATION on the day and year first written above.

City of Orlando, Florida

By:_____
David Billingsley, CPSM, C.P.M.
Chief Procurement Officer

_____, 20____

APPROVED AS TO FORM AND LEGALITY
for the use and reliance of the
City of Orlando, Florida, only.

_____, 20_____

_____
Michael O'Dowd
Assistant City Attorney
Orlando, Florida

Carollo Engineers, Inc.

By:_____

Print Name:_____

Title:_____

Date:_____, 20____

STATE OF FLORIDA }

COUNTY OF _____ }

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this _____ day of _____, 20____, by _____ (name of person) as _____ (type of authority, (e.g., officer, trustee, attorney in fact, etc.) for _____ _____ (name of entity/party on behalf of whom instrument was executed).

_____

Signature of Notary Public – State of Florida

Print, Type, or Stamp Notary Name:_____

(Affix Notary Stamp or Seal Above)

___ Personally Known or ___ Produced Identification

Type of Identification Produced _____

CITY OF ORLANDO
CONTINUING PROFESSIONAL CONSULTING SERVICES

SCOPE OF SERVICES

NORTH ORANGE AVE
SANITARY SEWER REPLACEMENT

September 28, 2020

A. PROJECT UNDERSTANDING

The City of Orlando (City) requests Carollo Engineers, Inc. (Carollo) to provide professional engineering services to upgrade approximately 1,550 feet of 16 inch sanitary sewer and 10 sanitary sewer manholes along Orange Ave between Highland Ave and Ivanhoe Blvd. The project intent is to address potential hydraulic limitations based on planned growth, and to complete and construct the final design of the necessary improvements. The limits of the existing sewer to be evaluated are shown in Figure 1.

The tasks in this scope include project management, survey, preliminary and final engineering, bidding and construction support. Subconsultants will be provided by Carollo to perform services for topographic survey, subsurface utility engineering (SUE), CCTV sewer inspection, manhole inspection and assessment, and preliminary engineering.

B. SCOPE OF WORK

Task 1 – Project Management

Carollo will administer the project and provide project management throughout the duration of this Project.

Subtask 1.1 - Project Management

Carollo will prepare updates to the project schedule throughout the duration of the Project. Carollo will prepare monthly invoices throughout the duration of the Project including Progress Reports, and subconsultant invoices. The total project duration from Notice to Proceed through the Construction completion is estimated at 420 days.

Subtask 1.2 - Project Kickoff Meeting

Carollo will schedule and attend 1 project kickoff meeting. The City will be responsible for inviting necessary parties from the City. Carollo will prepare an agenda and presentation materials for the meeting and provide a meeting summary. Carollo will establish the Project Team, the lines of communication, task assignments, design schedule, and reporting requirements. Carollo will notify the City of data requested by Carollo to perform the work.

Task 1 Deliverables:

- Monthly Project Update Reports
- Project Kickoff Meeting Agenda and Summary

Task 1 Meetings:

- Project Kickoff Meeting

Task 2 – Field Data Collection (Survey and Geotechnical Services)
This task includes field data collection including survey and geotechnical services as noted further below.

Subtask 2.1 - Survey - Utility locating and mapping services will be in accordance with the American Society of Civil Engineers (ASCE) Standard CI/ASCE 38-02. Work in the tasks below will be performed in accordance with Chapter 5J-17 of the Florida Administrative Code (F.A.C.) Standards of Practice for Florida Surveyors and Mappers pursuant to Florida Statutes, Chapter 472.027. Upon completion of the survey services Carollo will provide the City a signed and sealed copy of the Project Survey for the City's review and acceptance as pertinent to the City's Survey criteria. The survey will include the right-of-way path along the existing pipe alignment as shown in the attached sub-consultant survey scope. The Survey will be performed in accordance with the City's standards for topographic and Right-of-Way surveys.

The following survey services will be provided.

2.1.1 - Project Survey Control & Specific Purpose Right of Way Survey
Carollo team member, L&S Diversified, LLC, will perform the following;

- Obtain available instruments of record and create a horizontal and vertical network for the Project for use as a basis of surveying and design of the Project.
- Recover closest two (2) NGS or City of Orlando geodetic control monuments and reference each end of baseline near project site.
- Utilize GPS static or redundant RTK control survey methods to establish control pairs at each end of project relative to North American Datum of 1983 adjustment of 2011 (NAD83/2011), state plane coordinates, Florida East zone.
- Establish horizontal GPS network control and a vertical control network both for topographic survey and Right-of-Way monumentation. Perform a closed traverse through project monumentation to establish horizontal control.
- Recover closest City of Orlando benchmarks and measure closed differential level loop between control to establish elevations relative to North American Vertical Datum of 1988 (NAVD88) for each survey baseline monument.
- Plot data and adjust control networks and revisit the Project Site after plotting data for quality control.

2.1.2 - Topographic Survey
L&S Diversified, LLC will perform a topographic survey for a the full ROW width plus 10 feet outside on both side of the ROW along the existing pipeline route shown in the attached survey scope.

The topographic survey will be displayed at one foot contours and will be based on the North American Vertical Datum (NAVD) of 1988. L&S Diversified, LLC will perform the following;

- Survey cross sections at 50 foot intervals (within the right of way and extending a minimum of 10 feet outside the right of way at intersecting streets;
- Establish existing easements relative to pipe

- Locate significant features, existing improvements and visible above ground utilities;
- Locate rim and inverts on manholes including laterals and storm drains within site;
- Utilize the surveyed information to create one foot contours throughout the project site;
- Set at least four (4) site bench marks in order to facilitate engineering for the project site.

2.1.3 - Subsurface Utility Designation
Subsurface utility designation will be performed in order to locate. L&S Diversified, LLC will initially provide "Level B" investigation, which will utilize GPR investigation to determine existing utilities. This will be a combination of Sunshine 811 "Design" ticket requests, record drawings, and in field GPR by L&S. The effort will be based on the best available data gathered and marked by utilities along with L&S's in field support.

Where additional detail locates and data is necessary, the investigation effort will be supported by up to 10 additional "Level A" Excavation Holes. This assumes 5 soft and 5 hard surfaces, with a depth of up to 10 feet deep.

L&S will also provide MOT design, set up and take down for the manhole access along the area of investigation.

Subtask 2.2 – Geotechnical – Geotechnical services will be provided in order to assess the field soil conditions in relationship to the anticipated construction of a new gravity sewer. This will generally include field investigation and sampling, laboratory testing and engineering services related to soil conditions for the proposed pipeline. The route of the proposed pipeline is yet to be determined, and the final testing locations will be based upon the anticipated route determine in preliminary design. The final locations may be adjusted slightly in order to minimize impact to roads, traffic, sidewalks, etc.

The following survey services will be provided.

2.2.1 – Site Reconnaissance / Field Investigation
Carollo team member, Antillian Engineering, will perform the following;
Prepare a temporary boring-location plan using site information provided. Before commencing the drilling program, Antillian will conduct field visits to examine the site conditions and mark the preliminary boring locations for underground-utility location and marking in accordance with Florida statutes. We would coordinate with appropriate utility companies and City staff as needed. Based on an approximate spacing of 400 feet, we anticipate drilling five borings.

Borings will be drilled using split-spoon sampling and mud-rotary methods. The field crew will conduct the Standard Penetration Test ("SPT") with the split-spoon sampling in accordance with ASTM D 1586. Tests will be conducted continuously from one foot below the existing ground surface to ten feet, and then at five-foot intervals to the indicated completion depths. The field crew would log the soil samples recovered in the auger or samplers and seal representative portions in clean, airtight containers for transportation to our office. They will measure the depth

to groundwater in the boreholes, record the depths on the field logs, and backfill the boreholes with soil.

2.2.2 – Laboratory Testing
Carollo team member, Antillian Engineering, will perform the following; A geotechnical engineer will examine the recovered soil samples to confirm the field descriptions and classify the soils using visual-manual methods. The engineer will select representative specimens for laboratory testing which would consist of 12 percent-fines ("single-sieve") tests, 4 moisture content tests, 2 organic content tests and 2 Atterberg limits test series.

2.2.3 – Geotechnical Engineering Services
Carollo team member, Antillian Engineering, will perform the following; The team will review available information to develop a general understanding of the proposed improvements. They will compile field and laboratory test results to characterize subsurface conditions at the boring locations and evaluate the suitability of the subsurface conditions for the proposed construction. The results will be prepared into report-quality boring logs, including maps and plans.

These will be attached to a geotechnical-engineering report which will contain a summary of available information pertaining to the proposed improvements, appropriate subsurface characterizations, a summary of the laboratory testing results, and geotechnical recommendations for sanitary-sewer design, earthwork, excavation safety, groundwater control, and other concerns as appropriate. The report would be sealed by a Professional Engineer registered in Florida.

A geotechnical engineer will examine the recovered soil samples to confirm the field descriptions and classify the soils using visual-manual methods. The engineer will select representative specimens for laboratory testing which would consist of 12 percent-fines ("single-sieve") tests, 4 moisture content tests, 2 organic content tests and 2 Atterberg limits test series.

Task 2 Deliverables:

- The survey deliverable will include a cover page with survey report, vicinity map, legend and abbreviations, survey control sheet, combined specific purpose right of way and topographic survey. Survey field notes and site photos will also be delivered. The survey information will be transmitted to the City in the following formats:
    - Three (3) Signed and Sealed hardcopies
    - Electronic PDF of Survey, Field Notes, and Photos
    - Utility contact log with sketch of designated utilities
    - Electronic AutoCAD Civil 3D DWG file
- The geotechnical deliverable will include a cover page with geotechnical report, with figures, map, boring log figures. The survey information will be transmitted to the City in the following formats:
    - Three (3) Signed and Sealed hardcopies
    - Electronic PDF of the geotechnical report

Task 2 Meetings:

- No meetings are anticipated for Task 2.

Task 3 – CCTV and Manhole Inspections

Subtask 3.1 - CCTV Pipe Inspection
For this task, close circuit television (CCTV) and NASSCO Manhole Assessment to evaluate the existing sanitary sewer will be completed by the City. Carollo and exo Limited will coordinate with the City to schedule the investigation. The City will provide the CCTV evaluation work as completed by a certified National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) trained operator(s) using established PACP coding and observations. Results of the CCTV will be primarily utilized to confirm existing conditions, connectivity and to confirm existing lateral connections that may require transfer to the new pipe.

Subtask 3.2 - Manhole Evaluation
Manhole inspections will not be performed for this project. Where existing manholes are to remain, it is assumed the overall condition is sufficient for use with minor improvements, such as applied coatings. Specifically, where the pipe will terminate to existing manholes, these will be reviewed at a high level with anticipated repair coatings to occur as part of the project.

Task 3 Deliverables:
- N/A

Task 3 Meetings:
- No meetings are anticipated for Task 3.

Task 4 – Preliminary Engineering
Carollo subconsultant, exo Limited, will provide preliminary engineering to evaluate the current condition of the sewer and potential construction alternatives to rehabilitate/replace the existing gravity sewer pipe along the existing alignment. Carollo & exo Limited will present the City with the evaluation and recommendations so that the City can determine how to proceed in regards to rehabilitating the existing sewer. Services provided within the Preliminary Engineering task will include:

1. Project Initiation
2. Site Evaluation and Constructability Review
3. Preliminary Design Report

Task 4.1 – Project Initiation
Carollo and exo Limited will initiate the project and hold a kickoff meeting to establish communication, requirement and schedule for the preliminary engineering. This will include the involvement of BFA environmental who will provide hydraulic model evaluation. BFA environmental will provide a hydraulic analysis of the area system in order to provide an updated capacity analysis for the pipeline section, in order to determine the appropriate size of the new pipeline.

Carollo and exo Limited will also meet with FDOT to discuss the project and potential related FDOT projects in the area.

Task 4.2 – Site Evaluation and Constructability Review
Carollo and exo Limited will evaluate the existing underground utility maps and information from owners to determine which facilities may have an impact on construction of the sanitary sewer improvements.

Carollo and exo Limited will perform a site visit of the project corridor. This will include the observation of vehicle and pedestrian traffic patterns to address potential maintenance of traffic concerns. Special considerations will be taken for areas where gravity sanitary sewer traverses areas of on street parking, pedestrians and business impacts.

Carollo and exo Limited will coordinate with the City the installation of temporary groundwater monitoring points for the purpose of obtaining representative groundwater laboratory samples. The wells will be installed by the City, with samples transported by the City to the City lab under proper testing procedures. The City will provide laboratory summary results to the team for use in the design.

Additionally, as a pre-cursor to permitting efforts, the design team will coordinate closely with FDOT relative to the project timing. It is our understanding the FDOT has planned future improvements to the area, and coordination of these efforts are important to the project design and construction timing.

Task 4.3 – Preliminary Engineering Technical Memorandum

A Preliminary Design Report (PDR) will be drafted evaluating the replacement existing gravity sanitary sewer. This PDR will utilized the updated capacity analysis report provided by BFA will be utilized in the development of the PDR. A preliminary estimate of probable construction cost will be prepared by exo Limited and reviewed by Carollo Engineers, Inc.

A preliminary plan will be prepared for the proposed construction alignment of the gravity sewer system which depicts major conflicts with existing utilities and areas where special construction techniques may or must be considered. Plan view shall include locations with invert and rim elevations. A detailed profile will not be prepared for the PDR level.

Four (4) copies of the draft Preliminary Design Report will be submitted to the City. A draft Preliminary Design Report meeting will be held with the City to discuss the draft PDR. Carollo will summarize the discussion and action items from the draft PDR meeting. Following the draft PDR review meeting Carollo and exo Limited will revise and finalize the PDR. Submit four (4) hard copies of the final PDR and a CD containing the PDF version will be submitted to the City as the final deliverable.

Task 4 Deliverables:
- Four (4) Hardcopies & Electronic Version of Draft Preliminary Design Report
- Draft Preliminary Design Report Meeting Summary
  Four (4) Hardcopies & Electronic Version of Final Preliminary Design Report

Task 4 Meetings:
- Draft Preliminary Design Report Meeting

Task 5 – Final Design

Carollo subconsultant, exo Limited, will prepare final construction drawings to include the required plan and profile views and necessary construction details and notes. This will also include the preparation of technical specifications. The construction documents shall be completed and meet the requirements for construction contract competitive bid formulation and subsequent construction of the project. All documents shall comply with the current City Engineering Standards Manual (ESM) and Construction specifications manual. This shall include quality assurance and "constructability" review prior to submittals to the City.

Final Design documents will be prepared based on recommendations and discussions from the preliminary design phase of the project.

Task 5.1 – 60% Design Submittal
Carollo and exo Limited develop construction plans and technical specifications at a 60% level of completion to the City. The minimum requirements of a 60% level of completion are defined as a set of plan and profile drawings at a horizontal scale of 1"=20' and a vertical scale of 1"=4' for the project corridor and depicting:

a. Survey and Topographic information
b. Existing Utility Locations
c. Gravity sewer main, lateral and manhole improvements
d. Construction Details
e. SWPPP (by L&S Diversified)
f. Maintenance of Traffic plans (by L&S Diversified)

The submittal shall include a draft of all applicable sections of the technical specifications, bid tabulation and estimate of probable construction costs.

Six copies of the plans and specifications shall be submitted to the City. After review by the City, Carollo and exo Limited will meet to discuss the 60% submittal. Meeting minutes shall be provided and submitted following the meeting. The plans will be revised based on feedback for the next submittal stage.

Task 5.2 – 90% Design Submittal
Carollo and exo Limited develop construction plans and technical specifications at a 90% level of completion to the City. The minimum requirements of a 90% level of completion are defined as a set of plan and profile drawings at a horizontal scale of 1"=20' and a vertical scale of 1"=4' for the project corridor and depicting:

a. Survey and Topographic information
b. Existing Utility Locations
c. Gravity sewer main, lateral and manhole improvements (plan and profile)
d. Construction Details
e. SWPPP (by L&S Diversified)
f. Maintenance of Traffic plans (by L&S Diversified)

The submittal shall include a draft of all applicable sections of the technical specifications, bid tabulation and estimate of probable construction costs. Additionally, the team will prepare and submit an official bid form with itemization of items to be included in the bid.

Six copies of the plans and specifications shall be submitted to the City. After review by the City, Carollo and exo Limited will meet to discuss the 90% submittal. Meeting minutes shall be provided and submitted following the meeting. The plans will be revised based on feedback for the next submittal stage.

Task 5.3 – 100% Design Submittal
Carollo and exo Limited develop construction plans and technical specifications at a 100% level of completion to the City. The set will be submitted for final acceptance and use during the bid phase. All drawings will be submitted, including AutoCAD and PDF formats. Specifications will be provide in Microsoft Word and PDF.

Task 5 Deliverables:

- Six (6) Hardcopies & Electronic Version of 60% plans, specifications and cost estimate
- Six (6) Hardcopies & Electronic Version of 90% plans, specifications and cost estimate
- Six (6) Hardcopies & Electronic Version of 100% plans, specifications and cost estimate, including AutoCAD and Microsoft Word formats

Task 5 Meetings:

- 60% review meeting
- 90% review meeting

Task 6– Permitting
Carollo subconsultant, exo Limited, will prepare coordinate permitting efforts related to the project. These are anticipated to include the following:

Task 6.1 – City of Orlando Transportation Engineering

- Meet with City of Orlando Transportation Engineering Division to discuss permitting for potential road closures, maintenance of traffic requirements, SWPPP/Erosion Control and permit application submittals for the corridor.

- Prepare and submit a City of Orlando Right-of-Way Permit and SWPPP application. Provide coordination for requests for additional information as required throughout the permitting process. This task to be completed by L&S Diversified and delivered directly to Carollo and exo Limited.

- Prepare and submit Maintenance of Traffic plans in conjunction with the final design task submittal schedule. This task to be completed by L&S Diversified and delivered directly to Carollo and exo Limited.

Task 6.2 – Florida Department of Environmental Protection (FDEP)

- Submit a Permit Determination request to FDEP to determine the permitting requirements. If, requested by FDEP, meet with them to discuss permitting requirements and permit application submittals in greater detail.

- Prepare and submit Florida Department of Environmental Protection (FDEP) Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System and required attachments. Provide coordination for requests for additional information throughout the permitting process.

- Prepare and submit Florida Department of Environmental Protection (FDEP) Notice of Intent (NOI) to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities (NPDES) including related permit application and supporting documentation necessary to obtain required permit for construction. This task to be completed by L&S Diversified and delivered directly to Carollo and exo Limited.

Task 6.3 – Florida Department of Transportation (FDOT)

- Prepare and submit Florida Department of Transportation Right-of-Way Utilization Permit application. Provide coordination for requests for additional information as required throughout the permitting process. This task to be completed by L&S Diversified and delivered directly to Carollo and exo Limited.

- The design team will be coordinate with FDOT early in the project, as we are aware of potential improvements by FDOT in the area. It will be critical to coordinate the project schedules in order optimize project efforts by the City and FDOT.

All permitting application fees will be reimbursed by the City of Orlando. Minimal time has been allocated for coordination and minor revisions to the construction documents for other permitting activities.

Task 6 Deliverables:

- Permit Applications

Task 6 Meetings:

- N/A

Task 7 – Bidding Assistance

- Submit Bid Documents in accordance with the City's requirements for use during the bidding phase of the project.

- Attend the pre-bid conference as scheduled by the City Purchasing Department, prepare minutes, and submit to City.

- Respond to written questions from bidders related to the project and prepare all addenda as required to interpret, clarify or expand the Bidding Documents. Submit addenda to the Citv in a timely manner that allows reception of addenda by all bidders at least five (5) days prior to bid opening date.

- Prepare a tabulation of all bids received in spreadsheet format and provide a digital copy, review and evaluate the apparent three (3) lowest bidders unit prices, experience and references and make recommendations to the City regarding the award of the construction contract.

Task 7 Deliverables:

- Meeting Minutes
- Response to bid questions

- Tabulation of all bids (spreadsheet and letter of recommendation)

Task 7 Meetings:

- Pre-Bid conference

Task 8 – Construction Administration (estimated 12 months construction)
Carollo and its subconsultant, exo Limited, will provide assistance to the City in the construction process. These are anticipated to include the following:

Task 8.1 – Pre-Construction

- Modify bidding documents, if required, and obtain City required and contractor executed documents; provide the City with one (1) set of the "Conformed" construction drawings and one (1) set of "Conformed" technical specifications.

- Attend a pre-construction conference scheduled and conducted by the City of Orlando. Distribute Conformed Contract Documents at the meeting.

- Attend up to three (3) City scheduled Community Meetings to discuss details of this project scope with concerned citizens from the construction area. As the City deems necessary, these Community Meetings might be scheduled in design phases, prior to the start of construction and/or during the construction duration.

- Review shop drawings and product submittals for conformance with the Contract Documents. Forward the City copies of all notes and conclusions for these reviews. Keep an updated log of all shop submittals with review and distribution dates.

Task 8.2 – Construction Engineering and Observation

- Attend monthly construction progress meetings, take meeting minutes and distribute minutes to all attendees. Assume 8 construction progress meetings will occur over an approximate 12 month duration.

- Make periodic fields visits to observe the construction of the project, discuss concerns with the City inspector, and furnish the City a written summary of the visit. Assume nine (9) field visits.

- Provide clarification and interpretation of the Contract Documents when requested. If requested by the City, evaluate any requests for changes in contract price and time made by the Contractor, and provide assistance with the preparation of change orders, if required.

Task 8.3 – Post Construction

- Conduct substantial and final completion inspections of the project and prepare appropriate "punch lists".

- Prepare record drawings incorporating changes made during construction based on as-built information furnished by the Contractor and his surveyor; provide to the City three (3) set of prints of the record drawings and electronic files of the

record drawings in AutoCAD™. Additionally, provide electronic files of scanned images of the record drawings in the pdf file format.

- Prepare necessary documents and submit the project certification of completion and necessary partial certifications to the FDEP to obtain approvals for release for use. Prepare and submit other required certifications from regulatory agencies exercising control over any part of the project.

Task 8 Deliverables:

- Shop Drawings review documents
- Responses and Clarifications to information requests
- Record Drawings

Task 8 Meetings:

- Construction progress meetings
  Field Visits
- Substantial and Final Completion meetings

Task 9 – Owner Controlled Contingency

This task is for out-of-scope work items that may occur during the progress of the work under this Service Authorization. Funds allocated under this task will not be used without prior written authorization from the City. The amount of funds allocated to this Owner Controlled Contingency Task is $10,000.00.

COMPENSATION SUMMARY

The not-to-exceed fee for the Scope of Services described above is $226,708.57 which includes an owner controlled contingency budget of $10,000. **Exhibit II** presents a detailed breakdown of the estimated hours and compensation for the Scope of Services. Proposals from the various sub-consultants that will provide services for this project are provided in **Attachment A**.

SUBCONSULTANT PARTICIPATION

The Carollo team for this project includes M/WBE subconsultant L & S Diversified, LLC and BFA Environmental. In addition to the M/WBE subconsultant Carollo Engineers, Inc. will also team with exo Limited for engineering services. Subconsultant proposals are enclosed in **Attachment A**. The proposed M/WBE and subconsultant compensation including the percentage of work are presented in **Table 1** and **Table 2**.

Table 1 M/WBE Subconsultant Compensation Terms North Orange Ave Sewer Evaluation		
Subconsultant	**Compensation**	**% of Task Authorization**
L & S Diversified, LLC.	$46,170.00	21.3%
BFA Environmental (Subconsultant to exo Limited)	$9,167.34	4.2%
Antillian Engineering Associates	$14,687.68	6.8%
Total M/WBE Subconsultants	**$70,025.02**	**32.3%**

Table 2 Subconsultant Compensation Terms North Orange Ave Sewer Evaluation		
Subconsultant	**Compensation**	**% of Task Authorization**
exo Limited (without BFA portion)	$99,726.60	46.0%
Total Subconsultants	**$99,726.60**	**46.0%**

PROJECT SCHEDULE

Carollo anticipates that the project will progress according to the following project schedule. Start and completion durations are shown from Notice to Proceed.

Table 3 Project Schedule North Orange Ave Sewer Evaluation			
Task	**Start**	**Duration**	**Completion**
Task 1 - Project Management	Throughout Project		
Task 2 - Survey Services	NTP	45 Days	45 Days
Task 3 - CCTV and Manhole Inspections	NTP	30 Days	30 Days
Task 4 - Preliminary Engineering	30 Days	30 Days	60 Days
Task 5 – Final Design	60 Days	90 Days	150 Days
Task 6 - Permitting	90 Days	60 Days	150 Days
Task 7 - Bidding	120 Days	60 Days	180 Days
Task 8 – Construction Administration	180 Days	240 Days	420 Days
Task 9 - Owner Controlled Contingency	N/A		
Total Anticipated Project Duration from NTP	**420 Days**		

City of Orlando
North Orlando Ave Sewer Investigation
Carollo Engineers, Inc.

Exhibit II

Labor Hour and Budget Estimate Breakdown

	Billing Rate Schedule		Labor Category*								Task Totals - Carollo				
	Multiplier	Role	Senior Project Professional	Lead Project Professional	Project Professional	Professional	Assistant Professional	Senior Technician	Technician	Document Processing					
	3.00	Rate	$84.00	$73.52	$59.00	$52.25	$48.50	$53.75	$37.25	$27.25			Burdened	Carollo	Project
		BRate	$252.00	$220.56	$177.00	$156.75	$145.50	$161.25	$111.75	$81.75	Hours	Raw Labor	Labor	ODC's	Total
Task No.	Activity														
Task 1 - Project Management and Meetings			4	52	0	14	0	0	0	0	70	$4,890.54	$14,671.62		$14,671.62
1.1	Project Management		4	50		12					66	$4,639.00	$13,917.00		$13,917.00
1.2	Kickoff Meeting			2		2					4	$251.54	$754.62		$754.62
Task 2 - Field Data Collection			0	4	0	0	0	0	0	0	4	$294.08	$882.24		$882.24
2.1	Survey			2							2	$147.04	$441.12		$441.12
2.2	Geotechnical			2							2	$147.04	$441.12		$441.12
Task 3 - CCTV and Manhole Inspection			0	2	0	2	0	0	0	0	4	$251.54	$754.62		$754.62
3.1	CCTV Pipe Inspection			2		2					4	$251.54	$754.62		$754.62
3.2	Manhole Inspections										0	$0.00	$0.00		$0.00
Task 4 - Preliminary Engineering			0	6	0	8	0	0	0	2	16	$913.62	$2,740.86		$2,740.86
4.1	Project Initiation			2		2					4	$251.54	$754.62		$754.62
4.2	Site Evaluation and Constructability			2		2					4	$251.54	$754.62		$754.62
4.3	Preliminary Memorandum			2		4				2	8	$410.54	$1,231.62		$1,231.62
Task 5 - Final Design			3	5	0	6	0	0	0	2	16	$987.60	$2,962.80		$2,962.80
5.1	60%		2	2		2					6	$419.54	$1,258.62		$1,258.62
5.2	90%		1	2		2					5	$335.54	$1,006.62		$1,006.62
5.3	100%/Final			1		2				2	5	$232.52	$697.56		$697.56
Task 6 - Permitting			0	3	0	6	0	0	0	3	12	$615.81	$1,847.43		$1,847.43
6.1	City			1		2				1	4	$205.27	$615.81		$615.81
6.2	FDEP			1		2				1	4	$205.27	$615.81		$615.81
6.3	FDOT			1		2				1	4	$205.27	$615.81		$615.81
Task 7 - Bidding			0	2	0	2	0	0	0	2	6	$306.04	$918.12		$918.12
7.1	Bidding Assistance			2		2				2	6	$306.04	$918.12		$918.12
Task 8 - Construction			0	10	0	16	0	0	0	6	32	$1,734.70	$5,204.10		$5,204.10
8.1	Pre-Construction			2		4				2	8	$410.54	$1,231.62		$1,231.62
8.2	Construction Engineering and Observation			4		8				2	14	$766.58	$2,299.74		$2,299.74
8.3	Post Construction			4		4				2	10	$557.58	$1,672.74		$1,672.74
Task 9 - Contingency															
9.1	Contingency (see below for value)														
	SubTotal - Carollo		7	84	0	54	0	0	0	15	160	$9,993.93	$29,981.79	$0.00	$29,981.79
	Subconsultant Costs														$169,751.62
	10% Administration of Subconsultants														$16,975.16
	Sub-Total														$216,708.57
	Owner Controlled Contingency														$10,000.00
	Total Project Costs														**$226,708.57**

* The labor categories and rates herein shall be used for invoicing purposes and for determining total compensation due to Engineer.

Details for Other Direct Cost's (ODC's)	
Description	Amount
Travel and Subsistence	$ -
Vehicle Mileage	$ -
Shipping and Reproduction	$ -

Subconsultants			**Description**	**Minority Status**	
Name		**Amount**	**Role**	**MBE**	**WBE**
L & S Diversified, LLC.	21.3%	$46,170.00	Topographic Survey	**21.3%**	-
EXO Limited	46.0%	$99,726.60	Engineering Services	**-**	-
Antillian Engineering	6.8%	$14,687.68	Geotechnical Engineering Services	**6.8%**	
BFA (sub to EXO)	4.2%	$9,167.34	Hydraulic Modeling	**4.2%**	
TOTAL SUBCONSULTANT FEES		$169,751.62	**Participation**	**32.3%**	**0.0%**

Figure 1 North Orange Ave Project Limits

ATTACHMENT A

September 23, 2020

Carollo Engineers
Mr. Scott Richards
200 E. Robinson Street
Suite 1400
Orlando, FL 32801

Subject: North Orange Avenue Sanitary Sewer Replacement

Dear Mr. Richards,

Thank you for allowing us to present you this proposal for professional engineering services.

Through our preliminary discussions it is our understanding that the City of Orlando (City) has requested Carollo Engineers (Carollo) and exo Limited to perform professional engineering services for the investigation of the sanitary sewer system along North Orange Avenue. The scope of work outlined below is limited to approximately 1,550 LF of existing 16-inch sanitary sewer and 10 sanitary sewer manholes within the within the right of way of North Orange Avenue between the intersections of Highland Avenue and Ivanhoe Blvd as shown on Figure 1. The intent is to increase the pipe size of the existing sewer to accommodate future demands.

Task 1 – Project Management by Carollo

This task will be conducted directly by Carollo.

Task 2 – Survey Services

Survey services will be provided by L & S Diversified directly to Carollo under a separate contract. Once approved by the City of Orlando and Carollo, exo Limited will use the survey as a base file to provide recommendations on the available alternatives to rehabilitate the gravity main. If is determined that the pipe needs to be replaced, exo Limited will use the survey base file to provide final design and preparation of construction plans after the preliminary engineering task is completed and approved and a separate task for preparation of construction documents is negotiated.

It is presumed that Carollo will manage Task 2 directly.

exo Limited
Consulting Engineers

Principal
Brad Alexander, PE, PSM

405 Lake Howell Road
Suite 1001
Maitland, FL 32751
407.681.3836

www.exolimited.com

Task 3 – CCTV and Manhole Inspections

Task 3.1 – CCTV Pipe Inspection

The City of Orlando will provide CCTV video of the existing sanitary sewer system for use in the final design of the sanitary sewer improvements. exo Limited will review the CCTV video to identify the existing service connection locations and the overall existing conditions of the sewer main. This data will be compiled into a matrix and included in the preliminary design report. CCTV review will be performed by a certified NASSCO Pipeline Assessment and Certification Program (PACP) trained operator using established PACP coding and observations.

Task 3.2 – Manhole Inspections

Manhole inspections will not be performed for this project. It is assumed that the condition of the existing manholes are to be replaced within the design of the sewer improvements.

Task 4 – Preliminary Engineering

The preliminary engineering task of this project is to present an in-depth evaluation of the construction alternatives to rehabilitate/replace the existing gravity sanitary system along its current alignment. This task will allow the City to make an informed decision on how to proceed with the final design of the project. Services provided within the Preliminary Engineering task will include:

1. Project Initiation
2. Site Evaluation and Constructability Review
3. Preliminary Design Report
    - *BFA Environmental will provide an updated capacity analysis as part of the Preliminary Design Report.*

Task 4.1 – Project Initiation

4.1.1 Meet with Carollo, BFA Environmental and the City to initiate the project and hold a project kick off meeting to establish lines of communication, contract requirements, and schedule.

4.1.2 Meet with Florida Department of Transportation (FDOT) to discuss the project, any potential upcoming FDOT projects and permitting requirements within the FDOT right of way. The information obtained in this task will be presented in the Preliminary Design Report.

Task 4.2 – Site Evaluation and Constructability Review

4.2.1 Request and evaluate the existing underground utility maps from utility owners whose facilities may have an impact on construction of the sanitary sewer system improvements.

4.2.2 Perform a site visit to get familiarized with the project corridor. A City representative may attend the site visit if the schedule permits. While on site, exo Limited will observe vehicular and pedestrian traffic patterns for potential maintenance of traffic concerns during construction. A formal traffic study will not be done as a part of this scope. Special considerations will be taken in areas where the gravity sanitary sewer traverses areas of on street parking and the potential for pedestrian and business impacts during construction.

4.2.3 Coordinate installation of six (6) temporary groundwater monitoring points for the purpose of obtaining a representative groundwater laboratory analytical sample. The groundwater monitoring wells will be installed by the City of Orlando. Samples will be transported by the City under proper chain of custody on wet ice to their environmental testing facility for laboratory analyses of the parameters required. The City will provide laboratory summary of the analytical results of the ground water samples for exo Limited's design.

Task 4.3 – Preliminary Design Report

4.3.1 A Preliminary Design Report (PDR) will be drafted evaluating the replacement of the gravity sanitary sewer system. This PDR will utilize the updated capacity analysis provided by BFA Environmental and the information obtained in Task 3 make recommendations to the City of Orlando on the best alternatives to replace the existing sanitary sewer system. A preliminary estimate of probable construction costs will be prepared for each alternative and be included within the report.

4.3.2 Prepare a preliminary plan of the proposed construction alignment of the gravity sewer system which depicts major conflicts with existing utilities and areas where special construction techniques may or must be considered. A profile will not be prepared for the PDR.

4.3.3 Submit four (4) copies of the draft Preliminary Design Report to the City and Carollo. Meet with the City and Carollo to discuss the PDR; revised and finalize the PDR after the review meeting. Submit four (4) hard copies of the final PDR and a CD containing the PDF version.

Task 5 – Final Design

Prepare project construction drawings to include required plan and profile views and necessary Construction Details and Notes. Prepare the technical specifications for the Project Manual. The construction documents shall be complete and meet the requirements for construction contract competitive bid formulation and subsequent construction of the project. All documents shall comply with current requirements of the City's

Engineering Standards Manual (ESM) and Construction Specifications Manual. exo Limited will provide a quality assurance and "constructability" review prior to all submittals to the City.

Final Design Documents will be prepared based on recommendations and discussions from the preliminary design phase of the project.

Task 5.1 – 60% Design Submittal

5.1.1 Submit six (6) copies of construction plans and technical specifications at a 60% level of completion to the City. The minimum requirements of a 60% level of completion are defined as a set of plan and profile drawings at a horizontal scale of 1"=20' and a vertical scale of 1"=4' for the project corridor and depicting:

a. Survey and Topographic information
b. Existing Utility Locations
c. Gravity sewer main, lateral and manhole improvements
d. Construction Details
e. SWPPP
f. Maintenance of Traffic plans
g. a draft of all applicable sections of the technical specifications, bid tabulation and estimate of probable construction costs.

5.1.2 Meet with the City and Carollo to discuss the 60% submittal, prepare detailed meeting minutes and submit meeting minutes for verification.

5.1.3 Revise construction documents per 60% design review meeting.

Task 5.2 – 90% Design Submittal

5.2.1 Submit six (6) sets of construction drawings and technical specifications at a 90% level of completion to the City. At the 90% level of completion, the construction drawings and technical specifications shall be at a level of completion that will allow the project to be bid and shall include the following:

a. Survey and Topographic information
b. Existing Utility Locations
c. Gravity sewer main, lateral and manhole improvements (plan and profile views)
d. Construction Details
e. SWPPP (provided by L&S Diversified)
f. Maintenance of Traffic plans (provided by L&S Diversified)
g. A draft of all applicable sections of the technical specifications, bid tabulation and estimate of probable construction costs.

Meet with the City to discuss the 90% submittal, prepare detailed meeting minutes submit the minutes to the City for verification.

5.2.2 Prepare and submit an Official Bid Form. The Official Bid Form shall appear as a separate itemization to be included in the Invitation for Bids. Coordinate with City departments for the latest requirements for the Official Bid Form.

5.2.3 Prepare and submit six (6) copies of the Engineers Estimate of Probable Construction Costs.

5.2.4 Meet with the City and Carollo to discuss the 90% submittal, prepare detailed meeting minutes and submit meeting minutes for verification.

5.2.5 Revise construction documents per 90% design review meeting.

Task 5.3 – 100% Submittal

5.3.1 Submit six (6) sets of construction drawings and technical specifications at a 100% level of completion to the City for final acceptance and use during bidding phase. Submit all drawings and specifications in electronic format. Drawings shall be submitted in AutoCAD™ Release 14 format and in PDF. Specifications will be in Microsoft Word ™format and in PDF.

Task 6 – Permitting Services

It is anticipated that permitting services will be provided for the following regulatory agencies:

6.1 – City of Orlando Transportation Engineering

6.1.1 Meet with City of Orlando Transportation Engineering Division to discuss permitting for potential road closures, maintenance of traffic requirements, SWPPP/Erosion Control and permit application submittals for the Raleigh Street corridor.

6.1.2 Prepare and submit a City of Orlando Right-of-Way Permit and SWPPP application. Provide coordination for requests for additional information as required throughout the permitting process. This task to be completed by L&S Diversified and delivered directly to Carollo and exo Limited.

6.1.3 Prepare and submit Maintenance of Traffic plans in conjunction with the final design task submittal schedule. This task to be completed by L&S Diversified and delivered directly to Carollo and exo Limited.

6.2 – Florida Department of Environmental Protection (FDEP)

6.2.1 Submit a Permit Determination request to FDEP to determine the permitting requirements. If, requested by FDEP, meet with them to discuss permitting requirements and permit application submittals in greater detail.

6.2.2 Prepare and submit Florida Department of Environmental Protection (FDEP) Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System and required attachments. Provide coordination for requests for additional information throughout the permitting process.

6.2.3 Prepare and submit Florida Department of Environmental Protection (FDEP) Notice of Intent (NOI) to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities (NPDES) including related permit application and supporting documentation necessary to obtain required permit for construction. This task to be completed by L&S Diversified and delivered directly to Carollo and exo Limited.

6.3 – Florida Department of Transportation (FDOT)

6.3.1 Prepare and submit Florida Department of Transportation Right-of-Way Utilization Permit application. Provide coordination for requests for additional information as required throughout the permitting process. This task to be completed by L&S Diversified and delivered directly to Carollo and exo Limited.

All permitting application fees will be reimbursed by the City of Orlando. It is presumed that L&S Diversified will take the lead on all permitting activities besides the FDEP Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System for this project. Minimal time has been allocated for coordination and minor revisions to the construction documents for other permitting activities.

Task 7 – Bidding Assistance

7.1 – Bidding Services

7.1.1 Submit Bid Documents in accordance with the City's requirements for use during the bidding phase of the project.

7.1.2 Attend the pre-bid conference as scheduled by the City Purchasing Department, prepare minutes, and submit to City.

7.1.3 Respond to written questions from bidders related to the project and prepare all addenda as required to interpret, clarify or expand the Bidding Documents. Submit addenda to the City in a timely manner that allows reception of addenda by all bidders at least five (5) days prior to bid opening date.

7.1.4 Prepare a tabulation of all bids received in spreadsheet format and provide a digital copy, review and evaluate the apparent three (3)

lowest bidders unit prices, experience and references and make recommendations to the City regarding the award of the construction contract.

Task 8 – Construction Administration (assume 12-month duration)

8.1 – Pre-Construction

8.1.1 Modify bidding documents, if required, and obtain City required and contractor executed documents; provide the City with one (1) set of the "Conformed" construction drawings and one (1) set of "Conformed" technical specifications.

8.1.2 Attend a pre-construction conference scheduled and conducted by the City of Orlando. Distribute Conformed Contract Documents at the meeting.

8.1.3 Attend up to three (3) City scheduled Community Meetings to discuss details of this project scope with concerned citizens from the construction area. As the City deems necessary, these Community Meetings might be scheduled in design phases, prior to the start of construction and/or during the construction duration.

8.1.4 Review shop drawings and product submittals for conformance with the Contract Documents. Forward the City copies of all notes and conclusions for these reviews. Keep an updated log of all shop submittals with review and distribution dates.

8.2 – Construction Engineering and Observation (assume 12-month duration)

8.2.1 Attend monthly construction progress meetings, take meeting minutes and distribute minutes to all attendees. Assume 8 construction progress meetings.

8.2.2 Make periodic fields visits to observe the construction of the project, discuss concerns with the City inspector, and furnish the City a written summary of the visit. Assume nine (9) field visits.

8.2.3 Provide clarification and interpretation of the Contract Documents when requested. If requested by the City, evaluate any requests for changes in contract price and time made by the Contractor, and provide assistance with the preparation of change orders, if required.

8.3 – Post Construction

8.3.1 Conduct substantial and final completion inspections of the project and prepare appropriate "punch lists".

8.3.2 Prepare record drawings incorporating changes made during construction based on as-built information furnished by the

Contractor and his surveyor; provide to the City three (3) set of prints of the record drawings and electronic files of the record drawings in AutoCAD™ Release 14 format. Additionally, provide electronic files of scanned images of the record drawings in the pdf file format.

8.3.3 Prepare necessary documents and submit the project certification of completion and necessary partial certifications to the FDEP to obtain approvals for release for use. Prepare and submit other required certifications from regulatory agencies exercising control over any part of the project.

Schedule

exo Limited will provide our services as expeditiously as practicable to meet a mutually agreed-upon schedule. Tasks 2-4 will start within seven days of a signed agreement and notice to proceed. It is anticipated that the project will progress according to the following project schedule as shown in Table 1:

Table 1
Project Schedule
North Orange Avenue Sanitary Sewer Investigation

Task	Start	Duration	Completion
Task 1 – Project Management by Carollo	Project Duration		
Task 2 – Surveying	NTP	45	45
Task 3 – CCTV and Manhole Inspections	NTP	30	30
Task 4 – Preliminary Engineering	30	30	60
Task 5 – Final Design	60	90	150
Task 6 – Permitting	90	30	120
Task 7 - Bidding	120	60	180
Task 8 – Construction Administration	180	240	420
Total Anticipated Project Duration from NTP			**420**

This schedule assumes that tasks 2-4 will proceed simultaneously after the NTP. It is also assumed that the City will provide review and schedule the review meeting of each submittal within 2 weeks of the submittal date.

Fees and Billing

exo Limited will provide the professional engineering services outlined in Tasks 1-4 in the above Scope of Services on an hourly basis not to exceed the amounts as follows:

• Task 1 – Project Management by Carollo	$ *N/A*
• Task 2 – Surveying	$ *N/A*
• Task 3 – CCTV and Manhole Inspections	$ 3,417.60
• Task 4 – Preliminary Engineering	$ 25,145.04
• Task 5 – Final Design	$ 29,132.40
• Task 6 – Permitting	$ 6,006.00
• Task 7 – Bidding	$ 9,526.20
• Task 8 – Construction Administration	$ 35,666.70
Estimated Subtotal Contract Amount	**$ 108,893.94**

Attachment A shows the project fee summary breakdown for this project.

Professional fees will be invoiced monthly, as applicable, upon the percentage of services performed as of the invoice date. Any additional services above and beyond what is outlined in this scope of services will be billed at exo's current hourly billable rates plus any expenses.

Subconsultant Participation

exo Limited plans to utilize subconsultants on their team for this project. Subconsultants proposals are enclosed in Attachment B. The proposed compensation and percentage of work is presented in Table 2:

Table 2
Subconsultant Compensation Table
North Orange Avenue Sanitary Sewer Investigation

Subconsultant	Compensation	% of Task Authorization
BFA Environmental	$ 9,167.34	7.77%
Total Subconsultants	$ 9,167.34	7.77%

Should you have any questions concerning this proposed scope and fee, please contact Brad Alexander, PE, PSM at (407) 681-3836 ext. 104 or brad.alexander@exolimited.com.

Sincerely,

exo Limited

Brad Alexander, PE, PSM

President

Agreed to this ____ day of _____, 2020

By: _____ _____

_____ (date)

(print name)

Title: _____

(Member or Manager, as authorized)

_____ _____

(email address) (phone number)

Attachment B

Subconsultants Proposals

BFA Environmental Consultants

1230 Hillcrest Street, Suite 100 ***Orlando, Florida 32803***
(407) 896-8608 ***Fax (407) 896-1822***

BFA #2020-xx.xx

TO: Brad Alexander PE, PSM, President
EXO

FROM: Willie Thomas, PE, President

DATE: February 18, 2020

SUBJECT: Proposal for Professional Engineering Services
City of Orlando – N Orange Avenue Sewer Hydraulic Modeling Update

As requested, attached as exhibits to this cover page are the scope of services and fee estimate for the subject project. The following exhibits and attachments are included:

Exhibit I – Scope of Services
Exhibit II – Project Budget

BFA's proposed hourly-not-to-exceed proposal to provide the City of Orlando with professional services described in Exhibit I – Scope of Services is $9,167.34.

We appreciate the opportunity to be of service to EXO and the City of Orlando and look forward to working with you on this project. If you have any questions or require further information, please do not hesitate to contact me.

EXHIBIT I
BFA SCOPE OF SERVICES
NORTH ORANGE AVENUE SEWER HYDRAULIC MODELING UPDATE
CITY OF ORLANDO, FLORIDA

A. PROJECT DESCRIPTION

EXO Limited (EXO) is working with Carollo on a new sanitary sewer investigation/rehab/replace project for the City of Orlando Water Reclamation Division (WRD) along N. Orange Avenue near Lake Ivanhoe and Lake Highland. BFA has previously performed a hydraulic analysis and capacity study on the existing gravity system in this area. As part of the Carollo and EXO's scope of work, the City has requested that BFA update their system model to include the future flows of the recent developments and provide an updated technical memorandum stating the findings.

BFA's scope of services will utilize the most recent updates to the Lift Station 3 Collection System model developed by BFA. Proposed gravity sewer improvements will be incorporated into the model and evaluated using the most current wastewater projections including recent development projects. This scope outlines the steps to be taken to conduct a sewer capacity analysis using an existing hydraulic model to aid the WRD in making a determination regarding the availability of sewer capacity.

B. SCOPE OF SERVICES

1. Coordinate with EXO for the potential areas of impact and proposed improvements.
    a. Coordinate with the WRD and City Planning Department to obtain specifics on proposed development such as its location, proposed number of dwellings, and square footage, etc.
2. Calculate average daily flow (ADF) per City guidelines and input flow into the most appropriate existing model node or create and extend the model using City GIS data and apply flows to a new node. Any existing flows allocated to the parcel to be (re)developed shall be removed or adjusted accordingly.
3. Consultant will perform model simulation using InfoSewer modeling software that was previously used for the original LS 3 sewer model.
4. A brief report will be produced by BFA for review by EXO and the WRD. The report will include a narrative and summarize the input values and model output, including:
    a. Map of service area impacted, highlighting sewers to be impacted
    b. Input and output tables containing existing and "proposed" flows in each pipe downstream of proposed development as well as resulting flow depths. Flow depths exceeding City standards (if any) shall be identified and documented in the report.

c. Summarize the findings of the above tasks in a draft technical memorandum. Submit two (2) paper copies and PDF to EXO for review and comment.

d. Meet with EXO and the WRD to discuss the draft technical memorandum and finalize the document pursuant to comments received. Submit two (2) paper copies and PDF of the final technical memorandum to EXO.

C. COMPENSATION SUMMARY

The total hourly not-to-exceed fee for the Scope of Services described above is $9,167.34. Exhibit II presents a detailed breakdown of the estimated hours and compensation for the Scope of Services.

D. SCHEDULE

The scope of services outlined above will be conducted when requested by EXO and will be completed in coordination with EXO's overall project schedule, generally within a two (2) week period from the notice to proceed date.

EXHIBIT II

City of Orlando
NORTH ORANGE AVENUE SEWER HYDRAULIC MODELING UPDATE

Cost Summary

BFA Labor Costs

LABOR CLASS	Billing Rate	TASK 1	TASK 2	TASK 3	TASK 4	TOTAL HOURS	TOTAL COST
Project Manager	$149.50	4	6	10	9	29	$4,335.50
Engineer V	$179.79	0	0	0	0	0	$0.00
Engineer II / GIS Tech	$95.68	4	12	20	12	48	$4,592.64
Administrative Support	$59.80	0	0	0	4	4	$239.20
Sub-Total Hours		8	18	30	25	81	
Sub-Total BFA Labor Costs		$980.72	$2,045.16	$3,408.60	$2,732.86		$9,167.34

BFA Direct Costs

Black and White Copies:							
	8.5" x 11"	$0.00	$0.00	$0.00	$0.00		$0.00
	11" x 17"	$0.00	$0.00	$0.00	$0.00		$0.00
Color Copies:							
	8.5" x 11"	$0.00	$0.00	$0.00	$0.00		$0.00
	11" x 17"	$0.00	$0.00	$0.00	$0.00		$0.00
Courier Delivery		$0.00	$0.00	$0.00	$0.00		$0.00
Sub-Total BFA Direct Costs		$0.00	$0.00	$0.00	$0.00		$0.00

Total Project Costs

Total Project Costs	**$980.72**	**$2,045.16**	**$3,408.60**	**$2,732.86**		**$9,167.34**

EXHIBIT II
CITY OF ORLANDO
LIFT STATIONS NO. 2 AND 3 COLLECTION SYSTEMS ANALYSIS

2/18/2020

BFA LABOR COSTS

TASK	Project Manager		Engineer II / GIS Tech		Administrative Support		BFA Labor Totals with 2.99 Multiplier	
	Labor Rate $50.00 Billing Rate $149.50		Labor Rate $32.00 Billing Rate $95.68		Labor Rate $20.00 Billing Rate $59.80			
	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs
1. Coordination								
Coordination with EXO, WRD and Planning Dpt	4	$598.00	4	$382.72			8	$980.72
Subtotal	**4**	**$598.00**	**4**	**$382.72**			**8**	**$980.72**
2. Service Area & Flow Analysis								
Development of Projected Wastewater Flows	4	$598.00	8	$765.44			12	$1,363.44
GIS Spatial Layers for Land Use and Flow Projections	2	$299.00	4	$382.72			6	$681.72
Subtotal	**6**	**$897.00**	**12**	**$1,148.16**			**18**	**$2,045.16**
Subtotal								
3. Hydraulic Modeling								
Disaggregation of Existing and Future WW Flows	2	$299.00	4	$382.72			6	$681.72
Hydraulic Analysis	4	$598.00	8	$765.44			12	$1,363.44
Identification of System Insufficient Capacity Locations	4	$598.00	8	$765.44			12	$1,363.44
Subtotal	**10**	**$1,495.00**	**20**	**$1,913.60**			**30**	**$3,408.60**
4. Technical Memorandum								
Prepare Draft Report	4	$598.00	8	$765.44	2	$119.60	14	$1,483.04
Draft Report Review Meeting	2	$299.00					2	$299.00
Finalize Report	3	$448.50	4	$382.72	2	$119.60	9	$950.82
Subtotal	**9**	**$1,345.50**	**12**	**$1,148.16**	**4**	**$239.20**	**25**	**$2,732.86**
Total	**29**	**$4,335.50**	**48**	**$4,592.64**	**4**	**$239.20**	**81**	**$9,167.34**

When it is not in our power to follow what is true, we ought to follow what is most probable.
~Rene Descartes

L & S Diversified
Professional Surveyors and Mappers

February 27, 2020 **L & S Proposal No. 5928**

Carollo Engineers
Scott Richards, PE
4600 E. Washington Street, Suite 500
Phoenix, AZ 85034

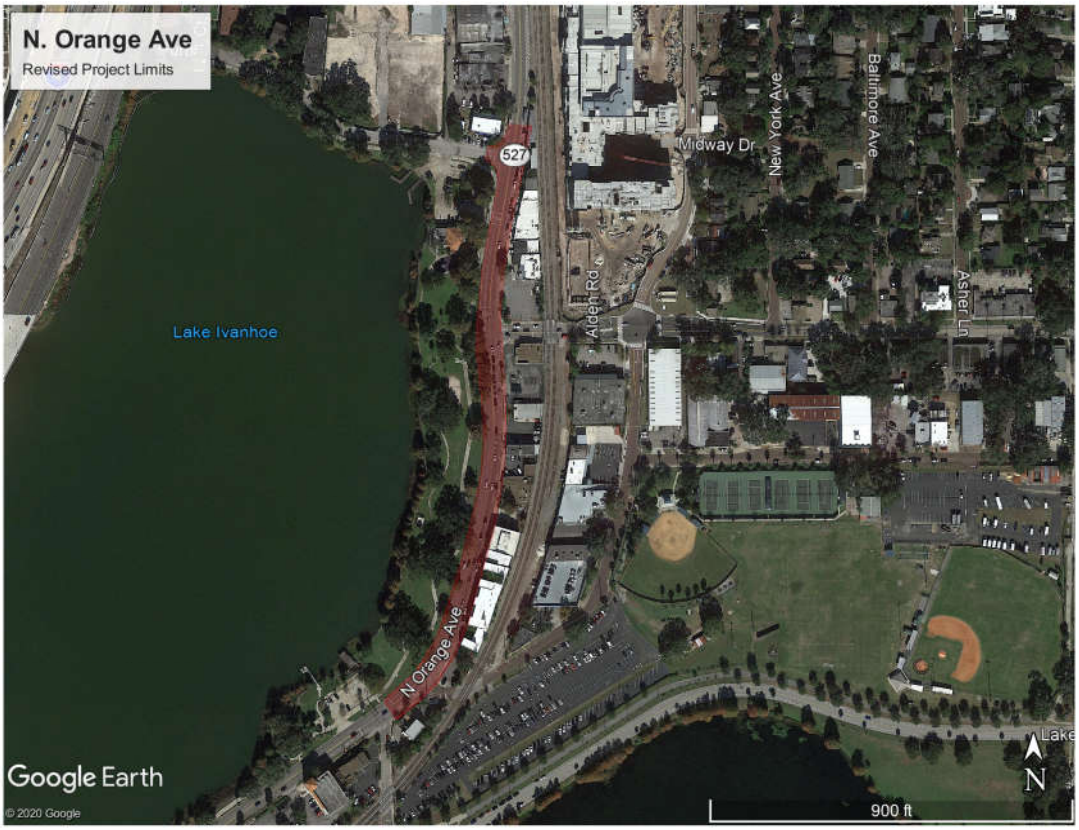
Subject: **Proposal for Surveying and Sub-surface Utility Engineering Services along N. Orange Avenue**

Dear Scott,

We appreciate your consideration of L&S Diversified, LLC to provide professional surveying services for the above referenced project. Below we have outlined a proposed schedule of services and the associated fees for this project.

SCOPE OF SERVICES

The following is based on **scope provided by Client.**



Certifications

M/WBE
City of Orlando
Orange County
Osceola County
State of Florida
G.O.A.A.
F.D.O.T.

DBE
F.D.O.T.

LDB
G.O.A.A.

SSBE
Expressway Authority

L & S Diversified, LLC

Principal
Sherry Lee Manor, PSM

405 Lake Howell Rd.
Suite 1001
Maitland, FL 32751
Phone (407) 681-3836
Fax (407) 681-6541

www.LSsurveyor.com

PART 1 Survey Control and Specific Purpose Right of Way Survey

Survey Tasks for part 1 shall consist of: the position and description of all recovered monuments; right-of-way and adjacent parcels with recording information; survey control set at 600-foot intervals to facilitate project engineering.

Survey control will consist of the following:

Recover closest two (2) NGS or City of Orlando geodetic control monuments; Monument and reference each end of baseline near project site. Utilize GPS static or redundant RTK control survey methods to establish control pairs at each end of project relative to North American Datum of 1983 adjustment of 2011 (NAD83/2011), state plane coordinates, Florida East zone. L&S will perform a closed travers through horizontal control points to establish survey control for the project. L&S will recover the closest City of Orlando benchmarks; Measure closed differential level loop between control to establish elevations relative to North American Vertical Datum of 1988 (NAVD88) for each survey baseline monument.

A separate survey control sheet will be provided showing all set and recovered control.

The Survey Control and Specific Purpose Right of Way Survey will be performed and prepared in accordance with the State of Florida Standards of Practice, as set forth by the Board of Professional Surveyors and Mappers, Chapter 5J-17, Florida Administrative Code and per Section 472.027, Florida Statutes and the City of Orlando Engineering Standards Manual.

PART 2 Topographic Survey

Survey Tasks for part 2 shall consist of: cross sections at 50 foot intervals or at an interval to secure a one foot contour interval (within right of way and extend **10'** outside of both sides of the right of way and to the returns of all intersection); location of existing improvements and visible above ground utilities; subsurface utilities as marked by L&S; trees and landscaping within project limits; and setting at least **four (4)** site bench marks in order to facilitate engineering for the project site. Topographic surveying will be performed using conventional surveying methods, no GPS will be utilized.

The topographic survey will be displayed at one-foot contours with spot elevations and will be based on the North American Vertical Datum (NAVD) of 1988.

The Topographic Survey will be prepared in accordance with the State of Florida Standards of Practice Chapter 5J-17, Florida Administrative Code, as set forth by the Board of Professional Surveyors and Mappers, pursuant to Section 472.027, Florida Statutes and the City of Orlando Engineering Standards Manual.

PART 3 Subsurface Utility Designation – Quality Level "B"

A Sunshine 811 "Design" ticket will be requested for the areas described to determine

the utility providers within the project limits and to notify them of the request for coordination with the L & S utility locator. These areas will be scanned for underground utilities using electronic detection devices and Ground Penetrating Radar (GPR). Any utilities detected and found within the project limits will be surface painted and flagged with the appropriate color as recognized by the National Utility Locating Contractors Association (NULCA), or if marked by others, will be verified by the L & S utility locator.

Underground utilities that are detectable by the above methods, where surface evidence exists or where plans are provided to L & S showing the locations thereof can be designated. However, some underground utilities may not be made of a conductive material or may not return a GPR echo and therefore cannot be designated with electronic prospecting equipment or GPR. Without surface evidence or existing plans, as provided to L & S, identification and designation of any utilities that might exist would then require soft excavation and would need to be determined by the client as additional services.

L & S would expect that any available information from previous surveys of the project site, research or plans obtained by the design engineer or other drawings that depict historic utility information and any other pertinent information that has been obtained by the Engineering Design team regarding utilities at the project site will be provided to L & S to help facilitate the location and accounting for the subsurface utilities for this site.

L & S utilizes the above-mentioned resources in addition to the knowledge of our experienced technicians to accomplish the goal of providing as much information regarding the subsurface utilities at this location as possible in the limited locations and by the methods described above. However, the information provided by L & S is also dependent upon the information provided by the Design team as mentioned above, Sunshine 811 request for utility owners and/or their representatives to also provide information and/or to meet with our crew at the time of these activities to verify their facilities and to confirm the details of the subsurface utilities at this location.

It is understood and expected that the Design Engineer will perform sufficient Utility Coordination with the Utility Agency Owners, (UAO's) in this location to ascertain and affirm the information from these efforts and to help confirm that no other subsurface utilities are possibly undetected by these efforts. It is also understood that the Contractor is responsible to abide by Sunshine State One Call, Florida State Statutes # 556.106.

L&S will provide MOT design, set up and take down for the opening of manholes where needed.

Deliverables

All Survey Deliverables will be in accordance with the City of Orlando Engineering Standards Manual and include Civil 3d (2013 version) dwg e-transmittal file and pdf file of the survey. Three (3) signed and sealed hard copies of the survey will be delivered along with the digital formats.

A Sunshine State 811 "Design" ticket will be requested and documentation of this and any information obtained from the utility companies or their representatives will be shown in a utility contact log. A copy of the utility contact log will be provided along with a sketch of the designated utilities and the above-mentioned Subsurface Utility Reports.

PART 4 Subsurface Utility Excavation – ASCE Quality Level "A"

L & S will perform a total of ten (10) (5 soft surface, 5 hard surface) excavation test holes at positions determined by the client. A Sunshine 811 ticket request will be called to allow 72 hours in advance of the proposed excavation as is required by law. The utility at each position will be verified both horizontally and vertically up to a depth of approximately ten (10) feet. L & S is capable of soft excavating to a depth of six (6) feet and air probing to a depth of ten (10) feet. It is possible that ground water intrusion and/or soil conditions at any given position could prevent a clear identification of any utility or obstruction.

The depth and size of each utility will be measured and noted on a Subsurface Utility Report for each position, and if visible, the composition of the material of the pipe will also be noted. However, the condition of the material will not be determined by L & S as this is not within our expertise. Each position will be restored to near pre-excavated condition with the excavated soil or like materials such as an asphalt or concrete patch.

Deliverables

All Survey Deliverables, including site pictures, will be in accordance with the City of Orlando Engineering Standards Manual and include Civil 3d (2013 version) dwg e-transmittal file and pdf file of the survey. Three (3) signed and sealed hard copies of the survey will be delivered along with the digital formats.

A Sunshine State 811 "Design" ticket will be requested and documentation of this and any information obtained from the utility companies or their representatives will be shown in a utility contact log. A copy of the utility contact log will be provided along with a sketch of the designated utilities and the above mentioned Subsurface Utility Reports.

PART 5 Civil Drafting Support

L & S Diversified will utilize in house drafting services to prepare project construction drawings to include Stormwater Pollution Prevention Plans (SWPPP) and Maintenance of Traffic (MOT) Plans for the replacement of the gravity sewer along the project corridor. The construction drawings shall be complete and meet the requirements for a construction contract competitive bid formulation and subsequent construction of the project. All drawings shall comply with the requirement of the City's Engineering Standards Manual (ESM) and construction specifications manual. L & S Diversified will provide a quality assurance and constructability review prior to submittals to the client.

The table below summarizes the costs associated with this proposal. Please review this information and let us know if you have any questions.

Item	Description	Qty	Rate	Amount
1	2 Person Survey Field Crew - Crew Chief, I-Man	8	$ 132.00	$ 1,056.00
1	Mapping Technician	4	$ 81.00	$ 324.00
1	Professional Surveyor and Mapper	2	$ 126.00	$ 252.00
2	2 Person Survey Field Crew	40	$ 132.00	$ 5,280.00
2	Mapping Technician	24	$ 81.00	$ 1,944.00
2	Professional Surveyor and Mapper	8	$ 126.00	$ 1,008.00
3	2 Person SUE Field Crew	36	$ 126.00	$ 4,536.00
3	Subsurface Utility Coordinator	16	$ 60.00	$ 960.00
3	SUE Project Manager	4	$ 126.00	$ 504.00
4	2 Person SUE Field Crew	32	$ 171.00	$ 5,472.00
4	Subsurface Utility Coordinator	8	$ 60.00	$ 480.00
4	SUE Project Manager	4	$ 126.00	$ 504.00
4	Test Hole (soft surface)	5	$ 300.00	$ 1,500.00
4	Test Hole (hard surface)	5	$ 600.00	$ 3,000.00
5	Engineering Technician	120	$ 81.00	$ 9,720.00
5	Project Manager/Project Engineer	65	$ 126.00	$ 8,190.00
1-3	General Contract Administration and Billing	20	$ 72.00	$ 1,440.00
			Estimated Time and Materials	***$ 46,170.00***

Schedule

L & S Diversified will begin the Survey on the subject property within 5 working days after receipt of your executed Notice to Proceed (NTP). This does not apply if extensive title work is involved, extensive certification requirements are needed, or if an ALTA/ACSM Survey is required. Proposed fee and schedule shown hereon is valid for up to 45 days from the date of receipt. We prefer at least 48 hours of notice for scheduling of a field crew.

Description – Survey and SUE	**Duration**
Field Data Collection	2.5 Weeks
Office Drafting	1 Weeks
QA/QC	.5 Week
Estimated Delivery of Survey from Notice to Proceed	**4 Weeks**

Description – Civil Drafting	**Duration**
Civil drafting will be performed in conjunction with engineer's schedule	-
Estimated Delivery of Survey from Notice to Proceed	-

Additional Services

If **Carollo** desires to change or expand upon these proposed services, an additional fee shall be negotiated. This renegotiation shall be accomplished prior to commencing the additional work, and may be necessary for any of the following services which are not a part of this contract:

Locating and/or flagging Flood Zone Line or Normal High Water Line (NHWL), tidal records, or locating '0' or specific elevations, Research and ordering additional Maps, Records or Materials necessary for completing these specified tasks; client-imposed requirements not covered herein; Additional Certifications or Affidavits not specified herein; Elevation Certifications; Wetland Delineation or Location; sub-surface Excavation or Underground Utility Location; Extensive Title Review and Plotting of Easements; Offsite Surveys or Sketches; Vertical Topographic information unless outlined in this proposal; Requests by Third Parties (Buyer's Attorney, Seller's Attorney, Lender or Lender's Counsel, Real Estate Agents, Title Company Personnel, etc.) for additions, deletions or revisions to be made to the survey drawings or maps before or after initial submittal to client; Additional Meetings and Errands not covered herein which are necessary to complete these specified tasks; Client-Authorized on-site instruction given to field crew for extra field work not covered herein; Client-approved overtime; Additional ALTA Table A Items.

Reimbursables such as overnight mailings, sending electronic files, copying charges, blueprinting costs, plotting of extra drawings not covered herein, delivery, shipping, or rush charges, etc. will be billed as an Extra cost on a Time, Materials and Expense basis.

It may be necessary for the Project Manager to call the client to receive verification and authorization for Extra Costs stated above in the preceding paragraph, and may further require the client to sign an Additional Work Authorization Form for any out-of-scope requests.

All public entity or jurisdictional agency fees are to be paid directly by the client prior to obtaining approvals or permits. These fees include, but are not limited to, platting, impact, re-zoning, permitting, review and application fees. L & S Diversified has no control over the procedures of public entities or jurisdictional agencies, and therefore, cannot guarantee timing and outcome of permits and entitlements related to this site/project.

Please see attached Exhibit "A" - Standard Provisions of Agreement for Professional Services and Exhibit "B" – Hourly Rates in addition to this Agreement.
The following additional provisions are included in this contract:

1. The terms of this agreement shall be valid for client acceptance for a period of sixty (60) days from the date of execution by L&S Diversified, LLC after which

time this contract offer becomes null and void if not accepted formally (evidenced by receipt of an executed copy of this document).

2. This agreement may be terminated by either party within fifteen (15) days written notice. In the event of termination, L&S Diversified, LLC shall be compensated to the date of termination, including direct expenses then due.
3. All rates and fees quoted in this document shall be effective for a period of twelve (12) months, after which time they may be renegotiated with the client.
4. For projects lasting over 30 days, L & S Diversified, LLC will bill on 25th of the month. The invoiced amount will include all work (time and materials) performed for the calendar month, up to the 20th.
5. Upon client request, we will contract and/or coordinate with applicable transportation, environmental, geotechnical, and engineering consultants, and will rely upon their work; however, L&S Diversified, LLC assumes no liability for the accuracy of their work.

Thank you for this opportunity and we look forward to working with you on this exciting new project. Please sign, date and return a copy of this agreement as your authorization to proceed with these professional services. Should you have any questions, please do not hesitate to call.

Sincerely,
L & S Diversified, LLC

Sherry Lee Manor, PSM February 27, 2020
President

The undersigned agrees to the above terms and costs associated with project completion.

Accepted By:

_____
Company

_____
Signature Date

_____
Title

ANTILLIAN
ENGINEERING ASSOCIATES, INC.

July 13, 2020

Carollo Engineers, Inc.
200 E. Robinson Street, Suite 1400
Orlando, FL 32801

Attention: Scott Richards, P.E.

Reference: Proposal for Geotechnical Engineering Services
North Orange Avenue Sewer Improvements
Orlando, Florida

Dear Mr. Richards:

Antillian Engineering Associates, Inc. is pleased to submit this proposal to provide geotechnical engineering services for this project. It was prepared in response to an e-mail request dated June 30, 2020 from Brad Alexander.

SCOPE OF SERVICES

The City of Orlando Water Reclamation Division ("the City") intends to replace a segment of gravity sewer line along North Orange Avenue between Highland Avenue and Midway Street. The overall length of the segment is reported to be about 1,600 feet. The depth of the pipelines and structures was not provided, but the e-mail requested a boring depth of 20 feet. The planned method of construction also was not provided. We have assumed that in the absence of detailed information, customary, excavate-and backfill methods will be used in temporarily-dewatered, below-grade work-areas. We propose to provide geotechnical-engineering services to support the design of these five replacements. Work will be authorized under Carollo's 2017 Continuing Wastewater Engineering Contract. The overall scope of services would be separated into tasks, as follows:

Task 1 - Site Reconnaissance/Field Investigation – We would prepare a temporary boring-location plan using site information provided by Carollo staff. Before commencing the drilling program, we would conduct field visits to examine the site conditions, and mark the preliminary boring locations for underground-utility location and marking in accordance with Florida statutes. We would coordinate with appropriate utility companies and City staff as needed. Based on an approximate spacing of 400 feet, we anticipate drilling five borings.

We would drill the borings using split-spoon sampling and mud-rotary methods. Our field crew would conduct the Standard Penetration Test ("SPT") with the split-spoon sampling in accordance with ASTM D 1586. Tests would be conducted continuously from one foot below the existing ground surface to ten feet, and then at five-foot intervals to the indicated completion depths. The field crew would log the soil samples recovered in the auger or samplers and seal representative portions in clean, airtight containers for transportation to our office. They would measure the depth to groundwater in the boreholes, record the depths on the field logs, and backfill the boreholes with soil.

3309 Bartlett Boulevard • Orlando, Florida 32811 • Tel. (407) 422-1441

Task 2 - Laboratory Testing – A geotechnical engineer would examine the recovered soil samples in our office to confirm the field descriptions and classify the soils using visual-manual methods. The engineer would select representative specimens for laboratory testing which would consist of 12 percent-fines ("single-sieve") tests, 4 moisture content tests, 2 organic content tests and 2 Atterberg limits test series.

Task 3 - Engineering Services - We would perform the following services:

- review available information to develop a general understanding of the proposed improvements
- compile field and laboratory test results to characterize subsurface conditions at the boring locations
- evaluate the suitability of the subsurface conditions for the proposed construction
- prepare report-quality boring logs, maps and plans
- prepare a geotechnical-engineering report

The report would contain a summary of available information pertaining to the proposed improvements, appropriate subsurface characterizations, a summary of the laboratory testing results, and geotechnical recommendations for sanitary-sewer design, earthwork, excavation safety, groundwater control, and other concerns as appropriate. The report would be sealed by a Professional Engineer registered in Florida.

COMPENSATION FOR SERVICES

We propose to provide the described services for an hourly, not-to-exceed fee of $14,687.68. An itemized fee estimate is attached as Appendix A. It represents our best estimate of the scope of services needed for this project. If needed, additional engineering services would be provided at the unit rates shown in the estimate. We would not exceed the estimated fee without notifying you and receiving your written authorization to do so.

SCHEDULE

We can begin work on this project within one week of receiving your notification to proceed. The field and laboratory investigations should take about six weeks, not including any time needed to obtain coordinate access and Maintenance of Traffic with the City Traffic Control Office. We would issue a draft report for review by Carollo staff within four weeks after completion of the laboratory testing. After receiving any review comments from Carollo, we would revise the draft report and issue the design report.

LIMITATIONS

We will provide services our services on this project in general accordance with currently accepted, customary geotechnical-engineering practice in central Florida. Please call if you have questions or need more information.

Respectfully submitted,
ANTILLIAN ENGINEERING ASSOCIATES, INC.

Peter G. Suah, P.E.
Principal Engineer/President

Attachments: Appendix A - Fee Estimate

APPENDIX A
FEE ESTIMATE
NORTH ORANGE AVENUE SEWER IMPROVEMENTS
ORLANDO, FLORIDA

DESCRIPTION	UNIT	QTY	RATE		TOTAL
Field Explorations					
Crew/Equipment Mobilization, ATV Rig	each	1	$600.00	$	600.00
SPT Borings, 0 to 50 feet, 5 to 20 ft	LF	100	$12.00	$	1,200.00
Pavement Cores, Asphalt	each	3	$125.00	$	375.00
Drill Rig and Crew, on-site movement/MOT	hour	16	$180.00	$	2,880.00
Signs and Barricades	day	1	$200.00	$	200.00
Project Engineer (ROW permit/utility location/field coordination)	hours	16	$136.55	$	2,184.80
Laboratory Testing					
Visual classification/sample preparation	each	14	$10.00	$	140.00
Grain Size Analysis, Single Sieve	each	12	$30.00	$	360.00
Atterberg Limits	each	2	$90.00	$	180.00
Moisture Content	each	2	$10.00	$	20.00
Organic Content	each	2	$30.00	$	60.00
Engineering Services					
Project Manager	hour	8	$137.99	$	1,103.92
Project Engineer	hour	32	$136.55	$	4,369.60
Draftsperson	hour	12	$84.53	$	1,014.36
				$	14,687.68