

CITY OF HOLLYWOOD

SURVEY, GEOTECHNICAL, UTILITY COORDINATION, DESIGN, PERMITTING, AND BIDDING FOR HOLLYWOOD BEACH WATER MAIN REPLACEMENT PROJECT

DESIGN, PERMITTING, AND CONSTRUCTION ADMINISTRATION FOR HOLLYWOOD BEACH FORCE MAIN REPLACEMENT PHASE 1A AND 1B AND LIFT STATION E-09 REPLACEMENT/REHABILITATION PROJECT

(CITY PROJECT # 10-5106/18-7098)

SCOPE OF SERVICES

I. PROJECT DESCRIPTION

The City of Hollywood (City) has an ongoing water main replacement program and has identified a project in the area along Sheridan Street from West Lake Drive to SR A1A and the Hollywood Beach area from Johnson Street to East Dania Beach Boulevard. The City also has a wastewater system rehabilitation program under way and has identified a project which includes the rehabilitation of Lift Stations E-01 and E-09 and replacement of the E-09 discharge force main. Wastewater transmission improvements from Lift Station E-01 to E-02 are also part of this project. The City has selected Tetra Tech through a competitive Requests for Statements of Qualifications for Design and Construction Administration Services for Hollywood Beach Utility Improvements, Project No. 10-5106/18*7098.

This project will be implemented in multiple phases. This proposal is for Phases IA and IB. Phase II services will be provided in a future proposal.

Phase IA of the project will include the following:

- Basis of Design Memorandum for the wastewater system improvements, to include preliminary design for the wastewater systems of Lift Stations E-01 and E-09 to develop the basis of design, and present the proposed project alternatives and plan.
- Approximately 3,750 feet of water main replacement along the following streets, between SR A1A and Surf Road:
 - Douglas Street.
 - Franklin Street.
 - Oak Street.
 - Palm Street.
 - Desoto Street.
 - Walnut Street.

- Balboa Street.
- Approximately 1,450 feet of water main replacement along Surf Road, between Balboa Street and Franklin Street.
- Approximately 400 feet of water main replacement along Surf Road, between Freedom Street and Douglas Street.
- Approximately 300 feet wastewater force replacement/upsizing along Balboa Street, between Lift Station E-09 and SR A1A.

Phase IB of the project will include the following:

- Approximately 16,500 feet of water main replacement along the following streets:
 - Sheridan Street between W. Lake Drive and the west side of the Sheridan Street bridge.
 - Greene Street between SR A1A and Surf Road.
 - Cambridge Street between SR A1A and FH00739.
 - Surf Road between Simms Street and Freedom Street.
 - Surf Road between Douglas Street and Franklin Street.
 - N. 14th Terrace from the dead-end to Cambridge Street.
 - SR A1A from Sheridan Street to Balboa Street.
- Approximately 200 feet of horizontal directional drill of the water main along SR A1A, underneath the Dania Beach Boulevard Bridge, connecting to the existing water mains on the north and south sides of the Dania Beach Boulevard Bridge
- Approximately ____ feet of water main installed via horizontal directional drill along Sheridan Street, underneath the Intracoastal Waterway.
- Approximately ____ feet of water main installed via horizontal directional drill along Polk/Arizona Streets, underneath the Intracoastal Waterway.
- Replacement of Lift Station E-09, to include replacement of the wet well, existing pumps, discharge piping, electrical and standby power.
- Replacement of approximately 7,500 feet of the discharge force main from the endpoint of the proposed force main on Balboa Street designed under Phase 1A to the gravity system connection point on Sherman Street, to be upsized as determined by the City.
- Replacement of approximately 1,500 feet of water mains within North Beach Park (at Sheridan Street).

The Phase IA and IB improvements involve upgrading existing 2-inch, 4-inch, and 6-inch diameter water mains one nominal size and replacing existing 8-inch and 12-inch diameter water mains with the same nominal size. The existing water mains will be replaced with new polyvinyl chloride (PVC) or ductile iron (DI) water mains, isolation valves, fire hydrants, and water services. Existing water meters and boxes will remain within easements or street rights-of-way. The design will include replacement of the 12-inch diameter water main along Simms Street between A1A and the North Boardwalk through Hollywood Beach Park. The water main along Sheridan Street will be designed to be installed utilizing horizontal directional drilling to cross the Intracoastal Waterway, along Sheridan Street rights-of-way, and into Broward County's Hollywood Beach Park, up to 50 feet. The water main along Polk/Arizona Street will be designed to be installed utilizing horizontal directional drilling to cross the Intracoastal Waterway, along Arizona Street rights-of-way, and into the Hollywood Marina. The existing 12-inch diameter cast iron water main under the E. Dania Beach Boulevard Bridge will be replaced and will be designed to be installed utilizing horizontal directional drilling. Proposed water mains will be connected to existing water mains on the western, southern, and northern project boundaries.

The City owns and operates various water, wastewater and stormwater utility infrastructure within the project right-of-way. Other existing utilities that typically share the rights-of-way include power, telephone, cable, gas utilities, and others. The City would like to implement the potable water pipeline replacement and improvements, while avoiding relocation of existing utilities, if possible.

II. SCOPE OF SERVICES

Task 1: Meetings and Coordination

Tetra Tech will schedule and conduct various meetings for this project. Coordination between Tetra Tech, the Public Utilities Department, the Design and Construction Management Department, Florida Power and Light (FP&L), and the consultant designing the FP&L underground infrastructure must occur. Meetings to occur as part of this task are described below.

1. Coordinate and attend a project kick-off meeting with the project team, the City, FP&L, and FP&L's design consultant. Provide minutes summarizing the meeting discussions. On the day of the kick-off meeting, visit the site with the project team.
2. Attend up to nine (9) other meetings for coordination and design purposes, with the City and/or members of the project team.

Task 2: Preliminary Design of Wastewater System Improvements

Currently, the Phase I project area has gravity sewers from Franklin Street to Dania Beach Boulevard, a lift station (E-09), and a discharge force main from E-09 to a manhole on SR A1A and Sherman Street. Lift Station E-09 is under sized, due to redevelopment and growth in the area. Existing and future wastewater flows to E-09 must be estimated and projected to properly size the pumping and transmission infrastructure.

Lift Station E-09 pumps wastewater to a sewer manhole that flows to Lift Station E-01. Lift Station E-01 also collects wastewater through a gravity sewer system. Lift Station E-01 then pumps wastewater to a gravity sewer system on SR A1A, which flows to Lift Station E-02. Improvements to Lift Station E-

01 and the transmission systems to Lift Station E-02 must be evaluated to ensure capacity for existing and future flows.

The purpose of preliminary design is to gather information for the wastewater systems of Lift Stations E-01 and E-09 to develop the basis of design, and present the proposed project alternatives and plan. Services to be completed in this task are described below:

Tetra Tech will obtain readily available data required to proceed with preliminary design and final design tasks. Data to be obtained, reviewed, and processed includes the following:

- As-builts for the existing gravity sewers, which discharge to Lift Stations E-09 and E-01.
- As-builts for Lift Stations E-09 and E-01.
- Water billing data for the parcels currently connected to the sewer systems for Lift Stations E-09 and E-01.
- Redevelopment applications for parcels which will be redeveloped.
- Zoning information.
- Other readily available data.
- Wastewater from Lift Station E-09 discharges to a manhole on SR A1A at Sherman Street, which then flows to Lift Station E-01.

Tetra Tech will utilize the information collected to size pumping infrastructure Lift Stations E-09 and E-01. Future projected flows will be provided to the City, which it will utilize to perform hydraulic modeling to determine the discharge force main size for Lift Station E-09 and alternatives for bypassing Lift Station E-01 or transmission system upgrades for Lift Station E-01.

Water billing data provided by the City will be utilized to quantify existing water usage and estimate existing wastewater flows within the Phase 1 project area. Wastewater flows will be estimated for the evaluation of Lift Stations E-09 and E-01 and the discharge force mains and/or other transmission systems, through desktop analyses. Hydraulic modeling will be performed by the City to determine transmission system sizing and evaluation of alternatives. Draft and Final Preliminary Design Memoranda will be prepared outlining proposed pumping, piping, electrical, and communications options and designs, along with preliminary costs. Zephyr Engineering will provide support services for development applications review, zoning information, and wastewater projections. Hillers Electrical Engineering will provide engineering services for electrical preliminary design.

Task 3: Survey

Survey services will be performed by a subconsultant, Gibbs Land Surveyors. Survey will consist of the following for the areas described in the subtasks below:

1. Perform a topographic survey locating and identifying all visible existing aboveground and underground utilities (as marked in the field by the utility owners) within the limits described in Section I, above.

2. Locate and/or provide permanent construction controls on site in State Plane Coordinates (1983 adjustment) and vertical control based on the North American Vertical Datum of 1988 (NAVD88). Horizontal and vertical controls will be referenced to the Florida State Plane Coordinate system on the digital files.
3. Platted rights-of-way, easements and property boundaries will be plotted on survey drawings for the project route.
4. Provide location of all existing buildings, concrete pads, valve boxes, water/electrical meter boxes, electrical pull boxes, telephone/cable risers, fences, hydrants, above-ground utilities, wood/concrete utility poles, overhead electrical lines, culverts, guardrails, pavement limits, pavement markings, traffic signage and type, headwalls, end walls, manholes, vaults, driveways, right-of-way limits, landscaping, and any other visible improvements.
5. Provide cross-sections at 100-foot intervals to extend 5 feet beyond the right-of-way.
6. Provide centerline elevations at 100-foot intervals and significant grade breaks (highs and lows) within the alley rights-of-way.
7. Identify swale material, denoting grass, dirt or gravel.
8. Provide rim and invert elevations and pipe size and material type on all visible gravity sewer structures and/or outfalls (sanitary and storm drainage) within the above limits.
9. Provide location of vegetation and individual trees greater than four (4) inches in diameter.
10. Provided Bathymetry (soundings) under Intracoastal Waterway for the proposed crossing.
11. Provide topography in North Beach Park.
12. Easement sketch and description for water main.
13. Digital files shall delineate all field collected data as well as existing limits of referenced rights-of-way.
14. The final survey map to be prepared at 1"=20' horizontal in a standard 22"x34" plan sheet format in include all topographic data listed above, right-of-way lines and property lines (GIS derived), baselines and platted right-of-way lines based upon existing monumentation and utilities verification and subsurface utility data, if provided.
15. Deliverables: CAD files (.dwg files) and cross sections and topographic /elevations (.txt files) and signed and sealed copy of survey.

Task 3.1: Phase 1A Right of Way Survey

Phase 1A rights-of-way survey will include the Surf Road, from Balboa Street to Franklin Street. In addition, pavement markings along SR A1A, from Balboa Street to Franklin Street and from Douglas Street to Freedom Street will be surveyed, to augment the survey prepared by Calvin Giordano & Associates.

Task 3.2: Phase 1B Right of Way Survey

Phase 1B rights-of-way survey will include the following:

1. Sheridan Street — From West Lake Drive, east to N Ocean Dr. (SR A1A).
2. State Road A1A (N. Ocean Dr) from Sherman Street to Freedom Street.
3. State Road A1A (N. Ocean Dr) from Douglas Street to Franklin Street.
4. State Road A1A (N. Ocean Dr) from Balboa Street to 970 feet north of Dania Beach Blvd., just north of the bridge.
5. Surf Road, from Simms Street (Beach Park) to Franklin Street.
6. Greene Street from SR A1A to Surf Road.
7. Cambridge Street from SR A1A to approximately 625 feet east.
8. N. 14th Terrace from Cambridge Street to 325 feet south.
9. Intracoastal right-of-way – a 50-foot corridor perpendicular to the waterway south of Sheridan Street.
10. A topographic survey of North Beach Park, on the east side of SR A1A, topographic locations, trees, random elevations to the westerly edge of park roadway and parking.
11. A topographic survey of a portion of Hollywood Marina (Polk Street), Intracoastal Waterway, and Arizona Street. Survey of an area 50 feet in width, a bathymetric survey (soundings) of full right of way of the Intracoastal Waterway at Polk Street Marina, the alignment of which shall be Arizona Street extended westerly, to include a 50 foot wide topographic survey of the Marina, grass surface, asphalt parking and above ground improvements and random elevations, approximately 130 feet west from the west right of way line of the Intracoastal Waterway; extending easterly along the Arizona Street right of way width (40 feet) continuing across SR A1A easterly to include all of Arizona Street right of way to Surf Road.

Task 3.3: Phase 1B Site Surveying (Lift Station E-09)

A topographic survey will be prepared, as described above, for the Lift Station E-09 site, on Balboa Street.

Task 4: Phase 1A Utilities Verification

Utilities Verification: Tetra Tech will perform the utility verification for the existing buried power, telecommunication, cable television, gas, water, sewer and drainage facilities, and identified facilities within limits of the survey for Phase 1A.

1. Tetra Tech will coordinate with SSOCOF to open Design Tickets, will contact all existing utilities provided by SSOCOF and will submit sketches of the proposed work to each utility to obtain available atlas, mark-ups, records, as-builts, etc.
2. The horizontal and vertical locations of the existing underground utilities will be depicted based on the records received from each utility, by using the above ground visible features (i.e. valves, manhole covers, inlets) to approximate the locations of the utilities.
3. The horizontal locations of services will be approximated, to the extent possible, based on the limited information provided and above ground visible features within the rights-of-way (i.e. water meters).
4. Vertical locations for sewers will be approximated, to the extent possible, based on invert elevations at manholes and inlets, if accessible, etc. Vertical locations for services and laterals will be assumed based on City standards.

Task 5: Phase 1A Subsurface Utilities Evaluation

Subsurface utilities evaluation services will be provided by a subconsultant, T2 UES (T2). T2 proposes utility locating services by using surface geophysical methods as described below:

Vacuum Excavation: T2 proposes to use vacuum excavation equipment to perform up to 60 minimally intrusive excavations at locations as directed by Tetra Tech or the City. The locations of each test hole will be validated by utility designating technologies. Vacuum excavation methods will enable T2 to visualize the utility in question. T2 will make every effort to vacuum excavate to a depth of eight feet using high pressure air methods. However, vacuum excavation will cease when these methods are unable to progress below refusal, such as bedrock or flowable fill. T2 will not employ destructive methods, such as jackhammers or chipping hammers, to break up bedrock or other refusal within a test hole due to the high risk of damage to buried utilities and safety risk to T2 employees. Utilities deeper than 8 feet may not be found.

Limited Utility Designation: T2 will notify Sunshine 811 two full business days in advance of excavation. Utilities will be designated at each test hole location only. T2 will mark the conductive utilities by inductive methods utilizing electromagnetic geophysical prospecting equipment. Known non-conductive utilities will be marked utilizing 2-D Radar (GPR). Aerial facilities are not included for this project.

Survey: T2 will set a survey control point at each utility test hole and then survey the horizontal and vertical values of each control point. All measurements to the utility found at each test hole will be relative to this survey control point. The horizontal datum that will be used is NAD '83/2011 and the vertical datum that will be used is NAVD '88.

MOT, MOT permits and Drawings: T2 will provide or subcontract the required MOT for lane closures and street closures in order to perform test holes.

Backfill of test holes will be performed utilizing the removed material, if suitable. Areas will be restored as close as is reasonable to their original condition. Test holes in asphalt will be restored using cold patch.

Utility designating in this scope of services is to verify the location of the client specified utility at each vacuum excavation only. The position of each excavation is to be provided by Tetra Tech or the City.

Task 6: Geotechnical Investigation

A geotechnical investigation to facilitate design and construction of the proposed improvements will be performed by Tierra South Florida (TSF). The scope for the geotechnical investigation includes performing borings along the roadways for the proposed pipes, on a typical frequency of one boring per 500 feet. Standard Penetration Testing (SPT) and borings and pavement cores are proposed as follows:

1. Fifty-eight (58) SPTs to 6 feet below the roadway surface
2. Two (2) SPT borings to a depth of 20 feet for the directional drills.
3. Four (4) SPT borings to a depth of 75 feet are proposed on land for the subaqueous crossings.
4. Four (4) SPT borings to a depth of 75 feet are proposed on the water.
5. Thirty (30) asphalt cores, with asphalt and base checks.

Some adjustments in the boring depths may be necessary depending upon the subsurface conditions encountered.

Within the borings, penetration resistance testing will be performed in general accordance with the requirements of ASTM designation D 1586. Borings will be approximately located in the field by our drilling personnel by measuring distances with a tape from known reference points. Elevations at boring locations can be interpreted from a topographic plan if furnished by others.

Prior to drilling at the project site, TSF will notify the local utility companies and request that underground utilities be marked. Our experience, however, is that the utility companies will not mark privately owned utilities. This proposal assumes that private utility lines will be field located by the perspective utility company prior to mobilization of the drill rig. TSF will recommend a utility line locating service upon request.

Upon completion of the field exploration, some laboratory testing and visual classifications will be performed on selected samples.

The results of all drilling and laboratory testing will be evaluated by a geotechnical engineer. A report will be issued that contains the exploration data, a discussion of the site and subsurface conditions and a discussion of some construction considerations.

Task 7: Phase 1A Design

Task 7.1: Phase 1A Water Main Design

The final design will result in preparation of the bid documents, engineering drawings (plan view only) and technical specifications for the Phase IA areas, as described in Section I of this proposal. The design will be predominantly PVC pipe installed by open trench construction. As requested by City

staff, this project will require two (2) reviews which will be at the 60% and 100% completion levels. The 60% water main improvements submittal will include plan view with connections and typical conflicts detailed and a draft project manual. The 100% completion level will include updated engineering drawings and specifications, to include incorporating the comments received from the City on the 60% submittal. Three (3) sets of drawings and specifications will be provided to the City for each review. Also, an engineer's opinion of probable cost will accompany the 60% and 100% design documents. Subtasks, which will be performed include the following:

1. Site Visit: Tetra Tech staff will visit the project site to observe existing conditions and evaluate the pipeline corridors.
2. A significant part of the project design will be based on survey performed by others. Tetra Tech will reasonably rely upon this survey in completion of final design. The survey will be provided in AutoCad format.
3. Review the survey and available City record drawings to identify pipeline locations for the City's replacement water mains. The City will provide GIS information of City owned water, sewer and stormwater facilities in digital format.
4. Coordinate with the City to discuss the proposed pipeline locations and potential conflicts.
5. Coordinate with the design consultant retained by the City to design the undergrounding of the electrical lines in the Phase 1A area.
6. Prepare drawings in AutoCAD based on survey and geotechnical engineering base information. A preliminary list of drawings is presented below:

General

Cover Sheet and Index of Drawings
General Notes, Legend, and Abbreviations
Key Plan
Overall Water Sampling Points Map

Civil

Double Plan Drawings at 1-inch = 20-ft Scale (6 sheets)
Double Plan Drawings – Pavement Restoration at 1-inch = 20-ft Scale (6 sheets)
Standard City Water Details (2 Sheets)
Other details (1 Sheet)
Pollution Prevention Notes and Specs (1 sheet)
Pollution Prevention Details (1 Sheet)
Maintenance of Traffic Plan & Details (3 Sheets)

7. Attend design review meeting at 60% and 100% completion levels, prepare agenda and minutes.
8. Prepare an engineer's estimate of construction cost based on previous bid tabulations, vendor quotes, and estimates provided by Contractors. Cost estimate will be provided at the 60% and 100% completion level.
9. Pavement Restoration sheets will be prepared to meet Broward County requirements.

10. Prepare a comprehensive project manual to contain technical specifications (Divisions 0 through 16). The project manual and its contents will be formatted in accordance with the Construction Specification Institute (CSI) and prepared using Microsoft WORD®.

Task 7.2: Phase 1A Force Main Design

Tetra Tech will design a portion of the force main within the Balboa Street right of way to replace the existing discharge force main from Lift Station E-09. This force main will be designed and constructed to meet the construction schedule for the utilities undergrounding project being implemented by the City. The Phase 1A force main will be designed and constructed within the Balboa Street rights-of-way and capped on both ends until the remainder of the force main is constructed as part of Phase IB. The upstream portion of this replacement force main, within the Lift Station E-09 site, and the downstream portion, from the intersection of SR A1A and Balboa Street to Sherman Street along SR A1A, will be designed and constructed as part of Phase IB. One plan and profile sheet and one detail sheet will be prepared with the design of the force main, along with the technical specifications and cost estimate. A submittal will be made at the 60 percent and 100 percent intervals, for inclusion in the Phase 1A drawing set.

Task 8: Phase 1A Permitting

Task 8.1: Phase 1A Water Permitting

The proposed water mains for Phase 1A of this project will require multiple permits from the following agencies:

- FDEP, for water mains,
- Broward County Traffic and Highway Engineering Departments,
- Florida Department of Environmental Protection (for Coastal Construction Line), and
- City of Hollywood Building Department

Accordingly, Tetra Tech will perform the following tasks:

1. Schedule and attend preapplication meetings with the regulatory agencies.
2. Prepare and submit permit applications. All permit application fees are to be paid by the City.
3. Prepare and submit attachments, plans, calculations, reports, and other documentation required by the permitting agencies.
4. Review and respond to "Requests for Additional Information" issued by the regulatory agencies and teleconferences with agency staff.
5. Prepare and submit up to four (4) water main clearance applications through the FDEP, for project clearance and certification. Clearance applications are budgeted based on receipt of a single Contractor submittal containing four (4) hardcopy sets and one (1) AutoCAD CD set of as-built drawings that depict the information required in the contract documents along with original

passing bacteriological sample reports and signed passing pressure test forms. Tetra Tech will also review as-built drawings submitted for the clearance applications and provide comments for revisions by the contractor prior to submittal of the clearance applications.

6. After completion of construction, information required by the permitting agencies will be prepared and submitted. Information may include photos of completed construction, as-builts, and other information.

Zephyr Engineering will provide support services for Building Department submittal and responses to requests for additional information.

Task 8.2: Phase 1A Wastewater Permitting

Tetra Tech will attend one preapplication meeting with Broward County and prepare and submit permit applications and supporting documentation necessary to obtain permits from the Broward County Environmental Protection and Growth Management Department (EPGMD) and City of Hollywood Building Department for the Phase 1A force main replacement from Lift Station E-09 to the intersection of Balboa Street and SR A1A. Accordingly, Tetra Tech will perform the following tasks:

1. Coordinate and attend one preapplication meeting with Broward County and prepare meeting minutes.
2. Prepare and submit one (1) "Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System" [DEP Form 62-604.300(8) (a)] and one (1) "Application to Construct a Wastewater Collection/Transmission System" [Broward County Domestic Wastewater Licensing Program Form] to the EPGMD and respond to "Requests for Additional Information" (RAI) issued by the regulatory agency. All permit application fees are to be paid by the CITY.
3. Prepare and submit two (2) signed and sealed sets of plans to the City of Hollywood Building Department for review and response to "Requests for Additional Information" (RAI) issued by the regulatory agency.
4. The City will be responsible for all permitting fees.

Zephyr Engineering will provide support services for Building Department submittal and responses to requests for additional information.

Task 9: Phase 1A Bidding and Award

The proposed Phase 1A improvements will be bid as one (1) project, with the City's utilities undergrounding project in the North Beach area, as a Construction Management at Risk project with a Guaranteed Maximum Price at the 60 percent completion level. Bidding and award activities will be led by the City. Tetra Tech will conduct the following services during the bidding process.

1. Tetra Tech will work with the City staff to provide a master copy of the 60 % - Bid Set construction drawings and specifications in electronic format (PDF). It is our understanding that the City will be responsible for distribution of bid packages to potential bidders via online plan distribution.

2. Support with addenda. Tetra Tech will respond to technical questions forwarded by the City for four (4) anticipated addenda as part of this scope of services. Tetra Tech will respond to questions using the Addendum Form for expedited response time and will generate necessary supporting documents, as applicable, and submit them to the City for distribution to registered plan holders.
3. Tetra Tech will attend the bid meeting at the City and prepare agenda.
4. Tetra Tech will coordinate with the selected contractor to obtain design input, which will be incorporated into the final set of plans for construction.

Task 10: Phase 1A Construction Administration Services

Task 10.1: Phase 1A Construction Administration (Water System)

During the construction phase, Tetra Tech will provide technical services support for the water main replacement improvements project. Tetra Tech will consult with and advise the City during construction of the water system. Daily construction observation will be performed by City staff. All instructions to the Contractor will be issued through the City's resident project representative or in writing on an as-needed basis. During the construction phase, Tetra Tech will:

1. Prepare conformed Contract Documents for the water main replacement improvements and attend one (1) pre-construction conference, prepare agenda and minutes.
2. Periodically visit the construction sites of the proposed water main improvements. The overall project is expected to have a total duration of up to 18 months including project kick-off, shop drawing review and substantial and final completion. Periodic observation will be conducted on a weekly basis during active construction which will necessitate a total of 78 site visits.
3. Attend up to 18 monthly progress meetings. Tetra Tech will be responsible for preparing meeting agendas and minutes for distribution, along with DCM.
4. Provide interpretation or clarification of the design documents during active construction (up to 18 months), when requested for approximately thirty requests for additional information.
5. Review shop drawings and other submittals up to two (2) times per submittal subject area for general conformance with the Contract Documents.
6. Evaluate and determine the acceptability of substitute materials and equipment proposed by the Contractor.
7. Assist the City's full time Project Inspector or Project Manager with review of test reports for soils, concrete and other materials.
8. Assist the City's Project Manager to evaluate claims made by the Contractor and prepare change orders as required.
9. Conduct substantial and final completion inspections and punch lists.

10. Prepare record drawings, incorporating changes made during construction, based on record information furnished by the Contractor and provide four (4) sets of prints and one (1) compact disk with an electronic version (PDF) of the documents and AutoCAD drawing files to the City. The record drawings will be tied into the State Plane Coordinate System to facilitate future integration with the City's GIS system.
11. Also, provide project certification to regulatory agencies certifying that the project is complete and in general conformance with permits issued.

Task 10.2: Phase 1A Construction Administration (Wastewater System)

The proposed force main improvements will be constructed with the water main improvements. During the construction phase, Tetra Tech will provide construction administration services for the force main within the right of way between Lift Station E-09 and the eastern right of way line of SR A1A. All instructions to the Contractor will be issued through the City. It is assumed this project will be constructed with the water main improvements in the area and attendance at the monthly construction progress meetings is already included in the scope of work for the water main project. During the construction phase, Tetra Tech will provide the following services to augment the services already being provided as part of the water main project:

1. Prepare conformed Contract Documents to include the force main improvements defined herein.
2. Provide interpretation or clarification of the force main design documents during active construction, when requested for approximately five requests for additional information.
3. Review shop drawings and other submittals up to two (2) times per submittal subject area for general conformance with the Contract Documents.
4. Evaluate and determine the acceptability of substitute materials and equipment proposed by the Contractor.
5. Assist the City's full time Project Inspector or Project Manager with review of test reports for soils, concrete and other materials.
6. Assist the City's Project Manager to evaluate claims made by the Contractor and prepare change orders as required.
7. Conduct substantial and final completion inspections and punch lists.
8. All testing reports and documentation is to be provided to the Consultant for review and adherence to lift station design criteria.
9. Prepare record drawings, incorporating changes made during construction for City and EPGMD based on record information furnished by the Contractor and provide five (5) sets of prints and one (1) compact disk with an electronic version (PDF) of the documents and AutoCAD drawing files to the City. The record drawings will be tied into the State Plane Coordinate System to facilitate future integration with the City's GIS system.

10. Also, provide project certification to regulatory agencies certifying that the project is complete and in general conformance with permits issued.

Task 11: Phase 1B Design

Task 11.1: Phase 1B Water Main Design

Tetra Tech will collect relevant information necessary for design of the water mains for Phase 1B, as described in Section I of this proposal. Information to be collected and reviewed for design considerations will include the following:

- As-builts for the Sheridan Street Bridge, including structural drawings of pilings and other members within the Intracoastal Waterway.
- As-builts for the sea walls along the Intracoastal Waterway, where it crosses Sheridan Street.
- As-builts for the boat bumper system within the Intracoastal Waterway under Sheridan Street.
- As-builts for the Dania Beach Bridge over A1A.
- As-builts for mast arms on Sheridan Street and A1A.
- Others.

The final design will result in preparation of the bid documents, plan and profile view engineering drawings for the areas along Sheridan Street and A1A, plan view only for the remaining areas, and technical specifications, which will be submitted to the City for review. Because of permitting requirements, the bid documents will show a plan and profile for the proposed water mains along Sheridan Street, SR A1A, and the Intracoastal crossings. The design will be predominantly PVC pipe installed by open trench construction. The design will include horizontal directional drills under the Intracoastal Waterway and A1A, along Sheridan Street, and along A1A, underneath the E Dania Beach Boulevard. As requested by City staff, this project will require two (2) reviews which will be at the 60% and 100% completion levels. The 60% water main improvements submittal will include plan view with connections and typical conflicts detailed, preliminary profiles, and a draft project manual. The 100% completion level will incorporate City comments and a final project manual. Three (3) sets of drawings and specifications will be provided to the City for each review. Also, an engineer's opinion of probable cost will accompany the 60% and 100% design documents. Subtasks, which will be performed include the following:

1. Prepare agenda, attend a kick-off meeting with the City, and prepare minutes.
2. Site Visit: Tetra Tech staff will visit the project site to observe existing conditions and evaluate the pipeline corridors.
3. Review the survey and available City record drawings to identify pipeline locations for the City's replacement water mains. The City will provide GIS information of City owned water, sewer and stormwater facilities in digital format.
4. Coordinate with the City to discuss the proposed pipeline locations and potential conflicts.

5. Prepare drawings in AutoCAD based on survey and geotechnical engineering base information. A preliminary list of drawings is presented below:

General

Cover Sheet and Index of Drawings
General Notes, Legend, and Abbreviations
Key Plan
Overall Water Sampling Points Map

Civil

Plan and Profile Drawings for Sheridan Street at 1-in = 20-ft Scale Horizontal and Vertical (8 sheets)
Plan and Profile Drawings for A1A from Sheridan Street to Balboa Street at 1-in = 20-ft Scale Horizontal and 1-in = 2-ft Vertical (12 sheets)
Plan and Profile Drawings for Dania Beach Boulevard Bridge Crossing at 1-in = 20-ft Scale Horizontal and 1-in = 2-ft Vertical (1 sheet)
Plan and Profile Drawings for Intracoastal Crossing at Polk/Arizona Streets sheets at 1-inch = 20-ft Scale Horizontal and 1-in = 2-ft Vertical (2 sheets)
Double Plan Drawings at 1-inch = 20-ft Scale (8 sheets)
Double Plan Drawings – Pavement Restoration at 1-inch = 20-ft Scale (20 sheets)
Standard City Water Details (2 Sheets)
Other Details (1 Sheet)
Pollution Prevention Notes and Specs (1 sheet)
Pollution Prevention Details (1 Sheet)
Maintenance of Traffic Plan & Details (3 Sheets)

6. Attend design review meeting at 60% and 100% completion levels, prepare agenda and minutes.
7. Prepare an engineer's estimate of construction cost based on previous bid tabulations, vendor quotes, and estimates provided by Contractors. Cost estimate will be provided at the 60% and 100% completion level.
8. Pavement Restoration sheets will be prepared to meet Broward County requirements.
9. Prepare a comprehensive project manual to contain bidding, contract, general requirements (provided by the City) and technical specifications (Divisions 0 through 16) for competitive bidding. The project manual and its contents will be formatted in accordance with the Construction Specification Institute (CSI) and prepared using Microsoft WORD®.

Task 11.2: Phase 1B Wastewater System Design

This task includes preparation of the bid documents for the replacement of Lift Station E-09, and the remainder of the discharge force main replacement along SR A1A, from Balboa Street to Sherman Street.

The proposed force main will be designed to include a new flow meter, if required. The design will be predominantly pressure PVC pipe installed by open trench construction.

Lift station calculations will be developed for the following:

- Duplex lift station sizing calculations.
- Wet well sizing calculations.
- Discharge force main head loss calculations.
- Lift station cycle time.
- Wet well and valve vault flotation calculations.

As requested by City staff, this project will require two (2) reviews which will be at the 60% and 100% completion levels. Three (3) sets of drawings and specifications will be provided to the City for each review. Also, an engineer's opinion of probable cost will accompany the 60% and 100% design documents. The 100% completion level will incorporate City comments and comments received during permitting. Tasks to be conducted as part of this task include:

1. Site Visit: Tetra Tech staff will visit the project site with members of the City to observe existing conditions and the existing lift station site.
2. Prepare drawings in AutoCAD based on survey and geotechnical engineering base information. The preliminary list of drawings to be included in the Phase 1B bid package is presented below:

General

General Notes, Legend, and Abbreviations
Key Plan

Civil

Lift Station E-09 Existing Site Plan
Lift Station E-09 Demolition Plan
Lift Station E-09 Grading and Site Plan
Lift Station E-09 Mechanical Plan
Lift Station E-09 Mechanical Section and Isometric
Lift Station E-09 Meter Plan and Section
Lift Station E-09 Piping Plan
Force Main Plan and Profile Drawings at 1-inch = 20-ft Scale (13 sheets)
Standard City Sewer Details (2 Sheets)
Other details (1 Sheet)

Electrical and Communication

Electrical Legend
Lift Station E-09 Electrical Site Plan
Lift Station E-09 Hazardous Classification Plan and Section
Lift Station E-09 Electrical Riser Diagram
Lift Station E-09 Control Panel Layout
Lift Station E-09 Control Panel Wiring Diagram (2 sheets)
Lift Station E-09 Telemetry Panel Wiring Diagram

Lift Station E-09 Details (2 Sheets)
Lift Station E-09 Process Flow and Instrumentation Diagram

Structural

Structural General Notes
Lift Station E-09 Structural Plan and Section
Lift Station E-09 Meter Structural Plan and Section
Structural Details (1 Sheet)

3. Prepare technical specifications and modify the City's front-end specifications, as required.
4. Attend design review meeting at 60% and 100% completion levels, prepare agenda and minutes.
5. Control panel, power and control systems and Supervisory Control and Data Acquisition (SCADA) and Remote Terminal Unit (RTU) equipment per City standards.
6. Coordination with FPL for power supply and obtain FPL design of power supply before bid of the project.
7. Stand-by power generator system connection.
8. Prepare an engineer's estimate of construction cost based on previous bid tabulations, vendor quotes, and estimates provided by Contractors.
9. Prepare an engineer's estimate of construction cost based on previous bid tabulations, vendor quotes, and estimates provided by Contractors. Cost estimate will be provided at the 60% and 100% completion level.
10. Prepare a comprehensive project manual to contain bidding, contract, general requirements (provided by the City) and technical specifications (Divisions 0 through 16) for competitive bidding. The project manual and its contents will be formatted in accordance with the Construction Specification Institute (CSI) and prepared using Microsoft WORD®.

Hillers Electrical Engineering will provide engineering services for electrical design.

Task 12: Phase 1B Permitting

Task 12.1: Phase 1B Water Permitting

The proposed water mains for this project will require multiple permits from the following agencies:

- FDEP, for water mains.
- Broward County Traffic and Highway Engineering Departments.
- Broward County Environmental Protection and Growth Management Department.
- the Army Corps of Engineers.

- Florida Department of Environmental Protection (for Coastal Construction Line).
- Florida Department of Transportation (FDOT).
- City of Hollywood Building Department.

Accordingly, Tetra Tech will perform the following tasks:

1. Schedule and attend preapplication meetings with the four regulatory agencies.
2. Prepare and submit permit applications. All permit application fees are to be paid by the City.
3. Prepare and submit attachments, plans, calculations, reports, and other documentation required by the permitting agencies.
4. Review and respond to “Requests for Additional Information” issued by the regulatory agencies and teleconferences with agency staff.
5. Prepare and submit up to four (4) water main clearance applications through the Florida Department of Health, for project clearance and certification. Clearance applications are budgeted based on receipt of a single Contractor submittal containing four (4) hardcopy sets and one (1) AutoCAD CD set of as-built drawings that depict the information required in the contract documents along with original passing bacteriological sample reports and signed passing pressure test forms. Tetra Tech will also review as-built drawings submitted for the clearance applications and provide comments for revisions by the contractor prior to submittal of the clearance applications.
6. After completion of construction, information required by the permitting agencies will be prepared and submitted. Information may include photos of completed construction, as-builts, and other information.

Zephyr Engineering will provide support services for development applications review and wastewater projections.

Task 12.2: Phase 1B Wastewater Permitting

Tetra Tech will attend one preapplication meeting with Broward County and prepare and submit permit applications and supporting documentation necessary to obtain permits from the Broward County Environmental Protection and Growth Management Department (EPGMD) and City of Hollywood Building Department for the transmission system improvements from Lift Station E-01 to Lift Station E-02. Accordingly, Tetra Tech will perform the following tasks:

1. Coordinate and attend one preapplication meeting with Broward County and prepare meeting minutes.
2. Prepare and submit one (1) “Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System” [DEP Form 62-604.300(8) (a))] and one (1) “Application to Construct a Wastewater Collection/Transmission System” [Broward County Domestic Wastewater Licensing Program Form] to the EPGMD and respond to “Requests for Additional

Information” (RAI) issued by the regulatory agency. All permit application fees are to be paid by the CITY.

3. Prepare and submit two (2) signed and sealed sets of plans to the City of Hollywood Building Department for review and response to “Requests for Additional Information” (RAI) issued by the regulatory agency.
4. The City will be responsible for all permitting fees.

Zephyr Engineering will provide support services for development applications review and wastewater projections.

Task 13: Phase 1B Bidding and Award

The proposed improvements will be bid as one (1) project. Bidding and award activities will be led by the City. Tetra Tech will conduct the following services during the bidding process.

1. Tetra Tech will work with the City staff to provide a master copy of the Bid Set construction drawings and specifications in electronic format (PDF). It is our understanding that the City will be responsible for distribution of bid packages to potential bidders via online plan distribution.
2. Support with addenda. Tetra Tech will respond to technical questions forwarded by the City for four (4) anticipated addenda as part of this scope of services. Tetra Tech will respond to questions using the Addendum Form for expedited response time and will generate necessary supporting documents, as applicable, and submit them to the City for distribution to registered plan holders.
3. Tetra Tech will attend the pre-bid meeting at the City and prepare agenda.
4. Tetra Tech will evaluate the bids, provide support for evaluation of the apparent low bidder's utilities contractor's qualifications for undertaking the utility work on the project, and provide a recommendation of award.

Task 14: Phase 1B Construction Administration Services

Task 14.1: Phase 1B Construction Administration (Water System)

During the construction phase, Tetra Tech will provide technical services support for Phase 1B of the water main replacement improvements project. Tetra Tech will consult with and advise the City during construction of the water system. Daily construction observation will be performed by City staff. All instructions to the Contractor will be issued through the City's resident project representative or in writing on an as-needed basis. During the construction phase, Tetra Tech will:

1. Prepare conformed Contract Documents for the water main replacement improvements and attend one (1) pre-construction conference, prepare agenda and minutes.
2. Periodically visit the construction sites of the proposed water main improvements. The overall project is expected to have a total duration of up to 18 months including project kick-off, shop drawing review and substantial and final completion. Periodic observation will be conducted on a weekly basis during active construction which will necessitate a total of 78 site visits.

3. Attend up to 18 monthly progress meetings. Tetra Tech will be responsible for preparing meeting agendas and minutes for distribution.
4. Provide interpretation or clarification of the design documents during active construction (up to 18 months), when requested for approximately forty requests for additional information.
5. Review shop drawings and other submittals up to two (2) times per submittal subject area for general conformance with the Contract Documents.
6. Evaluate and determine the acceptability of substitute materials and equipment proposed by the Contractor.
7. Assist the City's full time Project Inspector or Project Manager with review of test reports for soils, concrete and other materials.
8. Assist the City's Project Manager to evaluate claims made by the Contractor and prepare change orders as required.
9. Conduct substantial and final completion inspections and punch lists.
10. Prepare record drawings, incorporating changes made during construction, based on record information furnished by the Contractor and provide four (4) sets of prints and one (1) compact disk with an electronic version (PDF) of the documents and AutoCAD drawing files to the City. The record drawings will be tied into the State Plane Coordinate System to facilitate future integration with the City's GIS system.
11. Also, provide project certification to regulatory agencies certifying that the project is complete and in general conformance with permits issued.

Task 14.2: Phase 1B Construction Administration (Wastewater System)

The proposed sanitary sewer improvements will be constructed with the City Water Main Replacement Program Project. During the construction phase, Tetra Tech will provide construction administration services for the rehabilitation of Lift Station E-09 and the remainder of the discharge force main from Lift Station E-09 along SR A1A from Balboa Street to Sherman Street. All instructions to the Contractor will be issued through the City. It is assumed this project will be constructed with the water main improvements in the area and attendance at the monthly construction progress meetings is already included in the scope of work for the water main project. During the construction phase, Tetra Tech will provide the following services to augment the services already being provided as part of the water main project:

1. Prepare conformed Contract Documents to include the force main and lift station improvements defined herein.
2. Periodically visit the construction sites of the proposed force main and lift station improvements. The overall project is expected to have a total duration of up to 18 months including project kick-off, shop drawing review and substantial and final completion. Periodic observation will be conducted on a weekly basis during active construction which will necessitate a total of 78 site visits.

3. Provide interpretation or clarification of the force main and lift station design documents during active construction, when requested for approximately 20 requests for additional information.
4. Review shop drawings and other submittals up to two (2) times per submittal subject area for general conformance with the Contract Documents.
5. Evaluate and determine the acceptability of substitute materials and equipment proposed by the Contractor.
6. Assist the City's full time Project Inspector or Project Manager with review of test reports for soils, concrete and other materials.
7. Assist the City's Project Manager to evaluate claims made by the Contractor and prepare change orders as required.
8. Conduct substantial and final completion inspections and punch lists.
9. All testing reports and documentation is to be provided to the Consultant for review and adherence to lift station design criteria.
10. Prepare record drawings, incorporating changes made during construction for City and EPGMD based on record information furnished by the Contractor and provide five (5) sets of prints and one (1) compact disk with an electronic version (PDF) of the documents and AutoCAD drawing files to the City. The record drawings will be tied into the State Plane Coordinate System to facilitate future integration with the City's GIS system.
11. Also, provide project certification to regulatory agencies certifying that the project is complete and in general conformance with permits issued.

Task 15: Allowance

An allowance of \$150,000 will be included in this work order for additional services or unforeseen work, including design, subsurface utility investigations, environmental surveys or other services which may be required. The allowance must be requested and approved in writing by the City, prior to use.

Task 16: Reimbursable Expenses

An allowance of \$10,000 will be included in this work order for additional services or unforeseen work, including design, subsurface utility investigations, or other services which may be required. The allowance must be requested and approved in writing by the City, prior to use.

III. COMPENSATION

The total Lump Sum fee for the Scope of Services described above is **\$1,377,717**. **Attachment B** presents a detailed breakdown of the estimated hours and compensation for the Scope of Services. The approximate fee is split for water and wastewater utilities as shown below:

- Water - \$977,083
- Wastewater - \$400,634
- **Total - \$1,377,717**

Task	Fee (\$)
Task 1: Meetings and Coordination	13,376
Task 2: Data Collection, Review, Preliminary Design Memorandum	68,896
Task 3.1: Phase 1A Right of Way Surveying	6,039
Task 3.2: Phase 1B Right of Way Surveying	123,720
Task 3.3: Phase 1B Site Surveying (Lift Station E-09)	3,850
Task 4: Utilities Verification	18,795
Task 5: Subsurface Utilities Evaluation	76,505
Task 6: Geotechnical Investigation	111,822
Task 7.1: Phase 1A Water Main Design	69,306
Task 7.2: Phase 1A Force Main Design	2,566
Task 8.1: Phase 1A Water Permitting	24,719
Task 8.2: Phase 1A Wastewater Permitting	4,280
Task 9: Phase 1A Bidding and Award	13,288
Task 10.1: Phase 1A Construction Administration (Water System)	105,195
Task 10.2: Phase 1A Construction Administration (Wastewater System)	11,606
Task 11.1: Phase 1B Water Main Design	127,749
Task 11.2: Phase 1B Wastewater System Design	132,416
Task 12.1: Phase 1B Water Permitting	48,293
Task 12.2: Phase 1B Wastewater Permitting	20,045
Task 13: Phase 1B Bidding and Award	19,423
Task 14.1: Phase 1B Construction Administration (Water System)	133,309
Task 14.2: Phase 1B Construction Administration (Wastewater System)	82,519
Task 15: Allowance	150,000
Task 16: Reimbursable Expenses	10,000
Total	1,377,717

IV. SCHEDULE

The project schedule for the Scope of Services described in Section II shall be up to five years. A detailed schedule will be developed during the preliminary design portion of the project.

V. ASSUMPTIONS

1. This proposal is for design of Phase 1 only. Preliminary and detailed design and other services for the Phase 2 portion of this project will be provided as part of a future work order.
2. Design or rehabilitation of gravity sewers is not included in this work order.
3. Environmental services are not explicitly included in this proposal. If benthic surveys are required for the crossing of the Intracoastal Waterway, the additional services allowance task will be utilized for this work.
4. Other Permits - This proposal does not include permitting services for any permits not previously listed.
5. Costs for advertising the Project are to be paid by the City.
6. Obtaining easements on property for construction of the project or any work related to easements is not included in this scope. If easements are required, which will be identified during the preapplication meetings with the permitting agencies, services related to easements will be approved in a separate work order.
7. Coordination with businesses or homeowners is not included in this scope and no time has been budgeted for attendance at any meetings not previously listed.
8. All construction related layout and record drawing survey work and geotechnical services, including materials testing and other services are to be provided by the Contractor. This pertains only to such work that is completed during the construction phase.
9. Hydraulic modeling of the water or wastewater systems. Any modeling will be completed by the City and results provided to Tetra Tech.
10. All permitting fees are to be paid by the City. No permitting through the City of Dania Beach is included.
11. Public involvement is excluded. All interactions with the public will be conducted by the City.
12. Services related to the stormwater improvements design, permitting, bidding and construction administration.
13. Additional services due to a bid protest or extensive review of bids beyond tabulation, review, and contacting references.
14. Extensive MOT design, permitting, and materials, beyond what is included in the Subsurface Utility Investigation task.
15. A significant part of the project design will be based on survey performed by others. Tetra Tech will reasonably rely upon this survey in completion of final design.

<div><div><div><div><div><div></div></div></div><div><div></div></div></div><div>Price Proposal</div></div></div>		Labor Plan									Price Summary / Totals						
		9 Resource									Task Pricing Totals				1,377,717		
Hollywood Beach Utility Improvem	Bill Rate >	248.00	207.20	150.23	105.40	89.44	107.73	201.19	279.00	94.58	Specify Add'l Fees on Setup				0		
	Proj Area >										Technology Use Fee						
												Total Price				1,377,717	
Submitted to: City of Hollywood											Pricing by Resource						
Contract Type: Lump Sum																	
	Total Labor Hrs	Sr Project Manager	Sr Engineer	Engineer IV	Engineer II	Engineer I	Engineering Designer	Sr Engineer (Structural)	Principal Engineer	Project Administrator	Labor	Subs / Allowance	Travel	Mat'l's & Equip	ODCs	Task Pricing Totals	
Project Phases / Tasks		6,117	245	1,062	552	1,331	857	1,807	110	54	99	821,888	545,832	-	-	10,000	1,377,717
Task 1 Meetings and Coordination		66	22	23	21	-	-	-	-	-	-	13,376	-	-	-	-	13,376
Task 2 Data Collection, Review, Preliminary Alternatives and D		335	10	32	27	94	172	-	-	-	-	38,457	30,439	-	-	-	68,896
Task 3.1 Phase1A ROW Surveying		-	-	-	-	-	-	-	-	-	-	-	6,039	-	-	-	6,039
Task 3.2 Phase 1B ROW Surveying		-	-	-	-	-	-	-	-	-	-	-	123,720	-	-	-	123,720
Task 3.3 Lift Station E-09 Survey		-	-	-	-	-	-	-	-	-	-	-	3,850	-	-	-	3,850
Task 4 Phase I Utilities Verification		181	-	-	1	22	38	120	-	-	-	18,795	-	-	-	-	18,795
Task 5 Subsurface Utility Evaluation		-	-	-	-	-	-	-	-	-	-	-	76,505	-	-	-	76,505
Task 6 Geotechnical Investigation		-	-	-	-	-	-	-	-	-	-	-	111,822	-	-	-	111,822
Task 7.1 Phase 1A Water Main Design		513	36	90	16	162	-	189	-	-	20	69,306	-	-	-	-	69,306
Task 7.2 Phase 1A Force Main Design		19	1	4	-	8	-	6	-	-	-	2,566	-	-	-	-	2,566
Task 8.1 Phase 1A Water Main Permitting		136	8	36	-	58	-	34	-	-	-	19,219	5,500	-	-	-	24,719
Task 8.2 Phase 1A Wastewater Permitting		30	2	8	-	12	-	8	-	-	-	4,280	-	-	-	-	4,280
Task 9 Phase 1A Bidding and Award		105	3	16	8	23	14	36	-	-	5	13,288	-	-	-	-	13,288
Task 10 Phase 1A Construction Administration (Water)		700	29	256	23	213	55	102	10	-	12	105,195	-	-	-	-	105,195
Task 10.2 Phase 1A Construction Administration (Wastewater)		96	2	-	37	6	30	19	-	-	2	11,606	-	-	-	-	11,606
Task 11.1 Phase 1B Water Main Design		931	58	144	-	264	16	393	-	36	20	127,749	-	-	-	-	127,749
Task 11.2 Phase 1B Wastewater System Design		989	16	20	150	-	245	490	56	-	12	117,744	14,672	-	-	-	132,416
Task 12.1 Phase 1B Water Permitting		395	8	66	-	130	87	100	-	-	4	48,293	-	-	-	-	48,293
Task 12.2 Phase 1B Wastewater Permitting		145	4	15	18	31	32	44	-	-	1	17,768	2,277	-	-	-	20,045
Task 13 Phase 1B Bidding and Award		139	2	19	12	33	20	48	-	-	5	17,146	2,277	-	-	-	19,423
Task 14.1 Phase 1B Construction Administration (Water)		853	40	313	43	271	8	136	8	18	16	133,309	-	-	-	-	133,309
Task 14.2 Phase 1B Construction Administration (Wastewater)		484	4	20	196	4	140	82	36	-	2	63,788	18,731	-	-	-	82,519
Task 13 Allowance		-	-	-	-	-	-	-	-	-	-	-	150,000	-	-	-	150,000
Task 14 Reimbursable Expenses		-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,000	10,000
Totals		6,117	245	1,062	552	1,331	857	1,807	110	54	99	821,888	545,832	-	-	10,000	1,377,717



A Civil Engineering Firm
Tel: (786)302-7693 • Email: wilford@zephyrengineeringfl.com

January 8, 2021

Mr. Kenneth L. Caban, Vice President
Tetra Tech
Phone: (954)364-1752
Email: ken.caban@tetratech.com

**RE: Design & Construction Administration Services for
Hollywood Beach Utility Improvements
Project No. 10-5106/18-7098
Hollywood, FL**

Dear Mr. Caban,

Per your request, attached is a proposal for the above referenced project. If you agree to the terms of this proposal, please sign and date the last page, and this will serve as the contract between Zephyr Engineering and Tetra Tech.

Relevant Parties

1. Tetra Tech will be referred to as Client.
2. Zephyr Engineering will also be referred to as ZE.

Scope of Services

Zephyr Engineering will assist the design team by obtaining sanitary sewer flows from developments currently under construction, developments submitted to the City's Technical Advisory Committee (TAC) review process, and projects submitted for Pre-Application Conference (PACO). Zephyr Engineering will provide Client with a report listing the various developments, along with the associate proposed sanitary sewer flows. The work will be divided into two phases, which are described below.

During the permitting phase, Zephyr Engineering will submit plans to the City of Hollywood for permit review, and will coordinate review comments from the City to be addressed by Tetra Tech. Zephyr Engineering will also review plans after comments are addressed by Tetra Tech, to verify that all comments have been satisfactorily addressed.

Phase 1

Phase 1 includes the area between East Dania Beach Blvd and Sheridan Street, along SR A1A. The tasks to be performed by Zephyr Engineering are as follow:



A Civil Engineering Firm
Tel: (786)302-7693 • Email: wilford@zephyrengineeringfl.com

COMPENSATION SUMMARY

Task	Cost
A) Obtain current and future development applications and zoning information	\$ 3,500
B) Provide Tetra Tech with table of development flows to be used for Sanitary sewer design	\$ 4,000
C) Submit plans to the City of Hollywood for permit review	\$ 1,000
D) Review plans revised by Tetra Tech for re-submittal to the City of Hollywood	\$ \$4,000
Total Lump Sum	\$ 12,500

Phase 2

Phase 2 includes the area between Sheridan Street & Johnson Street, along SR A1A. The tasks to be performed by Zephyr Engineering are as follow:

COMPENSATION SUMMARY

Task	Cost
A) Obtain current and future development applications and zoning information	\$ 3,500
B) Provide Tetra Tech with table of development flows to be used for Sanitary sewer design	\$ 4,000
Total Lump Sum	\$ 7,500

A Civil Engineering Firm
Tel: (786)302-7693 • Email: wilford@zephyrengineeringfl.com

Payment Schedule:

Client will be billed on a monthly basis based on percentage of progress completed.

LIMITATION OF LIABILITY: Client agrees that Zephyr Engineering's total liability to Client for any and all claims, losses, expenses or claim expenses as a result of this agreement from any cause or causes, shall not exceed the total amount of payments made to Zephyr Engineering. Such causes include but are not limited to Zephyr Engineering's negligence, errors, omissions, strict liability, breach of contract or breach of warranty.

Approval

If you agree to the terms stated on this proposal, please sign, date and email a scanned copy of the signed proposal to me. This proposal shall serve as the binding contract between the client and Zephyr Engineering.

Wilford Zephyr: Wilford Zephyr 1-8-21
Signature Date

Client: _____

Signature _____ Date _____

GIBBS LAND SURVEYORS

2131 HOLLYWOOD BOULEVARD SUITE 204 HOLLYWOOD, FLORIDA 33020

PHONE: 954-923-7666 FAX: 954-923-7668

SSEELEY@GIBBSLANDSURVEYORS.COM

January 7, 2021

Ken Caban
Tetra Tech
450 N Park Road Suite 502
Hollywood FL 33021

RE: City of Hollywood – North Beach Utility Improvements – Land Survey Services

Dear Mr. Caban:

We are pleased to submit the following proposal for Professional Land Surveying services on the above referenced project.

TASK 3.1 Phase 1A Right-of-Way Surveying:

1. Surf Road Right-of-Way from Balboa Street to Franklin Street. In addition, pavement markings along SR A1A, from Balboa Street to Franklin Street and from Douglas Street to Freedom Street, to augment survey by Calvin Giordano & Assoc.

TASK 3.1 Lump sum fee: \$5,490.00

TASK 3.2 Phase 1B Right-of-Way Surveying:

1. Sheridan Street – from West Lake Drive, east to North Ocean Drive (A-1-A);
Lump sum fee: \$29,750.00
2. State Road A-1-A (N. Ocean Drive) from Sherman Street to Freedom Street;
Lump sum fee: \$11,275.00
3. State Road A-1-A (N. Ocean Drive) from Douglas Street to Franklin Street;
Lump sum fee: \$17,325.00
4. State Road A-1-A (N. Ocean Drive) from Balboa Street to 970 feet north of Dania Beach Blvd., just north of the bridge;
Lump sum fee: \$9,130.00
5. Surf Road, from Simms Street (Beach Park) to Franklin Street;
Lump sum fee: \$14,213.00
6. Greene Street from A-1-A to Surf Road;
Lump sum fee: \$900.00
7. Cambridge Street from A-1-A to approximately 625 feet east;
Lump sum fee: \$2,200.00
8. N 4th Terrace, from Cambridge Street to approximately 275 south to the end;
Lump sum fee: \$900.00
9. Intracoastal waterway – a 50 foot corridor perpendicular to the waterway south of and adjacent to the north right-of-way line of Sheridan Street; Provide bathymetry (soundings) to the bottom of the waterway, collected in intervals of 5 feet, elevations in NAVD88 Datum and horizontal position in State Plane Coordinate System.
Lump sum fee: \$4,500.00

10. A topographic survey of a portion of Hollywood Marina (Polk Street), Intracoastal Waterway, and Arizona Street;
Survey of an area 50 feet in width, a bathymetric survey (soundings) of full right-of-way of the Intracoastal Waterway at Polk Street Marina, the alignment of which shall be Arizona Street extended westerly, to include a 50 foot wide topographic survey of the Marina, grass surface, asphalt parking and above ground improvements and random elevations, approximately 130 feet west from the west Right-of-Way line of the Intracoastal Waterway; extending easterly along the Arizona street Right-of-Way width (40 feet) continuing across A-1-A easterly to include all of Arizona Street Right-of-Way to Surf Road.

Lump sum fee: \$8,500.00

11. Provide 50 foot corridor topography, crossing A-1-A in line with the south bathymetric survey (above) to extend into North Beach Park 100 feet, with elevations, and locations to create a staging area for HDD.

Lump sum fee: \$2,400.00

12. Provide Sketch and Description for water main.

Lump sum fee: \$1,500.00

TASK 3.2 TOTAL FEES: \$95,093.00

Survey will consist of the following:

1. Perform a topographic survey locating and identifying all visible existing above-ground and underground utilities (as marked in the field) within the above limits.
2. Locate and/or provide permanent construction controls on site in State Plane Coordinates (1983 adjustment) and vertical control based on the North American Vertical Datum of 1988 (NAVD88). Horizontal and vertical controls will be referenced to the Florida State Plane Coordinate system on the digital files.
3. Platted right-of-ways or easement and property boundaries shall be plotted on survey drawings for the project route.
4. Provide location of all existing buildings, concrete pads, valve boxes, water/electrical meter boxes, electrical pull boxes, telephone/cable risers, fences, hydrants, above-ground utilities, wood/concrete utility poles, overhead electrical lines, culverts, guardrails, pavement limits, pavement markings, traffic signage and type, headwalls, endwalls, manholes, vaults, driveways, right-of-way limits, and any other visible improvements.
5. Provide cross-sections at 100 foot intervals to extend 5 feet beyond the Right-of-Way lines
6. Bathymetric survey: Soundings to the bottom of the waterway, collected in intervals of 5 feet, elevations in NAVD88 Datum and horizontal position in State Plane Coordinate System.

7. Provide rim and invert elevations and pipe size and type on all visible gravity sewer structures and/or outfalls (sanitary and storm drainage) within the above limits. Access to structures limited to a two-person effort without risk of damage from deteriorating grates. City assistance may be required.
8. Provide location of vegetation and individual trees greater than four (4) inches in diameter.
9. Digital files shall delineate all field collected data as well as existing limits of referenced right-of-ways
10. The final survey map to be prepared at 1"=20' horizontal in a standard 22"x34" plan sheet format in include all topographic data listed above, right-of-way lines and property lines (GIS derived), baselines and platted right-of-way lines based upon existing monumentation and utilities verification and subsurface utility data, if provided.
11. Deliverables: Standard AutoCAD (2019) files (.dwg files) and cross sections and topographic / elevations (.txt files) and signed and sealed copy of survey.

TASK 3.3 Phase 1B Right-of-Way Surveying:

1. Survey services will be performed by Gibbs Land Surveyors (Surveyor) and shall provide a topographic survey for Lift Station E-09 Site.

Lump sum fee: \$3,500.00

2. Topographic Survey of all of North Beach Park – all paved areas, roadways, parking, drives, walkways, service roads & paths, all above ground structures and utilities, lightpoles, valve boxes, hand holes, signage and striping - search for water valves. Random elevations, highs & lows, storm drainage, sanitary sewer, rims and inverts. Trees and palms, with their diameter size and species.

Lump sum fee: \$17,380.00

Survey will consist of the following:

1. Perform a topographic survey locating and identifying all visible existing above-ground and underground utilities (as marked in the field) within the above limits.
2. Locate and/or provide permanent construction controls on site in State Plane Coordinates (1983 adjustment) and vertical control based on the North American Vertical Datum of 1988 (NAVD88). Horizontal and vertical controls will be referenced to the Florida State Plane Coordinate system on the digital files.
3. Platted right-of-ways or easement and property boundaries shall be plotted on survey drawings for the project route.
4. Provide location of all existing buildings, concrete pads, valve boxes, water/electrical meter boxes, electrical pull boxes, telephone/cable risers, fences,

hydrants, above-ground utilities, wood/concrete utility poles, overhead electrical lines, hydrants, above-ground utilities, wood/concrete utility poles, overhead electrical lines, culverts, guardrails, pavement limits, pavement markings, traffic signage and type, headwalls, endwalls, manholes, vaults, driveways, right-of-way limits and any other visible improvements.

5. Provide random elevations throughout;
6. Provide rim and invert elevations and pipe size and type on all visible gravity sewer structures and/or outfalls (sanitary and storm drainage) within the above limits.

Access to structures limited to a two-person effort without risk of damage from deteriorating grates. City assistance may be required.

7. Provide location of vegetation and individual trees greater than four (4) inches in diameter.
8. Digital files shall delineate all field collected data as well as existing limits of referenced right-of-ways
9. The final survey map to be prepared at 1"=20' horizontal in a standard 22"x34" plan sheet format in include all topographic data listed above, right-of-way lines and property lines (GIS derived), baselines and platted right-of-way lines based upon existing monumentation and utilities verification and subsurface utility data, if provided.
10. Deliverables: Standard AutoCAD (2019) files (.dwg files) and topographic / elevations (.txt files) and signed and sealed copy of survey.

EXCLUSIONS:

This survey does not include the following:

- 1) Deliverables that may be required by FDOT for Roadway design or milling and resurfacing; deliverables in MicroStation, GeoPak or AutoCAD Civil 3D
- 2) Deliverables of FDOT compatible "smart features" points;
- 3) Files in formats other than Autocad.
- 4) FDOT Primary Network Control
- 5) FDOT Baseline & Right-of-Way mapping

Ken Caban
Tetra Tech
North Beach Utility Improvements
1/07/2021
Sheet 5

COMPENSATION SUMMARY:

1) TASK 3.1 Survey.....	\$5,490.00
2) TASK 3.2 Survey.....	\$95,093.00
3) TASK 3.3 Survey.....	\$20,880.00

TOTAL FEES:.....\$121,463.00

Sincerely,



Stephen K. Seeley, (for the firm)



HILLERS ELECTRICAL ENGINEERING, INC.

January 7, 2021

Kenneth Caban, P.E.
Tetra Tech
4601 Sheridan Street, Suite 212
Hollywood, Florida 33021

Subject: City of Hollywood – Lift Stations No. E-1 and E-9 Rehabilitation

Dear Ken:

Hillers Electrical Engineering, Inc. (HEE) is pleased to provide Tetra Tech a proposal for the electrical, instrumentation & control, and SCADA design, permitting, bidding and construction services associated with the above referenced project.

Lift Station No. E-1 Design includes:

- FPL coordination
- New electrical service with underground feed, meter can, service disconnect, automatic transfer switch, a standby generator in sound attenuated non walk-in enclosure, pump station control panel, Remote Telemetry Unit (RTU), antenna mast, auto-dialer system, grounding, and submersible pump motors
- Instrumentation and control
- Wet well lighting and exhaust fan

Lift Station No. E-1 Design Phase includes:

- Preliminary Design Memo – Includes site visit, preliminary design, cost estimate and review meeting.

Lift Station No. E-9 Design includes:

- FPL coordination to upgrade the existing electrical service. FPL requires to upgrade the existing 240V, 3-phase service to a new 480V, 3-phase service when a new motor horsepower becomes larger than 20HP.
- New electrical service, meter can, service disconnect, manual transfer switch, generator receptacle, pump station control panel, Remote Telemetry Unit (RTU), antenna mast, grounding and submersible pump motors
- Instrumentation and control
- On-site lighting

Lift Station No. E-9 Design Phases include:

- Preliminary Design Memo – Includes site visit, preliminary design, cost estimate and review meeting.
- 60% Design – Drawings, specifications, cost estimate and review meeting
- 100 % Design - Drawings, specifications, and cost estimate
- Permitting – Assistance with permitting and drawing revision

Kenneth Caban, P.E.

Subject: City of Hollywood – Lift Stations No. E-1 and E-9 Rehabilitation

- Bidding – Assistance with bidding and answering bidding questions from Contractors.

Lift Station No. E-9 Construction Service includes:

- Shop drawing review & approvals, RFI responses, (6) periodic site visits during construction, equipment testing, loop testing, start-up, final punch list inspection and prepare (As-Built) drawings

Our proposed lump sum fee for Lift Station No. E-1 Preliminary Design Memo is \$ 6,336.

Our proposed lump sum fee for Lift Station No. E-9 design, permitting, bidding and construction services is \$ 40,842.

Total fee for both Lift Stations No. E-1 and E-9 is \$ 47,178.

Our fee breakdown is shown in the attached spreadsheet.

Sincerely,

A handwritten signature in blue ink, appearing to read "P. Hillers", with a stylized flourish at the end.

Paul Hillers, P.E.

City of Hollywood – Lift Stations No. E-1 and E-9 Rehabilitation

HILLERS ELECTRICAL ENGINEERING, INC.

Scope Fee Breakdown -Design, Permitting, Bidding and Construction Services

Date: 1/7/2021

Rate	\$180.00	\$153.00	\$124.00	\$113.00	\$65.00						
	Principal Eng.	Proj. Eng.	Engineer	Field Rep.	Secretarial					SUB-TOTAL	TOTAL
PHASE OF WORK	Hours	Hours	Hours	Hours	Hours			Sub-total	Expenses	TASK COST	TASK COST
LS E-1: Preliminary Design Memo											\$6,336.00
FPL Coordination	4	16						20		\$3,168.00	
Electrical/I&C Memo	3	10						13		\$2,070.00	
Cost Estimate	1	2						3		\$486.00	
Review Meeting		4						4		\$612.00	
LS E-9: Preliminary Design Memo											\$6,336.00
FPL Coordination	4	16						20		\$3,168.00	
Electrical/I&C Memo	3	10						13		\$2,070.00	
Cost Estimate	1	2						3		\$486.00	
Review Meeting		4						4		\$612.00	
LS E-9: 60% Design											\$7,434.00
FPL Coordination	4	16						20		\$3,168.00	
Electrical/I&C Design	3	14						17		\$2,682.00	
Specification and Cost Estimate	2	4						6		\$972.00	
Review Meeting		4						4		\$612.00	
LS E-9: 100% Design											\$5,904.00
FPL Coordination	2	6						8		\$1,278.00	
Electrical/I&C Design	5	18						23		\$3,654.00	
Specification and Cost Estimate	2	4						6		\$972.00	
LS E-9: Permitting											\$2,070.00
Permitting Assistance and Drawing Revision	3	10						13		\$2,070.00	
LS E-9: Bidding											\$2,070.00
Bidding Assistance and Answer RFI	3	10						13		\$2,070.00	
LS E-9: Construction Services											\$17,028.00
Shop Drawing Review	8	36						44		\$6,948.00	
RFI Responses	4	8						12		\$1,944.00	
Site Inspections w/ Report (6x)		30						30		\$4,590.00	
Start-up		12						12		\$1,836.00	
Final Punch List Inspections		6						6		\$918.00	
As-Built	1	4						5		\$792.00	
Total Hours	53	246									
	\$9,540.00	\$37,638.00						\$47,178.00			\$47,178.00



GEOTECHNICAL MATERIAL TESTING INSPECTION SERVICES

February 7, 2019, R6 1/7/2021

Tetra Tech | US Infrastructure Division
450 N Park Road
Suite 502
Hollywood, FL 33021
Attn: Mr. Kenneth L. Caban, P.E., VP
email: ken.caban@tetrattech.com

**Re: Proposal for Geotechnical Services
Water Improvements
City of Hollywood
Broward County, Florida
TSF Proposal No. 1902-102**

Dear Kenneth:

TSF is pleased to submit this proposal for providing subsurface exploration at the site of the proposed water line improvements. This proposal includes a summary of our understanding of the project, an outline of our proposed scope of work, an estimate of the total job cost, and our anticipated schedule for completion of the work.

PROJECT INFORMATION

Based on the information provided to this office we understand that the waterline improvements are being designed for multiple roadways in the City of Hollywood. See the location plan herein for proposed improvement roadway locations. In addition to the roadway water lines, directional drill is proposed under Dania Beach Blvd, and a subaqueous crossing of the intercoastal waterway is proposed along Sheridan Roadway and Azalea/Polk Street (no current roadway).

PROPOSED SCOPE OF WORK

Based on our experience in this area, we propose to perform borings along the roadways for the waterline, on a typical frequency of one boring per 500 lineal feet. Standard Penetration Testing (SPT) borings are proposed as noted in Table 1 below.

Table 1 – Proposed Field Testing	
Location	Proposed Services
Waterline along the Roadways -	Fifty-Eight (58) SPTs to 6 feet below the roadway surface (348 LF)
Subaqueous Crossing Sheridan Street	Two (2) locations on land - SPTs to 75' One (1) location on land – SPT to 20' for the drill pit. Two (2) locations on water – SPTs to 75' below mudline (estimated to be 20 feet deep (30 LF 0-50 and 45 LF 50-100 each water boring)
Subaqueous Crossing Polk/Azalea Street	Two (2) locations on land - SPTs to 75' One (1) location on land – SPT to 20' for the drill pit. Two (2) locations on water – SPTs to 75' below mudline (estimated to be 20 feet deep (30 LF 0-50 and 45 LF 50-100 each water boring)
FDOT Roadway	Thirty (30) Asphalt Cores, with asphalt and base checks
Note - obtaining a permit for water borings is not part of TSF's Scope.	

Some adjustments in the boring depths may be necessary depending upon the subsurface conditions encountered.

Within the borings, penetration resistance testing will be performed in general accordance with the requirements of ASTM designation D 1586. Borings will be approximately located in the field by our drilling personnel by measuring distances with a tape from known reference points. Elevations at boring locations can be interpreted from a topographic plan if furnished by others.

Prior to drilling at the project site, TSF will notify the local utility companies and request that underground utilities be marked. Our experience, however, is that the utility companies will not mark privately owned utilities. Our proposal assumes that private utility lines will be located in the field by others prior to mobilization of the drill rig. TSF will recommend a utility line locating service upon request.

Upon completion of the field exploration, some laboratory testing and visual classifications will be performed on selected samples.

The results of all drilling and laboratory testing will be evaluated by a geotechnical engineer. A report will be issued that contains the exploration data, a discussion of the site and subsurface conditions and a discussion of some construction considerations.

ESTIMATED COST

It is proposed that the fee for the performance of the services outlined above is determined on a unit fee basis, and that the work is performed pursuant to the agreement with Tetra Tech, including their General Conditions.

On the basis of the quantities of tests noted, the not to exceed fee will be **\$101,656.00.**

Our estimate covers the work needed to present our findings and recommendations in a report form. Not included are reviews of foundation drawings, preparation of construction specifications, special conferences and any other work requested after submittal of our report.

Boring, sampling, and testing requirements are a function of the subsurface conditions encountered. Therefore, the estimated cost previously indicated is approximate, and compensation for the exploration will be based on the actual work and tests performed. We will endeavor to keep the exploration cost at a minimum consistent with good engineering practice.

SCHEDULE AND AUTHORIZATION


TSF will proceed with the work after receipt of a signed copy of this proposal. With our present drilling schedule, we can commence work within two to three weeks of project approval (weather permitting) and fieldwork is expected to take about two weeks to complete. The written report can be submitted within 2 weeks after completion of the field exploration, depending on the extent of the laboratory-testing program. Verbal preliminary recommendations can be made to appropriate parties prior to submittal of the written report.

We at TSF appreciate the opportunity to submit this proposal and look forward to working with you on this project. If you should have any questions concerning our proposal, please contact our office.

Respectfully submitted,
TSF



Harmon C. Bennett, P.E.
Principal Engineer



Ramakumar Vedula, P.E.
Principal Engineer

Attachments:

General Terms and Conditions
Fee Estimate
List of Coordinates
Boring Location Plan (7 Pages)

AUTHORIZED BY:	INVOICE TO:
Name:	Firm:
Title:	Name:
Date:	Address:
	Phone :

Tierra South Florida's General Conditions

SCOPE OF WORK. Work means the specific geotechnical, analytical, testing or other service to be performed by Tierra South Florida, Inc. (TSF) as set forth in TSF's proposal. Client's acceptance of the scope of work and these General Conditions. Additional work ordered by Client shall also be subject to these General Conditions. "Client" refers to the person or business entity ordering the work to be done by TSF. Client shall communicate these General Conditions to each and every third party to whom Client transmits any part of TSF's work. TSF shall have no duty or obligation to any third party greater than that set forth in TSF's proposal. Client's acceptance of TSF's proposal and these General Conditions. The ordering of work from TSF, or the reliance on any of TSF's work, shall represent acceptance of the terms of TSF's proposal and these General Conditions, regardless of the terms of any subsequently issued document.

RIGHT-OF-ENTRY. The client will provide right-of-entry for TSF and all necessary equipment in order to complete the work. While TSF will take all reasonable precautions to minimize any damage to the property, it is understood by Client that in the normal course of work some damage may occur; the correction of which is not part of this agreement.

DAMAGE TO EXISTING MAN-MADE OBJECTS. The Client, will provide the location of all underground utilities or obstructions to TSF who, in the prosecution of their work, will take all reasonable precautions to avoid damage or injury to any such subterranean structure or utility. The Owner agrees to hold TSF harmless for any damages to subterranean structures which are not called to TSF's attention and correctly shown on the plans furnished and will reimburse TSF for any expenses in connection with any claims or suits including reasonable attorney fees at the trial and appellate levels.

IN-PLACE MATERIALS TESTING. TSF will not be responsible for repair or damage to portions of structures designated for in-place materials testing. Repairs can be made for aesthetic reasons if requested in advance of the work to be performed. The cost for labor and materials would be charged.

SAMPLE RETENTION. TSF will retain all soil and rock samples obtained for geotechnical explorations for 30 days. Samples subjected to Construction Materials and Laboratory testing are disposed of subsequent to testing. Further storage or transfer of samples can be made at Client's expense upon written authorization.

DEFINITION OF RESPONSIBILITY (OBSERVATION SERVICES). The presence of our field representative will be for the purpose of providing observation and field testing. Our work does not include supervision or direction of the actual work of the contractor, his employees or agents. The contractor for this project should be so advised.

The Contractor should also be informed that neither the presence of our field representative or the observation and testing by our firm shall excuse him in any way for defects discovered in his work. It is understood that TSF will not be responsible for the Contractor's job or site safety on his project. That will be the sole responsibility of the contractor.

STANDARD OF CARE. Service performed by TSF under this Agreement will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty, expressed or implied, is made.

Client recognizes that subsurface conditions may vary from those encountered at the location where borings, surveys or explorations are made by TSF and that the data, interpretations and recommendations of TSF are based solely on the information available to it. TSF shall not be responsible for the interpretation by others of information developed.

ORAL AGREEMENTS. No oral agreement, guarantee, promise, representation or warranty shall be binding.

OWNERSHIP OF DOCUMENTS. All reports, boring logs, field data and notes, laboratory test data, calculations, estimates and other documents prepared by TSF, as instruments of service, shall remain the property of TSF until final payment is received and a letter of copyright transfer has been executed.

BASIS OF PAYMENT. Payment is due within 30 days of date of invoice. Payments not made when due shall bear interest at eighteen (18) percent annum or at the maximum rate allowed by law from the date of the invoice until same is paid.

If the Client fails to make any payment due to TSF for service and/or expenses within 60 days of date of invoice, TSF may, after giving seven days' written notice to Client, suspend services until all outstanding amounts have been paid to TSF in full. Further, TSF may, in addition to withholding services, or singularly, withhold reports, plans and other documents not paid in full by the Client. In the event that final payment for completed work is not made, TSF shall request that all copyrighted documents which were submitted to client be returned and all information used in project plans be removed from project documents.

In the event it is necessary to take legal action to effect collection, whether or not litigation is commenced, the Client agrees to reimburse TSF for expenses in connection with any claims or suits, including reasonable attorney's fees, including but not limited to the trial and appellate levels.

This contract shall be governed by the laws of the State of Florida.

CONSTRUCTION REVIEW. TSF cannot accept responsibility for any design work unless the work includes services for construction review to determine whether or not the work performed is in substantial compliance with TSF's conclusions and recommendations.

INDEMNIFICATION. TSF agrees to hold harmless and indemnify Client from and against liability arising out of TSF's negligent performance of the work. Client agrees to indemnify and hold TSF harmless from all liability including all costs, attorney's fees and expenses of defense for any claims by any other person or corporation which may arise out of the performance or breach of this contract for which TSF was not solely negligent.

LIMITATION OF LIABILITY. The Client/Owner agrees to limit TSF's liability for negligent professional acts, errors or omissions, such that the total aggregate liability of TSF shall not exceed \$50,000 or the total fee for the services rendered on this project; whichever is greater. The Owner further agrees to require the contractor and his subcontractors a similar limitation of liability suffered by the contractor or the subcontractors arising from TSF's negligent professional acts, errors or omissions.

If Client prefers to have higher limits on professional liability, TSF agrees to increase the limits up to a maximum of \$1,000,000 upon Client's written request at the time of accepting our proposal provided that Client agrees to pay an additional consideration of 5 percent of our total fee. The additional charge for the higher liability limits is because of the greater risk assumed and is not strictly a charge for additional professional liability insurance.

INSURANCE. TSF represents and warrants that it and its agents, staff and consultants employed by it are protected by Worker's Compensation insurance and Employer's Liability Insurance in conformance with applicable state laws. TSF has such coverage under public liability and property damage insurance policies that TSF deems to be adequate. A Certificate of Insurance can be supplied evidencing such coverage upon request.

Within the limits and conditions of such insurance, TSF agrees to indemnify and save client harmless from and against any loss, damage or liability arising from any negligent acts by TSF, its agents, staff and consultants employed by it. TSF shall not be responsible for any loss, damage or liability beyond the amounts, limits and considerations of such insurance. TSF shall not be responsible for any loss, damage or liability arising from any acts by clients, its agents, staff and other consultants employed by it.

Cost of the above coverage is included in our quoted fees. If additional coverage or increased limits of liability are required, TSF will endeavor to obtain the requested insurance and charge separately for costs associated with additional coverage or increased limits.

TERMINATION. This agreement may be terminated by either party upon seven days written notice in the event of substantial failure by the other party to perform in accordance with the terms thereof. Such termination shall not be effective if the substantial failure has been remedied before expiration of the period specified in the written notice. In the event of termination, TSF shall be paid for services performed to the termination notice date plus reasonable termination expenses.

In the event of termination or suspension for more than three months, prior to completion of all reports contemplated by this Agreement, TSF may complete a report on the services performed to the date of notice of termination or suspension. The expenses of termination or suspension shall include all direct costs for TSF in completing such analyses, records and reports.

CLIENT'S OBLIGATION TO NOTIFY TSF. Client represents and warrants that it has advised TSF of any known or suspected hazardous materials or conditions, utility lines and pollutants at any site at which TSF is to do work hereunder, and unless TSF has assumed in writing the responsibility of locating subsurface objects, structures, lines or conduits, Client agrees to defend, indemnify and save TSF harmless from all claims, suits, losses, costs and expenses, including reasonable attorney's fees as a result of personal injury, death or property damage occurring with respect to TSF's performance of its work and resulting to or caused by contact with subsurface or latent objects, structures, lines or conduits where the actual or potential presence and location thereof were not revealed to TSF by Client.

HAZARDOUS MATERIALS. This agreement shall not be interpreted as requiring TSF to assume the status of an owner, operator, generator, storer, transporter, treater or disposal facility as those terms appear within RCRA or within any Federal or State statute or regulation governing the generation, transportation, treatment, storage and disposal of pollutants.

Initial _____

TIERRA SOUTH FLORIDA, INC.

	Unit	Land	Water	# of Units	Unit Price	Land	Water	Total	
I. FIELD INVESTIGATION									
On-Land Borings - for Subaqueous									
Mobilization of Men and Equipment									
Truck-Mounted Equipment	Trip	3		3	\$ 400.00	\$ 1200.00	\$ 0.00	\$ 1,200.00	
Support Vehicle	Trip	6		6	\$ 150.00	\$ 900.00	\$ 0.00	\$ 900.00	
Standard Penetration Test Borings									
(By Truck-Mounted Equipment)									
0 - 50 ft depth	L.F.	240		240	\$ 12.00	\$ 2880.00	\$ 0.00	\$ 2,880.00	
50 - 100 ft depth	L.F.	100		100	\$ 14.00	\$ 1400.00	\$ 0.00	\$ 1,400.00	
Grout-Seal Boreholes									
(By Truck-Mounted Equipment)									
0 - 50 ft depth	L.F.	240		240	\$ 5.50	\$ 1320.00	\$ 0.00	\$ 1,320.00	
50 - 100 ft depth	L.F.	100		100	\$ 6.50	\$ 650.00	\$ 0.00	\$ 650.00	
Casing									
(By Truck-Mounted Equipment)						0.00	0.00		
0 - 50 ft depth	L.F.	240		240	\$ 10.00	\$ 2400.00	\$ 0.00	\$ 2,400.00	
50 - 100 ft depth	L.F.	100		100	\$ 12.00	\$ 1200.00	\$ 0.00	\$ 1,200.00	
Asphalt Cores									
EA	30			30	\$ 150.00	\$ 4500.00	\$ 0.00	\$ 4,500.00	
Maintenance of Traffic									
Day	1			1	\$ 1,200.00	\$ 1200.00	\$ 0.00	\$ 1,200.00	
On-Water Borings - for Subaqueous									
Barge Mobilization	EA		1	1	\$ 15,000.00	\$ 0.00	\$ 15000.00	\$ 15,000.00	
Barge Mounted Equipment	Day		4	4	\$ 6,000.00	\$ 0.00	\$ 24000.00	\$ 24,000.00	
Support Boat	Day		8	8	\$ 500.00	\$ 0.00	\$ 4000.00	\$ 4,000.00	
Support Vehicle	Day		8	8	\$ 150.00	\$ 0.00	\$ 1200.00	\$ 1,200.00	
Crane Rental	Day		2	2	\$ 2,000.00	\$ 0.00	\$ 4000.00	\$ 4,000.00	
Standard Penetration Test Borings									
(By Barge-Mounted Equipment)									
0 - 50 ft depth	L.F.		120	120	\$ 15.60	\$ 0.00	\$ 1872.00	\$ 1,872.00	
50 - 100 ft depth	L.F.		180	180	\$ 18.20	\$ 0.00	\$ 3276.00	\$ 3,276.00	
Grout-Seal Boreholes									
(By Barge-Mounted Equipment)									
0 - 50 ft depth	L.F.		120	120	\$ 7.15	\$ 0.00	\$ 858.00	\$ 858.00	
50 - 100 ft depth	L.F.		180	180	\$ 8.45	\$ 0.00	\$ 1521.00	\$ 1,521.00	
Casing									
(By Barge-Mounted Equipment)									
0 - 50 ft depth	L.F.		120	120	\$ 13.00	\$ 0.00	\$ 1560.00	\$ 1,560.00	
50 - 100 ft depth	L.F.		180	180	\$ 15.60	\$ 0.00	\$ 2808.00	\$ 2,808.00	
Water Line SPT Borings									
(By Truck-Mounted Equipment)									
0 - 50 ft depth	L.F.	348		348	\$ 12.00	\$ 4176.00	\$ 0.00	\$ 4,176.00	
Maintenance of Traffic	Day	5		5	\$ 1,200.00	\$ 6000.00	\$ 0.00	\$ 6,000.00	
Boring Permit (note water permit by Client)	LS	1		1	\$ 700.00	\$ 700.00	\$ 0.00	\$ 700.00	88621.00
II. LABORATORY TESTING									
Visual Examination by Staff Engineer	Hour	8	2	10	\$ 85.00	\$ 680.00	\$ 170.00	\$ 850.00	
Natural Moisture Content Tests	Test	8	2	10	\$ 20.00	\$ 160.00	\$ 40.00	\$ 200.00	
Full Grain-Size Analysis - (8 sieves)	Test	4	1	5	\$ 75.00	\$ 300.00	\$ 75.00	\$ 375.00	
Grain-Size Analysis - Single Sieve	Test	4	1	5	\$ 25.00	\$ 100.00	\$ 25.00	\$ 125.00	
Organic Content Tests	Test	4	1	5	\$ 50.00	\$ 200.00	\$ 50.00	\$ 250.00	
Atterberg Limit Tests	Test	4	1	5	\$ 80.00	\$ 320.00	\$ 80.00	\$ 400.00	
Environmental Tests (pH, sulfates, chlorides, resistivity)	Set	2	2	4	\$ 185.00	\$ 370.00	\$ 370.00	\$ 740.00	2,940.00
III. FIELD ENGINEERING AND TECHNICAL SERVICES									
Site Recon./Utility Coordination/Obtain Permit									
Sr. Engineering Technician	Hour	16	12	28	\$ 65.00	\$ 1040.00	\$ 780.00	\$ 1,820.00	1,820.00
IV. ENGINEERING AND TECHNICAL SERVICES									
Principal Engineer	Hour	2	1	3	\$ 145.00	\$ 290.00	\$ 145.00	\$ 435.00	
Senior Geotechnical Engineer	Hour	8	8	16	\$ 125.00	\$ 1000.00	\$ 1000.00	\$ 2,000.00	
Engineer, P.E.	Hour	18	14	32	\$ 115.00	\$ 2070.00	\$ 1610.00	\$ 3,680.00	
Draftsperson	Hour	20	16	36	\$ 60.00	\$ 1200.00	\$ 960.00	\$ 2,160.00	8,275.00
TOTAL FEE FOR GEOTECHNICAL SERVICES						\$ 36,256.00	\$ 65,400.00	\$ 101,656.00	101,656.00


List of Coordinates

Name	Latitude	Longitude	Name	Latitude	Longitude
B-01	26.04180113	-80.11394598	B-41	26.03896807	-80.11428711
B-02	26.04299194	-80.11377711	B-42	26.03783997	-80.11437554
B-03	26.04429091	-80.11357744	B-43	26.04084082	-80.11489273
B-04	26.04568913	-80.11336701	B-44	26.03948675	-80.11494287
B-05	26.04696108	-80.11317753	B-45	26.03810566	-80.11500321
B-06	26.04808801	-80.11289917	B-46	26.03701615	-80.11402192
B-07	26.04880048	-80.11276386	B-47	26.03698432	-80.11472179
B-08	26.05001788	-80.1125148	B-48	26.03673384	-80.11510346
B-09	26.05110956	-80.11237663	B-49	26.03537112	-80.11521363
B-10	26.04809034	-80.11327898			
B-11	26.0480595	-80.11413883			
B-12	26.04864957	-80.11318481	B-52	26.03419098	-80.11565225
B-13	26.04860202	-80.1142647	B-53	26.03417068	-80.11676178
B-14	26.04916415	-80.11317094	B-54	26.03411664	-80.11826134
B-15	26.04915192	-80.11412062	B-55	26.03404458	-80.11977103
B-16	26.04974985	-80.11297662	B-56	26.03398172	-80.12131064
B-17	26.0496848	-80.1141466	B-57	26.03398198	-80.12283978
B-18	26.0503095	-80.11295241	B-58	26.03391	-80.12436946
B-19	26.050235	-80.11405251	B-59	26.03384648	-80.12580912
B-20	26.05081493	-80.11291862	B-60	26.03385603	-80.12738816
B-21	26.05075848	-80.11401858			
B-22	26.05137397	-80.11279446			
B-23	26.05132759	-80.11406428			
B-24	26.05212157	-80.11396835			
B-25	26.05264535	-80.1139844			
B-26	26.05217322	-80.11355813			
B-27	26.05293157	-80.11354243			
B-28	26.05353956	-80.11403766			
B-29	26.05287352	-80.11438253			
B-30	26.05183535	-80.11441032			
B-31	26.05046323	-80.11446062			
B-32	26.04908232	-80.11455096			
B-33	26.04772765	-80.11450116			
B-34	26.04633759	-80.11457158	BB-1 (75')-Land	26.03408714	-80.11785273
B-35	26.04493857	-80.11465206	BB-2 (75')-Water	26.03409199	-80.11752013
B-36	26.0435307	-80.11476258	BB-3 (75')-Water	26.03406775	-80.11710707
B-37	26.04223984	-80.11481226	BB-4 (75')-Land	26.03410168	-80.11675302
B-38	26.0409644	-80.11443203	BB-5 (75')-Land	26.01435373	-80.11855633
B-39	26.03938529	-80.11459382	BB-6 (75')-Water	26.01438984	-80.11826374
B-40	26.0403128	-80.11418705	BB-7 (75')-Water	26.01442614	-80.11798128
			BB-8 (75') Land	26.01442355	-80.11766941
			SPT-1 (20')-Land	26.05297177	-80.11450935
			SPT-2 (20')-Land	26.01430971	-80.1188754

Boring Location Plan

1902-102.City of Hollywood Water (TetraTech)

Legend

 Proposed Borings




900 ft

Boring Location Plan

1902-102 City of Hollywood Water (TetraTech)

Legend

 Proposed Borings

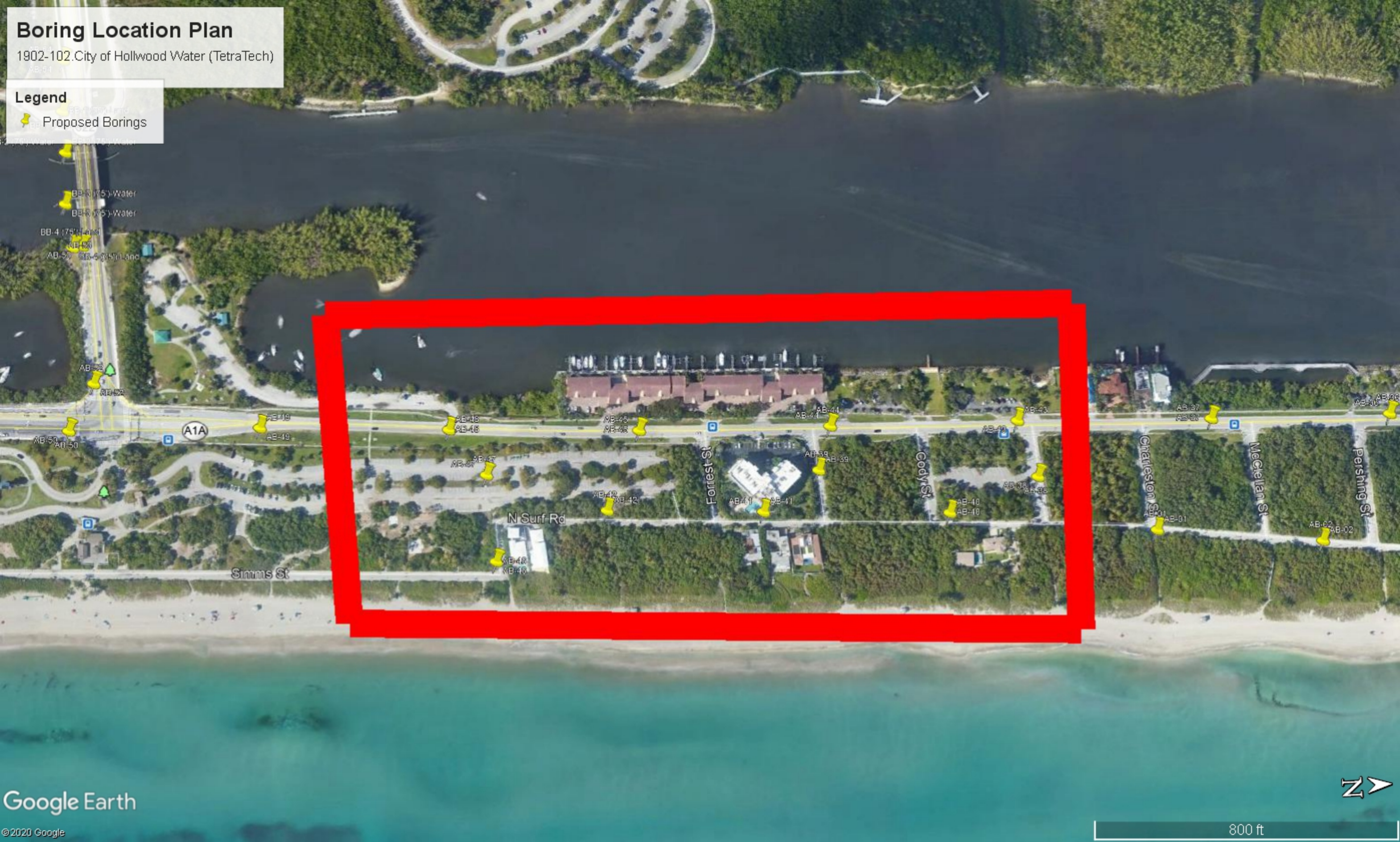


Boring Location Plan

1902-102 City of Hollywood Water (TetraTech)

Legend


 Proposed Borings



Boring Location Plan

1902-102 City of Hollywood Water (TetraTech)

Legend

 Proposed Borings



Boring Location Plan

1902-102.City of Hollywood Water (TetraTech)

Legend


 Proposed Borings



Boring Location Plan

1902-102 City of Hollywood Water (TetraTech)

Legend


 Proposed Borings



Boring Location Plan

1902-102 City of Hollywood Water (TetraTech)

Legend

 Proposed Borings

