

**WORK AUTHORIZATION PURSUANT TO THE  
CONTINUING PROFESSIONAL ENGINEERING SERVICES  
AGREEMENT BETWEEN THE CITY OF HALLANDALE BEACH AND  
KEITH AND ASSOCIATES, INC. (KEITH)**

~~December 13, 2021~~  
Revised December 20, 2021

WORK AUTHORIZATION NO. # 06

TASK ORDER NO. (CITY No. TBD) PROJECT NO.11011.06 (KEITH)

PROJECT NAME: Hallandale Beach Boulevard (S.R. 858) Water Main Improvements

This work authorization is pursuant to the Agreement for Continuing Professional Engineering Services between the City of Hallandale Beach and Keith and Associates, Inc. (KEITH) approved by the City Commission pursuant to Resolution No. 2020-054 and adopted on August 5, 2020, RFP #2018-209-012 Consultant Competitive Negotiation Act (CCNA).

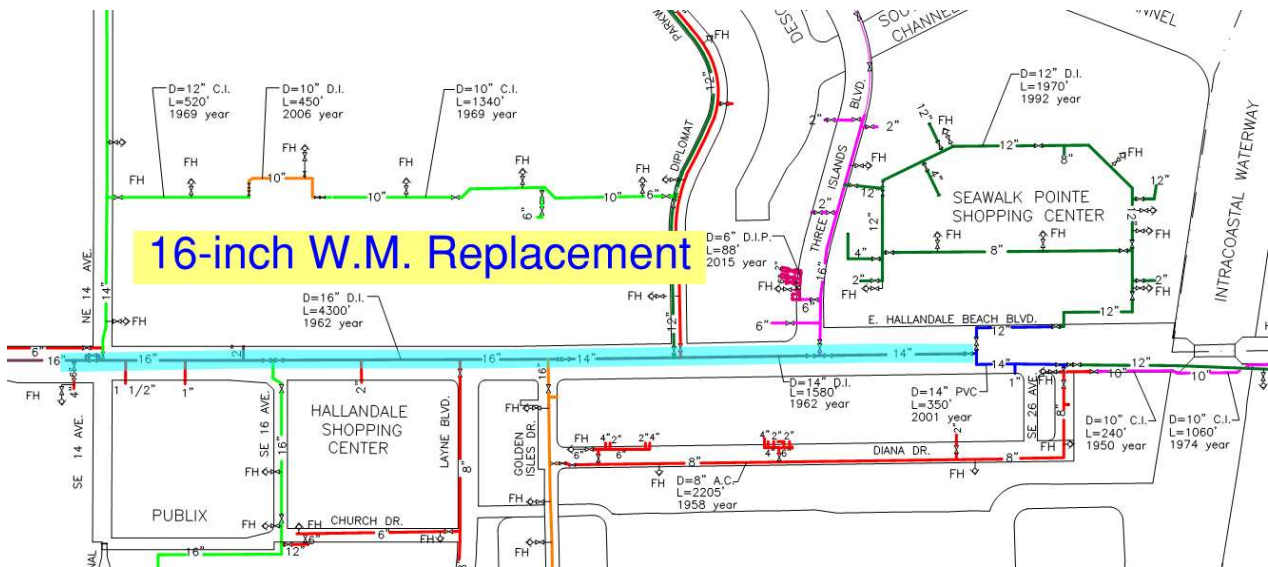
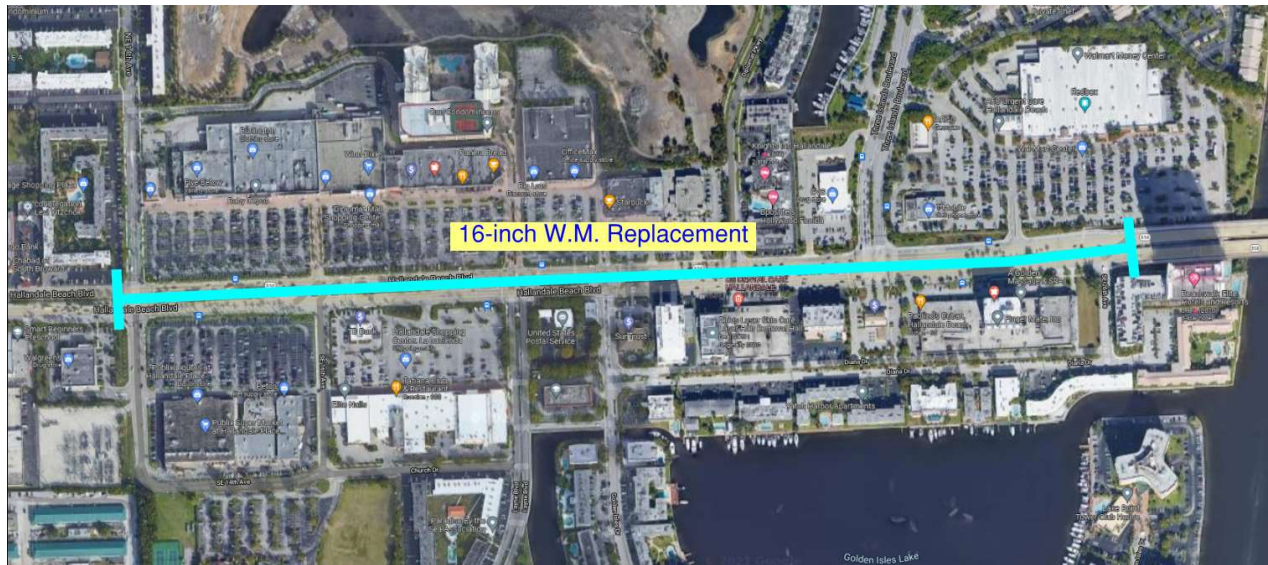
**PROJECT**

The City of Hallandale Beach (CITY) has requested that KEITH (CONSULTANT) provide civil engineering services associated with the replacement / upsizing of an existing 14-inch & 16-inch ductile iron (D.I.) water main (built in the 1962) with a new 16-inch water main along Hallandale Beach Boulevard (S.R. 858). The City has determined the new 16-inch water main is sufficient to serve the future water demands. The water main replacement will extend from just west of SE 14<sup>th</sup> Avenue (to the west) to just west of SE 26<sup>th</sup> Avenue (to the east), approximately 3,500 LF.

Although the CITY owns and operates the water main Hallandale Beach Blvd., the Florida Department of Transportation (FDOT) has jurisdiction over the right-of-way (ROW).

Other existing utilities that typically share the ROW include power, telephone, cable, gas utilities, and others. The CITY would like to implement the potable water pipeline replacement and improvements while avoiding impacts to any other existing utilities, if possible.

Connections to existing water mains on side streets along the project limits (including 14<sup>th</sup> Avenue, 16<sup>th</sup> Avenue, Layne Blvd, Golden Isles Blvd., Diplomat Parkway, Three Island Blvd.) and existing watermain tie-ins, will be designed to minimize any water down time via wet taps, line-stops or cut-in valves. All existing domestic water services are to be replaced up to existing meters or within 5-ft of back of sidewalk, all existing fire services are to be replaced up to existing DDCVs or within 5-ft of back of sidewalk, all fire hydrants are to be replaced and if necessary, add additional fire hydrants to provide required minimum spacing.



## **SCOPE OF SERVICES**

### **SURVEY SERVICES**

#### **Task 101 Topographic Survey**

CONSULTANT shall prepare a Topographic Survey of the Right of-Way of Hallandale Beach Blvd within the project limits.

The Right of Way shall be based on the Broward County GIS parcels. Elevations shall be obtained throughout the designated areas at 50-foot intervals with obvious intermediate high and low areas obtained at 25-foot intervals. CONSULTANT shall field locate all surface features to include 10 feet beyond the right-of-way lines, but not limited to utilities structures, signage, and pavement markings. CONSULTANT shall field locate all native tree species over 4 inches in diameter at breast height (DBH). Common tree types and trunk diameters shall also be identified by the surveyor. Specific species identification will not be confirmed by an arborist unless further specified herein. The trees and identification will be depicted on the Survey. Storm and Sanitary structures shall be noted with the pipe invert elevation, diameter, material, and direction. Survey shall be referenced to the Florida State Plane Coordinate System (NAD83/11) and the North American Vertical Datum of 1988 (NAVD88). The Survey shall conform to the Standards of Practice as set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 5J-17, F.A.C.

### **SUBSURFACE UTILITY ENGINEERING (SUE) SERVICES**

KEITH will follow ASCE Standard 38-02 – “Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data” during the field and office operations for this project. The quality levels discussed below are defined within the standard. KEITH is to provide professional services associated with designation, location, and mapping of existing subsurface utilities. KEITH shall designate all known tone able and non-tone able utilities within a 10’ radius of the depicted blue highlighted approximately 3,500’ water main run. Gravity systems, service laterals, irrigation or overhead facilities are not included in this investigation.

#### **Task 201 Horizontal Designation Services**

KEITH will horizontally mark any known tone able and non-tone able underground utilities that are represented on as-built plans, above ground appurtenances, and other miscellaneous utility records (to be provided by CLIENT). Conductive utilities will be marked on the surface utilizing active geophysical prospecting techniques in conjunction with electromagnetic equipment utilizing passive radio and audio frequencies. Known non-conductive utilities and/or structures will be marked on the surface utilizing Ground Penetrating Radar (GPR), above ground features, professional judgment, utility plats and/or as-builts. This task does not include identifying gravity systems, service laterals, irrigation, or overhead facilities unless specifically requested by the CLIENT and included in the scope of services.

#### **Task 202 Location Services**

KEITH will perform up to thirty (30) test holes at specific sites requested by the design engineer. Test holes will be utilized to expose utilities to minimize any potential for damage. Test holes performed will be of minimum size (usually 1’ by 1’). Backfill of test holes will be performed utilizing the removed material, if suitable. Areas will be restored back as close as possible to their original condition. Installation of an identifiable above ground marker will be performed at each test hole location. Field markers will consist of a nail and disk in asphalt, or an iron rod and cap with survey stake in grassed areas. Test holes performed in the street will be patched using cold patch. The test hole number and utility will be identified on the ground or on the stake, as appropriate. A test hole summary report will be created providing coordinates, depth of cover, type, size, and material if applicable. There is a four test hole location minimum.



Some of the test holes may need to be used to identify the existing water main being replaced to consider pipe bursting as a construction option. For pipe bursting the existing main must be a minimum of 3-ft deep, otherwise pipe bursting is not safe.

### **Subsurface Utility Engineering Conditions and Understandings**

CLIENT and/or their contractor is required by law to contact Sunshine State One Call of Florida forty-eight (48) hours in advance of any CLIENT excavation. KEITH will not access confined spaces. If confined spaces need to be accessed for locating purposes, then the client will be notified, and further arrangements will be made for said access. Additional fees may be applicable. If additional MOT is required beyond the capability of KEITH's standard MOT operations, KEITH will notify the client. Additional requests outside the scope of services, when requested by client and/or client's representative, will be invoiced on an hourly basis. This proposal assumes site access is available and work can be performed between the hours of 7:30 AM and 5:00 PM Monday through Friday.

### **Task 203      Utility Mapping**

KEITH will perform surveying services to collect the surface markings completed in Task 201 and/or Task 202 that mark the underground utilities. Survey of said markings shall be based on Real-Time Kinematic (RTK) GPS observations and referenced to the Florida State Plane Coordinate System (NAD83/11) and the North American Vertical Datum of 1988 (NAVD88). Survey of Horizontal Designations shall be delivered in a geo-referenced (NAD83/11) AutoCAD file. Survey of Location Services (Test Holes) shall be delivered in Excel in PNEZD format.

## **GEOTECHNICAL ENGINEERING SERVICES (Subconsultant)**

### **Task 301      Geotechnical Exploration and Report (Subconsultant)**

Refer to Exhibit A – Universal Engineering Sciences (UES) (Sub-Consultant) Geotechnical Exploration Services Scope and Fees.

A geotechnical engineering evaluation and subsurface exploration to facilitate design and construction of the proposed water main will be performed by Universal Engineering Sciences (UES) and the scope for the geotechnical investigation includes the following:

1. The Sub-Consultant shall perform seven (7) standard penetration test (SPT) borings. The borings will be completed to depths of 10 feet below existing grade, utilizing a truck or track mounted drilling equipment. The SPT borings will be used as an investigative tool.
2. A software-generated and plotted log of each boring will be prepared.
3. Prepare a site plan showing the approximate test locations.
4. Summarize the activities on this project in the form of a Geotechnical Report which will include: test procedures used, data collected, evaluation of subsurface soil conditions, and engineering recommendations for the proposed construction.
5. Provide recommended site preparation procedures and imported fill requirements.

The borings are to be performed along (or adjacent) to the travel lanes of Hallandale Beach Boulevard. Maintenance of Traffic is likely needed to perform this work. UES can subcontract these services. If requested, UES will subcontract the performance of the Maintenance of Traffic (MOT). This option can be selected as an add alternate (optional) for an additional LUMP SUM price of \$3,500.00. In addition, if the preparation of an MOT plan is necessary for the permitting process, an additional \$1,000 will be added.

Right of Way (ROW) and MOT permits are not included.





**Deliverables:**

1. One (1) digitally signed and sealed copy of the Geotechnical Report.
2. Six (6) copies signed and sealed of the Geotechnical Report.

## **CIVIL ENGINEERING SERVICES**

### **Task 401 Preliminary Engineering Design**

Based on the survey data, utility investigation performed and a field review of the site, the CONSULTANT shall prepare a preliminary engineering plan depicting the general alignment of the of the proposed water main that meets the requirements of the regulatory agencies. The Preliminary Engineering plan will address the location of the existing utilities, the alignment and location of the proposed water main and tie-in points to determine the most desirable and cost-effective design. The CONSULTANT will submit the Preliminary Engineering Plan to the CITY for approval prior to preparing 60% Design Documents.

KEITH shall perform utility records research to assist in identifying utility owners that may have facilities within project limits and may be affected by the project. KEITH shall collect any applicable utility owner records for review and include on the plans.

The CONSULTANT shall attend one (1) coordination meeting with the CITY to address review comments. CONSULTANT shall prepare the agenda, record and submit meeting minutes.

The CONSULTANT shall prepare an initial construction cost estimate and make the changes to the design if needed to have it within the proposed budget.

The CONSULTANT shall provide an initial schedule in Microsoft Project as part of this submittal package for City review and approval.

The CONSULTANT shall provide an initial specification outline for City review and approval.

**Deliverables:**

1. Three (3) original sets of the Preliminary design package (24" x 36" plan sheets), together with one (1) electronic copy.
2. One (1) copy of meeting minutes.
3. One (1) copy of the initial Engineer's construction cost estimate.
4. One (1) copy of the initial project schedule.
5. One (1) copy of the specification outline.

### **Task 402 90% Design Documents**

CONSULTANT shall prepare 90% engineering plans addressing all previous City comments and depicting the plan and profile of the of the proposed water main that resolves all crossings and meets the requirements of the regulatory agencies. The 90% plans are permit level plans.

If the City accepts these plans, the CONSULTANT shall use this set to submit to ALL permitting agencies at one time.

The CONSULTANT shall attend one (1) coordination meeting with the CITY to address review comments. CONSULTANT shall prepare the agenda, record and submit meeting minutes.

The CONSULTANT shall prepare an updated construction cost estimate and make the changes to the design if needed to have it within the proposed budget.

The CONSULTANT shall provide an updated schedule in Microsoft Project as part of this submittal



package for City review and approval.

The CONSULTANT shall provide a specification package for City review and approval.

The CONSULTANT shall provide a summary of permits status.

Deliverables:

1. Three (3) original sets of the 90% design package (24" x 36" plan sheets), together with one (1) electronic copy.
2. One (1) copy of meeting minutes.
3. One (1) copy of the updated Engineer's construction cost estimate.
4. One (1) copy of updated project schedule.
5. One (1) copy of the specifications.
6. One (1) copy of summary of permits status.

#### **Task 403      100% Design Documents**

CONSULTANT shall prepare 100% Construction Documents addressing all previous City and permitting agency comments.

The CONSULTANT shall attend one (1) coordination meeting with the CITY to address review comments. CONSULTANT shall prepare the agenda, record and submit meeting minutes.

The CONSULTANT shall provide the final Engineer's construction cost estimate.

The CONSULTANT shall provide the final schedule in Microsoft Project.

The CONSULTANT shall provide the final specification package.

The CONSULTANT shall provide the final summary of permits and permit book.

Deliverables:

1. Three (3) original sets of the 100% design package (24" x 36" plan sheets), together with one (1) electronic copy.
2. One (1) copy of meeting minutes.
3. One (1) copy of the Final Engineer's construction cost estimate.
4. One (1) copy of the Final project schedule.
5. One (1) copy of the Final specifications.
6. One (1) copy of the Final summary of permits and permit book.

#### **Task 404      Engineering Permitting**

KEITH shall attend required pre-application meetings with agencies having jurisdiction over the facilities designed by KEITH, and prepare and submit the permit applications for the construction of the following improvements and process them through the following regulatory agencies:

##### **Water System**

- Florida Department of Environmental Protection (FDEP) – Water Main Extension.
- Florida Department of Transportation – Utility Permit.
- City Utilities, Engineering and Public Works Departments.

##### **Pavement Markings and Signage**

- Broward County Traffic Engineering Division.
- City Engineering and Public Works Departments.



If additional permits are required, KEITH shall process them and the fees for these additional services will be submitted to CLIENT as additional services under a contract addendum if required.

**Deliverables**

1. Permit applications and submittal documents required for above listed regulatory agencies for the listed project improvements.

**Task 405 Bidding Services**

CONSULTANT shall provide assistance to CITY during the pre-bid and procurement phase. This assistance shall consist of:

1. Provide bid and construction documents (plans and technical specifications) in CITY approved format, including incorporating the CITY's front-end documents.
2. Attending one (1) pre-bid meeting with CITY, other Consultants and Contractor(s) and prepare meeting minutes.
3. Issue technical addenda(s) and/or responses to request for information (RFI's) for clarification as necessary during the bidding process.
4. Assist CITY in the evaluation of the bids received (including written recommendation of contract award to the City).

**CONSTRUCTION / PROJECT MANAGEMENT SERVICES**

KEITH shall provide construction engineering services in order to ensure the integrity of the design intent and certify to the CLIENT and other jurisdictional agencies that the construction work has been completed in substantial compliance with the approved documents and permits. Services included are described as follows and are anticipated to take six (6) months:

**Task 801 Construction Observation  
Shop Drawing Reviews**

KEITH shall review shop drawings, samples, and calculations, which the selected contractor is required to submit for review. This review will only be for conformance with the design concept of the project and compliance with the information provided on the design drawings and specifications. Such review will not extend to methods, means, techniques, construction sequence(s) or procedures, or to safety precautions and related programs. KEITH shall also determine the acceptability, subject to CLIENT approval, of substitute materials and equipment proposed by contractors.

**Periodic Site Visits and Construction Observation**

KEITH shall visit the Project at intervals appropriate to the various stages of construction, as KEITH deems necessary to observe as an experienced and qualified design professional to review the progress and quality of the various aspects of the contractor's work. KEITH shall coordinate and attend one (1) Pre-construction Meetings. If required by the CLIENT, KEITH shall attend or participate in CLIENT scheduled coordination and progress meetings or telephone conferences. These services will be invoiced on a time and material basis in accordance with our Professional Service Fee schedule (attached). Re-tests and failed inspections will be invoiced based on this same Fee schedule.

KEITH can also provide Additional Optional Service(s) under this Task 801 at the CLIENT's request to perform:

**As-builts Review**

KEITH will review the record drawings (as-builts) to ensure substantial conformance to the approved plans. KEITH will only review and reject any particular as-built plans set a maximum of two (2) times,



any additional review will be considered additional services. The contractor will be expected to have the as-builts revised in accordance with all comments.

KEITH will coordinate with the contractor to have the Final As-builts also be provided in GIS shapefiles in accordance with the City requirements.

### **Final Inspections**

KEITH shall participate, with the CLIENT's representative, in a semi-final inspection for the purpose of determining if the project is substantially complete and participate in the preparation of a written "Punch List" of all incomplete, defective or deficient items. Upon notice from the CLIENT, participate in a final inspection together with CLIENT and contractor representatives to assure that all "Punch List" items are complete, and the work is indeed completed in accordance with all contract documents. Upon completion of the final inspection, certify, in writing, that the work in-place is acceptable, subject to any conditions therein expressed. This service is anticipated to be one (1) inspection, additional inspection(s) will be invoiced based on the attached Fee schedule.

## **Task 802 Construction Engineering**

### **Issue Clarifications**

KEITH shall issue all instructions and revisions of the CLIENT to Contractor(s); issue necessary interpretations and clarifications of the contract documents; have authority, as the City's representative to require special inspection or testing of the work; act as initial interpreter of the requirements of the contract documents and judge of the acceptability of the work there under, and make decisions on all claims of the CLIENT and contractor(s) relating to the acceptability of the work or the interpretation of the requirements of the contract documents pertaining to the execution and progress of the work.

### **Meetings and Conference calls**

KEITH shall attend and or participate in project meetings and conference calls as requested by the CLIENT and CITY. KEITH shall review requests for information prepared by the Contractor and respond accordingly to all parties. KEITH will prepare drawings supplemental information needed to address the contractor's request for information.

### **Final Certification**

KEITH will prepare final certification to all appropriate permitting agencies utilizing record drawings for the design from the survey information supplied by the contractor, or by other means agreed to by both KEITH and CLIENT.

Note: It is the Contractor's responsibility to coordinate through KEITH the scheduling of testing. KEITH shall represent the CLIENT in performing periodic observation of construction as necessary to confirm construction is in accordance with the approved plans.

The Construction Engineering and Certification for the work is for an anticipated period of one (1) month beyond the construction completion date for certifications.

We anticipate the following items requiring as-built certification:

- Water System

Note: Construction-related surveying (stakeout, as-built plans, etc.) and testing (densities, concrete, LBR'S, etc.) services are not included in this Agreement.





## **PROJECT SCHEDULE**

Subsequent to the issuance of a Purchase Order from the CITY, CONSULTANT shall commence work on the project. We anticipate commencing work within 5 business days from notice to proceed.

Table 1 Schedule Estimate of Engineering Services

TASK		DURATION
Task 101	Topographic Survey	3 Months
Task 201	Horizontal Designation Services	1 Month
Task 202	Location Services	1-2 Months
Task 203	Utility Mapping	Concurrent with Task 101
Task 301	Geotechnical Exploration and Report (Subconsultant)	Concurrent with Task 101
Task 401	Preliminary Engineering	3 Months
Task 402	90% Design Documents	3 Months
Task 403	100% Design Documents	3 Months
Task 404	Engineering Permitting	3 – 4 Months
Task 405	Bidding Services	1 -2 Months
Task 801	Construction Observation	6 Months
Task 802	Construction Engineering	6 Months

### **Schedule Disclaimer:**

*Considering the ongoing outbreak of the Coronavirus 2019 (COVID-19), KEITH remains fully committed to pursuing the completion of our work in a safe, diligent, and reasonable manner under the current circumstances based on the schedule provided. It is possible that we will encounter certain delays because of this pandemic. Potential impacts may include, but are not limited to, labor shortages due to mandated quarantine regulations, material shortages and significant delays in lead times because of factory closings across the globe. We will continue to monitor the situation and advise of any delays resulting from the impacts of the current worldwide health scenario.*



### **CITY'S RESPONSIBILITY**

The CITY shall assist CONSULTANT with the following items to expedite the completion of the project in an effective manner.

- A. Designate a representative(s) who shall have the authority to transmit instruction, receive information and enunciate policies and decisions.
- B. Provide access to and obtain permission for CONSULTANT to enter upon public lands as required at no additional cost to perform observations or other necessary services under this Agreement.
- C. Make available to CONSULTANT all existing information which may in any way be pertinent to the project.
- D. Assist in contacting all permitting agencies to facilitate expediting reviews and/or approvals.

### **ADDITIONAL SERVICES**

Consultant shall not perform any additional services without the written consent of the CITY. Services performed beyond the Scope of Services described above shall be considered additional services and will be presented to the CITY as an Addendum to this Agreement prior to initiating the work. Additional services shall be invoiced on a time and material basis in accordance with our current Professional Service Fee Schedule or on a lump sum basis if a scope of service can be defined.

### **COMPENSATION**

Consultant shall invoice the City for services rendered under this Agreement on a lump sum basis, unless otherwise stated, and in accordance with the terms and conditions of the Continuing Services Agreement for Professional Engineering Services between the City of Hallandale Beach and KEITH, dated December 15, 2020 and approved by the City pursuant to RFP #2018-209-012 Consultant Competitive Negotiation Act (CCNA).



Table 2 Budget Estimate of Engineering Services		
TASK		FEE
Task 101	Topographic Survey	\$44,000.00 (Hourly/NTE)
Task 201	Horizontal Designation Services	\$11,000.00 (Hourly/NTE)
Task 202	Location Services	\$15,000.00 (NTE)
Task 203	Utility Mapping (included as part of Task 101)	N/A
Task 301	Geotechnical Exploration and Report (Subconsultant)	\$3,150.00 (NTE) + Optional Services of 3,500.00 MOT and \$1,000.00 for MOT Plan
Task 401	Preliminary Engineering	\$19,500.00 (Hourly/NTE)
Task 402	90% Design Documents	\$27,000.00 (Hourly/NTE)
Task 403	100% Design Documents	\$19,000.00 (Hourly/NTE)
Task 404	Engineering Permitting	\$18,000.00 (Hourly/NTE)
Task 405	Bidding Services	\$4,500.00 (Hourly/NTE)
Task 801	Construction Observation	\$50,000.00 (Hourly/NTE)
Task 802	Construction Engineering	\$27,000.00 (Hourly/NTE)
CONSULTANT'S TOTAL COMPENSATION (NTE)		<b>\$235,000.00</b>
DIRECT EXPENSES (Including Optional Services by UES)		<b>\$7,650.00 (NTE)</b>
TOTAL FEE (NTE)		<b>\$242,650.00</b>

"CITY":

CITY OF HALLANDALE BEACH

CONSULTANT:

KEITH

By: \_\_\_\_\_

By: \_\_\_\_\_  
 STEPHEN WILLIAMS, SR., PE  
 Vice President of Civil Engineering

