SCOPE OF SERVICES

CITY OF HOLLYWOOD
PROJECT # 16-5136

WATER MAIN REPLACEMENT PROGRAM:
PEMBROKE ROAD TO HOLLYWOOD BOULEVARD BETWEEN N. 52 AND N. 56 AVENUES AND STATE ROAD (SR) 441

SURVEY, GEOTECHNICAL, UTILITY COORDINATION, DESIGN, PERMITTING, BIDDING, AND CONSTRUCTION ADMINISTRATION SERVICES

I. PROJECT DESCRIPTION

The City of Hollywood (City) has an ongoing water main replacement program and has identified the area from Pembroke Road to Hollywood Boulevard between N. 52 and 56 Avenues and SR 441, as a project for Tetra Tech to design under the General Engineering Consulting Services contract (City Project No. 02-1214). The water main improvements consist of approximately 70,000 feet of 2-inch, 4-inch, 6-inch, 8-inch, 12-inch, and 16-inch diameter water mains along local City streets and easements. These improvements involve upgrading 2-inch, and 6-inch diameter water mains one nominal size and replacing 4-inch, 8-inch, 12-inch, and 16-inch diameter water mains with the same nominal size. The existing utilities will be replaced with new PVC water mains, isolation valves, fire hydrants, and water services. Water meter and boxes will remain within easements or street rights-of-ways. Where water meter and boxes are located within easements, the easement will be restored to its preconstruction condition. The design will not cross the rights-of-ways (ROWs) at Hollywood Boulevard or SR 441. The water main along Pembroke Road will be replaced and the water main on the southern side of Hollywood Boulevard will be replaced. Proposed water mains will be connected to existing water mains on the east side of SR 441.

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 right-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

A. Water Main Confirmations and Coordination

Tetra Tech will coordinate with FDOT for projects along state roads to obtain necessary information on recently constructed water mains and other improvements. :

- Meetings and teleconferences,
- Review of design drawings, correspondence from FDOT, as-builts, and other items,
- Field visits to confirm water mains, if possible,
- Review of other GIS and paper water main atlases to identify water mains previously replaced and no longer in need of replacement.

B. Surveying

Survey services will be performed by Gibbs Land Surveyors (Surveyor) and shall provide a topographic/route survey of water distribution/transmission mains within the following limits of work (approximating 63,545 linear feet), and as described below.

1. All those Streets, Avenues and Alleys (public thoroughfares), lying within the full ROW of S 56 Avenue west to the east edge of pavement of U.S. 441 (SR 7), from the centerline of Hollywood Boulevard, south to the centerline of Pembroke Road and from the north ROW of Plunkett Street to the centerline of Pembroke Road, from the east ROW of S 52 Avenue to S56 Avenue; including those facilities owned and operated by the City of Hollywood on private property subject to existing easement agreements between the City and private entities.
2. East half R/W of SR 7, from Pembroke Road to 100 feet north of Mayo Street,
3. East half R/W of SR 7, from 100 feet south of Funston Street to 100 feet north of Washington Street,
4. South half R/W of Hollywood Boulevard, from east limits of Hollywood Mall (S 58 Avenue) to S 56 Avenue.
5. Survey performed will comply with "Minimum Technical Standards" established by the State of Florida.

Survey will consist of the following:

1. Perform a topographic survey locating and identifying all applicable visible existing above-ground and underground utilities as marked 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 North American Vertical Datum of 1988 Benchmark system (NAVD88). Horizontal control data shall be relative to the Florida State Plane Coordinate system, East Zone, North American Datum of 1983/1990 adjustment.
3. Platted right-of-ways or easement and property boundaries shall be plotted on survey drawings for the project route.
4. Digital Baseline shall be established at the beginning and end of the project and all changes in direction. Monumentation and other survey control points found in the field will confirm the GIS file. State Plane coordinate values and elevations (x,y,z) will be assigned to the control/work points in the digital file
5. Provide cross-sections at 100 foot intervals to extend 5 feet beyond the right-of-way lines.
6. Provide centerline elevations at 100 foot intervals within the alley rights-of-way.
7. 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, headwalls, endwalls, manholes, vaults, driveways, right-of-way limits, landscaping, traffic signage, other signage (not to include pavement striping), and any other visible improvements within the above limits.

8. 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.
9. Provide location of hedges and individual trees greater than four (4) inches in diameter.
10. Digital maps shall delineate all field collected data as well as existing limits of nearby public right-of-ways.
11. Provide location of utilities where possible based on field observation and utility records provided to this office.
12. Record horizontal and vertical location of existing pipes at proposed connection locations and other soft dig locations as provided to this office; record position of test holes (by others).
13. The final survey map to be prepared at 1"=20' horizontal in a standard 22"x34" plan sheet format to include all topographic data listed, right-of-way lines, property lines (GIS derived), baselines, and platted easement lines and subsurface utility markings (by others).
14. Provide signed and sealed survey showing all of the above survey information.

C. Utilities Verification

Utilities Verification: Tetra Tech will be 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.

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 obtain available atlas, mark-ups, records, as-builts, etc.
2. The locations of the existing underground utilities will be depicted based on the records received, 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 ROW (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.

D. Subsurface Utility Evaluations

Subsurface Utility Evaluations will be performed by Keith and Associates and will horizontally mark any known tone able and nontone able underground utilities that are represented on as-built plans, above ground appurtenances, and other miscellaneous utility records. 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 nonconductive 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.

Up to (30) test holes at specific sites will be performed. 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. Maintenance of Traffic will include arrow board, signs and cones. Extensive MOT materials, permitting, and design are not expected to be required and are therefore not included in this proposal.

E. Geotechnical

A geotechnical investigation to facilitate design and construction of the proposed water mains will be performed by Professional Service Industries, Inc. (PSI). The scope for the geotechnical investigation includes the following:

1. Sixty-six (66) Standard Penetration Tests (SPT) borings advanced to a depth of 8 feet below existing grade. The SPT borings will be performed with a truck-mounted rig using mud rotary wash drilling procedures.
2. Associated laboratory and office analysis.
3. Report shall include soil borings logs and classifications, existing groundwater levels, estimated seasonal high levels, pipe trench and backfill requirements, and roadway reconstruction requirements.

After completion of drilling, all boreholes will be backfilled with excavated soil/rock, the asphalt surface patched as necessary, and the site generally cleaned as required.

Underground utility clearance will be required prior to commencing the drilling of the borings. Therefore, PSI will contact "Sunshine One-Call" Service to obtain underground public utility clearance. Minor Maintenance of Traffic (MOT) will be required to perform the field work as many of the borings will be performed within the existing roadways. Flagmen, cones/barricades, arrow boards, etc. will be used in accordance with FDOT MOT Design Standards 600 series.

F. Final Design

The final design will result in preparation of the bid documents, plan view only engineering drawings for all areas except along Pembroke Road and Hollywood Boulevard, and project technical specifications, which will be submitted to the City for review. Only water mains highlighted in red in Attachment A will be replaced, which is approximately 62,000 linear feet of water mains. Because of FDOT permitting requirements, the bid documents will show a plan and profile for the proposed water mains along Pembroke Road. The design will be predominantly PVC pipe installed by open trench construction. Per City staff, all other roads other than Pembroke Road, Hollywood Boulevard, and SR 441 are City roads and all road crossings will all be open trench/open cut. The design will not enter the ROW of Hollywood Boulevard or SR 441. All connections to existing water mains will be require contractor coordination with City staff to close required valves during connections. 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 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 with members of the City to observe existing conditions and evaluate the pipeline corridors. Two (2) days have been included in the proposal for this activity.
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 and specifications based on survey and geotechnical engineering base information. A preliminary list of drawings is presented below:
    - Cover Sheet and Location Map
    - Legends, Abbreviations and General Notes
    - Key Plan
    - Overall Water Sampling Points Map
    - Double Plan Drawings (55 Sheets at 1-inch = 20-ft Scale)
    - Plan and Profile Drawings for Pembroke Road (10 sheets at 1-inch = 20-ft Scale)
    - Double Plan Drawings – Pavement Restoration (60 Sheets at 1-inch = 20-ft Scale)
    - 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.

G. Permitting

Tetra Tech will prepare and submit the permit applications and supporting documentation necessary to obtain permits required for the project to the Broward County Health Department (BCHD), FDOT and City of Hollywood Building Department for the water main relocation project. Accordingly, Tetra Tech will perform the following tasks:

1. Prepare and submit one (1) "Notice of Intent to Use the General Permit for Construction of Water Main Extensions for PWSs [DEP Form 62-555.900(7)] to the BCHD and respond to up

to two (2) "Requests for Additional Information" (RAI) issued by the regulatory agency or two (2) teleconferences with agency staff. All permit application fees are to be paid by the City.

2. Prepare and submit up to four (4) water main clearance applications through the BCHD for project 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. Failure of the Contractor to provide the required information or submission of poor quality as-built drawings will count as an application review. Poor quality as-built drawings will be returned with comments one (1) time and subsequent reviews of poor quality as-built drawings submitted by the Contractor will be counted as one (1) application review per instance. The project manual and/or the drawings will specify the Contractor's responsibilities.
3. Prepare and submit two (2) signed and sealed sets of plans to the City of Hollywood Building Department for review and response to two (2) anticipated "Requests for Additional Information" (RAI) issued by the regulatory agency or two (2) teleconferences with agency staff.
4. Prepare FDOT Utility Permit applications and corresponding Maintenance of Traffic (MOT) exhibits for water main(s) along Pembroke Road for review and response to one (1) anticipated "Request for Additional Information" (RAI) issued by the regulatory agency or one (1) teleconference with agency staff.
5. The City will be responsible for all permitting fees.

H. 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.

I. Construction Administration

During the construction phase, Tetra Tech and the City will provide technical services support for the water main replacement improvements projects, respectively. Tetra Tech will consult with and advise the City and provide periodic inspection. Daily inspection 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 and attend one (1) pre-construction conference, prepare agenda and minutes.
2. Periodically observe construction of the proposed improvements. The overall project is expected to have a total duration of up to 17 months including project kick-off, shop drawing review and substantial and final completion. Periodic observation will be provided on a bi-monthly basis during active construction which will necessitate a total of 30 site visits Site visits will occur on the same days as the progress meetings.
3. Attend up to 17 monthly progress meetings. The City Project Manager will be responsible for preparing meeting minutes for distribution.
4. Provide interpretation or clarification of the design documents during active construction (up to 17 months) when requested.
5. Review shop drawings and other submittals up to two (2) times per submittal subject area for general conformance with the Contract Documents. The Contract Documents will require the Contractor to pay for additional reviews.
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 applications for payment, test reports for soils, concrete and other materials on a monthly basis.
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 checklists.
10. Prepare record drawings, incorporating changes made during construction for City BCHD 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. Also, provide project certification to regulatory agencies certifying that the project is complete and in general conformance with permits issued.

J. Allowance

An allowance of $25,000 will be included in this work order for additional or unforeseen additional work. The allowance must be requested and approved in writing by the City, prior to use.

III. SERVICES NOT INCLUDED

A. Other Permits - This proposal does not include permitting services for any permits not previously listed.

B. Costs for advertising the Project are to be paid by the City.

C. Obtaining easements on property for construction of the project is not included in this scope.

D. Coordination with homeowners is not included in this scope and no time has been budgeted for attendance at any meetings not previously listed. For private water service relocation and reconnection, the Contractor will coordinate with property owners to obtain signed Right-of-Entry forms consenting to allow contractors to perform the necessary work within the private property.

E. 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.

F. Services related to permitting pipeline construction through wetlands or environmentally sensitive areas are not anticipated and are not included in this scope.

G. Hydraulic modeling.

H. All permitting fees are to be paid by the City.

I. Services related to the stormwater improvements design, permitting, bidding and construction administration.

J. Additional services due to a bid protest.

K. Extensive MOT design, permitting, and materials.

IV. COMPENSATION SUMMARY

The total Lump Sum compensation for the Scope of Services described in Section II is $730,269. The compensation for the Scope of Services by task is summarized below.

	Task	Cost
A	Water Main Confirmations and Coordination	$ 16,285
B	Surveying	$ 235,562
C	Utilities Verification	$ 27,890
D	Subsurface Utility Evaluations	$ 17,270
C	Geotechnical	$ 22,872
F	Final Design	$ 252,390
G	Permitting	$ 31,025
H	Bidding Assistance	$ 10,240
I	Construction Services	$ 89,535
J	Allowance	$ 25,000
K	Reimbursable Expenses	$ 2,200
Total Lump Sum		**$ 730,269**

V. SCHEDULE

See Attachment B for breakdown of schedule by tasks based on duration.

Price Proposal

Water Main Replacement Program:

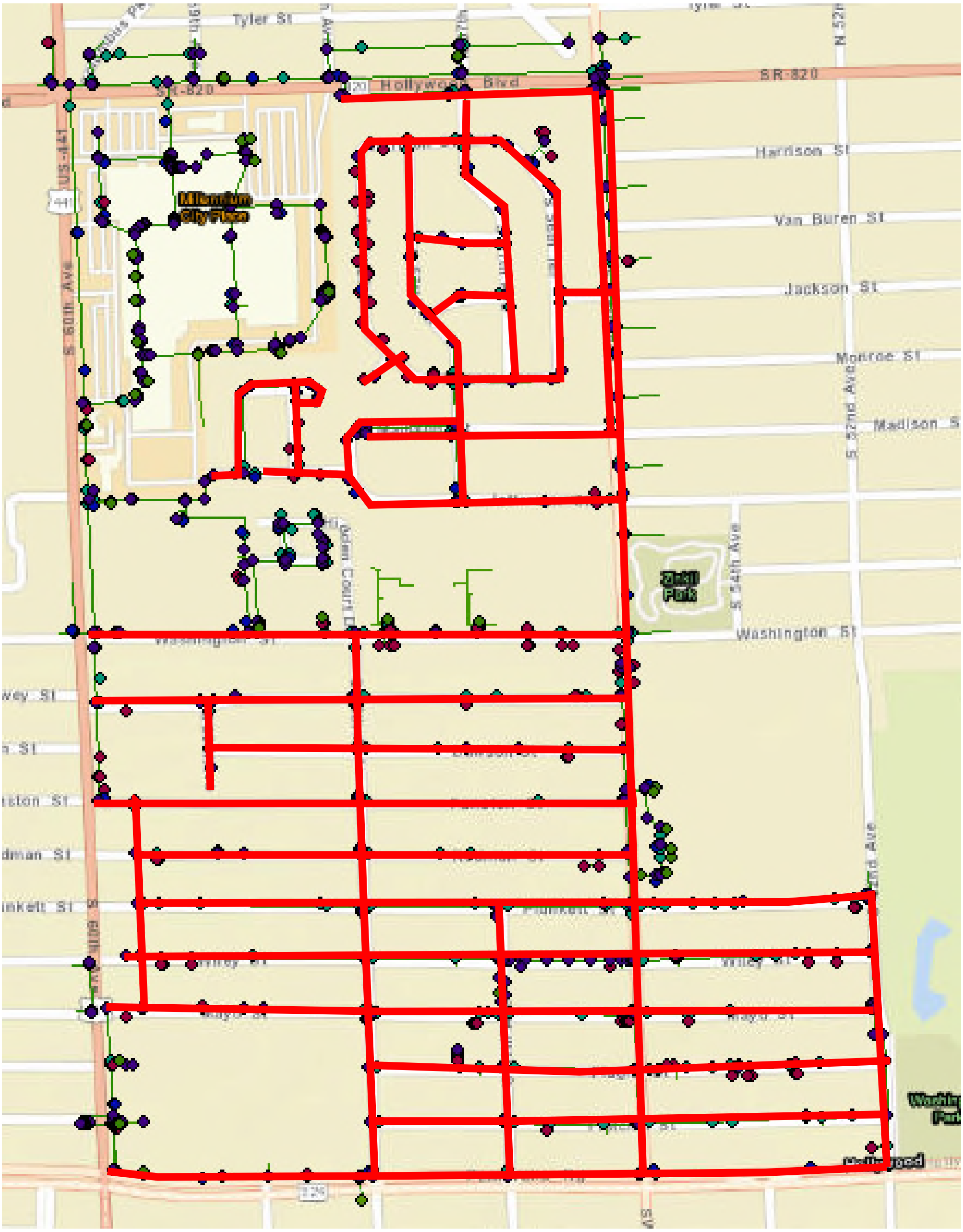
Pembroke Rd to Hollywood Blvd. N. 52 N. 56 Ave to SR 441

Submitted to: City of Hollywood
(Attn: Clece Aurelus, P.E.)

Contract Type: Lump Sum

		Labor Plan (8 Resource)								Price Summary / Totals			
													Task Pricing Totals	730,269
	Bill Rate >	185.00	150.00	130.00	80.00	85.00	90.00	80.00	70.00				Specify Add'l Fees on Setup	0
													Technology Use Fee	
	Proj Area >												**Total Price**	**730,269**
		Professional (9)	Professional (8)	Professional (7)	Professional (3)	Professional (4)	Professional (5)	Engineering Technician (5)	Word Processing Operator (4)	**Pricing by Resource**				
Project Phases / Tasks	**Total Labor Hrs**									Labor	Subs	ODCs	**Task Pricing Totals**	
	4,238	175	421	781	1,112	28	266	1,318	137	427,365	300,704	2,200	**730,269**	
A Water Main Confirmations and Coordination	**123**	**17**	**70**	**-**	**4**	**-**	**-**	**8**	**24**	**16,285**	**-**	**-**	**16,285**	
B Surveying	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**235,562**	**-**	**235,562**	
C Utilities Verification	**292**	**2**	**22**	**56**	**114**	**12**	**-**	**78**	**8**	**27,890**	**-**	**-**	**27,890**	
D Subsuface Utility Evaluations	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**17,270**	**-**	**17,270**	
E Geotechnical	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**22,872**	**-**	**22,872**	
F Final Design	**2,536**	**122**	**198**	**410**	**516**	**16**	**242**	**1,016**	**16**	**252,390**	**-**	**-**	**252,390**	
G Permitting	**337**	**5**	**11**	**56**	**138**	**-**	**-**	**124**	**3**	**31,025**	**-**	**-**	**31,025**	
H Bidding Services	**94**	**8**	**10**	**24**	**30**	**-**	**-**	**20**	**2**	**10,240**	**-**	**-**	**10,240**	
I Construction Services	**856**	**21**	**110**	**235**	**310**	**-**	**24**	**72**	**84**	**89,535**	**-**	**-**	**89,535**	
J Allowance	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**25,000**	**-**	**25,000**	
K ODCs	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2,200**	**2,200**	
Totals	**4,238**	**175**	**421**	**781**	**1,112**	**28**	**266**	**1,318**	**137**	**427,365**	**300,704**	**2,200**	**730,269**	

ATTACHMENT A



GIBBS LAND SURVEYORS

2131 HOLLYWOOD BOULEVARD SUITE 204 HOLLYWOOD, FLORIDA 33020
PHONE: 954-923-7666 FAX: 954-923-7668
SSEELEY@GIBBSLANDSURVEYORS.COM

February 3, 2017

Ken Caban, P.E.
Tetra Tech
150 West Flagler Street
Suite 1625
Miami, FL 33130

RE: **City of Hollywood – Watermain replacement project- Hollywood Blvd to Pembroke Road, 441 to S 56 Avenue, Plunkett Street to Pembroke, S 52 Avenue to S 56 Avenue. (Approx 63,545 L.F – public Right-of-Way)**

Dear Mr. Caban:

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

LIMITS OF WORK

1. All those Streets, Avenues and Alleys (public thoroughfares), lying within the full Right-of-Way of S 56 Avenue west to the east edge of pavement of U.S. 441 (State Road 7;
2. From the north R/W of Plunkett Street to the centerline of Pembroke Road, from the east R/W of S 52 Avenue to S 56 Avenue;
3. East half R/W of State Road 7, from Pembroke Road to 100 feet north of Mayo Street;
4. East half R/W of State Road 7, from 100 feet south of Funston Street to 100 feet north of Washington Street;
5. South half R/W of Hollywood Boulevard, from east limits of Hollywood Mall (58 Avenue) to 56 Avenue.
6. Any facilities owned and operated by the City of Hollywood on private property, subject to existing easement agreements between the City and private entities.

SCOPE OF WORK

Land Survey Services:

1. Perform a topographic survey locating and identifying all applicable visible existing above-ground and underground utilities as marked 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 North American Vertical Datum of 1988 Benchmark system (NAVD88). Horizontal control data shall be relative to the Florida State Plane Coordinate system, East Zone, North American Datum of 1983/1990 adjustment.
3. Platted right-of-ways or easement and property boundaries shall be plotted on survey drawings for the project route.

4. Digital Baseline shall be established at the beginning and end of the project and all changes in direction. Monumentation and other survey control points found in the field will confirm the GIS file. State Plane coordinate values and elevations (x,y,z) will be assigned to the control/work points in the digital file
5. Provide cross-sections at 100 foot intervals to extend 5 feet beyond the right-of-way lines.
6. Provide centerline elevations at 100 foot intervals within the alley rights-of-way.
7. 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, headwalls, endwalls, manholes, vaults, driveways, right-of-way limits, landscaping, traffic signage, other signage (not to include pavement striping), and any other visible improvements within the above limits.
8. 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.
9. Provide location of hedges and individual trees greater than four (4) inches in diameter.
10. Digital maps shall delineate all field collected data as well as existing limits of nearby public right-of-ways.
11. Provide location of utilities where possible based on field observation and utility records provided to this office.
12. Record horizontal and vertical location of existing pipes at proposed connection locations and other soft dig locations as provided to this office; record position of test holes (by others).
13. The final survey map to be prepared at 1"=20' horizontal in a standard 22"x34" plan sheet format to include all topographic data listed, right-of-way lines, property lines (GIS derived), baselines, and platted easement lines and subsurface utility markings (by others).
14. Provide signed and sealed survey showing all of the above survey information.

Note: Title Search and Records Search is not a part of this Scope.

The above SCOPE OF WORK for this survey will be performed for a fee of
$214,147.00

Any supplemental title work, if required, will be paid by the City. Any additional surveying as requested will be performed at the following hourly rates:

Principal	$125.00/hour
Survey Crew Supervisor	85.00/hour
Field Crew	100.00/hour
Cad Drafter - Survey Technician	60.00/hour
Secretary	35.00/hour

Sincerely,

Stephen K. Seeley, (for the firm)

1.

KEITH & ASSOCIATES, INC.
consulting engineers
301 East Atlantic Boulevard, Pompano Beach, Florida 33060-6643
Tel: 954-788-3400 Fax: 954-788-3500

February 27th, 2017

Kenneth Caban
Vice President
Tetratech
6303 Blue Lagoon Drive Ste 305
Miami, FL 33126
305-908-1420
305-849-3404
Ken.Caban@tetratech.com

RE: Agreement for Professional Services
Project Name: City of Hollywood
Project Location: SR-7 and Hollywood Boulevard
Our Project/Proposal Number: 09815.M0_Rev01

Dear Mr. Caban,

In accordance with your request and subsequent discussions between members of our association and yourself, this agreement between Keith & Associates, Inc. ("CONSULTANT"), and Tetratech ("CLIENT") for professional services is submitted for your consideration and approval. CONSULTANT will begin work within three (3) days after receipt of a fully executed copy of this Agreement. Such receipt shall constitute written notice to proceed.

I. PURPOSE OF AGREEMENT/PROJECT DESCRIPTION

The purpose of this Agreement is to outline the scope of services recommended by CONSULTANT and accepted by CLIENT, and to establish the contractual conditions between CONSULTANT and CLIENT with respect to the proposed services.

II. SCOPE OF SERVICES

Section 1 – Subsurface Utility Engineering (SUE) Services

Keith and Associates (CONSULTANT) appreciate the opportunity to provide SUE/Survey services on this very important project. CONSULTANT 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. CONSULTANT is to provide professional services associated with designation (in order to setup 30 locates) per designer's request of specific existing subsurface utilities. Gravity systems, service laterals, irrigation or overhead facilities are not included in this investigation.

Task 001 Horizontal Designation Services - (Quality Level 'B')

CONSULTANT will horizontally mark any known tone able and non toneable 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 proposal does not include identifying gravity systems, service laterals, irrigation, or overhead facilities.

The Lump Sum Fee for this Task shall be……$ 3,200.00

Task 002 Location Services - (Quality Level 'A')
(Vacuum Excavations)

CONSULTANT will perform up to (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 (to be provided by client), depth of cover, type, size and material if applicable.

The Lump Sum Fee for this Task shall be……$ 12,000.00

MOT Maintenance of Traffic (includes arrow board, signs and cones)……..$ 500.00

Technical Limitations

Services will be provided with due diligence and in a manner consistent with standards of the subsurface utility locating industry. Every reasonable effort will be made to locate all utility systems of interest whether indicated on record plans available to us or not. However, no guarantee can be made that all existing utility systems can be detected, located or exposed. It may not be possible to detect utilities without prior knowledge, such as systems that are not depicted on record prints available to us. Typically the horizontal location effort will include electromagnetic induction, power source detection, and ground penetrating radar (GPR). Electromagnetic induction is a method in which a transmitted signal is applied to a metallic target. As long as the target is metallic and unbroken, the target can be traced and a receiver at the surface is used to detect the transmitted signal. If the signal cannot be applied directly to the target, induction may be produced from the surface. In this scenario bleed-off of the transmitted signal to an adjacent facility is possible, sometimes resulting in erroneous information. PVC, HDPE, concrete pipe and other non-metallic facilities cannot be located by electromagnetic methods. Power source detection is a technique used to locate naturally occurring magnetic fields that exist around cables while generating a signal (electric, telephone, CATV for example). Ground penetrating radar (GPR) is available to assist in locating non-metallic utilities and other facilities that are unidentifiable using traditional electromagnetic techniques. The accuracy of these techniques is

subject to the limitation of the available technology and certain factors and field conditions beyond our control, such as the size, depth and conductivity of the target, the site conditions and access, soil conditions, depth to water table and the existence of adjacent buried materials and debris. The targeting of subsurface utilities, although highly reliable, is expressly understood to represent an approximate location of the facility marked on the ground surface. Facilities located from the surface are usually found within two feet of the surface mark. Once a possible facility has been located from the surface, vacuum excavation services should be used to visually verify and to provide the accurate horizontal location and vertical measurements (a test hole). Vacuum excavation techniques are used to provide a cost-effective service that causes minimal disturbance to the site, the utility, vehicle traffic, and is acceptable to the permitting agencies. The size of the test hole excavation is kept to a minimum, in most cases the nominal size of a test hole is 8" x 8". This service represents the best available data on subsurface utilities given a cost-effective investigation using air/vacuum excavation. Visual verification in the test hole below the water table is not possible. An air lance probe can be used in these instances to a reasonable depth of approximately 6 feet, although results to greater depths may be possible. The bottom of the utility pipe and conduit is sometimes not directly available and in most cases can be derived from the crown of the pipe and the pipe diameter. Pipes with a diameter of 16"or less can usually be determined by exposing a potion or the entire pipe as needed. If pipe diameter is critical on pipe facilities greater than 16", additional test holes may be required to obtain both edges. The bottom depth of multiple conduit and encased duct banks is determined by excavating down one edge of the utility. Additional test holes are needed to accurately document edges, configuration and top and bottom depths. Conditions under multiple or encased duct bank facilities cannot be excavated and therefore the existence of another facility cannot be confirmed. It is important to remember that the bottom edge of the facility may not represent its lowest point, and the shape or configuration of the facility may not be the same on both sides. Locating underground utilities is not an exact science. The reporting of a negative result (no facility found) should not be used as a positive determination that the subject area is clear of all facilities or that the facility does not exist. CLIENT shall hold harmless and indemnify Keith and Associates, Inc. (K&A) against any losses as a result of limitations within the equipment, but not against negligence on the part of K&A. Use of this service does not relieve interested parties from their responsibility to make required notification prior to excavation, nor does it relieve utility owners of their responsibility to mark the location of their facilities. K&A will not be responsible for damage caused by others. K&A will not be responsible for utilities that cannot be located with the equipment and techniques provided, or those located underneath other utilities. If records research is not part of the scope of services, the utility owner's marks will be used to identify the utility. K&A will not be responsible for correcting mistakes made by other locators. Where vacuum excavation services are used and no utility is found at the mark provided by the utility at a depth of 5 feet, the excavation will be backfilled, referenced and invoiced as one test hole.

Subsurface Utility Engineering Conditions and Understandings

The utility markings are for design purposes only. The Florida One Call must be notified forty-eight (48) hours in advance of any excavation.

CONSULTANT 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 Due to traffic conditions additional MOT is required and is beyond the capability of CONSULTANTS standard MOT operations, CONSULTANT will notify client and provide an additional fee for the MOT operation.

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.

CONSULTANT'S TOTAL LUMP SUM FEE……..…….……$ 15,700.00

PROPOSAL FEES

Our Project/Proposal Number		09815.M0	Personnel and Hourly Rates						
Proposal Date		2/3/2017	90	91	92	93	95	96	
Tasks			Utility Crew Supervisor	Utility Technician	Utility Project Manager	Utility Project Engineer	Utility Coordinator	Utility Designating/GPR (2) Person	Task Subtotals
No.	Description		$80.00	$70.00	$100.00	$130.00	$120.00	$200.00	
001	Designation/Setup Testholes							16	$ 3,200.00
002	Locate Testholes (see below)								$ -
003									$ -
Personnel Hours			0	0	0	0	0	16	$ 3,200.00
Personnel Cost			$ -	$ -	$ -	$ -	$ -	$ 3,200.00	

Personnel Subtotal	$ 3,200.00
(30)Test Holes - Pervious ($350.00/each)	15
Test Holes Subtotal	$ 5,250.00
(15)Test Holes - Impervious ($440.00/each)	15
Test Holes Subtotal	$ 6,750.00
Miscellaneous Expenses (MOT)	$ 500.00
Direct Expenses	$ -
GRAND TOTAL	$ 15,700.00

Section 8 - Additional Services

The undertaking by CONSULTANT to perform professional services defined within this Agreement extends only to those services specifically described herein. No other services, whether they may be interpreted as related, incidental or implied, shall be considered to be included in the scope of work of this proposal. If upon request of CLIENT, CONSULTANT agrees to perform additional services hereunder, CLIENT shall be obligated to pay CONSULTANT for the performance of such additional services an amount (in addition to all other amounts payable under this Agreement) based on an hourly fee in accordance with CONSULTANT'S current professional fee schedule, plus reimbursable expenses as incurred by CONSULTANT, unless a lump sum addendum to Agreement is executed by the parties to this Agreement which addresses the additional services.

Additional services shall include revisions to work previously performed that are required due to a change in the data or criteria furnished to CONSULTANT, a change in the scope or concept of the

7950 NW 64th Street.
Miami, FL 33166
phone: 305.471.7725
fax: 305.593.1915
intertek.com/building
psiusa.com

March 2, 2017

Tetra Tech
6303 Blue Lagoon Drive, Suite 305
Miami, Florida 33126

To: Mr. Kenneth L. Caban, P.E.
South Florida Regional Manager

Re: Proposal for Geotechnical Engineering Services
Replacement of Water Mains
From Hollywood Blvd. to Pembroke Rd. & From US-441 to SW 56th Ave.
Hollywood, Florida
PSI Proposal No. 0397-201386

Dear Mr. Caban:

As requested, **Professional Service Industries, Inc. (PSI)** is pleased to submit this proposal to perform a geotechnical engineering study for the above referenced project. Included herein is our understanding of the proposed improvements along with a scope of services, cost estimate and anticipated schedule to conduct these services.

PROJECT INFORMATION

It is our understanding that the project will consist of the replacement of water mains along many roadways, bounded by the following limits:

1. From Hollywood Boulevard to Washington Street and from US-441 to SW 56th Avenue.
2. From Washington Street to Pembroke Road and from US-441 to SW 52nd Avenue.

We understand that the watermains along US-441 and Hollywood Boulevard will not be replaced. Similarly, the area occupied by the existing shopping plaza and parking areas at the SE corner of US-441 and Hollywood Boulevard (extending approximately 1900 feet south of Hollywood Blvd. and 1200 feet east of US-441) will not be replaced.

Based on the map provided showing the roadways and associated proposed watermain replacements, we have estimated a total project length of around 64,000 linear feet. For the most part, the watermains will be installed by conventional cut and cover techniques.

Should any of the noted details be inconsistent, PSI requests that you contact us immediately to allow us to make any necessary modifications to this proposal.

SCOPE OF SERVICES

Based on the requested boring spacing of approximately 1000 feet, PSI will perform sixty-six (66) Standard Penetration Test (SPT) borings advanced to a depth of 8 feet below existing grade. The SPT borings will be performed with a truck-mounted rig using mud rotary wash drilling procedures. Samples of the in-place materials will be recovered with a standard split barrel driven with a 140-pound hammer falling 30 inches (the Standard Penetration Test in accordance with ASTM D1586).

After completion of drilling, all boreholes will be backfilled with excavated soil/rock, the asphalt surface patched as necessary, and the site generally cleaned as required.

Underground utility clearance will be required prior to commencing the drilling of the borings. Therefore, PSI will contact “Sunshine One-Call” Service to obtain underground public utility clearance. We assume that any private underground utilities existing in the exploratory area will be identified to us by others. Also, we anticipate Maintenance of Traffic (MOT) will be required to perform the field work as many of the borings will be performed within the existing roadways. Flagmen, cones/barricades, arrow boards, etc. will be used in accordance with FDOT MOT Design Standards 600 series.

GEOTECHNICAL ENGINEERING AND REPORTING

A geotechnical engineer will review the soil samples and representative samples will be tested for physical properties such as gradation, moisture content and organic content, if deemed necessary. The results of our work will be transmitted in a report which will specifically contain the information listed below:

1. A plan of the site showing the location of the soil borings.
2. Logs of the exploratory borings will be provided, which furnish the results of the SPT sampling.
3. Classification of the soil borings based on ASTM D2487.
4. Groundwater levels noted in our SPT borings at the time of drilling.
5. Associated laboratory testing results, if any.
6. A general discussion of the observed soil and groundwater table conditions across the site.

SCHEDULE AND FEES

Our study can begin one-day after we receive authorization to proceed. We will start drilling after underground utilities have been located and identified, which may take 2 to 4 business days. The field drilling should be completed in approximately 6 work days, assuming no delays due to weather. The written report of the subsurface exploration will be available within two weeks following the field demobilization. We estimate that our study will be completed within four weeks from your notice to proceed. Preliminary verbal results can be provided as our field work progresses, if requested.

Based on our general knowledge of the subsurface conditions of the site and our understanding of your requirements, we propose to complete the subsurface exploration and geotechnical engineering services described in this proposal on a lump sum fee basis as presented below:

Task	Total Lump Sum Fee
Geotechnical Engineering Services	**$20,793.00**

Our estimate is based on 66 SPT borings to a depth of 8 feet at a total footage of 528 linear feet.

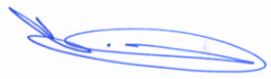
The work will be carried out in accordance with our General Conditions a copy of which are attached hereto. PSI appreciates your consideration of our firm for this project. To formally authorize us, kindly indicate so by returning a signed copy of this proposal to our Miami office.

In the event you have any questions or if you require additional information, please do not hesitate to contact us.

Sincerely,

PROFESSIONAL SERVICE INDUSTRIES, INC.
Certificate of Authorization No: 3684

Julio de Blas, P.E.
Regional Engineer



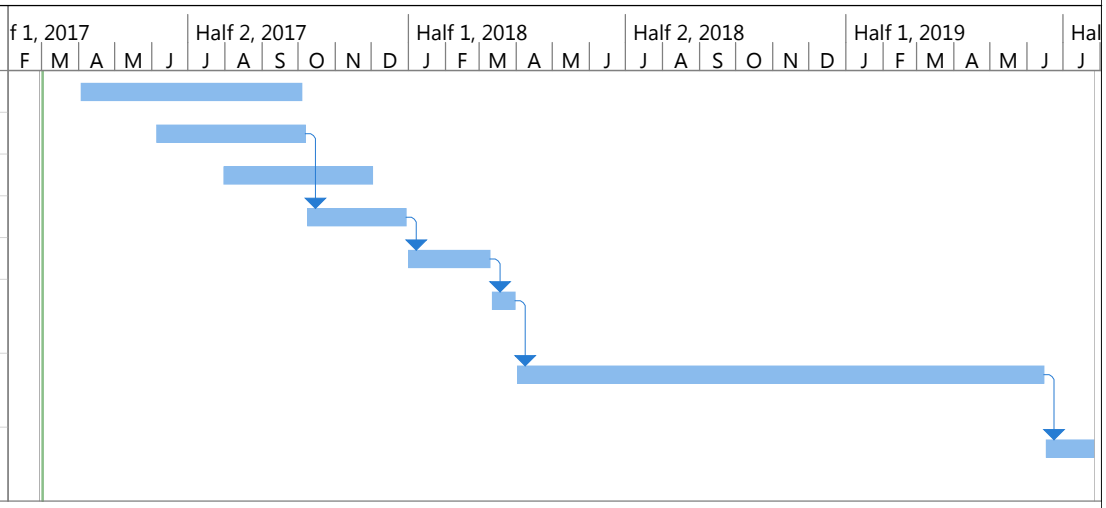
Ian Kinnear, P.E.
Chief Engineer

Attachment: Cost Breakdown
General Conditions

AUTHORIZED BY:	INVOICE TO:
Signature	Firm
Name	Address
Title	
Date	Attention

ATTACHMENT B
CITY OF HOLLYWOOD
WATER MAIN REPLACEMENT PROGRAM
FROM PEMBROKE ROAD TO HOLLYWOOD BLVD
BETWEEN N 52nd AVENUE AND SR 441

ID	Task Name	Duration	Start	Finish
1	Surveying & Geotechnical	132 days	Mon 4/3/17	Tue 10/3/17
2	Design/Spec 60%	90 days	Mon 6/5/17	Fri 10/6/17
3	Permitting	90 days	Mon 7/31/17	Fri 12/1/17
4	Design/Spec 100%	60 days	Mon 10/9/17	Fri 12/29/17
5	Bidding/Evaluation	50 days	Mon 1/1/18	Fri 3/9/18
6	Construction initiation (Shop Dwg, etc.)	15 days	Mon 3/12/18	Fri 3/30/18
7	Construction of Improvements	315 days	Mon 4/2/18	Fri 6/14/19
8	Construction & Project Close Out	30 days	Mon 6/17/19	Fri 7/26/19



Project: COH Pembroke to Hollywood
from N 52 Ave and SR 441
Date: Thu 3/2/17

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress