



King Engineering Associates, Inc.

WORK ORDER INITIATION FORM for the CITY OF CLEARWATER

Date:	November 12, 2014
Project Number:	2110-214-000
City Project Number:	14-0041-UT
Plan Set Number:	2014053

1. PROJECT TITLE:

Clearwater Memorial Causeway Subaqueous Pipelines Project

2. SCOPE OF SERVICES:

The City of Clearwater (City) has requested King Engineering Associates, Inc. (King) to design, permit, and prepare construction plans for the installation of the following:

- A replacement force main across Clearwater Harbor from Bayway Blvd. to State Road (S.R.) 60 (approximately 2,500 LF);
- A new 20-inch pipeline across the Intracoastal Waterway from the Memorial Causeway to Drew Street; for future use as either a force main, water main, or reclaimed water main (approximately 2,700 LF).

The existing force main across Clearwater Harbor from Bayway Blvd. to S.R. 60 is a 20-inch force main. The original utilities that paralleled the Causeway included the following:

- 16-inch Molox Joint Water Main (1958)
- 20-inch Ball Joint Water Main (1991)
- 16-inch Cast Iron Water Main (1961)
- 20-inch Force Main (unknown age)

In 1999, as part of the “Island Estates Reclaimed Water Main Project”, the City installed a new 16-inch ductile iron reclaimed water main along the Causeway, connected it to the existing 16-inch Molox Joint water main and converted the 16-inch Molox joint water main to reclaimed water service.

In 2003, the City installed several new pipelines parallel with the Causeway to Drew Street via horizontal directional drill as follows:

- 20-inch HDPE Force Main (installed in 2003)
- 18-inch HDPE Water Main (installed in 2003)
- 18-inch HDPE Reclaimed Water Main (installed in 2003)
- 6-inch HDPE Gas Main (installed in 2003)

As part of the work that was completed in 2003, the existing 16-inch Cast Iron Water Main (1961) and the 20-inch Ball Joint Water Main (1991) were abandoned and the 20-inch force main (unknown age) that is located on the south of the side the Causeway was grouted and abandoned.

Therefore, the only utilities that are in-service along the Causeway are as follows:

- 20-inch HDPE Force Main (installed in 2003)
- 18-inch HDPE Water Main (installed in 2003)
- 18-inch HDPE Reclaimed Water Main (installed in 2003)
- 6-inch HDPE Gas Main (installed in 2003)

This Work Order authorizes King to provide planning, design, permitting and other services related to preparing Contract Documents for advertisement for public bid. The design plans will be compiled using the City of Clearwater Deliverables Standards, as referenced in Attachment “A”.

I. PRE-DESIGN PHASE

Task 1.1 - Project Coordination

King will provide the following services throughout the Pre-Design and Final Design Phases:

- A. Prepare a project specific Project Management Plan (PMP) establishing team members and responsibilities, lines of communication, project delivery schedules and project budgets.
- B. Coordinate the activities of the King’s staff and subconsultants with those of the City and administer communications among the project team members and with the City’s staff.
- C. Prepare for and attend status meetings during the 30%, 60%, and 90% design phases of the work.

- D. Maintain and update monthly project schedules and status reports.
- E. Administer a quality assurance program covering the technical work of the project team.

Task 1.2 – Geotechnical Services

A geotechnical exploration program will be conducted within the project area. Specifically, the geotechnical program scope includes:

- A. Five (5) Standard Penetration Test (SPT) borings will be conducted in water to a depth of ± 50 feet below the mudline surface as follows:
 - Three (3) SPT borings located in the water between Bayway Blvd. and State Road (S.R.) 60
 - Two (2) SPT borings located in the water between S.R. 60 and Drew Street

Four (4) SPT borings to a depth of 50 feet on the landward side of the project area as follows:

- One (1) SPT boring located at the vacant lot on Bayway Blvd.
- One (1) SPT boring located on the south side of S.R. 60 and one (1) SBT boring on the North side of S.R. 60 on the West side of the Intracoastal Waterway.
- One (1) SPT boring adjacent to Drew Street

Laboratory classification tests will be performed on representative samples including grainsize analyses, Atterberg limits and organic content tests. Corrosivity testing will not be required.

- B. The results of the field and laboratory studies will be included in a signed and sealed geotechnical report. The report will also include recommendations for dewatering, an evaluation of the suitability of existing soils for HDD, backfill purposes and recommendations for compaction requirements.

Task 1.3 – Surveying

Topographic survey services will perform in the areas listed below using the following surveying methods:

- The vacant lot on Bayway Blvd.: Conventional Ground Survey.
- S.R. 60 tie-in: Conventional Ground Survey.

- Drew Street tie-in: Conventional Ground Survey.
 - The water bottom between Bayway Blvd. and S.R. 60: Bathymetry, 2,100 feet long and 200 feet wide.
 - The North side of S.R. 60 West of the Intracoastal Waterway tie-in Conventional Ground Survey.
 - The water bottom between Drew Street and the Causeway: Bathymetry, 1,500 feet long and 200 feet wide.
- A. The topographic survey will be referenced to the North American Vertical Datum of 1988 (vertical) and North American Datum of 1983/90 (horizontal) and made in accordance with the Minimum Technical Standards set forth in Chapter 5J-17 of the Florida Administrative Code. The survey will include the following:
- Invert elevations and pipe sizes on manholes, storm drains and other structures that are accessible according to the requirements of OSHA regulations.
 - Location of existing above ground utilities and above ground evidence of underground utilities.
 - Above ground features within the proposed corridor, grade breaks, fences, walls, driveways, trees 5" diameter and above (including tree canopies) and outline bushes or shrubs. If a tree is beyond the right-of-way, but its canopy extends into the right-of-way it will be located.
 - Establish temporary bench marks along the portion of the route, by conventional methods utilizing local permanent bench marks as published by National Geodetic Survey and the City of Clearwater.
 - Location of the right-of-way monumentation along the route.
 - Cross-sectioning the Intracoastal Waterway bottom at approximately 50 foot intervals.
 - Establish the Mean High Water (MHW) Line Elevation at the Causeway, Bayway Blvd. site and Drew St. site.
 - Development of a specific purpose jurisdictional survey for the wetland/surface water and MHW lines.

- Development of a sketch and legal description for use in obtaining an easement for the pipelines across the Intracoastal Waterway.
- Development of a sketch and legal description for use in obtaining a temporary construction easement at vacant lot on Bayway Blvd.
- Locating land-based geotechnical test borings.

Task 1.4 – Subsurface Utility Engineering and Utility Coordination

A. Subsurface Utility Engineering

Subsurface Utility Engineering (SUE) services will be provided to locate, confirm depth and size of existing utilities unable to be located by conventional surveying and in potential conflict with the proposed pipeline alignment. A total of 20 vacuum excavated holes are included in the fees along with surveying in the hole locations.

B. Utility Coordination

Plans of the proposed pipeline alignments will be sent to utility companies known to be in the project area at 30, 60, 90 and 100 percent submittals. Utilities will be requested to locate and draw their facilities on these plans or note “no conflicts” and return one copy to King. This information will be combined with above ground visible data and SUE data to estimate the location of existing utilities. Three (3) meetings have been included to review the alignment with various utility owners along the pipeline alignment.

Task 1.5 – Environmental Services

A. Preliminary Listed Species Assessment

King Environmental Scientists will conduct a preliminary ecological assessment of the proposed project area, the purpose of which is to identify sensitive ecological features, marine resources or potential listed species involvements as it relates to potential permitting constraints for the project. A brief memorandum of findings will be prepared summarizing the results of the field reconnaissance and GIS or literature database searches along with a preliminary determination of effect on implicated species. In the event that initial or follow-up wildlife surveys detect the presence of listed species within the project area, such that proposed project activities may affect such species, it will be necessary to coordinate with the FWC, USFWS and/or other regulatory agencies to determine if any additional surveys are required. Because the extent of these subsequent surveys cannot be predicted at this time, they are not included in the proposed fees.

B. Jurisdictional Wetland/Surface Water Determination

King's Environmental Scientists will locate and determine the approximate extent of regulatory wetland/surface water jurisdiction within the project limits. Since the proposed project is situated adjacent to (and under) the Intracoastal Waterway and across portions of Clearwater Harbor, the extent of regulatory wetland/surface water jurisdiction will minimally be established using the Mean High Water (MHW) elevation in the vicinity of the project area. If preliminary field review reveals the presence of wetlands above the established MHW elevational contour as shown on the plans, the King will delineate and GPS/survey locate such wetland areas in establishing the more landward limits of regulatory jurisdiction as applicable based on local, state and federal agency criteria.

Task 1.6 – Preliminary Design Plans and Memorandum

A. Preliminary Design Plans

Preliminary Design Plans will be prepared. It is anticipated that these drawings will include only plan views and will show pertinent survey data, jurisdictional lines, apparent right-of-way lines, existing utility data, a proposed pipeline route, proposed easements, interconnection points, and preliminary maintenance of traffic techniques. The Preliminary Design Plans will serve as the 30% Design and will be submitted for City review along with a Preliminary Design Memorandum discussed below.

B. King will develop a Preliminary Design Memorandum for the proposed pipelines, which will include and address the following:

- Confirmation of existing pipeline configurations
- Proposed alignments and alternatives considered
- Materials of construction
- Methods of construction (open cut, directional drill, etc.) and Horizontal Directional Drill calculations
- Construction staging/Construction phasing
- Maintaining service during construction
- Available rights-of-way and easements required
- Summary of coordination with other utility owners

- Environmental impacts/considerations
- Permitting requirements
- Estimated construction costs and construction duration

The Preliminary Design Plans and Memorandum will be presented to the City and the FDOT at a preliminary design briefing attended by King's Project Manager, Environmental Scientist and Project Engineer. Comments received will be incorporated into the Preliminary Design Memorandum and the memorandum will be finalized. Comments on the Preliminary Design Plans will be incorporated into the 60% Design Documents.

II. FINAL DESIGN PHASE

Task 2.1 – Design Document Development

King will develop biddable drawings and specifications for construction of the proposed pipelines.

A. Final Design Plans, Technical Specifications and Construction Cost Estimate

- Cover
- Index and Notes
- Stormwater Pollution Prevention Plan
- Pipeline Key Sheet
- Force Main 1"=20' Plan and Profiles (5 sheets)
- Standby Main 1"=20' Plan and Profiles (6 sheets)
- Interconnection Plans and Sections
- Force Main System Details
- Standby Main System Details
- Miscellaneous Details
- Restoration Plans
- Maintenance of Traffic and Pedestrian Control Plans

Documents will be submitted to the City at the 60% and 90% complete levels along with estimates of probable construction costs. Front end technical specifications will be developed using the City's standard documents. King will meet with the City after each submittal to review and respond to the City's comments.

Task 2.2 – Permitting

King will provide permitting services, which will include attending pre-application meetings, submitting permit application packages and responding to Requests for Additional Information (RAI) to obtain the following permits:

- A. Attend one (1) pre-application meetings with FDEP, FDOT and the U.S. Army Corps of Engineers
- B. FDEP Application for a Specific Permit to Construct PWS Components
- C. FDEP Notification/Application For Constructing A Domestic Wastewater Collection/Transmission System
- D. FDOT Utility Permit
- E. FDEP State Wide Environmental Resource Permit (SWERP)
- F. FDEP Sovereign Submerged Land Easement

Activities located on sovereignty submerged lands (as defined in subsection 18-21.003, F.A.C.,) typically require a proprietary authorization from the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) to use such lands under Chapter 253, F.S., and Chapter 18-21, F.A.C., and, if located in an aquatic preserve, Chapter 258, F.S., and Chapter 18-18 or 18-20, F.A.C. When noticing is required under Section 253.115, F.S., for activities requiring a lease or easement in, on, or over state-owned submerged lands, the FDEP in representing the Board of Trustees of the Internal Improvement Trust Fund requires noticing of all property owners within a 500-foot radius of the easement limits.

Based on preliminary record searches in the GIS databases that revealed no existing easements present and the projects location within the Pinellas County Aquatic Preserve, it is assumed that an FDEP Sovereign Submerged Land (SSL) Easement will be required concurrent with the SWERP process. In support of obtaining the easement King will perform the following:

- Additional records search and coordination with FDEP SSL Division regarding a determination of the extent of SSL involvement and the resulting proprietary authorization required if any.
- Prepare an aquatic resource assessment of the effected shoreline(s) and the approximate extent of submerged aquatic vegetation (SAV) or other sensitive marine resources present in the project corridor based on available agency mapping products only (e.g. no in-water assessment or mapping by King).

- Prepare a brief narrative within the SWERP application package to address the required public interest criteria associated with obtaining authorization to use SSL within an Aquatic Preserve.
- Provide a list of names and addresses from the latest county tax assessment roll in mailing label format to FDEP to facilitate their notification of all property owners within a 500-foot radius of the proposed lease or easement boundary.

G. U.S. Army Corps of Engineers Nationwide Dredge and Fill Permit

Because the proposed subaqueous crossing north of the Memorial Causeway Bridge will traverse the Gulf Intracoastal Waterway (GICWW) a federally maintained channel, the project falls under both the regulatory and proprietary jurisdiction of the U.S. Army Corps of Engineers (USACE).

As a result, the Consultant will prepare an U.S. Army Corps of Engineers (USACE) Nationwide Permit (NW 12) as appropriate in accordance with current Corps regulatory guidelines and respond to up to two rounds of agency questions necessary to obtain approval for the permit. This task also includes coordination with the USACE Jacksonville Office real estate and operations divisions related to design criteria associated with GICWW easement requirements and hydrographic survey data. This scope includes the preparation and submittal of the permit application, Corps Preliminary JD Form and supporting narratives along with 8½" x 11" exhibits. In addition, the Consultant will prepare an easement legal description and assist the City in executing the required USACE Consent to Easement to use the Corps of Engineers Right-of-Way.

H. The following permit application fees have been included:

- FDEP Notification/Application For Constructing A Domestic Wastewater Collection/Transmission System: \$500.00
- FDEP Application for a Specific Permit to Construct PWS Components: \$650.00
- FDEP State Wide Environmental Resource Permit (SWERP): \$1,500.00

In accordance with Section 166-248 of the Pinellas County Land Development Code, since the proposed project will employ horizontal directional drill methods to facilitate a subaqueous crossing of Waters of the Pinellas County such utility projects are considered exempt from requirement to obtain a Dredge and Fill Permit from the Pinellas County Water & Navigation Control Authority. It is further assumed that the project will not involve any

activities having an impact to the water column or substrate within County, State or Federal waters. Building permits and dewatering permits will be obtained by the contractor.

Task 2.3 – Public Relations Assistance

King will assist the Clearwater Public Communications Department by providing the following services:

- A. Attending two (2) Public Relations/Information meetings;
- B. Assistance with developing handouts or flyers to be distributed by the City;
- C. Preparing maps, exhibits and/or PowerPoint presentations for use at the above meetings.

III. BIDDING PHASE

Task 3.1 - Bid Documents and Bidding and Award Assistance

King will assist the City with advertisement, bidding and award of the project including:

- A. Submitting final Bid Documents including:
 - Two (2) signed and sealed copies of the project drawings and technical specifications;
 - One (1) unbound reproducible set of the technical specifications;
 - One (1) CD-ROM containing the project drawings in AutoCAD format and the technical specifications in Word format;
 - One (1) CD-ROM containing the Bid Documents in PDF format;
 - The final Engineer's Opinion of Probable Construction Cost and construction duration.
- B. Attending the pre-bid meeting and site visit;
- C. Preparing up to two (2) Addenda/answer questions;
- D. Reviewing the bids, evaluating the apparent low bidder and providing recommendation of contract award.

Task 3.2 – Prepare Conformed Contract Documents

- A. Prepare and submit four (4) signed and sealed sets of conformed contract documents

3. PROJECT GOALS:

Project deliverables will include the following and those referenced in Attachment A:

1. Three (3) copies of the Preliminary Listed Species Assessment;
2. Three (3) copies of the Geotechnical Report;
3. Five (5) 24"x36" copies and two (2) 11"x17" copy of the 30% drawings; Five (5) copies of the Preliminary Design Memorandum; One (1) CDROM containing the Plans and Preliminary Design Memorandum in PDF format.
4. Five (5) 24"x36" copies and two (2) 11"x17" copy of the 60% drawings; Five (5) copies of the 60% Technical Specifications; One (1) CDROM containing the Plans and Technical Specifications in PDF format.
5. Five (5) 24"x36" copies and two (2) 11"x17" copy of the 90% drawings; Five (5) copies of the 90% Technical Specifications; One (1) CDROM containing the Plans and Technical Specifications in PDF format.
6. One (1) full copy of all permit application packages and RAI responses;
7. Bid Documents as described above.
8. Meeting minutes in PDF format by email.

4. BUDGET:

This price includes all labor and expenses anticipated to be incurred by King Engineering Associates, Inc. for the completion of these tasks in accordance with Professional Services Method "A" – Cost Times Multiplier Basis, **for a fee not to exceed Three Hundred Thirty-Six Thousand Seven Hundred Forty-Six Dollars and Zero Cents (\$336,746).**

5. SCHEDULE:

The project is to be completed **395 days** from issuance of notice-to-proceed. The project deliverables are to be phased as follows:

30% construction plans	120 calendar days
60% construction plans and permit applications	180 calendar days
90% construction plans	365 calendar days
Final construction documents	395 calendar days

6. STAFF ASSIGNMENT (Consultant):

Principal: Christopher F. Kuzler, P.E.
Project Manager: Loc P. Truong, P.E.
Project Engineers: Christopher High E.I., Timothy Palmer, E.I.
Designers: Mark Gladbach, Frank Paul, Chanta Sengaroun
Clerical: Paula Eldon

7. CORRESPONDENCE/REPORTING PROCEDURES:

Engineer's/Architect's project correspondence shall be directed to: Loc P. Truong, P.E.

All City project correspondence shall be directed to: Kelly J. O'Brien with copies to others as may be appropriate.

8. INVOICING/FUNDING PROCEDURES:

Invoices for work performed shall be submitted monthly to the City of Clearwater, Engineering Department, Attn.: Veronica Josef, Senior Staff Assistant, PO Box 4748, Clearwater, Florida 33758-4748. Contingency services will be billed as incurred only after written authorization is provided by the City to proceed with those services.

City Invoicing Code: **0327-96665-561300-535-000-0000**

9. INVOICING PROCEDURES

At a minimum, in addition to the invoice amount(s) the following information shall be provided on all invoices submitted on the Work Order:

- A. Purchase Order Number and Contract Amount.
- B. The time period (begin and end date) covered by the invoice.
- C. A short narrative summary of activities completed in the time period.
- D. Contract billing method – Lump Sum or Cost Times Multiplier.
- E. If Lump Sum, the percent completion, amount due, previous amount earned and total earned to date for all tasks (direct costs, if any, shall be included in lump sum amount).
- F. If Cost Times Multiplier, hours, hourly rates, names of individuals being billed, amount due, previous amount earned, total earned to date for each task and other direct costs (receipts will be required for any single item with a cost of \$50 or greater or cumulative monthly expenses greater than \$100).
- G. If the Work Order is funded by multiple funding codes, an itemization of tasks and invoice amounts by funding code.

10. SPECIAL CONSIDERATIONS:

The consultant named above is required to comply with Section 119.0701, Florida Statutes (2013) where applicable.

PREPARED BY:

Christopher F. Kuzler, P.E.
Sr. Vice President
King Engineering Associates, Inc.

Date

APPROVED BY:

Michael D. Quillen, PE
City Engineer
City of Clearwater

Date

WORK ORDER INITIATION FORM

CITY OF CLEARWATER DELIVERABLES STANDARDS

FORMAT:

The design plans shall be compiled utilizing one of the following standards:

City of Clearwater CAD standards or Consultant's CAD standards (please provide all supporting documents when utilizing Consultant's Standards).

DATUM:

Horizontal and Vertical datum shall be referenced to North American Vertical Datum of 1988 (vertical) and North American Datum of 1983/90 (horizontal). The unit of measurement shall be the United States Foot. Any deviation from this datum will not be accepted unless reviewed by City of Clearwater Engineering/Geographic Technology Division.

DELIVERABLES:

A minimum of two (2) signed and sealed Plans and Contract Documents (specifications book) labeled "ISSUED FOR BID" shall be provided at the onset of the bid phase, as well as electronic copies. Electronic plan copies in PDF and CAD and electronic contract documents in PDF and MS Word.

The design plans shall be produced on bond material, 24" x 36" at a scale of 1" = 20' unless approved otherwise. The consultant shall also deliver all digital files in CAD drawing format and PDF format together with all project data in AutoCAD Civil 3D file format. All references, such as other drawings attached, images and graphic files, custom fonts and shapes shall be included in hard copy and electronic copy.

Prior to the City Council award date, a minimum of two (2) copies of signed and sealed plans and contract documents (specifications book) labeled "CONFORMED" shall be provided. All revisions made during the bid phase shall be included in the plan sets and noted in the revision block or as a footnote. Copies of each Addendum shall be included at the front of the contract and all revisions made during the bid phase shall be incorporated into the Contract Documents.

Electronic copies of "CONFORMED" plans (PDF and CAD) and contract documents (PDF and MS Word) shall be provided prior to the City Council award date.

NOTES:

- If approved deviation from using Clearwater CAD standards, the consultant shall include all necessary information to aid in manipulating and printing/plotting the drawings. Please address any questions regarding file format to Mr. Tom Mahony, Geographic Technology Manager, at (727) 562-4762 or email address: tom.mahony@myclearwater.com.

Clearwater Memorial Causeway Subaqueous Force Main Project
King Engineering Associates, Inc.

**WORK ORDER INITIATION FORM
PROJECT BUDGET**

Task	Description	Subconsultant Services	Labor	Total
I.	Pre-Design			
1.1	Project Coordination		\$ 20,509	\$ 20,509
1.2	Geotechnical Services	\$ 36,800	\$ 1,067	\$ 37,867
1.3	Surveying Services	\$ 12,534	\$ 48,090	\$ 60,624
1.4	SUE and Utility Coordination	\$ 8,625	\$ 9,165	\$ 17,790
1.5	Environmental Services		\$ 11,493	\$ 11,493
1.6	Preliminary Design Plans and Memorandum		\$ 26,791	\$ 26,791
				\$175,074
II.	Final Design Phase			
2.1	Design Document Development			\$ 66,759
2.2	Permitting			\$ 46,427
2.3	Public Relations Assistance			\$ 5,093
				\$118,279
III.	Bidding Phase			
3.1	Bid & Award Services		\$ 10,116	\$10,116
3.2	Conform Plans and Technical Specifications		\$ 2,664	\$2,664
				\$12,780
Subtotal, Labor and Subcontractors				\$306,133
Contingency (10%)				\$30,613
Grand Total				\$336,746