

November 6, 2024

SENT VIA E-MAIL (dfisher@fortlauderdale.gov)

Daniel Fisher, P.E.
Senior Project Manager
Public Works
City of Fort Lauderdale
100 North Andrews Avenue
Fort Lauderdale, FL 33301

Re: Event 264 – Design Services for Pump Station A-5

Dear Mr. Fisher,

Chen Moore and Associates (CMA) is pleased to submit a Scope of Services to provide professional engineering services for the design of Pumping Station A-5 as described in RFQ Event 264.

Parties to this Agreement are:

- Chen Moore and Associates (CONSULTANT)
- City of Fort Lauderdale (CITY)

I. **BACKGROUND**

Pump Station A-7 (PS A-7) is experiencing increasingly high pressures due to wet weather infiltration into the City of Fort Lauderdale gravity sewer system. In addition, sewer flows continue to increase due to new residential development within the CITY's downtown area. The higher pressures and additional flows have caused PS A-7 to exceed its intended design capacity. The CITY has determined that that a new Pump Station is required (Pump Station A-5) to divert some of the flow from Pump Station A-7.

Capital Improvement Project (CIP) 12899 is for the construction of a new sanitary sewer Pump Station A-5 (PS A-5) to split the existing PS A-7 sewage basin into two (2) separate basins. The existing pump station is rated for 4,375 gallons per minute (GPM) at 136 feet of total dynamic head, it is anticipated PS A-5 will be of similar size and capacity. CONSULTANT shall analyze the existing PS A-7 gravity basin and determine a location to split the system and divert approximately half of the flow to PS A-5. The flow will be diverted to a new pump station located approximately 300 feet on NE 3rd Street. The pump station will be located inside the 300 & 330 North Andrews residential development currently under design. CONSULTANT will perform a capacity analysis of the new PS A-5 basin for the existing flows and future flows (ultimately build out) to size the pump station.

II. **SCOPE OF SERVICES**

CONSULTANT will prepare detailed construction documents inclusive of all structural, civil, mechanical, electrical and instrumentation equipment required for a complete pump station, sewer forcemain and associated gravity sewer piping to meet CITY standards. All pumps, piping and equipment shall meet current conditions and consider any future development. CONSULTANT will

assist the CITY during the procurement process by attending pre-bid meetings, responding to technical questions, reviewing bids and other related work. CONSULTANT shall also assist the CITY during construction of the project.

CONSULTANT shall comply with the City's Unified Land Development Code & Department of Sustainable Development permitting process, National Electric Code, National Fire Protection Association, Florida Department of Environmental Protection, Florida Department of Transportation (FDOT), South Florida Water Management District (SFWMD), Broward County Environmental Protection and Growth Management Department (EPGMD), Broward County Highway Construction and Engineering Division (HCED) and any other permitting agency having jurisdiction.

Task #1 – Preliminary Investigation

- CONSULTANT shall gather and review available utility information from Sunshine 811 Design Tickets to identify known utilities within the project limits.
- CONSULTANT shall gather existing plans and as-builts from the CITY, right-of-way owners, and pertinent jurisdictional agencies to establish the location of existing infrastructure and determine potential conflicts within the project limits.
- CONSULTANT shall compile and incorporate the collected information into a GIS database to be used as a basis for conceptual design for the project.
- Preliminary investigation also includes all necessary site visits to determine potential challenges.

Deliverables: The following deliverables shall be provided under this Task:

1. Electronic copy of compiled existing information

Task #2 – Geotechnical Investigation

- CONSULTANT shall employ the services of a licensed geotechnical engineer in the State of Florida to perform the following geotechnical services necessary to prepare the construction documents. Services will be as follows:
 - a. CONSULTANT will perform five (5) Standard Penetration Test (SPT) borings to a depth of 50 feet, two (2) Standard Penetration Test (SPT) borings to a depth of 30 feet and two (2) Standard Penetration Test (SPT) borings to a depth of 40 feet, all in general accordance with ASTM D- 1586 specifications. At the completion of the on-site work, the soil samples will be taken to a laboratory. CONSULTANT will provide an engineering report including a description of our findings for support of the proposed construction. In order to provide information concerning the engineering properties of the soils encountered, it is anticipated that tests may be performed to determine natural water content, organic content, and sieve analysis on representative soil samples collected from the field. The engineering report will include graphic logs of the test borings and a test boring location plan. It is assumed the site is accessible to truck mounted drilling equipment and that underground utilities will be cleared by others prior to our performing the on-site work.

Deliverables: The following deliverables shall be provided under this Task:

1. Signed electronic copy of the Geotechnical Report

Task #3 – Topographic Survey

The anticipated forcemain route is approximately 8,376 linear feet. However, approximately 3,900 linear feet of the forcemain route will be surveyed under a separate CITY contract (P12831 Pump Station A-7 Redundant Forcemain) . For purposes of this task order, the survey will include a route of approximately 4,476 linear feet which is the balance of the P12831 project route.

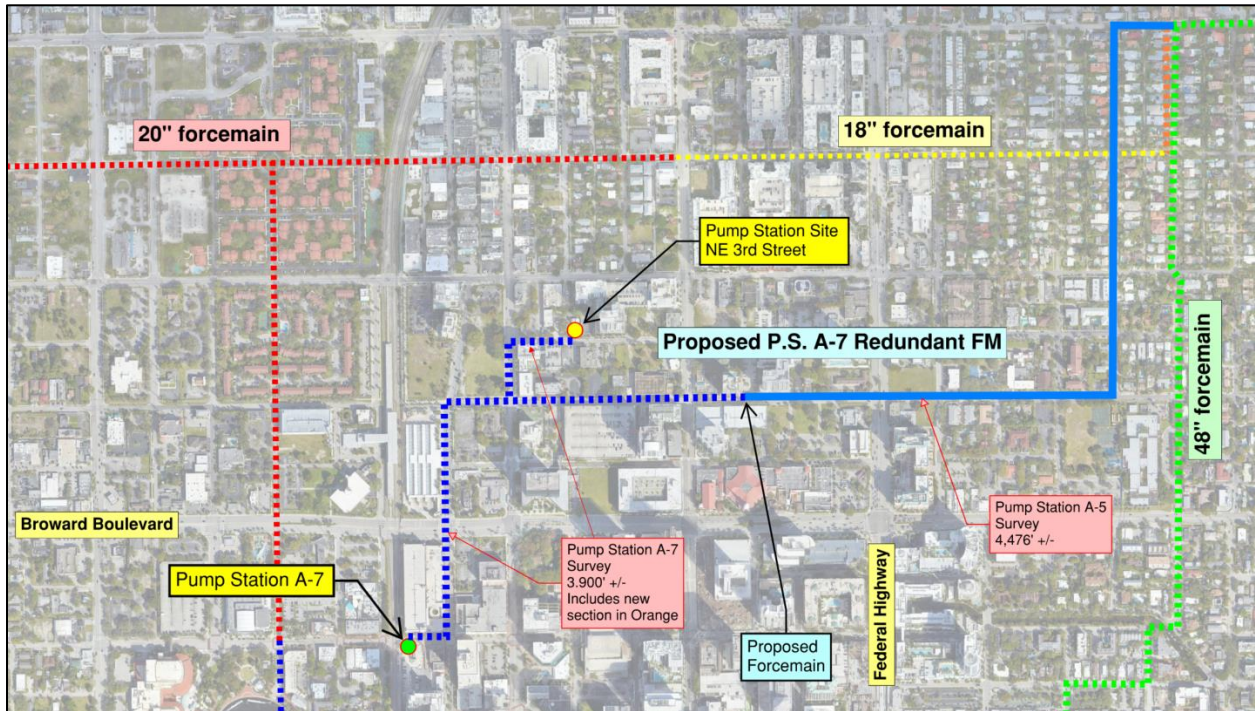


Figure 1: Proposed 8,376 LF of FM is shown in blue. Approximately 4,476 LF will be surveyed under this task order

- CONSULTANT shall employ the services of a licensed surveyor in the State of Florida to perform the following services necessary to prepare the construction documents:
 - a. Establish horizontal and vertical control points to support the survey efforts.
 - b. Vertical control (elevations) will be based on North American Vertical Datum of 1988 (NAVD).
 - c. Horizontal control will be based on the Florida State Plane Coordinates System, East Zone, North American Datum of 83/90.
 - d. The survey shall extend to the right-of-way line.
 - e. Obtain elevations at locations no more than 50 feet apart and at high and low spots.
 - f. Locate aboveground features within the survey limits according to the following schedule: pavement, driveways, back of curbs, paved swales, sidewalks, walls, fences, power and light poles, anchors, handrails, storm manholes, catch basins, wire pull boxes, signs, cabinets, risers, curbs, valve boxes, sanitary sewer manholes, vaults and valves, roadway striping, driveway types, edges and corners, slabs, trees, meter boxes, control panels, fire hydrants, and valves, and overhead utilities.
 - g. Utility locations will be based on surface evidence of underground utilities such as valves, fire hydrants, catch basins and manholes. Include the location of water features beyond right-of-way lines.

- h. Measure the rim and invert elevation of storm sewer and sanitary sewer structures that are accessible. Determine pipe types, size, and flow direction, when possible. Structures located within active roadways will be as-built at the field crew's discretion, based on safety considerations.
- i. Locate trees 3" diameter at breast height (DBH) or larger. Denote diameter and common tree name only. Prepare a Tree Table which lists each tree species by common name, survey point number, and trunk diameter.
- j. Exotic and invasive (nuisance) trees will not be located. Ornamental plants, shrubs, ground cover will not be located.
- k. Locate pavement markings.
- l. Tie in any subdivision corners, lot corners and plat corners which can be located along the right-of-way lines. Calculate and depict easements and right-of-way lines on the survey based on plats of record and F.D.O.T. right-of-way maps. Right-of-way and property lines are for informational purposes only.
- m. Easements will be based on information obtained from record plats.
- n. Prepare an AutoCAD drawing file using City of Fort Lauderdale CAD drafting standards.

Deliverables: The following deliverables shall be provided under this Task:

- 1. One (1) signed electronic copy of the Topographic Survey

Task #4 – Subsurface Utility Exploration

CONSULTANT shall provide Subsurface Utility Exploration (SUE) services as follows:

- Utility Designating and Survey
 - a. Utility Designating and Survey – Utility designating and survey will be performed to provide horizontal locations of utilities at the intersection of Broward Boulevard, NW 1st Avenue, and NW 3rd Street as shown below. Utility designation is not intended to be for the full right of way width. Utility designation will be provided for one half of the right of way to be determined during design.



Figure 2: Proposed Utility Designation (Utility Targeting Area)

- b. Electronic Sweep/Targeting - An electronic sweep of the project site will be conducted. This sweep will verify the location of utilities that were identified during record review and to search for utilities that were not identified during records review. The electronic sweep will be conducted utilizing active and passive type utility detection equipment that detects induced or naturally occurring energy fields present on conductive utilities.
 - c. Field Drawings/Notes - Designators will draft field sheets that show the location, trend, and configuration of utilities detected. Field sheets will be prepared to differentiate utility systems and will show underground utility surface features and lines. Designated utilities will be annotated with size and material from utility record information, as applicable.
 - d. Survey- A survey crew will survey utility line targeting and utility surface features. Survey of designated utilities will be performed by utilizing applicable State Plane Coordinate System or client provided established survey control.
 - e. CAD - The survey data will be processed into an existing utility file in AutoCAD format in accordance with applicable CAD standards.
 - f. Quality Assurance / Quality Control Review – The existing utility file will be compared to record drawings, field sketches and notes. The intent of this task is to ensure existing utilities are depicted thoroughly and accurately.
- Air Vacuum Excavation Test Holes
 - a. Air vacuum excavation test holes will be performed at locations to be determined during design. This proposal includes 33 test holes.
 - b. Test Holes shall provide all measures necessary to perform the work safely and to cause no damage to the utility structure. The Test Hole will be of the minimum size required to expose the utility of interest and record the following information:
 - i. Depth below grade (cover).
 - ii. Utility material, shape, and overall condition.
 - iii. Approximate diameter of pipes, cables, conduits, and the configuration of multiple conduit systems.
 - iv. The general directional trend of the utility.
 - v. Thickness, type, and condition of paving material.
 - vi. General soil conditions.

Deliverables: The following deliverables shall be provided under this Task:

1. Electronic copies of field notes and findings.
2. Testhole information will also be incorporated into the design plans

Task 5 – Siting & Route Analysis Technical Memorandum

Site Evaluation

- CONSULTANT shall evaluate the layout of the proposed pump station site.
- The selected site for the new pump station is within the new 300 & 330 North Andres Avenue residential development. The evaluation will assess the requirements for the pump station including access and operation of CITY maintenance trucks , site air circulation, odor control requirements, ease of pump station operation & maintenance (O&M), and estimated construction cost. The site analysis will take into consideration local ordinances to define

building setbacks and/or buffer requirements and determine the footprint available for the new pump station at each location.

- This task includes a pre-application meeting with Development Services Department (DSD) staff for site planning purposes, meetings with the site developer and CITY.

Forcemain and Gravity Sewer Route Analysis

- CONSULTANT shall evaluate multiple forcemain routes from each of the two (2) sites to the proposed connection points. The potential connections include the 20-inch forcemain to the north on NW 5th Street, the 30-inch forcemain on NW 9th Avenue and the 48-inch redundant forcemain along NW 11th Avenue. CONSULTANT will evaluate constructability, access, and provide a cost comparison for each route. The gravity sewer installation and connection to the existing system will also be evaluated as part of the routing analysis.
- As part of the analysis, CONSULTANT will coordinate closely with CITY operations staff and perform site visits, as necessary.

Hydraulic Modeling

- Hydraulic modeling will be based on the recommended forcemain route provided to the CITY.
- CONSULTANT will perform a hydraulic modeling analysis to determine a preliminary pump station and force main sizing for the project. This information will be based on the existing gravity and forcemain modeling data, as well as the projected flow demand for the basin, to be provided by the CITY. The hydraulic modeling will provide maximum and minimum flows as well as peak and minimum pressures at the point of connection and pump station discharge. Current flows in the new A-5 basin will be estimated based on Broward County Guidelines and CITY ERC's.

Preliminary Pump Selection and Process Mechanical Equipment Dimensioning

- Based on the results of the hydraulic model (maximum & minimum flows and peak & minimum pressures), CONSULTANT will proceed to determine the appropriate pumping capacity for the proposed pump station and conduct the preliminary selection of the pumping equipment.
- Field measurements for verification/monitoring of flows and pressures are excluded. CONSULTANT will perform the analysis based on the results of the hydraulic modeling and any SCADA data provided by the CITY.
- Identify the operating envelope for pre-selected pumps. CONSULTANT shall coordinate with the CITY, as required, to develop the range of operating scenarios to be evaluated and required flow/pressure points to evaluate the performance of the pre-selected pump.
- Preliminary selection and sizing of odor control systems as per CITY standards and equipment preferences.

Preliminary Selection and Dimensioning of Electrical and I&C Components

- Determine the load capacity of the on-site emergency engine generator based on dimensional requirements for the pumps, electrical equipment panels, and other electromechanical equipment associated with the pump station.
- Identify environmental requirements for the installation of the new generator.
- Perform preliminary sizing of electrical panels and associated equipment to evaluate required footprint and layout alternatives.
- Evaluate flood protection alternatives for electrical equipment as required by the project's DFE as defined by FEMA, state and local statutes.

- Define the requirements and layout for a flow meter at the discharge forcemain within the pump station site.

Preliminary Dimensioning of Structural Components

- Define preliminary sizing, capacity and footprint of the main structural components of the pump station, in compliance with current building codes and local ordinances. Structural components include wet well, valve vault, meter vault, access hatches, generator pad, electrical equipment pad and hoisting equipment requirements.
- Evaluate flood protection alternatives as required by the project's DFE as defined by FEMA, state and local statutes. This will be used to define the top of slab (TOS) elevation of the structural components listed above.

Technical Memorandum

- CONSULTANT will develop a Technical Memorandum to include the results of the site evaluation, route analysis, and hydraulic modeling. The following recommendations and information will be provided:
 - a. Hydraulic modeling results
 - b. Preliminary equipment sizing and selection for the pump station
 - c. Recommendations for optimal Pump Station site
 - d. Pump Station layout options
 - e. Recommendations for forcemain route
 - f. Cost comparison of the options

Task 6 - 30% Construction Documents (Schematic)

- CONSULTANT shall develop 30% Construction Documents for the pump station and proposed piping system. The 30% design submission shall include the following:
 - a. Conceptual layout of the pump station
 - b. Pump Station site features
 - c. Preliminary pump station sizing
 - d. Gravity sewer pipe layout, structures, preliminary sizes and proposed materials
 - e. Forcemain layout, preliminary sizes and proposed materials
 - f. Existing conditions plan
 - g. Opinion of probable construction cost
- The CITY shall provide comments to the CONSULTANT within 14 days of receiving the submittal.
- CONSULTANT shall attend coordination meetings with the CITY to address review comments. CONSULTANT shall prepare the agenda, record and submit meeting minutes.

Deliverables: The following deliverables shall be provided under this Task:

1. One (1) electronic copy of the 30% plans.
2. One (1) electronic copy of the Opinion of probable construction cost.

Task 7 - 60% Construction Documents

Construction Documents

- CONSULTANT shall incorporate the review comments from the 30% design submission in the 60% design submission. This task shall include, at a minimum, the following:
 - a. Existing Conditions Plan
 - b. Pump Station Plans
 - i. Mechanical – Notes & Legend, Mechanical Plan, Sections, Details and Pump Data
 - ii. Structural – Notes & Legend, Structural Plan, Sections, Details, Foundations for Electrical Slab, Generator and Odor Control System, Hoist System
 - iii. Electrical – Notes & Legend, Electrical Plan, Power/Control (MPE) and Wiring Schedule, Electrical Control Panel and Typical Details, RTU Installation Wiring Diagrams, Panel Schedule.
 - iv. I&C – Notes & Legend, P&ID, Network Diagram, and Details
 - c. Plan view of the forcemain and connections
 - d. Gravity sewer route
 - e. Preliminary profile view of the proposed pipeline routes
 - f. Preliminary utility crossing information
 - g. Technical specifications
 - h. Revised opinion of probable construction cost

Preliminary Engineering Report

- CONSULTANT shall prepare a Preliminary Engineering Report (PER) to satisfy the requirements of the permitting agencies. The PER shall contain the following information:
 - a. Introduction
 - b. Project Location
 - c. Project Background
 - d. Design Criteria
 - e. Scope of Work
 - f. Exhibits

Deliverables: The following deliverables shall be provided under this Task:

1. One (1) electronic copy of the 60% plans
2. One (1) electronic copy of the revised opinion of probable construction cost
3. One (1) electronic copy of the technical specifications
4. One (1) electronic copy of design calculations
5. One (1) electronic copy of the Preliminary Engineering Report

Task 8 - 90% Construction Documents

Construction Documents

- CONSULTANT shall incorporate the review comments from the 60% design submission in the 90% design submission. This task shall include, at a minimum, the following:
 - a. Existing Conditions Plan
 - b. Pump Station Plans
 - i. Mechanical – Notes & Legend, Mechanical Plan, Sections, Details and Pump Data

- ii. Structural – Notes & Legend, Structural Plan, Sections, Details, Foundations for Electrical Slab, Generator and Odor Control System
- iii. Electrical – Notes & Legend, Electrical Plan, Power/Control (MPE) and Wiring Schedule, Electrical Control Panel and Typical Details, RTU Installation Wiring Diagrams, Panel Schedule.
- iv. I&C – Notes & Legend, P&ID, Network Diagram, and Details
- c. Plan view of the forcemain and gravity sewer routes
- d. Profile view of the proposed pipeline routes including data crossing tables, utility information and testholes
- e. Detailed design information including valves, structures, conflict elevations, separation of utilities, etc.
- f. Stormwater pollution prevention plan
- g. Contaminated sites plan
- h. Specialty details (structures, shoring, access, cross sections)
- i. Roadway and driveway restoration plans
- j. Signing & Marking Plans (required for FDOT and County rights-of-way)
- k. Technical specifications
- l. Revised opinion of probable construction cost

Final Engineering Report

- CONSULTANT shall update the PER to prepare the Final Engineering Report (FER) to satisfy the requirements of the regulatory agencies. The FER will contain the following information:
 - a. Introduction
 - b. Project Location
 - c. Project Background
 - d. Design Criteria
 - e. Scope of Work
 - f. Exhibits

Deliverables: The following deliverables shall be provided under this Task:

1. One (1) electronic copy of the 90% plans
2. One (1) electronic copy of the revised opinion of probable construction cost
3. One (1) electronic copy of the revised technical specifications
4. One (1) electronic copy of design calculations
5. One (1) electronic copy of the Final Engineering Report

Task 9 - Permitting

- The CONSULTANT shall obtain all required permits from the CITY, regulatory agencies, and authorities having jurisdiction, for this project.
- The CONSULTANT shall respond to all permit comments from the CITY, regulatory agencies, or authorities having jurisdiction.
- The CONSULTANT shall attend permit meetings with CITY, regulatory agencies, and authorities having jurisdiction, record and prepare meeting minutes, and provide documentation to the CITY.

- The CONSULTANT is responsible for determining which permits are required and which agencies are applicable to the project. Anticipated approvals for this project are as follows:
 - a. Broward County Resilient Environment Department (BCRED) – Domestic wastewater approval
 - b. Broward County Highway Construction and Engineering Division (BCHCED) – Work within County right-of-way.
 - c. Broward County Traffic Engineering Division (BCTED) – Signing and marking
 - d. Florida Department of Transportation (FDOT) – Work within FDOT right-of-way
 - e. City of Fort Lauderdale Building Department
- Construction Water Use and dewatering permitting is not included. It is assumed the contractor will obtain all construction-related dewatering approvals.

Deliverables: The following deliverables shall be provided under this Task:

1. Permit approvals from jurisdictional agencies

Task 10 –Development Services Department Approval

- CONSULTANT shall assemble the Site Plan package with all required back information and submit it to DSD for review and approval.
- Review is expected for electrical, mechanical and flood compliance review.
- Proposal includes all necessary meetings with staff for approval.
- Reimbursables for DSD review per the CITY’s fee schedule is \$19,822.00. The review fee is included in this proposal under the Reimbursables task.

Task 11 - 100% Construction Documents

- CONSULTANT shall incorporate the review comments from the 90% design submission and from the regulatory agencies into the 100% construction documents. In addition to all documents provided at the 90% submittal, CONSULTANT shall also incorporate the following:
 - a. Project narrative (to be incorporated in the bid package)
 - b. Bid tabs
 - c. Copies of all permits
- The design drawings shall be submitted in 11” x 17” plan sheets and PDF format.
- CONSULTANT shall submit the Design Drawings and Specifications, and any other document required for a complete design.

Deliverables: The following deliverables shall be provided under this Task:

2. One (1) original set of the 100% design package (11” x 17” plan sheets), together with an electronic copy
3. One (1) original set, signed and sealed of the Final Plans and Specifications 100% design package (24” x 36” plan sheets), together with one (1) electronic copy
4. One (1) copy of the opinion of probable construction cost
5. One (1) copy of all permit approvals

Task #12 - Bidding Services

- CONSULTANT shall assist the CITY in preparing the bid documents by providing the CITY with 100% design plans, permits, and technical specifications.
- CONSULTANT shall attend the pre-bid meeting. The CONSULTANT shall respond to questions from prospective bidders.
- CONSULTANT shall provide supplemental information to prospective bidders as required during the bidding process through the issuance of addenda
- CONSULTANT shall review all bids to determine the most responsible and responsive bidder and provide the CITY with a recommendation for award of the construction contract.

Task #13 – Post Design Services

It is understood that CONSULTANT will provide limited engineering inspections required for the certification of the project. The CITY will have an engineering firm perform full-time inspections under a separate project. It is assumed that the construction period for this project is 12 months. CONSULTANT will provide services as follows:

Pre-construction services

- Preconstruction meeting attendance - CONSULTANT shall attend a pre-construction meeting with the CITY, the Contractor and the CITY's Construction Manager.
- Shop drawings review – CONSULTANT shall review and respond to each shop drawings within 7 workdays of the submittal by the contractor.

Services During Construction

- Respond to Requests for Information – CONSULTANT will review and respond to Requests For Information (RFI) from the contractor during construction operations. CONSULTANT shall prepare documentation required to clarify questions from the contractor.
- Limited Construction Inspections - CONSULTANT shall perform inspections throughout the construction duration to conduct on-site observation/verification of construction. Inspection services provided by CONSULTANT verify general compliance with the plans and specifications for certification of the project. A total of 35 inspections are anticipated. Inspections will include the following:
 - a. Pressure testing
 - b. Flushing
 - c. Limited observation of pipe fusing
 - d. Occasional pipe installation inspections
 - e. Sewer lamping
 - f. Exfiltration testing
 - g. Connections to existing lines
 - h. Start-up testing
 - i. Generator testing
 - j. Cast in place concrete work
 - k. Flow meter testing and calibration
 - l. Compliance with DSD

- CONSULTANT shall prepare inspection reports and submit them to the CITY for review and approval.
- Limited Progress Meetings Attendance – CONSULTANT shall attend progress meetings during construction. A total of 15 meetings are included. The CITY’s Construction Manager will prepare meeting agendas and meeting minutes.
- As-built Review - CONSULTANT shall review as-built data provided by the Contractors Licensed Surveyor. CONSULTANT shall provide comments for Contractor to address and make any corrections necessary.
- Project Certification and Permit Closeout – After final as-builts are completed by the Contractor, CONSULTANT will submit certification packages to the regulatory agencies. CONSULTANT shall address comments provided by the agencies and obtain final certification from the permitting agencies as applicable.

Task #14 – Reimbursable Expenses

- CONSULTANT shall be reimbursed for project-related expenses such as postage, shipping, deliveries, copies and reproductions necessary for the project. Regulatory agencies review fees are included.

III. ASSUMPTIONS AND GENERAL REQUIREMENTS

- CONSULTANT is responsible for the quality control (QC) of their work and of its subconsultants.
- CONSULTANT shall be responsible for the professional quality, technical accuracy, and coordination of all pre-design services, designs, drawings, specifications, and other services furnished by the CONSULTANT and their subconsultants.
- CONSULTANT shall coordinate with the CITY, regulatory agencies, and any other government entity having an interest or jurisdiction, which may require permits for this project.
- CITY shall provide existing electronic CAD files that are beneficial to the project.
- CITY shall provide access to the project site as applicable.
- If available, copies of all relevant data, including correspondence, as-builts, design plans or reports in CITY’s possession which may be beneficial to the work effort performed by CONSULTANT.
- Structural engineering services are limited to the design of submersible pump station and wetwell with on-site generator, odor control system, flow meter and hoisting system. It is understood that the building structure including walls, columns and ceiling will be designed by the site developer of the 300 & 330 North Andrews Avenue project. Their building structural members shall be able to accommodate the requirements of the pump station.
- Architectural services are not included in this proposal.
- It is assumed the CITY will be responsible for processing all necessary easements.

IV. **FEES**

Services will be provided for the following Not-to-Exceed amounts:

Task	Consultant	Sub Consultant	Total Fee
TASK 1 - PRELIMINARY INVESTIGATION	\$27,984.00	\$0.00	\$27,984.00
TASK 2 - GEOTECHNICAL INVESTIGATION	\$0.00	\$18,045.80	\$18,045.80
TASK 3: TOPOGRAPHIC SURVEY	\$0.00	\$47,525.00	\$47,525.00
TASK 4: SUBSURFACE UTILITY EXPLORATION	\$0.00	\$64,789.98	\$64,789.98
TASK 5: SITING & ROUTING ANALYSIS TECHNICAL MEMORANDUM	\$30,263.00	\$93,660.00	\$123,923.00
TASK 6: 30% CONSTRUCTION DOCUMENTS	\$96,285.00	\$89,270.00	\$185,555.00
TASK 7: 60% CONSTRUCTION DOCUMENTS	\$91,863.00	\$110,712.00	\$202,575.00
TASK 8: 90% CONSTRUCTION DOCUMENTS	\$83,489.00	\$94,552.00	\$178,041.00
TASK 9: PERMITTING	\$51,874.00	\$19,400.00	\$71,274.00
TASK 10: DSD APPROVAL	\$21,965.00	\$6,220.00	\$28,185.00
TASK 11: 100% CONSTRUCTION DOCUMENTS	\$50,292.00	\$41,786.00	\$92,078.00
TASK 12: BIDDING ASSISTANCE	\$18,205.00	\$16,768.00	\$34,973.00
TASK 13: POST DESIGN SERVICES	\$75,062.00	\$33,680.00	\$108,742.00
TASK 14: REIMBURSABLE EXPENSES	\$25,000.00	\$3,825.00	\$28,825.00
TOTAL	\$572,282.00	\$640,233.78	\$1,212,515.78

Refer to attached Exhibit A for hourly breakdown and subconsultant breakdown

V. **PROJECT SCHEDULE**

CONSULTANT shall perform the services identified in Tasks 1 through 11 within 19 months of NTP. The schedule for Tasks 12 and 13 will be subject to procurement and construction schedule.

Refer to attached Exhibit B for detailed schedule.

Should you have any questions, please do not hesitate to contact me at my office at (954) 730-0707 x 1085, my cell phone at (772) 361-9759 or send me an electronic message at ddavila@chenmoore.com.

Respectfully submitted,



CHEN MOORE AND ASSOCIATES
 Principal Engineer, Director of Water and Sewer
 Daniel Davila, P.E.

Exhibit A: Fee Breakdown & Subconsultant Scope
 Exhibit B: Schedule

EXHIBIT A
HOURLY BREAKDOWN AND SUBCONSULTANT FEES

Exhibit A - Hourly Breakdown

Event 264 - Pump Station A-5												
TASK 1 - PRELIMINARY INVESTIGATION												
	Intern	Designer	Sr. Designer	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	Sub-Total
	\$60.00	\$105.00	\$145.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00		
Research, As-builts, site visit, investigation, compile information, GIS maps, coordination with agencies	10	1	1	2	120	2	2	4	40	4		\$ 27,984.00
												\$ -
TOTAL HOURS	10	1	1	2	120	2	2	4	40	4		
	TOTAL - TASK 1 - PRELIMINARY INVESTIGATION											\$ 27,984.00
TASK 2 - GEOTECHNICAL INVESTIGATION												
	Intern	Designer	Sr. Designer	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	Sub-Total
	\$60.00	\$105.00	\$145.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00		
See attached for Subconsultant Breakdown (PanGeo Consultants)											\$18,045.80	\$ 18,045.80
												\$ -
TOTAL HOURS	0	0	0	0	0	0	0	0	0			
	TOTAL - TASK 2 - GEOTECHNICAL INVESTIGATION											\$ 18,045.80
TASK 3: TOPOGRAPHIC SURVEY												
	Intern	Designer	Sr. Designer	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	Sub-Total
	\$60.00	\$105.00	\$145.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00		
See attached for Subconsultant Breakdown (Stoner & Associates))											\$47,525.00	\$ 47,525.00
												\$ -
TOTAL HOURS	0	0	0	0	0	0	0	0	0			
	TOTAL - TASK 3: TOPOGRAPHIC SURVEY											\$ 47,525.00
TASK 4: SUBSURFACE UTILITY EXPLORATION												
	Intern	Designer	Sr. Designer	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	Sub-Total
	\$60.00	\$105.00	\$145.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00		
See attached for Subconsultant Breakdown (InfraMap)											\$64,789.98	\$ 64,789.98
												\$ -
TOTAL HOURS	0	0	0	0	0	0	0	0	0			
	TOTAL - TASK 4: SUBSURFACE UTILITY EXPLORATION											\$ 64,789.98
TASK 5: SITING & ROUTING ANALYSIS TECHNICAL MEMORANDUM												
	Intern	Designer	Sr. Designer	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	Sub-Total
	\$60.00	\$105.00	\$145.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00		
Route Analysis	1	1	1	1	40	1	1	24	4			\$ 11,487.00
Site coordination						8		8	4			\$ 3,716.00
Technical Memorandum						40			20	2		\$ 11,110.00
QC / Administration								8	10			\$ 3,950.00
See attached for Subconsultant Breakdown (Ardurra)											\$93,660.00	\$ 93,660.00
												\$ -
TOTAL HOURS	1	1	1	1	40	49	1	40	38	2		
	TOTAL - TASK 5: SITING & ROUTING ANALYSIS TECHNICAL MEMORANDUM											\$ 123,923.00

TASK 6: 30% CONSTRUCTION DOCUMENTS												
	Intern	Designer	Sr. Designer	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	<i>Sub-Total</i>
	\$60.00	\$105.00	\$145.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00		
Plans & Documents	2	280	16	40	2	100	2	20	80			\$ 74,350.00
QC Coordination					2	20		16	32	8		\$ 16,030.00
Management and Administration									24	1		\$ 5,905.00
See attached for Subconsultant Breakdown (Ardurra)											\$89,270.00	\$ 89,270.00
												\$ -
TOTAL HOURS	2	280	16	40	4	120	2	36	136			\$ -
	TOTAL - TASK 6: 30% CONSTRUCTION DOCUMENTS											\$ 185,555.00
TASK 7: 60% CONSTRUCTION DOCUMENTS												
	Intern	Designer	Sr. Construction Specialist	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	<i>Sub-Total</i>
	\$60.00	\$105.00	\$142.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00		
Plans & Documents	2	240	8	40	2	160	2		80			\$ 73,786.00
QC Coordination					1	1		16	32	8		\$ 13,112.00
Management and Administration									20	1		\$ 4,965.00
See attached for Subconsultant Breakdown (Ardurra)											\$110,712.00	\$ 110,712.00
												\$ -
TOTAL HOURS	2	240	8	40	3	161	2	16	132			\$ -
	TOTAL - TASK 7: 60% CONSTRUCTION DOCUMENTS											\$ 202,575.00
TASK 8: 90% CONSTRUCTION DOCUMENTS												
	Intern	Designer	Sr. Construction Specialist	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	<i>Sub-Total</i>
	\$60.00	\$105.00	\$142.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00		
Plans & Documents	2	240	1	40	2	120	2	16	60			\$ 65,412.00
QC Coordination					1	1		16	32	8		\$ 13,112.00
Management and Administration									20	1		\$ 4,965.00
See attached for Subconsultant Breakdown (Ardurra)											\$94,552.00	\$ 94,552.00
												\$ -
TOTAL HOURS	2	240	1	40	3	121	2	32	112			\$ -
	TOTAL - TASK 8: 90% CONSTRUCTION DOCUMENTS											\$ 178,041.00
TASK 9: PERMITTING												
	Intern	Designer	Sr. Designer	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	<i>Sub-Total</i>
	\$60.00	\$105.00	\$145.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00		
Permitting	2	160	2	2	120	2	2	2	60	2		\$ 48,114.00
Management and Administration									16			\$ 3,760.00
See attached for Subconsultant Breakdown (Ardurra)											\$19,400.00	\$ 19,400.00
												\$ -
TOTAL HOURS	2	160	2	2	120	2	2	2	76			\$ -
	TOTAL - TASK 9: PERMITTING											\$ 71,274.00
TASK 10: DSD APPROVAL												
	Intern	Designer	Sr. Designer	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	<i>Sub-Total</i>
	\$60.00	\$105.00	\$145.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00		
Submittals / Site Plan / Approvals / Meetings / Landscape Plans / Tree Disposition	1	16	1	1	1	80	1	10	24	1		\$ 21,965.00
See attached for Subconsultant Breakdown (Ardurra)											\$6,220.00	\$ 6,220.00
												\$ -
TOTAL HOURS	1	16	1	1	1	80	1	10	24			\$ -
	TOTAL - TASK 10: DSD APPROVAL											\$ 28,185.00

TASK 11: 100% CONSTRUCTION DOCUMENTS												
	Intern	Designer	Sr. Construction Specialist	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	<i>Sub-Total</i>
	\$60.00	\$105.00	\$142.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00	\$0.00	
Plans & Documents	1	100	1	1	1	80	1		50			\$ 34,627.00
QC Coordination								20	24	4		\$ 10,700.00
Management and Administration									20	1		\$ 4,965.00
See attached for Subconsultant Breakdown (Ardurra)											\$41,786.00	\$ 41,786.00
TOTAL HOURS	1	100	1	1	1	80	1	20	94			
	TOTAL - TASK 11: 100% CONSTRUCTION DOCUMENTS											\$ 92,078.00
TASK 12: BIDDING ASSISTANCE												
	Intern	Designer	Sr. Designer	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	<i>Sub-Total</i>
	\$60.00	\$105.00	\$145.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00		
Bidding Assistance, Meetings and Presentations	1	1	1	1	1	50	1	1	40	2		\$ 18,205.00
See attached for Subconsultant Breakdown (Ardurra)											\$16,768.00	\$ 16,768.00
TOTAL HOURS	1	1	1	1	1	50	1	1	40			
	TOTAL - TASK 12: BIDDING ASSISTANCE											\$ 34,973.00
TASK 13: POST DESIGN SERVICES												
	Intern	Designer	Sr. Construction Specialist	Engineer	Associate Engineer	Project Engineer	Project Manager	Sr Engineer	Sr. Project Manager	Principal Engineer	Subconsultant	<i>Sub-Total</i>
	\$60.00	\$105.00	\$142.00	\$110.00	\$125.00	\$147.00	\$180.00	\$200.00	\$235.00	\$265.00	\$0.00	
Site Visits & reports (Assumed 30 plus 5 visits under Ardurra scope)			120			30			20			\$ 26,150.00
Coordination / meetings	1	1	1	1	1	1	1	1	80	1		\$ 20,112.00
Certification						100			60			\$ 28,800.00
See attached for Subconsultant Breakdown (Ardurra)											\$33,680.00	\$ 33,680.00
												\$ -
TOTAL HOURS	1	1	121	1	1	131	1	1	160			
	TOTAL - TASK 13: POST DESIGN SERVICES											\$ 108,742.00
TASK 14: REIMBURSABLE EXPENSES												
	<i>Chen Moore</i>										<i>Subconsultant</i>	
Permit Fees	\$25,000.00										\$3,825.00	\$28,825.00
	TOTAL FEE											\$ 1,212,515.78

November 4, 2024

Mr. Daniel Davila, P.E.
Chen Moore and Associates
500 W. Cypress Creek Road
Suite 630
Fort Lauderdale, FL 33309

**RE: Proposal for Professional Surveying Services
Connection to Pump Station A-5 Redundant Forcemain
City of Fort Lauderdale, FL**

Dear Mr. Davila,

I am pleased to provide you with this proposal for surveying services at the above-referenced site. Based on the information that you provided, I have developed the scope of services shown below.

Survey Route:

From the southeast corner of building 313 NE 2nd Street, east along NE 2nd Street to NE 10th Avenue, then north to NE 6th Street, then east to NE 11th Avenue. See survey route in solid blue color in the sketch below:



Survey Type:

Stoner & Associates, Inc. (S&A) will prepare a Topographic Survey meeting the Standards of Practice established by The Board of Professional Surveyors and Mapper within the State of Florida.

SCOPE OF SERVICES:

Topographic Survey:

- Establish horizontal and vertical control points to support the survey efforts.
- Vertical control (elevations) will be based on North American Vertical Datum of 1988 (NAVD) referenced to the City of Fort Lauderdale benchmark network.
- Horizontal control will be based on the Florida State Plane Coordinates System, East Zone, North American Datum of 83/11 referenced to the Florida Permanent Reference Network (FPRN).
- The survey will extend to the right of way lines.
- Obtain elevations at locations no more than 50 feet apart and at high and low spots.
- Locate aboveground features within the survey limits according to the following schedule: pavement, driveways, back of curbs, paved swales, sidewalks, walls, fences, power and light poles, anchors, handrails, storm manholes, catch basins, wire pull boxes, signs, cabinets, risers, curbs, valve boxes, sanitary sewer manholes, vaults and valves, driveway types, edges and corners, slabs, trees, meter boxes, control panels, fire hydrants, and valves, and overhead utilities.
- Utility locations will be based on surface evidence of underground utilities such as valves, fire hydrants and manholes.
- The investigation for underground utilities will not extend to research at the city, Broward County, or utility companies and no underground exploration will be conducted.
- Measure the rim and invert elevation of storm sewer and sanitary sewer structures that are accessible. Determine pipe types, size, and flow direction, when possible. Structures located within active roadways will be as-built at the field crew's discretion, based on safety considerations. If as-built data for structures located within active roadways is required, then it will be necessary to have Maintenance of Traffic (MOT). MOT fees are not included in this proposal.
- Locate trees 3" in diameter or larger. Denote diameter and common tree name only. Prepare a Tree Table which list each tree species by common name, survey point number, and trunk diameter.
- Exotic and invasive (nuisance) trees will not be located. Ornamental plants, shrubs, ground cover will not be located.
- Locate pavement markings.
- Tie in any subdivision corners, lot corners and plat corners which can be located along the right-of-way lines. Calculate and depict easements and right-of-way lines on the survey based on plats of record and F.D.O.T. right-of-way maps. Right of way and property lines are for informational purposes only.
- Prepare AutoCAD drawing files using City of Fort Lauderdale CAD drafting standards.

Employee Classification	Hours		Hourly		Amount
			Rate		
Principal Land Surveyor	5.00	x	\$160.00	=	\$800.00
Sr. Professional Land Surveyor	80.00	x	\$140.00	=	\$11,200.00
Professional Land Surveyor	0.00	x	\$125.00	=	\$0.00
Field Crew Supervisor	10.00	x	\$80.00	=	\$800.00
Survey/CAD Technician	120.00	x	\$80.00	=	\$9,600.00
Survey Crew (3 Person)	155.00	x	\$160.00	=	\$24,800.00
Administrative	5.00	x	\$65.00	=	\$325.00
Total Lump Sum Fee:					\$47,525.00

Deliverables:

The survey drawings will be prepared utilizing AutoCAD. The AutoCAD drawings and a pdf copy of the survey will be delivered digitally via e-mail along with text files with spot elevations. Certified hard copies of the drawings will be provided upon request and will be billed at the rates shown below for copies. Hard copies will be delivered by United States Postal Service Standard Mail. Other delivery methods will be invoiced at our cost for the service, plus 15% of the cost.

Black-Line Prints	Outside Printing
18" x 24" = \$2.50 Per Sheet	Cost + 15%
24" x 36" = \$5.00 Per Sheet	Courier Services
30" x 42" = \$7.50 Per Sheet	Cost + 15%

The above scope of services and associated fee(s) are based on the following:

- ALTA/NSPS Land Title Survey Specifications are not included unless specified otherwise in "SCOPE OF SERVICES."
- Matters of zoning, land use, height, density, access, setbacks, will not be shown on the survey drawings unless specified otherwise in "SCOPE OF SERVICES."
- Environmental and soil conditions will not be shown on the survey drawings unless specified otherwise in "SCOPE OF SERVICES."
- Subsurface features will not be located or shown on the survey unless specified otherwise in "SCOPE OF SERVICES."
- S&A will not contact Sunshine 811 to request marking of underground utilities. The following note is per Sunshine 811 website: "Effective February 1, 2023, Sunshine 811 will no longer accept non-emergency tickets with a work start date (due date) less than two full business days from the date the ticket was requested – 10 full business days if the site is underwater". See also <https://www.sunshine811.com/faqs>
- Subsurface utilities remotely located from the surface of the ground, by electronic means are limited in reliability and accuracy. Before the final design of improvements or beginning construction, key alignments, horizontal and vertical locations, pipe sizes and measurements, should be verified by direct excavation and or measurements to verify and ensure the integrity of the data presented in the survey drawings.
- As-built measurements collected in active facilities (storm, sanitary and other structures), are limited in accuracy and reliability. Before the final design of improvements or beginning construction, critical measurements should be verified with the facilities pumped down and cleaned of effluent and derbies to ensure the integrity of the data being presented in the survey drawings. Subsurface features will not be located or shown on the survey unless specified otherwise in "SCOPE OF SERVICES."
- Trees, shrubs, hedges, and other vegetation will not be located or shown on the survey unless specified otherwise in "SCOPE OF SERVICES."
- Coordination with attorneys, title companies, outside consultants is not included and will be hourly at the rates shown below.
- Express delivery fees, copies of public records and printing fees are not included and will be billed at our cost.

Service, outside of the above scope of services, will be billed on an hourly basis per the rate schedule shown below:

Employee Classification	Hourly Rate
Principal	\$190.00
Senior Professional Land Surveyor	\$150.00
Project Manager	\$90.00
Survey/CAD Technician	\$85.00
Survey Crew	\$175.00
Administrative	\$80.00

Standard General Conditions:

- **Payment of Invoices** – Invoices are due and payable upon receipt. Delinquent accounts more than 30 days from the date of invoice will constitute a breach of this agreement, and all remaining services may be terminated at the option of Stoner & Associates, Inc. (from now on referred to as S&A). Should it become necessary to collect any unpaid invoices through an attorney or legal proceedings, the client agrees to pay all costs of collections, including attorneys' fees.
- **Hours & Rates** - Rates are based on a forty (40) hour week, excluding holidays. Time more than forty (40) hours per week will be invoiced at one and one-half times the rates quoted herein (overtime time-and-a-half).
- **Termination** – The obligation to provide further services under this agreement may be terminated by either party upon seven (7) day' written notice in the event of substantial failure by the other party to perform by the terms hereof through no fault of the terminating party.
- **Client-Furnished Information** – S&A will consider all information supplied by the client as accurate and correct. Extra work or work was done over because of inaccurate or incorrect information supplied by the client will be paid for as additional services.
- **Ownership of Documents** – All documents prepared under this Agreement are instruments of service and are the property of S&A. The use of said documents on other projects or extensions of this project must be approved in writing by S&A.
- **Additional Services** – If authorized by the client, S&A will furnish additional services, which are not considered normal or customary basic services. The cost for additional services provided by S&A personnel will be billed on a time and materials basis. Additional services provided by others (i.e., soil testing, aerial photography, etc.) will be billed directly to the client by the provider.
- **Reimbursable Expenses** – The client will pay S&A for the actual expenses incurred in connection with the project for commercial travel and subsistence, shipping charges (i.e. Federal Express, mail, etc.), courier/delivery charges, printing, and reproduction costs.
- **Controlling Law** – This Agreement will be governed by the laws of the State of Florida and is deemed to have been entered into in Broward County, Florida.
- **Oral Agreements** – No oral agreement guaranty, promise, representation or warranty will be binding.
- **Limitation of Liability** – The client agrees to limit any and all liability or claim for damages, cost of defense, or expenses to be levied against S&A by the client or third parties to a sum not to exceed \$20,000.00 or the amount of our fee, whichever is greater, on account of any design defect, error, omission, or professional negligence.



QUALITY PROFESSIONAL EXPERTISE

June 18, 2024 (Revised 11-4-2024)

Chen Moore & Associates
500 W Cypress Creek Rd., #630
Fort Lauderdale, FL 33309

Daniel Davila, P.E.
E: ddavila@chenmoore.com
O: 954.730.0707

Re: Fort Lauderdale Pump Station A-5
Fort Lauderdale, FL
Subsurface Utility Engineering Services

Dear Mr. Davila:

We have prepared this proposal to perform subsurface utility engineering services including utility targeting and air vacuum excavation test holes for the above referenced project. We have received the following files by email dated June 13, 2024 attached identifying the project locations:

. SUE on Broward Blvd.pdf

Our scope of work shall be performed in accordance with the Procedures, Exclusions and Assumptions identified below and will follow *ASCE 38-22 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data* including the following:

1. **Utility Designating and Survey** – Utility designating and survey will be performed to provide horizontal locations of utilities within the project limits.
2. **Air Vacuum Excavation Test Holes** – Air vacuum excavation test holes will be performed at the proposed test hole locations. This proposal includes 30 test holes.

Utility Designating and Survey

1. **Electronic Sweep/Targeting** - An electronic sweep of the project site will be conducted. This sweep will verify the location of utilities that were identified during record review and to search for utilities that were not identified during records review. The electronic sweep will be conducted utilizing active and passive type utility detection equipment that detects induced or naturally occurring energy fields present on conductive utilities. Utilities identified will be marked on the ground surface using InfraMap paint and symbols standards.
2. **Field Drawings/Notes** - Designators will draft field sheets that show the location, trend, and configuration of utilities detected. Field sheets will be prepared to differentiate utility systems and will show underground utility surface features and lines. Designated utilities will be annotated with size and material from utility record information, as applicable.
3. **Survey**- A survey crew will survey utility line targeting and utility surface features. Survey of designated utilities will be performed by utilizing applicable State Plane Coordinate System or client provided established survey control.
4. **CAD** - The survey data will be processed into an existing utility file in AutoCAD format in accordance with applicable CAD standards.

5. **Quality Assurance / Quality Control Review** – The existing utility file will be compared to record drawings, field sketches and notes. The intent of this task is to ensure existing utilities are depicted thoroughly and accurately.
6. **Deliverables** - Deliverables will include an existing utility file in AutoCAD (dwg) format.

Air Vacuum Excavation Test Holes

During utility locating by air / vacuum test holes InfraMap will complete the following tasks:

1. **Agency Coordination** – InfraMap will comply with laws and regulations concerning excavation by coordinating with utility inspectors, property owners, "ONE CALL" and others as required.
2. **Anticipated Permits** – InfraMap will prepare and coordinate throughout the permitting process and will bill the associated fees as a direct expense.
3. **Test hole conflict identification and field locate** –If InfraMap has not performed the utility designating prior to the test hole task, and we identify a discrepancy between existing utility location on client provided plans and what is in the field, we will notify the Client prior to any test hole work. We will make recommendations if utilities are not where the records maps indicate, or a utility is discovered that is not shown on any records and is not detectable during the electronic sweep. InfraMap will contact the client and discuss strategies to address the unpredictable field conditions. InfraMap will work with the client in the identification of additional test holes or removal of test holes from future scope of work.
4. **MOT** - Maintenance and Protection of Traffic in local jurisdiction will be provided in accordance with the *Florida Department of Transportation (FDOT) FY 2023-24 Standard Plans*, latest edition or other applicable requirements. If MOT is required (depending on test hole locations), InfraMap will bill the associated fees as a direct expense.
5. **Test hole** – InfraMap will perform the following for the test hole task:
 - a. Excavate a test hole using air/ vacuum excavation. Provide all precautions necessary to perform the work safely and to cause no damage to the utility. The test hole will be of the minimum size required to expose the utility and record the following information:
 - i. Depth below grade (cover).
 - ii. Utility material, shape, and overall condition.
 - iii. Approximate diameter of pipes, cables, conduits, and the configuration of multiple conduit systems.
 - iv. The general directional trend of the utility.
 - v. Thickness, type, and condition of paving material.
 - vi. General soil conditions.
 - b. Install a survey marker (PK or hub and tack) directly over the centerline of pipes or edge of concrete structures or conduit banks at grade. Ribbon of appropriate APWA / ULCC color will be installed in the backfill from utility to grade. Indicate on the test hole form the placement of the marker relative to the utility cross section. Record the location of the marker with a minimum of three swing tie measurements to convenient existing permanent structures on site.
 - c. Backfill test hole with excavated material in 6-inch lifts by air pneumatic tamping. Restore test hole area to the original condition. Repair and restore all pavement cuts to ensure a long-lasting repair utilizing asphalt cold patch.
6. **Survey** - Survey of test hole locations to provide northing, easting and elevations of pin or hub associated with each test hole. Survey will be performed by utilizing applicable State Plane Coordinate System or client provided established survey control.

7. **CAD** - The survey data will be processed into a test hole utility file in AutoCAD (dwg) format with symbols depicting horizontal locations of test holes.
8. **Quality Assurance / Quality Control review** – QA/QC review of the test hole reports will be completed to compare the findings of the test hole to the available utility information. InfraMap will evaluate and resolve any discrepancies.
9. **Deliverables** – Deliverables will include a test hole inventory summary table, individual test hole reports, and updated existing utility file in AutoCAD (dwg) format.

Exclusions and Assumptions:

1. The targeting of subsurface utilities, although highly reliable, is expressly understood to represent an approximate location of the target facility as marked on the ground surface. The accuracy of targeting is subject to certain factors beyond our control such as limitations of available technology and field conditions that may include, but are not limited to depth of utility, electrical conductivity of utility, site conditions and access.
2. Our electronic equipment cannot locate non-conductive pipe systems and or fiber optic line without tracer wire.
3. Concrete Pavement with reinforcement, as well as guide rails and chain link fence, could interfere with our electronic equipment at times to locate utilities.
4. Overhead utilities, irrigation systems, septic drain fields, residential/commercial services, and confined space entry are not included in this scope of work. In addition, gravity structure investigations including storm water and sanitary sewer are not included.
5. At this time, geotechnical borings or subgrade information have not been provided. Large stones, shale, coral, construction debris, or other subsurface conditions including a high groundwater table may limit the ability of our equipment to excavate to the utility and or make it very difficult to visually verify the utility condition and material.
6. In order to provide a cost-effective service that causes minimal disturbance to site amenities and utilities, and is acceptable to permitting agencies, the size of the Test Hole excavation is kept to a minimum. The diameter of most pipes greater than 24" cannot be recovered directly from one test hole and it may be necessary to perform additional holes.
7. This proposal assumes test holes will be repaired consistent with the cold patch specifications above. Depending upon test holes locations and/or local, county and state permit requirements, permanent asphalt patch repairs either using hot mix asphalt, asphalt infrared services or cement subbase, are out of the scope of these services. If required, an out-of-scope proposal or supplemental agreement will be prepared before proceeding further.
8. If a single test hole location is selected at a point where two or more utilities intersect (or trend close together), a single test hole may not be feasible to obtain information for all requested utilities. The utility of higher elevation may be of sufficient size as to prohibit further excavation in the existing test hole. To reach the utility of lower elevation in this instance a separate (additional) test hole will be required.
9. Encased systems and non-encased conduit banks are typically exposed on one edge. This allows the test hole to be excavated down the side of the utility until a discernable bottom edge can be evaluated. Although it is usually possible to determine the bottom edge of these systems, it is not possible to determine conditions under these or other utility systems, such as concrete over pour and other utilities. It is important for the



designer to remember that the bottom edge of an encased system or unencased conduit bank may not

10. represent its lowest point, and that the shape of the system may not be the same on both sides. The width of these systems may not be determined from a single test hole. Encased systems and unencased conduit banks may require two test holes to document the width (and both of the sides top and bottom elevations).
11. This service will be provided with due diligence and in a manner consistent with standards of the subsurface utility mapping industry. Every reasonable effort will be made to locate all systems of interest whether indicated on records available to us or not. However, we do not guarantee that all existing utility systems can or will be detected. It may not be possible to detect utilities that we do not have prior knowledge of, such as systems that are not depicted on records available to us. Further, this service is not intended to detect non-utility structures such as but not limited to foundations, buried tanks, septic systems, wells, tunnels, concrete or metal structures, or the true size and limits of subsurface utility vaults and manholes.

FEE SCHEDULE

UTILITY DESIGNATING SERVICES				
<u>Resource</u>	<u>Rate</u>	<u>Units (Hrs)</u>	<u>Fee</u>	
Project Manager/PE/PLS	\$ 175.00	15	\$ 2,625.00	
Senior Utility Location Manager	\$ 153.00	15	\$ 2,295.00	
Utility Location Manager/Party Chief	\$ 112.83	120	\$ 13,539.60	
Technical Locator/Instrument Operator	\$ 87.00	120	\$ 10,440.00	
CADD Technician/Computer Technician	\$ 115.63	40.0	\$ 4,625.20	
TOTAL FEE ESTIMATE			\$ 33,524.80	

UTILITY TEST HOLE SERVICES				
<u>Resource</u>	<u>Rate</u>	<u>Units (Hrs)</u>	<u>Fee</u>	
Project Manager/PE/PLS	\$ 175.00	8	\$ 1,400.00	
Senior Utility Location Manager	\$ 153.00	8	\$ 1,224.00	
Utility Location Manager/Party Chief	\$ 112.83	16	\$ 1,805.28	
CADD Technician/Computer Technician	\$ 115.63	30	\$ 3,468.90	
Technical Locator/Instrument Operator	\$ 87.00	16	\$ 1,392.00	
3 or More Utility Test Holes 0-6' - per hole	\$ 550.00	33	\$ 18,150.00	
TOTAL FEE ESTIMATE			\$ 27,440.18	

REIMBURSABLES				
<u>Resource</u>	<u>Rate</u>	<u>Units (Hrs)</u>	<u>Fee</u>	
Lane Closure - MOT Subconsultant	\$ 1,800.00	2	\$ 3,600.00	
Traffic Control - Arrow Board - per day	\$ 75.00	3	\$ 225.00	
			\$ -	
TOTAL FEE ESTIMATE			\$ 3,825.00	



Our total estimated cost for this project is **\$ 64,789.98**. Our cost is in accordance with the scope of services, exclusions, and assumptions as indicated above and includes mobilization, mileage, performing of field services, office coordination and oversight, QA/QC, and preparation of final deliverables.

If you have any questions or concerns regarding this proposal, please do not hesitate to call at (561) 315-5714 or email agarcia@inframap.net. We look forward to working with Chen Moore & Associates on this project.

Regards,

A handwritten signature in blue ink that reads "Andres Garcia".

Andres Garcia
Sr. Project Manager

**CHEN MOORE AND ASSOCIATES
RFQ Event No. 264**

**Design Services for Pumping Station A-5
SCOPE OF WORK**

October 31, 2024

Prepared for:

Chen Moore and Associates
Peter Moore, PE, F.ASCE, F.ACEC
President
500 W. Cypress Creek Road, Suite 600
Fort Lauderdale, Florida 33309



Prepared by:

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Table of Contents

PROJECT UNDERSTANDING	3
SCOPE OF SERVICES	3
TASK 1 – SITING, ROUTE ANALYSIS TECHNICAL MEMORANDUM AND SITE INVESTIGATION	4
TASK 2 – 30% DESIGN SUBMITTAL	6
TASK 3 – 60% DESIGN SUBMITTAL	7
TASK 4 – 90% DESIGN AND PERMIT SET SUBMITTAL	8
TASK 5 – PERMITTING SERVICES	8
TASK 6 – SITE PLANNING AND SDS COORDINATION	9
TASK 7 – 100% DESIGN SUBMITTAL	9
TASK 8 – PROCUREMENT SUPPORT SERVICES	10
TASK 9 – ENGINEERING SERVICES DURING CONSTRUCTION	11
ADDITIONAL SERVICES	12
INVOICING	12
COMPENSATION	12
PROJECT ASSUMPTIONS	12



PROJECT UNDERSTANDING

Due to the increasing population within the City of Fort Lauderdale (“CITY”), basin A-7 was previously divided into two separate basins. The City plans to further split the existing A-7 sewage basin into two separate basins. Sewage Basin A-7 is served by Pump Station A-7 (PS A-7) and is rated for 4,375 gallons per minute at 136 ft of total dynamic head. It is anticipated that the new Pump Station A-5 (PS A-5) will be of similar size and capacity and utilize submersible pumps. Modifications to the collection system, along with a new submersible pump station and discharge force main are required to collect and transmit the sanitary sewer flow generated within the new Basin A-5. Under RFQ Event No. 264 the CITY has selected Chen-Moore and Associates (“CMA”) to provide professional engineering services for the design of the new pumping station A-5, collection system modifications and discharge force main. As a subconsultant to CMA, Ardurra Group, Inc. (“ARDURRA”) will provide mechanical, electrical, instrumentation & controls, and structural engineering services required for the design of the new PS A-5.

ARDURRA’s services include design for the new pump station mechanical, electrical and structural components such as: pump selection, wet well, valve vault, flow meter, on-site generator, electrical equipment, instrumentation & controls, and odor control system.

SCOPE OF SERVICES

ARDURRA will provide mechanical, electrical, instrumentation & controls and structural engineering services to develop the project’s construction documents for the proposed PS A5.

ARDURRA’s scope of services is summarized as follows, and as further detailed below::

- Siting and Route Analysis Technical Memorandum – including siting analysis for the layout of the pump station and hydraulic modeling for the sizing of the pump station and force main system as well as validation of pressures at the force main point of connection.
- Development of Design Documents – as it pertains to ARDURRA’S disciplines
 - 30% Design Submittal
 - 60% Design Submittal
 - 90% Design Submittal
 - 100% Design Submittal
- Permitting Services – as it pertains to ARDURRA’S disciplines
- Coordination with the Development Services Department – as it pertains to ARDURRA’S disciplines
- Procurement Support Services – as it pertains to ARDURRA’S disciplines
- Engineering Services During Construction – as it pertains to ARDURRA’S disciplines

TASK 1 – SITING, ROUTE ANALYSIS TECHNICAL MEMORANDUM AND SITE INVESTIGATION

Siting Analysis

ARDURRA will assist CMA in the evaluation, sizing and layout of the proposed pump station site. As indicated by the City, the selected site for the pump station will be within the new development at 300 & 330 North Andrews Avenue. The City is currently under negotiation to obtain an easement from the developer for the installation of the new pump station. No other sites will be evaluated under this scope of work.

The evaluation will assess the requirements for the pump station including access & parking needs, site air circulation, odor control requirements, ease of pump station operation & maintenance (O&M), and estimated construction cost. The site analysis will take into consideration local ordinances to define building setbacks and/or buffer requirements and determine the footprint available at the location. ARDURRA will attend one (1) site visit as part the site evaluation effort. In addition, ARDURRA will attend coordination meetings with the site developer and the City during this stage of the project. It is assumed that two (2) coordination meetings will be required.

Hydraulic Modeling

As requested by the CITY, ARDURRA will perform a hydraulic modeling analysis to determine the pump station capacity and force main sizing for the project. This information will be based on the CITY's existing gravity and force main modeling data, as well as the projected flow demand for the basin, to be provided by the CITY. The proposed force main connection options and routing will be defined by CMA and included in the hydraulic model to determine pressures at the point of connection. Current flows in the new A-5 basin will be estimated based on Broward County Guidelines and City ERC's

The hydraulic modeling will provide maximum and minimum flows for the basin as well as peak and minimum pressures at the force point of connection (to be defined by CMA) and at pump station discharge.

Preliminary Pump Selection and Process Mechanical Equipment Dimensioning

ARDURRA will conduct the following activities to provide a preliminary selection the pumps as well as sizing of the main mechanical components for the new PS A-5 :

- Based on the results of the hydraulic model (max & min flows and peak & min pressures), ARDURRA will proceed to determine the appropriate pumping capacity for the proposed pump station and conduct the preliminary selection of the pumping equipment. ARDURRA will not conduct field verification/monitoring of flows or pressures in the system, the analysis will be performed based on the results of the hydraulic modeling and any SCADA data available for the system, to be provided by the CITY.
- Identify the operating envelope for pre-selected pumps. CMA and ARDURRA shall coordinate with the CITY, as required, to develop the range of operating scenarios to be evaluated and required flow/pressure points to evaluate the performance of the pre-selected pump, as well as manufacturer and model preferences.
- Preliminary selection and sizing of odor control systems as per CITY standards and equipment preferences. It is assumed that the site will not be fully enclosed and therefore natural ventilation will be possible. If the evaluation determines the need from HVAC equipment, this will require a revision of the design efforts scope and fee.

Preliminary Selection and Dimensioning of Electrical and I&C Components

ARDURRA will conduct the following activities to provide a preliminary selection and sizing of the main electrical and I&C components for the new PS A-5:

- Determine the load capacity of the on-site emergency engine generator based on dimensional requirements for the pumps, electrical equipment panels, and other electromechanical equipment associated with the pump station.
- Identify environmental requirements for the installation of the new generator
- Perform preliminary sizing of electrical panels and associated equipment to evaluate required footprint and layout alternatives
- Evaluate flood protection alternatives for electrical equipment as required by the project's DFE as defined by FEMA, state and local statutes.
- Define the requirements and layout for a flow meter at the discharge force main within the pump station site.

Preliminary Dimensioning of Structural Components

ARDURRA will perform the following activities to provide a preliminary sizing of the main structural components for the new PS A-5:

- Define preliminary sizing, capacity and footprint of the main structural components of the pump station, in compliance with current building codes and local ordinances. Structural components include wet well, valve vault, access hatches, generator pad, electrical equipment pad and hoisting equipment requirements.
- Evaluate flood protection alternatives as required by the project's DFE as defined by FEMA, state and local statutes. This will be used to define the top of slab (TOS) elevation of the structural components listed above.

Data Gathering

CMA will identify the existing utility agency owners (UAO) within the project boundary limits, specific to the location of the proposed pump station. CMA will obtain this information through a design ticket via the One Call Sunshine 811 Service. Based on the information provided in the design ticket, CMA will coordinate with the UAO's to request utility information (utility type, size, location, and associated easements), if applicable. The utility information provided by the UAO will be tracked by CMA within a tracking log/matrix. The log will include the UAO request, UAO response, and the documents obtained by the UAO.

CMA will provide ARDURRA with the 811 design ticket, the updated tracking log/matrix, and the UAO responses as they are issued by the UAO.

Survey and SUE Services

ARDURRA will not perform Survey and Subsurface Utility Engineering (SUE) services as part of this task. ARDURRA will assist CMA in the coordination with surveyor and SUE subconsultant to determine the location of SUE and detailed survey requirements within the pump station site

Geotechnical Services

ARDURRA will not perform Geotechnical services as part of this task. ARDURRA will assist CMA in the coordination with the Geotechnical Engineer to determine the location and needs of the geotechnical investigation within the pump station site



The activities listed herein will allow ARDURRA to define the required pump station footprint and equipment layout, access and O&M requirements. This analysis will be discussed with the site developer to ensure the area will be able to accommodate the requirements of the pump station.

Technical Memorandum

ARDURRA will assist CMA in drafting a technical memorandum to document the results of the siting analysis and hydraulic modeling. ARDURRA will include the following items within the memorandum:

- Hydraulic modeling results
- Preliminary equipment sizing and selection for the pump station
- Pump station layout options

ARDURRA will attend one (1) workshop with CMA and the CITY to discuss the draft technical memorandum, it is estimated that the workshop will be conducted approximately ten (10) days after submittal of the technical memorandum. Subsequently, a final technical memorandum will be submitted addressing the comments obtained during the workshop.

Deliverables:

- Project initiation (kick-off) meeting agenda and meeting minutes – as it pertains to ARDURRA’s disciplines
- Coordination meeting with site developer and City agenda and meeting minutes – as it pertains to ARDURRA’s disciplines
- Draft technical memorandum workshop presentation and meeting minutes – as it pertains to ARDURRA’s disciplines
- Draft Technical Memorandum – submitted electronically in .pdf format
- Final Technical Memorandum – submitted electronically in .pdf format

DEVELOPMENT OF DESIGN DOCUMENTS

ARDURRA will develop the design documents in the following design milestones: Schematic 30% Design (Schematic Design), 60% Design, 90% Design & Permit Set and Construction Documents (100% Design).

TASK 2 – 30% DESIGN SUBMITTAL

Upon Completion of Task 1 and Task 2, ARDURRA will prepare the 30% schematic design for the pump station. The preparation of this submittal package will include the following activities:

Schematic Design

ARDURRA will develop the following plans as part of the 30% schematic design drawings:

- Site plan and layout
- Pump selection, generator selection and main equipment layout

3D Rendering

ARDURRA will develop an above-ground 3-dimensional rendering of the proposed pump station layout. ARDURRA will coordinate with CMA ,its architectural/landscape design subconsultant and the site developer for the incorporation of beautification components in the 3D Rendering. ARDURRA will not design beautification and/or landscaping components, that



shall be done by others. It is assumed that the site will not be fully enclosed and therefore natural ventilation will be possible. If the evaluation determines the need from HVAC equipment, this will require a revision of the design efforts scope and fee.

Preliminary Opinion of Probable Cost

ARDURRA will prepare a Level IV Opinion of Probable Cost (OPC) as part of the 30% design submittal for the pump station design.

It is anticipated that the CITY will complete its review of the 30% Design Submittal within ten (10) working days of receipt of the submittal.

Deliverables:

- 30% Schematic Design Plans (developed in size 24"x36") – submitted electronically in .pdf format
- Above-ground 3D Rendering – submitted electronically in .pdf format
- Level IV Opinion of Probable Cost – submitted electronically in .pdf format

TASK 3 – 60% DESIGN SUBMITTAL

ARDURRA will prepare the 60% design submittal based on comments received from CMA and the CITY on the 30% design submittal for the pump station design.

Design Documents

ARDURRA will develop the following plans as part of the 60% design drawings:

- Mechanical –Notes & Legend, Mechanical Plan, Sections, Details and Pump Data
- Structural – Notes & Legend, Structural Plan, Sections, Details, Foundations for Electrical Slab, Generator and Odor Control System, Hoist System
- Electrical – Notes & Legend, Electrical Plan, Power/Control (MPE) and Wiring Schedule, Electrical Control Panel and Typical Details, RTU Installation Wiring Diagrams, Panel Schedule.
- I&C – Notes & Legend, P&ID, Network Diagram, and Details

Technical Specifications

ARDURRA will assist CMA in the development of construction technical specifications for the project, in accordance with CITY standards. The 60% design specifications will include the Division 1 sections and main equipment technical specifications. Technical specifications will be prepared based on CITY's and/or CMA standards.

Preliminary Engineering Report

The Preliminary Engineering Report (PER) shall be prepared to satisfy the requirements of the permitting agencies. The PER shall contain the following information:

- Introduction
- Project Location
- Reasons of Project
- Design Criteria
- Scope of Work
- Exhibits

Opinion of Probable Cost



ARDURRA will update the Opinion of Probable Cost (OPC) for the pump station design based on the updated design documents.

Deliverables:

- Response to 30% Design Submittal Comments
- 60% Design Plans (24" x 36") – submitted electronically in .pdf format
- Preliminary Engineering Report – submitted electronically in .pdf format
- Opinion of Probable Cost (Class III) – submitted electronically in .pdf format
- 60% Technical Specifications – submitted electronically in .pdf format

TASK 4 – 90% DESIGN AND PERMIT SET SUBMITTAL

ARDURRA will prepare the 90% design submittal based on the comments received from the CITY and CMA on the 60% design submittal. The 90% submittal will be submitted to CMA and the City for final review and approval. ARDURRA will then prepare signed and sealed drawings and final engineering report for the pump station to be used for permitting purposes

Technical Specifications

ARDURRA will prepare a complete set of technical specifications for the work items related to the pump station design based on the updated design drawings. ARDURRA will include bypass requirements as part of the technical specifications.

Final Engineering Report

ARDURRA will update the PER to prepare the Final Engineering Report (FER) to satisfy the requirements of the regulatory agencies. The FER will contain the following information:

- Introduction
- Project Location
- Reasons of Project
- Design Criteria
- Scope of Work
- Exhibits

Opinion of Probable Cost

ARDURRA will update the Opinion of Probable Cost (OPC) based on the updated design documents.

Deliverables:

- Response to 60% Design Submittal Comments
- 90% Design Plans – submitted electronically in .pdf format
- Signed and Sealed Permit Set Plans – submitted electronically in .pdf format
- Opinion of Probable Cost (Class II) – submitted electronically in .pdf format
- Technical Specifications – submitted electronically in .pdf format
- Signed and Sealed Final Engineering Report (FER) – submitted electronically in .pdf format

TASK 5 – PERMITTING SERVICES

ARDURRA will assist CMA in the preparation of permit applications, as it relates to the pump station design components of the project, for submittal to the appropriate authority having



jurisdiction (AHJ). CMA will formally submit the permit applications, coordinate meetings, and maintain a permitting log/matrix to monitor the status of permitting.

It is anticipated that the following regulatory reviews and/or permits will be required for the pump station:

- City of Fort Lauderdale Development Review Committee (DRC)
- City of Fort Lauderdale Building Department
- City of Fort Lauderdale Utility Department
- Broward County Environmental Protection and Growth Management Department City of Fort Lauderdale Public Works Department

Permit fees will not be paid for by ARDURRA. It is anticipated that the project may require a Dewatering permit. If required, dewatering permit shall be the responsibility of the Contractor.

ARDURRA will assist CMA in the preparation of responses to permitting agencies request for additional information (RAI/RFI) that relate to the pump station design components. Responses to RAI/RFI from the regulatory agencies will be provided within fifteen (15) working days of receipt.

Deliverables:

- Permit applications for the permits related to the pump station – submitted electronically in .pdf format
- RAI/RFI response package (up to two (2) per agency) – submitted electronically in .pdf format

TASK 6 – SITE PLANNING AND SDS COORDINATION

Site Planning, setbacks and code compliance

CMA will lead the efforts to complete this service. ARDURRA will assist CMA with documentation generated during the site analysis under Task 1 and the pump station 3D rendering, developed under Task 3. These activities shall be completed before the development of the 60% design, in parallel with Task 3.

Landscape Architecture

ARDURRA will not perform landscaping services as part of this task.

City Commission

If required, ARDURRA will attend one (1) CITY Commission Hearing to assist CMA with the pump station scope of work. ARDURRA will assist CMA in the preparation of presentation material for this hearing. This hearing shall occur before the commencement of the 60% design, during the completion of Task 3.

Deliverables:

- Commission Hearing Presentation Materials related to the pump station site selection and layout – submitted electronically

TASK 7 – 100% DESIGN SUBMITTAL

After the permits have been issued by the AHJs and the plans have been approved, ARDURRA will develop signed and sealed 100% design drawings set for bidding purposes for the scope



items related to the pump station design. CMA will be responsible for the preparation of the consolidated bid package for the project.

ARDURRA will update the construction technical specifications with the final modification after the permitting approvals and will generate a Class I Opinion of Probable Cost (OPC) for the pump station design.

Deliverables:

- Signed and Sealed Construction Drawings – submitted electronically in .pdf format
- Technical Specifications – submitted electronically in .pdf format
- Class I Opinion of Probable Cost – submitted electronically in .pdf format

TASK 8 – PROCUREMENT SUPPORT SERVICES

The CITY is responsible for procuring the contractor to complete the construction of the project. ARDURRA will support CMA during the procurement phase with bid and award services as described below.

Pre-Bid Meeting

ARDURRA will attend one (1) pre-bid conference for the project with CMA. CMA will be responsible for the preparation of the pre-bid agenda and presentation. ARDURRA will respond to technical questions related to the pump station design as directed by CMA; questions of legal and administrative nature will be addressed by the CITY. CMA will prepare and distribute written meeting minutes to the bidders and attendees after the pre-bid conference.

Procurement Package Preparation Support Services

CMA will receive, log and provide timely responses to bid RFIs from contractors during the bid process. RFI's relative to the pump station will be provide to ARDURRA by CMA and.

CMA will assist the City in the preparation of the Invitation to Bid (ITB) package. CMA will coordinate with ARDURRA for any additional attachments necessary for the bid documents, related to the pump station design, which will be incorporated into the ITB by CMA. ARDURRA will assist CMA in the preparation of the Bid form based on the Final OPC.

Preparing Addenda and Conformed Construction Documents

CMA will prepare written addenda with responses to RFIs from potential bidders. Addenda may include clarification to the construction drawings, specifications, and/or other documents as required to respond to the bid RFI's. CMA shall provide the final version of each addenda to the CITY's designee for review and issuance. ARDURRA will assist CMA in the preparation of addenda as they relate to ARDURRA's scope of services. ARDURRA will assist CMA in the preparation of Conformed Construction Documents with the updated drawings and technical specifications from the bid and addenda process.

Bid Evaluation and Contract Award

Following the CITY's internal review of the bid and proposal, CMA will evaluate the bids and bidder's qualifications for completeness, responsiveness, and price, including alternative prices and unit prices. ARDURRA will assist CMA in the evaluation of the bid for the scope of work elements related to the pump station construction. CMA will be responsible for preparing the recommendation to award letter for the CITY.



Deliverables:

- Completed bid documents – as it pertains to ARDURRA’s disciplines
- Addenda documentation – as it pertains to ARDURRA’s disciplines
- Conformed Construction Documents for ARDURRA’s disciplines

TASK 9 – ENGINEERING SERVICES DURING CONSTRUCTION

ARDURRA will support CMA during the construction phase of the project for the pump station scope elements. ARDURRA will provide shop drawing reviews, responses to requests for information from the Contractor, and project certification for the pump station. Construction Engineering and Inspection (CEI) services will not be performed by ARDURRA under this scope of services. ARDURRA will not be responsible for ensuring the project is constructed as designed, the CITY will secure the services of a CEI firm under a separate project.

A further breakdown of the scope of services to be provided by ARDURRA is described below:

Construction Meetings

Prior to construction, ARDURRA will attend one (1) joint pre-construction meeting with CMA, the CITY, the CITY’s CEI the awarded contractor, and the AHJs governing the project. The CEI will be responsible for providing a meeting agenda. Meeting notes will be taken and distributed by the CEI to ensure all parties comply with the CITY’s standards throughout the construction phase of this project. Attendance by ARDURRA to regularly scheduled construction meetings are not anticipated as part of this project.

Shop Drawing Review

Prior to construction, ARDURRA will review the shop drawing packages provided by the awarded contractor for the pump station scope of work. Up to twenty-five (25) shop drawing packages will be reviewed as part of this project. It is the awarded contractor’s responsibility to ensure the initial packages are complete and orderly prior to submittal; ARDURRA will only review one (1) rejected/revised package, per shop drawing, following a submittal. Further reviews will be considered additional services. Once the shop drawing has been approved by ARDURRA, the shop drawing submittal package will then be sent to CMA for final approval.

Request for Information

It is anticipated that ARDURRA will respond up to ten (10) RFIs throughout the construction phase of the project for the pump station scope of work. The RFI’s will be documented and logged by the City’s CEI.

Specific Purpose Site Visits

ARDURRA will perform specific purpose site visits related to the certification of the pump station. This may include pressure testing, pump station start up test, generator testing, cast in place concrete work, valve testing, flow meter testing and calibration, among others. The CITY’s CEI will give CMA and ARDURRA a minimum of two (2) days advance notice prior to critical milestones in the pump station construction. ARDURRA will attend to up to five (5) specific purpose site visits during construction under this scope of work.

As-built Review

ARDURRA will review the as-built drawings prepared by the Contractor, to ensure substantial compliance with the approved construction documents for the pump station. ARDURRA will review and reject an as-built plan set a maximum of two (2) times. Additional reviews will be considered additional services.



Certificate of Completion

Utilizing the as-built drawings, ARDURRA will assist CMA in the preparation of the final certification package for the pump station work. It is the contractor's responsibility to coordinate the scheduling for final testing, associated with the certification of the project. The following permit certifications are anticipated:

- Broward County Environmental Protection and Growth Management Department – Sanitary Sewer Extension Permit
- City of Fort Lauderdale Public Works Department – Public Works Permit

Deliverables:

- Shop drawing review – as it pertains to ARDURRA's disciplines
- RFI responses – as it pertains to ARDURRA's disciplines
- Attend to specific purpose site visits – as it pertains to ARDURRA's disciplines
- As-built review – as it pertains to ARDURRA's disciplines
- Final certification package – as it pertains to ARDURRA's disciplines

ADDITIONAL SERVICES

If authorized in writing by the CITY and CMA, as an amendment to this Task Order, ARDURRA shall furnish, or obtain, Additional Services of the types listed in the MASTER AGREEMENT between the CITY and CMA. The CITY, as indicated in the MASTER AGREEMENT between the CITY and CMA, will pay for these services.

INVOICING

Invoicing will be monthly as per the Contract between CMA and ARDURRA pursuant to RFQ Event No. 264. CMA shall pay ARDURRA invoices within 30 days of invoice submittal

COMPENSATION

The services described herein will be performed on a "Lump Sum" fee basis as per the Contract between CMA and ARDURRA pursuant to RFQ Event No. 264. Miles and other reimbursable expenses are to be paid as presented and approved.

An estimated fee schedule is presented in Appendix A.

PROJECT ASSUMPTIONS

1. Requested information shall be made available to ARDURRA by CMA.
2. CMA shall provide as-built information for all CITY owned infrastructure and utilities. CMA will provide available survey data, record drawings, and historical information as required.
3. CMA will provide all required information that is available within a reasonable timeframe.
4. The CITY will provide available hydraulic model data for the force main system.
5. The CITY will provide projected sewer demands based on future developments
6. At the end of each design milestone (30%, 60%, 90%), CMA and the CITY will review the plans and technical specifications (if available) and provide the review comments to ARDURRA within 10 calendar days.
7. CMA to provide a Project Schedule to Ardurra for review and concurrence on estimated project timeline and deliverables.



8. Performance durations assume timely permit processing by the regulatory agencies having jurisdiction over the project. Delays in obtaining permits beyond the control of ARDURRA may result in delays to the performance schedule, for which the ARDURRA cannot be held liable.
9. This scope does not include addressing substantial comments after the 60% review.
10. If a request for modification of the proposed site plan is issued after the 30% design review and approval, this will require approval of a scope revision prior to re-design
11. ARDURRA shall implement an internal Quality Assurance/Quality Control (QA/QC) Process to ensure proper design and adherence to the City of Fort Lauderdale and all applicable standards.
12. Development of right-of-way roadway specifications are not included in this scope of work.
13. Preparing modifications to the Conformed Construction Documents due to unforeseen conditions during construction is not included in this scope of services.
14. Permit fees will not be paid for by ARDURRA.
15. CMA will be available to conduct meetings as necessary.
16. ARDURRA will not be responsible for the failure of Contractor(s) to perform the work in accordance with the Construction Contract Documents
17. This scope of work will not include: radio propagation studies; evaluation of alternatives for selection of technology for the SCADA system (RTU, PLC, local controllers, radio modems, radio antennas, network switches); Federal Communication Commission (FCC) licensing services; design of the City of Fort Lauderdale's telemetry network for SCADA implementation; design of the City of Fort Lauderdale's master control room and its servers; design of the City of Fort Lauderdale's master radio tower; permitting related to the implementation of the City of Fort Lauderdale's SCADA network, definition of SCADA requirements other than those applicable to the Pump Station; development of City of Fort Lauderdale's SCADA standards, such as: network/architecture diagrams, HMI templates, I/O signals, others
18. Surveying services will not be performed by ARDURRA.
19. Architectural services will not be performed by ARDURRA.
20. Transportation services will not be performed by ARDURRA.
21. Landscaping/beautification services will not be performed by ARDURRA.
22. Geotechnical services will not be performed by ARDURRA.
23. Environmental assessments are not included in this scope of work
24. Structural services are limited to the design of a submersible pump station with on-site generator, odor control system, flow meter and hoisting system. Any additional structural services are not included.
25. It is assumed the pump station will not be housed within the new development at 300 & 330 North Andrews Avenue. ARDURRA will not conduct structural design for the building, only the pump station components .
26. Public outreach services will not be performed by ARDURRA.
27. Grant coordination and/or administration services will not be performed by ARDURRA.
28. HVAC design services are not included in this scope of work. It is assumed that the pump station site will not be fully enclosed, and therefore HVAC system will not be needed. If



during the project execution it is determined that HVAC is needed, this will require a revision of the scope and fee for additional design services.

29. Construction Engineering & Inspection (CEI) Services will not be performed by ARDURRA under this task order.
30. Review of contractor's payment requisitions will not be performed by ARDURRA.
31. Maintenance of traffic design will be performed by CMA.
32. As indicated by the CITY, the design of variable frequency drives are excluded from this project.
33. No easement requests and/or right-of-way dedication will be provided as part of this scope of work.



CHEN MOORE AND ASSOCIATES

RFQ Event No. 264

Design Services for Pumping Station A-5

Proposed Fee Schedule
Appendix A



Task	Rate, \$/Hr									Subtotal	Remarks	
		Senior Project Manager	Project Manager	Technical Advisor (QA/QC)	Senior Engineer (EOR)	Project Engineer	Junior Engineer	Senior CADD Designer	Project Coordinator			Total Hours
1		\$250.00	\$195.00	\$228.00	\$203.00	\$155.00	\$123.00	\$125.00	\$103.00			
1	Siting, Route Analysis TM and Site Investigation	24	60	32	88	200	100	60		564	\$93,660.00	
2	30% Design Submittal	28	46	32	68	80	100	220		574	\$89,270.00	
3	60% Design Submittal	35	72	36	68	80	120	310		721	\$110,712.00	
4	90% Design and Permitt Set Submittal	29	62	36	68	80	100	228		603	\$94,552.00	
5	Permtting Services	6	16		20	40	20		20	122	\$19,400.00	
6	Site Planning and DSD Coordination		16			20				36	\$6,220.00	
7	100% Design Submittal	13	24	18	24	32	40	120		271	\$41,786.00	
8	Procurement Support Services	8	8		16	32		40		104	\$16,768.00	
9	Engineering Services during Construction	8	12		100		40		40	200	\$33,680.00	
	Total (Hours)	151	316	154	452	564	520	978	60	3195		
	Sub-Total Labor Fee										\$506,048.00	
	ODC's (Mileage, Reproduction & Reimbursable) (See Appendix B)										\$0.00	
	Sub-Total Labor Fee/ODC										\$506,048.00	
	Total Project Cost (Labor/ODC)										\$506,048.00	
	% Utilization	4.73%	9.89%	4.82%	14.15%	17.65%	16.28%	30.61%	1.88%	100.00%		
	Total (\$)	\$37,750.00	\$61,620.00	\$35,112.00	\$91,756.00	\$87,420.00	\$63,960.00	\$122,250.00	\$6,180.00	\$0.00	\$506,048.00	

**EXHIBIT B
PROJECT SCHEDULE**

Project Timeline

TASK	MONTHS																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
TASK 1 - PRELIMINARY INVESTIGATION	2 months																							
TASK 2 - GEOTECHNICAL INVESTIGATION			2 months																					
TASK 3: TOPOGRAPHIC SURVEY		3 months																						
TASK 4: SUBSURFACE UTILITY EXPLORATION				3 months																				
TASK 5: SITING & ROUTING ANALYSIS TECHNICAL MEMORANDUM		3 months																						
TASK 6: 30% CONSTRUCTION DOCUMENTS					3 months																			
TASK 7: 60% CONSTRUCTION DOCUMENTS								4 months																
TASK 8: 90% CONSTRUCTION DOCUMENTS												4 months												
TASK 9: PERMITTING															5 months									
TASK 10: DSD APPROVAL																3 months								
TASK 11: 100% CONSTRUCTION DOCUMENTS																			2 months					
TASK 12: BIDDING ASSISTANCE	TBD																							
TASK 13: POST DESIGN SERVICES	TBD																							
TASK 14: REIMBURSABLE EXPENSES	TBD																							

* Assumes 2 weeks for City review in between submittals