

EXHIBIT I – SCOPE OF SERVICES
PROFESSIONAL ENGINEERING SERVICES
Water Conserv I Pumping Station Improvements Project
Final Design
Authorization #2

I. General

The following presents the specific tasks, which will be performed as part of this Scope of Services. Because of the nature of this work, certain assumptions have been made in preparing this Scope of Services. To the extent possible, these assumptions are stated herein and are reflected in the budget for services. If the work tasks required are different from the assumptions presented herein or if the City of Orlando (CITY) desires additional services, the resultant changes in scope and budget will serve as a basis for modifying this Scope of Services as agreed to by both the CITY and AECOM (CONSULTANT).

CONSULTANT will perform the following final design services for the CITY for the Water Conserv I (C1) Pumping Stations Improvements project (Project):

II. Consultant's Scope of Services

CONSULTANT's services will include serving as the CITY's professional engineering representative for the Project. CONSULTANT and its subconsultants will provide customary professional engineering consultation, advice and other services as described below:

Task Group 1 – Project Management

There are no changes to this task group.

Task Group 2 – Final Design Engineering Services for Lift Stations 113, 118, 222 and 231

There are no changes to this task group.

Task Group 3 – ARV Replacement Additional Design Phase Services

Task Group 3 is responsible for the production of construction contract documents for the ARV Replacement portion to the Water CIWRF Lift Station Improvements project as determined by the ARV Replacement Recommendations Technical Memorandum and meetings with City Staff. The additional design phase services will include the following:

1. Prepare Draft ARV Technical Memorandum: The Draft ARV Technical Memorandum includes the following:

- a. Discussion of regular maintenance of ARV's
 - b. Effects of improper force main design.
 - c. Summary of ARV site visits
 - d. Recommended sizing and location of ARV's
 - e. City of Orlando current standards for ARV's
 - f. AECOM's recommended ARV design
 - g. ARV recommendations for construction
 - h. Figures and Appendices including a key map, site visit notes and photos for each ARV, manufacturer recommendations and catalog cut sheets, City of Orlando standard details, original trunk force main record drawings, and master ARV spreadsheet.
2. Prepare Final ARV Technical Memorandum: The final ARV Technical Memorandum will address City comments on the draft ARV Technical Memorandum and final the master spreadsheet for ARV improvements.
 3. ARV Detail Drawings: Drawing C-901, which is a master spreadsheet for the ARV improvements, will reference the following detail drawings (5 total):
 - a. Drawing C-902 – Typical ARV Details. This detail is the general detail that to be used for 19 ARV's.
 - b. Drawing C-903 – Typical ARV Detail specific to only ARV 248-249I.
 - c. Drawing C-904 – Typical ARV Detail specific to only ARV 248-249J.
 - d. Drawing C-905 – ARV Details for Lift Stations 95, 104, 107, and 122. At these stations the current ARV's are below grade in a vault and the City requested a design to bring them above grade.
 - e. Drawing C-906 – ARV Details for Lift Stations 167, 169, 170, and 175. At these stations the current ARV's are below grade in a vault and the City requested a design to bring them above grade.
 4. In the original scope under Task 3 Site Visits, AECOM was to provide two (2) representatives. Only one (1) representative from AECOM was present at the site visits, so AECOM will offer the City a credit for the second representative.

Task Group 4 – Quality Control

There are no changes to this task group.

Task Group 5 – Additional Permitting Phase Services

Task Group 5 is responsible for the permits required for the ARV Replacement improvements within the Water CIWRF Lift Station Improvements project as determined by meetings with City Staff. The ARV's are located along Semoran Boulevard, Lee Vista Road/Judge Road, and Conway Road/Tradeport Drive. Both Semoran Boulevard (SR 436) and Conway Road, between Judge and SR 528 are FDOT roadways. We have discussed with FDOT and a single FDOT

Utilities permit will be required. The permit is necessary for ARV 248-249J, 248-249K, and 248-249L. Below is list of tasks that will be required to obtain each permit:

1. Prepare and complete FDOT Utilities Permit Application.
2. Perform Sunshine State One calls for each ARV location to obtain private utilities in the location of said ARV.
3. Prepare letter and send to each utility identified in the Sunshine State One call. FDOT requires a copy of this letter at time of application.
4. Prepare one figure showing the locations of ARV248-249J, 248-249K, and 248-249L. This figure will accompany the letter to utility owners identified in the Sunshine State One call. Based on previous experience with FDOT, a survey will not be required.
5. Update the figure to show location of utilities as provided by the utility owners.
6. Prepare Utility Permit application packet. Packet to include letter to utility providers, figures, details, and specifications. Only specifications relative to the ARV installation (i.e. restoration, ARV, pavement, hatches) will be submitted.
7. Respond to RAI's by FDOT.

Task Group 6 – Bid Phase Services

There are no changes to this task group.

Task Group 7 – Construction Phase Services

There are no changes to this task group.

Task Group 8 – Subconsultant Services

Task Group 8 is responsible for the subconsultant services on the project. The Client has requested that AECOM include materials testing in the contract. Material testing to include the following:

- Soil testing:
 - Perform laboratory moisture-density relationship tests (Proctors) and minus 200 sieve test on backfill soils, subgrade materials, concrete slab subgrade soils per each visually different material type.
 - Perform soil in-place field density tests at pipe backfill locations at the frequency of one (1) test per 200 lineal feet per 12” lift.
 - Perform soil in-place field density tests at structure backfill locations at the frequency of one (1) test per structure per 12” lift.
 - Perform soil in-place field density tests at sidewalk/curb subgrade locations at the frequency of one (1) test per 300 lineal feet per 12” lift.

- Perform soil in-place field density at driveway, equipment pads subgrade locations at the frequency of one (1) test per 300 lineal feet per 12” lift, minimum 2 tests per area.
- Concrete testing:
 - Slump: Perform one test at point of discharge for each sample when test specimens are molded.
 - Temperature: Measure temperature for each sample when test specimens are molded.
 - Test Specimens: Mold one set of five (4” x 8”) concrete test cylinders at a frequency of one set for each day’s pour exceeding 5 cubic yards, but less than 25 cubic yards. Plus one set for each additional 50 cubic yards or fraction per mix type.
 - Transport cast cylinders to our laboratory for curing and testing.
 - Perform laboratory curing and compressive strength testing of cylindrical concrete specimens. Test will be performed: one at 7 days, three specimens at 28-days and one cylinder will be placed on hold for future testing, if required.
 - Report compressive strength test results. Failing tests will be reported within 24 hours of lab testing.
- Masonry Grout Testing:
 - Slump: Perform one test at point of discharge for each sample when test specimens are molded.
 - Temperature: Measure temperature for each simple when test specimens are molded.
 - Test Specimens: Mold one set of four (3.5” x 3.5” x 7.0”) grout test prisms at a frequency of 1 set per 5,000 SF or day of placement.
 - Transport cast prisms to our laboratory for curing and testing.
 - Perform laboratory curing and compressive strength testing of grout prism specimens. Test performed: one at 7 days, two specimens at 28 days and one prism will be placed on hold for future testing, if required.
 - Report compressive strength test results. Failing tests will be reported within 24 hours of lab testing.

Task Group 8 will be performed by Nadic Engineering Services, Inc., a registered M/WBE firm in the City of Orlando.

Task Group 9 – Supplemental Work – Final Design of Lift Stations 12, 215,138 and 108

There are no changes to this task group.

III. Compensation

CONSULTANT shall be paid in accordance with Section 5 of the Agreement. A labor budget showing the estimated number of hours and associated fee for the tasks described within the

Scope of Services is presented as **Exhibit II**. The not to exceed compensation for Tasks 1 through 9 is **\$27,160.00** and will be part of the base authorization of this scope of work.

Task Group	Authorization 2
Task 1 – Project Management	\$0
Task 2 – Final Design Engineering Services	0
Task 3 – ARV Replacement	12,560
Task 4 – Quality Control	0
Task 5 – Permitting Services	2,810
Task 6 – Bidding Phase Services	0
Task 7 – Construction Phase Services	0
Task 8 – Subconsultant	10,719
Task 9 – Supplemental Work	0
Subconsultant Mark-up	1,071
Direct Costs	0
Total	\$27,160

IV. Services Not Included

The following services are not included in this Scope of Services, however, they are anticipated as part of future work on this project.

- Operations and Maintenance Manuals except for equipment O&M Manuals provided by the Contractor in accordance with the Contract Documents
- Modification of the Operating Protocol

V. CITY’s Responsibilities

The CITY shall be responsible for providing the following in a timely manner so CONSULTANT can complete its work and not delay the performance of services.

1. Provide all criteria and full information as to CITY’s requirements for the Project, including design objectives, constraints, capacity and performance requirements, flexibility, and expandability, and furnish copies of all design and construction standards which CITY will require to be used on/included in the Project.

2. Provide all field surveys that are currently available, including a vertical benchmark within the limits of the Project site, required for design of the facilities as determined by the CONSULTANT. CONSULTANT intends to use existing record drawing data for developing the final design documents.
3. Promptly review, comment on, and return CONSULTANT's submittals.
4. Execute, process, and obtain all required permits and approvals.
5. Pay all permit and approval fees.
6. Promptly advise CONSULTANT when the CITY becomes aware of any defect, deficiency or changed condition.
7. Provide electronic files for data, drawings and specifications when it is available in this format.

VI. Deliverables (CONSULTANT)

There are no changes to the deliverables.

VII. Period of Service

There are no changes to the schedule.

Project Budget

Exhibit II
CIWRF Lift Station Improvements - Authorization #2

City of Orlando

Task Description	Personnel Hours							Budget		
	Principal	Project Manager	Project Engineer II	Engineer III	CAD Technician	Admin. Assistant	Total Hours	Labor	Non-Labor Fee	Total
Task Group 1 - Project Management										
There are no changes to this task group.							-	\$ -		\$ -
							-	\$ -		\$ -
Subtotal	-	-	-	-	-	-	-	\$ -	\$ -	\$ -
Task Group 2 - Final Design Engineering Services for Lift Station 113, 118, 222, and 231										
There are no changes to this task group.							-	\$ -		\$ -
							-	\$ -		\$ -
Subtotal	-	-	-	-	-	-	-	\$ -	\$ -	\$ -
Task Group 3 - ARV Replacement Additional Design Phase Services										
Prepare Draft ARV Technical Memorandum	2	12	40			24	78	\$ 10,850		\$ 10,850
Prepare Final ARV Technical Memorandum	2	2	8			4	16	\$ 2,450		\$ 2,450
ARV Detail Drawings (5 total)		2	8		24		34	\$ 3,760		\$ 3,760
Credit for manhours not used during Site Visits			(30)				(30)	\$ (4,500)		\$ (4,500)
							-	\$ -		\$ -
Subtotal	4	16	26	-	24	28	98	\$ 12,560	\$ -	\$ 12,560
Task Group 4 - Quality Control										
There are no changes to this task group.							-	\$ -		\$ -
							-	\$ -		\$ -
Subtotal	-	-	-	-	-	-	-	\$ -	\$ -	\$ -
Task Group 5 - Additional Permitting Phase Services										

Project Budget

Exhibit II
CIWRF Lift Station Improvements - Authorization #2

City of Orlando

Task Description	Personnel Hours							Budget		
	Principal	Project Manager	Project Engineer II	Engineer III	CAD Technician	Admin. Assistant	Total Hours	Labor	Non-Labor Fee	Total
Prepare and obtain FDOT Permit	2	2	8		4	4	20	\$ 2,810		\$ 2,810
							-	\$ -		\$ -
Subtotal	2	2	8	-	4	4	20	\$ 2,810	\$ -	\$ 2,810
<u>Task Group 6 - Bid Phase Services</u>										
There are no changes to this task group.							-	\$ -		\$ -
							-	\$ -		\$ -
Subtotal	-	-	-	-	-	-	-	\$ -	\$ -	\$ -
<u>Task Group 7 - Construction Phase Services</u>										
There are no changes to this task group.							-	\$ -		\$ -
							-	\$ -		\$ -
Subtotal	-	-	-	-	-	-	-	\$ -	\$ -	\$ -
<u>Task Group 8 - Subconsultant Services</u>										
Construction Materials Testing - NADIC Engineering, Inc.							-	\$ -	\$ 10,719	\$ 10,719
10% Subconsultant Mark-up							-	\$ -	\$ 1,071	\$ 1,071
							-	\$ -		\$ -
Subtotal	-	-	-	-	-	-	-	\$ -	\$ 11,790	\$ 11,790
<u>Task Group 9 - Supplemental Work - Final Design of Lift Stations 12, 215, 138, and 108</u>										
There are no changes to this task group.							-	\$ -		\$ -
							-	\$ -		\$ -
Subtotal	-	-	-	-	-	-	-	\$ -	\$ -	\$ -

Project Budget

Exhibit II
CIWRF Lift Station Improvements - Authorization #2

City of Orlando

Task Description	Personnel Hours							Budget		
	Principal	Project Manager	Project Engineer II	Engineer III	CAD Technician	Admin. Assistant	Total Hours	Labor	Non-Labor Fee	Total
Total	6	18	34	-	28	32	118	\$ 15,370	\$ 11,790	\$ 27,160

Amounts shown are revenue.

<u>Personnel Category</u>	<u>\$/HR</u>
Principal	\$265.00
Project Manager	\$200.00
Project Engineer II	\$150.00
Engineer III	\$110.00
CAD Technician	\$90.00
Admin. Assistant	\$80.00

November 26, 2013

Chad A. Setzer, P.E.
Project Engineer
AECOM Technical Services, Inc.
150 N. Orange Avenue
Suite 200
Orlando, Florida 31801

Re: Proposal to Provide Construction Material Testing
Water Conserv I Lift Stations Improvements
Project Number: 2123
NES Project Number: CMT13-023

Dear Mr. Setzer:

Pursuant to your request, **Nadic Engineering Services, Inc. (NES)** is pleased to submit this proposal for construction material testing services for the proposed Water Conserv I Lift Stations Improvements. The quantities provided herein are based on the information provided by you. Quantities can vary with construction scheduling practices; however, we feel that these are reasonably close to what will actually be needed. Of course, you would only be invoiced for services performed at the unit price fees noted on the attached sheet.

We understand that the project consists of Materials Testing at the Water Conserv I Lift Stations Improvements in Orlando, Florida. Based on our understanding of this project, we will provide the services listed below.

- Conduct Compaction Tests for pipe/structure backfill, pavement subgrade and pavement base
- Sample, transport and test Proctors
- In-Place Density Testing
- Grout Prism transport and testing
- Wash Thru #200 testing

We will be glad to provide any other services you request.

Fee and Terms

Material Testing services will be provided in accordance with the attached General Conditions at the rates included in the attached Project Fee Schedule (Exhibit A). Billing will be based on the quoted unit rates, the number of hours spent traveling to the project site, conducting field services,

NES	E-mail: nadic@nadicinc.com	15291 NW 60 th Avenue, Ste 106
Office:	601 N. Hart Boulevard	Miami Lakes, FL. 33014
	Orlando, FL 32818	
Phone:	(407) 521- 4771	305 512 0687
Fax:	(407) 521-4772	(305) 512 0897

preparing written reports, and the number of laboratory tests completed. The total fee for our services is not expected to exceed the sum of **\$10,719.16** as presented in the Exhibit A.

Since **NES** has no control over the construction schedule or methods of construction, the actual number of hours spent on-site and number of tests shall depend on actual construction practices and the project schedule. The testing services will be invoiced based on the actual quantity of testing services rendered at the indicated unit rates. **NES** should not be obligated to provide services which fees exceed the total amount authorized by the Client.

We appreciate the opportunity to present this proposal to you. If this proposal is acceptable, please sign below as notice to proceed and return one (1) copy of this proposal intact to our office. Should you have any questions or if we can be of further assistance, please contact us. We look forward to working with you on this project and projects in the future.

Sincerely,

NADIC ENGINEERING SERVICES, INC.

Godwin N. Nnadi, Ph.D., P.E.
Principal Engineer

AGREED TO THIS _____ **DAY OF** _____, _____

BY (Please Print): _____

TITLE: _____

COMPANY: _____

SIGNATURE: _____

EXHIBIT 1

Construction Materials Testing Services
 Water Conserv I Lift Stations Improvements Project No. 2123
 Orlando, Florida
 NES Project No.: CMT13-023

TASK	QUANTITY	UNIT	UNIT COST	TOTAL COST
Construction Materials Testing				
<u>Field Technician</u>				
Field Density Tests (minimum 4 per trip)	41	Each	\$23.00	\$1,148.00
Collect and transport proctor samples	8	Per hour	\$54.36	\$434.88
Grout prism testing (10 sets of 3 per set)	20	Per hour	\$54.36	\$1,087.20
Concrete Cylinders Making and Testing Cylinders including Slump Text (5 cylinders or less per set)	20	Per hour	\$54.36	\$1,087.20
<u>Laboratory Testing</u>				
Percent Fines (Wash No. 200 Sieve)	8	Each	\$40.00	\$320.00
Proctor Testing	8	Each	\$110.00	\$880.00
Grout Prism Testing	10	Each	\$55.00	\$550.00
Concrete Strength Testing	20	Each	\$55.00	\$1,100.00
<u>Engineering Services</u>				
Principal Engineer	12	Hour	\$156.57	\$1,878.84
Project Engineer	12	Hour	\$86.53	\$1,038.36
Technical Secretary	24	Hour	\$49.57	\$1,189.68
TOTAL				\$10,709.16

NOTES:

- (1) All unit fees are for normal work hours, Monday through Friday from 6:30 a.m. to 4:30 p.m. daily. Work performed outside the normal work hours, Saturday, Sunday and holidays will be invoiced at the standard rate plus 30 percent.
- (2) Stand-by time will be charged at the rate of \$54.36 per hour.
- (3) A minimum of four In-Place Density Tests per trip is required.
- (4) All hourly work requires a minimum of four hour call-out per trip.
- (5) Professional consultations and meetings will be invoiced at our standard rates.