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INDIAN RIVER COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT - TRAFFIC ENGINEERING DIVISION
INTER-OFFICE MEMORANDUM

DATE: November 2, 2016
TO: Jason E. Brown, County Administrator
THROUGH: Richard B. Szyrka, P.E., Public Works Director
FROM: Kimberly Graham, P.E., County Traffic Engineer
SUBJECT: Work Order No. 2, Carter Associates, Inc.
Intersection of 21st Street SW and 27th Avenue
Mast Arm Traffic Signal Design

DESCRIPTION AND CONDITIONS

On November 15, 2011, the Board of County Commissioners approved the Continuing Contract for Professional Services with Carter Associates, Inc. and on November 4, 2014, approved an Extension and Amendment of the Continuing Contract.

Based on a traffic signal warrant study at the intersection of 21st Street SW at 27th Avenue the Traffic Engineering Division (Traffic) recommends the installation of a mast arm traffic signal at the intersection. Attached please find Work Order No. 2 for Carter Associates, Inc. to provide design services for the construction of a mast arm traffic signal and associated improvements including pedestrian facilities at the intersection of 21st Street SW and 27th Avenue.

The purpose of Work Order No. 2 is to provide design services to improve the safety and operation of the intersection of 21st Street SW and 27th Avenue. The proposed improvements consist of the installation of a mast arm traffic signal, pedestrian crosswalks and curb ramps, including sidewalk ramps, associated signage and pavement markings. The County is responsible for the collection of all necessary survey work and data. Work Order No. 2 is for a lump sum amount of \$32,445.00

FUNDING

Funding is budgeted and available from the Optional Sales Tax/21st Street and 27th Avenue account (315214441-066510-17002).

RECOMMENDATION

Staff recommends approval of Work Order No. 2 to Carter Associates, Inc. authorizing the above-mentioned professional services as outlined in the attached Scope of Services and requests the Board to authorize the Chairman to execute attached Work Order No. 2 on their behalf for a total lump sum amount of \$32,445.00.

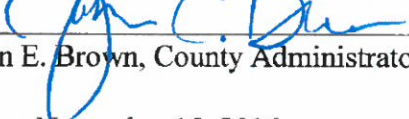
ATTACHMENTS

Work Order No. 2

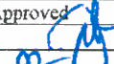
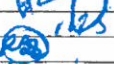



DISTRIBUTION

Carter Associates, Inc.

APPROVED AGENDA ITEM

BY: 
Jason E. Brown, County Administrator

FOR: November 15, 2016

Indian River Co	Approved	Date
Admin		11/15/16
Legal		11/15/16
Budget		11/15/16
Department		11/13/16
Risk Manager		11-08-14

CARTER ASSOCIATES, INC.
CONSULTING ENGINEERS AND LAND SURVEYORS
1708 21st STREET • VERO BEACH, FLORIDA 32960-3472 • 772-562-4191 • 772-562-7180 (FAX)

JOHN H. BLUM, P.E., PRINCIPAL
DAVID E. LUETHJE, P.S.M., PRINCIPAL
GEORGE A. SIMONS, P.E., PRINCIPAL
PATRICK S. WALTHER, P.E., PRINCIPAL

MARVIN E. CARTER, P.S.M., Consultant to the Firm
DEAN F. LUETHJE, P.E., (a) & (s) Consultant to the Firm

FRANK S. CUCCURESE, P.S.M.
CLINTON J. RAHJES, P.E.
STEVE D. SNOBERGER, P.E.

RECEIVED

OCT 17 2016

TRAFFIC ENGINEERING

October 17, 2016

Kimberly Graham, P.E.
County Traffic Engineer
Indian River County
1801 27th Street, Bldg. A
Vero Beach, FL 32960

Re: Signalization of 27th Avenue and 21st Street SW Intersection
Professional Engineering Services Agreement

Dear Kimberly:

Carter Associates, Inc. (CAI) is pleased to present this proposed agreement for professional engineering services relative to the design of mast arm traffic signals, pedestrian crossings and appurtenances at the intersection of 27th Avenue and 21st Street SW, in Indian River County, Florida. The CAI team includes sub-consultants for signalization design and geotechnical services, McMahon Associates, Inc. and KSM Engineering and Testing, Inc., respectively. The following describes our proposed scope of services and terms of agreement between CAI and Indian River County (COUNTY):

Part 1. Preliminary Engineering:

- The COUNTY will provide CAI with a topographic survey which will include elevations, above ground features and right-of-way for a distance of 200' north, south, east and west of the intersection. The survey will include horizontal location of edges of roads, sidewalks, curbs, gutters, pavement markings, surface features of utilities, signage, existing poles, landscaping trees and features within the project limits and within the right-of-way. The COUNTY will provide CAI with an electronic file of the survey drawing in AutoCad. The survey will be utilized as the base drawing for the design of proposed improvements.
- The COUNTY will coordinate buried utility locates through "Sunshine One Call". The buried utility locates will be surveyed by the COUNTY and shown on the base drawing. CAI will identify conflicts and coordinate conflict resolution.
- CAI will prepare preliminary design drawings for crosswalks on all four approaches including improvements to sidewalks, curb ramps, pavement markings and signage.
- CAI's sub-consultant, McMahon Associates, Inc., will prepare preliminary plan view signalization design drawings incorporating mast arms and appurtenances.
- CAI will submit the preliminary drawings to COUNTY staff for review, comment, and approval of the preliminary layout.

CAI Serving Florida
Since 1911

Part 2. Design Development:

- CAI will meet with COUNTY staff to go over review comments prior to proceeding with design development.
- CAI's geotechnical sub-consultant, KSM Engineering and Testing, Inc., will conduct the required geotechnical investigation needed for the design of mast arm foundations.
- The CAI team will prepare final design development drawings including details and specifications.
- CAI will prepare an opinion of probable construction costs.
- CAI will submit final design development drawings to COUNTY staff for review and comment.

Part 3. Final Construction Plans:

- CAI will address the COUNTY's review comments and proceed with the preparation of final construction drawings and specifications.
- CAI will update the opinion of probable construction costs.
- CAI will submit deliverables to the COUNTY. Final Deliverables to include five (5) paper "hardcopy" signed and sealed sets of plans, AutoCad drawing file in release 2013, PDF formats and other pertinent documents. All electronic files to be provided on CD.

Assumptions:

In developing this proposal, CAI represents to the COUNTY that the following assumptions have been made and that deviation from these assumptions may require additional services and expenditures by CAI that will require additional compensation from the COUNTY:

1. Design and permitting of adjustments to existing water main, sanitary sewer or other utilities that are in conflict with proposed improvements are not included.
2. The existing right-of-way will accommodate the proposed improvements. No additional right-of-way or easements will be required.
3. The project area of development does not contain jurisdictional wetlands or threatened species.
4. The existing north-south crosswalks on the east and west sides of 27th Avenue will remain as striped. New crosswalks will be constructed running east-west on both north and south sides of 21st St SW.
5. The proposed scope does not include roadway modifications or lane additions. CAI will coordinate the placement of the mast arm on the northeast corner so that the addition of a right turn lane in the future will not conflict with the proposed mast arm.
6. Bidding the project for construction is not included. The COUNTY will handle bidding the project.
7. Construction Phase Services are not included but can be provided as an additional service.

General:

CAI will generally bill the COUNTY monthly for the previous month's charges. All tasks will be invoiced on a percentage complete/lump sum basis including expenses. Should additional services be required, a separate written agreement will be prepared.

CAI's fees are summarized as follows:

Part 1 Preliminary Engineering.....	\$3,620.00
Part 2 Design Development.....	\$3,545.00
Part 3 Final Construction Plans.....	\$3,080.00
CAI Total	= \$10,245.00

McMahon Associates, Inc. fees are summarized as follows (Reference attached proposed agreement from our sub-contractor McMahon Associates, Inc. dated September 20, 2016.):

Signalization Plans.....	\$21,000.00
McMahon Total	= \$21,000.00

KSM Engineering and Testing, Inc. fees are summarized as follows (Reference attached proposed agreement from our sub-contractor KSM Engineering and Testing, Inc., dated September 23, 2016.):

Geotechnical services.....	\$1,200.00
KSM Total	= \$1,200.00
GRAND Total	= \$32,445.00

CAI looks forward to furnishing the services described herein. Our Man-hour/Fee estimate is attached as Exhibit "A" for your use. Should you have any questions regarding our proposed scope of work or terms of agreement, please feel free to call me at your convenience.

Sincerely,

CARTER ASSOCIATES, INC.



Patrick S. Walther, P.E.
Principal/ Project Manager

Attachments



Preliminary Engineering

Incidentals, Site Visit & Coordination with IRC Staff, McMahon and KSM
 Prepare Preliminary Plan View Layout & Geometry
 Identify Conflicts and Coordinate Conflict Resolution
 Submit Preliminary Plans to IRC for Review

Design Development

Incidentals & Coordination with IRC Staff, McMahon and KSM
 Address IRC Comments
 Prepare Details & Specifications
 Prepare Opinion of Probable Construction Cost
 Submit Final Design Development Plans to IRC for Review

Final Construction Plans

Incidentals & Coordination with IRC Staff, McMahon and KSM
 Address IRC Comments and Preparation of Final Construction Documents
 Update Opinion of Probable Construction Cost
 Submit Deliverables

Total Manhours

Lump Sum Total Fee Estimate

	\$150.00 Eng, PE, Prin Patrick	\$105.00 Eng Tech Domenic	\$150.00 Sur, PSM, Prir David	\$125.00 Survey, PSM Frank	\$130.00 Survey Crew Wess	\$45.00 Clerical	Reimburse	Subtotal
	8.00					2.00		\$1,290.00
	6.00	4.00						\$1,320.00
	4.00							\$600.00
	1.00	2.00					\$50.00	\$410.00
							Subtotal	\$3,620.00
	4.00					2.00		\$690.00
	2.00	1.00						\$405.00
	6.00	6.00						\$1,530.00
	2.00	2.00						\$510.00
	1.00	2.00					\$50.00	\$410.00
							Subtotal	\$3,545.00
	4.00					2.00		\$690.00
	4.00	4.00						\$1,020.00
	2.00	2.00						\$510.00
	2.00	4.00				2.00	\$50.00	\$860.00
							Subtotal	\$3,080.00
	46.00	27.00	0.00	0.00	0.00	8.00		
							TOTAL	\$10,245.00



McMAHON ASSOCIATES, INC.
2090 Palm Beach Lakes Boulevard, Suite 400
West Palm Beach, FL 33409
p 561-840-8650 | f 561-840-8590

September 20, 2016

VIA E-MAIL

Mr. Patrick S. Walther, P.E.
Carter Associates, Inc.
1708 21st Street
Vero Beach, Florida 32960

**RE: 27th Avenue SW at 21st Street SW Signal Design Plan
McMahon Project No. N16628.OP**

Dear Pat:

McMahon Associates, Inc. (McMahon) is pleased to provide this proposal for traffic engineering services associated with the proposed improvements at the intersection of 27th Avenue SW with 21st Street SW, in Vero Beach, Florida. Specifically, this proposal is for services to prepare signal design plans for the intersection of 27th Avenue SW with 21st Street SW (project intersection).

This proposal is based on the assumption that all project baseline geometry, existing and proposed right-of-way, topographic, geotechnical, and sub-surface utility exploration (SUE) information necessary to complete the design will be provided by Carter Associates, Inc.

The existing topography information will include existing above ground features and elevations for a minimum distance of 200' in the north, south, east and west direction of the study intersection. Field survey data, to be provided by Carter Associates, Inc., must include planimetric survey delivered in CADD format and shall include horizontal location of edges of roads, curbs, gutters, sidewalks, pavement markings, surface features of utilities, signage, existing poles, landscaping trees and features within the project limits and within all right-of-way. Sufficient data will be provided to establish roadway crown elevations, roadway slopes, and elevations at the base of any new mast arm uprights.

In order to provide the proper design for the traffic signal supports, subsurface soil information must be provided by Carter Associates, Inc. Soil borings will be obtained in the field by a Geotechnical Engineer, at all corners of the study intersection. The geotechnical information will be analyzed, and the project Geotechnical Engineer will provide a standard report. This information will be utilized for the design of proposed traffic signal mast arm supports and their foundations.

PRINCIPALS

Joseph W. McMahon, P.E.
Joseph J. DeSantis, P.E., PTOE
John S. DePalma
William T. Steffens
Casey A. Moore, P.E.
Gary R. McNaughton, P.E., PTOE

ASSOCIATES

John J. Mitchell, P.E.
Christopher J. Williams, P.E.
R. Trent Ebersole, P.E.
Matthew M. Kozsuch, P.E.
Maureen Chlebek, P.E., PTOE
Dean A. Carr, P.E.



McMahon will coordinate with the existing utility owners within the project corridor to receive information to show the existing utilities on the signalization plan, as outlined in the Scope of Work section below. If right-of-way or other project constraints dictate that a proposed mast arm base be placed in the vicinity of an existing underground utility, then Carter Associates, Inc. will provide the sub-surface utility exploration (soft dig) necessary to identify the utility conflict. If additional right-of-way or easements are required for the proposed signal equipment locations, Carter Associates, Inc. will obtain the necessary agreements.

This proposal also assumes that all other roadway design work, such as sidewalk, curb and gutter, curb ramps, and signing and pavement marking plans will be completed by Carter Associates, Inc. Signal design plans, prepared by McMahon, will be provided for inclusion in the Carter Associates, Inc. design plan set for submission to the County.

The Scope of Work includes the following tasks:

SCOPE OF WORK

TASK 1 – TRAFFIC SIGNAL DESIGN AND PLANS PREPARATION

The signalization plans will be prepared in conformance with State and Federal guidelines regarding traffic signal design in conjunction with any roadway improvements proposed along 27th Avenue SW and 21st Street SW.

The various tasks required in conjunction with the development of the traffic signal plans are as follows:

- A. **Signalization Plan** – The signalization plan will be prepared in Microstation, in a standard plan format of 11" x 17", and at a scale of 1" = 40'. Basic information presented on the plan shall include, but shall not be limited to, roadway geometry, pavement markings, traffic regulatory signs, street names, construction stationing, drainage inlets, sidewalks, right-of-way lines and conflicting underground and overhead utilities. This information will be required to ascertain the location for the proposed mast arms, and traffic and pedestrian signal related equipment.

Detailed information will include signal head type and locations, pedestrian signal and detector type and locations, signal pole locations, regulatory signs, and other appropriate details. McMahon will coordinate with the appropriate governmental agencies to ensure that the signal hardware is compatible with other signals along the corridor, and in Broward County.

The fee does not include costs for designing utility relocation plans. McMahon will, however, send one (1) set of plans to each affected utility company in order to obtain current utility

information to be included on the plans. McMahon will make every effort to design the traffic signal to avoid any existing utilities. If utility relocation is necessary, the utility relocation design and plans can be created under a supplemental work agreement.

- B. **Fiber Optic Network Plan** – McMahon will coordinate with Indian River County to determine the County's interconnect needs. If necessary, a Fiber Optic Network plan sheet will be included in the plan set.
- C. **General Note Sheet** – A general construction note sheet will be prepared, and will be included with the plan set package. The general notes will include general construction information, utility operation data, maintenance of traffic information, and reference to standard or special construction details/notes as required by Indian River County.
- D. **Quantities Sheet** – The quantities sheet will include a tabulation of items, description and quantity of materials, and type of work for the location. Specific notes referencing pay items or indicating special design information will also be indicated.
- E. **Mast Arm Detail Sheets** – For purposes of this proposal, it is assumed that the mast arm design will be in conformance with the FDOT Mast Arm Assemblies Indices. The Mast Arm Detail sheets will include the tables showing the mast arm pole and arm designations, as well as the signal and sign data for each mast arm structure.
- F. **Guidesign Detail Sheets** – The Guidesign detail sheets will include information for the internally illuminated street name signs that will be mounted on the mast arms. For purposes of this proposal, it is assumed that two (2) different street name legend signs will be required.
- G. **Mast Arm Analysis** – The mast arm will be designed and analyzed with Mathcad using the FDOT Mast Arm data files. Any deviations from the FDOT standard mast arm criteria will be detailed in the Special Drilled Shaft section of the Standard Mast Arm Assemblies Data Table and \ or a Special Mast Arm Assemblies Data Table, if required. For the purposes of this proposal, it is assumed that four (4) mast arms will be required.

The services to be performed pursuant to this agreement are strictly limited to those expressly set forth herein.

FEE

The lump sum fee for the above-mentioned services is \$21,000.00, including expenses. If additional services are required that exceed those identified in this Scope of Work, a supplemental agreement will be submitted to the client for review and approval prior to the commencement of any additional tasks. Additional services will commence upon written authorization to proceed by the client.

SCHEDULE

We are prepared to initiate work on the project upon receipt of written authorization to proceed. McMahon will use its best efforts to complete this work in accordance with the client's meeting schedule.

TERMINATION

This agreement may be terminated by the authorized representative effective immediately on receipt of written notice. Payment will be due for services rendered through the date written notice is received.

BINDING STATUS

The client and McMahon Associates, Inc. bind themselves, their partners, successors, assigns, heirs, and/or legal representatives to the other party to the Agreement, and to the partners, successors, assigns and legal representatives of such other party with respect to all covenants of the proposal.

TERMS

The terms of this Agreement call for execution of this contract. Invoices for services will be submitted monthly and are payable within 30 days of issuance. All invoices not paid within 30 days are subject to a 1.5% monthly interest charge, and all projects with overdue balances exceeding 90 days will be subject to a stoppage of all work. Any changes in the specific Scope of Work described above will result in an adjustment of the conditions and fees.

All invoices not paid within 30 days are subject to a 1.5% monthly interest charge. All projects with overdue balances exceeding 90 days may be subject to a stop work notice until such time as the outstanding invoices are paid in full.

This agreement (and Exhibits, if any) hereto sets forth the entire understanding between the parties with respect to the subject matter hereof, supersedes any and all prior understandings whether written or oral with respect to the subject matter hereof and may not be altered, modified, changed, amended or waived in any manner, except in writing signed by all of the parties hereto.

The fee quoted above is valid for a period of 90 days from the date of this proposal. If the terms of this contract, as contained herein, are agreeable to you, please execute it below in the space provided and return one (1) signed original and the above referenced retainer to me. If you have any questions or require further information, please feel free to contact me.

We greatly appreciate the opportunity to present our proposal on this project and look forward to working with you.

Sincerely,



R. Trent Ebersole, P.E.
Vice President & General Manager - Florida

RTE:JDH/amp
Attachments

Accepted for Carter Associates, Inc.

By: _____
(Signature of Authorized Representative)

(Printed Name of Authorized Representative)

Title: _____

Date: _____

Please provide your Accounts Payable contact information:

Name: _____

Phone Number: _____

E-mail Address: _____

In the space below, please provide any details, including the date invoices are due each month for prompt payment:

MCMAHON ASSOCIATES, INC.
STANDARD PROVISIONS FOR PROFESSIONAL SERVICES
JANUARY 1, 2016

SERVICES

McMahon Associates, Inc. reserves the right to make adjustments for individuals within these classifications as may be desirable in its opinion by reason of promotion, demotion, or change in wage rates. Such adjustments will be limited to the manner in which charges are computed and billed and will not, unless so stated in writing, affect other terms of an agreement, such as estimated total cost. The following rates will apply to actual time devoted by McMahon Associates, Inc. staff to this project computed to the nearest one-half hour.

<u>PERSONNEL</u>	<u>HOURLY RATES</u>
Principal	\$250.00
Senior Associate	\$240.00
Associate	\$225.00
Senior Engineer/Planner VIII	\$210.00
Senior Engineer/Planner VII	\$200.00
Senior Engineer/Planner VI	\$195.00
Senior Engineer/Planner V	\$190.00
Senior Engineer/Planner IV	\$180.00
Senior Engineer/Planner III	\$170.00
Senior Engineer/Planner II	\$160.00
Senior Engineer/Planner I	\$150.00
Chief of Surveys	\$140.00
Traffic Control/Construction Specialist	\$135.00
Party Chief	\$120.00
Engineer VI	\$140.00
Engineer V	\$130.00
Engineer IV	\$125.00
Engineer III	\$120.00
Engineer II	\$110.00
Engineer I	\$105.00
Technician/Word Processor IV	\$ 95.00
Technician/Word Processor III	\$ 90.00
Technician/Word Processor II	\$ 85.00
Technician/Word Processor I	\$ 80.00
Survey Technician	\$ 75.00
Field Traffic Count Personnel	\$ 50.00

TERMS

1. **Invoices** - Invoices will be provided on a monthly basis and will be based upon percentage of completion or actual hours, plus expenses. Payment is due to McMahon Associates, Inc. within 30 days of the invoice date. Unpaid balances beyond 30 days are subject to interest at the rate of 1.5% per month. This is an annual percentage rate of 18%.
2. **Confidentiality** - Technical and pricing information in this proposal is the confidential and proprietary property of McMahon Associates, Inc. and is not to be disclosed or made available to third parties without the written consent of McMahon Associates, Inc.
3. **Commitments** - Fee and schedule commitments will be subject to renegotiation for delays caused by the client's failure to provide specified facilities or information, or any other unpredictable occurrences.
4. **Expenses** - Automatic Traffic Recorder equipment usage will be billed at \$25.00 per 24-hour count. Incidental expenses are reimbursable at cost, plus an administration fee of 10%. These include subconsultants, reproduction, postage, graphics, reimbursement of automobile usage at the IRS-approved rate, parking and tolls. Expenses which by company policy are not billed as reimbursable expenses to clients and therefore, will not be billed as part of this contract include the following: air travel, rental car, lodging, meals, and long distance phone charges between McMahon Associates offices. If it becomes necessary during the course of this project to travel elsewhere, those travel costs will be treated as reimbursable expenses. These expenses will be reflected in the monthly invoices.
5. **Attorney's Fees** - In connection with any litigation arising from the terms of this agreement, the prevailing party shall be entitled to all costs including reasonable attorney's fees at both the trial and appellate levels.
6. **Ownership and Use of Documents** - All original drawings and information are to remain the property of McMahon Associates, Inc. The client will be provided with copies of final drawings and/or reports for information and reference purposes.
7. **Insurance** - McMahon Associates, Inc. will maintain at its own expense Workman's Compensation Insurance, Comprehensive General Liability Insurance and Professional Liability Insurance and, upon request, will furnish the client a certificate to verify same.
8. **Termination** - This agreement may be terminated by the authorized representative effective immediately on receipt of written notice. Payment will be due for services rendered through the date written notice is received.
9. **Binding Status** - The client and McMahon Associates, Inc. bind themselves, their partners, successors, assigns, heirs, and/or legal representatives to the other party to this Agreement, and to the partners, successors, assigns and legal representatives of such other party with respect to all covenants of this Contract.



KELLER, SCHLEICHER & MacWILLIAM ENGINEERING AND TESTING, INC.
MARTIN (772) 337-7755 P.O. BOX 78-1377, SEBASTIAN, FL 32978-1377 SEBASTIAN (772) 589-0712
PALM BEACH (561) 845-7445 www.ksmengineering.net MELBOURNE (321) 768-8488
FAX (561) 845-8876 E-Mail: KSM@KSMENGINEERING.NET ST. LUCIE (772) 229-9093
C.A.: 5693 FAX (772) 589-6469

September 23, 2016

Patrick Walther
c/o Carter Associates, Inc.
1708 21st Street
Vero Beach, Florida 32960

**Re: 21st Street SW & 27th Avenue
Proposed Traffic Light Mast Arm
Indian River County, Florida**

Dear Mr. Walther:

Thank you for the opportunity to submit a proposal to perform geotechnical engineering services in the way of soil borings for the referenced project.

Our services shall consist of the following:

- A. Perform two (2) soil borings to a depth of 30 feet at the corners of the intersection in accordance with ASTM Standards described in ASTM D1586, known as the Standard Penetration Test (SPT).
- B. Provide a report covering the investigation including the boring logs illustrating the soil classification, thickness of each layer, number of blows per foot (N Value), groundwater depth, and recommendations for site preparation with an allowable bearing capacity of the soil.

The specified investigation shall be completed along with two (2) copies of our report mailed to your office after written authorization to proceed is received.

