APPROVED BY ORANGE
COUNTY BOARD OF COUNTY
COMMISSIONERS

BCC Mtg. Date: November 29, 2016

ORANGE COUNTY GOVERNMENT FLORIDA

Interoffice Memorandum

November 14, 2016

TO: Mayor Teresa Jacobs
and Board of County Commissioners

FROM: Raymond E. Hanson, P. E., Director
Utilities Department

SUBJECT: **BCC Agenda Item – Consent Agenda**
November 29, 2016 BCC Meeting
First Amendment to Hamlin Groves Trail Utility Line Construction Agreement
Contact Person: Andres Salcedo, P. E., Assistant Director
Utilities Department
407-254-9719

Orange County Utilities Department requested that SLF IV/Boyd Horizon West JV, LLC (Developer) construct County utilities on its behalf when the Developer constructs portions of the Hamlin Groves Trail which are within Horizon West Town Center development.

The First Amendment CIP Utility Work includes approximately 30 linear feet (LF) of 30-inch diameter water main, 1,100 LF of 24-inch diameter water main and 60 LF of 20-inch diameter water main within the right-of-way of Hamlin Groves Trail and one potable water booster pump station to be located on a parcel that will be donated by the Developer to Orange County.

The Developer shall design, permit, and construct the First Amendment CIP Utility Work and Orange County shall reimburse the Developer for the costs of construction according to the subject agreement.

The construction costs of the First Amendment Utility Work under this agreement include the construction cost of $1,685,383.70, a 10% contingency of $168,538.37 and engineering costs of $294,418.54. The costs to be paid by Orange County for the First Amendment Utility Work are limited to a total payment obligation amount not to exceed $2,148,340.61.

Orange County Attorney's Office staff reviewed the agreement and finds it acceptable. Utilities Department staff recommends approval.

Action Requested: **Approval and execution of First Amendment to Utility Line Construction Reimbursement Agreement for Hamlin Groves Trail Extension by and between Orange County and SLF IV/Boyd Horizon West JV, LLC, increasing the County's maximum cost obligation by $2,148,340.61.**

District 1.

APPROVED BY ORANGE
COUNTY BOARD OF COUNTY
COMMISSIONERS
BCC Mtg. Date: November 29, 2016

FIRST AMENDMENT TO UTILITY LINE CONSTRUCTION REIMBURSEMENT AGREEMENT FOR HAMLIN GROVES TRAIL EXTENSION

THIS FIRST AMENDMENT TO UTILITY LINE CONSTRUCTION REIMBURSEMENT AGREEMENT FOR HAMLIN GROVES TRAIL EXTENSION (the **"First Amendment"**) is made and entered into as of the latest date of execution below by and between **ORANGE COUNTY**, a charter county and political subdivision of the State of Florida (the **"COUNTY"**) whose address is 201 South Rosalind Avenue, Orlando, Florida 32801, and **SLF IV/Boyd Horizon West JV, LLC**, a Delaware limited liability company (the **"OWNER"**) whose address is 7586 West Sand Lake Road, Orlando, FL 32819. Hereinafter, the COUNTY and the OWNER may be referred to individually as a "Party" or collectively as the "Parties."

WITNESSETH:

WHEREAS, the Parties entered into that certain Utility Line Construction Reimbursement Agreement for Hamlin Groves Trail Extension, including Exhibits A through D, approved by the Orange County Board of County Commissioners on April 7, 2015 (the **"Original Agreement"**); and

WHEREAS, the COUNTY desires to include a water booster pump station as part of the County Utility Work as defined in the seventh Whereas clause of the Original Agreement; and

WHEREAS, the COUNTY has determined that the expenditures of funds and the achievement of the objectives of the Original Agreement, as modified by this First Amendment, is in the public interest .

NOW, THEREFORE, in consideration of the premises hereof and the mutual covenants set forth herein, the Parties agree as follows:

SECTION 1. RECITALS; DEFINED TERMS. All of the recitals contained herein are true and correct, and are incorporated herein by reference. Capitalized terms used herein shall have the meanings ascribed to them in the Original Agreement, as amended by this First Amendment.

SECTION 2. EXPANSION OF COUNTY UTILITY WORK. The term **"County Utility Work"** as described in the Original Agreement is hereby expanded in scope to include:

Water Booster Pump Station – A potable water booster pump and associated improvements as more particularly described and depicted in the attached **Exhibit "E"** of this First Amendment (the **"Location Map"**) and **Exhibit "F" ("Preliminary Design Sketch")**. Exhibit "E" and Exhibit "F"attached hereto are incorporated herein by reference.

SECTION 3. EXPANSION OF SCOPE OF SERVICES. The Scope of Services described in **Exhibit "B"** to the Original Agreement shall be deemed to include and encompass the expanded County Utility Work as set forth in Section 2, above, including Exhibits "E" and "F." The description of the additional scope of services is included in Exhibit "G," attached hereto and incorporated herein by reference.

SECTION 4. CONVEYANCE OF WATER BOOSTER PUMP STATION LAND. Prior to construction of the Water Booster Pump Station and related improvements, The OWNER shall convey to the COUNTY fee title to the mutually agreed upon land area comprising the final designed Water Booster Pump Station and minimum 20-foot wide driveway to a public right-of-way, together with mututally agreed upon easements for access and/or construction, if any. Such conveyance shall be in accordance with customary and acceptable Orange County real estate requirements including a final survey and legal description of the Water Booster Pump Station area, title insurance and environmental assessment, all subject to approval by the COUNTY.

SECTION 5. INCREASE TO COUNTY MAXIMUM COST OBLIGATION. The COUNTY's Maximum Cost Obligation is hereby increased by $2,148,340.61, from $4,195,715.00 to $6,344,055.61.

SECTION 6. WATER BOOSTER PUMP STATION AS SEPARATE PHASE OF PROJECT. Notwithstanding the inclusion of the Water Booster Pump Station as part of the County Utility Work and therefore part of the overall Project as defined in the Original Agreement, the parties understand that the design and construction of the Water Booster Pump Station will be implemented through separate design and construction contracts and may occur on a different timetable than the original Project scope as defined in the Original Agreement. The procedure for review and approval of design services and construction of the Water Booster Pump Station and related improvements shall be subject to the same overall terms and conditions, including reimbursement procedures, governing other aspects of the overall Project pursuant to the Original Agreement.

The Parties acknowledge that Phase 1 of the Project has already commenced within the Hamlin Groves Trail Extension ROW located on the Property. The remainder of the Project improvements to be installed within the ROW of the planned Hamlin Groves Trail Extension on the Conserv II Land has not yet commenced and is generally referred to by the Parties as "Phase II" of the overall Project. For clarity of reference, the Parties will refer to the design and construction of the Water Booster Pump Station as Phase III of the Project.

As separate phases with separate design and construction contracts, each phase may stand on its own, have separate performance and payment bonds and may be completed with full and final reimbursement on separate timetables not dependent upon the commencement or completion of any other phase.

SECTION 7. NO WAIVER OF SOVEREIGN IMMUNITY.

Nothing in this First Amendment or in the Original Agreement shall be construed as a waiver by contract of the COUNTY's sovereign immunity. The COUNTY's sovereign immunity may be waived only to the extent specifically waived under Section 768.28, Florida Statutes (2016), for action in tort.

SECTION 8. RATIFICATION OF AGREEMENT TERMS. Other than as amended by this First Amendment, the Agreement shall remain in full force and effect in accordance with its terms and is hereby ratified in all respects.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties hereto have caused these presents to be executed as of the dates indicated below.

ORANGE COUNTY, FLORIDA

By: Board of County Commissioners

By: _____
Teresa Jacobs
Orange County Mayor

ATTEST: Martha O. Haynie, County Comptroller
As Clerk of the Board of County Commissioners

By: _____
Deputy Clerk

Print: Katie Smith

Date: NOV 2 9 2016

WITNESSES:

SLF IV/BOYD HORIZON WEST JV, LLC, a Delaware limited liability company

By: Boyd Horizon West, LLC, a Florida limited liability company, Managing Member

By: _____
Scott T. Boyd, Manager

Date: 11/4/16

_____
Print Name: Penny A Selga

_____
Print Name: Heather Easterling

STATE OF FLORIDA

COUNTY OF ORANGE

The foregoing instrument was acknowledged before me by Scott T. Boyd, Manager of Boyd Horizon West, LLC, a Florida limited liability company, Managing Member of SLF IV/BOYD HORIZON WEST JV, LLC, a Delaware limited liability company, on behalf of the company, and who is known by me to be the person described herein and who executed the foregoing, this 4th day of November, 2016. He/she is personally known to me or has produced N/A as identification and did/did not take an oath.

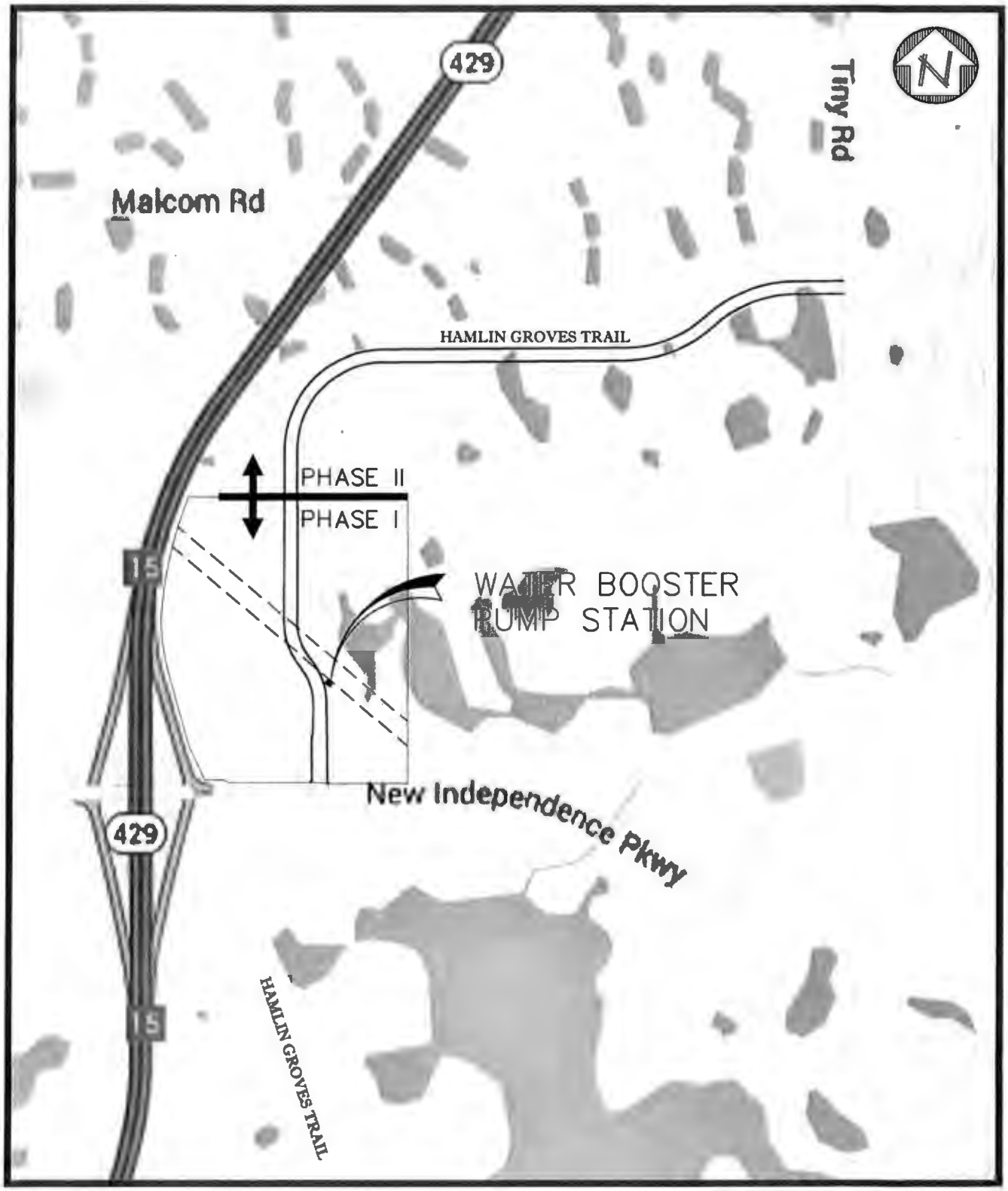
4th WITNESS my hand and official seal in the County and State last aforesaid this day of November, 2016.

PENNY NUNES
MY COMMISSION # FF 047392
EXPIRES: August 21, 2017
Bonded Thru Notary Public Underwriters

_____
Notary Public
Print Name: Penny Nunes
My Commission Expires: 8/21/17

EXHIBIT "E"

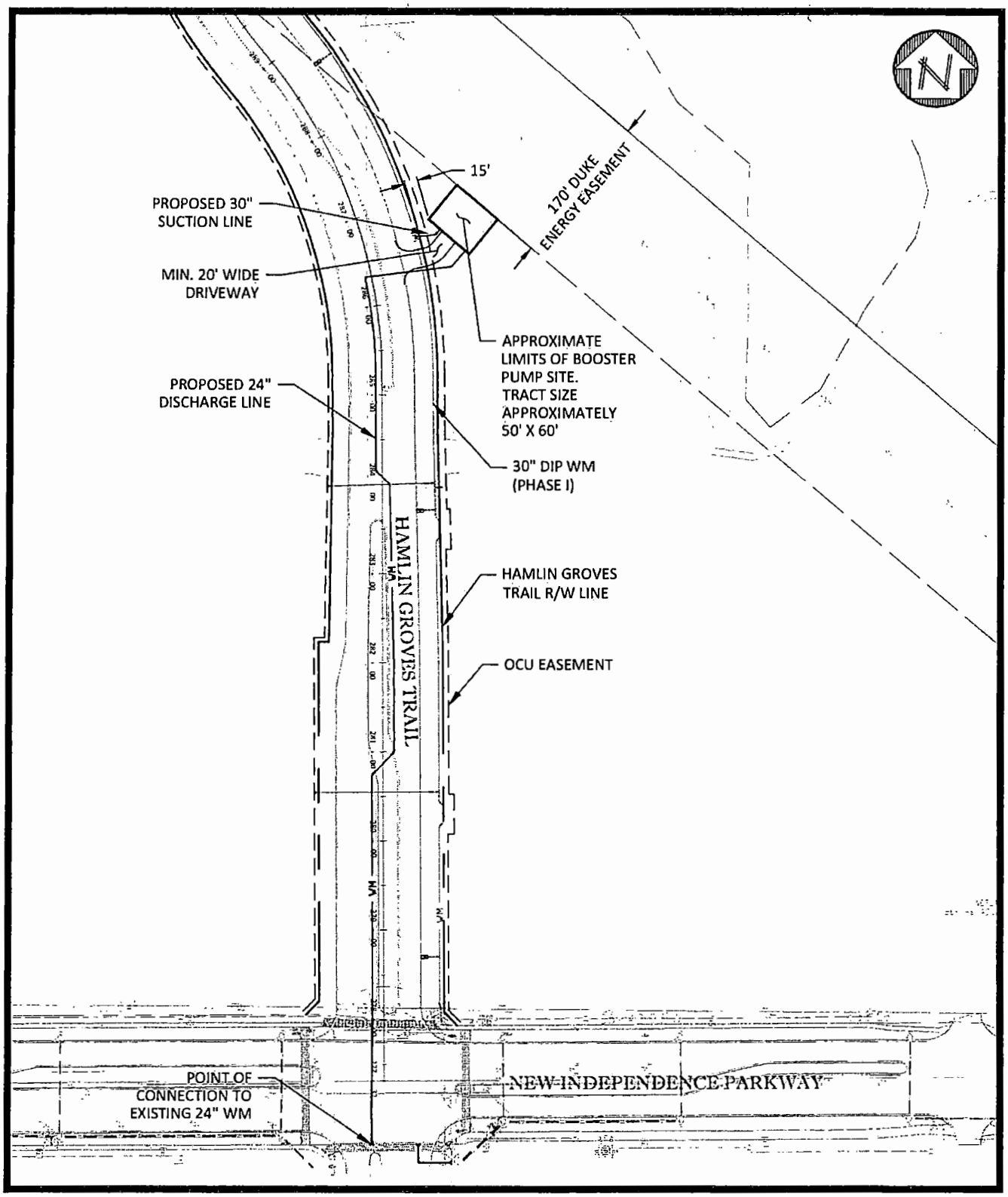
(Location Map)



KELLY, COLLINS & GENTRY, INC.	Scale: 1"=1200	**HAMLIN GROVES TRAIL WATER BOOSTER PUMP STATION**
	Date: 9/09/16	
	S: 20 T: 23 R: 27	
	Job # : 927.000	Exhibit: E-LOCATION MAP
	Drawn by: GPR	Source: GOOGLE MAPS
	Appvd. by: GRR	Area: ORANGE COUNTY, FL 1 of 2

EXHIBIT "F"

(Preliminary Design Sketch)



KELLY, COLLINS & GENTRY, INC.	Scale: 1" = 60'	**HAMLIN GROVES TRAIL WATER BOOSTER PUMP STATION**
ENGINEERING / PLANNING	Date: 9/09/16	
	S: 20 T: 23 R: 27	
	Job # :927.000	Exhibit: F–PRELIMINARY DESIGN SKETCH
	Drawn by: GPR	Source: KCG
	Appvd. by: GRR	Area: ORANGE COUNTY, FL 2 of 2

EXHIBIT G

ENGINEERING SCOPE OF SERVICE

Engineering Scope of Services for Hamlin Groves Trail Water Booster Pump Station and Water Main Extension Project

The engineering services required for the Hamlin Groves Trail Water Booster Pump Station and Water Main Project are presented in the following. The Project includes the design, permitting, and construction management for the installation of approximately 1190 LF of water main, a Water Booster Pump Station, and the reconstruction of roadway facilities impacted by the utility construction. See project description below.

The proposed water main extensions and pipe diameters are shown in the Exhibit 1 "Schematic Utilities Site Plan". The water booster pump station will be sized in accordance with the Horizon West Town Center Master Utility Plan and design based on OCU water technical specifications and standards.

PROJECT PURPOSE

In conjunction with other pipeline projects in the area, the Project will ultimately provide a means to boost water pressure to serve properties south of Hamlin Groves Trail (HGT) / New Independence Parkway (NIP) intersection prior to the construction of the Malcolm Road Water Supply Facility and to provide a boost in pressure west of Hamlin Groves Trail after construction of the WSF.

PROJECT DESCRIPTION

Professional engineering services will be provided to perform design, permitting, and complete construction of the following utilities as shown in attached Exhibit 1 "Schematic Utilities Site Plan":

1. The proposed project consists of a water booster pump station, a 24 inch water main extension along HGT and a 20 inch water main and isolation valves connections in the HGT / NIP intersection area to assist in isolating and directing the effectiveness of the boosted pressure. Connection to the HGT existing 30 inch water main will be made adjacent to the booster pump in the HGT right-of-way.
   1.1. The proposed booster pump will be located in a facility along the east side of Hamlin Groves Trail in a tract to be dedicated to Orange County Utilities. The booster pump will have a connection to the Hamlin Groves Trail existing 30 inch water main along the east side of HGT, adjacent to the booster pump station facility. This connection will be the suction pipe.
   1.2. The proposed 24 inch water main extension will run approximately 1100 LF from the existing 24 inch water main along NIP to the booster pump station in the limits of the HGT and NIP right-of-way and will connect to the proposed water booster pump station. This water main will be the discharged pipe.
   1.3. A 20 inch water main connection with isolation valves will be made in the HGT / NIP intersection from the South leg of the existing 20 inch water main, to the western leg of the existing 24 inch water main. .

SCOPE OF ENGINEERING SERVICES

The services to be provided by Kelly, Collins & Gentry, Inc. (KCG) for the proposed Hamlin Groves Trail water booster pump station and water main extension project, as described above, include:

1. Preliminary Engineering;
2. Corrosion Investigation; **N/A**
3. Surveying;
4. Geotechnical Investigation; **(See BFA Proposal)**

5. Ecological Investigation;
6. Preparation of Construction Documents;
7. Permitting
8. Bidding
9. Construction Administration Services.

1.0 Task 1 - Preliminary Engineering

The purpose of the preliminary engineering phase is to develop and present project completion alternatives to OCU that will allow OCU to make informed decisions regarding the Project. The preliminary engineering phase shall include:

1.1 Meet with OCU to initiate the project so that the Engineer and any subconsultants to the Engineer fully understand the intent of the Project, the scope of work for the Project, and OCU's specific requirements applicable to the Project.

1.2 Collect and review available information such as GIS data, aerials, topographic maps and surveys, right-of-way and easement records, record drawings, soils investigation reports, privately owned utility system data, zoning classification, flood maps, building codes, and standards that may be pertinent to the Project. The review shall include reviewing requirements of all agencies having jurisdiction over the Project. Meet with and coordinate with the agencies that will impact the Project.

1.3 Perform a site visit to evaluate existing conditions along the proposed pipe alignments that may impact the Project, including, but not limited to, locations of the proposed mains, staging and storage areas, and spoils piles.

1.4 Prepare a preliminary layout of proposed construction alignment of the 24 inch water main, which indicates all major conflicts with existing utilities and other underground features and all areas where special construction techniques must be considered. Additionally, present other pertinent information necessary for OCU to evaluate the proposed alignment and water booster pump station construction. Prepare a preliminary estimate of probable construction costs for the Project based on the following recommendations:

a. Preliminary alignment of the proposed 24 inch water main.
b. Appurtenances, i.e., valves, fittings, etc., provided to facilitate testing of the mains, isolating main segments for future expansion or for maintenance or repair, and addressing other construction or operational issues.
c. Construction methods based on existing site conditions and other construction planned within the Project limits.
d. Water Booster Pump Station facility, building, pumps, valves, etc.

2.0 Task 2 - Corrosion Investigation N/A

3.0 Task 3 - Surveying (See Allen & Company Proposal)

4.0 Task 4 - Geotechnical Investigation (See Terracon Proposal)

5.0 Task 5 - Ecological Investigation (See BFA Proposal for coordination)

6.0 Task 6 - Preparation of Construction Documents

The purpose of this task is to prepare construction drawings, including plan and profile sheets, construction details and notes. The construction documents shall be completed and meet the requirements for bidding as required by OCU in conjunction with the Developer. Documents shall comply with Attachment 5 – "Supplemental Requirements for Design and Record Documents" and the applicable requirements as described on the CIP Technical Specifications and Orange County Utilities Standards and Construction Specifications Manual. Design services will include submittal of construction documents at the 60%, 90% and 100% level of completion.

Drawings also should include structural and architectural design related to the slab and structure where the BPS pre-engineered package will be installed.

6.1 Prepare 60% Construction Drawings and Documents

6.1.1 A set of Drawings including a cover sheet, general notes sheets, plan and profile drawings at 1"=40' horizontal scale 1"=4' vertical scale shall be prepared indicating:

a. Cover and general notes;
b. Site location map;
c. Legend and symbols;
d. Survey, Boundary and topographic information; (by developer's surveyor)
    i. Topographic and boundary survey, as defined in Task 3 above.
    ii. Datum used to set the controls shown on the Drawings.
    iii. Surveyor's name, registration number, and the date the survey was performed
    iv. The baseline with state plane coordinates and elevations.
    v. Stations and offsets from the baseline to the proposed mains.
    vi. Found or set monuments for rights-of-ways, easements, or boundary surveys.
e. Existing and proposed utilities in plan and profile views; and
f. Applicable construction details.

6.1.2 Submit seven (7) sets of construction drawings and technical specifications and a digital copy as a searchable single PDF file at a 60% level of completion to OCU for review.

6.1.3 Coordinate with Development Engineering and Orange County Public Works (OCPW). Submit one (1) printed set of 60% Drawings (simultaneously with OCU submittal) as a separate submittal package with cover letter for review and comment to each:

a. Manager of Development Engineering Division;
b. Manager of Stormwater
c. Manager of Road and Drainage
d. Manager of Highway
e. Manager of Traffic Engineering
f. Manager of the Public Works Engineering Division

6.1.4 Meet with OCU within 30 days of the submittal to discuss the 60% submittal, prepare meeting minutes and CIP Comment Tracking Spreadsheet, submit the CIP Comment Tracking

Spreadsheet to OCU for verification, and subsequently revise the construction documents per OCU's comments.

6.1.5 Incorporate design data and other information obtained during the 60% review meeting, not shown on the 60% Drawings and documents or contained in the County's review comments, as required to prepare the 90% Drawings and documents.

6.2 Prepare 90% Construction Drawings and Documents

6.2.1 The minimum requirements of a 90% level completion are defined as the incorporation of County comments received and verified after review of the 60% submittal. At the 90% level of completion the Drawings and Specifications shall be at a level of completion that will allow the project to be reviewed by the OCU managers for pre-bid. A design Asset Attribute Table shall be included in the drawings in accordance with the requirements of the Manual If determined by the PM that the 90% level of completion requirements are not met, the corrected 90% construction documents shall be resubmitted and, if applicable, another 90% review meeting shall be attended by the Engineer.

6.2.2 Submit seven (7) sets of construction drawings and technical specifications and a digital copy of the drawings on AUTOCAD and pdf format, cost estimate and technical specifications at a 90% level of completion to OCU for review.

6.2.3 Meet with OCU within 30 days of the submittal to discuss the 90% submittal, prepare meeting minutes and CIP Comment Tracking Spreadsheet, and submit the CIP Comment Tracking Spreadsheet to OCU for verification.

6.2.4 Prepare and provide to OCU a Red-Line set of drawings, Technical Specifications and signed and sealed cost estimate, reflecting the comments provide during the 90% review meeting to be used on the Bid-Ready Review Group (BRG).

6.3 Prepare 100% Construction Drawings and Documents

6.3.1 Prepare the construction drawings, and other documents which are required for the 100% submittal addressing all the 90% review comments. Incorporate any final comments from the Bid-Ready Review Group (BRG) into the 100% complete drawings and specifications.

6.3.2 Submit to OCU six (6) signed and sealed hardcopy sets of construction drawings and technical specifications, a digital copy of the Drawings and Technical Specifications as a single PDF and a copy of the drawings in AutoCAD™ Civil 3D format

6.3.3 Prepare and provide State of Florida Registered Professional Engineer signed and sealed Engineer's Opinion of Probable Construction Cost.

6.3.4 At the 100% level of completion the Drawings and Specifications shall be at a level of completion that will allow the project to ready for bid. If determined by the PM that the 100%

level of completion requirements are not met, the corrected 100% construction documents shall be resubmitted and, if applicable, a 100% review meeting shall be attended by the Engineer.

7.0 Task 7 - Permitting

Permitting services will be provided, including the payment of fees which will be reimbursed by the County. Based on this project's scope of work, the following permits and services are anticipated:

7.1 Prepare and submit required Project related permit applications and supporting documentation necessary to obtain permits for construction and operation of the Project. The following permits are anticipated for this project:

a. FDEP: "Notice of Intent to Use the General Permit for Construction of Water Main Extensions for PWSs"

b. Ecological permits, if gopher tortoises or sand skinks are present at booster site.

c. Building and Safety Permits

d. Right-of-way, MOT

7.2 Respond to requests for additional information from permitting agencies.

7.3 Pay fees for permits. OCU will reimburse fees paid by the Engineer as part of the development reimbursement agreement

7.4 Provide to OCU information of required permits prior to BRG review meeting.

8.0 Bidding

8.1 KCG will prepare bidding documents in accordance with OCU and developer requirements.

8.2 KCG will disburse bid documents to list of bidders provided by the developer and to OCU for review.

8.3 KCG will attend pre-bid meetings and respond to request for additional information (RFI's).

8.4 KCG will prepare a letter of recommendation to OCU justifying which bid was selected.

8.5 KCG will provide OCU a digital copy of the Bid Set drawings and documents that will be used to advertise the project, titled "BID SET"

9.0 Task 9 - Construction Administration

OCU's Field Services Division provides construction inspection. If requested by the Field Services Division, the Engineer will provide general consultation and advice. All instructions to the Contractor shall be issued through OCU. The following tasks will be accomplished during the construction phase.

9.1 Prepare and submit conformed documents, modify bidding documents, if required, and obtain County/Procurement required and contractor executed documents; provide the County ten (10) full-size and five (5) half-size signed and sealed sets of the construction drawings and fifteen (15)

complete Technical Specifications (collectively referred to as the "conformed" Contract Documents) for OCU's use during the construction phase of the Project.

9.2 Provide OCU Project Manager (PM) a scanned digital version of the certified hard copy Conformed Construction Drawings and Technical Specifications in protected Adobe Acrobat document file (pdf) format and comprised of files in the tagged information file (.tif) format and signed and sealed by the Engineer of Record.

9.3 Provide a digital version of the Conformed Construction Drawings submitted in AutoCAD Civil 3D (.dxf or .dwg) format.

9.4 Organize and conduct a pre-construction conference. Distribute Conformed Contract Documents, take meeting minutes, and distribute written minutes to all attendees.

9.5 Review an estimate of 60 shop drawings and product submittals for conformance with the Contract Documents. Review and respond to Contractor's requests for information (RFI) and estimate of 20 RFIs. Maintain a shop drawing log and a RFI log.

9.6 Attend monthly construction progress meetings, an estimate of 12 meetings, take meeting minutes, and distribute minutes to all attendees.

9.7 Conduct biweekly site observation of the construction site and discuss concerns with OCU.

9.8 On a monthly basis review contractor surveyor certified as-built Asset Attribute Table and Pipe Deflection Table and provide comments to OCU Field Service or Chief Inspector.

9.9 Conduct substantial and final completion inspections of the Project and prepare appropriate "punch lists".

9.10 Review as-built drawings, as-built Asset Attribute Tables, and as-built pipe deflection tables, prepared by the Contractor's State of Florida registered Professional Surveyor; review and revise the as-built/record drawings, Asset Attribute Tables and deflection tables to reflect information provided by the Contractor.

9.11 Prepare Record Drawings in accordance with Attachment 5 "Supplemental Requirements for Design and Record Documents" based on information provided by the Contractor only. Provide three (3) sets of prints of the record drawings and an electronic file of the record drawings utilizing the AutoCAD™ Civil 3D format to OCU. Also provide electronic files of scanned images of the record drawings in the ".tif" file format to OCU.

9.12 Prepare and provide to OCU a certified post-construction boundary survey of the water booster pump station facility and driveway parcel, including any utility easement(s) that was needed to install these utilities.

9.13 Water booster pump station startup reports, manuals, standard operation procedures and warranties.

ATTACHMENT 1

Compensation

Engineering Scope of Services for
Hamlin Groves Trail Water Booster Pump Station and
Water Main Extension Project

Engineering Phase Services:

Task 1, 6, 7, 8:

Basis: Firm fixed fee amount in accordance with Contract

Amount: One Hundred and Twenty-Six Thousand Seven Hundred and Forty
($126,740.00)

Task 2, 3, 4: (BFA)

Task 5: (N/A Per Roadway Project)

Hourly Services:

Task 9 - Construction Administration:

Basis: Hourly, not to exceed the specified amount in accordance with Contract

Amount: Thirty-Four Thousand Four Hundred and Ninety
($34,490.00)

Direct Expense Estimate: Eight Thousand
($8,000.00)

Sub Consultants:

BFA Proposal - **$95,143.54**
Allen & Company Proposal - **$19,500**
Terracon - **$2,470**
Landscape Architect - **$8,075**

Total Contract Amount: Two Hundred and Ninety-One Thousand Nine Hundred Forty-eight and Fifty-Four Cents
($294,418.54)

ATTACHMENT 1

Hamlin Goves Trail Water Booster Pump Station & Water Main Extension Project

Staff Classification	Principal		Chief Engineer		Sr Project Manager		Senior Designer		Landscape Architect		Project Eng/Designer		CADD Operator		Technician		Administration		KCG Labor	
	Rate $ 260.00		Rate $ 160.00		Rate $ 125.00		Rate $ 110.00		Rate $ 85.00		Rate $ 75.00		Rate $ 60.00		Rate $ 50.00		Rate $ 40.00		TOTALS	
	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs
Tasks 1,6,7,8																				
1. Project Coordination Meetings	0	$0	0	$0	0	$0	24	$2,640	0	$0	0	$0	0	$0	0	$0	6	$240	30	$2,880.00
2. Interproject Coordination	10	$2,600	0	$0	8	$1,000	30	$3,300	0	$0	0	$0	0	$0	0	$0	20	$800	68	$7,900.00
3. Utility Plans	20	$5,200	30	$4,800	15	$1,875	90	$9,900	0	$0	0	$0	285	$17,100	0	$0	5	$200	445	$39,475.00
4. Utility Profiles	10	$2,600	20	$3,200	15	$1,875	70	$7,700	0	$0	0	$0	205	$12,300	0	$0	5	$200	325	$28,075.00
5. Intersection Details	2	$560	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	2	$560.00
6. Utility Design	0	$0	10	$1,600	0	$0	10	$1,100	0	$0	0	$0	0	$0	0	$0	0	$0	20	$2,700.00
7. Detail Sheets	0	$0	0	$0	0	$0	15	$1,650	0	$0	0	$0	25	$1,500	0	$0	0	$0	40	$3,150.00
8. Asset Tables	0	$0	0	$0	0	$0	20	$2,200	0	$0	0	$0	50	$3,000	0	$0	0	$0	70	$5,200.00
9. Roadway Plans	5	$1,400	20	$3,200	0	$0	70	$7,700	0	$0	0	$0	120	$7,200	0	$0	0	$0	215	$19,500.00
10. Roadway Profiles	5	$1,400	10	$1,600	0	$0	30	$3,300	0	$0	0	$0	80	$4,800	0	$0	0	$0	125	$11,100.00
11. Roadway Intersection Details	0	$0	6	$800	0	$0	10	$1,100	0	$0	0	$0	25	$1,500	0	$0	0	$0	40	$3,400.00
12. Roadway Details	0	$0	5	$800	0	$0	10	$1,100	0	$0	0	$0	15	$900	0	$0	0	$0	30	$2,800.00
																				$126,740.00
Task 9 - Construction Administration																				
1. Preconstruction Coordination/Conference	3	$840	0	$0	0	$0	3	$330	0	$0	0	$0	0	$0	0	$0	0	$0	6	$1,170.00
2. Monthly Progrss Meetings	6	$1,680	0	$0	0	$0	24	$2,640	0	$0	0	$0	0	$0	0	$0	6	$240	36	$4,560.00
3. Biweekly Site Observation	6	$1,680	0	$0	0	$0	48	$5,280	0	$0	0	$0	0	$0	0	$0	12	$480	66	$7,440.00
4. Shop Drawing Review	2	$560	0	$0	0	$0	30	$3,300	0	$0	0	$0	10	$600	0	$0	0	$0	42	$4,460.00
5. Contractor Clarification RFI	2	$560	0	$0	0	$0	30	$3,300	0	$0	0	$0	20	$1,200	0	$0	0	$0	52	$5,060.00
6. As-Built Reivew (Provided by Contractor)	2	$560	0	$0	0	$0	20	$2,200	0	$0	0	$0	10	$600	0	$0	0	$0	32	$3,360.00
7. Record Drawings	2	$560	0	$0	0	$0	30	$3,300	0	$0	0	$0	40	$2,400	0	$0	0	$0	72	$6,260.00
8. Certificate of Completion	4	$1,120	0	$0	0	$0	6	$660	0	$0	0	$0	0	$0	0	$0	10	$400	20	$2,180.00
																				$34,490.00
Landscaping																				
1. Landscape Plans	0	$0	0	$0	0	$0	0	$0	75	$6,375	0	$0	0	$0	0	$0	0	$0	75	$6,375.00
2. Landscape Details	0	$0	0	$0	0	$0	0	$0	10	$850	0	$0	0	$0	0	$0	0	$0	10	$850.00
3. Irrigation Plans	0	$0	0	$0	0	$0	0	$0	10	$850	0	$0	0	$0	0	$0	0	$0	10	$850.00
																				$8,075.00

ATTACHMENT 2

SUBCONSULTANT PROPOSALS

BFA Environmental Consultants

1230 Hillcrest Street *Orlando, Florida 32803*
Phone: (407) 896-8608 *Fax: (407) 896-1822*

MEMORANDUM BFA #2016-XX.xx

TO: Scott M. Gentry, P.E., Kelly Collins & Gentry Inc.

FROM: Willie E. Thomas, PE, BFA Environmental Consultants

DATE: October 28, 2016

SUBJECT: **Revised Proposal for Engineering Services**
Orange County Utilities Department
Hamlin Booster Pump Station

This memo is to present BFA Environmental Consultants' (BFA or Consultant) proposal for performing engineering services required to complete the Hamlin Booster Pump Station (BPS) Project as a component of the Orange County Utilities (OCU) West Service Area potable water transmission system. This proposal includes the proposed scope, fee, schedule, and all work and services needed to successfully complete the design, permitting, bidding assistance and construction administration services for the project.

DESCRIPTION OF PROJECT

The project includes the design and construction of a pre-engineered booster pump station and building to serve portions of OCU's West Service Area. The booster pump station operating conditions and hydraulic grade line requirements utilized for design will be provided by OCU. The booster pump station will be located along Hamlin Groves Trail near the Hamlin Reserve development.

The scope of services will include coordination with OCU on the evaluation of pressure zones, system pressures, and locations for system control valves. BPS elements will include site work, security wall, manual access gate, paved access driveway, a pre-engineered pump station with all necessary piping, pumps, motors, valves, pre-engineered building, and necessary appurtenances. The electrical, controls, instrumentation and SCADA system connection will be customized to OCU's standards. The Basis of Design for the proposed BPS will be similar to the recently completed Summerlake and McCormick Rd Booster Pump Stations operated by OCU.

SCOPE OF SERVICES

Engineering services will include the following tasks:

- Task 100 Preliminary Engineering;
- Task 200 Surveying (Survey services performed by others);
- Task 300 Geotechnical Investigation (Geotechnical services performed by others);
- Task 400 Ecological Investigation (No Services Included);
- Task 500 Construction Documents;
- Task 600 Public Relations: Community Meeting/Public Notification-Flier Production and Mailing Procedure (No Services Included);
- Task 700 Bidding Assistance; and
- Task 800 Construction Administration Services.

TASK 100 - PRELIMINARY ENGINEERING

The Preliminary Engineering task includes coordination with KCG and OCU regarding location and orientation of the BPS site. Consultant will coordinate with OCU's Engineering Division to assist in determining the pump design criteria and pressure zone conditions for this portion of OCU's West Service Area, including location criteria of any proposed system control valves. The hydraulic modeling will be performed by OCU's Engineering Division. Site planning of the proposed improvements will be conducted based on the information obtained in this task. Site planning of the proposed improvements will consider impacts to existing properties, drainage, perimeter wall, locations and relationship to existing facilities, functionality, and access.

This task will include selection and evaluation of acceptable pre-engineered package booster pump station manufacturers. Consultant will evaluate pump control features and the need for variable frequency drive units. This task includes the development and review of the structural and architectural design of the booster pump station building based on available pre-engineered buildings for booster pump stations. Consultant will prepare a preliminary layout of the site and booster pump station schematics to be included with a preliminary design memorandum summarizing the results of this task. Submit eight (8) copies of the draft and final preliminary design memorandum and attend one (1) review meeting.

TASK 200 - SURVEY (SURVEY SERVICES PERFORMED BY OTHERS, REVIEW AND COORDINATION BY BFA)

TASK 300 - GEOTECHNICAL INVESTIGATION (GEOTECHNICAL SERVICES PERFORMED BY OTHERS, REVIEW AND COORDINATION BY BFA)

TASK 400 – ECOLOGICAL INVESTIGATION (ECOLOGICAL SERVICES PERFORMED BY OTHERS, NO BFA SERVICES)

TASK 500 - CONSTRUCTION DOCUMENTS

This task includes the design and development of plans and technical specifications complete and ready to obtain competitive bids. Consultant will work closely with KCG and OCU during development of the plans and specifications. Construction documents for the proposed BPS will be similar to the recently completed Summerlake and McCormick Rd Booster Pump Stations operated by OCU. The following specific elements are included in this task:

Potable Water Booster Pumping System

This component includes design of the potable water package booster pumping system in a pre-fabricated building that is delivered to the site. The building floor plan shall accommodate all pumps, piping, valves, flow meter, electrical, and instrumentation/control equipment.

Electrical and Controls

This task includes the design of electrical, controls and emergency power receptacle for the booster bump station in accordance with current OCU design standards. A standby power generator is not included as emergency power will be provided by an existing OCU portable generator. It is anticipated that the controls and instrumentation will be customized to OCU standards and requirements including, but not limited to, lightning/surge protection and SCADA control system. Consultant or its Subconsultant will coordinate with the local power company to determine power feed requirements.

Subtask 510 – 60% Level of Completion

The Consultant shall prepare design drawings; plan views, sections and details for proposed structures; site plans and details for electrical, instrumentation, and mechanical (i.e., pipe, valves, etc); and technical specifications; and opinion of probable cost. The Consultant shall incorporate all KCG and OCU comments received and verified after review of the Preliminary Design Report submittal. Submit eight (8) sets of construction drawings and technical specifications at a 60% level of completion to KCG. The Consultant shall meet with KCG and OCU to discuss the 60% design submittal, prepare a written list of comments and submit to KCG and OCU for verification.

Subtask 520 - 90% Level of Completion

The Consultant shall revise and submit 90% design documents and cost estimate following incorporation of all KCG and OCU comments received and verified after KCG and OCU's review of the 60% submittal. Submit eight (8) sets of construction drawings and technical specifications at a 90% level of completion to KCG. The Consultant shall meet with KCG and

OCU to discuss the 90% design submittal, prepare a written list of comments and submit to KCG and OCU for verification.

Subtask 530 - 100% Level of Completion

The Consultant shall revise and submit final design documents and cost estimate following incorporation of all KCG and OCU comments received and verified after KCG and OCU's review of the 90% submittal. The Consultant shall prepare and provide State of Florida registered professional engineer signed and sealed Engineer's Estimate of Probable Cost and prepare and provide the Bid Schedule. Submit eight (8) sets of construction drawings and technical specifications at a 100% level of completion to KCG.

Subtask 540 - Permitting

Prepare and submit required project related permit applications and supporting documentation necessary to obtain required permits for construction and operation of the Project from all agencies with jurisdiction over the Project. Consultant will prepare and respond to all requests for additional information from permitting agencies. Coordination with SFWMD and modifications to the existing ERP will be the responsibility of KCG.

Consultant will prepare and submit a FDEP Potable Water System Specific Permit. Anticipated permit fee of $900 for the FDEP permit is included.

The selected contractor will be responsible for obtaining the County Building Permit for the project. Consultant will provide the construction drawings and assist in the submittal.

TASK 600 - PUBLIC RELATIONS: COMMUNITY MEETING/PUBLIC NOTIFICATION-FLIER PRODUCTION AND MAILING PROCEDURE

These services are not required for this project.

TASK 700 - BIDDING ASSISTANCE

1. Create construction drawings and specifications for bidding and ePlan™ distribution. Construction drawings and specifications shall be formatted as pdf documents and furnished to KCG for distribution.

2. Consider written questions from bidders related to the Project and prepare addenda as required to interpret, clarify or expand the Bidding Documents.

3. Prepare a tabulation of all bids received in spreadsheet format and provide a digital copy, review and evaluate the apparent three (3) lowest bidder's unit prices, experience and references and make recommendations regarding the award of the construction contract.

TASK 800 - CONSTRUCTION ADMINISTRATION

Construction inspection will be provided by OCU. Consultant will provide general construction administration for the Project that includes provision of consultation and advice. All instructions to the Contractor(s) shall be issued through KCG and OCU. The following tasks will be accomplished during the construction phase. The construction phase shall initiate the day after the Contractor has been awarded the construction contract.

1. Modify bidding documents, if required, and obtain all and contract executed documents; provide five (5) full size and five (5) half-size hard copy sets of the "Conformed" construction drawings and ten (10) complete, bound Project Manuals (collectively referred to as the conformed Contract Documents) for KCG and OCU's use during the construction phase of the Project. Submit one (1) certified, full size, hard copy sets of Conformed Construction Documents signed and sealed by the Engineer and digital Conformed Drawings in AutoCAD (dxf or dwg) and PDF formats. Provide a digital version of the conformed construction drawings in AutoCAD™ format (.dxf or .dwg) to the Contractor.
2. Preconstruction Conference: Plan, organize and conduct a pre-construction conference; distribute Conformed Contract Documents, take meeting minutes and distribute written minutes to all attendees.
3. Attend monthly construction progress meetings, take meeting minutes and distribute minutes to all attendees. Twelve (12) meetings are assumed for this scope of work.
4. Conduct biweekly site visits to observe the construction of the Project and discuss any concerns with KCG and OCU.
5. Provide clarifications, interpretation of the specifications, sketches and drawings to resolve actual field conflicts encountered and provide consultation and advice during the construction process, as requested by KCG and OCU.
6. Review shop drawings and product submittals for conformance with the Contract Documents.
7. If requested by KCG, evaluate requests for changes in contract price and time made by the Contractor.
8. Start-up: Review contractor's start-up plan and assist with start-up coordination. Attend start-up and field testing and assist KCG and OCU with coordination of comments and corrections.
9. Operation and Maintenance Manual: Review the supplier's/equipment manufacturers' operation and maintenance manual submitted by the Contractor for consistency with the Contract Documents. The scope does not include preparation of an operation and maintenance manual by the Engineer.

10. Conduct substantial and final completion inspections of Project and prepare appropriate "punch lists".
11. Prepare necessary documents and submit the project certification of completion and any necessary partial certifications to the FDEP to obtain all approvals for release of the facilities for use and including, but not limited, to partial Record Drawings.
12. Record Drawings
    a. The Engineer shall develop the Record Drawings from the As-built Drawings of the construction supplied by the construction contractor. The Record Drawings shall incorporate all partial clearance information. The Engineer shall indicate substantive deviations from the original design documents and certify whether the deviations are such that the original engineering design intent has or has not been "materially" accomplished by the finished construction. The Engineer shall fully and completely delineate the scope of the Engineer's work on all Record Documents and what services were performed by the Engineer upon which the certification is based.
    b. The Record Drawings shall be a compiled representation of the constructed project; shall contain a listing of the sources and the basis of information used in the preparation of the Record Drawings; shall contain a certification that they are believed to be correct to the best of the Engineer's knowledge and that the drawings meet the design intent.
    c. The Engineer shall submit three (3) certified, full size, hard copy sets of Record Drawings, signed and sealed by the Engineer of Record and containing appropriate notes or disclosures accompanying the certification that state the Engineer's determination that such modifications do or do not "materially" affect the permitted design.
    d. The Engineer shall submit a scanned digital version of the certified, hard copy Record Drawing in Adobe Acrobat protected document file (pdf) format and comprised of the tagged information file (tif) format.

SCHEDULE

The design and permitting will be completed in accordance with the schedule included as Attachment A.

COMPENSATION

The Engineer will perform Tasks 100 through 700 for a firm fixed fee (lump sum) of $63,296.84. The proposed hourly-not-to exceed fee estimate for Task 800 is $31,846.70. The total project fee is **$95,143.54**. A complete description of the proposed fee providing man-hour and fee information for each task is provided in Attachment B.

We appreciate the opportunity to be of service to KCG and look forward to working with you on this project. If you have any questions or require further information, please do not hesitate to contact me.

Hamlin Booster Pump Station
Orange County Utilities
October 28, 2016
Project Schedule

TASK	TIME TO COMPLETE		CUMULATIVE TIME	
Consultant Notice to Proceed	----			
PDM to OCU	4	Weeks	4	Weeks
OCU Review	2	Weeks	6	Weeks
90% to OCU	8	Weeks	14	Weeks
90% review by OCU	2	Weeks	16	Weeks
100% to OCU	3	Weeks	19	Weeks
Permitting	5	Weeks	24	Weeks
Advertise Project	1	Weeks	25	Weeks
Bids Received	5	Weeks	30	Weeks
Contractor Notice to Proceed	6	Weeks	36	Weeks
Construction Substantial Completion	360	Days	87	Weeks
Construction Final Completion	30	Days	92	Weeks

ATTACHMENT B-1

Hamlin Booster Pump Station
Orange County Utilities

Cost Summary

October 28, 2016

TASK	BFA Labor Totals		BFA Direct Costs	Subconsultant Costs	Project Total Costs
	Hours	Costs			
Task 100 Preliminary Engineering	139	$13,411.61	$177.40		$13,589.01
Task 200 Surveying and SUE	9	$930.07			$930.07
Task 300 Geotechnical Investigation	4	$422.65			$422.65
Task 500 Construction Documents	250	$23,656.17	$1,409.90	$19,527.80	$44,593.87
Task 700 Bidding Assistance	30	$2,690.17	$308.10	$762.97	$3,761.24
Task 800 Construction Administration Services	222	$22,279.79	$572.32	$8,994.59	$31,846.70
Project Totals	654	$63,390.46	$2,467.72	$29,285.36	$95,143.54

Tasks 100 thru 700 Lump Sum	$63,296.84
Task 800 Fee not to Exceed	$31,846.70
	$95,143.54

ATTACHMENT B-2

Hamlin Booster Pump Station
Orange County Utilities
Labor Costs

October 28, 2016

TASK	Project Manager		Project Engineer		Sr. Designer		Sr. CAD		Environmental Scientist I		2 Person S.U.E Crew		Administrative Support		BFA Labor	
	Billing Rate	$149.50	Billing Rate	$84.77	Billing Rate	$94.19	Rate	$83.72	Rate	$59.50	Rate	$139.78	Billing Rate	$41.11	Totals	
	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs	Hours	Costs
Task 100 Preliminary Engineering	**20**	**$2,990.00**	**41**	**$3,476.57**	**56**	**$5,274.64**	**15**	**$1,606.96**					**4**	**$164.44**	**139**	**$13,411.61**
Kick Off Meeting	2	$299.00			4	$376.76									6	$675.76
Site Visits and Data Collection	2	$299.00	3	$254.31	8	$753.52									13	$1,306.83
Preliminary Design Analysis and Layout	6	$897.00	8	$678.16	24	$2,260.56	12	$1,004.64							50	$4,840.36
Draft Report Preparation and Meeting	8	$1,196.00	24	$2,034.48	16	$1,507.04							2	$82.22	50	$4,819.74
Final Report Preparation	2	$299.00	6	$508.62	4	$376.76	6	$502.32					2	$82.22	20	$1,768.92
Task 200 Surveying and SUE	**2**	**$299.00**	**3**	**$254.31**	**4**	**$376.76**									**9**	**$930.07**
Subtask 201 Survey Coordination and Review	2	$299.00	3	$254.31	4	$376.76									9	$930.07
Task 300 Geotechnical Investigation	**1**	**$149.50**	**1**	**$84.77**	**2**	**$188.38**									**4**	**$422.65**
Subtask 310 Coordination and Review	1	$149.50	1	$84.77	2	$188.38									4	$422.65
Task 500 Construction Documents	**33**	**$4,933.50**	**58**	**$4,916.08**	**82**	**$7,725.48**	**59**	**$4,688.32**					**11**	**$452.21**	**250**	**$23,656.17**
Subtask 510 - 60% Level of Completion	11	$1,644.50	20	$1,695.40	43	$4,050.17	24	$2,009.28							98	$9,399.35
510.1 - 60% Design Submittal	8	$1,196.00	20	$1,695.40	40	$3,767.60	24	$2,009.28							92	$8,668.28
510.4 - Review Meeting	3	$448.50			3	$282.57									6	$731.07
Subtask 520 - 90% Level of Completion	*12*	*$1,794.00*	*18*	*$1,525.86*	*33*	*$3,108.27*	*20*	*$1,674.40*					*6*	*$246.66*	*89*	*$8,349.19*
520.1 - 90% Design Submittal	8	$1,196.00	15	$1,271.55	30	$2,825.70	18	$1,506.96					4	$164.44	75	$6,964.65
520.2 - Review Meeting	3	$448.50			3	$282.57									6	$731.07
520.3 - BRG Submittal	1	$149.50	3	$254.31			2	$167.44					2	$82.22	8	$653.47
Subtask 530 - 100% Level of Completion	*4*	*$598.00*	*8*	*$678.16*	*8*	*$753.52*	*8*	*$669.76*					*2*	*$82.22*	*30*	*$2,781.66*
530.1 - 100% Design Submittal	4	$598.00	8	$678.16	8	$753.52	8	$669.76					2	$82.22	30	$2,781.66
Subtask 540 - Permitting	*6*	*$897.00*	*12*	*$1,017.24*	*8*	*$753.52*	*4*	*$334.88*					*3*	*$123.33*	*33*	*$3,125.97*
540.1 - FDEP Permit	4	$598.00	4	$339.08			2	$167.44					1	$41.11	11	$1,145.63
540.2 - Stormwater Permitting																
540.3 OC Bldg. Permit Coordinator	2	$299.00	8	$678.16	8	$753.52	2	$167.44					2	$82.22	22	$1,980.34
Task 600 Public Relations (No Services)																
Task 700 Bidding Assistance	**4**	**$598.00**	**12**	**$1,017.24**	**7**	**$659.33**	**3**	**$251.16**					**4**	**$164.44**	**30**	**$2,890.17**
Subtask 710 - Bid Documents	1	$149.50	3	$254.31			3	$251.16					4	$164.44	11	$819.41
Subtask 720 - Pre-Bid Conference																
Subtask 730 - RAI Responses/Issue Addenda	2	$299.00	3	$254.31	6	$565.14									11	$1,118.45
Subtask 740 - Bid Evaluation/Recommendation	1	$149.50	8	$508.62	1	$94.19									8	$752.31
Task 800 Construction Administration Services	**32**	**$4,784.00**	**19**	**$1,610.63**	**158**	**$14,882.02**	**11**	**$920.92**					**2**	**$82.22**	**222**	**$22,279.79**
Subtask 810 - Conformed Construction Documents	1	$149.50	3	$254.31	2	$188.38	3	$251.16					2	$82.22	11	$925.57
Subtask 820 - Preconstruction	2	$299.00			6	$565.14									8	$864.14
Subtask 825 - Progress Meetings	3	$448.50	4	$339.08	30	$2,825.70									37	$3,613.28
Subtask 840 - Contractor RFIs/Coordination/Clarifications	12	$1,794.00			40	$3,767.60									52	$5,561.60
Subtask 850 - Submittal Review	2	$299.00	6	$508.62	32	$3,014.08									40	$3,821.70
Subtask 860 - Record Documents Review	1	$149.50			6	$565.14									7	$714.64
Subtask 870 - Review/Evaluate Change Order Requests	2	$299.00			8	$753.52									10	$1,052.52
Subtask 880 - Start-up Assistance	2	$299.00			12	$1,130.28									14	$1,429.28
Subtask 885 - O&M Manual Review	1	$149.50			6	$565.14									7	$714.64
Subtask 890 - Substantial and Final Completion Inspections	3	$448.50			8	$753.52									11	$1,202.02
Subtask 891 - Record Drawings	1	$149.50	2	$169.54	8	$753.52	8	$669.76							19	$1,742.32
Subtask 892 - Certification of Completion	2	$299.00	4	$339.08											6	$638.08
Total	**82**	**$13,754.00**	**134**	**$11,359.18**	**319**	**$30,046.81**	**88**	**$7,367.36**					**21**	**$863.31**	**654**	**$63,390.46**

ATTACHMENT B-3

Hamlin Booster Pump Station
Orange County Utilities

Direct Costs

October 28, 2016

TASK	Color Copies		Plan Sheets*		Binding		Courier Delivery		Postage		B/W Copies		Direct Costs		Total
		Rate		Rate		Rate		Rate		Rate		Rate	BFA Direct	Subconsultants	Direct
	Units	$0.50	Units	$0.45	Units	$4.00	Units	$22.50	Units	$0.44	Units	$0.05	Costs		Costs
Task 100 Preliminary Engineering	120	$60.00			12	$48.00	2	$45.00	10	$4.40	400	$20.00	$177.40		$177.40
Task 200 Surveying and SUE															
Task 300 Geotechnical Investigation															
First Watch Search and Laoratory															
Task 400 Ecological Investigation															
FWC Mitigation Contribution Fee															
Task 500 Construction Documents	36	$18.00	288	$129.60	22	$88.00	3	$67.50	20	$8.80	3,960	$198.00	$1,409.90	$19,527.80	$20,937.70
E/T Eng. Technologies														$2,854.00	
EMI Consulting														$16,673.80	
FDEP Permit Fee													$900.00		
Task 600 Public Relations (No Services)															
Task 700 Bidding Assistance	32	$16.00	256	$115.20	16	$72.00	3	$67.50	10	$4.40	660	$33.00	$308.10	$762.97	$1,071.07
EMI Consulting														$762.97	
Task 800 Construction Administration Services	32	$16.00	256	$115.20	16	$64.00	8	$180.00	48	$21.12	3,520	$176.00	$572.32	$8,994.59	$9,566.91
EMI Consulting														$7,987.59	
E/T Eng. Technologies														$1,007.00	
Total		$110.00		$360.00		$272.00		$360.00		$38.72		$427.00	$2,467.72	$29,285.36	$31,753.08

*Plan Sheets (Blackline Copies - 22" x 34")

ATTACHMENT B-4

Hamlin Booster Pump Station

Orange County Utilities

Fee Breakdown - Engineering Services

October 28, 2016

	Fee Amount	% of Project Total
BFA Labor Costs	$63,390.46	66.6%
Subconsultant - E/I EMI Consultaning Specialties	$25,424.36	26.7%
E/T Engineering Technologies	$3,861.00	4.1%
BFA Direct Costs	$2,467.72	2.6%
Total	$95,143.54	100.0%

September 28, 2016

Terracon

KCG, Inc.
1700 North Orange Avenue, Suite 400
Orlando, Florida 32804

Attn: Scott M. Gentry, P.E.
P: [407] 898-7858
E: smgentry@kcgcorp.com

Re: Proposal for Geotechnical Engineering Services
Water Booster Pump Station
Hamlin Groves Trail
Orange County, Florida
Terracon Proposal No. PH1165293

Dear Mr. Gentry:

Terracon Consultants, Inc. (Terracon) is pleased to present this proposal for providing a geotechnical evaluation for the above-referenced project. The purpose of the exploration is to obtain geotechnical engineering data to assist in the design and construction of the proposed pump station at the above-referenced project location. This proposal outlines our understanding of the project, presents a recommended scope of services, and contains a time and cost estimate for providing those services.

A. PROJECT INFORMATION

Site Location

ITEM	DESCRIPTION
Location	This project site is located on Hamlin Groves Trail, north of New Independence Parkway in Orange County, Florida.
Current Ground Cover	The project area is located adjacent to a roadway in an area with commercial and residential development.

Project Description

ITEM	DESCRIPTION
Project Description	The project will include construction of an above ground water booster pump station.

Should any of the above information or assumptions be inconsistent with the planned construction, please let us know so that we may make any necessary modifications to this proposal.

B. SCOPE OF SERVICES

GEOTECHNICAL EVALUATION

The services for the Geotechnical Engineering Evaluation to be provided by Terracon are summarized in the following paragraphs.

Field Program – The following field program is based on the proposed project understanding and the boring location requested by you. We propose to perform one (1) Standard Penetration Test (SPT) boring to a depth of 20 feet in the proposed pump station location. The boring may be relocated from the requested location depending on buried and overhead utilities.

Sampling will be in general accordance with industry standard procedures wherein split-barrel samples are obtained. Five (5) samples will be obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. In addition we will observe and record groundwater levels during and after drilling. Once the samples have been collected and classified in the field, they will be placed in appropriate sample containers for transport to our laboratory.

Subsurface conditions may be encountered which merit alterations of the field boring and/or sampling programs described above. However, we will not perform additional scope or incur additional expense without your authorization. Borings will be backfilled with the soil cuttings, unless jurisdictional requirement indicates they must be grouted.

Conditions/Items to be provided by Client – Items to be provided by the client include the locations of proposed site improvements, right of entry to conduct the exploration and an awareness and/or location of any private subsurface utilities existing in the area. We will contact Sunshine State One Call of Florida (SSOCOF) for location of utilities in public easements. Location of private lines on the property is not part of the SSOCOF or Terracon scope. All private lines should be marked by others prior to commencement of drilling.

Terracon will take reasonable efforts to reduce damage to the property, such as rutting of the ground surface. However, it should also be understood that in the normal course of our work some such disturbance could occur. We have not budgeted to restore the site beyond backfilling our boreholes. If there are any restrictions or special requirements regarding this site or exploration, these should be known prior to commencing field work.

Our fee is based on the site being accessible to our truck-mounted drilling equipment and Terracon providing layout of the boring; additional costs may result if this is not the case. It does include a limited amount of services associated with site clearing, wet ground conditions, tree and shrub clearing for access to the boring. It does not include damage of landscape or locations of underground utilities beyond contacting a "one-call" locate service. If such conditions are known to exist on the site, Terracon should be notified so that we may adjust our scope of services and fee, if necessary.

For safety purposes, the boring will be backfilled immediately after their completion. Excess soil cuttings would be disposed of on the site.

SAFETY - *IIF*

At Terracon, we all have a personal and uncompromising commitment to everyone going home safely each and every day. Incident and Injury-Free (*IIF*) is about care and concern for people. It is our personal and organizational commitment at all levels of the company and is where safety is held as a core value as well as an operational priority. Working safely is an inseparable part of working correctly, just as much as other operational priorities, in particular quality, profitability and schedule. Incident and Injury-Free is our commitment to our people and others, who we value for who they are and what they do. *IIF* is not just something we do, it's in everything we do.

As part of our IIF process, we will prepare a "Pre-Task Plan" for this project where we will identify the potential site safety and job hazards associated with your site. Our Pre-Task Plan will identify and prepare our personal to be able to handle conditions such as but not limited to traffic control, environmental contamination, site access issues, overhead and underground utilities, adverse weather conditions, and personal protection equipment and will continually be reviewed and reevaluated throughout the field work activities. We understand that each site is unique and may contain different safety conditions and as a company to protect our personal as well as others, we look at each site individually to identify the potential concerns.

Laboratory Testing – The samples will be tested in our laboratory to determine physical engineering characteristics. Testing will be performed under the direction of a Geotechnical Engineer and will include visual classification, moisture content, wash 200 sieve analysis, and Atterberg limits, as needed. We understand that environmental classification testing is not required.

Engineering Analysis and Report – The results of our field and laboratory programs will be evaluated by a professional Geotechnical Engineer licensed in the State of Florida. Based on the results of our evaluation, an engineering report will be prepared that details the results of the testing performed, provides logs of the boring, and a diagram of the site/boring layout. The report will include the following:

- Computer generated boring log with soil stratification based on visual soil classification.
- Summarized laboratory data.
- Groundwater levels observed during drilling.
- Estimated seasonal high groundwater levels.
- Boring location plan.
- Subsurface exploration procedures.
- Encountered soils conditions.
- A discussion of general site preparation techniques, excavation, pump station foundation design recommendations, backfilling and compaction for installation of the proposed pump station.

SCHEDULE

Terracon can begin the field exploration program within about one week after receipt of the signed agreement and site plans, if the site and weather conditions permit. We estimate the final geotechnical report can be completed within about one to two weeks after the soil boring is completed. In situations where information is needed prior to submittal of our report, we can provide verbal information or recommendations for specific project requirements after we have completed our field and laboratory programs. Deliverables will include a scanned draft version of our report to you. Upon approval of the draft report, a signed and sealed report will be provided.

In order to comply with the proposed schedule, please provide the following items at the time of notification to proceed.

- Signed Authorization to Proceed evidencing acceptance of this scope of services.
- Right of entry to conduct the evaluation.
- Notification of any restrictions or special requirements (such as confidentiality, scheduling, or on-site safety requirements) regarding accessing the site.
- An accurate legal description and/or a diagram of the site such as a surveyor's plat map or scaled architect's drawing (if such diagrams exist).

C. COMPENSATION

For the scope of services outlined in this proposal, we estimate that our fees will be as follows:

SERVICE	FEE
BASE GEOTECHNICAL ENGINEERING SERVICES *	$ 2,470.00

Should it be necessary to expand our services beyond those outlined in this proposal, we will notify you, then send a supplemental proposal stating the additional services and fee. We will not proceed without your authorization, as evidenced by your signature on the Supplemental Agreement form.

D. AUTHORIZATION

This proposal may be accepted by providing us with a sub-consultant agreement. This proposal is valid only if authorized within sixty days from the listed proposal date.

We appreciate the opportunity to provide this proposal and look forward to the opportunity of working with you.

Sincerely,
Terracon Consultants, Inc.

Elias N. Jammal, P.E.
Senior Geotechnical Engineer

Jay W. Casper, P.E.
Principal

Attachments: Scopes of Services and Fee Estimate

GEOTECHNICAL SERVICES
SCOPE OF SERVICES AND FEE ESTIMATE
WATER BOOSTER PUMP STATION
HAMLIN GROVES TRAIL
ORANGE COUNTY, FLORIDA
PROPOSAL NO. PH1165293

	DESCRIPTION OF WORK	QTY.	RATE	UNIT	AMOUNT
I.	**FIELD EXPLORATION**				
A.	Mobilization of Crew and Equipment				
	-- Truck Mounted Equipment (0 to 25 miles)	1	$ 450.00	per trip	$ 450.00
B.	Standard Penetration Test (SPT) Borings (1 @ 20')				
	-- 0 to 50 feet	20	$ 12.00	per l.f.	$ 240.00
C.	Site Reconnaissance/Utility Coordination				
	-- Senior Engineering Technician	4	$ 65.00	per hour	$ 260.00
	Subtotal				$ 950.00
II.	**LABORATORY TESTING**				
A.	Grain Size Analysis (Single Sieve)	1	$ 30.00	each	$ 30.00
B.	Atterberg Limits	1	$ 75.00	each	$ 75.00
C.	Natural Moisture	1	$ 10.00	each	$ 10.00
D.	Corrosion Series	1	$ 140.00	each	$ 140.00
	Subtotal				$ 255.00
III.	**ENGINEERING AND TECHNICAL SERVICES**				
A.	Senior Engineer	1	$ 170.00	per hour	$ 170.00
B.	Project Engineer	6	$ 125.00	per hour	$ 750.00
C.	CADD Operator	3	$ 75.00	per hour	$ 225.00
D.	Administrative Assistant	2	$ 60.00	per hour	$ 120.00
	Subtotal				$ 1,265.00
	TOTAL FOR PROJECT				$ 2,470.00

ALLEN
&
COMPANY
Professional Surveyors & Mappers

September 23, 2016

Kelly, Collins & Gentry, Inc.
Attn.: Scott M. Gentry, P.E.
1700 N. Orange Ave., Suite 400
Orlando, FL 32804

Cc: Dennis Seliga
Email: dseliga@boyddev.com

RE: Booster Pump Hamlin North - Additional Services – Exhibit B (20110078)

Dear Mr. Gentry:

We appreciate your consideration of ALLEN & COMPANY, INC. to provide additional professional land surveying services for the above referenced project. These services will include items listed on Exhibit "B" to be billed Lump Sum as shown on Exhibit "B", attached, plus out-of-pocket expenses incurred on the clients behalf. Also, included in this contract are the attached "Standard Provisions of Agreement for Professional Services".

The survey will be prepared in accordance with the minimum technical standards for surveys as set forth in Chapter 5J-17 Florida Administrative Code, pursuant to Section 472.02, Florida Statutes.

The following additional provisions are included in this contract:

1. The terms of this agreement shall be valid for client acceptance for a period of sixty (60) days from the date of execution by Allen & Company, Inc. after which time this contract offer becomes null and void if not accepted formally (evidenced by receipt of an executed copy of this document).

2. This agreement may be terminated by either party within fifteen (15) days written notice. In the event of termination, Allen & Company, Inc. shall be compensated to the date of termination, including direct expenses then due.

16 E Plant Street ■ Winter Garden, Florida 34787 ■ 407/654/5355 ■ FAX 407/654/5356

3. All rates and fees quoted in this document shall be effective for a period of twelve (12) months, after which time they may be renegotiated with the client.

4. All original documents shall be retained by Allen & Company, Inc. and will remain their property. This information is proprietary and will not be shared with others without prior written consent. The client will be provided with reproducible copies of all original documents upon request, and at client expense.

5. The client will pay invoices upon receipt and understands interest charges of 1.5% per month will be applied to any unpaid balance. Allen & Company, Inc. may elect to stop work until payment is received. If work is stopped for thirty (30) days or more, Allen & Company, Inc. may be compensated for start-up costs when work resumes.

6. Upon client request, we will contract and/or coordinate with applicable transportation, environmental, geotechnical, and engineering consultants, and will rely upon their work; however, Allen & Company, Inc. assumes no liability for the accuracy of their work.

Thank you for this opportunity and we look forward to working with you on this exciting new project. Please sign, date and return a copy of this agreement as your authorization to proceed with these professional services. Should you have any questions, please do not hesitate to call.

Sincerely,

ALLEN & COMPANY, INC.

Jim Rickman

James L. Rickman, P.S.M.
Vice President

BY_____ DATE:_____

EXHIBIT B

Booster Pump – Hamlin North

Scope/quote:

Minimum Requirements for Survey Accuracy and Control as required by Orange County Utilities

TASK 300 – Survey

1. Subtask 320 - Description and Sketch to Accompany Description for Temporary Construction Easement Acquisition. Estimate 5 sketches at $450.00 each.....$2,250.00

2. Subtask 332 - Boundary Survey for Acquisition Purposes.....$1,750.00

3. Subtask 340 - Right-of-Way Locations.....$2,500.00

4. Subtask 350 - Topographic Survey.....$3,500.00

5. Subtask 360 - Collection and Depiction of Existing Subsurface Utility Data.....$7,500.00

6. Subtask 370 - Survey Control and Baselines.....$2,000.00

7. Deliverables
   - A. A single PDF file for data collected, control, title search of public records, last deeds of records or other data utilized in the Survey work effort.
   - B. Submit three (3) signed and sealed paper copies and electronic AutoCAD files of the Topographic and Boundary Survey in the 60% Design submittal.
   - C. Submit three (3) signed and sealed 8 1/2" x 11" paper copies and electronic PDF files of the Boundary Survey.
   - D. Submit four (4) signed and sealed paper copies of the Temporary Construction Easement and an electronic PDF file.
   - E. One (1) signed paper copy of MTS Survey Checklist completed.
     If the County has any review comments, the Surveyor shall address those comments and resubmit.

Please note – further description of Task 300 Survey (and all Subtasks listed above) is included on following attached pages.

Minimum Requirements
For Survey Accuracy and Control

TASK 300 – SURVEY

Description of Project....

Insert (if applicable, include linear feet of route)

Subtask 310 - Title Search (Not applicable)

Subtask 320 - Description and Sketch to Accompany Description for Temporary Construction Easement Acquisition

The Surveyor will provide Temporary Construction Easement(s) description with sketch prepared on 8 ½" x 11" sheet(s) with a 1" x 3" blank space in upper right hand corner for recording in the Official Records of Orange County. The description with sketch shall meet or exceed MTS and meet Real Estate Management's requirements. A Boundary Survey is not required for temporary construction easements (for format purposes, see Example 1, "Boundary Survey for Acquisition").

Subtask 331 - Boundary Survey for Non-acquisition Purposes (Not applicable)

Subtask 332 - Boundary Survey for Acquisition Purposes

Provide a Boundary Survey for fee simple property and/or easements including all improvements to the site for acquisition by Orange County and shall be prepared on an 8 ½" x 11" sheet(s) with a 1" x 3" blank space in upper right hand corner for recording in the Official Records of Orange County. The Survey along with the Survey Map Report and/or legal description (see Example 1, "Boundary Survey for Acquisition") shall be submitted to use in parcel acquisitions and shall the minimum requirements of the following:

1. Chapter 5J-17 Minimum Technical Standards (MTS)_
2. Meet 2011 Minimum Standard Detail requirements for ALTA/ACSM Land Title Surveys that does not include Table A items
3. Meet Orange County Real Estate Management requirements

The Boundary Survey shall be certified to Orange County and First American Title Insurance Company and use the MTS certification statement (see General Requirements) and the

ALTA/ACSM certification statement: *"This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2011 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes no Table A items. The field work was completed on* _____.

The area of the parcel being surveyed is estimated to be **insert #** acres.

Subtask 333 - Wetlands Boundary Survey (Not applicable)

Subtask 340 - Right-of-Way Locations

Existing plats and land records containing the project right-of-ways shall be obtained and reviewed. Sufficient monumentation will be recovered, field located and verified in order to calculate and determine the right-of-way lines through the project area, as well as any platted easements adjacent to the right-of-ways. The right-of-ways will be monumented at each block corner, angle point, and the beginning and end of each curve. This task will require setting or recovering approximately **insert #** of monuments. Found or set monuments for right-of-ways, easements and lot lines shall be adequately depicted on the Topographic Survey. Sufficient dimensions will be shown to support the location of the right-of-way lines relative to the survey control baselines. Reference point details will be included in the CADD files provided.

Any major discrepancy between field monumentation and the right-of-way established by the surveyor shall be noted on the survey and described within the Surveyor's Report. The Surveyor shall notify the Utilities Project Manager in writing the effect of the discrepancy.

Subtask 350 - Topographic Survey

Provide a Topographic Survey (see Example 3 "Topographic Survey for Design") for [describe the limits of the survey]. The survey shall be conducted in accordance with the MTS and meet the requirements of Table 1 Minimum Survey Accuracies, whichever is more stringent. The Surveyor shall prepare a Topographic Survey to provide Utilities with sufficient data to design a proposed water, reuse, force and/or gravity main and/or pump station constructed within existing and/or proposed right of way, easement or site. The construction corridor referenced herein (limits of the Topographic Survey) is defined as the area to be impacted by construction of the proposed improvements. Other factors outside the construction corridor shall be surveyed to support ancillary activities, such as maintenance of traffic (MOT), etc.

The horizontal and vertical spatial relationship of the above ground natural or man-made features lying within the limits of survey defined will be established and mapped. Elevations shall be taken along the route at 100 foot intervals and at apparent high and low points. Spot elevations shall be

taken as necessary to identify significant elevation changes occurring within the limits of survey. Trees having a diameter of six (6) inches (measured three feet above the ground level) lying within the limits of survey, shall be located. Monuments shall be set for bench marks outside the limits of construction at intervals not to exceed 1,400 feet. The location of benchmarks shall be coordinated with the design such that a minimum of one monumented bench mark is located within the limits of each sheet of the construction plans. The Topographic Survey shall be shown on 22" x 34" drawings at a scale of 1" = 20'.

Subtask 360 - Collection and Depiction of Existing Subsurface Utility Data

Surface appurtenances of utilities such as water meters, hydrants, valves, sanitary lateral clean-outs, utility poles, guy poles and anchors, junction boxes, and transformers shall be located within the limits of the proposed topographic corridor. Utility poles with direction of overhead lines shall be shown on the Topographic Survey. Sanitary and drainage structures and shall be located with rim and invert elevations, size, and material. The size, material, and the direction of sewer pipes shall be located. The Surveyor shall investigate any utility systems within or crossing the Topographic Survey area.

Surveyor shall request utility locates from the Sunshine State One Call Service. Surveyor shall submit verification that Sunshine One was notified as follows.

A. Utilities listed with match design ticket provided by SSOCOF One Call.
B. Copies of letters to utilities sent requesting markups
C. Follow-up with utilities that did not respond by date requested verified

The Surveyor shall locate the marked utilities performed by the Utility Company representatives and designate on the Topographic Survey the respective CI / ASCE 3802 Subsurface Utility Quality Level B through D Indexes.

The Surveyor shall use ground penetrating radar and electronic line locating equipment to determine the horizontal location of the existing utilities for Quality Level A utilities not under roadway pavement. The utilities shall then be verified by some excavation means to verify the type of utility and size and establish the vertical elevation of the utility. Surveyor has made an allowance of **insert #** Verified Vertical and Horizontal (VVh) locations for Utility Quality Level A and **insert #** ground penetrating radar cross sections at the following locations. See attached drawing for the location of the GPR cross section locations.

1. Ground penetrating radar shall be used for the full width of the right-of-way to locate all utilities at minimum cross section intervals of 300' or before and after each road intersection whichever is appropriate. VVhs shall be performed for all utilities located.
2. Proposed pipe crossings of existing utilities

3. Proposed pipe connections to existing utilities

All existing utilities shall be shown on the Topographic Survey in accordance with the CI/ASCE 38-02, ASCE Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data. The date of the field work shall be depicted with the Subsurface Utility Data. All existing utilities shall be identified with a utility quality level by the appropriate abbreviation and legend. Show on all of the Topographic Survey drawings the following tables:

1. Table 2 - CI / ASCE 3802 Subsurface Utility Quality Level Indexes
2. Table 3 – Legend and Abbreviations
3. Table 4 – Utility Quality Level A Horizontal and Vertical Example
4. The drawing note: "This drawing was prepared in conformance with ASCE standard CE/ASCE 38-02 American Society of Civil Engineers Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data"..

Table 2

CI / ASCE 3802 Subsurface

Utility Quality Level INDEXES

1. Quality Level A (QLA): Utility information which has been visually verified, survey located (both horizontally and vertically) and accurately reduced onto these drawings. This is typically shown as a HV verification excavation hole.
2. Quality Level B (QLB): Utility information derived by marking the approximate surface horizontal location of utility using electronic methods. Marking is subsequently field survey located and accurately reduced onto these drawings.
3. Quality Level C (QLC): Utility information obtained as below for quality level D, plotted to correlate with surface utility features which have been field verified, survey located and accurately reduced onto these drawings. Included in this category are aerial utility information and utility depictions, which in the professional opinion of the subsurface utility engineer, represent the most probable approximate horizontal location, type and / or existence of a utility.
4. Quality Level D (QLD): Utility information plotted on the drawing based solely on record information, individual recollections or the existence of utility service. It shall be noted that all information shown (other than at test hole locations, see QLA above) with reference to a utilities size, capacity, material composition, condition or service status shall be considered QLD even though the utility may be plotted and labeled QLC or QLB.

Table 3

LEGEND AND ABBREVATIONS

QLB	=	Quality Level B
QLC	=	Quality Level C
QLD	=	Quality Level D
--WM--	=	Water Main
--SAN--	=	Sanitary Sewer
CO	=	San. Clean-Out

--FM--	=	WW Force Main
--RWM--	=	Reclaimed WM
--UT--	=	Buried Telephone
--OH TEL	=	Overhead Telephone
--UFOC--	=	Buried Fiber Optic Cable
--UE--	=	Buried Elect. Cable
--OH ELEC--	=	Overhead Elect. Cable
--GAS--	=	Gas Main

Table 4

UTILITY QUALITY LEVEL A

HORIZONTAL AND VERTICAL EXAMPLE

Location ID	Horizontal Coordinates	Elevation (ft)	Utility Owner	Size & Material
HV-1	N 1363520 E 2221723	110	Florida Gas	2" galv
HV-2	N 1363521 E 2221724	108	AT&T	1" cable
HV-3	N 1363520 E 2221727	106	OCU	6" PVC

Survey field work for VVh locations was performed on **"date"**

Subtask 370 - Survey Control and Baselines

The Surveyor shall prepare a survey control drawing for the baseline horizontal and vertical controls. Tie Orange County GIS control points to the baseline established along the route. The baseline shall be referenced to permanent monumentation located outside the limits of construction at the beginning and end of the route, at angle points, and at intervals not to exceed 1200 feet. A table shall provide state plane coordinates with elevations (x, y, z) at all changes in baseline direction. Baseline turning points shall be labeled on the design drawings to identify these points referenced in the survey control drawing table. The table shall include the type of monument set. Iron pins are required when setting the baseline in easements or rights-of-way without pavement. The survey control drawing shall state what horizontal and vertical datum used and shall contain adequate graphical or written descriptions of the locations, construction and marking of all marks used or set and shall explain methods employed in the survey and adjustment. Two horizontal and vertical datum are required for horizontal and vertical controls. The Surveyor's name, registration number, and the date the survey was performed shall be labeled on the survey control drawing.

1. Baselines shall be parallel to the right-of-way and monumented at the beginning and end of the project and at all changes in direction.

2. Enough corners shall be found to determine the right-of-ways and these monuments shall be indicated on the survey.
3. GPS surveyed control baselines shall meet these post processed GPS survey specifications using the kinematic survey method. Kinematic GPS surveys make use of two or more GPS units. At least one GPS unit is set up over a known (reference) station and remains stationary, while other (rover) GPS units are moved from station to station. These surveys can be either continuous or "stop and go". Stop and go station observation periods are of short duration, typically under two minutes.
   A. Minimum number of reference stations to control the project is 3rd order or better
   B. Minimum number of check stations is 2
   C. Maximum distance between the survey project boundary and the network reference control stations is 6 miles.
   D. Maximum PDOP during station occupation is 5.
   E. Minimum observation time on station is 5 epochs
   F. Minimum number of satellites observed simultaneously at all stations is 5 (100% of time)
   G. Maximum epoch interval for data sampling is 1 to 15 seconds
   H. Minimum satellite mask angle above the horizon is 10 degrees. During office processing, start with a 15 degree mask.

Other control surveys shall detail the datum used and control stations used in a manner consistent with the general survey and map provisions of subsection 5J-17.051, F.A.C. The survey control and baseline points shall maintain a minimum positional reliability of 1:10,000 feet relative to the nearest control station. All baseline control traverses shall be tied to at least two existing horizontal controls of second order class I or higher standards or a control established by the County.

Subtask 380 - As-Built Drawings (Not applicable)

Subtask 390 - As-Built Digital Data (Not applicable)

Submit completed tables to Utilities of the Asset Attribute Data, Pipe Deflection, and Gravity Main signed, sealed and dated by the Surveyor the paper copies and electronic Excel spreadsheets. These spreadsheets shall be the same Excel work sheets provided by Utilities. A Survey Map Report is required to accompany the Digital Data.

GENERAL REQUIREMENTS

The following General Requirements shall apply to all TASK300 Subtasks described above.

MTS Requirement

All Surveys shall be conducted in accordance with the Minimum Technical Standards promulgated by the Florida Board of Professional Land Surveyors, 5J-17, of the Florida Administrative Code, Section 472.027, Florida Statutes.

Survey shall note when the field work was completed.

Horizontal and Vertical Controls

The horizontal control data shall be relative to the Florida State Plane Coordinate system, East Zone, North American Datum of 1983/1990 adjustment.

All vertical control shall be established from benchmarks published by Orange County or other governmental agencies utilizing the North American Vertical Datum 1988 adjustment.

State Plane and Vertical Coordinates

State plane coordinates with elevations (x, y, z) shall be provided for all of the items listed in Table 1 Minimum Survey Accuracies Per Asset.

CAD Templates

If the Surveyor is contracted in-house design by Utilities, the Surveyor shall request a current version of Utilities AutoCAD Template for preparing final documents. The digital file submitted will match Orange County Utilities In-House CAD Standards including but not limited to: Line-type Files, Hatch Patterns, Symbol Library, Layer names, and the "stb" and "ctb" files.

Surveyor Map Report

Provide a Survey Map Report which will meet or exceed MTS. The survey report should, at the very least, provide a clear, complete, and concise summery of work performed to prepare the survey. The Report shall include, but not be limited to: Scope, project location, survey equipment/software, survey data resources, field monumentation and any boundary discrepancies, relative positional accuracy of measurements, flood statement, subsurface utility locates, ownership and encumbrances, jurisdictional wetland boundaries, horizontal and vertical control, accuracies obtained for the survey traverse and surveyor's certificate (see Example 2, "Survey Map Report").

In lieu of a Survey Map Report, information in the report shall be listed on the survey map as "Surveyor's Notes".

MTS Certification Statement

All survey deliverables shall be certified to Orange County and use the following certification:

"This Survey was performed in accordance with the Minimum Technical Standards as set forth by the Florida Board of Professional Surveyors and Mappers, Chapter 5J-17, Florida Administrative Code, Pursuant to Section 472.027, Florida Statutes."

Deliverables

1. A single PDF file for data collected, control, title search of public records, last deeds of records or other data utilized in the Survey work effort.
2. Submit three (3) signed and sealed paper copies and electronic AutoCAD files of the Topographic and Boundary Survey in the 60% Design submittal.
3. Submit three (3) signed and sealed 8 1/2" x 11" paper copies and electronic PDF files of the Boundary Survey.
4. Submit four (4) signed and sealed paper copies of the Temporary Construction Easement and an electronic PDF file.
5. One (1) signed paper copy of MTS Survey Checklist completed.

If the County has any review comments, the Surveyor shall address those comments and resubmit.

ALLEN & COMPANY
Professional Surveyors & Mappers

STANDARD PROVISIONS OF AGREEMENT FOR PROFESSIONAL SERVICES

The Client and Surveyor agree that the following Provisions shall be a part of their agreement:

1. Neither the Client nor Surveyor shall assign its interest in this agreement without the written consent of the other.

2. All agreements on Surveyor's part are contingent upon, and Surveyor shall not be responsible for damages or be in default or be deemed to be in default by reason of: delays in performance by reason of strikes, lock-outs, accidents, acts of God and other delays unavoidable or beyond Surveyor's reasonable control, or due to shortages or unavailability of labor at established area wage rate or delays caused by failure of Client or Client's agents to furnish information or to approve or disapprove Surveyor's work promptly, or due to late or slow, or faulty performance by Client, other contractors or governmental agencies, the performance of whose work is precedent to or concurrent with the performance of Surveyor's work, in the case of the happening of any such cause of delay, the time of completion shall be extended accordingly.

3. In the event that any changes are made in the plans and specifications by the Client or persons other than Surveyor which affect Surveyor's work, any and all liability arising out of such changes is waived as against Surveyor and the Client assumes full responsibility for such changes unless Client has given Surveyor prior notice and has received from Surveyor written consent for such changes.

4. Surveyor is not responsible, and liability is waived by client as against Surveyor, for use by Client or any other person of any plans or drawings not signed by Surveyor.

5. All tracings, survey notes, and other original documents are instruments of service and shall be the property of Surveyor, except where by law or precedent these documents become public property.

6. Surveyor's liability to the Client for injury or damage to persons or property arising out of work performed for the Client and for which legal liability may be found to rest upon Surveyor, other than for professional errors and omissions, will be limited to Surveyor's general liability insurance coverage. For any damage on account of any error, omission or other professional negligence, Surveyor's liability will be limited to a sum not-to-exceed Surveyor's fee.

7. Fees and all other charges will be billed monthly as the work progresses and the net amount shall be due at the time of billing.

8. Interest 1-1/2% per month (but not exceeding the maximum rate allowable by law) will be payable on any amounts not paid within 30 days of the billing date, payment thereafter to be applied first to accrued interest and then to the principal unpaid amount. Any attorney's fees or other costs incurred in collecting any delinquent amount shall be paid by the Client.

9. The Client shall pay the costs of checking inspection fees, zoning and annexation application fees, assessment fees, soils Surveying fees, soils testing fees, aerial topography fees, and all other fees, permits, bond premiums, title company charges, blueprints and reproductions, and all other charges not specifically covered by the terms of this agreement.

10. In the event all or any portion of the work prepared or partially prepared by Surveyor is suspended, abandoned, or terminated, the Client shall pay Surveyor for the work performed on an hourly basis, not to exceed any maximum contract amount specified herein.

_____ **(Initials)**

16 E Plant Street ■ Winter Garden, Florida 34787 ■ 407/654/5355 ■ FAX 407/654/5356

ALLEN & COMPANY
Professional Surveyors & Mappers

STANDARD PROVISIONS OF AGREEMENT FOR PROFESSIONAL SERVICES

11. Any Opinion of the Construction Cost prepared by Surveyor represents his Judgment as' a design professional and is supplied for the general guidance of the Client. Since Surveyor has no control over the cost of labor and material, or over competitive bidding or market conditions, Surveyor does not guarantee the accuracy of such opinions as compared to contractor bids or actual cost to the Client.

12. The Client agrees that in accordance with generally accepted construction practices, the construction contractor will be required to assume sole and complete responsibility for Job site conditions during the course of construction of the project, Including safety of all persons and property and that this requirement shall be made to apply continuously and not be limited to normal working hours.

13. In the performance of its professional services, Surveyor will use that degree of care and skill ordinarily exercised under similar conditions in similar localities and no other warranties express or implied are made or intended in any of Surveyor's' proposals, contracts or reports. The Client agrees to defend, indemnify and hold harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability proximately arising from the sole negligence of Surveyor.

14. In the event the Client fails to pay Surveyor within sixty (60) days after invoices are rendered, then Client agrees that Surveyor shall have the right to consider said default a total breach of this agreement and the duties of Surveyor under this agreement terminated upon five (5) days written notice. This agreement may be terminated by either Client or Surveyor upon thirty (30) days written notice In the event of substantial failure of the other party to perform In accordance with the terms of this agreement. Client expressly agrees to hold Surveyor harmless from any liability arising out of Surveyor's termination of Its services hereunder due to Client's failure to perform and/or pay in accordance with the provisions of this agreement. In the event of termination of this agreement, Client shall then promptly pay Surveyor for all of the fees, charges and services performed by Surveyor in accordance with the compensation arrangements under this agreement or on an agreed hourly basis.

15. The Client agrees not to solicit or be solicited by any employee, former employee or sub-consultant of Allen & Company, Inc. for employment for this project or any other Client's project for one year after completion and/or termination of Allen & Company services without written consent. In event Client fails to adhere by said agreement, then Client will be billed for one year at the employee's billable rate.

16. Should litigation be necessary to enforce any term or provision of this agreement, or to collect any portion of the amount payable under this agreement, then all litigation and collection expenses, witness fees and court costs, and attorney's fees shall be paid to the prevailing party.

17. Should any provision herein be found or deemed to be invalid, this agreement shall be construed as not containing such provisions and all other provisions which are otherwise lawful shall remain in full force and effect, and to this end the provisions of this agreement are declared to be severable.

18. Services provided within this agreement are for the exclusive use of the Client.

19. There are no understandings or agreements except as herein expressly stated.

20. All "Standard Hourly Rates" will be maintained for 60 days from the date the contract is signed.

_____ **(Initials)**

ATTACHMENT 3

ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COST

Hamlin Groves Trail - Booster Pump WM Extension
Utility Construction
ENGINEER'S ESTIMATE OF PROBABLE COST
10/28/2016

COUNTY UTILITY WORK

	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL AMOUNT
1	**Demolition Mobilization**				
	Pavement Demolition (2500 SY)	1	LS	$25,000.00	$25,000.00
	Landscape Hardscape Demo	1	LS	$7,500.00	$7,500.00
	Mobilization	1	LS	$40,000.00	$40,000.00
					$0.00
					$0.00
				SUBTOTAL	**$72,500.00**
2	**WATER**				
	30" DIP Watermain	30	LF	$160.00	$4,800.00
	24" DIP Watermain	1100	LF	$130.00	$143,000.00
	20" DIP Watermain	60	LF	$64.00	$3,840.00
	16" DIP Watermain		LF	$53.00	$0.00
	12" PVC Watermain		LF	$35.00	$0.00
	36" Gate Valve	0	EA	$38,800.00	$0.00
	30" Gate Valve	2	EA	$30,100.00	$60,200.00
	24" Gate Valve	3	EA	$16,000.00	$48,000.00
	20" Gate Valve	1	EA	$6,000.00	$6,000.00
	Booster Pump Station	1	LS	$1,000,000.00	$1,000,000.00
	Connection to 30 inch	1	EA	$25,000.00	$25,000.00
	Connection to 20, 24 inch	3	EA	$15,000.00	$45,000.00
	Testing/Survey	1	LS	$3,843.70	$3,843.70
	Fittings Per LF	1190	LF	$30.00	$35,700.00
				SUBTOTAL	**$1,375,383.70**
3	**Paving, LS, RM Reconstruction**				
	Paving and Striping	2500	SY	$75.00	$187,500.00
	Landscape, Hardscape	1	LS	$25,000.00	$25,000.00
	RM Reconstruction 12 inch	1	LS	$25,000.00	$25,000.00
					$0.00
				SUBTOTAL	**$237,500.00**
4	**Data Collection, Design**				
	Geotech	1	LS	$18,000.00	$2,470.00
	Survey	1	LS	$19,500.00	$19,500.00
	Subconsultants (BFA)	1	LS	$95,143.54	$95,143.54
	Landscape Architect	1	LS	$8,075.00	$8,075.00
				SUBTOTAL	**$125,188.54**
5	**Roadway Design, Utility Design, PM**				
	Design	1	LS	$169,230.00	$169,230.00
				SUBTOTAL	**$169,230.00**
				COUNTY UTILITY WORK TOTAL	**$1,979,802.24**

KELLY, COLLINS & GENTRY, INC

ATTACHMENT 4

SUPPLEMENTAL REQUIREMENTS

FOR DESIGN AND RECORD DOCUMENTS

Supplemental Requirements
For Design and Record Documents

Engineering services are to provide Orange County Utilities with sufficient data to ascertain that proposed water, wastewater, reclaimed water mains and pump station sites are within the existing and/or proposed boundaries and as indicated on the construction drawings. **A *pre-proposal meeting with the OCU Project Manager, Engineer and Surveyor is required to define scope of services.***

Horizontal and Vertical Controls
Horizontal and vertical controls shall be sufficiently shown on the design drawings for the contractor to determine locations and elevations to establish his work.

Rights-of-Way, Easements, and Pump Station Sites
Survey information for rights-of-ways, easements, and pump station sites shall be adequately depicted on the design drawings.

Design Asset Attribute Data Table
Both a design Asset Attribute Table and a partially complete contractor surveyor's as-built Asset Attribute Table shall be included in the design drawings. Assets include bench marks, fire hydrants, blow-off valves, air release valves, master meters, meter box, cleanouts, pump station, manholes, system valves, fittings, piping @ 100' maximum intervals, restrained pipe, connections, bore and jack casing, direction drilling beginning and end, and numbering procedure. As a reference, see Table A "Types of Assets" and Table B "Asset Attribute Data Form Example".

Table A
Types of Assets

Asset/Location	Location: horizontal center and vertical top, unless otherwise specified
Bench Marks	Point
Horizontal Control	Point
Easements and Tracts	Survey Monuments
Civil Site, Topographic and Foundation Drawings	All
Hydrants	Operating Nut
Blow off Valves	Valve Enclosure
Air Release Valves	Valve Enclosure
Master Meters	Register
Meter Box	Top of Meter Box
Clean-out	Top of Clean-out
Pump Station	Top Center of Wet Well and Pipe Inverts
Manholes	Top Center of Cover
Manhole	Pipe Inverts
System Valves	Operating Nut and Valve Body
Fittings	Top of Fitting and Ground
Piping at 100' max intervals	Top of Pipe and Ground
Restrained Pipe	Limits
Connections	Pipe Invert
Bore & Jack Casing	Top of Casing at Limits of Casing
Existing Utilities*	Conflicts

Existing utilities including but not limited to water, wastewater, reclaimed water, storm, fiber optic cable, electric, gas and structures within the limits of construction

Supplemental Requirements
For Design and Record Documents (continued)

Design Construction Documents Design Reviews

Pipe deflections shall be designed to not exceed the pipe manufacturer's recommended maximum deflection. Engineer shall add fittings to the design when the pipe deflections would exceed the pipe manufacturer's recommendations. Design drawings and specifications shall be in accordance with the OCU Standards and Construction Specifications Manual and, with CIP Master Technical Specifications Any modifications to OCU Standard Details shall be noted during the 60% and 90% design review meetings.

Record Drawings

The Engineer shall develop the Record Drawings from the Construction Record Documents (certified as-built from a licensed surveyor) supplied by the Contractor. The Engineer shall identify substantive deviations from the original design documents and state whether the deviations are such that the original engineering design intent has, or has not, been "materially" accomplished by the finished construction. The Engineer shall fully and completely delineate the scope of the Engineer's work in preparing all Record Documents and indicate what specific services were performed by the Engineer, or the engineering firm, upon which the opinion in the Engineer's certification is based. The National Council of Engineering Examiners & Surveyors (NCEES) suggests that such a statement should include statements noting.

- That the "record/as-built" drawing is a compiled representation of the constructed project;
- A listing of the sources and the basis of information used in the preparation of the "record/as-built" drawing;
- That the drawing is believed to be correct to the best of the Engineer's knowledge; and
- That the drawings meet the design intent including, but not limited to location of installed assets and pipe deflections.

Appropriate notes on the Record Drawings or disclosures accompanying the certification can clarify an Engineer's determination that such modifications do or do not "materially" affect the permitted design.

An Asset Attribute Table, certified by the contractor's surveyor, shall be included in the Record Drawings. In addition, the utilities asset and coordinates shall be indicated on each sheet of the Record Drawings for the assets shown on that drawing. Assets and coordinates for each sheet shall be shown in a table formatted identically to overall project Asset and Coordinate Table.

The Record Drawings submittal shall include:

- Three (3) certified, full size, hard copy sets of Record Drawings signed and sealed by the Engineer of Record.
- A scanned digital version of the certified, hard copy Record Drawing in protected Adobe Acrobat document file (pdf) format and comprised of files in the tagged information file (.tif) format and signed and sealed by the Engineer of Record.
- A revised digital Record Drawing shall be submitted in AutoCAD (.dxf or .dwg) format.
- The electronic files shall be signed and sealed by creating a "signature" file in accordance with Chapter 61 G 15-23.003, FAC.
- Startup reports, manuals, standard operation and maintenance procedures for the water booster pump station and all applicable warranties.

1. Electronic files shall be sealed by creating a "signature" file that contains the Engineer, date, a brief overall description of the documents and a list of the electronic files to be sealed. Each file in the list shall be identified by its file name utilizing relative Uniform Resource Locators (URL) syntax described in the Intemet Architecture Board's Request for Comments (RFC) 1738, December 1994, which can be obtained from the Internet website: ftp:/Iftp.isi.edu/in-notes/rfc173B.txt
2. Each file shall have an authentication code defined as an SHA-1 message digest described in Federal Information Processing Standard Publication 1BjO-1 "Secure Hash Standard," 1995 April 17, which can be obtained from the intemet website: http://www.itl.nist.gov/fipspubs/fip1BO-1.htm
3. For those sheets that are electronically signed and sealed by the Engineer, the following note shall be placed legibly on the sheet. The note shall be located outside and along the right sheet border line, within 1/B-inch of the line and beginning within one inch of the bottom sheet border line.

"NOTICE: THE OFFICAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61 G15-23.003, FAC"

ATTACHMENT 5

TABLE B

Asset Attribute Data Form Example

Asset Type	I.D. Number	Utilities Asset Number	UTILITIES Asset Coordinates		
			Northerly	Easterly	Elevation
Bench Marks	BM-1		1605466	450720.5	86.04
Horizontal control	HC-1		1605700	450879	N/A
Horizontal control	HC-2		1605333	450773.1	N/A
Fire hydrant	FH-1		1605630	450920.4	N/A
Fire hydrant	FH-2		1605162	450024.6	N/A
					Depth
Gate valve	GV-1		1605631	450533.2	2.9
Gate valve	GV-2		1605400	450765.8	3.4
Plug valve	PV-1		1605024	450123.7	3.3
Plug valve	PV-2		1605626	450245.4	2.6
Blow off valve	BO-1		1605805	450057.3	N/A
Blow off valve	BO-2		1605030	450126.2	N/A
Air release valve	ARV-W1		1605647	450939.9	N/A
Air release valve	ARV-FM2		1605978	450490.1	N/A
Master meter	MM-1		1605290	450130.2	N/A
Master meter	MM-2		1605900	450883.9	N/A
Detector check meter	DCM-1		1605244	450848.8	N/A
Detector check meter	DCM-2		1605829	450035.9	N/A
Clean-out	CO-1		1605290	450130.2	N/A
Clean-out	CO-2		1605900	450883.9	N/A
Force Main Fitting	FMF-1		1605024	450123.7	3.3
Water Main Fitting	WMF-1		1605626	450245.4	3.6
Reclaimed Water Fitting	RWMF-1		1605680	450302.7	3
Water Piping	WM-1		1605290	450130.2	2.8
Force Main Piping	FM-1		1605900	450883.9	4

Reclaimed Water Main Piping	RWM-1		1605900	450883.9	3.2	
Restrained Water Main	RSWM-1		1605631	450533.2		Limits of restraint
Restrained Force Main	RSFM-1		1605400	450765.8		Limits of restraint
Restrained Reclaimed Water Main	RSRWM-1					Limits of restraint
			1605024	450123.7		
Water Main Connection	WMC-1		1605626	450245.4		
Force Main Connection	RMC-1		1605030	450126.2		
RW Main Connection	RWMC-1		1605805	450057.3		
Water B&J Casing	WMBJC-1		1605900	450883.9		
Force Main B&J Casing	FMBJC-1		1605647	450939.9		
RW B&J Casing	RWBJC-1		1605978	450490.1		
Other Utility Line Conflicts	CONFL-1		1605290	450130.2		

	I.D. Number	Asset Number	1605829	450035.9	Top Center	Infl. Pipe Invert	Wet Well Bottom
PS top center of wet well	PS-1		1605643	450370.8	87.04	73.25	68.20

	I.D. Number	Asset Number	Asset Coordinates		Top Elevation	Invert Elevations	
			Northerly	Easterly		N	S
Manhole	MH-1		1605320	450195.7	88.19	73.50	73.60
Manhole	MH-2		1605160	450726.7	87.48	75.35	75.45

ATTACHMENT 6

DESIGN REVIEW PROCEDURE

DESIGN REVIEW PROCEDURE
PROJECT DOCUMENTS DESIGN REVIEW PROCEDURE
ORANGE COUNTY UTILITIES ENGINEERING CAPITAL IMPROVEMENTS PROGRAM

Preliminary Design Memorandum and 60% Document Review:

For the Preliminary Design Memorandum and submittals of Drawings and Specifications by Engineers marked 60% complete, document review and comments will be handled by the OCU Engineering Project Manager assigned to the project, the appropriate Chief Engineer, the Construction Chief Inspector assigned to the project, and the appropriate operating division(s). The Construction and Engineering Managers will be present at review sessions when available or as needed. All review comments made in the meeting shall be documented by the Engineer and put on the CIP Comment Tracking Spreadsheet. The completed spreadsheet shall be sent to the OCU Project Manager by the Engineer.

90% Document Review:

The 90% document review will be handled in a similar way with the following exceptions:

A set of documents shall be "red-lined" by the Engineer with all comments from the 90% review meeting, the Spreadsheet shall be prepared, and the "red-lined" Drawings and specifications and the Spreadsheet shall be transmitted by the Engineer to the OCU Project Manager. Before the changes are made by the Engineer, the Project Manager will have the Construction Division and Engineering Division Managers review the project a final time for both design/construction related comments and for "bid-ability". The Division Managers' comments will be transmitted to the Project Manager for incorporation into the 100% design package. The Engineer shall not start making changes to the 90% until after the Managers' review and comments and the Project Manager has transmitted all comments back to the Engineer.

100% Document Review:

When 100% documents are submitted, the OCU Project Manager will meet with the Chief Inspector to obtain written confirmation that all construction comments have been incorporated into the design. After that confirmation is obtained, the OCU Project Manager will meet with the appropriate Chief Engineer to review the Design Review/Bid-Ready Checklist to ensure that the project is bid-ready.