

**Work Authorization No. KA 17-07, District 3A STEP Area 3A-D
Under
Agreement between Broward County and Keith and Associates, Inc.
For
Continuing Engineering Services for Water Distribution, Wastewater Collection and Storm
Water Collection (RFP# R1404111P1)**

1. This Work Authorization is issued pursuant to the agreement between Broward County ("County") and Keith and Associates, Inc., a Florida Corporation ("Consultant"), for Continuing Engineering Services for Water Distribution, Wastewater Collection and Storm Water Collection (the "Agreement"), which was approved by the Board of County Commissioners on March 28, 2017.

2. This Work Authorization requires Consultant to provide the services identified and described in Exhibit A ("Work Authorization Fee Proposal") and Exhibit B ("Scope of Services"), both of which are attached hereto and expressly made part of this Work Authorization as though fully set forth herein. These services are authorized pursuant to Article 3 of the Agreement.

3. Compensation and Method of Payment.

3.1 Payment for the services authorized by this Work Authorization will be in accordance with Article 6 of the Agreement and the agreed method of compensation shall be as follows (check those boxes that apply):

3.1.1 Maximum Amount Not-To-Exceed Compensation. Compensation to Consultant for the performance of Task 2.6 identified in the Work Authorization Fee Proposal and as further described in Section 2.6 of the Scope of Services as payable on a "Maximum Amount Not-To-Exceed" basis, and as otherwise required under the terms of the Agreement, shall be based upon the Salary Costs as described in Section 6.2 of the Agreement up to a maximum amount not-to-exceed of Ninety-five Thousand Seven Hundred Twenty-eight and 10/100 Dollars (\$95,728.10). Consultant shall perform all services designated as Maximum Amount Not-To-Exceed set forth herein for total compensation in the amount of or less than that stated above.

3.1.2 Lump Sum Compensation. Compensation to Consultant for the performance of Tasks 2.1 through 2.5 identified in the Work Authorization Fee Proposal and as further described in Sections 2.1 through 2.5 of the Scope of Services as payable on a "Lump Sum" basis, and as otherwise required by this Agreement, shall be a total lump sum of One Hundred Eighteen Thousand Three Hundred Twenty-seven and 84/100 Dollars (\$118,327.84).

3.1.3 Reimbursable Expenses. County has established a maximum amount not-to-exceed of Twenty-two Thousand Six Hundred Forty Dollars (\$22,640.00) for

potential reimbursable expenses which may be utilized pursuant to Section 6.3 of the Agreement. Unused amounts of those monies established for reimbursable expenses shall be retained by County.

3.2 Payments for this Work Authorization shall be charged against:

Budget No. 44250-44100-67301010-512110-104758

4. Consultant shall perform the services identified in the Work Authorization Fee Proposal in accordance with the Scope of Services and within the time periods specified in the Project Schedule included in Section 4.0 thereof; said time periods shall commence from the date of the Notice to Proceed for such services.

5. CBE Goals.

5.1 In an effort to assist County in achieving its overall goal as set forth in the Agreement, Consultant agrees to meet the following CBE participation goal by utilizing the CBE firms for the work and dollar values described in paragraph 5.2 below: 14.69%.

5.2 In performing services for this Project, County and Consultant hereby incorporate Consultant's participating CBE firms, addresses, scope of work, and dollar value identified in the Letters of Intent (attached hereto and incorporated herein as Exhibit C).

6. The terms and conditions of the Agreement are hereby incorporated into this Work Authorization. Nothing contained in this Work Authorization shall alter, modify, or change in any way the terms and conditions of the Agreement with County.

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IN WITNESS WHEREOF, the Parties have made and executed this Work Authorization No. KA 17-07, District 3A STEP Area 3A-D: Broward County, by and through its Board of County Commissioners, signing by and through its Mayor or Vice-Mayor, authorized to execute same by Board action on the _____ day of _____, 20____, and Keith and Associates, Inc., signing by and through its VICE PRESIDENT duly authorized to execute same.

COUNTY

ATTEST:

BROWARD COUNTY, by and through
its Board of County Commissioners

Broward County Administrator, as
Ex-officio Clerk of the Broward County
Board of County Commissioners

By _____
Mayor

____ day of _____, 20__

Approved as to form by
Andrew J. Meyers
Broward County Attorney
Governmental Center, Suite 423
115 South Andrews Avenue
Fort Lauderdale, Florida 33301
Telephone: (954) 357-7600
Telecopier: (954) 357-7641

Insurance requirements
approved by Broward County
Risk Management Division

By Counall 04/16/19
Signature (Date)

Colleen Counall Risk Analyst
Print Name and Title above

By [Signature] 4/22/19
Jordan Nadel (Date)
Assistant County Attorney

By [Signature] 4/22/19
Michael J. Kerr (Date)
Deputy County Attorney

CONSULTANT

ATTEST:

Elyse Kempner
Corporate Secretary

(SEAL)



Keith and Associates, Inc.

By *[Signature]*
President or Vice President

Alex Lazowick, Executive Vice President
(Print Name and Title)

29 day of March, 2019



Exhibit A
**WORK AUTHORIZATION
FEE PROPOSAL**

District 3A STEP, Area 3A-D (the "Project")

KA 17-07

1.0 COMPENSATION AND METHOD OF PAYMENT							
This work will be completed as Lump Sum (LS) and Maximum Not-To-Exceed (NTE) work authorization in the amount of \$236,695.94 in accordance with the below breakdown:							
TASK	FEE SUMMARY	LS or NTE	Total Team	CMA	PDS	RI	K&A
Task 2.1	LAND SURVEYING	LS	\$27,901.80	\$0.00	\$26,491.80	\$0.00	\$1,410.00
Task 2.2	SUB-SURFACE UTILITY ENGINEER	LS	\$6,145.25	\$0.00	\$0.00	\$0.00	\$6,145.25
Task 2.3	SUBSURFACE EXPLORATION OF SOILS	LS	\$5,514.00	\$0.00	\$0.00	\$4,950.00	\$564.00
Task 2.4	ENGINEERING DESIGN & PERMITTING	LS	\$72,736.47	\$65,827.47	\$0.00	\$0.00	\$6,909.00
Task 2.5	MISCELLANEOUS ENGINEERING SERVICES	LS	\$6,030.32	\$4,667.32	\$0.00	\$0.00	\$1,363.00
Task 2.6	CONSTRUCTION PHASE ENGINEERING SERVICES	NTE	\$95,728.10	\$94,365.10	\$0.00	\$0.00	\$1,363.00
			\$214,055.94	\$164,859.89	\$26,491.80	\$4,950.00	\$17,754.25
	Reimbursable	NTE	\$22,640.00	\$0.00	\$0.00	\$4,840.00	\$17,800.00
	Total Fee		\$236,695.94	\$164,859.89	\$26,491.80	\$9,790.00	\$35,554.25
Notes:							
CBE Participation:	14.69%						



Exhibit A
**WORK AUTHORIZATION
FEE PROPOSAL**
District 3A STEP, Area 3A-D (the "Project")

KA 17-07

CMA Salary Cost Water/Wastewater	Admin. Assistant		Technician		Sr. Technician		Sr. Designer		Construction Specialist		Engineer		Associate Eng.		Sr. Landscape Arch.		Sr. PM		Totals	
	Hr. Rate	\$90.91	Hr. Rate	\$80.08	Hr. Rate	\$90.36	Hr. Rate	\$123.33	Hr. Rate	\$82.94	Hr. Rate	\$88.61	Hr. Rate	\$121.03	Hr. Rate	\$183.65	Hr. Rate	\$176.26		
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Task 2.1 LAND SURVEYING - Lump Sum																				
2.1a - Topographic Survey	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2.1b - SUE Locations	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2.1c - Sketch and Description	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Subtotals	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Task 2.2 SUB-SURFACE UTILITY ENGINEER - Lump Sum																				
2.2a - Utility Designations	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2.2b - Location Services	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Subtotals	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Task 2.3 SUBSURFACE EXPLORATION OF SOILS - Lump Sum																				
2.3a - Subsurface Exploration	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Subtotals	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Task 2.4 ENGINEERING DESIGN & PERMITTING - Lump Sum																				
2.4a - 50% Construction Documents	0	\$0.00	56	\$4,484.48	32	\$2,891.52	3	\$369.99	0	\$0.00	12	\$1,063.32	78	\$9,440.34	4	\$734.60	22	\$3,877.72	207	\$22,861.97
2.4b - 90% Construction Documents	20	\$1,818.20	36	\$2,882.88	32	\$2,891.52	4	\$493.32	0	\$0.00	8	\$708.88	56	\$6,777.68	0	\$0.00	24	\$4,230.24	180	\$19,802.72
2.4c - Regulatory Agency Permitting	8	\$727.28	24	\$1,921.92	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	80	\$9,682.40	0	\$0.00	20	\$3,525.20	132	\$15,856.80
2.4d - Final Construction Documents (Final CD's)	10	\$909.10	26	\$2,082.08	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	24	\$2,904.72	0	\$0.00	8	\$1,410.08	68	\$7,305.98
Subtotals	38	\$3,454.58	142	\$11,371.36	64	\$5,783.04	7	\$863.31	0	\$0.00	20	\$1,772.20	238	\$28,805.14	4	\$734.60	74	\$13,043.24	587	\$65,827.47
Task 2.5 MISCELLANEOUS ENGINEERING SERVICES - Lump Sum																				
2.5a - Bidding Assistance	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	24	\$2,904.72	0	\$0.00	10	\$1,762.60	34	\$4,667.32
Subtotals	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	24	\$2,904.72	0	\$0.00	10	\$1,762.60	34	\$4,667.32
Task 2.6 CONSTRUCTION PHASE ENGINEERING SERVICES - NTE																				
2.6a - RPR Construction Observation	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	960	\$79,622.40	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	960	\$79,622.40
2.6b - Shop Drawing Review	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	8	\$708.88	0	\$0.00	0	\$0.00	0.5	\$88.13	8.5	\$797.01
2.6c - Contractor's Request for Information (RFI's)	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	8	\$708.88	8	\$968.24	0	\$0.00	4	\$705.04	20	\$2,382.16
2.6d - Change Management	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	8	\$708.88	8	\$968.24	0	\$0.00	4	\$705.04	20	\$2,382.16
2.6e - As-Built Reviews	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	8	\$968.24	0	\$0.00	0.5	\$88.13	8.5	\$1,056.37
2.6f - Final Inspection and Punchlist	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	15	\$1,244.10	0	\$0.00	8	\$968.24	0	\$0.00	1	\$176.26	24	\$2,388.60
2.6g- Final Certification/Permit Closeouts	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	24	\$2,126.64	24	\$2,904.72	0	\$0.00	4	\$705.04	52	\$5,736.40
Subtotals	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	975	\$80,866.50	48	\$4,253.28	56	\$6,777.68	0	\$0.00	14	\$2,467.64	1093	\$94,365.10
Total Salary Costs	38	\$3,454.58	142	\$11,371.36	64	\$5,783.04	7	\$863.31	975	\$80,866.50	68	\$6,025.48	318	\$38,487.54	4	\$734.60	98	\$17,273.48	1714	\$164,859.89



Exhibit A
**WORK AUTHORIZATION
FEE PROPOSAL**

District 3A STEP, Area 3A-D (the "Project")

KA 17-07

**PDS Salary Cost
Civil Eng/Surveying**

	Project Mgr.		Sr. Engineer		CAD Drafter		Totals	
	<i>Hr. Rate</i>	<i>\$144.30</i>	<i>Hr. Rate</i>	<i>\$133.80</i>	<i>Hr. Rate</i>	<i>\$54.75</i>		
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Task 2.1 LAND SURVEYING - Lump Sum								
2.1a - Topographic Survey	2	\$288.60	96	\$12,844.80	168	\$9,198.00	266	\$22,331.40
2.1b - SUE Locations	0	\$0.00	16	\$2,140.80	24	\$1,314.00	40	\$3,454.80
2.1c - Sketch and Description	0	\$0.00	2	\$267.60	8	\$438.00	10	\$705.60
Subtotals	2	\$288.60	114	\$15,253.20	200	\$10,950.00	316	\$26,491.80
Total Salary Costs	2	\$288.60	114	\$15,253.20	200	\$10,950.00	316	\$26,491.80



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**WORK AUTHORIZATION
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District 3A STEP, Area 3A-D (the "Project")

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RI Salary Cost Geotechnical Eng	Principal PM		Sr. PM		-		-		Totals	
	<i>Hr. Rate</i>	<i>\$198.33</i>	<i>Hr. Rate</i>	<i>\$188.94</i>	<i>Hr. Rate</i>	<i>\$0.00</i>	<i>Hr. Rate</i>	<i>\$0.00</i>		
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Task 2.3 SUBSURFACE EXPLORATION OF SOILS - Lump Sum										
2.3a - Subsurface Exploration	4	\$793.32	22	\$4,156.68	0	\$0.00	0	\$0.00	26	\$4,950.00
Subtotals	4	\$793.32	22	\$4,156.68	0	\$0.00	0	\$0.00	26	\$4,950.00
Total Salary Costs	4	\$793.32	22	\$4,156.68	0	\$0.00	0	\$0.00	26	\$4,950.00



Exhibit A
**WORK AUTHORIZATION
FEE PROPOSAL**
District 3A STEP, Area 3A-D (the "Project")

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RI Reimbursable Cost Geotechnical Eng										
REIMBURSABLES				QTY	RATE	AMOUNT				
I. Soil Testing										
7. Organic Content Test			Test	5	58.00	290.00				
10. Natural Sample Moisture Content			Test	10	18.00	180.00				
III. Aggregate Testing										
1.A. Grain Size Deter - Full Grain Size (8 sieves)			Test	10	95.00	950.00				
1.B. Grain Size Deter - Wash through (#200)			Test	10	55.00	550.00				
VI. Geotechnical Field Exploration										
3. Standard Penetration Test-Truck Rig (0-50')			LF	75	20.00	1,500.00				
5. Borehole Grout (0-50')			LF	75	6.00	450.00				
6. Casing (0-50')			LF	75	7.00	525.00				
9.A. Mobilization of drilling equipment to project (50 Miles Travel)			Trip	1	395.00	395.00				
Total						4,840.00			\$9,790.00	



Exhibit A
**WORK AUTHORIZATION
FEE PROPOSAL**
District 3A STEP, Area 3A-D (the "Project")

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K&A Salary Cost	Sr. PM-JT		Sr. PM-TD		Engineer III (PE)		Subsurface Util Eng.		Sr. Utility Coord.		Totals	
	Hr. Rate	\$199.75	Hr. Rate	\$199.75	Hr. Rate	\$141.00	Hr. Rate	\$152.75	Hr. Rate	\$122.20	Hours	Cost
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Task 2.1 LAND SURVEYING - Lump Sum												
2.1a - Topographic Survey	0	\$0.00	0	\$0.00	4	\$564.00	0	\$0.00	0	\$0.00	4	\$564.00
2.1b - SUE Locations	0	\$0.00	0	\$0.00	4	\$564.00	0	\$0.00	0	\$0.00	4	\$564.00
2.1c - Sketch and Description	0	\$0.00	0	\$0.00	2	\$282.00	0	\$0.00	0	\$0.00	2	\$282.00
Subtotals	0	\$0.00	0	\$0.00	10	\$1,410.00	0	\$0.00	0	\$0.00	10	\$1,410.00
Task 2.2 SUB-SURFACE UTILITY ENGINEER - Lump Sum												
2.2a - Utility Designations	0	\$0.00	0	\$0.00	6	\$846.00	15	\$2,291.25	0	\$0.00	21	\$3,137.25
2.2b - Location Services	0	\$0.00	0	\$0.00	4	\$564.00	16	\$2,444.00	0	\$0.00	20	\$3,008.00
Subtotals	0	\$0.00	0	\$0.00	10	\$1,410.00	31	\$4,735.25	0	\$0.00	41	\$6,145.25
Task 2.3 SUBSURFACE EXPLORATION OF SOILS - Lump Sum												
2.3a - Subsurface Exploration	0	\$0.00	0	\$0.00	4	\$564.00	0	\$0.00	0	\$0.00	4	\$564.00
Subtotals	0	\$0.00	0	\$0.00	4	\$564.00	0	\$0.00	0	\$0.00	4	\$564.00
Task 2.4 ENGINEERING DESIGN & PERMITTING - Lump Sum												
2.4a - 50% Construction Documents	0	\$0.00	4	\$799.00	8	\$1,128.00	0	\$0.00	0	\$0.00	12	\$1,927.00
2.4b - 90% Construction Documents	0	\$0.00	4	\$799.00	8	\$1,128.00	0	\$0.00	0	\$0.00	12	\$1,927.00
2.4c - Regulatory Agency Permitting	0	\$0.00	0	\$0.00	8	\$1,128.00	0	\$0.00	0	\$0.00	8	\$1,128.00
2.4d - Final Construction Documents (Final CD's)	4	\$799.00	0	\$0.00	8	\$1,128.00	0	\$0.00	0	\$0.00	12	\$1,927.00
Subtotals	4	\$799.00	8	\$1,598.00	32	\$4,512.00	0	\$0.00	0	\$0.00	44	\$6,909.00
Task 2.5 MISCELLANEOUS ENGINEERING SERVICES - Lump Sum												
2.5a - Bidding Assistance	4	\$799.00	0	\$0.00	4	\$564.00	0	\$0.00	0	\$0.00	8	\$1,363.00
Subtotals	4	\$799.00	0	\$0.00	4	\$564.00	0	\$0.00	0	\$0.00	8	\$1,363.00
Task 2.6 CONSTRUCTION PHASE ENGINEERING SERVICES - NTE												
2.6a - RPR Construction Observation	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2.6b - Shop Drawing Review	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2.6c - Contractor's Request for Information (RFI's)	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2.6d - Change Management	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2.6e - As-Built Reviews	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2.6f - Final Inspection and Punchlist	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
2.6g- Final Certification/Permit Closeouts	4	\$799.00	0	\$0.00	4	\$564.00	0	\$0.00	0	\$0.00	8	\$1,363.00
Subtotals	4	\$799.00	0	\$0.00	4	\$564.00	0	\$0.00	0	\$0.00	8	\$1,363.00
Total Salary Costs	12	\$2,397.00	8	\$1,598.00	64	\$9,024.00	31	\$4,735.25	0	\$0.00	115	\$17,754.25
REIMBURSABLES		QTY		RATE		AMOUNT						
Plans Reproduction	ea	1	1,000.00	1,000.00								
Subsurface Designation	hrs	40	200.00	8,000.00								
Vacuum Excavations - Impervious	ea	20	440.00	8,800.00								
Total				17,800.00								\$35,554.25

EXHIBIT B
SCOPE OF SERVICES
Continuing Engineering Services
Broward County Water Wastewater Services RFP R1404111P1
Septic Tank Elimination Program
Work Authorization KA 17-07, District 3A STEP Area 3A-D
Project No. 104758

1.0 PROJECT DESCRIPTION

Broward County Water Wastewater Services (“BCWWS”) RFP R1404111P1, Septic Tank Elimination Program, District 3A STEP Area 3A-D, Project No. 104758 (the “Project”) entails the complete design and construction of approximately five thousand feet (5,000’) of eight-inch (8”) gravity sewer main, maintenance access structures, and associated service lines and cleanouts in order to provide a complete wastewater collection system to the properties (“Project Properties”) designated on Figure 1 below, which is expressly incorporated herein and made part of this Scope of Services, using septic systems for onsite sewage disposal.

2.0 SCOPE OF SERVICES

Consultant shall provide professional engineering services to County for the complete design of the wastewater collection system, technical specifications, regulatory permitting, assistance during bidding, engineering services during construction, and coordination required to complete the Project as described below and in the task summaries that follow in Sections 2.1 through 2.6.

Consultant shall design approximately five thousand feet (5,000’) of gravity sewer main, maintenance access structures, associated service lines and cleanouts, and restoration of the roadway and other features, and perform all other design and engineering services required to provide a complete wastewater collection system for the Project Properties. Topographic survey, sub-surface utility engineering including test holes and utility designation, geotechnical investigation, field investigations, coordination with property owners, and coordination with regulatory permitting agencies are also included in this scope of services and are more fully described below.

Figure 1 below depicts a conceptual sewer main location based on preliminary site information which is provided solely as a guide for Consultant. The design and location of the sewer main, maintenance access structures, associated service lines and cleanouts, and all other work incident to the Project are the responsibility of Consultant, subject to the Contract Administrator’s approval, and Consultant

shall provide the design for the Project in accordance with all applicable professional standards, building codes, ordinances, regulations, rules and laws pertinent to the Project.

Permitting agencies with jurisdiction over the Project include, but are not limited to, Broward County Environmental Protection and Growth Management Department (“EPGM”), Broward County Traffic Engineering Division (“BCTED”), Broward County Highway Construction and Engineering Division (“BCHCED”), South Florida Water Management District (“SFWMD”), the City of Dania Beach, and the City of Hollywood.

2.1 TOPOGRAPHIC SURVEY

Consultant shall collect survey data along the conceptual gravity sewer main route depicted in Figure 1 below, which includes sections of SW 34th Court, SW 26th Terrace, SW 36th Street, and the Ravenswood Road southbound lane from SW 34th Street north to property address 3221 Ravenswood Road (“3221 Ravenswood Road”), as well as a twenty-five feet (25’) corridor to 3221 Ravenswood Road and at all other locations necessary for Consultant to design the Project. Consultant shall also prepare the easement sketch and legal description needed in order to serve the 3221 Ravenswood Road.

- a. Topographic Survey – Consultant shall produce a topographic survey base file of the existing conditions as required for the completion of the Project’s design effort. This survey will utilize and depict all existing utility lines, including but not limited to all drainage and overhead and buried electrical utilities, referenced from any current survey data available and will be field verified by Consultant as to the existing surface conditions, including all aboveground improvements and trees with diameter greater than three inches (3”). Consultant shall ensure that the survey includes ties to the nearest street intersections. The survey must also include septic tank locations found by the Consultant or located by the owners of the Project Properties, the finished floor elevations of the existing buildings on the Project Properties, visible building cleanouts on the Project Properties, and elevations at any relevant property line. Consultant shall ensure that street right-of-way lines are depicted on the survey in accordance with the current instruments of record obtained and field verification. Title research is not included in this scope of services. Consultant shall also ensure that the survey includes the utility designation and location described in Section 2.2 below. Consultant

shall provide County with topography in NAVD (1988) datum. Consultant shall ensure that the final deliverable includes a signed and sealed topographic survey and an AutoCAD base file suitable for use in the final design.

- b. Sketch and Description – Consultant shall prepare a sketch and legal description that describes the limits of the proposed sanitary sewer easement necessary to serve 3221 Ravenswood Road. The sketch and legal description shall be prepared for each property covered by the proposed easement. Hard copies and digital copies shall be signed and sealed by a professional land surveyor.

2.2 SUBSURFACE UTILITY ENGINEERING

- a. Utility Designations – Consultant shall horizontally mark any known underground utilities along SW 34th Court, SW 26th Terrace and SW 36th Street, and such other locations necessary to properly design the Project; as well as a twenty-five feet (25') corridor from the eastern most end of SW 34th Street to Ravenswood Road, and the Ravenswood Road southbound lane between 3221 Ravenswood Road and SW 34th Court which must include the area five feet (5') outside the right-of-way. Consultant shall mark conductive utilities on the surface utilizing active geophysical prospecting techniques in conjunction with electromagnetic equipment utilizing passive radio and audio frequencies. Consultant shall also mark known non-conductive utilities and structures on the surface utilizing ground penetrating radar, above ground feature references, professional judgment, utility plats, and as-built plans.
- b. Location Services - (Quality Level 'A') – Consultant shall perform up to twenty (20) test holes where a utility is marked that may conflict with the proposed system and at any other locations needed for the design. Consultant must utilize test holes to expose utilities and to minimize any potential for damage. Consultant shall ensure that test holes are of minimum necessary size (usually 1' by 1'). Consultant shall ensure that an identifiable above ground marker is installed at each test hole location. Ground markers will consist of a nail and disk in asphalt, or an iron rod and cap with survey stake in grassed areas. Consultant must identify the test hole number and utility on the ground or on the stake, as appropriate. Consultant shall backfill test holes utilizing the removed material, if suitable. Otherwise, Consultant shall be responsible for

obtaining suitable fill material to restore test holes. Consultant shall ensure that test hole areas are restored back as close as possible to their original condition. Consultant shall also ensure that test holes located in the street are patched using a cold patch. Consultant shall create a test hole summary report providing coordinates, depth of cover, type, size, and material, if applicable. The Consultant shall incorporate the test hole data from the test hole summary report onto the survey described under Section 2.1 above.

2.3 SUBSURFACE EXPLORATION OF SOILS

Consultant shall perform four (4) Standard Penetration Tests (“SPTs”) to a depth of +/- 15 ft. below existing ground surface on SW 34th Court, SW 26th Terrace, SW 36th Street, and Ravenswood Road, and shall evaluate the subsurface conditions at all other areas necessary for Consultant to properly design the Project. Consultant shall prepare a geotechnical report summarizing the soil types encountered and results of the borings.

2.4 ENGINEERING DESIGN & PERMITTING

Consultant shall perform the engineering services described below and prepare Construction Documents that show the character and extent of the Project, including procurement documents, technical specifications, and drawings. At each milestone as identified under Sections 2.4.a, 2.4.b, and 2.4.d below, Consultant shall provide County with four (4) hard copies and one (1) electronic copy of the Construction Documents. At each milestone, Consultant shall also meet with the Contract Administrator to receive and discuss County’s review comments. Consultant must incorporate into the Construction Documents the review comments of County as discussed and resolved during the review meeting. As referenced in Section 4.0 below, the schedule provides the County twenty-one (21) calendar days of review time at each design milestone to examine and comment on the Construction Documents. Additionally, Consultant shall meet and coordinate with County and the owner(s) of the Project Properties to facilitate the recordation of an easement for the gravity sewer line to serve 3221 Ravenswood Road.

- a. 50% Construction Documents – Consultant shall prepare and submit to the Contract Administrator the following construction documents upon 50% completion of the Project’s design stage (the “50% Construction Documents”):

- A detailed report addressing potential conflicts with existing utilities and connections to the existing system;
- Initial plan views;
- Initial construction details;
- Opinion of probable cost of the Project (“budget level” Class 3 as defined by the American Association of Cost Engineers (“AACE”) with a probable accuracy of -10% to +30%).

Technical specifications and profile views are excluded from the 50% Construction Documents submittal. Consultant shall attain 50% completion of the Project’s design and submit the 50% Construction Documents in accordance with the schedule contained in Section 4.0.

- b. 90% Construction Documents – Consultant shall prepare and submit to the Contract Administrator the following construction documents upon 90% completion of the Project’s design stage (the “90% Construction Documents”):
- Revised plan and profiles for the gravity sewer line;
 - Revised construction details, cross sections, and notes;
 - Technical specifications;
 - Opinion of probable cost of the Project (“bid level” Class 2 as defined by the AACE with a probable accuracy of -5% to +20%).

Consultant shall attain 90% completion of the Project’s design and submit the 90% Construction Documents in accordance with the schedule contained in Section 4.0. All revisions to the 50% Construction Documents shall address and/or incorporate County’s comments relating thereto.

- c. Regulatory Agency Permitting – At the 90% stage of design, Consultant shall submit the 90% Construction Documents to the permitting agencies listed below for review or permit issuance. Consultant shall coordinate with the regulatory agencies and prepare submittal packages with the appropriate calculations and back-up for the Contract Administrator’s review, and shall then apply for approvals and permits from the governmental authorities with jurisdiction over the Project. Consultant shall identify the appropriate governmental authorities. The governmental authorities with jurisdiction over the Project and the permits and approvals needed include, but are not limited to, the following:
- EPGM – License for Installation of Wastewater System;

- City of Dania Beach – Building Department Review;
 - City of Hollywood – Utility Provider Sign-off/ Building Department Review;
 - BCHCED – Pavement Marking and Signage.
- d. Final Construction Documents (Final CDs) – Consultant shall prepare and submit to the Contract Administrator the following Construction Documents upon final completion of the Project’s design stage (the “Final Construction Documents”). The Final Construction Documents shall include:
- Final plan and profiles for the gravity sewer line;
 - Erosion control plan;
 - Construction details, cross sections, and notes;
 - Final technical specifications;
 - Final opinion of probable cost of the Project (“bid level” Class 2 as defined by the AACE with a probable accuracy of -5% to +20%).

Consultant shall attain final completion of the Project’s design and submit the Final Construction Documents in accordance with the schedule contained in Section 4.0. All revisions to the 90% Construction Documents shall address and/or incorporate County’s comments relating thereto. Furthermore, all such revisions shall also address and/or incorporate comments from the government authorities/regulatory agencies with jurisdiction over the Project.

2.5 MISCELLANEOUS ENGINEERING SERVICES

Consultant shall assist County during procurement of the Project. Such assistance includes reviewing proposals from contractors, responding to inquiries from potential bidders on the Project design or technical specifications, and attending the pre-bid meeting held prior to the advertised bid date.

Consultant shall reproduce and distribute bid documents to construction contractors requesting documents. Consultant can charge a reasonable fee to potential bidders and others that request bid documents.

Consultant shall provide timely responses to the inquiries of potential bidders through written addenda. Consultant shall send these query responses to the Contract Administrator.

Consultant shall evaluate the bids for completeness, full responsiveness, and price, including alternative and unit prices, and shall make a formal recommendation to County regarding the award of contract. County shall evaluate the bid for nontechnical requirements, including but not limited to requirements relating to insurance and bonding.

Consultant shall reproduce six (6) sets of the Final Construction Documents to County for distribution to County staff and the awarded Contractor.

2.6 CONSTRUCTION PHASE ENGINEERING SERVICES

Consultant shall provide engineering services during construction for the Project. Consultant shall assist the Contractor with completing the dewatering and building permits. Consultant shall provide the following services during the construction of the Project:

- a. Resident Project Representative (“RPR”) Construction Observation: Provide full-time (up to 40 hours per week) RPR inspection services as construction remains active through final completion of the Project. Consultant is not responsible for the means, methods, techniques, sequences, or procedures of construction selected by the Contractor or the safety precautions and programs incident to the work of the Contractor. It is anticipated that the installation of all the sanitary sewer improvements will be completed by one Contractor with an anticipated construction duration of 32 weeks (224 calendar days).

The Consultant shall observe and document the utility installation and testing required to certify to the governing permitting agencies and Contract Administrator (the actual testing will be by others) that the utilities meet minimum requirements and specifications. Inspection reports and photographs shall be completed daily using Consultant’s standard inspection form, and must include a report on the progress being made as well as photographs and notes documenting the equipment and staffing provided by the Contractor. Consultant shall provide Contract Administrator copies of the reports weekly. Furthermore, Consultant shall attend all progress meetings with Contractor and Contract Administrator’s designees, maintain a record of

the installation measures of the sanitary sewer main and appurtenances to substantiate the Contractor's payment applications, review payment applications for sufficiency, and review and evaluate change order requests. If Consultant knows, or should reasonably know, of a construction issue, Consultant must immediately notify the Contract Administrator in writing.

Consultant shall not be responsible for the failure of the Contractor to perform the work in accordance with the contract drawings; except to the extent Consultant identifies, or should have reasonably identified, such failure and fails to notify the Contract Administrator in writing, and fails to instruct the Contractor to correct such nonconformance.

- b. Shop Drawing Review: Consultant shall review and approve shop drawings, samples, and other data and reports that the Contractor is required to submit for review. Consultant's review shall focus on conformance with the design concept for the Project and compliance with the information provided on the approved Contract Documents. The Contractor will be expected to have the shop drawings revised/corrected in accordance with the comments provided by Consultant.
- c. Contractor's Requests for Information ("RFIs"): Consultant must answer all RFIs from Contractor. Consultant shall provide County the draft response to each RFI within five (5) working days. Following County review and approval, the response will be issued to Contractor. Responses must include on-site observation/verifications of all conditions and situations which may lead or have led to the Contractor's RFI. Consultant shall notify the Contract Administrator in a timely manner of the impending RFI. Consultant shall provide an estimate of the cost and time impacts from the RFI on the Project and document conditions and situations necessitating the request for a contract modification or change order. Consultant shall make a recommendation of a resolution to the request.
- d. Change Management – Consultant shall prepare technical input for routine project cost or schedule changes from the construction Contractor. Consultant shall log, track, and evaluate the impact of the change request in terms of project cost and schedule. Consultant shall prepare a recommendation of the change request and if acceptable, a statement noting that the request cost/ schedule impacts is fair and

reasonable. Consultant analysis of the change request shall be forwarded to County for processing.

- e. As-Built Review: The as-built survey information collected and prepared by the Contractor shall be in accordance with technical specifications contained in the Construction Documents. Consultant shall review the as-builts to ensure substantial conformance to the approved plans. The Contractor will be expected to have the as-built plans revised in accordance with the comments provided by Consultant.
- f. Final Inspection and Punch list: Before issuing a determination of substantial completion or final completion, Consultant shall attend an inspection with the Contract Administrator or designee and, based on such inspection, Consultant shall prepare a list of items requiring completion or correction (punch list) for approval by the Contract Administrator. Consultant shall provide Contractor with an approved copy of the punch list and update the punch list as corrections are made. Consultant shall attend the final inspection with the Contract Administrator or designees and prepare a final inspection report for approval by the Contract Administrator.
- g. Final Certification/Permit Close-outs: Consultant shall prepare the final certification packages, prepare and process record drawings based on as-built survey information supplied by the Contractor, and submit final certification packages to the appropriate jurisdictional agencies. Consultant shall provide to County two (2) sets of 22"x34" signed and sealed prints and PDF and AutoCAD electronic versions of the record drawings. The record drawings must meet the BCWWS Minimum Drawing Requirements.

3.0 DELIVERABLES

All deliverables must be submitted to the Contract Administrator in accordance with the schedule contained in Section 4.0 below. The deliverables shall include:

- Topographic survey and AutoCAD base file;
- Subsurface utility engineering report;
- Geotechnical report;
- 50% Construction Documents;
- 90% Construction Documents;
- Final Construction Documents;

- Regulatory agency permits;
- Easement sketch and legal description;
- Construction procurement documents;
- Project close-out records; and

4.0 **SCHEDULE**

Twenty-one (21) calendar days review time is included for BCWWS to examine and provide comments on the deliverable documents at each 50%, 90%, and Final Construction Document tasks.

Activity or Task		Duration
	Notice to Proceed ("NTP")	
2.1.a	Topographic Survey	6 weeks from NTP (42 calendar days)
2.2	Subsurface Utility Engineering	4 weeks from NTP (28 calendar days)
	2.2.a Utility Designation	2 weeks from NTP (14 calendar days)
	2.2.b Location Services	4 weeks from NTP (28 calendar days)
2.3	Subsurface Exploration of Soils	6 weeks from NTP (42 calendar days)
2.4, 2.1.b	Engineering Design & Permitting Easement Sketch and Description	44 weeks from NTP (308 calendar days)
	2.4.a 50% Construction Documents	19 weeks from NTP (133 calendar days)
	2.4.b 90% Construction Documents	30 weeks from NTP (210 calendar days)
	2.4.c Regulatory Agency Permitting	42 weeks from NTP (294 calendar days)
	2.4.d Final Construction Documents and all other deliverables enumerated in Section 3.0 above not specified in this schedule	44 weeks from NTP (308 calendar days)
2.5	Miscellaneous Engineering Services	46 weeks from NTP (322 calendar days)
2.6	Construction Phase Engineering Services	4 weeks from construction Contractor NTP 1; 32 weeks from Construction Contractor NTP 2 (252 calendar days total)
	Total Duration	82 weeks after NTP (574 calendar days)

(*) The duration of task 2.4 excludes city and building permit approvals, as a Contractor must be retained for the Right-of-Way Permit applications to be complete.

END OF SCOPE

FIGURE 1

