

DOCUMENT ROUTING FORM

(3) ✓ 1/29/13 (L)

NAME OF DOCUMENT: **CDM SMITH, INC. TASK ORDER No. 23 – GTL WWTP LARGE DIAMETER PROCESS PIPE REPLACEMENT – PHASE II DESIGN - \$240,772.00**

Approved Comm. Mtg. on **JANUARY 8, 2013** CAM #12-2216 ITEM: ☒ M-4

Routing Origin: ☒ CAO

Also attached: ☒ copy of CAR ☒ copy of document ☐ ACM Form ☒ 3 originals

By: LB forwarded to: **MARYANN JOHNSTON, PUBIC WORKS ENGINEERING**
Initials

1.) Approved as to Content: [Signature]
Department Director

Capital Improvements defined as having a life of at least 10 years and a cost of at least \$50,000 and shall mean improvements to real property (land, buildings, fixtures) that add value and/or extend useful life, inc. major repairs such as roof replacement, etc. Term "Real Property" include: land, real estate, realty, real.

Please Check the proper box: CIP FUNDED ☒ YES ☐ NO
Capital Improvement Projects

2.) Approved as to Funds Available: by [Signature] Date: 1-11-13
Finance Director

Amount Required by Contract/Agreement \$ 240,772.00 Funding Source: P11773.451
 Dept./Div. PBS/ENG Index/Sub-object 6534 Project # P11773

3.) City Budget Amendment roved as to Form: # 3 Originals to City Mgr. By: CARRIE SARVER
CAM approved per Bobbi W.
 Carrie Sarver [Signature]

4.) Appr [Signature] sistant City Manager:
 By: Stanley Hawthorne, Assistant City Manager By: Susanne Torriente, Assistant City Manager

- 5.) Acting City Manager: Please sign as indicated and forward 3 originals to Mayor.
- 6.) Mayor: Please sign as indicated and forward 3 originals to Clerk.
- 7.) To City Clerk for attestation and City seal.

INSTRUCTIONS TO CLERK'S OFFICE

8.) City Clerk: retains one original document and forwards 2 original documents to:
MARYANN JOHNSTON, PUBIC WORKS ENGINEERING 1/18

☐ Copy of document to _____ ☒ Original Route form to Linda Blanco, CAO
☐ Attach _____ certified copies of Reso. # _____ ☐ Fill-in date

RECEIVED
 FT LAUDERDALE
 CITY ATTORNEY'S OFFICE
 2013 JAN 11 PM 12:09

Task Order No. 23
Dated the 8th day of January, 2013
CITY PROJECT NO. 11773

CITY OF FORT LAUDERDALE
GEORGE T. LOHMEYER REGIONAL WASTEWATER TREATMENT PLANT
LARGE DIAMETER PROCESS PIPE REPLACEMENT – PHASE II
DESIGN

On May 3, 2011, the City Commission authorized a Continuing Services Agreement with CDM Smith Inc. formerly known as Camp Dresser & McKee Inc. (Consultant), for the General Wastewater Consulting Professional Architectural – Engineering Service (RFQ No. 606-10482) associated with the City's wastewater and stormwater systems ("Master Agreement") as amended and approved by City Commission on May 1, 2012. This task order is being performed under the terms and conditions of the Amended Master Agreement.

The Master Agreement with the Consultant includes design services for the George T. Lohmeyer Wastewater Treatment Plant.

BACKGROUND

In September, 2011, the City experienced several large diameter process pipe failures at the George T. Lohmeyer Wastewater Treatment Plant. The following actions were taken by the City.

Task order 11, completed October 2011 – The City and Consultant temporarily bypassed the 48"/60" diameter prestressed concrete cylinder pipe conveying pretreated raw sewage between the pretreatment building and reactor 2 influent.

Task order 12, completed May 2012 – The City and Consultant identified approximately 2,460 linear feet of critical-duty prestressed concrete cylinder pipe consisting of 660 feet of 66" pipe; 180 feet of 54" pipe; 780 feet of 48" pipe, and 840 feet of 42" pipe. Reference separately attached Exhibit A, Process Pipe Replacement Sequencing. The Consultant then evaluated replacement materials, sizes, and options for permanent pipe replacement. The City and Consultant developed a preliminary construction sequence to keep the plant in service during pipe replacement for the temporary bypassed 48"/60" pipe into reactor 2; and the leaking 42"/60" pipe into clarifier battery 3; and replace the 48"/54" pipe into reactor 1.

SCOPE OF SERVICES

1.0 Design services for the 60 percent design development consists of advancing the development of drawings based on the findings of the definition, conceptual, and preliminary design phases necessary to implement the replacement identified in task order 12. Specifically, the influent to both reactors, the influent to battery 3 clarifiers, and the influent bypass line for reactor 1. The length of process pipe to be replaced is approximately 2,460 linear feet and generally consists of 660 feet of 66" pipe; 180

feet of 54" pipe; 780 feet of 48" pipe and 840 feet of 42" pipe. This design development phase includes structural review and modifications incidental to perform temporary bypass piping during construction. The Consultant will provide design provisions to temporarily protect or relocate the existing non-potable water, potable water, seal water, plant drain, chlorine solution, power, and communication utilities to facilitate the process pipe replacement. The Consultant will provide bypass pump flow requirements as well as process pipe replacement construction sequencing initiated in task order 12. Piping changes during construction are an inherent nature of this work, so the design development services will include internal quality technical and constructability reviews to minimize change orders associated with underground utilities, structural modifications, or repairs due to bypass piping, during replacement of the process pipe identified in task order 12.

The design development services shall also include the replacement of the existing 1,200 linear feet of 6" fiberglass pipe conveying odor control chlorine solution originating from the chlorine building's west exterior and terminating at the pretreatment building's east exterior. The replacement pipe material shall be schedule 80 polyvinyl chloride. The existing odor control chlorine solution pipe extends above ground at the liquid oxygen facility but the new pipe would be placed below ground if feasible.

The design development services shall also include a bypass pipe line or an in-line jumper pipe, depending upon hydraulic and operational considerations, around a 48" flow meter. The 48" flow meter shall be located above ground between the pretreatment building and reactor 2.

The design development services include drawings for the proposed work using AutoCAD Civil 3D 2012 software prepared per City CADD specifications current at the time they are submitted. Design drawings shall be uploaded to a safe file transfer protocol site in a portable document format.

This Phase is estimated at 602 hours and \$83,875. This phase builds upon previous phases and is interdependent with each subsequent phase.

2.0 Design Services for 90 Percent (Pre-Final) Design consists of development of drawings and specifications necessary to advance the replacements identified in the design development phase above. Services include detailed drawings for the proposed work using AutoCad Civil 3D 2012 software prepared per City CADD specifications current at the time they are submitted. Consultant technical specifications, utilizing the Construction Specifications Institute 16-Division format, shall be prepared and shall consist of written technical descriptions of materials, construction, systems, standards and workmanship as applied to this project. Services include internal quality technical and constructability reviews for the design. Design drawings and technical specifications shall be uploaded to a safe file transfer protocol site in a portable document format. These documents can be used to accompany any necessary permit application submittal.

This phase is estimated at 455 hours and \$61,185. This phase builds upon previous phases and is interdependent with each subsequent phase.

3.0 Final Design Services for bid set drawings consist of drawings and specification necessary to obtain construction bids to implement the replacements identified in the pre-final design development phase above. These documents shall include review comments from regulatory agencies, the City, and the

Consultant on the 90 percent submittal documents. Services include detailed drawings for the proposed work using AutoCad Civil 3D 2012 software prepared per City CADD specifications current at the time they are submitted. Technical specifications consisting of written technical descriptions of materials, construction, systems, standards and workmanship as applied to this project shall be finalized. Services include internal quality technical and constructability reviews for the design. Design drawings shall be uploaded to the City's file transfer protocol site in a portable document format. City provided front end documents and Consultant technical specifications shall be assembled/paginated, and then uploaded to a safe file transfer protocol site in a portable document format. A final statement of probable construction costs based upon the City approved final detailed construction document shall be provided.

This phase is estimated at 370 hours and \$42,890. This phase builds upon previous phases and is interdependent with each subsequent phase.

4.0 Permitting Services consist of preparation of necessary construction license applications to the various regulatory agencies having jurisdiction on this project. Licenses may be required from the following regulatory agencies:

- a. Broward County Development and Environmental Regulation Division; Form 212-0004; and
- b. Florida Department of Environmental Protection; Form 62-604.300(8)(a).

License application forms shall be delivered by the Consultant to the appropriate regulatory agencies. The Consultant will reply to regulatory questions generated from the submittal of these forms. The City shall provide all permit fees based on the fee value provided by the regulator.

This phase is estimated at 46 hours and \$6,110. This phase builds upon previous phases and is interdependent with each subsequent phase.

5.0 Bidding Services include the work necessary to assist the City with bidding of the project. The work includes the following:

- a. Provide the City with written responses to questions from plan holders on technical aspects of bid documents for an addendum;
- b. Attend the pre-bid conference and bid opening. The City shall reproduce and distribute the contract documents, maintain plan holders list, and tabulate bids; and
- c. Telephone the references provided by the lowest responsive bidder and prepare a letter of recommendation for the lowest responsive bidder. Bidding services shall end with the recommendation of the award.

This phase is estimated at 98 hours and \$12,595. This phase builds upon previous phases.

DATA OR ASSISTANCE TO BE PROVIDED BY THE CITY

- A. Provide forms, bidding instructions and administration procedures (front ends);

- B. Review and provide comments on the 60 percent, and 90 percent design documents;
- C. Provide assistance with regulatory agencies and provide payment for permit fees;
- D. Advertisement of project at bidding;
- E. Reproduce and distribute the contract documents and maintain plan holder list;
- F. Hold, conduct and generate minutes for pre-bid conference and site visit by bidders;
- G. Tabulate bids; and
- H. Prepare notice of award.

DELIVERABLES

- 1.0 Design development phase drawings via the safe file transfer protocol site.
- 2.0 Pre-Final design phase drawings and technical specifications via the safe file transfer protocol site.
- 3.0 Final design phase drawings; front end/technical specifications; final statement of probable construction costs via the safe file transfer protocol.
- 4.0 Agency licenses to construct improvement or agency license waivers.
- 5.0 Letter of recommendation of award to the lowest responsive bidder.

TIME OF COMPLETION

The Scope of Services from design development to final design is budgeted to be six months from receipt of the notice to proceed and purchase order. Bidding services are budgeted to be four months in duration, but are not within the Consultant's control. Permitting will run concurrent with the project execution. The time of completion of this task order may be extended through the City's contract administrator.

CITY CONTACTS

Requests for payments should be directed to City of Fort Lauderdale Accounts Payable via e-mail to AcctsPayble@FortLauderdale.gov.

All other correspondence and submittals should be directed to the attention of Jorge Holguin at the address shown below.

City of Fort Lauderdale
City Hall, 4th Floor – Engineering
100 North Andrews Avenue
Fort Lauderdale, FL 33301

CONSULTANT CONTACTS

Timothy J. O'Neil, P.E., BCEE
6365 NW 6th Way # 200
Fort Lauderdale, FL 33309
954 776-1731

PAYMENT AND COMPENSATION

Invoicing for the services will be monthly based on time and hourly rate for labor at the time services are provided. A status report shall accompany each progress invoice.

A breakdown of the estimated labor for Consultant services and subconsulting expenses are provided on the following page and summarized below.

DESCRIPTION	AMOUNT
Estimated Labor Cost	\$206,655
Estimated Reimbursable Subconsulting Expenses	\$ 34,117

Task Order No. 23 Total Not to Exceed \$240,772

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CONSULTANT SERVICES

<u>Labor Category (Hourly Rate)</u>	<u>Hours</u>
Officer (\$190)	0
Principal/Associate (\$170)	257
Senior Professional (\$150)	373
Professional II (\$125)	423
Professional I (\$100)	0
Senior Support Services (\$115)	167
Staff Support Services (\$75)	120
Senior Professional Field Services (\$110)	0
Professional Field Services (\$77)	0
Project Administration (\$65)	153
Senior Quality Control Officer (\$225)	0
Senior Quality Control Manager (\$205)	78
Total Estimated Hours	1,571
*Estimated Labor Cost (Not to Exceed)	<u>\$206,655</u>

**Other Labor Categories and Hours may be applicable to the services as allowable in the Master Agreement.*

<u>Reimbursable Subconsulting Expenses</u>	<u>Amount</u>
Craven Thompson & Associates Inc. above and below grade utilities location/survey and geophysical soil boring/ resistivity/chloride	\$34,117
Estimated Reimbursable Subconsulting Amount (Not to Exceed)	<u>\$34,117</u>

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CONSULTANT:

Witnesses:

Ruth Burney
Signature

Ruth Burney
Printed Name

Allyson Nunes
Signature

Allyson Nunes
Printed Name

CDM SMITH INC. (f/k/a Camp Dresser & McKee Inc.)

By: [Signature]
Title: Associate

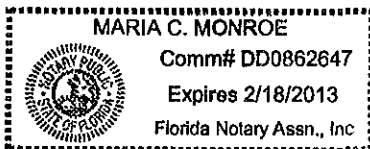
ATTEST:

By: Mario F. Marcaccio
Title: Assistant Secretary

STATE OF FLORIDA:
COUNTY OF BROWARD:

BEFORE ME, an officer duly authorized by law to administer oaths and take acknowledgments, on the 21st day of December, 2012 personally appeared Jonathan Z. Goldman as Associate and Mario Marcaccio as Assistant Secretary of CDM Smith Inc., a Massachusetts corporation, authorized to do business in the State of Florida, and acknowledged they executed the foregoing Agreement as the proper officials of CDM Smith Inc., for the use and purposes mentioned in it and they affixed the official seal of the legal entity, and that the instrument is the act and deed of that entity.

(SEAL)




Maria C. Monroe
Notary Public, State of Florida
(Signature of Notary taking Acknowledgment)

Maria C. Monroe
Name of Notary Typed, Printed or Stamped
My Commission Expires: February 13, 2013
Commission Number: DD0862647

IN WITNESS OF THE FOREGOING, the parties have set their hands and seals the day and year first above written.

CITY OF FORT LAUDERDALE, a municipal
corporation of the State of Florida:

By 
LEE R. FELDMAN, City Manager


(CORPORATE SEAL)



ATTEST:


JONDA K. JOSEPH, City Clerk

Approved as to form:


CARRIE L. SARVER
Assistant City Attorney

ESTIMATING TOOL

Consulting Services for Design, Permit, Bid
Replacement of Large Diameter Process Pipe - Phase II
Task Order No. 23
Project No. 11773
18-Dec-12

PHASE AND DESCRIPTION	Officer	Principal Associate	Senior Professional	Professional II	Professional I	Senior Support Services	Staff Support Services	Sr Professional Field Services	Professional Field Services	Project Administration	Senior QC Officer	Senior QC Manager	TOTAL HOURS	LABOR COSTS
Other labor categories and hours may be applicable to the services as allowable in the Master Agreement. The phases (definition, conceptual, preliminary, development, pre final, final, permitting, bidding, construction) are interdependent and build upon each other throughout the project process. The phases are not considered stand alone activities (i.e. not a subtask).														
Estimated Hours	0	257	373	423	0	167	120	0	0	153	0	78	1,571	\$206,655
Phase 3 - Design Development 30% - 60%	0	121	166	174	0	77	0	0	0	38	0	26	602	\$83,875
Phase 4 - Pre Final Design 60%-90%	0	68	114	144	0	50	0	0	0	53	0	26	455	\$61,185
Phase 5 - Final Design 90% - 100%	0	43	77	24	0	30	120	0	0	50	0	26	370	\$42,890
Permitting Phase - FDEP and BC DERD - Open Construction License	0	12	0	31	0	0	0	0	0	3	0	0	46	\$6,110
Bidding Phase - Technical, Conference, Opening, Recommend	0	13	16	50	0	10	0	0	0	9	0	0	98	\$12,585
Estimated Hours	0	257	373	423	0	167	120	0	0	153	0	78	1,571	\$206,655
Hourly Rate	\$190.00	\$170.00	\$150.00	\$125.00	\$100.00	\$115.00	\$75.00	\$110.00	\$77.00	\$95.00	\$225.00	\$205.00		

CDM Smith Estimated Labor Hours= 1,571
CDM Smith Estimated Labor Cost \$ 206,655

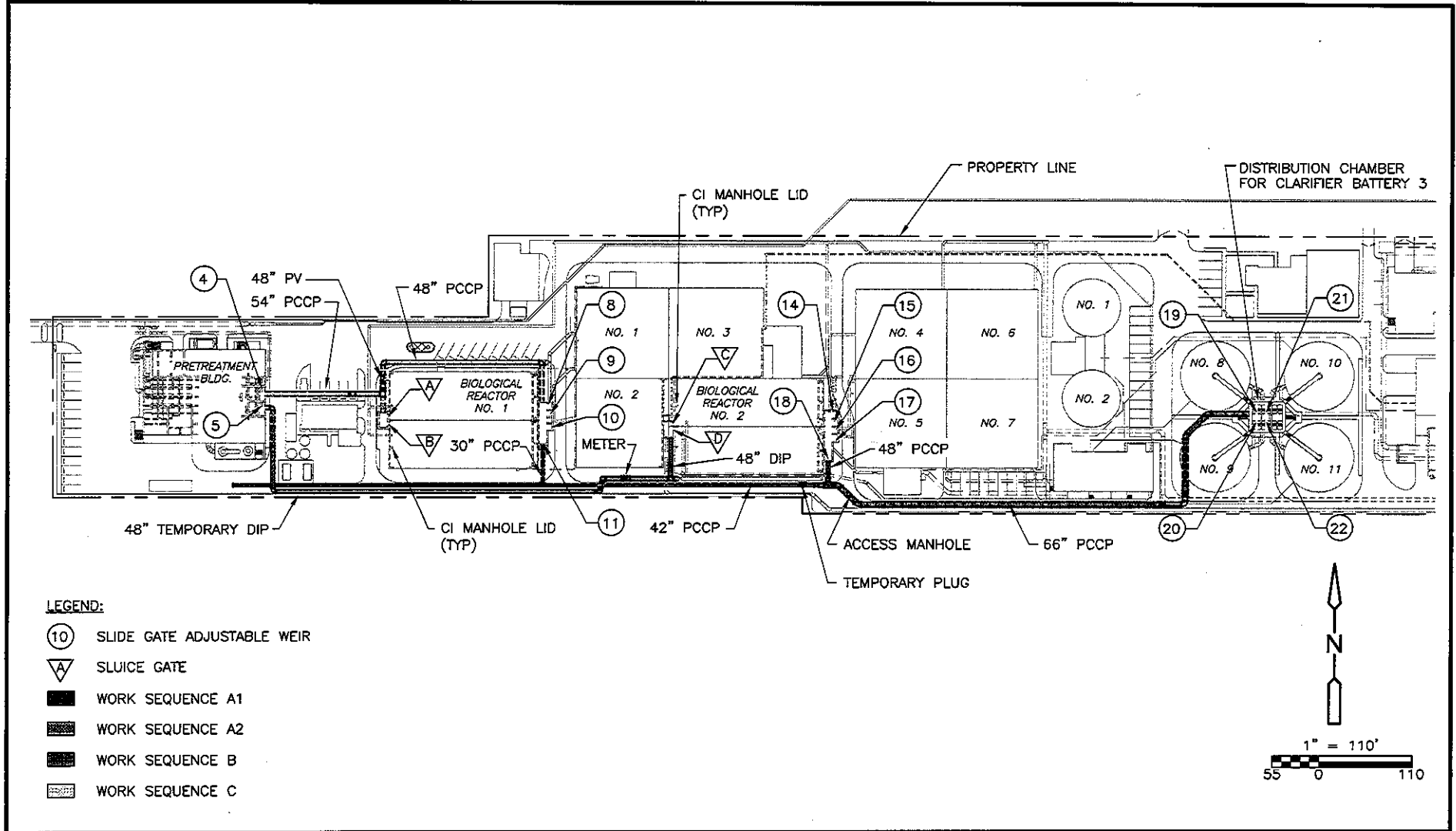
ESTIMATED REIMBURSABLE SUBCONSULTANT EXPENSES (CTA Inc) \$ 34,117

Estimated Consulting Services \$ 240,772 Not To Exceed

CDM Smith Inc.		
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ESTIMATING TOOL		
Consulting Services for Design, Permit, Bid		
Replacement of Large Diameter Process Pipe - Phase II		
Task Order No. 23		
Project No. 11773		
18-Dec-12		
LABOR CATEGORY	Employee Title	Project Role
Principal Associate	Project Manager	Guide and manage the week to week activities of the team; Primary point of contact for the project; Stay ahead of schedule; Stay under budget; Engineer of record for the entire project (civil, electrical, controls, structural). Prepare, refine, finalize the bid tab; Prepare, refine, finalize the constructability design to keep existing water, chlorine, non-potable, electrical, controls, in service or temporarily removed
Senior Professional	Structural Engineer	Design structural modifications or repairs due to bypass piping during replacement of the 2,460 feet of 48"-66" process pipe; Design the 48" flow meter pipe supports
	Electrical Engineer	Design the power source/conduit/wire for the 48" flow meter; Design the control conduit/cable for the 48" flow meter; Design the lightning protection grounding system for the 48" flow meter; Design for temporary relocation /protection of existing power and control conduit during replacement of 2,460 feet of 48"-66" process pipe
	Controls Engineer	Define the advantages of a 48" inline venturi flow meter versus an inline magnetic flow meter and make a recommendation based on the application; Design the flow meter, flow range, lining, control signal output/input, accuracy, transmitter, local indicator, Design the temporary flow meters _flow, range, size, type, control signal_ during replacement of 2,460 feet of 48"-66" process pipe
	Bypass Pipe Engineer	Build upon T/O 12 to design the temporary bypass pumps flow/head selection design; Temporary bypass piping diameter/flow/ velocity/ material selection design
Professional II	New Pipe Engineer	Build upon T/O 12's material selection and unit cost to design the new 2,460 feet of 48"-66" pipe line work ; Design the flow meter bypass pipe line or in-line jumper pipe; take the lead in answering construction bid questions.
Senior Staff Support Services	AutoCAD	AutoCAD drawings drafter ; Create drawings from designer redline drawings; and from electrical and controls redline drawings; and from structural pipe support redline drawings
Staff Support Services	Estimator	Final statement of probable construction cost estimator
Project Administration	Administration	Format 94 specifications; Assemble/ paginate 94 specifications; Two permit letters; One bid letter
	Financial	Monthly invoices Labor/Expenses/ Certified backup plus initial project setup
Senior Quality Control Manager	Lead Practitioner	Independent checking of constructability / MOPO design work, as a fresh pair of eyes, build upon technical review comments from T/O 12; Confirm constructability, pipe joint restraints, pipe testing procedures; Confirm drawing call-out notes, dimensions, depth of cover, drawing details, restoration procedures; Independent checking of temporary bypass pipe design work, as a fresh pair of eyes, build upon technical review comments from T/O 12; Confirm the temporary bypass pumps flow/head selections; Confirm the temporary bypass piping diameter/flow/ velocity selections

USER: nunesal
DATE: Sep 06, 2012 11:14am

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Report Figures\EXHIBIT A.dwg
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AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



**CDM
Smith**

Exhibit A
G.T. Lohmeyer WWTP
Process Pipe Replacement Sequencing
12-2216
Exhibit 1

City of Fort Lauderdale Project No. 1173 Craven-Thompson & Associate, Inc. Survey Proposal Costs

DESCRIPTION	TASK No 23	Start Type-->> Hourly Rate -->>	Principal Surveyor \$140.00	P/S \$105.00	Field Representative \$77.00	Survey Field Crew \$105.00	Switzer CAD/DT Technician \$77.00	Clerical Services \$65.00	Field Crew with GPS \$150.00	SBD Party Agreement Fixed fee	Cost
SURVEY TASKS											
CITA No.											
1100											
As-Built & Topographic Survey											
Project research & boundary corner recovery		Task 1.1 - Hours		4.00		7.00	0.00	0.00	0.00		
		Task 1.1 - Costs	\$0.00	\$420.00	\$0.00	\$735.00	\$0.00	\$0.00	\$0.00		
		Task 1.1 - Hours		4.00		8.00	0.00	0.00	0.00		
Establish control points with elevations		Task 1.1 - Costs	\$0.00	\$420.00	\$0.00	\$840.00	\$0.00	\$0.00	\$0.00		
		Task 1.1 - Hours		12.00		32.00	22.00	0.00	0.00		
Locate visible site improvements		Task 1.1 - Costs	\$0.00	\$1,260.00	\$0.00	\$3,960.00	\$1,694.00	\$0.00	\$0.00		
1200											
Designate & Locate Utilities											
Vacuum Excavation- hard surface with restoration, twenty-four (24) locations of existing utilities performed by a licensed utility locating firm.		Task 1.2 - Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$9,000.00	
Research information, coordinate with CDM Smith & utility locating firm for vacuum excavation locations		Task 1.2 - Hours		2.00			0.00	0.00	0.00		
		Task 1.2 - Costs	\$0.00	\$210.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		
		Task 1.2 - Hours		2.00		10.00	3.00		0.00		
Re-establish control points with elevations, field locate vacuum excavation sites, process information and plot on as-built survey		Task 1.2 - Costs	\$0.00	\$210.00	\$0.00	\$1,050.00	\$231.00	\$0.00	\$0.00		
1210											
Locate Test Holes & Soils Test Areas											
Drill two (2) Standard Penetration Borings to a depth of 25 feet below existing grade, provide four (4) soil resistivity and chloride testing in the area of the proposed pipe alignment performed by a licensed Geotechnical Engineering firm		Task 1.3 - Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$8,770.00	
Research information, coordinate with CDM Smith & Geotechnical Engineering firm for location of boring & resistivity areas		Task 1.3 - Hours		2.00			0.00				
		Task 1.3 - Costs	\$0.00	\$210.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		
		Task 1.3 - Hours		2.00		6.00	1.00	1.00			
Re-establish control points with elevations, field locate boring and soil resistivity areas, process information and plot on as-built survey		Task 1.3 - Costs	\$0.00	\$210.00	\$0.00	\$630.00	\$77.00	\$65.00	\$0.00		
1260											
Obtain Process Pipe As-Builts											
		Task 1.4 - Hours		10.00		20.00	0.00	0.00	0.00		
		Task 1.4 - Costs	\$0.00	\$1,050.00	\$0.00	\$2,100.00	\$0.00	\$0.00	\$0.00		
12160											
Obtain Spot Elevation on Top of Tanks											
		Task 1.5 - Hours		3.00		12.00	0.00	0.00	0.00		
		Task 1.5 - Costs	\$0.00	\$315.00	\$0.00	\$1,260.00	\$0.00	\$0.00	\$0.00		