



MANATEE COUNTY FLORIDA

March 31, 2014

TO: All Interested Bidders
SUBJECT: Invitation for Bids #14-0667CD
Sludge Holding Tank Improvements at the Southeast
Water Reclamation Facility

ADDENDUM #3

Bidders are hereby notified that this Addendum shall be acknowledged on page Bid Form-1 of the Bid Form and made a part of the above named bidding and contract documents. Bids submitted without acknowledgment of the Addendum will be considered incomplete.

The following items are issued to add to, modify, and clarify the bid and contract documents. These items shall have the same force and effect as the original bidding and contract documents, and cost involved shall be included in the bid prices. Bids to be submitted on the specified bid date, shall conform to the additions and revisions listed herein.

1. **DELETE** pages Bid Form-2 thru Bid Form-5 and **INSERT REVISED** pages Bid Form-2 thru Bid Form-5 that are attached to this Addendum #3.
2. **CHANGE** Article 1.08.M, Remove Debris from Sludge Holding Tanks (Bid Item 8a), on page 44 of the Measurement and Payment Section 01150 in the Technical Specifications to read as follows:

M. Remove Debris from Sludge Holding Tanks (Bid Item 8a)

1. Payment for all work included in this Bid Item will be made at the applicable Contract lump sum price listed in the Bid Form, and shall represent full compensation for draining the two sludge holding tanks and removing, hauling and spreading the debris at the facilities drying beds. This item includes coordination with treatment plant operators, draining tanks, collecting and hauling, and spreading of debris.

2. Payment will be based on the percent complete at the time of preparation of the monthly application for payment. These payments will be subject to the standard retainage provided in the Contract. Payment of the retainage will be made after completion of the work and demobilization.

Financial Management Department –Purchasing Division
1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205
PHONE: 941.749.3014 * FAX: 941.749.3034

www.mymanatee.org

3. **ADD** the following Article 1.08.N, SCADA Programming Allowance (Bid Item 7c), to page 44 of the Measurement and Payment Section 01150 in the Technical Specifications:

N. SCADA Programming Allowance (Bid Item 7c)

- a. Payment for all work included in this bid item will be made at the applicable Contract lump sum price listed in the bid form, and shall represent full compensation for furnishing SCADA programming services in accordance with scope of work listed in Section 17010 of the Technical Specifications. This item includes SCADA programming, startup and testing services, training and providing complete documentation in digital format, complete.
- b. Payment will be based on the percent complete at the time of preparation of the monthly application for payment. These payments will be subject to the standard retainage provided in the Contract. Payment of the retainage will be made after completion of the work and demobilization.

General Contractor shall use an allowance of \$ 19,520.00 to contract with the factory authorized representative of existing Manatee County SCADA software listed below:

BCI Technologies
1619 E. Vine Street
Kissimmee, FL 34744
Office: 407-847-8848
Fax: 407-847-8824

4. **CLARIFICATION** of Article 1.04, Substitutions and Product Options, of Section 01600 on page 80 of the Technical Specifications:

The County and the Engineer of Record will not provide review and approval of "or equal" products prior to bid award. Prospective bidders are directed to bid on the products specified within the respective sections of the Technical Specifications. After award of the project, the County and the Engineer of Record will review requests for substitutions from the awarded Contractor, if requested, during shop drawing submittals to determine "or equal" status to the product(s) specified in the Technical Specifications.

5. **DELETE** Article 1.01.B.1 of Section 17010 on page 404 of the Technical Specifications in its entirety and **INSERT** the following:

B. SCADA Software Services

1. The Contractor shall contract with the factory authorized representative of the existing Citect-Software in the plant SCADA command center; BCI Technologies, 1619 E. Vine St., Kissimmee, FL 34744, to provide SCADA Software Services, including all pertinent software requirements for additions and modifications to existing SCADA computers and HMI graphics at the SEWRF command center, as specified in section 17400, plus software control logic additions and configuration to existing PLC in SCADA panel "SP-3", located at the Thickener and Blower building No. 3, as needed for processing the additional software points and pertinent software requirements specified in Section 17452-1.03-C-3.

2. **BCI Technologies Scope of Work:** BCI Technologies will provide Citect SCADA programming services for monitoring of the added Sludge Feed pump, Discharge pump and Belt Thickener in the Citect SCADA software. Display graphics and tag database items will be created to match the existing screens/graphics. BCI Technologies will provide software programming for the Allen-Bradley PLC Feed Pump Controls in accordance with the requirements specified in the project plans and specifications, excluding the Thickener Control Panel programming which is to be provided by the equipment manufacturer.
 - a. **HMI Programming**

BCI Technologies will provide modifications to the existing Citect SCADA software located at the Southeast Water Reclamation Facility. Modifications will include the following:

 1. Create new graphics/screens
 2. Modify existing tag database (I/O tag list must be provided by Owner or PLC Programming Contractor)
 3. Create new trend pages and alarms
 - b. **PLC Programming**

BCI Technologies will provide software programming for the Allen-Bradley PLC Feed Pump Controls in accordance with the requirements specified in the plans and specifications. This programming excludes the Thickener Control Panel software and programming which is to be provided by the equipment manufacturer.
 - c. **Operation and System Validation**

BCI will provide startup and testing for the Citect SCADA system software and perform a functional test of the SCADA graphics and tag database with the Contractor and Owner.
 - d. **Training**

BCI will provide a two hour training session with operators and maintenance personnel for the modified graphics and alarms added to the Citect SCADA software.
 - e. **System Software Backup and Manuals**

BCI will provide a compact disk or USB flash drive with a complete backup copy of the Citect SCADA project. Documentation will be provided for the operation of the updated Citect SCADA graphics/screens.
3. Contractor shall coordinate, manage and provide all of the required SCADA and PLC Software Services of BCI Technologies as a Subcontractor, plus all of the required submittals and documentation for a complete working system.
6. **ADD** the following Article 1.07.A.2 to Section 17010 on page 412 of the Technical Specifications:

Acceptable Subcontractor for required SCADA Software Services specified in section 17400: BCI Technologies, 1619 E. Vine St., Kissimmee, FL 34744, the factory authorized representative of the existing Citect-Software in the plant SCADA Command Center.

7. **ADD** the following Article 1.07.B.5 to Section 17010 on page 413 of the Technical Specifications:

5. Acceptable Subcontractors to provide Instrumentation and Control Systems:

- a. Revere Controls Systems, Lakeland, FL 33811.
- b. Curry Controls Company, Lakeland, FL 33811
- c. Rocha Controls, Tampa, FL 33634

8. **CHANGE** Article 1.01.C of Section 17400 on page 434 of the Technical Specifications to read as follows:

C. General requirements:

1. Contractor shall provide all necessary coordination for testing and commissioning the software modifications and additions in existing SCADA computers and SCADA PLC, including testing functionality of all new graphics, to assure complete and operating control software system related to the new thickener and sludge feed pumps.
2. Contractor shall furnish copies of all related equipment shop drawing data for controls and instrumentation, including copies of field equipment testing verifying adequate termination of field wiring, testing of control loops and calibration of all field instruments.
3. Contractor shall furnish copies of all software logic in the thickener No. 2 control panel, for communication between thickener control panel and the plant SCADA system.

9. **CHANGE** Article 1.02 of Section 17400 on page 434 of the Technical Specifications to read as follows:

1.02 SCADA Software Services

A. Contractor shall provide and include the cost to subcontract the scope of work for SCADA software services, including all software additions and modifications to existing SCADA computers at the SEWRF command center and software control logic additions to existing PLC in SCADA panel "SP-3", located at the Thickener and Blower building No. 3.

B. General requirements:

1. Contractor shall provide all Software modifications and additions in existing SCADA computers and SCADA PLC "SP-3", including all new graphics for a complete and operating control software system, to achieve the functionality described in this and other sections through a combination of standard control system software and application software developed specifically for this project.
2. The standard control software listed in this section does not represent a comprehensive list of software necessary to implement the functional requirements of the specifications. Contractor shall provide all necessary supplemental utility software and application software, as required, to meet the functional requirements of the Specifications.
3. The software must match the existing SCADA software.

10. **CHANGE** Article 2.01.A of Section 17400 on page 435 of the Technical Specifications to read as follows:
 - A. Contractor shall provide the SCADA graphic software system to match existing.
11. **ADD** the following Article 2.01.B to Section 17400 on page 435 of the Technical Specifications:

Acceptable Subcontractor for required SCADA Software Services specified in section 17400: BCI Technologies, 1619 E. Vine St., Kissimmee, FL 34744, the factory authorized representative of the existing Citect-Software in the plant SCADA Command Center.
12. **CHANGE** Article 3.02.B of Section 17400 on page 438 of the Technical Specifications to read as follows:
 - B. Contractor shall provide training to plant operating personnel related to new additional SCADA graphics.
13. **ADD** the following sentence to Article 1.03.A of Section 17542 on page 456 of the Technical Specifications:

PLC's hardware in new and future control panels shall be the newer products of the Allen Bradley CompactLogix series.
14. **CHANGE** Article 1.03.B of Section 17542 on page 456 of the Technical Specifications to read as follows:

New PLC hardware and related software in sludge gravity belt thickener No. 2 shall match the quality and type of newer products PLCs Allen Bradley CompactLogix, for Owner's convenience of maintenance and stocking of common spare parts.
15. **CHANGE** Article 1.03.C.3 of Section 17542 on page 457 of the Technical Specifications to read as follows:
 2. All software /programming services in existing PLC controllers SP-3 and SCADA computer shall be provided by Contractor.
16. **CHANGE** Article 2.01.A.3 of Section 17542 on page 457 of the Technical Specifications to read as follows:

Allen Bradley CPU processor 1747-L552
17. **ADD** the following Article 2.02.C to Section 17542 on page 458 of the Technical Specifications:
 - C. The existing PLC communicates with the SCADA system via Ethernet protocol". Provide new hardware for communication with PLC in Thickener Control Panel No. 2 using the Ethernet protocol network.
18. **CHANGE** Article 2.03.A of Section 17542 on page 458 of the Technical Specifications to read as follows:

Provide PLC hardware and related software using Allen Bradley CompactLogix products, according to Owner's requirement for newer PLC technology for SCADA system, of similar product configuration as products in existing SCADA Panel SP-3.

19. **CHANGE** Article 2.03.J of Section 17542 on page 458 of the Technical Specifications to read as follows:
- J. Software shall be Rockwell – Allen Bradley RSLogix 5000 and/or the pertinent software for the selected PLC hardware.
20. **CHANGE** Article 2.03.K of Section 17542 on page 459 of the Technical Specifications to read as follows:
- K. Provide Fiber Optic Switch with failover redundancy or equivalent feature on the PLC communication card for communication to SCADA network in PLC cabinet SP-3.
21. **DELETE** Plan Sheets M-1 and M-4 and **INSERT** the Revised Plan Sheets M-1 and M-4 that are attached to this Addendum #3.

The following questions and/or requests have been presented by potential bidders:

QUESTION #1: Per plans C-3,M-1, & M-5 along with spec section 11240 we are providing 2 new sludge pumps. Please confirm that both pumps are to be designed for the same operating conditions as only one set of conditions is called out in the specs.

RESPONSE #1: Correct, one set of operating conditions apply to both pumps.

QUESTION #2: Do you have details on the tank drain system for sludge holding tanks #1 & #2? If so would you provide those? Is there a floor drain in the tank or is the only way to drain the tank by using the sludge pumps?

RESPONSE #2: See the record drawings for the floor drain details that are attached to this Addendum #3.

QUESTION #3: On the bid form item 8a refers to 1,000 cy of debris removal. Is that based on 500 cy per tank?

RESPONSE #3: Bid item #8a has been revised; see item #2 of this Addendum for Contractor responsibilities for removal of sludge.

QUESTION #4: Spec 01150 M – Remove Debris from Sludge Holding Tanks, is this item to be paid as a lump sum or will it be measured and paid by quantities (CY)? If it is to be measured and paid by CY how will the measurements be done, per calculated volume remaining in the tank? Or by volume of truck hauling to drying bed? Or by dry volume being hauled to the landfill? Would the county consider having a "Debris removal allowance" included with the bid in lieu of a line item for removal?

RESPONSE #4: Please see item #2 of this Addendum for Contractor responsibilities for removal of sludge.

QUESTION #5: Would you please provide cost of disposal at landfill, if this is to be included in the contractors bid?

RESPONSE #5: The County will be responsible for disposal of debris, please see item #2 of this Addendum for Contractor responsibilities for removal of sludge.

QUESTION #6: Please confirm the permits required for the project? Will the contractor be required to pay for the permits or will the county pay for those or waive those fee's?

RESPONSE #6: There are 2 permits for this project; one for the aluminum structure, and one for concrete which includes everything but the aluminum structure. The County has made partial payment for both permits, and the Contractor shall be responsible for the remaining permit fees of \$189 and \$162.

QUESTION #7: Please confirm if there is any local preference associated with this project?

RESPONSE #7: Please refer to Article A.28 on pages A-10 and A-11 of the Bid documents for local preference parameters for this project.

QUESTION #8: Please confirm if there are any Davis Bacon or similar requirements associated with this project?

RESPONSE #8: There is no Davis Bacon or similar requirement associated with this project.

QUESTION #9: Please confirm in an addendum that all manufacturers are to include a 3 year warranty, per specification section 01030.1.13.

RESPONSE #9: Per Article 1.13.A of Section 01030 of the specifications, the Contractor and the manufacturer(s) are to provide a three (3) year warranty for all material supplied, with the warranty period beginning on the date of County acceptance of the project.

QUESTION #10: Drawings M-1, M-3, and M-4 appear to show an 8" Motor Operated Plug Valve, and 8" Manual Plug Valve, at the Thickener influent line, before the Polymer Mixer. The quantities on the Bid form for Item 5a and 5b, appear to have counted these valves as 6". Please clarify if there is a 6" Motorized Plug Valve, or an 8" Motorized Plug Valve, and if 8" where to include it on the bid form.

RESPONSE #10: The 6" motorized plug valve is required in this project, see revised sheets M-1 and M-3 attached to this Addendum #3 that clarifies the pipe, fittings and valve sizes.

QUESTION #11: Drawing M-6, indicates a water source for the 2 new polymer feed units. Drawing M-1 shows a new RCW line to the thickener and pump seal water, but doesn't indicate a new line extending to the polymer units. Please confirm the water source for the new units is existing near the existing unit.

RESPONSE #11: The existing water service will feed the polymer units.

QUESTION #12: Please verify that the estimated quantity of sludge and rags in each sludge tank is actually 500 CY each and not much less as indicated at the pre-bid meeting.

RESPONSE #12: The total quantity of sludge and rags for both tanks combined is estimated to be no more than 500 cubic yards (CY).

QUESTION #13: Please confirm that the removed sludge can be dumped on an existing pad, dewatered, and disposed of at the Lena Road landfill.

RESPONSE #13: The County will be responsible for disposal of debris, please see item #2 of this Addendum for Contractor responsibilities for removal of sludge.

QUESTION #14: Please confirm that all tipping fees will be waived by the County for the disposal of the dewatered sludge at the Lena Road landfill.

RESPONSE #14: The County will be responsible for disposal of debris, please see item #2 of this Addendum for Contractor responsibilities for removal of sludge.


QUESTION #15: What is the cost of the permits the contractor needs to pay for this project?

RESPONSE #15: See the response to Question #6 above.

END OF ADDENDUM #3

Bids will be received at Manatee County Purchasing, 1112 Manatee Avenue West, Bradenton, Florida 34205 until **Tuesday, April 8, 2014 at 3:00 PM.**

Sincerely,


Melissa M. Wendel, CPPO
Purchasing Official

BID FORM

(Submit in Triplicate)

SLUDGE HOLDING TANK IMPROVEMENTS AT THE SOUTHEAST WATER RECLAMATION FACILITY

Bid "A" Based on Completion Time of 300 Calendar Days

ITEM NO.	DESCRIPTION	EST. QTY.	U/M	UNIT PRICE	EXTENDED PRICE
1	MOBILIZATION/ DEMOBILIZATION	1	LS	\$	\$
2	SLUDGE THICKENING EQUIPMENT				
	a GRAVITY BELT THICKENER	1	LS	\$	\$
	b THICKENED SLUDGE PUMP (PUMP NO. 8)	1	LS	\$	\$
	c DUAL POLYMER FEED	1	LS	\$	\$
	d SLUDGE TRANSFER PUMP NO. 5	1	LS	\$	\$
3	DIFFUSERS	480	EA	\$	\$
4	YARD PIPING	1	LS	\$	\$
5	VALVES (6-INCH AND LARGER)				
	a 6-INCH MANUAL PLUG VALVE	5	EA	\$	\$
	b 6-INCH MOTORIZED PLUG VALVE	1	EA	\$	\$
	c 8-INCH MANUAL PLUG VALVE	1	EA	\$	\$
	d 6- INCH CHECK VALVE	2	EA	\$	\$
6	STRUCTURES				
	a ROOF STRUCTURE FOUNDATION AND THICKENER BASE SLAB	1	LS	\$	\$
	b ROOF STRUCTURE	1	LS	\$	\$

Bidder Name: _____

Authorized Signature: _____

BID FORM

(Submit in Triplicate)

SLUDGE HOLDING TANK IMPROVEMENTS AT THE SOUTHEAST WATER RECLAMATION FACILITY

Bid "A" Based on Completion Time of 300 Calendar Days

ITEM NO.	DESCRIPTION	EST. QTY.	U/M	UNIT PRICE	EXTENDED PRICE
7	ELECTRICAL, INSTRUMENTATION AND CONTROLS				
a	ELECTRICAL	1	LS	\$	\$
b	INSTRUMENTATION AND CONTROLS	1	LS	\$	\$
c	SCADA PROGRAMMING ALLOWANCE (WITH BCI TECHNOLOGIES)	1	LS	\$19,520.00	\$19,520.00
8	REMOVE DEBRIS FROM SLUDGE HOLDING TANKS	1	LS	\$	\$
TOTAL BASE BID "A" - Based on Completion Time of <u>300</u> Calendar Days					\$
9	CONTRACT CONTINGENCY WORK (USED ONLY WITH COUNTY APPROVAL)			10% OF TOTAL BASE BID	\$
TOTAL OFFER FOR BID "A" with Contract Contingency - Based on Completion Time of <u>300</u> Calendar Days					\$

Bidder Name: _____

Authorized Signature: _____

BID FORM

(Submit in Triplicate)

SLUDGE HOLDING TANK IMPROVEMENTS AT THE SOUTHEAST WATER RECLAMATION FACILITY

Bid "B" Based on Completion Time of 365 Calendar Days

ITEM NO.	DESCRIPTION	EST. QTY.	U/M	UNIT PRICE	EXTENDED PRICE
1	MOBILIZATION/ DEMOBILIZATION	1	LS	\$	\$
2	SLUDGE THICKENING EQUIPMENT				
	a GRAVITY BELT THICKENER	1	LS	\$	\$
	b THICKENED SLUDGE PUMP (PUMP NO. 8)	1	LS	\$	\$
	c DUAL POLYMER FEED	1	LS	\$	\$
	d SLUDGE TRANSFER PUMP NO. 5	1	LS	\$	\$
3	DIFFUSERS	480	EA	\$	\$
4	YARD PIPING	1	LS	\$	\$
5	VALVES (6-INCH AND LARGER)				
	a 6-INCH MANUAL PLUG VALVE	5	EA	\$	\$
	b 6-INCH MOTORIZED PLUG VALVE	1	EA	\$	\$
	c 8-INCH MANUAL PLUG VALVE	1	EA	\$	\$
	d 6- INCH CHECK VALVE	2	EA	\$	\$
6	STRUCTURES				
	a ROOF STRUCTURE FOUNDATION AND THICKENER BASE SLAB	1	LS	\$	\$
	b ROOF STRUCTURE	1	LS	\$	\$

Bidder Name: _____

Authorized Signature: _____

BID FORM

(Submit in Triplicate)

SLUDGE HOLDING TANK IMPROVEMENTS AT THE SOUTHEAST WATER RECLAMATION FACILITY

Bid "B" Based on Completion Time of 365 Calendar Days

ITEM NO.	DESCRIPTION	EST. QTY.	U/M	UNIT PRICE	EXTENDED PRICE
7	ELECTRICAL, INSTRUMENTATION AND CONTROLS				
	a ELECTRICAL	1	LS	\$	\$
	b INSTRUMENTATION AND CONTROLS	1	LS	\$	\$
	c SCADA PROGRAMMING ALLOWANCE (WITH BCI TECHNOLOGIES)	1	LS	\$19,520.00	\$19,520.00
8	a REMOVE DEBRIS FROM SLUDGE HOLDING TANKS	1	LS	\$	\$
	TOTAL BASE BID "B" - Based on Completion Time of <u>365</u> Calendar Days				\$
9	CONTRACT CONTINGENCY WORK (USED ONLY WITH COUNTY APPROVAL)			10% OF TOTAL BASE BID	\$
	TOTAL OFFER FOR BID "B" with Contract Contingency Based on Completion Time of <u>365</u> Calendar Days				\$

Bidder Name: _____

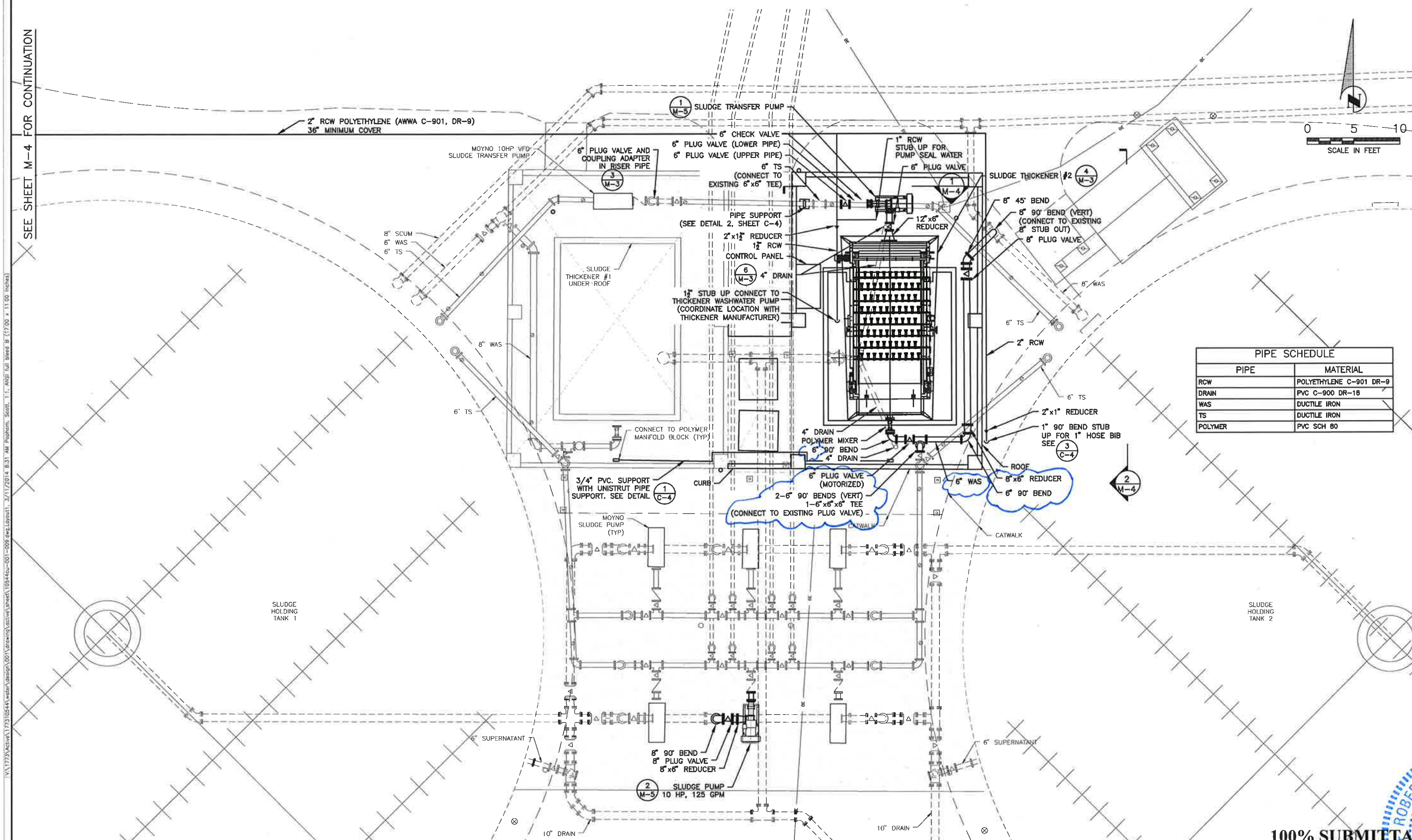
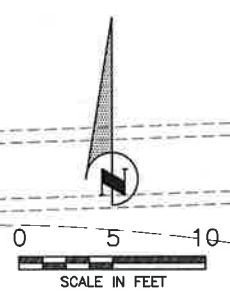
Authorized Signature: _____



**SOUTHEAST WATER RECLAMATION FACILITY
SLUDGE HOLDING TANK IMPROVEMENTS
YARD PIPING PLAN**

SEE SHEET M-4 FOR CONTINUATION

V:\1723\active\172310544\media\design\001\drawing\civil\piping\10544-001-009.dwg (Sheet) 10544-001-009.dwg, Scott, T.T., ANSI Full Sheet B (17.00 x 11.00 inches)



PIPE SCHEDULE	
PIPE	MATERIAL
RCW	POLYETHYLENE C-901 DR-9
DRAIN	PVC C-900 DR-18
WAS	DUCTILE IRON
TS	DUCTILE IRON
POLYMER	PVC SCH 80

NO.	REVISION DESCRIPTION	BY	DATE
1	ADDENDUM NO. 1	SRP	03/11/14

PROJECT #	177310544
SURVEY #	000
SEC./TWN./RGE	1/35S/18E
SCALE	1"=5'

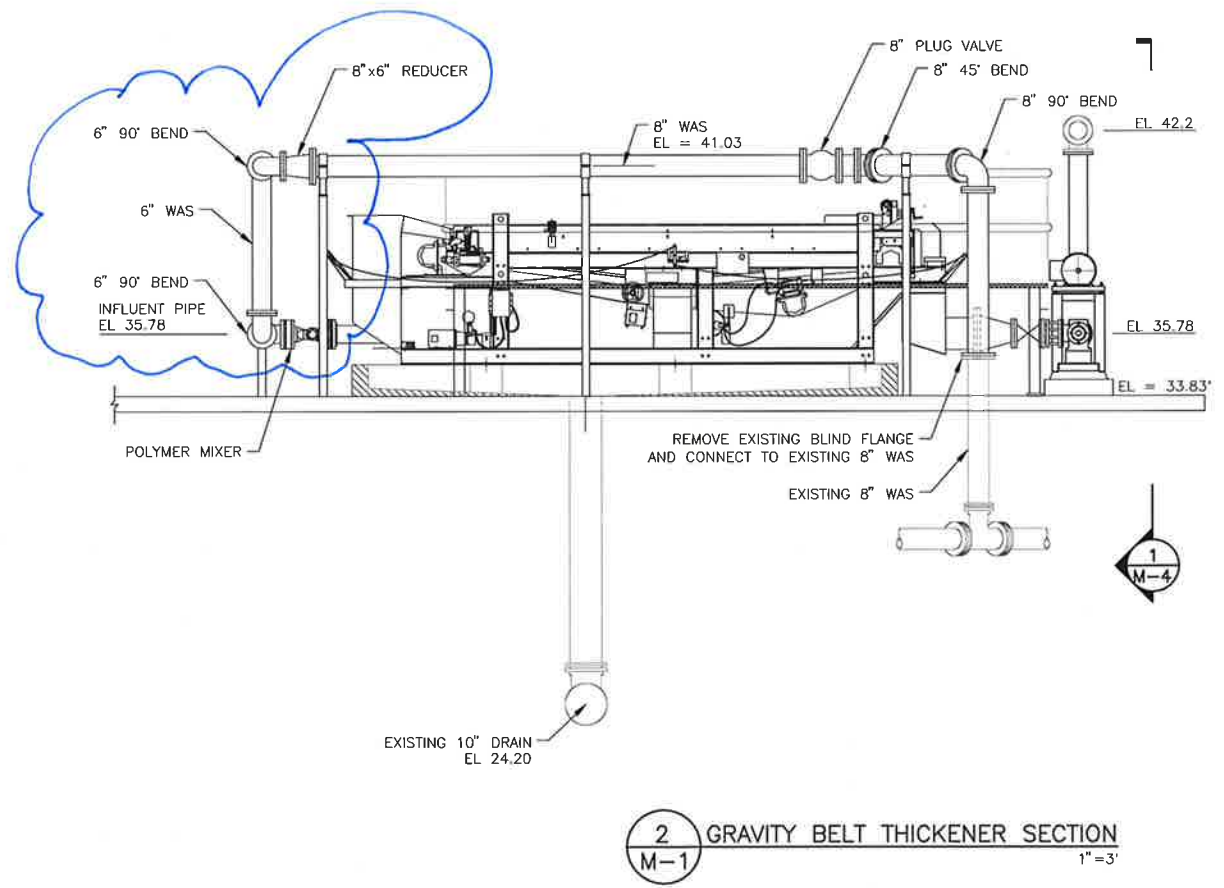
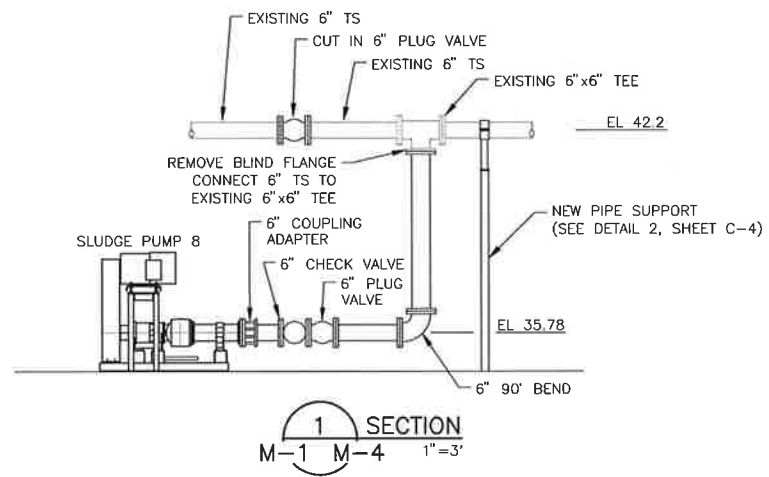
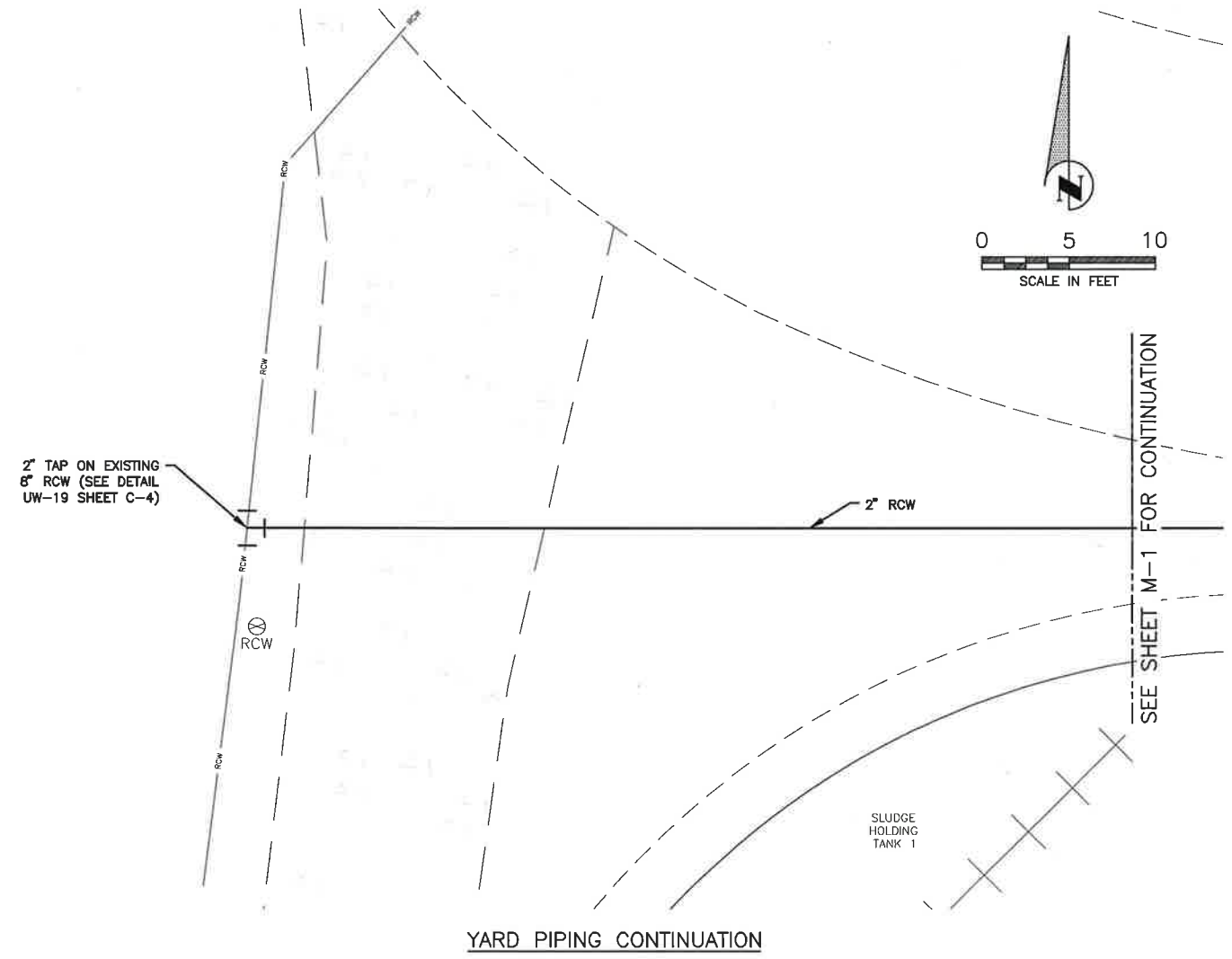
DATE	BY
04/26/13	SRP
05/23/13	SRP
05/23/13	RJC

ROBERT J. HALBACH
FLORIDA P.E. # 40139
3-11-14
SHEET M-1

100% SUBMITTAL

STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL 941.365.5500 - FAX 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

**SOUTHEAST WATER RECLAMATION FACILITY
SLUDGE HOLDING TANK IMPROVEMENTS
GRAVITY BELT THICKENER PLAN SECTIONS**



NO.	REVISION DESCRIPTION	BY	DATE
1	ADDENDUM NO. 1	SRP	03/11/14

PROJECT #	177310544
SURVEY #	000
SEC./TWN./RGE	1/35S/18E
SCALE	AS SHOWN

BY	DATE
SURVEYED BY	04/26/13
DESIGNED BY	05/23/13
DRAWN BY	05/23/13
CHECKED BY	05/23/13

ROBERT J. HALBACH
FLORIDA P.E. # 40139

Signature & Date

100% SUBMITTAL



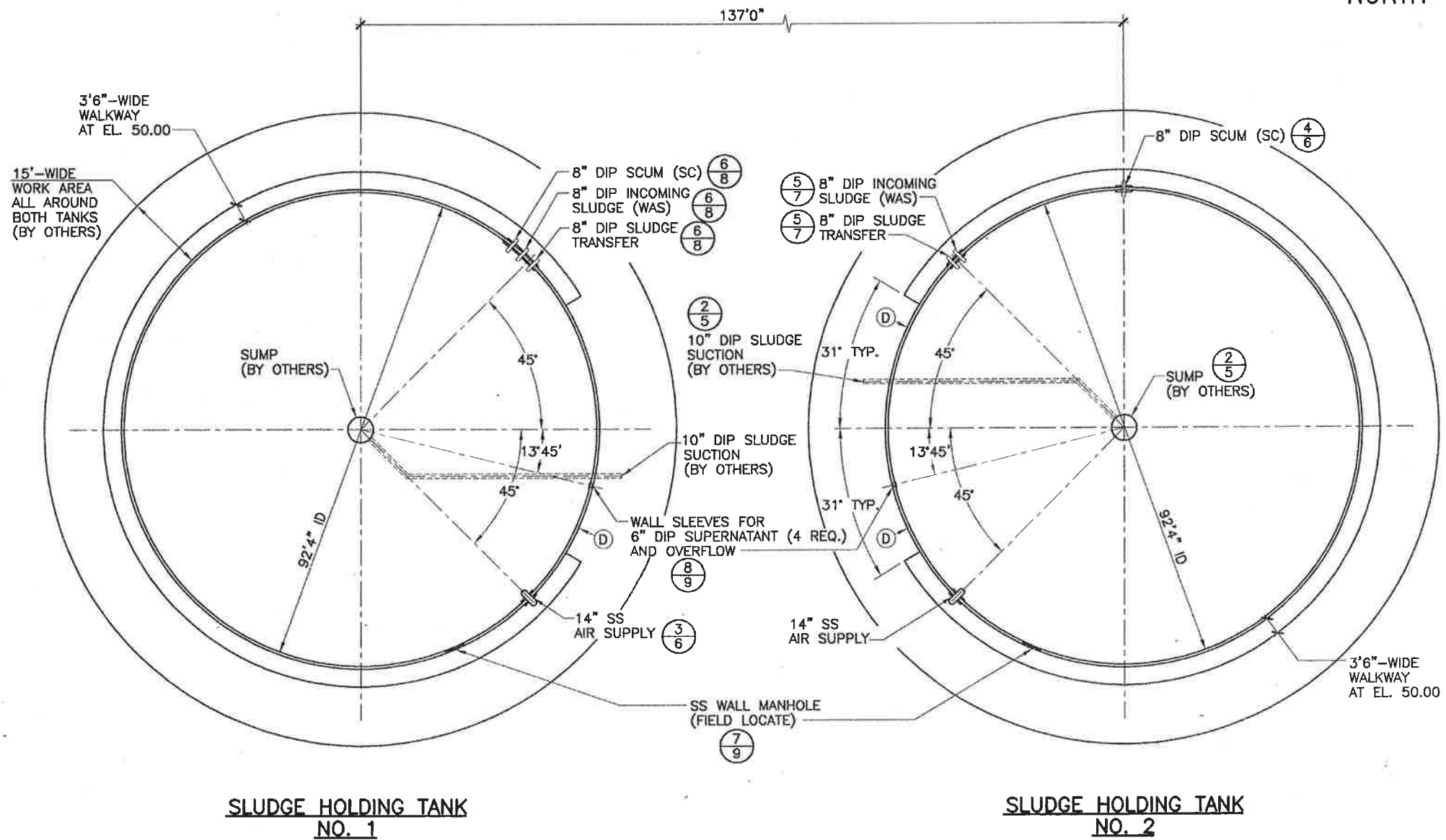
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL 941.366.5600 - FAX 941.368.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

ROBERT J. HALBACH
FLORIDA P.E. # 40139

Signature & Date

SHEET M-4

V:\1773\177310544\water\design\001\drawing\sheet\10544-001-012.dwg, Layout1, 3/11/2014 7:15 AM Phipham, Scott, T.T., ANSI Full Sized B (17.00 x 11.00 inches)



SLUDGE HOLDING TANK NO. 1

SLUDGE HOLDING TANK NO. 2

PLAN

LEGEND

- ① 1 1/2"-THICK SHOTCRETE BOSS ON EXTERIOR TANK WALL (BY CROM) FOR ANCHORAGE OF DOWNSPOUTS (BY OTHERS) (FIELD LOCATE THREE PLACES, TYP.)

NOTE: FIELD VERIFY ALL ACCESSORY & PIPE LOCATIONS WITH ENGINEER PRIOR TO PLACEMENT.

DATE: 5/8/00
 DRAWN: MAL
 CHECKED: JL
 APPROVED: JSW
 DESIGNED: JSW

TANK DESCRIPTION:
 TWO - 1,000,000 GALLON
 SLUDGE HOLDING TANKS

TANK DIMENSIONS:
 92'4" ID x 21'6" SWD

TANK BUILDER:
 THE CROM CORPORATION
 GAINESVILLE, FLORIDA

OWNER:
 SOUTHEAST REGIONAL
 WWTP
 MANATEE COUNTY
 FLORIDA

CONSULTING ENGINEER:
 McKIM & CREED
 DAYTONA BEACH AND
 CLEARWATER, FLORIDA

REV.	DESCRIPTION	DATE	CHK BY

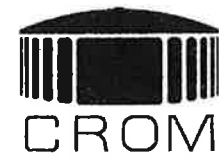
WHERE STANDARD SPECIFICATIONS ARE IN CONFLICT WITH CROM CORPORATION SPECIFICATIONS OR WITH GOOD PRACTICES OR WITH GOOD PRESTRESSING OR SHOTCRETE PRACTICES THE STANDARD SPECIFICATIONS SHALL BE SUBORDINATED. THIS DESIGN AND DRAWING ORIGINATED BY AND THE EXCLUSIVE PROPERTY OF THE CROM CORPORATION.

BAR IS ONE INCH ON ORIGINAL DRAWINGS 0 1"

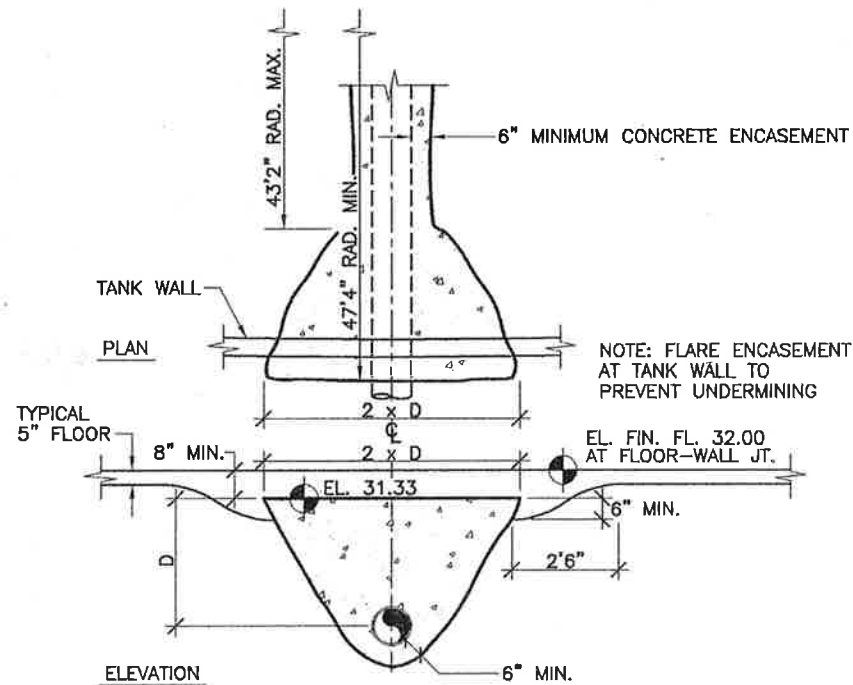
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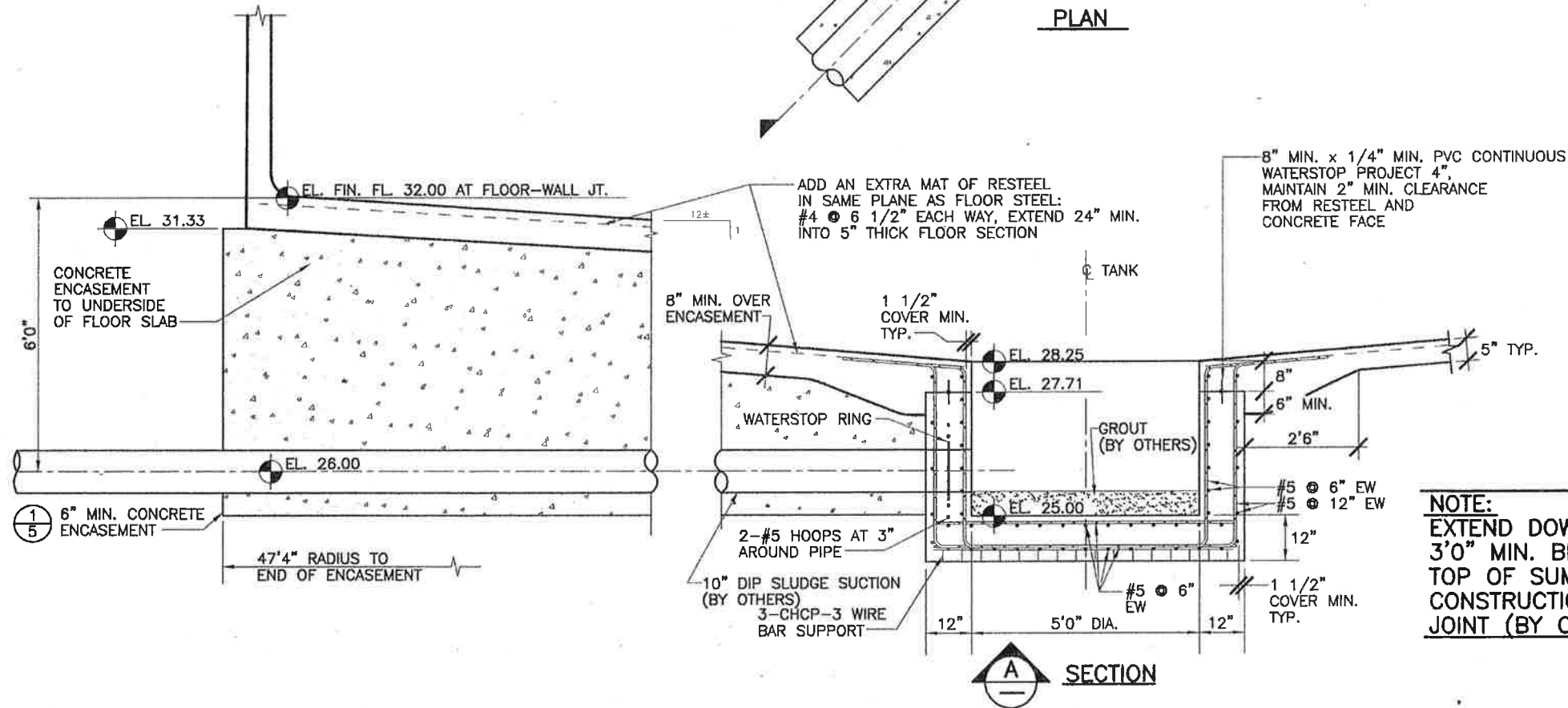
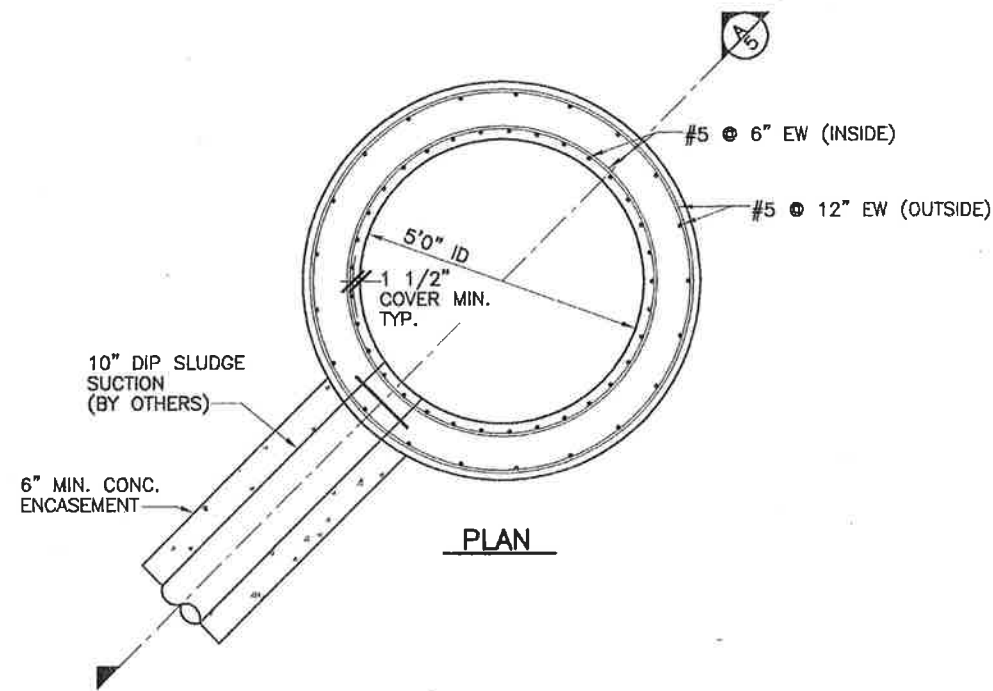
SHEET 3 OF 9



ALL PIPING AND ENCASEMENT PROVIDED AND PLACED BY OTHERS



1 TYPICAL PIPE ENCASEMENT AT WALL
NTS



NOTE:
EXTEND DOWELS
3'0" MIN. BEYOND
TOP OF SUMP
CONSTRUCTION
JOINT (BY OTHERS)

2 SUMP AND 10" DIP SLUDGE SUCTION (BY OTHERS) 1/2"=1'0"

DATE	5/8/00
DRAWN	MAL
CHECKED	<i>[Signature]</i>
APPROVED	<i>[Signature]</i>
DESIGNED	JSW
TANK DESCRIPTION	TWO - 1,000,000 GALLON SLUDGE HOLDING TANKS
TANK DIMENSIONS	92'4" ID x 21'6" SWD
TANK BUILDER	THE CROM CORPORATION GAINESVILLE, FLORIDA
OWNER	SOUTHEAST REGIONAL WWTP MANATEE COUNTY FLORIDA
CONSULTING ENGINEER	McKIM & CREED DAYTONA BEACH AND CLEARWATER, FLORIDA

REV.	DESCRIPTION	DATE	CHK BY

WHERE STANDARD SPECIFICATIONS ARE IN CONFLICT WITH CROM CORPORATION SPECIFICATIONS OR WITH GOOD PRACTICES OR WITH GOOD PRESTRESSING OR SHOTCRETE PRACTICES THE STANDARD SPECIFICATIONS SHALL BE SUBORDINATED. THIS DESIGN AND DRAWING ORIGINATED BY AND THE EXCLUSIVE PROPERTY OF THE CROM CORPORATION.

BAR IS ONE INCH ON ORIGINAL DRAWINGS 0 1"

SCALE:
AS NOTED

FILE NO. 99069.4

SHEET 5 OF 9