



## Interoffice Memorandum

February 5, 2018

**TO:** Mayor Teresa Jacobs  
and Board of County Commissioners

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

**SUBJECT:** BCC Agenda Item – Consent Agenda  
February 20, 2018 BCC Meeting  
Change Order Number 001 to Contract Y17-774, Cell 9-10 Leachate  
Pump Station No. 1  
Contact Person: James Becker, Manager  
Utilities Solid Waste Division  
407-254-9660

This change order provides for an increase in Contract No. Y17-774 to accommodate a required change in pumps being supplied as part of the contract.

The original specifications named two pump manufacturers, Flygt and Sulzer-ABS, and the successful bid was based upon a quotation from Flygt.

During the project submittal review process, it was identified that the Flygt pump no longer held the required rating (Class 1, Group 1, Division D explosion proof) as required by the specifications.

The second named vendor is unable to meet the stainless steel motor requirements and warranty conditions for the specified service environment. The engineer and contractor evaluated pumps from a total of four manufacturers (including a coated, non-stainless alternate from Sulzer-ABS) to identify an acceptable alternate pump and motor for the service environment.

The original pump model was bid at \$55,122.50 to the contractor by Flygt as part of the base bid and the required substitute pump is bid at \$157,613.14, resulting in a change order in the amount of \$102,490.64

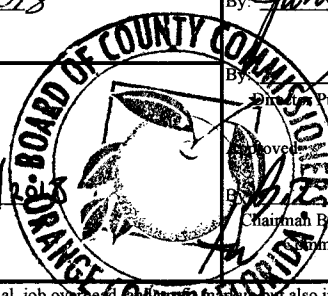
**Action Requested:** Approval and execution of Change Order #: 001  
Contract No. Y17-774 Cell 9-10 Leachate Pump  
Station No. 1 with Eclipse Construction Company in  
the amount of \$102,490.64, for a revised contract  
amount of \$700,490.64.

District 4.

ORANGE COUNTY UTILITIES

57-36 A (2/85)

Contractor: **Eclipse Construction Company** Change Order #: **001**  
Date:  
Contract No.: **Y17-774** Original Contract Amount: **\$598,000.00**  
Contract Name: **Cell 9-10 Leachate Pump Station No. 1** Revised Contract Amount: **\$700,490.64**  
Engineer: **Neel-Schaffer, Inc.**

Item No.	Quantities	Unit	Description	Unit Price	Additions	Deductions
RFP 001	1	LS	Re-location of LFG Condensate Pipe	\$5,111.02	\$ 5,111.02	\$0.00
RFP 002	1	LS	Pump Substitution	\$97,379.62	\$ 152,502.12	\$55,122.50
Percent Complete				Percent Complete	Totals	
Time:				Dollars:	\$102,490.64	\$157,613.14
Total Time (Increase) (Decrease) this Change Order:				Change Order:	\$102,490.64	
Days				121	Net Dollars Previous	
Total Time (Increase) (Decrease) previous Change Orders:				Change Order:	\$0.00	
Days				0	Net Dollar Changes	
Original Contract				Substantial	Final	To Date:
Time:				180	210	\$102,490.64
Revised Contract				Substantial	Final	Original Contract
Time:				301	331	Dollar Amount:
CONTRACTOR						\$598,000.00
Accepted:						Revised Contract
By: <u>Gerald A. Petro</u>						Dollar Amount:
Print Name						\$700,490.64
By: <u>[Signature]</u>						ORANGE COUNTY PUBLIC UTILITIES
Sign						Approval Recommended:
Date: <u>1/19/2018</u>						By: <u>[Signature]</u>
ENGINEER						Date: <u>1/26/18</u>
Approval Recommended:						By: <u>[Signature]</u>
By: <u>Jon M. [Signature]</u>						Date: <u>1-31-18</u>
Project Manager						By: <u>[Signature]</u>
Date: <u>01/24/18</u>						Date: <u>2.20.18</u>
This change order includes not only all direct costs of contractor such as labor, material, job overhead and profit margin but also includes any costs for modifications or changes in sequence of work to be performed, delays, rescheduling, disruptions, extended direct overhead or general overhead, acceleration, material or other escalation which includes wages, and other impact costs.						
Accepted for Contractor By: <u>Gerald A. Petro</u>				Title: <u>Owner's Representative</u>		

Orange County Solid Waste Cell 9-10 Leachate Pump Station #1

RFP 001 REV 1 12/08/2017

In response to your clarification letter regarding RFP 001 Eclipse proposes to perform the work as described with the following clarifications and assumptions for a lump sum price of \$ 5,111.00

Eclipse requests a 2 day extension to the contract time for performance of the work. Eclipse will have only one crew on site and when this crew is working on extra work they are unavailable for contract work.

The estimate transmitted by the Engineer is unrealistic. Your total labor of \$ 659.00 would not cover the cost of our Supervisor. We estimate a realistic time for performance of the work would be two days, therefore we have estimated a 4 man crew for two days in our proposal.

Please find attached our detailed pricing of the proposal with labor and material

The following clarifications and assumptions are included in this proposal:

1. Eclipse has eliminated all pipe clamps and added SS Pipe straps @ 20' oc anchored into the concrete with SS Tapcons.
2. We noted no 45 degree ells in your estimate so we propose to lay the relocated pipe directly on the existing crossing pipe.
3. The penetration through the top of the wet well will be by core drilling in the shop or field. Link Seal will be used to seal opening
4. All existing pipe will be reused.
5. Per your estimate we assume we are disassembling the existing pipe at a flanged connection and no flange adaptor will be necessary. A new blind flange can be bolted directly to the existing flange.
6. We assume submittals will be waived



Gerald A Petro  
Owner's Representative  
Eclipse Construction

PROPOSAL:	Orange County Leachate Pump Station 1		
<b>COST CODE</b>	<b>DESCRIPTION</b>		
110	Labor (Incl. Tax & Insurances)	64	\$ 2,453.60
120	Site Administrative		\$ -
130	Home Office Job Management		\$ 240.00
140	Site Quality Assurance		\$ -
220	Materials		\$ 711.15
330	Subcontracts		\$ 600.00
401	Mobilize & Transport		\$ -
402	Equipment (over \$1,000)		\$ 160.00
403	Gas, Fuel & Lube (% of Equip. _____)	15%	\$ 24.00
404	Tools (less than \$1,000) (% of Labor _____)	3%	\$ 73.61
405	Calibration & Repair		\$ -
406	Consumables (% of Labor _____)	3%	\$ 73.61
408	Travel Expenses		\$ -
409/410	Office Equipment/Supplies (Est. L.S.)		\$ -
411	Telephone & Utilities		\$ -
413	Temporary Facilities		\$ -
	Subtotal		\$ 4,335.97
	Overhead & Profit	15.0%	\$ 650.40
	Subtotal		\$ 4,986.37
	Bond Cost	2.5%	\$ 124.66
	Subtotal		\$ 5,111.02
	Receipts/Use Tax	0%	\$ -
	<b>GRAND TOTAL</b>		<b>\$ 5,111.02</b>

				PROPOSAL NO.      Orange County Leachate Pump Station 1						
CUSTOMER:								LOCATION:		
ITEM	UNIT	QNT.	MH EA	TOTAL M.H.	LABOR RATE	LABOR COST	MATL EA	TOTAL MATL	SUB CONT.	TOTAL COST
Material				0		\$ -		\$ -		\$ -
6" SDR 17 90	Ea	8		0		\$ -	\$ 24.30	\$ 145.80		\$ 145.80
6" Blind Flange w/ bolt and Gasket	Ea	1		0		\$ -	\$100.00	\$ 100.00		\$ 100.00
SS pipe Straps	Ea	20		0		\$ -	\$ 10.00	\$ 200.00		\$ 200.00
SS Tapcons	Ea	50		0		\$ -	\$ 1.00	\$ 50.00		\$ 50.00
Link Seal	Ea	10		0		\$ -	\$ 17.51	\$ 175.10		\$ 175.10
				0		\$ -		\$ -		\$ -
				0		\$ -		\$ -		\$ -
LABOR Two crew days	Ea			0		\$ -		\$ -		\$ -
Superintendent	Ea	1	16	16	\$63.48	\$ 1,015.68		\$ -		\$ 1,015.68
Foreman HDPE welder	Ea	1	16	16	\$47.23	\$ 755.68		\$ -		\$ 755.68
Skilled laborer	Ea	1	16	16	\$28.09	\$ 449.44		\$ -		\$ 449.44
Unskilled laborer	Ea	1	16	16	\$14.55	\$ 232.80		\$ -		\$ 232.80
				0		\$ -		\$ -		\$ -
SUBCONTRACTS				0		\$ -		\$ -		\$ -
Drill hole in Top Slab				0		\$ -		\$ -	\$ 600.00	\$ 600.00
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# REQUEST FOR PROPOSAL



REQUEST FOR PROPOSAL (RFP) FOR PROPOSED CHANGE NO. 001

RFP Prepared By: Bo Bruner Project Engineer  
(Name) (Title)

Date Prepared: October 24, 2017

PROJECT DATA	CONTRACT DATA
Name: Cell 9-10 Leachate Pump Station No. 1	Contract Document Page Number: N/A
Location: OCSWMF- Cell 9-10	Drawing Number: 005-C-0003A
Owner's Bid Number: Y17-774	Specification Section/Number:

RFP DISTRIBUTION BY ENGINEER:				
Owner's Home Office: Attn.: Jim Flynt, P.E. Dan Courcy, P.E.	No. Copies 1		Date Sent: 10/24/2017	By email
Contractor's Home Office: Eclipse Construction Company Attn.: Scott Petro	No. Copies 1		Date Sent: 10/24/2017	By email
Owner's Field Office:	No. Copies		Date Sent:	
Engineer's Field Rep: Cherlyn Watts	No. Copies 1		Date Sent 10/24/2017	By Email
Contractor's Field Office: Attn:	No. Copies		Date Sent:	
Other: Attn.:	No. Copies		Date Sent:	

Please provide the undersigned a proposal for the following change in the work within thirty (30) calendar days from the above date of this request. The written proposal must clearly delineate the scope of the proposed change in work by providing an itemized estimate of time and costs broken down by materials, labor (by trade), subcontracts, overhead costs, and profit. Any amount claimed for subcontracts must be similarly supported in detail. If this proposal is accepted and approved by the Owner, a change order will be issued for changes in the work of the Contract in accordance with the Contract Documents.

Type of Change  
Proposed:

(Deletion of Work) X (Addition of Work) (Revision of Work) (Other)

Please see reverse side for a detailed description of the proposed change in Work.

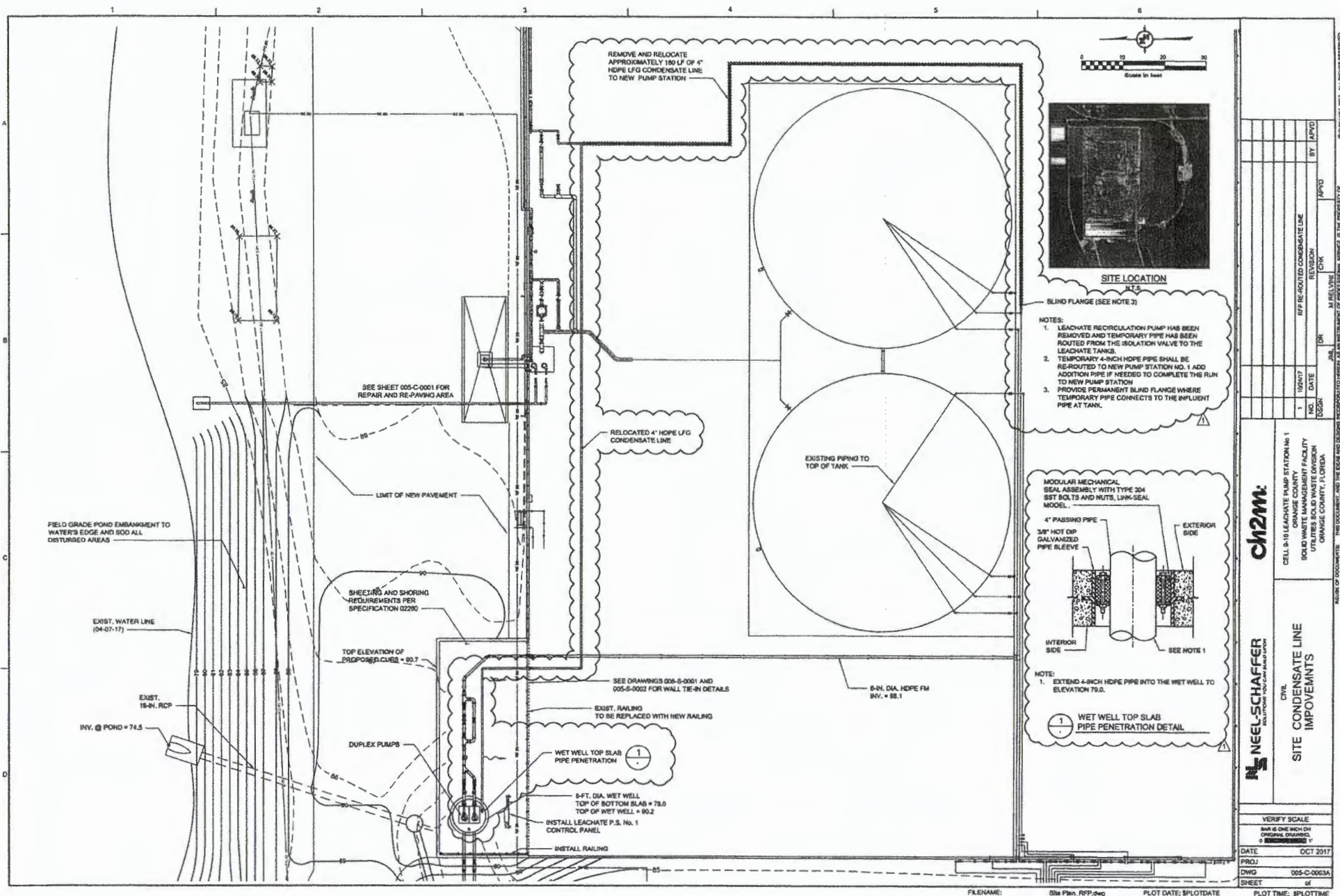
**DESCRIPTION OF PROPOSED CHANGE IN WORK:**

Re-route an existing landfill gas condensate pipe as indicated on the attached drawings. The existing 4-inch diameter HDPE pipe is to be removed and relocated as indicated on the plans and connected to the proposed pump station wetwell. The work includes installation of a 4-inch plug valve, blind flange and all required fittings. The installation of the HDPE pipe by the Contractor shall be in accordance with the specifications.

**ATTACHMENTS:**

	Description of Item Attached	No. of Copies
1.	<b>Site Condensate Line Improvements</b>	<b>PDF</b>
2.		
3.		
4.		
5.		

**END OF REQUEST FOR PROPOSAL FORM**





## **Orange County Solid Waste Cell 9-10 Leachate Pump Station #1**

**RFP 002 REV 0- 1/03/2018**

In response to RFP 002 Eclipse proposes to perform the work as described with the following clarifications and assumptions for a lump sum price of \$

Eclipse requests a extension to the contract time for performance of the work.

### **ESTIMATE OF ADDITIONAL COSTS:**

#### **NEW WILO PUMPS**

New Pumps	\$ 119,641.00
Expedited Delivery -	<u>\$ 1,500.00</u>
Base Pl/ Anchors	\$ 1,250.00 ✓
Subtotal-	<u>\$ 122,391.00</u>
Tax-	<u>\$ 8,567.37</u>
Subtotal-	\$ 130,958.37
OH and P @15%-	<u>\$ 19,643.75</u>
<b>Total Pump Cost-</b>	<b>\$ 150,602.12</b>

#### **ORIGINAL FLYGT PUMPS**

Pumps-	\$ 45,000.00
Tax	\$ 3,150.00
Subtotal-	<u>\$ 47,150.00</u>
OH & P @ 15%-	<u>\$ 7,072.50</u>
<b>Total Pump Cost-</b>	<b>\$ 55,122.50</b>

#### **EXTRA WORK ITEMS DUE TO PUMP SELECTION DELAY**

( The top slab of the wet well could not be fabricated with the wet well because the embedded Aluminum Hatch is to be supplied by the pump supplier. To maintain schedule Eclipse fabricated the wet well without the top slab which will be fabricated and delivered later. The top slab would have been sent on the truck delivering the wet well and set with the wet well while the crane was on site.)

1. Extra freight to deliver Top Slab = \$ 450.00
  2. Extra Mobilization of Crane to set top slab ( 4 hr Min)= \$ 250.00 x 4 =\$ 1,000.00
  3. Temporary Safety Cover for wet well= \$ 450.00 ( Estimated)
- Total Extra work = \$ 1,900.00**

**SUMMARY OF ADDITIONAL COSTS:**

<b>New pump Costs:</b>	<b>\$ 150,602</b>
<b><u>Flygt Pump Costs:</u></b>	<b><u>\$ 55,123</u></b>
<b>Difference:</b>	<b>\$ 95,479</b>
<b><u>Extra Work:</u></b>	<b><u>\$ 1,900</u></b>
<b>TOTAL</b>	<b>\$ 97,379.00</b>

Please find attached the original proposal for the Flygt Pumps specified on the drawings and the new proposal for the Wilo pumps.

We have excluded any costs that may be incurred as a result of the schedule delay as the final delay cannot be predicted.

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Gerald A Petro  
Owner's Representative  
Eclipse Construction

# **Orange County Solid Waste Cell 9-10 Leachate Pump Station #1**

**RFP 002 REV 0 1/03/2018**

## **PROJECTED SCHEDULE**

Receipt of Submittals and transmittal to Engineer 2 Feb 2018

Approval of Submittals ( 3 weeks ) 23 Feb 2018

Fabrication of Pumps and Delivery ( 18 weeks ) 29 June 2018 ( Includes expedited delivery)

Approved schedule lists the first pump activity on March 02, 2018. With pump delivery projected for 29 June 2018 this would be a delay of 4 months or 119 days. Eclipse is requesting a schedule extension of 119 days.

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Gerald A Petro  
Owner's Representative  
Eclipse Construction

# KAMAN

Industrial Technologies

FLORIDA BEARINGS

Miami	Ft. Lauderdale	Riviera Beach	Orlando
10050 NW 116 Way, Ste1	1430 W Broward Blvd	3520 Investment Lane, Unit 3	2020 N Rio Grande Ave
Medley, FL 33178	Ft Lauderdale, FL 33312	Riviera Beach, FL 33404	Orlando, FL 32804
Phone (305) 573-8424	Phone (954) 462-0285	Phone (561) 863-3260	Phone (407) 843-4153
Fax (305) 573-7366	Fax (954) 765-1043	Fax (561) 863-3262	Fax (407) 843-4154

## Scope of Supply

### Orange Co-Leachate PS1 / 25' Deep / 8' Diameter / P02267

2 pieces, FA10.65E-251/HC20.1-4/22KEx – 23.5 HP, to operate on 3/60/460V, 1760 RPM, with 40' power, overload, and moisture probe cables. Pumps to include stainless steel lifting bails, 316SS volute and impeller, Ceram C0 on motor exterior, 316SS Shaft, 2 spare pump seals

- Please confirm that 40' of cable is sufficient!
- **NOTE:** Pump impeller diameters are theoretical, based upon computer program inputs. Actual impeller diameters may vary slightly from submittal data in order to more accurately meet the design conditions of service.

2 pieces 4" Twin Pipe 316SS Guide Rail suspension system to include: 316SS base, 316SS coupling, 316SS upper guide rail bracket, and 316SS mounting accessories

5 pieces 1-1/4" 316SS X 20ft long Guide Pipes (to be cut & welded, if applicable, by contractor)

2 pieces 3/8" 316SS chain package and quick link x 25' long

1 pieces J6A 316SS Cable Holder

2 pieces S40NONC Floats

1 piece USF Hatch cover, TPD300-4253, 36x52 clear opening, double door, 2" mill lettering "CONFINED SPACE", 316SS hardware, slam lock, bit paint, spring assist aluminum hatch cover, w/double safety grates, odor reduction gasket, HDPE coating by others.

1 piece Champion 23.5HP, Duplex Panel, *Sensaphone Sentinell Pro* used to accept Verizon service as specified, Instruments and spare parts

### Items not specifically listed above, are NOT included.

#### Clarifications/Exceptions:

- Installation is not included.
- Pump mounting plate supplied by others.
- Gauges supplied by others.

# KAMAN

Industrial Technologies

FLORIDA BEARINGS

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Phone (305) 573-8424	Phone (954) 462-0285	Phone (561) 863-3260	Phone (407) 843-415
Fax (305) 573-7366	Fax (954) 765-1043	Fax (561) 863-3262	Fax (407) 843-4154

## Orange Co-Leachate PS1 / 25' Deep / 8' Diameter / P02267

**START UP SUPERVISION:** If required, we will furnish a factory-trained supervisor for one (1) day. At least seven (7) business days' notice must be given to schedule a start-up. Additional time, beyond the one (1) day, will be charged at \$800.00 per day plus expenses.

**Total price:** **\$119,641.00** plus any Federal, State or Local Taxes which may apply. Quoted price and delivery is good for forty-five (45) days. (Add 4,500.00 for 2 sets, impeller & wear rings)

**FOB Origin:** Delivered Prepaid

**Estimated shipment:** 20-22 weeks is based upon receipt, in our office, of acceptable order and complete approval of submittal data. (Add 1,500.00 to decrease shipment by 4 weeks via air-freight)

**O&M Manuals:** We will provide to the contractor, five (5) hard copies.

**Submittal lead time:** 4-6 weeks after receipt of purchase order

**TERMS:** 100% due and payable 30 days from date of each invoice, subject to continuing approval of credit. Payment of this invoice is in no way contingent upon payment by others. In event any amount becomes past due, buyer agrees to pay seller a fee of 1 1/2% of unpaid balance each month until paid, at the highest legal rate allowed by law, whichever is lower, plus all costs of collection including reasonable attorney's fees. Failure to pay in accordance with terms voids all warranties and no service or startup will be authorized until account is paid in full including service fee and collection costs.

Kaman Industrial Technologies hereby disclaims any on-site labor and also expressly disclaims any responsibility, liability, or indemnification for any and all damages or injury of any kind whatsoever resulting from the purchased services or goods. Title to ownership of this material remains with Kaman Industrial Technologies until same is paid in full.

Please note that the products listed on this proposal are special made to order items and cannot be returned. In the event this order is cancelled or modified for any reason, buyer is obligated for cost and expense incurred by Kaman as a result of cancellation, modification, returns, progress being stopped or other changes from quantities and conditions herein. Your signature indicates acceptance of these terms and is required to proceed.

**\*Notice to owner applicable on this project!\***

Accepted this \_\_\_\_\_ day of  
\_\_\_\_\_, 2017

\_\_\_\_\_  
Name of Purchaser

Submitted this 18th day of  
December, 2017

Tommy Nichols \_\_\_\_\_  
Kaman Industrial / Muni Account Manager

**From:** Rooks, Alan  
**Sent:** Tuesday, December 19, 2017 6:50 AM  
**To:** Jerry Petro  
**Cc:** Nichols, Tommy; Barrett, Gary  
**Subject:** P02265 - Orange County, Leachate PS#1  
**Importance:** High

Good Morning Jerry!

We finally have all of our numbers in and we are excited to include our formal Scope of Supply and proposal. Please see the attached document for our offer on the Orange County, Leachate PS#1 project.

We have included on the last page a couple of "add-ons" that I wanted to bring to your attention. The pumps are made to order, that being said, there is a 20 – 22 week lead-time. However, one of the add-ons is that we can shorten that time by four (4) weeks for an additional \$1,500.00 in airfreight charges coming out of Germany. The other "add-on" is for the extra set of impellers and wear rings. Please keep in mind that we chose to quote the impellers with Ceram C0 coating vs stainless steel for the replacements. We are confident that the Ceram C0 will provide equal to or longer life span than the stainless steel at a third of the cost.

As Tommy said, we are very happy to be working with you and Eclipse Construction on this project. Should you have any questions, please let us know. Once again, thank-you for your time and patience while we were getting all of this together.

Best Regards and *Happy Holidays!*  
Alan

**Alan Rooks**  
Project Manager  
**Kaman Industrial Technologies**  
**Water/Wastewater Division**

10050 NW 116 Way | Suite #1 | Miami, FL 33178 | [How are we doing?](#)  
O: [305-573-8424](#) | D: [305-420-2699](#) | F: [305-573-7366](#) | In Kaman: [7103-2699](#)  
[www.kaman.com](#) | [Facebook](#) | [LinkedIn](#) | [Twitter](#) | [You Tube](#) | [Blog](#) | [Join Our List](#)



**Xylem Water Solutions USA Inc. /  
Flygt Products**

2152 Sprint Blvd. Apopka, Florida 32703  
Phone: 407-880-2900 • Fax: 407-880-2962

To: Bidding Contractors

Date: July 12, 2017

Subject: Cell 9-10 Leachate Pump Station No. 1  
Quote Number: 2017-APO-SSR1

We are pleased to offer the following equipment:

- (2) 6"NP3153/433 Flygt pumps 20 H.P., 3/460V, EXP w/ FLS, 50' motor cable for 500GPM@72'TDH w/Certified Tests
- (1) Basic repair kit w/spare parts
- (2) Base Plates per Orange County Specs
- (2) 15' Orange County standard lift device
- (2) 6"x6" discharge connections
- (12) Threaded rods w/adhesive cartridges
- (4) 15'x2" guide rails, 316ss
- (2) 2" upper guide brackets, 316ss
- (1) Cable holder, 316ss
- (1) 48"x66" aluminum angle frame/cover, spring-assist, 300# double door w/"Confined Space" etching; backplate for discharge piping; HALLIDAY PRODUCTS
- (2) Mini-Cas
- (1) Duplex Control panel to ORCO standards
- (5) Level Float Controls
- (1) Five Year, Full **100%** Warranty
- (1) Start-up service

**DOES NOT INCLUDE TERMINAL JUNCTION BOXES**

**Price: \$ 45,000.00**

**Exclusions:** WE DO NOT SUPPLY, PIPING, VALVES, GUIDE BARS, PRESSURE GAUGES, DISCONNECTS, JUNCTION BOXES, KELLUMS GRIPS, SURGE PROTECTION EQUIPMENT, SPARE PARTS, LABOR OR ANY OTHER ITEM NOT SPECIFICALLY LISTED ABOVE.

**PLEASE MAKE PURCHASE ORDERS OUT TO: XYLEM WATER SOLUTIONS USA, INC.**

**Validity:** THIS QUOTE IS VALID FOR NINETY (90) DAYS UNLESS LONGER TIME AGREED TO IN WRITING.

**Taxes:** State, local, and other applicable taxes are not included in this quotation.

**Freight Terms:** DAP; Jobsite - Full Freight Allowed (per Incoterms 2010)

**Shortages:** Xylem will not be responsible for apparent shipment shortages or damages incurred in shipment that are not reported within two weeks from delivery to jobsite. Damages should be noted on the receiving slip and the truck driver advised of the damages. Please contact our office as soon as possible to report damages or shortages so that replacement items can be shipped and the appropriate claims made.

**Payment Terms:** 100% NET 45 DAYS AFTER SHIPMENT DATE.  
(Note: Partial billing will be made on partial shipments)

Xylem's payment shall not be dependent upon Purchaser being paid by any third party unless Owner denies payment due to reasons solely attributable to items related to the equipment being provided by FLYGT.

**Schedule:** Please consult your local Flygt branch for submittals and fabrication lead-times.

# REQUEST FOR PROPOSAL



REQUEST FOR PROPOSAL (RFP) FOR PROPOSED CHANGE NO. 002

RFP Prepared By: Bo Bruner Project Engineer  
(Name) (Title)

Date Prepared: December 13, 2017

PROJECT DATA	CONTRACT DATA
Name: Cell 9-10 Leachate Pump Station No. 1	Contract Document Page Number: N/A
Location: OCSWMF- Cell 9-10	Drawing Number: 005-E-5001
Owner's Bid Number: Y17-774	Specification Section/Number: 11305

RFP DISTRIBUTION BY ENGINEER:				
Owner's Home Office: Attn.: Jim Flynt, P.E. Dan Courcy, P.E.	No. Copies 1		Date Sent: 12/15/2017	By email
Contractor's Home Office: Eclipse Construction Company Attn.: Scott Petro	No. Copies 1		Date Sent: 12/15/2017	By email
Owner's Field Office:	No. Copies		Date Sent:	
Engineer's Field Rep: Cherlyn Watts	No. Copies 1		Date Sent 12/15/2017	By Email
Contractor's Field Office: Attn:	No. Copies		Date Sent:	
Other: Attn.:	No. Copies		Date Sent:	

Please provide the undersigned a proposal for the following change in the work within fourteen (14) calendar days from the above date of this request. The written proposal must clearly delineate the scope of the proposed change in work by providing an itemized estimate of time and costs broken down by materials, labor (by trade), subcontracts, overhead costs, and profit. Any amount claimed for subcontracts must be similarly supported in detail. If this proposal is accepted and approved by the Owner, a change order will be issued for changes in the work of the Contract in accordance with the Contract Documents.

Type of Change  
Proposed:

(Deletion of Work)      (Addition of Work)      X (Revision of Work)      (Other)

Please see reverse side for a detailed description of the proposed change in Work.



**DESCRIPTION OF PROPOSED CHANGE IN WORK:**

---

In our response to CCIR-1 we stated: XYLEM/Flygt's Model D8058/444, 20 HP pump specified is no longer rated for Class I, Division 1, Group D service; therefore, the pump specified in the bid documents cannot be used for this project.

We proposed the 23.5 HP Model FA 10.65E pump by Wilo EMU as a substitute for the specified pump. This pump has an explosion-proof motor rated for Class I, Division 1, Group D service, and has corrosion-resistant components.

The proposed pump data, pump curve, dimensional drawings and manufacturer data were attached to our response to CCIR-1. The Supplemental Data Sheet from Specification Section 11305 was revised and submitted to you to reflect the new pump selection and is attached. The rail system shall be as provided by Wilo EMU. In addition, please provide the vendor the lift cable and guiderail length included in the data sheet. The revised electrical plans to accommodate the new pump was also included in our response to CCIR-1. Revised electrical requirements for the larger horsepower pump were included in Revised Drawing 005-E-5001.

---

Please include with your proposal the "Basis of Bid" including vendor quotes for the costs for deleted pump, control panel and accessories required by Section 11305; and a detailed vendor quote(s) including a cost breakdown of the new pump, control panel and accessories.

---

**ATTACHMENTS:**

	Description of Item Attached	No. of Copies
1.	<u>Drawing 005-E-5001 Revised</u>	<u>1</u>
2.	<u>Specification Section 11305, Supplemental Data Sheet Revised</u>	<u>1</u>
3.	<u></u>	<u></u>
4.	<u></u>	<u></u>
5.	<u></u>	<u></u>

**END OF REQUEST FOR PROPOSAL FORM**

**SUBMERSIBLE PUMP DATA SHEET, 11305 Leachate Pump Station No. 1 (Rev\_1, CCIR 001)**

**Tag Numbers:** P-9-10-1 and P-9-10-2

**Pump Name:** Leachate Pump Station-Submersible Pumps (Stainless Steel)

**Manufacturer and Model Number:** (1) Wilo FA10.65E

(2) \_\_\_\_\_

(3) \_\_\_\_\_

**SERVICE CONDITIONS**

Liquid Pumped (Material and Percent): Landfill Leachate, 100 percent

Pumping Temperature (Fahrenheit): Normal: 80 degrees Max 100 Min 40

Specific Gravity at 60 Degrees F: 1.005 to 1.02 Maximum, Viscosity Range: \_\_\_\_\_

pH: 5-8

Abrasive (Y/N) Y Possible Scale Buildup (Y/N): Y

Total suspended solids (mg/l) 150 to 500.

Largest diameter solid pump can pass (inches): 3 inches.

Min. NPSH Available (Ft. Absolute): N/A

**PERFORMANCE REQUIREMENTS**

Capacity (US gpm): Rated: 500 Secondary: 800.

Total Dynamic Head (Ft): Rated: 72 Secondary: 53.

Maximum Shutoff Pressure (Ft): 120 feet.

Min. Rated Pump Hydraulic Efficiency at Rated Capacity (%): 67%

Max. Pump Speed at Rated Capacity (rpm): 1,740 Constant (Y/N): Y

Adjustable Speed Driver (Y/N): N

**DESIGN AND MATERIALS**

Pump Type: Non clog style

Volute Material: Pump Casing Material: CF8M 316 Stainless Steel (SST)

Motor Housing Material: Cast Iron with Ceram C0 coating

Wear Rings Case (Y/N) N/A Material:

Wear Ring Impeller (Y/N): N/A Material:

## SUBMERSIBLE PUMP DATA SHEET, 11305C

Tag Numbers: P-9-10-1 and P-9-10-2

Pump Name: Leachate Pump Station-Submersible Pumps (Stainless Steel)

Elastomers: Viton (FK)

Fasteners: 316 Stainless Steel

Impeller: Non clog design Type: Single Channel

Material: 316 SST

Shaft Material: 316 SST

Base Elbow: CF 8M Stainless Steel

Double Mechanical Seal: Yes

Bearing Life (Hrs.): min. L-10 life 30,000 hrs. at rated capacity.

### DRIVE MOTOR (See Section 16005, ELECTRICAL)

Horsepower: 23.5 HP Voltage: 460 Phase: 3

Synchronous Speed (rpm): 1,800 rpm

Enclosure: Cast Iron with Ceram C0 coating

Classification: Class 1, Group D, Division 1

Other Features: 316 SST mounting brackets, non-sparking guiderail assembly, 316 SST guiderails, lifting bales and lifting cables as recommended by the manufacturer. 316 SST liquid end (casing, impellers, discharge elbow and baseplate).

### . REMARKS:

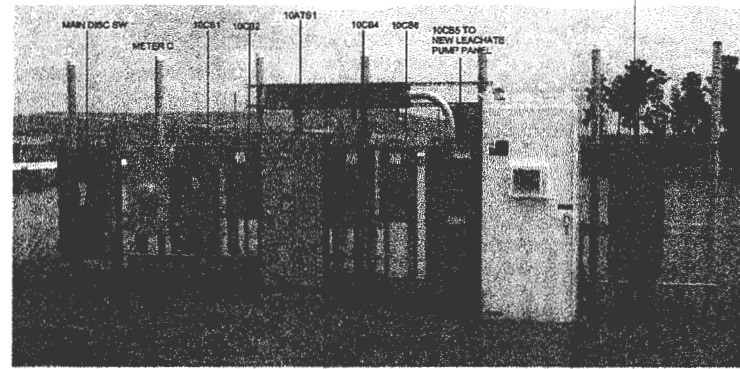
1. Requires, non-sparking guide rails, lifting bale and grip-eye assembly in wetwell for pump retrieval due to potential methane gas from landfill gas. Motor is Class 1, Division 1, Group D explosion-proof.
2. Per Contract Documents, furnish temperature (TSH 9-10-1 and TSH 9-10-2) and moisture protection (XE 9 -10-1 and XE 9-10-2) sensors for each pump to be installed with the PICS supplied pump station control panel (LCP 9-10).

**TABLE 11305-A**

SUBMERSIBLE PUMPS SCHEDULE FOR LEACHATE PUMP STATION NO.1		
Item	Description/Value	Remarks
1. Manufacturer	Wilo.	
2. Model Number	FA10.65E	
3. Impeller Trim	9.9-inches	Impeller trimmed to suit COS
4. No. of Pumps Required	2	
5. Pump Discharge Connection Size, Inches	4	
6. Primary Capacity, GPM / Total Head, Feet	500/72	
7. Run-out Capacity, GPM / Total Head, Feet	800/53	
8. Shut-off / Total Head, Feet	95	
9. Motor, HP (NEMA Code)	23.5	
10. Maximum Speed, RPM	1,740	
11. Explosion Proof Motor Required (Yes or No)	Yes	
12. Voltage, Volts	460	
13. Phase	3	
14. Frequency, Hertz	60	
15. Service	Landfill Leachate	
16. Minimum solid sphere size passed	3-inches	
17. Minimum Pump Efficiency at Primary Capacity , %	67	
18. Submergence Requirement, Inches	44	
19. Minimum Height of Base Elbow, Inches	12	
20. Horizontal Distance from Pump Volute to Base Plate, Inches	11	
21. Certified Pump Performance Test	Required	Per HI Stds.
22. Certified Pump Volute Hydrostatic Test	Required	Test to 150% of shutoff head
23. Certified Motor Test	Required	

13.8KV/480V  
200KVA  
XFRM-4C  
300A N.F.  
DISC. SW  
FLORIDA  
POWER  
METER

GENERATOR NO. 2  
3P  
300A  
175KW 480V  
50.3W 60Hz



Load	kVA	Amp
P--9-10-1	26.19	31.5
P--9-10-2	26.19	31.5
FIT-9-10	1.66	2
PUMP CONTROLS	3.99	4.8
25% of Largest Motor		7.88
<b>TOTAL:</b>	<b>41</b>	<b>77.68</b>

**LEACHATE PUMP LOAD CALCULATIONS**  
NTS

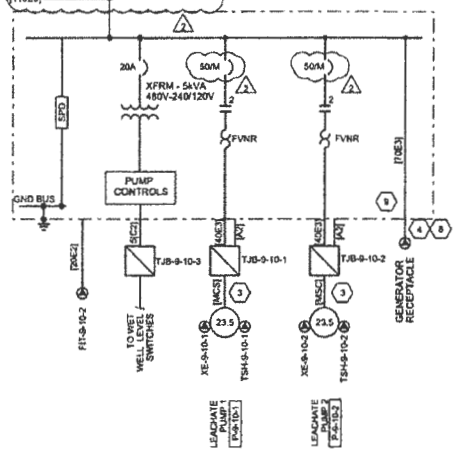
**GENERAL NOTES**

1. PROVIDE AND INSTALL A WILDLIFE GUARD ON TOP OF EACH OUTDOOR PANEL; ALUMINUM NON-STATIC OPERATED SPIKES 2-3 INCHES MAX LENGTH

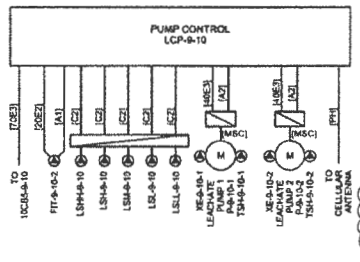
**KEYED NOTES**

1. PROVIDE NEMA 4X 315 STAINLESS STEEL TERMINAL JUNCTION BOX WITH STAINLESS STEEL CABLE GLANDS
2. INSTALL MANUFACTURER SUPPLIED CABLE (MSC) BETWEEN LEACHATE PUMP MOTOR TERMINAL JUNCTION BOXES IN COMPLIANCE WITH MANUFACTURERS REQUIREMENTS AND OTHER DIVISIONS OF CONTRACT.
3. PROVIDE RECEPTACLE FOR PORTABLE GENERATOR HOOKUP AND ISOLATION SWITCH TO DISCONNECT UTILITY POWER. MELTREC DSM 150A.
4. CONTROL PANEL AS PER SECTION 13411.
5. REFERENCE DETAIL (2005-101) FOR MANUFACTURER SUPPLIED CABLE TERMINATION AT TJB'S. AIR GAP BETWEEN THE WET WELL AND THE TJB'S AS SHOWN ON PANEL ARRANGEMENT AND DETAIL.
6. FURNISH AND INSTALL CIRCUIT BREAKER THAT CAN BE LOCKED IN THE OFF POSITION. USE 316 STAINLESS STEEL ENCLOSURE.
7. FURNISH AND INSTALL DIN MOUNTED BRANCH CIRCUIT BREAKER PROTECTION TO POWER FIT-9-10-2
8. FURNISH AND INSTALL 3 POSITION MANUAL TRANSFER MECHANISM WITH LEFT CENTER RIGHT POSITION SWITCH (GENERAL WORKTABLES).
9. CONDUIT TRANSITIONS FROM BELOW GRADE TO CONTROL PANELS AND TJB'S MUST BE PVC-COATED RIGID GALVANIZED STEEL
10. CONTRACTOR TO PROVIDE ANCHORING SUPPORT DETAILS FOR THE UNISTRUT MOUNTED ON THE CONCRETE COLUMN. REFERENCE DRAWING 005-S-0002 FOR CONCRETE COLUMN DETAILS.

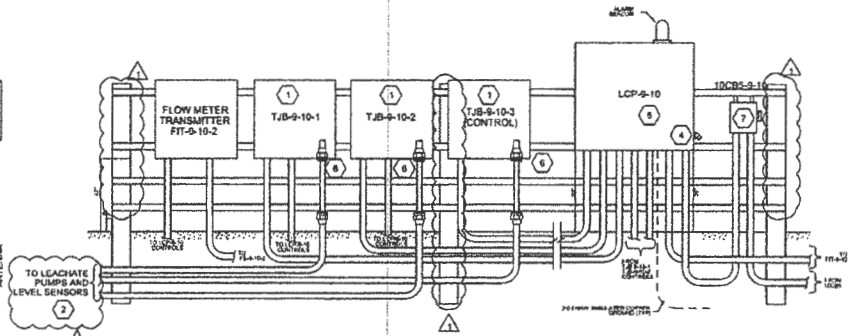
100A AD-L  
3P  
10CB5-9-10  
EXISTING RECIRCULATION LEACHATE PUMPS



**SINGLE LINE DIAGRAM**  
NTS



**LEACHATE PUMP RISER DIAGRAM.**  
NTS



**PANEL ARRANGEMENT AT LEACHATE PUMPS**  
NTS

**ch2m**

CELL 5-10 LEACHATE PUMP STATION No. 1  
SOLID WASTE MANAGEMENT FACILITY  
ULTRATES SOLID WASTE FACILITY  
ORANGE COUNTY, FLORIDA

**NEEL-SCHAFFER**  
ELECTRICAL

**ONE-LINE DIAGRAM**

NO.	DATE	REVISION	BY	APP'D
1	12/01/17	ADDITIONAL NO. 1	AC	BT
2	06/27/17	ADDITIONAL NO. 1	AC	BT

DATE: SEP 2017

PROJ: 688045

DWG: 005-E-0001

SHEET: 1 of 1

VERIFY SCALE: 3/4" = 1'-0"

DATE: SEP 2017

PROJ: 688045

DWG: 005-E-0001

SHEET: 1 of 1

Leachate Pump Station Mods

Orange County Florida  
Orlando Florida 32801

Data Release : Year 2017 Quarter 3 Unit Cost Estimate

Quantity	Line Number	Line Source	Description	Crew	Daily Output	Labor Hours	Unit	Mat. O&P	Labor O&P	Equip. O&P	Total O&P	Mat. O&P	Ext. Labor O&P	Ext. Equip. O&P	Ext. Total O&P	Labor Type	Release Date	CCI Location	Notes
20	221113780078		Pipe, plastic, high density polyethylene (HDPE), single wall, straight, welded, based on 40' length, 4" diam., DR 17, add 1 weld per joint, excludes hangers, trenching, backfill, hoisting or digging equipment		0	0	L.F.	\$ 4.14	\$ -	\$ -	\$ 4.14	\$ 82.80	\$ -	\$ -	\$ 82.80	OPN	Year 2017 Quarter 3	FLORIDA / ORLANDO (327-328,347)	
6	221113780328		Elbow, 90 Deg., plastic, high density polyethylene (HDPE), single wall, welded, 4" diam., DR 17, add 1 weld per joint, excludes hangers, trenching, backfill, hoisting or digging equipment		0	0	Ea	\$ 24.30	\$ -	\$ -	\$ 24.30	\$ 145.80	\$ -	\$ -	\$ 145.80	OPN	Year 2017 Quarter 3	FLORIDA / ORLANDO (327-328,347)	
16	221113784070		Welding, plastic, high density polyethylene (HDPE), single wall, labor per joint, cost based on the thickest wall for each diameter, 4" pipe size, weld, excludes welding machine	4 Skwk	77	0.42	Ea	\$ -	\$ 15.85	\$ -	\$ 15.85	\$ -	\$ 253.60	\$ -	\$ 253.60	OPN	Year 2017 Quarter 3	FLORIDA / ORLANDO (327-328,347)	
163	024113381600		Selective demolition, water & sewer piping & fittings, plastic Pipe, 3/4" - 4", diameter, excludes excavation	B6	700	0.03	L.F.	\$ -	\$ 1.67	\$ 0.60	\$ 2.27	\$ -	\$ 305.61	\$ 109.80	\$ 415.41	OPN	Year 2017 Quarter 3	FLORIDA / ORLANDO (327-328,347)	
1			Blind Flange 4"					\$ 100.00	\$ 100.00		\$ 200.00	\$ 100.00	\$ 100.00		\$ 200.00		ROM		
1			Pipe Penetration 4" Sleeve & Link Seal					\$ 500.00	\$ 500.00		\$ 1,000.00		\$ 500.00		\$ 1,000.00		ROM		

Total

\$ 1,246.56 \$ 328.80 \$ 1,159.21 \$ 109.80 \$2,097.61

**CONTRACT CLARIFICATION/  
INTERPRETATION REQUEST**

CCIR NO: 004

PROJECT: Orange County SWM Cell 9-10 Leachate Pump StationPROJECT NO: 686045CONTRACTOR: Eclipse Construction CompanyClarification/Interpretation Initiated By: Gerald A PetroRegarding: Plan Sheet \_\_\_\_\_ of C004 Spec. Section: 11305**Description:**

Your response to CCIR No.: 001 directs the use of WILO pumps and provides a quote from Kaman Industrial Technologies.

We were advised that Kaman was not furnished a copy of the Pump and Instrumentation Specifications on which to base their quote.

Kaman did not include the Pump Control Panel, Float Switches, Spare Parts nor the Aluminum Hatch. We have asked Kaman for a revised quote which includes all requirements of the specifications.

We also note that there is an estimated delivery of 90 to 120 days from release for fabrication (After submittal approval). This will affect sequencing of work on the project and will result in a project delay, however the delay cannot be estimated at this time.

The purpose of this CCIR is to advise of the pricing differential, delivery estimates and schedule impact.

Gerald A Petro

Prepared by

12/11/2017

Date

**Response Assigned to:**

Comment noted. Please provide a response to the attached RFP.

Please note that Section 11305, Paragraph 2.03A refers to Section 13400. This call-out should be for Section 13411.

Ron Beladi

Prepared by

12/15/2017

Date

**CONTRACT CLARIFICATION/  
INTERPRETATION REQUEST**

**CCIR No.: 001**

**Submersible Pump**

**PROJECT:** Orange County Cell 9-12 Leachate Pump Station  
No. 1

**PROJECT NO:** Y 17-774

**CONTRACTOR:** ECLIPSE CONSTRUCTION

**CCIR INITIATED BY:** G.A. Petro

**REGARDING: PLAN SHEET** C-004 **SPEC SEC.** 11305

**Description:**

Flygt has advised that the pump specified on Drawing. C-004 does not meet specifications as it does not have the FM rating to meet Class I Div. 1 Group D requirement. FM rating expired in 2013. See attached e-mail from Flygt.

G. Petco

Prepared by

Submitted October 12, 2017

Date

**Response:**

Based on Flygt's E-mail submitted by you and our inquiry, XYLEM/Flygt's Model D8058/444, 20 HP pump is no longer rated for Class I, Division 1, Group D service; therefore, the pump specified in the bid documents cannot be used for this project. We worked with XYLEM/Flygt and ABS to select an acceptable and comparable pump suitable for this application, but neither could provide a pump that meets the project specifications.

We propose the 23.5 HP Model FA 10.65E pump by Wilo EMU as a substitute for the specified pump. This pump has an explosion-proof motor rated for Class I, Division 1, Group D service, and has corrosion-resistant components.

The proposed pump data, pump curve, dimensional drawings and manufacturer data are attached. The Supplemental Data Sheet from Specification Section 11305 has been revised to reflect the new pump selection and is attached. The rail system shall be as provided by Wilo EMU. Contractor shall provide the vendor with lift cable and guiderail length.

The electrical plans have been revised to accommodate the new pump. Revised electrical requirements for the larger horsepower pump are included in Revised Drawing 005-E-5001, attached.

We are providing you with a copy of proposal from the vendor for this new pump and accessories. The local contact is Tommy Nichols, Kaman Industrial Technologies Corporation, phone: 407.843.4153

John Less/N-S and Tao Fu/CH2M

Prepared by

December 5, 2017

Date



Quote #	Quote Date	Taken By
323147-00	11/29/17	Dan Brooks
Salesperson	Terms	Expired Date
6003	NET 30	12/29/17

Correspondence To:	Kaman - Orlando 2020 N. Rio Grande Ave Whse # 1105 Orlando, FL 32804 (407)843-4153
--------------------	--

Contact Name	
Contact Email	
Contact Phone #	
Contact Fax #	

Bill To: 118260	CH2M Hill Omi PO Box 241329 Denver, CO 80224-9329  US-United States
--------------------	---

Ship To:	Ch2m Hill Orange County Landfill 5901 Young Pine Road ORLANDO, FL 32829  US-United States
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Reference	Instructions	Ship Via
ATTN: TAO FU	PPD	Echo Global
Promo Message		Ship Point
		Kaman - Orlando

Ln #	Quote Quantity	Product and Description	Non-Cancel Non-Return	Qty U/M	Promise Date	Price U/M	Unit Price	Net Amount
1	2	FOR ORANGE COUNTY LANDFILL TO PUMP LEACHATE. INCLUDES FACTORY 5-YEAR PRORATED WARRANTY FOR 5-YEAR, 100% WARRANTY, ADD \$2.316.00/PUMP DELIVERY: 70-120 DAYS ARO FREIGHT: INCLUDED		each	04/06/18	each	25730.00	51460.00
2	2	FA10.65E+HC20.1-4/22KEx WILO 4" SUBMERSIBLE, 20 HP, 460V, EXPLOSION PROOF, WITH 40' CABLES, MOISTURE AND TEMPERATURE SENSORS, 316SS VOLUTE AND IMPELLER, DUPLEX SHAFT AND CERAMIC ON EXTERIOR OF MOTOR.		each	04/06/18	each	4681.00	9362.00
3	2	4" 316SS WET PIT ELBOW WILO BASE ELBOW WITH PUMP COUPLING AND UPPER GUIDE RAIL BRACKET IN 316SS (GUIDE RAILS AND LIFTING CABLES NOT INCLUDED)		EA	04/06/18	EA	705.40	1410.80
4	2	2710768 2" X 20' GUIDE RAIL WILO, 316SS		each	04/06/18	each	749.25	1498.50
	2	2708954 20' X 3/8" LIFTING CABLE ASSEMBLY, WILO, 316SS						

4 Lines Total	Qty Quote Total	8	Sub-Total	63731.30
			Taxes	3935.24
			Quote Total	67666.54

Project:  
Project number:

Created on: 2017-11-21  
Created by: Morris, N

**wilo**

## Technical data

Submersible sewage pump

FA 10.65E

with motor

HC 20.1-4/22KE<sub>x</sub>

Pump					
Pump type		FA 10.65E		Installation type	
Impeller Ø	max. possible	12.5	inch	Enhängevorrichtung 1	
	standard	318	mm	DN100/2RK	
	designed	9.9	inch	Free passage	
	min. possible	9.2	inch	3.1 inch	
Nominal speed		1740	1/min	Suction port	Pressure rating
Frequency		60	Hz		Rated diameter
Impeller type		Single-channel			Standard
Impeller construction		Closed		Discharge port	Pressure rating
					Rated diameter
					Standard
Weights					
Weight of pump end		max. 169.8	lb	Weight of unit	
Weight of motor		414.5	lb	max. 584.2 lb	
Materials					
Pump housing		1.4581		Suction ports	
Stationary wear ring		1.4462/1.4470			
Impeller		1.4581			
Mobile wear ring		1.4462/1.4470			
Motor					
Motor name		HC 20.1-4/22KE <sub>x</sub>		Number of poles	
Rated power		23.5	hp	Rated speed	
Power input with rated power				1710 rpm	
Rated voltage				28.5 hp	
Current input with rated power				460 ~3 V	
Efficiency with rated power				31.5 A	
cos phi with rated power		0.85		83 %	
cos phi with starting		0.55		Rated frequency	
Starting current, direct starting		126	A	60 Hz	
Starting current, star-delta		42	A	Operation type wet	
Starting torque		121	lbf ft	S1	
Inertia moment		1.0394	lb ft <sup>2</sup>	Operation type dry	
Sel. explosion protection		FM		S1	
Ex-designation		FM		Max. fluid temperature	
Motor connection cable				104 °F	
				Starts per hour max.	
				15	
				Degree of protection	
				IP 68	
				Ex-number	
				-	
Duty point data					
Volume flow		500	US g.p.m.	Fluid	
Head		72	ft	Water, pure	
Shaft power		P <sub>2</sub> 13.3	hp	Required pump NPSH	
Pump efficiency		68.6	%	8.2 ft	
Power input		P <sub>1</sub> 15.9	hp	Speed	
				1751 rpm	
				Total efficiency	
				= $\frac{P_2 \cdot \text{Pump efficiency}}{P_1}$	
Item no.					

Project:  
Project number:

Created on: 2017-11-21  
Created by: Morris, N

**wilo**

## Performance curves

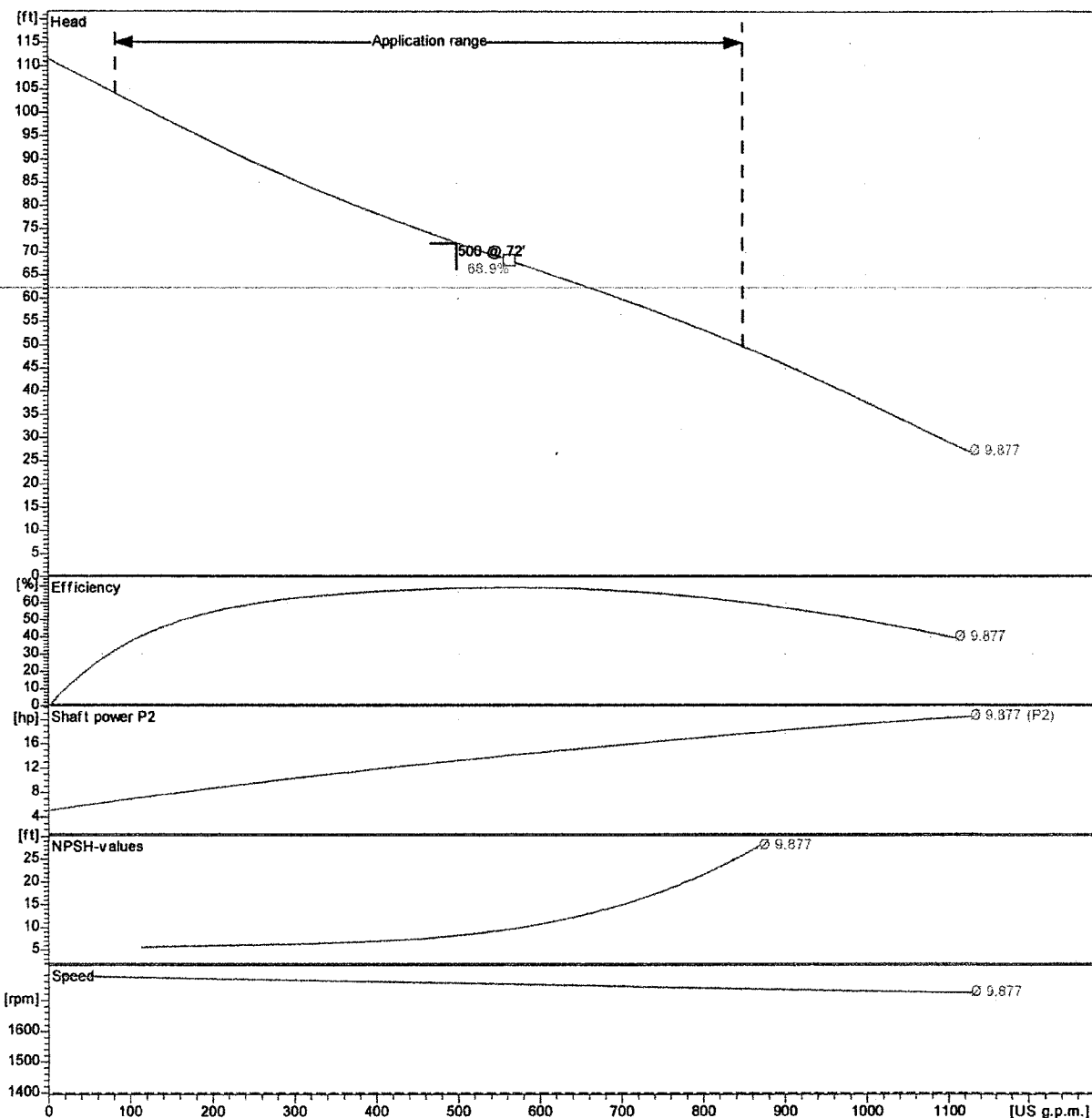
Submersible sewage pump

FA 10.65E

with motor

HC 20.1-4/22KE<sub>x</sub>

Power data referred to: Water, pure [100%]; 68°F; 62.322lb/ft<sup>3</sup>; 1.0818E-5ft<sup>2</sup>/s  
Tolerance as per ISO 9906 / Annex A.2



Pump			Duty point data		
Impeller Ø	designed	9 7/8	inch	Volume flow	500 US g.p.m.
Nominal speed		1740	rpm	Head	72 ft
Frequency		60	Hz	Shaft power P <sub>2</sub>	13.3 hp
Impeller type		Single-channel		Pump efficiency	68.6 %
Motor			Power input P <sub>1</sub>	15.9	hp
Rated power		23.5	hp	Required pump NPSH	8.2 ft
Sel. explosion protection		FM	Speed	1751	rpm

Project:  
Project number:

Created on: 2017-11-21  
Created by: Morris, N

**wilo**

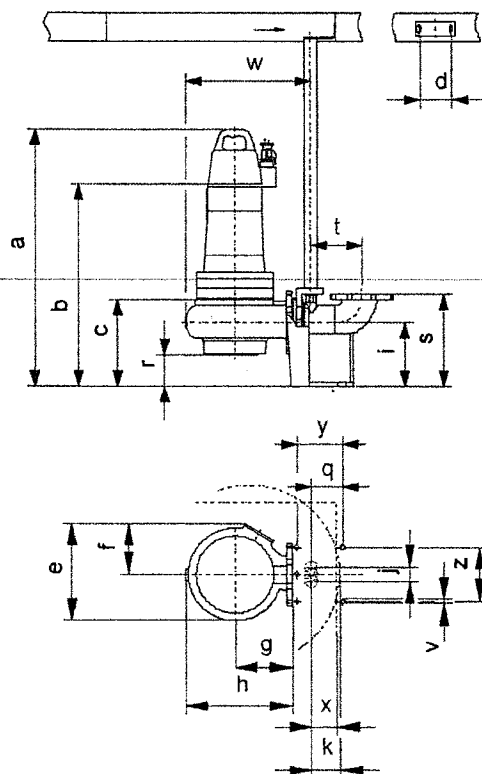
## Technical data

Submersible sewage pump

FA 10.65E

with motor

HC 20.1-4/22KEx



Dimensions in inch				Connections
a	48 <sup>11</sup> / <sub>16</sub>	r	4 <sup>15</sup> / <sub>16</sub>	Suction port DN100 PN10
b	44 <sup>1</sup> / <sub>2</sub>	s	12 <sup>13</sup> / <sub>16</sub>	
c	11 <sup>7</sup> / <sub>8</sub>	t	6 <sup>15</sup> / <sub>16</sub>	
d	4 <sup>5</sup> / <sub>16</sub>	v	9 <sup>1</sup> / <sub>16</sub>	
e	18 <sup>11</sup> / <sub>16</sub>	w	22 <sup>1</sup> / <sub>2</sub>	Discharge port DN100 PN10
f	10 <sup>3</sup> / <sub>16</sub>	x	3 <sup>9</sup> / <sub>16</sub>	
g	11	y	6 <sup>5</sup> / <sub>16</sub>	
h	19 <sup>5</sup> / <sub>16</sub>	z	7 <sup>1</sup> / <sub>2</sub>	
i	8 <sup>7</sup> / <sub>8</sub>			Enhängevorrichtung 1 DN100/2RK
j	1 <sup>15</sup> / <sub>16</sub>			
k	3 <sup>7</sup> / <sub>8</sub>			
q	4 <sup>5</sup> / <sub>16</sub>			

**SUBMERSIBLE PUMP DATA SHEET, 11305 Leachate Pump Station No. 1 (Rev\_1, CCIR 001)**

**Tag Numbers:** P-9-10-1 and P-9-10-2

**Pump Name:** Leachate Pump Station-Submersible Pumps (Stainless Steel)

**Manufacturer and Model Number:** (1) Wilo FA10.65E

(2) \_\_\_\_\_

(3) \_\_\_\_\_

**SERVICE CONDITIONS**

Liquid Pumped (Material and Percent): Landfill Leachate, 100 percent

Pumping Temperature (Fahrenheit): Normal: 80 degrees Max 100 Min 40

Specific Gravity at 60 Degrees F: 1.005 to 1.02 Maximum, Viscosity Range: \_\_\_\_\_

pH: 5-8

Abrasive (Y/N) Y Possible Scale Buildup (Y/N): Y

Total suspended solids (mg/l) 150 to 500.

Largest diameter solid pump can pass (inches): 3 inches.

Min. NPSH Available (Ft. Absolute): N/A

**PERFORMANCE REQUIREMENTS**

Capacity (US gpm): Rated: 500 Secondary: 800.

Total Dynamic Head (Ft): Rated: 72 Secondary: 53.

Maximum Shutoff Pressure (Ft): 120 feet.

Min. Rated Pump Hydraulic Efficiency at Rated Capacity (%): 67%

Max. Pump Speed at Rated Capacity (rpm): 1,740 Constant (Y/N): Y

Adjustable Speed Driver (Y/N): N

**DESIGN AND MATERIALS**

Pump Type: Non clog style

Volute Material: Pump Casing Material: CF8M 316 Stainless Steel (SST)

Motor Housing Material: Cast Iron with Ceram C0 coating

Wear Rings Case (Y/N) N/A Material:

Wear Ring Impeller (Y/N): N/A Material:

## SUBMERSIBLE PUMP DATA SHEET, 11305C

Tag Numbers: P-9-10-1 and P-9-10-2

Pump Name: Leachate Pump Station-Submersible Pumps (Stainless Steel)

Elastomers: Viton (FK)

Fasteners: 316 Stainless Steel

Impeller: Non clog design Type: Single Channel

Material: 316 SST

Shaft Material: 316 SST

Base Elbow: CF 8M Stainless Steel

Double Mechanical Seal: Yes

Bearing Life (Hrs.): min. L-10 life 30,000 hrs. at rated capacity.

### DRIVE MOTOR (See Section 16005, ELECTRICAL)

Horsepower: 23.5 HP      Voltage: 460      Phase: 3

Synchronous Speed (rpm): 1,800 rpm

Enclosure: Cast Iron with Ceram C0 coating

Classification: Class 1, Group D, Division 1

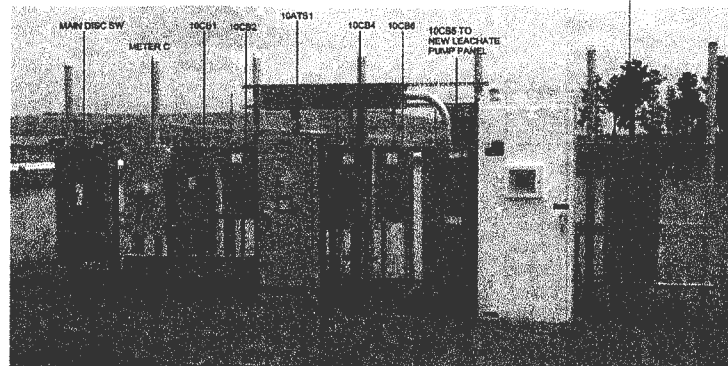
Other Features: 316 SST mounting brackets, non-sparking guiderail assembly, 316 SST guiderails, lifting bales and lifting cables as recommended by the manufacturer. 316 SST liquid end (casing, impellers, discharge elbow and baseplate).

### . REMARKS:

1. Requires, non-sparking guide rails, lifting bale and grip-eye assembly in wetwell for pump retrieval due to potential methane gas from landfill gas. Motor is Class 1, Division 1, Group D explosion-proof.
2. Per Contract Documents, furnish temperature (TSH 9-10-1 and TSH 9-10-2) and moisture protection (XE 9-10-1 and XE 9-10-2) sensors for each pump to be installed with the PICS supplied pump station control panel (LCP 9-10).

**TABLE 11305-A**

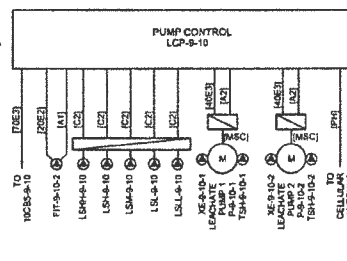
SUBMERSIBLE PUMPS SCHEDULE FOR LEACHATE PUMP STATION NO.1		
Item	Description/Value	Remarks
1. Manufacturer	Wilo.	
2. Model Number	FA10.65E	
3. Impeller Trim	9.9-inches	Impeller trimmed to suit COS
4. No. of Pumps Required	2	
5. Pump Discharge Connection Size, Inches	4	
6. Primary Capacity, GPM / Total Head, Feet	500/72	
7. Run-out Capacity, GPM / Total Head, Feet	800/53	
8. Shut-off / Total Head, Feet	95	
9. Motor, HP (NEMA Code)	23.5	
10. Maximum Speed, RPM	1,740	
11. Explosion Proof Motor Required (Yes or No)	Yes	
12. Voltage, Volts	460	
13. Phase	3	
14. Frequency, Hertz	60	
15. Service	Landfill Leachate	
16. Minimum solid sphere size passed	3-inches	
17. Minimum Pump Efficiency at Primary Capacity , %	67	
18. Submergence Requirement, Inches	44	
19. Minimum Height of Base Elbow, Inches	12	
20. Horizontal Distance from Pump Volute to Base Plate, Inches	11	
21. Certified Pump Performance Test	Required	Per HI Stds.
22. Certified Pump Volute Hydrostatic Test	Required	Test to 150% of shutoff head
23. Certified Motor Test	Required	



Load	KVA	Amp
P--9-10-1	26.19	31.5
P--9-10-2	26.19	31.5
FIT-9-10	1.66	2
PUMP CONTROLS	3.99	4.8
25% of Largest Motor		7.88
<b>TOTAL:</b>	<b>41</b>	<b>77.68</b>

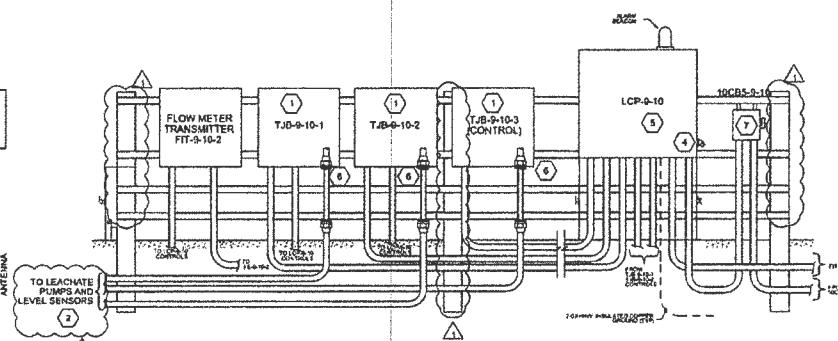
### LEACHATE PUMP LOAD CALCULATIONS

NTS



LEACHATE PUMP RISER DIAGRAM.

NT8



### PANEL ARRANGEMENT AT LEACHATE PUMPS

NT:

- GENERAL NOTES

1. PROVIDE AND INSTALL A WILDLIFE GUARD ON TOP OF EACH OUTDOOR PANEL: ALUMINUM NON-STATIC OPERATED SPIKES 2-3 INCHES MAX LENGTH

## KEYED NOTES

1. PROVIDE NEMA 4X 316 STAINLESS STEEL TERMINAL JUNCTION BOX, WITH STAINLESS STEEL CABLE CLAMPS
2. INSTALL MANUFACTURER SUPPLIED CABLE (MSD) BETWEEN LEACHPAC PUMP MOTOR TERMINAL JUNCTION BOXES IN COMPLIANCE WITH MANUFACTURERS REQUIREMENTS AND OTHER DIVISIONS OF CONTRACT.
3. PROVIDE RECEPTACLE FOR PORTABLE GENERATOR HOOKUP AND ISOLATION SWITCH TO DISCONNECT UTILITY POWER. SEE DISC 159.1.1
4. CONTROL PANEL AS PER SECTION 314.11.
5. REFERENCE DETAIL 2022-101 FOR MANUFACTURER SUPPLIED CABLE TIE. THE TIES ARE GAP BETWEEN THE WELL AND THE TIES AS SHOWN ON PANEL ARRANGEMENT AND DETAIL.
6. FURNISH AND INSTALL CIRCUIT BREAKER THAT CAN BE LOCKED IN THE OFF POSITION. USE 316 STAINLESS STEEL ENCLOSURE
7. FURNISH AND INSTALL ON MOUNTED BRANCH CIRCUIT BREAKER PROTECTION TO POWER FIT-610-2
8. FURNISH AND INSTALL 3 POSITION MANUAL, TRANSFER MECHANISM WITH LEFT/CENTER/RIGHT POSITION SWITCH (CENTER OFF/LEFT/RIGHT)
9. CONDUIT TRANSITIONS FROM BELOW GRADE TO CONTROL BOX AND TIE BOX MUST BE PVC-COATED RIBBED SANITIZED STEEL.
10. CONTRACTOR TO PROVIDE ANCHORING SUPPORT DETAILS FOR THE UNISTRUT MOUNTING ON THE CONCRETE COLUMN. REFERENCE DRAWING 005-3-5002 FOR CONCRETE COLUMN DETAIL.



ch2m:

NEEL-SCHAFFER

## ELECTRICAL ONE-LINE DIAGRAM

**VERIFY SCALE**

DATE	SEP 2017
PROJ	686045
DWG	005-E-3001
SHEET	of

CONFIRMED CONSTRUCTION DOCUMENTS

SECRET