



CITY OF HAVELOCK

Post Office Box 368
Havelock, NC 28532

INVITATION TO BID

Pursuant to North Carolina General Statutes §143-131, the City of Havelock invites informal bids on the following:

Bids must be submitted in accordance with the attached specifications. Bids must include an itemized schedule (including quantity, unit price and total) for each work element. Bids can be submitted by mail, email, fax or hand delivered. Cover sheets, envelopes, etc. should be clearly marked with the words:

*“City of Havelock,
Wastewater Treatment Plant,
RAS Control Station Modifications”*

Address Bids to: Lee Tillman, Director of Finance
City of Havelock
P.O. Box 368
1 Governmental Ave.
Havelock, NC 28532
Fax: 252-447-0126
Email: Ltillman@havelocknc.us

Bids will be accepted until **3:00 PM (EST) on Monday, July 16, 2018** at which time they will be reviewed in the office of the City Finance Director. Quotes are not subject to public inspection until the contract is awarded. The bids are good for 75 days after opening.

Bidders are cautioned not to submit bids until the proposed requirements and specifications have been carefully examined. It will be considered that bidders will have satisfied themselves as to the accuracy of the specifications. No proposal will be considered unless prices are submitted for all items requested in any section. The City reserves the right to change the amount of quantities.

The names of certain brands or makes denote quality standard in the article desired, but do not restrict bidders to the specific brand, make or manufacturer named. They are meant to convey to prospective bidders the general style, type, character and quality of the article desired.

The successful bidder on all construction contracts will be required to conduct the operation in accordance with all Federal, State, and Municipal health and safety rules, regulations and laws applicable to the operation. The successful bidder may be asked to provide the City with a copy of the company's safety plan prior to commencing work. For all projects over \$30,000, a general contractor's license must be furnished to the City if applicable.



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N.C.G.S. (North Carolina General Statutes), specifically §160A-20.1(b), prohibit the City from entering into contracts with contractors and subcontractors who have not complied with the requirement of Article 2 or Chapter 64. The Contractor shall submit the E-Verify Affidavit, located in the Bid Proposal section, with their bid. Bids that do not include this Affidavit will be considered non-responsive.

N.C.G.S 147-86.42-84 requires that contractors with a North Carolina Local Government must not utilize any subcontractor found on the State Treasurer's Iran Divestment list or Companies Boycotting Israel list. The referenced lists can be found on the State Treasurer's website at the address www.nctreasurers.com and will be updated every 180 days.

The City of Havelock reserves the right to reject any or all proposals and to purchase items from the state contract in the efforts to award the contract to the bidder it deems to be for the best interest of the City.

This institution is an equal opportunity provider, and employer.

Contact person(s) for information on this bid:

For questions in regards to the bid specifications, the City requires and only responds to questions submitted in writing and sent via email to:

Ltillman@havelocknc.us AND cc: Asmith@havelocknc.us

Questions must be received by **3:00 PM (EST) on Thursday, July 9, 2018**. If questions are received, the City will respond no later than **5:00 PM (EST) on Friday, July 13, 2018**.

This is the 25th day of June 2018

CITY OF HAVELOCK

Lee W. Tillman
Director of Finance



Bid Sheet

Base Bid: _____

NC Sales Tax: _____

Delivery Cost (if applicable): _____

Total Cost to City: _____

Bids must include an itemized schedule by quantity, unit price and total for each work element.

Company Name: _____

Company Address: _____

Contact Person: _____

Telephone Number: _____

NC Contractor's License Type and Number: _____

Number of Addendums Acknowledged (circle one): N/A 1 2 3 4

As of the date listed below, the vendor or bidder listed above is compliant with N.C.G.S. 147-86.42-84, the Iran Divestment Act and the Companies Boycotting Israel Act.

Authorized Signature: _____

Print Name of Authorized Signature: _____

Title: _____

Address Bid to: Lee Tillman, Director of Finance
City of Havelock
P.O. Drawer 368
1 Governmental Avenue
Havelock, NC 28532

Please indicate the Bid name on the outside of the envelope.



Project Scope

Modify the existing Return Activated Sludge (RAS) Control Station by replacing the existing valves, flow meter devices, piping, fittings, and appurtenance. Remove and place in Owner's possession existing strap-on meters attached to the two 10-inch pipes in the RAS control vault. Remove from the site the two existing pinch valves, stem extension, and associated wheel operators. Modify piping inside the vault as shown on Drawing M1, and electrical and control modifications as shown on E1, for the complete installation of two new mag meters, two new plug valves with actuators, and associated piping, vault modifications, and electrical and controls modifications. (See Figure 1 excerpt from sheet 2 of 46 WWTP Expansion dated 1996 and Hazen & Sawyer Contract Drawing M1 and E1 dated June 2018.)

A submission of a bid for the project shall constitute confirmation that the Contractor has inspected the site and facilities to be demolished, and is familiar with site conditions and scope or work required for project completion as described.

Materials Furnished by Owner

The scope of supply by the Owner includes all of the following:

1. Perkinson Company -Plug Valve and actuator package (quantity: 2)
 - 8" Plug Valve
 - Rectangular tub bracket (between gear box and plug valve)
 - AUMA GS63.3 Gear Box
 - 20mm Shaft Coupling
 - Extension Shaft
 - 2-1/2" SCH 40 Extension Bonnet
 - Unistrut (spans between vault walls to support extended shaft)
 - Strut Post
 - Shaft Collar (collar around extended bonnet to transfer load to unistrut for support purposes)
 - U-bolt (secures shaft collar to unistrut for support purposes)
 - AUMA SA07.6
 - One (1) day of Manufacturer field services for startup and testing

2. 8-inch magnetic flow meters (quantity: 2)

- Series 8750WA by Rosemount
- Remote mount indicating transmitter, powered by 120 VAC
- 4-20 mA output with HART protocol
- Flanged connections ANSI B16.5 RF Class 150 flow tube
- Tube lining: polyurethane
- Tube electrode material: 316 stainless steel, standard type
- Stainless steel grounding rings
- High accuracy calibration
- Interconnecting cables between flow tube and indicating transmitter
- Calibrated range: 0 – 1,000 gpm (normal flow range 400 – 600 gpm)
- One (1) day of Manufacturer field services for startup and testing

Attachment 1: Drawing

- | | |
|----|--|
| M1 | RAS Control Station Modifications (Mechanical) |
| E1 | RAS Control Station Modifications (Electrical) |

General Provisions:

1. Contractor shall comply with all requirements of OSHA 1926.
2. Period of Performance is forty (40) days from date of award.
3. Contractor will obtain all necessary permits. Permits required by City of Havelock are provided free of charge.

Figure 1: Location of RAS Control Station (Excerpt from sheet 2 of 46 WWTP Expansion dated 1996)

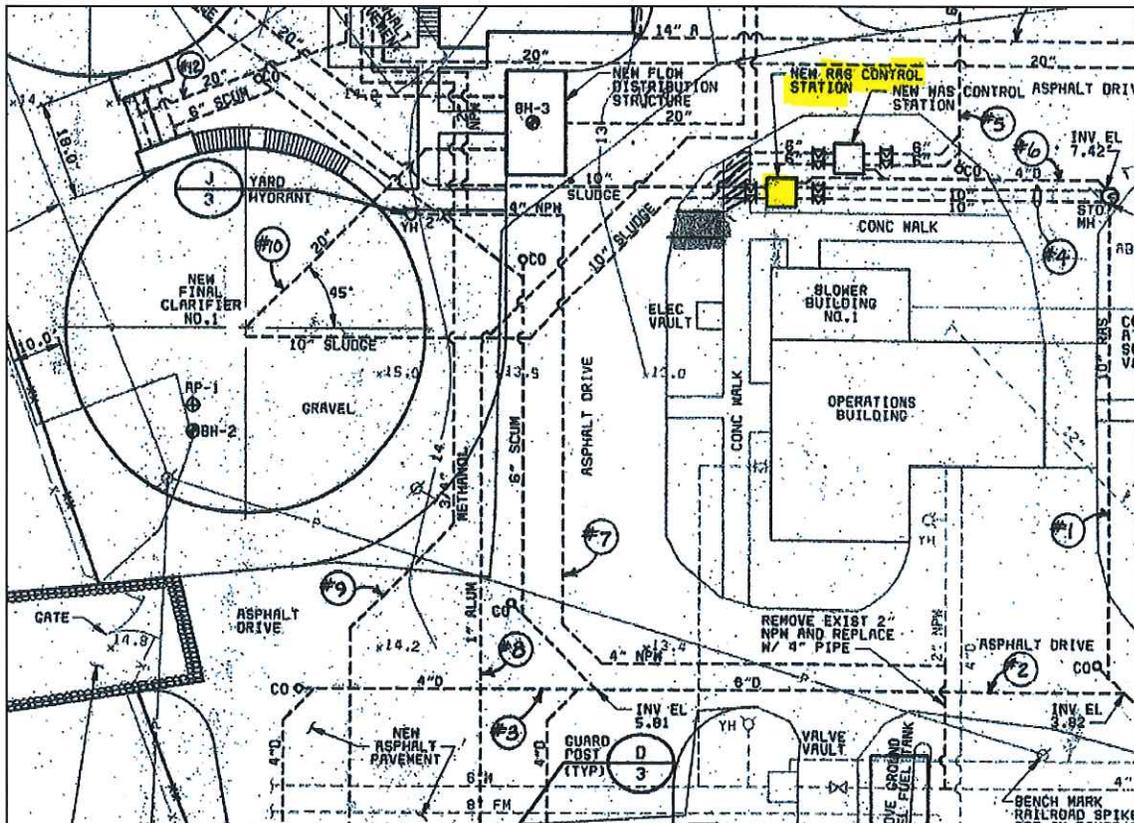


Figure 2: Photo of Existing RAS Control Station Vault (Provided for Reference)



Construction Notes

General Mechanical Requirements

1. Only one (1) RAS pipe shall be removed from service at a time. Shutdown of any one RAS line shall be limited to 24 continuous hours. Isolation valves are located upstream and downstream of the RAS control station vault.
2. All piping shall be flanged Class 53 ductile iron pipe. All hardware for assembly of piping, valves, and meters shall be 304 stainless steel.
3. All exposed piping shall be coated per the Painting Schedule included herein. Color selection shall be by Owner. Work shall include surface preparation, paint application, inspection of painted surfaces and corrective action required, protection of adjacent surfaces, cleanup and appurtenant work required for the proper painting of all surfaces to be painted. Surfaces to be painted are designated within the Painting Schedule and include new and existing piping, miscellaneous metals, equipment, and appurtenance. Perform Work in strict accordance with manufacturer's published recommendations and instructions.

General Electrical and Instrumentation Requirements

4. Contractor shall field verify the existing source of 120VAC power to the two (2) existing RAS flow instruments. Based upon field evaluations and available record drawings, the existing circuit is supplied by a 20A, 1-pole circuit breaker (Ckt #14) in panelboard "LP2" in the filter electrical building.
5. Remove two (2) existing RAS flow instruments and associated sensors/cables, but leave the existing supports and sunshades in place for reuse.
6. Furnish and install junction box on the eastern facing side of the newly constructed electrical support rack. Remove conduit and wire above existing junction box and furnish and install 2#12, #12GND in separate 3/4" rigid conduit from the existing junction box to the new junction box.
7. Furnish and install four (4) 120VAC disconnect switches (one for each of the two new RAS flow instruments and one for each of the two new RAS motor-operated valves). Mount disconnect switches on western facing side of the newly constructed electrical support rack.
8. Furnish and install field surge protection inside the new junction box to protect each flow meter transmitter and each electric valve actuator. A total of four (4) surge protection devices shall be provided. Surge protection devices shall be for the 120 VAC incoming power supply of each of the flow meter transmitters and the valve actuators. Surge protection devices shall be DIN-rail mounted module with pluggable surge protection Type 3 design for 120 VAC protection. SPDs shall be as manufactured by Phoenix Contact Part No. PLT-SEC-T3-120-FM, or equivalent by Weidmuller, Transtector.
9. Space for a future surge protection panel and future conduit (installed by others), as illustrated on Drawing E1, must remain available on the newly constructed equipment rack.
10. The Contractor shall coordinate testing and placing into operation the two (2) flow meters complete with field calibration of each meter to its specified accuracy. Written calibration sheet shall be provided to Owner for each flow meter (Manufacturer field services for testing and calibration of the meters is provided by Owner).

11. Install the two (2) new RAS flow instruments (furnished by Owner). Reuse existing instrument support/sunshade assembly. Mount new 12"X12"X¼" Aluminum plates to the existing supports below the sunshades to allow surface area for mounting new flow instrument. Furnish and install 1/2" conduit from each RAS flow transmitter to its respective flow meter, and install manufacturer-supplied sensor cable(s) in each conduit. Coordinate mounting and installation with the instrument manufacturer's requirements. Electrical, control and signal wiring connections between transmitter and flow tube mounted on process piping shall be made through liquid-tight flexible conduit. Conduit seal shall be provided where conduits enter the instrument and electronic housing.
12. Furnish and install 2#12, #12GND in separate 3/4" liquid-tight flexible conduit from each RAS flow instrument and RAS motor-operated valve to its respective disconnect switches. Furnish and install 2#12, #12GND in separate 3/4" liquid-tight flexible conduit from each disconnect switch to the junction box. All wiring in the junction boxes shall be terminated on terminal strips (see general junction box requirements herein).
13. All electrical work shall be performed by an electrical contractor licensed in the State of North Carolina. Contractor shall perform work and furnish and install all materials as described herein, and as otherwise required for a complete installation.
14. All work shall be performed in accordance with the National Electrical Code (NEC) and other applicable codes and standards. Grounding of raceways, enclosures, and equipment shall be in accordance with NEC Article 250.
15. All materials shall be UL Listed and NEMA type, where applicable. All bolts, screws, supports, and other hardware and appurtenances shall be Type 304 Stainless Steel.
16. Junction boxes shall be NEMA 4X Type 304 Stainless Steel and shall have hinged, gasketed covers with removable hinge pins. Covers shall be held in place by screw-operated clamp mechanisms. Clamp mechanism material of construction shall match that of the associated box. Junction boxes shall be provided with terminal strips, consisting of the necessary number of screw type terminals. Current carrying parts of the terminal blocks shall be of ample capacity to carry the full load current of the circuit connected. Terminal strips shall be rated for the voltage of the circuits connected. A separate ground bar shall be provided with the necessary number of screw type terminals. Junction boxes shall be sized in accordance with the fill and dimensional requirements of the NEC, and shall be a minimum of 12 inches wide by 12 inches tall by 4 inches deep to accommodate four (4) surge protection devices. Terminal blocks shall be considered when sizing the junction box.
17. 120VAC power wire shall consist of insulated copper conductors with a nylon (or equivalent) outer jacket. Conductor insulation shall be rated 90°C for dry locations, 75°C for wet locations, and 600V. Insulated conductors shall be UL Listed as NEC Type THHN/THWN. Conductors shall be stranded copper per ASTM B-8 and B-3, with Class B or C stranding contingent upon the size. If/where required by the termination hardware on a device, conductors shall be solid copper per ASTM B-3. Conductor size shall be no smaller than No. 12 AWG. Wiring shall be manufactured by the Okonite Company, the Southwire Company, General Cable, Encore Wire, or equal.
18. 120VAC disconnect switches shall be NEMA 4X NSSC series manual motor starting switches without overload protection as manufactured by Crouse-Hinds, Appleton equivalent, or equal.
19. Rigid conduit shall be rigid aluminum type, and shall be made of heavy wall high strength 6063 alloy aluminum with temper designation T1. Conduit shall be manufactured in accordance with ANSI C80.5, and shall be UL 6A Listed.

20. Flexible conduits shall be liquid-tight flexible metallic (LFMC) type, and shall be manufactured using a single strip of hot dip galvanized high strength steel alloy, helically formed into a continuously interlocked flexible metal conduit. Conduits shall be provided with an integrally woven copper bonding strip. Conduit shall be covered with an outside PVC jacket that is UV resistant, moisture-proof, and oil-proof. Conduit shall be UL 360 Listed.
21. Furnish and install NEMA 4X "Myers" hubs to terminate rigid conduits at junction boxes (for boxes that do not contain integral conduit hubs). Furnish and install NEMA 4X Stainless Steel flexible conduit fittings to terminate flexible conduits at junction boxes and other enclosures.

Structural Requirements

22. Replace all aluminum grating on top of the RAS Control Station with new aluminum grating. Coordinate with valve manufacturer to field modify new grating to accommodate new extended stem penetrations. New extended stem penetrations shall be similar to existing penetrations with an aluminum sleeve field welded to grating banding bars. Grating shall fit existing opening and be divided into three separate panels to match existing grating panel layout.
23. Aluminum grating shall be of I-bar type and shall consist of extruded bearing bars positioned and locked by crossbars. All supports, cross members, etc. shall be aluminum. Plank clips for grating holddowns or other required attachments, shall be aluminum or stainless steel. Bolts shall be stainless steel. Grating shall be "19-SI-4 I-Bar Swage Locked" by Alabama Metal Industries Corporation (AMICO), "IB" by Harsco Industrial IKG, "I-Bar 19SGI4", by Ohio Grating Inc., or "I-Bar" by Thompson Fabricating LLC.
24. Install new Uni-Strut to support the new electrical rack with Aluminum plate per the following requirements:
 - a. Supports: Eaton B-Line B12 Galvanized Uni-Strut section each side and top. Cut holes only where needed.
 - b. Anchors: (2) $\frac{3}{4}$ " \emptyset SST threaded rod/support. 6" embedment. Edge Dist. = 4" min. Spacing = 6"
 - c. Adhesive: Powers AC100+ Gold, or approved equal. Prepare drilled holes per adhesive manufacturer's instructions.

PAINING SCHEDULE

SURFACE	APPLICATION	PAINTING SYSTEM & NO. OF COATS	PRODUCT REFERENCE (SEE PRODUCT LISTING TABLE)	TOTAL MIN. DRY FILM THICKNESS (MILS)
<u>Metals</u>				
Interior and exterior nonsubmerged (gloss)	All new mechanical equipment, valves, piping.	1 coat epoxy polyamide primer	104	4-6
		1 coat epoxy polyamide	102	4-6
		1 coat aliphatic polyurethane	115	3-5

PRODUCT LISTING

REF.	SYSTEM	PURPOSE	PRODUCT			
			<u>Tnemec Series</u>	<u>PPG/AMERON</u>	<u>CARBOLINE</u>	<u>Sherwin-Williams</u>
102	Epoxy polyamide	Finish coat semi-gloss or gloss	N69	AMERLOCK 2	Carboguard 890	Dura-Plate 235
104	Epoxy Polyamide – metal	Primer	66	AMERCOAT 385	Carboguard 893SG	Macropoxy 646
115	Aliphatic Polyurethane	Finish coat	1074 or 1075	AMERCOAT 450 HS	Carbothane 134HG	Acrolon 218HS

ATTACHMENT 1

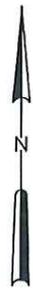
DRAWING M1 and E1

RAS CONTROL STATION MODIFICATIONS

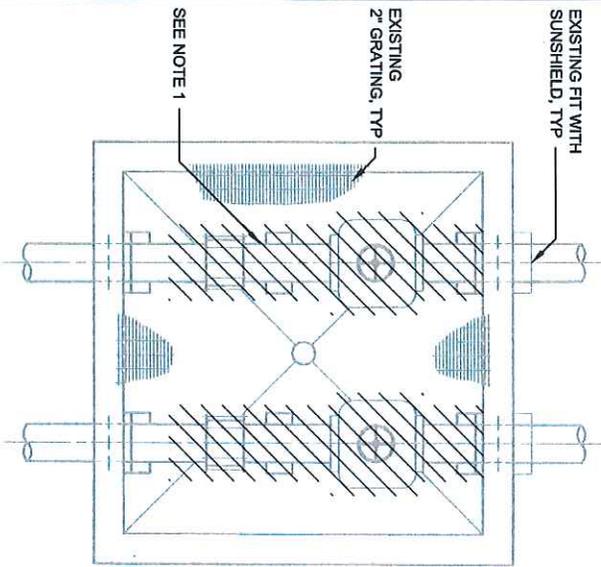
Hazen
 HAZEN AND SAWYER
 4011 WESTCHASE BOULEVARD, SUITE 500
 RALEIGH, NORTH CAROLINA 27607
 LICENSE NO.: C-0381



7/11/18

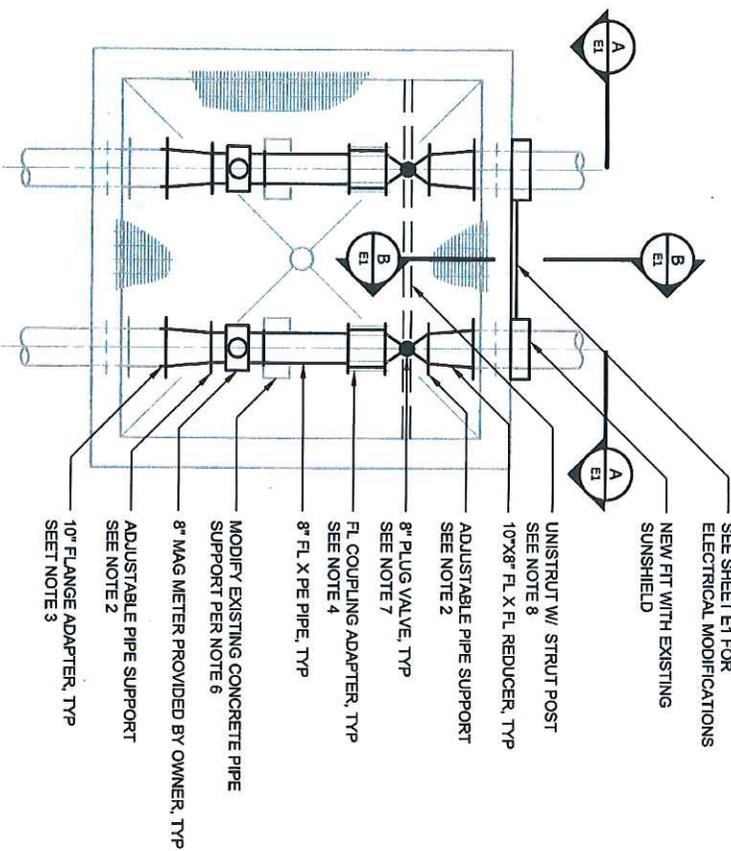


EXISTING RAS CONTROL STATION



DEMOLITION PLAN
 3/8" = 1'-0"

MODIFIED RAS CONTROL STATION



MODIFICATION PLAN
 3/8" = 1'-0"

NOTES:

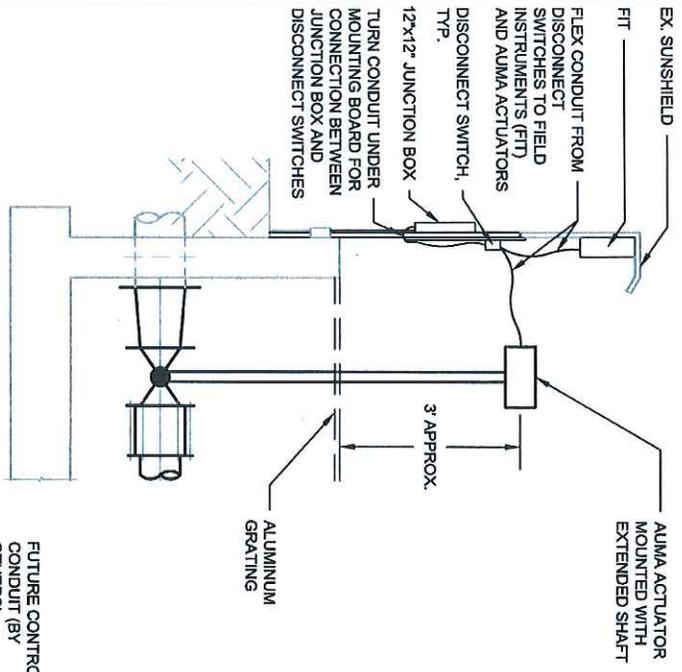
1. REMOVE ALL EXISTING EQUIPMENT AND PIPE AS SHOWN WITHIN RAS CONTROL STATION.
2. ADJUSTABLE PIPE SUPPORTS SHALL BE STANCON MODEL S89, ANCHOR TO FLOOR WITH FOUR (4) 1/2"x4-1/4" (MINIMUM) SS WEDGE EXPANSION ANCHORS. ALL OTHER PARTS SHALL BE GALVANIZED.
3. FLANGE ADAPTER SHALL BE SERIES 1000 BY EBBA IRON, INC., OR EQUAL.
4. FLANGE COUPLING ADAPTERS SHALL BE MANUFACTURED BY SMITH-BLAIR MODEL 912, ROMAC INDUSTRIES MODEL FOG, DRESSER INDUSTRIES MODEL 128-W, OR EQUAL.
5. A MINIMUM OF 2" SHALL BE BETWEEN FLANGE FACES OF THE MAG METER AND THE PLUG VALVE.
6. WRAP NEW PIPE WITH TWO SHEETS OF 80 LB FELT FOR BOND BREAKER. PLACE GROUT (SIKATOP 111 OR EQUAL) IN ANNULAR SPACE BETWEEN PIPE AND EXISTING PIPE SUPPORT.
7. PLUG VALVE WITH GEARBOX, EXTENSION SHAFT, AND ABOVE GRATE ACTUATOR PROVIDED BY OWNER. REFERENCE LIST OF MATERIALS PROVIDED BY OWNER IN THE PROJECT SCOPE.
8. INSTALL UNISTRUT (PROVIDED BY OWNER) TO SPAN WALLS FOR SUPPORT OF THE EXTENSION SHAFT AND ACTUATOR. REFERENCE LIST OF MATERIALS PROVIDED BY OWNER IN THE PROJECT SCOPE.

CITY OF HAVELOCK	
WASTEWATER TREATMENT PLANT	
RAS CONTROL STATION MODIFICATIONS	
PLAN	M1

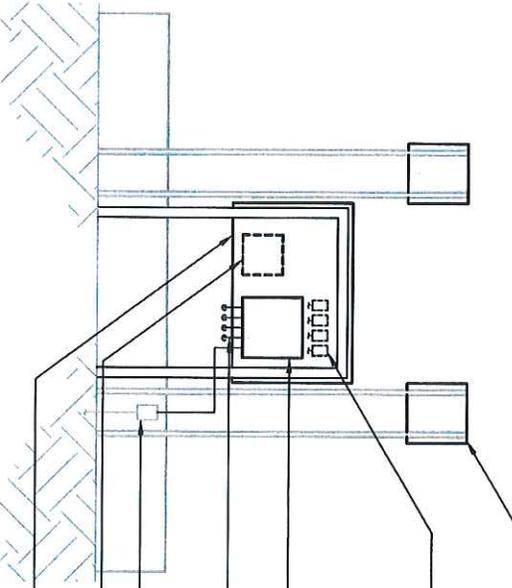
HAZEN AND SAWYER
 4011 WESTCHASE BOULEVARD, SUITE 500
 FAYETTEVILLE, NORTH CAROLINA 27507
 LICENSE NO.: C-0381



SECTION VIEW B
 1/2" = 1'-0"
 M.T.

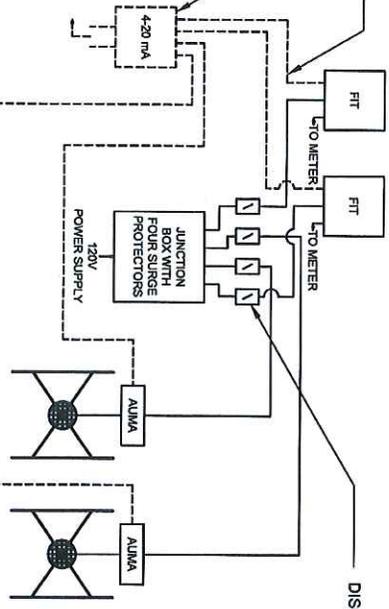


SECTION VIEW A
 1/2" = 1'-0"
 M.T.



FUTURE CONTROL CONDUIT (BY OTHERS)
 FUTURE SURGE PROTECTION BOX FOR 4-20 mA CONTROL SIGNALS (BY OTHERS)

SINGLE LINE DIAGRAM
 N.T.S.



- NEW 12"x12"x2" ALUMINUM PLATE FOR MOUNTING NEW FIT, TYP.
- CONTRACTOR TO MOUNT DISCONNECT SWITCHES ON OPPOSITE SIDE OF MOUNTING BOARD (WEST FACE). LOCATION IS SHOWN ON DRAWINGS FOR REFERENCE.
- 12"x12" JUNCTION BOX WITH FOUR SURGE PROTECTORS
- TURN CONDUIT UNDER MOUNTING BOARD FOR CONNECTION TO DISCONNECT SWITCHES
- EXISTING JUNCTION BOX
- FUTURE 8"x8" SURGE PROTECTION BOX FOR 4-20 mA CONTROL SIGNALS (BY OTHERS)
- NEW 3"x2" 1/2" ALUMINUM MOUNTING BOARD MOUNTED ON AL TUBING

NOTES:
 1. ELECTRICAL SECTION VIEW LAYOUTS OF ELECTRICAL COMPONENTS ARE TO ILLUSTRATE THE GENERAL ARRANGEMENT AND LAYOUT. ADJUSTMENTS OF THE LAYOUT MUST BE COORDINATED AND APPROVED BY THE OWNER.

CITY OF HAVELOCK	
WASTEWATER TREATMENT PLANT	
RAS CONTROL STATION MODIFICATIONS	
PLAN	E1