



## 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,  
Waste Water Treatment Plant,  
Construct Vector Truck Drying Bed,  
Demolition of Existing Facilities”*

**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 Wednesday, November 7, 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.



**CITY OF HAVELOCK**

Post Office Box 368  
Havelock, NC 28532

**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](http://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](mailto:Ltillman@havelocknc.us) **AND cc:** [Asmith@havelocknc.us](mailto:Asmith@havelocknc.us)

Questions must be received by **3:00 PM (EST) on Wednesday, October 31, 2018**. If questions are received, the City will respond no later than **5:00 PM (EST) on Friday, November 2, 2018**.

This is the 23rd day of October 2018

CITY OF HAVELOCK

Lee W. Tillman  
Director of Finance



STATE OF NORTH CAROLINA  
AFFIDAVIT  
CITY OF HAVELOCK

I, \_\_\_\_\_ (the individual attesting below), being duly authorized by and on behalf of \_\_\_\_\_ (the entity hereinafter "Employer") after first being duly sworn hereby swears or affirms as follows:

1. Employer understands that E-Verify is the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law in accordance with NCGS §64-25(5).
2. Employer understands that Employers Must Use E-Verify. Each employer, after hiring an employee to work in the United States, shall verify the work authorization of employee through E-Verify in accordance with NCGS §64-26(a).
3. Employer is a person, business entity, or other organization that transacts business in the State and that employs 25 or more employees in this State. (mark Yes or No)
  - a. YES \_\_\_\_\_, or
  - b. NO \_\_\_\_\_
4. Employer's subcontractors comply with E-Verify, and if Employer is the winning bidder on this project, Employer will ensure compliance with E-Verify by any subcontractors subsequently hired by Employer.

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Signature of Affiant: \_\_\_\_\_

Print or Type Name: \_\_\_\_\_

State of North Carolina County of \_\_\_\_\_

Signed and sworn to (or affirmed) before me, this the

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Notary

\_\_\_\_\_  
Printed Name of Notary

## Bid Sheet

Total Base Bid<sup>(1)</sup>: \_\_\_\_\_

(1) The Total base Bid shall include an allowance of \$20,000 to be used for additional work items as directed by the Owner in writing and as noted on the Contract Drawings.

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:**

Demolition of existing but abandoned Stabilized Sludge Pumping Station, Lime Storage Tank, Sludge Stabilization Tank No 1, and associated concrete slabs and construction of new Vector Truck Drying Bed. (See attached excerpt from sheet 2 of 46 WWTP Expansion dated 1996 and Hazen & Sawyer Contract Drawings dated May 2017.)

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.

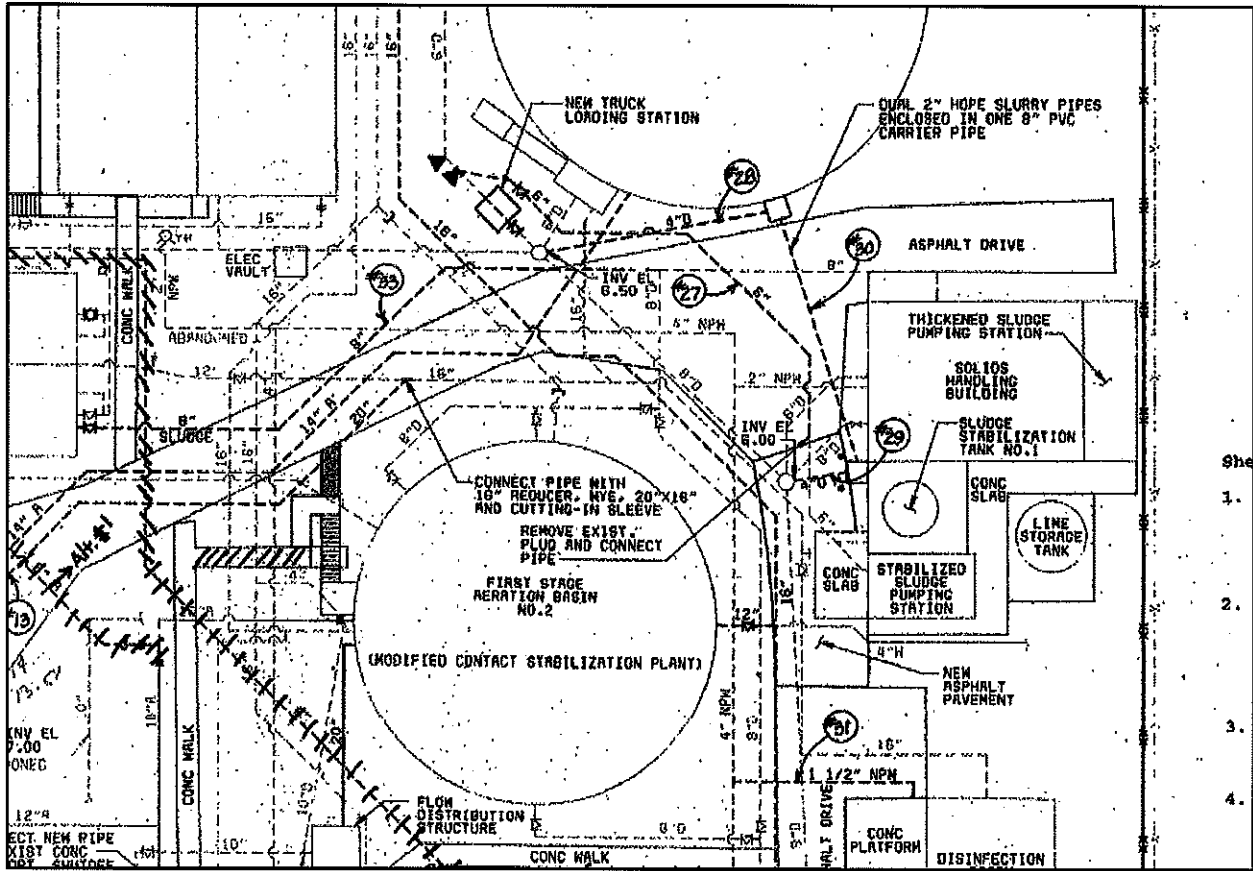
**General Provisions:**

1. Contractor shall comply with all requirements of OSHA 1926.
2. Period of Performance is one hundred and eighty days (180) days from date of award.
3. Contractor will obtain all necessary permits. Permits required by City of Havelock are provided free of charge.

**LOCATION:**

City of Havelock WWTP

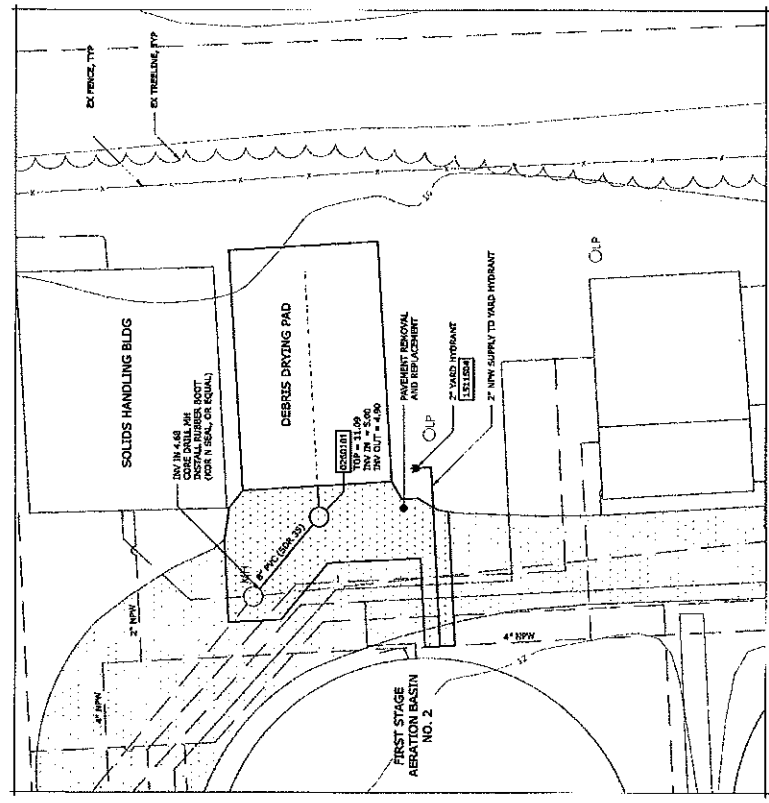
**Sewer Plant**  
**Plan Sheet 2 of 46 WWTP Expansion dtd 1996. (Excerpt)**



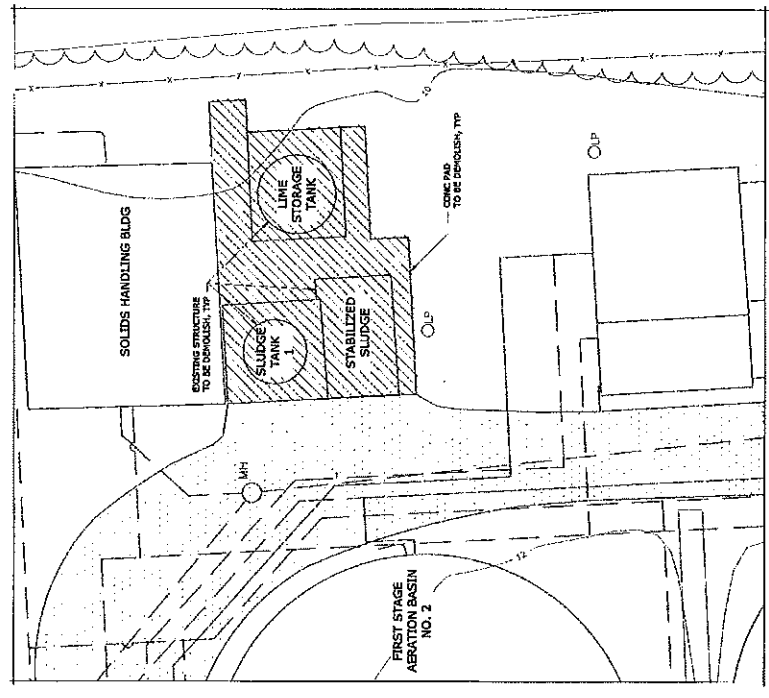
She  
 1.  
 2.  
 3.  
 4.

**NOTES:**

1. CONTRACTOR SHALL DEMOLISH, REMOVE FROM THE SITE AND PROPERLY DISPOSE OF (DO NOT INCLUDE PAVEMENT OF ALL DISCRETE AREAS) ALL EXISTING CONCRETE AND MAINTENANCE STRUCTURES TO BE DEMOLISHED TO THE ELEVATION 12' BELOW THE SURFACE ELEVATION FOR THE PROPOSED STRUCTURE OR 12' BELOW EXISTING GRADE WHERE STRUCTURES OR EXCAVATIONS ARE REQUIRED TO MAINTAIN THE GRADE STRUCTURES OR EXCAVATIONS AS SHOWN ON THE DRAWINGS SHALL BE AS FOLLOWS:
2. CONTRACTOR SHALL DEMOLISH, REMOVE FROM THE SITE AND PROPERLY DISPOSE OF (DO NOT INCLUDE PAVEMENT OF ALL DISCRETE AREAS) ALL EXISTING CONCRETE AND MAINTENANCE STRUCTURES TO BE DEMOLISHED TO THE ELEVATION 12' BELOW THE SURFACE ELEVATION FOR THE PROPOSED STRUCTURE OR 12' BELOW EXISTING GRADE WHERE STRUCTURES OR EXCAVATIONS ARE REQUIRED TO MAINTAIN THE GRADE STRUCTURES OR EXCAVATIONS AS SHOWN ON THE DRAWINGS SHALL BE AS FOLLOWS:
3. THE CONTRACTOR SHALL REMOVE EXISTING PIPES ENTERING THE DEMO AREA TO A MINIMUM OF 15 FEET OUTSIDE THE PERIMETER OF THE DEMO AREA. ALL EXISTING PIPES SHALL BE CAPPED WITH 18" DIA. CONCRETE AND RESTRAINING GLANDS. THE 4" INCH CAST IRON DRAIN SHALL BE CAPPED WITH 18" DIA. CONCRETE. THE TWO (2) 2" INCH STEEL PIPES SHALL BE PLUGGED ON TOP AT THE MOST UPSTREAM JOINT BEYOND THE FACE OF THE EXISTING STRUCTURE.
4. PRIOR TO DEMOLITION, THE ELECTRICAL CONTRACTOR AND OTHERS WITHIN THE AREA FOR DEMOLITION SHALL BE NOTIFIED. THE CONTRACTOR SHALL INCLUDE IN HIS BASE BID PRICE AN ALLOWANCE OF \$30.00 TO BE USED ONLY FOR THE CITY OF RALEIGH RECONNECTION OF ELECTRICAL CONTRACTORS OR CONSULTANTS INCLUDED IN THE AREA FOR DEMOLITION.
5. THE AREA SHOWN FOR PAVEMENT REMOVAL (DO NOT INCLUDE PORTIONS OF ASPHALT PAVEMENT AND CONCRETE PAVEMENT) SHALL BE DEMOLISHED TO THE ELEVATION 12" BELOW THE SURFACE COURSE (SEE 03) 2" INCHES OF BASE COURSE (SEE 05) AND 8" INCHES OF ASPHALT BASE COURSE.



**SITE PLAN**  
1" = 10'



**DEMOLITION PLAN**  
1" = 10'

**LEGEND**

EXISTING PAVEMENT

TO BE DEMOLISHED

1" = 10'

0 5 10 15 20

DATE:	SEPT. 2018
HAZEN NO.:	30906-006
CONTRACT NO.:	022
DRAWING NUMBER:	
CITY:	CL

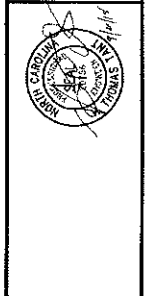
**SITE PLAN**

**CITY OF HAVELock**  
HAVELock, NORTH CAROLINA

**VECTOR TRUCK DISPOSAL FACILITY**

**Hazen**

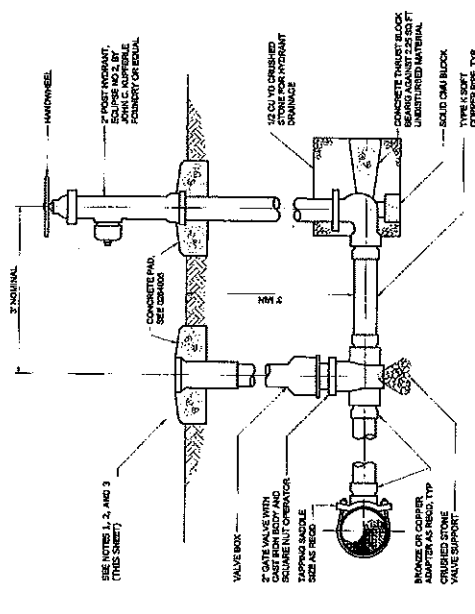
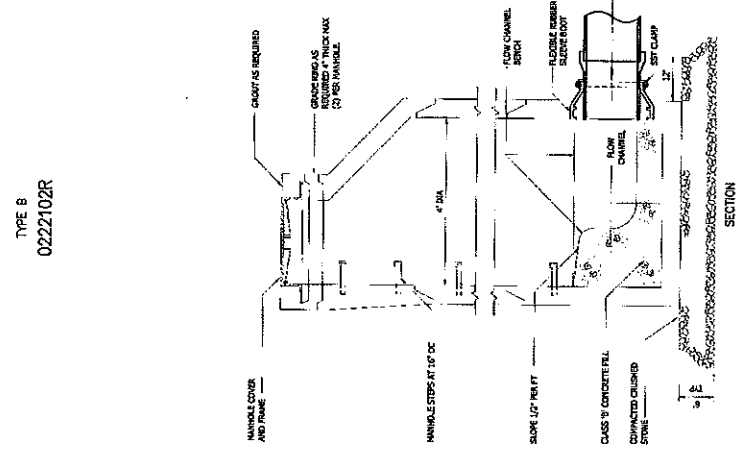
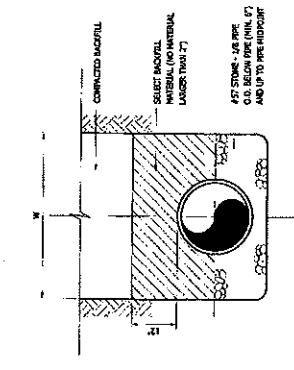
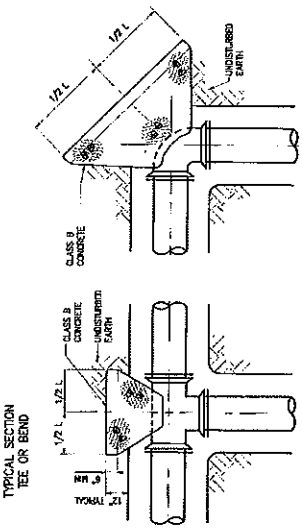
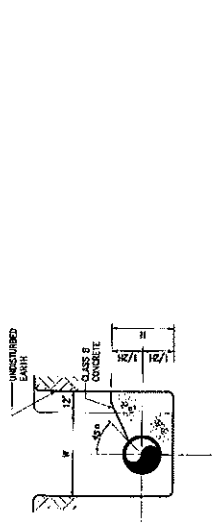
HAZEN AND SAWYER  
4011 WESTCHASE BOULEVARD, SUITE 500  
RALEIGH, NORTH CAROLINA 27607  
LICENSE NO.: C-0381



PROJECT ENGINEER:	T. TANT
DESIGNED BY:	T. TANT
DRAWN BY:	E. MC
CHECKED BY:	T. TANT
IF THIS BAG DOES NOT MATCH THE DRAWING IS NOT TO FULL SCALE	
DATE:	
BY:	
ESCALATED FOR:	

**NOTES:**

1. ALL GATE VALVES BETWEEN A TAPPING AND LAST TAPPING POINTS SHALL BE IRON BODY, BRONZE TRIMMED, WOGSS, LOSA, AND HINDRUP 150 PSI NON-SHOCK COLD WATER PRESSURE RATING.
2. TAPPING SADDLES SHALL BE SIMILAR TO HELLER OUTLET SADDLE, AMERICAN UNIVERSAL SHALL BE MANUFACTURED BY HELLER. ALL SHALL HAVE A MINIMUM WORKING PRESSURE OF 150 PSI. ALL TAPPING SADDLES SHALL BE MANUFACTURED BY HELLER. ALLOWED: TAPPING SADDLES SHALL BE MANUFACTURED BY HELLER PROVIDED A FACTOR OF SAFETY OF AT LEAST 2.5 IS MAINTAINED. TAPPING SADDLES SHALL BE MANUFACTURED BY HELLER EQUIPPED WITH A STANDARD AWWA C-110-77 FLANGE. CONSTRUCTION: TAPPING SADDLES SHALL BE "Y" DESIGN. TAPPING SADDLES SHALL BE MANUFACTURED BY HELLER APPROXIMATE SPECIFICATIONS: HELLER SADDLES SHALL BE "Y" DESIGN. TAPPING SADDLES SHALL BE MANUFACTURED BY HELLER. SADDLES SHALL BE OF ALLOY STEEL. THE TAPPING SADDLE SHALL BE THE AMERICAN TAPPING SADDLE, U.S. PIPE TAPPING SADDLE, OR EQUAL.
3. ALL VALVE BODIES SHALL BE 2 INCH CAST IRON, SLIDING TYPE 5-1/4" SHAFT, WITH HEAVY DUTY TRAFFIC MOTOR COLLAR AND 1/2" BUSHING. THE MOTOR SHALL BE MANUFACTURED BY JAMES B. CLAY & SONS, GANNETT VALVE MFG. CO., CHARLOTTE PIPE AND FITTING COMPANY, OR EQUAL.



DATE:	SEPT. 2018
HAZARD NO.:	30906-006
CONTRACT NO.:	022
HAZARD NUMBER:	000000

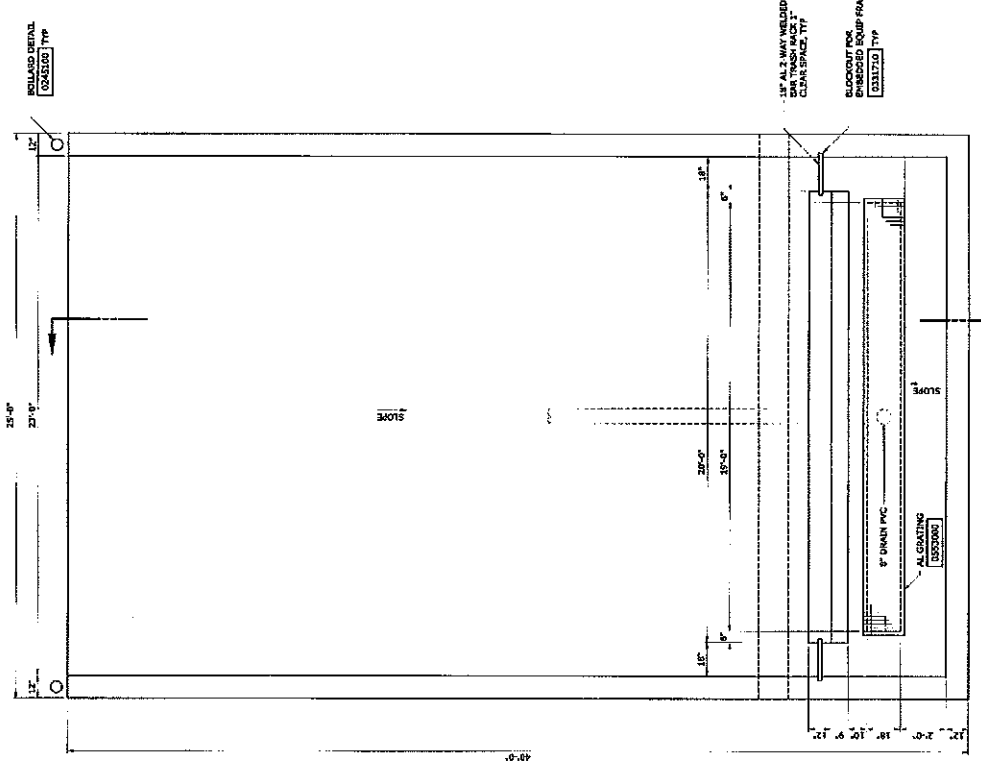
<b>DETAILS</b>	
PROJECT:	CITY OF HAVELock
DISIGNED BY:	HAVELock, NORTH CAROLINA
DRAWN BY:	VACTOR TRUCK DISPOSAL FACILITY
CHECKED BY:	
DATE:	
ISSUED FOR:	

**Hazen**  
HAZEN AND SAWYER  
4011 WESTCHASE BOULEVARD, SUITE 500  
RALEIGH, NORTH CAROLINA 27607  
LICENSE NO.: C-00881

PROJECT:	T. TANT
DISIGNED BY:	T. TANT
DRAWN BY:	E. NG
CHECKED BY:	T. TANT
DATE:	
ISSUED FOR:	

DATE:		BY:	
DATE:		BY:	
DATE:		BY:	
DATE:		BY:	
DATE:		BY:	





PLAN  
3/8" = 1'-0"

PROJECT ENGINEER:	T. TANT
DESIGNED BY:	I. YANCY
DRAWN BY:	Z. COLLINS
CHECKED BY:	C. PHILLIPS
IF THIS BIAS DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1" 1"

REV	ISSUED FOR	DATE	BY



**Hazen**  
HAZEN AND SAWYER  
4013 WESTCHASE BOULEVARD, SUITE 500  
RALEIGH, NORTH CAROLINA 27607  
LICENSE NO.: C-081

CITY OF HAVELock  
HAVELock, NORTH CAROLINA  
VACTOR TRUCK DISPOSAL FACILITY

DEBRIS DRYING PAD  
STRUCTURAL  
PLAN & SECTIONS

DATE:	SEPT. 2018
HAZEN NO.:	30906-006
CONTRACT NO.:	022
DRAWING NUMBER:	S-1

**GENERAL STRUCTURAL NOTES**

- G-1 DESIGN IS IN ACCORDANCE WITH AND CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF THE NORTH CAROLINA BUILDING CODE.
- G-2 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING INFORMATION IN THE FIELD.
- G-3 STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURE. DURING CONSTRUCTION, THE STRUCTURES SHALL BE PROTECTED BY BRACING AND TEMPORARY STRUCTURAL ELEMENTS AS NECESSARY. OVERSTRESSING OF ANY STRUCTURAL ELEMENT IS PROHIBITED.
- G-4 CONTRACTOR SHALL SUBMIT FOR REVIEW SHOP DRAWINGS FOR ALL FABRICATED WORK AND FOR ALL MANUFACTURED ITEMS REQUIRED TO BE FURNISHED AS INDICATED ON THE DRAWINGS AND BY THE MANUFACTURER'S INSTRUCTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT ALL WORK ITEMS OF WORK REQUIRING SUBMITTALS ARE AS FOLLOWS:
  - A) CONCRETE MIX DESIGN
  - B) WELDED CONNECTIONS
  - C) TRASH RACK AND FRAME
  - D) BRACING PROCEDURES
  - E) BRACING AND FRAME
  - F) OTHER ITEMS REQUESTED BY ENGINEER

**FOUNDATION**

- F-1 MINIMUM DEPTH FROM ADJACENT FINISHED GRADE TO BOTTOM OF FOUNDATION = 12 INCHES.
- F-2 CONTRACTOR SHALL LOCATE TO THE DEPTH SHOWN TO EXPOSE SUBGRADE. UPON COMPLETION OF EXCAVATION, THE CONTRACTOR SHALL PROVIDE SERVICES OF A LICENSED PROFESSIONAL ENGINEER, GEOTECHNICAL ENGINEER, TO VERIFY THAT THE EXCAVATION IS SUITABLE FOR THE FOUNDATION. UNSTABLE EXCAVATION SHALL CONTAIN WITH SUITABLE MATERIAL IS EXPOSED. RESULTING SANDS SHALL BE PROTECTED WITH #2 STEEL AND EXPOSED SUBGRADE SHALL BE COMPACTED TO 98% PROVED PROPERTIES. EXCAVATION SHALL BE PROTECTED BY BRACING AND SHORING TO PREVENT BACKFILL BEING EXPOSED TO WEATHER. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING PROTECTIVE SHIELDING AND PROTECTIVE COVERING TO PROTECT EXPOSED SUBGRADE AND TO PREVENT BACKFILL BEING EXPOSED TO WEATHER. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING PROTECTIVE SHIELDING AND PROTECTIVE COVERING TO PROTECT EXPOSED SUBGRADE AND TO PREVENT BACKFILL BEING EXPOSED TO WEATHER.
- F-3 THE FINAL SUBGRADE INSPECTION REPORT SHALL BE SUBMITTED TO THE CITY OF HAVELock BUILDING AND DEVELOPMENT CODE ENFORCEMENT DIVISION PRIOR TO PROJECT COMPLETION.
- F-4 BACKWORK OPERATIONS SHALL BE IN CONFORMANCE WITH AND SUBJECT TO THE LIMITATIONS OF THE LATEST EDITIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION, FINLAND AND ROAD CONSTRUCTION DIVISION, STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAY AND BRIDGE STRUCTURES, CONTROL, PLANNING AND DESIGN MANUAL. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXCESS MATERIAL.
- F-5 DURING GOOD WEATHER, THE CONTRACTOR SHALL PROVIDE POSITIVE PROTECTION AGAINST PENETRATION OF FROST PRIOR TO PLACEMENT OF CONCRETE.
- F-6 #57 STONE SHALL MEET THE REQUIREMENTS OF AGGREGATE STANDARD SIZE #57 AS SPECIFIED BY RECENT STANDARD SPECIFICATIONS AND ASTM C-33.

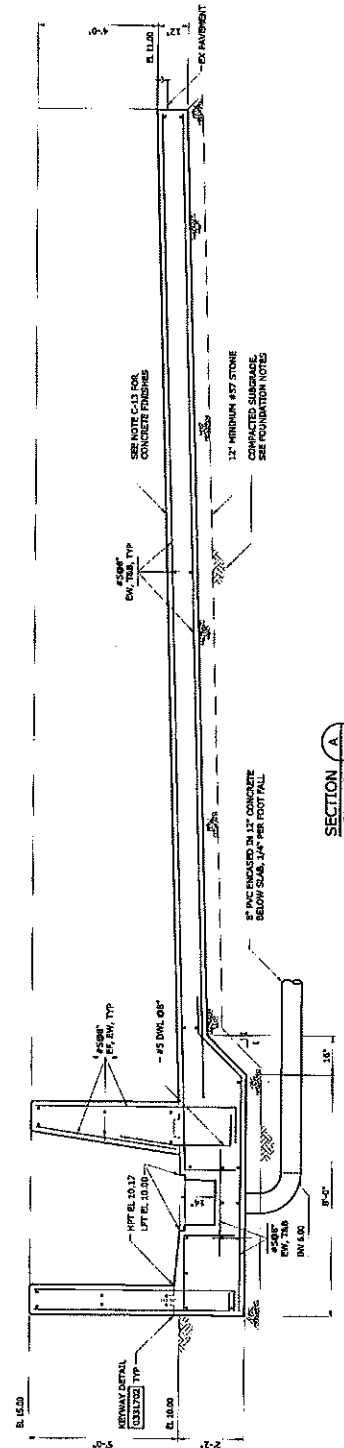
**STRUCTURAL METALS**

- M-1 ALUMINUM HERRIBS SHALL BE ALLOY 6061-T6.
- M-2 ALUMINUM GRATING AND TRASH RACK SHALL BE 3/16" THICK TYPE AND SHALL CONSIST OF STRUTTED ALUMINUM CHANNELS AND CROSS BRACING. ALL TRASH RACKS SHALL BE ALUMINUM TRASH RACKS WITH SUPPORT FRAMES ON ALL PERIMETER AND REARING ENDS FOR CAST-IN-PLACE CONCRETE INSTALLATIONS.

**CONCRETE (CAST-IN-PLACES)**

- C-1 DESIGN OF CONCRETE ELEMENTS INCLUDING WALLS AND FORMED SLABS ARE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND ACI 309 (CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES).
- C-2 CONCRETE STRENGTH CLASSES (28-DAY COMPRESSIVE STRENGTH):
  - A) CLASS A1 CONCRETE (4,500 PSI); NORMAL WEIGHT CONCRETE SHALL BE USED IN ALL STRUCTURES.
  - B) CLASS B1 CONCRETE (4,000 PSI); NORMAL WEIGHT CONCRETE SHALL BE USED IN ALL NORMAL SLABS = 4 INCHES.
  - C) CLASS C1 CONCRETE (3,500 PSI); NORMAL WEIGHT CONCRETE SHALL BE USED IN ALL NORMAL SLABS = 4 INCHES.
- C-3 ALL BAR REINFORCING SHALL CONFORM TO ASTM A618, GRADE 60 AND SHALL BE INSTALLED IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND ACI 309 (CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES).
- C-4 CONCRETE COVER FOR REINFORCING (UNLESS NOTED OTHERWISE ON THE DRAWINGS):
  - A) CONCRETE COVERED DIRECTLY AGAINST SOIL: 2"
  - B) WALLS AND SLABS: 2"
  - C) OTHERWISE: 2"
- C-5 SPICES SHALL BE CLASS "W" CONFORMING TO THE PROVISIONS OF ACI 318 UNLESS NOTED OTHERWISE.
- C-6 CONSTRUCTION JOINTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS. CONSTRUCTION JOINTS NOT SHOWN SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE APPROVAL OF THE ENGINEER PRIOR TO CONSTRUCTION. CONSTRUCTION JOINTS SHALL BE PROVIDED AT A SPACING NOT GREATER THAN 45 FEET ON CENTER.
- C-7 ALL JOISTS SHALL HAVE A WATERSTOP. CONSTRUCTION JOINTS SHALL HAVE A 4" PVC REBBER SHALL BE PROVIDED AT ALL JOINTS. WATERSTOP SHALL BE INSTALLED WITH AN OVERLAP OF 30" IN VERTICAL JOISTS. WATERSTOPS SHALL BE INSTALLED WITH AN OVERLAP OF 30" WHERE THE JOIST IS NOT VERTICAL. WATERSTOP, WHICHEVER IS HIGHER.
- C-8 THE WATER STOP SHALL BE MANUFACTURED FROM VIRGIN POLYETHYLENE TEREPHTHALATE (PET) COMPOUND AND SHOULD NOT CONTAIN ANY SOAP OR RECYCLED MATERIAL OR FIBER. WATERSTOP SHALL BE MANUFACTURED FROM VIRGIN POLYETHYLENE TEREPHTHALATE (PET) COMPOUND AND SHOULD NOT CONTAIN ANY SOAP OR RECYCLED MATERIAL OR FIBER. WATERSTOP SHALL BE MANUFACTURED FROM VIRGIN POLYETHYLENE TEREPHTHALATE (PET) COMPOUND AND SHOULD NOT CONTAIN ANY SOAP OR RECYCLED MATERIAL OR FIBER. WATERSTOP SHALL BE MANUFACTURED FROM VIRGIN POLYETHYLENE TEREPHTHALATE (PET) COMPOUND AND SHOULD NOT CONTAIN ANY SOAP OR RECYCLED MATERIAL OR FIBER. WATERSTOP SHALL BE MANUFACTURED FROM VIRGIN POLYETHYLENE TEREPHTHALATE (PET) COMPOUND AND SHOULD NOT CONTAIN ANY SOAP OR RECYCLED MATERIAL OR FIBER.
- C-9 ULTIMATE STRENGTH = 1,750 PSI (ASTM A-618).
- C-10 SLABS WITH SLOPING SURFACES SHALL HAVE THE INDICATED SLAB THICKNESS MAINTAINED AS THE MINIMUM. SLAB BOTTOMS ON EITHER SLOPE WITH THE TOP SURFACE OR LEVEL. REINFORCEMENT SHALL BE PLACED AT THE REQUIRED CLEARANCE FROM THE TOP SURFACE. SLABS WITH SLOPING SURFACES SHALL BE PLACED AT THE REQUIRED CLEARANCE FROM THE TOP SURFACE.
- C-11 ALL JOISTS: CORNERS SHALL HAVE A 1/4" CHAMFER OR A 1/4" RADIUS TOEDED CORNER. DOWELS, PIPES, WATERSTOPS AND OTHER EMBEDDED ITEMS SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.
- C-12 CONCRETE SHALL BE PLACED IN CONCRETE PLACES. MINIMUM CLEARANCE SHALL BE MAINTAINED AT ALL JOINTS. CONCRETE SHALL BE PLACED IN CONCRETE PLACES. MINIMUM CLEARANCE SHALL BE MAINTAINED AT ALL JOINTS. CONCRETE SHALL BE PLACED IN CONCRETE PLACES. MINIMUM CLEARANCE SHALL BE MAINTAINED AT ALL JOINTS.
- C-13 CONCRETE SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION. CONCRETE SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION. CONCRETE SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION.

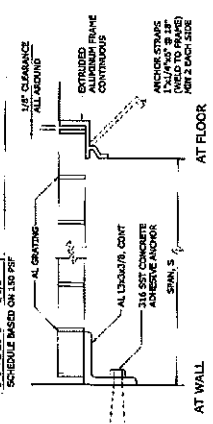
NOTES:  
 1. ALL DEBRIS DRYING PAD EQUIPMENT FRAME SHALL BE SPACED WITH 1/2" AIR GAPS AT THE TOP AND BOTTOM OF WALL.



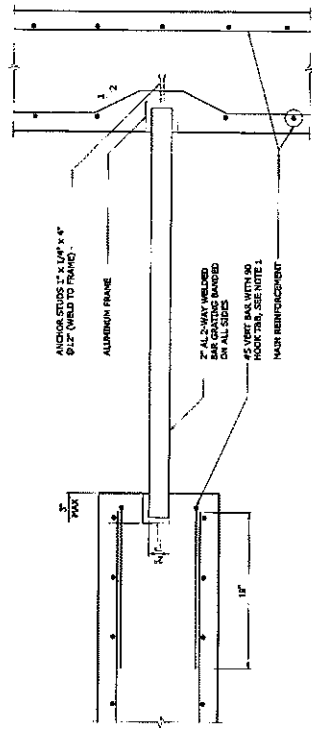
SECTION A  
 1/2" = 1'-0"

DEPTH (MIN)	CONCRETE ANCHOR (SIZE AND SPACING)
1'-0"	1/2" DIA. @ 12" ON CENTER
1'-6"	3/4" DIA. @ 12" ON CENTER
2'-0"	1" DIA. @ 12" ON CENTER
2'-6"	1 1/4" DIA. @ 12" ON CENTER
3'-0"	1 1/2" DIA. @ 12" ON CENTER
3'-6"	1 3/4" DIA. @ 12" ON CENTER
4'-0"	2" DIA. @ 12" ON CENTER

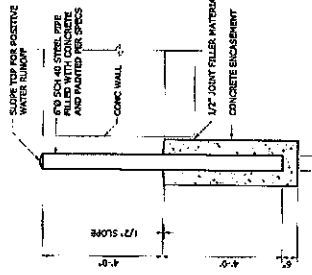
SCHEDULE BASED ON IS9 R/F



ALUMINUM GRATING  
 0553000



TYPICAL BLOCKOUT FOR EMBEDDED EQUIPMENT FRAME  
 0331710



TYPICAL KEYWAY  
 0331702

BOLLARD  
 0245100

REV	ISSUED FOR	DATE	BY

PROJECT: T. TANT  
 DESIGNED BY: I. YANCEY  
 DRAWN BY: Z. COLLINS  
 CHECKED BY: C. PHILLIPS

**Hazen**  
 HAZEN AND SAWYER  
 4011 WESTCHASE BOULEVARD, SUITE 300  
 RALEIGH, NORTH CAROLINA 27607  
 LICENSE NO.: C-0381

CITY OF HAVELOCK  
 HAVELOCK, NORTH CAROLINA  
 VACTOR TRUCK DISPOSAL FACILITY

DEBRIS DRYING PAD  
 STRUCTURAL  
 STANDARD DETAILS

DATE: SEPT. 2018  
 DRAWING NO.: 30906-005  
 CONTRACT NO.: 022  
 SHEET NO.: S-2