



# CITY OF TAMPA

Pam Iorio, Mayor

CONTRACT ADMINISTRATION DEPARTMENT

David L. Vaughn, AIA, Director

## ADDENDUM NO. 2

DATE: July 22, 2010

Contract: 08 - C-00021; Howard F. Curren AWTP Sludge Digester No. 6 Rehabilitation

Bidders on the above referenced project are hereby notified that the following addendum is made to the Contract Documents. BIDS TO BE SUBMITTED SHALL CONFORM TO THIS NOTICE.

Item 1: CHANGES TO PLANS:

1. Replace Plans sheets 3, 4, 5, 9, 10 and 12 with the attached revised Plans sheets.
2. Change dimension of anti-rotational angles in Section M-M on Sheet S-5 of the Plans from L3"x 3"x 3/8" to L3"x 2"x 5/8".
3. Replace note " Scale: 1" = 1'- 0" " at the bottom of Section M-M on Sheet S-5 of the Plans with "Not To Scale".

Item 2: CHANGES TO SPECIFICATIONS:

4. Page P-3 in Specifications package. Remove existing page and replace this page with attached corrected Page P-3R.
5. Section W-32.11 Painting and Coating: Change third sentence to read: "Chain wheels shall be Type 316 stainless steel." Change fourth sentence to read: "Chains shall be Type 316 stainless steel." Omit fifth sentence.
6. Section W-113 – Removal and Disposal of Debris: Remove existing section and replace with revised Section W-113R.
7. Section W-9400 – Metal Surfaces Preparation and Coatings: Add the following two paragraphs at the end of Specifications Section W-9400

The proposed concrete coating system from elevation 43 feet and above may be exposed to sunlight and shall be UV resistant. This UV resistant requirement applies to approximately 2,800 square feet area of the total estimated coating system quantity of 14,400 square feet. Additional coatings to be placed on top of the specified coating system to achieve this UV resistance shall be applied in strict accordance with manufacturer's instructions. Cost of the proposed coating system and any additional coatings to meet the UV resistant requirement shall be included in the lump sum cost of the project.

An additional approved coating system for this project is Geothane 520, a modified urethane elastomer as manufactured by Futura or approved equal. Applicator of this system shall be certified by the manufacturer. The surface preparation and application of this coating system shall be in strict accordance with the manufacturer's instructions. The minimum tensile strength and elongation in accordance to ASTM D 412 shall be 900 psi and 300% respectively.

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8. Section W-5120, Subsection 1.04 - Quality Assurance: Replace existing subsection with the attached revision of W-5120.1.04.
9. Section W-13233, Part 1 – General, Subsection 1.04- Submittals: Omit item B: AISC quality certification program certificate for fabricating plant.
10. Section W-13233 – Digester Covers, Part 2 – Products, Subsection 2.03 – Appurtenances, Item 2.03.A.3: Replace second sentence with the following: “See section “B” below: Non-Sparking Gastight Manway Covers.”
11. Section W-13233 – Digester Covers, Part 2 – Products, Subsection 2.03 – Appurtenances, Item 2.03.A.7: Change item 7 to read: Four (4) sets of steel angle wall guides, with suitable wall anchors....” .
12. Section W-13233 – Digester Covers, Part 2 – Products, Subsection 2.03 – Appurtenances, Item 2.03.B: Change item “B” to the following :
  - B. 30-inch Diameter Non-Sparking Gastight Manway Covers:
    1. Manufacturers: The following make and model or approved equal:
      - a. Varec 220 Series Roof Manway Cover, non-sparking, with handwheel or wing nuts for gastight shutoff, with stainless steel base and cover.
13. Section W-13233 – Digester Covers, Part 2 – Products, Subsection 2.03 – Appurtenances, Item 2.03.C: Change item “C” to the following :
  - C. 8-inch Diameter Sample Hatches:
    1. Manufacturers: The following make and model or approved equal:
      - a. Varec 42 Series, Model # 42-8-66-B-A, non-sparking, with handwheel for gastight shutoff, and with stainless steel base and cover.
14. Section W-13233 – Digester Covers, Part 2 – Products, Subsection 2.04 – Detailed Items To Be Supplied, Item 2.04.J: Change item “J” to the following :
  - J. 4 - Sampling wells, 8"-Ø with quick opening non-sparking gas tight covers, gaskets, and stainless steel fasteners. Sampling pipes are 8" schedule 40 steel pipe. All wells to extend to the bottom of the rim skirt. The sampling hatches shall be non-sparking and shall be made of stainless steel.

Item 3: RESPONSES TO QUESTIONS ASKED BY PROPOSED BIDDERS

15. Question: In Specifications on Page 13233-4, it calls for non-sparking gas type manhole covers. We'd like to know if the covers are for: a) The ten 30" access holes; b) The two 30" diameter manholes; c) Or both?

Response: The non-sparking gas type manhole covers are for the two 30" diameter manholes that permit access to the interior of the digester. Note: This specification was revised with this Addendum and calls for a specific make and model number, or equal. The ten 30" square access covers shall be bolted down plates with two lifting rungs on each; these permit access to the interior of the digester floating cover.

16. Question: Drawing on Plans sheet 12 calls for aluminum sample covers. However, the specifications (Section 13233.2.03.B) call for bronze. Please clarify.

Response: The four 8-inch sample covers specification has been changed with this Addendum and now calls for a specific make and model of non-sparking sample covers with stainless steel caps and bases.

17. Question: Are there any pre-approved manufacturers for the digester's floating steel cover, such as: Siemens, Walker Process, or WesTech? If so, can a modified form of the floating cover be approved with altered features such as truss design and center well dimensions?

Response: There are no pre-approved manufactures for the floating cover. A slightly modified cover may be acceptable but will need to comply with the following criteria.

- a) The center well dimensions must match the dimensions in the plans.
  - b) All steel plates shall have thicknesses as called for in the plans (5/16").
  - c) If a different truss design is submitted, load calculations and stress analysis shall be signed and sealed by a professional structural engineer, licensed in the State of Florida.
  - d) Cover shall be designed to operate at 10-inches water column pressure while point of submergence of ceiling is at a 25-foot radius from the center of the cover.
  - e) All appurtenances, such as wells, access openings, and manholes shall exactly match what is shown on the plans.
18. Question: Are the six 36-inch diameter gas mixing tubes and supports on Sheets 5 and 9 of the Plans required to be as new and supplied by the digester cover manufacturer, or will the Contractor reuse existing tubes and supports to fit the new digester cover?

Response: The existing carbon steel gas mixing tubes and supports are to be removed and replaced with new stainless steel tubes and supports. The new mixing tubes are not required to be made by the cover manufacturer; it is the Contractor's responsibility to fit the new tubes with the new cover. Note: A note was added to Sheet 3 of the plans regarding the mixing tubes with additional requirements if the tubes are to be made from rolled sheets.

19. Question: The 36-inch diameter T304L stainless steel mixing tubes are specified to be Schedule 20 pipe. This is not available as pipe and will be very difficult to roll as steel plate. Can this be modified?

Response: The wall thickness of the proposed 36-inch diameter T304L stainless steel mixing tubes has been changed from Schedule 20 pipe (0.500" thickness) to Schedule 10 Pipe (0.312" thickness) with this Addendum. Note: A note was added to Sheet 3 of the plans regarding the mixing tubes with additional requirements if the tubes are to be made from rolled sheets.

20. Question: Is the AISC quality certification program certificate for the steel fabrication plant necessary?

Response: The requirement for this certificate has been nullified with this Addendum. Also, some of the weld testing and steel inspection requirements have been changed.

21. Question: In regards to the removal and disposal of the sludge materials, has any analysis been done or any data developed for the sludge?

Response: No analysis has been done on the sludge. We expect the sludge to be similar to what has recently been removed from two other digesters at the plant, which was mainly digested sanitary sewer sludge with some plastic and rubber debris (i.e. sanitary napkin applicators, condoms, syringes, etc.), rags (woven fabrics), and a small percentage of sand.

22. Question: When the access ramp is removed, should it be refinished in any way? If so, please outline the requirements.

Response: The access ramp will need to be removed for the work on the digester wall and the digester cover replacement. The ramp is to be placed back into its original position in as good of condition as prior to construction, or better. No specific work, such as refinishing, is required here.

23. Question: Can the City provide structural detailing of the concrete pipe supports within the digester?

Response: The City does not have that information available.

24. Question: Are the concrete pipe supports within the digester to be coated along with the digester's interior concrete walls?

Response: We do not call for any of the digester's concrete pipe supports to be coated.

25. Question: A digester cover manufacturer proposes to provide pressure equalization units on each of the 30-inch square access covers. Will this be acceptable.

Response: No, the planned ventilator units are designed to be at an elevation where they would not be submerged in situations where foam in the digester comes up and over the roof of the floating cover. This has been a problem in the past. Also, the outer 11 ventilators are planned to set over drain sumps in the outer periphery of the cover's ceiling.

Item 4: ATTACHMENTS:

- 26. Revised Plan sheets 3, 4, 5, 9, 10 and 12.
- 27. Revised page P-3 of the Specifications.
- 28. Revised Specifications Section W-113 – Removal and Disposal of Debris.
- 29. Revised Specifications Subsection W-05120.1.04 – Quality Assurance.

This addendum shall be included in and attached to the inside cover of the Contract Documents by and upon which bids are submitted.

All other provisions of the Contract Documents and Specifications not in conflict with this Addendum shall remain in full force and effect.

Questions are to be e-mailed to [Contract Administration@tampagov.net](mailto:ContractAdministration@tampagov.net).

  
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Jim Greiner, P.E., Contract Manager

Item No.	Description	Unit	Approx. Quantity	Unit Price in Words	Unit Price	Total Computed Price
100	Contingency	LS	1	Fifty Thousand Dollars	\$50,000.00	\$50,000.00
200	Removal and replacement of existing 110 feet diameter structural steel digester cover including all appurtenances, application of approximately 14,400 square feet of a protective coating system on the interior digester walls, removal and replacement of approximately 440 linear feet of sludge piping, fittings, pipe supports, isolation plug valves, ball valves, and six 36" diameter mixing tubes; modification of all sludge piping penetrations; air tight testing of digester cover; and surface preparation and painting.	LS	1		\$	\$
650	Debris removal and disposal	CY	2,800		\$	\$
					TOTAL	\$

SECTION 113 – REMOVAL AND DISPOSAL OF DEBRIS (Revised)

W-113.01 General

The Contractor shall furnish all labor, materials, and equipment required to remove, temporarily store, transport and dispose of debris from Digester No. 6 at the Howard F. Curren AWTP (HFCAWTP). The HFCAWTP is located at 2700 Maritime Boulevard, in the Port of Tampa, and requires security clearance to enter. After debris has dried at the drying beds, but no longer than 30 calendar days, the Contractor shall properly dispose of all removed debris in a FDEP approved Class I or II landfill. Debris shall be defined as all material existing in the Digester including sludge, grit, rags, hair, and other foreign material. Based on the debris removal of previous digester projects, the debris is of a consistency that causes clogging in pumps and pipes. The Contractor shall be paid per cubic yard of debris contained in the digester prior to the start of work. The actual volume shall be calculated based on the measured debris level and digester configuration. **The number of cubic yards for payment shall be agreed upon, in writing, by the Contractor and the City before the debris removal process begins.**

W-113.02 Scope of Work

The Contractor will be permitted to work during the hours of 7:00 a.m. to 3:30 p.m. M-F, as directed by the Engineer. The Contractor shall furnish all labor, tools, pumps, piping, vehicles, fuel, equipment, parts, supplies, and materials to remove wastewater grit, sand, and other foreign material from Digester No. 6.

Sludge removal from the drying beds to the contractor's hauling vehicles shall be done by City personnel only. This work shall be done between the hours of 7:00 am and 3:00 pm, Monday through Friday, unless otherwise approved by the Engineer in writing.

Pump discharge hoses or equipment going to the drying beds south of the railroad tracks may not interfere in any way with the rail car deliveries. This hose must be disconnected at night and in time so as not to impede the trains. The Contractor shall supply two series of two shut-off valves mated together, 4 valves total (2 on each side of RR tracks), for this purpose. No spillage of hose contents is to be allowed when disconnecting or from leaks at any time. Contractor shall submit containment system for approval.

The debris removed is to be temporarily placed into drying beds located at HFCAWTP, south of the railroad tracks, at the location directed by the Engineer. This location may change during the project as beds become available or full.

The Contractor shall exercise all reasonable measures, including confined-space entry procedures, necessary to safeguard property and persons from its operations. A safety plan for work shall be submitted to the Engineer for approval.

The Contractor shall comply with all applicable Florida Department of Transportation regulations when transporting removed debris to the sludge drying beds and then to the landfill. The Contractor shall maintain all vehicles used to transport removed material in good mechanical condition, in a clean condition, and in a manner which will adequately control odors.

No material may be allowed to fall on the ground or roadway. Should a spill occur, the Contractor shall take immediate action to clean up the spilled material. Trucks shall have sealed tailgates to prevent loss of material during hauling. A method for cleaning trucks periodically after dumping debris shall be submitted. This plan shall be approved by the Engineer and implemented.

There is an estimated 2,800 cubic yards of material to be removed.

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SUBSECTION W-5120.1.04 QUALITY ASSURANCE (Revised)

1.04 QUALITY ASSURANCE

A. Qualifications:

1. Perform welding of structural metals with welders who have current AWS certificate for the type of welding to be performed.
2. Notify testing agency 24 hours minimum before starting shop or field welding.
3. Engineer may check materials, equipment, and qualifications of welders.
4. Remove welders performing unsatisfactory work, or required to re-qualify.
5. Testing agency may use magnetic particle, dye penetrant, ultrasonic, radiographic testing, or other aids to visual inspection to examine any part of welds or all welds.
6. CONTRACTOR shall bear costs of all testing and also retests on defective welds.
7. CONTRACTOR shall also bear costs in connection with qualifying welders.

B. Certification:

Steel fabricators shall follow the AISC 303-05 Code of Standard Practice for Steel Buildings.

C. Contractor shall engage an independent testing and inspection agency to inspect welded connections and to perform tests and prepare test reports on all fabricated and field installed elements.

D. Testing agency shall conduct and interpret tests and state in each report whether test specimens comply with requirements and specifically state any deviations from those requirements.

E. Testing agency may inspect structural steel at plant before shipment; however, City reserves right, at any time before final acceptance, to reject material not complying with specific requirement.

Shop/field inspection will include periodic inspection at the place of fabrication and identification of tested material, checking of fabrication for compliance with approved shop drawings, project specifications, inspection of shop painting, as well as the following:

1. Examination of all steel for straightness and alignment.
2. Examination of all fabricated pieces and checking of same with erection plans and detail drawings.
3. Shop-Bolted Connections: Inspect in accordance with AISC Specifications.
4. Shop Welding: Inspect and test during fabrication and erection of structural steel assemblies as follows:
  - a. Check that all welders are certified.
  - b. Record type and locations of defects found in work.
  - c. Record work required and performed to correct deficiencies or defects found.
  - d. Perform periodic visual inspections of random welds.
  - e. Perform the following:
    1. Visual Testing (VT) - Inspection of all welds.
    2. Ultrasonic Testing (UT) – of all complete joint penetration welds, CJP where shown on plans of the compression / tension rings.

**GENERAL NOTES**

- G-1. EXISTING DIMENSIONS AND ELEVATIONS ARE BASED ON THE BEST INFORMATION AVAILABLE. TRUE DIMENSIONS AND ELEVATIONS SHALL BE DETERMINED IN THE FIELD PRIOR TO LAYOUT AND SHOP DRAWING SUBMITTALS.
- G-2. SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED BY THE CITY FOR ALL PROPOSED ITEMS. ALL SUBMITTALS AND SHOP DRAWINGS SHALL BE ORIGINALS OR HIGH QUALITY COPIES (EASILY READABLE). NO FAXED SHEETS, E-MAILS, OR POOR QUALITY COPIES WILL BE ACCEPTED FOR SUBMITTAL REVIEW.
- G-3. CONTRACTOR IS RESPONSIBLE FOR MEETING ALL FEDERAL, STATE AND LOCAL GOVERNMENT REGULATIONS IN REGARDS TO WORKING IN CONFINED SPACES.
- G-4. OSHA STANDARD SAFETY EQUIPMENT SUCH AS SAFETY HARNESSSES, GAS MONITORS, LOWER EXPLOSIVE LIMIT DETECTORS, BREATHING APPARATUS, ETC. SHALL BE UTILIZED WHERE THE WORK DICTATES THEIR USE. PERSONAL RETRIEVAL SYSTEM FOR EACH WORKER WILL BE REQUIRED.
- G-5. EXISTING 36" SLUDGE GAS MIXING TUBES WITHIN THE DIGESTER SHALL BE REPLACED WITH 36" SCHEDULE 20 TYPE 304L STAINLESS STEEL TUBES. ALL MIXING TUBE SUPPORTS SHALL BE MADE WITH SCHEDULE 40 TYPE 304L STAINLESS STEEL PIPE.
- ⚠ G-6. ALL SLUDGE PIPING SHALL BE REPLACED WITH CLASS 53 (MINIMUM) DUCTILE IRON PIPE AND FITTINGS. PIPING SHALL HAVE AN INTERNAL COATING, 40 MILS (DRY) MINIMUM, OF PROTECTO 401 CERAMIC EPOXY, OR EQUAL. PIPING SHALL HAVE EXTERNAL COATINGS AS INDICATED IN THE CONTRACT SPECIFICATIONS.
- ⚠ G-7. ALL EXISTING PLUG VALVES TO BE REPLACED SHALL BE DEZURIK PEF, FULL PORT OPENING, PLUG VALVES UNLESS OTHERWISE NOTED. THERE ARE 6 - 4", 1 - 6", 11 - 8", AND 4 - 10" PLUG VALVES TO BE REPLACED.
- ⚠ G-8. ALL VALVES LOCATED 6- FEET OR MORE ABOVE FLOOR ELEVATIONS SHALL HAVE CHAIN-WHEEL / BEVEL GEAR ACTUATORS. CHAINS, WHEELS AND OTHER EXPOSED PARTS SHALL BE MADE OF TYPE 316 STAINLESS STEEL. THIS REQUIREMENT APPLIES TO 2 - 10" AND 9 - 8" PLUG VALVES. VALVES THAT ARE LESS THAN 6 FEET HIGH SHALL HAVE HAND WHEEL OPERATORS.
- G-9. UNLESS OTHERWISE INDICATED, CHEMICAL ANCHORS SHALL BE HILTI HIT-HY 150 MAX ANCHORING SYSTEM WITH TYPE 304 STAINLESS STEEL THREADED RODS, OR EQUAL.
- ⚠ G-10. PROPOSED CONCRETE COATING SYSTEM SHALL BE 125 MILS THICK APPLIED OVER A 1/8" TO 1/2" THICK LEVELING COURSE OF CONCRETE REPAIR MATERIAL (SEE SPECIFICATIONS). SURFACE PREPARATION SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. THE APPROXIMATE AREA OF CONCRETE SURFACE TO BE REHABILITATED AS SHOWN ON THE PLANS IS 14,400 S.F. PAYMENT FOR THE CONCRETE REHABILITATION SHALL BE INCLUDED IN THE LUMP SUM COST OF THE PROJECT.
- ⚠ G-11. CONTRACTOR SHALL REPLACE 5 EXISTING 1 1/2" BALL VALVES AND 6 EXISTING 1" BALL VALVES WITH APOLLO VALVES, MODEL 87A-200 SERIES, STAINLESS STEEL OR APPROVED EQUAL.
- G-12. CONTRACTOR SHALL REPLACE 4-8" AND 2-10" LONG RADIUS BASE ELBOWS AT THE LOCATIONS SHOWN ON THE PLANS. EACH BASE ELBOW SHALL BE ANCHORED TO THE EXISTING CONCRETE SUPPORT WITH 4- 5/8" DIAMETER 304 SS CHEMICAL ANCHORS (6" MIN. EMBEDMENT). EXISTING ANCHORS SHALL BE CUT FLUSH WITH CONCRETE SUPPORTS, GROUND BACK 1/4" AND FILLED WITH EPOXY. BASE ELBOWS SHALL BE POSITIONED TO AVOID EXISTING ANCHORS.
- ⚠ G-13. THE EXISTING SLUDGE DRYING BEDS TO THE EAST OF DIGESTER #6 MAY BE USED AS A STAGING AREA FOR DEMOLITION OF EXISTING DIGESTER COVER AND CONSTRUCTION OF PROPOSED COVER. CONTRACTOR SHALL SUBMIT A PLAN FOR APPROVAL DETAILING HOW THE EXISTING SHALLOW CLAY DRAINAGE PIPING IN EACH OF THE DRYING BEDS ARE TO BE PROTECTED FROM EXCESSIVE, OR POINT, LOADS FROM CONSTRUCTION MATERIALS AND/OR EQUIPMENT.
- ⚠ G-14. THE 36" DIAMETER STAINLESS STEEL GAS MIXING TUBES SHALL BE MADE OF EITHER EXTRUDED PIPE OR ROLLED SHEET. IF MADE FROM ROLLED SHEET THE TUBES SHALL BE OXYGEN-PURGED TIG-WELDED AND THEN BE RE-ROLLED TO TRUE ROUNDNESS. CONTRACTOR SHALL SUBMIT WELDING AND ROLLING PROCESS FOR APPROVAL.

**DEMOLITION NOTES**

- D-1. REFER TO STRUCTURAL PLANS AND SPECIFICATIONS FOR SPECIFIC REQUIREMENTS PERTAINING TO THE DIGESTER COVER REMOVAL.
- D-2. SALVAGEABLE MATERIAL, AS DETERMINED BY DEPARTMENT PERSONNEL, SHALL BE DELIVERED TO THE PARTS WAREHOUSE LOCATED ON THE TREATMENT PLANT SITE. NON-SALVAGEABLE MATERIALS ARE TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
- D-3. THE CONSTRUCTION SITE SHALL BE MAINTAINED IN AS NEAT AND ORDERLY CONDITION AS POSSIBLE DURING CONSTRUCTION OPERATIONS. SITE SHALL BE SECURED WITH TEMPORARY FENCING AND STRUCTURES DURING HOURS WHEN CONTRACTOR IS NOT PRESENT TO ENSURE SAFETY OF CITY EMPLOYEES AND THE PUBLIC.
- D-4. CONTRACTOR SHALL RESTORE ALL STRUCTURES, SODDING AND PAVEMENT THAT MAY HAVE BEEN DAMAGED DURING CONSTRUCTION TO ITS ORIGINAL CONDITION OR BETTER.

**DEMOLITION NOTES (CONTINUED)**

- D-5. STEEL FROM THE DEMOLITION OF THE DIGESTER COVER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
- D-6. ALL CONCRETE BALLAST BLOCKS IN THE EX. COVER SHALL BE REMOVED AND RE-USED FOR BALLAST IN THE PROPOSED COVER.
- D-7. THE ATTIC SPACE OF THE EXISTING COVER IS FILLED WITH APPROXIMATELY 6" OF SLUDGE. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF IT. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM COST OF THE CONTRACT AND IS NOT TO BE INCLUDED AS PART OF THE ITEMIZED BID ITEM FOR DEBRIS REMOVAL.
- ⚠ D-8. THE ATTIC SPACE OF THE EXISTING COVER IS FILLED WITH METHANE GAS, AS IS THE DIGESTER TANK ITSELF, AND THE CONTROL ROOM (BLDG. C) MAY ALSO CONTAIN METHANE GAS. THESE AREAS MUST BE PURGED OF ALL GASSES AND VERIFIED THAT THEY ARE GAS-FREE BEFORE ANY DEMOLITION WORK CAN BEGIN. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM COST OF THE CONTRACT.

**SLUDGE REMOVAL NOTES**

- ⚠ S-1. THE CONTRACTOR SHALL REMOVE THE REMAINING MATERIALS FROM DIGESTER #6, TEMPORARILY PLACE THEM INTO THE DRYING BEDS FOR UP TO 30 DAYS, AND PROPERLY DISPOSE OF ALL REMOVED DEBRIS IN A FDEP APPROVED CLASS I OR II LANDFILL. THE ESTIMATED AMOUNT OF MATERIALS TO BE REMOVED IS 2,800 CUBIC YARDS AND PAYMENT FOR THE REMOVAL / DISPOSAL WILL BE MADE PER CUBIC YARD AS DESCRIBED IN NOTE S-8 BELOW. THE DISCHARGE POINT INTO THE DRYING BEDS MAY CHANGE DURING THIS WORK, AS THE BEDS BECOME FULL. THE DIGESTER CONTAINS SEWAGE SLUDGE, SAND, GRIT, RAGS AND OTHER MISCELLANEOUS DEBRIS.
- ⚠ S-2. A SMALL AMOUNT OF WATER MAY BE ADDED TO THE DIGESTER TO FACILITATE THE REMOVAL PROCESS. THIS WATER SHALL BE KEPT TO A MINIMUM. THE EQUIPMENT THAT IS EMPLOYED IN THE EXECUTION OF THIS WORK SHALL BE CAPABLE OF HANDLING HIGH SOLIDS CONTENT SLUDGE WHICH MAY REQUIRE CUTTER-HEAD PUMPS, OR SIMILAR EQUIPMENT FOR REMOVAL. CONTRACTOR SHALL SUBMIT FOR APPROVAL, A COMPLETE PLAN OF THE PUMPING SYSTEM INCLUDING PUMP SIZE AND TYPE, PUMP FLOW CHARACTERISTICS, AND PIPING SIZE, TYPE AND DIAMETER.
- ⚠ S-3. THE CONTRACTOR SHALL PROVIDE ALL THE EQUIPMENT THAT IS NECESSARY TO ACCOMPLISH THE WORK DETAILED HEREIN. THIS STIPULATION SHALL INCLUDE PUMPS (THAT ARE SUITABLE) FOR THE REMOVAL OF WATER THAT IS ADDED TO, OR INFILTRATES INTO THE DIGESTER. ALL DISCHARGE HOSES NEEDED FOR THIS PURPOSE SHALL BE PROVIDED BY THE CONTRACTOR. THE CITY WILL PROVIDE A DISCHARGE POINT FOR THIS EQUIPMENT THAT SHALL BE SOUTH OF THE RAILROAD TRACKS. ALL HOSES AND COUPLING DEVICES TO BE USED FOR INJECTING WATER INTO THE DIGESTER SHALL BE SUPPLIED BY THE CONTRACTOR.
- ⚠ S-4. ANY PUMP DISCHARGE HOSE OR EQUIPMENT GOING TO THE DRYING BEDS SOUTH OF THE RAILROAD TRACKS MAY NOT INTERFERE IN ANY WAY WITH THE RAIL CAR DELIVERIES. THIS HOSE MUST BE DISCONNECTED AT NIGHT AND IN TIME SO AS NOT TO IMPEDE THE TRAINS. THE CONTRACTOR SHALL PROVIDE TWO SERIES OF TWO SHUT-OFF VALVES MATED TOGETHER, 4 VALVES TOTAL (2 ON EACH SIDE OF RR TRACKS), FOR THIS PURPOSE. NO SPILLAGE OF HOSE CONTENTS IS TO BE ALLOWED WHEN DISCONNECTING OR FROM LEAKS AT ANY TIME. CONTRACTOR SHALL SUBMIT CONTAINMENT SYSTEM FOR APPROVAL.
- S-5. THE CONTRACTOR SHALL PROVIDE ALL THE EQUIPMENT THAT IS NEEDED FOR MAKING A SAFE ENTRY INTO THE DIGESTER. ACCESS IS LIMITED TO ONE 2' DIAMETER MANHOLE THAT IS LOCATED ON THE SIDE OF THE DIGESTER, AND ACCESS MANHOLES LOCATED ON THE EXISTING COVER, AS SHOWN ON DRAWINGS. ALL SAFETY PRECAUTIONS REGARDING CONFINED SPACE ENTRY THAT ARE MANDATED BY FEDERAL, STATE AND LOCAL AUTHORITIES SHALL BE FOLLOWED.
- S-6. ALL MISCELLANEOUS DEBRIS, SUCH AS CLUMPS OF RAGS AND HAIR, WHICH ARE LEFT INSIDE THE DIGESTER AFTER THE PUMPING OPERATION SHALL BE REMOVED FROM THE DIGESTER AND DISPOSED OF IN AN ENVIRONMENTALLY SOUND MANNER, WHICH INVOLVES SENDING IT TO AN APPROVED LANDFILL.
- S-7. CONTRACTOR SHALL COMPLY WITH ALL FDOT REGULATIONS WHEN TRANSPORTING REMOVED DEBRIS FROM DRYING BEDS TO APPROVED OFF-SITE LANDFILL (SEE SPECIFICATIONS). NO MATERIAL SHALL BE ALLOWED TO FALL TO THE GROUND. SHOULD A SPILL OCCUR, THE CONTRACTOR SHALL TAKE IMMEDIATE ACTION TO CLEAN UP THE SPILLED MATERIAL.
- ⚠ S-8. THE CITY WILL COMPENSATE THE CONTRACTOR FOR THE CUBIC YARD MEASUREMENT OF THE MATERIAL THAT IS CONTAINED IN THE DIGESTER AND NOT FOR ANY WATER THAT IS ADDED OR WATER THAT INFILTRATES THE DIGESTER THROUGH ANTI-FLOTATION VALVES. THE NUMBER OF CUBIC YARDS CONTAINED IN THE DIGESTER SHALL BE MEASURED AND AGREED UPON, IN WRITING, BY THE CONTRACTOR AND THE CITY PRIOR TO THE START OF WORK. MEASUREMENT SHALL BE BASED ON REMAINING SLUDGE LEVEL AFTER CITY FINISHES PUMPING OUT AS MUCH AS POSSIBLE WITH EXISTING DIGESTER SLUDGE PUMPS.

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JACINTO CARLOS FERRAS P.E. #49454  
 DESIGN DIVISION HEAD  
 WASTEWATER DEPARTMENT

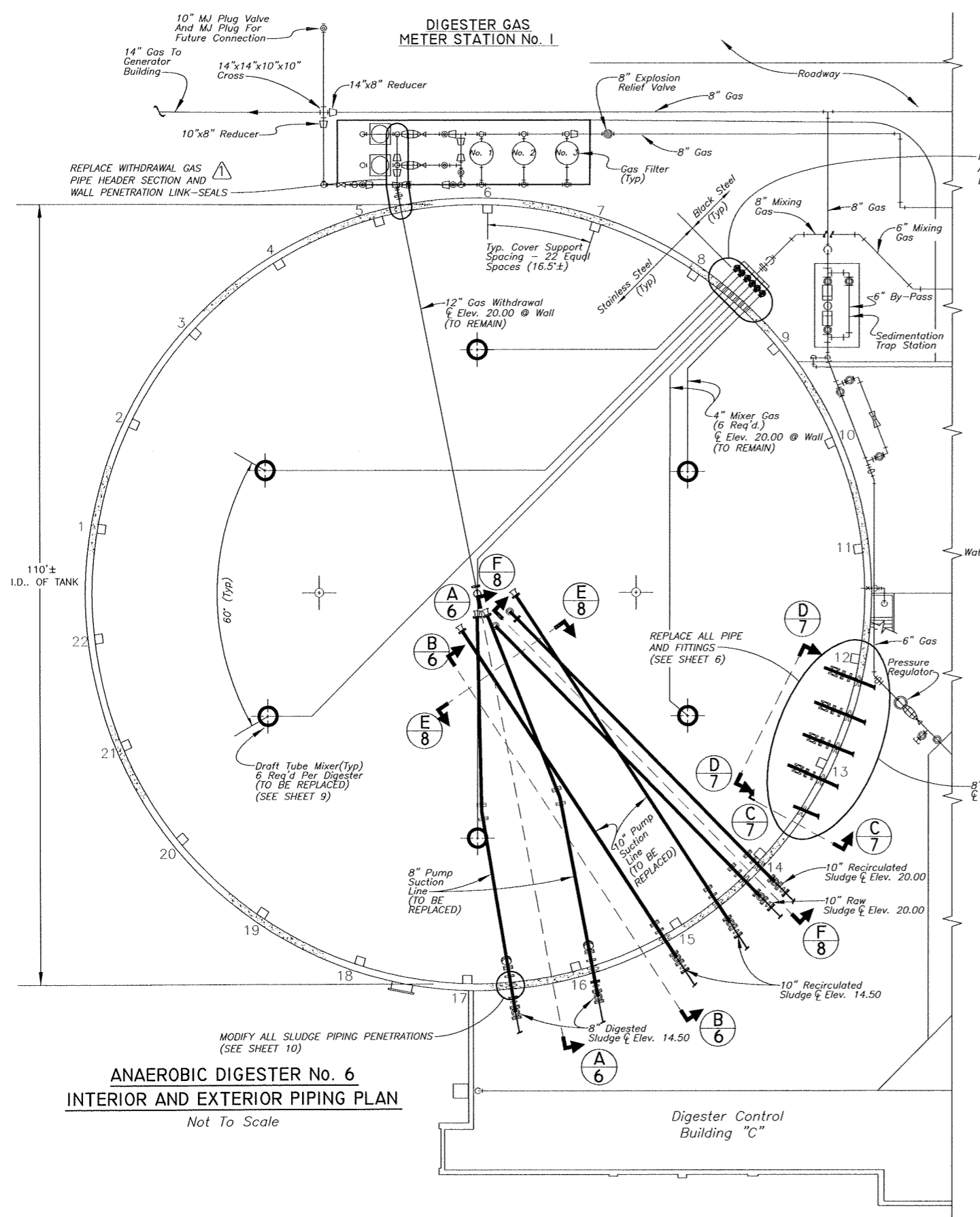
No.	DATE	REVISIONS
3		
2		
⚠	07/21/10	REVISED NOTES, ADDED NOTES D-8, G-13, G-14

DES: J.F.  
 DRN: BB  
 CKD: JF  
 DATE: 7/21/10

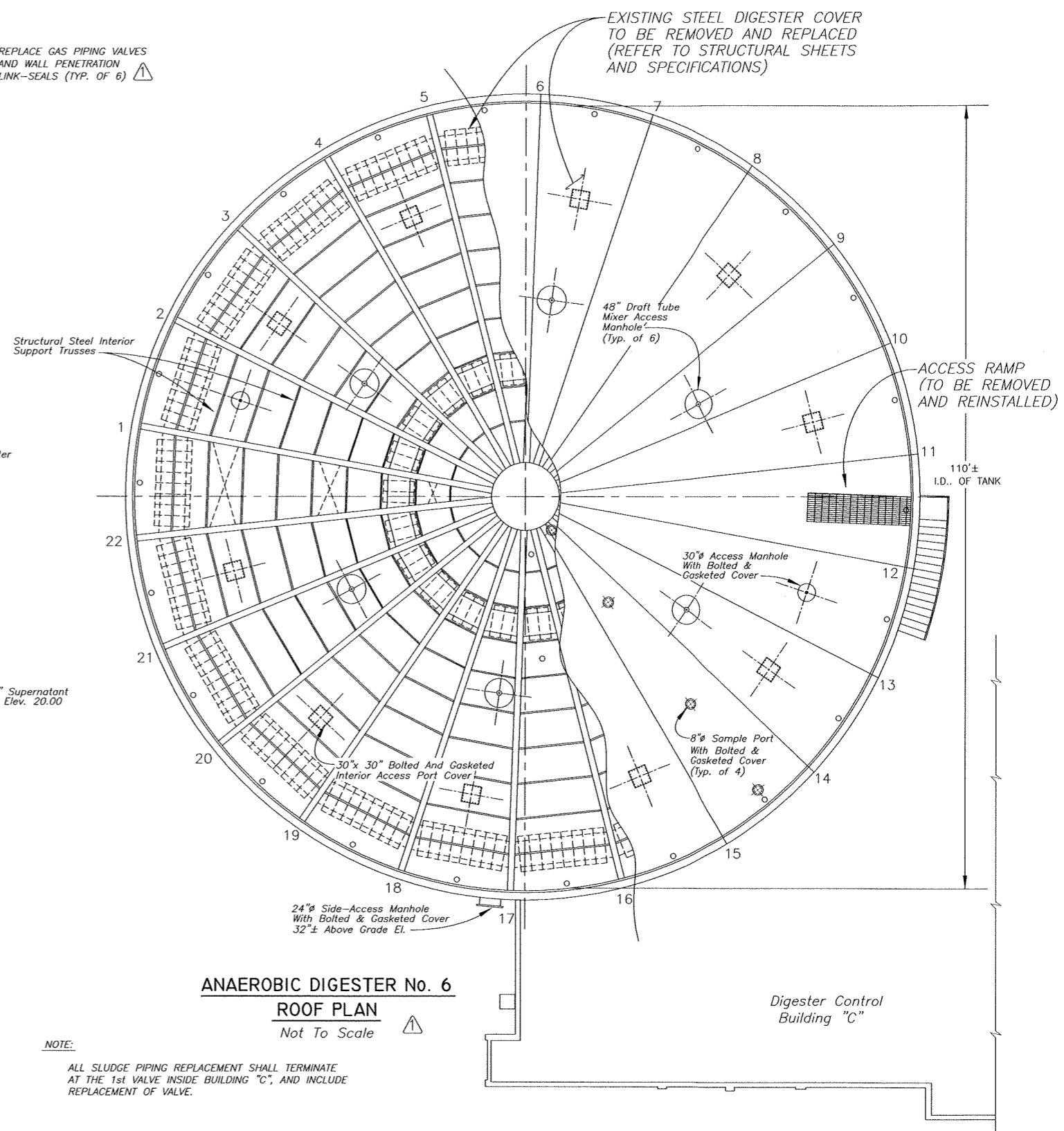
**CITY of TAMPA**  
 HOWARD F. CURREN  
 ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.  
 SLUDGE DIGESTER No. 6 REHABILITATION  
 GENERAL, DEMOLITION & SLUDGE REMOVAL NOTES

W.O. 5010  
 SHEET  
**3**



**ANAEROBIC DIGESTER No. 6**  
**INTERIOR AND EXTERIOR PIPING PLAN**  
Not To Scale



**ANAEROBIC DIGESTER No. 6**  
**ROOF PLAN**  
Not To Scale

NOTE:  
ALL SLUDGE PIPING REPLACEMENT SHALL TERMINATE AT THE 1st VALVE INSIDE BUILDING "C", AND INCLUDE REPLACEMENT OF VALVE.

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JACINTO CARLOS FERRAS P.E. #49454  
DESIGN DIVISION HEAD  
WASTEWATER DEPARTMENT

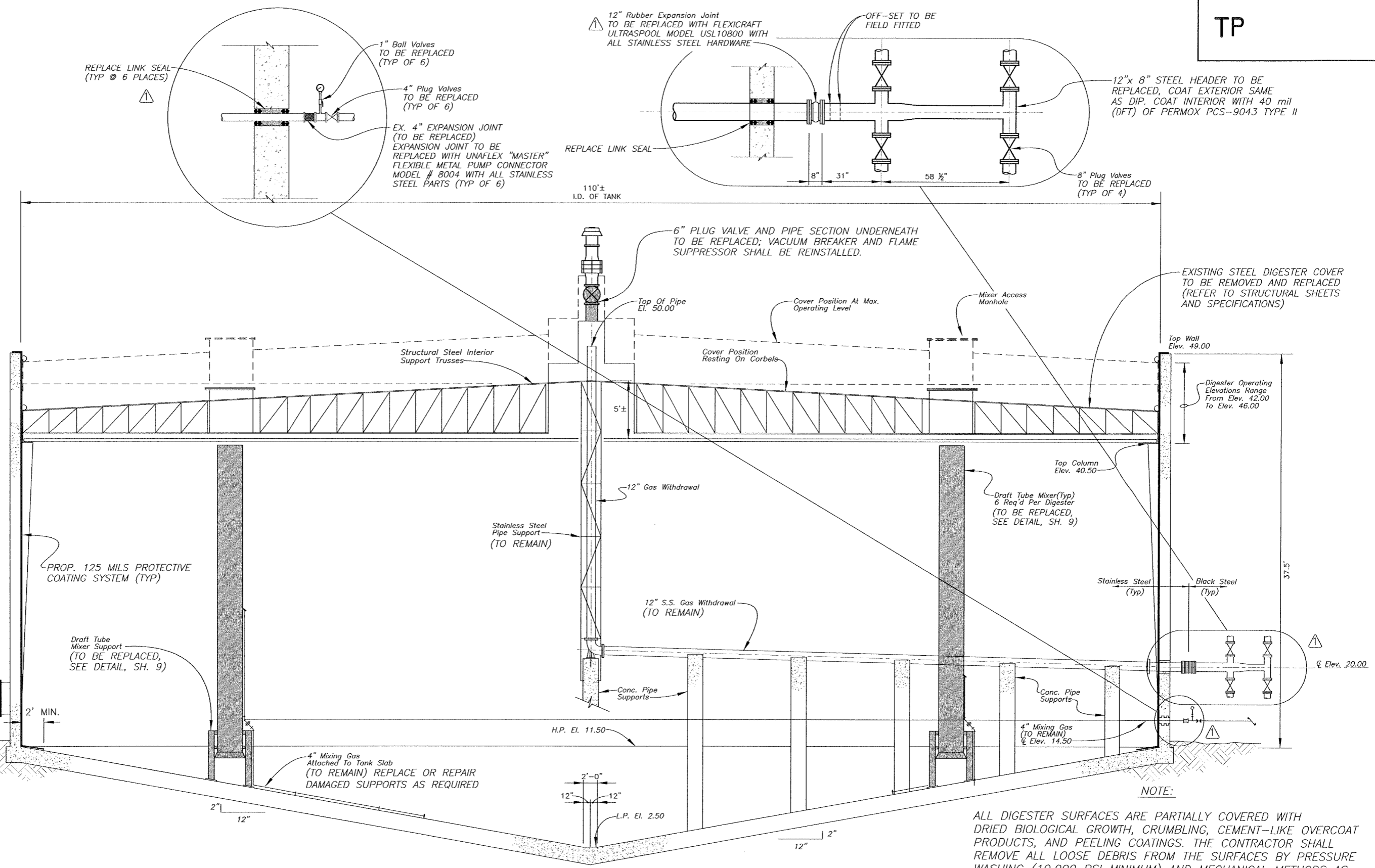
No.	DATE	REVISIONS
3		
2		
1	07/21/10	ADDED VALVES AND PIPING, REVISED ROOF PLAN

DES: J.F.  
DRN: BB  
CKD: 7/21/10  
DATE: JF

**CITY of TAMPA**  
HOWARD F. CURREN  
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.  
SLUDGE DIGESTER No. 6 REHABILITATION  
DIGESTER - PLAN AND ROOF PLAN

W.O. 5010  
SHEET  
**4**



**TYPICAL DIGESTER SECTION**

Not To Scale

**NOTE:**  
 ALL DIGESTER SURFACES ARE PARTIALLY COVERED WITH DRIED BIOLOGICAL GROWTH, CRUMBLING, CEMENT-LIKE OVERCOAT PRODUCTS, AND PEELING COATINGS. THE CONTRACTOR SHALL REMOVE ALL LOOSE DEBRIS FROM THE SURFACES BY PRESSURE WASHING (10,000 PSI MINIMUM) AND MECHANICAL METHODS AS REQUIRED. SURFACES TO BE CLEANED INCLUDE DIGESTER INTERIOR WALLS, FLOORS, PIPES (TO REMAIN), AND PIPE SUPPORTS. ALL DEBRIS SHALL BE DISPOSED OF BY THE CONTRACTOR (SEE SPECIFIC PROVISIONS).

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JACINTO CARLOS FERRAS P.E. #49454  
 DESIGN DIVISION HEAD  
 WASTEWATER DEPARTMENT

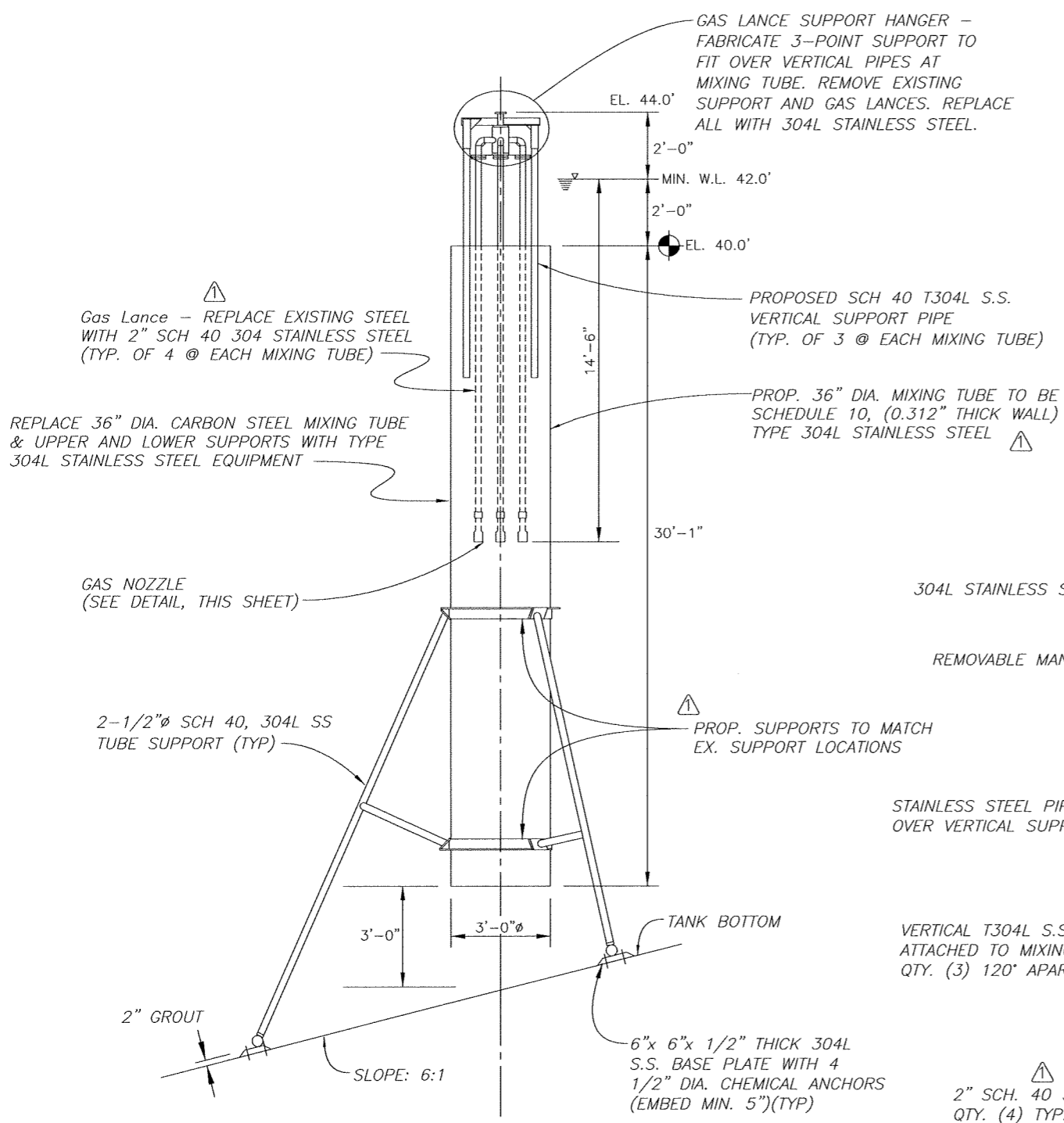
No.	DATE	REVISIONS
3		
2		
1	07/21/10	ADDED VALVES AND PIPING, ADDED DETAILS

DES: J.F.  
 DRN: BB  
 CKD: JF  
 DATE: 7/21/10

**CITY of TAMPA**  
 HOWARD F. CURREN  
 ADVANCED WASTEWATER TREATMENT PLANT

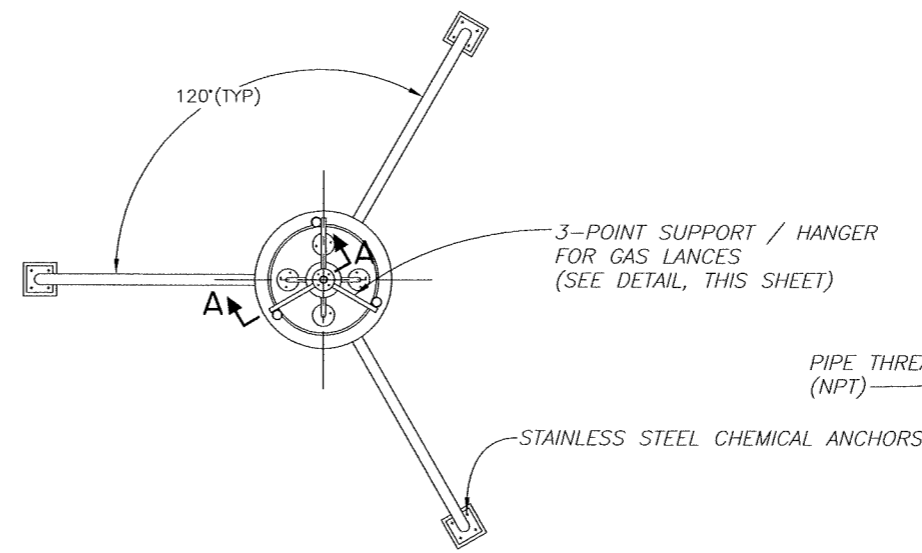
HOWARD F. CURREN A.W.T.P.  
 SLUDGE DIGESTER No. 6 REHABILITATION  
 DIGESTER - TYPICAL SECTION

W.O. 5010  
 SHEET  
**5**

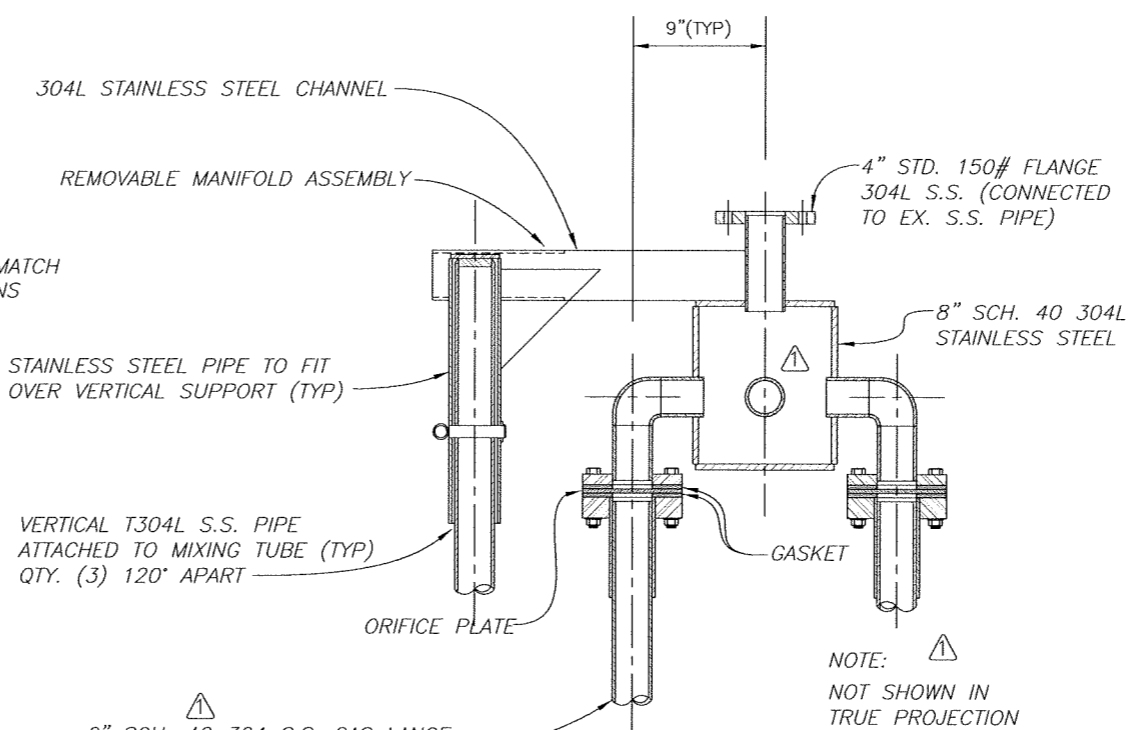


**PROPOSED DIGESTER No. 6 GAS-MIXING TUBE ASSEMBLY**

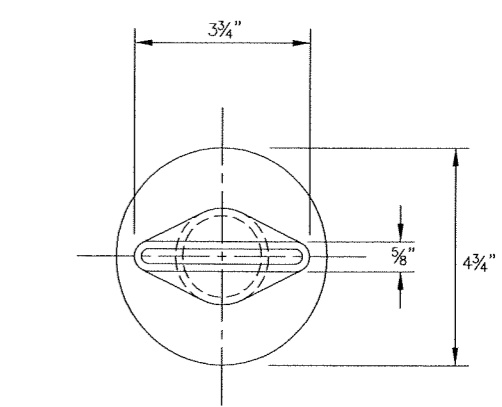
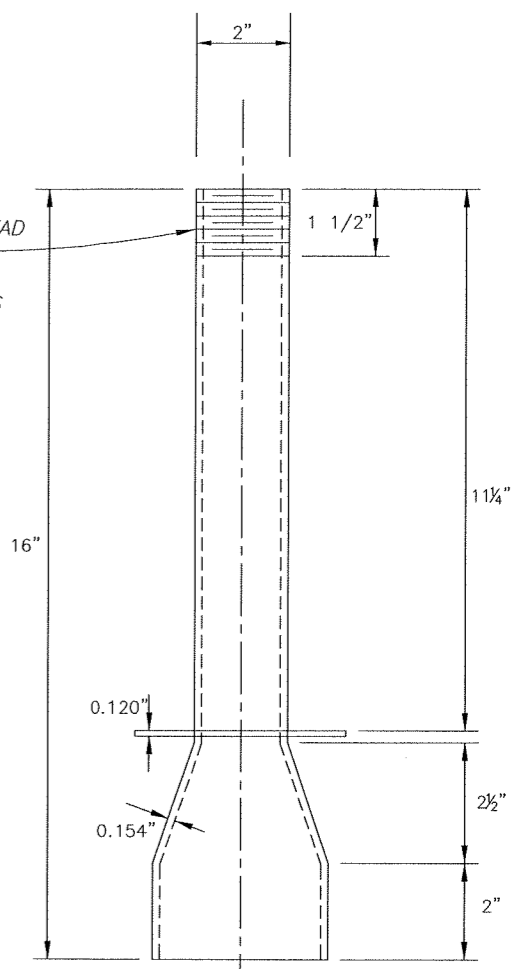
(TYP. OF 6)  
**ELEVATION**  
 NOT TO SCALE



**DIGESTER No. 6 GAS-MIXING TUBE**  
**PLAN VIEW**  
 NOT TO SCALE



**SECTION A - A**  
 NOT TO SCALE



**FILMSHEAR IV GAS KNIFE**  
 NOT TO SCALE

NOTE:  
 ALL ITEMS SHOWN ON THIS SHEET ARE PROPOSED

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No.	DATE	REVISIONS
3		
2		
1	07/20/10	REVISIONS MADE TO DRAWING, PIPE THICKNESS

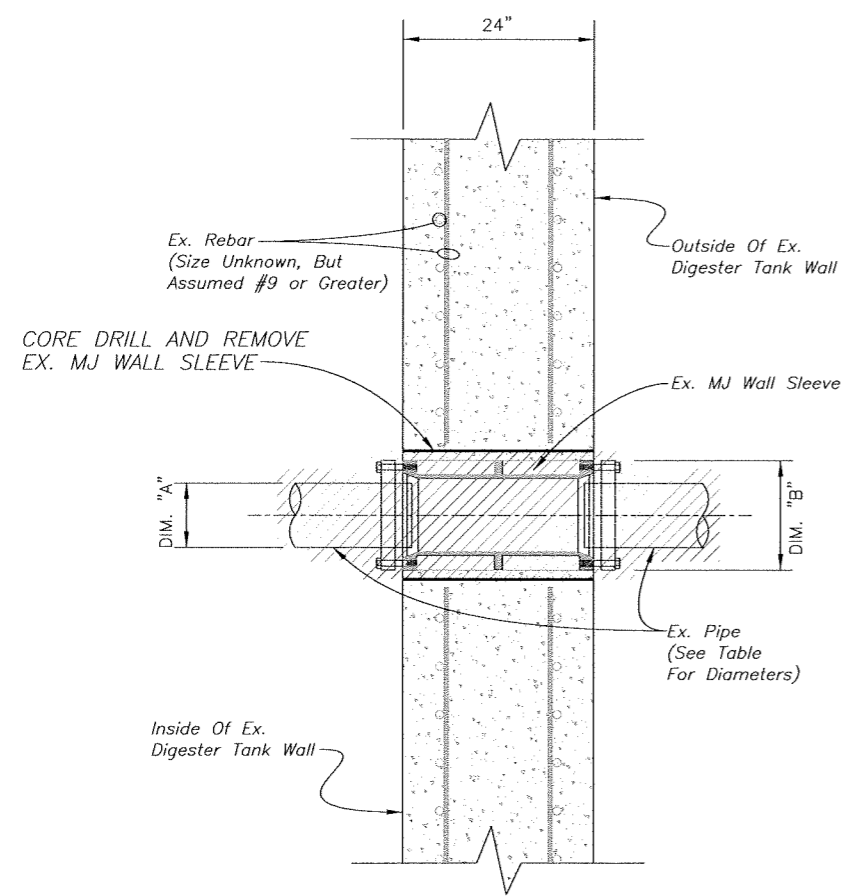
DES: J.H.  
 DRN: BB  
 CKD: JF  
 DATE: 7/21/10

**CITY of TAMPA**  
 HOWARD F. CURREN  
 ADVANCED WASTEWATER TREATMENT PLANT

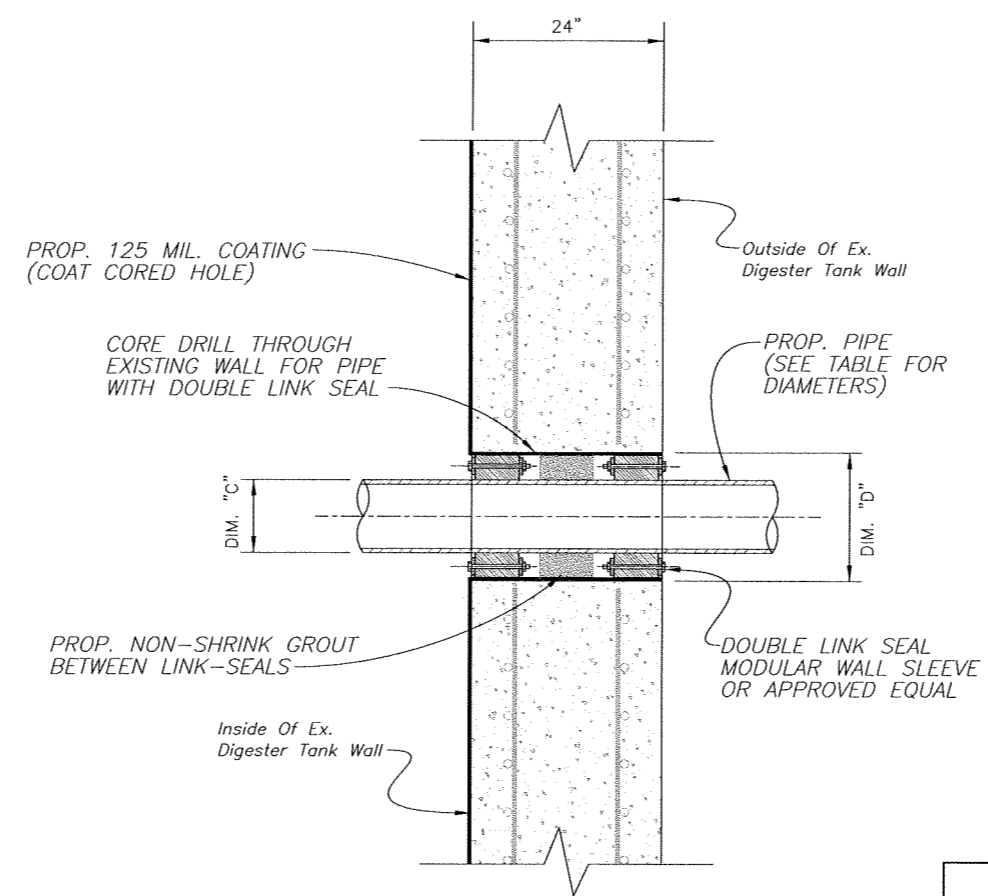
HOWARD F. CURREN A.W.T.P.  
 SLUDGE DIGESTER No. 6 REHABILITATION  
 MISCELLANEOUS GAS MIXER DETAILS

W.O. 5010  
 SHEET  
**9**

JACINTO CARLOS FERRAS, P.E. #49454  
 DESIGN DIVISION HEAD  
 WASTEWATER DEPARTMENT



**DIGESTER TANK WALL**  
**EXISTING PIPE PENETRATION SECTION**  
 SCALE: 1/2" = 1'-0"



**DIGESTER TANK WALL**  
**PROPOSED PIPE PENETRATION SECTION**  
 SCALE: 1/2" = 1'-0"

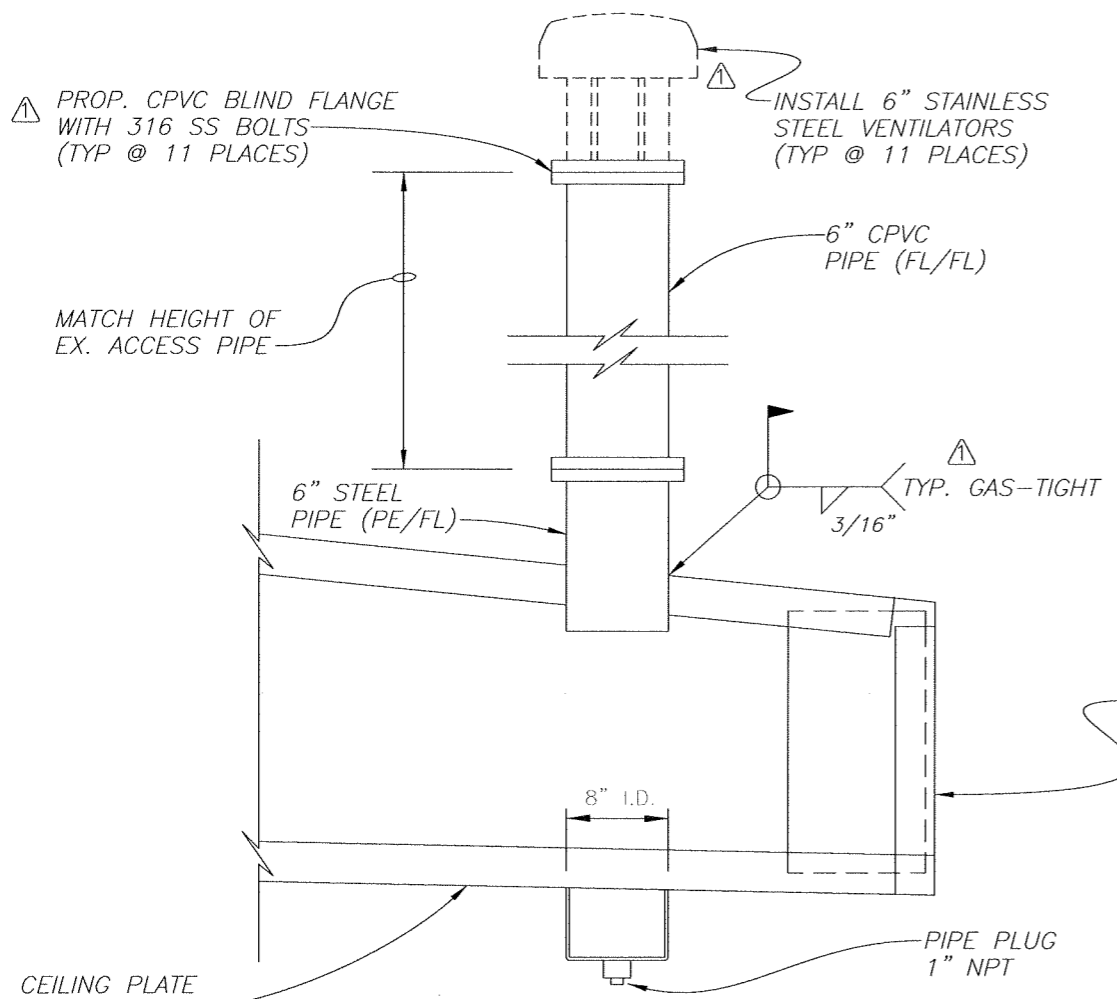
NOTES:

1. PROPOSED MODULAR WALL SLEEVES SHALL BE MODEL LS-600-OS-316 AS MANUFACTURED BY LINK SEAL OR APPROVED EQUAL. ALL HARDWARE SHALL BE 316 STAINLESS STEEL AND THE MATERIAL OF THE SEAL ELEMENTS SHALL BE NITRILE.
2. THERE ARE A TOTAL OF 6 - 4" MIXING GAS SUPPLY PIPES AT ELEVATION 14.50 AND ONE 12" GAS WITHDRAWAL PIPE AT ELEVATION 20.00 THAT EACH CONTAIN A WALL SLEEVE WITH A LINK SEAL. THE EXISTING PIPES ARE STAINLESS STEEL AND ARE TO REMAIN AS PART OF THIS CONTRACT. CONTRACTOR SHALL REPLACE THE EXISTING LINK SEALS AND INSTALL DOUBLE LINK SEALS AS DETAILED ON THIS SHEET. ALL HARDWARE SHALL BE 316 STAINLESS STEEL AND THE MATERIAL OF THE SEAL ELEMENTS SHALL BE NITRILE.
3. LINK SEALS ARE NOT DESIGNED TO SUPPORT ANY LOAD. PIPE SHALL BE SUPPORTED AT EACH END, CENTERED IN THE CORED HOLE AND GROUTED BEFORE INSTALLATION OF LINK SEALS.

PIPE PENETRATION TABLE					
QTY	A	B	C	D	℄ ELEVATION
7	8"	13.63"	9.05"	16"	2 @ 14.50', 5 @ 20'
4	10"	15.81"	11.10"	18"	2 @ 14.50', 2 @ 20'

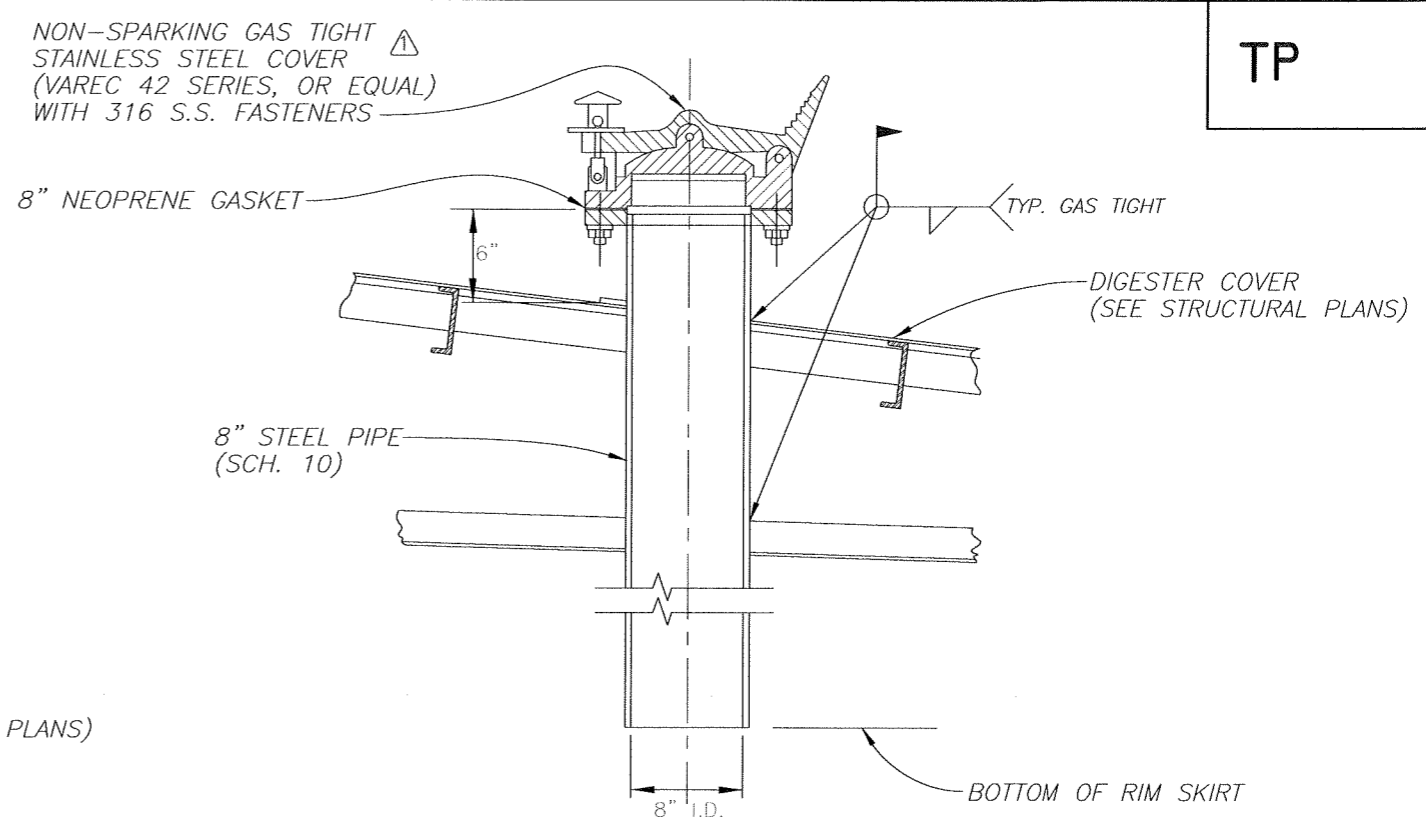
DIM "A" - NOMINAL DIAMETER OF EX./PROP. PIPE  
 DIM "B" - OUTSIDE DIAMETER OF EX. WALL SLEEVE  
 DIM "C" - OUTSIDE DIAMETER OF PROPOSED PIPE  
 DIM "D" - DIAMETER OF PROPOSED CORE HOLE (GREATER THAN FLANGE O.D.)

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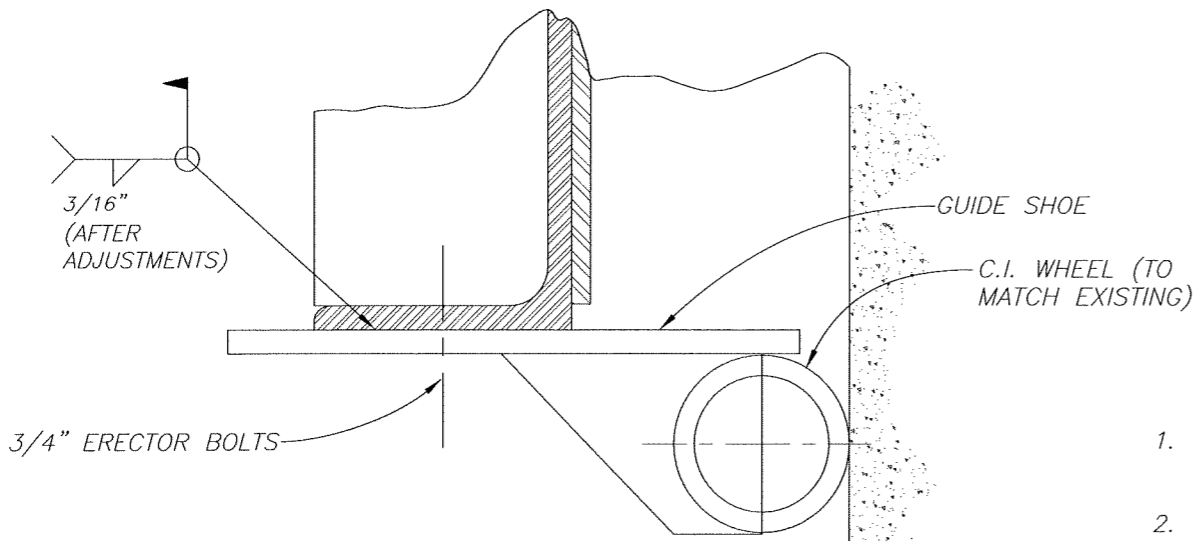
**DRAIN SUMP WITH ACCESS WELL DETAIL - SECTION VIEW**

**TYP @ 22 PLACES**  
NOT TO SCALE



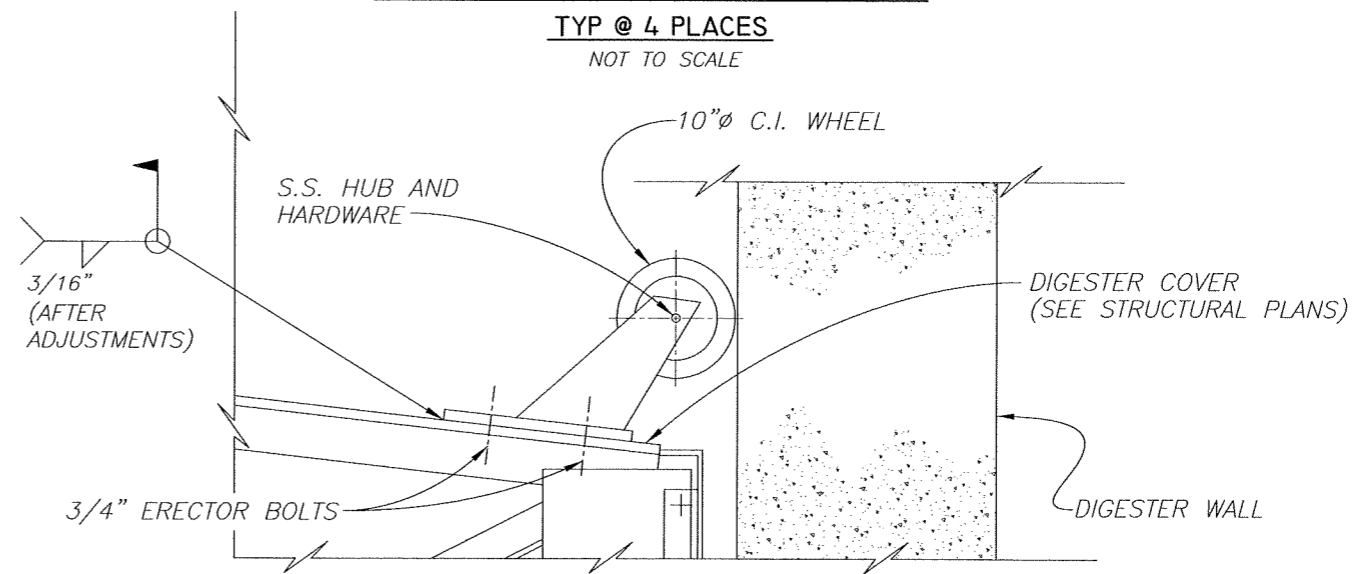
**SAMPLING WELL DETAIL - SECTION VIEW**

**TYP @ 4 PLACES**  
NOT TO SCALE



**GUIDE SHOE DETAIL - SECTION VIEW**

**TYP @ 22 PLACES**  
NOT TO SCALE



**TOP ROLLER DETAIL - SECTION VIEW**

**TYP @ 11 PLACES**  
NOT TO SCALE

**NOTES:**

1. ALL APPURTENANCES SHOWN ON THIS SHEET ARE BASED ON THE ORIGINAL DRAWINGS OF THE EXISTING COVER AND SHALL BE REPLACED IN-KIND UNLESS OTHERWISE DETAILED OR SPECIFIED.
2. CONTRACTOR SHALL REMOVE AND REUSE THE EXISTING BALLAST BLOCKS. THE APPROXIMATE DIMENSIONS AND QUANTITIES ARE AS FOLLOWS:

176 TOTAL - 15"x18"x5'11" LONG (APPROX WEIGHT 1,600#/EA)  
44 TOTAL - 18"x22"x4'0" LONG (APPROX WEIGHT 1,600 #/EA)

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JACINTO CARLOS FERRAS P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	
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No.	DATE	REVISIONS
3		
2		
1	07/21/10	REVISED DRAIN SUMPS & VENTILATORS

DES: J.F.  
DRN: BB  
CKD: JF  
DATE: 7/21/10

**CITY of TAMPA**  
HOWARD F. CURREN  
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.  
SEWAGE DIGESTER No. 6 REHABILITATION  
DIGESTER - MISCELLANEOUS DETAILS

W.O. 5010  
SHEET  
**12**