

SAN ANTONIO WATER SYSTEM PURCHASING DEPARTMENT

Issued By: **D. Anthony Rubin**
BID NO.: 18-18069

Date Issued: May 25, 2018

**FORMAL INVITATION FOR BIDS
CONTRACT FOR CLEANING DIGESTERS OR SLUDGE HOLDING
TANKS AT THE DOS RIOS WRC
ADDENDUM NO. 2**

Sealed bids addressed to the Purchasing Director, San Antonio Water System, 2800 US Hwy 281 North, Administration Bldg., 5th Floor, San Antonio, TX 78212 will be received until **3:00 p.m., June 1, 2018** and then publicly opened and read aloud for furnishing materials or services as described herein below,

The San Antonio Water System Purchasing Department is willing to assist any bidder(s) in the interpretation of bid provisions or explanation of how bid forms are to be completed. Assistance may be received by visiting the Purchasing Office in the SAWS Main Office, 2800 US Hwy 281 North, San Antonio, TX 78212, or by calling (210) 233-3819.

**(Contractor's Insurance Requirements Attached)
(Bid Bond, Performance Bond & Payment Bond Required)**

This invitation includes the following:

Invitation for Bids
Terms and Conditions of Invitation for Bids

Specifications and General Requirements
Price Schedule

The undersigned, by his/her signature, represents that he/she is authorized to bind the Bidder to fully comply with the Specifications and General Requirements for the amount(s) shown on the accompanying bid sheet(s). By signing below, Bidder has read the entire document and agreed to the terms therein.

Signer's Name: _____ Firm Name: _____
(Please Print or Type)

Address: _____

Signature of Person Authorized to Sign Bid _____ City, State, Zip Code: _____

Email Address: _____ Telephone No.: _____

Fax No.: _____

Please complete the following:

Prompt Payment Discount: _____% _____ days. (If no discount is offered, Net 30 will apply.)

Please check the following blanks which apply to your company:

Ownership of firm (51% or more):

Non-minority Hispanic African-American Other Minority (specify) _____

Female Owned Handicapped Owned Small Business (less than \$1 million annual receipts or 100 employees)

Indicate Status: Partnership Corporation Sole Proprietorship Other (specify) _____

Tax Identification Number: _____

To report suspected ethics violations impacting the San Antonio Water System, please call 1-800-687-1918.

This **Addendum no. 2** is being issued to provide responses to question submitted and drawing for the digester tanks.

Question Submitted:

1. Is there a site drawing showing the two digester tanks to be cleaned and the three proposed tanks?
Answer: Drawings of the digesters will be provided.
2. Can polymers be used? Answer: Yes
3. Where will the effluent from our cleaning process be returned? Answer: Yes, it will be returned to a small lift station located next to road between the digesters.
4. Is there access from the top of the tanks if so what is the size of the openings? Answer: Yes – From 1.8.A.6: *The CONTRACTOR may enter into the digester using the approximate 36-inch diameter manway located near ground level on the side of the tank or the approximate 6-ft X 6 -hatch located on the top of the tank dome.*
5. Are there access doors on the sides of the tanks if so what height and size? Answer: See response to Question #4.
6. Will we be able to utilize the digesters plumbing ie: underdrain? Answer: The digesters do not have an underdrain – see provided drawings.
7. Can our dewatered material hit the ground to be loaded into containers to be hauled to landfill? Answer: No – From 3.3.B: *All cake shall be stored in enclosed watertight receiving containers designed such that no liquids will leak during storage at the plant site, and transportation to the disposal site. Any off gassing from the container shall be odor controlled.*
 1. *No more than 2 filled containers shall be stored at the plant site at any time.*
 2. *The cake shall have a percent solids concentration that is acceptable for landfill disposal.*
8. Is there a landfill that already has a permit for SAWS class A biosolids? Answer: From 3.6.A: *Comply with all Local, State and Federal Regulations concerning the removal, hauling, and disposal of the removed materials specified. Disposal shall be at a registered or permitted co-disposal landfill (Type 1).*
9. SAWS requires the collection of samples to verify that amount of solids removed from the digesters and disposed of at the landfill. Therefore, all the information is to be collected necessary to link the actual amount of material removed and disposed to the direct expenses of the project. The project is being bid as lump sum for each digester. Contractors are not able to measure the amount of sludge to be removed prior to the bid because SAWS has not decided the specific sequence of work and these digesters are in operation and can't be opened. Contractors must guess how much material is to be removed and disposed. This forces the contractor to plan for the worst case scenario instead of simply linking the project pricing directly to the major expenses incurred by the contractor. Will SAWS consider changing the project pricing from lump sum to payment by the unit (Dry Tons or Wet Tons)? Answer: No, this is a firm fix price contract. Bidder will need to take all cost factors into consideration for bid purposes.
10. Will SAWS please provide data from previous cleaning events (Date and Dry Tons Removed) and the total cost of each event? Answer: The previous cleaning was completed in 2013 for Digesters 1, 2, 3, 4, as part of the Digester Mixing System Enhancements Phase 2 (see table below):

Digester	Year of Previous Cleaning	Dry Tons	Total Cost
1	1998	1,516.92	\$ 823,915.10
2	2001	1,604.95	\$ 871,728.59
3	1998	1,435.77	\$ 779,838.48
4	2010	120.22	\$ 65,297.49

11. It was mentioned during the meeting that the contractor may be able to connect to the underdrain from the digester. During the site walk, an operator said that he believed it would not be possible to connect to the underdrain. Please clarify if the contractor will be able to utilize the underdrain? Answer: See the response to Question #6.
12. Can we have a copy of sludge profile and the landfill name and location that the profile is registered with? Answer: The sludge profile is registered with both local landfills and will be provided upon award.
13. How many dry tons were removed from the emergency digester cleaning project from earlier this year? Answer: The emergency digester cleaning project is still on-going. Digester #6 is still be cleaning, and the cleaning for Digester #4 has been completed. Approximately 853 wet tons and 203 dry tons were removed from Digester #4 which had last been cleaned in 2010.
14. How many days were required to remove the material and clean the digester for the emergency project this year? Answer: All work for the cleaning of each digester was to be completed in 60 calendar days.
15. Were 2 digesters cleaned under the emergency project or just one? Answer: Two digesters were cleaned, Digester #4 and Digester #6.
16. Who performed the hauling for the emergency cleaning project? Answer: The hauling was performed by the contractor, Synagro.
17. What specific digesters are scheduled to be cleaned under this contract? Answer: The digesters proposed for cleaning are Digesters 5, 7, 8, 9, 10, based on available funding.
18. How long has it been since the digesters in the contract have been cleaned? Answer: The digesters were lasted cleaned in 2003, except Digester #10 which was cleaned in 2010.
19. How many dry tons are estimated to be in the current digesters? Answer: The digesters contain sludge with a total solids concentration ranging from approximately 10 percent up to approximately 80 percent. The digesters may contain sludge with a lower total solids in the upper portion of the sludge to be removed and a higher total solids concentration in the lower portion of the sludge to be removed.
20. The bid form asks for a lump sum price to clean the digesters. Would SAWS modify the sheet to price on a dry ton with mobilization and demobilization separate line items? Answer: See the response to Question #9.
21. Were there any odor issues with the emergency project during the project at the plant or during the transportation of the dewatered biosolids? Answer: No If so, what was done to mitigate the odors? Answer: No.

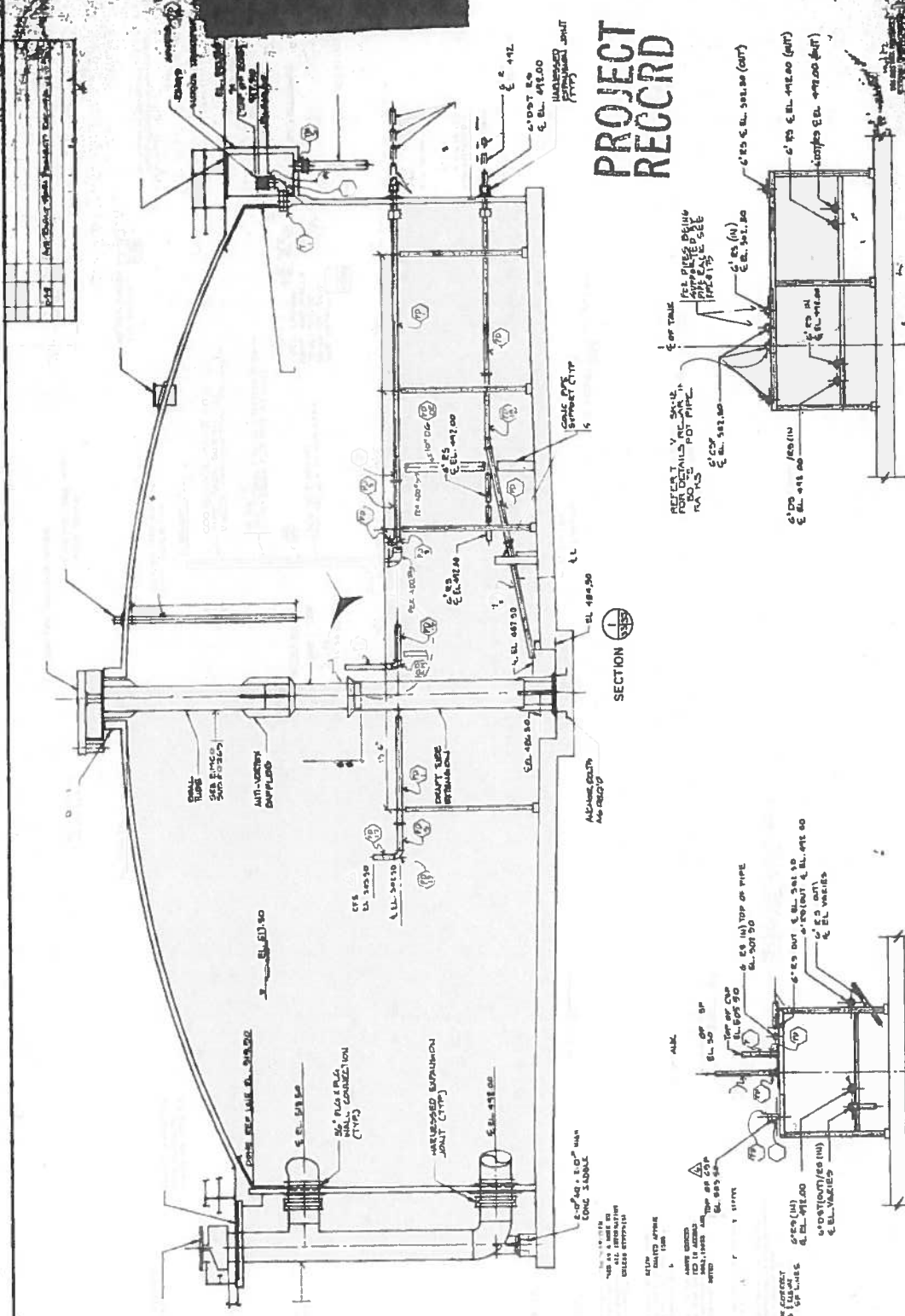
22. Will the digester be available back to back? Answer: The goal is for the digesters to be available back to back, however it is possible for there to be a delay of up to three weeks.
23. If not, will there be a delay between them and how long is anticipated? Answer: See response to Question #22.
24. Can equipment be placed on the digester roof? Answer: Yes, the roof is stable for standard cleaning operations, however no heavy equipment. The provided drawings reference a live load of 20 p.s.f for the roof.
25. Is there a weight restriction for the roof? Answer: See the response to Question #24.

IT IS NOT NECESSARY TO RETURN THIS ADDENDUM TOGETHER WITH YOUR BID

PROJECT NO. 2
DOG RIOS FACILITY
 WATER TREATMENT
 IMPROVEMENT

5571

PROJECT RECORD



NO.	DESCRIPTION	DATE
1	As Shown	1/1/55

SECTION A-A

SECTION B-B

SECTION C-C

NOTES:
 1. ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN FEET AND INCHES.
 2. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
 3. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
 4. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
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 19. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
 20. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.

EIGHT PRIMARY DIGESTERS & ONE SLUDGE STORAGE TANK

CONTRACT NO. 84 PL 021

DOS RIOS FACILITY

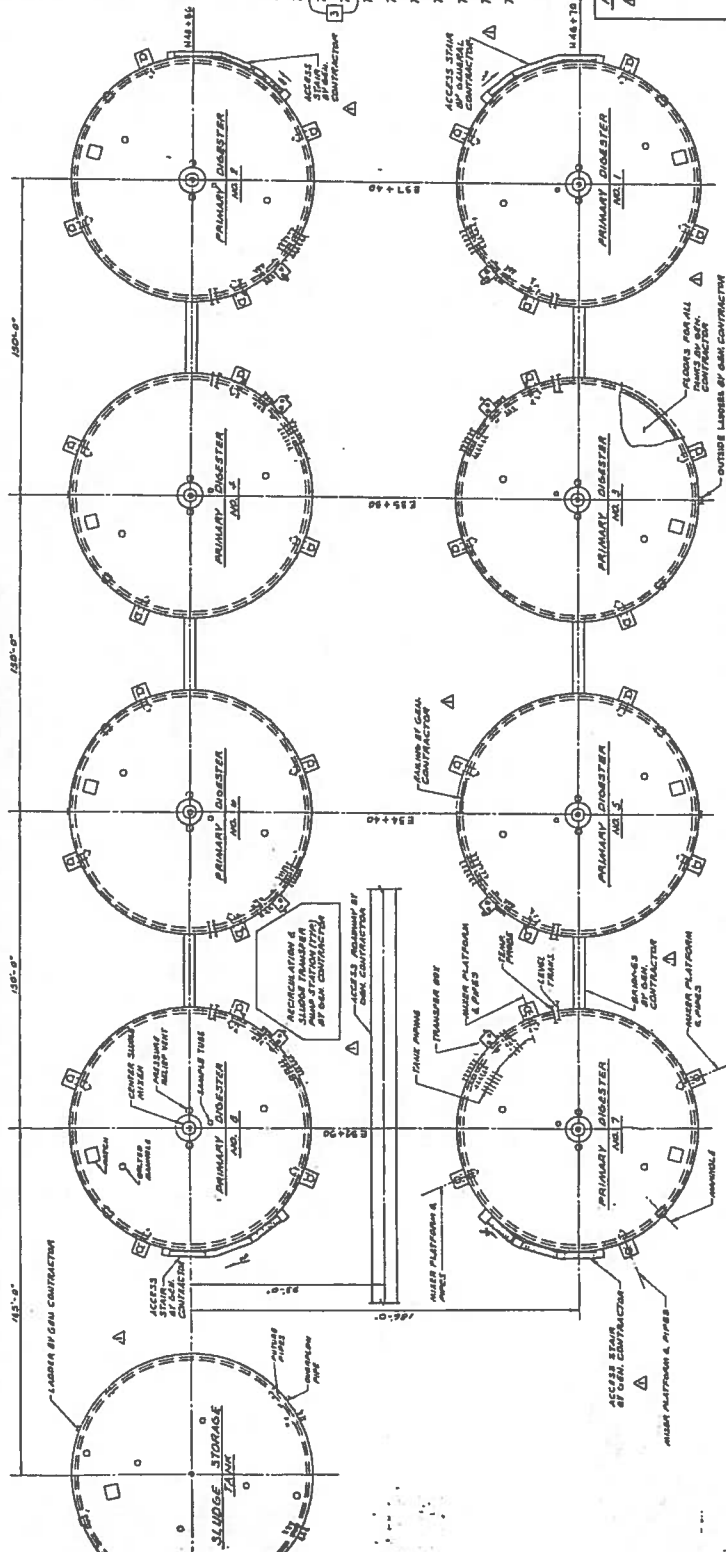
SAN ANTONIO, TEXAS

CONSULTING ENGINEERS:

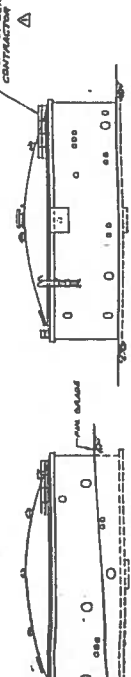
MALCOLM PIRNIE INC. (914-694-2100)

White Plains, N.Y.

- PRELOAD WORKING DRAWING**
- TEC. 01-084-1 GENERAL ARRANGEMENT
 - TEC. 01-084-2 PLAN AND ELEVATION OF TANK
 - TEC. 01-084-3 ANCHOR TANKS
 - TEC. 01-084-4 TRUSSER AND DETAILS
 - TEC. 01-084-5 TRUSSER AND DETAILS
 - TEC. 01-084-6 TRUSSER AND DETAILS
 - TEC. 01-084-7 TRUSSER AND DETAILS
 - TEC. 01-084-8 TRUSSER AND DETAILS
 - TEC. 01-084-9 TRUSSER AND DETAILS
 - TEC. 01-084-10 TRUSSER AND DETAILS
 - TEC. 01-084-11 TRUSSER AND DETAILS
 - TEC. 01-084-12 TRUSSER AND DETAILS
 - TEC. 01-084-13 TRUSSER AND DETAILS
 - TEC. 01-084-14 TRUSSER AND DETAILS
 - TEC. 01-084-15 TRUSSER AND DETAILS
 - TEC. 01-084-16 TRUSSER AND DETAILS
 - TEC. 01-084-17 TRUSSER AND DETAILS
 - TEC. 01-084-18 TRUSSER AND DETAILS
 - TEC. 01-084-19 TRUSSER AND DETAILS
 - TEC. 01-084-20 TRUSSER AND DETAILS
 - TEC. 01-084-21 TRUSSER AND DETAILS
 - TEC. 01-084-22 TRUSSER AND DETAILS
 - TEC. 01-084-23 TRUSSER AND DETAILS
 - TEC. 01-084-24 TRUSSER AND DETAILS
 - TEC. 01-084-25 TRUSSER AND DETAILS



PLAN OF PRIMARY DIGESTERS & SLUDGE STORAGE TANK



- NOTES:**
- ALL DIMENSIONS IN PLAN SHALL BE TO THE CENTER OF THE TANK WALLS AND SHALL BE TO THE CENTER OF THE TANK WALLS UNLESS OTHERWISE SPECIFIED.
 - ALL DIMENSIONS IN ELEVATION SHALL BE TO THE TOP OF THE TANK WALLS UNLESS OTHERWISE SPECIFIED.
 - ALL DIMENSIONS IN SECTION SHALL BE TO THE CENTER OF THE TANK WALLS UNLESS OTHERWISE SPECIFIED.
 - ALL DIMENSIONS IN GENERAL ARRANGEMENT SHALL BE TO THE CENTER OF THE TANK WALLS UNLESS OTHERWISE SPECIFIED.
 - ALL DIMENSIONS IN TRUSSER AND DETAILS SHALL BE TO THE CENTER OF THE TANK WALLS UNLESS OTHERWISE SPECIFIED.
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REVISIONS

NO	DATE	DESCRIPTION	BY	CHKD
1	12/15/84	ISSUE FOR PERMIT	J.D. RAO	K.A.C.
2	12/20/84	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
3	1/10/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
4	1/15/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
5	1/20/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
6	1/25/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
7	1/30/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
8	2/5/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
9	2/10/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
10	2/15/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
11	2/20/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
12	2/25/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
13	2/28/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
14	3/5/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
15	3/10/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
16	3/15/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
17	3/20/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
18	3/25/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
19	3/30/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.
20	4/5/85	REVISIONS AS PER ENGINEER'S COMMENTS	J.D. RAO	K.A.C.

WORKING DRAWING

DOS RIOS FACILITY

SAN ANTONIO, TEXAS

PRELOAD

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

DATE: 12/15/84

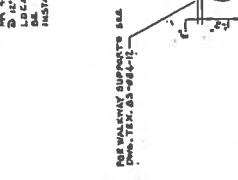
BY: J.D. RAO

CHKD: K.A.C.

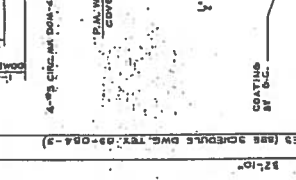
STRAND STAINLESS NOTES:

- 1. APPLY PRESTRESS BY JACKING TO A FORCE OF 44% OF THE TENSILE STRENGTH OF THE STRANDS. MEASURED FROM THE END OF THE STRANDS TO THE POINT OF APPLICATION OF THE FORCE.
- 2. STRANDS TO BE STRESSED STARTING WITH CENTER STRANDS, ALTERNATING TO 2 STRANDS EITHER SIDE OF CENTER STRANDS UNTIL ALL STRANDS ARE STRESSED AT ANY TIME.

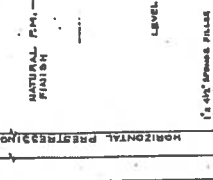
DETAIL - 4



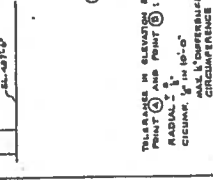
PANEL TEMPLATE



ENCASEMENT DETAIL



TYP. FLOOR PROJECTION DETAIL



GENERAL NOTES:

- 1. PRECAST CONCRETE WALLS SHALL BE CAST AND CURED IN PLACE.
- 2. MIN. 28-DAY CONCRETE CYLINDER STRENGTH: 4500 PSI.
- 3. USE TYPE 3E GRABIT.
- 4. DOME LIVE LOAD: 20 PSF.
- 5. MIN. LAP = 36 BAR DIAMETERS (SEE NOTES).
- 6. WELDED WIRE FABRIC TO CONFORM TO ASTM A185.
- 7. TO AVOID DIAPHRAGM BARS ON THIS DOME, SMALL COMMONS.
- 8. WALL BRACING PADS TO BE 40 DURS, WITH AN ULTIMATE STRENGTH OF 500 PSI AND A MIN. ECOMENT OF 500 PSI.
- 9. AFTER CASTING, PADS MUST BE REMOVED IN 14 DAYS.

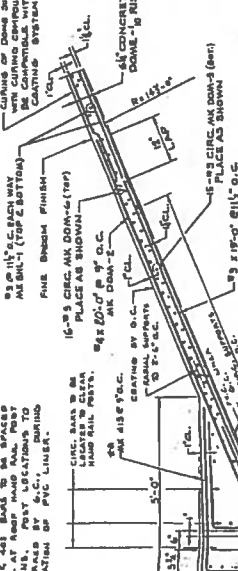
TYPICAL SECTION AT WALL



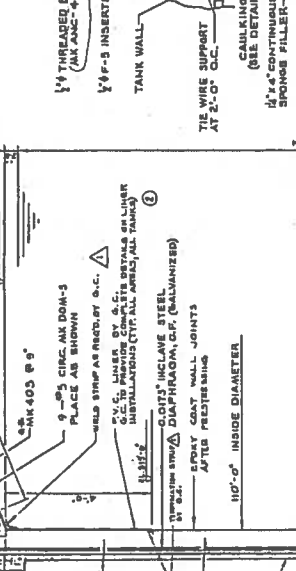
WALL PANEL NOTES:

- 1. PACK ALL INSERT HOLES ABOUT 1/2" BEFORE COMPLETION OF THEIR USE.
- 2. FINISH SURFACE OF PANEL TO BE TROWEL FINISHED.
- 3. PANELS NOT TO BE STRESSED UNTIL CONC. STRENGTH OF 3500 PSI IS ATTAINED.
- 4. LIFTING CABLES TO BE ATTACHED TO STRANDS AT JOINTS TO BE PATCHED & WELDED BY O.C.

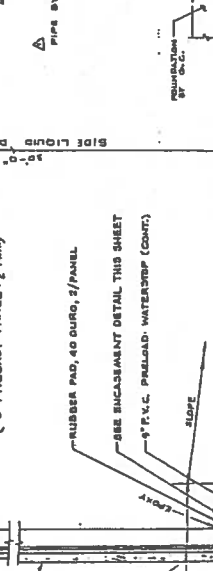
SECTION B-B



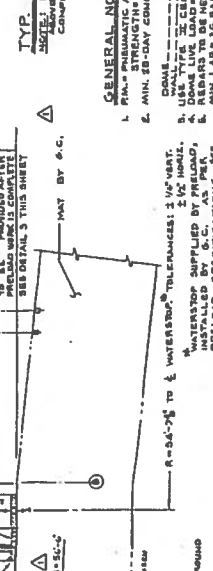
DETAIL 2



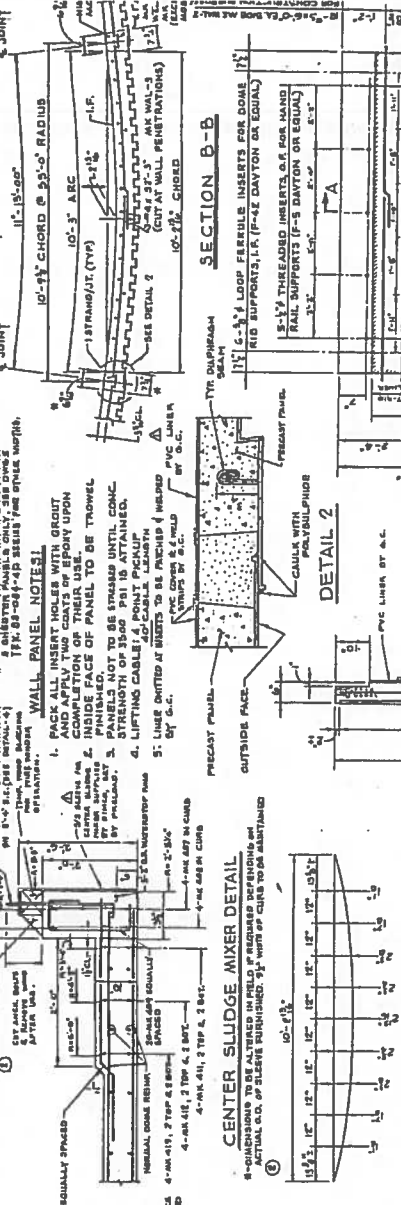
SECTION A-A



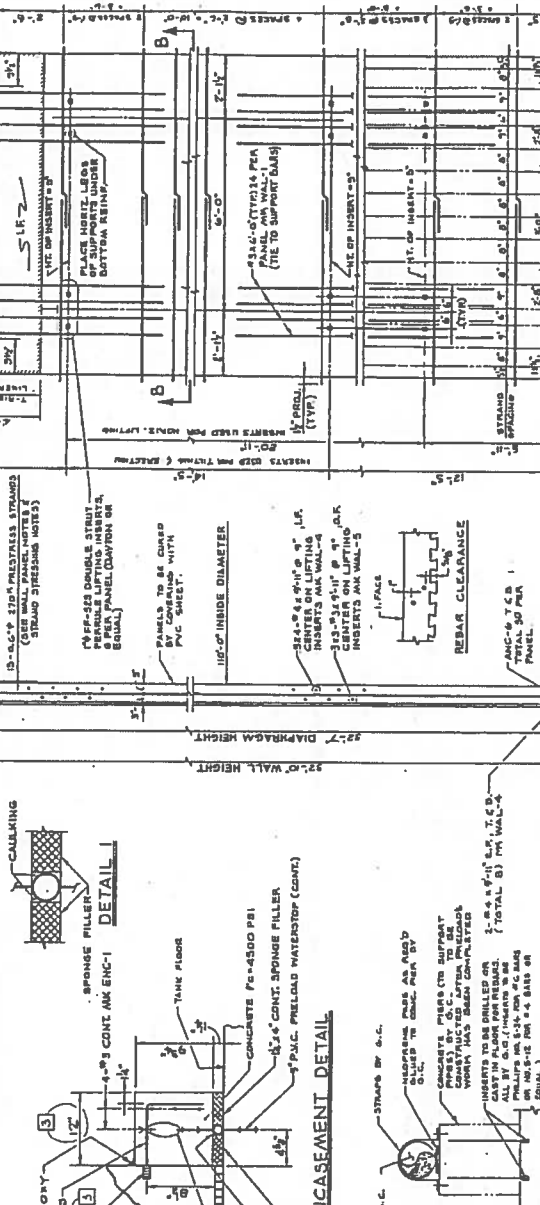
DETAIL 3



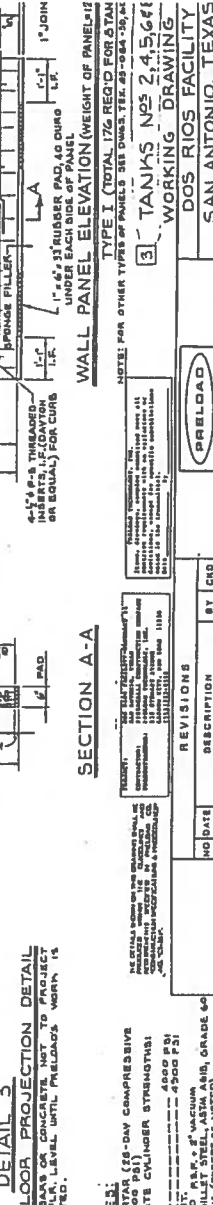
WALL PANEL ELEVATION (WEIGHT OF PANELS)



WALL PANEL ELEVATION (WEIGHT OF PANELS)



WALL PANEL ELEVATION (WEIGHT OF PANELS)



REVISIONS

NO.	DATE	DESCRIPTION	BY	CRD
1	10/15/83	AS PER SUBMITTALS	JD	RAO
2	10/15/83	AS PER SUBMITTALS	JD	RAO
3	10/15/83	AS PER SUBMITTALS	JD	RAO

PRELAP

PRELAP: 12" MIN. OVERLAP OF PRECAST CONCRETE PANELS AT JOINTS.

TYPE I PANEL DETAILS

TYPE I PANEL DETAILS: 1. PRECAST CONCRETE WALLS SHALL BE CAST AND CURED IN PLACE.

WORKING DRAWING

WORKING DRAWING: 1. PRECAST CONCRETE WALLS SHALL BE CAST AND CURED IN PLACE.

DDOS RIOS FACILITY

DDOS RIOS FACILITY: 1. PRECAST CONCRETE WALLS SHALL BE CAST AND CURED IN PLACE.

SAUN ANTONIO, TEXAS

SAUN ANTONIO, TEXAS: 1. PRECAST CONCRETE WALLS SHALL BE CAST AND CURED IN PLACE.

TANKS NOS 2,4,5,6,7

TANKS NOS 2,4,5,6,7: 1. PRECAST CONCRETE WALLS SHALL BE CAST AND CURED IN PLACE.

TYPE I PANEL DETAILS

TYPE I PANEL DETAILS: 1. PRECAST CONCRETE WALLS SHALL BE CAST AND CURED IN PLACE.

DATE: 5/21/83

DATE: 5/21/83: 1. PRECAST CONCRETE WALLS SHALL BE CAST AND CURED IN PLACE.

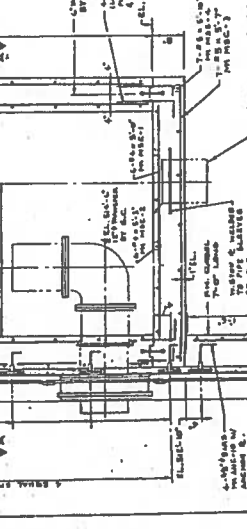
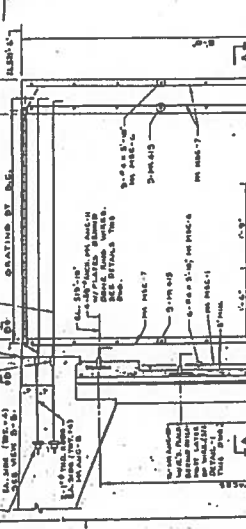
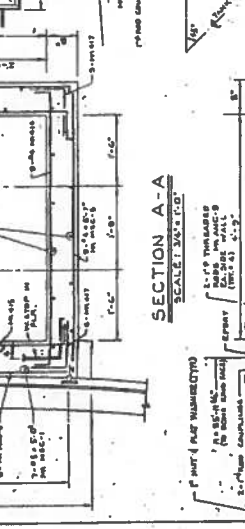
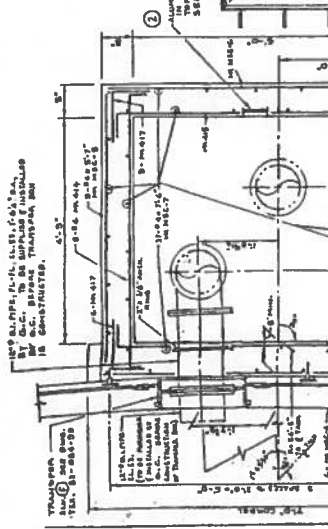
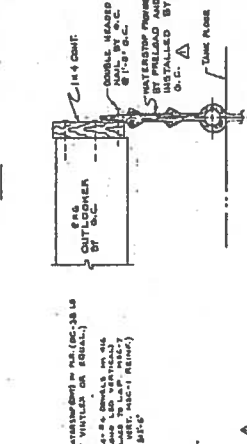
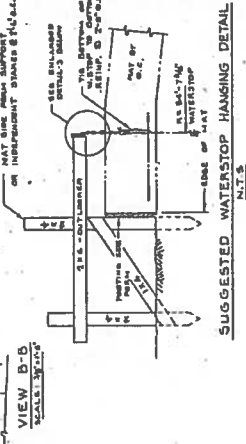
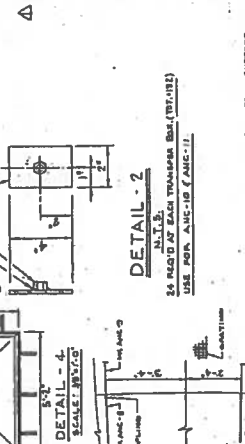
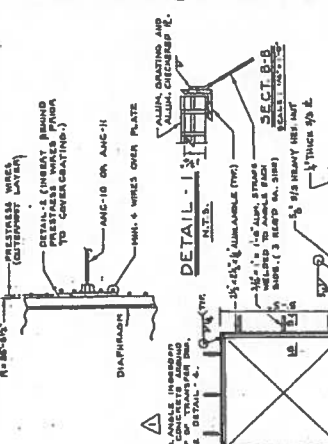
MISC. IRON SCHEDULE (FOR 3 TANKS)

QTY	SIZE	HT.	SKETCH	LOCATION
ANC-8 32	1" x 4"	103		TRANSFER BOX
ANC-9 158	1/2" x 4"	4940		PANEL JOINTS
ANC-10 2	3/4" x 7"	14		SLIPPER STRAP
ANC-11 765	1/2" x 6"	815		WATERSTOP
ANC-12 4	1" x 3"	19		VENT
ANC-13 8104	1/2" x 8"	1454		PRESTRESS ANCHORAGE
ANC-14 32	1" x 6"	845		TRANSFER BOX
ANC-15 143	1/2" x 6"	123		TRANSFER BOX
ANC-16 64	1/2" x 6"	213		TRANSFER BOX
ANC-17 180	1/2" x 6"	238		TRANSFER BOX
ANC-18 180	1/2" x 6"	238		TRANSFER BOX

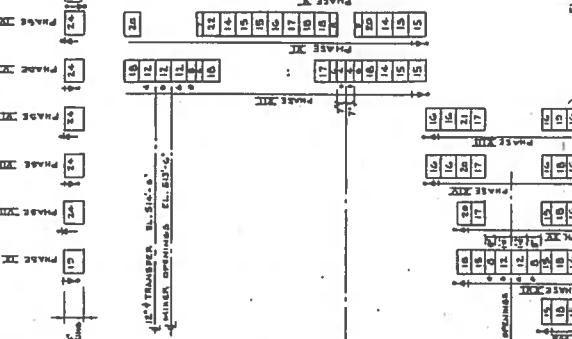
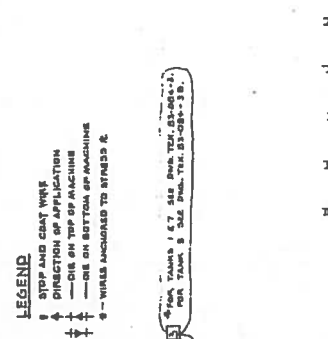
PRESTRESS WIRE QUANTITIES

PHASE	WALL	WEIGHT	DOSE	REMARKS
I	113	3080	24	632
II	24	632	24	632
III	24	632	24	632
IV	24	632	24	632
V	24	632	24	632
VI	24	632	24	632
VII	24	632	24	632
VIII	24	632	24	632
IX	289	7250	19	500
X	243	6086	19	500
XI	185	4641	19	500
XII	121	3035	19	500
XIII	119	2988	19	500
XIV	84	2157	19	500
XV	122	3061	19	500
XVI	48	1204	19	500
XVII	12	301	19	500
TOTAL		1348	187	4924
TOTAL		33816	780	4924

TOTAL OVERALL HEIGHT OF PRESTRESS PHASES = 120'
 PRESTRESS WIRE QUANTITIES LISTED ARE FOR ONE DIODETRA TANK ONLY FOR PRESTRESS REQUIREMENTS OF SLOPES
 FROM TANK TO TANK DIVISION



TYP. SECTION AT TRANSFER BOX
 SCALE: 3/8" = 1'-0"
 (TOTAL 6 REINFORCING DIODETRA TANKS, TANKS NO. 2, 3, 6 & 7 AS SHOWN, TANKS NO. 1, 4, 5 & 8 OPPOSITE HAND.)
 FOR PHASES 8, 9, 10 & 11 SEE PHASE IRON SCHEDULE THIS SHEET.

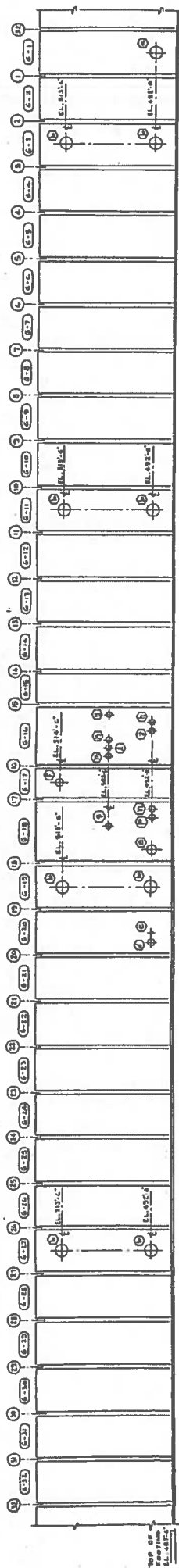


DIGESTER TANKS WIREWINDING SCHEDULE
 NOTES:
 1. WIREWINDING SEQUENCE IS BASED ON WIRE DIAMETER OR SIZE FOR WALL. 1/2" FOR 600 R.I.D. 3/8" AND 1/4" FOR 450 R.I.D. WALLS.
 2. INITIAL FORCE IN WIRE (BASED ON SIZES INDICATED):
 1/2" DOM R.I.D. - 2500 LBS.
 3/8" DOM R.I.D. - 2000 LBS.
 1/4" DOM R.I.D. - 1500 LBS.
 3. PROVIDE ONE INCH PNEUMATIC MORTAR PROTECTIVE COVER OVER OUTERMOST LAYER OF WIRE.
 4. WIREWINDING SEQUENCE SHOWN SHOULD NOT BE ALTERED WITHOUT PRIOR APPROVAL BY FIELD ENGINEER.
 5. WIREWINDING MUST COMMENCE AFTER CONCRETE HAS ATTAINED A STRENGTH OF 3000 P.S.I.
 6. TANKS = 2, 4, 5, 6 & 8

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD.
1	10/1/58	AS PER ENGINEER.	JD	RD
2	10/1/58	REVISIONS TO TRANSFER BOX DETAILS.	JD	RD
3	10/1/58	REVISIONS TO DIGESTER TANKS DETAILS.	JD	RD

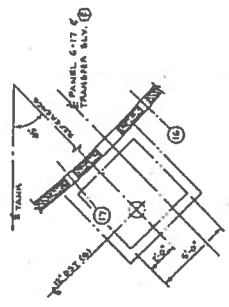
DOS RIOS FACILITY
 SAN ANTONIO, TEXAS
 DIGESTER TANKS 2, 4, 5, 6, 8 WIREWINDING SC
 TRANSFER BOX DETAILS & MISC. IRON SC
 DRAWING NO. 84 PL.
 DATE: 5/22/55



DEVELOPED ELEVATION
 (OUTSIDE FACE OF WALL - SLURGE)
 SCALE: 1/8" = 1'-0"

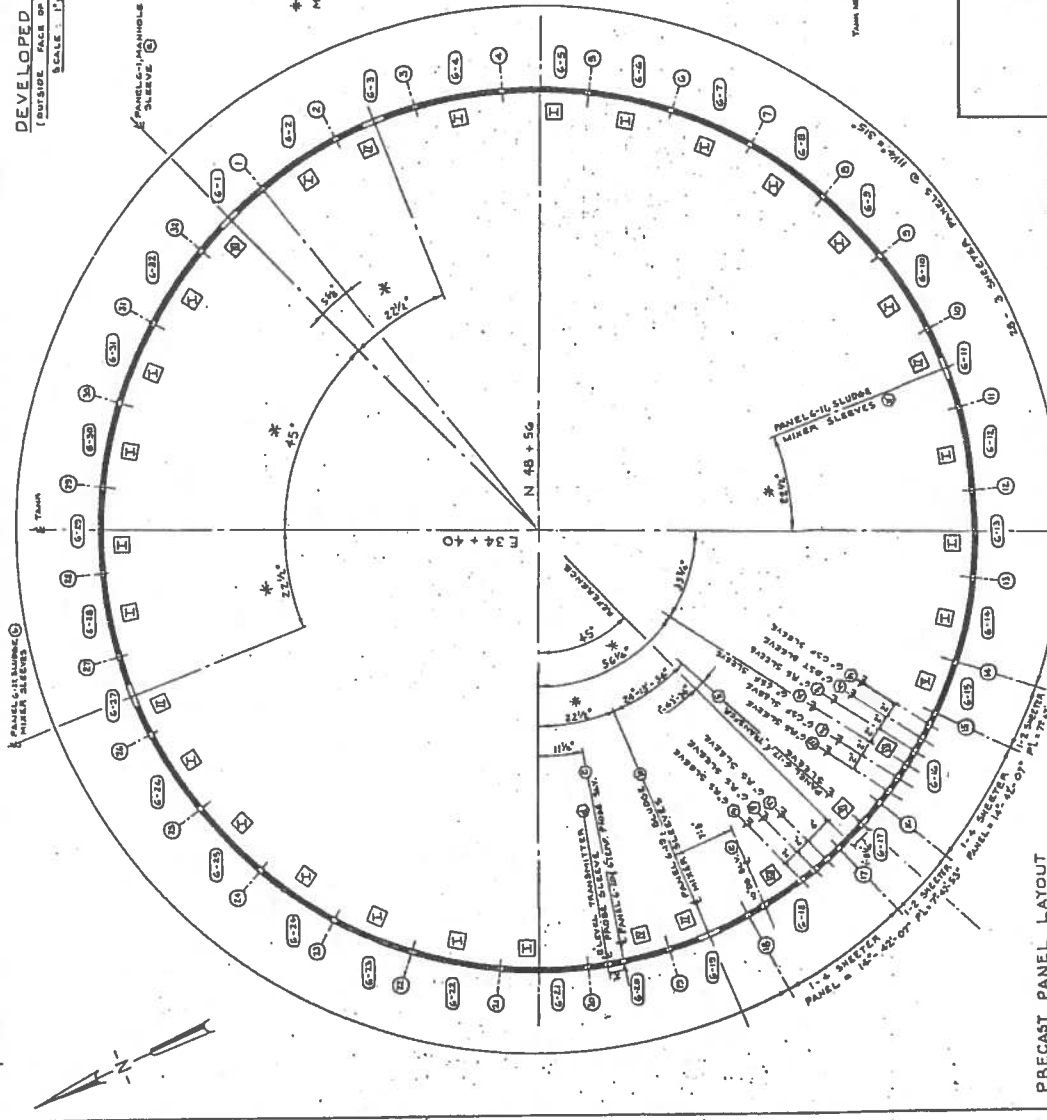
PANEL LOCATIONS: CUMULATIVE ANGLES

C.L. PANEL NO. (C-1 TO C-32)	J-1 TO J-32
C.L. PANEL NO. 1	0 - 0 - 0
C.L. PANEL NO. 2	3 - 37 - 28
C.L. PANEL NO. 3	16 - 32 - 28
C.L. PANEL NO. 4	29 - 07 - 28
C.L. PANEL NO. 5	39 - 32 - 28
C.L. PANEL NO. 6	50 - 37 - 28
C.L. PANEL NO. 7	61 - 32 - 28
C.L. PANEL NO. 8	73 - 07 - 15
C.L. PANEL NO. 9	84 - 32 - 28
C.L. PANEL NO. 10	96 - 37 - 28
C.L. PANEL NO. 11	108 - 32 - 28
C.L. PANEL NO. 12	119 - 07 - 28
C.L. PANEL NO. 13	129 - 32 - 28
C.L. PANEL NO. 14	140 - 37 - 28
C.L. PANEL NO. 15	151 - 32 - 28
C.L. PANEL NO. 16	159 - 07 - 28
C.L. PANEL NO. 17	174 - 32 - 28
C.L. PANEL NO. 18	182 - 16 - 23
C.L. PANEL NO. 19	186 - 12 - 13
C.L. PANEL NO. 20	208 - 07 - 23
C.L. PANEL NO. 21	218 - 32 - 28
C.L. PANEL NO. 22	230 - 37 - 28
C.L. PANEL NO. 23	241 - 32 - 28
C.L. PANEL NO. 24	253 - 07 - 15
C.L. PANEL NO. 25	264 - 32 - 28
C.L. PANEL NO. 26	275 - 37 - 28
C.L. PANEL NO. 27	288 - 32 - 28
C.L. PANEL NO. 28	288 - 07 - 19
C.L. PANEL NO. 29	308 - 32 - 28
C.L. PANEL NO. 30	320 - 37 - 28
C.L. PANEL NO. 31	331 - 32 - 28
C.L. PANEL NO. 32	343 - 07 - 28
C.L. PANEL NO. 32	354 - 32 - 28
C.L. PANEL NO. 32	360 - 00 - 00



PLAN - TRANSFER BOX ORIENTATION
 SCALE: 1/8" = 1'-0"

* 1/2" OF OPENINGS MUST BE MAINTAINED AT ANGLES SHOWN.



PRECAST PANEL LAYOUT
 SCALE: 1/8" = 1'-0"

PANEL TYPES (BY TYPE)

TYPE II - 22
 TYPE III - 4
 TYPE III - 1
 TYPE III - 1
 TYPE III - 1
 TYPE III - 1
 TYPE III - 1

JOINT WIDTH (ON FACE)
 ALL JOINTS (EXCEPT AS NOTED) 7/16"
 JOINTS (C) & (D) 7/16"
 JOINTS (E) & (F) 7/16"

LEGEND
 (C) = JOINT NUMBERS
 (D) = PANEL NUMBERS
 (E) = PANEL TYPE
 (F) = PANEL SLEEVE TYPE

WORKING DRAWING

DOS RIOS FACILITY
SAN ANTONIO, TEXAS
PRIMARY DIGESTER TAN
TANK NO. 6 PANEL LAYOUT
DATE: 5/24/85
BY: [Signature]
CHECKED: [Signature]
DESIGNED: [Signature]
REVISION: [Signature]

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK

PREPARED BY: [Signature]

DESIGNED BY: [Signature]

CHECKED BY: [Signature]

DATE: 5/24/85

1" = 3" SHEET A
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET B
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET C
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET D
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET E
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET F
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET G
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET H
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET I
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET J
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET K
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET L
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET M
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET N
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET O
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET P
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET Q
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET R
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET S
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET T
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET U
 PANEL & 100'-00" TO 100'-00"

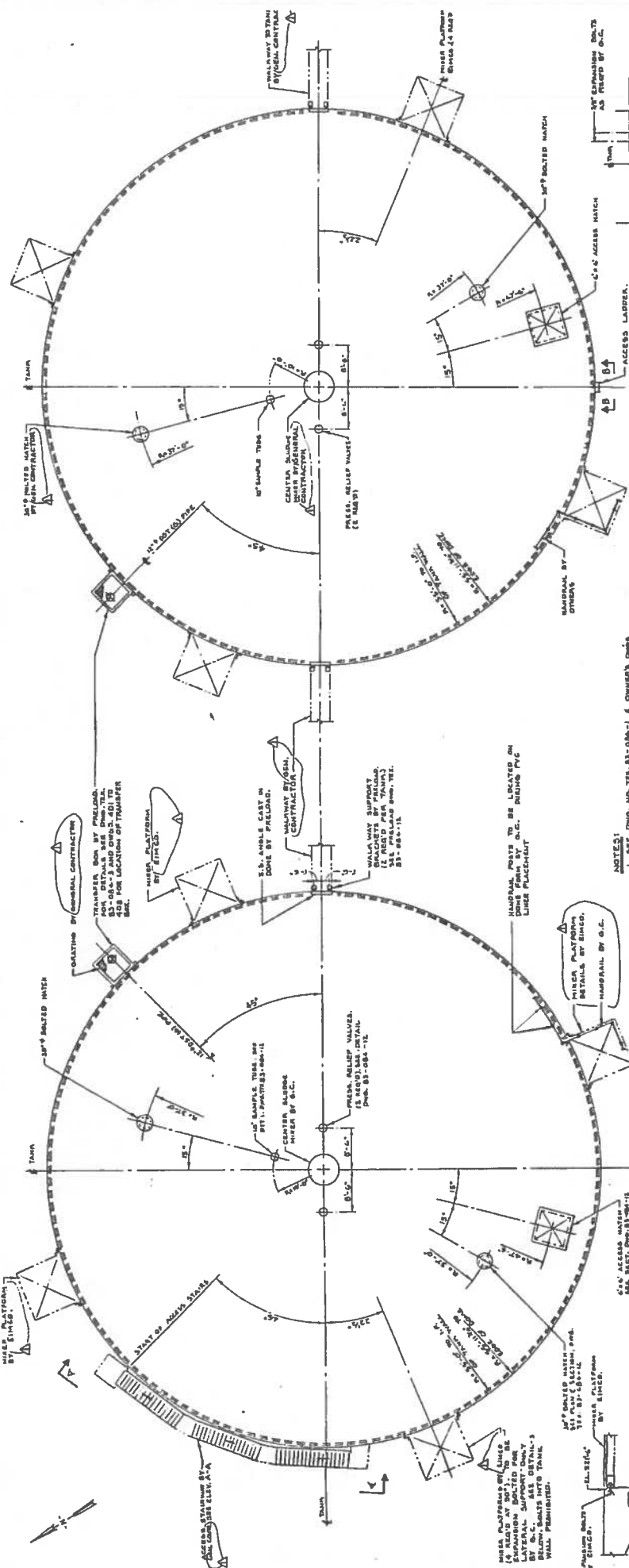
1" = 3" SHEET V
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET W
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET X
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET Y
 PANEL & 100'-00" TO 100'-00"

1" = 3" SHEET Z
 PANEL & 100'-00" TO 100'-00"



ROOF PLAN
SCALE: 1" = 10'

TANK NO. 1 SHOWN, TANK NO. 2 IS SIMILAR.
(SEE DWG. THE B3-08A-1)

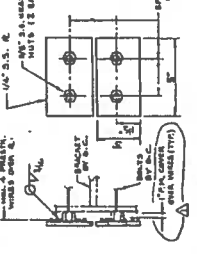
DETAIL-3
SCALE: 1" = 10'

EXPANSION JOINT BY SINGERS.
SEE DETAIL-3 FOR DETAILS OF JOINT.
WALKWAY TO TANK (SEE DWG. THE B3-08A-1)

- NOTES:**
- SEE DWG. THE B3-08A-1 FOR DETAILS OF MISER PLATFORMS AND MISER PLATFORMS TO BE EXPANDED AT 30".
 - LOCATION OF ROOF SLEEVES IN EACH TANK SHALL BE DETERMINED BY SINGERS BEFORE CASTING OF ROOF CONCRETE.
 - ALL ROOF PENETRATIONS FOR ALL TANKS BY O.C.

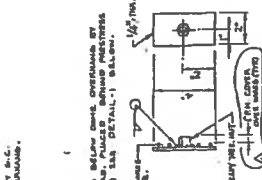
ROOF PLAN
SCALE: 1" = 10'

TANK NO. 5 SHOWN, TANK NO. 6 IS SIMILAR.



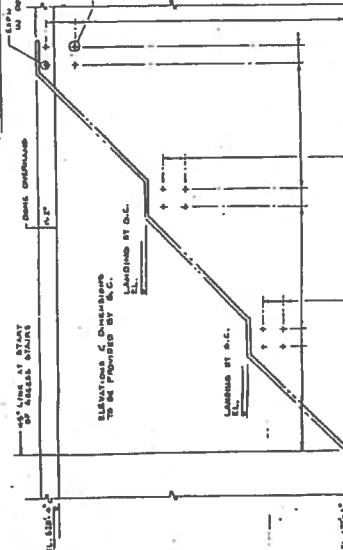
DETAIL-2
SCALE: 1" = 10'

MS. AND LOCATIONS OF MISERS TO BE SUPPLIED BY O.C.



DETAIL-1
SCALE: 1" = 10'

QUANTITY TO BE SUPPLIED BY O.C.



ELEVATION A-A
SCALE: 1" = 10'

ACCESS STAIRS, SUPPORT DETAIL BY O.C.

NO.	DATE	DESCRIPTION	BY	CHKD.
1	11/15/11	ISSUED FOR CONSTRUCTION	JD	AS

PRELOAD

100% OF THE WEIGHT OF THE STRUCTURE (CONCRETE AND STEEL) SHALL BE APPLIED TO THE STRUCTURE BEFORE CASTING OF THE ROOF CONCRETE. THIS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE DESIGNER'S SPECIFICATIONS.

WORKING DRAWINGS

ELEVATION B-B (INTS)

LABOR SUPPORT DETAILS

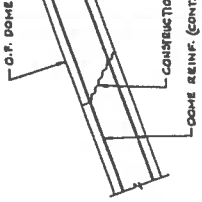
DOCS RIOS FACILITY

SAN ANTONIO, TEXAS

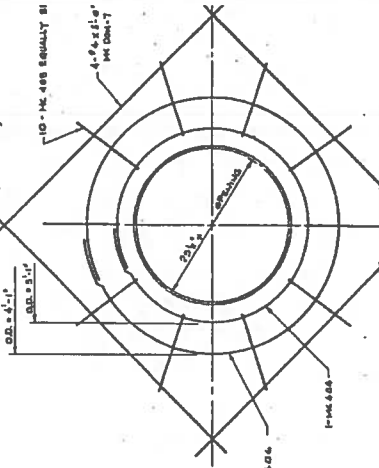
PRIMARY DIGESTERS

ROOF PLANS AND DETAIL

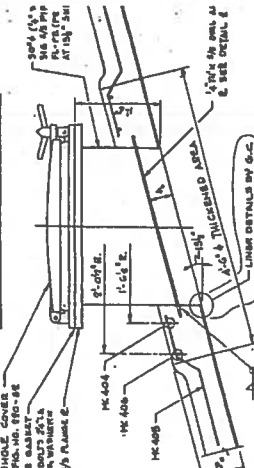
DESIGNER: JD
CHECKER: PD
DATE: 9/21/11



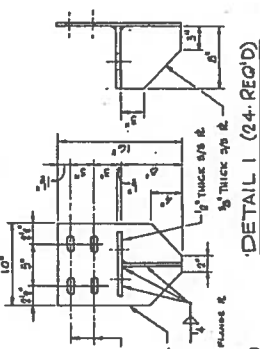
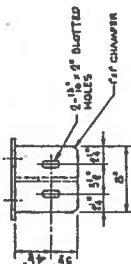
DOUME CONSTRUCTION JOINT DETAIL (ALL TANKS)



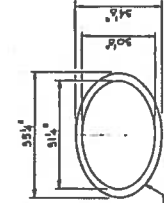
PLAN AT 30' BOLTED HATCH



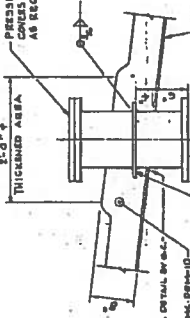
**SECTION AT 30' BOLTED HATCH
TOTAL 18 REQ'D (2 PER TANK)
(INCLUDING SLUDGE STORAGE TANKS)**



DETAIL 1 (24 REQ'D)

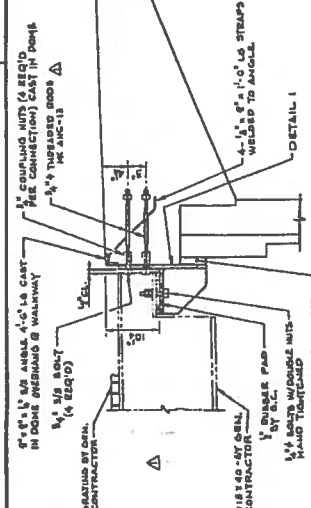


**DETAIL 2
OVAL ANCHOR RING
(18 REQ'D)**

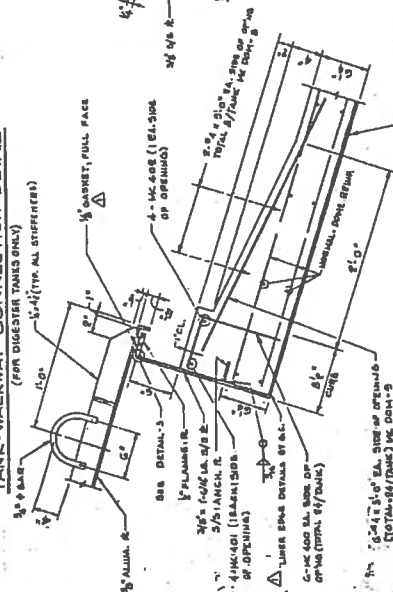


**DETAIL 3
DOME PENETRATION DETAIL**

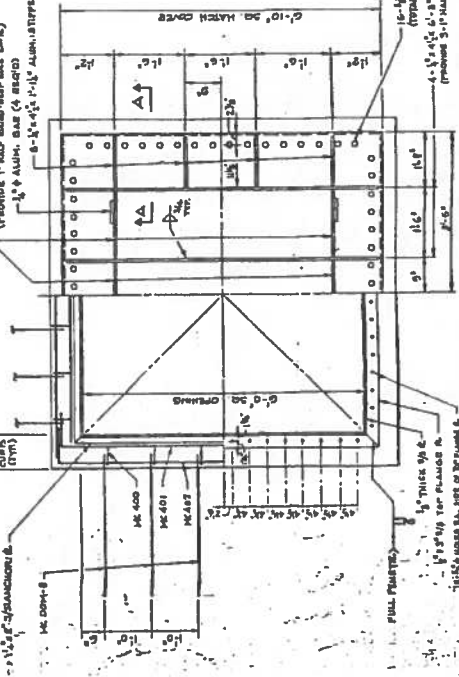
NOTES:
1. ALL STAINLESS STEEL SHALL BE TYPE 316.
2. ALL ROOF SLEEVES, HATCHES AND MANHOLES SHALL BE DESIGNED PER TANK MANUFACTURER'S CONNECTIONS.



**TANK-WALKWAY CONNECTION DETAIL
(FOR DIGESTER TANKS ONLY)**



SECTION A-A



ACCESS HATCH PLAN (FOR DIGESTER TANKS)

ALUMINUM SHALL CONFORM TO CSI-75

18-6\"/>

2-1/2\"/>

NO.	DATE	DESCRIPTION	BY	CHK'D
1		ISSUED FOR CONSTRUCTION	J.P. BLOOM	
2		REVISED PER COMMENTS	J.P. BLOOM	

REVISIONS

PROJECT
DSS RIOS FACILITY
SAN ANTONIO, TEXAS

WORKING DRAWINGS
PRIMARY DIGESTERS & SLUDGE STORAGE
ROOF DETAILS

DESIGNED BY
CHECKED BY
DATE

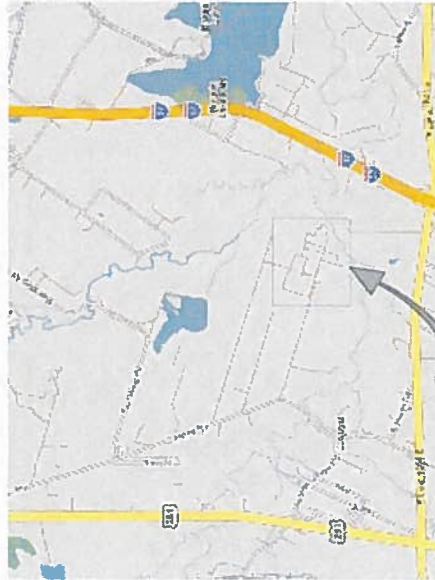
SAN ANTONIO WATER SYSTEM



DOS RIOS WATER RECYCLING CENTER (DRWRC) DIGESTER MIXING AND SYSTEM ENHANCEMENTS PHASE 1

SAWS JOB No: 07-6500
SAWS SOLICITATION NO: B-10-031-MF

VOLUME 2 OF 2



LOCATION MAP
NTS



DOS RIOS WATER RECYCLING CENTER
3485 VALLEY RD
SAN ANTONIO, TX 78221



LOCATION MAP
NTS



ORIGINAL
BY: R. E. KILIAN
DATE: 08/20/07

RECORD DRAWINGS
THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED
IN PART ON INFORMATION PROVIDED BY OTHERS

THIS DRAWING SET WAS PREPARED ONLY FOR THE
PROJECT AND IS NOT TO BE USED FOR ANY OTHER
PURPOSES AND IS NOT TO BE USED FOR CONSTRUCTION

Date: 08/20/07
By:

SAWS JOB NO. 07-6500
DOS RIOS DIGESTER
MIXING AND SYSTEM
ENHANCEMENTS PHASE 1

carollo
Engineers...Working Wonders With Water™
TBPE No. F-882

8918 Tesoro Drive, Suite 400
San Antonio, Texas 78217
Phone: 210-829-5612

LNW
engineers | architects | contractors
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Dallas, Texas 75243
Phone: 214-343-3333
www.lnw.com

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HARTMAN
ENGINEERS
INCORPORATED
10000 N. Loop West, Suite 1000
Dallas, Texas 75243
Phone: 214-343-3333
www.hei.com

NO.	DATE	REVISIONS	APP.
RECORD DRAWING			



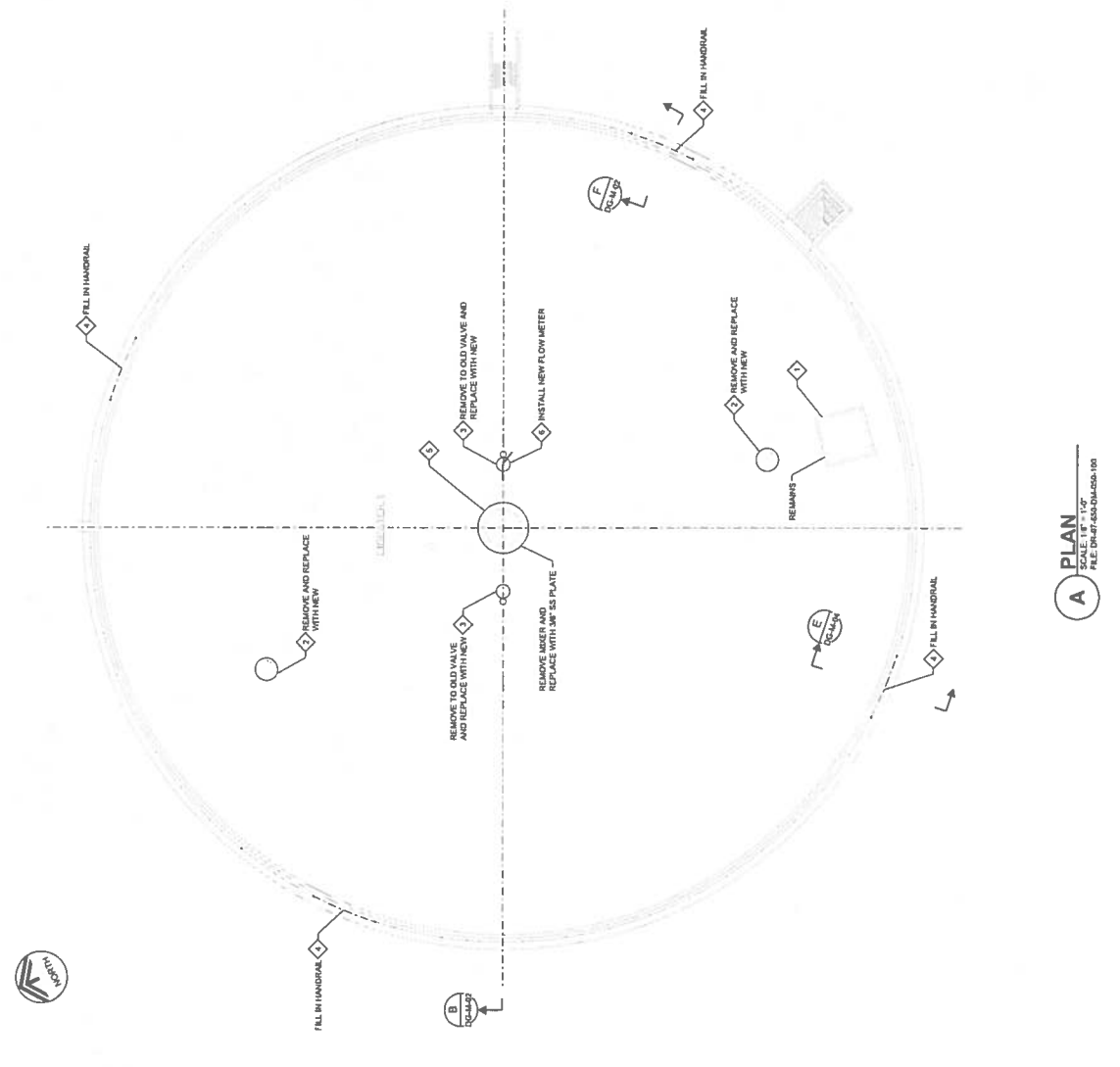
ORIGINAL
STAMPED BY
R. KELLY
06-25-10
10:20

SAWS JOB No. 07-6500
DRWRC Digester Mixing and
System Enhancements - Phase 1
DIGESTER 4 GAS APPURTENANCES

Drawn by: LAX
Checked by: KJB
REK
Drawing: DG-M-01
Sheet: 25 of 163

- GENERAL NOTES:**
- NOTES IN DRAWINGS 06-43 AND 06-44 APPLY TO ALL DRAWINGS. DIGESTERS ARE PRESTRESSED CONCRETE TANKS. CONTRACTOR SHALL NOT MAKE ANY PENETRATIONS TO DIGESTERS UNDER ANY CIRCUMSTANCES.
 - HAZARDOUS AREAS: ALL INSTALLATION SHALL MEET NEC99. CLASS 1, DIV 1 - TANK INTERIOR.
 - CONTRACTOR SHALL REVIEW DIGESTER CONSTRUCTION SHOP DRAWINGS AND NOT CANCELLED RECOMMENDED LOADING FOR GULCH. BEFORE PERFORMING ANY DISMANTLING WORK. SEE SPECIFICATION SECTION 11392.

- KEY NOTES:**
- EXISTING PLATE TO REMAIN.
 - REPLACE 3" DIA HATCH (TYP OF 2) SEE DETAIL (A).
 - NEW PRESSURE TRANSDUCER VALVE AND PULSE TRANSDUCER (TYP OF 2) SEE DETAIL (B).
 - ADD NEW HORIZONTAL PER TYPICAL (C) EXTEND TO NEAREST SUPPORT BOTH SIDES AND CONNECT TO EXISTING (TYP OF 4).
 - INSTALL 3/8" THICK 316 ST. PLATE SEE DETAIL (D).
 - DOWELING NOT SHOWN FOR CLARITY. SEE SECTION (B).



A PLAN
SCALE: 1/8" = 1'-0"
FILE: DWG/25042656.rvt

NO.	DATE	REVISIONS	APP.
RECORD DRAWING			



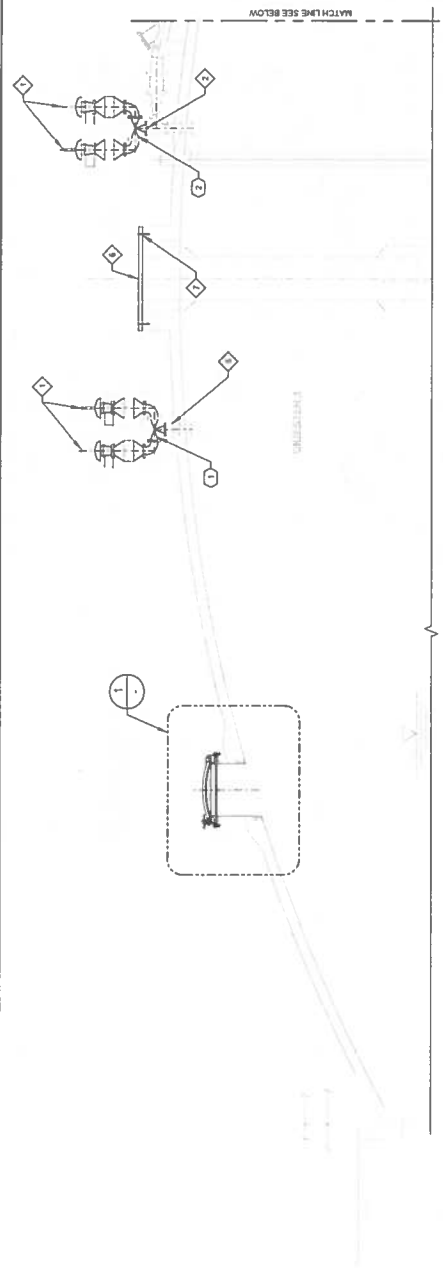
ORIGINAL
STAMPED BY
DATE: 06-25-10
BY: [Signature]

SAWS JOB NO. 07-6500
DRWRC Enhancements - Phase I
MECHANICAL SECTIONS AND DETAILS
Drawing: **DC-M-02**
Sheet: **28** of **183**

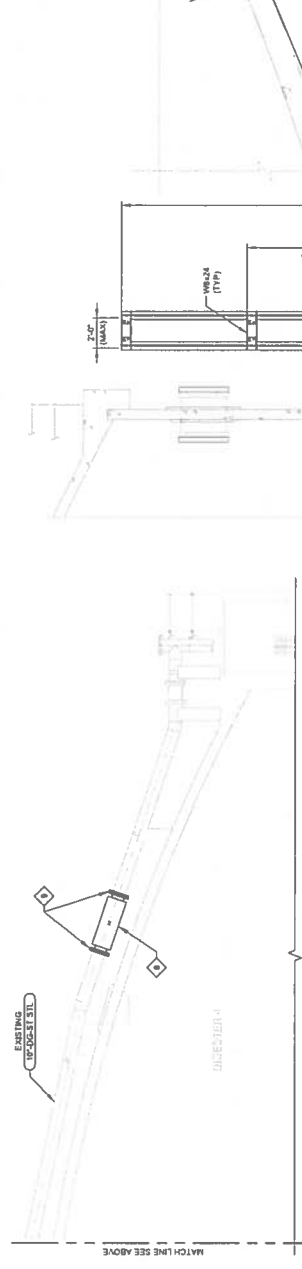
- GENERAL NOTES:**
- NOTES IN DRAWINGS 06-043 AND 06-044 APPLY TO ALL DRAWINGS. DIGESTERS ARE PRESTRESSED CONCRETE TANKS. CONTRACTOR SHALL NOT MAKE ANY PENETRATIONS TO DIGESTERS UNDER ANY CIRCUMSTANCES.
 - HAZARDOUS AREAS: ALL INSTALLATION SHALL MEET IEC603. CLASS 1, DIV 1 - TANK INTERIOR AREAS ABOVE AND AROUND THE DIGESTER COVER AND AROUND THE POINT OF THE COVER AND 3 FT FROM ANY WALL.
 - CLASS 1, DIV 2 - ENVELOPE 18 FT ABOVE THE DIV 1 AREA OVER THE COVER AND 3 FT BEYOND THE DIV 1 AREA AROUND THE TANK WALL.
 - CONTRACTOR SHALL REVIEW DIGESTER CONSTRUCTION SHOP DRAWINGS AND NOT EXCEED RECOMMENDED LOADING OR DOME. CONTRACTOR SHALL COMPLETELY CLEAN DIGESTER OF ALL CONTENTS BEFORE PERFORMING ANY DEMOLITION WORK. SEE SPECIFICATION SECTION 11342.

- KEY NOTES:**
- NEW PRESSURE / VACUUM RELIEF VALVE, FLAME ARRESTER, AND JAWBY VALVE ASSEMBLIES.
 - CONNECT NEW DG EQUIPMENT TO EXISTING 6" TEE.
 - NEW NONSPRINGING GAS-TIGHT 30" DIA MANHOLE COVER.
 - NEW 1/4" PALL FACE RESPIRATOR GASKET WITH NEW 3/16 STL HARDWARE.
 - CONNECT NEW DG EQUIPMENT TO EXISTING DG FLANGE.
 - PROVIDE 3/16 STL PLATE W/ STIFFENER PLATES PER DETAIL MATCH EXISTING BOLT DRUMS AND MOUNT OVER EXISTING INSULATED BURNING FLANGE.
 - GAS TIGHT 3/4" x 1/4" WIDE CONTINUOUS NEOPRENE PAD.
 - ULTRASONIC TRANSIT TIME GAS FLOW METER.
 - CONTRACTOR TO CUT EXISTING PIPING AND WELD NEW FLANGES PER SPECIFICATION SECTION 15355 FOR CONNECTION TO THE NEW FLOW METER.

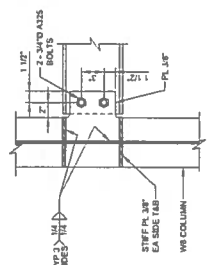
- KEY TAGS:**
- 1 - [Symbol]
 - 2 - [Symbol]
 - 3 - [Symbol]



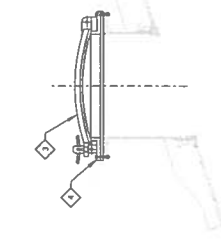
B SECTION
SCALE: 1/4" = 1'-0"
FILE: D:\07-650-DC-06-00-000.dwg



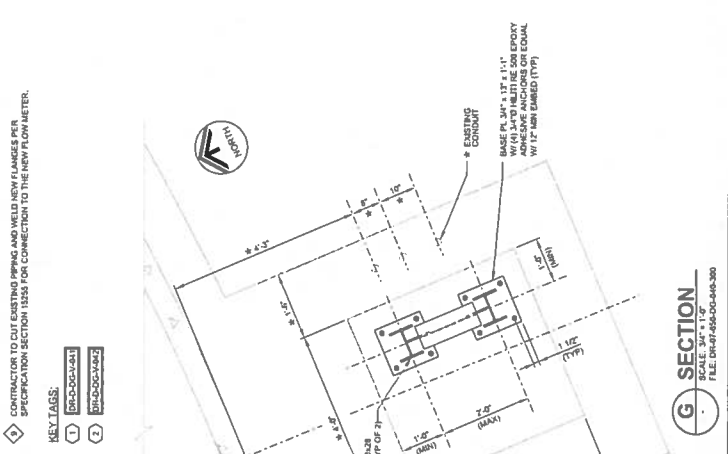
B SECTION
SCALE: 1/4" = 1'-0"
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7 DETAIL
SCALE: 1/4" = 1'-0"
FILE: D:\07-650-DC-06-00-000.dwg



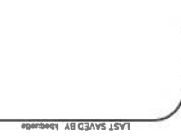
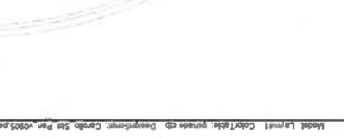
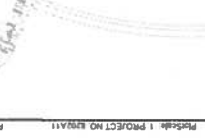
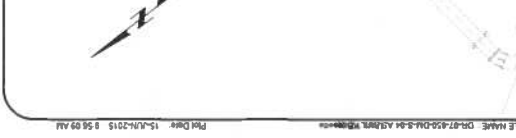
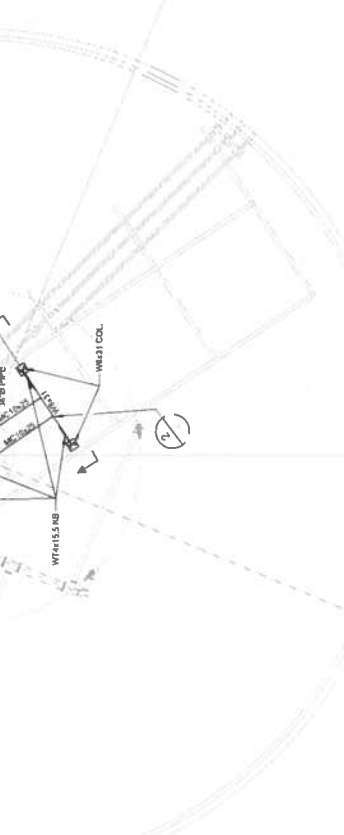
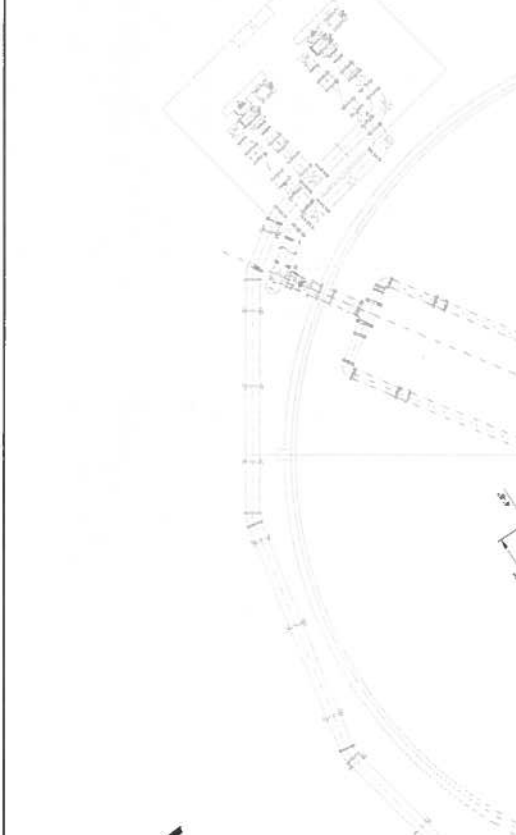
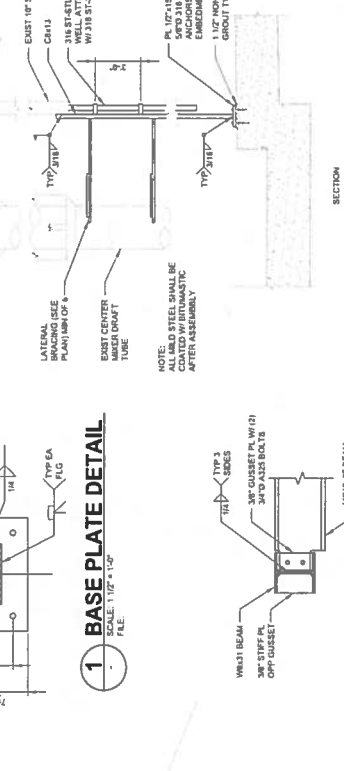
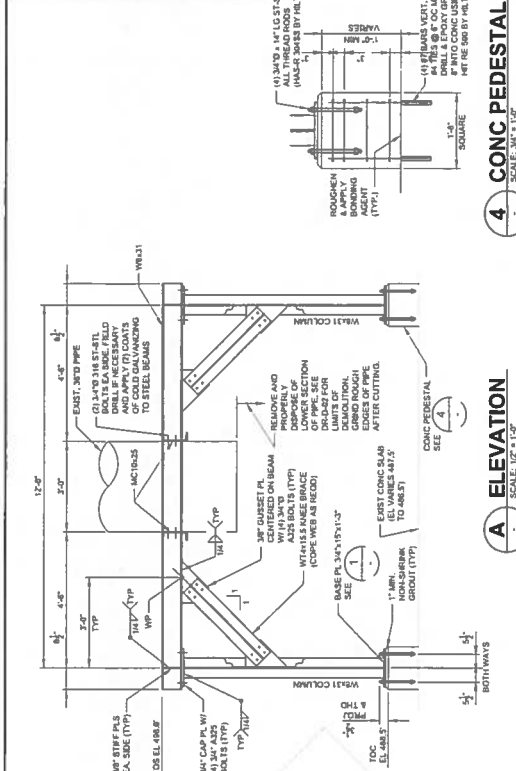
1 30" DIA MANWAY DETAIL
SCALE: NTE
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F SECTION
SCALE: 3/4" = 1'-0"
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G SECTION
SCALE: 3/4" = 1'-0"
FILE: D:\07-650-DC-06-00-000.dwg

* FIELD VERIFY ALL EXISTING DIMENSIONS PRIOR TO CONSTRUCTION



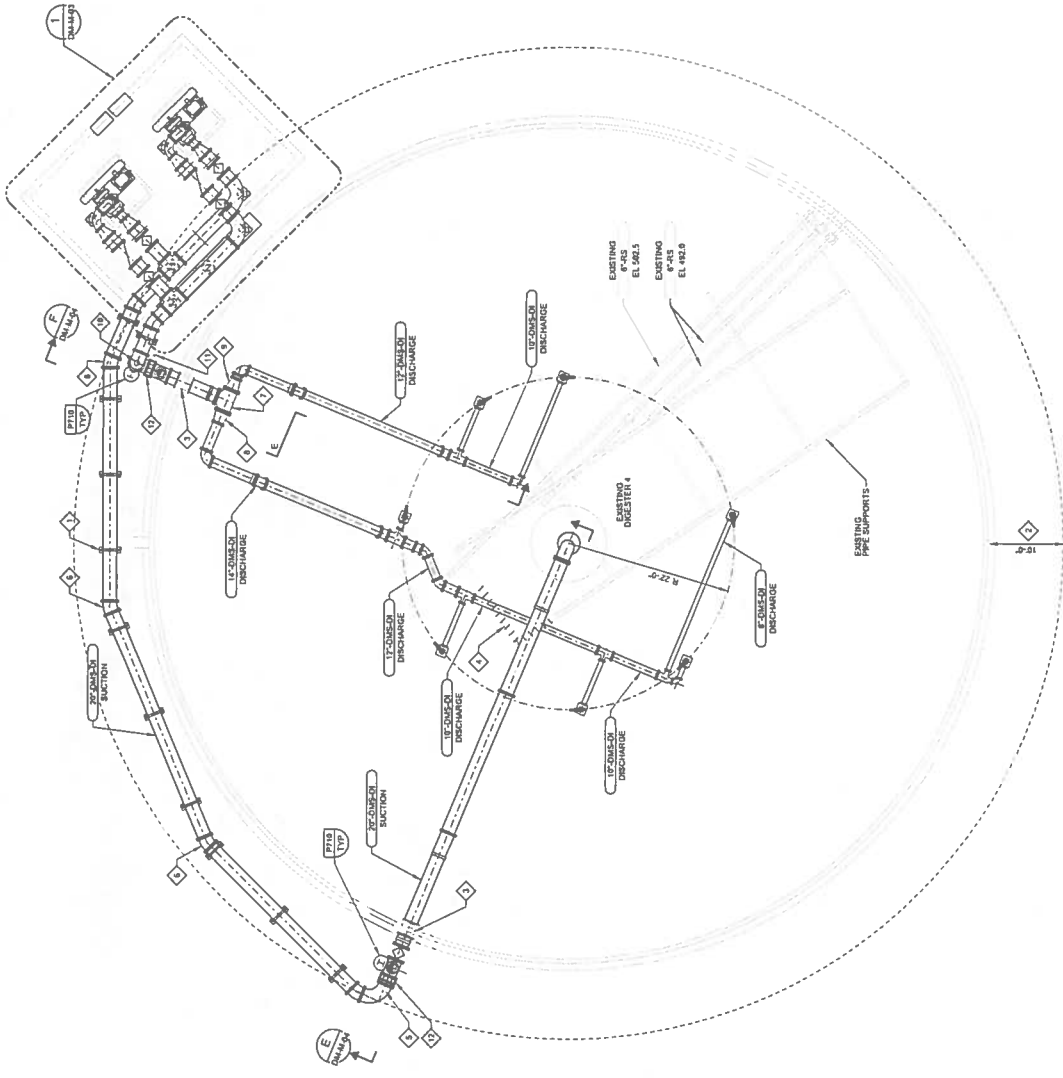
APP.	REVISORS	DATE	NO.

RECORD DRAWING

GENERAL NOTES:

1. ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED SHALL APPLY TO THE EXTERIOR OF THE PIPE UNLESS NOTED OTHERWISE.
2. ALL EXISTING DIMENSIONS AND ELEVATIONS ARE TO BE VERIFIED BY THE CONTRACTOR TO VERIFY THE ACCURACY OF THE INFORMATION PROVIDED.
3. ALL DIMENSIONS SHALL BE TO THE CENTERLINE UNLESS OTHERWISE NOTED.

- KEY NOTES:**
- 1. PIPE SUPPORT PER (SEE) AND (SEE) (TYP).
 - 2. ALL EXISTING PIPES TO BE MAINTAINED SHALL BE IDENTIFIED BY A CLASS 1, LOW VOLTAGE INTERLOCK COVER ENVELOPE TO BE INSTALLED AT THE POINT OF THE COVER AND 5 FT FROM ANY WALL.
 - 3. ALL EXISTING PIPES TO BE MAINTAINED SHALL BE IDENTIFIED BY A CLASS 1, LOW VOLTAGE INTERLOCK COVER ENVELOPE TO BE INSTALLED AT THE POINT OF THE COVER AND 5 FT FROM ANY WALL.
 - 4. ALL EXISTING PIPES TO BE MAINTAINED SHALL BE IDENTIFIED BY A CLASS 1, LOW VOLTAGE INTERLOCK COVER ENVELOPE TO BE INSTALLED AT THE POINT OF THE COVER AND 5 FT FROM ANY WALL.
 - 5. ALL EXISTING PIPES TO BE MAINTAINED SHALL BE IDENTIFIED BY A CLASS 1, LOW VOLTAGE INTERLOCK COVER ENVELOPE TO BE INSTALLED AT THE POINT OF THE COVER AND 5 FT FROM ANY WALL.
 - 6. ALL EXISTING PIPES TO BE MAINTAINED SHALL BE IDENTIFIED BY A CLASS 1, LOW VOLTAGE INTERLOCK COVER ENVELOPE TO BE INSTALLED AT THE POINT OF THE COVER AND 5 FT FROM ANY WALL.
 - 7. ALL EXISTING PIPES TO BE MAINTAINED SHALL BE IDENTIFIED BY A CLASS 1, LOW VOLTAGE INTERLOCK COVER ENVELOPE TO BE INSTALLED AT THE POINT OF THE COVER AND 5 FT FROM ANY WALL.
 - 8. ALL EXISTING PIPES TO BE MAINTAINED SHALL BE IDENTIFIED BY A CLASS 1, LOW VOLTAGE INTERLOCK COVER ENVELOPE TO BE INSTALLED AT THE POINT OF THE COVER AND 5 FT FROM ANY WALL.
 - 9. ALL EXISTING PIPES TO BE MAINTAINED SHALL BE IDENTIFIED BY A CLASS 1, LOW VOLTAGE INTERLOCK COVER ENVELOPE TO BE INSTALLED AT THE POINT OF THE COVER AND 5 FT FROM ANY WALL.
 - 10. ALL EXISTING PIPES TO BE MAINTAINED SHALL BE IDENTIFIED BY A CLASS 1, LOW VOLTAGE INTERLOCK COVER ENVELOPE TO BE INSTALLED AT THE POINT OF THE COVER AND 5 FT FROM ANY WALL.



A DIGESTER 4 PLAN

FILE: DR-07-600-04-058-110



DESIGNED BY: LAR
 DRAWN BY: e18
 CHECKED BY: REK

DIGESTER 4 MIXING MECHANICAL PLAN

SAWS JOB NO. 07-6500
 DRWRC Digester Mixing and System Enhancements - Phase I

Drawing: DM-M-01
 Sheet: 31 of 183

RECORD DRAWING	APP	REV	DATE	BY



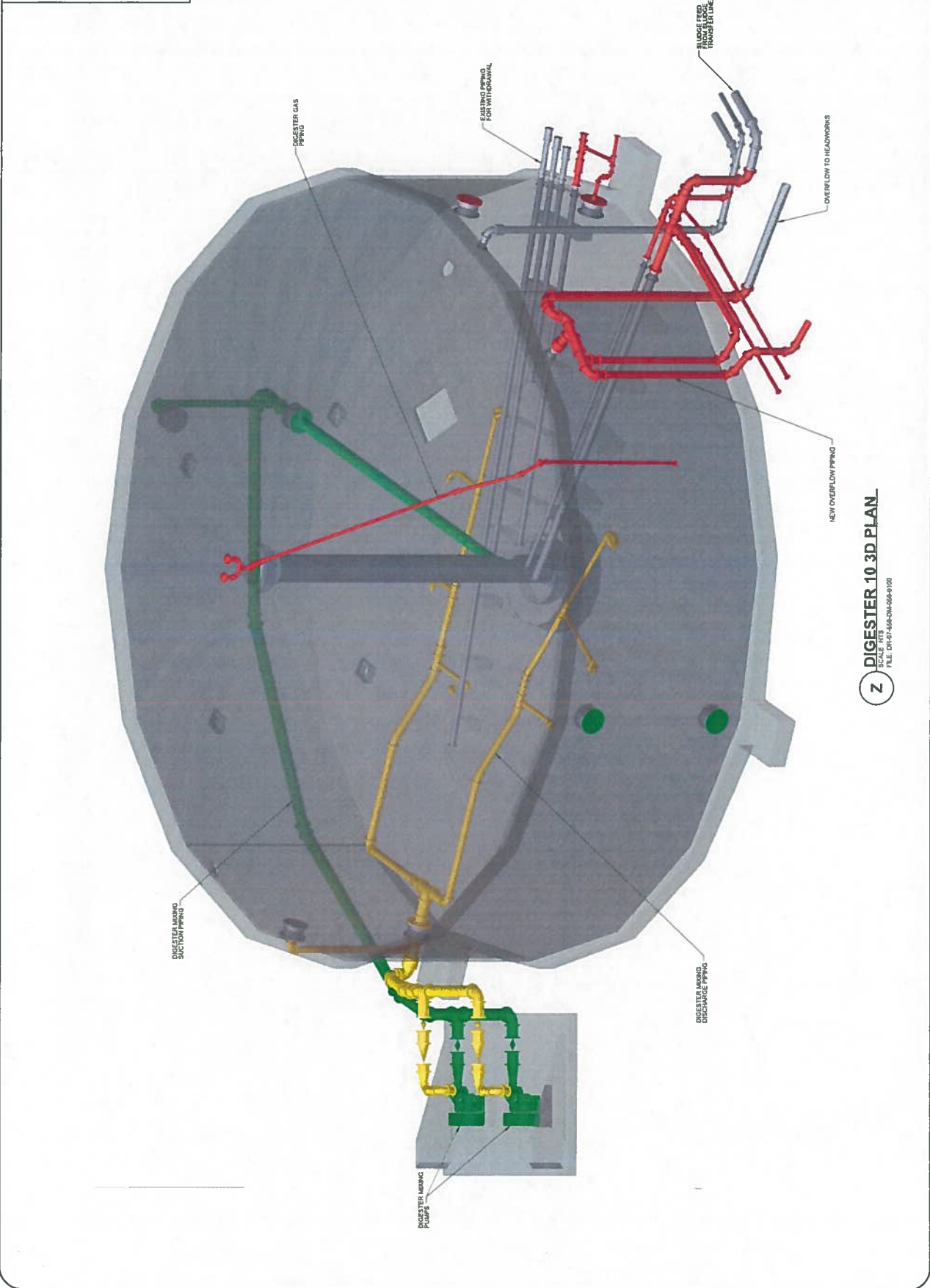
SAN ANTONIO WATER SYSTEM



ORIGINAL
DRAWING
DATE: 08-25-10
BY: 94203

**DIGESTER 10
3D PLAN**

Drawn by: LAK
Checked by: REF
Drawing: DM-M-02A
Sheet: 2 of 103



Z
DIGESTER 10 3D PLAN
FILE: P:\07-1458-00-00-9100

NO.	DATE	REVISIONS	APP.
RECORD DRAWING			



SAN ANTONIO WATER SYSTEM

ORIGINAL
STAMPED BY
DATE
BY

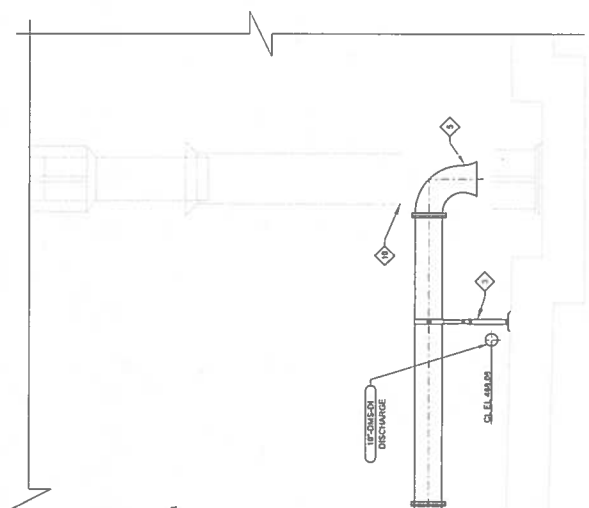
SAWS JOB NO. 07-6500
DIGESTER 4 MIXING
System Enhancements - Phase I
MECHANICAL SECTIONS

Designed by: LAK
Drawn by: DE
Checked by: BEK
Drawing: DM-M-04
Sheet: 18 of 183

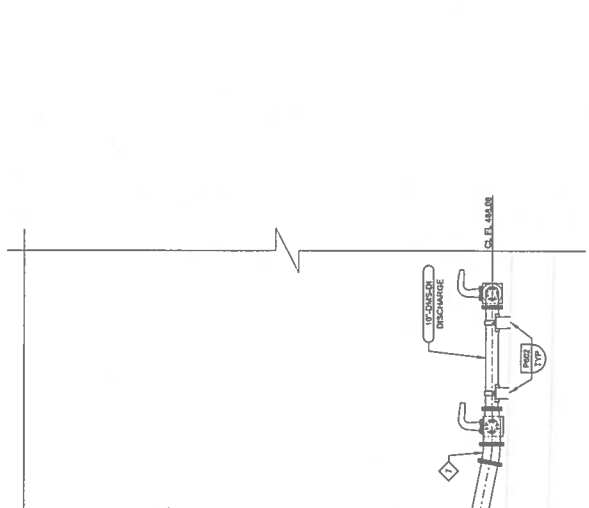
- GENERAL NOTES:**
- NOTES ON DRAWINGS 00-C-43 AND 00-C-44 APPLY TO ALL DRAWINGS.
 - MANUFACTURER'S CATALOGS, SPECIFICATIONS AND DRAWINGS SHALL BE USED TO DETERMINE THE MANUFACTURE OF ALL MATERIALS AND EQUIPMENT.
 - PROVIDE DIMENSIONS AS NECESSARY TO ADJUST FOR THE MANUFACTURE OF ALL MATERIALS AND EQUIPMENT WITH MANUFACTURER'S SYSTEM MANUFACTURER'S FOR HOISTE ELEVATIONS.

- KEY NOTES:**
- 1 PIPE SUPPORT PER (ENR) (TYP)
 - 2 PIPE SUPPORT PER (ENR) (TYP)
 - 3 PIPE SUPPORT PER (ENR) (TYP)
 - 4 2" x 1/2" TEE
 - 5 3" PIPE LONG RADIUS FLARE
 - 6 P-F F REDUCER
 - 7 2.5" RADIUS BEND
 - 8 SEWAGE COMBINATION AIR VALVE PER (ENR) (TYP)
 - 9 FLANGED COUPLING ADAPTOR
 - 10 REFER TO STRUCTURAL DRAWINGS FOR CUT INTO EXISTING PIPE

- KEY TAGS:**
- 1 EX-004-002
 - 2 EX-004-002



E DIGESTER 4 SECTION
SCALE: 1/8" = 1'-0"
FILE: DR-07-6500-DM-000-300



F DIGESTER 4 SECTION
SCALE: 1/8" = 1'-0"
FILE: DR-07-6500-DM-000-300