

September 8, 2015

Mr. Jerry Paddock, P.E.  
Technical & Financial Assistance Bureau  
P.O. Box 201901  
Helena, MT 59620-0901

**RE: Town of Culbertson Wastewater Rehabilitation Project – Phase 2  
AIS Waiver Request for Stainless Steel**

Dear Mr. Paddock:

This letter constitutes a formal request on behalf of the Town of Culbertson to MDEQ/EPA for a waiver from the American Iron Steel (AIS) requirements for the stainless steel piping, fittings and bends for the above referenced project. The contractor for this project is Century Companies and the engineer is WWC Engineering. The following information reiterates the information required by the Waiver Request Checklist and our specific responses to each item as follows:

**General**

1. Description of the foreign and domestic construction materials.

***This project requires stainless steel piping, Grade 304 for the aeration system. The stainless steel material is necessary in the vicinity of the blowers due to the extreme heat generated by the aeration blowers. A description, quantity and location of this required item shown on the engineering plans is located in Attachment A.***

2. Unit of measure

***The unit of measure of the stainless steel construction materials are shown in Attachment A.***

3. Quantity

***The quantity of the stainless steel construction materials are shown in Attachment A.***

4. Price

***The price for the AIS stainless steel is not provided as the suppliers cannot provide AIS stainless steel with a certification.***

5. Time of delivery or availability

***The stainless steel for the aeration blowers is not available. The contractor's pipe supplier has contacted 10 individual stainless steel suppliers, all of which will not provide an AIS certification for their material. They claim they can provide "domestic" certified steel but not AIS certified steel due to an alloy that is applied to the pipe.***

6. Location of the construction project

***The construction project is located approximately 1 mile south of the Town of Culbertson. The Town of Culbertson is located along the Missouri River in the eastern portion of Roosevelt County.***

7. Name and address of the proposed supplier

***The proposed pipe supplier is:  
Northwest Pipe Fittings  
33 South 8th Street West  
Billings, MT 59103***

8. A detailed justification for the use of foreign construction materials

***The contractor and supplier have contacted 10 stainless steel suppliers and all of the suppliers have stated that they will not sign the AIS certification that is required.***

***A list of the suppliers that have been contacted are located in Attachment B. Several suppliers claim that they can meet the "domestic" steel requirements but due to an alloy that is applied to all of the stainless steel they will not sign the AIS certification form. The current construction schedule that is provided in Attachment C shows that the aeration piping inside the building is to commence at the beginning of October.***

#### **Availability Waiver Request**

1. Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials.

***The list of suppliers and their contact information is included in Attachment B. A total of 10 suppliers were contacted.***

2. Documentation of the assistance recipient's efforts to find available domestic sources, such as a description of the process for identifying suppliers and a list of contacted suppliers.

***The contractor and Northwest Pipe Fittings supplier contacted several stainless steel suppliers initially and immediately informed WWC Engineering that they were having issues obtaining AIS certified stainless steel. WWC had several conversations with SRF and were able to find an AIS waiver request that was denied by the EPA for Williston, ND. On this waiver request denial the EPA identified manufactures that could meet the AIS certification.***

***The contractor had Northwest Pipe Fittings contact these two manufacturers and were told by these companies that they could not meet the AIS certification for all of the stainless steel products they were requesting.***

3. Project schedule

***A project schedule is located in Attachment C.***

4. Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials

***Relevant excerpts from the project plans have been included in Attachment D.***

5. Waiver request includes a statement from the prime contractor and/or supplier confirming the non-availability of the domestic construction materials for which the waiver is sought.

***A cover letter and documentation emails from the contractor have been included in Attachment E.***

6. Has the State received other waiver requests for the materials described in this waiver request, for comparable projects?

***To our knowledge the State of Montana has not received any other waiver request for the materials described in this waiver request.***

It is our sincere hope that the requirements have been adequately addressed and that the **Town of Culbertson AIS Waiver Request for Stainless Steel** submittal be reviewed as soon as possible. Please do not hesitate to contact us should you have any further questions or require additional clarification.

Sincerely,



Drew Pearson, P.E.  
Project Manager

cc: File  
Encl.: As Noted  
DP

K:\Helena\TOWN OF CULBERTSON\14190 - Phase 2 Const Admin\CORRE\DEQ\OUTGOING\AIS WAIVER REQUEST FOR SS 090815.docx

This waiver request was submitted to the EPA by the state of Montana on behalf of the Town of Culbertson. All supporting correspondence and/or documentation from contractors, suppliers or manufacturers included as a part of this waiver request was done so by the recipient to provide an appropriate level of detail and context for the submission.

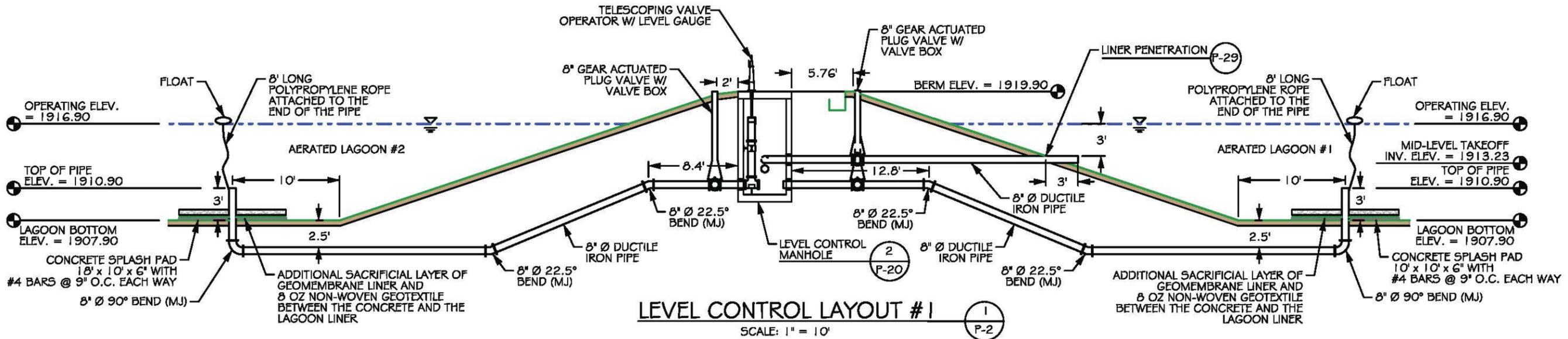
Some of the referenced attachments with project schedules and supplier correspondence are in formats that do not meet the Federal accessibility requirements for publication on the Agency's website. Hence, these exhibits have been omitted from this waiver publication. They are available upon request by emailing [SRF\\_AIS@epa.gov](mailto:SRF_AIS@epa.gov)

# **ATTACHMENT A**

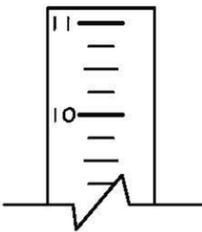
## Stainless Steel Item Details

DESCRIPTION	QTY	UNIT	PLAN SHEET	USED FOR
6" X 3" X 6" S.S. TEE	1	EA	B-4	BLOWER MANIFOLD
6" X 4" X 6" S.S TEE	4	EA	B-4	BLOWER MANIFOLD
4" S.S. CHECK VALVE	4	EA	B-4	BLOWER MANIFOLD
6" S.S. 90° ELBOW	1	EA	B-4	BLOWER MANIFOLD
6" X 3" S.S. REDUCER	1	EA	B-4	BLOWER MANIFOLD
6" S.S PIPE	10'	LF	B-4	BLOWER MANIFOLD
6" BLIND FLANG	1	EA	B-13, DETAIL DRAWING	BLOWER MANIFOLD
4" S.S PIPE	10	LF	B-4	BLOWER MANIFOLD
4" S.S PIPE	40	LF	P-31	AIR PIPING FROM MANIFOLD TO HDPE
4" S.S PIPE	70	LF	P-31	AIR PIPING FROM MANIFOLD TO HDPE
4" S.S PIPE	60	LF	P-31	AIR PIPING FROM MANIFOLD TO HDPE
4" S.S PIPE	50	LF	P-31	AIR PIPING FROM MANIFOLD TO HDPE
4" S.S 90° ELBOW	12	EA	P-31, B-13	AIR PIPING FROM MANIFOLD TO HDPE
3" S.S PIPE	230	LF	P-32 TO P-38	AIR PIPING IN LAGOONS
3" S.S 90° ELBOW	10	EA	P-32 TO P-38	AIR PIPING IN LAGOONS
3" S.S FLANGE	6	EA	P-32 TO P-38	AIR PIPING IN LAGOONS
4" S.S S.S PIPE	200	LF	P-32 TO P-38	AIR PIPING IN LAGOONS
4" S.S 90° ELBOW	12	EA	P-32 TO P-38	AIR PIPING IN LAGOONS
4" S.S FLANGE	8	EA	P-32 TO P-38	AIR PIPING IN LAGOONS
2" S.S. PIPE SCH. 40	40	LF	B-11	GUIDE RAILS FOR SUBMERSIBLE PUMPS
2" S.S. PIPE SCH. 40	20	LF	P-20, P-22, P-24, P-46, B-10	PIPE STANDS
2" S.S. PIPE SCH. 80	60	LF	P-20, P-22, P-24 MOVED INTO LAGOONS	STAFF GUAGE POSTS
MISC. CONNECTIONS AND ACCESSORIES				WHERE NEEDED
ADDITIONAL FITTINGS			IF NECESSARY	AS NEEDED

**ATTACHMENT E**  
Project Plan Excerpts



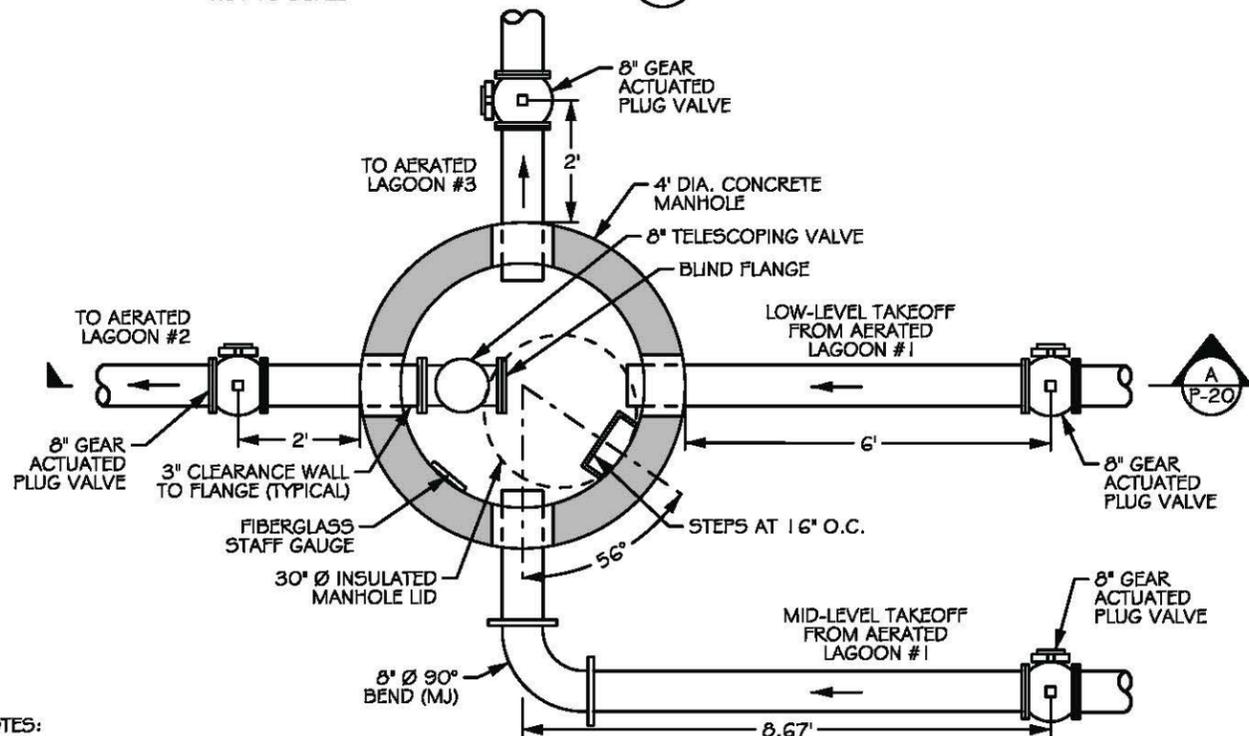
**LEVEL CONTROL LAYOUT #1**  
SCALE: 1" = 10'



**NOTES:**

- 1) FIBERGLASS STAFF GAUGE 11' MARK TO BE PLACED 1' BELOW TOP OF MANHOLE RIM. STAFF GAUGE IS INTENDED TO MEASURE WATER LEVEL IN UPSTREAM LAAGOON.
- 2) FIBERGLASS STAFF GAUGE SHOWN IN SECTION VIEW IS FOR GRAPHICAL PURPOSES ONLY. SEE STAFF GAUGE PLACEMENT IN PLAN VIEW FOR ACTUAL PLACEMENT.

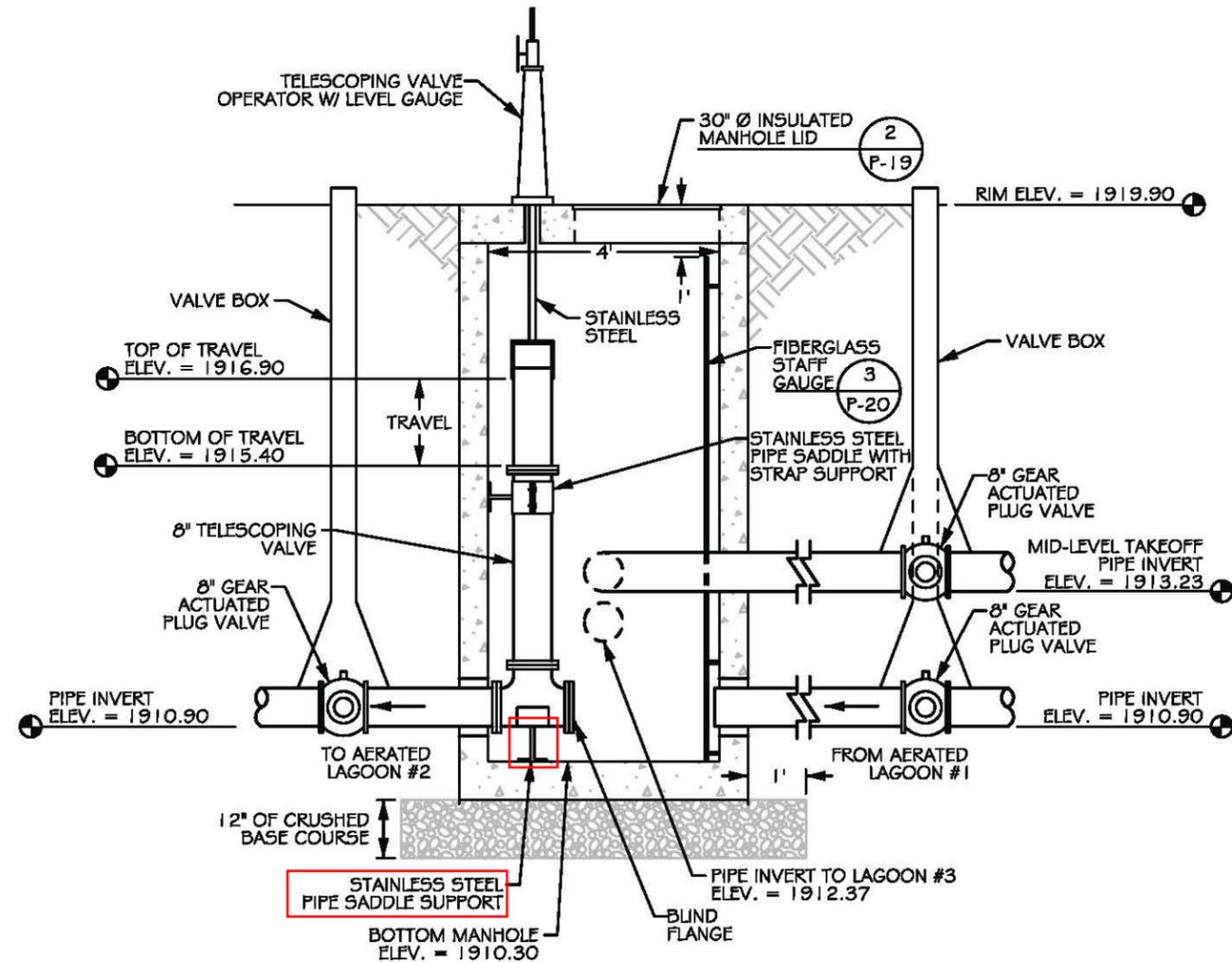
**FIBERGLASS STAFF GAUGE DETAIL**  
NOT TO SCALE



**NOTES:**

- 1) MANHOLE TO BE DESIGNED FOR A H-20 VEHICLE LOAD.
- 2) PRECAST MANUFACTURER TO DETERMINE WALL THICKNESS AND REBAR CONFIGURATION FOR OUTLET STRUCTURE.
- 3) ALL PIPE BLOCKOUTS SHALL BE SIZED APPROPRIATELY TO HAVE A FLEXIBLE PIPE TO MANHOLE CONNECTOR INSTALLED TO ENSURE A WATER TIGHT SEAL.
- 4) BASE SHALL BE CAST MONOLITHICALLY WITH FIRST BARREL SECTION.

**LEVEL CONTROL STRUCTURE #1 DETAIL**  
SCALE: 1" = 3'



**SECTION**  
SCALE: 1" = 3'

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 JOB # 2013-088

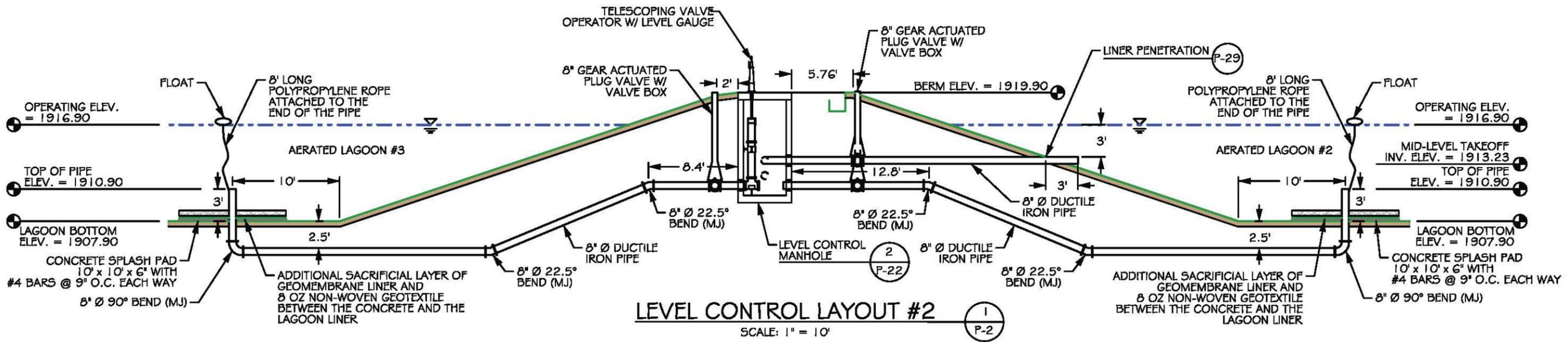
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**CULBERTSON WASTEWATER FACILITY  
 REHABILITATION - PHASE 2**

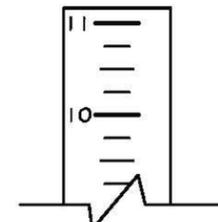
**Level Control Structure No. 1**

**SHEET**  
 P-20

**FINAL**

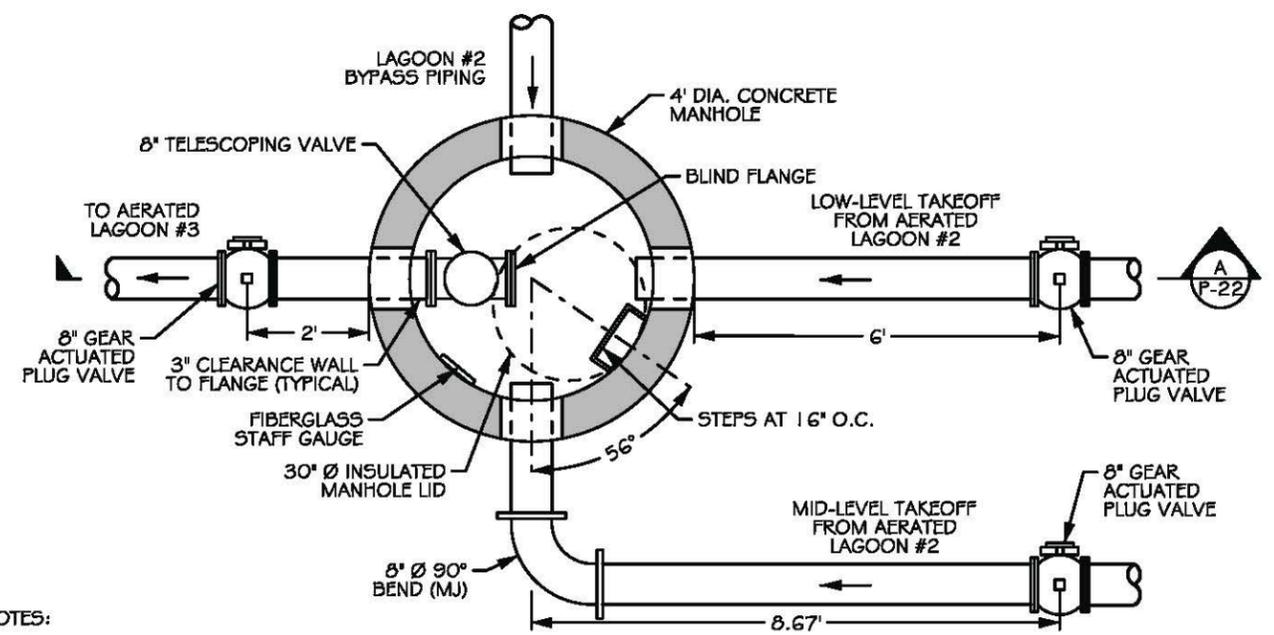


**LEVEL CONTROL LAYOUT #2**  
SCALE: 1" = 10'



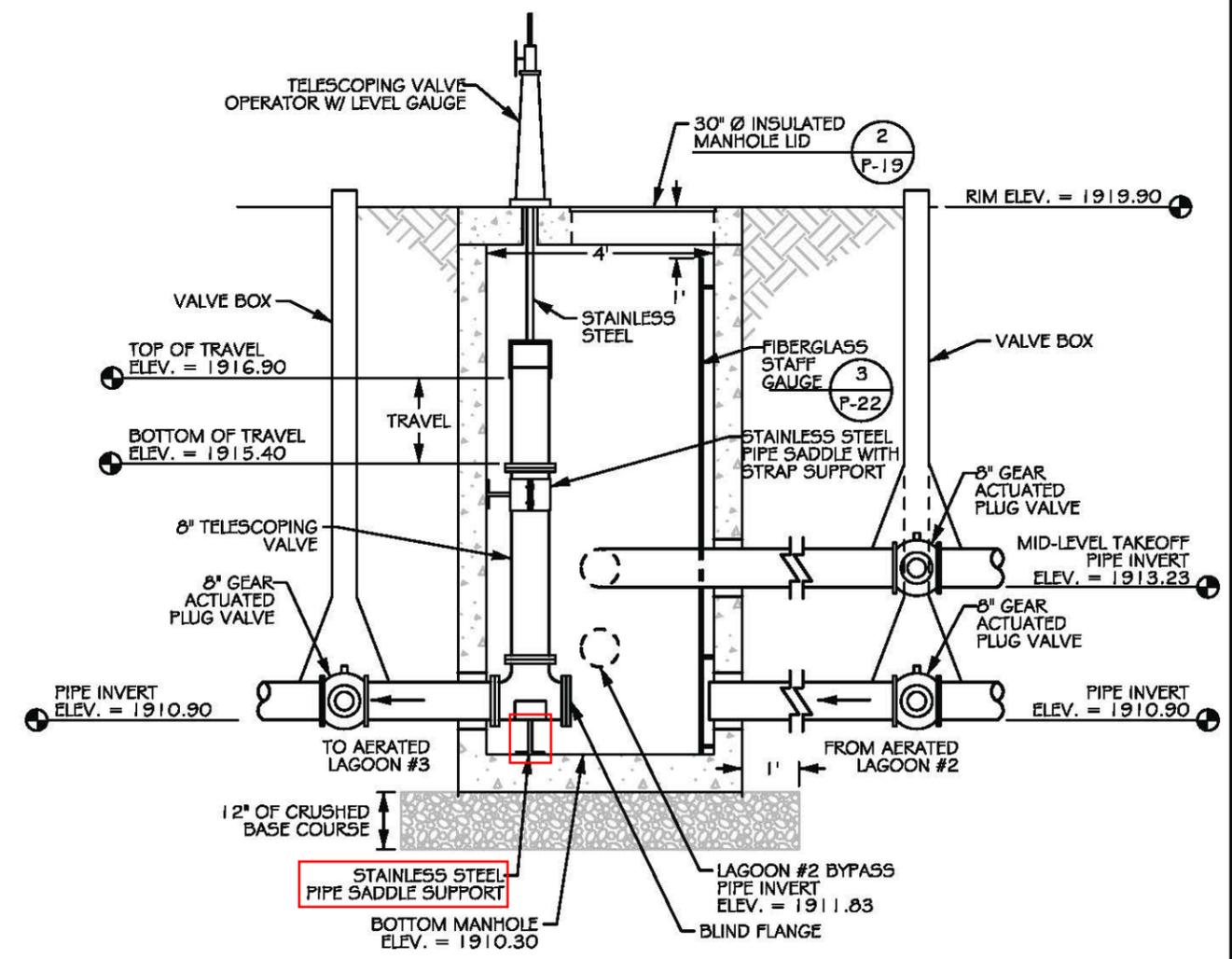
- NOTES:**
- 1) FIBERGLASS STAFF GAUGE 11' MARK TO BE PLACED 1' BELOW TOP OF MANHOLE RIM. STAFF GAUGE IS INTENDED TO MEASURE WATER LEVEL IN UPSTREAM LAGOON.
  - 2) FIBERGLASS STAFF GAUGE SHOWN IN SECTION VIEW IS FOR GRAPHICAL PURPOSES ONLY. SEE STAFF GAUGE PLACEMENT IN PLAN VIEW FOR ACTUAL PLACEMENT.

**FIBERGLASS STAFF GAUGE DETAIL**  
NOT TO SCALE



- NOTES:**
- 1) MANHOLE TO BE DESIGNED FOR A H-20 VEHICLE LOAD.
  - 2) PRECAST MANUFACTURER TO DETERMINE WALL THICKNESS AND REBAR CONFIGURATION FOR OUTLET STRUCTURE.
  - 3) ALL PIPE BLOCKOUTS SHALL BE SIZED APPROPRIATELY TO HAVE A FLEXIBLE PIPE TO MANHOLE CONNECTOR INSTALLED TO ENSURE A WATER TIGHT SEAL.
  - 4) BASE SHALL BE CAST MONOLITHICALLY WITH FIRST BARREL SECTION.

**LEVEL CONTROL STRUCTURE #2 DETAIL**  
SCALE: 1" = 3'



**SECTION A-A**  
SCALE: 1" = 3'

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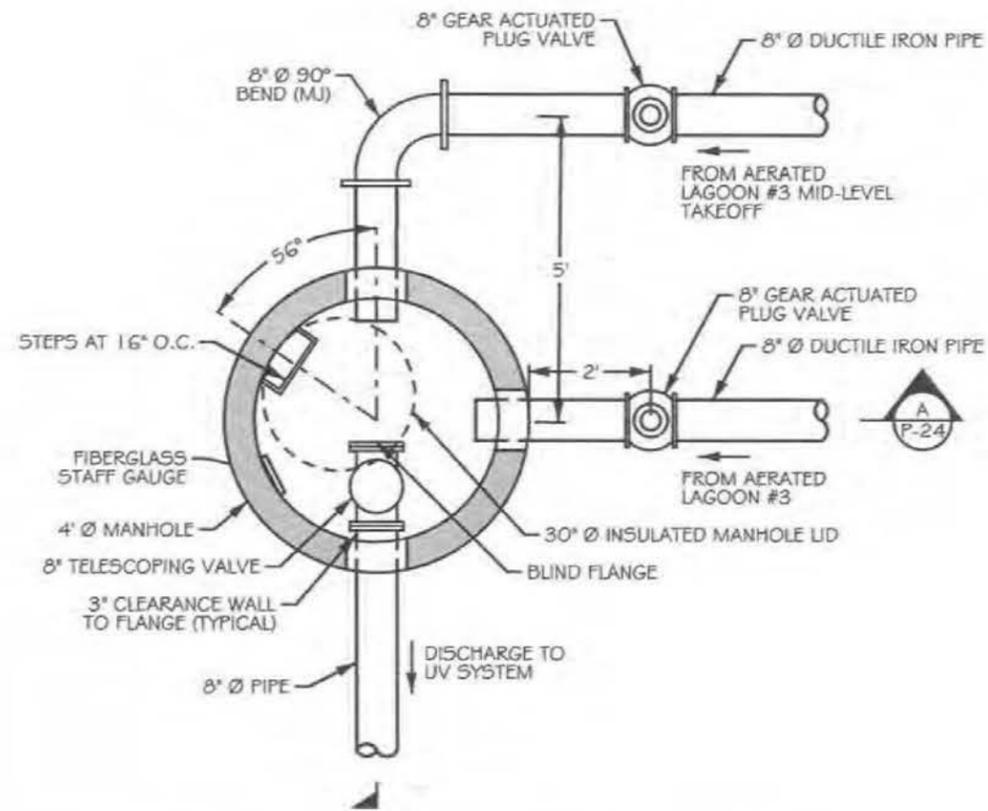
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PROJECT: CULBERTSON WASTEWATER FACILITY REHABILITATION - PHASE 2  
 SHEET: P-22

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**CULBERTSON WASTEWATER FACILITY REHABILITATION - PHASE 2**  
**Level Control Structure No. 2**

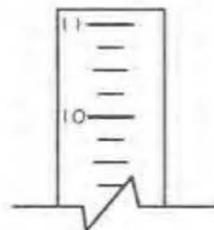
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**OUTLET STRUCTURE LAGOON #3** (2) P-23  
SCALE: 1" = 3'

**NOTES:**

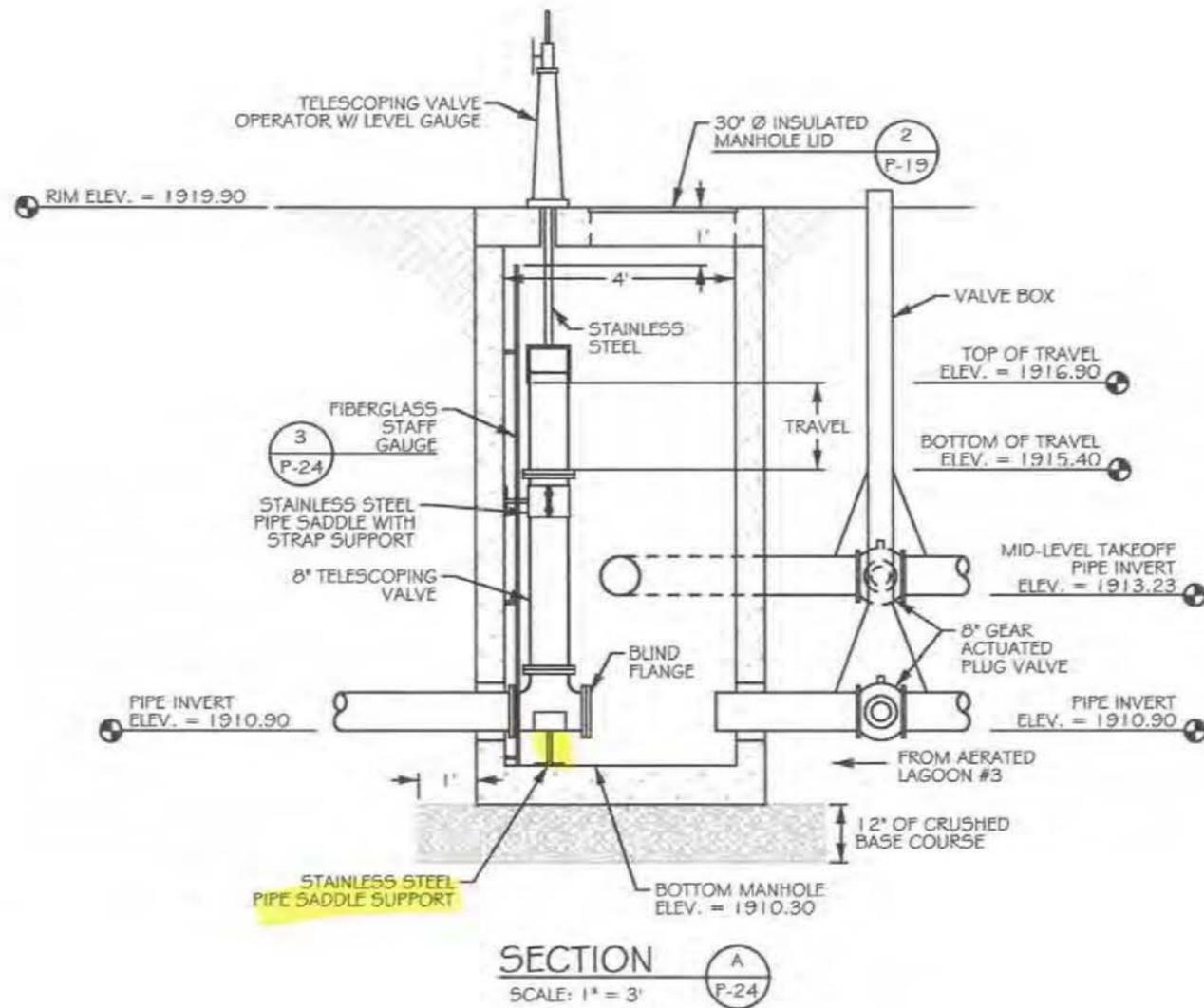
- 1) MANHOLE TO BE DESIGNED FOR A H-20 VEHICLE LOAD.
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- 3) ALL PIPE BLOCKOUTS SHALL BE SIZED APPROPRIATELY TO HAVE A FLEXIBLE PIPE TO MANHOLE CONNECTOR INSTALLED TO ENSURE A WATER TIGHT SEAL.
- 4) BASE SHALL BE CAST MONOLITHICALLY WITH FIRST BARREL SECTION.



**FIBERGLASS STAFF GAUGE DETAIL** (3) P-24  
NOT TO SCALE

**NOTES:**

- 1) FIBERGLASS STAFF GAUGE 11' MARK TO BE PLACED 1' BELOW TOP OF MANHOLE RIM. STAFF GAUGE IS INTENDED TO MEASURE WATER LEVEL IN UPSTREAM LAGOON.
- 2) FIBERGLASS STAFF GAUGE SHOWN IN SECTION VIEW IS FOR GRAPHICAL PURPOSES ONLY. SEE STAFF GAUGE PLACEMENT IN PLAN VIEW FOR ACTUAL PLACEMENT.



**SECTION A-A** (A) P-24  
SCALE: 1" = 3'

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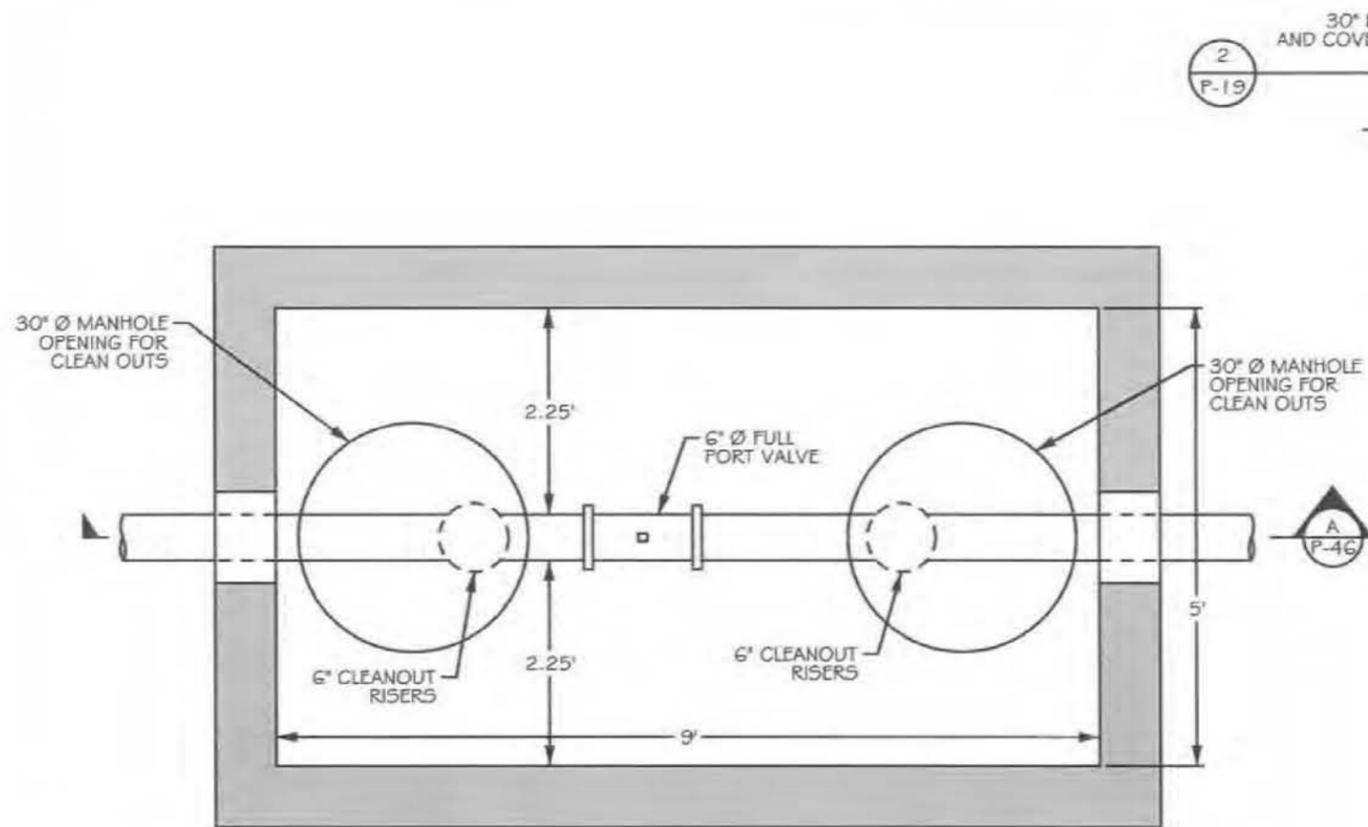
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JOB # 2013-088

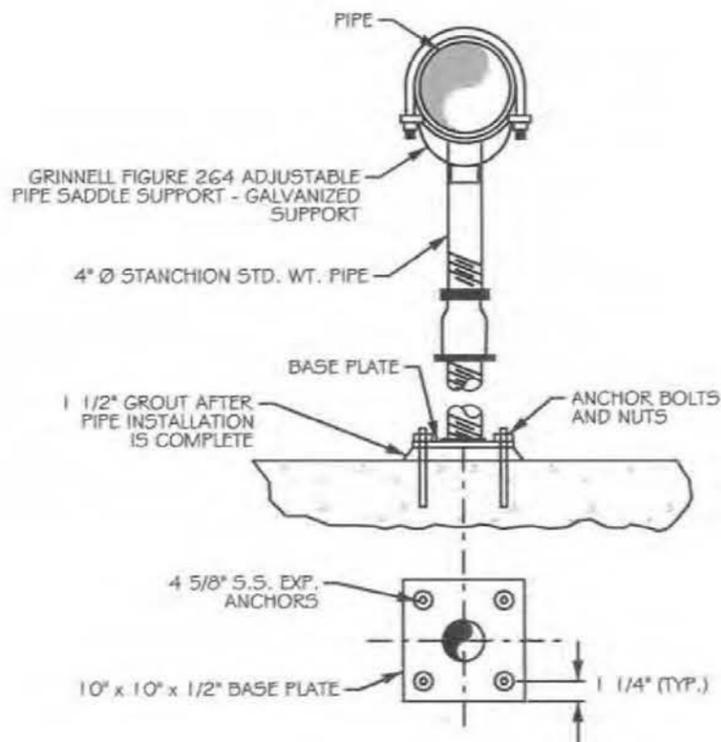
**CULBERTSON WASTEWATER FACILITY  
REHABILITATION - PHASE 2**  
Outlet Structure Lagoon #3 Details

**FINAL**

SHEET  
P-24

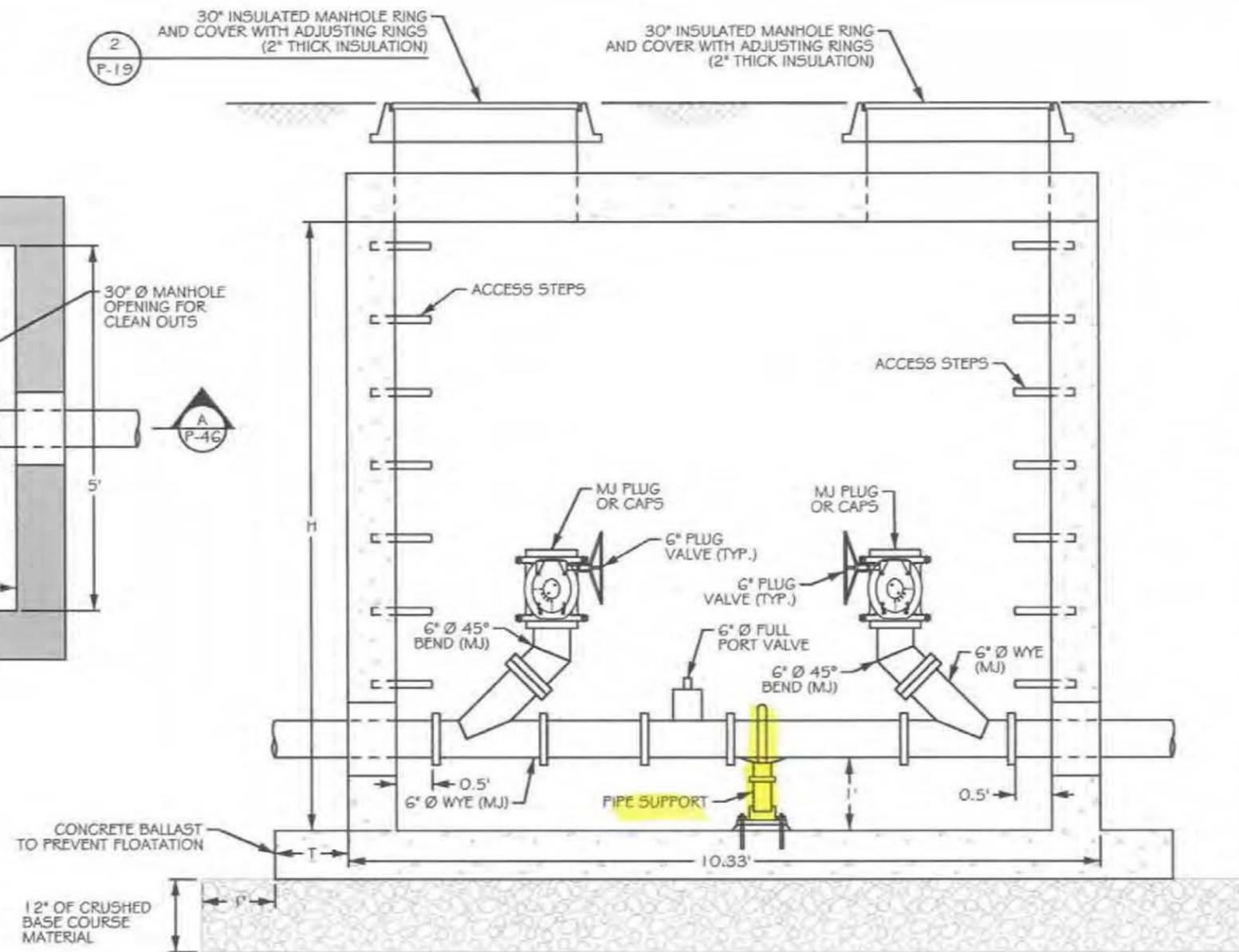


PLAN VIEW



PIPE SUPPORT DETAIL

NOT TO SCALE



SECTION A P-46

TWO-WAY FORCEMAIN CLEAN OUT

SCALE: 1" = 2'

CLEAN OUT NUMBER	STATION	RIM ELEVATION	INVERT IN ELEVATION	INVERT OUT ELEVATION	FLOOR ELEVATION	T* VALUE (FT)	H* VALUE (FT)
1	119+40.00	1911.47	1903.94	1904.00	1902.94	1	7
2	132+35.00	1912.39	1904.25	1904.24	1903.24	1	7

NOTES:

- 1) ALL PIPE BLOCKOUTS SHALL BE SIZED APPROPRIATELY TO HAVE A FLEXIBLE PIPE TO MANHOLE CONNECTOR INSTALLED TO ENSURE A WATER TIGHT SEAL.
- 2) PRECAST MANUFACTURER TO DETERMINE WALL THICKNESS AND REBAR CONFIGURATION FOR CLEANOUT VAULTS.
- 3) MANHOLE TO BE DESIGNED FOR H-20 VEHICLE LOAD.
- 4) PLUG VALVES SHALL CLEARLY INDICATE DIRECTION OF FLOW.
- 5) VAULT SHALL BE COVERED WITH A BITUMINOUS COATING TO REPEL WATER AND ALL JOINTS SHALL BE SEALED WITH 1/2" BUTYL ADHESIVE WRAP MATERIAL.
- 6) BASE SHALL BE CAST MONOLITHICALLY WITH FIRST BARREL SECTION.

**FINAL**

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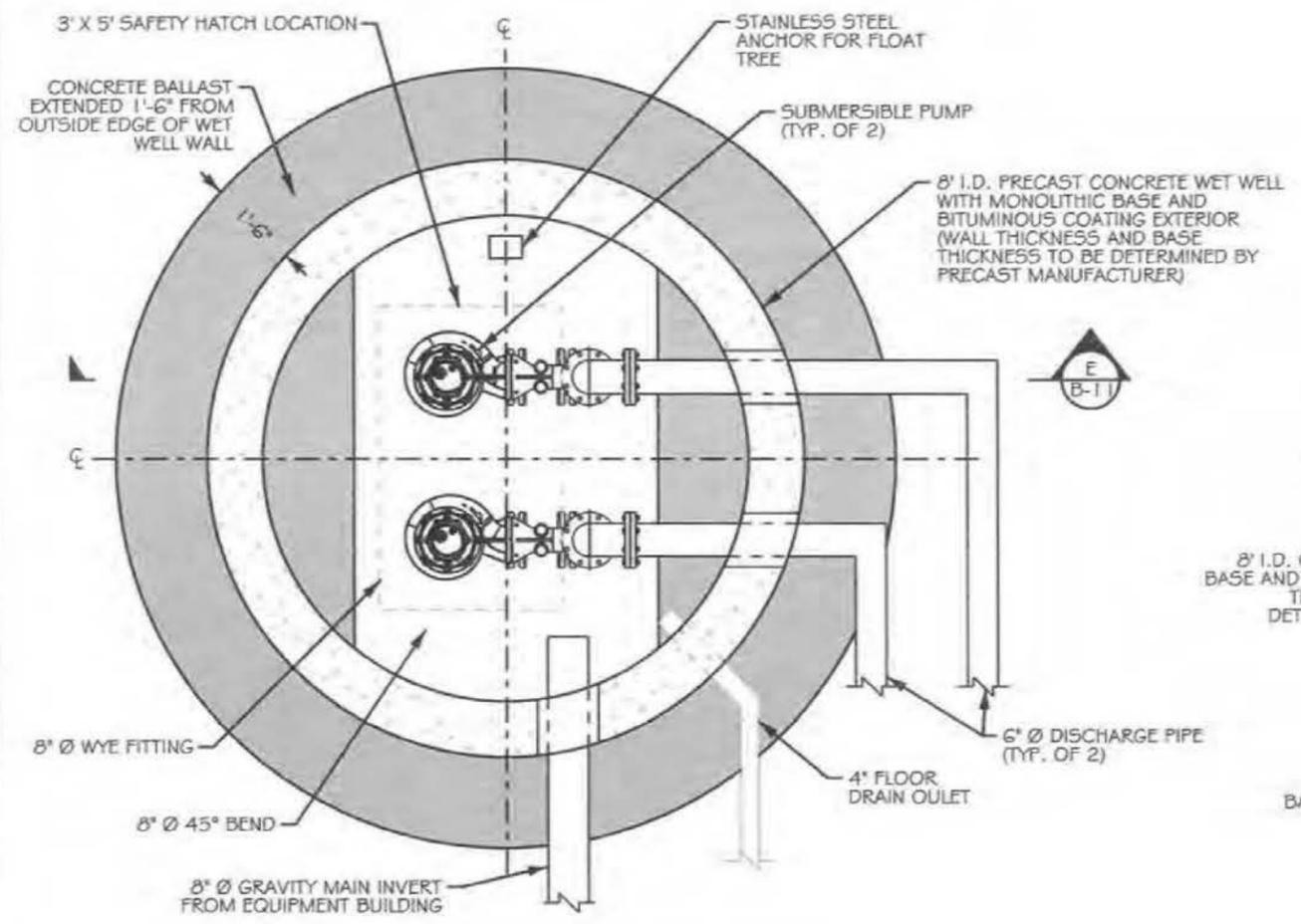
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CULBERTSON WASTEWATER FACILITY  
 REHABILITATION - PHASE 2

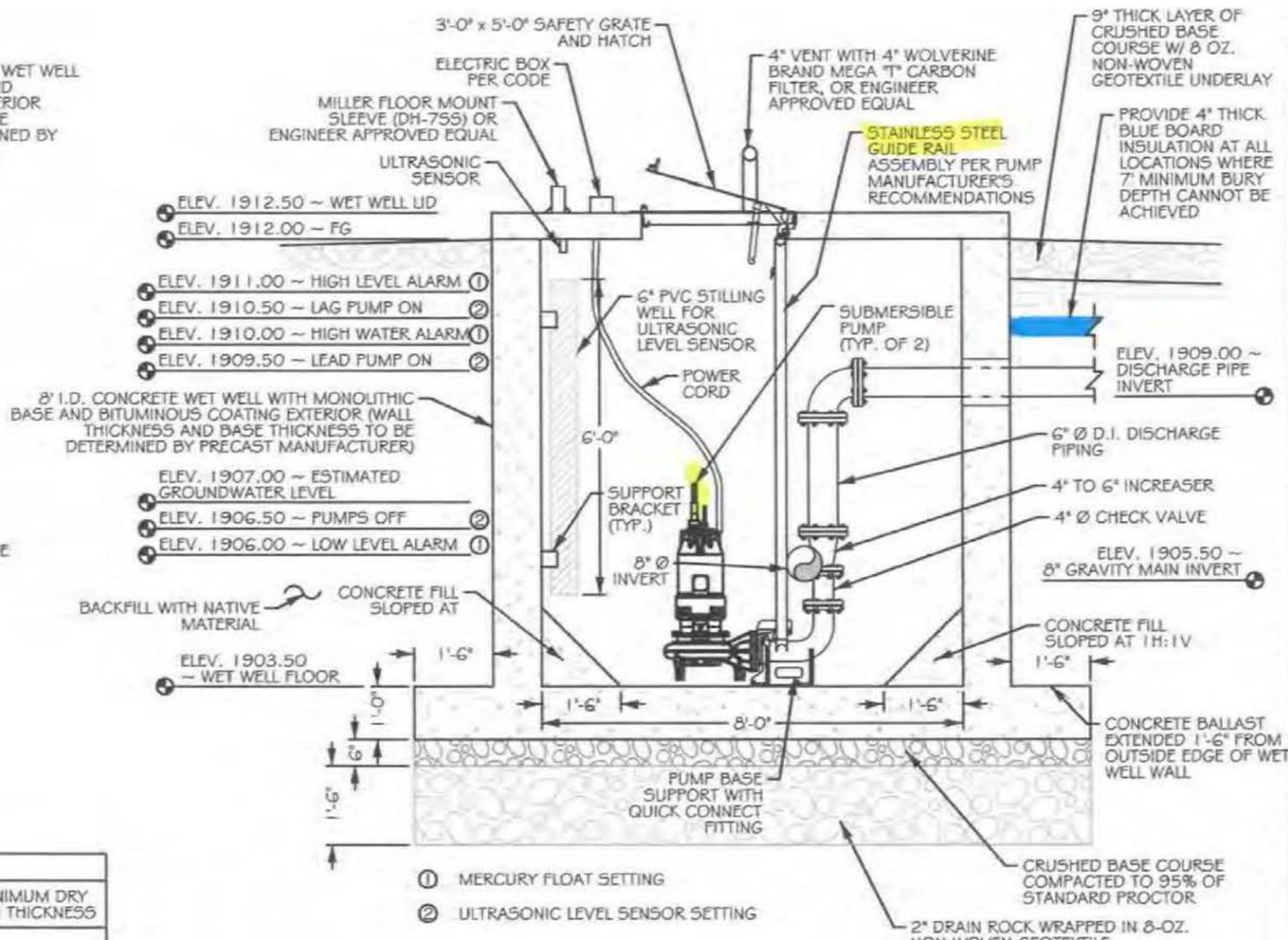
Clean Out Details

SHEET  
 P-46

**FINAL**



**WET WELL PLAN VIEW**  
SCALE: 1" = 3'



**WET WELL SECTION E-B-11**  
SCALE: 1" = 3'

MECHANICAL PAINTING SCHEDULE					
APPLICATION	SURFACE PREPARATION	PAINT MATERIAL	COLOR	MINIMUM COATS	MINIMUM DRY FILM THICKNESS
EXPOSED DUCTILE IRON (DI) PIPING AND FITTINGS IN THE WET WELL	ABRASIVE BLAST OR CENTRIFUGAL WHEEL BLAST (SP 5 WHITE METAL)	POLYIMIDE EPOXY	DARK GREY	3	4 MILS/COAT
EXPOSED DI PIPE, VALVES AND FITTINGS IN THE LIFT STATION BUILDING	ABRASIVE BLAST OR CENTRIFUGAL WHEEL BLAST (SP 10 NEAR WHITE)	POLYIMIDOAMINE EPOXY PRIMER	N/A	1	3 MILS/COAT
		POLYIMIDOAMINE EPOXY PRIMER	DARK GREY	2	4 MILS/COAT

- NOTES:
1. PRECAST WET WELL BASE AND FIRST BARREL SECTION SHALL BE A MONOLITHIC POUR.
  2. WET WELL SHALL HAVE A BITUMINOUS COATING EXTERIOR.
  3. AT EVERY JOINT ALL CONCRETE MANHOLE RISERS SHALL: BE WRAPPED ON THE EXTERIOR WITH 1/2-INCH WIDE BUTYL ADHESIVE TAPE, BE FURNISHED WITH TWO PARALLEL STRIPS OF RAM NECK BETWEEN BARREL SECTIONS, AND COATED WITH BITUMINOUS TAR.
  4. THE MANHOLE PRECAST MANUFACTURER SHALL TEST FIT ALL PRECAST COMPONENT AT THEIR FACILITY, FIX ANY ISSUES THAT PREVENT THE MANHOLE SECTIONS FROM ASSEMBLING CORRECTLY, AND PAINT MATCH LINES ON THE EXTERIOR OF THE MANHOLE SECTIONS FOR HOW THEY'VE TESTED THE SECTIONS AND ACHIEVED PROPER ASSEMBLY.
  5. ACCESS HATCH SHALL BE CAST FLUSH IN PRECAST CONCRETE COVER.
  6. ALL EXPOSED DUCTILE IRON PIPE AND FITTINGS SHALL BE MANUFACTURED AND DELIVERED WITH NO ASPHALTIC COATING, BUT SHALL BE COATED OUTSIDE WITH A FACTORY-APPLIED, HIGH-SOLIDS EPOXY PRIMER COMPATIBLE WITH THE FINISHED COATING SPECIFIED IN THE PAINTING SCHEDULE.
  7. ALL HARDWARE WITHIN THE WET WELL SHALL BE STAINLESS STEEL. AN INSPECTION REPORT CERTIFYING THESE MATERIALS ARE STAINLESS STEEL SHALL BE SUPPLIED TO THE TOWN OF CULBERTSON AT BOTH INTERIM AND FINAL ACCEPTANCE.

8. FLOOR MOUNT FOR THE MAN LIFT SHALL BE A MILLER FLOOR MOUNT SLEEVE (DH-755) OR APPROVED EQUAL. FLOOR MOUNT SHALL BE COMPATIBLE WITH THE EXISTING MAN LIFT OWNED BY THE TOWN. CONTACT THE ENGINEER TO ENSURE COMPATIBILITY. FLOOR MOUNT SHALL BE POSITIONED TO ALLOW UNOBSTRUCTED ENTRY INTO THE WET WELL WITHOUT REMOVING THE WET WELL ACCESS HATCH DOORS.
9. INSTALL P-TRAP AND 1-1/2' VENT PIPING ON FLOOR DRAIN LINE AND SLOPE 1/4" PER FOOT TOWARDS THE WET WELL. EXTEND VENT PIPING THROUGH THE ROOF AND INSTALL 3' CARBON FILTER (ORENCO MODEL CF3 OR EQUAL) ON THE END.
10. FLOOR DRAIN SHALL BE CAST IRON BODY WITH ADJUSTABLE STRAINER (JOSAM 30000-A OR EQUAL).
11. PROVIDE LINK SEAL OR APPROVED EQUAL, ON ALL PIPE PENETRATIONS INTO WET WELL. VOID SPACE AROUND PIPE PENETRATIONS SHALL BE FILLED WITH NON-SHRINK GROUT.
12. ULTRASONIC SENSOR SHALL BE PRIMARY LIQUID LEVEL CONTROL SIGNAL WITH HIGH/HIGH AND LOW/LOW SIGNALS AND DISCRETE SIGNALS FROM FLOATS.
13. CONTRACTOR SHALL LEAK TEST THE WET WELL TO ENSURE THAT THE WET WELL IS WATER-TIGHT.
14. BACKFILL AROUND WET WELL WITH NATIVE MATERIAL, PLACED IN MAXIMUM LOOSE LIFT THICKNESSES OF 8", AND COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR DENSITY. FLOWABLE FILL MAY BE USED AROUND THE DUCTILE IRON PIPE, AS APPROVED BY THE ENGINEER.
15. THE SUBMERSIBLE PUMPS SHALL MEET ALL OF THE REQUIREMENTS IN THE SPECIFICATIONS.

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**TOWN OF CULBERTSON**

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REHABILITATION - PHASE 2**

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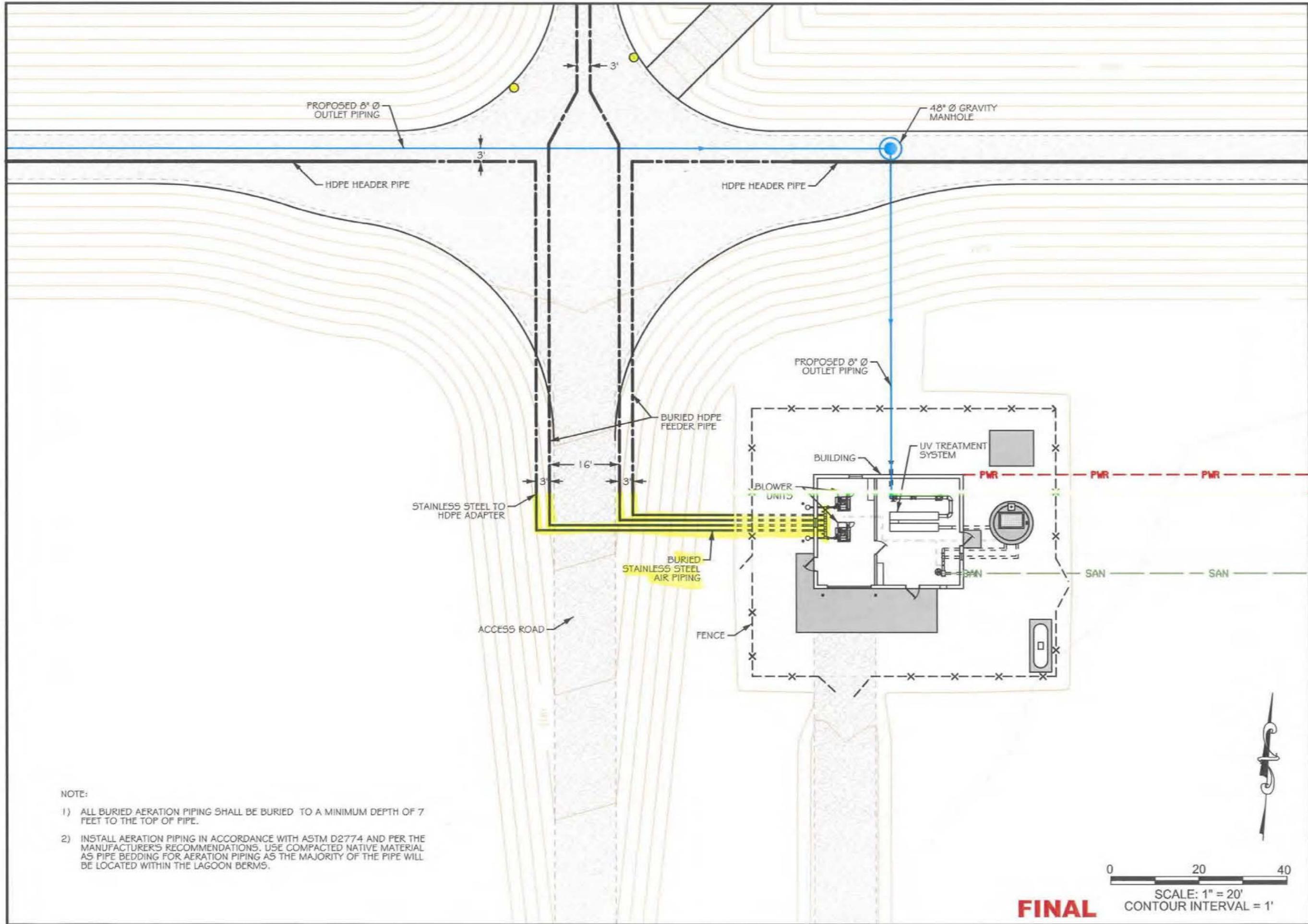
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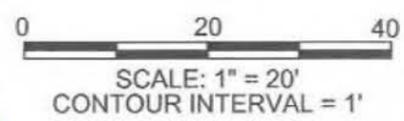
JOB # 2013-088

**Wet Well Details**

**SHEET B-11**



- NOTE:
- 1) ALL BURIED AERATION PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 7 FEET TO THE TOP OF PIPE.
  - 2) INSTALL AERATION PIPING IN ACCORDANCE WITH ASTM D2774 AND PER THE MANUFACTURER'S RECOMMENDATIONS. USE COMPACTED NATIVE MATERIAL AS PIPE BEDDING FOR AERATION PIPING AS THE MAJORITY OF THE PIPE WILL BE LOCATED WITHIN THE LAGOON BERMS.



**FINAL**



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HELENA, MT 59601  
(406) 443-3982

**TOWN OF CULBERTSON**  
210 BROADWAY AVE.  
CULBERTSON, MT 59218  
(406) 787-5271

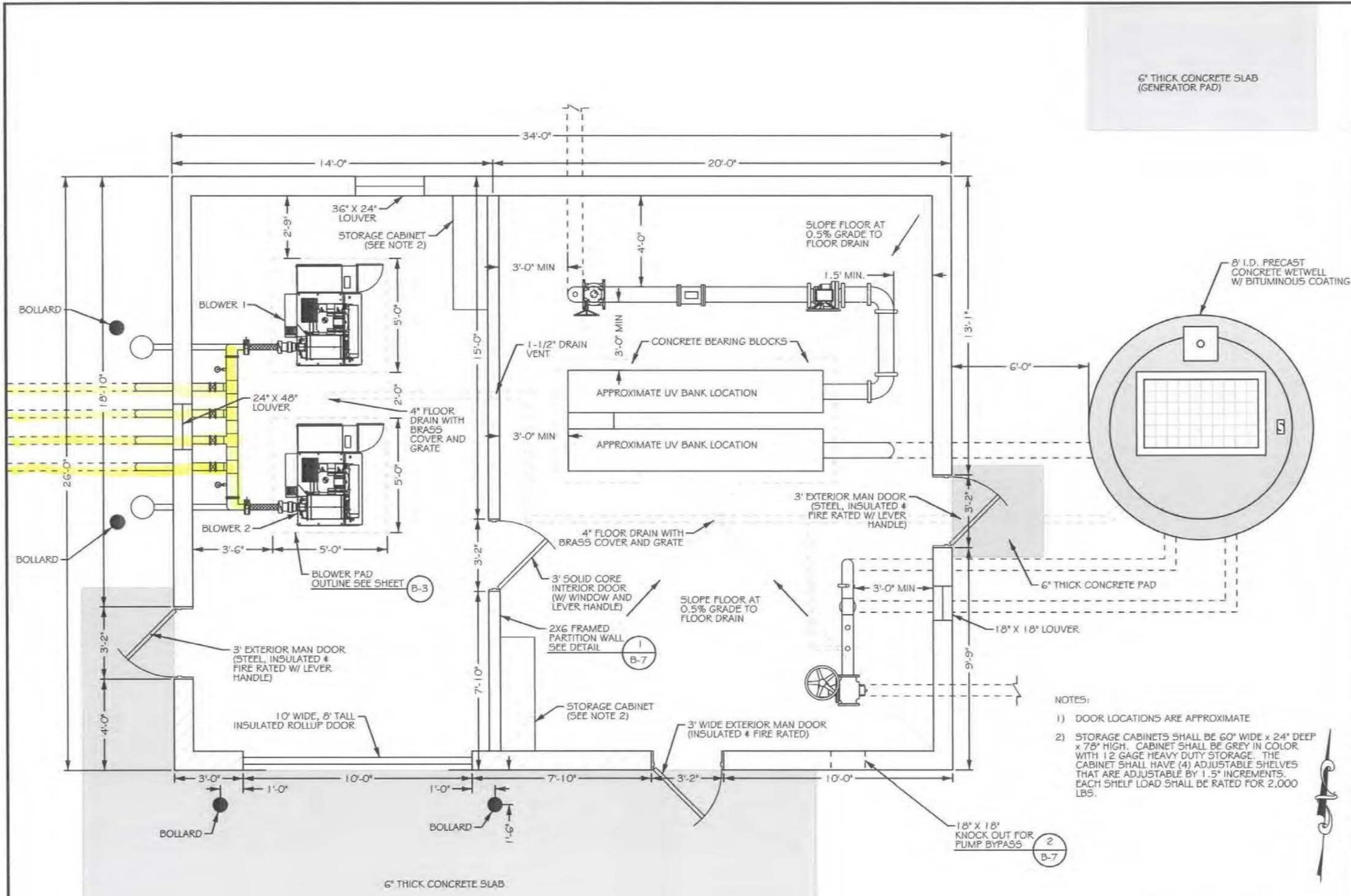
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TAS	11/14	CKD	STH
REV	DATE	CKD	STH
DDP	02/15	CKD	STH
DDP	03/15	CKD	STH

JOB # 2013-018

**CULBERTSON WASTEWATER FACILITY  
REHABILITATION - PHASE 2**  
Aeration System Piping to  
Blower Building

SHEET  
P-31

PEN TABLE PATH: K:\New\TOWN OF CULBERTSON\2013 - Wastewater\Phase 2\ENGINEERING\PLANS\CULBERTSON\2013-018 - Wastewater\Phase 2\DWG\CULBERTSON LAGOON PLAN SET.DWG  
3/23/2015

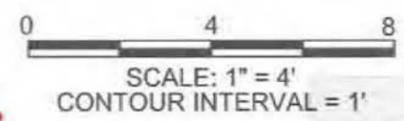


6" THICK CONCRETE SLAB  
(GENERATOR PAD)

NOTES:

- 1) DOOR LOCATIONS ARE APPROXIMATE
- 2) STORAGE CABINETS SHALL BE 60" WIDE x 24" DEEP x 78" HIGH. CABINET SHALL BE GREY IN COLOR WITH 12 GAGE HEAVY DUTY STORAGE. THE CABINET SHALL HAVE (4) ADJUSTABLE SHELVES THAT ARE ADJUSTABLE BY 1.5" INCREMENTS. EACH SHELF LOAD SHALL BE RATED FOR 2,000 LBS.

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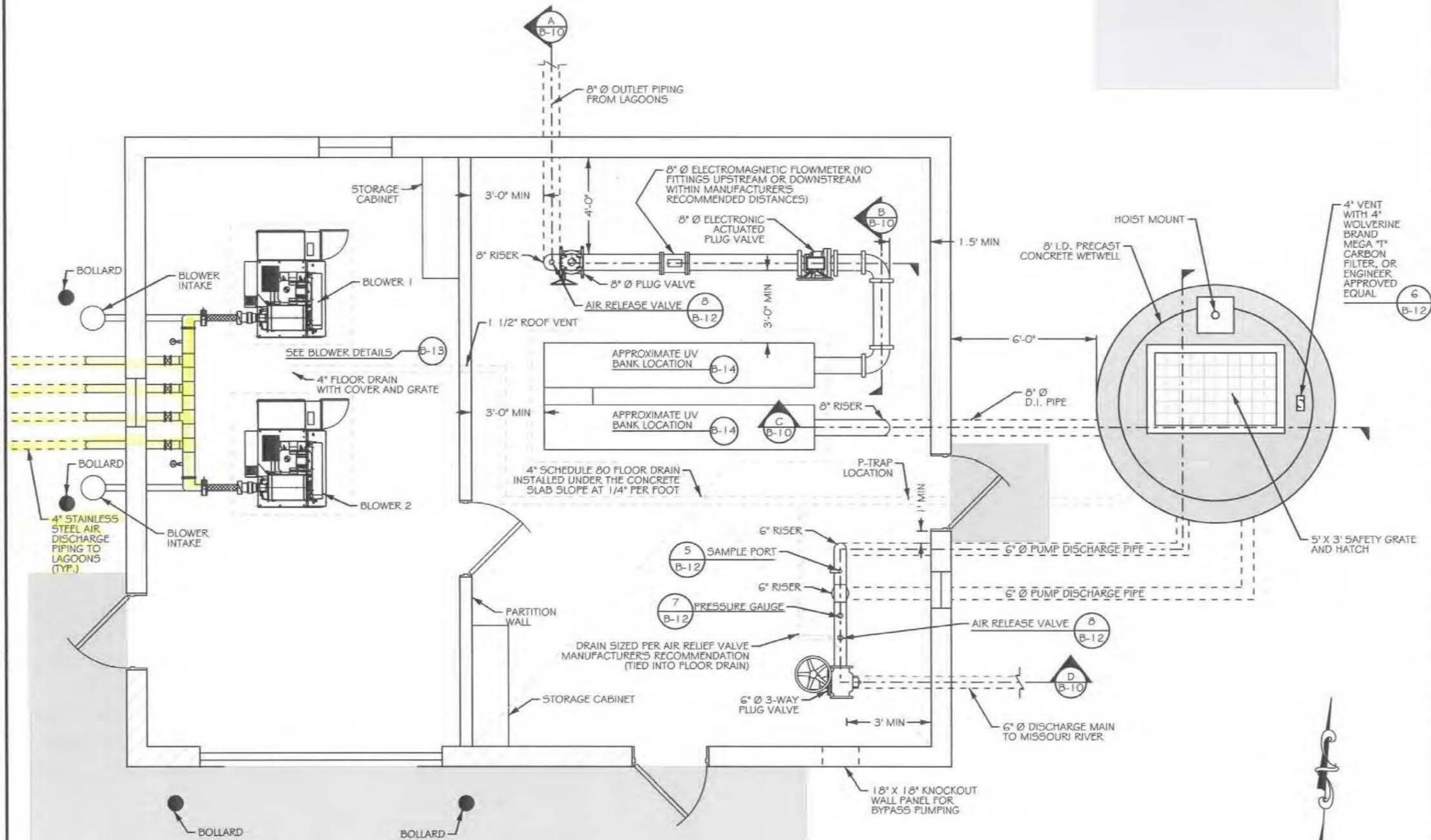
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MRS	11/14	STH	
REV	DATE	CKD	STH
DDP	02/15	STH	
DDP	03/15	STH	

JOB # 2013-088

**CULBERTSON WASTEWATER FACILITY  
REHABILITATION - PHASE 2**

**Floor Plan**

SHEET  
B-4



NOTES:

- 1) UV DISINFECTION SYSTEM SHALL MEET THE REQUIREMENTS IN THE SPECIFICATIONS AND MT DEQ REQUIREMENTS. ANY VARIANCES MUST BE APPROVED BY MT DEQ.
- 2) INTERIOR PIPING SHALL BE CLEAN WITH 1 COAT OF PRIMER AND 2 COATS OF EPOXY PAINT TOTALING 8 MM IN THICKENS. PAINT SHALL BE GRAY IN COLOR.

**FINAL**

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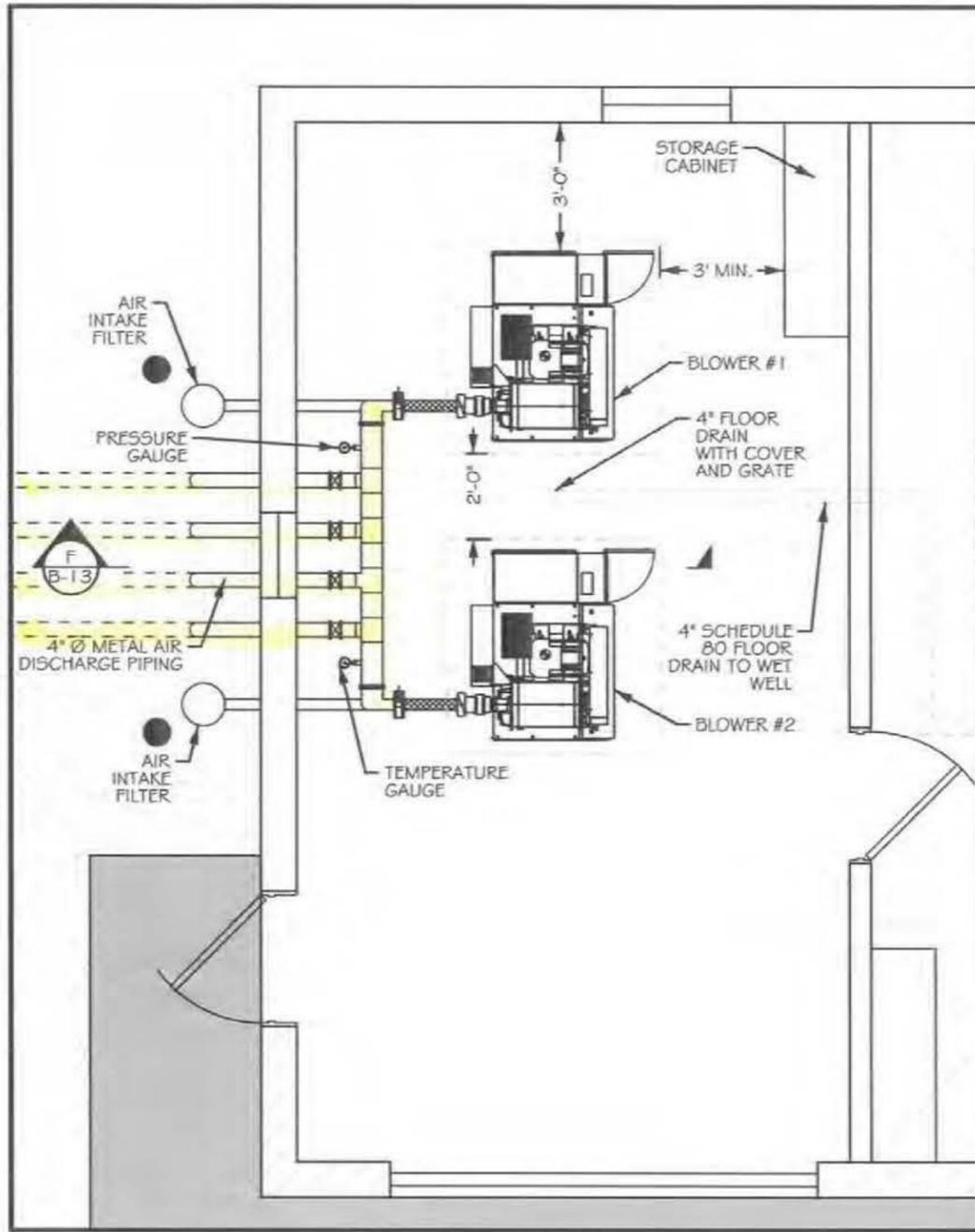
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DSGN	DATE	CKD	STH
MRS	11/14	STH	
REV	DATE	CKD	STH
DDP	02/15	STH	
DDP	03/15	STH	

JOB # 2013-088

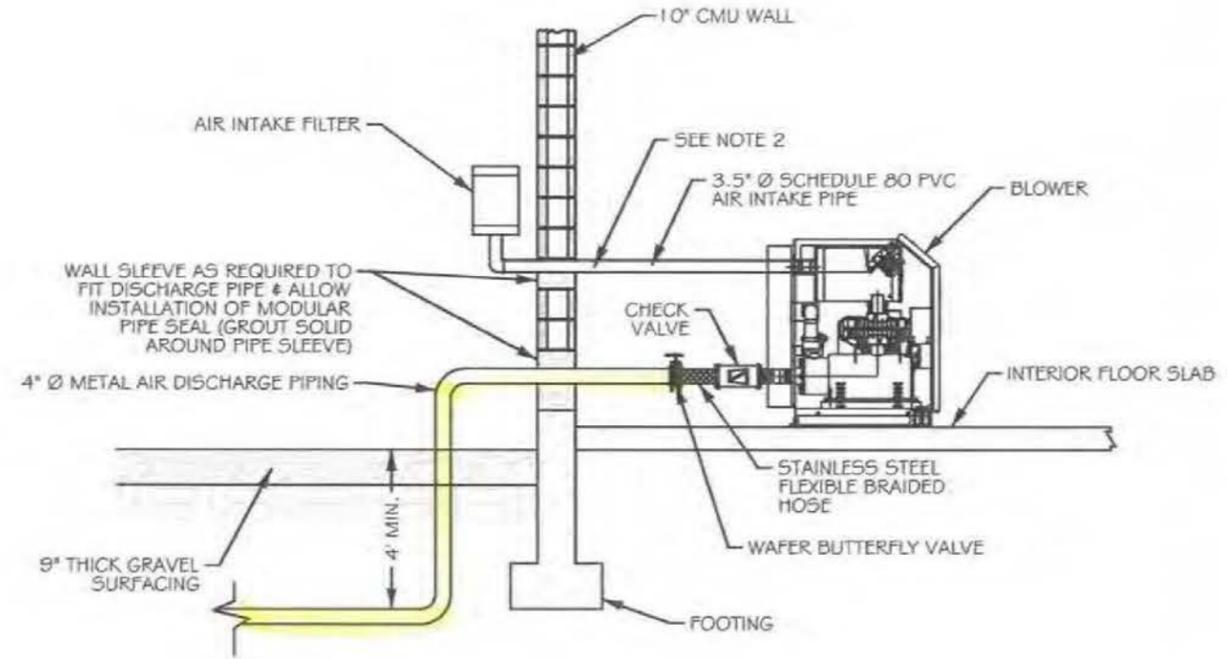
**CULBERTSON WASTEWATER FACILITY  
 REHABILITATION - PHASE 2**  
 Pipe Layout Plan

SHEET  
 B-9



**BLOWER PLAN DETAIL**

SCALE: 1" = 4'



**SECTION VIEW F-B-13**  
NOT TO SCALE

**NOTES:**

- 1) ALL PIPING AFTER WAFER BUTTERFLY VALVE TO THE LAGOONS SHALL BE CONTRACTOR FURNISHED.
- 2) PIPING BETWEEN BLOWER AND AIR INTAKE FILTER SHALL BE CONTRACTOR FURNISHED.

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DSGN	DATE	CKD	STH	REV	DATE	CKD	STH
MRS	11/14			DDP	02/15		
				DDP	03/15		

JOB # 2013-008

**CULBERTSON WASTEWATER FACILITY  
REHABILITATION - PHASE 2**

**Blower Details**

**SHEET  
B-13**

**FINAL**

**LAGOON 3-B**

NO AERATION  
COVERED SECTION

**LAGOON 3-A**

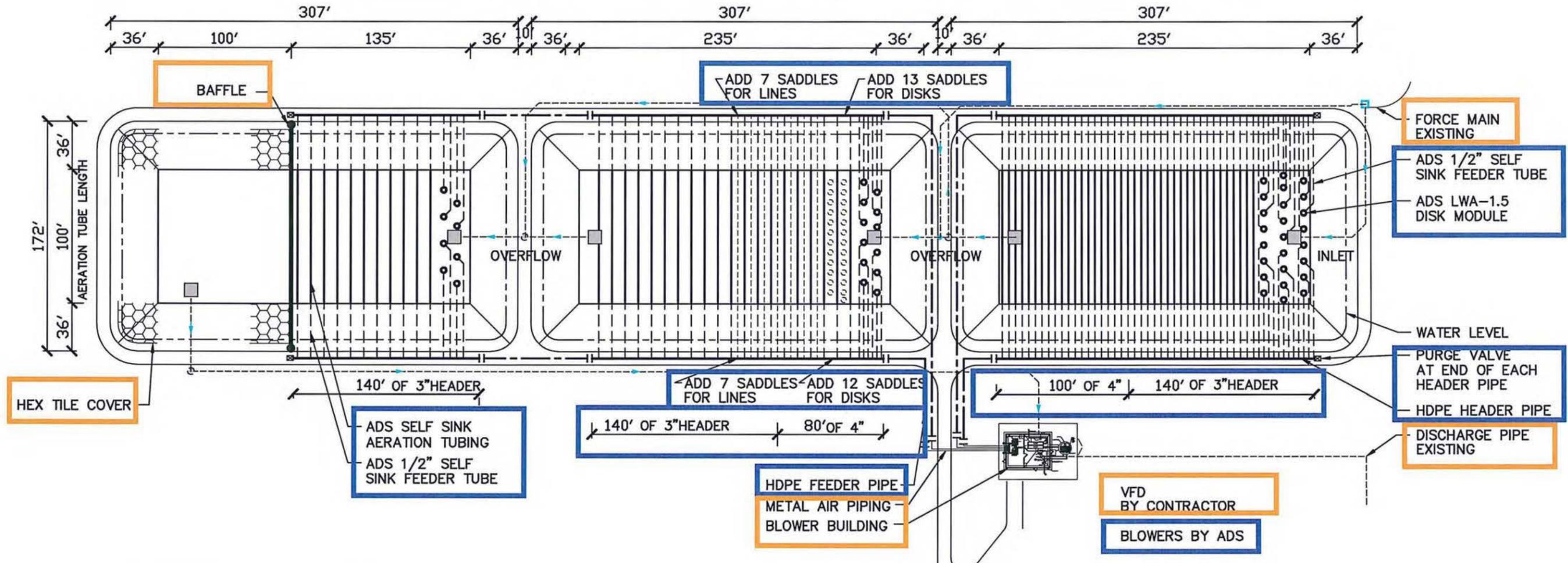
8 LWA-1.5 DISKS  
11 AERATION LINES  
1,100' SSA-1.5  
57 SCFM

**LAGOON 2**

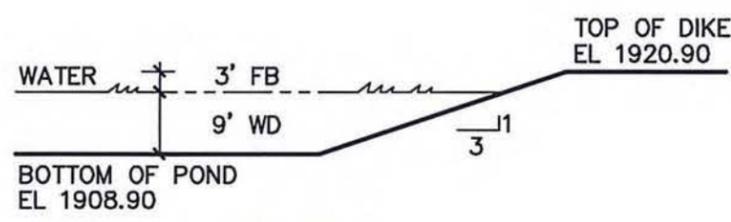
12 LWA-1.5 DISKS  
20 AERATION LINES  
2,000' SSA-1.5  
96 SCFM

**LAGOON 1**

25 LWA-1.5 DISKS  
39 AERATION LINES  
3,900' SSA-1.5  
192 SCFM



AERATION EQUIPMENT	
45	ADS LWA-1.5 STAINLESS STEEL DISK MODULE WITH LEGS; 100' ADS WEIGHTED AERATION TUBE
7,000'	ADS SELF SINK AERATION TUBING SSA-1.5
11,000'	1/2" SELF SINK FEEDER TUBE
1,200'	HDPE HEADER PIPE
800'	HDPE FEEDER PIPE
2	30 HP BLOWERS TO DELIVER 345 SCFM OF FILTERED OIL FREE AIR AT 7.0 PSI 14 PSI MAX (ONE RUNNING AND ONE STANDING BY)



**SECTION**

NOTES:  
LAGOON BOTTOM SHALL BE LEVEL WITHIN ±6"  
DIFFUSER ELEVATION SHALL BE MAXIMUM 6" VARIATION TO SURFACE

**AERATION PLAN**



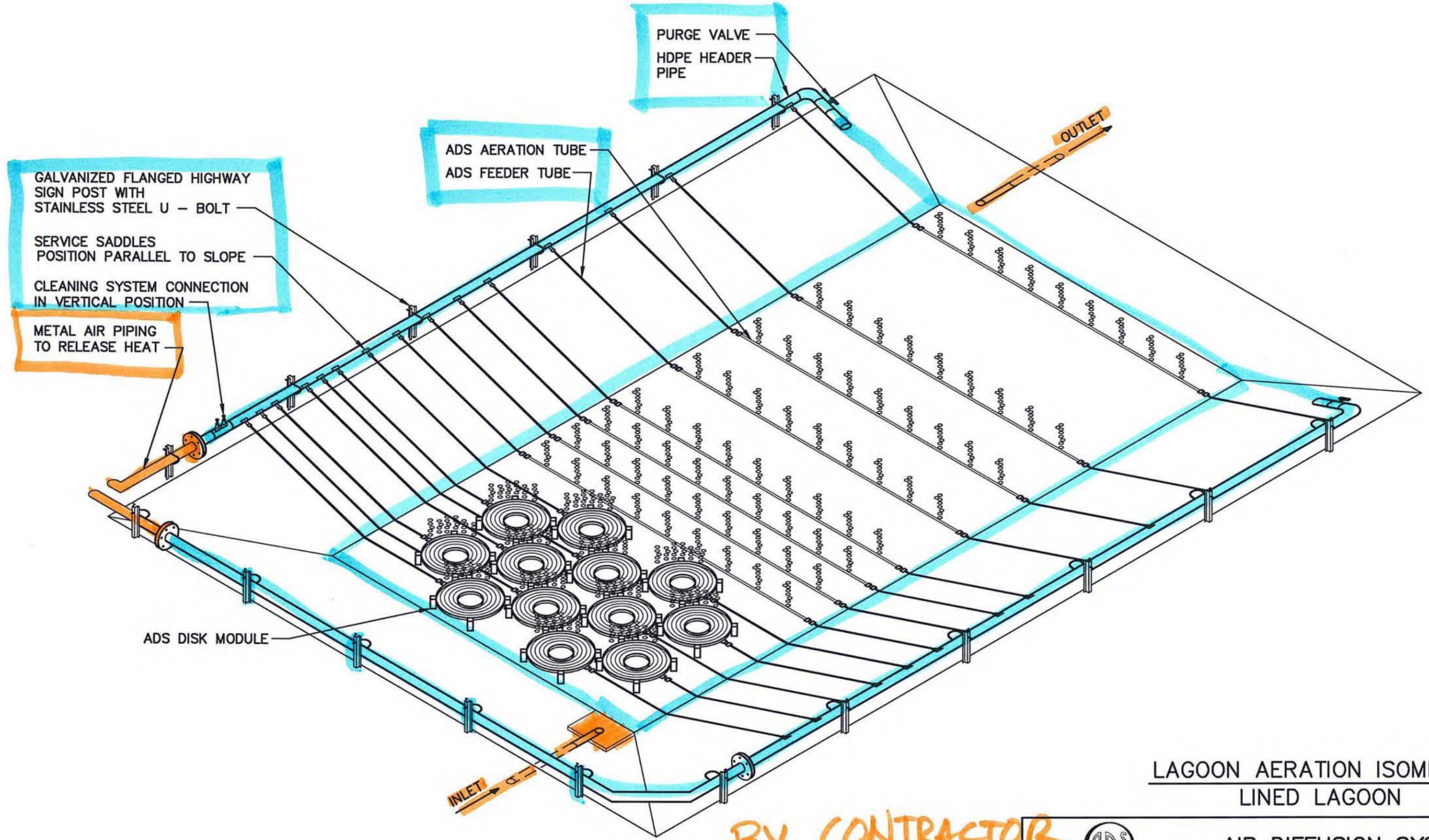
WORK COLOR CODES	
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<span style="border: 1px solid blue; padding: 2px;">WORK BY ADS</span>	

**AIR DIFFUSION SYSTEMS**

T.847-782-0044 F.847-782-0055 WWW.AIRDIFFUSION.COM

DATE 04-23-2015	ADS SYSTEM # 2012-100-E
AERATION PLAN CULBERTSON, MT	
1	

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LAGOON AERATION ISOMETRIC  
LINED LAGOON

BY CONTRACTOR  
BY ADS



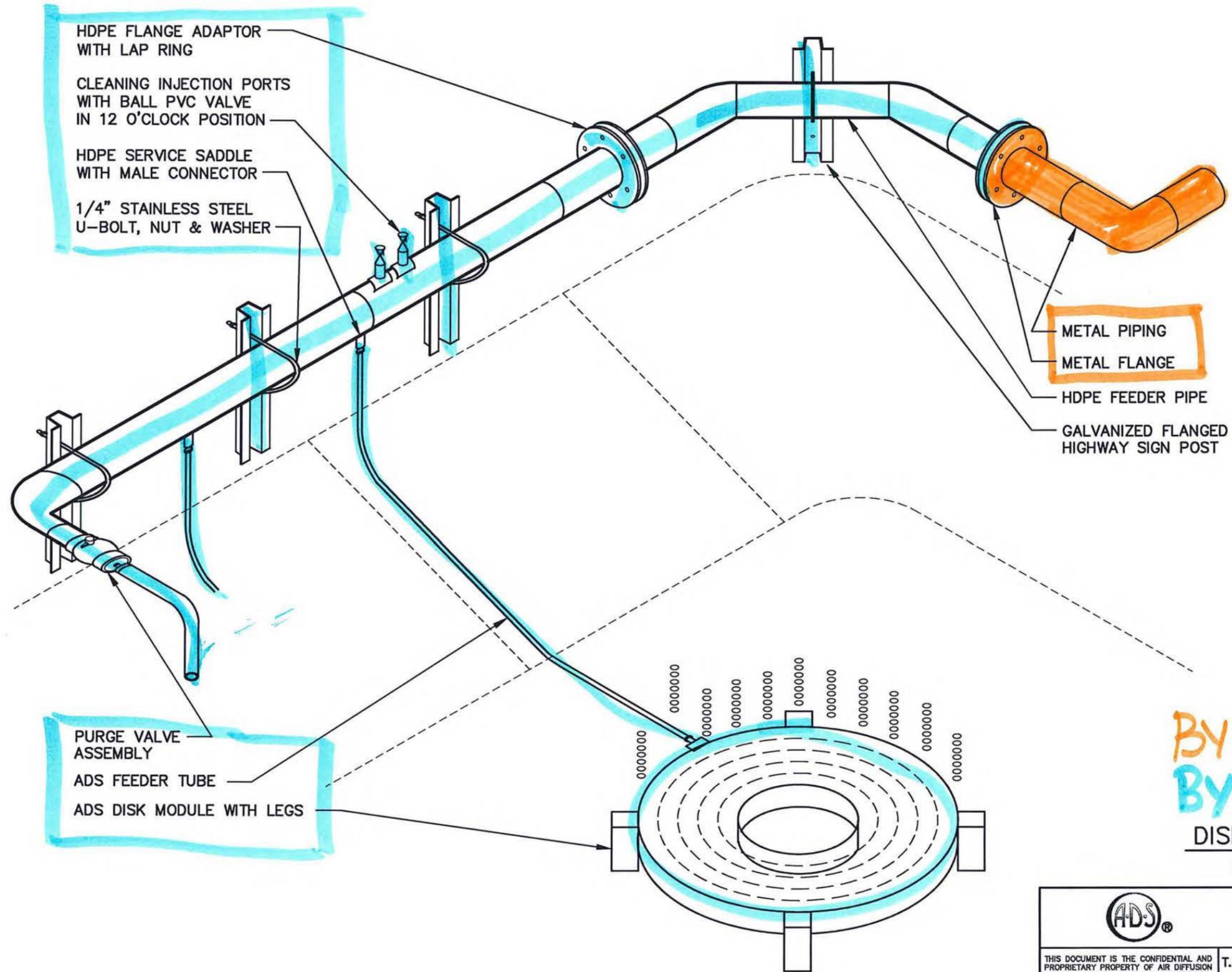
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DATE 04-23-2015 ADS SYSTEM # 2012-100-E

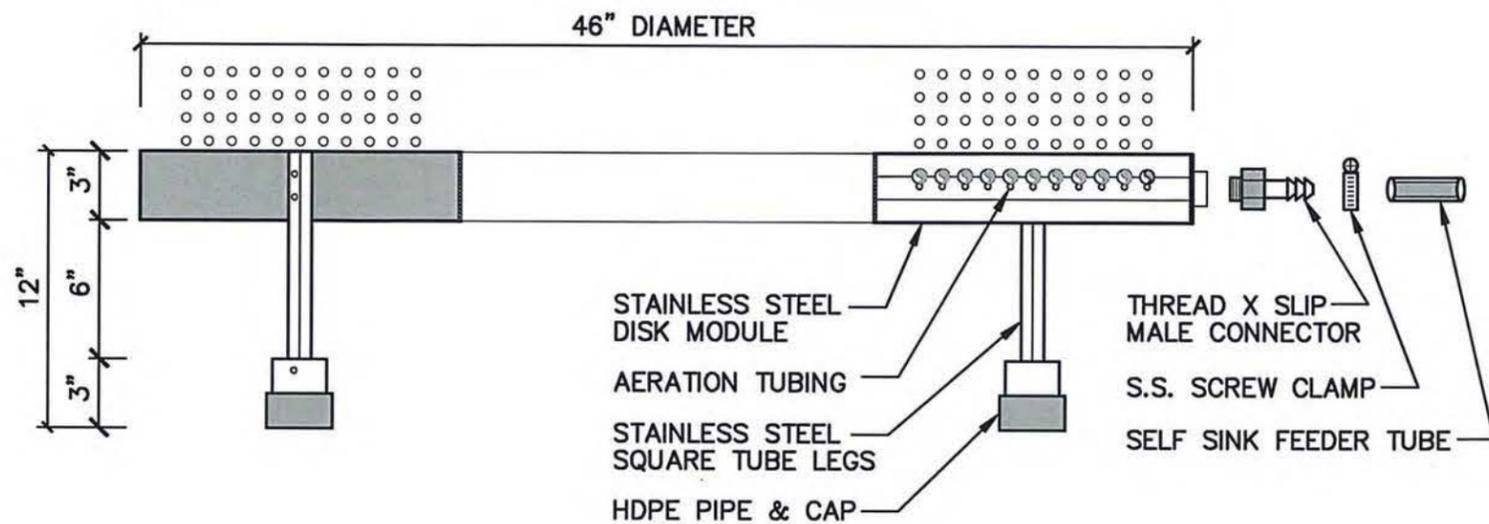
LAGOON AERATION ISOMETRIC  
CULBERTSON, MT



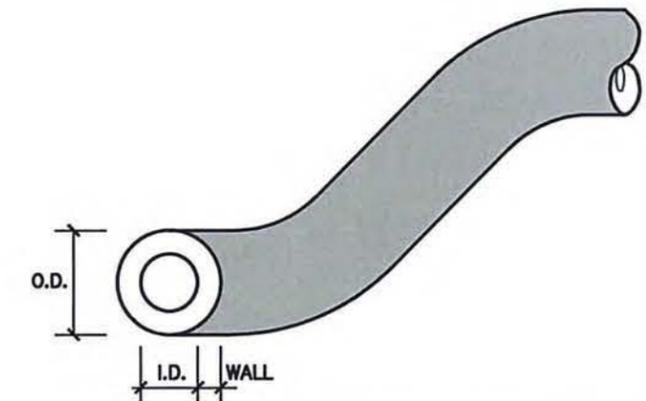
BY CONTRACTOR  
By ADS

DISK MODULE ISOMETRIC  
LINED LAGOON

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		DATE	ADS SYSTEM #
		04-23-2015	2012-100-E
DISK MODULE ISOMETRIC CULBERTSON, MT		3	

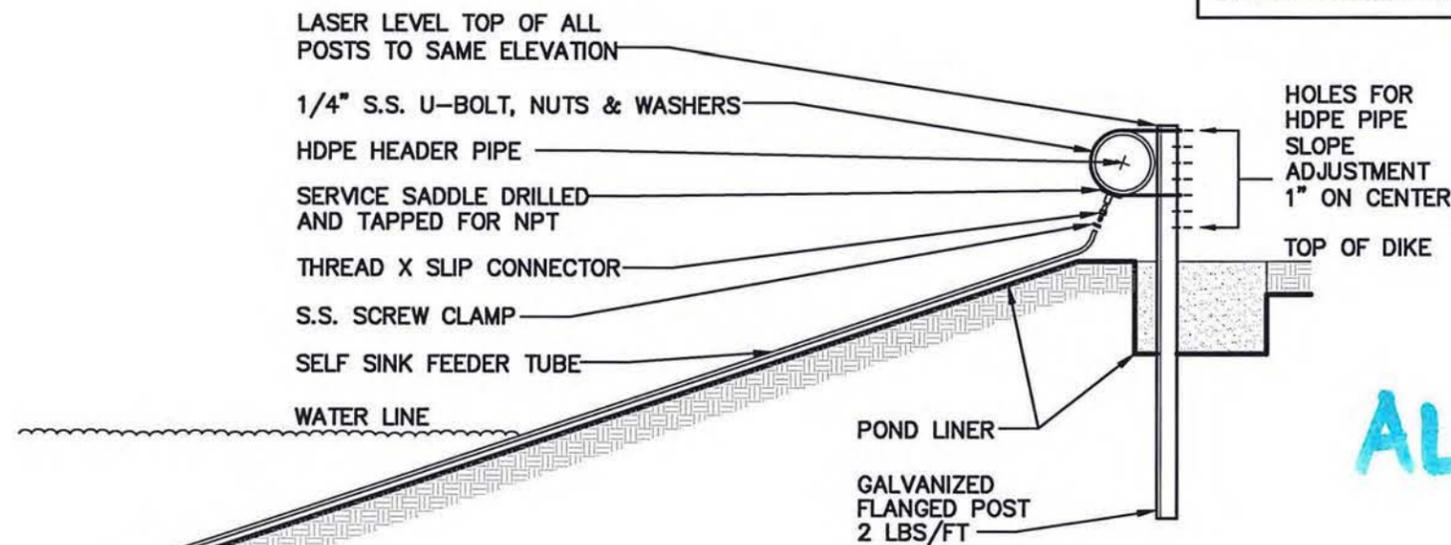


**ADS STAINLESS STEEL DISK MODULE WITH LEGS**



	SSFT - 50	SSFT - 75	SSFT - 100	SSFT - 125	SSFT - 150
I.D. (IN)	0.50	0.75	1.00	1.25	1.50
O.D. (IN)	1.00	1.36	1.81	2.25	2.55
WALL (IN)	0.25	0.30	0.40	0.50	0.525
WT/FT (LBS)	0.50	0.74	1.31	2.40	2.80

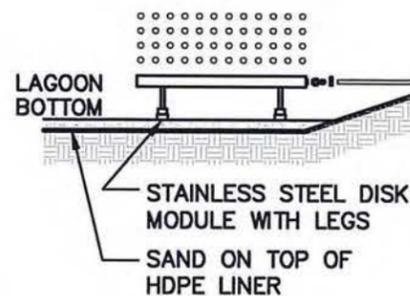
MATERIAL - HIGHLY FILLED VINYL COMPOUND  
 COLOR - BLACK WITH CARBON ADDITIVE FOR UV PROTECTION  
 BURST - 225 PSI  
 SPOOLS AVAILABLE: 1/2"=500', 3/4"=300', 1"=100', 1-1/4"=100', 1-1/2"=100'



**SELF SINK FEEDER TUBE DETAIL**

**ALL BY ADS**

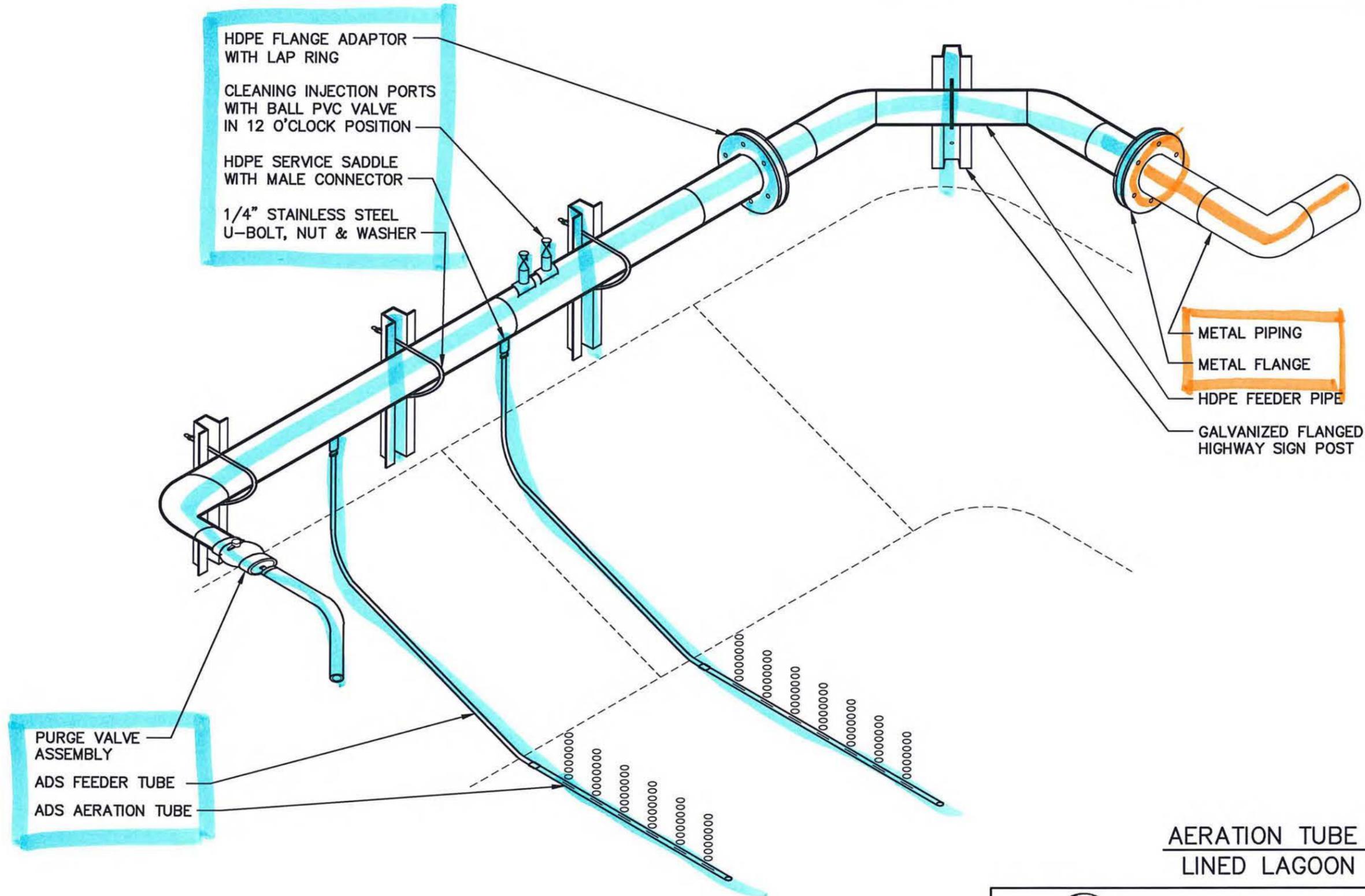
**DISK MODULE DETAILS LINED LAGOON**



SPACING BETWEEN SUPPORT POST FOR HDPE PIPE				
PIPE SIZE	2"	3"	4"	6"
DISTANCE	3'	3'	3'	4'

**HDPE PIPE SUPPORT AND HEADER PIPE TO DISK MODULE CONNECTION DETAIL**

	<b>AIR DIFFUSION SYSTEMS</b>	
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	T.847-782-0044 F.847-782-0055 WWW.AIRDIFFUSION.COM DATE 04-23-2015	ADS SYSTEM # 2012-100-E
<b>DISK MODULE DETAILS</b> <b>CULBERTSON, MT</b>		<b>4</b>



AERATION TUBE ISOMETRIC  
LINED LAGOON



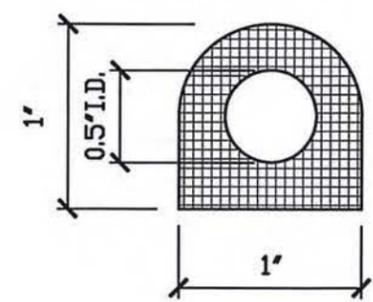
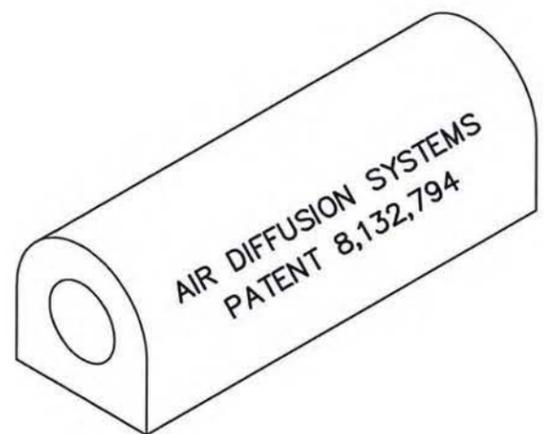
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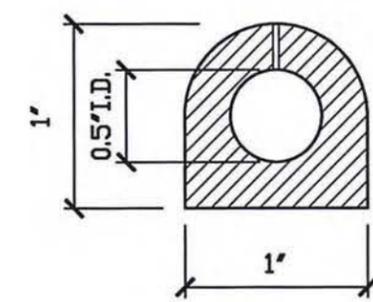
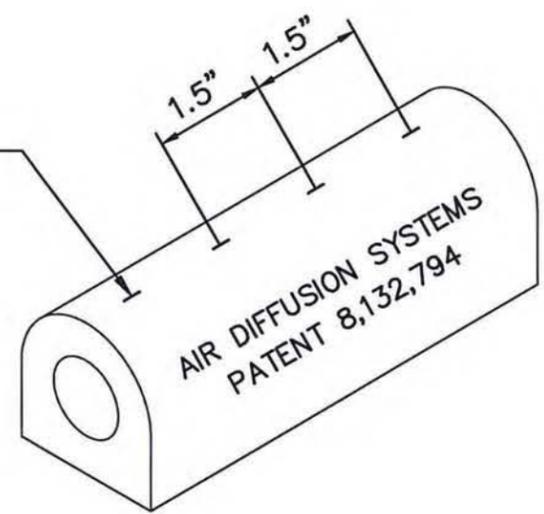
DATE 04-23-2015 ADS SYSTEM # 2012-100-E

AERATION TUBE ISOMETRIC  
CULBERTSON, MT



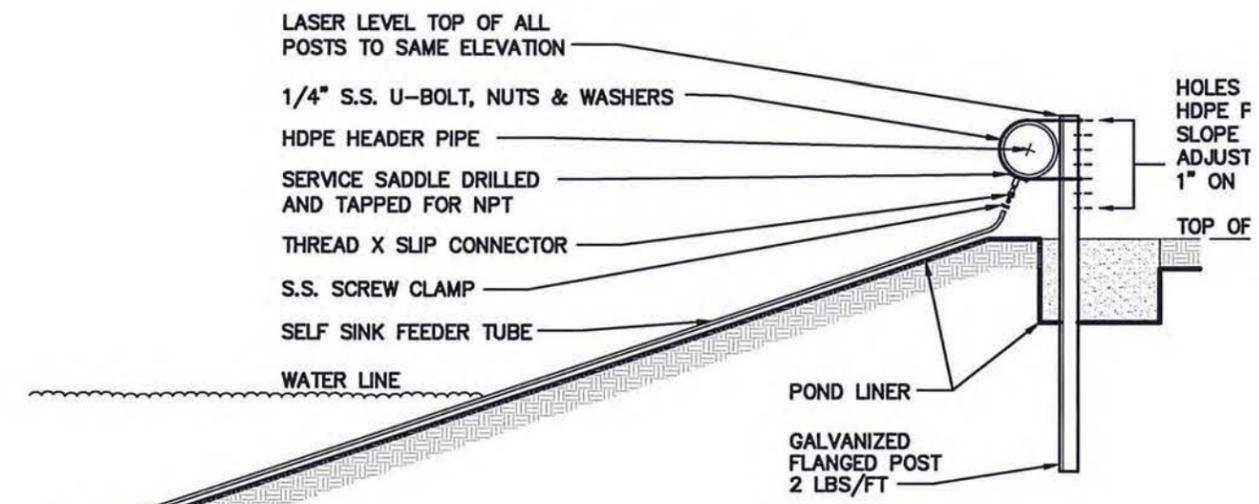
**SELF SINK FEEDER  
TUBE – SSFT**

AIR-CUTS ON TOP OF TUBING WITH 1.5" O.C.



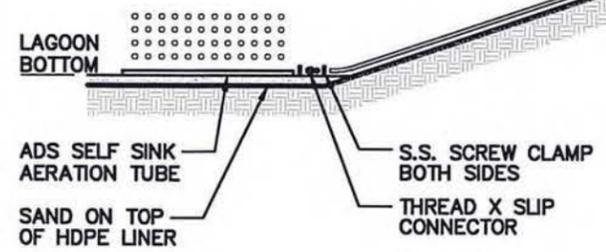
**SELF SINK AERATION  
TUBE – SSA 1.5**

SELF SINK MATERIAL
MATERIAL – HIGHLY FILLED VINYL COMPOUND
COLOR – BLACK WITH CARBON ADDITIVE FOR UV PROTECTION
WEIGHT – 0.49 POUNDS/FOOT 0.73 KILOGRAMS/METER



**ALL BY ADS**

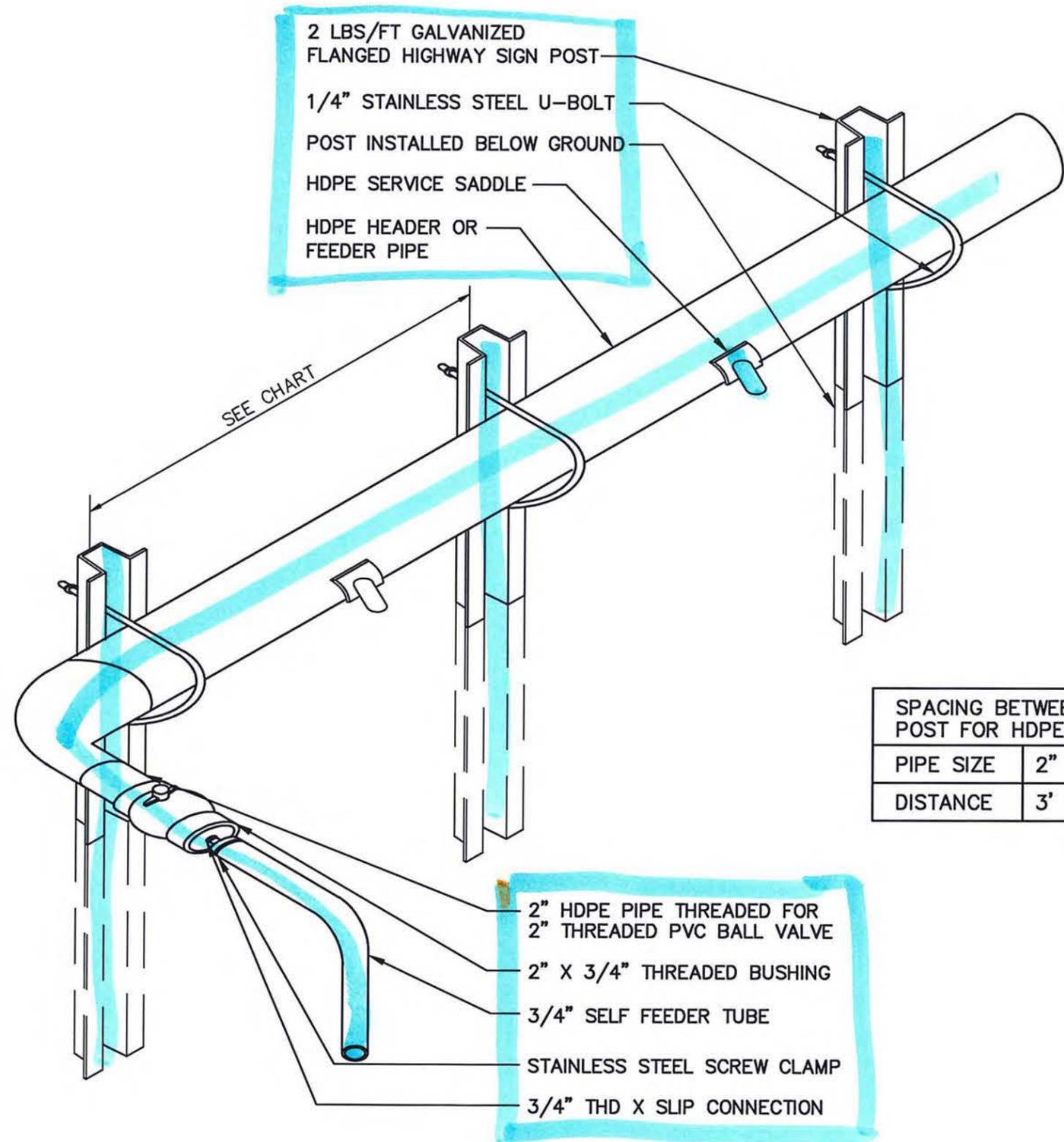
**AERATION TUBE DETAILS  
LINED LAGOON**



SPACING BETWEEN SUPPORT POST FOR HDPE PIPE				
PIPE SIZE	2"	3"	4"	6"
DISTANCE	3'	3'	3'	4'

**HDPE PIPE SUPPORT AND HEADER PIPE TO  
SELF SINK AERATION TUBE CONNECTION**

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		DATE	04-23-2015
AERATION TUBE DETAILS CULBERTSON, MT			6



2 LBS/FT GALVANIZED  
FLANGED HIGHWAY SIGN POST  
1/4" STAINLESS STEEL U-BOLT  
POST INSTALLED BELOW GROUND  
HDPE SERVICE SADDLE  
HDPE HEADER OR  
FEEDER PIPE

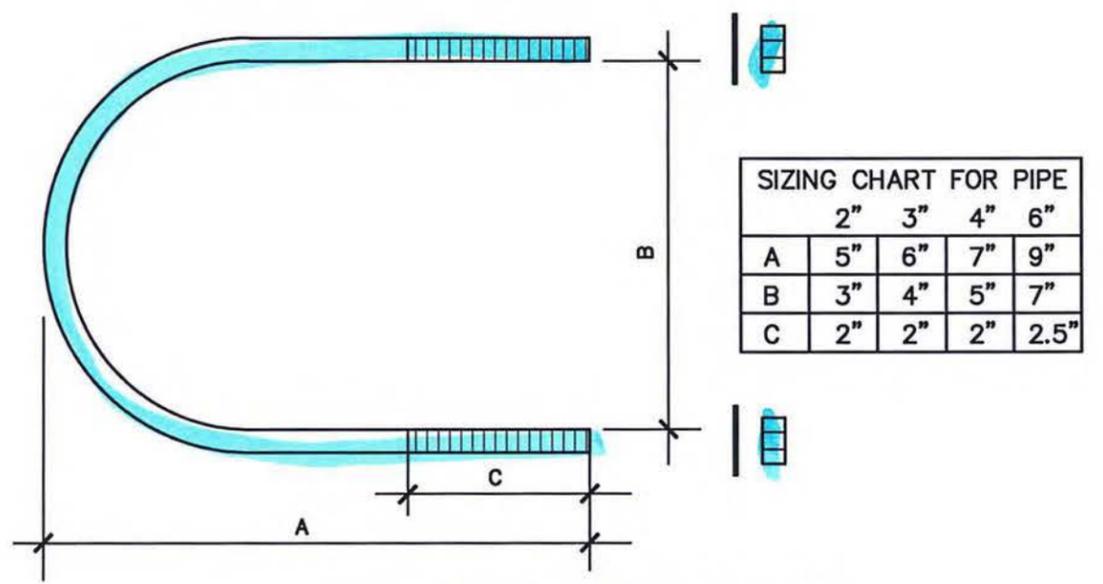
SEE CHART

SPACING BETWEEN SUPPORT POST FOR HDPE PIPE

PIPE SIZE	2"	3"	4"	6"
DISTANCE	3'	3'	3'	4'

2" HDPE PIPE THREADED FOR  
2" THREADED PVC BALL VALVE  
2" X 3/4" THREADED BUSHING  
3/4" SELF FEEDER TUBE  
STAINLESS STEEL SCREW CLAMP  
3/4" THD X SLIP CONNECTION

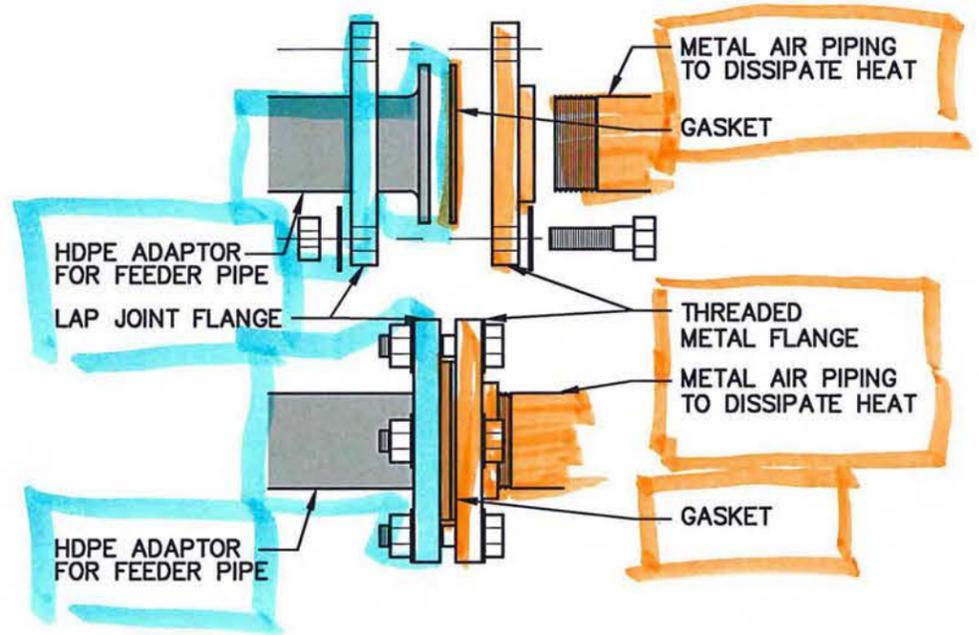
2" PURGE VALVE ASSEMBLY DETAIL



SIZING CHART FOR PIPE

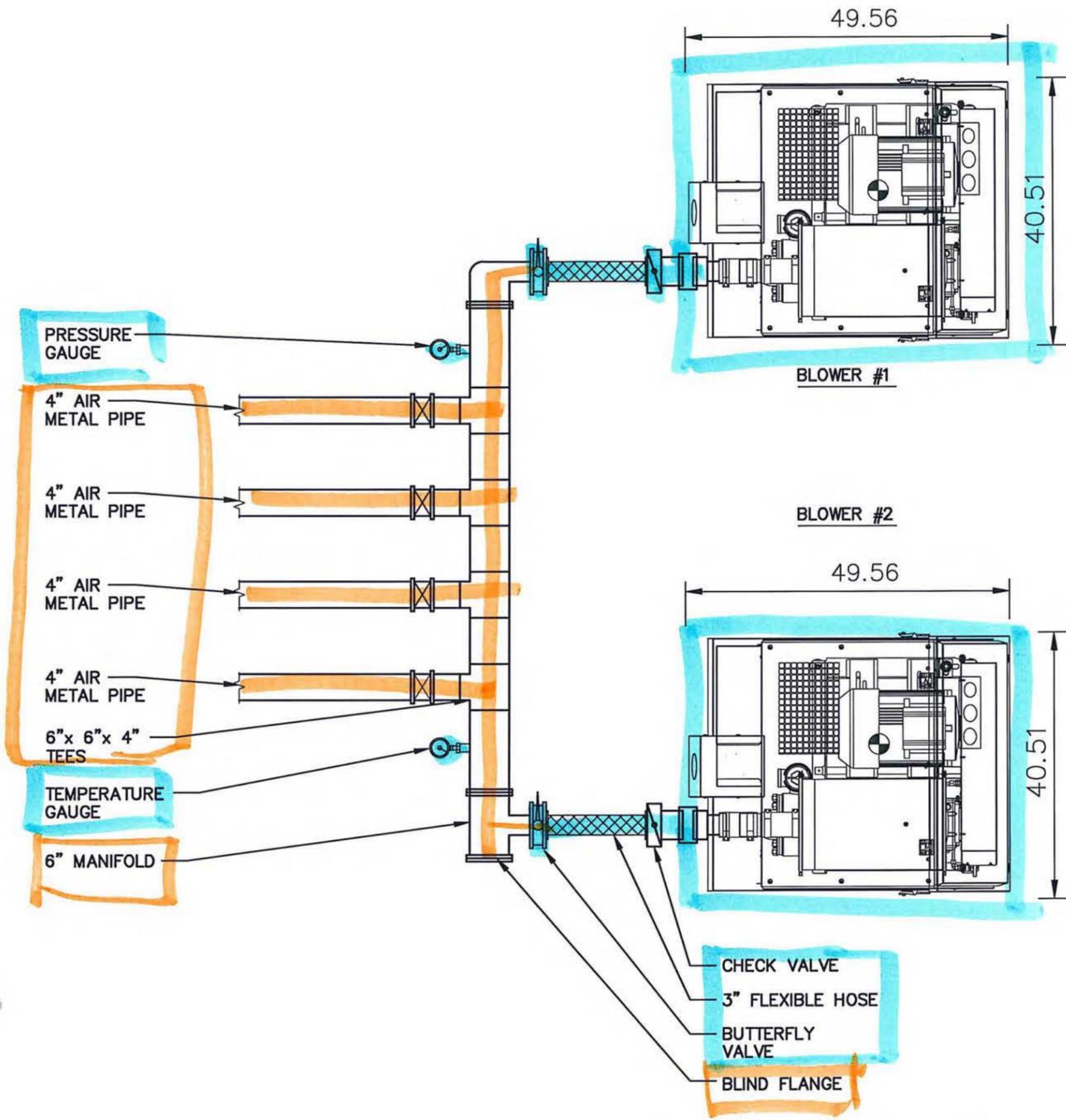
	2"	3"	4"	6"
A	5"	6"	7"	9"
B	3"	4"	5"	7"
C	2"	2"	2"	2.5"

1/4" STAINLESS STEEL TYPE 304  
U-BOLT, NUTS AND WASHERS

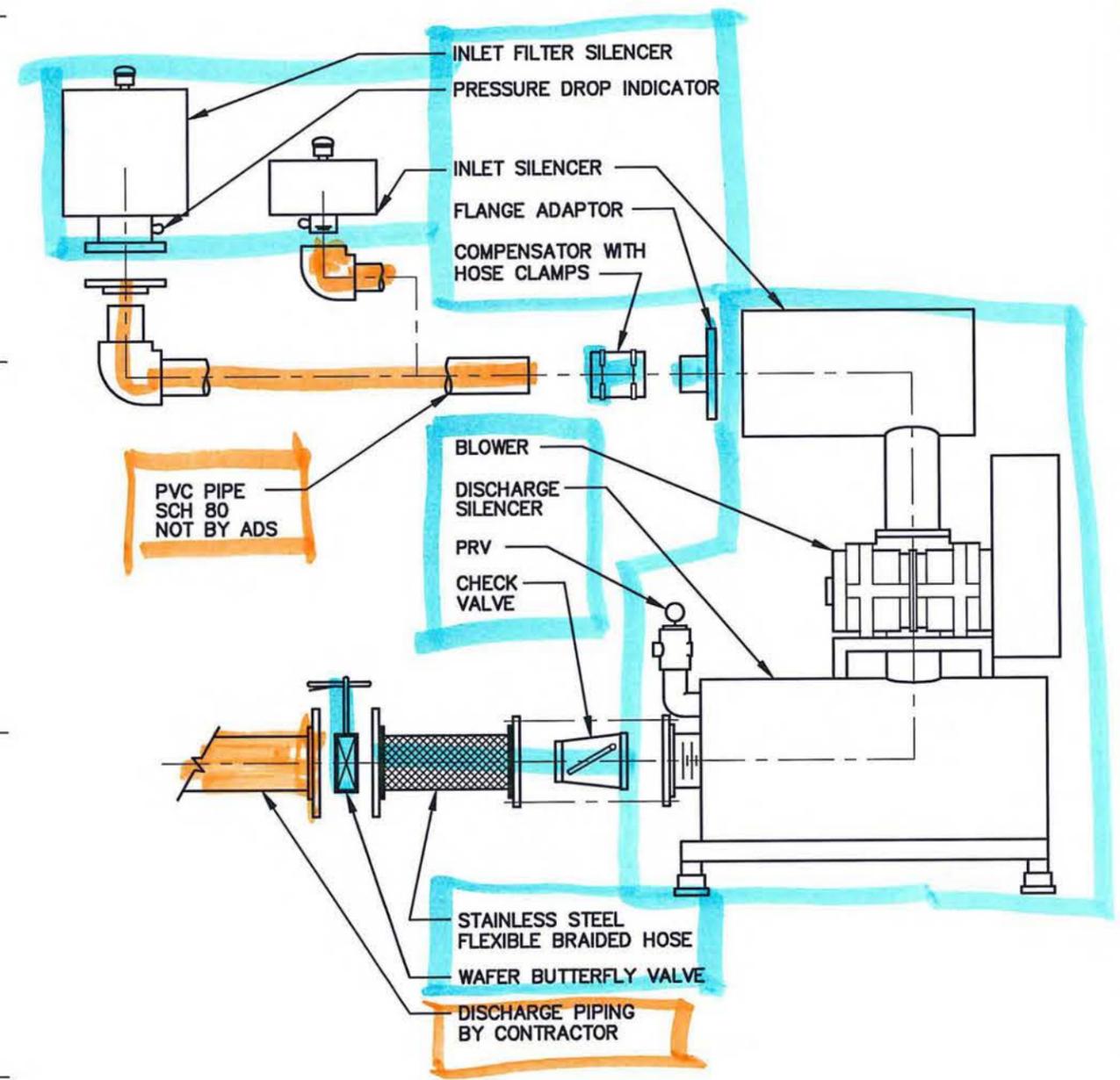


FLANGE CONNECTION DETAIL

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	<p>DATE</p> <p>04-23-2015</p>	<p>ADS SYSTEM # 2012-100-E</p>
	<p>DETAILS</p> <p>CULBERTSON, MT</p>	

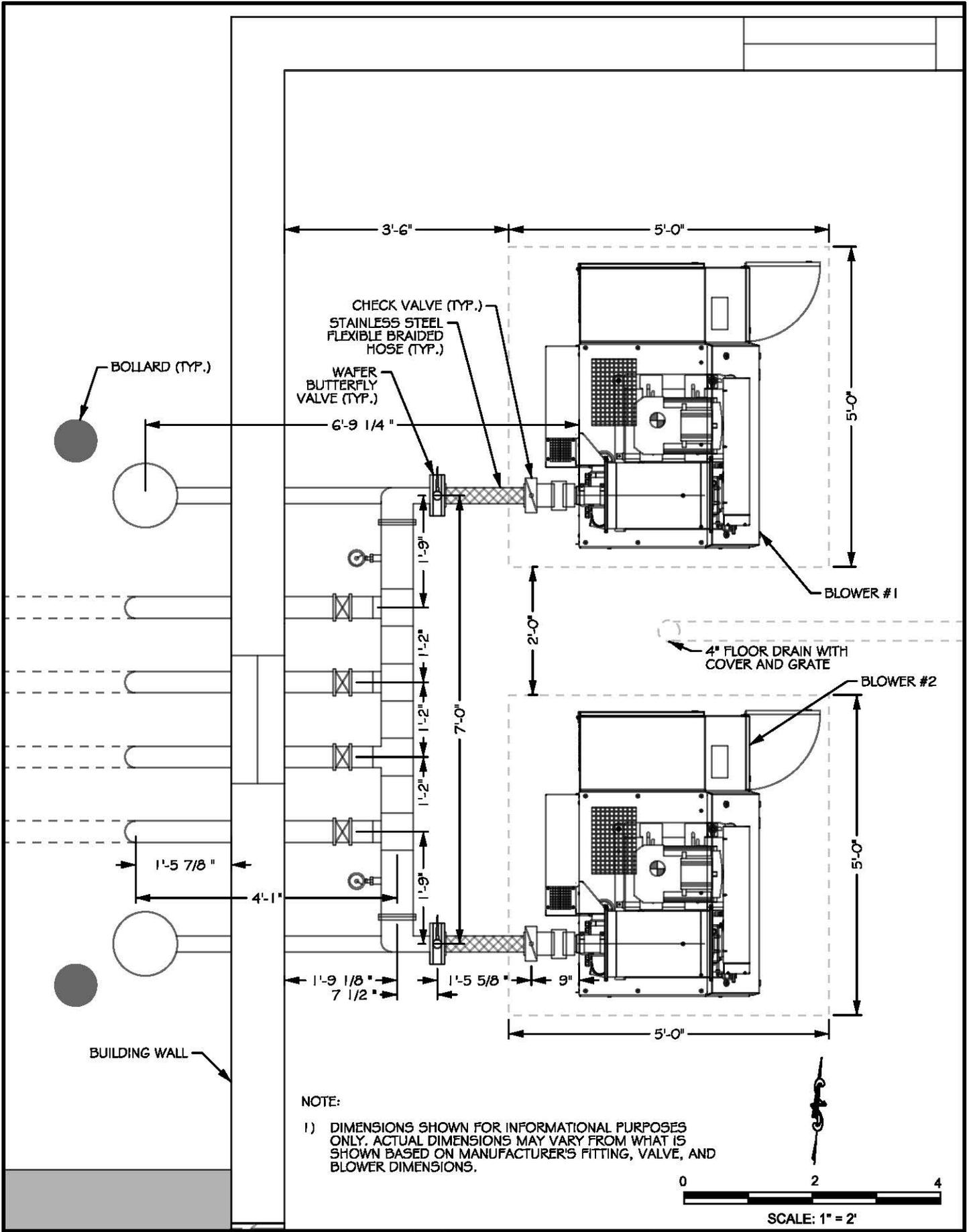


**BLOWER ENLARGED PLAN**  
NOT TO SCALE

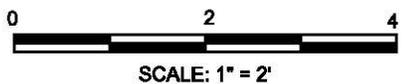


**BLOWER DETAIL**

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	<p>DATE 04-23-2015</p>	<p>ADS SYSTEM # 2012-100-E</p>
	<p>BLOWER DETAILS CULBERTSON, MT</p>	



NOTE:  
 1) DIMENSIONS SHOWN FOR INFORMATIONAL PURPOSES ONLY. ACTUAL DIMENSIONS MAY VARY FROM WHAT IS SHOWN BASED ON MANUFACTURER'S FITTING, VALVE, AND BLOWER DIMENSIONS.



<b>CULBERTSON WASTEWATER FACILITY REHABILITATION - PHASE 2</b>  <b>Blower Dimensions</b>	DSGN    DATE    CKD MRS    7/23/16    STH REV    DATE    CKD	<b>TOWN OF CULBERTSON</b> 210 BROADWAY AVE. CULBERTSON, MT 59218 (406) 787-5271	 <b>WWC ENGINEERING</b> 1275 MAPLE STREET, SUITE F HELENA, MT 59601 (406) 443-3982	<b>EXHIBIT</b>  1
	JOB # 2013-088              PER TABLE PATH: K:\Plans\TOWN OF CULBERTSON\1308 - Wastewater Project Phase 2\04-BUILDING\04-BUILDING PLAN SET.dwg FILE PATH: K:\Plans\TOWN OF CULBERTSON\1308 - Wastewater Project Phase 2\04-BUILDING\04-BUILDING PLAN SET.dwg			