Date: June 12, 2026
Owner: City of Flowery Branch
Project: SCADA System Equipment Upgrade for Water System
Project Number: 26-010

Addendum Number One

Submitted Questions with Answers

1. **Copy of the June 03 mandatory pre-bid attendance list.**
    - Please refer to **Exhibit A.**
2. **Copies of all available MR Systems SCADA and existing VFD drawings.**
    - Please refer to **Exhibit B** for all available drawings.
3. **Can we give couple of pricing options? There is no need to replace PLC now. Can we give pricing for with and without PLC replacement?**
    - Yes, please provide both pricing options.
4. **Is there any union requirement we need to be aware of when we plan our installation work at site?**
    - There are no union labor requirements for this GEFA Drinking Water project. Contractors must comply with all applicable GEFA, State of Georgia, and local licensing and certification requirements.
5. **Can we propose online work or will there be a planned outage for any replacements?**
    - Planned outages can be arranged, although they are not preferred.
6. **What SCADA System does the City currently use?**
    - The City uses a Year 2000 MR Systems SCADA platform.
7. **Are the smaller pumps at the same station?**
    - Yes, they are located at the booster pump station.
8. **Does the City only maintain pressure with the smaller pumps?**
    - No.
9. **Do we need to submit itemized pricing?**
    - Yes, itemized pricing is required.
10. **Is the SCADA system independent from the Wastewater?**
    - Yes, it is independent.
11. **If so, who won that solicitation? Who was the engineer?**

- ESG Engineering served as the engineer, and Global Control Systems was the integrator.

12. Does the City want to match the software being used in Wastewater?

- Yes, the City prefers to match the existing Wastewater software.

13. Are the same employees going to operate the Wastewater and Water SCADA system?

- Yes, the same staff operate both systems daily and have done so for over 20 years.

14. Will the PC be installed at the Wastewater Treatment Plant?

- Yes, it will be installed in the breakroom adjacent to the Wastewater Plant PC.

15. Does the City have Variable Frequency Drive (VFD)?

- One well pump and all four booster pumps are equipped with VFDs.

16. Do all the Soft Starts need to be replaced?

- Replacement depends on the proposed system. The City prefers to retain existing equipment when feasible.

17. Does access need to be remote?

- Yes, remote access is required.

18. What is the horsepower to all the pumps?

- Well pumps: 20 HP
- Booster pumps: 60 HP and 10 HP

19. What is the Variable Frequency Drive (VFD) running at?

- Well 3 pump: 53.9 Hz
- 60 HP booster pump: 51–52 Hz
- 10 HP booster pump: 58.8 Hz

20. Does the City want a backup?

- The City would like to use the existing PSI gauge at the well buildings as a backup transducer for the Gainesville Street Tank, and tank floats as backup for the ground tank. A full system backup is desirable if budget allows. Manual operation is possible if SCADA is offline.

21. When in auto does the telemetry handle?

- It monitors pump status, tank levels, and power failures.

22. Are the flow meters charting?

- No.

23. Does the City want flow meters charting?

- Yes.

24. Does the City want the individual analog cards incorporated into this system?

- Yes, if required by bidders. Ideally, one analog card should be installed at each site.

25. Is the panel to be upgraded or replaced?

- This depends on budget. In some cases, full replacement is more cost-effective; in others, upgrading internal components while reusing the enclosure is sufficient.

26. Can enclosures be reused?

- Yes, enclosures may be reused, but the company label must be updated**.**

27. What notifications does the City want?

- Notifications must alarm locally on the SCADA computer and also the on-call phone. Required alarms:
    1. High tank level – Roberts Drive Ground Tank & Gainesville Tank
    2. Low tank level – Roberts Drive Ground Tank & Gainesville Tank
    3. Pump status – all pumps (running, off, fault)
    4. Power failure – each RTU station

28. What PSI do the pumps turn on and off at?

- Currently 103 PSI using the well building gauge. This will change once the pressure transducer is installed at the Gainesville Street Tank; calculations will be completed beforehand.

29. How far of a distance do the booster pumps pump to?

- Booster pumps push water approximately 0.65 miles.

30. Is the City needing a low level and high level alarm?

- Please refer to the answer provided for Question 27.

31. What does the Programmable Logic Controller (PLC) do now?

- The PLC provides updates every 10 seconds from the RTUs, alarms locally, and allows wells to be placed in Auto.

32. Is there a specific Booster pump vendor we would work with?

- Pro Pump & Controls based out of Kentucky.

33. Are there any drawings for the ground tank?

- Please refer to **Exhibit B** for all available drawings.

34. Does the City want to keep RACO in service?

- The City will retain RACO temporarily after startup, then relocate it once the new alarm system proves reliable.

35. Is RACO land based or cell service?

- Land-based.

36. Does the City want remote manual control and automatic?

- Yes, both are required**.**

37. Is there drawings for the Gainesville Street Tank?

- Please refer to **Exhibit B** for all available drawings.

38. Does the City want directional antennas?

- No. They are prone to lightning damage. A cellular-based system is preferred.

39. What cellular provider does the City use?

- AT&T FirstNet

40. What is the radio model?

- MR Systems MDS TransNET 900 (now outdated).

41. Do the notifications need to be text only or calls as well?

- Please provide pricing for both options.

42. To confirm, we are not required to include a new VFD or a new soft starter. If required, do you have a preferred brand you would like us to include in the proposal?

- The City prefers to retain existing equipment when feasible. If new equipment is required in the process then City must approve.

END OF QUESTIONS AND ANSWERS

Exhibit A

PRE-BID MEETING SIGN-IN SHEET

FLOWERY BRANCH

BID NUMBER: 26-010
BID TITLE SCADA System Equipment Upgrade for Water System
BID DUE / OPEN DATE: Tuesday June 30, 2026 at 2:00 PM
PRE-BID MEETING: Wednesday, June 3, 2026 at 9:30 AM
PRE-BID MEETING LOCATION: City Hall Community Room 5410 Pine Street, Flowery Branch, Georgia 30542

PROPOSERS ATTENDANCE SHEET				
No.	**Proposer's Company Name**	**Attendee Name**	**Email Address**	**Phone Number**
1	M.C. Dean	Shauna Johnson	Shauna.Johnson@MCDean.com	(404) 513-8847
2	Clark Nexsen	Chuck Parkerson	cparkerson@clarknexsen.com	478-231-9070
3	Tesco Controls Rich Ercolini	Rich Ercolini	rercolini@tescocontrols.com	225-910-4573
4	Prime Controls	Kelly Pedigo	k.pedigo@PrimeControls.com	615-806-1577
5	Lord & Company	Christian Brown	cbrown@lordandcompany.com	704-512-9042
6	Radiant Control Systems	TJ PATWA	tj.patwa@radiantcontrolsystems.com	404-435-9548
7	Rever Control	Greg Grainger Caroline Martin	ggrainger@revercontrol.com	251-284-3279
8	Cintra Instruments Inc	WES Wood	Wwood@cziinc.com	6784355145
9	SELVA LLC	Selva Kumar	SELVA.KUMAR@SELVALLC.com	7703375380
10	~~Shane Weaver Jr~~	Shane Weaver	Shane.weaverjr@gmail.com	706-641-6940

holstein eletric
DeAnna Fountain / MCDean

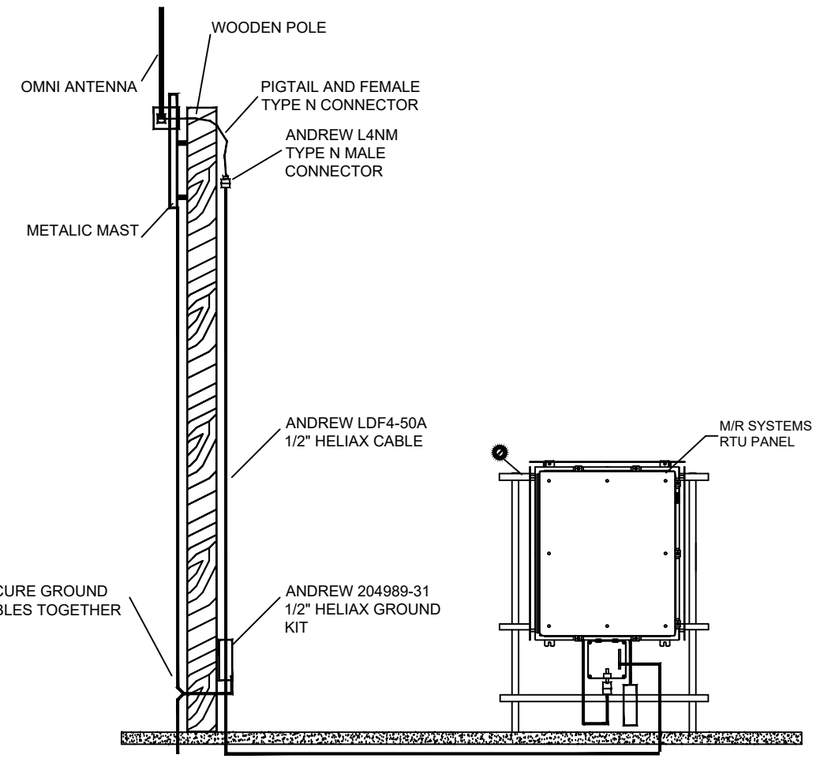
Following the meeting at City Hall, Respondents will be required to travel to three (3) additional sites: the Well Building, Booster Pump Building and the Wastewater Treatment Plant.

PROPOSERS ATTENDANCE SHEET				
No.	**Proposer's Company Name**	**Attendee Name**	**Email Address**	**Phone Number**
11	INFRAMARK	William.Kelly	William.Kelly@inframark.com	678 325. 2817
12				
13				
14				

EXHIBIT B (PAGES 6-54)

FRONT PANEL BILL OF MATERIALS

ITEM	QTY	TAG	MANUFACTURER	MODEL	DESCRIPTION	ENGRAV_L1	ENGRAV_L2
1	1		B & D Fabricators, Inc.	2420DP	Door Pan, for 24" x 20" Ultrix enclosure		
2	1		B & D Fabricators, Inc.	SS-F-242010ALW	solarshield, front for 24" x 20" x 10" enclosure, aluminum painted white		
3	2		B & D Fabricators, Inc.	SS-S-242010ALW	solarshield, side for 24" x 20" x 10" enclosure, aluminum painted white		
4	1		B & D Fabricators, Inc.	SS-T-242010ALW	solarshield, top for 24" x 20" x 10" enclosure, aluminum painted white		
5	1		Hoffman	U-U605025	Enclosure, wall mount, 24 x 20 x 10, NEMA 4X, fiberglass ULTRX		
6	1		Hoffman	U-UHPL	Padlock Kit for ULTRX Fiberglass Enclosure		
7	1		Hoffman	A-24P20	Subpanel, 21" x 17", fits 24 x 20 enclosure		
8	1		Hoffman	Q-202013PCIQR	QLINE "I" polycarbonate 4x enclosure , 7.87" x 7.87"		
9	1		Hoffman	Q-2020PI	Subpanel, 6.3" x 6.3"		
10			NotUsed				
11	1		Micro Switch	BZ-2RW82-A2	Basic Switch, SPST, 15A contact, Roller Arm		
12	1		WD Engraving	1.5" x 3"Lamacoid NP	Black Lamacoid engraved with white letters per attached	15,000GAL ELEVATED TANK	RTU-1
13	1		Best Power Tech	Patriot SMT420VB	UPS,420VA, 260W, 120VAC IN/OUT 4.0 Min @ Full Load, w/batt		



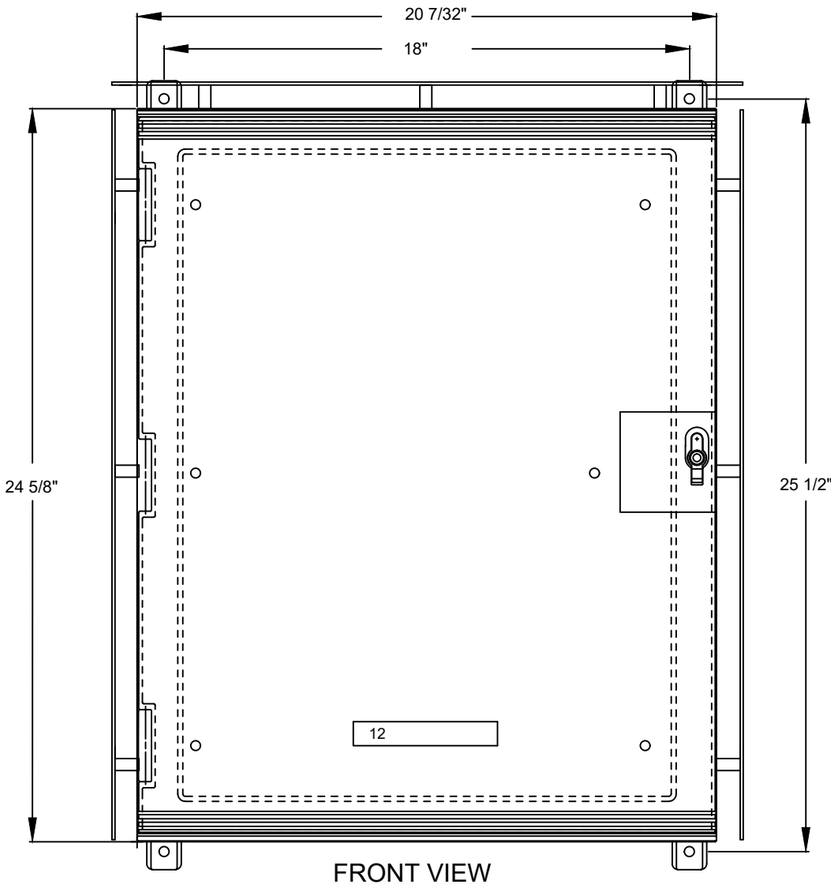
INSTALLATION DETAIL

PANEL FABRICATION DETAILS:

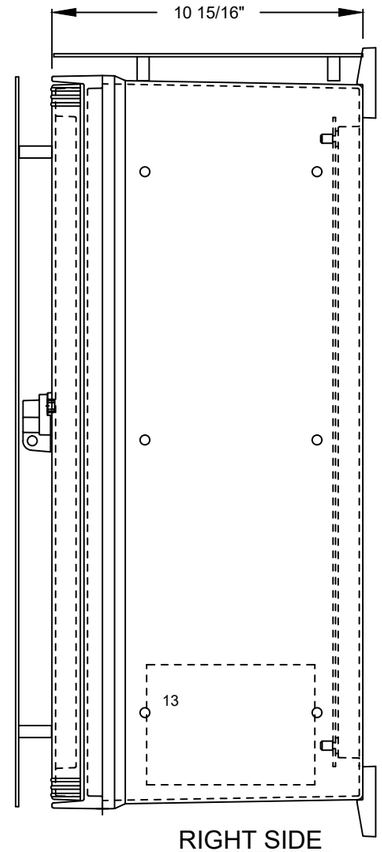
1. RTU ENCLOSURE IS WALL MOUNTED FIBERGLASS NEMA 4X HOFFMAN PART NO. U-U605025.

2. SUBPANEL SHALL BE STEEL AND PAINTED HOFFMAN WHITE. HOFFMAN PART NO. A-24P20.

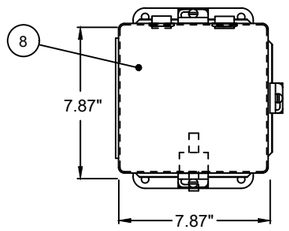
3. NAMEPLATES SHALL BE BLACK GRAVOPLY WITH WHITE LETTERS, BEVELED EDGES. NAMEPLATE SIZING AND LETTERING SHALL BE AS REQUIRED TO PROVIDE OPTIMAL VIEWING.



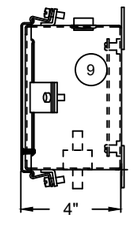
FRONT VIEW



RIGHT SIDE



FRONT VIEW



RIGHT SIDE

SUPPLIED BY OTHERS

REV	DATE	DESCRIPTION	REV	DATE	DESCRIPTION
			3	01-28-01	REVD MICRO TO MODMOM
			2	10-08-01	AS SHIPPED
			1	09-21-01	FOR MANUFACTURE
4	04-03-02	AS INSTALLED	0	09-13-01	FOR APPROVAL

SCALE: DO NOT SCALE

	NAME	APPROVED	DATE
DESIGN BY:	W. WOOD	WMW	09-13-01
DRAFTING:	N.FIELDS	NF	09-13-01
PROJ ENG:	W. WOOD	WMW	09-13-01
PROJ MGR:	W. WOOD	WMW	09-13-01

M/R Systems, Inc.
Service & System Integration
NORCROSS, GA - GAINESVILLE, FL

PROJECT - LOCATION
CITY OF FLOWERY BRANCH, GA.
RADIO TELEMETRY SYSTEM
FLOWERY BRANCH, GA.

PROJECT NO. 201042

TITLE
150,000 GAL ELEVATED TANK
RTU-1
REMOTE TELEMETRY UNIT

FILE: 2014201M01 SHT. 1 OF 1

DRAWING NO. 201042-3501-M1

PRINTED 4/3/02 11:23 AM 2014201M01.dwg

SUBPANEL BILL OF MATERIALS

ITEM	QTY	TAG	MANUFACTURER	MODEL	DESCRIPTION	
1	1		Allen-Bradley	1492-DR5	terminal track aluminum, 35mm DIN, 3.28 FT	
2	2		AMP	5-554739-3	RJ 45 connector for flat 8 cond, stranded cond	
3	1		Andrew	L4NF	Female connector,Type N, for 1/2inch Heliax LDF4-50A	
4	1		Andrew	204989-31	Grounding kit for Antenna Cable, 1/2 in cable, screw lug	
5	1		Andrew	LDF4-50A	Heliax cable, 1/2 in foam filled, 1foot	
6	1		Andrew	L4NM	Male connector, Type N, for 1/2 inch Heliax LDF4-50A	
7	1		Andrew	241474-4	Weatherproofing kit, 3M Cold Shrink, 1/2 inch coax to 1/2 inch coax covers (2) connectors	
8	1		Brady	WML-205-292-75	w ire marker, small w /clear w rap (qty 250)	
9	1		Bussman	AGC-1	Fuse, 1/4 x 1 1/4 inch, 1 Amp, 250 volt, (box of 5)	
10	1		Bussman	AGC-1/2	Fuse, 1/4 x 1 1/4 inch, 1/2 Amp, 250 volt, (box of 5)	
11	15		IDEC	RH1B-U-DC24V	Relay, 1PDT pole, 10 amp, 24VDC coil, uses socket SH1B-05	REV 5
12	1		IDEC	RH1B-U-AC120V	Relay, 1PDT, 10 amp, 120VAC coil, uses socket SH1B-05	
13	16		IDEC	SH1B-05	Socket, 1 pole, 10 amp, DIN mount	REV 5
14	1		McMaster-Carr Supply Co.	7438K11	Extension Cord, indoor/outdoor, three-conductor(16/3), SJTW-A, 13 amps, orange	
15	1		Microw ave Data Systems	MDS947Y-2-PT	Yagi antenna, 10dB gain, 7 element,890-960 MHZ, 2ft pigtail w /type N Male	
16	1		Microw ave Data Systems	9810B	Radio TransCeiver, 2100 series compatible MAS, 800 - 960 MHz, DSP, 9600bps, master or remote, 5 w att output	
17	1		Modicon	172JNN21032	Momentum,OptionAdapter,Modbus(RS232/485)port,TOD clock, battery backup	
18	1		Modicon	171CCC76010	Momentum,M1 Processor Adapter,512K RAM, 1-RJ45 Modbus RS-232 port, 1DB9Field I/O Bus Port	
19	2		MR Systems, Inc	Kamikazie ASA-1	Analog Surge Arrestor	
20	1		Polyphaser	ISB-B50LN-C2	Coaxial Protector, Bulkhead Mt, UHF, 125-100MHZ, (2) Type N Female	
21	1		Pow er One	HC12-3.4	Pow er Supply, Single Output, 12VDC, 3.4 amps, C Case 4.87"L x 2.50"W x 5.62"D	
22	2		Pow er-One	HB24-1.2-A	Pow er Supply, Single Output, 24VDC, 1.2 amps, B Case 4.87"L x 4"W x 2.10"D	
23	1		QVS, Inc.	CC342	Modular Serial RS232 Adaptor, RJ45F to DB25M, 8 w ire	
24	1		RF Industries	RFN-1023	Bulkhead adapter, TYPE N female to TYPE N female	
25	1		Sat-Pak	SP58U-72NMNM	Jumper, radio, RG58/U, 72", (2) Type N Male	
26	1		Square D	SDSA1175	AC pow er surge protector, 120 VAC	
27	1		Square D	SQDQOU115	Circuit breaker, single pole, 15 Amp, DIN Mount	
28	1		Square D	QOSAMK11897	mounting bracket for AC pow er surge protector	
29	1		Taylor	99010	w ire duct cap, 1", grey, (6 foot stick)	
30	1		Taylor	91020	w ire duct, 1"W x 2"H, grey, (6 foot stick)	
31	2		Weidmuller	WSI 6/2 #101420	Fused Terminal Block w ith blow n fuse indicator, 1 1/4" x 1/4" fuse, 15-30VDC / 30-60VAC	REV 5
32	4		Weidmuller	WSI 6/2 #101430	Fused Terminal Block w ith blow n fuse indicator, 1 1/4" x 1/4" fuse, 40-60VDC / 80-120VAC	
33	30		Weidmuller	WDU 4 #102010	Terminal 6mm, 600 volt, 35 amp, beige	
34	3		Weidmuller	WDU 6 #102020	Terminal 8mm, 600 volt, 45 amp, beige	
35	6		Weidmuller	WEW 35/2 #106120	Terminal End Bracket	
36	1		Modicon	170AMM09000	Momentum, I/O Base, 4 Chnl AI / 2 Chnl AO, 24V DC - 4 Pt DI / 2 Pt DO	REV 5
37	1		Modicon	170INT11000	Momentum, Communications Adapter, Interbus (I/O Bus), 2-port, Port 2 9-pin	REV 5
38	1		Modicon	170ADM35010	Momentum, I/O Base, 24V DC - 16 Pt input / 16 Pt output	REV 5
39	1		Modicon	170MCI00700	Cable, Interbus I/O, momentum side-by-side mounting, low profile, 4.5 in. long	REV 5

TS-1	TS-2	TS-3	ARRESTORS
L	L1	303	ASA205
N	N1	TO	ASA210
G	L1A	314	
	N1A		
	113	426	
	TO	TO	
	121	437	REV 5

601
TO
616

701
TO
706

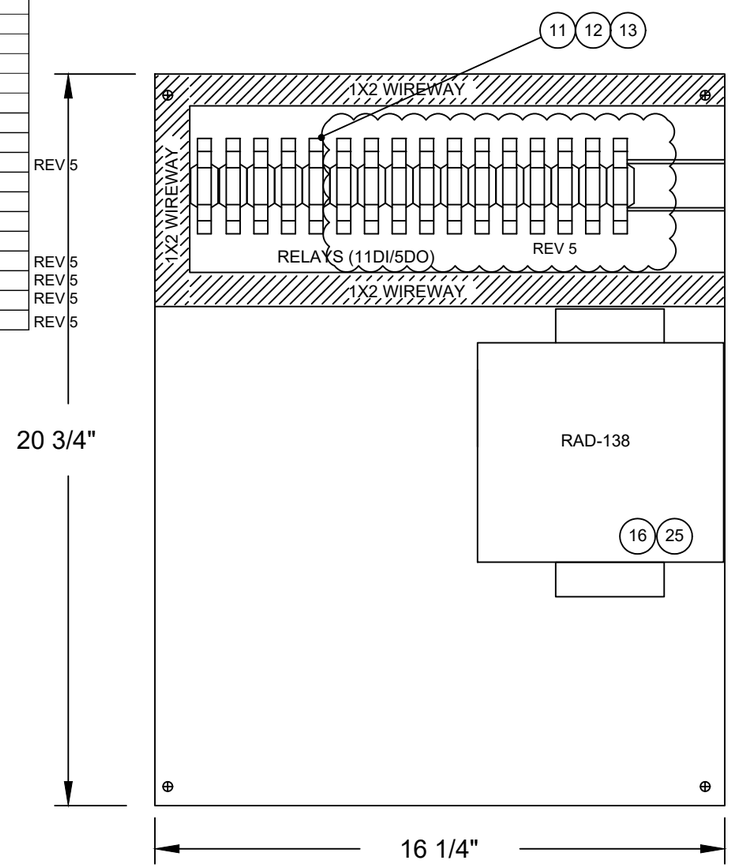
REV 5

RELAYS		
CR306	CR402	IR606
CR308	CR405	IR608
		IR611
PR103	CR705	IR614
	CR708	IR616
	CR711	IR618
		IR621
		IR623

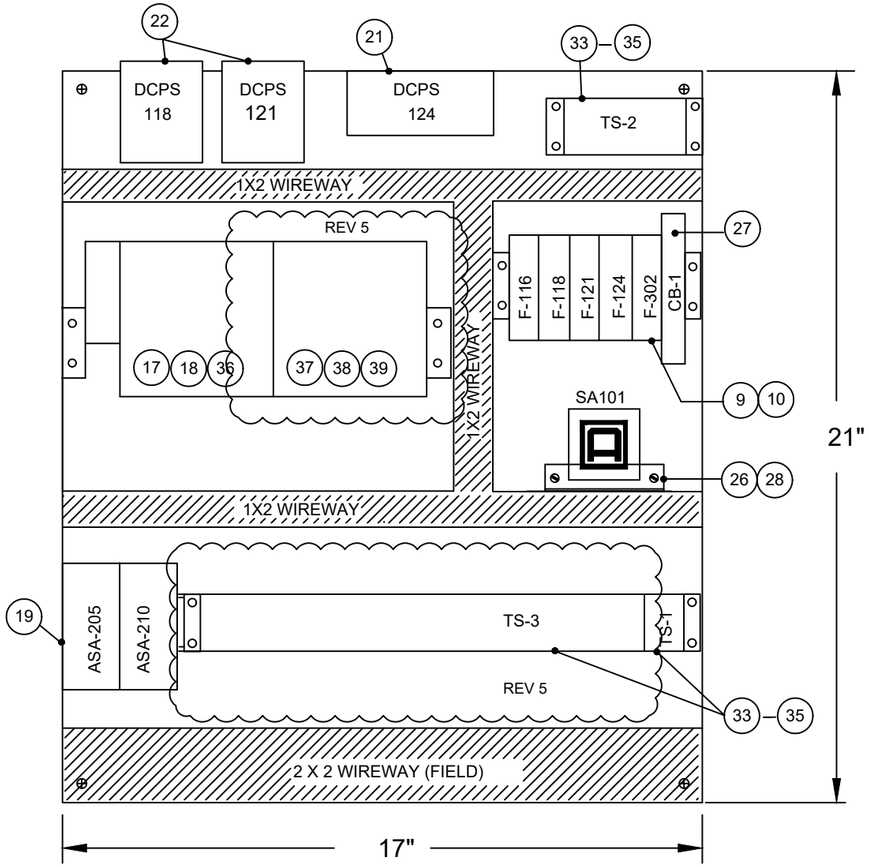
NOTE: -ALL PANEL WIRING SHALL CONFORM TO THE FOLLOWING:

BUS OR OTHER USE	COLOR	WIRE GAUGE	ABREVIATION
120VAC LINE SIDE 120VAC NEUTRAL SIDE	BLACK WHITE	14AWG 14AWG	BK W
120VAC ISOLATED LINE 120VAC ISOLATED NEUTRAL	BLACK WHITE	14AWG 14AWG	BK-ZA W-XA
24VDC(+) 24VDC(-)	PURPLE ORANGE	16AWG 16AWG	PUR ORN
ANALOG CIRCUITS TWISTED JACKETED	RED WHITE	18AWG 18AWG	PUR ORN
DC CONTROL AC CONTROL	BLUE RED	16AWG 16AWG	N/A N/A
CIRCUITS POWERED FROM SOURCES EXTERNAL TO PANEL	YELLOW GREEN	14AWG 14AWG	N/A N/A
GROUND COMMON TO PANEL			N/A

*ALL PANEL DC SUPPLY VOLTAGES USE PURPLE(+) AND ORANGE REFER TO DRAWING E1 FOR IDENTIFICATION OF POWER SUPPLY VOLTAGE.



DOORPANEL LAYOUT



SUBPANEL LAYOUT

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5	02-06-08	REVISED PER 208005	1	09-21-01	FOR MANUFACTURE
4	04-03-02	AS INSTALLED	0	09-13-01	FOR APPROVAL

SCALE: DO NOT SCALE

	NAME	APPROVED	DATE
DESIGN BY:	W. WOOD	WMW	09-13-01
DRAFTING:	N.FIELDS	NF	09-13-01
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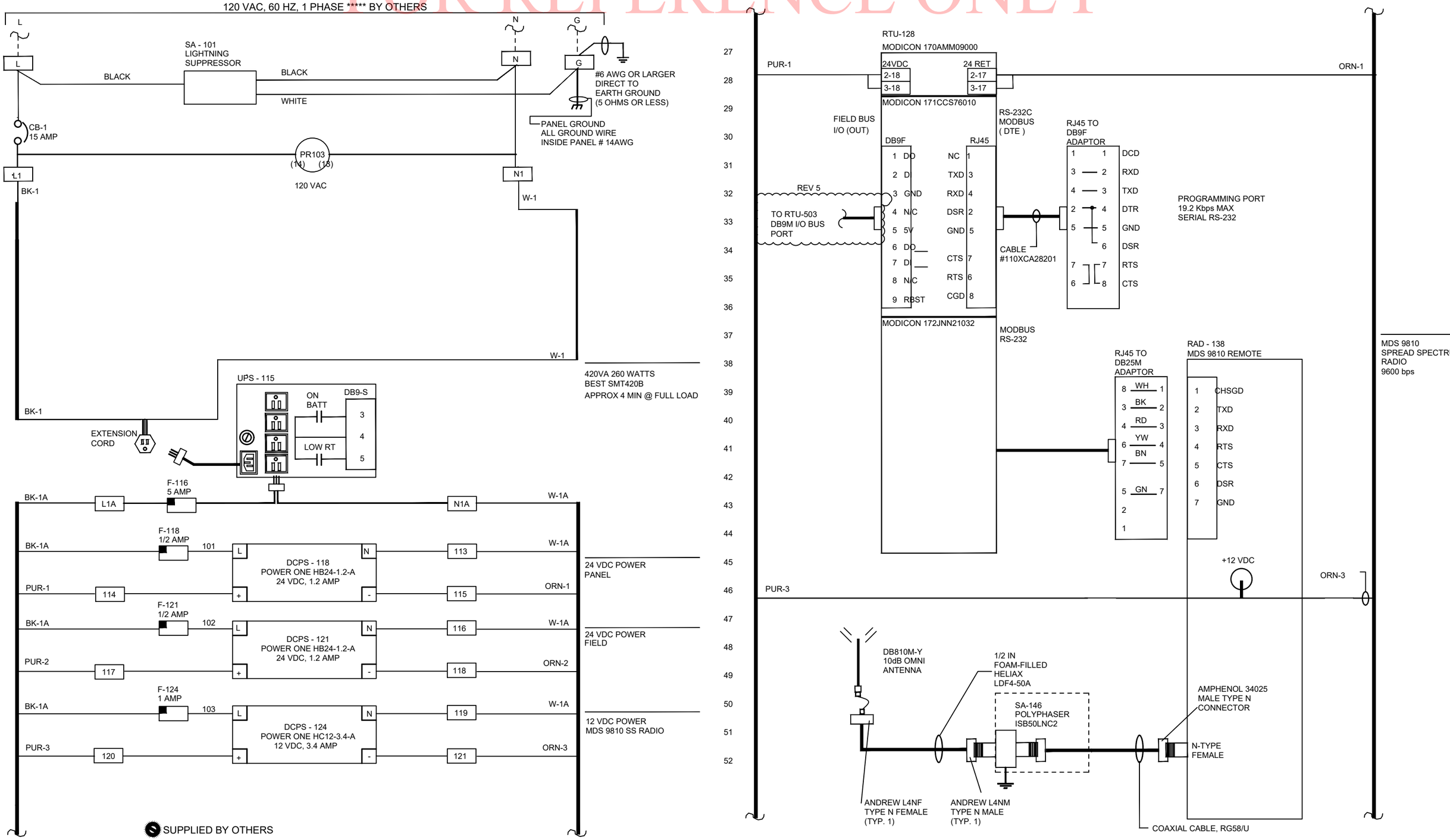
FILE: 2014201MA1 SHT. 1 OF 1

DRAWING NO. 201042-3501-MA1



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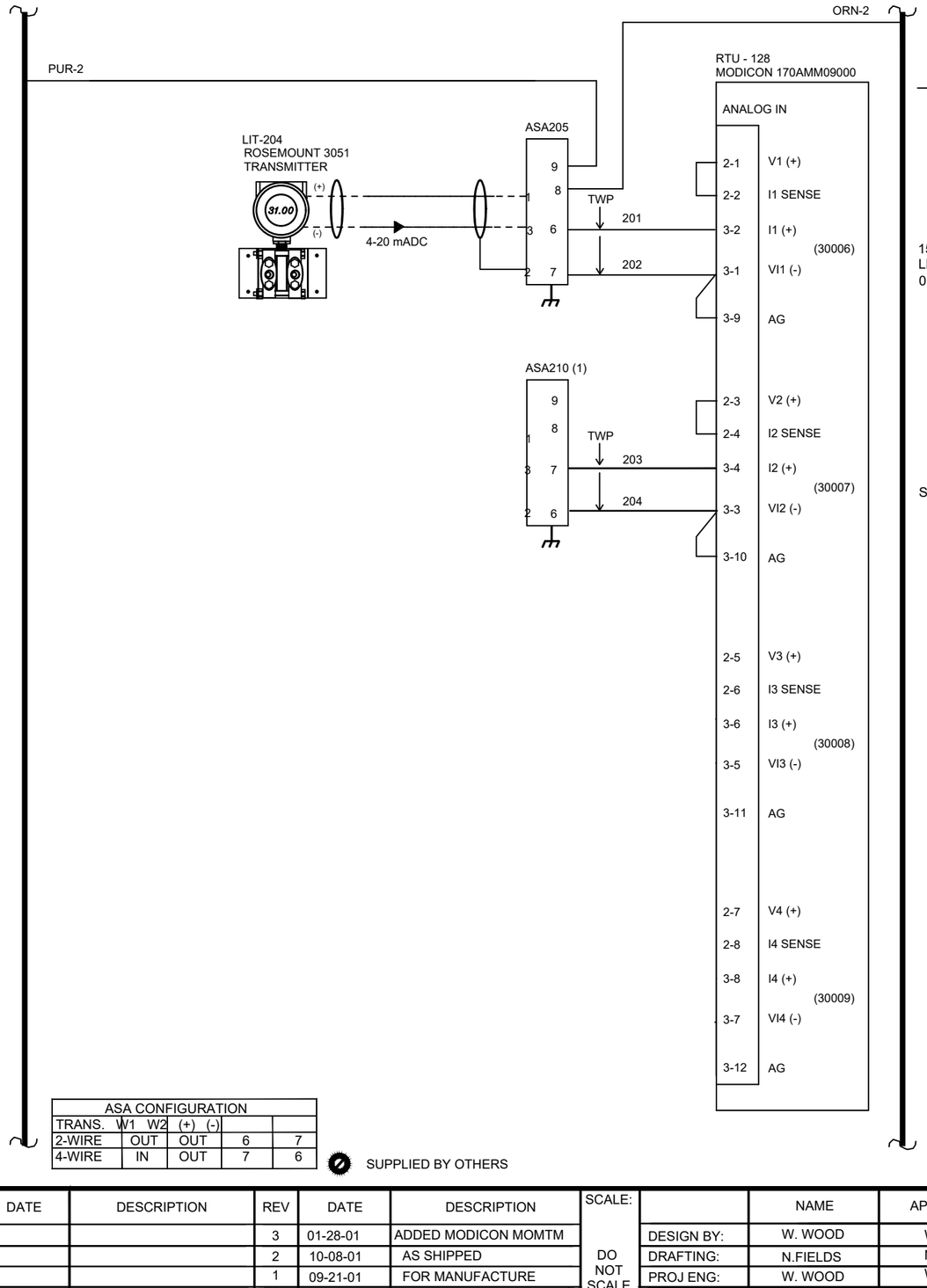

ASA CONFIGURATION				
TRANS. W1 W2 (+) (-)				
2-WIRE	OUT	OUT	6	7
4-WIRE	IN	OUT	7	6

SUPPLIED BY OTHERS

REV	DATE	DESCRIPTION	REV	DATE	DESCRIPTION
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FILE: 2014201E02 SHT. 1 OF 1
DRAWING NO. 201042-3501-E2

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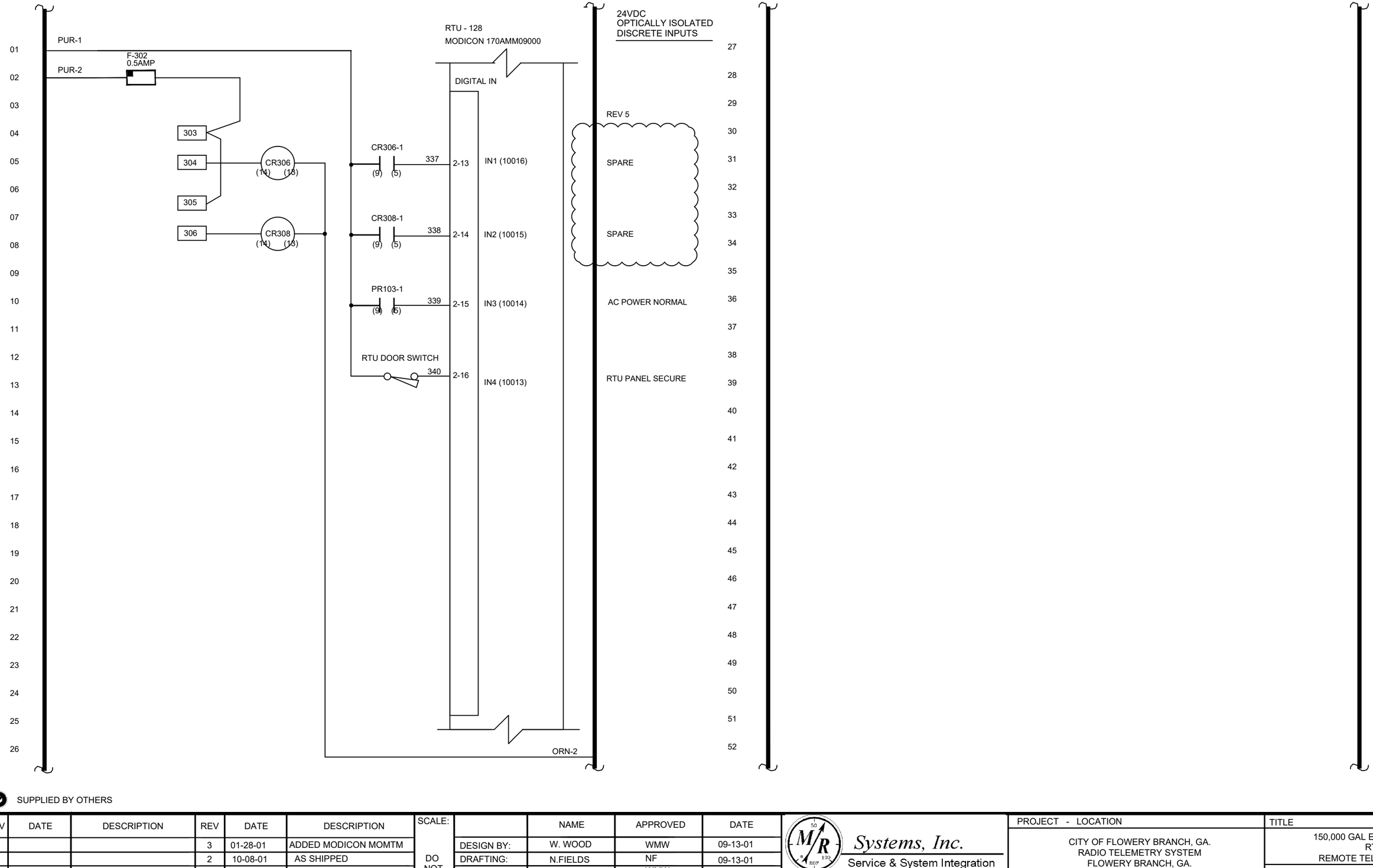

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M/R Systems, Inc.
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PROJECT - LOCATION
CITY OF FLOWERY BRANCH, GA.
RADIO TELEMETRY SYSTEM
FLOWERY BRANCH, GA.
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TITLE
150,000 GAL ELEVATED TANK
RTU-1
REMOTE TELEMETRY UNIT
FILE: 2014201E03 SHT. 1 OF 1
DRAWING NO. 201042-3501-E3

2014201E03.dwg
PRINTED 4/3/02 1:14 PM

RTU - 128
MODICON 170AMM09000

DIGITAL OUT

(00016) OUT1 — 3-13 — 410 — CR402 (13) (14)

CR330-1 (9) (5) — YEL 426 — YEL 427

(00015) OUT2 — 3-14 — 411 — CR405 (13) (14)

CR334-1 (9) (5) — YEL 428 — YEL 429

ORN-1

SUPPLIED BY OTHERS

GROUP A 24VDC
DISCRETE OUTPUTS

REV 5

SPARE

SPARE

REV	DATE	DESCRIPTION
5	02-06-08	REVISED PER 208005
4	04-03-02	AS INSTALLED

REV	DATE	DESCRIPTION
3	01-28-01	ADDED MODICON MOMTM
2	10-08-01	AS SHIPPED
1	09-21-01	FOR MANUFACTURE
0	09-13-01	FOR APPROVAL

SCALE:

DO NOT SCALE

	NAME	APPROVED	DATE
DESIGN BY:	W. WOOD	WMW	09-13-01
DRAFTING:	N.FIELDS	NF	09-13-01
PROJ ENG:	W. WOOD	WMW	09-13-01
PROJ MGR:	W. WOOD	WMW	09-13-01

M/R Systems, Inc.
Service & System Integration
NORCROSS, GA - GAINESVILLE, FL

PROJECT - LOCATION

CITY OF FLOWERY BRANCH, GA.
RADIO TELEMETRY SYSTEM
FLOWERY BRANCH, GA.

PROJECT NO. 201042

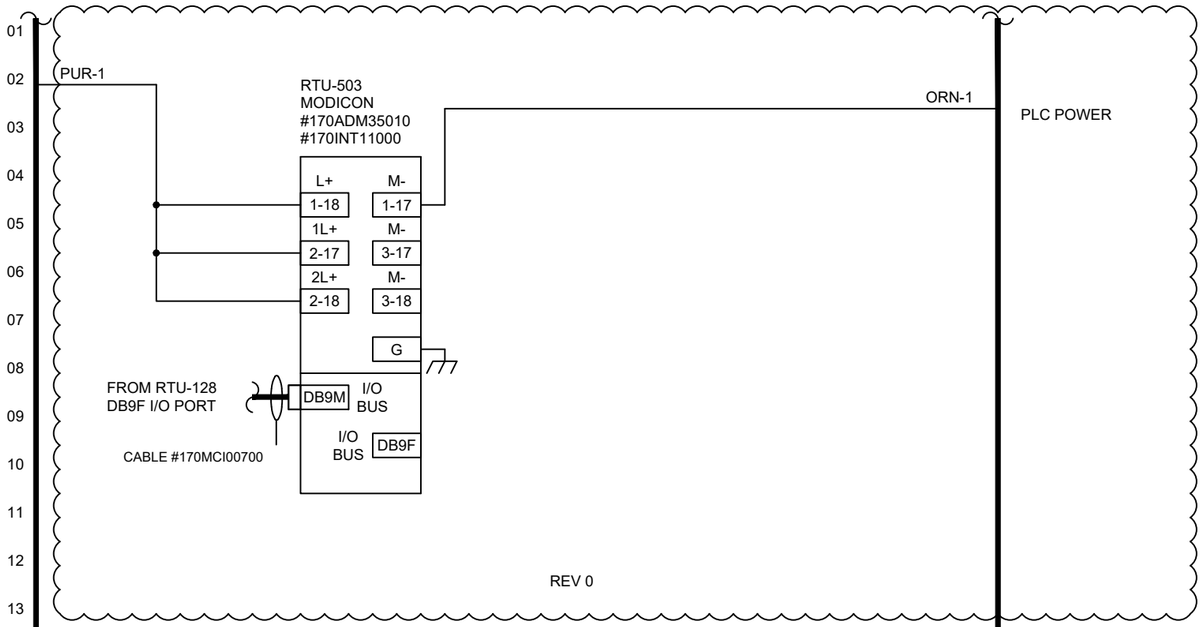
TITLE

150,000 GAL ELEVATED TANK
RTU-1
REMOTE TELEMETRY UNIT

FILE: 2014201E04 | SHT. 1 OF 1

DRAWING NO. 201042-3501-E4

2014201E04.dwg
PRINTED 4/3/02 1:30 PM



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			2	00-00-00	AS SHIPPED
			1	00-00-00	FOR MANUFACTURING
			0	02-06-08	FOR APPROVAL

SCALE:

DO NOT SCALE

	NAME	APPROVED	DATE
DESIGN BY:	N. FIELDS	NF	02-06-08
DRAFTING:	N. FIELDS	NF	02-06-08
PROJ MGR:	L. PONN		
CHKD BY:	D. FOSTER		

M/R Systems, Inc.
Service & System Integration
NORCROSS, GA GAINESVILLE, FL

PROJECT - LOCATION

CITY OF FLOWERY BRANCH, GA.
RADIO TELEMETRY SYSTEMS
FLOWERY BRANCH, GA.

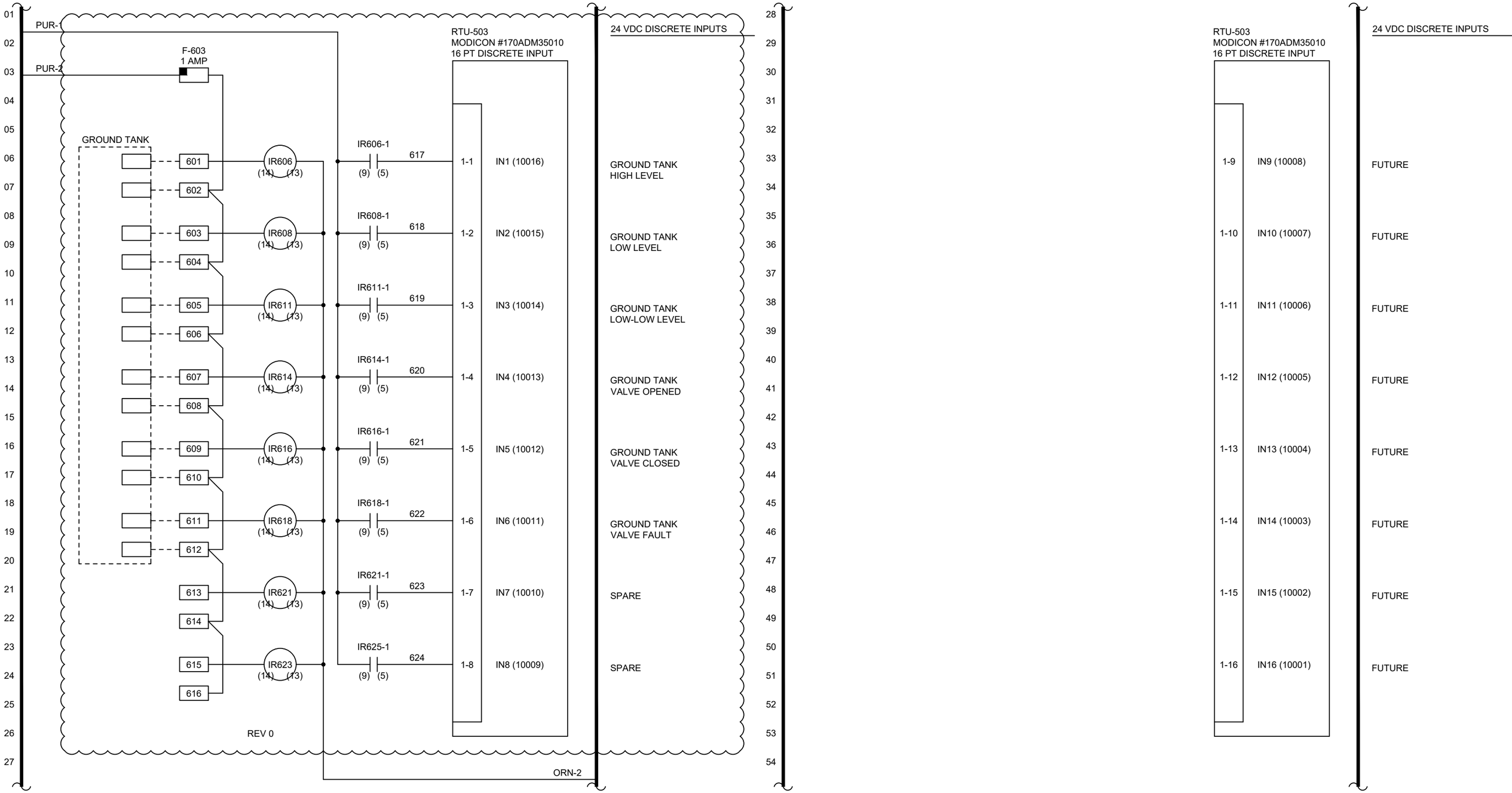
PROJECT NO. 208005

TITLE

150,000 GAL ELEVATED TANK
RTU-1
REMOTE TELEMETRY UNIT

FILE: 2080503E05DWG SHT. 1 OF 1

DRAWING NO. 208005-3503-E05



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			2	00-00-00	AS SHIPPED
			1	00-00-00	FOR MANUFACTURING
			0	02-06-08	FOR APPROVAL

SCALE: DO NOT SCALE

	NAME	APPROVED	DATE
DESIGN BY:	N. FIELDS	NF	02-06-08
DRAFTING:	N. FIELDS	NF	02-06-08
PROJ MGR:	L. PONN		
CHKD BY:	D. FOSTER		

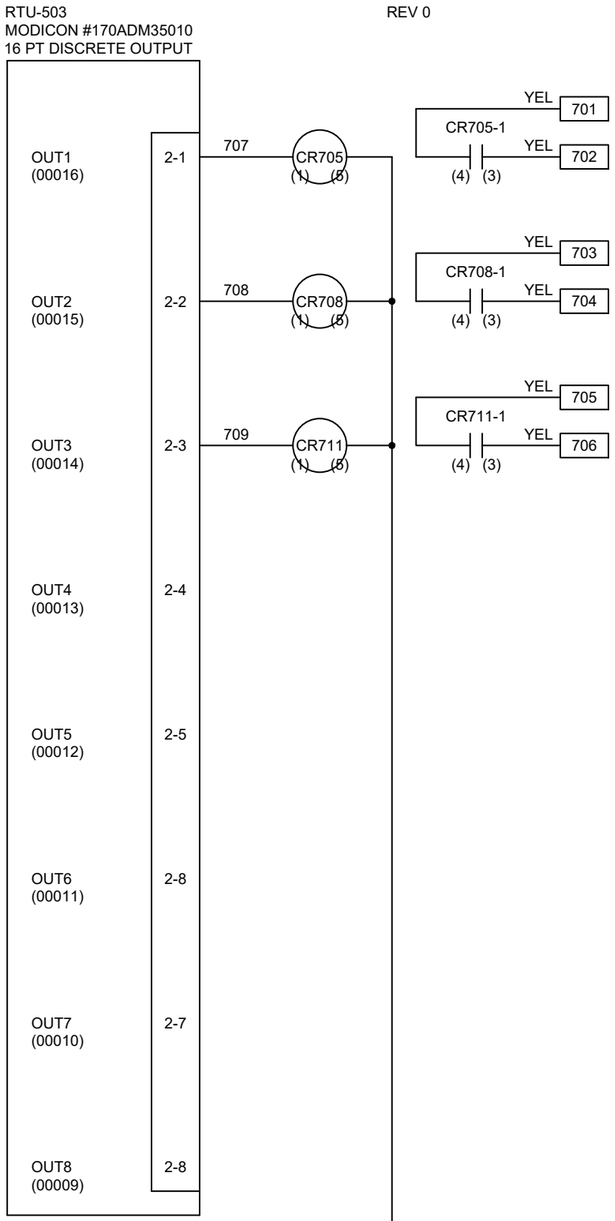
M/R Systems, Inc.
Service & System Integration
NORCROSS, GA GAINESVILLE, FL

PROJECT - LOCATION
CITY OF FLOWERY BRANCH, GA.
RADIO TELEMETRY SYSTEMS
FLOWERY BRANCH, GA.
PROJECT NO. 208005

TITLE
150,000 GAL ELEVATED TANK
RTU-1
REMOTE TELEMETRY UNIT
FILE: 2080503E06DWG SHT. 1 OF 1
DRAWING NO. 208005-3503-E06

RTU-503
MODICON #170ADM35010
16 PT DISCRETE OUTPUT

REV 0



ORN-1

24 VDC DISCRETE OUTPUTS

GROUND TANK VALVE
CALL TO OPEN

GROUND TANK VALVE
CALL TO CLOSE

SPARE

FUTURE

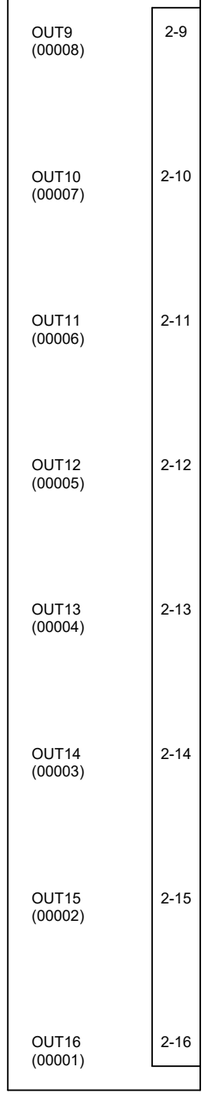
FUTURE

FUTURE

FUTURE

FUTURE

RTU-503
MODICON #170ADM35010
16 PT DISCRETE OUTPUT



24 VDC DISCRETE OUTPUTS

FUTURE

FUTURE

FUTURE

FUTURE

FUTURE

FUTURE

FUTURE

REV	DATE	DESCRIPTION	REV	DATE	DESCRIPTION
			1	06-28-23	GENERAL REVISION
			0	02-06-08	FOR APPROVAL

SCALE:

DO NOT SCALE

	NAME	APPROVED	DATE
DESIGN BY:	N. FIELDS	NF	02-06-08
DRAFTING:	N. FIELDS	NF	02-06-08
PROJ MGR:	L. PONN		
CHKD BY:	D. FOSTER		

M/R Systems, Inc.
Service & System Integration
NORCROSS, GA GAINESVILLE, FL

PROJECT - LOCATION

CITY OF FLOWERY BRANCH, GA.
RADIO TELEMETRY SYSTEMS
FLOWERY BRANCH, GA.

PROJECT NO. 208005

TITLE

150,000 GAL ELEVATED TANK
RTU-1
REMOTE TELEMETRY UNIT

FILE: 2080503E07DWG | SHT. 1 OF 1

DRAWING NO. 208005-3503-E07

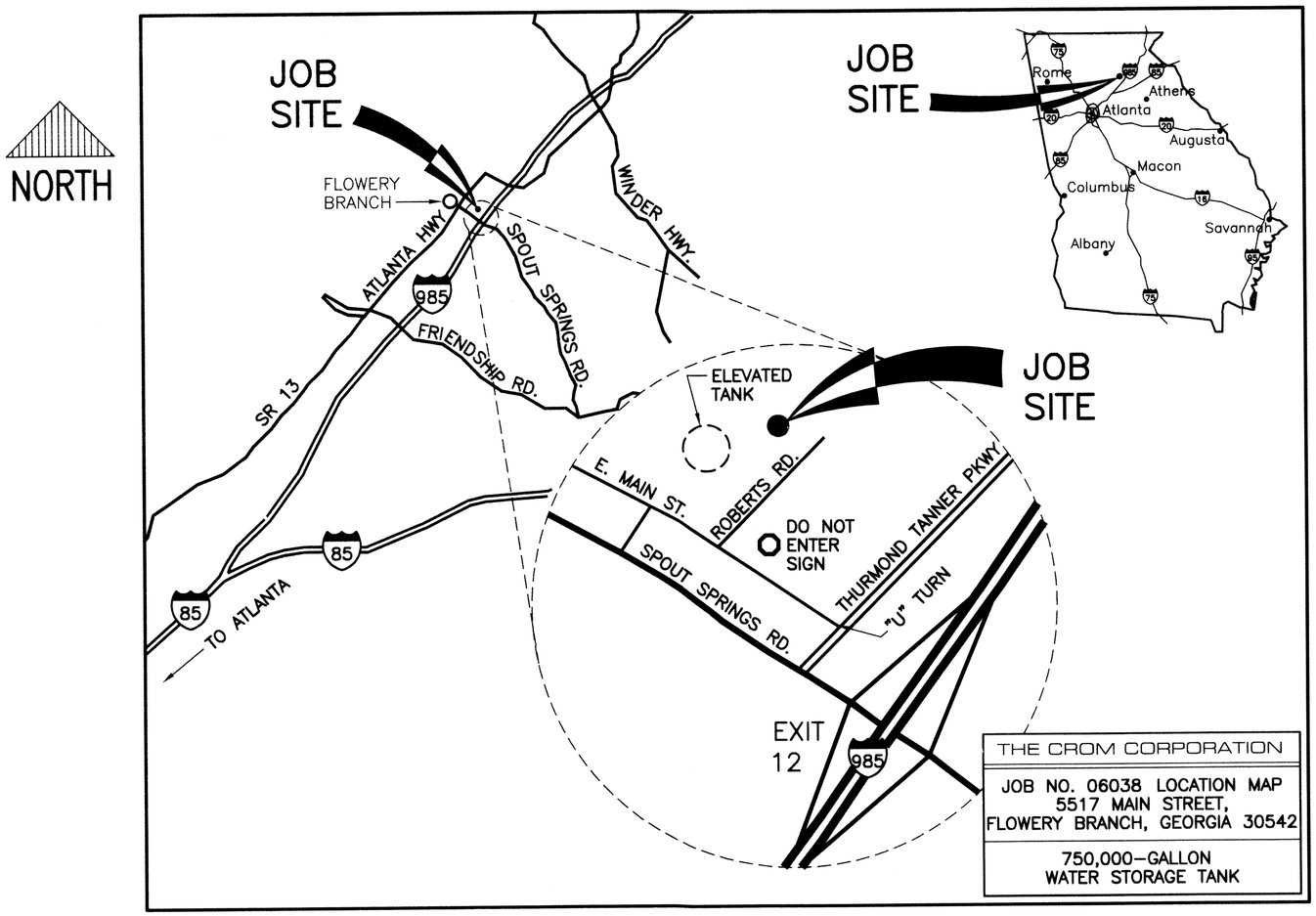


TABLE OF CONTENTS

750,000-GALLON WATER STORAGE TANK

PROJECT: ROBERTS DRIVE WATER STORAGE TANK
FLOWERY BRANCH, GEORGIA

OWNER: CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GEORGIA

CONSULTING ENGINEER: RINDT–McDUFF ASSOCIATES, INC.
MARIETTA, GEORGIA

AS BUILT
THE CROM CORPORATION
DATE: 3/13/07 BY: MAB

THE CROM CORPORATION
Prestressed Composite Tanks

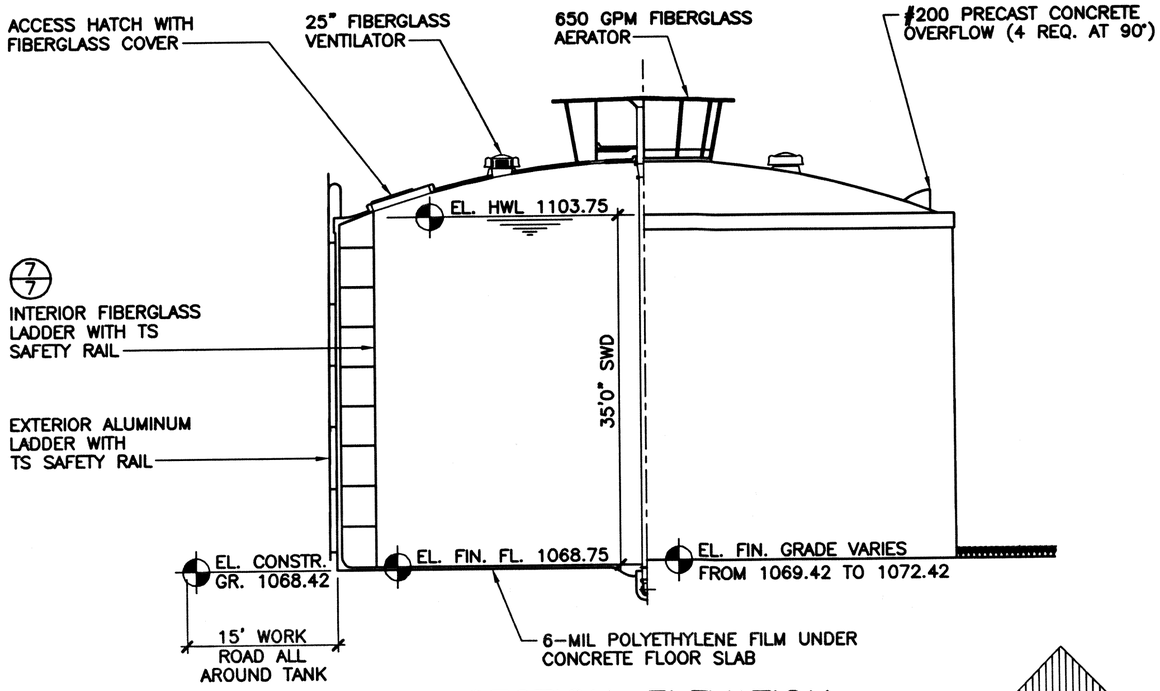
REV	COMMENTS	DATE

Revisions are designated by a letter following the FILE NUMBER.
UPPER CASE letters indicate APPROVED distribution.

DATE:
DRAWN: DM
CHECKED: DGW
APPROVED:
DESIGNED:

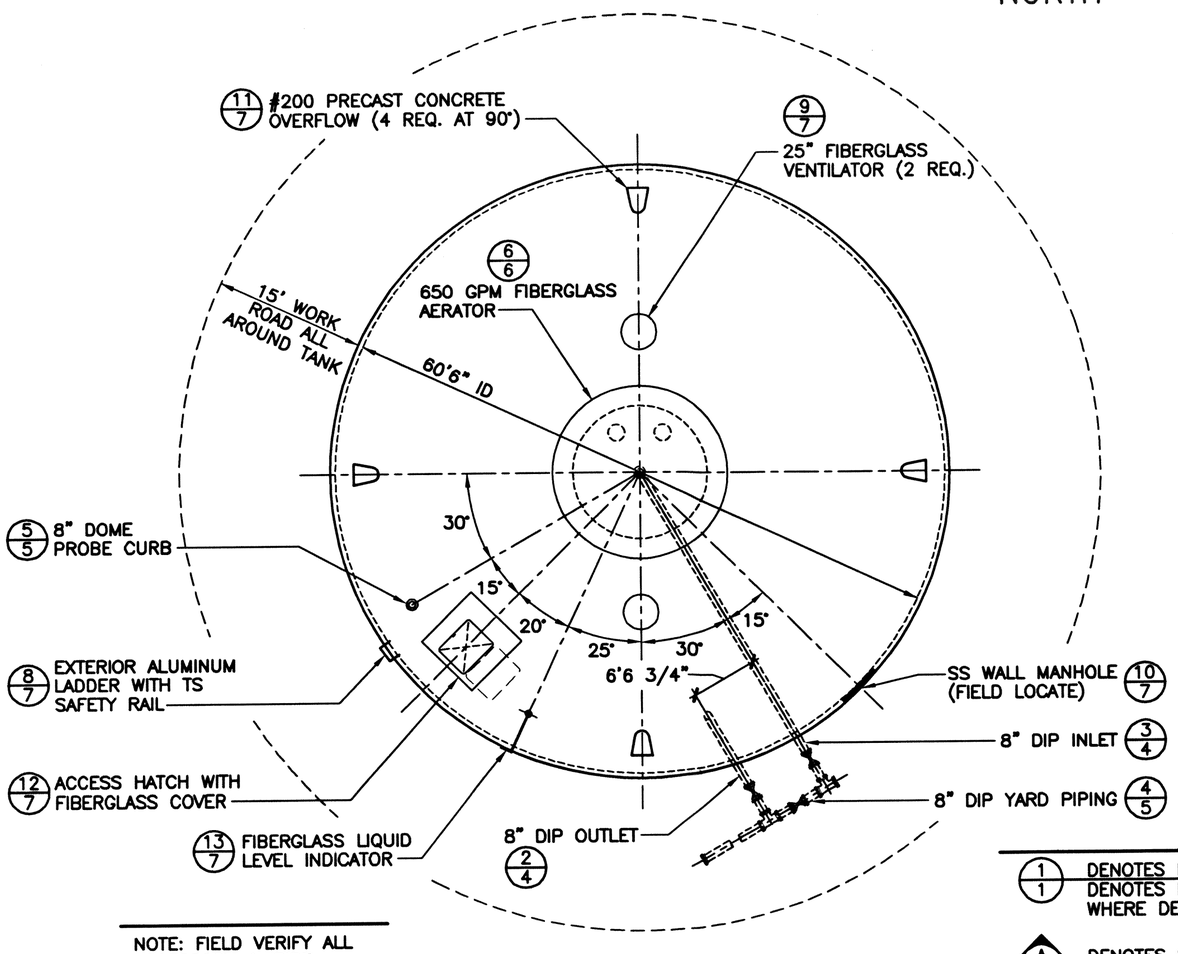
FILE NUMBER: 06038

SHEET 1 OF 7



SECTION–ELEVATION

NORTH



NOTE: FIELD VERIFY ALL ACCESSORY & PIPE LOCATIONS WITH ENGINEER PRIOR TO PLACEMENT.

PLAN

1/1 DENOTES DETAIL NUMBER
DENOTES PAGE NUMBER WHERE DETAIL APPEARS

A/1 DENOTES SECTION LETTER
DENOTES PAGE NUMBER WHERE SECTION APPEARS

NOTES

Materials & Services Furnished by Others:

A. Miscellaneous:
1. Water and Electricity for construction.

Materials & Services Furnished By The Crom Corporation:

A. Sitework and Miscellaneous:
1. Clearing of the site, excavation, pipe placement, fill and compaction to an elevation 4" below floor slab on an 90'6" diameter circle.
2. Final grading and seeding.

B. Concrete: Use Type II Cement.
1. 4000 psi with 3/4" aggregate for floor.
2. 4000 psi with 3/8" aggregate pump mix for dome.

C. Shotcrete Mixes: Use Type II Cement. f'g = 4000 psi
fgi = 1800 psi
1. Corewall and covercoat: Pump mix with 7 1/2 bags of cement minimum.

D. Material Testing:
1. Concrete: (4 cylinders per set) Test one cylinder at 7 days, two at 28 days and hold one.
a. 2 sets for floor.
b. 2 sets for dome.
2. Shotcrete: (4 cylinders per set) Test one cylinder at 7 days, two at 28 days and hold one.
a. 3 sets for outside core wall.
b. 2 sets for inside core wall.
c. 2 sets for covercoat.

E. Curing:
1. Floor and walls to be water–cured during tank construction in accordance with ACI–308.
2. Dome to be water–cured in accordance with ACI–308.

F. Reinforcing Steel:
1. ASTM A–615 grade 60, lap 38 diameters.
2. Use 2" slab bolsters with plate to support floor resteel.

G. Prestressing Wire: Meets ASTM Spec. A821–93 Type B
1. Aw : 0.0206 square inch (8 gauge)
2. Dia : 0.1620"
3. Ultimate strength: 231,000 psi
4. Initial stress: 145,600 psi
5. Working stress: wall: 115,000 psi
dome ring: 120,000 psi

H. Paint Schedule:
1. Exterior exposed surfaces: One coat "Thoroseal" and two coats Sherwin–Williams DTM acrylic latex paint.
2. Interior surfaces: Paint underside of the dome and top two feet of the tank wall with two coats of an NSF approved epoxy paint.
3. Tank lettering.

I. Standard Accessories:
1. Stainless steel wall manhole
2. Exterior aluminum ladder with Aluminum TS Safety Rail
3. Interior fiberglass ladder with SS TS Safety Rail and removable extension
4. 7' square fiberglass access hatch cover
5. 200 square inch precast overflow, 4 req.
6. 25" fiberglass ventilator, 2 req.
7. Fiberglass liquid level indicator

J. Special Accessories:
1. 8" dome probe curb
5. 650 GPM natural draft fiberglass Aerator

CROM

TANK BUILDER:
THE CROM CORPORATION
GAINESVILLE, FLORIDA

OWNER:
CITY OF FLOWER BRANCH
FLOWER BRANCH,
GEORGIA

CONSULTING ENGINEER:
RINDT–McDUFF
ASSOCIATES, INC.,
MARIETTA,
GEORGIA

TANK DESCRIPTION:
0.75–MG WATER
STORAGE TANK

TANK DIMENSIONS:
60'6" ID x 35'0" SWD

DATE: 7/13/06
DRAWN: DM
CHECKED: DGW
APPROVED: TBM
DESIGNED: KRH

REV.	DESCRIPTION	DATE CK.BY

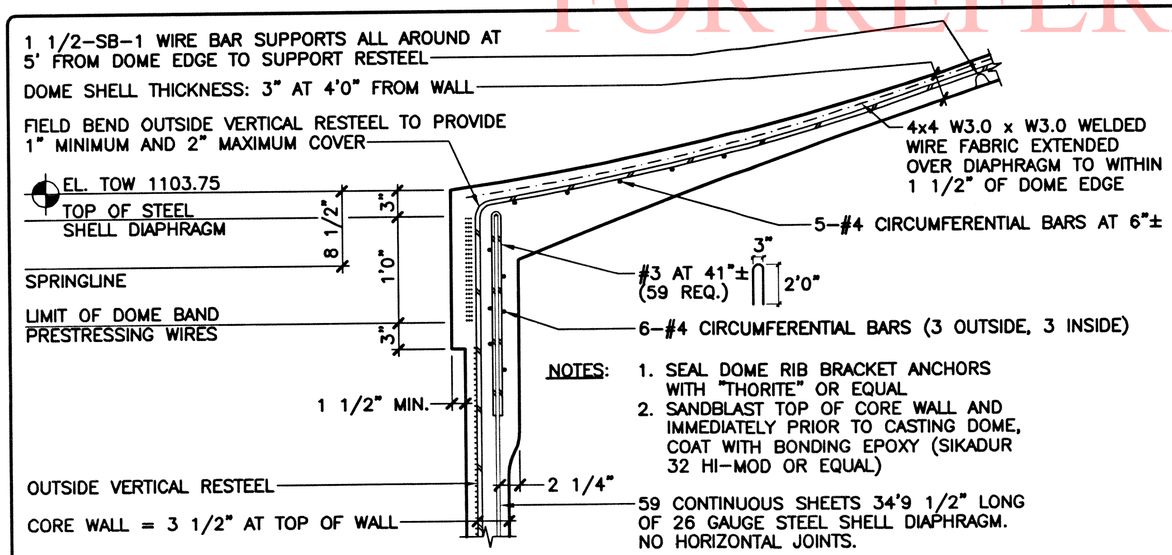
WHERE STANDARD SPECIFICATIONS ARE IN CONFLICT WITH CROM CORPORATION SPECIFICATIONS OR WITH GOOD PRE–STRESSING OR SHOTCRETE PRACTICES THE STANDARD SPECIFICATIONS SHALL BE SUBORDINATED.
THIS DESIGN AND DRAWING ORIGINATED BY AND THE EXCLUSIVE PROPERTY OF THE CROM CORPORATION.

BAR IS ONE INCH ON ORIGINAL DRAWINGS 0 1"

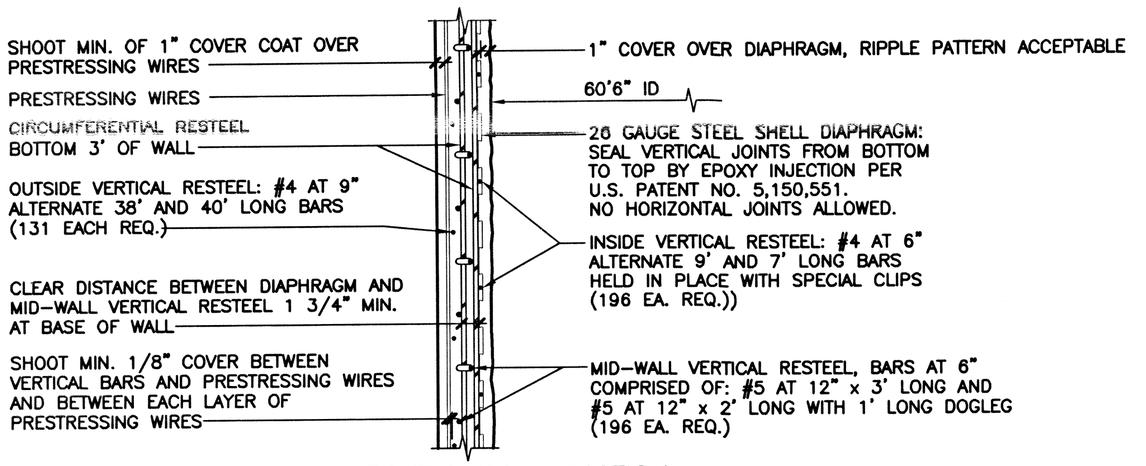
SCALE:
2' 0 5' 10'
3/32"=1'0"

FILE NO.
06038

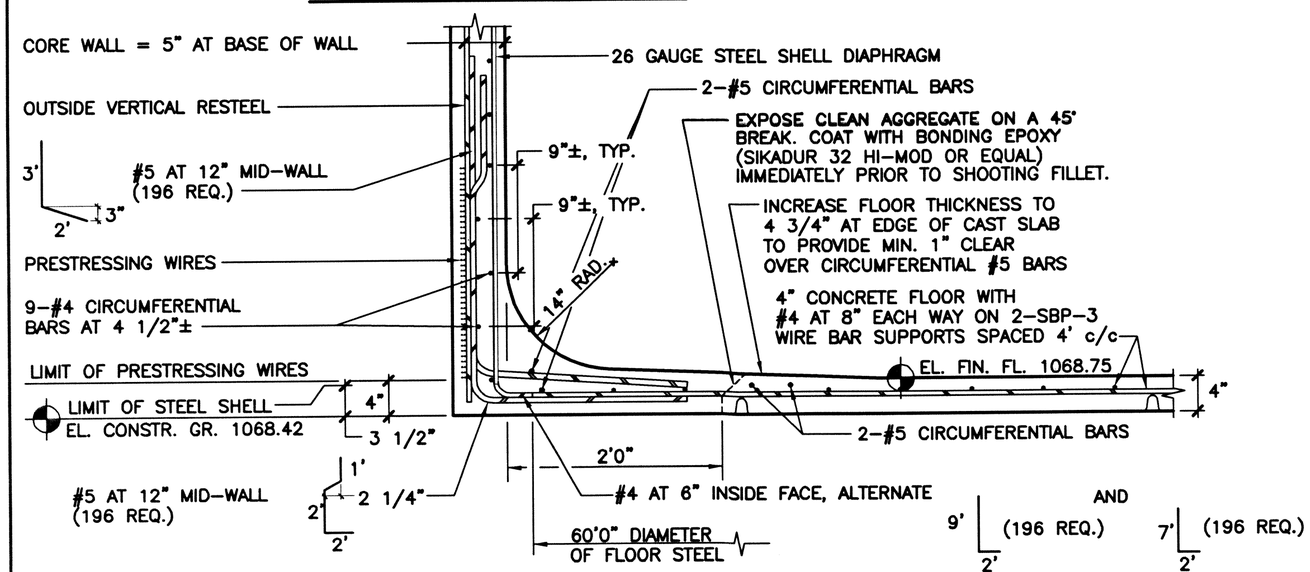
SHEET 2 OF 7



DOME RING DETAIL



HORIZONTAL WALL SECTION

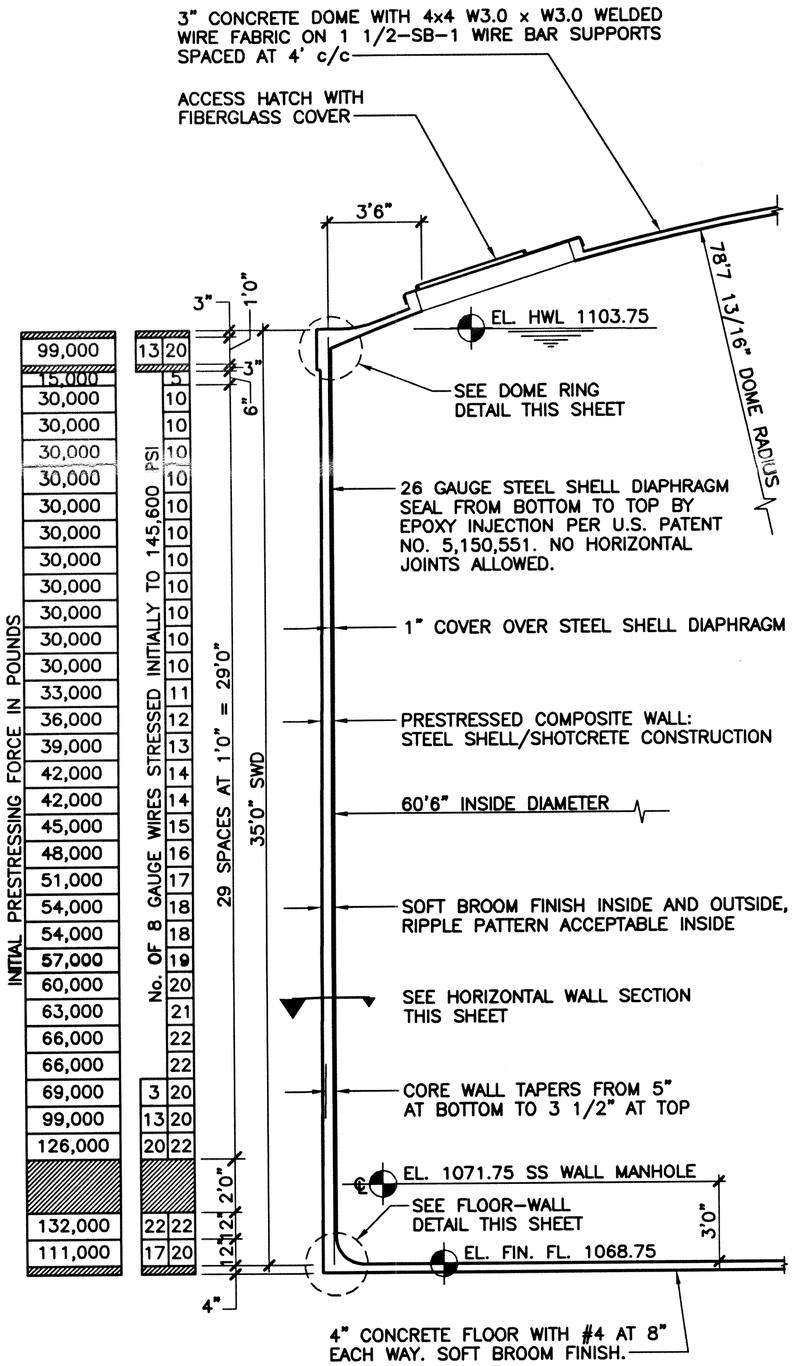


FLOOR-WALL DETAIL

1' 0 1'
1"=1'0"

TYPICAL WALL DETAILS

NOTES:
1. SHOTCRETE SHALL BE APPLIED BY OR UNDER DIRECT SUPERVISION OF NOZZLEMEN CERTIFIED BY THE AMERICAN CONCRETE INSTITUTE AS OUTLINED IN ACI CERTIFICATION PUBLICATION CP-60.
2. TENSION IN PRESTRESSING WIRE SHALL BE MEASURED BY AN ELECTRONIC DIRECT-READING STRESSOMETER ACCURATE TO WITHIN 2%.



INITIAL PRESTRESSING FORCE IN POUNDS	No. OF 8 GAUGE WIRES STRESSED INITIALLY TO 145,600 PSI
99,000	13 20
15,000	5
30,000	10
30,000	10
30,000	10
30,000	10
30,000	10
30,000	10
30,000	10
30,000	10
30,000	10
33,000	11
36,000	12
39,000	13
42,000	14
42,000	14
45,000	15
48,000	16
51,000	17
54,000	18
54,000	18
57,000	19
60,000	20
63,000	21
66,000	22
66,000	22
69,000	3 20
99,000	13 20
126,000	20 22
132,000	22 22
111,000	17 20

PRESTRESSING SCHEDULE

1/4"=1'0"
2' 0 2' 4'

CROM

TANK BUILDER:
THE CROM CORPORATION
GAINESVILLE, FLORIDA

OWNER:
CITY OF FLOWER BRANCH
FLOWER BRANCH, GEORGIA

CONSULTING ENGINEER:
RINDT-McDUFF ASSOCIATES, INC., MARIETTA, GEORGIA

TANK DESCRIPTION:
0.75-MG WATER STORAGE TANK

TANK DIMENSIONS:
60'6" ID x 35'0" SWD

DATE: 7/13/06
DRAWN: DM
CHECKED: DSW
APPROVED: TBM
DESIGNED: KRH

REV.	DESCRIPTION	DATE CK.BY

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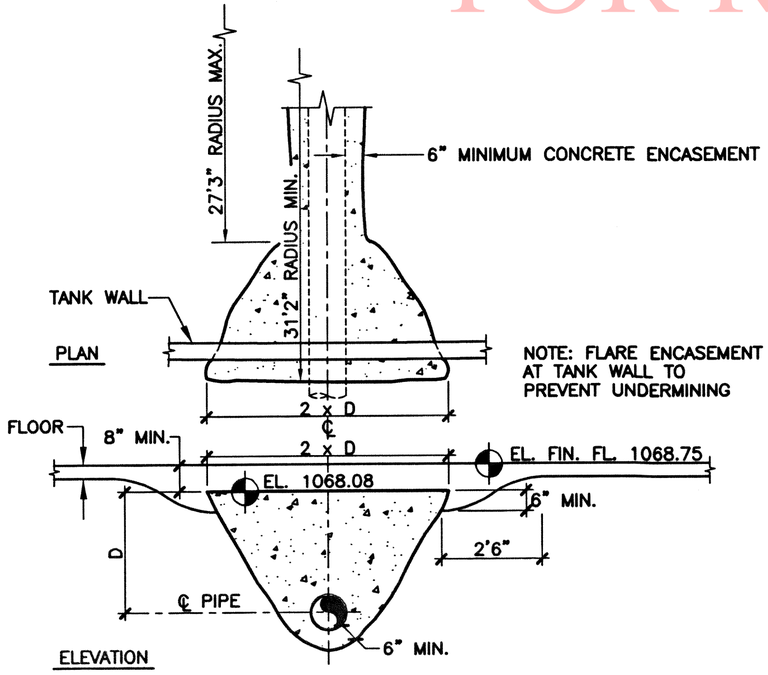
SCALE: AS NOTED

FILE NO. 06038

SHEET 3 OF 7



1 TYPICAL PIPE ENCASEMENT AT WALL

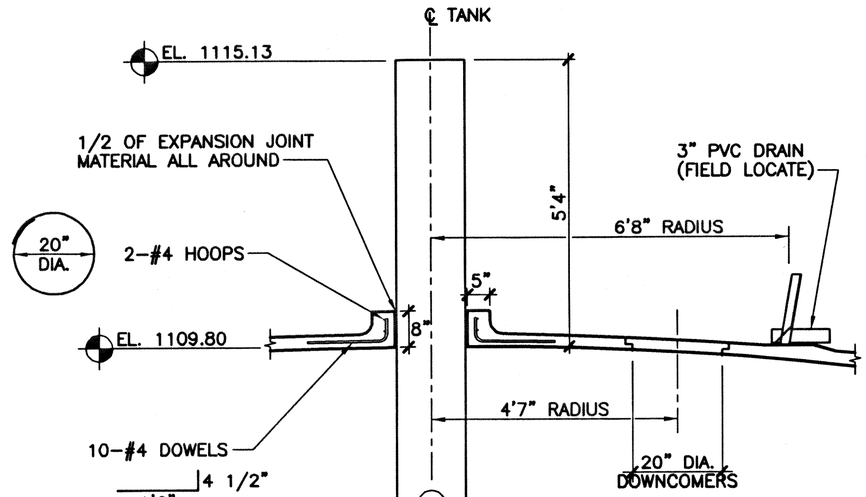
NTS

PIPE SCHEDULE FOR 14" DIP INLET

- ✱ ① 14" DIP 9'6 1/2" PE–FL
- ✱ ② 14" x 8" REDUCER FL–FL
- 1–14" FLG ACCESSORY SET

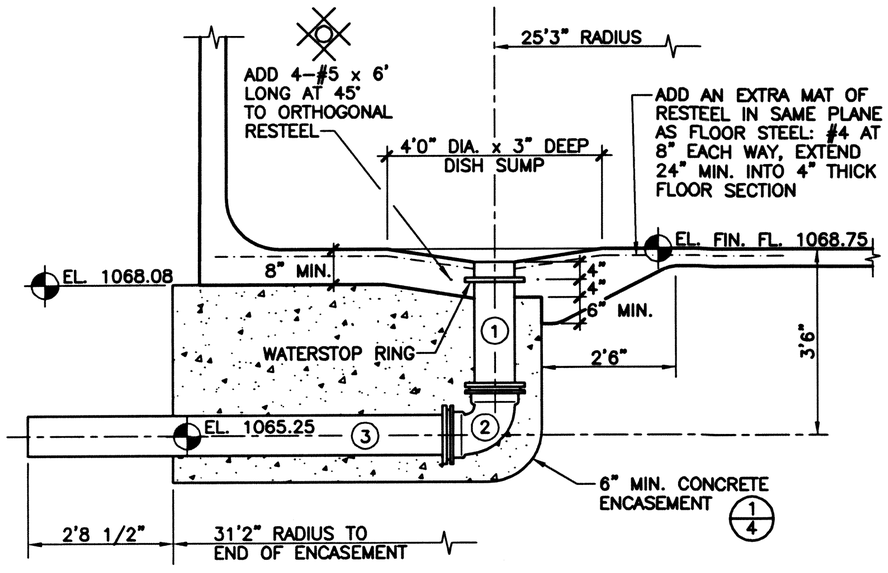
PIPE SCHEDULE FOR 8" DIP INLET

- ✱ ③ 8" DIP x 17'6" LONG FL–FL
- ✱ ④ 8" DIP x 17'6" LONG FL–FL
- ✱ ⑤ 8" DIP x 3'5 1/2" LONG FL–PE
- ⑥ 8" DIP CLASS 350 (COMPACT) MJ 90° BEND
- ⑦ 8" DIP x 17'6" LONG PE–MJ
- ⑧ 8" DIP x 15'11" LONG PE–PE
- 3–8" FLANGE ACCESSORY SETS
- 3–8" MJ ACCESSORY SETS
- ✱ SHOP PRIME



PIPE SCHEDULE FOR 8" DIP OUTLET

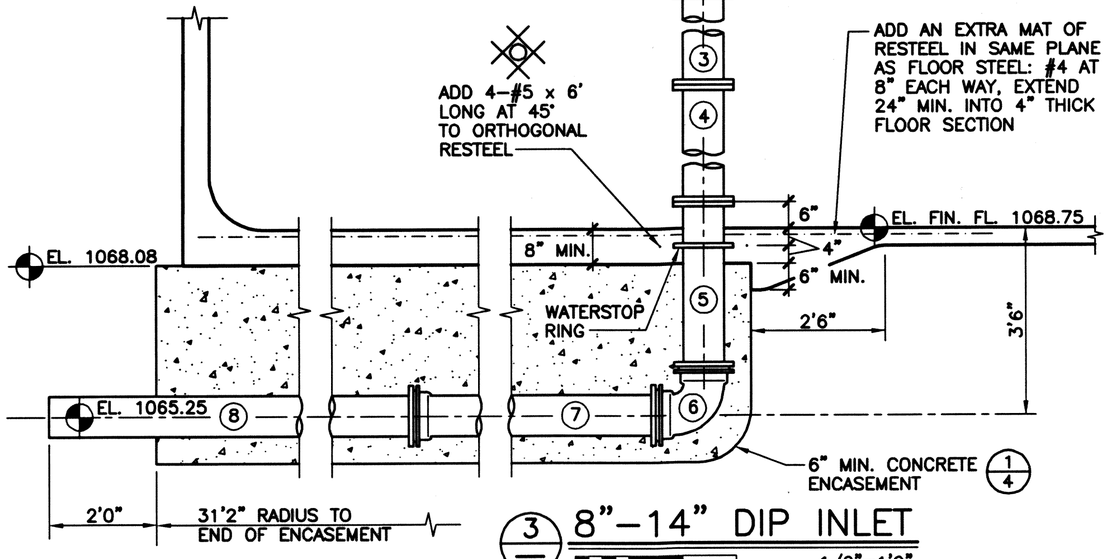
- ① 8" DIP x 2'8 1/2" LONG PE–PE WITH WATERSTOP RING 4" FROM END
- ② 8" DIP CLASS 350 (COMPACT) MJ 90° BEND
- ③ 8" DIP x 8'1" LONG PE–PE
- 2–8" MJ ACCESSORY SETS



2 8" DIP OUTLET

1/2"=1'0"

1' 0 1' 2'



3 8"–14" DIP INLET

1/2"=1'0"

1' 0 1' 2'

CROM

TANK BUILDER:
THE CROM CORPORATION
GAINESVILLE, FLORIDA

OWNER:
CITY OF FLOWER BRANCH
FLOWER BRANCH,
GEORGIA

CONSULTING ENGINEER:
RINDT–McDUFF
ASSOCIATES, INC.,
MARIETTA,
GEORGIA

TANK DESCRIPTION:
0.75–MG WATER
STORAGE TANK

TANK DIMENSIONS:
60'6" ID x 35'0" SWD

DATE: 7/13/06
DRAWN: DM
CHECKED: DGW
APPROVED: TBM
DESIGNED: KRH

REV.	DESCRIPTION	DATE CK.BY

WHERE STANDARD SPECIFICATIONS ARE IN CONFLICT WITH CROM CORPORATION SPECIFICATIONS OR WITH GOOD PRE–STRESSING OR SHOTCRETE PRACTICES THE STANDARD SPECIFICATIONS SHALL BE SUBORDINATED.
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SCALE:

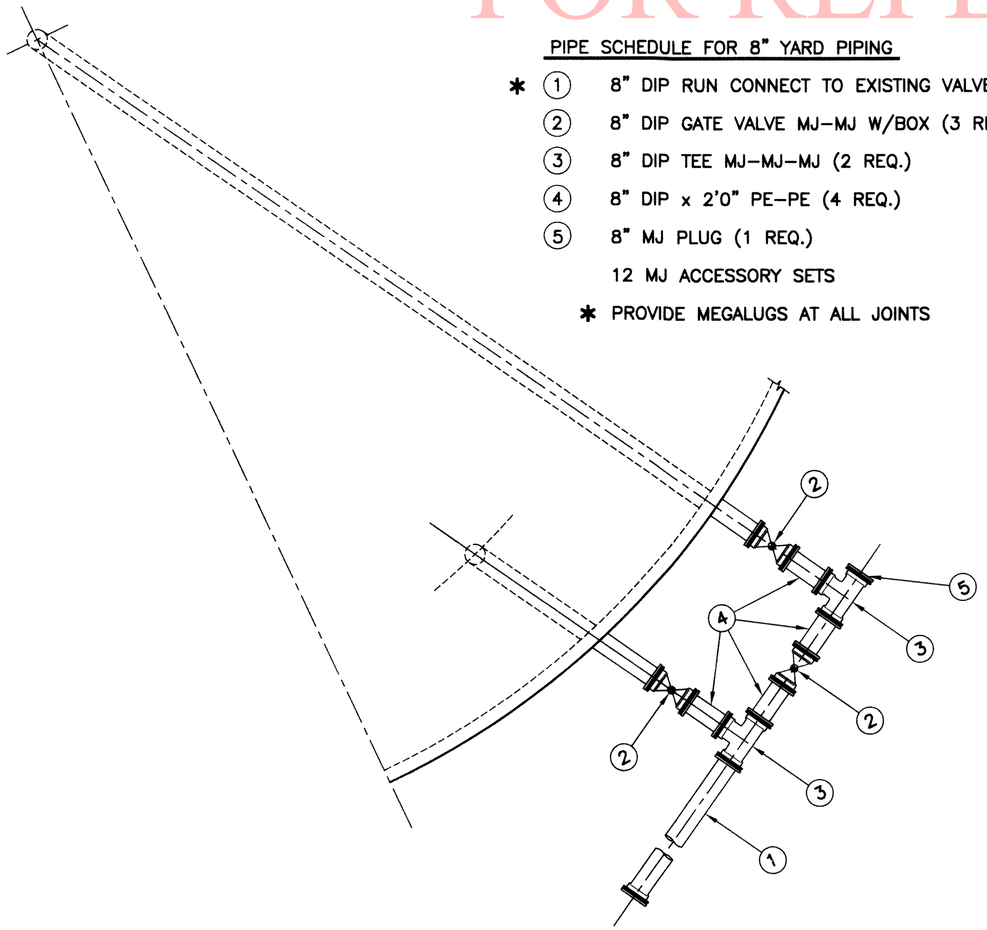
FILE NO.
06038

SHEET 4 OF 7

PIPE SCHEDULE FOR 8" YARD PIPING

*	1	8" DIP RUN CONNECT TO EXISTING VALVE (3 STICKS)
	2	8" DIP GATE VALVE MJ–MJ W/BOX (3 REQ.)
	3	8" DIP TEE MJ–MJ–MJ (2 REQ.)
	4	8" DIP x 2'0" PE–PE (4 REQ.)
	5	8" MJ PLUG (1 REQ.)
		12 MJ ACCESSORY SETS

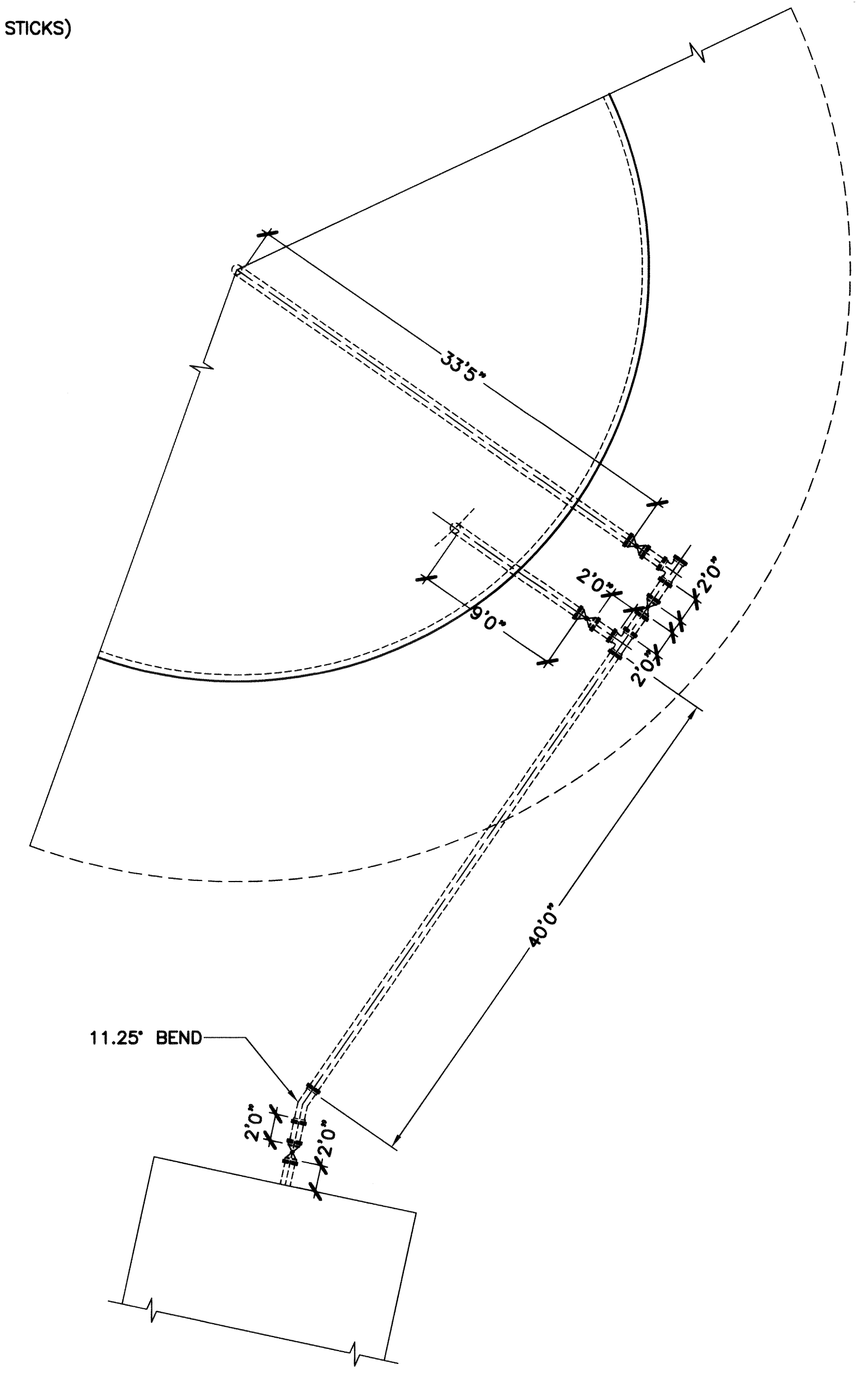
* PROVIDE MEGALUGS AT ALL JOINTS



4 8" YARD PIPING DETAIL

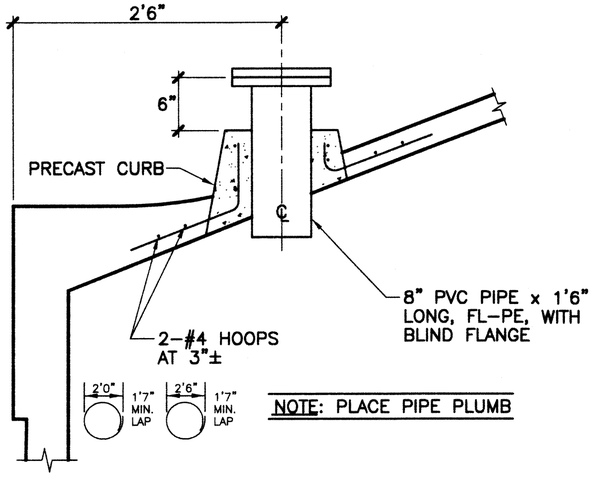
1/4"=1'0"

2' 0 2' 4'



8" YARD PIPING AS BUILT

NTS



5 8" DOME PROBE CURB

NTS

CROM

TANK BUILDER:
THE CROM CORPORATION
GAINESVILLE, FLORIDA

OWNER:
CITY OF FLOWER BRANCH
FLOWER BRANCH,
GEORGIA

CONSULTING ENGINEER:
RINDT–McDUFF
ASSOCIATES, INC.,
MARIETTA,
GEORGIA

TANK DESCRIPTION:
0.75–MG WATER
STORAGE TANK

TANK DIMENSIONS:
60'6" ID x 35'0" SWD

DATE: 7/13/06
DRAWN: DM
CHECKED: Dow
APPROVED: a
DESIGNED:

REV.	DESCRIPTION	DATE CK.BY

AS BUILT: 8" YARD PIPING LAYOUT WITH DIMENSION WAS ADDED TO SHEET 5 OF 7

3/13/07

WHERE STANDARD SPECIFICATIONS ARE IN CONFLICT WITH CROM CORPORATION SPECIFICATIONS OR WITH GOOD PRE–STRESSING OR SHOTCRETE PRACTICES THE STANDARD SPECIFICATIONS SHALL BE SUBORDINATED.
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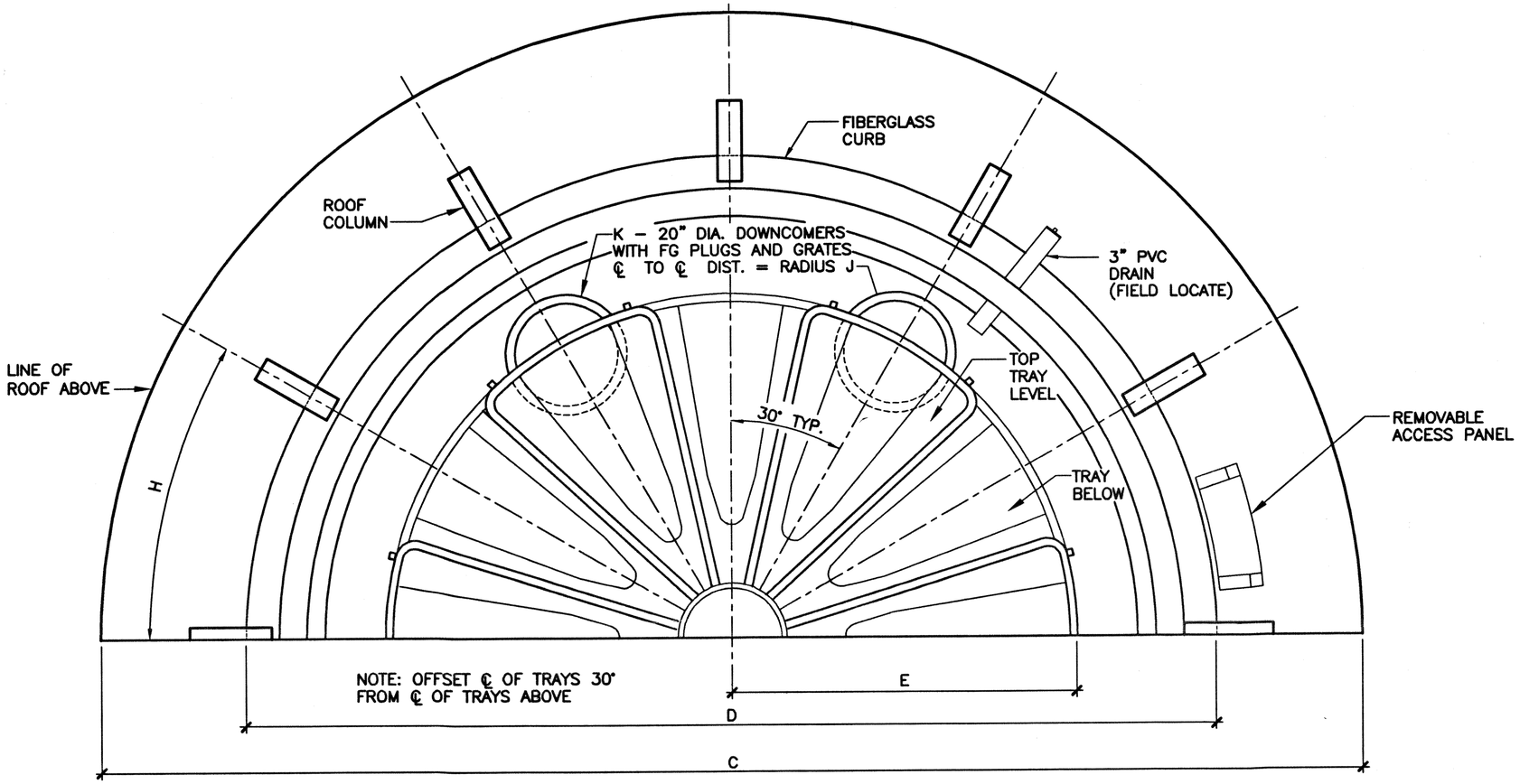
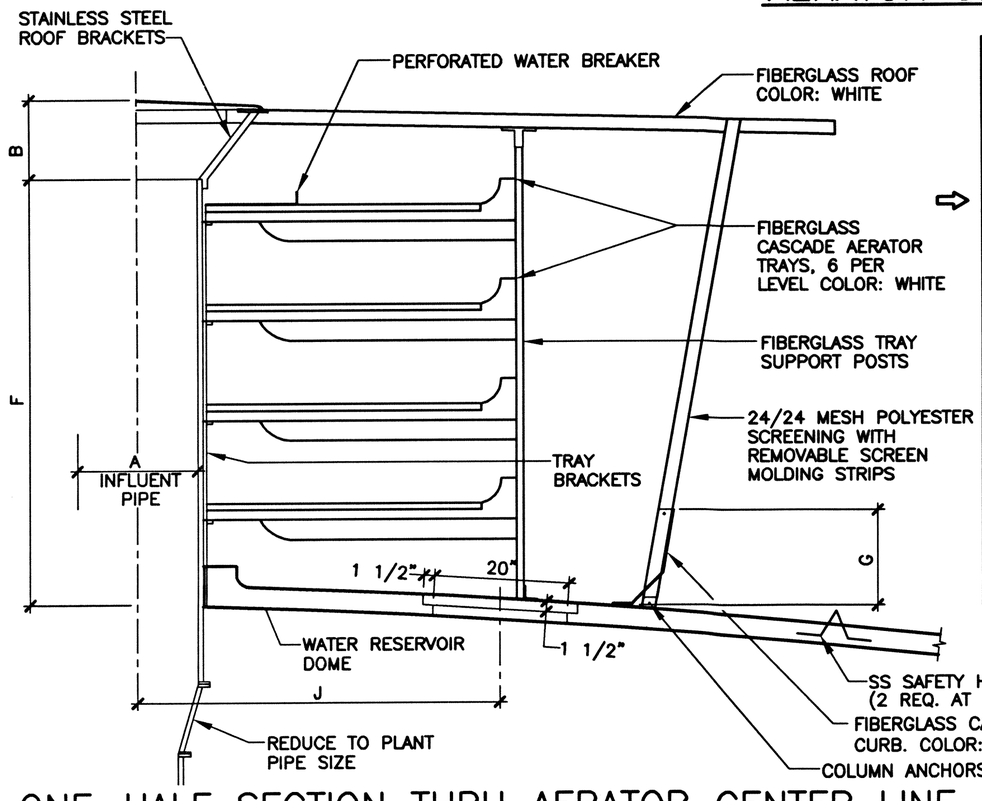
SCALE: AS NOTED

FILE NO. 06038

SHEET 5 OF 7



AERATOR ONE–HALF PLAN



ONE–HALF SECTION THRU AERATOR CENTER LINE

FLOW CAPACITY AND DIMENSION TABLE

FLOW CAPACITY GPM	TOTAL WEIR LENGTH	A PIPE SIZE	B CLEAR	C ROOF DIA.	D CURB DIA.	E TRAY RADIUS	F PIPE HEIGHT	G CURB HEIGHT	H ROOF COLUMN SPACING	I TOTAL TRAYS (LEVELS)	J DOWN–COMERS RADIUS	K NUMBER DOWN–COMERS
650	47'0"	14"	1'0"	17'4"	13'4"	4'9"	5'4"	1'4"	30°	6 (1)	4'7"	2
1,300	94'0"	14"	1'0"	17'4"	13'4"	4'9"	5'4"	1'4"	30°	12 (2)	4'7"	2
1,900	141'0"	14"	1'0"	17'4"	13'4"	4'9"	5'4"	1'4"	30°	18 (3)	4'7"	2
2,600	188'0"	18"	1'0"	17'4"	13'4"	4'9"	5'4"	1'4"	30°	24 (4)	4'7"	2
3,800	276'0"	20"	1'6"	28'0"	23'4"	9'0"	5'4"	1'6"	15°	18 (3)	9'7"	3
5,000	368'0"	24"	1'6"	28'0"	23'4"	9'0"	5'4"	1'6"	15°	24 (4)	9'7"	3
6,400	460'0"	24"	1'6"	28'0"	23'4"	9'0"	7'2"	1'6"	15°	30 (5)	9'7"	3
7,500	552'0"	30"	1'6"	28'0"	23'4"	9'0"	8'4"	1'6"	15°	36 (6)	9'7"	4

CASCADE TRAY NATURAL DRAFT AERATORS

ALL FIBERGLASS CONSTRUCTION WITH STAINLESS STEEL HARDWARE

6 — 650 GPM AERATOR

NTS

CROM

TANK BUILDER:
THE CROM CORPORATION
GAINESVILLE, FLORIDA

OWNER:
CITY OF FLOWER BRANCH
FLOWER BRANCH,
GEORGIA

CONSULTING ENGINEER:
RINDT–McDUFF
ASSOCIATES, INC.,
MARIETTA,
GEORGIA

TANK DESCRIPTION:
0.75–MG WATER
STORAGE TANK

TANK DIMENSIONS:
60'6" ID x 35'0" SWD

DATE: 7/13/06
DRAWN: DM
CHECKED: DGW
APPROVED: TBM
DESIGNED: KRH

REV.	DESCRIPTION	DATE CK.BY

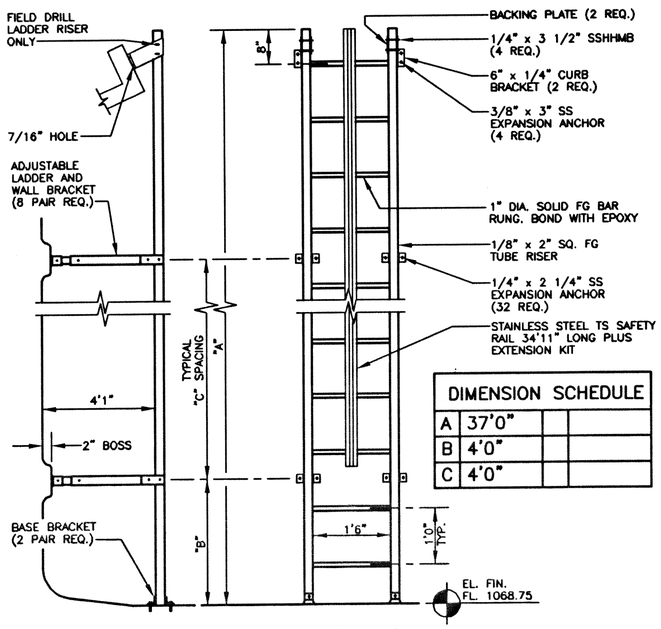
WHERE STANDARD SPECIFICATIONS ARE IN CONFLICT WITH CROM CORPORATION SPECIFICATIONS OR WITH GOOD PRE–STRESSING OR SHOTCRETE PRACTICES THE STANDARD SPECIFICATIONS SHALL BE SUBORDINATED.
THIS DESIGN AND DRAWING ORIGINATED BY AND THE EXCLUSIVE PROPERTY OF THE CROM CORPORATION.

BAR IS ONE INCH ON ORIGINAL DRAWINGS 0 — 1"

SCALE: NTS

FILE NO. 06038

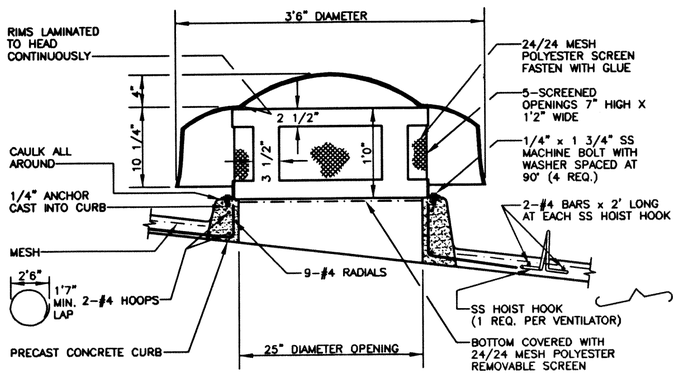
SHEET 6 OF 7



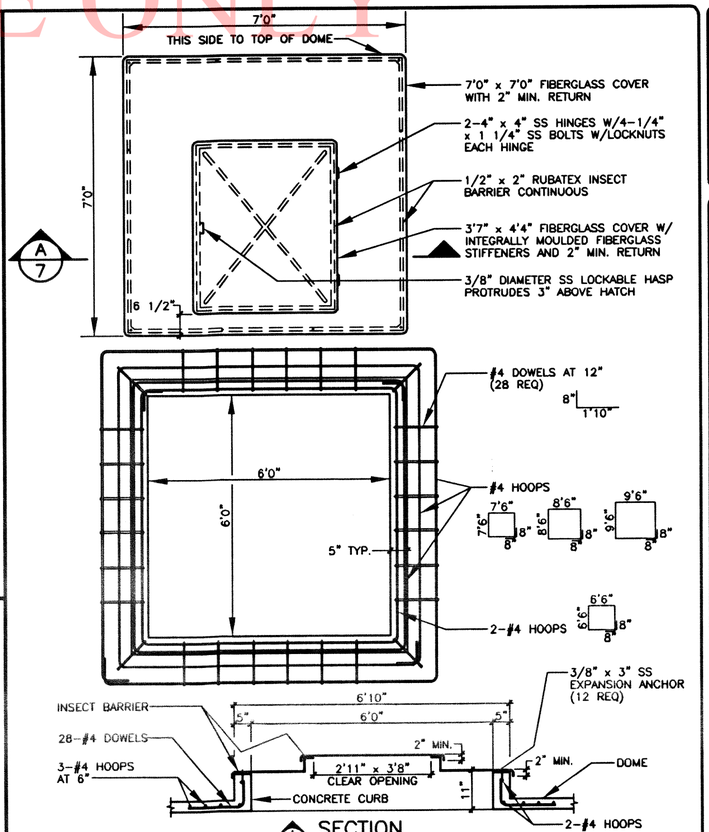
DIMENSION SCHEDULE			
A	37'0"		
B	4'0"		
C	4'0"		

NOTE: 1/4" X 2" FLAT BAR FIBERGLASS CROSS-BRACE TO BE PROVIDED FOR BRACING WALL BRACKET SUPPORTS ON EVERY BRACKET.

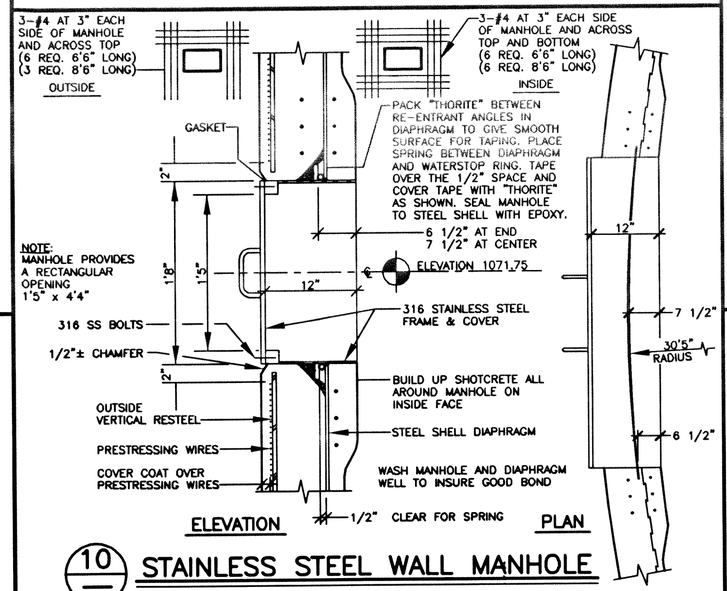
7/— INTERIOR FIBERGLASS LADDER WITH SS TS SAFETY RAIL



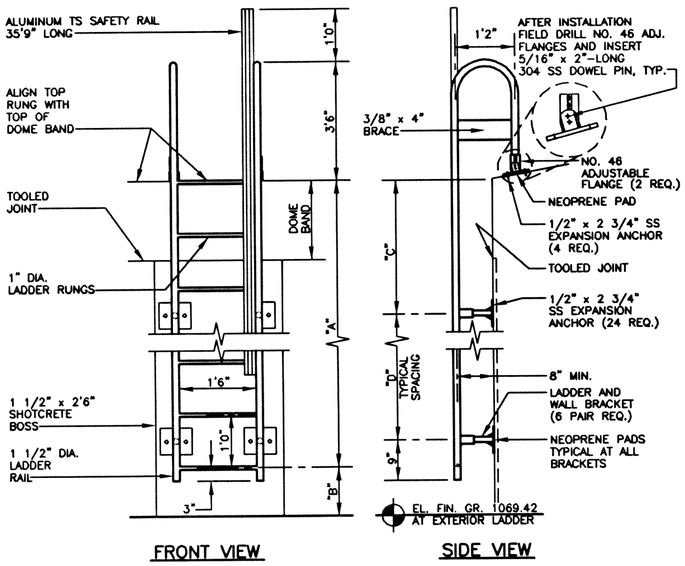
9/— 25" FIBERGLASS VENTILATOR WITH OFFSET PRECAST CURB (2 REQ.)



12/— FIBERGLASS HATCH COVER



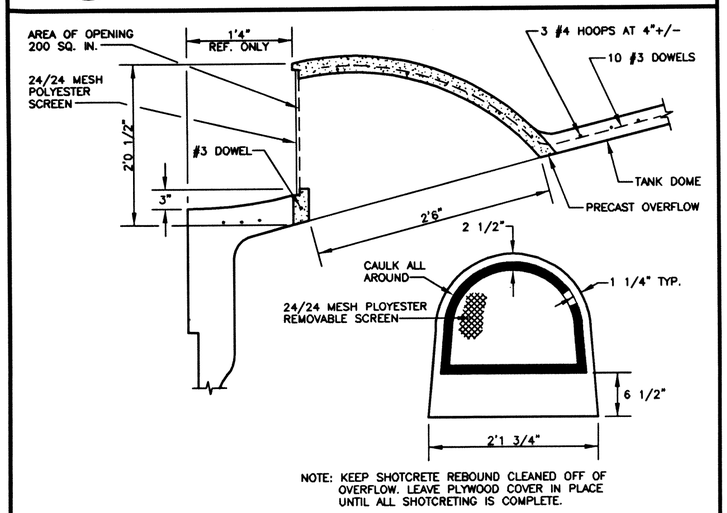
10/— STAINLESS STEEL WALL MANHOLE



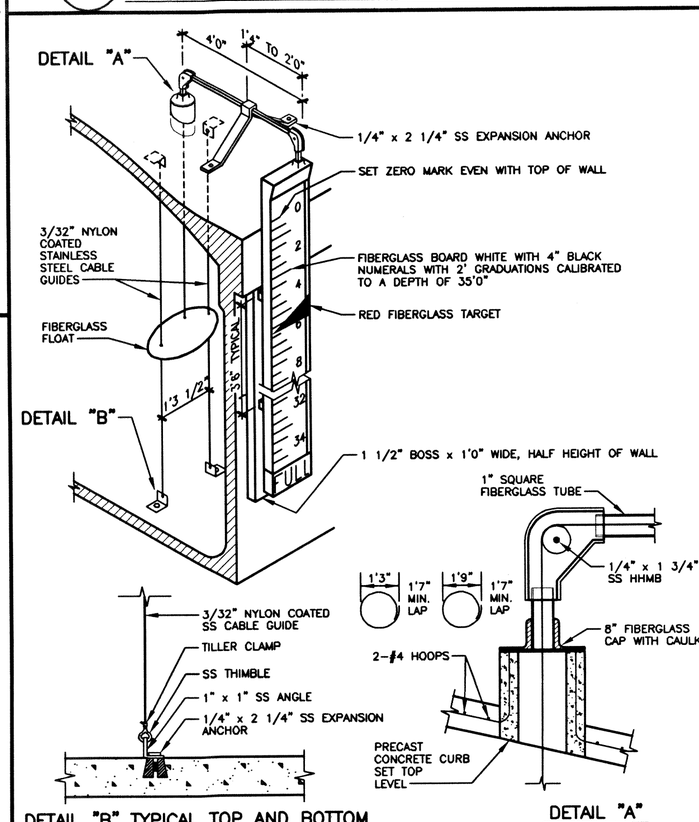
DIMENSION SCHEDULE			
A	33'1"	D	6'1 3/8"
B	1'3"		
C	2'6"		

NOTES: 1. ALL TUBULAR MATERIAL TO BE NOMINAL DIAMETER SCHEDULE 40 ALUMINUM PIPE 6061-T6 OR 6063-T6.
2. PLATES AND GUSSETS TO BE STRUCTURAL GRADE ALUMINUM 6061-T6.

8/— EXTERIOR ALUMINUM LADDER WITH TS SAFETY RAIL



11/— #200 PRECAST CONCRETE OVERFLOW (4 REQ.)



13/— FIBERGLASS LIQUID LEVEL INDICATOR

CROM

TANK BUILDER:
THE CROM CORPORATION
GAINESVILLE, FLORIDA

OWNER:
CITY OF FLOWER BRANCH
FLOWER BRANCH,
GEORGIA

CONSULTING ENGINEER:
RINDT-McDUFF ASSOCIATES, INC.,
MARIETTA,
GEORGIA

TANK DESCRIPTION:
0.75-MG WATER STORAGE TANK

TANK DIMENSIONS:
60'6" ID x 35'0" SWD

DATE: 7/13/06
DRAWN: DM
CHECKED: DGW
APPROVED: TBM
DESIGNED: KRH

REV.	DESCRIPTION	DATE CK.BY

WHERE STANDARD SPECIFICATIONS ARE IN CONFLICT WITH CROM CORPORATION SPECIFICATIONS OR WITH GOOD PRE-STRESSING OR SHOTCRETE PRACTICES THE STANDARD SPECIFICATIONS SHALL BE SUBORDINATED.
THIS DESIGN AND DRAWING ORIGINATED BY AND THE EXCLUSIVE PROPERTY OF THE CROM CORPORATION.

BAR IS ONE INCH ON ORIGINAL DRAWINGS 0 ——— 1"

SCALE: NTS

FILE NO. 06038

SHEET 7 OF 7

PHOENIX
FABRICATORS AND ERECTORS, LLC

Avon, Indiana - Sebree, Kentucky

250,000 GALLON WATER STORAGE TANK
FOR
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

DRAWING INDEX

SHEET	TITLE	REVISION
T-00	TITLE SHEET	A
T-01	GENERAL ELEVATION	0
T-02	BASE CONE DETAILS	0
T-03	DOORWAY DETAILS	0
T-04	SUPPORT DETAILS	0
T-05	UPPER TRANSITION DETAILS	0
T-06	PLATFORM & RING DETAILS	0
⚠T-07	UPPER CONE DETAILS	0
⚠T-08	GORE DETAILS	0
⚠T-09	PIPE DETAILS	A
⚠T-10	LADDER DETAILS	0
F-01	FOUNDATION DETAILS	A
F-02	FOUNDATION ELEVATION DETAILS	0
F-03	FOUNDATION DESIGN SUMMARY	0
F-04	SPLASH BLOCK DETAILS	0
D-01	PAINTING INSTRUCTIONS	0
D-02	SIGN LAYOUT	0
D-03	TANK VENT	0
D-04	30"Ø ROOF HATCH	0
D-05	30"Ø HATCH - PLATFORM #1	0
D-06	30"Ø HATCH - PLATFORM #2	0
D-07	24"Ø STEM HATCH	0
D-08	OVERFLOW SCREEN	0
D-09	PLATFORM DRAIN ASSEMBLY	0
D-10	BOWL DRAIN	0
D-11	GROUT PROCEDURE	0
D-12	NAME PLATE	0
D-13	ELECTRICAL BRACKETS	0
D-14	ROOF FLANGE	0
D-15	BASE CONE HANDRAIL	0
D-16	ROOF HANDRAIL	0
D-17	PAINTER'S RINGS	0
D-18	PROTECTIVE DISCHARGE CAP	0

TANK CRITERIA

WELDED STEEL TANK
TYPE: SPHEROIDAL
CAPACITY = 200,000 GALLON
HIGH WATER LEVEL = 152'-0"
TANK DIA = 44'-0"
HEAD RANGE = 30'-0"

BASE CONE DIA = 26'-0"
STEM DIA = 8'-0"
ACCESS TUBE DIA = 42"
INLET DIA = 12"
OVERFLOW DIA = 8"
DOOR SIZE = 36" X 80"

TANK NOTES

1. GROUT UNDER BASE PLATE MINIMUM 1".
2. WELDING TO BE IN ACCORDANCE WITH AWWA D100-21 AND NACE D.
3. SEE SHEET T-08 FOR LOCATING PAINTER'S LUGS.
4. SEAL WELD CONTAINER.

DESIGN CRITERIA

SPECIFICATIONS:	AWWA D100-21 ACI 318-11
WIND:	117 MPH - AWWA
SNOW:	25 PSF - AWWA
SEISMIC:	SITE CLASS C Ss = 0.207 S_1 = 0.089

NOT FOR FABRICATION

GEORGIA
REGISTERED
No. PE034576
PROFESSIONAL
ENGINEER
KURT T. FULLER
12.06.22

OWNER'S ENGINEER
INFRATEC CONSULTANTS, INC.

Rev.	Rev. By	Rev. Date	Revision Description
A	AB/KI	11/28/22	Revised Sheets & Items Noted

250,000 GALLON ELEVATED SPHEROIDAL TANK

TITLE SHEET

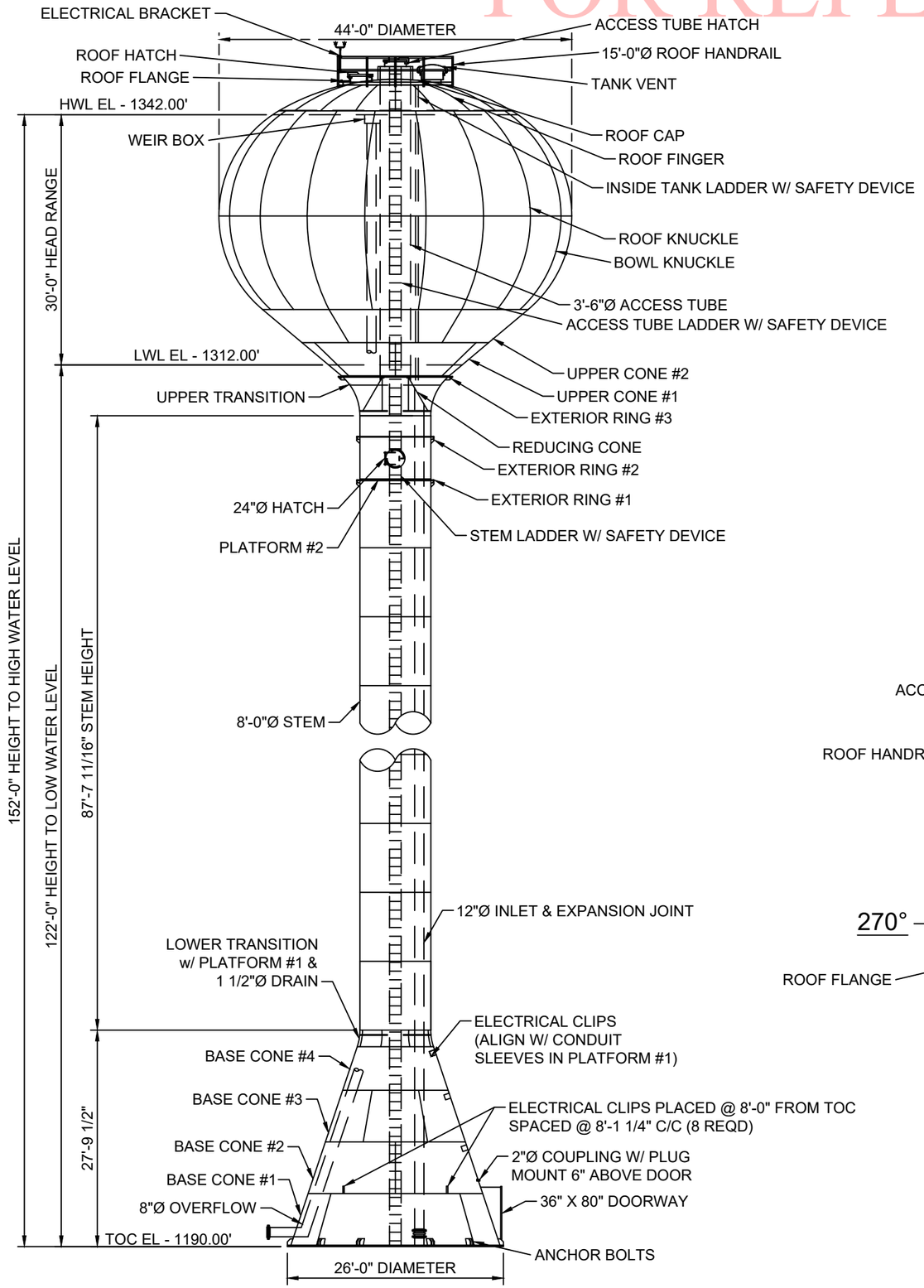
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

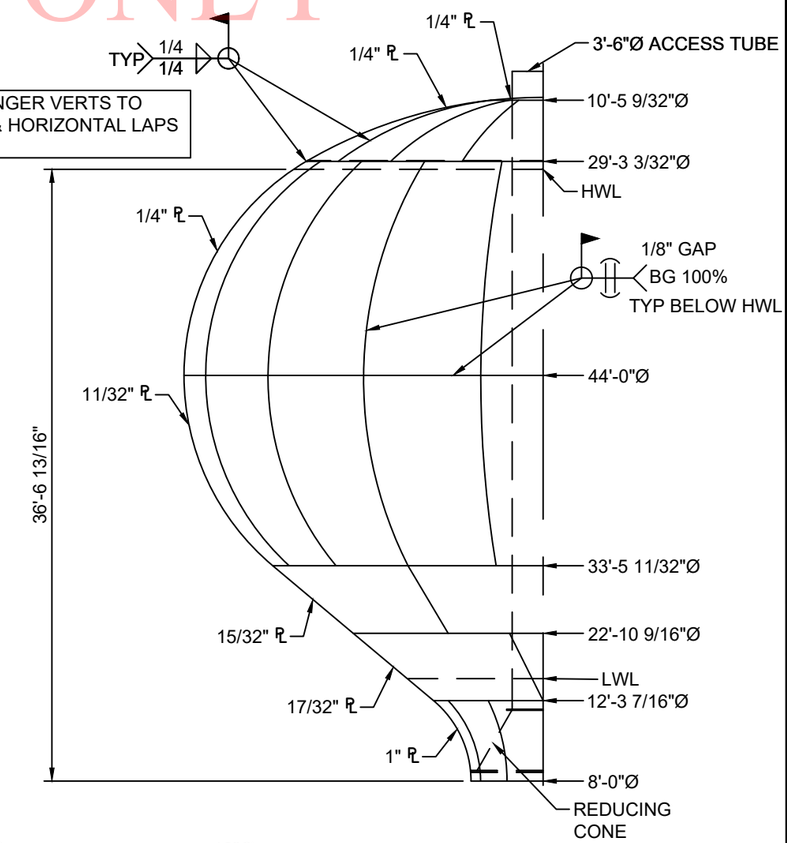
Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

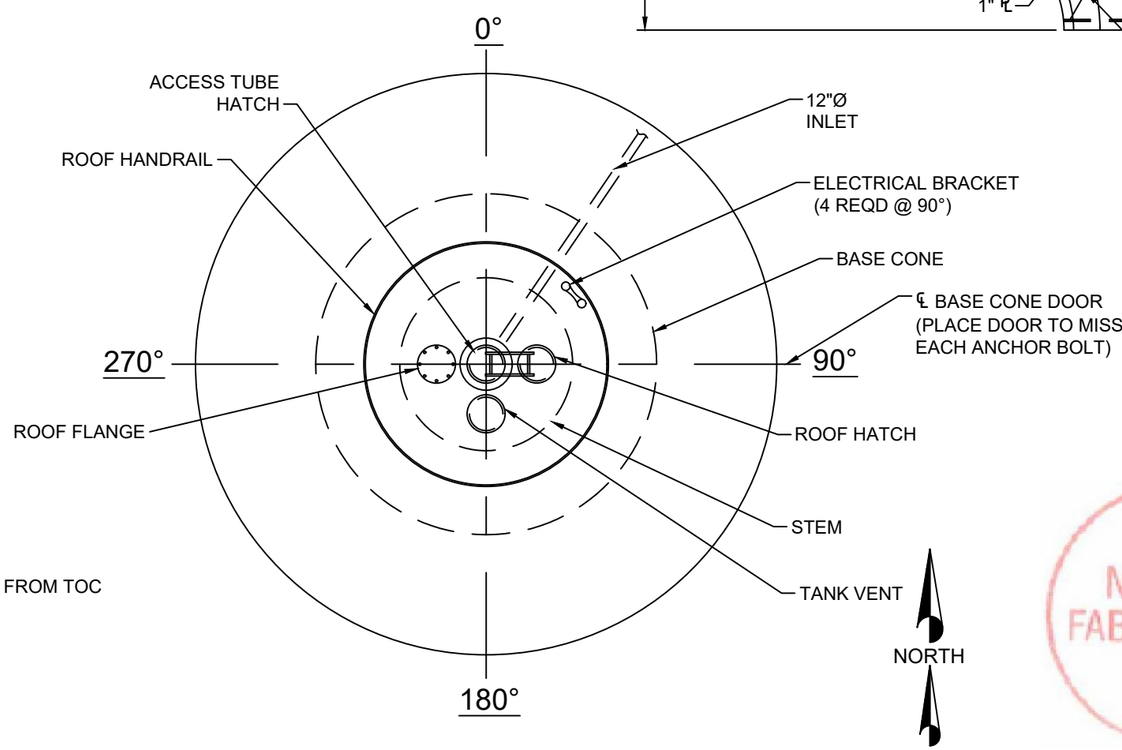
PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
T-00







ORIENTATION VIEW

NOT FOR FABRICATION

250,000 GALLON ELEVATED SPHEROIDAL TANK

GENERAL ELEVATION

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

Rev. By | Rev. Date | Revision Description

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

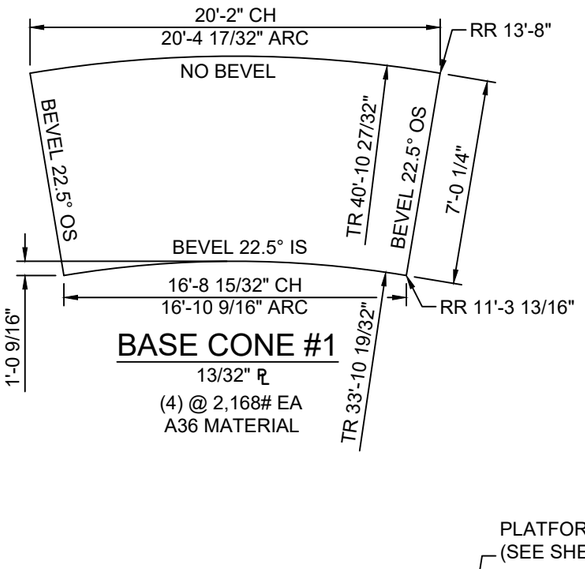
SHEET
T-01

CHORDS AFTER ROLLING		
	CH (1) PC	CH (2) PCS
LARGE END	18'-3 7/8"	25'-11 3/32"
SMALL END	15'-2 1/16"	21'-5 5/8"

CHORDS AFTER ROLLING		
	CH (1) PC	CH (2) PCS
LARGE END	15'-2 1/32"	21'-5 17/32"
SMALL END	12'-0 1/4"	17'-0 1/8"

CHORDS AFTER ROLLING		
	CH (1) PC	CH (2) PCS
LARGE END	12'-0 5/32"	17'-0"
SMALL END	8'-10 3/8"	12'-6 19/32"

CHORDS AFTER ROLLING		
	CH (1) PC	CH (2) PC
LARGE END	8'-10 7/32"	12'-6 11/32"
SMALL END	6'-1 3/8"	8'-7 7/8"

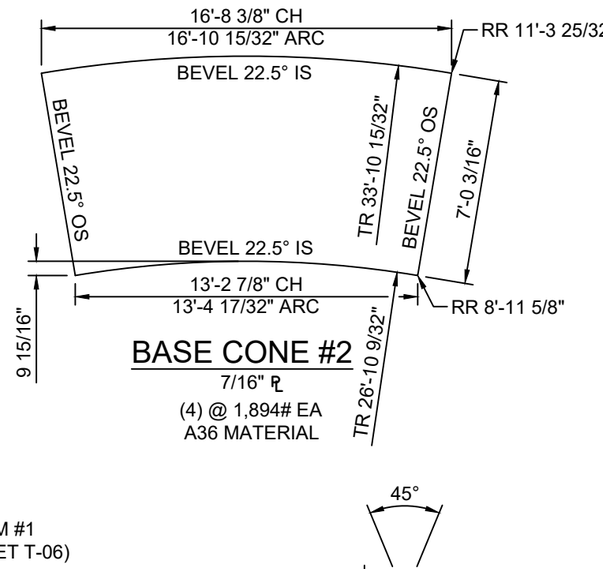


BASE CONE #1

13/32" ℄

(4) @ 2,168# EA

A36 MATERIAL

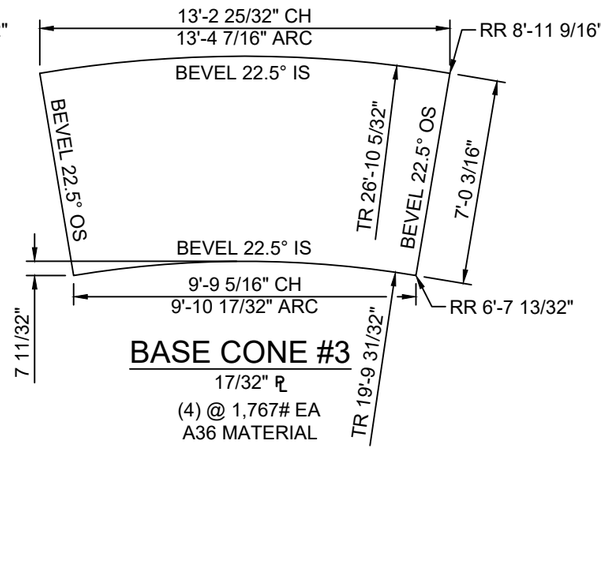


BASE CONE #2

7/16" ℄

(4) @ 1,894# EA

A36 MATERIAL

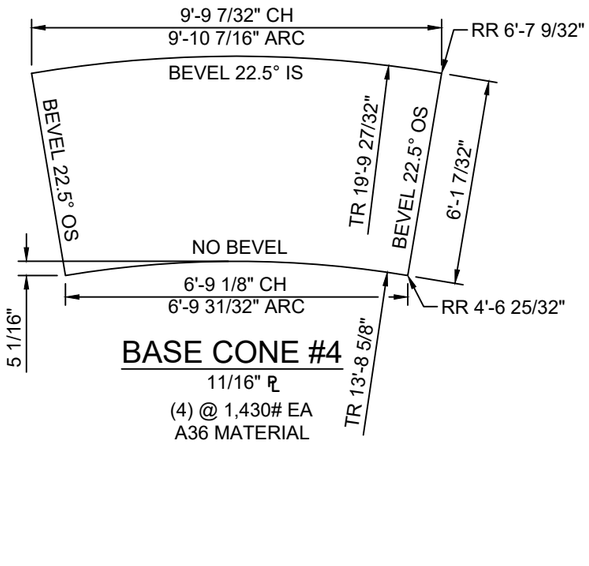


BASE CONE #3

17/32" ℄

(4) @ 1,767# EA

A36 MATERIAL

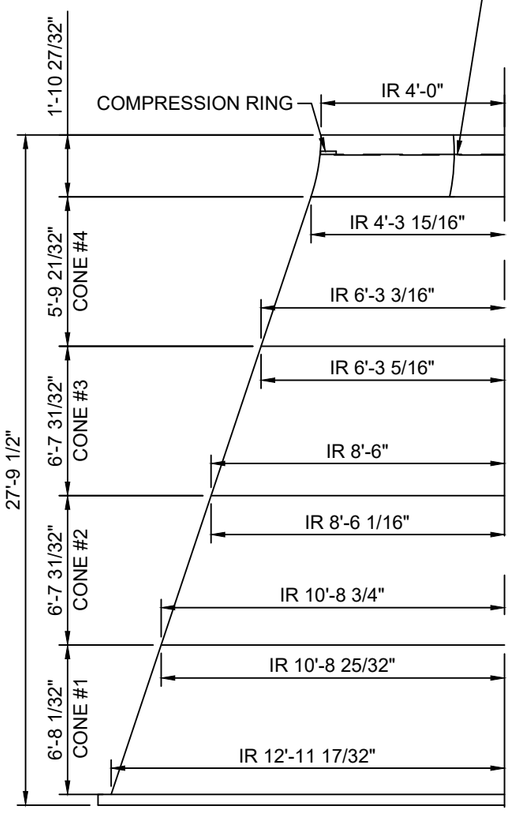


BASE CONE #4

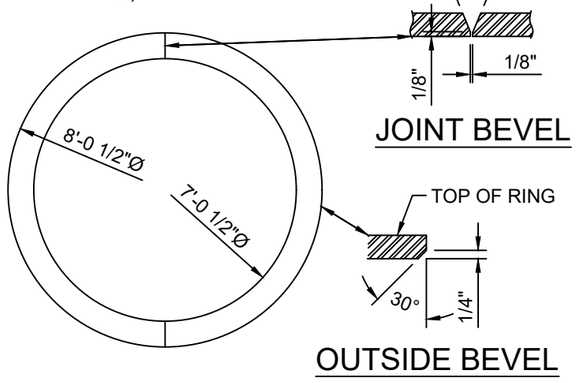
11/16" ℄

(4) @ 1,430# EA

A36 MATERIAL



BASE CONE ELEVATION



JOINT BEVEL

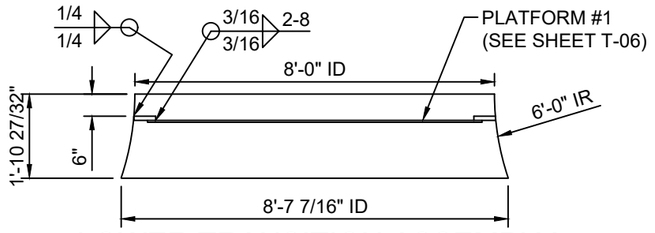
OUTSIDE BEVEL

COMPRESSION RING #1

1" ℄

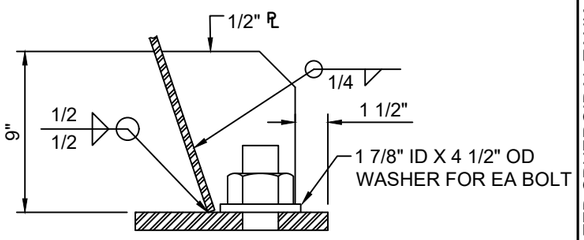
(2) @ 242# EA

A36 MATERIAL



LOWER TRANSITION ASSEMBLY

(1) @ 2,893# EA



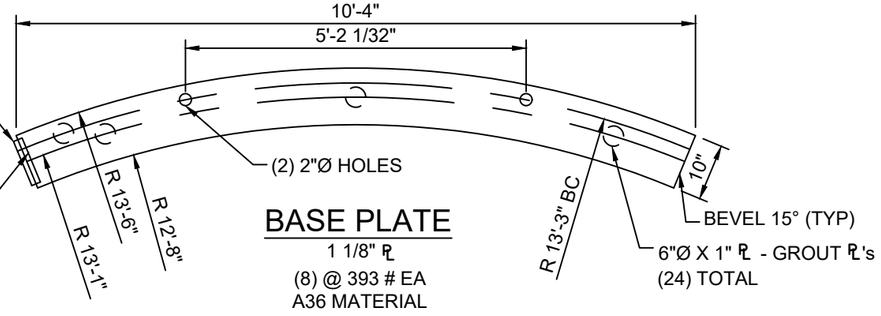
ANCHOR BOLT GUSSET

(32) REQUIRED

(2) REQD @ EA ANCHOR BOLT - 12" APART

BACKING STRIP
1/4" X 1 1/4" BAND X 9" L
(1) @ (6) BASE ℄'S.
(2) @ (1) BASE ℄
(0) @ (1) BASE ℄

TACK
UNDERSIDE
ONLY



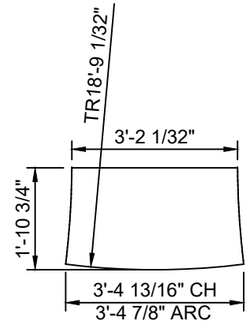
BASE PLATE

1 1/8" ℄

(8) @ 393 # EA

A36 MATERIAL

BASE CONES FIT MEAN



LOWER TRANSITION

1" ℄

(8) @ 249# EA

A36 MATERIAL

NOT FOR FABRICATION

Rev.	By	Rev. Date	Revision Description
D			
C			
B			
A			

250,000 GALLON ELEVATED SPHEROIDAL TANK

BASE CONE DETAILS

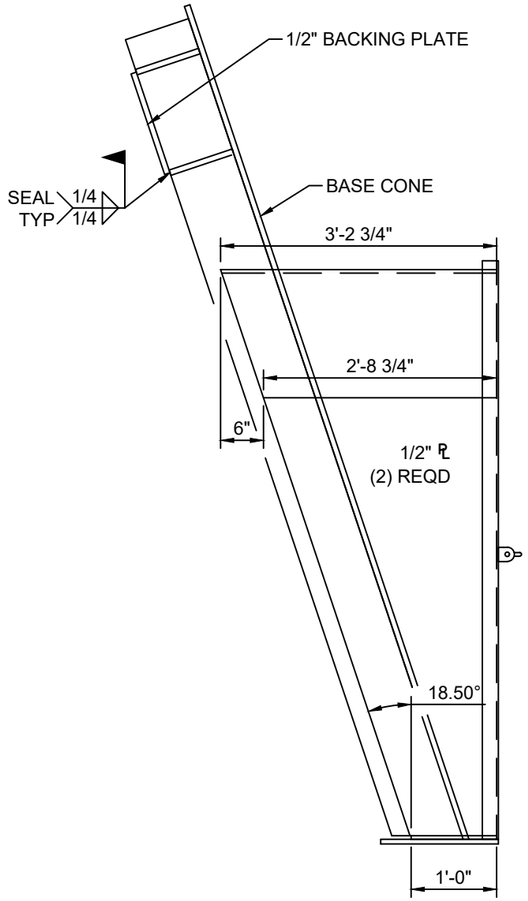
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

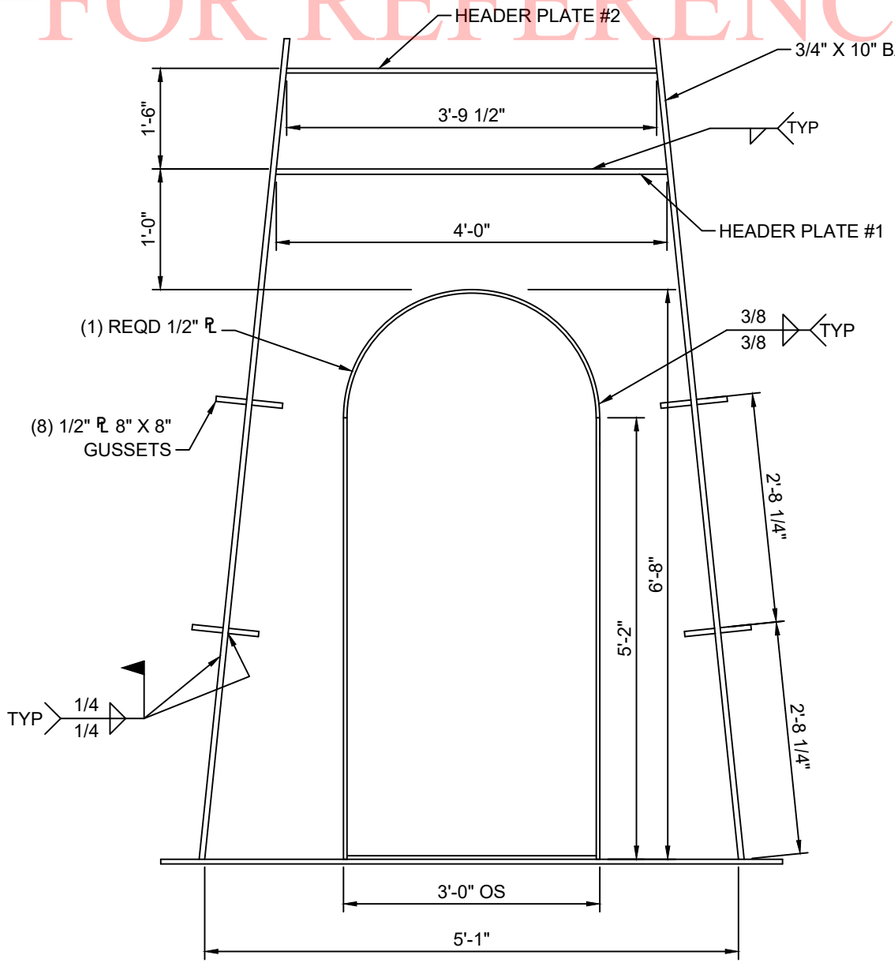
PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No. 3907

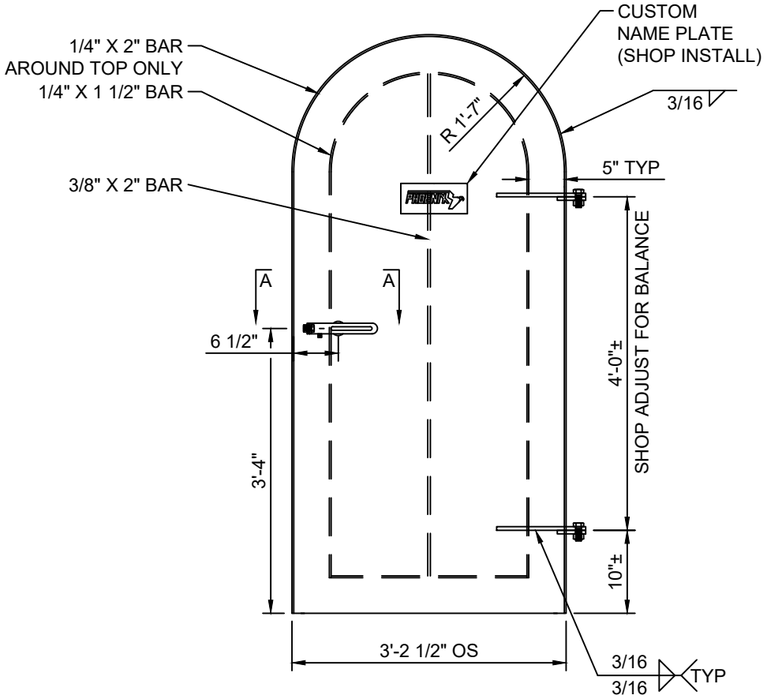
SHEET T-02



SIDE VIEW

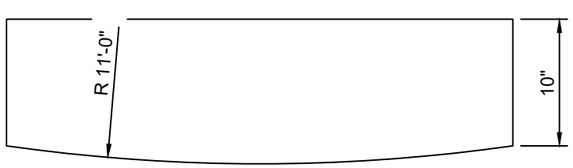


DOOR FRAME DETAIL



DOOR DETAIL

DOOR ASSEMBLY = 1,002#

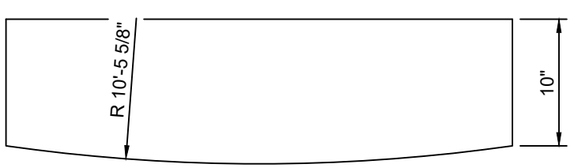


HEADER PLATE #1

3/4" PL

(1) @ 117#

A36 MATERIAL

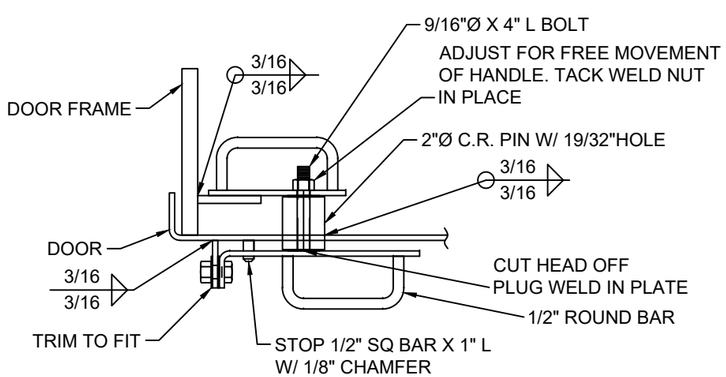


HEADER PLATE #2

3/4" PL

(1) @ 110#

A36 MATERIAL



SECTION A-A

NOT FOR FABRICATION

250,000 GALLON ELEVATED SPHEROIDAL TANK

DOORWAY DETAILS

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

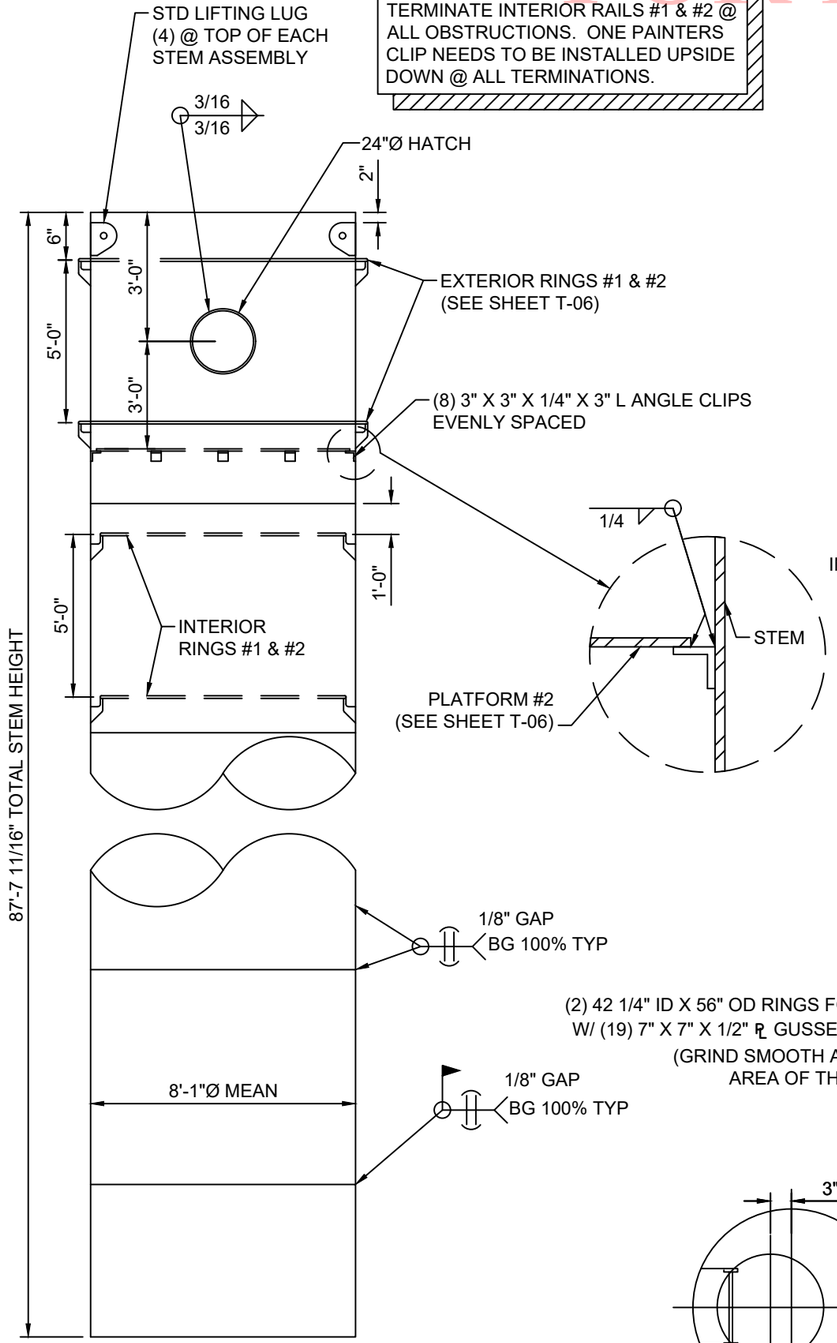
	Rev. By	Rev. Date	Revision Description
A			
B			
C			
D			

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

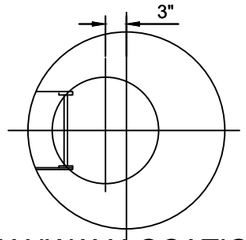
JOB. No.
3907

SHEET
T-03

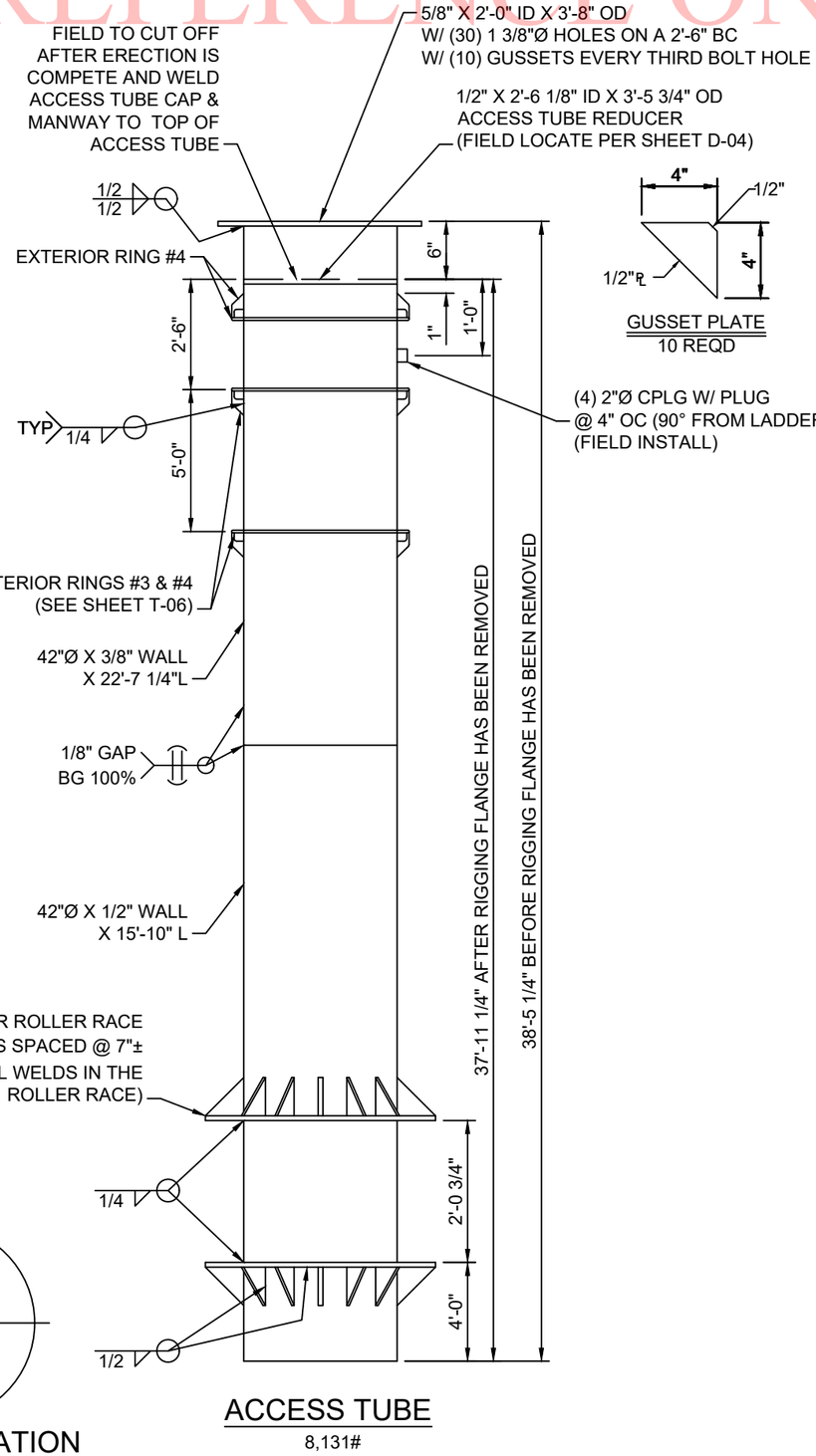
NOTE:
TERMINATE INTERIOR RAILS #1 & #2 @ ALL OBSTRUCTIONS. ONE PAINTERS CLIP NEEDS TO BE INSTALLED UPSIDE DOWN @ ALL TERMINATIONS.



STEM



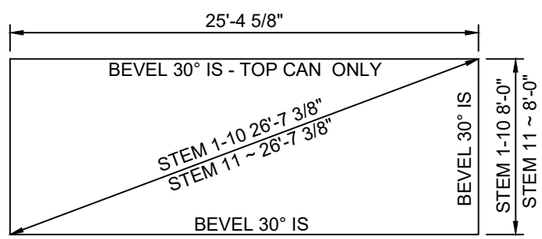
MANWAY LOCATION
IN ACCESS TUBE REDUCER



ACCESS TUBE
8,131#

GUSSET PLATE
10 REQD

STEM #11	1/2"	8'-1 1/2"	4,143
STEM #10	1/2"	8'-1 1/2"	4,186
STEM #9	17/32"	8'-1 17/32"	4,447
STEM #8	17/32"	8'-1 17/32"	4,447
STEM #7	9/16"	8'-1 9/16"	4,709
STEM #6	19/32"	8'-1 19/32"	4,971
STEM #5	19/32"	8'-1 19/32"	4,971
STEM #4	5/8"	8'-1 5/8"	5,232
STEM #3	21/32"	8'-1 21/32"	5,494
STEM #2	11/16"	8'-1 11/16"	5,756
STEM #1	23/32"	8'-1 23/32"	6,017
	℄ THK	OD	WEIGHT
STEM SHEETS (A36 MATERIAL TYP)			



SHOP NOTE: TRIM STEM CAN #10 AS REQUIRED TO MAKEUP STEM HEIGHT

NOT FOR FABRICATION

Revision Description | Rev. By | Rev. Date

250,000 GALLON ELEVATED SPHEROIDAL TANK

SUPPORT DETAILS

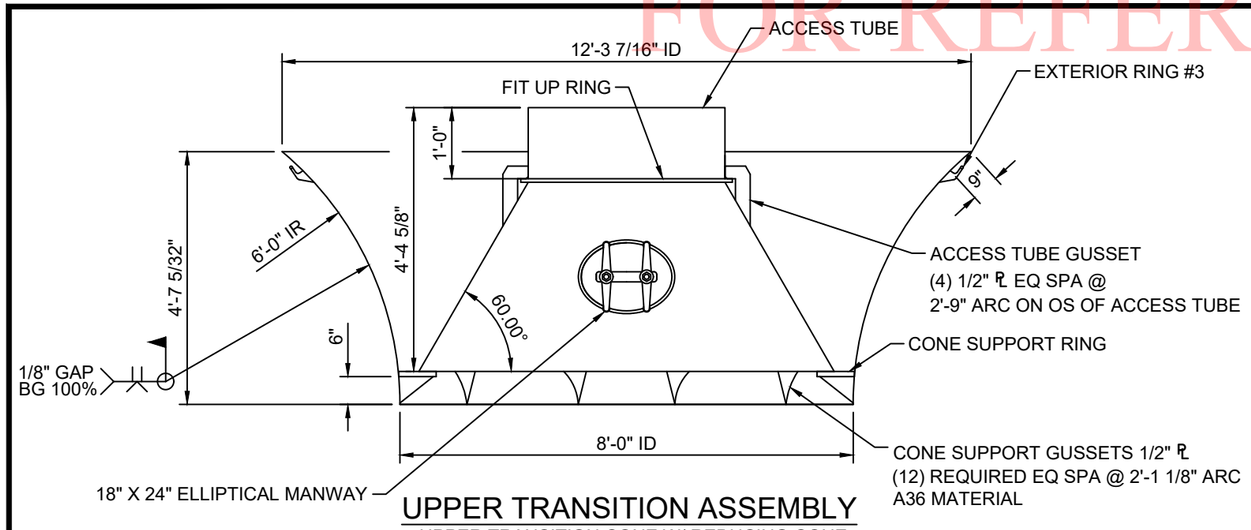
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

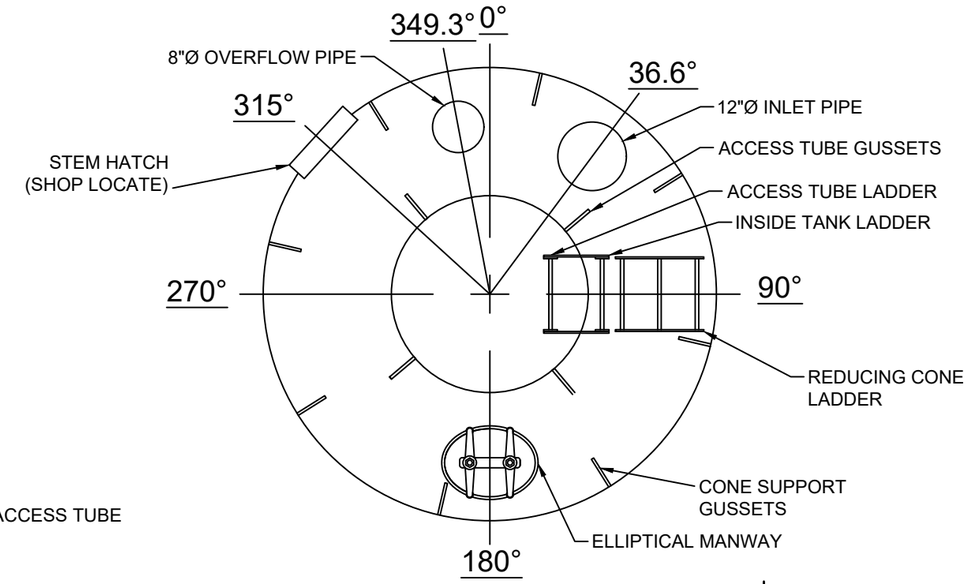
JOB. No.
3907

SHEET
T-04

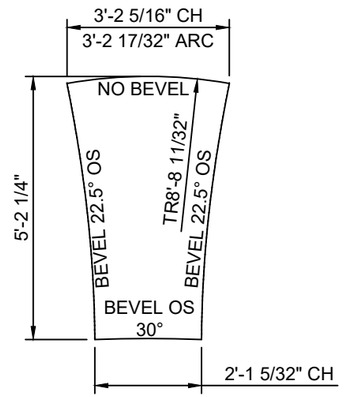


UPPER TRANSITION ASSEMBLY

UPPER TRANSITION CONE W/ REDUCING CONE,
ACCESS TUBE EXTENSION, SUPPORT RING,
& GUSSETS (SHIP IN HALVES)
TOTAL ASSEMBLY (1) @ 8,511#

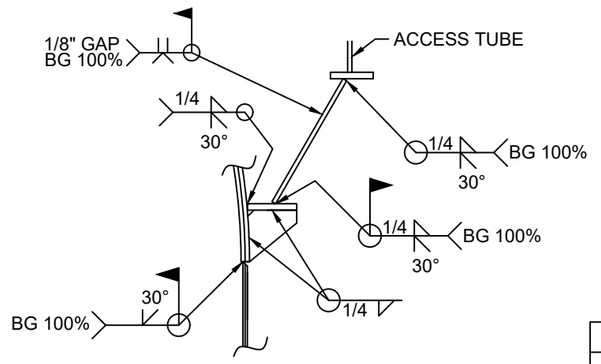


ORIENTATION VIEW

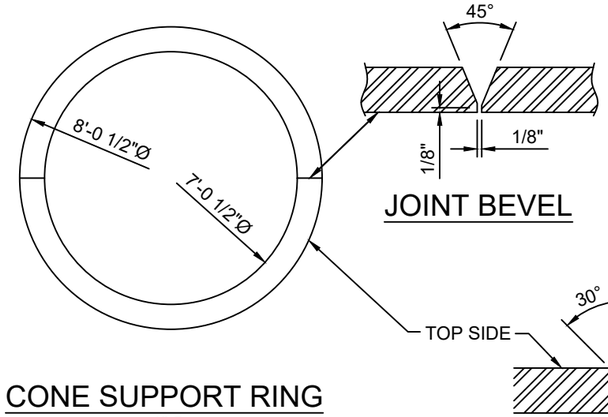


UPPER TRANSITION

1" PL
(12) @ 524# EA
A36 MATERIAL



WELD DETAIL

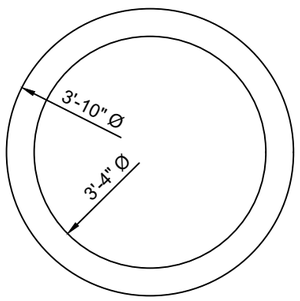


CONE SUPPORT RING

1" PL
(2) @ 272#
A36 MATERIAL

JOINT BEVEL

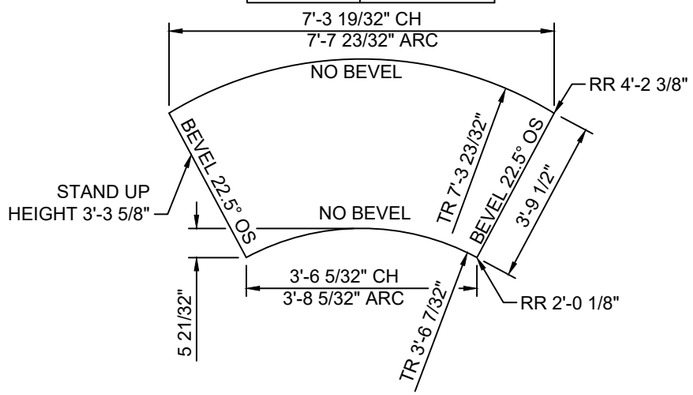
OUTSIDE BEVEL



FIT UP RING

1" PL
(1) @ 115#
A36 MATERIAL

CHORDS AFTER ROLLING	
	CH (1) PC
LARGE END	6'-3 17/32"
SMALL END	3'-0 1/8"



REDUCING CONE

1/2" PL
(3) @ 438# EA
A36 MATERIAL
SHIP W/ FIT UP RING & 1'-0" OF
3'-6"Ø ACCESS TUBE = 1644#

NOT FOR FABRICATION

250,000 GALLON ELEVATED SPHEROIDAL TANK

UPPER TRANSITION DETAILS

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

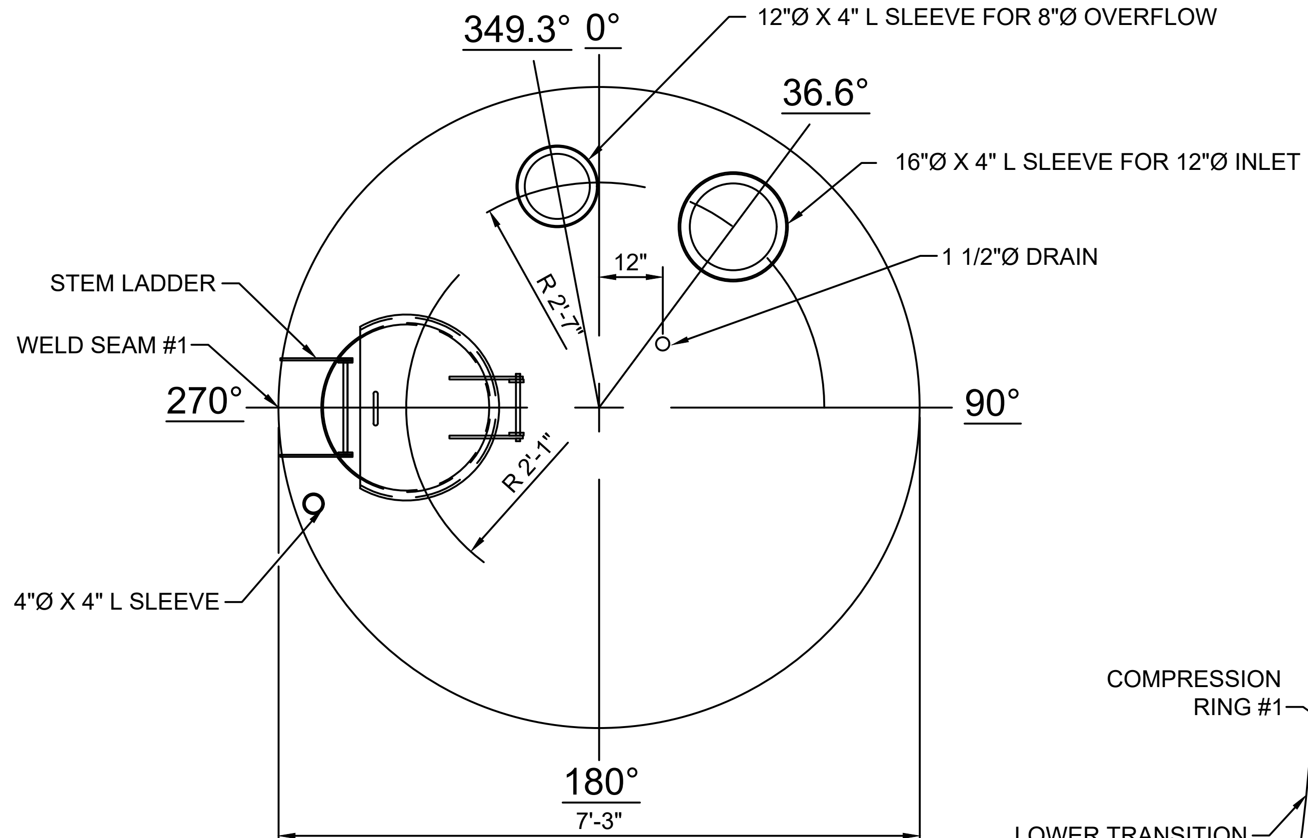
Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

Rev.	By	Rev. Date	Revision Description
A			
B			
C			
D			

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

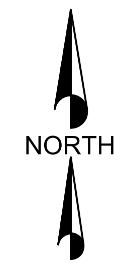
JOB. No.
3907

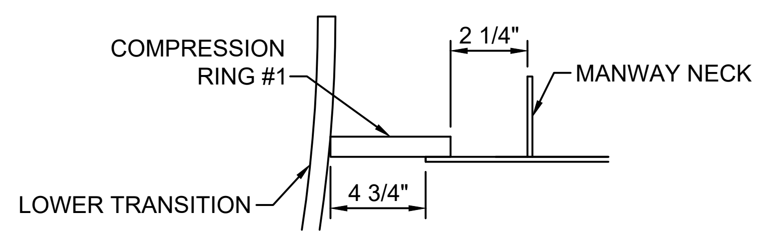
SHEET
T-05



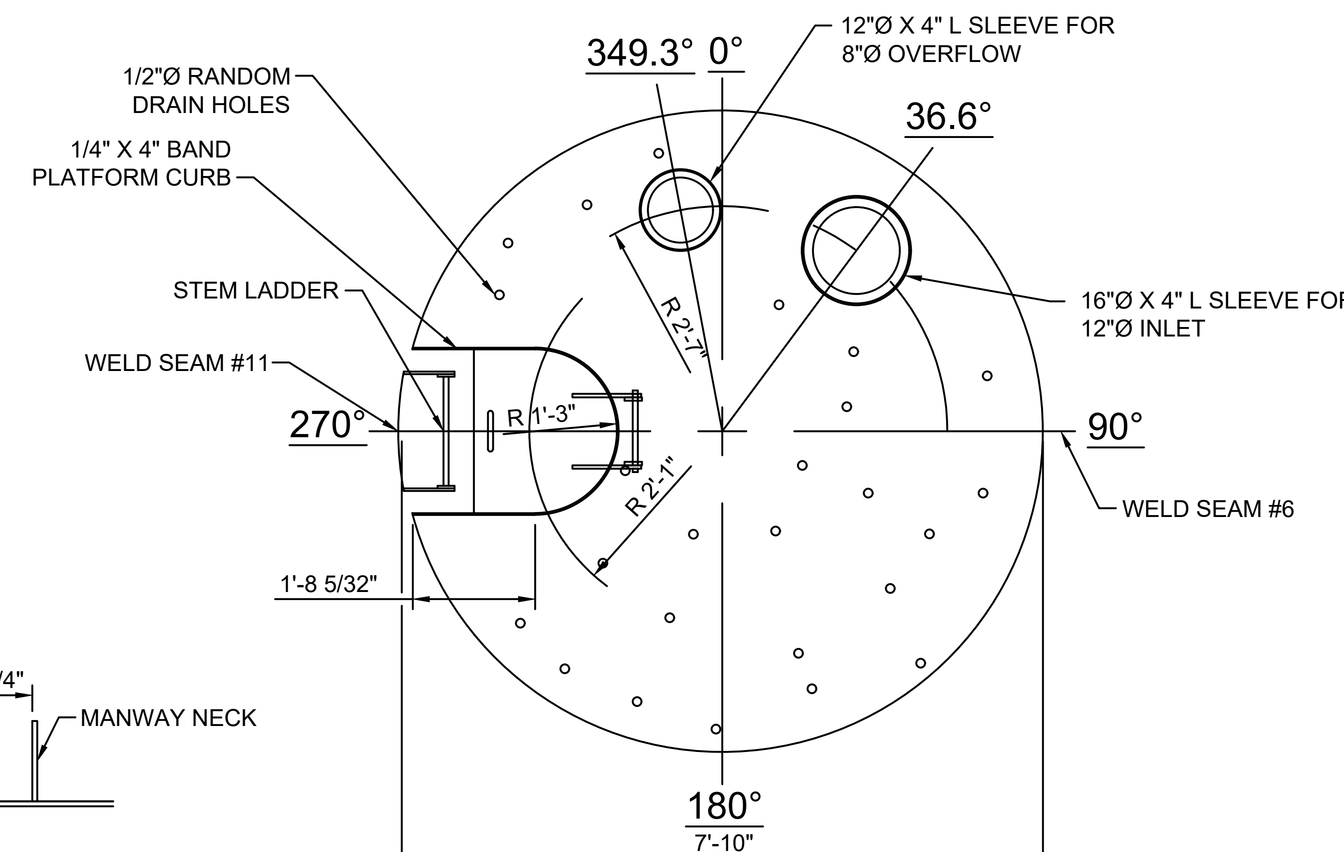
PLATFORM #1

1/4" PL
(1) @ 421#
A36 MATERIAL





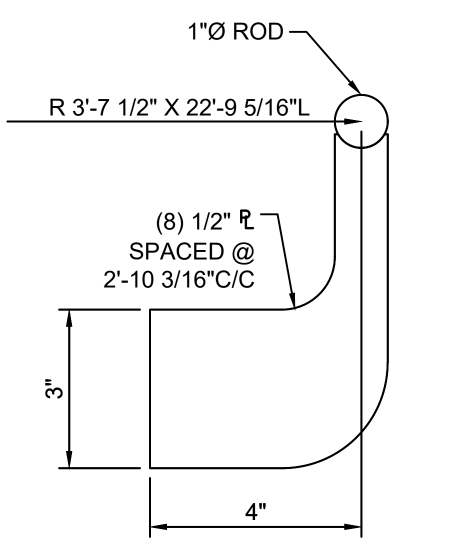
PLATFORM #1 LOCATION DETAIL



PLATFORM #2 & #3

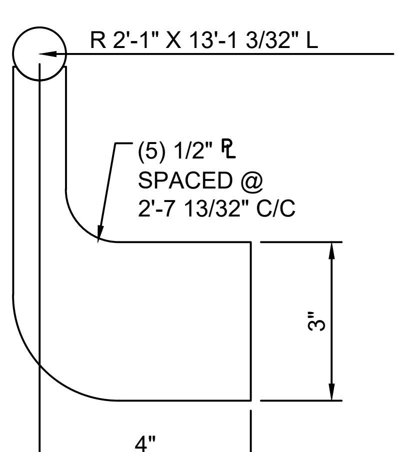
1/4" PL
(2) @ 492#
A36 MATERIAL

NOTE: ONE CLIP MUST BE AT ROD SPLICE



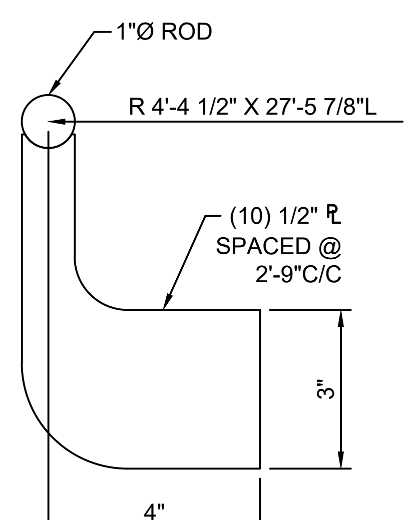
INTERIOR RING #1 & #2

(2) REQUIRED
(2) @ 65# EA



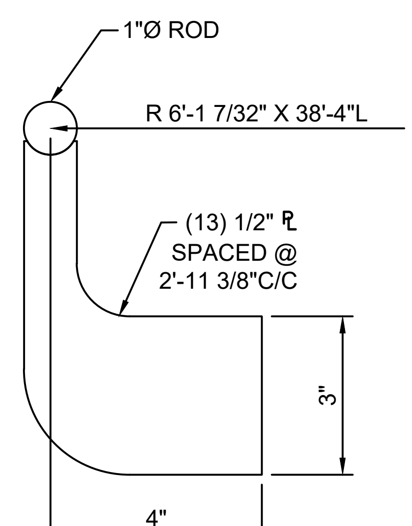
INTERIOR RING #3 & #4

(2) REQUIRED
(2) @ 38# EA



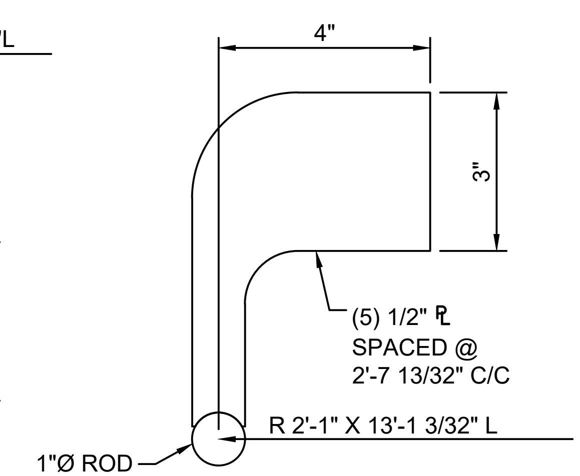
EXTERIOR RING #1 & #2

(2) REQUIRED
(2) @ 79# EA



EXTERIOR RING #3

(1) REQUIRED
(1) @ 108# EA



EXTERIOR RING #4

(1) REQUIRED
(1) @ 38# EA

250,000 GALLON ELEVATED SPHEROIDAL TANK

PLATFORM & RING DETAILS

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

Rev. By | Rev. Date | Revision Description

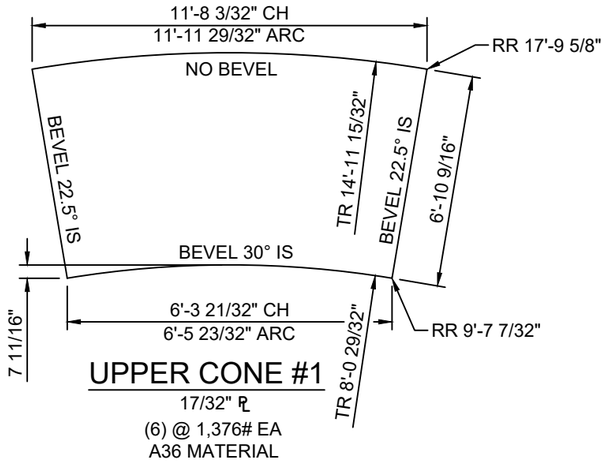
PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No. 3907

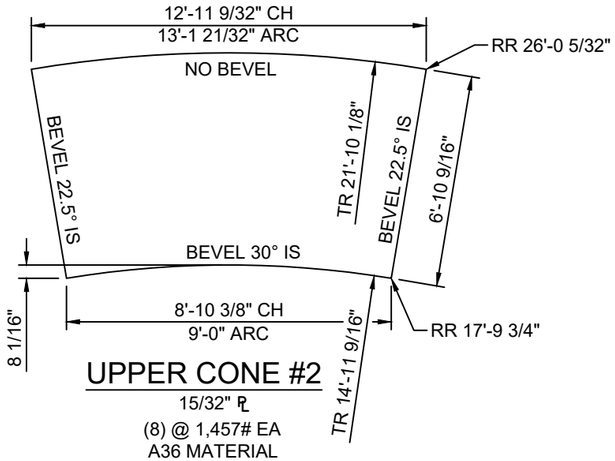
SHEET T-06

CHORDS AFTER ROLLING		
	CH (1) PC	CH (2) PCS
LARGE END	11'-5 1/4"	19'-9 27/32"
SMALL END	6'-2"	10'-8 9/32"

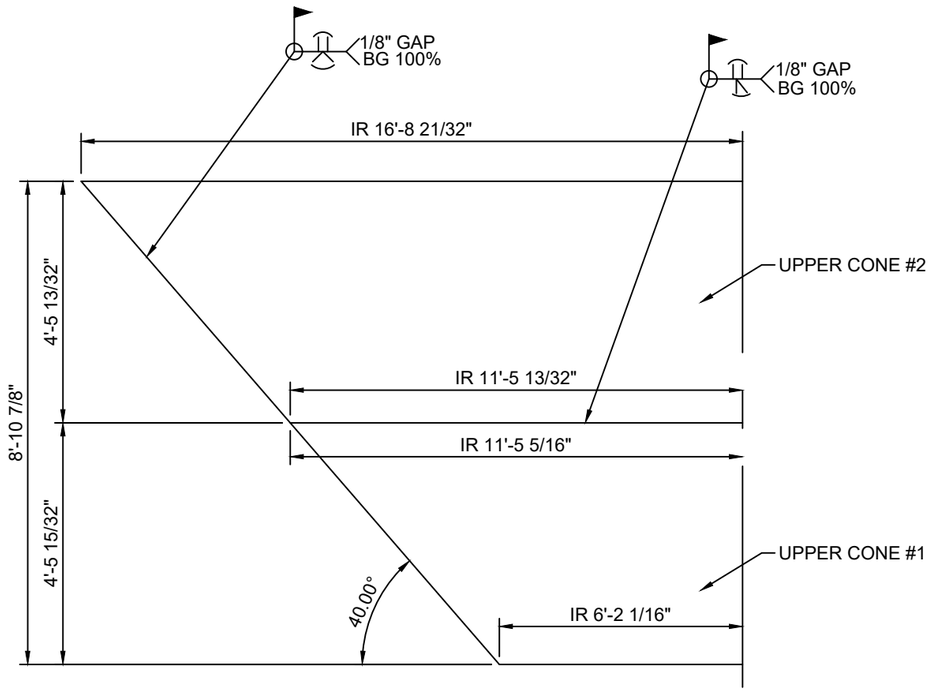
CHORDS AFTER ROLLING			
	CH (1) PC	CH (2) PCS	CH (4) PCS
LARGE END	12'-9 1/2"	23'-7 3/4"	33'-5 9/32"
SMALL END	8'-9 3/32"	16'-2 5/16"	22'-10 13/16"



UPPER CONE #1
17/32" ℄
(6) @ 1,376# EA
A36 MATERIAL



UPPER CONE #2
15/32" ℄
(8) @ 1,457# EA
A36 MATERIAL



UPPER CONE ELEVATION

CONES FIT TO OUTSIDE

250,000 GALLON ELEVATED SPHEROIDAL TANK

UPPER CONE DETAILS

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

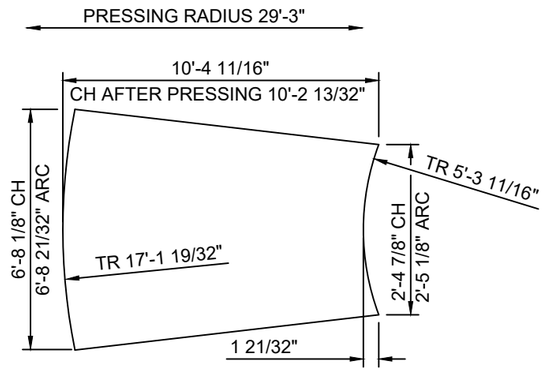
Rev.	Rev. By	Rev. Date	Revision Description

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
T-07

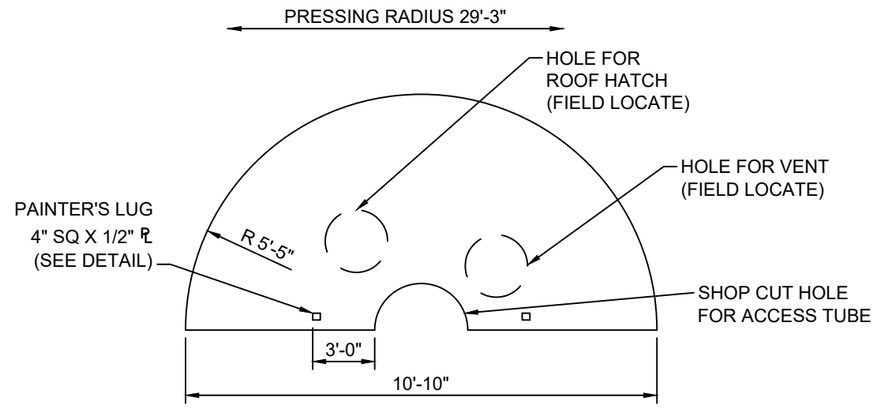
CHORDS AFTER PRESSING	
	CH (1) PC
LARGE END	6'-7 31/32"
SMALL END	2'-4 7/8"



ROOF FINGER

1/4" ℄

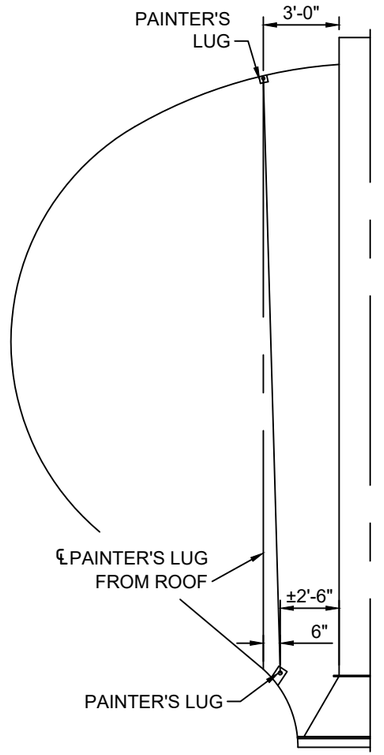
(14) @ 484# EA
A36 MATERIAL
STAND UP HEIGHT = 3'-6 11/16"



ROOF CAP

1/4" ℄

(2) @ 420# EA
A36 MATERIAL

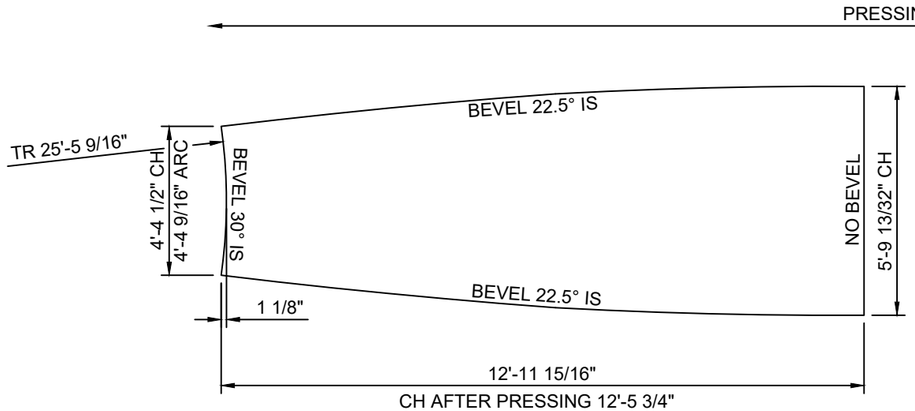


PAINTER'S LUG DETAIL

(2) PLACES @ 180°

CHORDS AFTER PRESSING			
	CH (1) PC	CH (2) PCS	CH (3) PCS
LARGE END	5'-8 31/32"	11'-4 3/4"	16'-10 3/16"
SMALL END	4'-4 7/16"	8'-8"	12'-9 3/4"

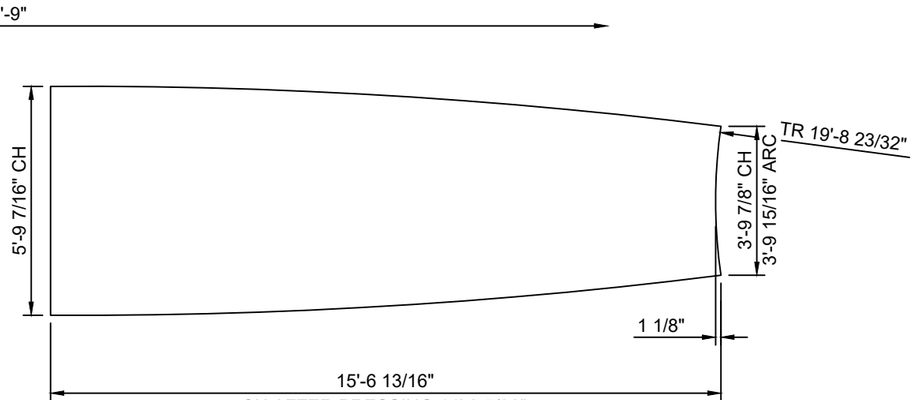
CHORDS AFTER PRESSING			
	CH (1) PC	CH (2) PCS	CH (3) PCS
LARGE END	5'-8 31/32"	11'-4 25/32"	16'-10 7/32"
SMALL END	3'-9 27/32"	7'-6 29/32"	11'-2 13/32"



BOWL KNUCKLE

11/32" ℄

(24) @ 962# EA
A36 MATERIAL
STAND UP HEIGHT = 11'-3 27/32"



ROOF KNUCKLE

1/4" ℄

(24) @ 808# EA
A36 MATERIAL
STAND UP HEIGHT = 12'-9 17/32"

250,000 GALLON ELEVATED SPHEROIDAL TANK

GORE DETAILS

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

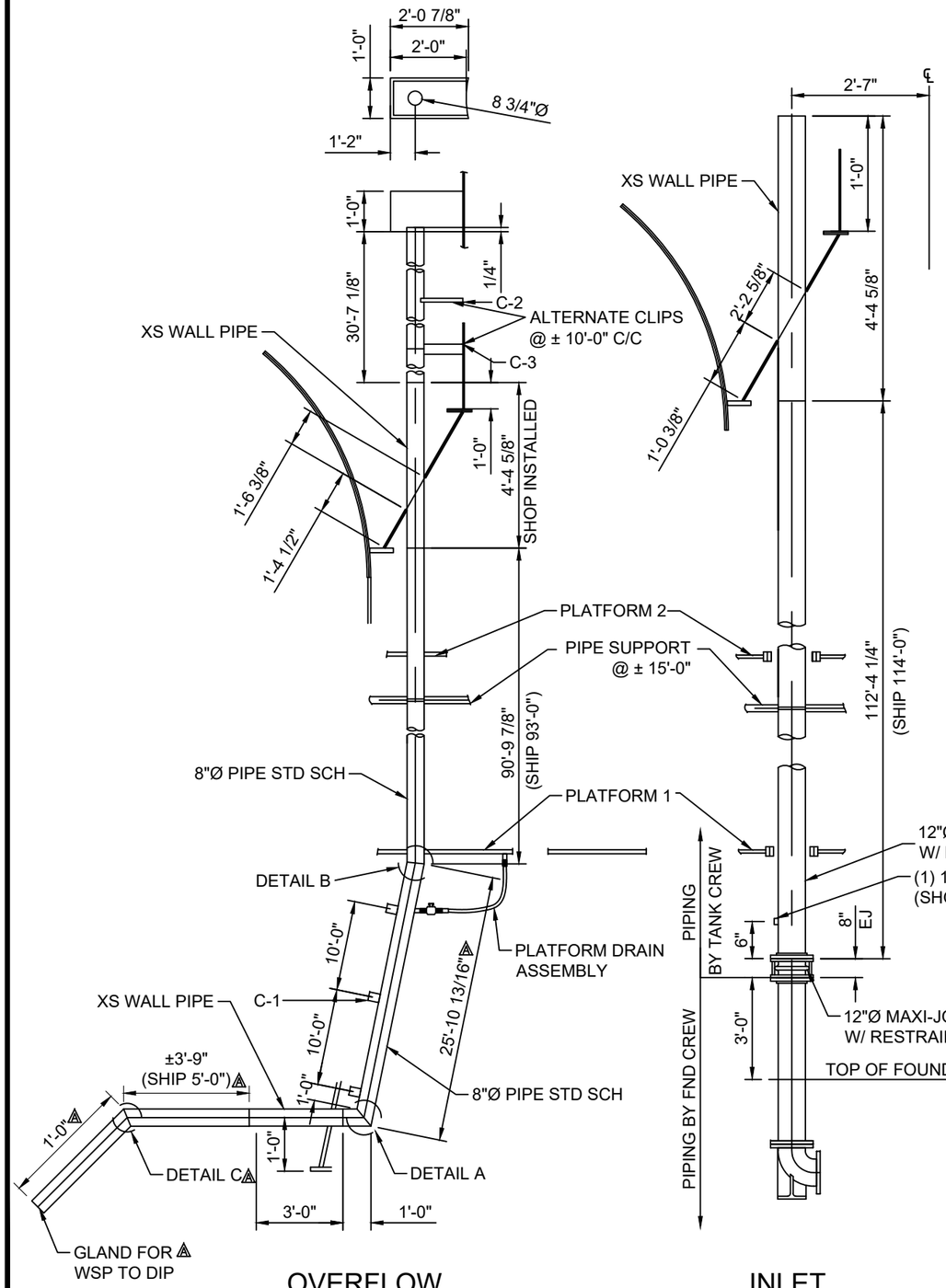
Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

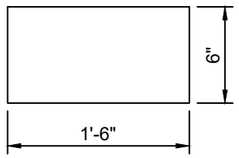
Rev.	By	Rev. Date	Revision Description
A			
B			
C			
D			

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

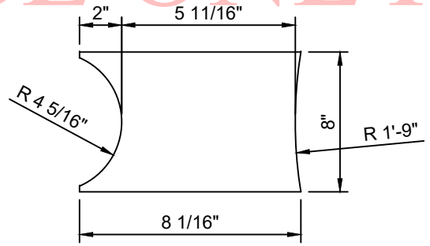
JOB. No.
3907

SHEET
T-08

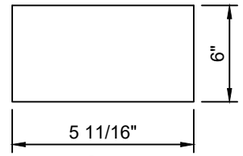




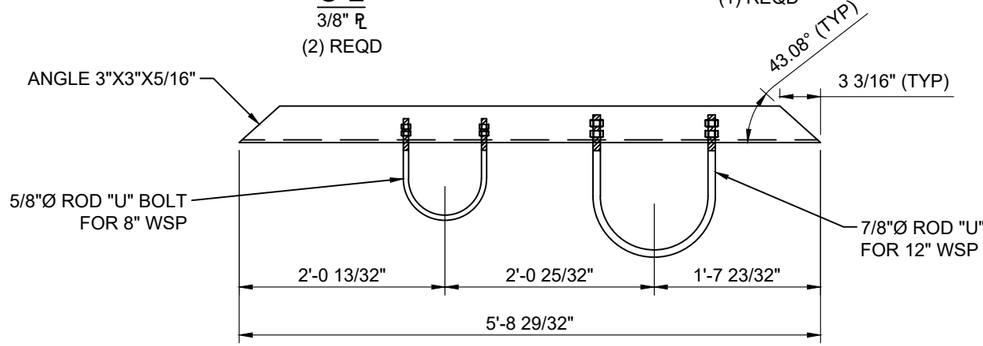
C-1
3/8" PL
(3) REQD



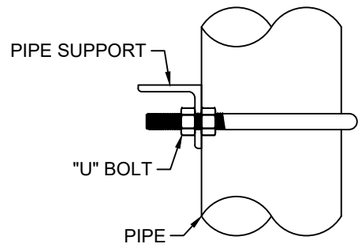
C-2
3/8" PL
(2) REQD



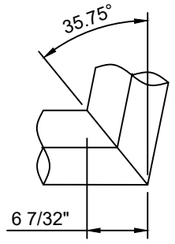
C-3
3/8" PL
(1) REQD



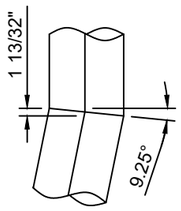
INLET PIPE SUPPORT
(6) REQUIRED



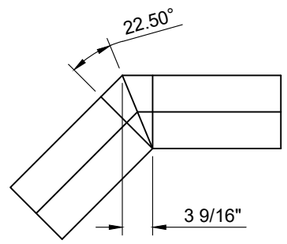
NOT FOR FABRICATION



DETAIL A



DETAIL B



DETAIL C ⚠

Rev.	Rev. By	Revision Description
B	AB/KI	Revised Items Noted

250,000 GALLON ELEVATED SPHEROIDAL TANK

PIPE DETAILS

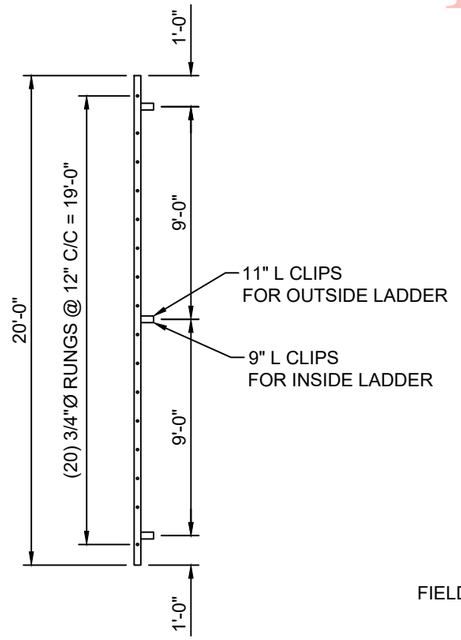
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

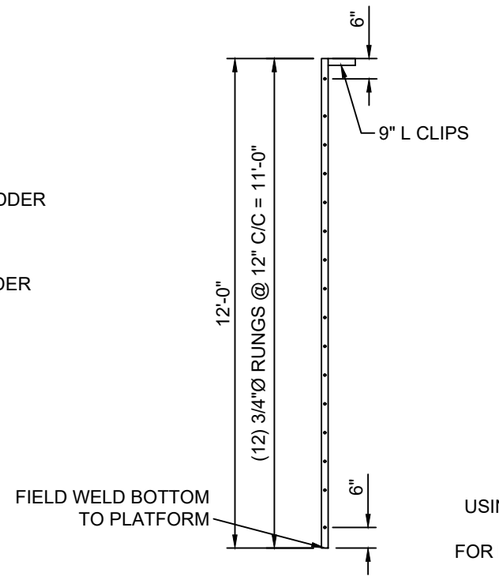
JOB. No.
3907

SHEET
T-09



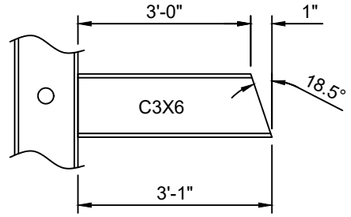
ACCESS TUBE LADDER

INSIDE (1) 20'-0" L SECTIONS (142#) (1) 18'-0" L SECTION (128#)
OUTSIDE (1) 20'-0" L SECTIONS (142#) (1) 17'-0" L SECTIONS (121#)



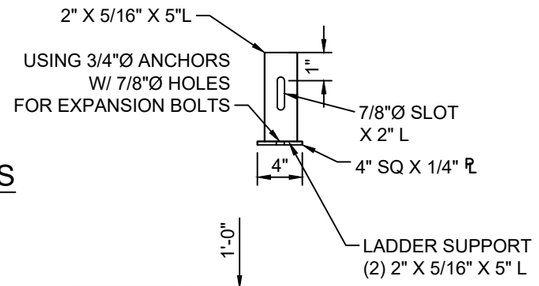
STEM TO ACCESS TUBE LADDER

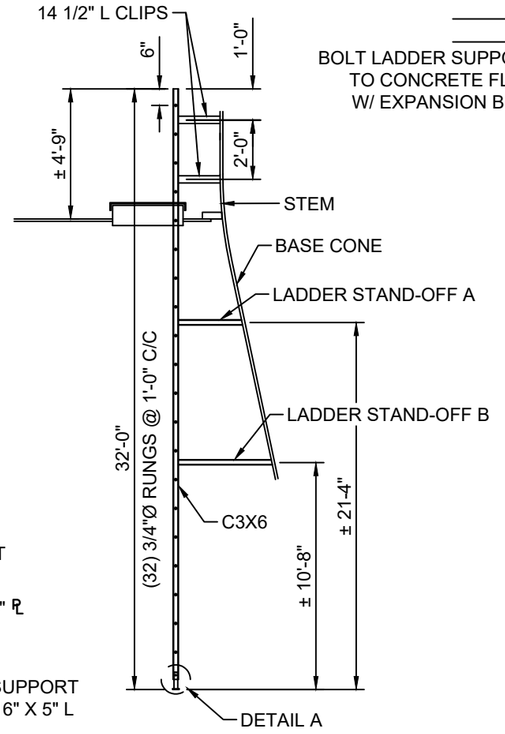
(85#)

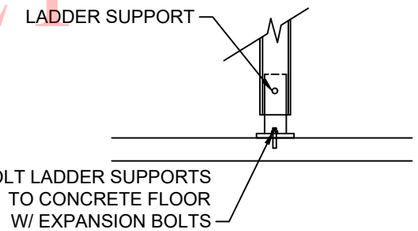


LADDER STAND-OFF DETAIL A

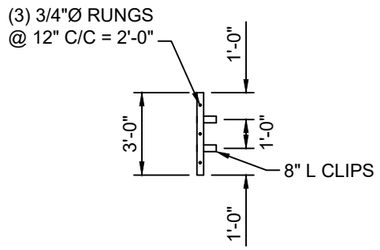
(2) REQD (18#)
[SHIP LOOSE]





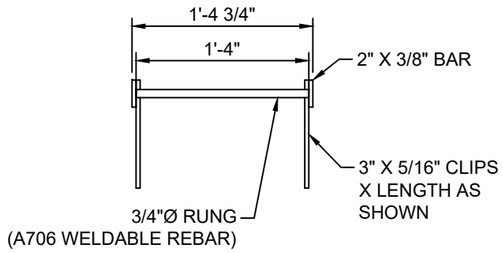


DETAIL A



REDUCING CONE LADDER

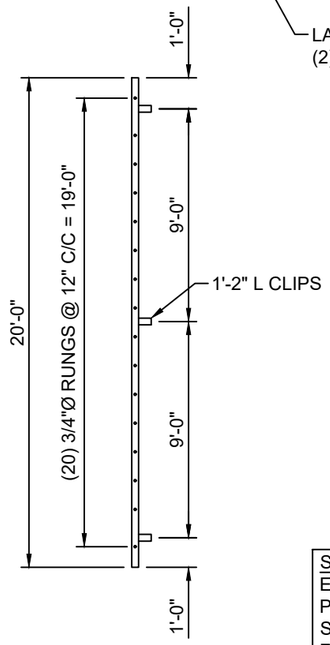
(1) REQD (21#)



END VIEW TYP

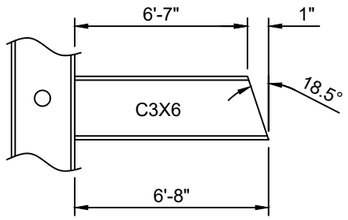
(STANDARD LADDER)

NOTE:
1.ALL LADDER CLIPS TO BE WELDED INSIDE LADDER RAIL.
2. GAP LADDER SECTIONS 3/8"



STEM LADDER

(4) 20'-0" L SECTIONS (142# EA)
(1) 2'-0" SECTION (14#)

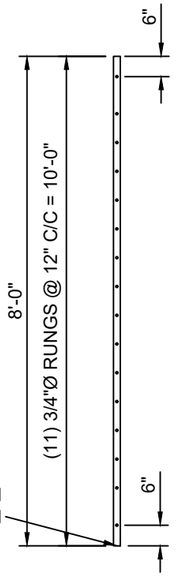


LADDER STAND-OFF DETAIL B

(2) REQD (42#)
[SHIP LOOSE]

STEM LADDER NOTES:
EXTEND STEM LADDER 48" ± ABOVE PLATFORM #2
START SAFETY CABLE 24" ± ABOVE CONCRETE FLOOR EXTEND 48" ABOVE PLATFORM #2

INCLUDES (2) SAFETY HARNESS
(2) PORTABLE CLAMP



MANWAY ACCESS LADDER

(57#)

NOT FOR FABRICATION

Rev.	By	Date	Revision Description
A	KI	10/22	

250,000 GALLON ELEVATED SPHEROIDAL TANK

LADDER DETAILS

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

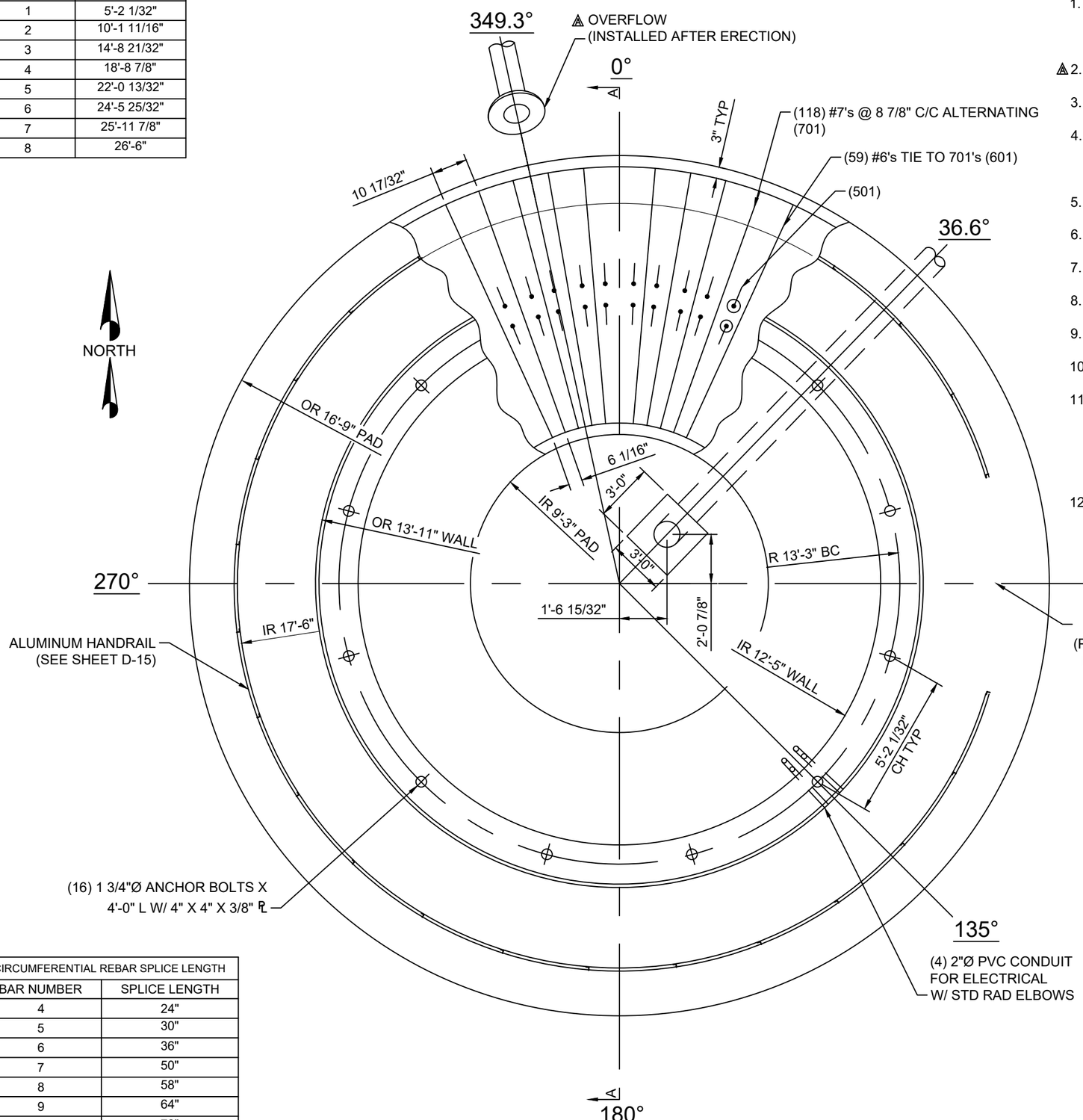
Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
T-10

ANCHOR BOLT CHORDS	
NUMBER OF SPACES	CHORD LENGTH
1	5'-2 1/32"
2	10'-1 11/16"
3	14'-8 21/32"
4	18'-8 7/8"
5	22'-0 13/32"
6	24'-5 25/32"
7	25'-11 7/8"
8	26'-6"



CIRCUMFERENTIAL REBAR SPLICE LENGTH	
BAR NUMBER	SPLICE LENGTH
4	24"
5	30"
6	36"
7	50"
8	58"
9	64"
10	72"

GENERAL NOTES:

1. FOUNDATION IS DESIGNED FOR AN ALLOWABLE SOIL BEARING CAPACITY OF 4500 PSF @ 7'-0" BELOW FINAL GRADE. ANY CHANGE IN THIS REQUIREMENT SHALL BE A CAUSE FOR A REDESIGN OF THE FOUNDATIONS.
⚠2. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI.
3. CEMENT SHALL CONFORM TO ASTM C-150 TYPE 1.
4. FOUNDATION SHALL HAVE A RUBBED FINISH TO A POINT 6" BELOW FINISHED GRADE. ALL EXPOSED EDGES SHALL HAVE A 1" CHAMFER. ANY VOIDS EXPOSED WHEN FORMS ARE REMOVED SHALL BE FILLED WITH A GROUT MIXTURE.
5. REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60.
6. REINFORCING BARS SHALL CLEAR ALL OPENINGS.
7. ANCHOR BOLTS SHALL BE SET VERTICAL, WITH A TOLERANCE NOT TO EXCEED 1/8" IN 12".
8. ANCHOR BOLTS SHALL BE NO MORE THAN 1/4" FROM THE SPECIFIED LOCATION IN PLAN.
9. ENGINEER SHALL ORIENT THE DIRECTION OF PIPING AND LOCATE THE CENTER OF THE TANK.
10. SOIL BEARING CAPACITY WAS ESTABLISHED BY AN INDEPENDENT SOIL LABORATORY.
11. ALL BACKFILL SHALL BE PLACED IN 6"-8" LIFTS. BACKFILL ON OUTSIDE OF RINGWALL SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY (ASTM D698) AT OPTIMUM MOISTURE CONTENT. BACKFILL ON INSIDE OF RINGWALL SHALL BE ENGINEER FILL TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY (ASTM D698) AT OPTIMUM MOISTURE CONTENT.
12. FLOOR DRAIN NOT SHOWN ON PLAN VIEW. FOUNDATION CREW TO COORDINATE LOCATION OF DRAIN WITH OWNER. SLOPE DRAIN AWAY FROM TANK TO DISCHARGE AT DAYLIGHT.

DESIGN CRITERIA

SPECIFICATIONS:	AWWA D100-21 ACI 318-11
WIND:	117 MPH - AWWA
SNOW:	25 PSF - AWWA
SEISMIC:	SITE CLASS C Ss = 0.207 S_1 = 0.089

NOT FOR FABRICATION

GEORGIA REGISTERED No. PE034576 PROFESSIONAL ENGINEER KURT T. FULLER

Rev. By	Revision Description	Date
AB/KI	Revised Items Noted	11/28/22

250,000 GALLON ELEVATED SPHEROIDAL TANK

FOUNDATION DETAILS

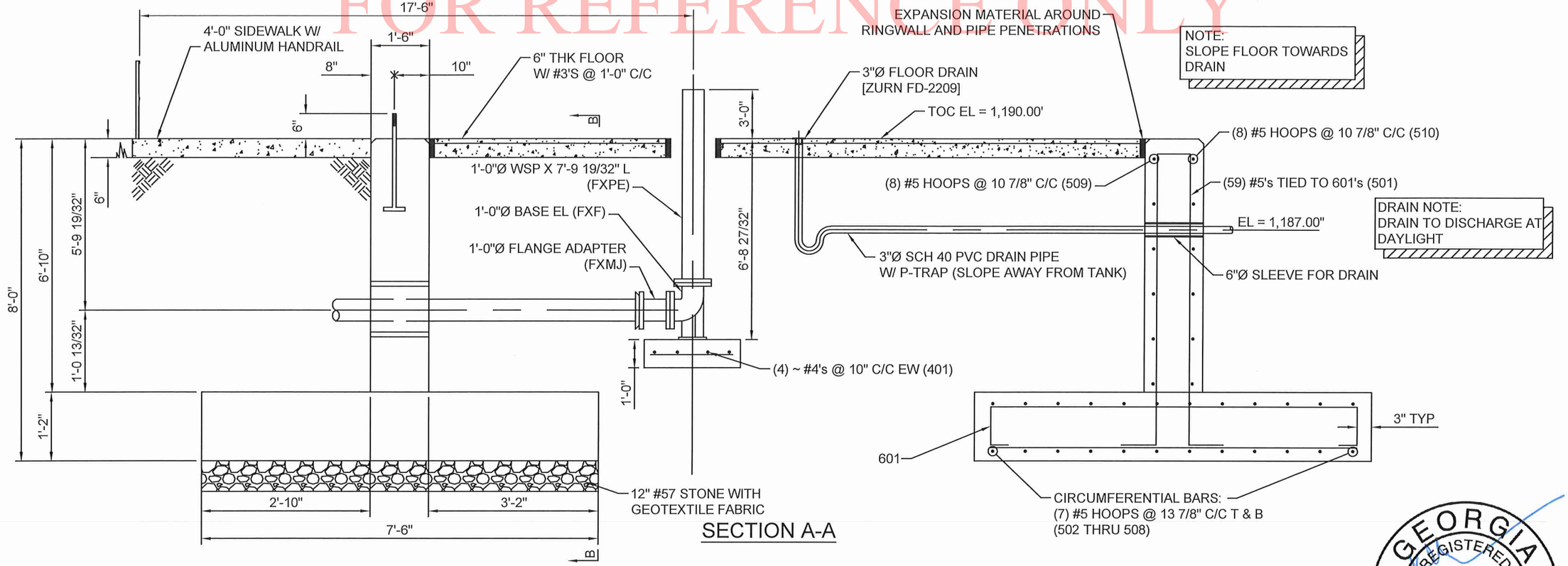
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

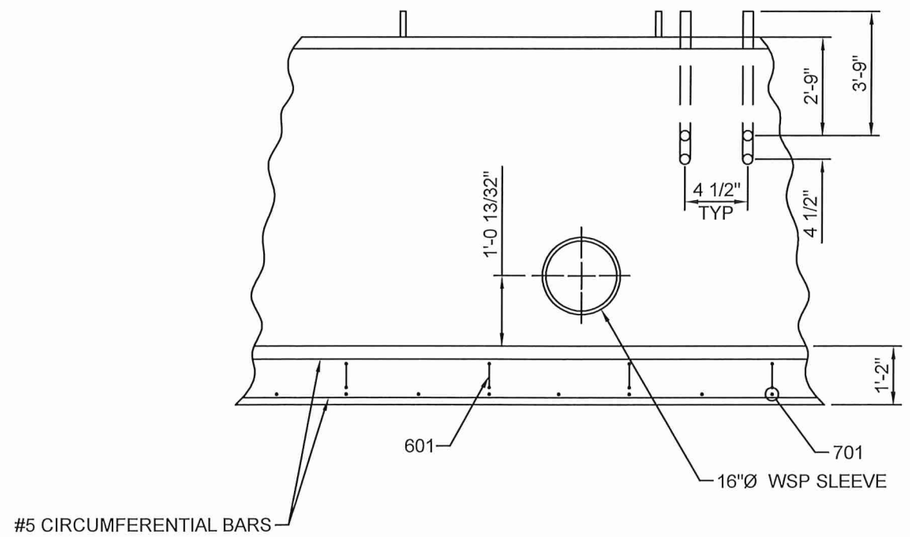
JOB. No.
3907

SHEET
F-01

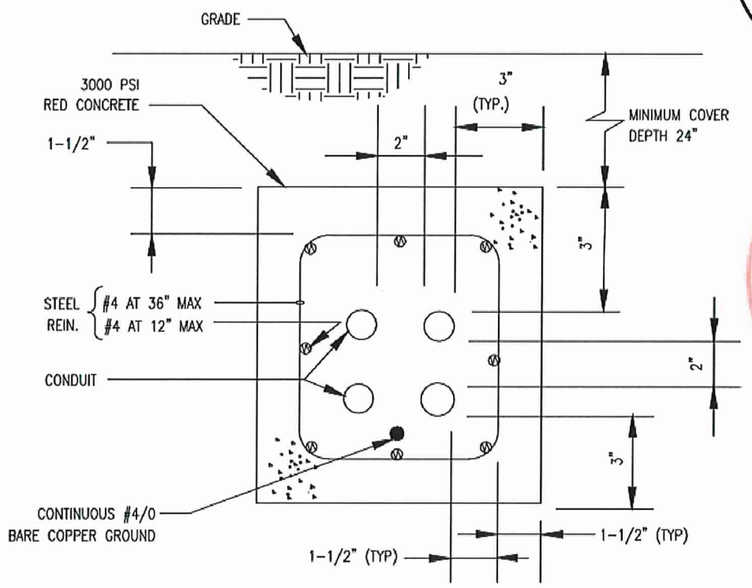


SECTION A-A

NOTE:
MECHANICAL JOINTS TO BE RESTRAINED



SECTION B-B



CONDUIT DETAIL

GEORGIA REGISTERED No. PE034576 PROFESSIONAL ENGINEER KURT T. FULLER

11.21.22

NOT FOR FABRICATION

250,000 GALLON ELEVATED SPHEROIDAL TANK

FOUNDATION ELEVATION DETAILS

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI	Drawn By: AB	Checked By: KI	Date: 10/22

Rev.	By	Rev. Date	Revision Description
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PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

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SHEET
F-02

CRITERIA: AWWA D100-21, 117 MPH Wind, Ss=0.207, S1=0.089, Site Class C

DESIGN LOADS: (All Loads in Pounds or In-Kip)

Dead	=	175860			
Live	=	2121975			
Snow	=	24983			
Wind:		Moment(W) =	56500	Shear(W) =	47205
Seismic =	28920	Moment(E) =	73552	Shear(E) =	36811

CONCRETE STRENGTH:
DESIGN f'C = 3000 psi
REBAR: GRADE 60

GEOTECHNICAL REPORT:
4500 PSF @ 7.00 Ft. Below Final Grade
Soil Borings By: Geo-Hydro Engineers, Inc. - Kennesaw, GA
Report Number: 181823.20

DIMENSIONS:
Base cone diameter of 26'-0"
Wall height of 6'-10"
Inner wall radius of 12'-5"
Outer wall radius of 13'-11"
Pad width of 7'-6" and height of 14"
Inner pad radius of 9'-3"
Outer pad radius of 16'-9"
Bearing Area of 612.61 ft^2
Section Modulus of 3347.6 ft^3

REINFORCEMENT:
8 pairs circumferential bars in wall at 10 7/8"
7 rows of circumferential bars in pad at 13 7/8"
59 - #6's @ 17 3/4" O/C E.W. (Top)
118 - #7's @ 8 7/8" O/C E.W. (Bottom)

BEARING: DLE Critical

D+L+S Capacity = 4500 psf > D+L+S Actual = 3939 psf

D+L+W Capacity = 6000 psf > D+L+W Actual = 5418 psf

D+L+E Capacity = 6000 psf > D+L+E Actual = 5865 psf

OVERTURNING:

Capacity = 139741 in-kip > Actual = 61032 in- kip

ANCHOR BOLTS:

Use 16 - 1 3/4" Dia. A36 Bolts x 48" Lg.

Tension Capacity = 37000 lbs > Tension Actual = 33557 lbs

Shear Capacity = 18500 lbs > Shear Actual = 2950 lbs

Top of Foundation Elevation = 1190.00'

NOT FOR FABRICATION

GEORGIA REGISTERED No. PE034576 PROFESSIONAL ENGINEER KURT T. FULLER

11.21.22

Rev.	By	Rev. Date	Revision Description
D			
C			
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A			

250,000 GALLON ELEVATED SPHEROIDAL TANK

FOUNDATION DESIGN SUMMARY

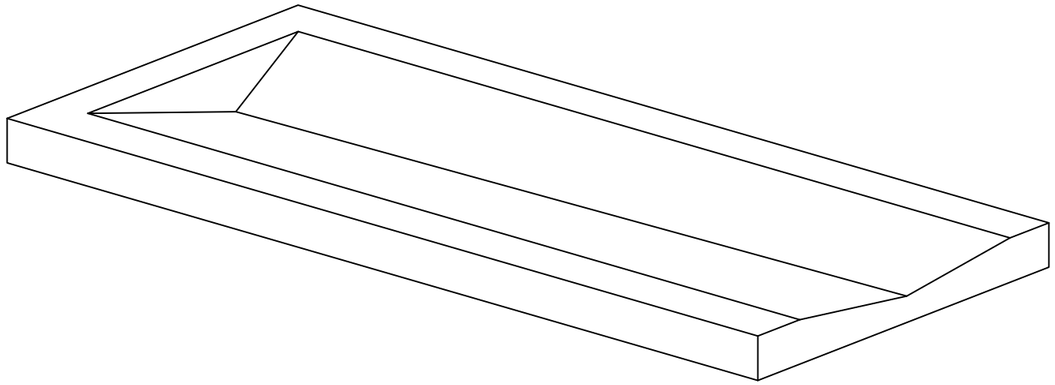
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

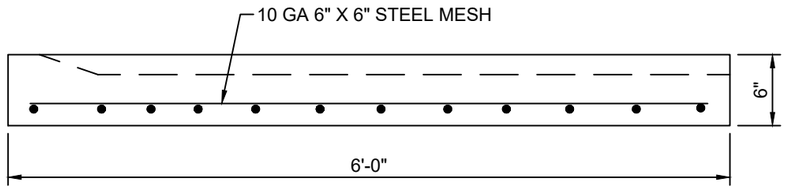
Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

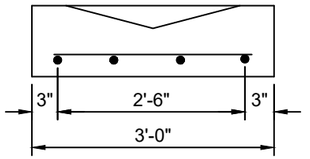
PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
F-03







NOT FOR FABRICATION

Rev. By	Rev. Date	Revision Description
A		
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D		

250,000 GALLON ELEVATED SPHEROIDAL TANK

SPLASH BLOCK DETAILS

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
F-04

COATING SYSTEMS PREPARATION AND APPLICATION INSTRUCTIONS

Project Information		Owner Information	Engineer Information	Coating Manufacturer Information
Project Number:	3907			
Project Name:	Flowery Branch, GA	City of Flowery Branch	Infratec Consultants, Inc	Tnemec Company, Inc.
Project Size:	250,000	5410 W. Pine Street, Flowery Branch, GA 30542	310 Saddle Hill Ct. Roswell, GA 30075	Jeff Parish
Project Design:	TE	770-967-6371	Keith Hendrix	317-694-0861
High Water Level:	152'		404-861-6956	jparish@tnemec.com
GPS Location:	34.186609, -83.928547		kh.infratec@aol.com	

SHOP PROCEDURES

Surface Preparation

Interior Wet: SSPC SP-10 Near White Abrasive Blast
Interior Dry: SSPC SP-6 Commercial Blast
Exterior: SSPC SP-6 Commercial Blast

All Surfaces: SSPC SP-1 Solvent Cleaning **(free of visible contaminants)**

Primer Application

		DFT's
Interior Wet:	Tnemec Series 94 H2O Hydro-Zinc	2.5 - 3.5
Interior Dry:	Tnemec Series 94 H2O Hydro-Zinc	2.5 - 3.5
Exterior:	Tnemec Series 94 H2O Hydro-Zinc	2.5 - 3.5

Shop Notes

1. **Leave margin on edges of sheets for welding**

FIELD PROCEDURES

Surface Preparation

Interior Wet: a. SSPC SP-10 Near White Abrasive Blast all weld seams and abraded areas.
b. SSPC SP-7 Brush-Off Blast all remaining shop primed areas.
Interior Dry: a. SSPC SP-6 Commercial Abrasive Blast all weld seams and abraded areas.
b. SSPC SP-7 Brush-Off Blast all remaining shop primed areas.
Exterior: a. SSPC SP-6 Commercial Abrasive Blast all weld seams and abraded areas.
b. SSPC SP-7 Brush-Off Blast all remaining shop primed areas.
Ductile Pipe: NA
All Surfaces: SSPC SP-1 Solvent Cleaning **(free of visible contaminants)**

Field Abrasive: **Starblast**

Logo/Lettering/Paint Scheme

Exterior Finish: Tnemec Series 700 HydroFlon
Color(s): Color TBD

Logo/Lettering: "FLOWERY BRANCH" pounced logo
Colors: Colors TBD

Location: "by engineer"
Target Color: NA

Manufacturers Notes

1. **Fast cure version of N140 to be used for low temperature applications.**
2. **44-710 Urethane accelerator to be used with 73,700,91H2O for low temperature applications.**

Additional Field Notes

1.

Disinfection:	**AWWA C652: Method 2** Owner to take samples and arrange for testing.

Coating Application

Interior Wet Coating System		DFT's	Suface Area:
Prime:	Tnemec Series 91 H2O Hydro-Zinc	2.5 - 3.5	
Stripe:	Tnemec Series N140 Pota-Pox Plus 15BL Tank White		
Intermediate:	Tnemec Series N140 Pota-Pox Plus 1255 Beige	6.0 - 8.0	6710 ft²
Finish:	Tnemec Series N140 Pota-Pox Plus 15BL Tank White	6.0 - 8.0	
	Total:	8.5 - 19.5	

Interior Dry Coating System		DFT's	Suface Area:
Prime:	Tnemec Series 91 H2O Hydro-Zinc	2.5 - 3.5	
Stripe:	Tnemec Series N140 Pota-Pox Plus 15BL Tank White		
Intermediate:	Tnemec Series N140 Pota-Pox Plus 1255 Beige	6.0 - 8.0	8520 ft²
Finish:	Tnemec Series N140 Pota-Pox Plus 15BL Tank White	6.0 - 8.0	
	Total:	8.5 - 19.5	

Exterior Coating System		DFT's	Suface Area:
Prime:	Tnemec Series 91 H2O Hydro-Zinc	2.5 - 3.5	
Stripe:	Tnemec Series N140 Pota-Pox Plus 15BL Tank White		
Intermediate:	Tnemec Series 73 Endura-Shield	2.0 - 3.0	9600 ft²
Finish:	Tnemec Series 700 HydroFlon (Color TBD)	2.0 - 3.0	
	Total:	6.5 - 9.5	

(undefined) System		DFT's	Suface Area:
Prime:	NA	NA - NA	
Stripe:	NA		
Intermediate:	NA	NA - NA	NA
Finish:	NA	NA - NA	
	Total:	NA - NA	

Rev.	By	Rev. Date	Revision Description
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B			
C			

250,000 GALLON ELEVATED SPHEROIDAL TANK

PAINTING INSTRUCTIONS

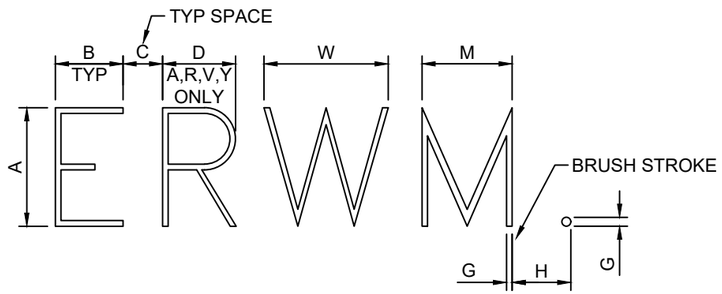
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
D-01



A	B	C	D	W	M	G	H
~~24"~~	~~14"~~	~~4"~~	~~18"~~	~~24"~~	~~21"~~	~~4"~~	~~8"~~
~~36"~~	~~21"~~	~~6"~~	~~25"~~	~~36"~~	~~32"~~	~~6"~~	~~12"~~
~~48"~~	~~28"~~	~~8"~~	~~32"~~	~~48"~~	~~42"~~	~~8"~~	~~16"~~
~~60"~~	~~34"~~	~~10"~~	~~38"~~	~~60"~~	~~54"~~	~~10"~~	~~20"~~
~~72"~~	~~42"~~	~~12"~~	~~48"~~	~~72"~~	~~64"~~	~~12"~~	~~24"~~
96"	55"	14"	61"	96"	84"	14"	28"

OWNER TO SUPPLY DIGITAL IMAGE.

SIGN TO BE AS SHOWN ABOVE.
PAINTED ON TWO SIDES OF THE TANK.

SIGN COLOR: BY OWNER
LOCATION: BY ENGINEER

Revision Description | Rev. Date | Rev. By

250,000 GALLON ELEVATED SPHEROIDAL TANK

SIGN LAYOUT

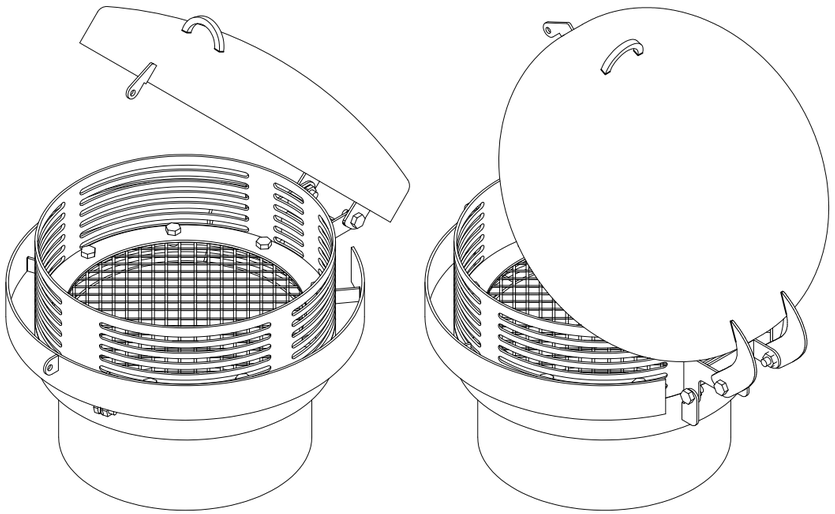
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

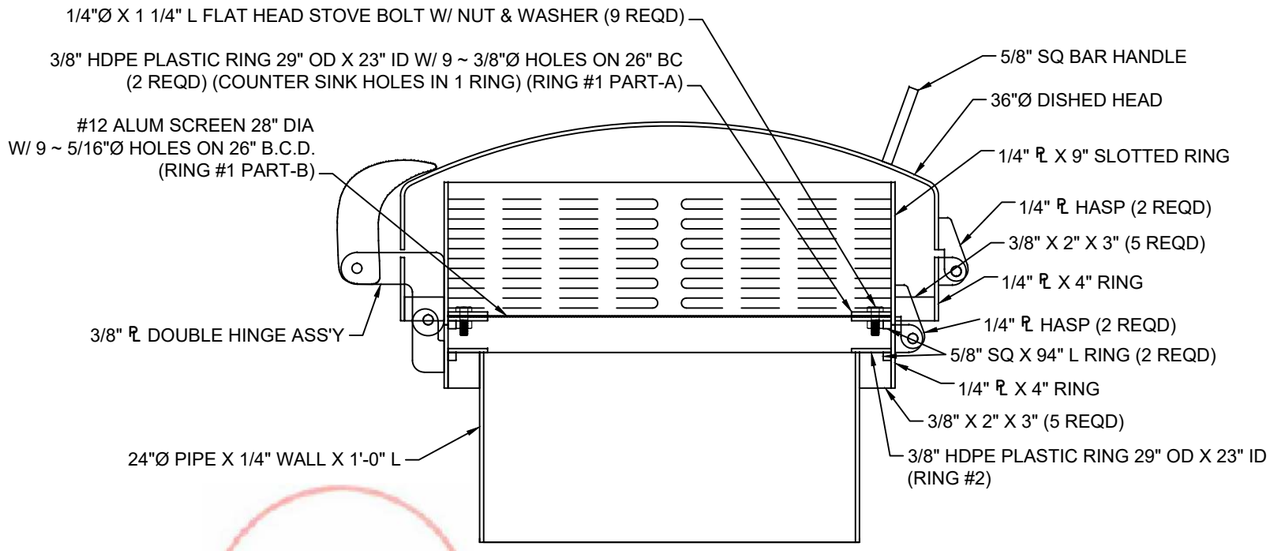
PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
D-02

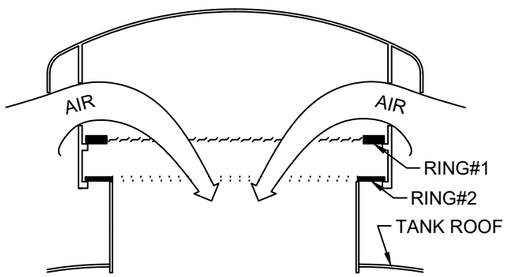


VENT ASSEMBLY



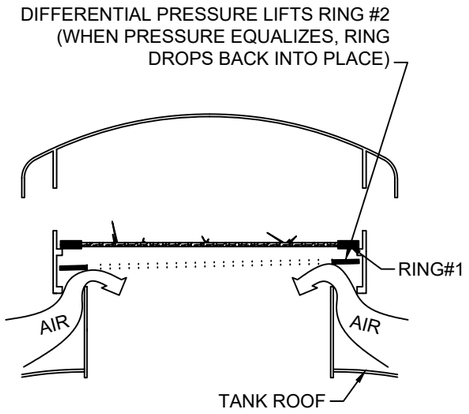
VENT SECTION

NOTE: ERECTION CREW FOREMAN
TO SET VENT NECK VERTICAL
FOR PROPER OPERATION



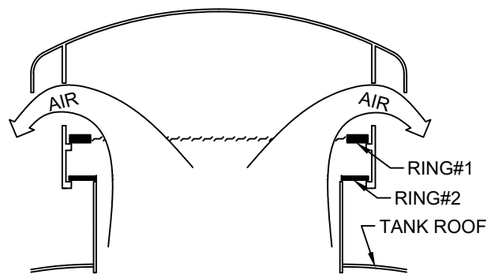
NORMAL AIR INTAKE

(THOUGH SCREEN)



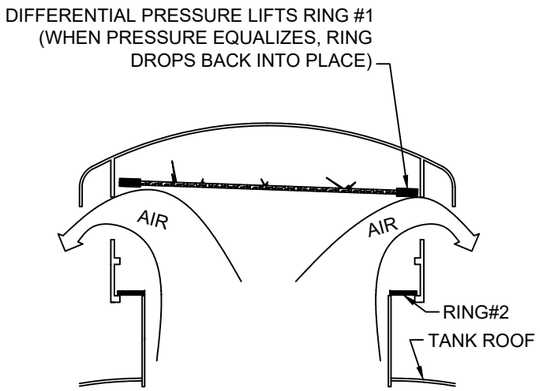
BACK-UP AIR INTAKE

(SCREEN CLOGGED)



NORMAL AIR EXHAUST

(THROUGH SCREEN)



BACK-UP AIR EXHAUST

(SCREEN CLOGGED)

FAIL-SAFE OPERATION

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250,000 GALLON ELEVATED SPHEROIDAL TANK

TANK VENT

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

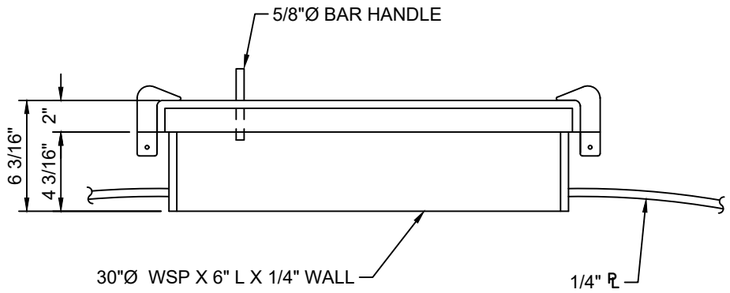
Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

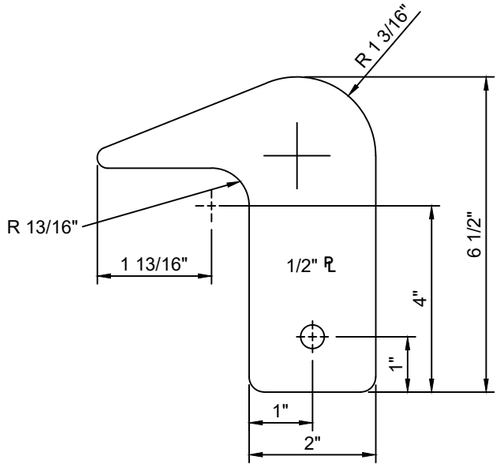
PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

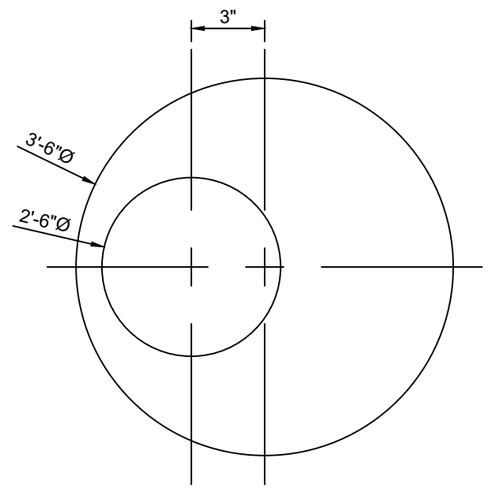
SHEET
D-03

FIELD NOTE:
AFTER BURNING HOLE FOR HATCH; SET HATCH IN PLACE & MAKE SURE THE HATCH WILL OPEN FULLY BEFORE WELDING

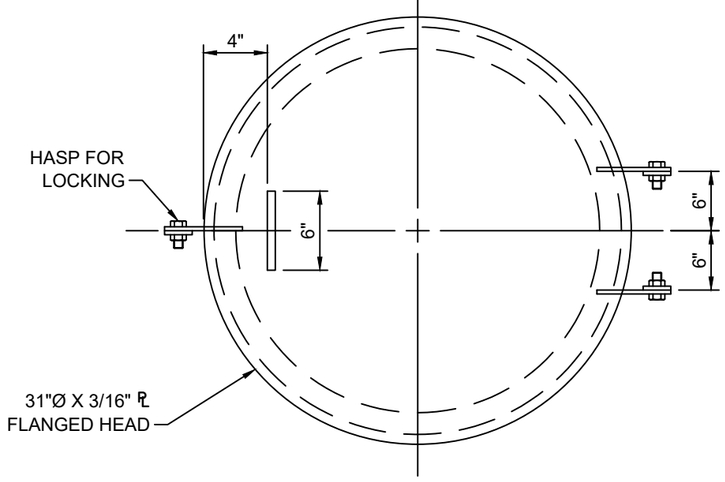




(3) REQD/HATCH



ACCESS TUBE REDUCER
1/2" ℄
(1) @ 97#
A36 MATERIAL



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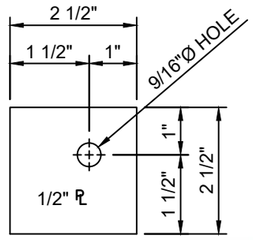


(3) REQD/HATCH

1 ~ MANWAY IN THE TOP OF ACCESS TUBE, FIELD INSTALL W/ HASP & HANDLE INSIDE W/ ACCESS TUBE REDUCING RING
1 ~ MANWAY IN ROOF ~ FIELD INSTALL W/ HASP & HANDLE OUTSIDE

NOT FOR FABRICATION

Rev.	By	Date	Revision Description
A			
B			
C			
D			

250,000 GALLON ELEVATED SPHEROIDAL TANK

30"Ø ROOF HATCH

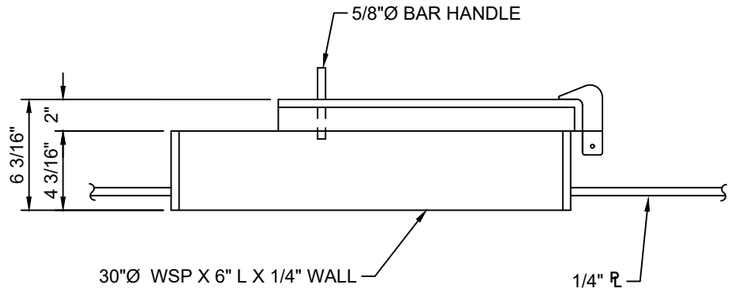
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

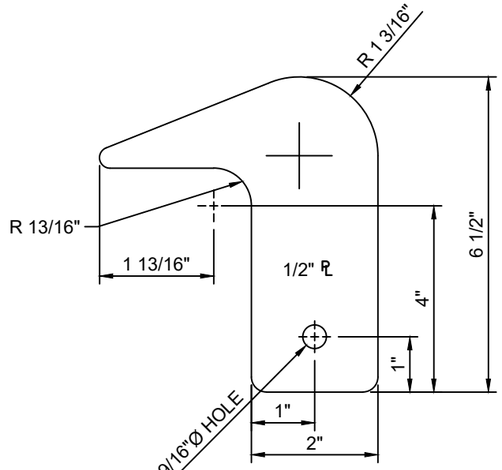
PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
D-04



FIELD NOTE:
AFTER BURNING HOLE FOR HATCH; SET HATCH IN PLACE & MAKE SURE THE HATCH WILL OPEN FULLY BEFORE WELDING



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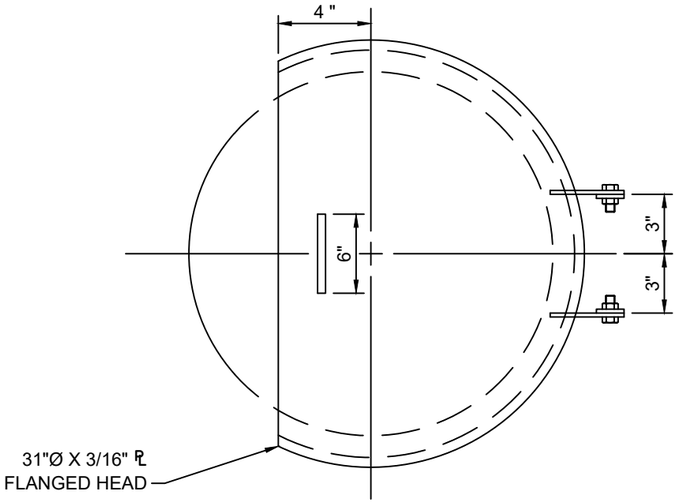
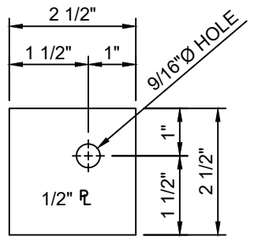


(1) REQD

NOTE:
SHOP INSTALL HATCH TO CLEAR SAFETY SYSTEM WHICH WILL BE INSTALLED LATER



(2) REQD/HATCH

1 ~ MANWAY IN THE PLATFORM #1
SHOP INSTALL W/ HANDLE INSIDE & OUTSIDE

Revision Description	Rev. By	Rev. Date

250,000 GALLON ELEVATED SPHEROIDAL TANK

30"Ø HATCH - PLATFORM #1

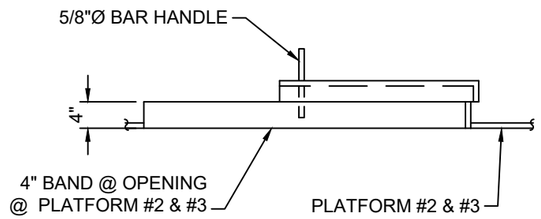
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

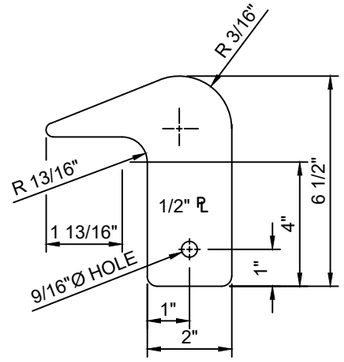
Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

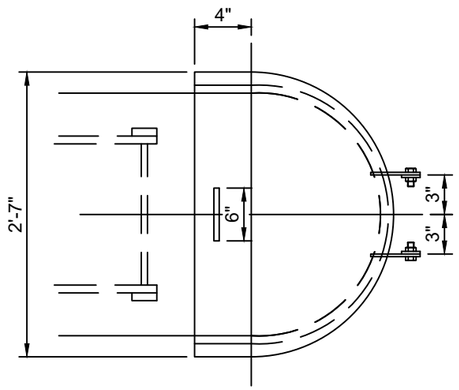
JOB. No.
3907

SHEET
D-05





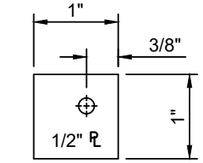
2 REQD/HATCH



1 REQD

NOTE:
SHOP INSTALL HATCH TO CLEAR SAFETY SYSTEM WHICH WILL BE INSTALLED LATER

1 ~ MANWAY IN THE PLATFORM #2
1 ~ MANWAY IN THE PLATFORM #3
SHOP INSTALL W/ HANDLE INSIDE & OUTSIDE



2 REQD/HATCH

250,000 GALLON ELEVATED SPHEROIDAL TANK

30"Ø HATCH - PLATFORM #2

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI	Drawn By: AB	Checked By: KI	Date: 10/22

Rev.	By	Rev. Date	Revision Description
A			
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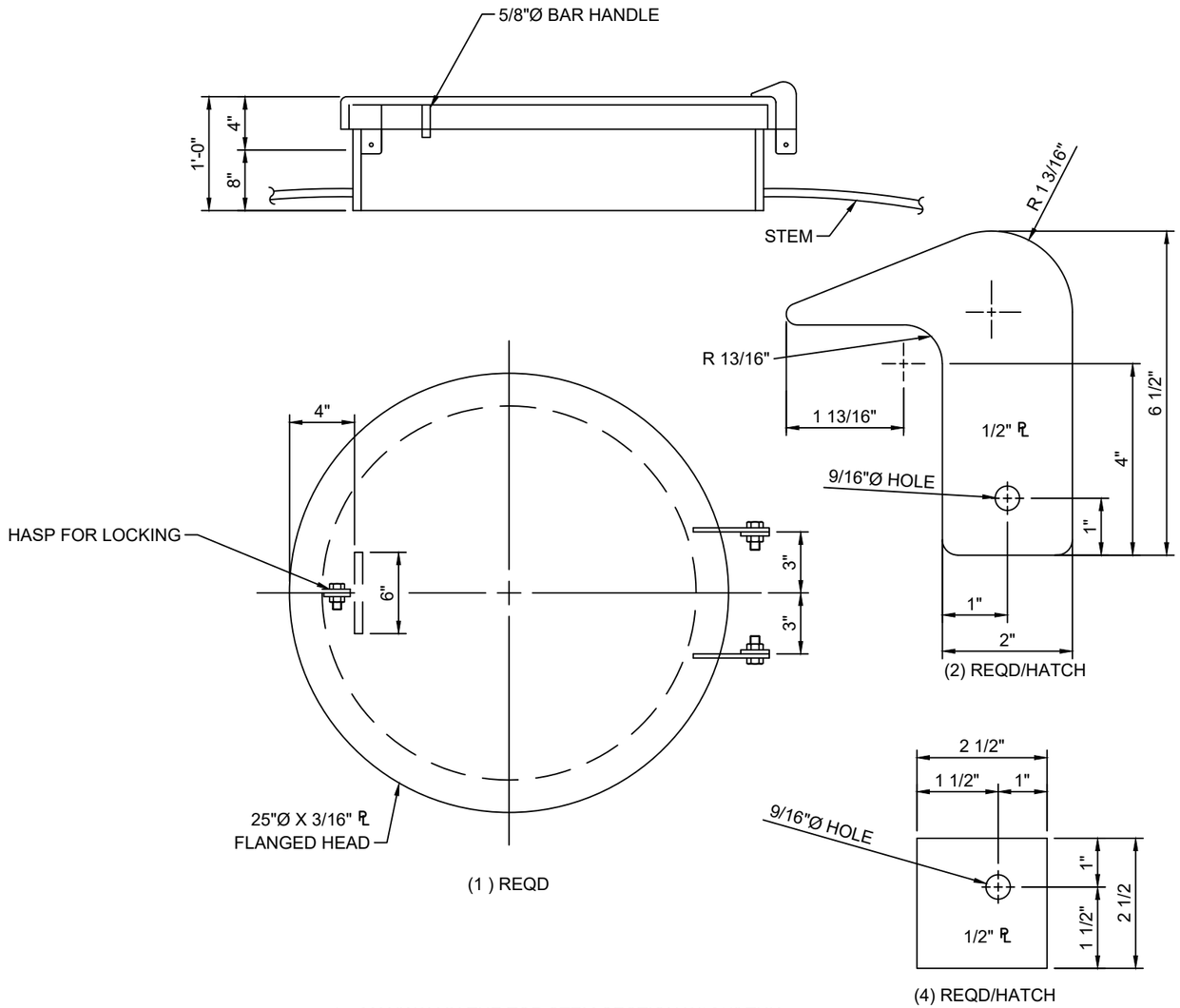
PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
D-06



1 ~ MANWAY IN THE TOP STEM SECTION W/ 3/4" THK
X 12" LG NECK ~ SHOP INSTALL W/ HASP & HANDLE INSIDE

Rev.	Rev. By	Revision Description
A		
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C		

250,000 GALLON ELEVATED SPHEROIDAL TANK

24"Ø STEM HATCH

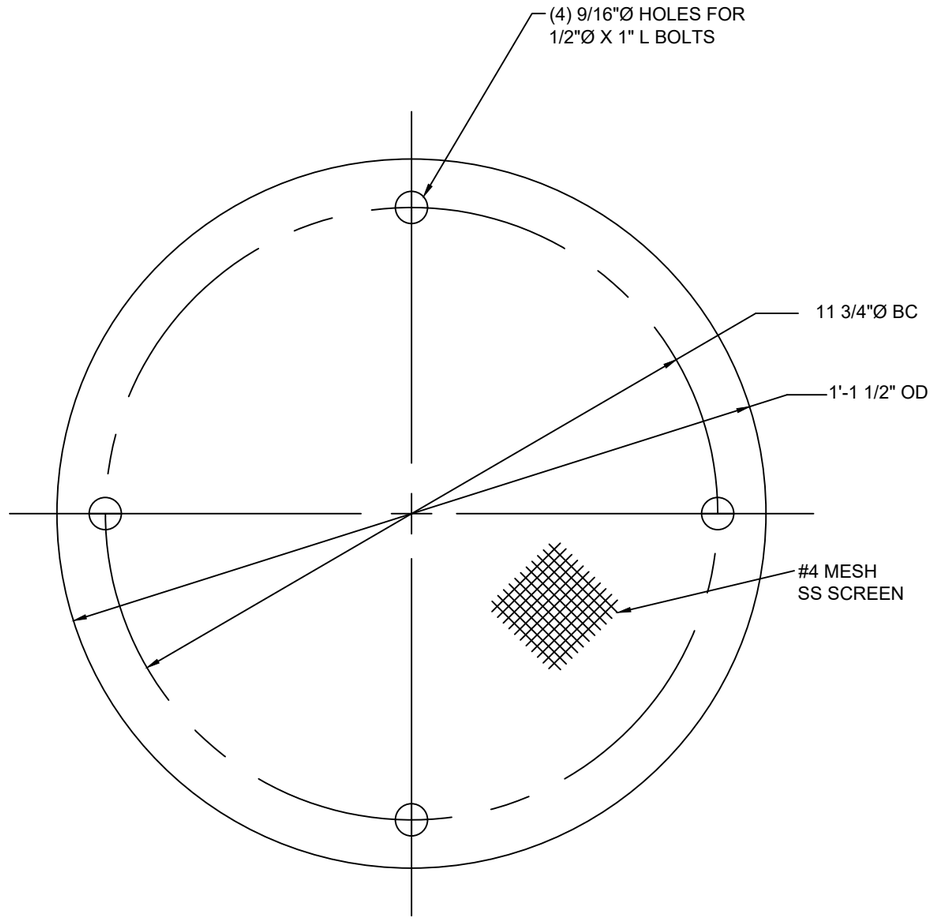
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
D-07



OVERFLOW SCREEN

250,000 GALLON ELEVATED SPHEROIDAL TANK

OVERFLOW SCREEN

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI	Drawn By: AB	Checked By: KI	Date: 10/22

Rev.	By	Rev. Date	Revision Description
A			Revised per Fabricators & Erectors

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Avon, Indiana - Sebree, Kentucky

JOB. No.
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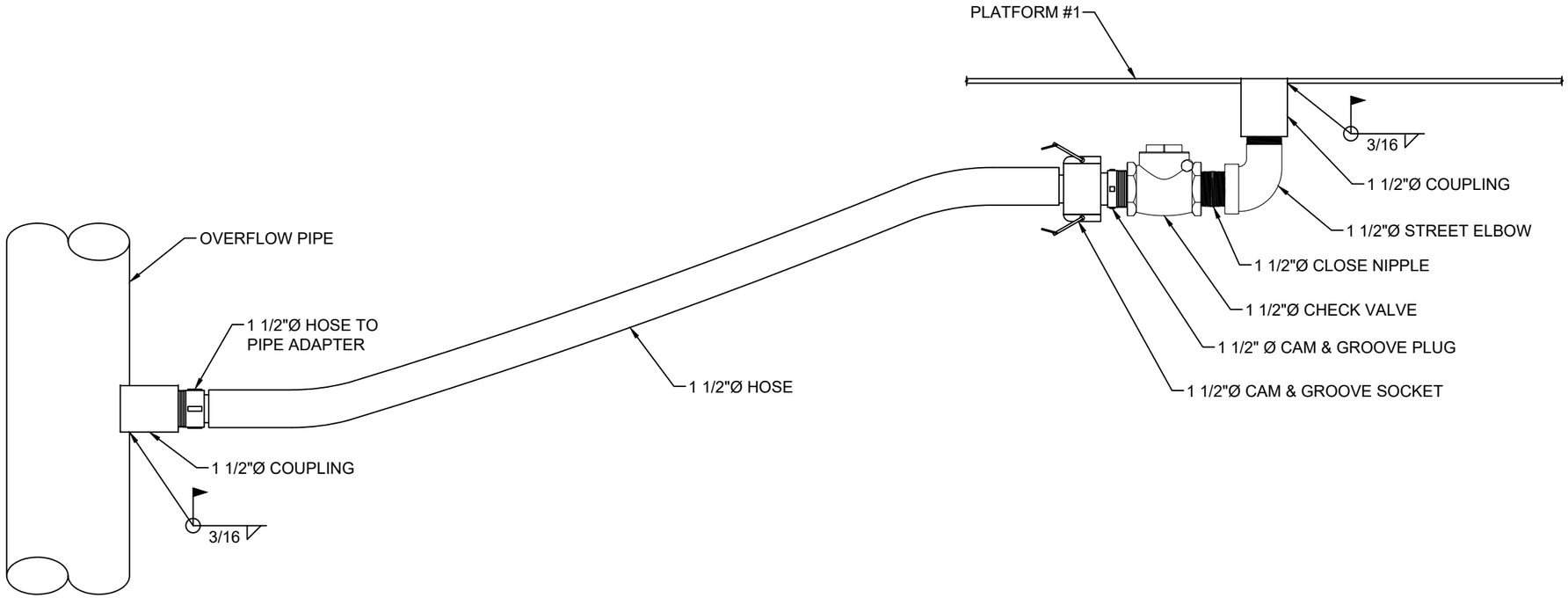
D-08



NOTE:
ALWAYS INSTALL HOSE TO COMPLETELY DRAIN TO OVERFLOW.

BILL OF MATERIALS
1~ 1 1/2" CHECK VALVE (MCMASTER CARR # 4708K57)
2~ 1 1/2"Ø 3000# COUPLING (MCMASTER CARR # 4513K67)
1~ 1 1/2"Ø HOSE TO PIPE ADAPTER (MCMASTER CARR # 5218K39)
1~ 1 1/2"Ø CLEAR HOSE (MCMASTER CARR # 9118T5)
1~ 1 1/2"Ø CAM & GROOVE SOCKET (MCMASTER CARR # 5535K11)
1~ 1 1/2"Ø CAM & GROOVE PLUG (MCMASTER CARR # 5535K23)
2~ 1 1/2"Ø HOSE CLAMP (MCMASTER CARR # 5443K25)
1~ 1 1/2"Ø STREET ELBOW (MCMASTER CARR # 4627K237)
1~ 1 1/2"Ø CLOSE NIPPLE (MCMASTER CARR # 4550K262)

250,000 GALLON ELEVATED SPHEROIDAL TANK

PLATFORM DRAIN ASSEMBLY

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

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B			
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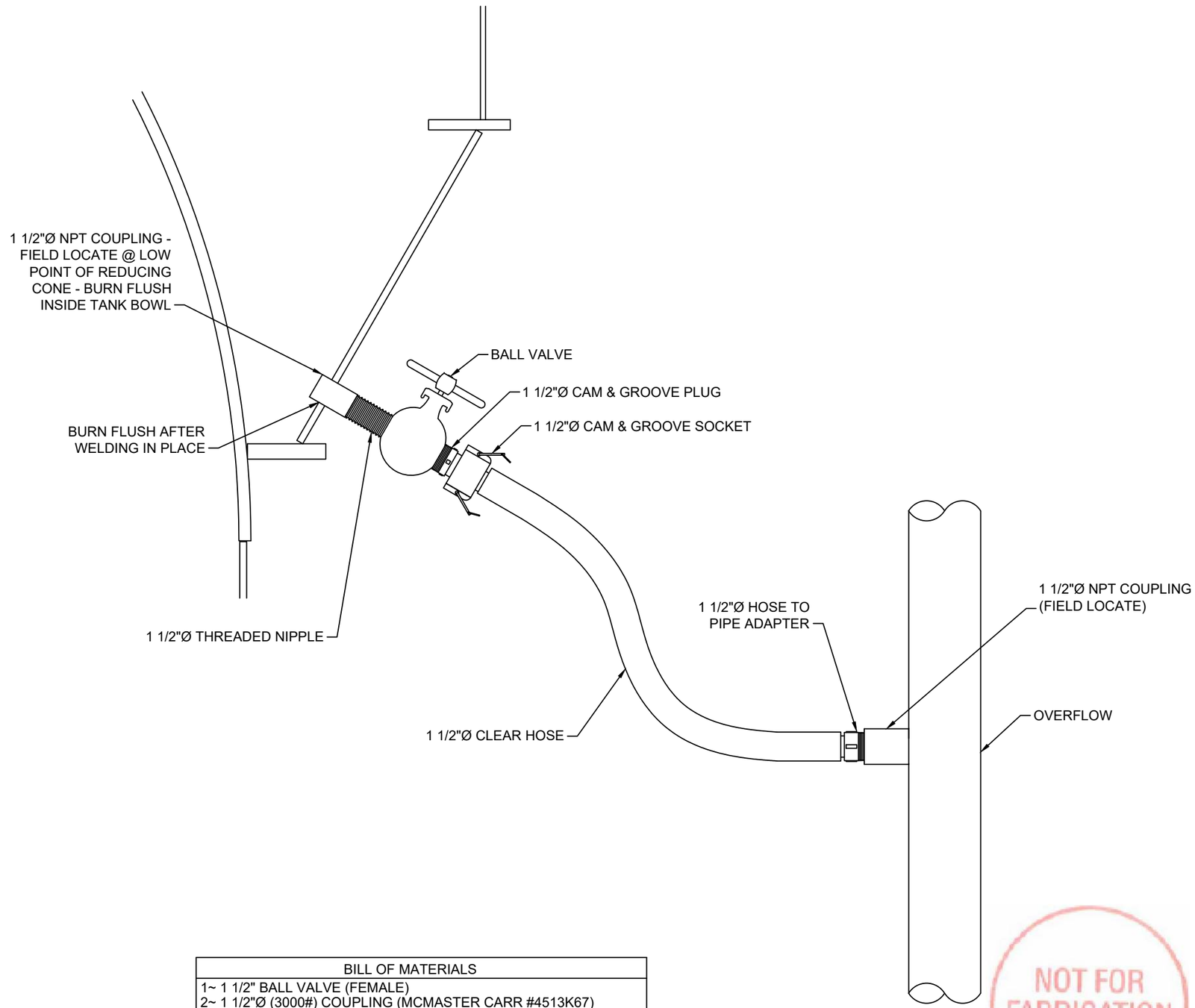
SHEET
D-09



BILL OF MATERIALS
1~ 1 1/2" BALL VALVE (FEMALE)
2~ 1 1/2"Ø (3000#) COUPLING (MCMASTER CARR #4513K67)
1~ 1 1/2"Ø HOSE TO PIPE ADAPTER (MCMASTER CARR #5218K39)
1~ 1 1/2"Ø CLEAR HOSE (MCMASTER CARR #9118T5)
1~ 1 1/2"Ø CAM & GROOVE SOCKET (MCMASTER CARR #5535K11)
1~ 1 1/2"Ø CAM & GROOVE PLUG (MCMASTER CARR #5535K23)
2~ 1 1/2"Ø HOSE CLAMPS (MCMASTER CARR #5443K25)
1~ 1 1/2"Ø CLOSE NIPPLE (MCMASTER CARR #4550K262)

NOT FOR FABRICATION

Rev.	By	Date	Revision Description
D			
C			
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A			

250,000 GALLON ELEVATED SPHEROIDAL TANK

BOWL DRAIN

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
D-10

THE EUCLID CHEMICAL COMPANY
19218 REDWOOD ROAD • Cleveland, OH 44110
(216) 531-9222 • (800) 321-7628 • FAX (216) 531-9596
www.euclidchemical.com

NS GROUT

NON-SHRINK, NON-STAIN, NON-METALLIC

NS GROUT is designed for critical use where high strength, non-staining characteristics and positive expansion are required. It contains only natural aggregate and an expansive cementitious binder. It is extremely flowable, and when cured, appears similar in appearance to concrete.

PRIMARY APPLICATIONS
- Pumps
- Fans
- Motors
- Compressors
- Generators
- Machine bases of all types
- Anchor bolts
- Column baseplates

FEATURES / BENEFITS
- Non-staining natural aggregate for better appearance
- Non-shrink performance provides excellent bearing
- Flowable and self-leveling
- High strength
- Appearance of plain concrete
- Does not contain any added chloride ions

SPECIFICATION / COMPLIANCES
- Meets the requirements of CRD C-621, Corps of Engineers Specification for Non-Shrink Grout.
- Shows positive expansion when tested in accordance with ASTM Specification C-1090, Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout.
- Meets the performance requirements of ASTM C-1107, Grades A & B as well as Grade C, "Standard Specification for Packaged Dry, Hydraulic-Cement Grout (non-shrink)."
- Meets ASTM C-827 "Test method for early volume of cementitious mixtures.

TECHNICAL INFORMATION

Typical Engineering Data

The following results were developed under laboratory conditions.

Flowable Consistency
1.0 gal/50 lb (3.8 liter/22.7 kg)
Flow Rate: ASTM C-939 & CRD C-621
120% Flow (flow table)
Compressive Strength
2" (50 mm) cubes (ASTM C-109 Modified*)

Age	Strength	
3 days	5,000 psi	(34 MPa)
7 days	7,000 psi	(48 MPa)
14 days	8,000 psi	(55 MPa)
28 days	9,000 psi	(62 MPa)

***See ASTM C-1107 Section 11.5 & 11.5.1 - 11.5.3**
Expansion
Tested in Accordance with CRD C-621

3 days	.01%
7 days	.06%
14 days	.06%
28 days	.06%

Fluid Consistency
1.2 gal/50 lb (4.5 liter/22.7 kg)
Flow Rate: ASTM C-939 & CRD C-621
20 to 30 seconds (Flow Cone)
Compressive Strength
2" (50 mm) cubes (ASTM C-109)

Age	Strength	
3 days	4,000 psi	(28 MPa)
7 days	6,000 psi	(41 MPa)
14 days	6,500 psi	(45 MPa)
28 days	7,000 psi	(48 MPa)

Expansion
Tested in Accordance with CRD C-621

3 days	.01%
7 days	.06%
14 days	.06%
28 days	.06%

Setting Time ASTM C-191

Initial Set	3 hrs	5 mins.
Final Set	4 hrs	47 mins

GROUT QUANTITY IS BASED ON AN ASSUMED GROUT THICKNESS OF ONE INCH. IF FOUNDATION IS NOT LEVEL OR ADDITIONAL SHIMMING IS REQUIRED, CONTACT THE OFFICE SO THAT ADDITIONAL GROUT MAY BE SHIPPED TO JOB SITE.

1. DAMPEN TOP OF FOUNDATION WITH WATER BEFORE MIXING GROUT.
2. ADD ONE GALLON OF CLEAN WATER PER 50 LBS CONTAINER OF GROUT. DO NOT ADD ADDITIONAL WATER. CAUTION MIX ONLY THE AMOUNT OF GROUT THAT CAN BE USED IN ABOUT ONE-HALF HOUR AS THE GROUT SETS RAPIDLY.
3. THE GROUT MIXTURE SHOULD BE FORCED UNDER THE BASE PLATE WITH A ROD OR FLAT BAR TO ASSURE COMPLETE FILLING UNDER THE BASE PLATE.

GROUT FOR: 250,000 GALLON SPHEROID

QUANTITY OF 50 LBS BAGS = 22

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250,000 GALLON ELEVATED SPHEROIDAL TANK

GROUTING PROCEDURE

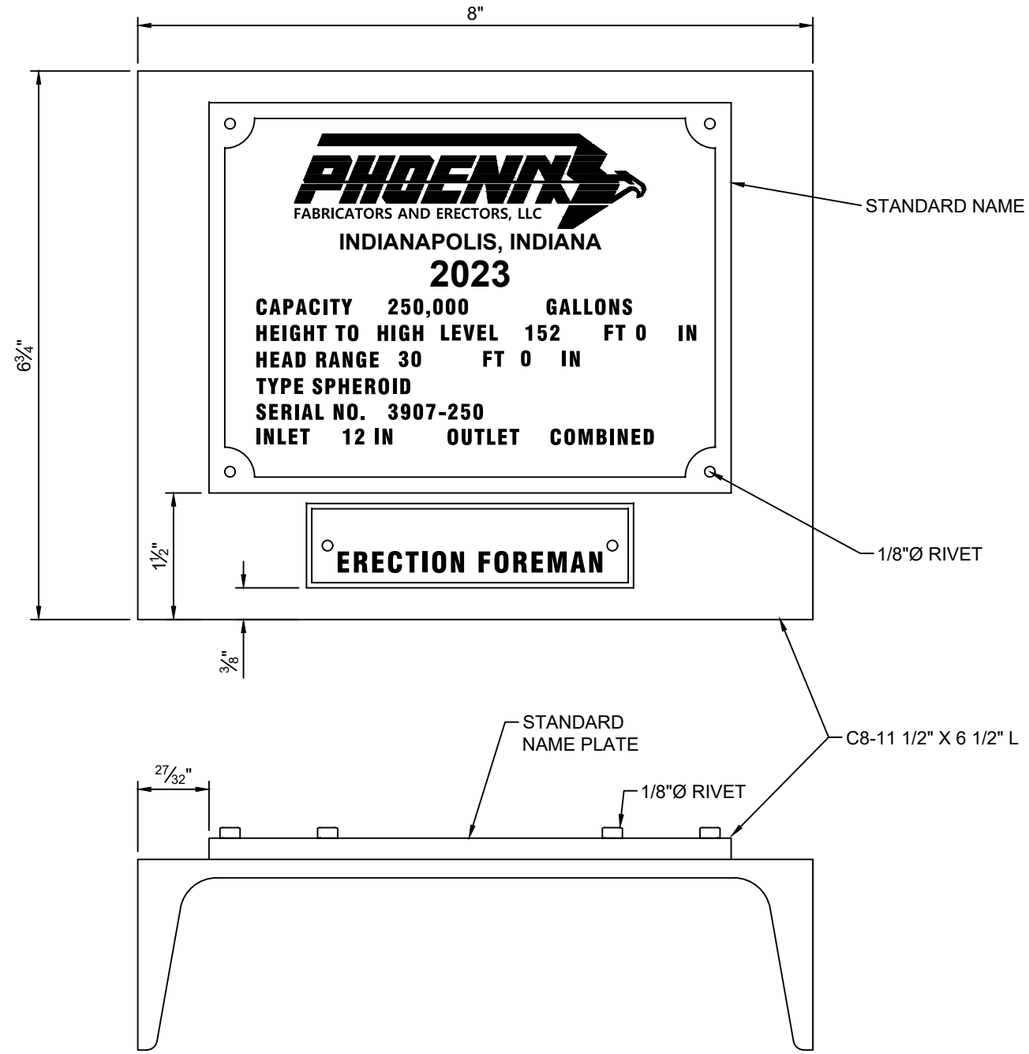
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
D-11



NOTE:
NAME PLATE SHALL BE SHOP INSTALLED ON TANK MAN DOOR.

NAME PLATE

NOT FOR FABRICATION

250,000 GALLON ELEVATED SPHEROIDAL TANK

NAME PLATE

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

	Rev. By	Rev. Date	Revision Description
D			
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B			
A			

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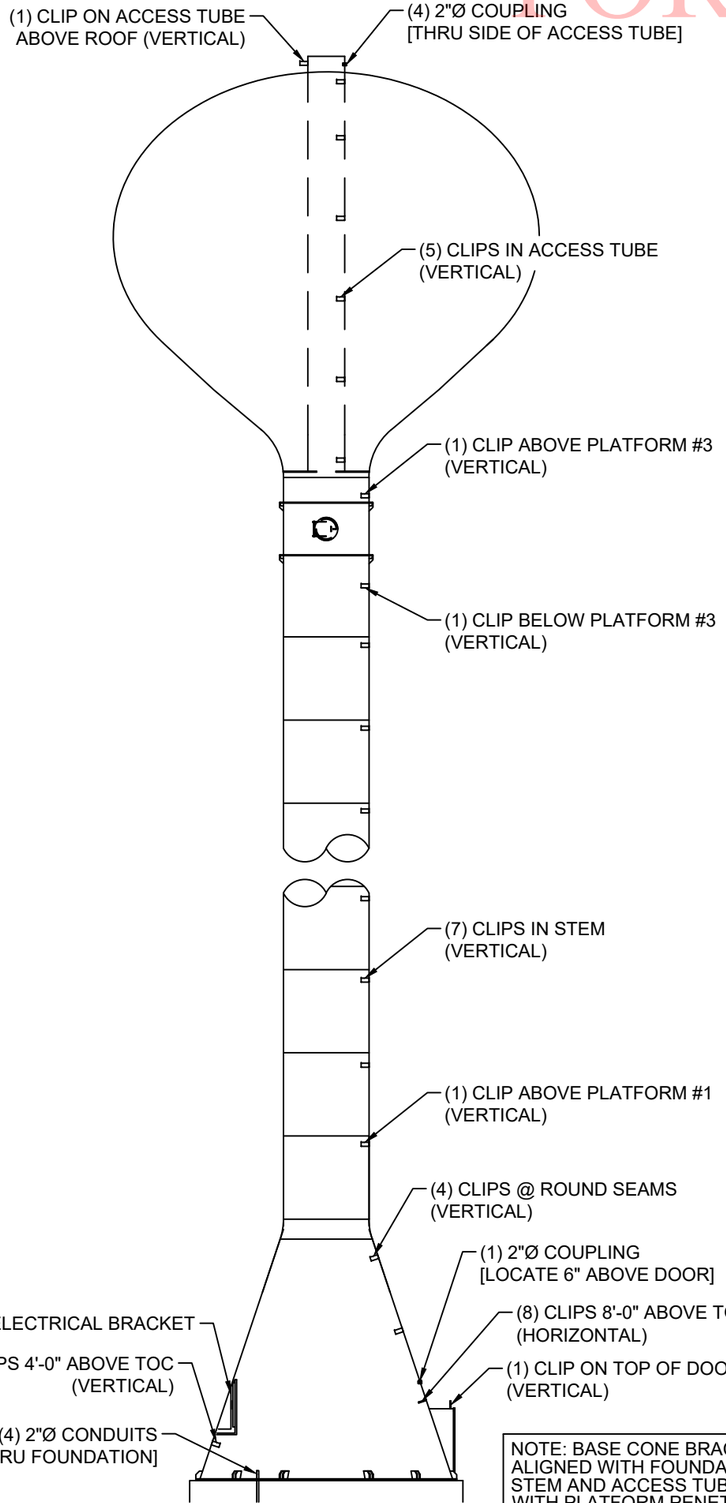
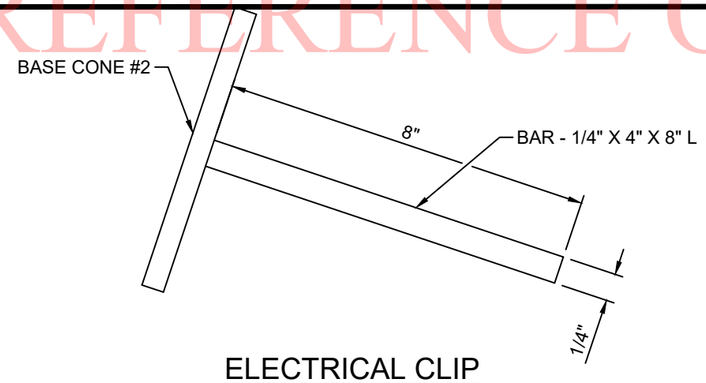
Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
D-12



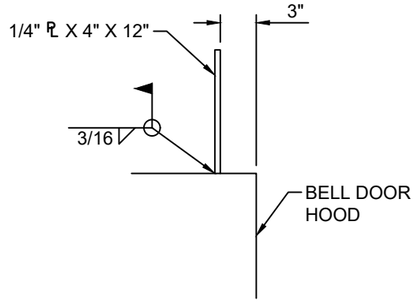


ELECTRICAL CLIP

(34) REQD

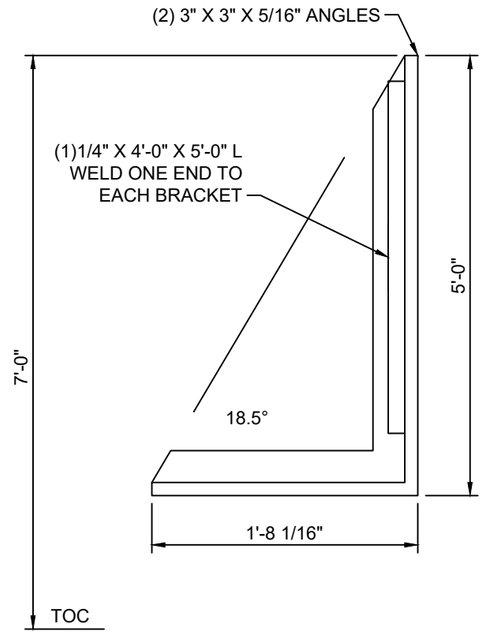
ELECTRICAL CLIP LOCATION NOTE: FIELD INSTALL

- (4) CLIPS @ 4'-0" FROM TOC SPACED 90° APART ~ TURNED VERTICALLY
- (1) CLIP @ 4'-0" FROM TOC LOCATED BY DOOR ~ TURNED VERTICALLY
- (1) CLIP @ 4'-0" FROM TOC LOCATED BY LADDER ~ TURNED VERTICALLY
- (8) CLIPS @ 8'-0" FROM TOC SPACED @ ±8'-0" APART ~ TURNED HORIZONTALLY
- (1) CLIP @ EACH HORIZONTAL ROUND SEAM IN BASE CONE STARTING AT TOP OF BASE CONE #2, ALIGNED WITH CONDUIT SLEEVE IN PLATFORM #1 ~ TURNED VERTICALLY (4 TOTAL)
- (1) CLIP @ ±6'-0" ABOVE PLATFORM #1
- (7) CLIPS SPACED @ ±10'-0"C/C ABOVE PLATFORM #1 ~ TURNED VERTICALLY
- (1) CLIP @ ±2'-0" BELOW PLATFORM #3
- (1) CLIP @ 5'-0" ABOVE PLATFORM #3 ~ TURNED VERTICALLY
- (5) CLIPS SPACES @ ±10'-0" C/C IN ACCESS TUBE ~ TURNED VERTICALLY
- (1) CLIP ON OUTSIDE OF ACCESS TUBE ~ TURNED VERTICALLY



EXTERIOR LIGHT BRACKET

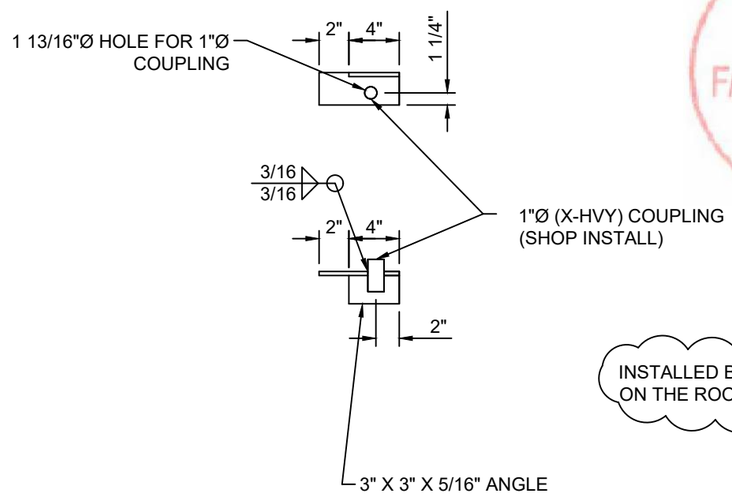
(1) REQD



ELECTRICAL BRACKET

(2) ASSEMBLY REQD
(FIELD TRIM END FOR SQUARE FIT)
(1) BRACKET AS SHOWN
(1) BRACKET OPP HAND

NOTE: BASE CONE BRACKETS TO BE ALIGNED WITH FOUNDATION CONDUIT. STEM AND ACCESS TUBE TO BE ALIGNED WITH PLATFORM PENETRATIONS.



OBSTRUCTION LIGHT BRACKET

(4) REQD

INSTALLED BY FIELD CREW ON THE ROOF HANDRAIL

NOT FOR FABRICATION

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250,000 GALLON ELEVATED SPHEROIDAL TANK

ELECTRICAL BRACKETS

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

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Avon, Indiana - Sebree, Kentucky

JOB. No.
3907

SHEET
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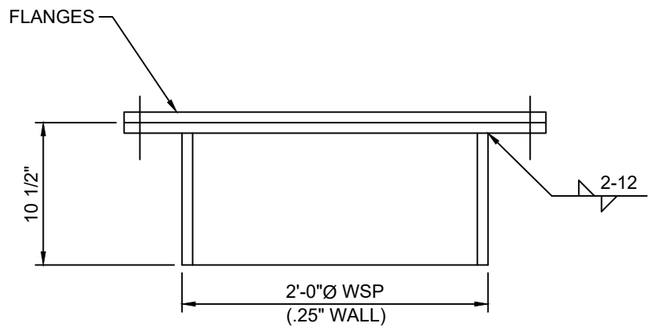
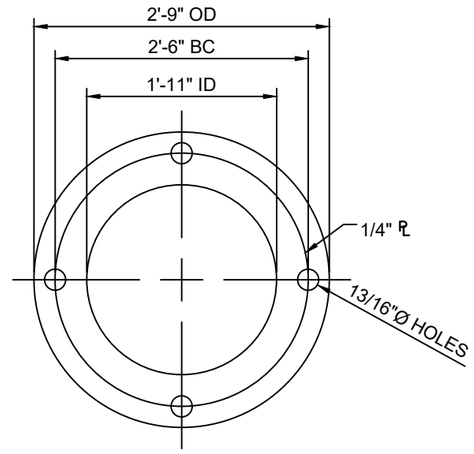


NECK



FLANGE

2-REQD (ONE WITH NO HOLE IN CENTER)
(FURNISHED 4 - 3/4"Ø X 1 1/2" L
BOLTS W/ NUTS)

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A			
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250,000 GALLON ELEVATED SPHEROIDAL TANK

ROOF FLANGE

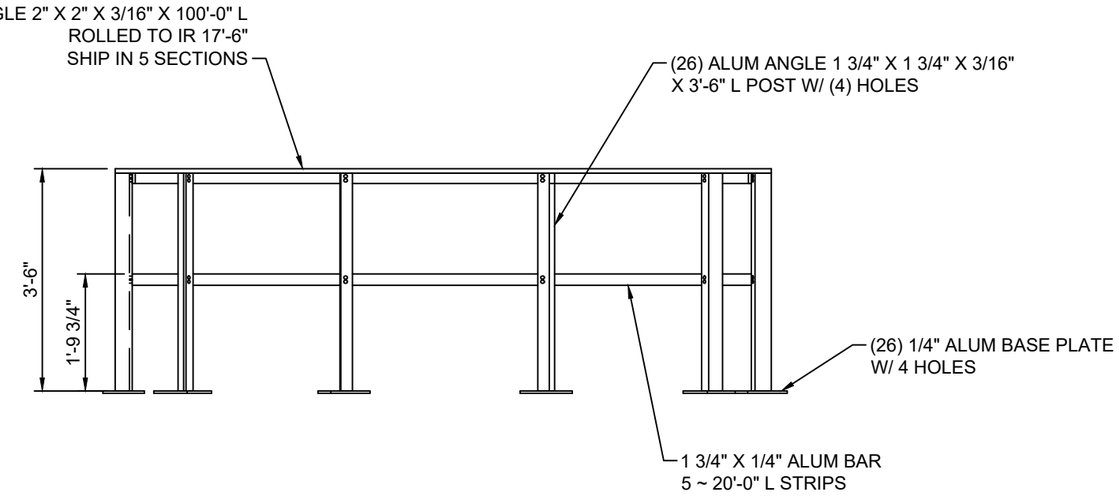
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

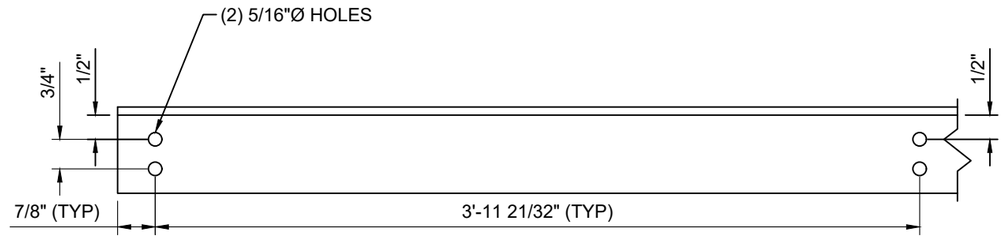
Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

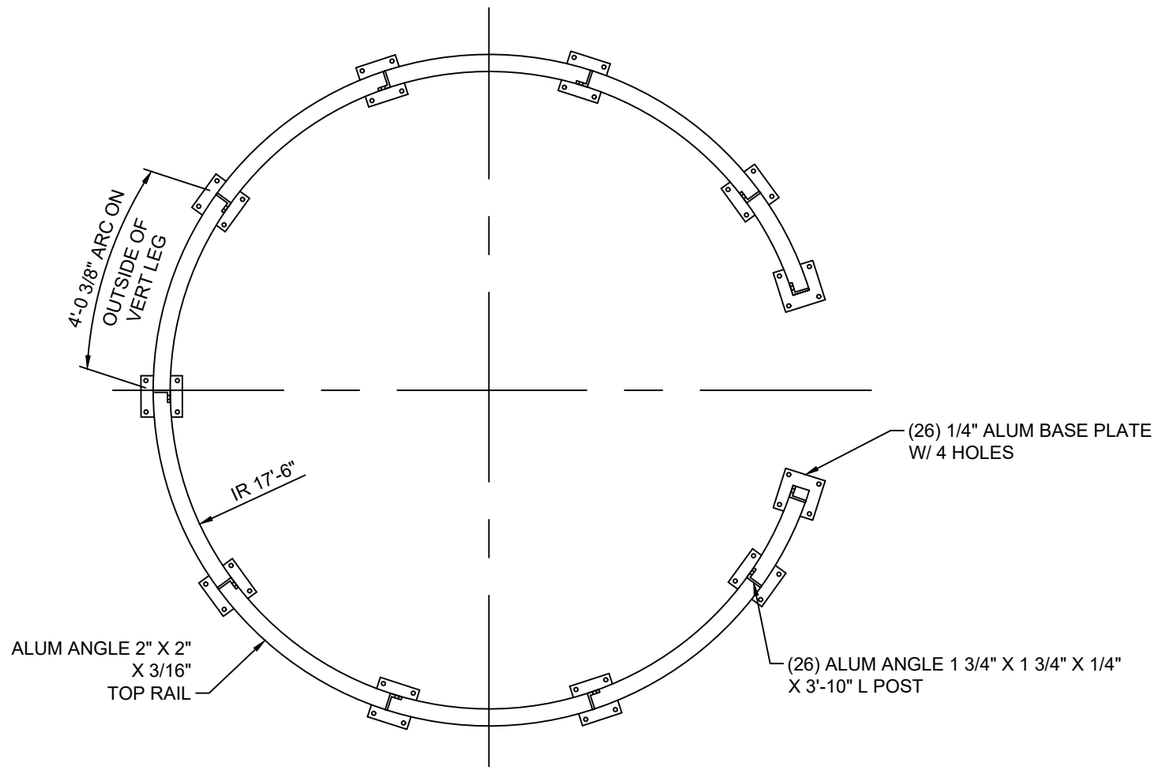
JOB. No.
3907

SHEET
D-14

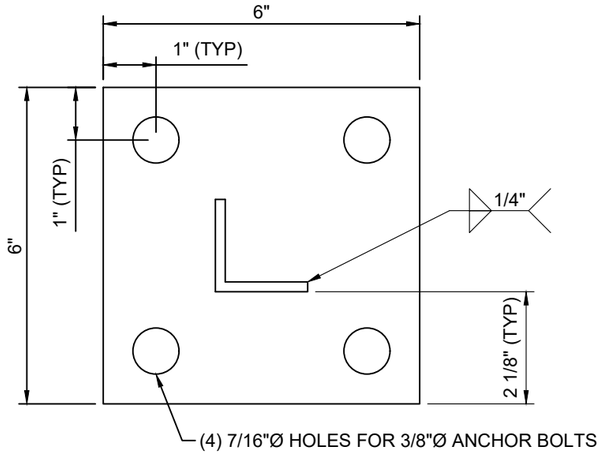




BOLT HOLE DETAIL



PLAN VIEW



FLANGE

(26) REQUIRED
1/4" ALUM PL

NOTE:
FIT UP IN SHOP
PRIOR TO SHIPPING

NOTE:
HANDRAIL TO BE INSTALLED
AFTER PAINTING IS COMPLETE

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250,000 GALLON ELEVATED SPHEROIDAL TANK

BASE CONE HANDRAIL

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

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3907

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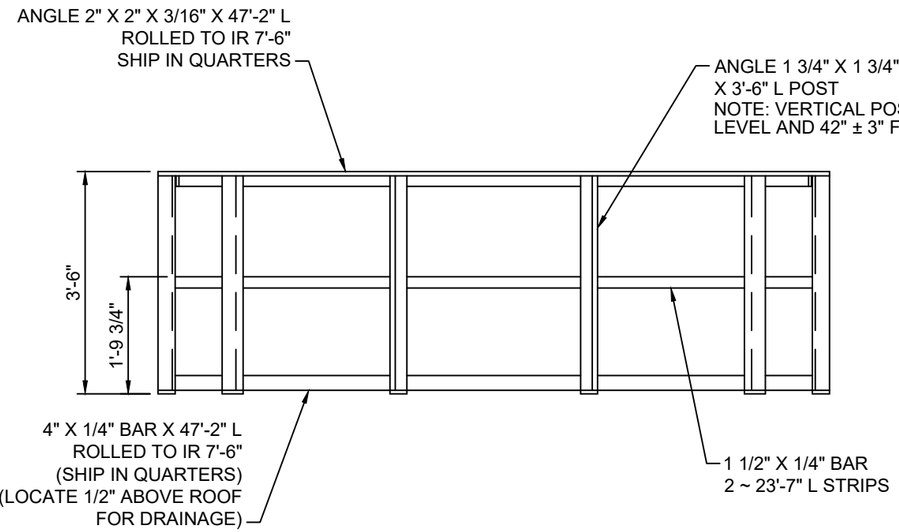
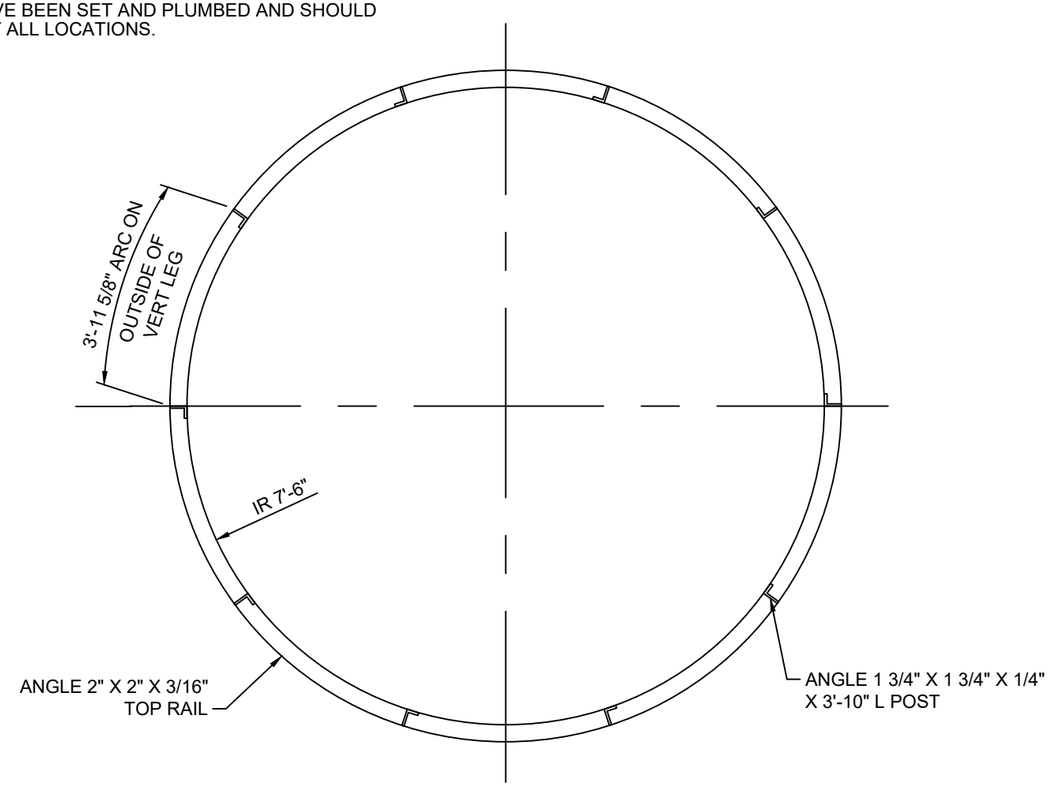


NOTE: TOE RAIL TO BE SHIPPED LOOSE. TOE RAIL TO BE AFTER VERTICAL POSTS HAVE BEEN SET AND PLUMBED AND SHOULD MAINTAIN 1/4" GAP AT ALL LOCATIONS.



PLAN VIEW

NOT FOR FABRICATION

250,000 GALLON ELEVATED SPHEROIDAL TANK

ROOF HANDRAIL

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

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PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

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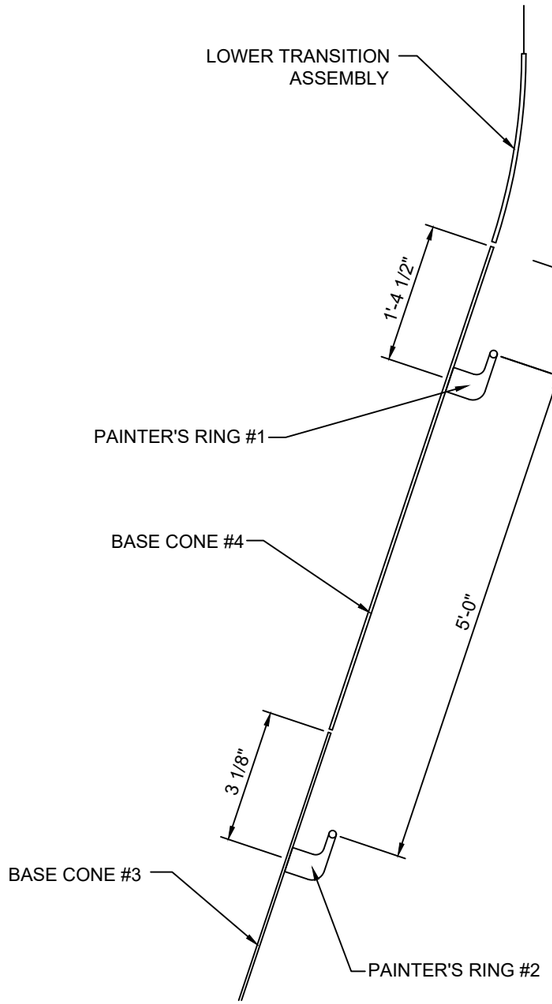
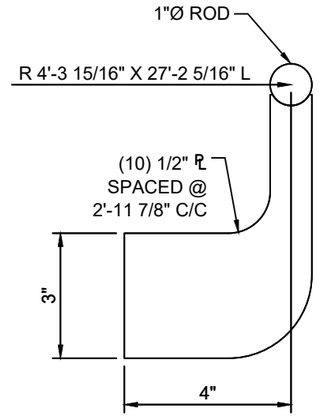
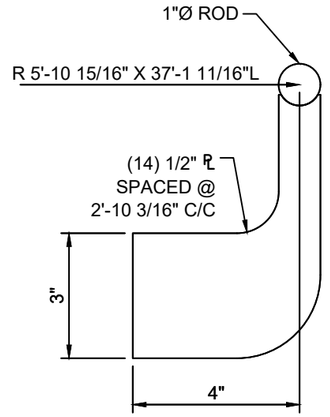


NOTE:
1: INSTALL "STOPS" IN LOCATIONS OF INTERFERENCE WITH/ LADDERS OR PIPING.
2: ONE CLIP WILL BE @ A ROD SPLICE



PAINTER'S RING #1
(1) REQUIRED
(1) @ 66# EA



PAINTER'S RING #2
(1) REQUIRED
(1) @ 90# EA

250,000 GALLON ELEVATED SPHEROIDAL TANK
BASE CONE PAINTER'S RINGS
CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA
Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

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PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

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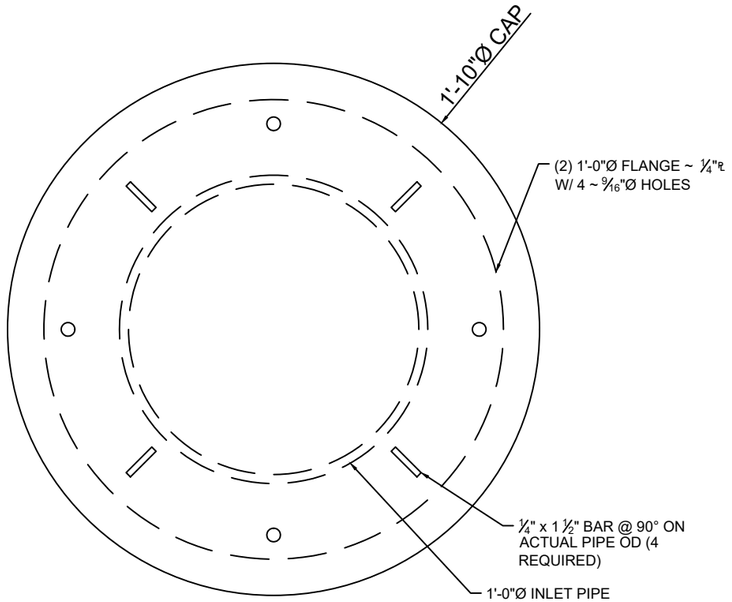

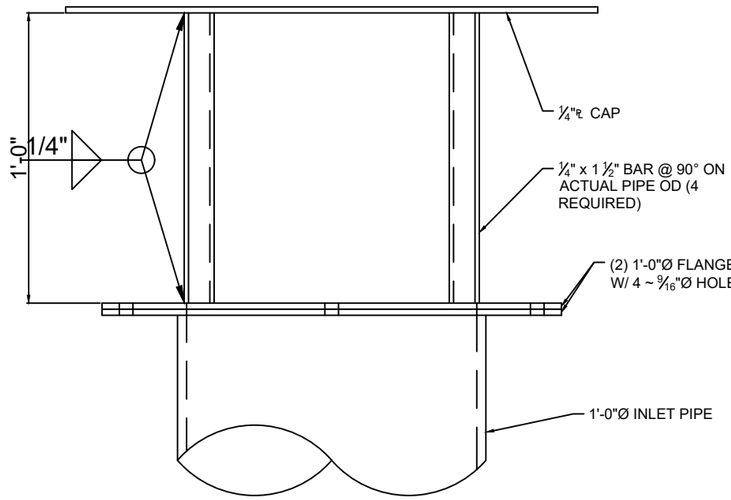

NOT FOR FABRICATION

Rev.	By	Rev. Date	Revision Description
A			
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C			
D			

250,000 GALLON ELEVATED SPHEROIDAL TANK

PROTECTIVE DISCHARGE CAP

CITY OF FLOWERY BRANCH
FLOWERY BRANCH, GA

Engineer: KI | Drawn By: AB | Checked By: KI | Date: 10/22

PHOENIX FABRICATORS AND ERECTORS, LLC
Avon, Indiana - Sebree, Kentucky

JOB. No.
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