Premier NDT Services, Inc

Inspection & Testing for the Energy Industry

TANK BOTTOM INSPECTION REPORT

City of Grand Junction
South 4.0 MG Water Storage Tank
170’ Diameter

Water Treatment Plant
Grand Junction, Colorado

Inspection Completion Date: November 20, 2025

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File Attachments:

1. Drawing 1.dwg
2. Drawing 2.dwg
3. PNDT Ultrasonic Thickness Testing Procedure.pdf
4. PNDT Magnetic Flux Exclusion Procedure.pdf

Premier NDT Services, Inc.
2198 Bloomfield Highway
Farmington, NM 87401
505-325-1407

Tank Bottom Inspection Report

Customer: City of Grand Junction		**Inspection Completion Date:** November 20, 2025	
Address: Water Treatment Plant		**Job Location:** South 4 MG Water Storage Tank	
City: Grand Junction	**State:** CO	**PO No.**: TBD	
Contact Person(s): Evan Sales		**Revision No.**: 0	**Invoice No.** : N/A

INSPECTION SUMMARY

On November 20, 2025, Premier NDT Services, Inc. (PNDT) employees Mike Herbolsheimer, Kevin Harkreader, Brian Williams and Tucker Neilsen completed a MFL scan, visual inspection and ultrasonic thickness survey of a 170' - 0" diameter Water Storage Tank bottom at the City of Grand Junction Water Treatment Plant. The tank was designated as the South 4 MG Water Storage Tank. Entry into the tank was through a 24" shell manway on the North side. The tank bottom was mostly clean with a few areas of standing water.

The epoxy coating remained on the surface for the inspection. The tank bottom was scanned with magnetic flux leakage (MFL), checked for thickness with ultrasound and visually inspected.

There are one-hundred seventy-two (172) lap-welded bottom plates across the bottom. The plates were numbered for reference. Deficiencies across the bottom are documented in this report for repairs or locating at future inspection(s). Drawings, photos, spreadsheets and this narrative report document the completed inspection of the bottom. Overall, the bottom is considered to be in fair condition by this inspector based on the age of the tank and the issues identified.

Observations / suggestions are given at the end of the report. These are issues and that should be considered by the tank owner to maintain the tank.

Recommendations are given at the end of the report and are based on the API 653 inspection standard and industry best practices. Recommendations are given for the continued suitable service and safe operation of the tank.

HISTORY

The tank was constructed in 1968 per a manufacturer nameplate above the manway on the North side of the tank. See photos 01 and 02. A few drawings related to the tank were provided and reviewed. These drawings are included with this report.

This is the first inspection of the tank bottom completed by PNDT. No previous formal internal, external, MFL or ultrasonic thickness inspection reports were provided. There are at least three (3) door sheets on the shell indicating the tank was entered for previous rehabilitation. The following historical information was provided verbally at this inspection:

- A cathodic protection system was recently installed to protect the soil side of the tank bottom.
- Modifications to the outlet / sump drain piping were previously completed.
- Mud jacking was previously completed at the sump side of the tank, some of the fillet welded patch plates on the sump side of the tank are probably associated with the jacking.

MFL BOTTOM INSPECTION

A MFE Enterprises 2412 Mark II scanner was setup for a 0.250" nominal bottom thickness with a thin film coating. The "green" wheels were utilized with the scanner setup and verified with the manufacturer provided 1/4" steel function plate. See photos 03 and 04. Guidance from the attached Premier NDT MFL procedure along with the scanner manufacturer manual was followed. The scan was completed to determine if corrosion / pitting was present from the soil side of the bottom. In addition, product side pits with detectable volume loss could be identified with the scan. The following issues were identified with the MFL scan:

• Approximately 95% of the tank bottom was accessible for the scan. Areas directly adjacent to the lap welds, corners of plates, around fixed roof supports and next to the shell were excluded in the scan. Approximately one-hundred-ten (110) locations were marked for prove-up with ultrasonic thickness testing. Drawings and spreadsheets included with the report detail the locations found. The soil side corrosion / pitting is mostly located between the suspected transition of the concrete ring wall / support base and the outer ring of roof supports.

VISUAL INSPECTION

The product side of the bottom plates was visually inspected. Inspection was limited due to the coating. The following issues were identified visually:

• The tank bottom is obviously sloped toward the sump. There have been previous modifications to the sump area along with mud jacking. Some of the fillet welded patch plates on the sump side of the tank are probably associated with the jacking. Some of the fillet-welded patches may be related to product or soil side corrosion issues. The patches range in size with square corners.

• The internal coating is not original to the tank construction. There appears to be a couple of layers with slightly different colors. There are calcium / mineral deposits at several of the lap welds with breaks in the coating visible when deposits are removed. See photos 61 and 62.

• There are twelve (12) outer roof support columns and six (6) associated with the inner ring. There is also a center column for a total of nineteen (19) roof supports. Spot ultrasonic thickness testing did not identify significant internal corrosion / pitting on the pipe columns. The support bases associated with all of the columns are channel iron(s) in direct contact with the bottom plates. There are restraining clips to limit lateral movement. There is caulking at these interfaces between the channel iron(s) with the bottom to prevent crevice corrosion, as coating the bottom plate under the support base is not possible. The concern is that crevice corrosion could be taking place. See photos 46 through 50.

• There are several extraneous welds across the bottom. There are a few gouges and dents across the bottom. The locations are noted on drawings and a spreadsheet included with this report. See photos 58, 59 and 60.

• There is a 30" bottom inlet on bottom plate 16 with underside reinforcement. The pipe was full of water with a steel silt ring. There is a non-metallic internal liner visible at the edge of the silt ring. See photos 27 and 28, No obvious issue was observed with this connection.

• There is an outlet nozzle at the Southwest side of the shell. The nozzle size is 19" as measured on the ID with an 18" elbow above grade on the exterior side of the tank. The nozzle is not original to the tank construction. The nozzle is not welded or sealed to the shell, which allows water between the exterior side of the shell and the repad. The nozzle appears to be welded to the square cornered reinforcement pad only with the reinforcement pad welded to the shell. There is internal corrosion / pitting at the bottom of the nozzle that has been coated to arrest further loss. Ultrasonic thickness readings indicate moderate wall loss from the suspected 0.250" nominal. A remaining wall thickness of 0.185" was found on the bottom. See photos 29 through 33. The current nozzle configuration is suspect.

• There is a 16" flanged overflow pipe at bottom plate 51 with underside reinforcement. There are gussets at the flanged connection that may or may not be original to the tank construction. See photos 42 through 45. No obvious issue was observed with this overflow connection at this inspection.

• On the external side of the tank, the bottom plate projection was visually inspected. There are significant gaps between the concrete ring wall and the bottom plate projection. The most significant gaps are on the West side of the tank where mud jacking was completed around the sump. The air gap is up to 1 ¼". The current condition allows water to migrate under the bottom. There are widely scattered areas of hairline cracks in the concrete ring wall. The surrounding grade is higher than the concrete ring wall at a few locations. See photos 07 through 17.

• There is a cathodic protection rectifiers mounted to the shell at the North side of the tank that is an impressed current system for the interior of the tank at three (3) anodes suspended above the bottom. See photos 21 and 22. A CP system for the soil side of the tank bottom was recently installed. See photo 20. Two (2) grounding wires were identified for the tank. See photos 18 and 19.

ULTRASONIC THICKNESS TESTING

A GE DMS Go ultrasonic thickness gauge was utilized to gather thickness data on the tank bottom, bottom of the shell and accessible components. The calibration was performed prior to the inspection with subsequent checks per the attached Premier NDT Ultrasonic Thickness procedure. The TC-560 transducer was utilized to gather thickness data and prove-up areas identified with the MFL scanner. The TC-560 transducer was used in conjunction with the thickness gauge to eliminate the coating thickness for a steel thickness only. The following issues were identified with ultrasonic thickness testing:

• Five (5) spot thickness readings were taken on each of the bottom plates to verify the nominal. The average thickness was 0.248" and the lowest reading found was 0.215". Drawing 1 shows the layout of the lap-welded plates.

• Ultrasonic prove-up was completed at locations identified with the MFL scan. Approximately one-hundred-ten (110) locations were scanned for remaining wall thicknesses. Three (3) remaining thicknesses were identified < 0.100" with the lowest remaining thickness of 0.080" found on bottom plate 16. Drawings and spreadsheets detail the remaining wall thicknesses found.

• Spot ultrasonic thickness readings were completed on the internal side of the tank at the bottom critical zone (within 3" of shell). Readings were taken clockwise at a 3' spacing starting at the North vertical shell seam 1. The average thickness was 0.248" and the lowest reading found was 0.202". No indication of significant underside corrosion / pitting in the critical zone was identified. There is soil side corrosion / pitting taking place outside of the critical zone where the concrete ring wall transitions to the compacted soil base. Drawing 1 and a spreadsheet details location and thicknesses found.

• Ultrasonic thickness readings were taken on the internal piping and the roof support columns. These readings are recorded on a spreadsheet included with this report. The shell outlet nozzle has issues. No obvious issues were observed with the other components.

• Ultrasonic thickness readings were taken on the bottom projection utilizing the eighteen (18) bottom shell course vertical welds for reference. The average thickness was 0.250" and the lowest reading found was 0.234". Drawings 1 shows location of thickness readings along with a spreadsheet to detail the thickness readings.

• Ultrasonic thickness readings were completed on the internal side of the tank at the bottom shell course. A spot reading was taken at 3' spacing around the tank circumference. Readings were taken at a 3' spacing

starting at the North vertical shell seam 1. Readings are recorded on a spreadsheet included with this report. The average thickness was 0.467" and the lowest thickness found was 0.407" on the bottom course. Drawing 1 and spreadsheets detail the locations.

CORROSION RATE / REMAINING LIFE CALCULATIONS

A tank bottom minimum remaining thickness (MRT) calculation was completed for a 1-year run when a major rehabilitation including a new internal coating is anticipated. There are three (3) areas of the bottom that are currently less than the required 0.100" thickness. Based on the corrosion rate, any remaining wall thicknesses < 0.103" will require repair for a 1-year run.

Based on the 57 years the tank has been in service and assuming a linear corrosion rate, the following remaining thicknesses that should be repaired for a 0.100" minimum bottom thickness the next time the tank is taken out of service. A longer service period will require more repair plates. It is understood that the customer will make the determination of repairs based on timing, budget, etc.

1 Year - 0.103"
2 Years - 0.105"
3 Years - 0.108"
4 Years - 0.110"
5 Years - 0.112"
20 Years - 0.140"

OBSERVATIONS / SUGGESTIONS

1. An engineer experienced in tanks is suggested to be involved in the rehab of this tank. Based on experience, the following inspection observation are suggested to be further addressed:
   a. Elevation readings to check levelness of concrete ring wall
   b. Elevation readings at internal side of tank
   c. Evaluation of surrounding grade (may be contributing to water migrating under the tank bottom)
   d. Evaluation of roof rafters and attachment clips
   e. Evaluation of column support bases for crevice corrosion concerns
   f. Method for sealing of bottom plate projection (grout, flexible membrane, other)
   g. Evaluation of the existing fillet welded patch plates across the bottom for suitability
   h. Evaluation of the current shell outlet nozzle configuration

RECOMMENDATIONS

1. Per API 653, the tank bottom minimum thickness shall not be less than 0.100" at the end of the service period. This tank bottom has three (3) locations that are currently < 0.100". A minimum of two (2) ¼" patch plates are recommended to cover these areas. Two (2) pass fillet welds are recommended with the plates air / vacuum box tested after completion. API 653 gives guidance for patch plate sizing and spacing requirements on lap-welded tank bottoms. After a 1-year run, it is assumed that the tank will be rehabilitated including a new internal coating. A more detailed MFL scan is recommended at the next out of service period to identify extent of repairs for a more lengthy service period after rehab. The use of a MFL edge scanner is also recommended. The scan is recommended to be completed after the epoxy coating is removed.

2. Spot coating is recommended to arrest loss until the entire interior coating issues are addressed. The interior coating is recommended to be renewed in the near future based on the condition observed at this inspection. A better visual inspection could be completed on the tank bottom and welds after the coating is removed. Repairs and grinding smooth of extraneous welds, product side pits, etc. is recommended prior to re-coating.

3. The shell outlet nozzle is recommended to be evaluated for suitability. The current configuration has several concerns.

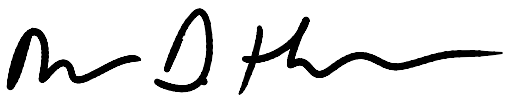
Description of Part Inspected	**Type of Material**
Tank ID: South 4 MG Tank, 170' Diameter, Water Storage Tank	Carbon Steel
	Acceptance Standard
	API 653, Per Customer
Inspector / Technician: Mike Herbolsheimer API 653 Aboveground Storage Tank Inspector, Cert. #1257 STI SP001 Adjunct Certification, ID# AC 28211 MFL Scanner Operator Level II Ultrasonic Thickness Technician  **Assistant:** Kevin Harkreader **Assistant:** Brian Williams **Assistant:** Tucker Neilsen	**Additional Comments**
Customer:	

Photo 01. Grand Junction Water Treatment Plant, 4 MG, 170' Diameter Water Tank

Photo 02. Tank construction nameplate

Photo 03. MFL scanner on function test plate

Photo 04. MFE Enterprises, Mark II 2412 floor scanner

Photo 05. Exterior view of 24” shell manway

Photo 06. Interior view of 24” shell manway

Photo 07. Tank support configuration and surrounding grade

Photo 08. Tank support configuration and surrounding grade

Photo 09. Tank support configuration and surrounding grade

Photo 10. Surrounding grade higher than bottom plate projection

Photo 11. Area of paint failure with rust at bottom plate projection

Photo 12. Area of paint failure with rust at bottom plate projection

Photo 13. Moss growing between concrete ring wall and bottom plate projection

Photo 14. Air gap between concrete ring wall and bottom plate projection

Photo 15. Remnant of asphalt impregnated fiberboard between concrete ring wall and bottom

Photo 16. As found corroded piece of flat steel bar between concrete ring wall and bottom

Photo 17. Corroded piece of flat steel bar between concrete ring wall and bottom

Photo 18. One (1) of two (2) grounding wires at bottom of tank

Photo 19. Two (2) of two (2) grounding wires at bottom of tank

Photo 20. Cathodic protection rectifier for soil side of tank bottom

Photo 21. Shell connection for internal impressed current CP system

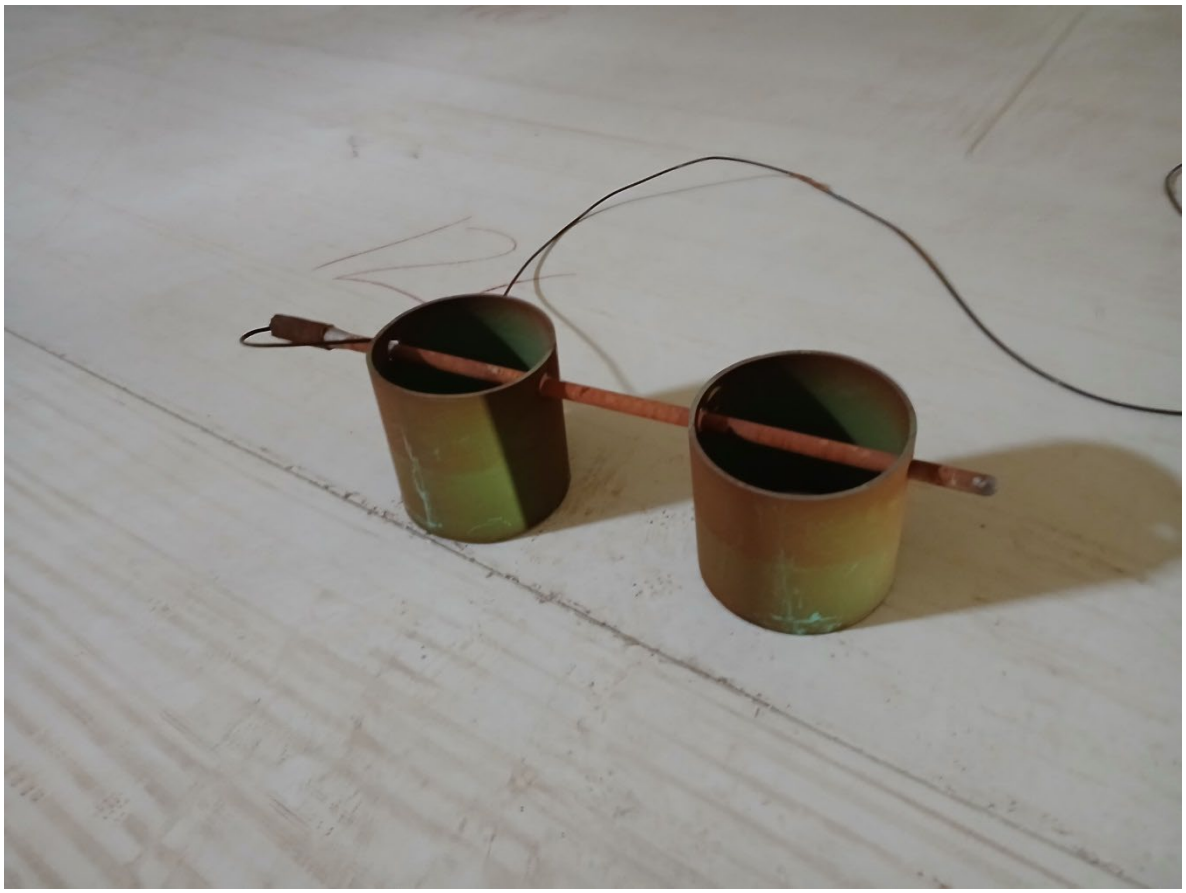


Photo 22. One (1) of three (3) anodes associated with internal impressed current CP system

Photo 23. Interior view of tank

Photo 24. Interior view of tank

Photo 25. Interior view of tank

Photo 26. Interior view of tank

Photo 27. 30” bottom inlet pipe configuration with silt stop and water inside

Photo 28. 30” bottom inlet pipe configuration with silt stop and water inside

Photo 29. Exterior view of shell outlet nozzle

Photo 30. Exterior view of shell outlet nozzle

Photo 31. Interior view of shell outlet nozzle

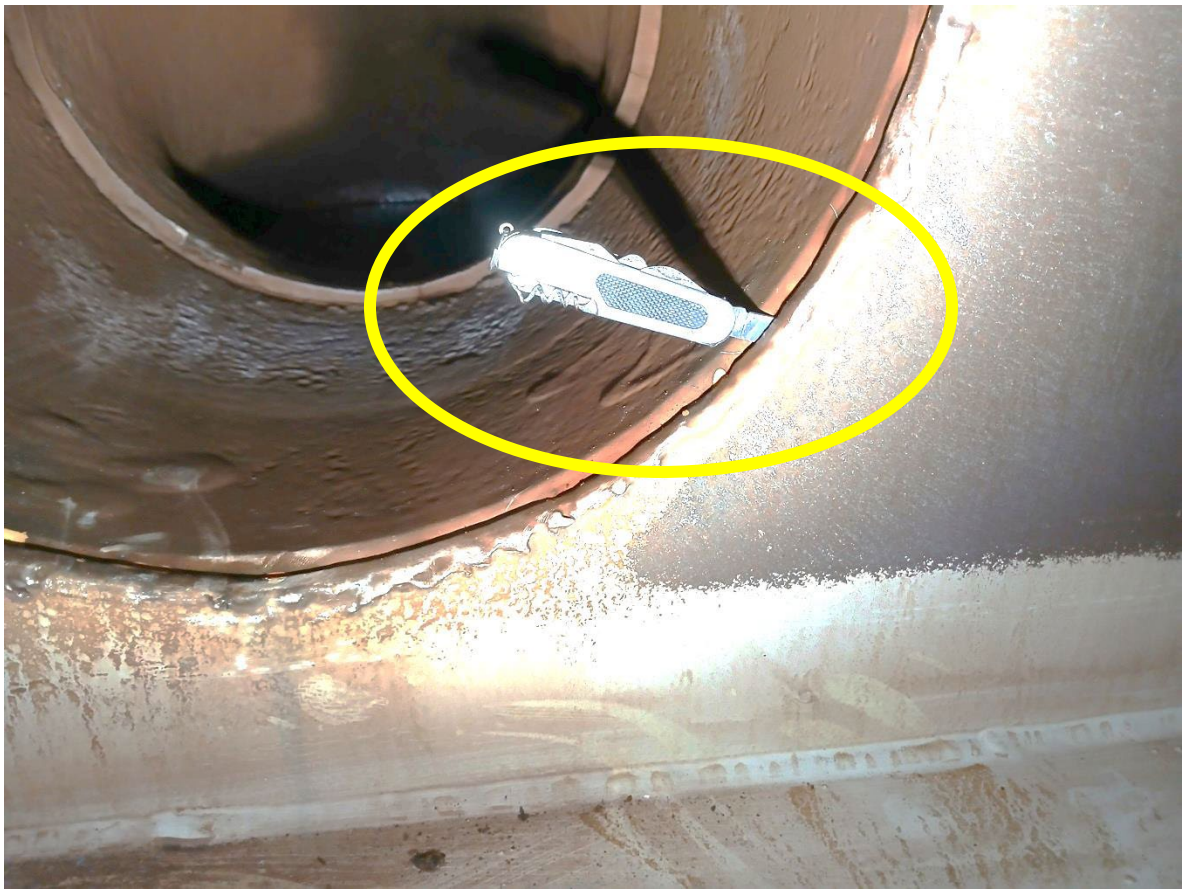


Photo 32. Air gap between shell outlet nozzle and shell, internal corrosion / pitting (coated)

Photo 33. Air gap between shell outlet nozzle and shell

Photo 34. Sump and drain configuration

Photo 35. Sump and drain configuration

Photo 36. Sump and drain configuration

Photo 37. Sump and drain configuration, scattered small fillet welded patches on tank bottom

Photo 38. Sump and drain configuration, scattered small fillet welded patches on tank bottom

Photo 39. Patch plates around the sump

Photo 40. Patch plates around the sump

Photo 41. Patch plates around the sump

Photo 42. Patch plates around the sump and 16” overflow

Photo 43. 16” overflow pipe

Photo 44. 16” overflow pipe

Photo 45. 16” overflow and patches on bottom

Photo 46. Roof support column and base configuration

Photo 47. Roof support column and base configuration

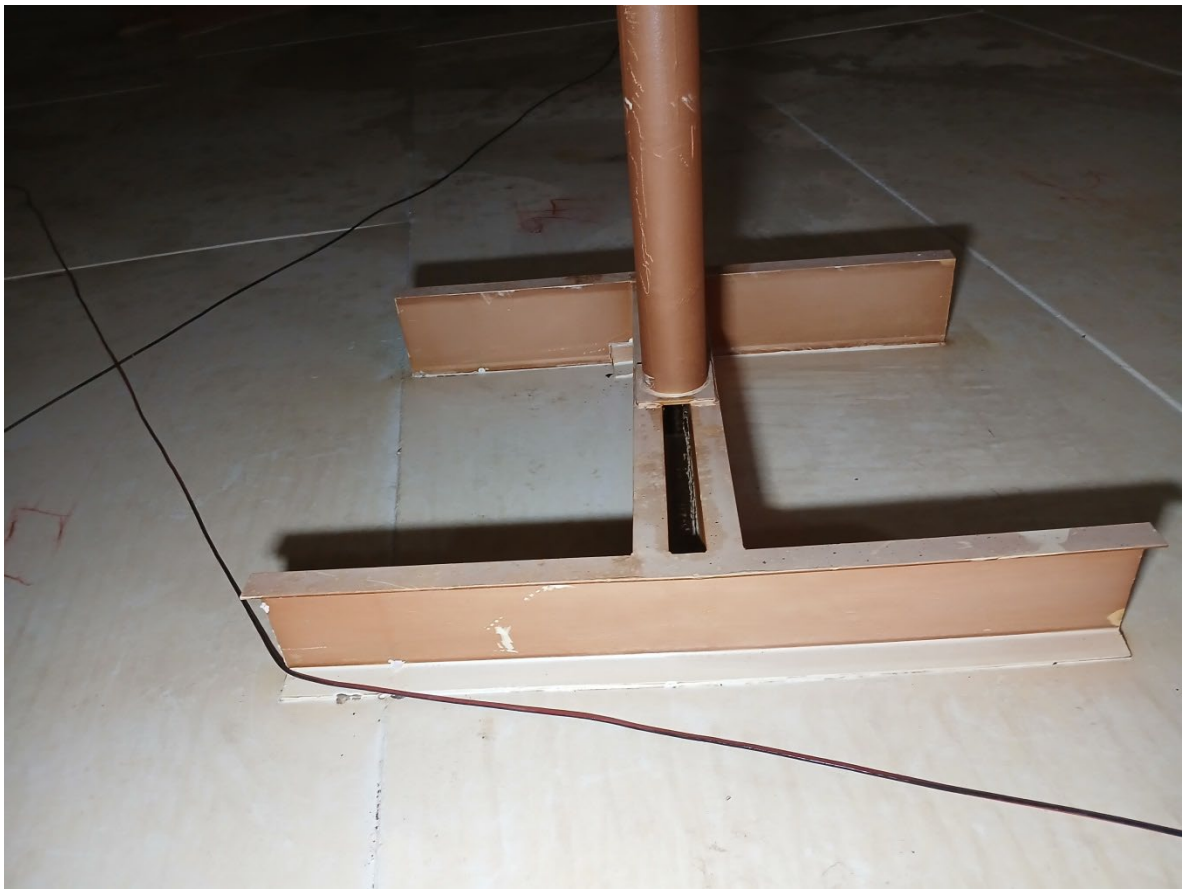


Photo 48. Roof support column and base configuration

Photo 49. Underside view of roof

Photo 50. Underside view of roof at center column

Photo 51. One (1) of three (3) door sheets on shell

Photo 52. Two (2) of three (3) door sheets on shell

Photo 53. Internal ladder and level float configuration

Photo 54. Internal ladder and level float configuration

Photo 55. Example soil side corrosion / pitting at suspected edge of concrete ring wall

Photo 56. Example soil side corrosion / pitting at suspected edge of concrete ring wall

Photo 57. Example soil side corrosion / pitting at suspected edge of concrete ring wall

Photo 58. Example of extraneous weld on tank bottom plate

Photo 59. Example of extraneous weld on tank bottom plate

Photo 60. Example of extraneous weld on tank bottom plate

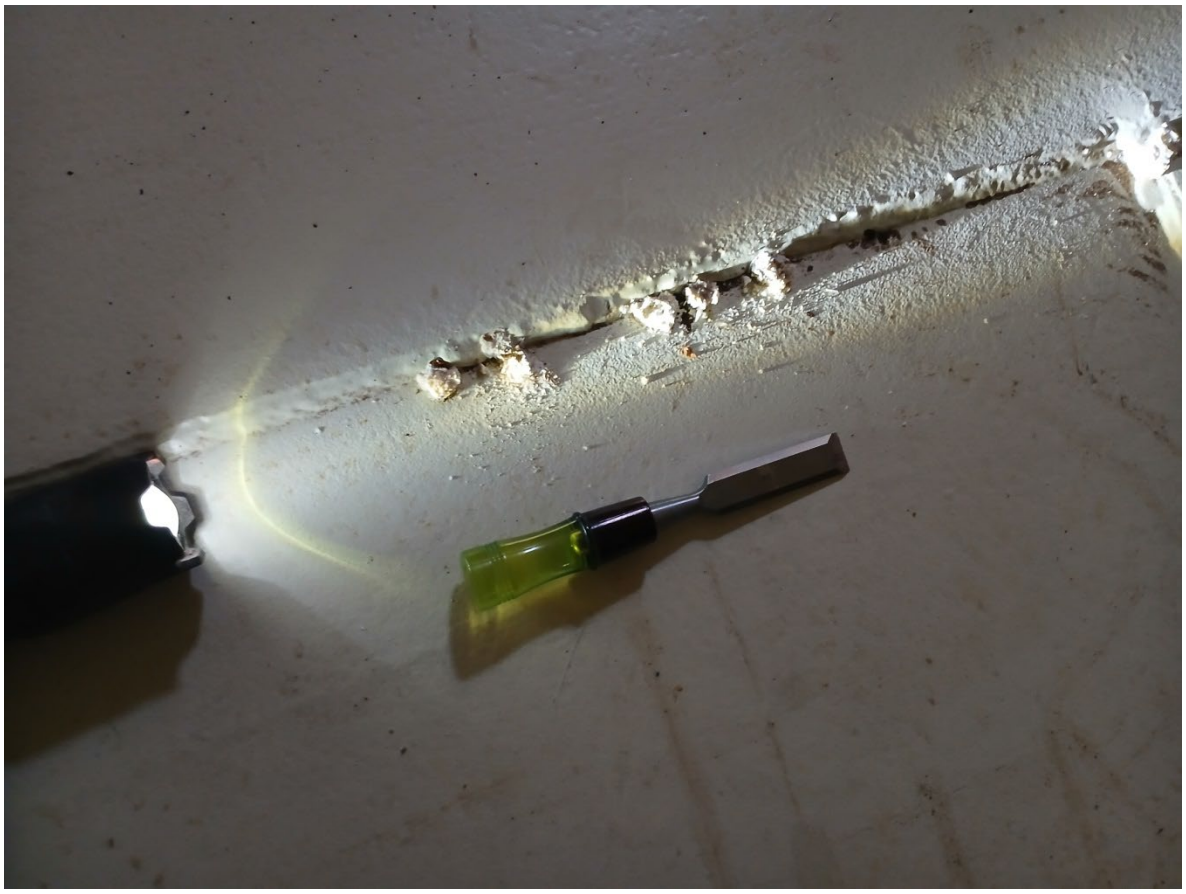
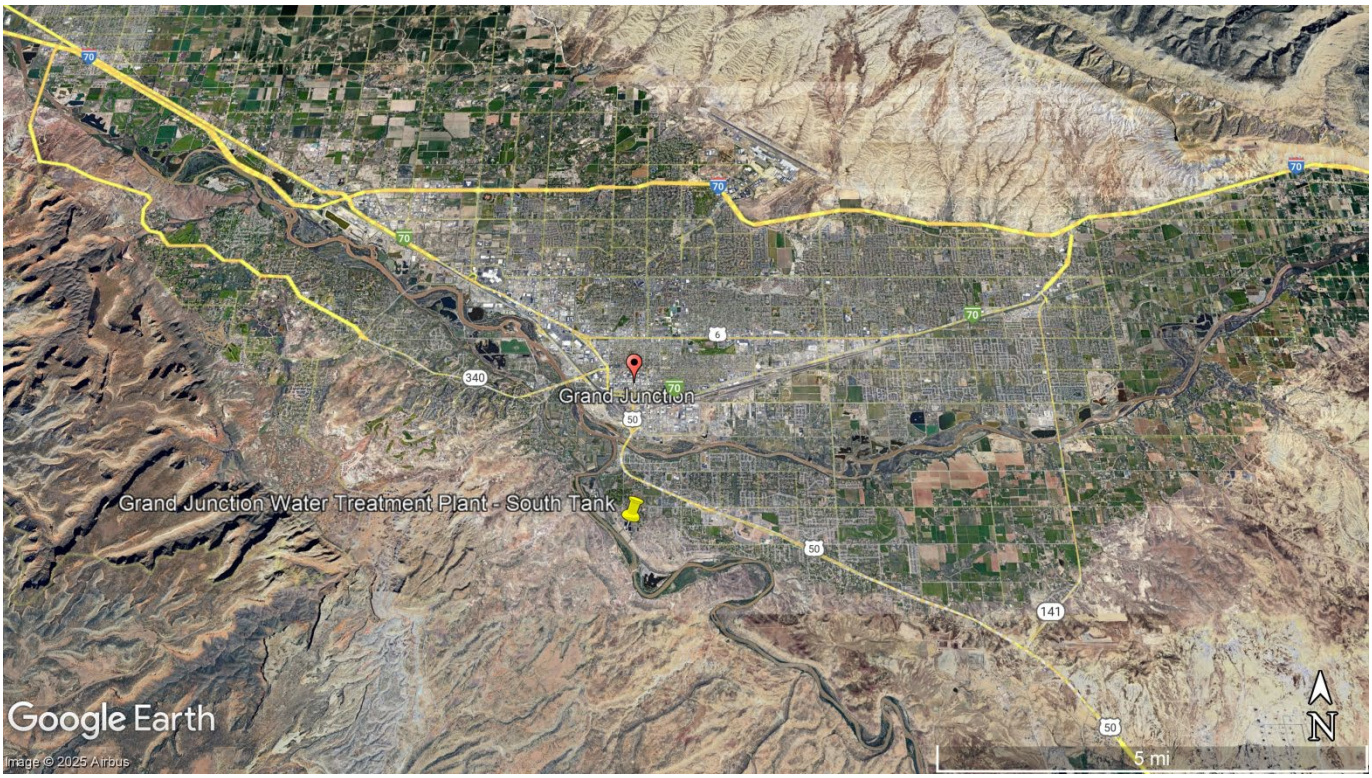


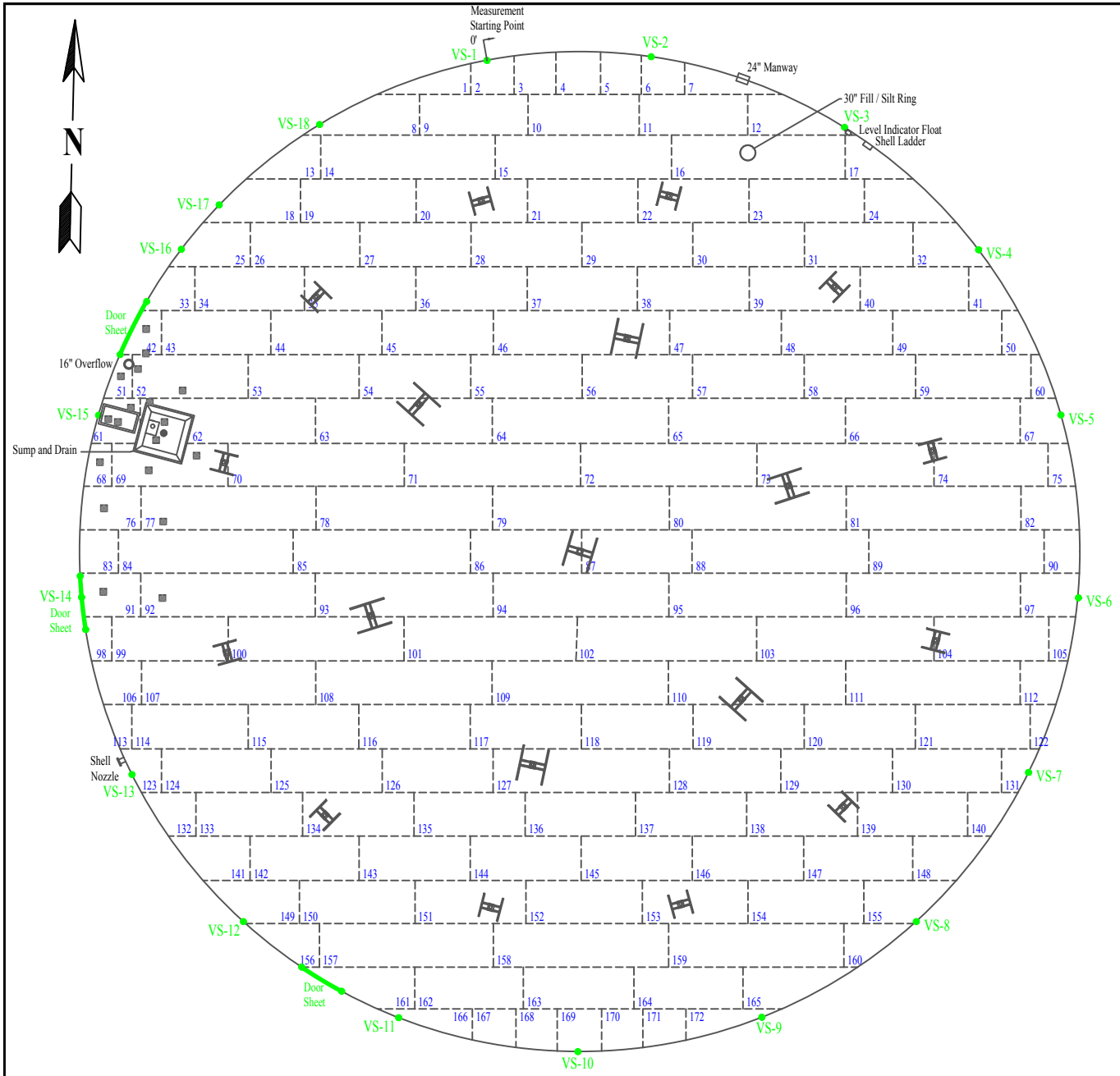
Photo 61. Example of calcium / mineral deposits at bottom lap welds

Photo 62. Areas of coating failure at removed calcium / mineral deposits

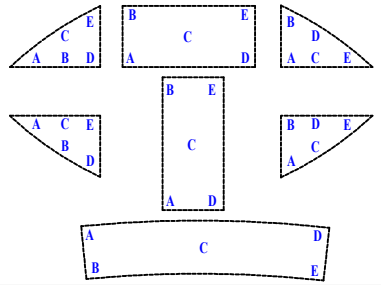
Photo 63. Bottom course vertical weld seam VS-1, starting point for critical zone and shell UT readings

Grand Junction Water Treatment Plant
South Water Tank





Bottom Plate UT Thickness Locations



LEGEND

- ---- - Lap Welded Bottom Plates
- * - Plate Numbers
- ● - Bottom Course Vertical Welds
- - Roof Support Columns
- ▩ - Current Filet Welded Patch Plates

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Project: Tank Bottom Inspection
ID: South Water Tank - 4 MG - 170' Diameter
Location: City of Grand Junction Water Treatment Plant

Bottom Layout - UT Thickness
Date: November 20, 2025
Drawing: 1

BOTTOM PATCH PLATE LOCATIONS

PATCH NUMBER	BOTTOM PLATE NUMBER	REFERENCE CORNER	"X" DISTANCE	"Y" DISTANCE	PATCH SIZE	PATCH THICKNESS	COMMENT
1	42	Bottom Right	- 2' - 7"	4' - 5"	NA	**0.255**	
2			- 2' - 7"	0' - 4"	16" x 8"	**0.238**	
3	51	Bottom Right	- 2' - 0"	2' - 10"	5" x 5"	**0.252**	
4	52	Bottom Left	8' - 6"	1' - 3"	5" x 5"	**0.250**	
5			1' - 4"	5' - 0"	16" x 16"	**0.245**	Capped pipe.
6	61	Top Right	- 1' - 9"	- 2' - 0"	5" x 5"	**0.247**	
7	62	Top Left	1' - 3"	- 0' - 6"	2" x 2"	**0.246**	
8	68	Bottom Right	- 2' - 0"	4' - 1"	5" x 5"	**0.247**	
9	69	Bottom Left	14' - 2"	5' - 2"	5" x 5"	**0.247**	
10			6' - 2"	2' - 7"	5" x 5"	**0.238**	
11	**76**	Bottom Right	- 6' - 3"	3' - 8"	5" x 5"	**0.246**	
12	**77**	Bottom Left	3' - 10"	1' - 4"	5" x 5"	**0.247**	
13	**91**	Bottom Right	- 6' - 4"	4' - 1"	2" x 2"	**0.247**	
14	**92**	Bottom Left	3' - 8"	3' - 2"	2" x 2"	**0.250**	

BOTTOM PLATE THICKNESS READINGS

Bottom Plate	Location "A"	Location "B"	Location "C"	Location "D"	Location "E"
1	0.251	0.241	0.250	0.240	0.243
2	0.234	0.237	0.234	0.235	0.232
3	0.244	0.248	0.228	0.245	0.242
4	0.249	0.251	0.256	0.254	0.257
5	0.249	0.247	0.239	0.244	0.246
6	0.236	0.234	0.225	0.232	0.234
7	0.255	0.260	0.256	0.255	0.254
8	0.238	0.238	0.237	0.235	0.235
9	0.243	0.251	0.258	0.256	0.256
10	0.256	0.257	0.258	0.253	0.251
11	0.247	0.252	0.261	0.260	0.242
12	0.233	0.234	0.235	0.228	0.236
13	0.235	0.237	0.226	0.236	0.232
14	0.241	0.243	0.243	0.245	0.244
15	0.242	0.243	0.245	0.243	0.243
16	0.243	0.238	0.246	0.240	0.231
17	0.234	0.238	0.225	0.215	0.234
18	0.246	0.249	0.252	0.247	0.247
19	0.246	0.247	0.250	0.250	0.249
20	0.252	0.257	0.264	0.265	0.246
21	0.254	0.260	0.258	0.256	0.252
22	0.247	0.248	0.254	0.255	0.259
23	0.250	0.252	0.261	0.241	0.250
24	0.243	0.243	0.226	0.243	0.243
25	0.253	0.246	0.247	0.242	0.245
26	0.263	0.263	0.262	0.257	0.254
27	0.254	0.254	0.258	0.260	0.256
28	0.257	0.261	0.252	0.244	0.254
29	0.257	0.255	0.258	0.249	0.249
30	0.249	0.255	0.257	0.260	0.262
31	0.248	0.250	0.254	0.259	0.257
32	0.244	0.233	0.236	0.240	0.235
33	0.252	0.261	0.258	0.259	0.254
34	0.243	0.249	0.253	0.247	0.248
35	0.259	0.256	0.259	0.256	0.254
36	0.259	0.253	0.262	0.261	0.262
37	0.253	0.252	0.262	0.260	0.258

BOTTOM PLATE THICKNESS READINGS

38	0.247	0.243	0.250	0.246	0.239
39	0.249	0.256	0.261	0.252	0.264
40	0.249	0.249	0.237	0.243	0.243
41	0.248	0.251	0.249	0.238	0.244
42	0.237	0.249	0.249	0.244	0.242
43	0.263	0.265	0.262	0.261	0.259
44	0.260	0.258	0.255	0.254	0.250
45	0.245	0.248	0.251	0.249	0.254
46	0.251	0.236	0.249	0.252	0.246
47	0.262	0.255	0.253	0.256	0.256
48	0.255	0.258	0.259	0.238	0.244
49	0.258	0.240	0.244	0.258	0.247
50	0.241	0.237	0.244	0.231	0.242
51	0.237	0.233	0.237	0.236	0.234
52	0.258	0.260	0.260	0.258	0.244
53	0.257	0.257	0.262	0.260	0.262
54	0.251	0.251	0.259	0.259	0.253
55	0.250	0.251	0.257	0.256	0.252
56	0.247	0.251	0.252	0.254	0.250
57	0.255	0.256	0.257	0.260	0.259
58	0.236	0.248	0.245	0.241	0.241
59	0.252	0.242	0.241	0.253	0.255
60	0.245	0.253	0.255	0.247	0.250
61	0.248	0.249	0.252	0.251	0.246
62	0.238	0.240	0.230	0.240	0.243
63	0.246	0.246	0.245	0.243	0.246
64	0.244	0.243	0.241	0.242	0.243
65	0.250	0.248	0.251	0.250	0.251
66	0.253	0.247	0.253	0.245	0.237
67	0.261	0.255	0.259	0.252	0.257
68	0.243	0.248	0.236	0.245	0.244
69	0.254	0.251	0.258	0.249	0.257
70	0.250	0.243	0.242	0.248	0.245
71	0.234	0.238	0.234	0.240	0.242
72	0.245	0.246	0.254	0.249	0.247
73	0.243	0.242	0.244	0.242	0.233
74	0.247	0.249	0.244	0.246	0.240
75	0.245	0.249	0.242	0.244	0.248

BOTTOM PLATE THICKNESS READINGS

76	0.223	0.241	0.246	0.240	0.243
77	0.239	0.241	0.242	0.250	0.248
78	0.238	0.241	0.251	0.251	0.248
79	0.243	0.241	0.243	0.244	0.244
80	0.240	0.244	0.238	0.242	0.240
81	0.244	0.240	0.245	0.242	0.255
82	0.223	0.226	0.255	0.246	0.249
83	0.255	0.254	0.257	0.250	0.296
84	0.238	0.242	0.241	0.239	0.237
85	0.240	0.229	0.239	0.246	0.239
86	0.250	0.248	0.248	0.257	0.249
87	0.243	0.257	0.262	0.254	0.259
88	0.238	0.242	0.244	0.244	0.241
89	0.250	0.252	0.243	0.245	0.245
90	0.253	0.240	0.255	0.226	0.255
91	0.248	0.248	0.248	0.250	0.232
92	0.235	0.229	0.240	0.241	0.240
93	0.243	0.242	0.245	0.244	0.242
94	0.249	0.250	0.250	0.242	0.243
95	0.242	0.243	0.248	0.248	0.231
96	0.239	0.240	0.252	0.253	0.251
97	0.244	0.225	0.243	0.232	0.244
98	0.243	0.245	0.251	0.234	0.249
99	0.249	0.248	0.255	0.256	0.251
100	0.242	0.234	0.242	0.242	0.241
101	0.245	0.238	0.240	0.239	0.240
102	0.244	0.242	0.239	0.239	0.243
103	0.241	0.239	0.244	0.245	0.239
104	0.246	0.247	0.250	0.245	0.251
105	0.242	0.241	0.243	0.241	0.241
106	0.255	0.251	0.254	0.247	0.253
107	0.255	0.241	0.255	0.245	0.245
108	0.241	0.240	0.241	0.244	0.245
109	0.241	0.240	0.241	0.243	0.242
110	0.241	0.229	0.238	0.242	0.230
111	0.243	0.243	0.245	0.245	0.235
112	0.253	0.244	0.249	0.251	0.251
113	0.222	0.238	0.243	0.240	0.241

BOTTOM PLATE THICKNESS READINGS

114	0.255	0.261	0.258	0.257	0.253
115	0.254	0.255	0.258	0.259	0.258
116	0.257	0.253	0.255	0.240	0.249
117	0.260	0.260	0.262	0.254	0.255
118	0.259	0.256	0.261	0.256	0.256
119	0.250	0.245	0.248	0.249	0.248
120	0.260	0.260	0.258	0.250	0.251
121	0.251	0.243	0.239	0.245	0.246
122	0.252	0.251	0.255	0.231	0.249
123	0.244	0.241	0.246	0.243	0.223
124	0.257	0.255	0.260	0.262	0.260
125	0.256	0.255	0.262	0.259	0.261
126	0.247	0.255	0.258	0.252	0.255
127	0.245	0.242	0.255	0.254	0.251
128	0.265	0.260	0.262	0.253	0.253
129	0.250	0.252	0.253	0.251	0.251
130	0.249	0.252	0.247	0.244	0.242
131	0.252	0.242	0.252	0.220	0.248
132	0.251	0.251	0.261	0.261	0.256
133	0.260	0.261	0.264	0.252	0.250
134	0.251	0.252	0.265	0.260	0.262
135	0.255	0.247	0.252	0.248	0.246
136	0.259	0.259	0.263	0.260	0.253
137	0.250	0.251	0.253	0.256	0.234
138	0.261	0.258	0.254	0.258	0.259
139	0.259	0.248	0.249	0.256	0.259
140	0.244	0.224	0.247	0.248	0.247
141	0.246	0.242	0.246	0.241	0.242
142	0.248	0.256	0.244	0.263	0.259
143	0.255	0.254	0.257	0.254	0.256
144	0.258	0.260	0.259	0.264	0.264
145	0.257	0.259	0.262	0.258	0.261
146	0.250	0.251	0.258	0.251	0.259
147	0.258	0.260	0.260	0.243	0.243
148	0.247	0.250	0.251	0.250	0.241
149	0.242	0.250	0.249	0.234	0.245
150	0.252	0.244	0.252	0.251	0.250
151	0.255	0.256	0.258	0.259	0.262

BOTTOM PLATE THICKNESS READINGS

152	0.250	0.253	0.256	0.252	0.252
153	0.265	0.259	0.265	0.258	0.263
154	0.248	0.251	0.247	0.244	0.240
155	0.242	0.238	0.245	0.246	0.247
156	0.239	0.239	0.238	0.238	0.237
157	0.240	0.245	0.243	0.242	0.246
158	0.241	0.238	0.242	0.242	0.241
159	0.249	0.245	0.252	0.242	0.241
160	0.240	0.240	0.241	0.241	0.240
161	0.241	0.240	0.244	0.241	0.243
162	0.242	0.253	0.261	0.258	0.259
163	0.262	0.258	0.262	0.254	0.256
164	0.257	0.263	0.261	0.256	0.257
165	0.242	0.240	0.227	0.240	0.244
166	0.244	0.238	0.241	0.238	0.242
167	0.237	0.240	0.242	0.237	0.245
168	0.249	0.250	0.249	0.245	0.239
169	0.250	0.251	0.252	0.251	0.254
170	0.247	0.255	0.251	0.246	0.247
171	0.238	0.237	0.240	0.238	0.237
172	0.242	0.242	0.242	0.242	0.243

Average:	0.248
Low:	0.215
High:	0.296

BOTTOM CRITICAL ZONE THICKNESS READINGS

Location	Bottom Critical Zone	Location	Bottom Critical Zone	Location	Bottom Critical Zone	Location	Bottom Critical Zone
1	0.238	54	0.252	107	0.249	160	0.251
2	0.239	55	0.251	108	0.227	161	0.202
3	0.253	56	0.249	109	0.250	162	0.254
4	0.257	57	0.259	110	0.244	163	0.257
5	0.243	58	0.257	111	0.248	164	0.243
6	0.249	59	0.262	112	0.248	165	0.234
7	0.243	60	0.260	113	0.251	166	0.236
8	0.236	61	0.251	114	0.247	167	0.240
9	0.239	62	0.232	115	0.247	168	0.221
10	0.239	63	0.240	116	0.248	169	0.232
11	0.230	64	0.254	117	0.262	170	0.248
12	0.259	65	0.258	118	0.262	171	0.244
13	0.257	66	0.235	119	0.219	172	0.232
14	0.255	67	0.252	120	0.256	173	0.244
15	0.258	68	0.252	121	0.253	174	0.262
16	0.257	69	0.260	122	0.249	175	0.254
17	0.244	70	0.269	123	0.269	176	0.250
18	0.240	71	0.249	124	0.264	177	0.260
19	0.246	72	0.256	125	0.273	178	0.235
20	0.253	73	0.242	126	0.238	179	0.248
21	0.241	74	0.247	127	0.229		
22	0.240	75	0.246	128	0.214		
23	0.240	76	0.249	129	0.238		
24	0.246	77	0.247	130	0.250		
25	0.241	78	0.250	131	0.265		
26	0.249	79	0.249	132	0.263		
27	0.246	80	0.248	133	0.260		
28	0.248	81	0.251	134	0.261		
29	0.245	82	0.245	135	0.259		
30	0.247	83	0.246	136	0.259		
31	0.229	84	0.242	137	0.259		
32	0.249	85	0.248	138	0.266		
33	0.241	86	0.253	139	0.253		
34	0.221	87	0.246	140	0.257		
35	0.250	88	0.247	141	0.229		
36	0.208	89	0.242	142	0.235		
37	0.247	90	0.244	143	0.232		
38	0.249	91	0.242	144	0.247		
39	0.260	92	0.255	145	0.252		
40	0.258	93	0.260	146	0.259		
41	0.254	94	0.259	147	0.261		
42	0.258	95	0.260	148	0.257		
43	0.257	96	0.252	149	0.246		
44	0.255	97	0.248	150	0.252		
45	0.258	98	0.258	151	0.257		
46	0.254	99	0.249	152	0.260		
47	0.254	100	0.247	153	0.255		
48	0.245	101	0.245	154	0.259		
49	0.257	102	0.250	155	0.263		
50	0.249	103	0.251	156	0.206		
51	0.240	104	0.248	157	0.262		
52	0.247	105	0.234	158	0.261		
53	0.235	106	0.246	159	0.257		

Average:	0.248
Low:	0.202
High:	0.273

BOTTOM PLATE PROJECTION THICKNESS READINGS

SHELL STATION	UT THICKNESS - RIGHT	UT THICKNESS - MIDDLE	UT THICKNESS - LEFT
VS-1 - VS-2	0.236	0.251	0.234
VS-2 - VS-3	0.239	0.241	0.251
VS-3 - VS-4	0.249	0.252	0.254
VS-4 - VS-5	0.249	0.246	0.262
VS-5 - VS-6	0.262	0.253	0.246
VS-6 - VS-7	0.250	0.247	0.255
VS-7 - VS-8	0.255	0.254	0.252
VS-8 - VS-9	0.245	0.250	0.254
VS-9 - VS-10	0.249	0.238	0.255
VS-10 - VS-11	0.259	0.249	0.234
VS-11 - VS-12	0.250	0.244	0.236
VS-12 - VS-13	0.256	0.250	0.251
VS-13 - VS-14	0.245	0.264	0.263
VS-14 - VS-15	0.261	0.248	0.259
VS-15 - VS-16	0.260	0.239	0.260
VS-16 - VS-17	0.256	0.262	0.265
VS-17 - VS-18	0.263	0.244	0.250
VS-18 - VS-1	0.245	0.234	0.244

Average:	0.250
Low:	0.234
High:	0.265

BOTTOM SHELL COURSE THICKNESS READINGS

Location	Bottom Shell Course	Location	Bottom Shell Course	Location	Bottom Shell Course	Location	Bottom Shell Course
1	0.466	54	0.453	107	0.466	160	0.472
2	0.471	55	0.460	108	0.474	161	0.464
3	0.468	56	0.452	109	0.466	162	0.473
4	0.465	57	0.458	110	0.465	163	0.473
5	0.471	58	0.459	111	0.467	164	0.497
6	0.468	59	0.453	112	0.467	165	0.475
7	0.466	60	0.451	113	0.467	166	0.473
8	0.461	61	0.455	114	0.464	167	0.473
9	0.463	62	0.453	115	0.464	168	0.475
10	0.461	63	0.453	116	0.462	169	0.463
11	0.456	64	0.464	117	0.460	170	0.464
12	0.456	65	0.474	118	0.462	171	0.467
13	0.458	66	0.468	119	0.462	172	0.564
14	0.459	67	0.471	120	0.463	173	0.470
15	0.469	68	0.470	121	0.464	174	0.472
16	0.466	69	0.469	122	0.463	175	0.503
17	0.467	70	0.544	123	0.463	176	0.474
18	0.467	71	0.453	124	0.462	177	0.469
19	0.464	72	0.464	125	0.462	178	0.467
20	0.474	73	0.465	126	0.453	179	0.469
21	0.467	74	0.461	127	0.467		
22	0.465	75	0.467	128	0.468		
23	0.465	76	0.467	129	0.468		
24	0.467	77	0.472	130	0.471		
25	0.468	78	0.475	131	0.471		
26	0.468	79	0.474	132	0.490		
27	0.470	80	0.468	133	0.473		
28	0.466	81	0.467	134	0.467		
29	0.468	82	0.470	135	0.470		
30	0.465	83	0.468	136	0.509		
31	0.465	84	0.465	137	0.463		
32	0.454	85	0.495	138	0.463		
33	0.453	86	0.469	139	0.466		
34	0.458	87	0.473	140	0.467		
35	0.459	88	0.471	141	0.472		
36	0.457	89	0.470	142	0.407		
37	0.459	90	0.471	143	0.477		
38	0.460	91	0.469	144	0.467		
39	0.463	92	0.471	145	0.470		
40	0.461	93	0.468	146	0.469		
41	0.463	94	0.469	147	0.465		
42	0.455	95	0.458	148	0.464		
43	0.463	96	0.454	149	0.463		
44	0.461	97	0.460	150	0.521		
45	0.463	98	0.456	151	0.462		
46	0.465	99	0.457	152	0.461		
47	0.460	100	0.461	153	0.461		
48	0.462	101	0.459	154	0.466		
49	0.462	102	0.460	155	0.463		
50	0.463	103	0.458	156	0.459		
51	0.459	104	0.456	157	0.470		
52	0.481	105	0.456	158	0.472		
53	0.450	106	0.465	159	0.465		

Average:	0.467
Low:	0.407
High:	0.564

ROOF SUPPORT COLUMN / PIPING / PAD THICKNESS READINGS

Bottom Plate	Channel Support Length	Channel Support Width	Column (Pipe) Size	Column (Pipe) Thickness
20	36"	48"	6"	0.247
22	36"	48"	6"	0.287
35	36"	48"	6"	0.256
39	36"	48"	6"	0.281
46	54"	72"	6"	0.266
63	54"	72"	6"	0.250
69	36"	48"	6"	0.286
73	36"	48"	6"	0.269
80	54"	72"	6"	0.259
*86	54"	72"	8"	0.258
93	54"	72"	6"	0.253
100	36"	48"	6"	0.266
104	36"	48"	6"	0.205
110	54"	72"	6"	0.292
127	54"	72"	6"	0.296
134	36"	48"	6"	0.252
138	36"	48"	6"	0.279
151	36"	48"	6"	0.299
153	36"	48"	6"	0.292

30" Fill Pipe / Silt Ring				
Plate	Repad	Ring	Liner	
16	0.311	0.243	0.500	

Shell Outlet Pipe				
Top	North	Bottom	South	Repad
0.225	0.236	0.185	0.211	0.335

`16" Overflow Pipe				
Pipe	Pipe	Floor Pad		
0.199	0.200	0.400		

Sump Bottom Plate				
North	East	South	West	Center
0.242	0.242	0.238	0.241	0.238

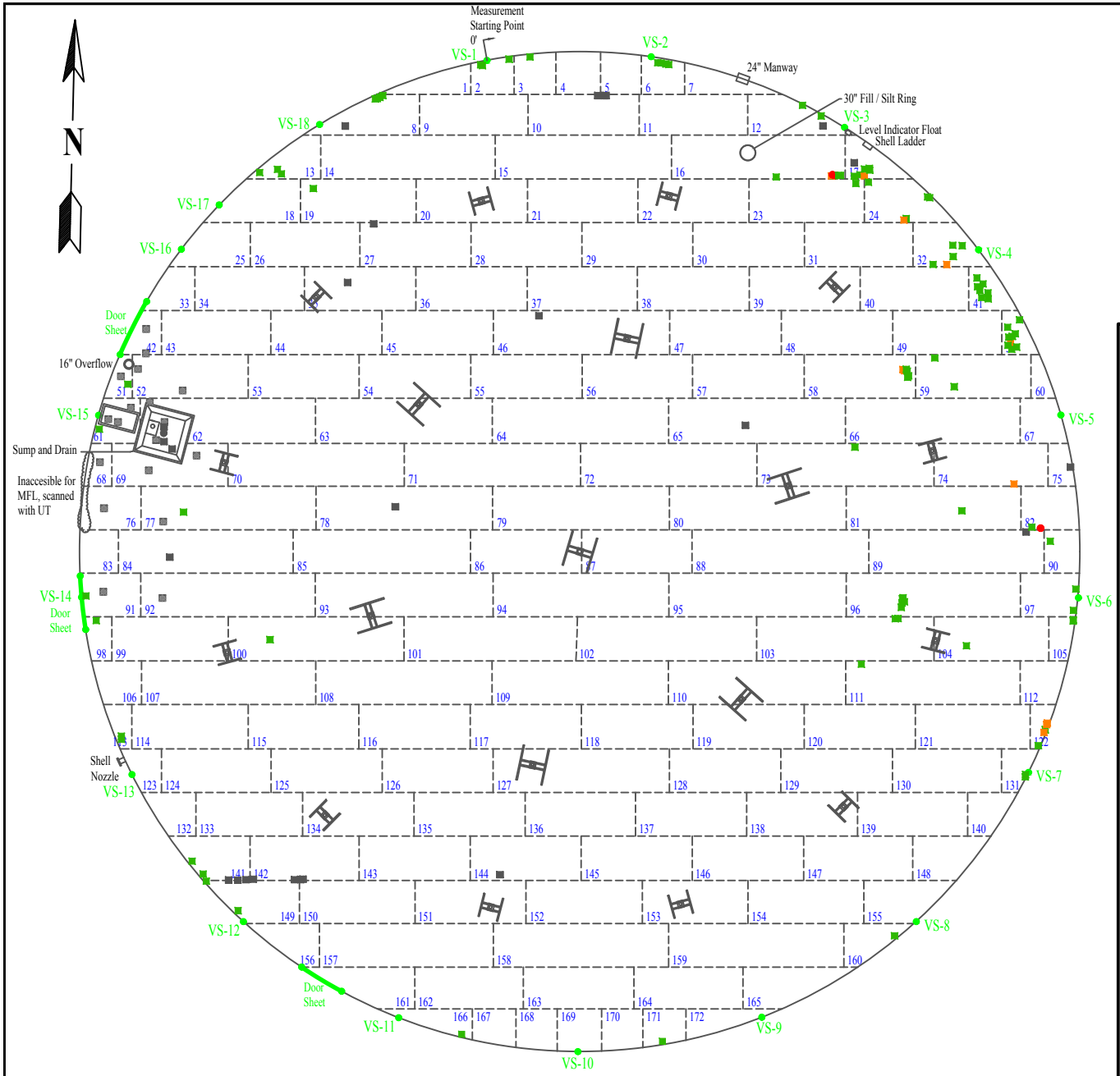
Sump Side Plate				
North	East	South	West	Repad
0.252	0.262	0.256	0.254	0.388

8" Sump Drain Pipe				
North	East	South	West	Repad
NA	NA	NA	NA	0.244

Bottom of Sump 12" Circukar Patch				
Top				
0.249				

Bottom Plate 61 44" x 79" Window Patch				
North	East	South	West	Repad
0.238	0.249	0.248	0.252	0.254

* - Center Column



LEGEND

- Y / -X / X / -Y - Deficiency Location
- ---- - Lap Welded Bottom Plates
- - Plate Numbers
- - Bottom Course Vertical Welds
- - Roof Support Columns
- - Current Fillet Welded Patch Plates
- - Product Side - Extraneous Welds, Pits, Gouges
- - Soil Side Pitting With Remaining Wall < 0.100'
- - Soil Side Pitting With Remaining Wall 0.101" to 0.140"
- - Soil Side Pitting With Remaining Wall 0.141" to 0.230"

Premier NDT Services, Inc.
2198 Bloomfield Hwy.
Farmington, NM 87401 Ph. (505) 325-1407

Project: Tank Bottom Inspection
ID: South Water Tank - 4 MG - 170' Diameter
Location: City of Grand Junction Water Treatment Plant

Bottom Deficiencies
Date: November 20, 2025
Drawing: 2

BOTTOM PLATE DEFICIENCIES - SOIL SIDE

BOTTOM PLATE NUMBER	REFERENCE CORNER	SOIL SIDE	CRITICAL ZONE	"X" DISTANCE	"Y" DISTANCE	REMAINING WALL THICKNESS	ESTIMATED CORROSION RATE / YEAR	ESTIMATED REMAINING LIFE (YEARS)	COMMENT
2	Bottom Right	☑	☐	- 0' - 11"	6' - 0"	0.190	0.0011	85.5	
		☑	☐	- 5' - 5"	4' - 9"	0.180	0.0012	65.1	
		☑	☐	-5' - 8"	4' - 10"	0.205	0.0008	133.0	
3	Bottom Right	☑	☐	- 4' - 3"	6' - 3"	0.230	0.0004	370.5	
6	Bottom Left	☑	☐	2' - 10"	5' - 5"	0.200	0.0009	114.0	
		☑	☐	3' - 3"	5' - 5"	0.200	0.0009	114.0	
		☑	☐	4' - 2"	5' - 2"	0.195	0.0010	98.5	
		☑	☐	4' - 5"	5' - 1"	0.200	0.0009	114.0	
8	Bottom Right	☑	☐	- 7' - 5"	6' - 1"	0.210	0.0007	156.8	
		☑	☐	- 7' - 2"	6' - 3"	0.200	0.0009	114.0	
		☑	☐	- 6' - 10"	6' - 5"	0.160	0.0016	38.0	
		☑	☐	- 6' - 4"	6' - 8"	0.185	0.0011	74.5	
12	Bottom Left	☑	☐	9' - 5"	5' - 3"	0.200	0.0009	114.0	
		☑	☐	12' - 7"	3' - 5"	0.200	0.0009	114.0	
13	Bottom Right	☑	☐	- 6' - 8"	0' - 9"	0.190	0.0011	85.5	
		☑	☐	- 7' - 4"	1' - 8"	0.190	0.0011	85.5	
		☑	☐	- 10' - 4"	1' - 0"	0.195	0.0010	98.5	
16	Bottom Left	☑	☐	17' - 10"	0' - 2"	0.180	0.0012	65.1	
		☑	☐	27' - 1"	0' - 5"	0.145	0.0018	24.4	
		☑	☐	27' - 3"	0' - 3"	0.125	0.0022	11.4	
		☑	☐	27' - 3"	0' - 3"	0.080	0.0030	0 Years	
		☑	☐	27' - 6"	0' - 2"	0.080	0.0030	0 Years	
		☑	☐	27' - 9"	0' - 1"	0.145	0.0018	24.4	
		☑	☐	27' - 9"	0' - 3"	0.150	0.0018	28.5	
		☑	☐	28' - 3"	0' - 4"	0.175	0.0013	57.0	
		☑	☐	28' - 6"	0' - 2"	0.175	0.0013	57.0	
17	Bottom Left	☑	☐	1' - 9"	0' - 4"	0.175	0.0013	57.0	
		☑	☐	2' - 3"	0' - 7"	0.175	0.0013	57.0	
		☑	☐	2' - 3"	0' - 4"	0.130	0.0021	14.3	
		☑	☐	2' - 2"	1' - 7"	0.180	0.0012	65.1	
		☑	☐	3' - 2"	1' - 4"	0.160	0.0016	38.0	
		☑	☐	3' - 0"	1' - 11"	0.100	0.0026	0.0	
19	Bottom Left	☑	☐	2' - 2"	5' - 9"	0.180	0.0012	65.1	
23	Bottom Left	☑	☐	18' - 1"	6' - 5"	0.170	0.0014	49.9	
24	Bottom Left	☑	☐	0' - 7"	6' - 9"	0.190	0.0011	85.5	
		☑	☐	6' - 8"	0' - 3"	0.135	0.0020	17.3	
		☑	☐	7' - 0"	0' - 7"	0.166	0.0015	44.8	

BOTTOM PLATE DEFICIENCIES - SOIL SIDE

24 con't.	**Bottom Left**	☑	☐	10' - 9"	4' - 4"	**0.160**	0.0016	38.0	
		☑	☐	11' - 2"	4' - 4"	**0.155**	0.0017	33.0	
32	**Bottom Left**	☑	☐	3' - 4"	0' - 4"	**0.160**	0.0016	38.0	
		☑	☐	5' - 11"	0' - 4"	**0.135**	**0.0020**	**17.3**	
		☑	☐	6' - 9"	1' - 9"	**0.175**	0.0013	57.0	
		☑	☐	6' - 10"	3' - 7"	**0.185**	0.0011	74.5	
		☑	☐	8' - 4"	3' - 6"	**0.190**	0.0011	85.5	
41	**Bottom Left**	☑	☐	1' - 4"	5' - 6"	**0.195**	0.0010	98.5	
		☑	☐	1' - 6"	3' - 11"	**0.195**	0.0010	98.5	
		☑	☐	1' - 11"	3' - 5"	**0.200**	0.0009	114.0	
		☑	☐	2' - 1"	2' - 1"	**0.190**	0.0011	85.5	
		☑	☐	2' - 6"	4' - 6"	**0.185**	0.0011	74.5	
		☑	☐	3' - 2"	3' - 0"	**0.185**	0.0011	74.5	
		☑	☐	3' - 1"	2' - 0"	**0.195**	0.0010	98.5	
50	**Bottom Left**	☑	☐	1' - 0"	4' - 7"	**0.175**	0.0013	57.0	
		☑	☐	1' - 1"	2' - 11"	**0.195**	0.0010	98.5	
		☑	☐	1' - 0"	1' - 5"	**0.200**	0.0009	114.0	
		☑	☐	1' - 6"	1' - 10"	**0.140**	**0.0019**	**20.7**	
		☑	☐	1' - 8"	0' - 11"	**0.200**	0.0009	114.0	
		☑	☐	1' - 10"	3' - 1"	**0.195**	0.0010	98.5	
		☑	☐	2' - 3"	3' - 5"	**0.180**	0.0012	65.1	
		☑	☐	2' - 6"	1' - 4"	**0.210**	0.0007	156.8	
		☑	☐	3' - 2"	5' - 11"	**0.220**	0.0005	228.0	
51	**Bottom Right**	☑	☐	- 0' - 9"	2' - 5"	**0.180**	0.0012	65.1	
58	**Bottom Left**	☑	☐	16' - 9"	4' - 10"	**0.110**	**0.0025**	**4.1**	
		☑	☐	16' - 11"	4' - 11"	**0.140**	**0.0019**	**20.7**	
		☑	☐	16' - 11"	4' - 9"	**0.120**	**0.0023**	**8.8**	
		☑	☐	17' - 1"	4' - 11"	**0.185**	0.0011	74.5	
		☑	☐	17' - 3"	4' - 8"	**0.180**	0.0012	65.1	
		☑	☐	17' - 6"	3' - 6"	**0.190**	0.0011	85.5	
		☑	☐	17' - 7"	3' - 9"	**0.190**	0.0011	85.5	
59	**Bottom Left**	☑	☐	3' - 3"	6' - 11"	**0.205**	0.0008	133.0	
		☑	☐	6' - 6"	1' - 11"	**0.185**	0.0011	74.5	
61	**Top Right**	☑	☐	- 7' - 2"	- 5' - 2"	**0.180**	0.0012	65.1	
73	**Bottom Left**	☑	☐	16' - 10"	6' - 6"	**0.205**	0.0008	133.0	
74	**Bottom Left**	☑	☐	13' - 10"	0' - 4"	**0.140**	**0.0019**	**20.7**	
77	**Bottom Left**	☑	☐	7' - 1"	3' - 0"	**0.205**	0.0008	133.0	
81	**Bottom Left**	☑	☐	19' - 7"	3' - 3"	**0.190**	0.0011	85.5	
82	**Bottom Left**	☑	☐	1' - 10"	0' - 5"	**0.165**	0.0015	43.6	

BOTTOM PLATE DEFICIENCIES - SOIL SIDE

82 con't.	Bottom Left	☑	☐	3' - 2"	0' - 2"	0.085	0.0029	0 Years	
90	Bottom Left	☑	☐	0' - 11"	5' - 5"	0.190	0.0011	85.5	
91	Top Right	☑	☐	- 9' -4"	3' - 11"	0.185	0.0011	74.5	
96	Bottom Left	☑	☐	9' - 8"	3' - 2"	0.185	0.0011	74.5	
		☑	☐	9' - 7"	2' - 7"	0.195	0.0010	98.5	
		☑	☐	9' - 11"	3' - 3"	0.205	0.0008	133.0	
		☑	☐	9' - 11"	2' - 6"	0.150	0.0018	28.5	
		☑	☐	9' - 4"	1' - 7"	0.210	0.0007	156.8	
97	Bottom Left	☑	☐	9' - 1"	1' - 0"	0.210	0.0007	156.8	
		☑	☐	9' - 9"	4' - 10"	0.155	0.0017	33.0	
98	Top Right	☑	☐	-2' - 8"	- 0' - 8"	0.210	0.0007	156.8	
100	Bottom Left	☑	☐	7' - 2"	3' - 7"	0.205	0.0008	133.0	
103	Bottom Left	☑	☐	23' - 5"	7' - 2"	0.190	0.0011	85.5	
		☑	☐	23' - 7"	7' - 1"	0.160	0.0016	38.0	
104	Bottom Left	☑	☐	5' - 6"	2' - 7"	0.195	0.0010	98.5	
105	Bottom Left	☑	☐	4' - 2"	6' - 11"	0.185	0.0011	74.5	
		☑	☐	4' - 4"	6' - 7"	0.158	0.0016	35.9	
111	Bottom Left	☑	☐	2' - 8"	6' - 11"	0.195	0.0010	98.5	
113	Top Right	☑	☐	- 1' - 9"	5' - 8"	0.205	0.0008	133.0	
		☑	☐	- 1' - 7"	6' - 1"	0.190	0.0011	85.5	
122	Top Left	☑	☐	3' - 2"	- 3' - 5"	0.120	0.0023	8.8	
		☑	☐	3' - 3"	- 3' - 3"	0.105	0.0025	2.0	
		☑	☐	2' - 6"	- 4' - 4"	0.200	0.0009	114.0	
		☑	☐	2' - 5"	- 4' - 7"	0.125	0.0022	11.4	
		☑	☐	1' - 5"	6' - 10"	0.215	0.0006	187.3	
131	Top Left	☑	☐	4' - 2"	- 4' - 5"	0.215	0.0006	187.3	
		☑	☐	4' - 2"	- 4' - 7"	0.205	0.0008	133.0	
141	Top Right	☑	☐	- 8' - 0"	- 6' - 7"	0.215	0.0006	187.3	
		☑	☐	- 9' - 10"	-4' - 1"	0.210	0.0007	156.8	
149	Top Right	☑	☐	- 10' - 7"	- 5' - 2"	0.210	0.0007	156.8	
		☑	☑	-16' - 1"	- 0' - 2"	0.144	0.0019	23.7	About 1" from shell.
160	Top Left	☑	☐	8' - 9"	- 2' - 4"	0.210	0.0007	156.8	
166	Top Right	☑	☐	- 1' - 10"	- 4' - 3"	0.205	0.0008	133.0	
171	Top Left	☑	☐	3' - 2"	-5' - 4"\	0.210	0.0007	156.8	

BOTTOM PLATE DEFICIENCIES - TOP SIDE

BOTTOM PLATE NUMBER	REFERENCE CORNER	TOP SIDE	CRITICAL ZONE	"X" DISTANCE	"Y" DISTANCE	DEPTH	COMMENT
8	Bottom Right	☑	☐	- 12' - 7"	1' - 9"	NA	Extraneous Weld
10	Bottom Left	☑	☐	11' - 9"	6' - 11"	NA	Extraneous Weld
		☑	☐	12' - 0"	6' - 11"	NA	Extraneous Weld
		☑	☐	12' - 2"	6' - 11"	NA	Extraneous Weld
12	Bottom Left	☑	☐	12' - 9"	1' - 7"	NA	Extraneous Weld
17	Bottom Left	☑	☐	1' - 6"	2' - 8"	NA	Suspected Inclusion
27	Bottom Left	☑	☐	2' - 4"	7' - 4"	NA	Extraneous Weld
35	Bottom Left	☑	☐	7' - 4"	4' - 9"	NA	Extraneous Weld
46	Bottom Left	☑	☐	7' - 9"	6' - 5"	NA	Dents, 17" in length
65	Bottom Left	☑	☐	13' - 0"	3' - 0"	NA	Extraneous Weld
75	Bottom Left	☑	☐	4' - 0"	3' - 7"	NA	Extraneous Weld
78	Bottom Left	☑	☐	13' - 7"	3' - 11"	NA	Extraneous Weld
84	Bottom Left	☑	☐	8' - 9"	2' - 6"	NA	Extraneous Weld, 6" in length
89	Bottom Left	☑	☐	26' - 8"	7' - 2"	NA	Gouge
141	Top Right	☑	☐	- 0' - 10"	- 7' - 3"		Extraneous Weld
		☑	☐	- 2' - 2"	- 7' - 4"		Extraneous Weld
		☑	☐	- 3' - 7"	- 7' - 3"		Extraneous Weld
142	Bottom Left	☑	☐	0' - 5"	0' - 2"		Extraneous Weld
		☑	☐	7' - 5"	0' - 1"		Extraneous Weld
		☑	☐	8' - 1"	0' - 1"		Extraneous Weld
		☑	☐	8' - 9"	0' - 0"		Extraneous Weld
144	Bottom Left	☑	☐	4' - 11"	0' - 11"		Extraneous Weld

TANK BOTTOM - MINIMUM REMAINING THICKNESS CALCULATION (AFTER REPAIRS - 1 YEAR RUN)

Client: City of Grand Junction **Location:** Grand Junction, Colorado

Tank: 170' Diameter **Date:** November 20, 2025

FORMULAS AND DEFINITIONS

MRT = (Minimum of RT_{bc} or RT_{ip}) - O_r (StP_r + UP_r)

MRT = minimum remaining thickness at the end of an interval O_r

O_r = In service interval of operation.

RT_{bc} = minimum remaining thickness from bottom side corrosion after repairs.

RT_{ip} = minimum remaining thickness from internal corrosion after repairs.

StP_r = maximum rate of corrosion not repaired on the top side. Is equal to zero if bottom is coated and the expected life of the coating is equal to or exceed O_r.

UP_r = maximum rate of corrosion on the bottom side (use minimum remaining thickness after repairs). Is equal to zero for areas that have effective cathodic protection.

VARIABLES

Actual

O_r =	**1.2**	Estimated Remaining Life Until MRT
RT_{bc} =	**0.103**	Remaining Wall Thickness at Soil Side Corrosion (After Repairs)
RT_{ip} =	**0.250**	Estimated Remaining Wall Thickness at Product Side Corrosion
StP_r =	**0.000**	Estimated Yearly Corrosion Rate (Product Side)
UP_r =	**0.00260**	Estimated Yearly Corrosion Rate (Soil Side)

RESULTS

MRT = 0.103

ESTIMATED REMAINING LIFE UNTIL MRT = 1.2 Years

NOTES:

1. MRT is based on an original bottom plate thickness of 0.250" with no proven cathodic protection to protect soil side of bottom.

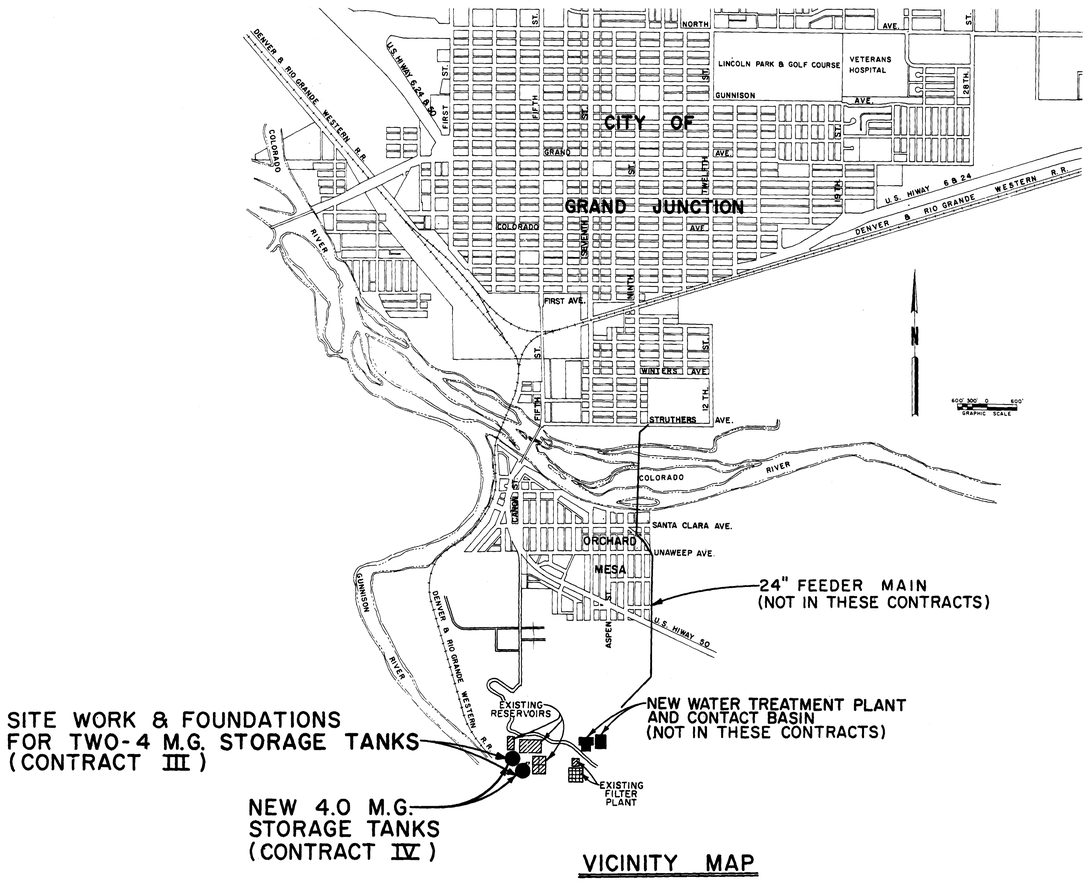
2. 1.2 years remaining life is based on repairing remaining wall thickness 0.103" and below.

Provided Tank Information

WATERWORKS IMPROVEMENTS
GRAND JUNCTION, COLORADO
1968

CONTRACT III - SITE WORK & FOUNDATIONS FOR TWO - 4 M.G. STORAGE TANKS

CONTRACT IV - TWO - 4 M.G. STORAGE TANKS



VICINITY MAP

LIST OF DRAWINGS

SHEET NO.	TITLE
CONTRACT III	
1.	LAYOUT AND SITE PLAN
2.	TANK SITE GRADING AND FOUNDATION DETAILS
CONTRACT IV	
3.	STORAGE TANKS - PLANS - SECTIONS - DETAILS

HENNINGSON, DURHAM & RICHARDSON
ENGINEERS • PLANNERS • CONSULTANTS
DENVER

WILLIAM L. BREDAR REGISTERED 2934 PROFESSIONAL ENGINEER STATE OF COLORADO

N

WASTE STOCKPILE AREA

METER HOUSE

TO GRAND JUNCTION

CITY PROPERTY LINE

ABANDONED 12" STEEL PIPE

WASTE AREA EXISTING RESERVOIR NO 1 (ABANDONED)

NEW PIPE (NOT THIS CONTRACT)

EXISTING RESERVOIR NO 2 (ABANDONED)

WASTE AREA

VALVE HOUSE

TELEPHONE LINE

NEW 36" PIPE (NOT IN CONTRACT III OR IV)

NEW OVERFLOW STRUCTURE (NOT IN CONTRACT III OR IV)

NEW RAW WATER PUMP STATION (NOT IN CONTRACT III OR IV)

EXISTING RESERVOIR NO 3 (15 MILLION GALLONS)

6" CURB ALL AROUND

12" TILE UNDERDRAIN

MANHOLE

20" INFLUENT

EXIST 20" RAW WATER BY PASS TO RESERVOIR

NEW CONTROL VALVE VAULT

NEW FLASH MIXER BASIN

NEW FILTER BUILDING

NEW CONTACT BASINS

POWER LINE

20" STEEL EFFLUENT

22 1/2°

36" PIPE

℄ TANKS

FOUNDATION FOR 4 MG. STEEL STORAGE TANK

℄ TANK S 1+51 5 W 1+33 7

NO. 1 (CONTRACT III)

NEW 36" PIPE

NEW TANK VALVE VAULT (NOT IN CONTRACT III OR IV)

EXISTING RESERVOIR NO 4 (8 MILLION GALLONS)

8" GATE VALVE & BOX

EXISTING SUMP

8" DRAIN

16" OVERFLOW & DRAIN (CONTRACT IV)

TO WASTE

FOUNDATION FOR 4 MG. STEEL STORAGE TANK

℄ TANK S 3+22 5 W 10+62 9

NO. 2 (CONTRACT III)

142'

53'

EXISTING FENCE TO BE REMOVED & RELOCATED (CONTRACT III) (SEE SPECS.)

SITE PLAN

SCALE IN FEET

100' 75' 50' 25' 0 100'

16" C I EFFLUENT

20" C I EFFLUENT

20" C I INFLUENT

RADIO TRANSMITTER BUILDING

2 1/2" UNDERGROUND

RADIO TOWER

SEPTIC TANK

4" C I SEWER

EXISTING DWELLING

SERVICE LINE

EXISTING FILTER HOUSE

TANK

FILTER

EXISTING RETAINING WALL

EXISTING SETTLING BASINS

24" C I SEWER

DITCH

DITCH CHECK

5 0+00 PRIMARY HORIZONTAL CONTROL CO-ORDINATE 0+00

PRIMARY BENCH FOR PLANT CONTROL EL 482680

WATERWORKS IMPROVEMENTS
GRAND JUNCTION, COLORADO
(CONTRACT - III)

SITE WORK & FOUNDATIONS FOR TWO - 4 M.G. STORAGE TANKS

LAYOUT & SITE PLAN

HENNINGSON, DURHAM & RICHARDSON, INC.
ENGINEERS • PLANNERS • CONSULTANTS
DENVER

JOB	DESIGNED	CHECKED	SHEET
730810	K.D.H.	K.D.H.	1
	DETAILED R.N.-M.W.W.	APPROVED DATE JAN. 1968	OF 3

NO.	DATE	DESCRIPTION REVISIONS	MADE	APPROV
3				
2				
1				

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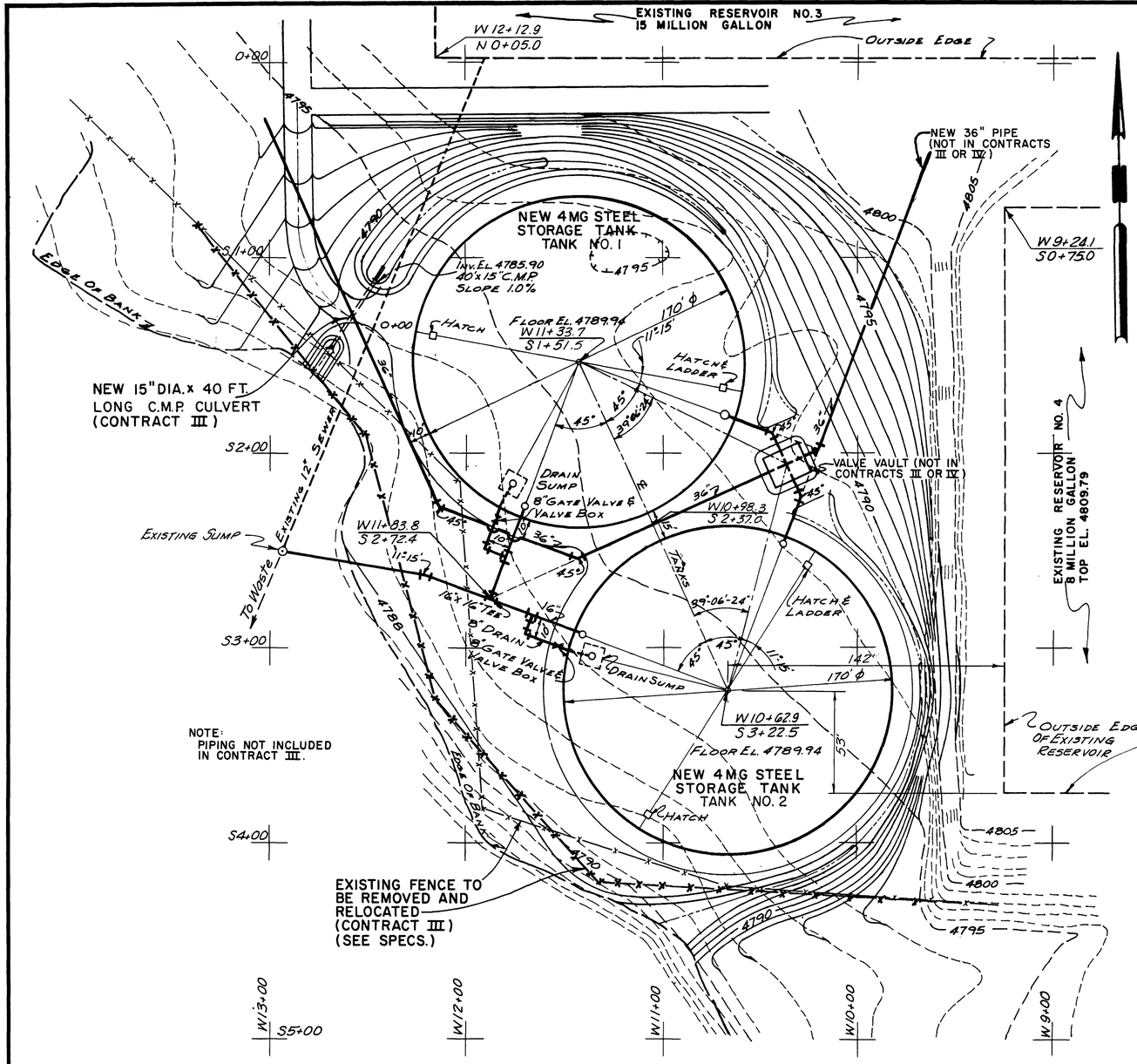
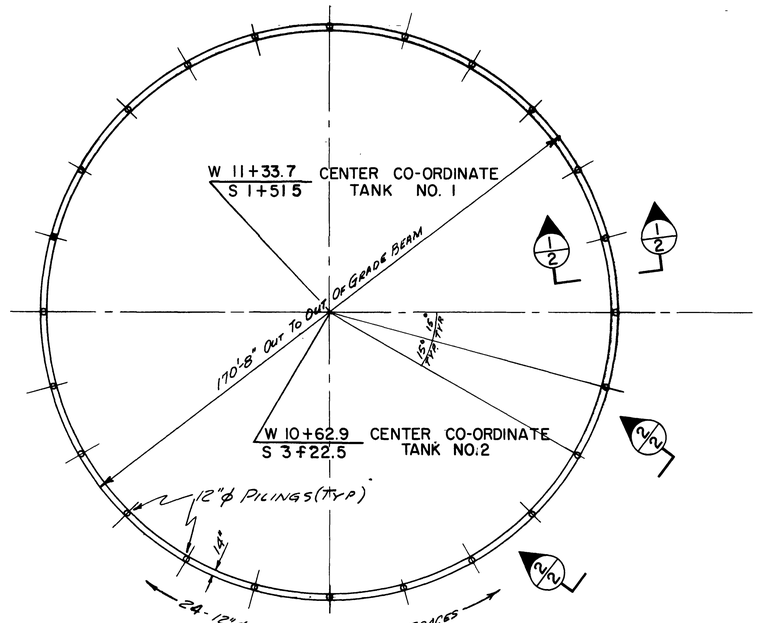


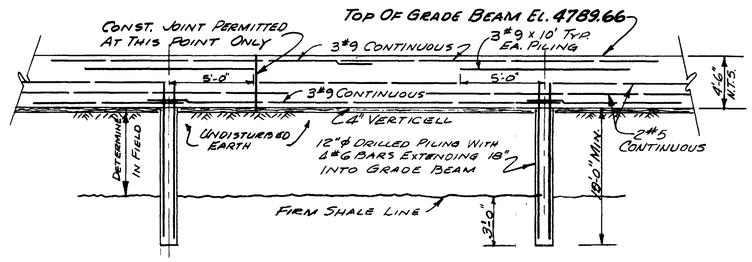
TANK SITE & GRADING PLAN

SCALE 1"= 30'



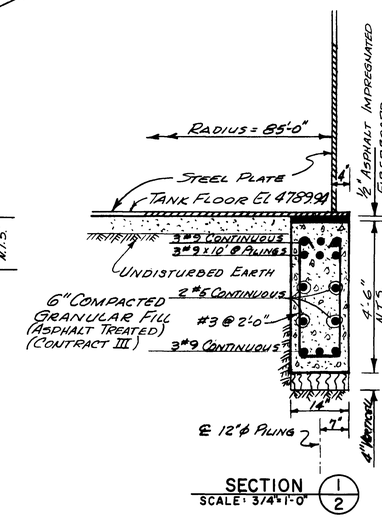
PLAN
TANK GRADE BEAM

SCALE: 1"=20'



SECTION (2/2)

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

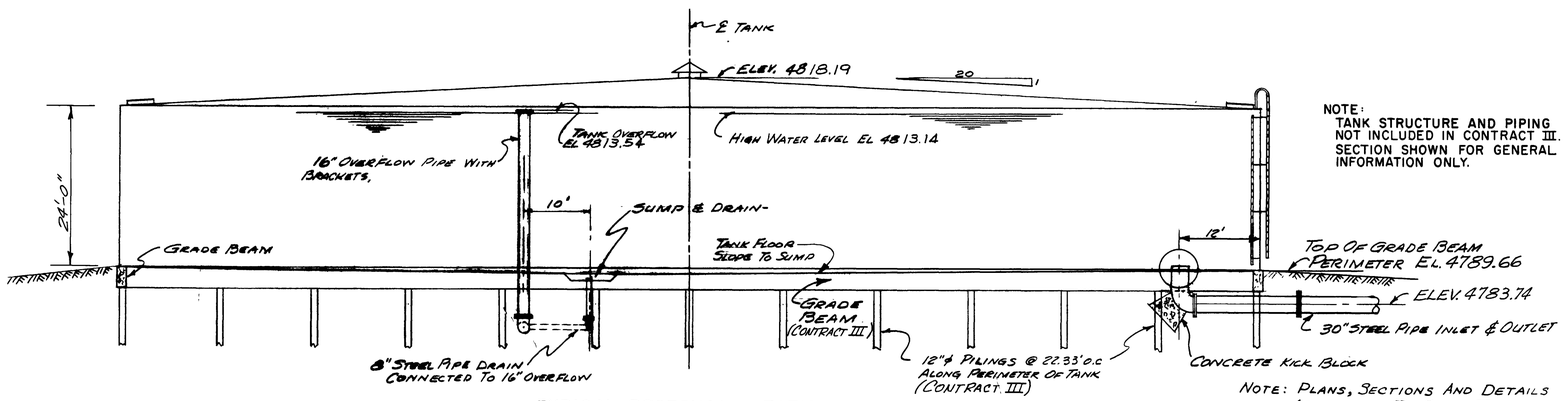


SECTION (1/2)

SCALE: 3/4"=1'-0"

LEGEND

- EXISTING YARD PIPING
- NEW STRUCTURES & ADDITIONS
- NEW YARD PIPING & VALVES
- 18 EXISTING CONTOURS
- 19 NEW CONTOURS



TYPICAL RESERVOIR SECTION

SCALE: 1"= 10'

NOTE:
TANK STRUCTURE AND PIPING NOT INCLUDED IN CONTRACT III. SECTION SHOWN FOR GENERAL INFORMATION ONLY.

NOTE: PLANS, SECTIONS AND DETAILS APPLICABLE TO BOTH TANKS.

DATE	DESCRIPTION REVISIONS	MADE	APPROV
3			
2			
1			

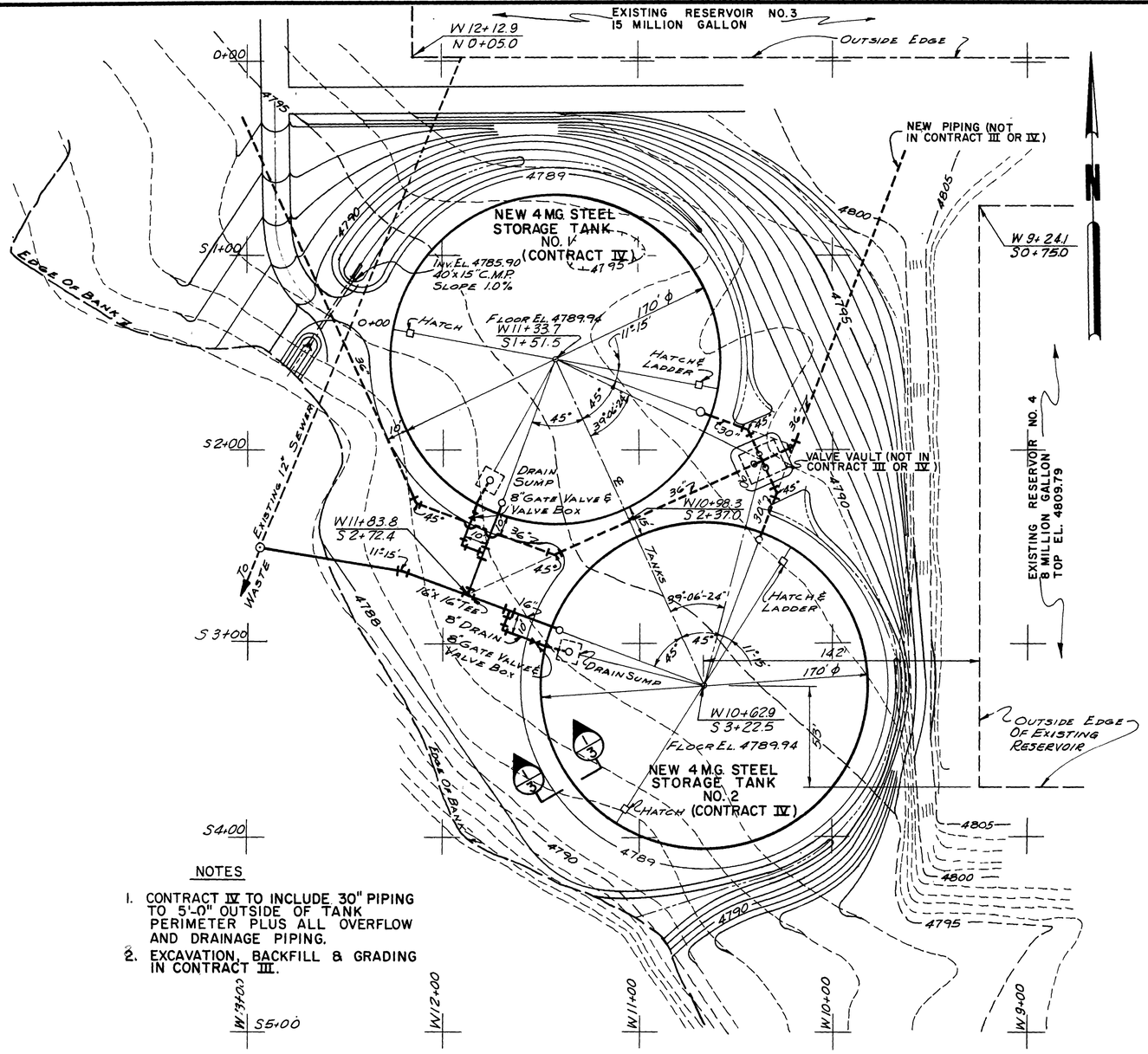
WATERWORKS IMPROVEMENTS
GRAND JUNCTION, COLORADO
(CONTRACT - III)

SITE WORK & FOUNDATIONS FOR TWO-4 M.G. STORAGE TANKS

TANK SITE GRADING & FOUNDATION DETAILS

HENNINGSON, DURHAM & RICHARDSON, INC.
ENGINEERS • PLANNERS • CONSULTANTS
DENVER, COLORADO

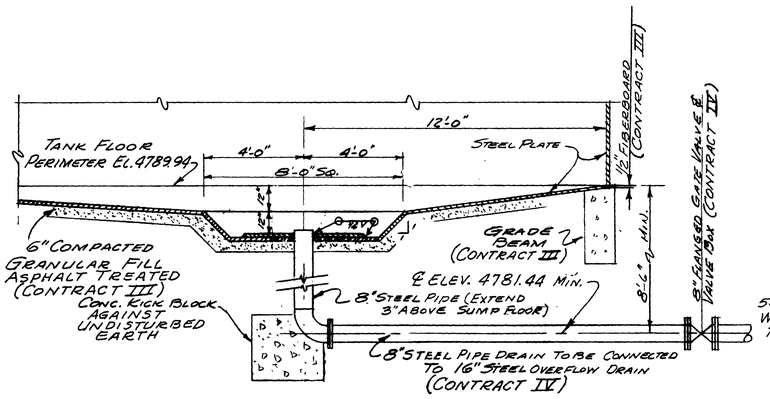
JOB	DESIGNED	CHECKED	SHEET
730810	EFR RER	KDH	2 OF 3
	DETAILED MWW - AT	APPROVED WLB	
		DATE JAN. 1968	



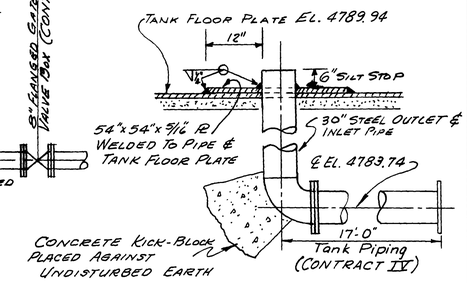
NOTES

1. CONTRACT IV TO INCLUDE 30" PIPING TO 5'-0" OUTSIDE OF TANK PERIMETER PLUS ALL OVERFLOW AND DRAINAGE PIPING.
2. EXCAVATION, BACKFILL & GRADING IN CONTRACT III.

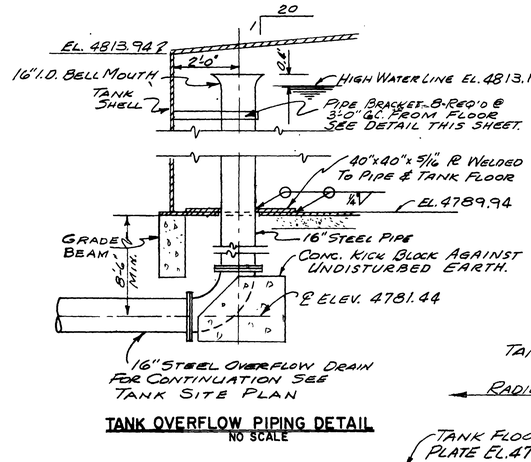
SITE PLAN - 2 - 4 M.G. STORAGE TANKS
SCALE: 1" = 30'



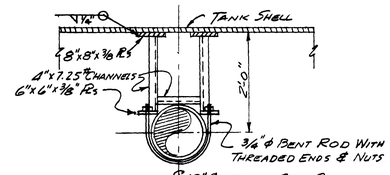
TANK SUMP & DRAIN DETAIL
SCALE: 3/8" = 1'-0"



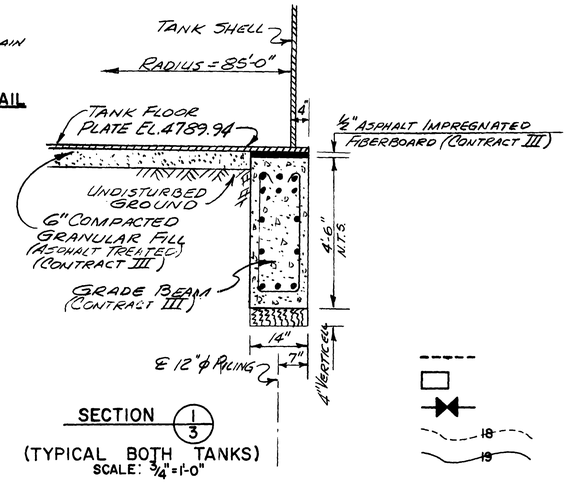
30" TANK INLET & OUTLET PIPING DETAIL
NO SCALE



TANK OVERFLOW PIPING DETAIL
NO SCALE



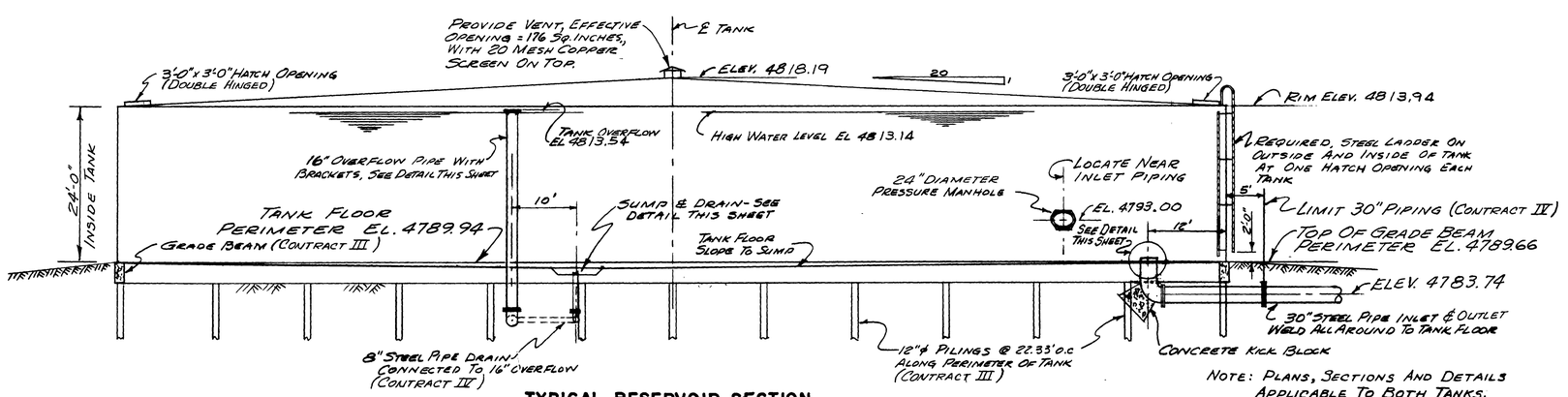
PIPE BRACKET DETAIL
NO SCALE



SECTION 1/3
(TYPICAL BOTH TANKS)
SCALE: 3/4" = 1'-0"

LEGEND

- EXISTING YARD PIPING
- NEW STRUCTURES & ADDITIONS
- NEW YARD PIPING & VALVES
- EXISTING CONTOURS
- NEW CONTOURS



NOTE: PLANS, SECTIONS AND DETAILS APPLICABLE TO BOTH TANKS.

TYPICAL RESERVOIR SECTION
SCALE: 1" = 10'

NO.	DATE	DESCRIPTION REVISIONS	MADE	APPROV
3				
2				
1				

WATERWORKS IMPROVEMENTS
GRAND JUNCTION, COLORADO
(CONTRACT - IV)

TWO - 4 M.G. STORAGE TANKS

STORAGE TANKS
PLANS - SECTIONS - DETAILS

HENNINGSON, DURHAM & RICHARDSON, INC.
ENGINEERS • PLANNERS • CONSULTANTS
DENVER, COLORADO

JOB 730810 | DESIGNED E.F.R. - R.E.R. | CHECKED K.D.H. | APPROVED W.L.B. | DETAILED A.T. - M.W.W. | DATE JAN. 1968 | SHEET 3 OF 3

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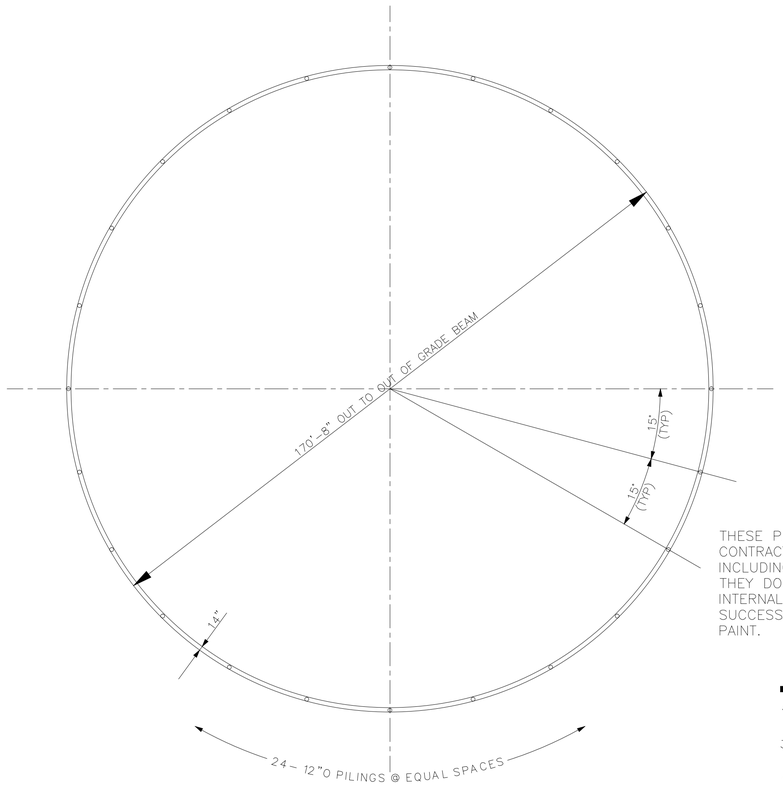
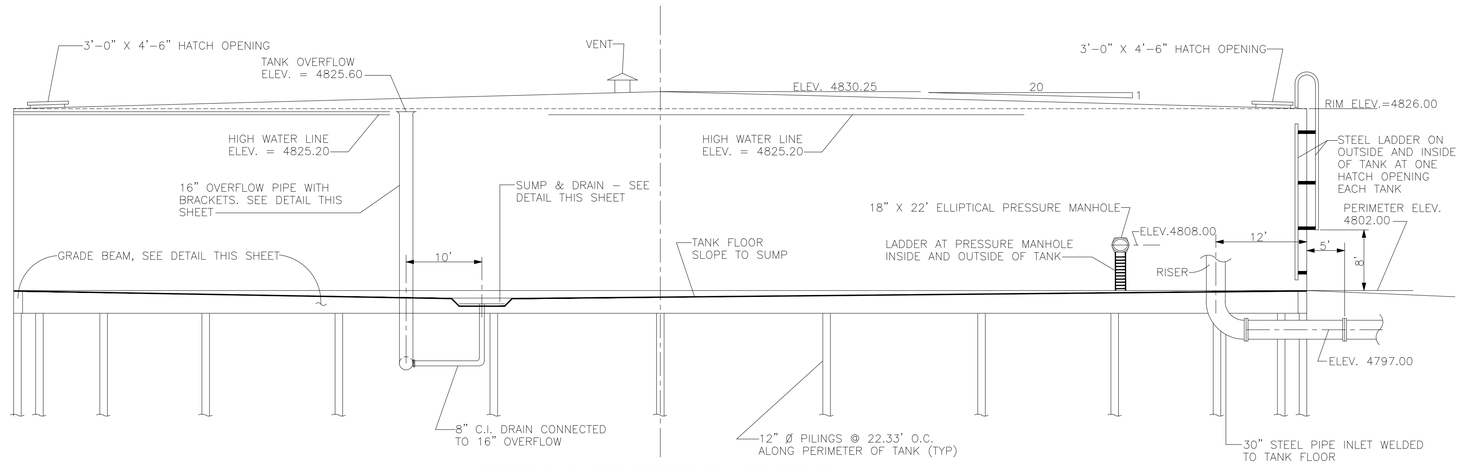
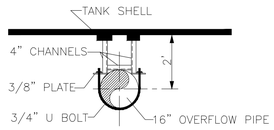


PLAN
TANK GRADE BEAM
1" = 20'



TYPICAL RESERVOIR SECTION
1" =10'

THESE PLANS ARE INTENDED TO PROVIDE THE PAINTING CONTRACTOR A GENERAL LAYOUT OF EACH TANK INCLUDING SOME OF THE INTERNAL STRUCTURES. THEY DO NOT DEPICT COLUMNS AND SOME OTHER INTERNAL STRUCTURES IN EACH TANK THAT THE SUCCESSFUL CONTRACTOR WILL BE RESPONSIBLE TO PAINT.



TANK BRACKET DETAIL
NO SCALE

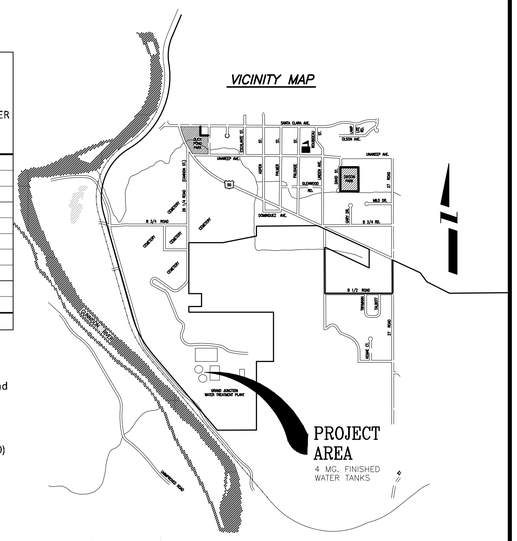
SUMMARY OF PAINTING AREAS - *FOR INFORMATION ONLY (See Notes Below)*

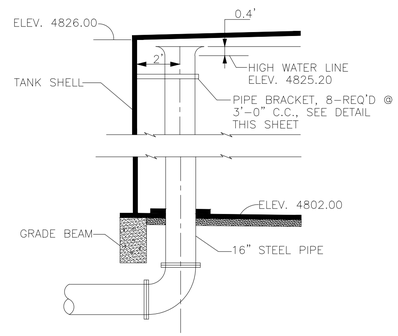
INTERIOR SURFACE AREA OF TANKS	SURFACE AREA (SF)	SURFACE AREA AT OR ABOVE THE WATER LINE (ASSUMED TOP 2 FEET OF WALL) (SF)	SURFACE AREA BELOW THE WATER LINE (SF)
SOUTH TANK, 4 million gallons, 180 ft diameter, 24 ft wall height at sides			
Interior Walls (24 ft height)	**12,818**	1,068	11,750
Interior Ceiling	**22,698**	22,698	
Interior Floor	**22,698**		22,698
NORTH TANK, 4 million gallons, 180 ft diameter, 24 ft wall height at sides			
Interior Walls (24 ft height)	**12,818**	1,068	11,750
Interior Ceiling	**22,698**	22,698	
Interior Floor	**22,698**		22,698
TOTAL SURFACE AREA FOR BOTH TANKS =	**116,428**	47,532	68,896

NOTES:

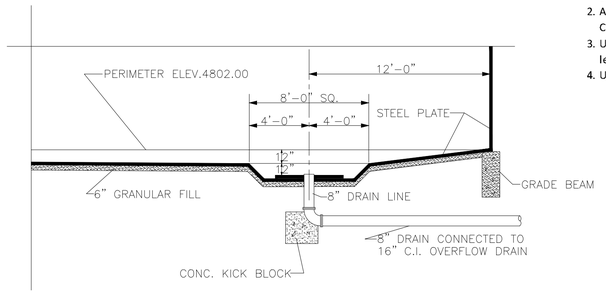
1. This table is being provided for information only, to provide additional clarity on what the specified scope of work includes. The work is to be paid as a Lump Sum pay item. It is not the intention of the ENGINEER to measure actual individual areas of each type of surface preparation and coverage.
2. Areas shown are FLAT SURFACE ONLY and do not include any interior columns, supports, or any other protruding or overlapping surfaces. Contractor is responsible for calculating actual surface areas.
3. Up to 10% of the surface area below the water line of the tanks may require additional surface preparation to the Near White Blast (SSPC-SP10) level in order to address localized areas of corrosion.
4. Up to 5% of the total surface area of the tanks may require Hand Tool Cleaning (SSPC-SP2) and/or Power Tool Cleaning (SSPC-SP3).

VICINITY MAP

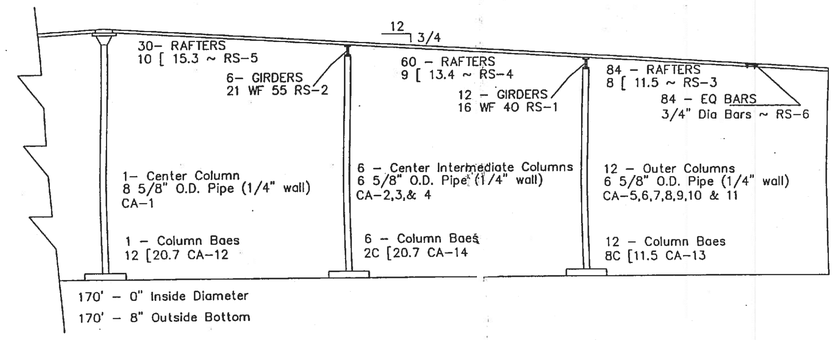




TANK OVERFLOW PIPING DETAIL
NO SCALE



TANK SUMP & DRAIN DETAIL
NO SCALE



INTERNAL TANK DIMENSIONS

ALL DRAWINGS AND NOTES APPLICABLE TO BOTH TANKS

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY JAH DATE 09/2013
DESIGNED BY DPJ DATE 09/2013
CHECKED BY DATE
APPROVED BY DATE

SCALE
AS SHOWN

CITY OF Grand Junction COLORADO

PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

APPENDIX A PLAN EXHIBIT
WATER TANK PAINTING PROJECT

1

INSPECTOR QUALIFICATIONS / CERTIFICATIONS

API INDIVIDUAL CERTIFICATION PROGRAMS

ANAB
ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17024
PERSONNEL CERTIFICATION BODY

verifies that

Michael D. Herbolsheimer

HAS MET THE ESTABLISHED AND PUBLISHED REQUIREMENTS FOR API CERTIFICATION AS AN

API 653 ABOVEGROUND STORAGE TANK INSPECTOR

IN ACCORDANCE WITH THE KNOWLEDGE DEFINED IN THE **API Standard 653**

CERTIFICATION NUMBER **1257**

ORIGINAL CERTIFICATION DATE	March 31, 1994
CURRENT CERTIFICATION DATE	March 31, 2024
EXPIRATION DATE	March 31, 2027

Director, Individual Certification Programs

API | ICP

07/01/16

MFE Enterprises, Inc.

THIS CERTIFIES THAT

Mike Herbolsheimer

HAS SUCCESSFULLY COMPLETED 40 HOURS OF TRAINING AND PASSED THE STANDARDS PER API 653 ANNEX G AND SNT TC-1A

Scanner Equipment	MFE Mark 3 / 1212 Mark 2
Plate Thickness (T)	.250 Inch
Coating Thickness (tc)	.005 Inch
% of Defects found	
t<.050	100% Passed
.050 in. < t < 1/2T	100% Passed
1/2T <t < 2/3T	100% Passed
General Corrosion	100% Passed

Critical Equipment Settings	Per Manufacturer
Function Test Check	Per Manufacturer
Hours of MFL Training	40
Final Written Test Grade	94%
Final Result	Passed

DYLAN DUKE, DIRECTOR OF TRAINING

BILL DUKE, PRESIDENT

Premier NDT Services, Inc
Inspection & Testing for the Energy Industry

NDE/NDT Certification Record

Employee:	**Michael D Herbolsheimer**	*Employee ID #*	**01088**
Testing Method:	**Ultrasonic Thickness + A Scan**	*Location:*	**Farmington, NM**
Certification Level:	**Level - II(a)**	*Certified:*	**2/15/2010**
		Expires:	**2/13/2028**

Formal Education Summary

(Formal Education attained and claimed for certification)

Education	Location	Date
AAS Degree - NDT Technology	Southwest Community College - Milford, NE	Jun-90

Technical Training Summary

(Documentation exists which verifies that the above individual meets or exceeds the qualification requirements, in accordance with the written practice of this company)

Course	Location	Date	Lab Hrs.	Hours
Ultrasonics I & II	SWCC - Milford, NE	6/12/1990	0	80
			Total Training Hours:	80

Work Experience Summary

(A summary of the qualifying work experience claimed for this method by the above individual, and verified by this company)

Employer	Position	From Date	To Date	Months
Premier NDT Services	L-II NDE Technician / Inspector	7/1/2005	Current	235
Comtech NDT Inc	L-II NDE Technician	1/1/2000	1/1/2005	60
			Total:	295

Examination Results

(Dates below indicate original exam and expire dates. Current expiration based on performance and recertification examination)

Exam Type	Exam #	Exam Alternative	Exam Date	Expire Date	Questions	Correct	Score
General	JA - 0000	N/A	2/15/2010	2/15/2013	30	26	86.7%
Specific	v02	N/A	2/13/2025	2/13/2028	20	20	100.0%
Practical	JA - 0000	N/A	2/15/2010	2/15/2013	100	100	100.0%
						Final Average Score:	95.6%

Eye Examination Record

(All tests must show current pass for this certification to be valid. A separate form may be attached to this certificate showing updated eye examination results, and would supersede the data below)

Exam Date	Corrective Lenses Required	Near Vision	Color Vision	Distance Vision	Expiration Date
8/8/2024	No	Pass	Pass	Pass	8/8/2025

Certification Statement

Based on the above summary of qualifications and examination results, I certify that the above named individual meets the minimum requirements for this method, in accordance with:

Premier NDT Services, Inc. - PNDT-QP-122 / SNT-TC-1A

Signature - Company Representative	President Title	2/13/2025 Date
Signature - Authorized NDT Level III	Richard Bodiford Print Name	2/13/2025 Date

Premier NDT Services, Inc
Inspection & Testing for the Energy Industry

Eye Examination Certificate

Employee: Mike Herbolsheimer **Expires:** 8/7/2026

Near Vision	Exam Type Used:	Jaeger 1	Corrective Lenses Required:	No	Result
Left Eye:	J1 @ 12"	Right Eye:	J1 @ 12"		PASS

Notes: Employee must exhibit ability to read Jaeger 1 letters in either a "uncorrected" or "corrected" Near Vision Test.

Color Vision	Exam Type Used:	Ishahara Color Test	Result
Score: 14 out of 14			PASS

Notes: Employee must exhibit ability to accurately identify 9 out of 14 plates

Distance Vision	Exam Type Used:	Snelling	Corrective Lenses Required:	No	Result
Left Eye:	20/25	Right Eye:	20/25		PASS

Notes:

Shades of Grey Vision Verification

Shades of grey vision verification verified using a chart of 25 different contrasting grey shaded panels. This chart was developed by Dr. Kolbl of FMTUVBV, Langernarcstr. 20 Essen Germany.

Score: 25 out of 25 Passing = 20 out of 25 Result: PASS

Above tests administered by: Sharon Luckey Date: 8/7/2025

Signature of Examiner: Sharon Luckey

Above testing performed in concordance with Premier NDT Services Quality Procedure for Vision Verification: PNDTS - QP -102

Form PNDT-QP-105 v03 "Eye Examination Certificate"