



VILLAGE OF THORNTON

Regular Board Meeting

September 03, 2024 at 7:15 PM

Village Hall – 115 East Margaret St

AGENDA

I. Call to Order

II. Approval of Committee & Regular Meeting Minutes; Vouchers

A. Vouchers

III. Public Comment

IV. Committee Topics

V. Treasurer Frye

VI. Engineer Kaminsky

A. Robinson Engineering final report regarding the water tower and ground reservoir painting and repairs

VII. Administrator Wiak

A. Quarry Blast Event - September 7, 2024

B. 1. Village of Thornton Police Department FY 25 Line Item Adjustment: Move \$8,037.08 from the Salaries-part time account 01-67-6005 to the Contractual services account 01-01-67-7025.

2.Village of Thornton Public Works Department FY25 Line Item Adjustment: Move \$7,000.00 from 02-74-7021 to 02-74-7023 to cover the cost of replacing meters

3. Village of Thornton Public Works Department FY25 Line Item Adjustment: Move \$20,000 from Contingency Fund to 02-74-7016 Maintenance - Sewers to cover emergency repairs to the lift station

C. Approval for Motorola Solutions to upgrade Village of Thornton's Police Department's CAD system for \$8,037.08 to share license information with DACRA.

D. Replace Public Works' 2004 Kubota lawn mower with a John Deere Z997R mower in the amount of \$22,845.00

E. Village Hall Digital Sign Replacement

-Roeda

-KDN

-OT Signs

-Signorama

VIII. Attorney Dillner

[A.](#) Nicor Agreement

IX. Acting President Pisarzewski

X. Executive Session

A. Fire Department Purchase - E-COM Radios

B. Police Union Contract

C. Personnel Matters

XI. Old & New Business

XII. Adjournment

VILLAGE OF THORNTON

Payment Approval Report - Fund Summary
Report dates: 8/20/2024-8/30/2024Page: 1
Aug 30, 2024 03:34PM

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
GENERAL FUND				
Total GENERAL FUND:				87,763.06
WATER FUND				
Total WATER FUND:				71,196.16
MOTOR FUEL TAX FUND				
Total MOTOR FUEL TAX FUND:				6,042.00
CAPITAL PROJECTS FUND				
Total CAPITAL PROJECTS FUND:				8,990.00
WATER FUND CAPITAL IMPROVEMENT				
Total WATER FUND CAPITAL IMPROVEMENT:				315,931.25
SOS GRANT				
Total SOS GRANT:				130,236.84
Grand Totals:				620,159.31

VILLAGE OF THORNTON

Payment Approval Report
Report dates: 8/20/2024-8/30/2024Page: 1
Aug 30, 2024 03:31PM

Report Criteria:

Detail report.
Invoices with totals above \$0.00 included.
Only unpaid invoices included.

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
AIR ONE EQUIPMENT				
210476	08/14/2024	AIR PACK WAIST BELT	01-69-8064 Equipment-dept	267.00
Total AIR ONE EQUIPMENT:				267.00
ATSI				
6263	08/09/2024	COMPUTER SERVICE	01-50-8007 Computer Support	49.00
6266	08/17/2024	COMPUTER SERVICE	01-50-8007 Computer Support	49.92
6270	08/22/2024	COMPUTER SERVICE	01-50-8007 Computer Support	370.22
6272	08/28/2024	COMPUTER SERVICE	01-50-8007 Computer Support	149.76
Total ATSI:				618.90
BLUECROSS BLUESHIELD OF ILLINOIS				
8152024	08/15/2024	HEALTH INSURANCE	01-01-2231 EFC contributions payable	43,919.26
Total BLUECROSS BLUESHIELD OF ILLINOIS:				43,919.26
BOSS DOOR COMPANY, INC.				
7286	08/27/2024	PW GARGE DOORS	01-63-7001 Maint-building	3,060.00
7287	04/26/2024	NEW FRONT ENTRANCE	08-61-8066 Building Improvements	8,990.00
7322	08/27/2024	FD GARAGE DOOR REPAIR	01-63-7001 Maint-building	155.00
Total BOSS DOOR COMPANY, INC.:				12,205.00
BOUND TREE MEDICAL LLC				
85446460	08/09/2024	EMS	01-69-8014 Supplies-operating	79.58
Total BOUND TREE MEDICAL LLC:				79.58
CALUMET CITY PLUMBING				
64111	08/12/2024	STREETLIGHT LINE LOCATION	04-80-7024 Maint - Street Lights	2,782.00
641112	08/12/2024	WATER SERVICE REPAIR	02-74-7021 Maint-water system	3,400.00
Total CALUMET CITY PLUMBING:				6,182.00
CHICAGO PD BUREAU OF COUNTERTERRORISM				
23-BOC-142	08/21/2024	CMATI PUSH TO TALK PHONES	15-68-8064 Equipment Purchases	708.85
Total CHICAGO PD BUREAU OF COUNTERTERRORISM:				708.85
CHICAGO POLICE DEPARTMENT				
CMATI JULY 2	08/16/2024	CMATI OT REIMBURSEMENT JULY 24	15-68-7077 Contractual Overtime - Inve	57,586.89
Total CHICAGO POLICE DEPARTMENT:				57,586.89
CITY OF BURBANK				
TUDRYN 7/5 T	08/15/2024	TUDRYN PAYROLL REIMBURSEMENT 7/5 TO	15-67-7075 ISATT Sworn Law Enforcem	13,347.81
TUDRYN 7/5 T	08/15/2024	TUDRYN OT REIMBURSEMENT 7/5 TO 7/19	15-67-7077 ISATT Sworn Law Enforce	617.57
Total CITY OF BURBANK:				13,965.38

VILLAGE OF THORNTON

Payment Approval Report
Report dates: 8/20/2024-8/30/2024

Page: 2
Aug 30, 2024 03:31PM

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
Civic plus LLC				
305926	08/25/2024	WEB SUBSCRIPTION	01-50-8007 Computer Support	3,586.28
Total Civic plus LLC:				3,586.28
COM ED				
0100-924	08/26/2024	9572800100	01-63-7041 Electricity-hst s-vbldgs	45.84
06000-824	08/26/2024	2462906000	02-74-7041 Electricity-pumps	56.92
17000-1124	08/26/2024	6637317000	01-63-7044 Street light electricity	2,987.64
24000-824	08/26/2024	8992724000	01-63-7044 Street light electricity	50.71
42000-724	08/26/2024	5720942000	01-63-7041 Electricity-hst s-vbldgs	31.66
5000-824	08/26/2024	3224055000	01-63-7044 Street light electricity	22.40
555000-824	08/26/2024	9544555000	01-63-7044 Street light electricity	22.40
76000-724	08/26/2024	3353476000	02-74-7041 Electricity-pumps	673.29
93000-724	08/26/2024	3249793000	01-63-7044 Street light electricity	120.64
Total COM ED:				4,011.50
COMMAND LLC				
1434	08/26/2024	AERIAL TEST	01-69-7025 Contracted services	1,500.00
Total COMMAND LLC:				1,500.00
COOK COUNTY STATES ATTORNEYS OFFICE				
KEATING 6.30	08/16/2024	KEATING PAYROLL REIMBURSEMENT 6.30 TO	15-67-7075 ISATT Sworn Law Enforcem	9,141.32
KEATING 6.30	08/16/2024	KEATING OT REIMBURSEMENT 6.30 TO 7.27	15-67-7077 ISATT Sworn Law Enforce	1,561.64
ZAPATA 6.30 T	08/16/2024	ZAPATA PAYROLL REIMBURSEMENT 6.30 TO 7	15-67-7075 ISATT Sworn Law Enforcem	9,880.84
ZAPATA 6.30 T	08/16/2024	ZAPATA OT REIMBURSEMENT 6.30 TO 7.27	15-67-7077 ISATT Sworn Law Enforce	1,201.42
Total COOK COUNTY STATES ATTORNEYS OFFICE:				21,785.22
DEARBORN LIFE INSURANCE COMPANY				
8122024	08/12/2024	BCBS LIFE INS. PREMIUM	01-01-2231 EFC contributions payable	1,485.95
Total DEARBORN LIFE INSURANCE COMPANY:				1,485.95
EAGLE UNIFORM CO., INC.				
11985-3	08/29/2024	UNIFORMS	01-67-8013 Uniforms	274.00
Total EAGLE UNIFORM CO., INC.:				274.00
ERA VALDIVIA CONTRACTORS INC				
22RO568.01	06/04/2024	WATER TOWER PAINT	14-74-8063 Infrastructure Impr. Water	311,986.25
Total ERA VALDIVIA CONTRACTORS INC:				311,986.25
ERIC WILEY				
000797	08/29/2024	UNIFORM REIMBURSEMENT	01-67-8013 Uniforms	57.25
Total ERIC WILEY:				57.25
FLOOD BROTHERS DISPOSAL CO.				
8-2024	08/26/2024	GARBAGE	01-63-7035 Garbage disposal	20,756.10
Total FLOOD BROTHERS DISPOSAL CO.:				20,756.10

VILLAGE OF THORNTON

Payment Approval Report
Report dates: 8/20/2024-8/30/2024Page: 3
Aug 30, 2024 03:31PM

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
GDL AUTO BODY INC.				
15063	08/12/2024	BRAKES/PADS/ROTORS	15-67-7002 Vehicle Maintenance/Fuel	425.31
15136	08/26/2024	EXHAUST REPLACEMENT	15-67-7002 Vehicle Maintenance/Fuel	332.24
Total GDL AUTO BODY INC.:				757.55
HEALTH ENDEAVORS, SC				
9635	08/12/2024	MEDICAL EVALUATION	01-69-7025 Contracted services	2,885.00
Total HEALTH ENDEAVORS, SC:				2,885.00
HOME DEPOT CREDIT SERVICES				
2523776 / 7624	08/26/2024	2523776	01-63-8014 Supplies-operating	129.71
2523776 / 7624	08/26/2024	7624402	02-74-8015 Supplies-Operating SEWER	67.21
Total HOME DEPOT CREDIT SERVICES:				196.92
KRUNCH TIME AUTO				
9968	08/26/2024	DC CAR OIL CHANGE	01-69-7002 Maint-vehicles	39.53
Total KRUNCH TIME AUTO:				39.53
MENARDS - HOMEWOOD				
70055	08/26/2024	PW SUPPLIES	02-74-8014 Supplies-operating Water	62.96
Total MENARDS - HOMEWOOD:				62.96
METROPOLITAN INDUSTRIES, INC.				
inv065142	08/15/2024	SCADA CLOUD SERVICES	02-74-7040 Telephone-water	160.00
inv065214	08/22/2024	SEWER LIFT STATION	02-74-7016 Maintenance Sewers	17,761.00
Total METROPOLITAN INDUSTRIES, INC.:				17,921.00
MICHELLE DUST				
112740818827	08/21/2024	UNIFORM REIMBURSEMENT	01-67-8013 Uniforms	451.02
Total MICHELLE DUST:				451.02
MULCH MASTERS				
859	08/26/2024	TREE REMOVAL	04-80-7009 Maint. - Tree Removal	1,285.00
860	08/26/2024	TREE REMOVAL	04-80-7009 Maint. - Tree Removal	1,975.00
Total MULCH MASTERS:				3,260.00
NICOR				
10006-724	08/26/2024	91066610006	01-63-7042 Heat	286.24
10008-7	08/26/2024	55556610008	01-63-7042 Heat	103.79
77483-8	08/26/2024	77411777483	01-63-7042 Heat	183.90
Total NICOR:				573.93
PERFECT POTTY, INC.				
29793	08/21/2024	PORTABLE RESTROOM	01-61-7025 Contract services	250.00
Total PERFECT POTTY, INC.:				250.00

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
ROBINSON ENGINEERING LTD.				
24080014	08/06/2024	WATER SYSTEM IMPROVEMENTS	14-74-8063 Infrastructure Impr. Water	3,945.00
24080499	08/28/2024	CDBG IMPROVEMENTS	01-50-7076 Engineering/Architect	1,773.00
24080503	08/28/2024	MISC. ENGINEERING	01-50-7076 Engineering/Architect	395.00
Total ROBINSON ENGINEERING LTD.:				6,113.00
S&J INDUSTRIAL SUPPLY CORP.				
10629	08/22/2024	01638014	01-63-8014 Supplies-operating	539.93
Total S&J INDUSTRIAL SUPPLY CORP.:				539.93
SECRETARY OF STATE				
08272024	08/27/2024	TITLE/REGISTRATION 4 CMAT1 VEHICLES	15-68-8064 Equipment Purchases	1,264.00
Total SECRETARY OF STATE:				1,264.00
SECRETARY OF STATE POLICE				
AUGUST 1-15	08/27/2024	SOS OT AUGUST 1-15 2024	15-67-7077 ISATT Sworn Law Enforce	6,419.46
ISATT JULY 1-	08/16/2024	ISATT OT JULY 1-15	15-67-7077 ISATT Sworn Law Enforce	4,076.75
ISATT OT JUL	08/16/2024	ISATT OT JULY 16-31	15-67-7077 ISATT Sworn Law Enforce	6,192.36
Total SECRETARY OF STATE POLICE:				16,688.57
SECURITAS TECHNOLOGY CORPORATION				
6004339181	08/01/2024	MAINTENANCE CHARGES/MONITORING CH	01-50-7040 Telephone - general	130.68
6004349708	08/01/2024	MAINTENANCE CHARGES/MONITORING CH	01-50-7040 Telephone - general	71.46
6004349770	08/01/2024	MAINTENANCE CHARGES/MONITORING CH	01-50-7040 Telephone - general	129.21
6004349900	08/01/2024	MAINTENANCE CHARGES/MONITORING CH	01-50-7040 Telephone - general	67.41
Total SECURITAS TECHNOLOGY CORPORATION:				398.76
SHARLEE DUNLOP				
20240831	08/27/2024	MILEAGE REIMBURSE	01-61-7031 Motor Fuel	220.09
Total SHARLEE DUNLOP:				220.09
SHOREWOOD HOME AND AUTO, INC				
02-433016	08/15/2024	MOWER PARTS	01-63-7018 Maint-equipment	36.99
Total SHOREWOOD HOME AND AUTO, INC:				36.99
T & T BUSINESS SYSTEMS				
119242	08/07/2024	COPIER RENTAL-@ V.H.	01-51-7025 Contracted Service	230.08
Total T & T BUSINESS SYSTEMS:				230.08
T-MOBILE USA INC.				
9576560969	08/13/2024	GPS LOCATE	15-67-7025 Contractual services	115.00
Total T-MOBILE USA INC.:				115.00
TRANSPORT FINISHES, INC.				
31572	08/26/2024	CODE CAR DECALS	01-69-7025 Contracted services	473.78
Total TRANSPORT FINISHES, INC.:				473.78

VILLAGE OF THORNTON

Payment Approval Report
Report dates: 8/20/2024-8/30/2024Page: 5
Aug 30, 2024 03:31PM

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
TRUGREEN CHEMLAWN				
198243189	08/12/2024	LAWN SERVICE REC CENTER	01-63-7008 Maint-grounds	325.63
Total TRUGREEN CHEMLAWN:				325.63
VILLAGE OF SOUTH HOLLAND				
08.21.2024	08/21/2024	WATER PURCHASE	02-74-7043 Water purchases	48,448.13
Total VILLAGE OF SOUTH HOLLAND:				48,448.13
VILLAGE OF WORTH				
MEISTER 7.9 T	08/19/2024	MEISTER PAYROLL REIMBURSEMENT 7/9 TO	15-67-7075 ISATT Sworn Law Enforcem	16,808.49
MEISTER 7.9 T	08/19/2024	MEISTER OT REIMBURSEMENT 7/9 TO 7/23	15-67-7077 ISATT Sworn Law Enforce	504.45
Total VILLAGE OF WORTH:				17,312.94
WENTWORTH TIRE				
30060904	08/26/2024	OIL CHANGE	15-67-7002 Vehicle Maintenance/Fuel	52.44
Total WENTWORTH TIRE:				52.44
WEST SIDE TRACTOR SALES				
s42875	08/19/2024	BACK-HOE REPAIRS	02-74-7018 Maint-equipment	66.65
Total WEST SIDE TRACTOR SALES:				66.65
Grand Totals:				619,659.31

Report Criteria:

Detail report.

Invoices with totals above \$0.00 included.

Only unpaid invoices included.

VILLAGE OF THORNTON

Payment Approval Report - Prepaid Checks

Page: 1

Report dates: 8/20/2024-8/30/2024

Aug 30, 2024 03:37PM

Report Criteria:

Detail report.

Invoices with totals above \$0.00 included.

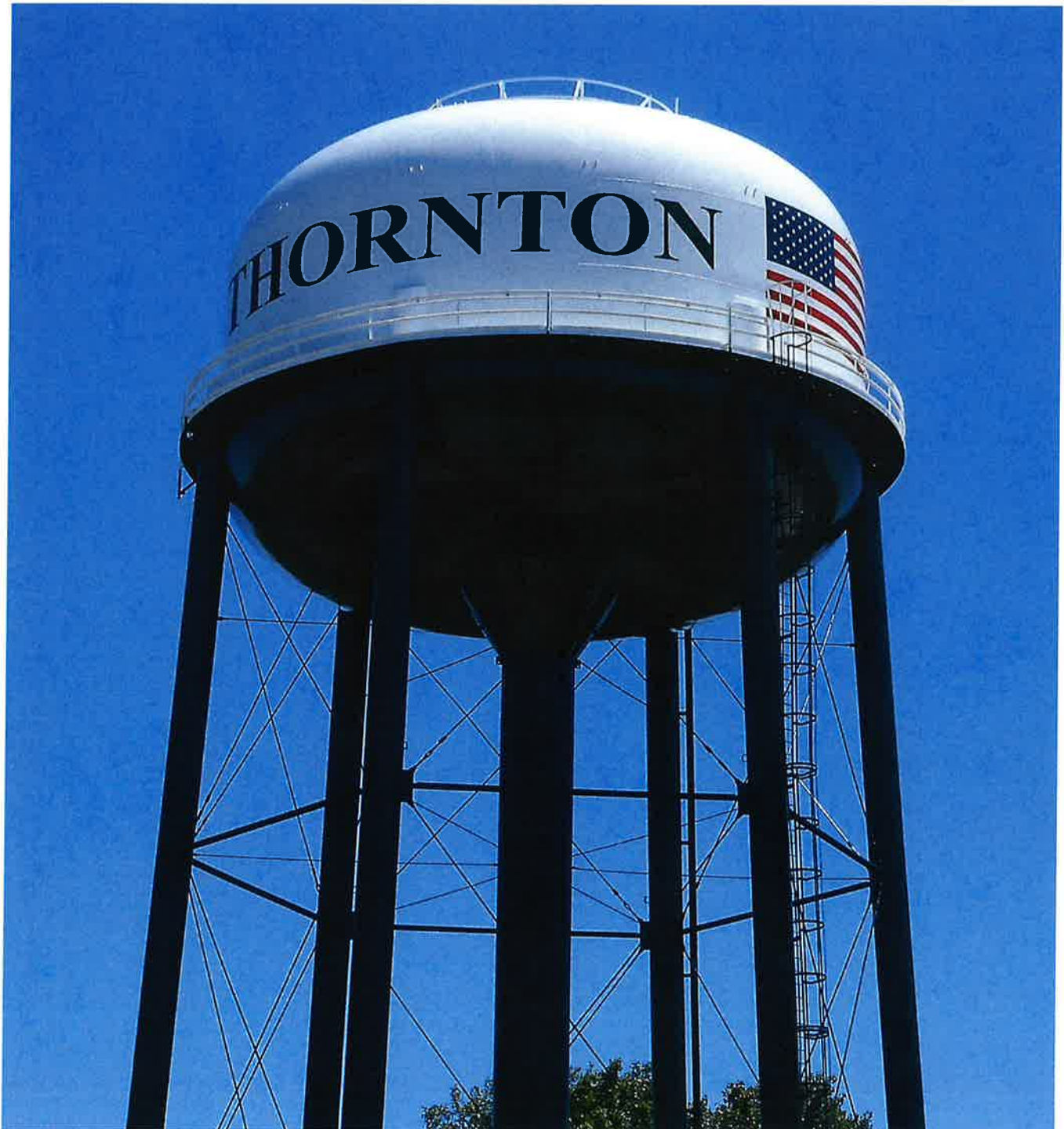
Only paid invoices included.

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
Elizabeth Misch				
08222024	08/22/2024	WATER METER READING	02-74-7075 Professional services	500.00
Total Elizabeth Misch:				500.00
Grand Totals:				500.00

Village of Thornton
Cash Position
August 29, 2024

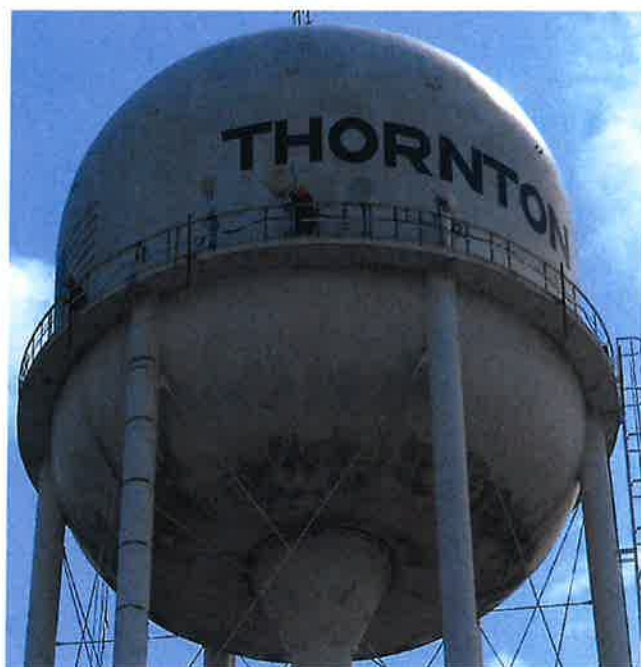
Balance per books		
01.01.0001 General Cash	\$	2,129,305.07
02.01.0001 Water		(330,255.85)
04.01.0001 Motor Fuel Tax		126,771.93
05.01.0001 Grants		(7,130.78)
06.01.0001 DUI/Vehicle Fund		1,437.45
08.01.0001 Capital Projects		342,739.55
09.01.0001 Bond Debt Service		155,961.34
11.01.0001 Downtown TIF #3		13,793.11
12.01.0001 TIF Downtown		50,467.34
13.01.0001 TIF Blackstone		93,366.43
14.01.0001 Water Capital Improvement		400,820.67
15.01.0010 SOS Grant		2,471,514.01
15.01.0002 SOS Debit account		25,000.00
16.01.0001 Rebuild Illinois		48,657.44
Adjusted Book	\$	<u><u>5,522,447.71</u></u>

VILLAGE OF THORNTON
400,000-GALLON ELEVATED LEG TANK
REPAINTING PROJECT
REL PROJECT # 22-R0568.04

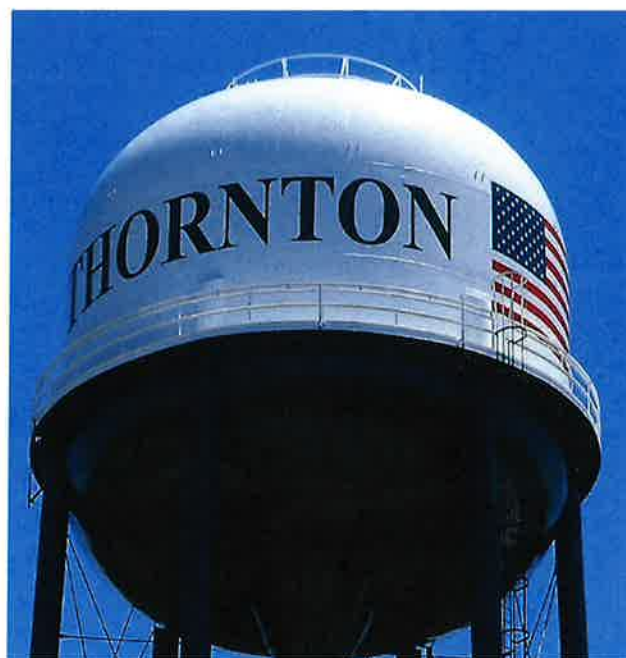


PROJECT OVERVIEW

Village of Thornton owns, operates, and maintains a 400,000-gallon elevated leg tank located at 321 East Harriet Street, Thornton IL. 60476. The existing coating system on the exterior of the tank was beyond its useful life with chalking, mildew buildup & areas of corrosion present. The interior wet portion of the tower is beyond its designed life exhibiting areas of local corrosion. The project work included waterjet cleaning the exterior portion of the tower to SSPC-SPWJ3 (thorough cleaning), power tool cleaning areas of corrosion to bare metal (SSPC-SP11) followed by the application of a two (2) coat macropoxy sealer, spot primer, then followed by a two (2) coat high solids polyurethane intermediate & a high solids polyurethane topcoat. The interior wet portion of the tower was abrasive blasted to a near white metal finish (SSPC-SP10) followed by a two (2) coat zinc primer, followed by a 100% solids low VOC epoxy topcoat system. This project also included repairs and replacement of tank equipment including; a cathodic protection (CP) system upgrade, installation of a new frost-free roof vent, new overflow flap gate and screen, seal welding of cathodic protection covers, raised catwalk handrail height, install roof corral, repair interior stiffener ring and install new interior wet access ladder.



BEFORE TANK REPAINT



AFTER TANK REPAINT

The following sections detail the Thornton elevated leg tank project.

TANK EXTERIOR

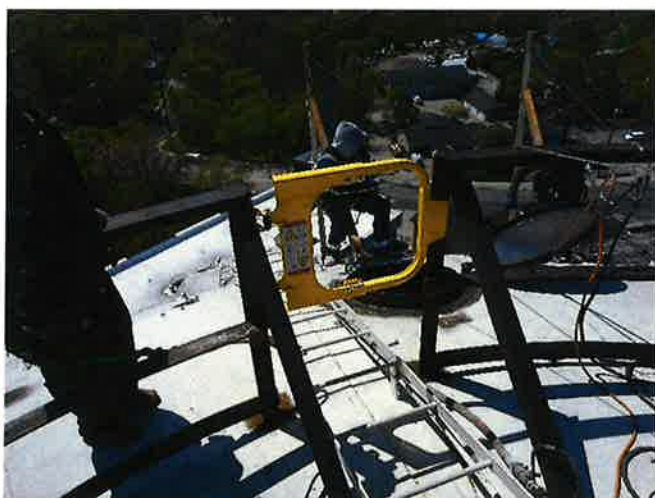
The tower exterior portion of the project started with raising the catwalk railing system to 42" height, fabricating and installing the roof corral, and installing a new overflow pipe flap gate to prevent contamination.



ROOF CORRAL FABRICATION IN PROCESS



ROOF CORRAL FABRICATION COMPLETED



ROOF CORRAL FABRICATION COMPLETED



CATWALK HANDRAIL RAISED TO 42"



A full containment system was constructed to prevent discharge of debris into the environment. The tank exterior was waterjet cleaned to SSPC-SPWJ3 (thorough cleaning) in order to remove mildew, dirt/debris, and expose any areas of corrosion that had started to form. After the cleaning process was complete any areas of corrosion were power tool cleaned to bare metal (SSPC-SP11), followed by an application of a high solids epoxy mastic primer before end of day. This method helps prevent flash rust from forming on the tank surface and provides a longer lifespan for the coating system. The primer coat was applied at a specified dry film thickness (DFT) range of 3.0 – 5.0 mils.



CONTAINMENT SYSTEM INSTALLED



TANK EXTERIOR WATERJET CLEANED



TANK EXTERIOR WATERJET CLEANED



POWER TOOL CLEANING & PRIMER APPLICATION IN PROCESS

Once the application of the high solids epoxy primer was completed the tie-in coat 100% solids penetrating epoxy sealer was applied. The tie-in coat was applied at a dry film thickness of 1.0 – 2.0 mils, bringing the total DFT range to 4.0 – 7.0 mils. The next coating application was the intermediate coat an acrylic polyurethane, fast drying that provides color and gloss retention. This was applied at a dry film thickness of 2.0 – 3.0 mils, bringing the total DFT range to 6.0 – 10.0 mils.



INTERMEDIATE COATING IN PROCESS



INTERMEDIATE COATING IN PROCESS



INTERMEDIATE COATING IN PROCESS



INTERMEDIATE COATING DFT READING

Following the polyurethane intermediate coat, a high solids fluoropolymer urethane topcoat was applied adding another 2.0 – 3.0 mils to the DFT, bringing the total DFT range to 8.0 – 13.0 mils. The fluoropolymer urethane coating offers an excellent non-stick property, reduction of friction and resistance to corrosion and UV rays. After the completion of the fluoropolymer topcoat, the logo was applied to the tank. The frost-free roof vent was coated with an epoxy coating to prevent chemical corrosion damage. Additional work was done on the metal bands and angle iron used to hold the cables for the antennas in place on the exterior leg(s) of the tower. Metal bands and angle iron were power tool cleaned, primed and coated.



FLOUROPOLYMER TOPCOAT IN PROCESS



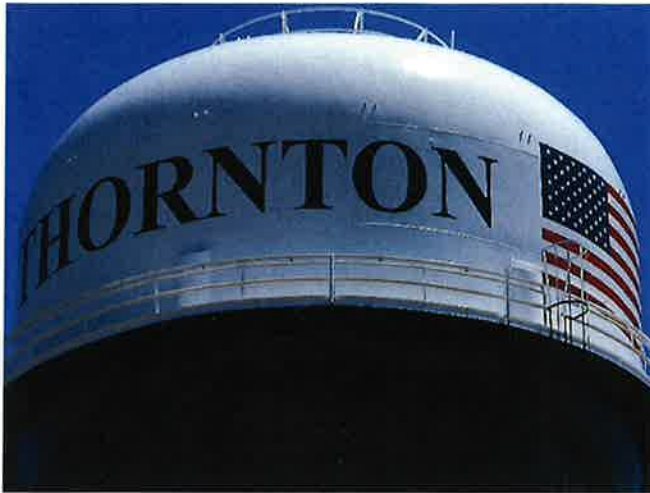
FLOUROPOLYMER TOPCOAT IN PROCESS



FLOUROPOLYMER TOPCOAT IN PROCESS



FLOUROPOLYMER TOPCOAT IN PROCESS



LOGO COMPLETED



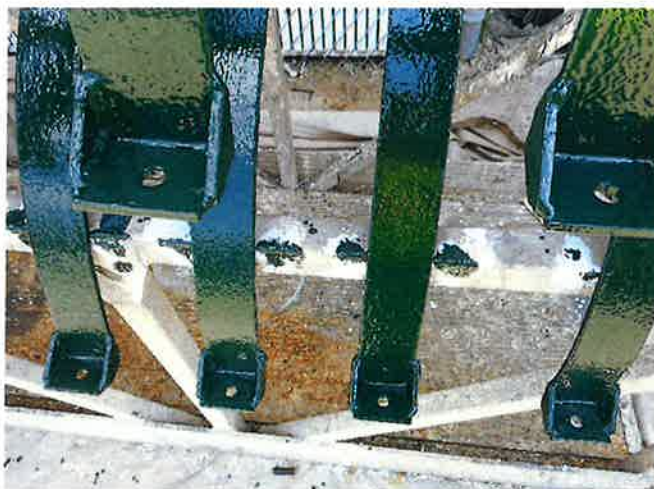
LOGO COMPLETED



FROST FREE ROOF VENT COATED



METAL BANDS CLEANED AND COATED



METAL BANDS CLEANED AND COATED



ANGLE IRON CLEANED AND COATED

TANK INTERIOR WET

The interior wet portion of the tank was abrasive blasted to a near white metal finish (SSPC-SP10) to remove the old coating system and any corrosion, as well as provide a sufficient surface profile for the new paint system to adhere to. After the abrasive blasting was completed, the interior wet portion of the tank was coated with a zinc primer at a specified DFT range of 2.0– 3.0 mils, the zinc provides the steel substrate protection by acting as a sacrificial anode.



BLASTING IN PROCESS



PRIMER COATING IN PROCESS



PRIMER COATING IN PROCESS



PRIMER DFT READING

Once the primer application was completed the interior wet portion of the tank was coated with an ultra-high solids epoxy amine topcoat at a specified DFT range of 20.0 – 30.0 mils, bringing the total DFT range to 22.0 – 33.0 mils. The low V.O.C., 100% solids high build epoxy provides a superior level of protection for the tank interior. After the topcoat had cured the new cathodic protection (CP) system was installed.



TOPCOAT IN PROCESS



TOPCOAT IN PROCESS



COMPLETED TOPCOAT APPLICATION



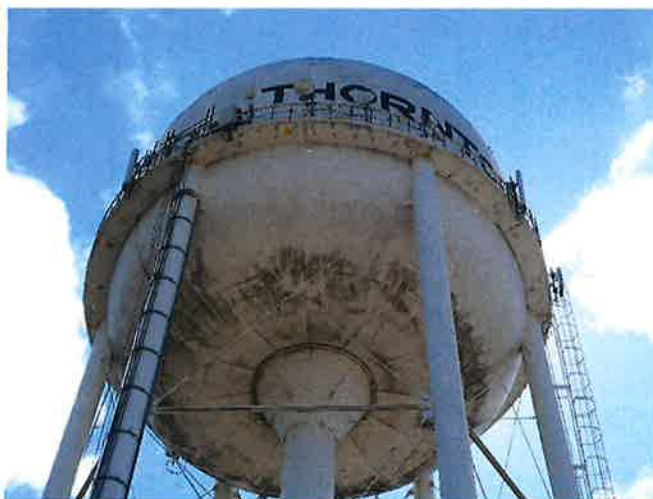
TOPCOAT DFT READING

Following the completion of all work the tank was sealed, filled, and disinfected utilizing AWWA method 3 and bacteriological samples were taken to ensure the tank was safe to return to service.

DAILY INSPECTION REPORTS

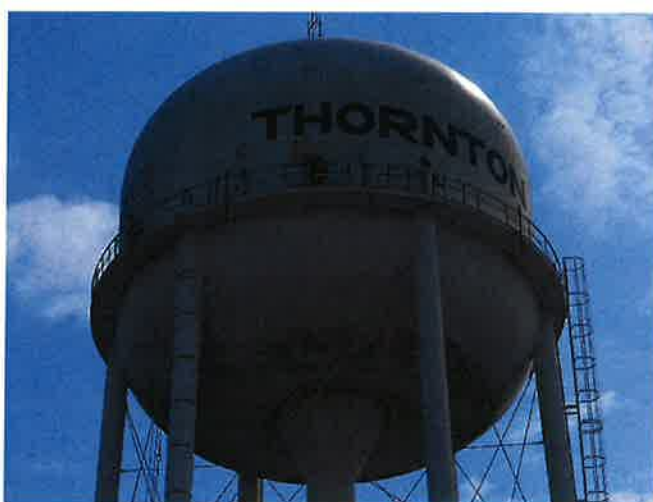
INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank				
Project:	22-R0568.04				
Date:	3-27--24				
Inspector's Name:	Renee Welter				
Signature:	RSW				
AMBIENT CONDITIONS					
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed
10:00 am	32°F	75%	°F	25°F	14 mph
ABRASIVE BLASTING				Notes	
Type / Grade of Abrasive					
Abrasive checked for cleanliness (Y/N)					
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average
Coatings Applied	Manufacturer & Type	Application Method		Batch #	Ok
Color	Mixing Method	Thinning %		Thinner Type	Ok
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range
WORK SUMMARY					
Insite antenna removal team from T-Mobil is on-site today removing their cabling system. Crane is to deliver tomorrow to remove antenna equipment from catwalk railing on tower. Temporary holding tanks are in place and set up – 3 tanks are located at the ground storage tank facility, 1 tank is located at the elevated leg tank facility. Testing of the temporary water system and Bac-T testing need to be performed prior to draining the tower. Municipal antennas and dishes are scheduled to be removed April 4th.					
COATING APPLICATION CHECKLIST		YES	NO	N/A	
Compressed air check satisfactory				X	
Surrounding air cleanliness satisfactory		X			
Recoat times & inter coat cleanliness satisfactory				X	
Application equipment: AS / CS / B / R				X	
Stripe coat applied				X	
Protective coverings in place				X	
Adequate lighting		X			
Free of application defects				X	
ENVIRONMENTAL CHECKLIST		YES	NO	N/A	
Does the containment comply with the spec				X	
Are the containment joints sealed				X	
Is the ventilation system functioning				X	
Is the ground properly covered				X	
Is all debris being captured for disposal		X			
Is the area outside of containment free of debris				X	
Is all collected waste stored in approved containers		X			



INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank				
Project:	22-R0568.04				
Date:	3-28-24				
Inspector's Name:	Renee Welter				
Signature:	RSW				
AMBIENT CONDITIONS					
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed
12:20 pm	46°F	46%	°F	27°F	9 mph
ABRASIVE BLASTING			Notes		
Type / Grade of Abrasive					
Abrasive checked for cleanliness (Y/N)					
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average
Coatings Applied	Manufacturer & Type	Application Method		Batch #	Ok
Color	Mixing Method	Thinning %		Thinner Type	Ok
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range
WORK SUMMARY					
Insite antenna removal team from T-Mobil is on-site today removing their antennas with crane that arrived today. Municipal antennas and dishes are still scheduled to be removed April 4 th . Contractor has been notified of delay in antenna removal.					
COATING APPLICATION CHECKLIST		YES		NO	
Compressed air check satisfactory				N/A	
Surrounding air cleanliness satisfactory		X			
Recoat times & inter coat cleanliness satisfactory				X	
Application equipment: AS / CS / B / R				X	
Stripe coat applied				X	
Protective coverings in place				X	
Adequate lighting		X			
Free of application defects				X	
ENVIRONMENTAL CHECKLIST		YES		NO	
Does the containment comply with the spec				X	
Are the containment joints sealed				X	
Is the ventilation system functioning				X	
Is the ground properly covered				X	
Is all debris being captured for disposal		X			
Is the area outside of containment free of debris				X	
Is all collected waste stored in approved containers		X			



INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank				
Project:	22-R0568.04				
Date:	4-12-24				
Inspector's Name:	Renee Welter				
Signature:	RSW				
AMBIENT CONDITIONS					
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed
10:30 am	59°F	55%	°F	47°F	23 mph
ABRASIVE BLASTING			Notes		
Type / Grade of Abrasive					
Abrasive checked for cleanliness (Y/N)					
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average
Coatings Applied	Manufacturer & Type	Application Method		Batch #	Ok
Color	Mixing Method	Thinning %		Thinner Type	Ok
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range
WORK SUMMARY					
Safety fencing is in place, and the portable facility is on-site. Testing of the temporary tanks was conducted yesterday, the test was successful, and tanks will continue to run until project is completed. Draining of the tower was started this morning and tank will be empty and ready for the painting crew to start on Monday Apr 15 th . Ray's Welding crew has been working on site since Wed Apr 10 th . They have been working on the roof corral installation, it will be completed today.					
COATING APPLICATION CHECKLIST		YES		NO	
Compressed air check satisfactory				N/A	
Surrounding air cleanliness satisfactory		X			
Recoat times & inter coat cleanliness satisfactory				X	
Application equipment: AS / CS / B / R				X	
Stripe coat applied				X	
Protective coverings in place				X	
Adequate lighting		X			
Free of application defects				X	
ENVIRONMENTAL CHECKLIST		YES		NO	
Does the containment comply with the spec				X	
Are the containment joints sealed				X	
Is the ventilation system functioning				X	
Is the ground properly covered				X	
Is all debris being captured for disposal		X			
Is the area outside of containment free of debris				X	
Is all collected waste stored in approved containers		X			



DRAINING OF TOWER IN PROGRESS



DRAINING OF TOWER IN PROGRESS



NEW ROOF CORRAL INSTALLATION



INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank				
Project:	22-R0568.04				
Date:	4-16-24				
Inspector's Name:	Renee Welter				
Signature:	RSW				
AMBIENT CONDITIONS					
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed
9:10 am	66°F	40%	°F	41°F	15 mph
ABRASIVE BLASTING				Notes	
Type / Grade of Abrasive					
Abrasive checked for cleanliness (Y/N)					
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average
Coatings Applied	Manufacturer & Type	Application Method		Batch #	Ok
Color	Mixing Method	Thinning %		Thinner Type	Ok
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range
WORK SUMMARY					
Painting crew is onsite today. Tank has been drained and the temporary tanks are working well, no issues have been noted. Painting crew is cleaning out the water left on the bottom of tank, getting it ready for blasting next week. Internal ladder detached from side wall to hatch opening will be removed from bottom of tank. Overflow top hat show excessive corrosion and should be replaced. The metal identification plaque on the tank was previously painted, the painting crew will try to remove existing paint. Tree branches on the east side of the tank will need to be cut back prior to painting crew setting up containment system.					
COATING APPLICATION CHECKLIST		YES		NO	
Compressed air check satisfactory				N/A	
Surrounding air cleanliness satisfactory		X			
Recoat times & inter coat cleanliness satisfactory				X	
Application equipment: AS / CS / B / R				X	
Stripe coat applied				X	
Protective coverings in place				X	
Adequate lighting		X			
Free of application defects				X	
ENVIRONMENTAL CHECKLIST		YES		NO	
Does the containment comply with the spec				X	
Are the containment joints sealed				X	
Is the ventilation system functioning				X	
Is the ground properly covered				X	
Is all debris being captured for disposal		X			
Is the area outside of containment free of debris				X	
Is all collected waste stored in approved containers		X			



OLD CP PORTS TO BE COVERED WITH WELDED PLATES



STIFFENER RING CORRODED AND DETACHED FROM TANK



OVERFLOW TOP HAT EXCESSIVE CORROSION



WET INTERIOR LADDER CORRODED AND DETACHED FROM WALL



TREE BRANCHES IN CONSTRUCTION AREA



ID PLAQUE PREVIOUSLY PAINTED

INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank				
Project:	22-R0568.04				
Date:	4-19-24				
Inspector's Name:	Renee Welter				
Signature:	RSW				
AMBIENT CONDITIONS					
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed
9:00 am	48°F	45%	°F	27°F	12 mph
ABRASIVE BLASTING			Notes		
Type / Grade of Abrasive					
Abrasive checked for cleanliness (Y/N)					
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average
Coatings Applied	Manufacturer & Type	Application Method		Batch #	Ok
Color	Mixing Method	Thinning %		Thinner Type	Ok
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range
WORK SUMMARY					
Ray's Welding crew on-site. Crew is bringing up new sections of internal wet ladder to be installed from roof of tank to bottom of tank bowl, this is to replace old ladder that was corroded and detached from interior wall and laying down on bottom of tank bowl. Materials for catwalk railing extension are being brought up and staged for installation. Welding crew will be back on Monday to finish up with the interior wet area and installing extension on had railing. Paint crew left for the day due to too many people on-site, they will come out tomorrow (Saturday). The tree branches were cut back yesterday by Village employees to give access for containment system setup. New overflow flap gate has been fabricated.					
COATING APPLICATION CHECKLIST		YES	NO	N/A	
Compressed air check satisfactory				X	
Surrounding air cleanliness satisfactory		X			
Recoat times & inter coat cleanliness satisfactory				X	
Application equipment: AS / CS / B / R				X	
Stripe coat applied				X	
Protective coverings in place				X	
Adequate lighting		X			
Free of application defects				X	
ENVIRONMENTAL CHECKLIST		YES	NO	N/A	
Does the containment comply with the spec				X	
Are the containment joints sealed				X	
Is the ventilation system functioning				X	
Is the ground properly covered				X	
Is all debris being captured for disposal		X			
Is the area outside of containment free of debris				X	
Is all collected waste stored in approved containers		X			



NEW OVERFLOW FLAP GATE



TREE LIMBS ARE CUT BACK

INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank				
Project:	22-R0568.04				
Date:	4-22-24				
Inspector's Name:	Renee Welter				
Signature:	RSW				
AMBIENT CONDITIONS					
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed
11:30 am	64°F	30%	°F	28°F	13 mph
ABRASIVE BLASTING				Notes	
Type / Grade of Abrasive					
Abrasive checked for cleanliness (Y/N)					
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average
Coatings Applied	Manufacturer & Type	Application Method		Batch #	Ok
Color	Mixing Method	Thinning %		Thinner Type	Ok
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range
WORK SUMMARY					
Ray's Welding crew on-site. Crew is finishing up welding new sections of internal ladder and are installing the new extension of the catwalk railing. Painting crew is not on site, will return when welding crew is done. During construction observations there are a couple of issues noted. (1) collar with roof plate supports need replacing (2) interior portion of overflow pipe need replacing – all due to corrosion.					
COATING APPLICATION CHECKLIST		YES		NO	
Compressed air check satisfactory				N/A	
Surrounding air cleanliness satisfactory		X			
Recoat times & inter coat cleanliness satisfactory				X	
Application equipment: AS / CS / B / R				X	
Stripe coat applied				X	
Protective coverings in place				X	
Adequate lighting		X			
Free of application defects				X	
ENVIRONMENTAL CHECKLIST		YES		NO	
Does the containment comply with the spec				X	
Are the containment joints sealed				X	
Is the ventilation system functioning				X	
Is the ground properly covered				X	
Is all debris being captured for disposal		X			
Is the area outside of containment free of debris				X	
Is all collected waste stored in approved containers		X			



CATWALK RAIL EXTENSION IN PROCESS



CATWALK RAIL EXTENSION IN PROCESS



TOP OF OVERFLOW PIPE CORROSION



CATWALK RAIL EXTENSION IN PROCESS



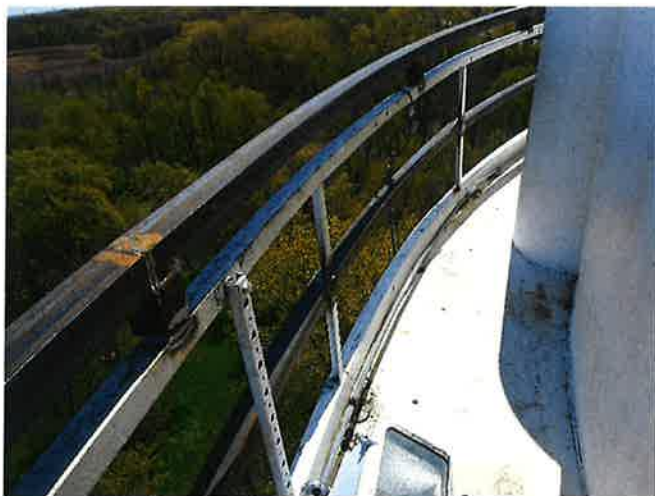
ROOF PLATE AND COLLAR SEVERELY CORRODED



OVERFLOW PIPE CORROSION

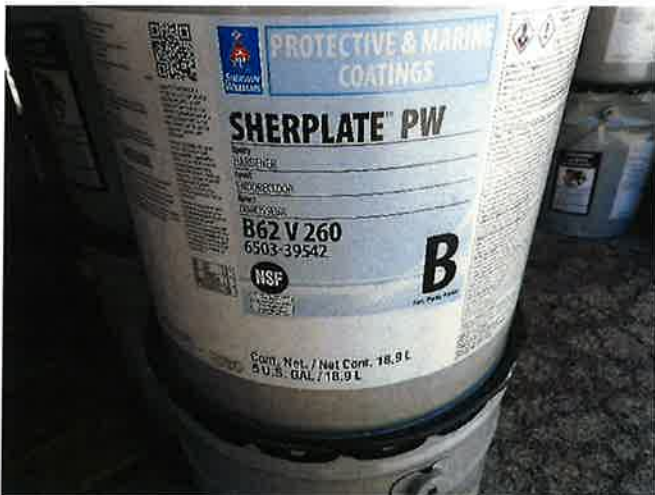
INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank				
Project:	22-R0568.04				
Date:	4-25-24				
Inspector's Name:	Renee Welter				
Signature:	RSW				
AMBIENT CONDITIONS					
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed
10:30 am	52°F	54%	°F	36°F	7 mph
ABRASIVE BLASTING				Notes	
Type / Grade of Abrasive					
Abrasive checked for cleanliness (Y/N)					
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average
Coatings Applied	Manufacturer & Type	Application Method		Batch #	Ok
Color	Mixing Method	Thinning %		Thinner Type	Ok
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range
WORK SUMMARY					
Ray's Welding has finished all repairs/installments on the tank – roof top corral install, catwalk rail raised to 42", interior wet ladder installed from floor of bowl to top hatch, stiffener ring repair, new overflow flap gate, 2 new posts for antennas mounted on the roof corral, removed corroded lip area off of the weir plate on overflow pipe, replaced hatch collar. Painting crew is on-site starting to assemble the containment outriggers on top of tank.					
COATING APPLICATION CHECKLIST		YES		NO	
Compressed air check satisfactory				X	
Surrounding air cleanliness satisfactory		X			
Recoat times & inter coat cleanliness satisfactory				X	
Application equipment: AS / CS / B / R				X	
Stripe coat applied				X	
Protective coverings in place				X	
Adequate lighting		X			
Free of application defects				X	
ENVIRONMENTAL CHECKLIST		YES		NO	
Does the containment comply with the spec				X	
Are the containment joints sealed				X	
Is the ventilation system functioning				X	
Is the ground properly covered				X	
Is all debris being captured for disposal		X			
Is the area outside of containment free of debris				X	
Is all collected waste stored in approved containers		X			



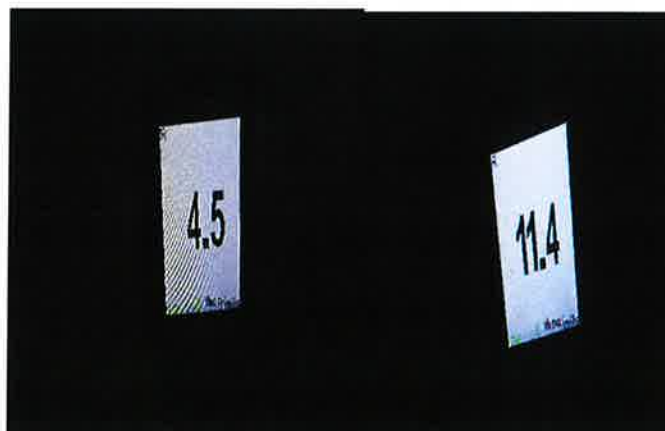
INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank				
Project:	22-R0568.04				
Date:	5-01-24				
Inspector's Name:	Renee Welter				
Signature:	RSW				
AMBIENT CONDITIONS					
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed
10:30 am	52°F	54%	°F	36°F	7 mph
ABRASIVE BLASTING				Notes	
Type / Grade of Abrasive					
Abrasive checked for cleanliness (Y/N)					
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average
Coatings Applied	Manufacturer & Type		Application Method		Batch #
Color	Mixing Method		Thinning %		Thinner Type
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range
WORK SUMMARY					
Painting crew is on-site today blasting the interior wet area of the tank. Questionable material was detected during the blasting process in and around the inlet pipe opening into the bowl area of the tank. Material was difficult to remove with blasting. Pieces of material will be sent out to identify what it's chemical makeup is. Spoke with village operator to see if records show what the mystery material is and when it might have been applied to tank. Nothing was found in records. Primer, intermediate and topcoat paint supply is on site. Dehumidifier is running throughout the evening hours to keep humidity levels low.					
COATING APPLICATION CHECKLIST		YES	NO	N/A	
Compressed air check satisfactory		X			
Surrounding air cleanliness satisfactory		X			
Recoat times & inter coat cleanliness satisfactory				X	
Application equipment: AS / CS / B / R				X	
Stripe coat applied				X	
Protective coverings in place				X	
Adequate lighting		X			
Free of application defects		X			
ENVIRONMENTAL CHECKLIST		YES	NO	N/A	
Does the containment comply with the spec				X	
Are the containment joints sealed				X	
Is the ventilation system functioning		X			
Is the ground properly covered				X	
Is all debris being captured for disposal		X			
Is the area outside of containment free of debris				X	
Is all collected waste stored in approved containers		X			



INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank							
Project:	22-R0568.04							
Date:	5-02-24							
Inspector's Name:	Renee Welter							
Signature:	RSW							
AMBIENT CONDITIONS								
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed			
9:00 am	61°F	56%	62°F	48°F	10 mph			
ABRASIVE BLASTING				Notes				
Type / Grade of Abrasive		Steel Shot						
Abrasive checked for cleanliness (Y/N)		Y						
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average	Specified	Ok	
Throughout interior wet area			4.5	11.4	8.1	2.0 – 3.0	X	
Coatings Applied	Manufacturer & Type		Application Method		Batch #	Ok		
Primer	SW Zinc Clad		Air Spray		2403CL			
Color	Mixing Method		Thinning %		Thinner Type	Ok		
Gray	Air Agitator							
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range	Ok		
WORK SUMMARY								
Painting crew is on-site today cleaning up the last of the blasting material in the interior wet area of the tank. Blasting profile was taken, readings of the profile are deeper than recommended, talked to foreman and will apply enough zinc primer to reach specification of 2.0 – 3.0 mil thickness. Crew will start applying the primer today and should be completed by tomorrow afternoon.								
COATING APPLICATION CHECKLIST			YES		NO		N/A	
Compressed air check satisfactory			X					
Surrounding air cleanliness satisfactory			X					
Recoat times & inter coat cleanliness satisfactory							X	
Application equipment: AS / CS / B / R			AS					
Stripe coat applied							X	
Protective coverings in place							X	
Adequate lighting			X					
Free of application defects			X					
ENVIRONMENTAL CHECKLIST			YES		NO		N/A	
Does the containment comply with the spec							X	
Are the containment joints sealed							X	
Is the ventilation system functioning			X					
Is the ground properly covered							X	
Is all debris being captured for disposal			X					
Is the area outside of containment free of debris							X	
Is all collected waste stored in approved containers			X					



DFT READINGS LOW - HIGH



AIR AGITATOR FOR PAINT MIXING

INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank				
Project:	22-R0568.04				
Date:	5-06-24				
Inspector's Name:	Renee Welter				
Signature:	RSW				
AMBIENT CONDITIONS					
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed
8:50 am	57°F	65%	°F	55°F	7 mph
ABRASIVE BLASTING			Notes		
Type / Grade of Abrasive					
Abrasive checked for cleanliness (Y/N)					
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average
Coatings Applied	Manufacturer & Type	Application Method		Batch #	Ok
Primer	SW Zinc Clad	Air Spray		2403CL	
Color	Mixing Method	Thinning %		Thinner Type	Ok
Gray	Air Agitator				
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range
WORK SUMMARY					
Painting crew worked on Saturday drilling holes for containment footings. Over weekend the area received heavy rains, holes had to be vacuumed to remove standing water prior to concrete arrival. There are a few areas that have structures too close to the tower making it difficult for crew to work around (fenced in area with equipment). Concrete delivered today to fill holes; anchors were set for containment system. Crew will continue to set up containment system (curtains etc.) and hook up scaffolding. Pully system was welded in place.					
COATING APPLICATION CHECKLIST		YES	NO	N/A	
Compressed air check satisfactory		X			
Surrounding air cleanliness satisfactory		X			
Recoat times & inter coat cleanliness satisfactory				X	
Application equipment: AS / CS / B / R		AS			
Stripe coat applied				X	
Protective coverings in place				X	
Adequate lighting		X			
Free of application defects		X			
ENVIRONMENTAL CHECKLIST		YES	NO	N/A	
Does the containment comply with the spec				X	
Are the containment joints sealed				X	
Is the ventilation system functioning		X			
Is the ground properly covered				X	
Is all debris being captured for disposal		X			
Is the area outside of containment free of debris				X	
Is all collected waste stored in approved containers		X			



INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank						
Project:	22-R0568.04						
Date:	5-10-24						
Inspector's Name:	Renee Welter						
Signature:	RSW						
AMBIENT CONDITIONS							
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed		
9:10 am	57°F	82%	63°F	51°F	1 mph		
ABRASIVE BLASTING				Notes			
Type / Grade of Abrasive							
Abrasive checked for cleanliness (Y/N)							
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average	Specified	Ok
Coatings Applied	Manufacturer & Type	Application Method			Batch #	Ok	
Primer	SW Zinc Clad	Air Spray			2403CL		
Color	Mixing Method	Thinning %			Thinner Type	Ok	
Gray	Air Agitator						
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range	Ok	
		3.58	11.91	8.21	2.0 – 3.0 mils	X	
WORK SUMMARY							
Painting crew finished setting up the containment system Tue/Wed this week. Tower's exterior was power washed on Thursday, cleanliness test was performed and passed. Noticed paint runs on the tower legs from previous coating application. Several anchor bolts/nuts are corroded and may need to be replaced prior to coating application. Primer DFT readings were taken in the interior wet area, results are greater than specified but are uniform throughout.							
COATING APPLICATION CHECKLIST		YES		NO		N/A	
Compressed air check satisfactory		X					
Surrounding air cleanliness satisfactory		X					
Recoat times & inter coat cleanliness satisfactory						X	
Application equipment: AS / CS / B / R		AS					
Stripe coat applied						X	
Protective coverings in place						X	
Adequate lighting		X					
Free of application defects		X					
ENVIRONMENTAL CHECKLIST		YES		NO		N/A	
Does the containment comply with the spec						X	
Are the containment joints sealed						X	
Is the ventilation system functioning		X					
Is the ground properly covered						X	
Is all debris being captured for disposal		X					
Is the area outside of containment free of debris						X	
Is all collected waste stored in approved containers		X					



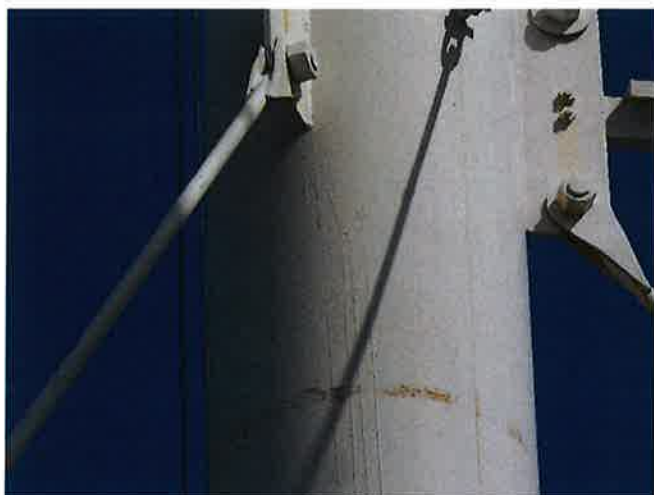
TANK POWER WASHED



CLEANLINESS TEST PERFORMED ON POWER WASHING



RUNS IN COATING PREVIOUS APPLICATION



RUNS IN COATING PREVIOUS APPLICATION



ZINC PRIMER APPLICATION



ZINC PRIMER APPLICATION



ZINC PRIMER APPLICATION



ZINC PRIMER APPLICATION



PRIMER DFT LOW AND HIGH READINGS



ZINC PRIMER APPLICATION



GENERAL CORROSION W/UNDERCUTTING



GENERAL CORROSION W/UNDERCUTTING

INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank				
Project:	22-R0568.04				
Date:	5-23-24				
Inspector's Name:	Renee Welter				
Signature:	RSW				
AMBIENT CONDITIONS					
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed
12:15 pm	80°F	29%	80°F	46°F	3 mph
ABRASIVE BLASTING				Notes	
Type / Grade of Abrasive					
Abrasive checked for cleanliness (Y/N)					
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average
Coatings Applied	Manufacturer & Type	Application Method		Batch #	Ok
Intermediate	Acrolon 218 HS	Air Spray		GC0534WN	
Color	Mixing Method	Thinning %		Thinner Type	Ok
Gypsum	Air Agitator				
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range
2.0 – 3.0 mils		6.4	15.8	10.92	6.0 – 10.0 mils
WORK SUMMARY					
Painting crew is on-site applying the intermediate coat to the upper portion of the tank (platform to roof). Lower section of the tank and legs have intermediate coating applied. DFT readings are in spec. Last week painting crew worked on spot sandblasting areas of corrosion on tank, fill pipe and anchor bolts, followed by an application of primer & epoxy coating. The crew then applied the tie-coat (pre-primer) to the entire structure prior to the intermediate coat application. The crew has also prepped, primed, and coated the metal bands and bars for T-Mobil's antenna equipment. Concrete areas around leg bases have been repaired and coated.					
COATING APPLICATION CHECKLIST		YES		NO	
Compressed air check satisfactory		X			
Surrounding air cleanliness satisfactory		X			
Recoat times & inter coat cleanliness satisfactory		X			
Application equipment: AS / CS / B / R		AS			
Stripe coat applied				X	
Protective coverings in place		X			
Adequate lighting		X			
Free of application defects		X			
ENVIRONMENTAL CHECKLIST		YES		NO	
Does the containment comply with the spec		X			
Are the containment joints sealed		X			
Is the ventilation system functioning		X			
Is the ground properly covered		X			
Is all debris being captured for disposal		X			
Is the area outside of containment free of debris		X			
Is all collected waste stored in approved containers		X			



SANDBLASTED CORROSION ON/AROUND ANCHOR BOLTS



SPOT SANDBLASTED AREAS OF CORROSION ON TANK EXTERIOR



BANDS FOR T-MOBIL EQUIPMENT



METAL BARS FOR T-MOBIL EQUIPMENT



ANCHOR BOLTS AFTER SANDBLASTING



CONCRETE AREAS AROUND BASES HAVE BEEN REPAIRED/COATED



INTERMEDIATE COAT COMPLETED



INTERMEDIATE COAT COMPLETED



INTERMEDIATE COAT COMPLETED



FULL CONTAINMENT



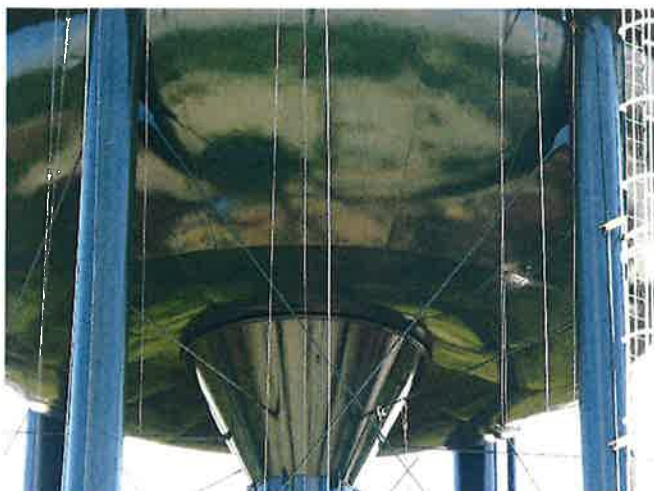
INSIDE OF FILL TUBE



DFT READINGS, LOW/HIGH/AVG

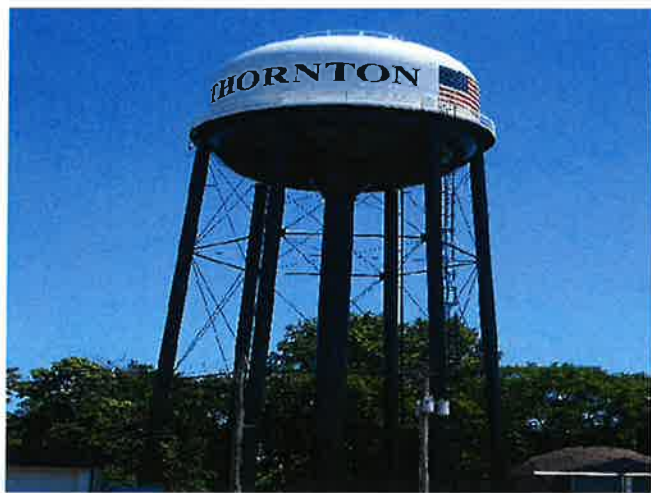
INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank				
Project:	22-R0568.04				
Date:	5-29-24				
Inspector's Name:	Renee Welter				
Signature:	RSW				
AMBIENT CONDITIONS					
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed
10:10 am	68°F	56%	74°F	52°F	3 mph
ABRASIVE BLASTING			Notes		
Type / Grade of Abrasive					
Abrasive checked for cleanliness (Y/N)					
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average
Coatings Applied	Manufacturer & Type	Application Method		Batch #	Ok
Topcoat	Fluorochem HS	Air Spray		EM1074YC	
Color	Mixing Method	Thinning %		Thinner Type	Ok
Dark Green	Air Agitated				
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range
2.0 – 3.0 mils		8.9	15.2	12.6	8.0 – 13.0 mils
WORK SUMMARY					
Painting crew is on-site applying the topcoat to the upper portion of the tank (platform to roof). Lower section of the tank and legs have dark green topcoat applied. DFT readings are in spec 8 – 13 mils.					
COATING APPLICATION CHECKLIST		YES		NO	
Compressed air check satisfactory		X			
Surrounding air cleanliness satisfactory		X			
Recoat times & inter coat cleanliness satisfactory		X			
Application equipment: AS / CS / B / R		AS			
Stripe coat applied				X	
Protective coverings in place		X			
Adequate lighting		X			
Free of application defects		X			
ENVIRONMENTAL CHECKLIST		YES		NO	
Does the containment comply with the spec		X			
Are the containment joints sealed		X			
Is the ventilation system functioning		X			
Is the ground properly covered		X			
Is all debris being captured for disposal		X			
Is the area outside of containment free of debris		X			
Is all collected waste stored in approved containers		X			



INSPECTION REPORT

Site Location:	Village of Thornton Elevated Leg Tank				
Project:	22-R0568.04				
Date:	5-31-24				
Inspector's Name:	Renee Welter				
Signature:	RSW				
AMBIENT CONDITIONS					
Time	Air Temperature	Relative Humidity	Steel Temperature	Dew Point	Wind Speed
9:10 am	63°F	100%	75°F	63°F	10 mph
ABRASIVE BLASTING			Notes		
Type / Grade of Abrasive					
Abrasive checked for cleanliness (Y/N)					
SURFACE PROFILE MEASUREMENTS (locations)			Min	Max	Average
Coatings Applied	Manufacturer & Type	Application Method		Batch #	Ok
Topcoat	Fluorochem HS	Air Spray		EM3353JJ	
Color	Mixing Method	Thinning %		Thinner Type	Ok
White	Air Agitated				
DFT 'S	DFT Before	Min	Max	Average	Specified DFT Range
2.0 – 3.0 mils		8.8	15.8	12.2	8.0 – 13.0 mils
WORK SUMMARY					
The topcoat on the upper portion of the tank's exterior was completed, DFT were taken – they are in spec 8.0 – 13.0 mils. The tank logo's were applied. The painting crew is on-site closing up the interior wet area in preparation for filling tank next week. DFT's were taken – they are in spec – 22.0 to 33.0 mils. Frost free roof vent has been coated and installed on tank.					
COATING APPLICATION CHECKLIST		YES		NO	
Compressed air check satisfactory		X			
Surrounding air cleanliness satisfactory		X			
Recoat times & inter coat cleanliness satisfactory		X			
Application equipment: AS / CS / B / R		AS			
Stripe coat applied				X	
Protective coverings in place		X			
Adequate lighting		X			
Free of application defects		X			
ENVIRONMENTAL CHECKLIST		YES		NO	
Does the containment comply with the spec		X			
Are the containment joints sealed		X			
Is the ventilation system functioning		X			
Is the ground properly covered		X			
Is all debris being captured for disposal		X			
Is the area outside of containment free of debris		X			
Is all collected waste stored in approved containers		X			





638 Executive Drive Willowbrook, IL 60527 Phone: 630,891-1192 Fax: 630,891-3394

Thornton, Village of
115 E Margaret Street
Thornton, IL 60476
Bryan Roberts

Certificate of Laboratory Analysis

Illinois Department of Public Health Certified # 17134

Customer No: 1031

Report Number: 198981

Facility Number:	IL-031-3090	These results are used	Report Date	6/12/2024
Monitoring Start Date:		for IEPA Compliance? N	Date Received:	06/11/2024
Monitoring End Date:			Time Received:	10:15:00
Sample Collector Name:	BRYAN ROBERTS		Relinquished By:	CLIENT
Permit Number:			Received By:	EO
Original Sample No			Date Started:	06/11/2024
Project:			Time Started:	14:30:00

Sample No:	Site Number Address::	Analyte	Reference	Sample Purpose:	Sample Type:	Sample Date:	Sample Time:	Free Cl:	Total Cl:	Colonies Read:	Pres Abs:
198981001	321 E HARRIET ST	Coliform (Total)	SM9223	SP	DIST	06/11/2024	07:55:00	00.20	002.20		A

E. Olean
M. Lenos, Project Manager
I certify that I am familiar with the information
contained in this report and that to the best of my
knowledge and belief such information is
true, complete and accurate

IDPH #17134

E.T.P. Labs, Inc. / Envirotest Perry Laboratories, Inc.

638 Executive Drive • Willowbrook, IL 60527 • Phone: (630) 891-3392
Email: mlenos@etplabs.com

IDPH #17134

E.T.P. Labs, Inc. / Envirotech Perry Laboratories, Inc.

638 Executive Drive • Willowbrook, IL 60527 • Phone: (630) 891-3392

Email: mienos@etplabs.com

Report No.

130981

Date and Time Received: 6.11.24. 10.15

Received by: En

Analysis Start Date and Time. 6/11/24 14:30

Set by: EG

Analysis End Date and Time: 6/12/24 8:30

Read by:

Samples must reach laboratory within 30 hours after collection.

1. Mail Water Supply Copy To: Name <u>V. L. LAGG, JR. THORNTON</u>			3. Date Collected: <u>6-11-24</u>		
Address: <u>115 E. MARQUETTE ST</u>			4. Sample Collector: <u>Bryan Roberts</u>		
Post Office: <u>THORNTON</u> State: <u>IL</u> Zip Code: <u>60476</u>			5. Sample Purpose ☐ Routine ☒ Repair/Maintenance ☐ Bore Order ☐ Other: _____		
2. Contact Person for Unsatisfactory Results: Name: <u>Bryan Roberts</u> Phone: (include area code) <u>708/877-4462</u>			☐ Repeat ☐ Invalid Replacement Orig. Smpl. Lab No. _____ Orig. Smpl. Date _____ Orig. Smpl. Lab No. _____ Orig. Smpl. Date _____ ☐ New Construction (Permit No. _____)		

[illegible]

E. Oren 6/12/24 Reported by _____ Date _____ Time _____ Person Notified _____ Date _____ Time _____	No. of Bottles Sent: _____ Date Bottles Sent: _____ Reason for Replacement: _____	☐ Sample more than 30 hours old ☐ No Date/Time of Collection ☐ Other: _____
---	---	--

SAMPLES ANALYZED by METHOD: COULERT - PRESENCE/ABSENCE: 9223B-PA



638 Executive Drive Willowbrook IL 60527 Phone: 630.891.3392 Fax: 630.891-3394

Thornton, Village of
115 E Margaret Street
Thornton, IL 60476
Bryan Roberts

Certificate of Laboratory Analysis

Illinois Department of Public Health Certified # 17134

Customer No: 1031

Report Number: 198996

Facility Number: IL-031-3090
Monitoring Start Date:
Monitoring End Date:
Sample Collector Name: BRYAN ROBERTS
Permit Number:
Original Sample No
Project:

These results are used
for IEPA Compliance? Y

Report Date 6/14/2024
Date Received: 06/12/2024
Time Received: 09:15:00
Relinquished By: CLIENT
Received By: EO
Date Started: 06/12/2024
Time Started: 14:45:00

Sample No:	Site Number Address:	Analyte	Reference	Sample Purpose:	Sample Type:	Sample Date:	Sample Time:	Free Total Cl: Cl:	Colonies Pres Read: Abs:
198996001	321 E HARRIET ST	Coliform (Total)	SM9223	SP	DIST	06/12/2024	07:45:00	00.7601.09	A

E. O'Keefe

M. Lenos, Project Manager

I certify that I am familiar with the information
contained in this report and that to the best of my
knowledge and belief such information is
true, complete and accurate

Report No. 138036

Date and Time Received: 6/12/24 9:15 Received by: W

Analysis Start Date and Time: 6/12/24 14:45 Set by: W

Analysis End Date and Time: 6/13/24 8:45 Read by: W

Samples must reach laboratory within 30 hours after collection.

1. Mail Water Supply Copy To: Name <u>VILLAGE OF THORNTON</u>		3. Date Collected: <u>6-12-24</u>	
Address: <u>115 E MARLBOROUGH ST.</u>		4. Sample Collector: <u>Bryan Rogers</u> Delivered to lab by:	
Post Office: <u>THORNTON</u>	State: <u>IL</u>	Zip Code: <u>60476</u>	5. Sample Purpose ☐ Routine ☒ Repair/ Maintenance ☐ Boil Order ☐ Other
2. Contact Person for Unsatisfactory Results: Name: <u>Bryan Rogers</u>		☐ Repeat ☐ Invalid Replacement Orig. Smpl. Lab No. _____ Orig. Smpl. Date _____ Orig. Smpl. Lab No. _____ Orig. Smpl. Date _____ ☐ New Construction (Permit No. _____)	
Phone: (include area code) <u>708/877-4462</u>			

[illegible]

Reported by <u>E. Oren</u> Date <u>6/13/04</u> Time: _____ Person Notified _____ Date _____ Time: _____	No. of Bottles Sent: _____ Date Bottles Sent: _____ Reason for Replacement: _____	☐ Sample more than 30 hours old ☐ No Date/Time of Collection ☐ Other: _____
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SAMPLES ANALYZED by METHOD: COLILERT - PRESENCE/ABSENCE: 9223B-PA

SPECIAL PROVISIONS

Table of Contents

SPECIAL PROVISIONS	2
SCOPE OF WORK.....	2
FUNDING LIMITS.....	2
PREQUALIFICATION	2
WAGE RATES.....	3
INSURANCE COVERAGE	3
BID ACCEPTANCE	3
INTERPRETATIONS AND ADDENDA	3
PROJECT SCHEDULE.....	3
PERMITS	4
WORK HOURS.....	4
SITE ACCESS	4
RECORD DOCUMENTS.....	4
PUBLIC AND RESIDENT NOTIFICATION	4
WATER USE	5
VIDEO RECORDING OF CONSTRUCTION SITES	5
PROPERTY RESTORATION	6
SUBMITTALS	6
MATERIAL INSPECTION REPORTS.....	6
GUARANTEE	7
PART 1 – GENERAL	7
PART 2 – GROUND STORAGE TANK PRODUCTS.....	16
PART 2.1 – NOT USED.....	19
PART 2.2 – ELEVATED LEG TANK PRODUCTS	19
PART 3 – GROUND STORAGE TANK EXECUTION.....	21
PART 3.1 – NOT USED.....	24
PART 3.2 – ELEVATED LEG TANK EXECUTION	24
PART 4 – COATING SYSTEM APPLICATION.....	26
PART 5 – METAL EQUIPMENT REPAIR AND REPLACEMENT	32
PART 6 – EXECUTION – WORK ITEMS	34
PART 7 – INSPECTION, TESTING & RECORD KEEPING.....	36
PART 8 – SITE CLEAN-UP & RESTORATIONS.....	37
PART 9 – DISINFECTION	37

**VILLAGE OF THORNTON, ILLINOIS
GROUND STORAGE TANK & ELEVATED TANK REHABILITATION
(IEPA #L17-1359)**

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction", adopted January 1, 2022; the latest editions of the "Supplemental Specifications and Interim Special Provisions" and the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways"; the "Manual of Test Procedures for Materials" in effect on the date of the invitation for bids; the "Standard Specifications for Water and Sewer Main Construction in Illinois", current edition; the Division I General Requirements and Covenants, and the Division II Technical Specifications which apply to and govern the proposed improvement, and in case of conflict with any part, or parts, of said specifications, the said special provisions shall take precedence and shall govern.

However, the Division I General Requirements and Covenants of the specifications shall, in all cases and at all times, govern the work of this contract. Section 100 "General Requirements and Covenants" of the Standard Specifications for Road and Bridge Construction is specifically excluded from this contract.

SCOPE OF WORK

This project will consist of work at two (2) different tank locations;

- A. Ground Storage Tank – The Contractor shall furnish all materials, tools, equipment, and labor necessary for the repair, abrasive blasting, and painting of one (1) 500,000-gallon ground storage tank interior and exterior located next to the Village of Thornton's pumping station at 3502 Williams Street Thornton, IL 60476. All painting shall be done in accordance with the manufacturer's recommendations and shall be performed in a manner satisfactory to the Engineer.
- B. Elevated Leg Tank – The Contractor shall furnish all materials, tools, equipment, and labor necessary for the waterjet cleaning, power tool cleaning and overcoating of the exterior, abrasive blasting, and recoating of the wet interior of one (1) 400,000-gallon elevated leg tank located next to the Village's Public Works Department at 321 East Harriet Street Thornton, IL 60476. All painting shall be done in accordance with the manufacturer's recommendations and shall be performed in a manner satisfactory to the Engineer.

FUNDING LIMITS

This project will be funded with a IEPA State Revolving Fund (SRF) low interest loan. The Contractor shall abide by all the rules associated with IEPA SRF loans. The Owner has allotted a limited amount of funding for the project. The contract will be limited to the amount of funding available. The Village reserves the right to delete any part of the bid after the award is made to the Contractor.

PREQUALIFICATION

The Contractor shall have sufficient experience, as determined by the Village and its representatives, in the field of water storage tank painting to justify release of the bid documents. The Contractor shall provide such documentation as is deemed necessary upon request.

If this information is not satisfactorily completed, the bid documents shall be withheld. The Contractor shall have completed a minimum of five (5) water storage tank paint projects within the last five (5) years, of which the contract was at least \$750,000 of the contract value, to be considered eligible for this project. The Contractor shall supply documentation that a member of the paint crew for this project is CAS certified based on the requirements of SSPC ACS-1/NACE 13, a CAS certified

crew member shall be present on the job site during all coating operations. Bid documents will not be released until such documentation has been provided to the Engineer.

WAGE RATES

This contract calls for the construction of a "public work," within the meaning of the Illinois Prevailing Wage Act, 820 ILCS 130/01 et seq. ("the Act"). The Act requires Contractors and subcontractors to pay laborers, workers and mechanics performing services on public works projects no less than the "prevailing rate of wages" (hourly cash wages plus fringe benefits) in the county where the work is performed. For information regarding current prevailing wage rates, please refer to the Illinois Department of Labor's website.

All Contractors and subcontractors rendering services under this contract must comply with all requirements of the Act, including but not limited to, all wage, notice and record keeping duties.

The Contract also calls for meeting Davis Bacon wage provisions to meet all federal funding requirements.

INSURANCE COVERAGE

The Insurance Requirements can be found in Section 7 of the General Requirements "Legal Relations and Responsibility to the Public". The Contractor and any Subcontractors shall obtain and thereafter keep in force for the term of the contract the insurance coverage specified in this section. The Contractor shall not commence work under the contract until all the insurance required by this section or any Special Provision has been obtained.

Section 7-2.02E Pollution Liability **WILL** be required as part of this project.

Section 7-2.02F Professional Liability **WILL** be required as part of this project.

BID ACCEPTANCE

No bidder may withdraw a BID within 120 days after the date of the opening of bids. This shall supersede the 45 days stated in Division 1, Section 3. Award and Execution of Contract, Paragraph 3-2 Award of Contract.

INTERPRETATIONS AND ADDENDA

All questions about the meaning or intent of the bidding documents are to be submitted to the Engineer in writing. Interpretations or clarifications considered necessary by the Engineer in response to such questions will be issued by written addenda delivered to all parties recorded by the Engineer as having received the bidding documents. Questions received fewer than five business days prior to the date for opening of bids will not be answered. Only questions answered by addenda will be binding. Oral and other interpretations or clarifications will be without legal effect. Addenda may be issued to clarify, correct, or change the bidding documents as deemed advisable by Village or Engineer. Questions relating to this project shall be directed to:

Greg Kamplain
Robinson Engineering, Ltd.
Phone: (815) 412-2016
Email: gkamplain@reltd.com

PROJECT SCHEDULE

Time is of the essence with this contract. The Contractor shall schedule their work accordingly so that only one (1) tank is out of service at any given time, and to ensure all tank work and site restoration work is completed by the dates listed below.

- A. Ground Storage Tank - 10/31/2023
- B. Elevated Leg Tank - 6/19/2024

These dates can be subject to change if a written agreement between the Owner and the Contractor is reached. Failure by the Contractor to complete the work within the agreed upon time frame may result in the assessment of liquidated damages.

All documentation shall be given to the Engineer/Owner 30 days prior to the completion date. If the documentation is not correct or in order it will be returned to the Contractor and the project will not be completed until all documentation is correct and in order. The project must be fully complete, including restoration, within 365 consecutive calendar days from the Notice to Proceed. Payment retention will be withheld until the project is 100% complete, including documentation.

It shall remain the Contractor's responsibility to ensure that the contract documents and insurance requirements are met in a timely manner after award as no work will be allowed until this information is received and correct. No adjustment to the project schedule will be made if this requirement is not met. Failure to complete the work on time will result in assessment of liquidated damages in accordance with the applicable section 8-9 of the Division I General Requirements and Covenants. The liquidated damage cost per day will be based upon the entire contract cost.

PERMITS

The Contractor shall be responsible for completing all work in accordance with any permits or licensing required for this project, as well as the provisions of this contract including all necessary bonds and insurance required. Any and all costs associated with insurance and bonding requirements necessary to acquire permits will not be paid for separately but will be considered incidental to the contract.

WORK HOURS

The Contractor may prosecute work between the hours of 7 a.m. to 7 p.m. Monday through Sunday. No work will be allowed on Holidays. Any hours of operation specifically applied by any of the permitting agencies will supersede these hours when doing work at the location covered by the aforementioned permit.

SITE ACCESS

The Contractor shall notify the Owner and Robinson Engineering forty-eight (48) hours prior to starting any site work and shall adhere to the requirements in these special provisions.

RECORD DOCUMENTS

The Contractor shall provide the Village/Engineer with documentation and field notes as described in these special provisions detailing the work. The cost for providing this information will be considered incidental to various pay items or to a specific pay item. Final payment will not be made to the Contractor until these records are reviewed and approved by the Village.

PUBLIC AND RESIDENT NOTIFICATION

If the Contractor is required to shutoff existing utility service (i.e., water, sanitary, power, communications, and gas) for any reason during the course of this project, the Contractor shall provide 24-hour advance written notice to:

- 1) the Village of Thornton of the scheduled work,
- 2) those water customers with connections to the water sections affected by the work, and
- 3) any other water customers that may potentially be adversely affected by the construction operations.

The notification shall be of a form and method as approved by the Village of Thornton.

WATER USE

The Contractor shall contact the Village to determine which hydrants will be available for water use. The Contractor shall conform with the ordinances of the municipality, as well as with the rules and regulations of the Water Department, including use of a Village-issued water meter, and will be held responsible for all damages to hydrants and water pipe used for the purposes of securing water. Pipe wrenches approved by the Water Department shall be utilized for opening and closing hydrants and other appurtenances.

When additional water from fire hydrants is necessary to avoid delay in normal work procedures, the water shall be conserved and not used unnecessarily. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant.

The Village wishes to keep accurate records of the amount of water used for construction purposes. The Contractor shall use an approved water meter supplied by the Village to record usage and shall report the total water used to the Public Works Superintendent at the end of each week. The Contractor will not be responsible for the cost of the water.

VIDEO RECORDING OF CONSTRUCTION SITES

Prior to the start of any tank painting and rehabilitation, the Contractor shall video the existing conditions of the interior area of the construction. The video recording shall be done on Digital Video Format (i.e., mpeg or avi). The Contractor shall supply the Engineer with two (2) flash drives or external hard drives.

The video recordings shall also supply a continuous audio record of the location (preferably with address), all anticipated problem areas, items, and features for the complete area to be affected by the construction.

The video recording shall be made on a flash drive, external hard drive or other approved equal and shall conform to Japan Electronics and Information Technology Industries Association (JEITA) standards. The format of recording and type of media used shall remain the same throughout the project. When the recorded video information is replayed and reviewed, it shall be free of electrical interference.

The audio portion of the composite signal shall be sufficiently free of electrical interference, background noise, and heavy foreign or regional accents to provide an oral report that is clear and complete and easily discernible. The audio portion of the video report shall be recorded by the operating technician on the video as they are being produced and shall include references to the street address and type of construction to be performed at the site as specified in the plans. Audio comments pertaining to special circumstances, which may arise during the tank painting and rehabilitation, shall also be included. Dubbing the audio information onto the video tract after the video is completed will not be permitted.

Video recordings shall be enclosed in vinyl plastic containers, which shall clearly indicate the date the video was taken, the designated section(s) of construction contained on the tape, and labeled as follows;

- A. "VILLAGE OF THORNTON GROUND STORAGE TANK PROJECT (REL PROJECT #22-R0568.01)".
- B. "VILLAGE OF THORNTON ELEVATED LEG TANK PROJECT (REL PROJECT #22-R0568.01)".

The construction areas after completion of the tank rehabilitation shall be the same or better than the pre-construction site conditions as shown in the video. The work contained within this special provision shall not be paid for separately but shall be included in the cost of the various contract pay items.

PROPERTY RESTORATION

It is anticipated that no public and/or private property shall be disturbed by this work. The Contractor shall take all precautions to avoid such damage and shall restore any public and/or private property, including landscaping, damaged and/or disturbed by the proposed work, to the satisfaction of the Owner, at no additional compensation.

If the Contractor encounters a situation where some private property or a public facility/infrastructure will suffer unavoidable damage or disturbance, the Contractor shall bring it to the Owner's attention for a specific authorization to proceed with such work before the task in question is performed.

SUBMITTALS

The Contractor shall provide five (5) identical sets of submittal information to the Engineer for review and approval prior to commencement of construction activities. Requirements for 5 sets are waived if digital submittals are provided. Submittal information generally includes product information, catalog pages, manufacturer's instructions, product warranties, specifications, samples, shop drawings, and proposed substitutions. At a minimum, the following items shall require submittal to the Engineer:

- Project Schedule – The Contractor shall submit an initial project schedule. This schedule, along with percentage of completion, shall be revised and submitted along with each application for payment.
- Major Components – Specifications for all major components such as painting, overflow flap gate, frost free roof vent, cathodic protection system, access ladder, roof corral, and catwalk handrail. The Contractor shall provide submittals deemed necessary for successful project completion by the Engineer.

If a substitution is proposed, the Contractor shall provide sufficient information to allow the Engineer to determine that the material or equipment proposed is equivalent or equal to that named. However, the burden of proof as to the type, function, and quality of any such substitute material or equipment shall reside with the Contractor. The Engineer shall be the sole judge of whether the proposed substitution is equivalent to the named material or equipment.

MATERIAL INSPECTION REPORTS

All materials incorporated in this contract are to be inspected according to the Project Procedures Guidelines (PPG) and the process and frequency of testing under the QC/QA specifications.

The Contractor shall be responsible for QC testing of these materials with the Engineer being notified at least forty-eight (48) hours in advance of the placement of any of these materials. The Local Agency shall be responsible for the QA testing of these materials on the job and at the plant per article 1030 of the Standard Specifications. Please note that the Contractor is required to submit a QC plan to the Engineer for approval per the referenced specifications.

The Contractor shall coordinate his work operations with the engineer to assure that the testing agencies can provide proper and sufficient notice to schedule their work. Also, all QC documentation is to be submitted to the Engineer, immediately following completion of this project. Five percent (5%) of the final contract amount due the Contractor will be withheld pending receipt of all documentation and approval of the Engineer's Final Payment Estimate.

Five percent (5%) of the final contract amount due the Contractor will be withheld pending receipt of all documentation and approval of the Engineer's Final Payment Estimate by the IEPA.

GUARANTEE

All materials and equipment shall be guaranteed for a period of one (1) year from date of written acceptance by the Village upon receipt of notice from the Village of failure of any part of the system during the guarantee period, new replacement parts shall be furnished and installed by the Contractor at no additional cost to the Village.

PART 1 – GENERAL**1.01 DESCRIPTION****A. Project Overview:**

1. Ground Storage Tank – The Village of Thornton owns and operates one (1) 500,000-gallon ground storage tank located next to the Village's pumping station at 3502 Williams Street (see attached Ground Storage Tank Limits of Project Site). The existing coating on the tank exterior is beyond its design life. The work will include installation of a full containment system, abrasive blasting of tank exterior to SSPC-SP6 followed by application of a three-coat zinc primer, urethane intermediate, fluoropolymer topcoat paint system. Abrasive blasting of the tank interior wet to SSPC-SP10 followed by application of a two-coat zinc primer, 100% solids low VOC epoxy topcoat paint system.
 - a. Ground Storage Tank Repairs/Replacements
 - Seal weld existing cathodic protection covers
 - Install an overflow flap gate
 - Concrete foundation repair and coating application
2. Elevated Leg Tank – The Village of Thornton owns and operates one (1) 400,000-gallon elevated leg tank located next to Public Works at 321 East Harriet Street (see attached Elevated Leg Tank Limits of Project Site). The existing coating on the tank exterior is beyond its design life. The work will include waterjet cleaning of tank exterior to SSPC-SP WJ3 and power tool cleaning any areas of corrosion to SSPC-SP11 followed by application of an epoxy spot primer, epoxy tie coat, urethane intermediate, fluoropolymer topcoat paint system. Abrasive blasting of the tank interior wet to SSPC-SP10 followed by application of a two-coat zinc primer, 100% solids low VOC epoxy topcoat paint system.
 - a. Elevated Leg Tank Repairs/Replacements
 - Cathodic protection system upgrade
 - Seal weld existing cathodic protection covers
 - Raise catwalk handrail height
 - Install roof corral
 - Install a frost-free roof vent
 - Install an overflow flap gate
 - Repair the interior stiffener ring
 - Install a new interior wet access ladder

1.02 DEFINITIONS

- | | |
|-----------------------|--|
| A. <u>Contractor:</u> | Successful bidder awarded the project |
| B. <u>Owner:</u> | The Village of Thornton |
| C. <u>Engineer:</u> | Robinson Engineering, Ltd. |
| D. <u>Exterior:</u> | External surfaces of the tank that are exposed to the outside atmosphere |
| E. <u>Sidewall:</u> | Vertical walls of tank up to bottom of the tank knuckle |
| F. <u>Roof:</u> | Very top of tank, including top seam of sidewall |

- G. OSHA: Occupational Health and Safety Administration
- H. SSPC: The Society for Protective Coatings
- I. NACE: National Association of Corrosion Engineers
- J. ASTM D-454: Standard test method for pull off strength of coatings using portable testers
- K. ASTM-D4417: Standard test method for field measurement of surface profile of steel
- L. AWWA-C652: Standard for disinfection of water storage facilities
- M. AWWA-D100: Standard for welded carbon steel tanks for water storage
- N. AWWA-D102: Standard for coating steel water storage tanks
- O. SSPC-Guide 6: Guide for containing surface preparation debris during paint removal operations
- P. SPC-Guide 7: Guide to the disposal of lead contaminated surface preparation debris

1.03 OMISSIONS/HIDDEN CONDITIONS

- A. It is the intent of the specifications to detail all work and materials necessary for completion of the work specified herein. Any small or incidental items not specifically detailed in the specifications, but obviously a part of the work, are to be included in the work at no additional cost to the Owner. Any items in question should be brought to the Engineers attention prior to the bid opening.

1.04 PROTECTION OF PROPERTY

- A. The Contractor is to take care to prevent damage to structures, utility services, storm and sanitary drainage systems, lawns, trees, plant material, fences, walks, drives, roadways, and other improvements in and adjacent to the area of work under the contract. Any damage to property resulting from the Contractor's operations shall be repaired or replaced by the Contractor without additional cost.

1.05 SCHEDULING

- A. The Contractor shall submit a construction schedule to the Engineer for review at the preconstruction meeting. The Contractor shall perform painting work according to the contract construction schedule.
- B. Scheduling shall not supersede temperature, humidity or other environmental requirements for surface preparation and coatings application included in these specifications.
- C. Coordinate work of other trades and provide conditions for neat, clean, and dust-free work.
- D. Working hours shall be Monday thru Friday, 7:00 a.m. till 8:00 p.m., no work is allowed on Saturday or Sunday, or holidays without 48-hour prior approval in writing from the Owner.
- E. Hold point inspection requests shall be directed to the Engineer. All inspection requests shall have a 48-hour notice.
- F. Both tanks can not be taken out of service at the same time. The Contractor shall plan their work accordingly to ensure that both tanks will not be taken out of service at the same time.

1.06 SUBMITTALS

- A. The Contractor shall provide submittals for materials and/or systems proposed for use on this project to the Engineer for review.
- B. Paint and Protective Coatings:
 - 1. Manufacturer Technical Data Sheets for all paints, coatings, solvents, detergents, and degreasers proposed as required by law.

2. Manufacturer Material Safety Data Sheets (MSDS) for all paints, coatings, thinners, solvents, detergents, degreasers, etc. proposed as required by law.
 3. Color name and/or number with color chart for each specific coating product. Exterior color shall be chosen by the Owner.
 4. Manufacturer's specific ventilation requirements for products used on interior surfaces. Ventilation requirements shall be provided to ensure adequate evacuation of solvents to prevent solvent entrapment, worker exposure to solvents above the OSHA PEL and provide for timely coating system cure.
- C. Abrasive Blast Products:
- Abrasive blast products shall conform to SSPC Abrasive Specification No. 1. "Mineral and Slag Abrasives", except that copper slag will not be permitted. Abrasive blast product submittals shall include, but not be limited to, the following:
1. Manufacturer's certification or laboratory analysis that the product proposed contains less than 1% free crystalline silica.
 2. Laboratory analysis of blast material presenting results of blast material testing as required in SSPC-AB 1, Table 1 requirements for Chemical and Physical Properties of Abrasives, except that the conductivity test for water soluble contaminants in accordance with ASTM D-4940 shall not exceed 500 microsiemens (micromhos).
 3. Material Safety Data Sheets.
 4. Composition, mesh size, and bulk density.
 5. Recommended application nozzle, air requirements, and pressure.
- D. Various repair items
1. Shop drawings shall be submitted for various repair/replacement items such as frost-free vent, overflow flap gates, cathodic protection system, roof corral, access ladder, etc.

1.07 PRODUCT HANDLING

- A. Delivery and Storage
1. All paints, coatings and related materials shall be delivered to the job site in original unopened containers with the product name, type and batch number, color, and manufacturer date clearly marked on each container.
 2. All materials used on the job by the Contractor shall be stored in a single place provided by the Contractor or designated by the Engineer at the job site. On site and fabrication shop storage shall comply with OSHA requirements, recommendations of the National Fire Protection Association, Municipal fire codes, and manufacturer recommendations.
 3. Oily or solvent-soaked rags and all waste shall be removed from the job site every night, and all necessary precautions shall be taken to reduce fire hazards to a minimum.

1.08 OWNER RESPONSIBILITY

- A. The Owner shall drain a tank within seven (7) days after notice has been provided by Contractor. Unless unforeseen circumstances do not allow the action, such as drought conditions or system shortages.
- B. Upon notification by the Contractor that the tank is ready to be returned to service, the Owner will conduct all operations involved with filling the tank.

1.09 WARRANTY

- A. Approximately one (1) year from the date of completion, the tank will be inspected by the Owner and/or his representative.
- B. The inspection will be performed in accordance with the applicable portions of AWWA D-102-11 Standard for Painting Steel Water Storage Tanks and industry standards.
- C. The Owner will establish a date of inspection and shall notify the Contractor ten (10) days in advance. The Contractor's attendance will not be required.
- D. Failure to schedule this inspection within thirteen (13) months after completion of the painting will be considered a waiver of this inspection.
- E. Any failed work will be documented, and the Contractor will be notified of necessary repair (method and extent).
- F. The Owner reserves the right to require inspection of the repair work. And possibly a second warranty inspection, dependent on degree of failure.
- G. Cost for one (1) year warranty inspection will be the responsibility of the Owner.
- H. Cost for a second warranty inspection will be the responsibility of the Contractor.

1.10 PROJECT MEETINGS

- A. Preconstruction Meeting:
 - 1. A preconstruction conference shall be scheduled by the Engineer and is to be attended by Owner, Engineer, and Contractor. Prior to beginning any work, the Contractor shall provide the Owner and Engineer with work schedule for the project in a Gantt chart format.
 - 2. Once the project has begun, the Contractor shall carry it to completion as specified in the construction schedule.
- B. Additional Meetings:
 - 1. Additional meetings may be scheduled by the Engineer and/or requested by the Contractor to address disputes, clarify tasks, etc.

1.11 SANITARY & HANDWASH FACILITIES

- A. Temporary sanitary toilet facilities shall be provided by the Contractor at the work sites, which conform to state and local health and sanitation regulations for the specified number of Contractor's employees that will be onsite. These sanitary toilet facilities shall be maintained on a weekly basis to prevent nuisance conditions to the surrounding properties and/or residents.
- B. The Contractor shall provide an OSHA approved hand wash facility with running water at the work site. Hot water is not required.
- C. The facility shall be stocked with soap and towels and replenished as needed.
- D. The Contractor shall properly dispose of water after the project is completed/or as needed.

1.12 SECURITY

- A. The Contractor is responsible for the security of the work site.
- B. The Contractor shall be responsible for loss or injury to persons or property where work is involved and shall provide security and take precautionary measures to protect Contractor's and Owner's interests.
- C. The work site shall be secured by the Contractor following daily completion of work.

- D. Contractor shall furnish and install a minimum 6-foot-high temporary chain link fencing around perimeter of the work area with a lockable gate. Provide a key for Engineer and the Owner.

1.13 PROJECT SITES

- A. The project sites are shown in the attached "Ground Storage Tank Limits of Project Site" and "Elevated Leg Tank Limits of Project Site".
- B. Contractor to limit parking to the project sites, no street parking will be allowed.

1.14 REMOVAL OF TEMPORARY MATERIALS AND EQUIPMENT

- A. When no longer required the Contractor shall completely remove temporary material and equipment.
- B. Any damage caused by the temporary installation or use of temporary facilities shall be cleaned/repared by the Contractor.
- C. Any existing or permanent facilities used for temporary services shall be restored by the Contractor to specified, or original condition.

1.15 BULLETIN BOARD DISPLAYS

- A. It is the responsibility of the Contractor to secure all permits and meet the requirements of local, state, and federal agencies. This includes building, electrical, labor, OSHA, etc.
- B. The Contractor shall display all permits and wage requirements on a temporary board at the project site.
- C. Copies of other permits that do not require display shall be attached to the foreman's copy of the specifications and be onsite at all times.

1.16 CREW SIZE/COMMUNICATION

- A. The Contractor shall provide the minimum crew size for completion of all work operations as defined in the project scope. The Contractor's resident superintendent shall be fluent in English to the level of competency to complete responsibilities of the Contractor. The superintendent shall also be fluent in or have access to a translator for the primary language of the majority of workers. Degree of fluency to be sufficient so that superintendent can adequately complete his duties.

1.17 CONTRACTOR STAFF REQUIREMENTS

- A. The Contractor shall supply documentation that a member of the paint crew for this project is CAS certified based on the requirements of SSPC ACS-1/NACE 13. A CAS certified crew member shall be present on the job site during all coating operations. Work will not proceed, until proper documentation of this requirement is met.
- B. The Contractor shall comply with the Illinois Preference Act, if applicable at the time the project commences.

1.18 SAFETY PLAN

- A. Corporate Safety Program:
Implement and maintain programs and procedures that comply with the requirements of this specification. Comply with all applicable regulations even if the regulation is not specifically referenced herein. If a state or local regulation is more restrictive than the requirements of this Specification, follow the more restrictive requirements.

- B. Identification of the items in this specification which are of specific interest to the Owner in no way relieves the Contractor of the responsibility to comply with all regulatory requirements, nor should it be constructed that the Owner, the EPA, OSHA, or state/local regulators are only interested in these items.
- C. Acceptance Criteria:
Establish minimum standards for the content of programs, plans, procedures, and designs required by this specification for the performance of the contract. Acceptance criteria will be the basis for judging the responsiveness of Contractor's programs and will also be used as a basis for suspending work, if necessary.
- D. Submittal Schedule:
Submit the following plans and programs to the Engineer and Owner. A minimum of twenty (20) days prior to mobilization to the project site.
- E. Worker Protection Program:
Provide a project specific compliance program, prepared under the direction of, and signed by, a Certified Safety Professional (CSP) or Certified Industrial Hygienist (CIH), for the protection of Contractor and any subcontractor workers from all recognized and foreseeable hazards on the job in accordance with 29 CFR 1926 and 29 CFR 1910, as applicable, as well as the requirements of this specification. Update the plan at least annually, or as conditions warrant.
- F. Worker Protection Program Acceptance Criteria:
To be acceptable, the Contractor's Worker Protection Program must provide procedures addressing each applicable element of the following, at a minimum:
 - 1. General Safety and Health Provisions – in accordance with applicable sections of Subpart C of 29 CFR 1926 including safety training and education, first aid and medical attention, housekeeping, and control of site access at a minimum.
 - 2. Occupational Health – in accordance with applicable sections of Subparts D and Z of 29 CFR 1926 including occupational noise; gases, fumes, dusts, and mists; hazard communication; lead, cadmium, arsenic, chromium, and other toxic metals.
 - 3. Fire Protection and Prevention, and Emergency Response – in accordance with the requirements of 29 CFR 1926.24 and 1926.150 for the control, storage, and handling of flammable and combustible materials, including a site-specific Emergency Response Plan in accordance with the requirements of 1926.65(q) at a minimum.
 - 4. Electrical Safety – in accordance with 29 CFR 1926.400, 1926.403 and all applicable provisions of 29 CFR 1926, Subpart K.
 - 5. Lock-out/Tag-out Plan – in accordance with 29 CFR 1910.147 and 1910.333 that will be followed for lock-out/tag-out of existing electrical utilities within containment or other work areas as appropriate. Include provisions for coordinating lock-out/tag-out activities with the Owner.
 - 6. Scaffolds, Work Platforms and Fall Protection – in accordance with applicable sections of Subparts L and M of 29 CFR 1926.
 - 7. Confined Space Entry - in accordance with 29 CFR 1929.21(b)(6) and 1910.146.
- G. Do not construe Owner review of Contractor submittals to imply approval of any particular method or sequence for conducting the work, or for addressing health and safety. Review of the programs does not relieve the Contractor from the responsibility to conduct the work in strict accordance with the requirements of this specification, or to adequately protect the health and safety of all workers involved in the project including any members of the public who may be affected by the project.
- H. The Owner has the right to examine the site of any accident and to question any person having knowledge of any such accidents. The Owner has the right, but not a duty, to inspect the site to ensure that the safety and health requirements under this contract are being implemented and fulfilled. If inspections reveal deficiencies, the Contractor shall immediately take action as may be required to correct the deficiencies. If Contractor fails or

refuses to correct an unsafe or unhealthful condition, the Owner has the right to stop all, or part of work performed until satisfactory corrective action has been taken. The Owner will not be subject to claims by Contractor, its employees, or its subcontractors as a result of this stop work order. The Owner maintains the right, but not the obligation, to remove any person(s) from the site if, in the opinion of the Owner, the person(s) endangers the safety or health of others.

I. Reference Material:

1. Adley, D.P., "Safety and Health in the Protective coatings Industry" Chapter 8 of Good Painting Practice, SSPC Painting Manual, Vol. 1. 4th edition. Pittsburgh, PA: SSPC, 2002.
2. AIHA Guideline No. 4, "Health and Safety Requirements in Construction Contract Documents," Fairfax, VA: American Industrial Hygiene Association, 2005.
3. Compliance Directive CPL 2.0-124, Multi-Employer Citation Policy, US Dept. of Labor, Occupational Safety and Health Administration, December 10, 1999.
4. SSPC Guide 17 (latest edition) "Guide to Developing a Corporate Safety Program for Industrial Painting and Coating Contractors," Pittsburgh, PA: SSPC.
5. U.S. Code of Federal Regulations, Title 29, Part 1910 (latest revision), "Occupational Safety and Health Standards." (All CFRs are available online at <http://www.gpoaccess.gov/cfr/index.html>.)
6. U.S. Code of Federal Regulations, Title 29 Part 1915 (latest revision), "Occupational Safety and Health Standards for Shipyard Employment."
7. U.S. Code of Federal Regulations, Title 29, Part 1926 (latest revision), "Safety and Health Standards for Construction."

1.19 ENVIRONMENTAL COMPLIANCE

- A. Contractor shall be aware of and in compliance with all environmental regulations, including those concerning contamination of soil, air, and water in the immediate project area.
- B. Contractor must prepare a plan for compliance with all environmental conditions, including air quality monitoring of the site perimeter during surface preparation and painting operations in accordance with SSPC-Guide 6, SSPC-Technology Guide 7 and SSPC-TU7.

1.20 TEMPORARY ELECTRIC AND LIGHTING

- A. Contractor shall supply temporary lighting sufficient to enable workers to safely access and perform work in all areas. Lighting shall be in conformance with SSPC-Guide 12, Guide to Illumination of Industrial Coating Projects. It is the responsibility of the Contractor to supply a temporary power source capable of powering all of their necessary equipment.

1.21 DAMAGE TO EXISTING PROPERTY

- A. Contractor is responsible for replacing or repairing damage to existing buildings, sidewalks, roads, parking lot surfacing, and other existing assets.
- B. Owner has the option of contracting for such work and having cost deducted from contract amount if the Contractor is not qualified to complete repairs or fails to act in a timely manner.

1.22 TEMPORARY FIRE PROTECTION

- A. Provide and maintain in working order a minimum of two (2) fire extinguishers and such other fire protective

equipment and devices as would be reasonably effective in extinguishing fires.

1.23 PROTECTION OF SEWERS

- A. Take adequate measures to prevent impairment of operation of existing storm sewer system. Prevent construction material, pavement, concrete, earth, or other debris from entering storm sewer or storm sewer structure. Contractor to provide a basket insert to storm structures that may receive contaminants.

1.24 PROTECTION OF WATERWAYS

- A. Observe rules and regulations of local, state, and federal government agencies prohibiting pollution of any lake, stream, river, or wetland by dumping of refuse, rubbish, dredge material, or debris therein.
- B. Provide containment that will divert flows, including storm flows and flows created by construction activity, to prevent loss of residues and excessive silting of waterways or flooding damage to property.
- C. Comply with procedures outlined in U.S. EPA manuals entitled "Guidelines for Erosion and Sedimentation Control Planning and Implementation," Manual EPA-72-015 and "Process, Procedures, and Methods to Control Pollution Resulting from all Construction Activity," Manual EPA 43019-73-007.
- D. Contractor shall prepare a Stormwater Pollution Prevention Plan (SWPPP) and submit to Owner and Engineer 7 days prior to construction start.

1.25 DISPOSAL OF EXCESS EXCAVATED AND OTHER WASTE MATERIALS

- A. Dispose waste material in accordance with federal and state codes, and local zoning ordinances. Copies of waste disposal manifests are to be supplied to Owner and Engineer prior to final payment.
- B. Unacceptable disposal sites include, but are not limited to, sites within wetland or critical habitat, and sites where disposal will have detrimental effect on surface water or groundwater quality.
- C. Make arrangements for disposal subject to submission of proof to Engineer that Owner(s) of proposed site(s) has a valid fill permit issued by appropriate government agency and submission of haul route plan, including map of proposed route(s).
- D. Provide watertight conveyance for liquid, semi-liquid, or saturated solids, whether being delivered to construction site or hauled away for disposal. Fluid materials hauled for disposal must be specifically acceptable at selected disposal site.
- E. Waste generated by abrasive blast cleaning is detailed in SSPC-Guide 6.

1.26 PROTECTION OF AIR QUALITY

- A. Contain paint aerosols and VOCs by acceptable work practices.
- B. Minimize air pollution by requiring use of properly operating combustion emission control devices on construction vehicles and equipment used by Contractor and encouraging shutdown of motorized equipment not actually in use.
- C. Trash burning not permitted on construction site.
- D. If temporary heating devices are necessary for protection of work, they shall not cause air pollution.

1.27 PROTECTION FROM FUEL AND SOLVENTS

- A. Submit plans and photos, or drawings of all containment structures, planned paint storage procedures, planned paint mixing (as it relates to possible spillage), and paint waste disposal.

- B. All required material must be submitted prior to the preconstruction meeting. No equipment may be delivered to the site without approval of submittals.
- C. The Owner reserves the right to restrict equipment location.
- D. Protect the ground from spills of fuel, oils, petroleum distillates, or solvents by use of containment systems.
 - 1. Total paint, thinner, oils, and fuel delivered to and stored on-site cannot exceed supplied capacity of spill containment provided (i.e., fuel in compressor must have secondary containment to catch both fuel and oil to be sized to exceed possible spill).
 - 2. Do not leave nozzle while fueling.
 - 3. Provide a different containment unit under fuel tank and oil reservoirs for all equipment and fuel storage tanks.
 - 4. Barrels of solvents, even for cleaning, are prohibited. Do not deliver paint thinners in containers greater than five (5) gallons.
- E. Disposal of waste fluids shall be in conformance with federal, state, and local laws and regulations.

1.28 USE OF CHEMICALS

- A. Chemicals used during project construction or furnished for project operations, whether herbicide, pesticide, disinfectant, polymer, reactant, or of other classification must show approval of U.S. EPA, U.S. Department of Agriculture, state, or another applicable regulatory agency.
- B. Use of such chemicals and disposal of residues shall be in conformance with manufacturer's written instructions and applicable regulatory requirements.

1.29 NOISE CONTROL

- A. Conduct operations to cause least annoyance to residents in vicinity of work and comply with applicable local ordinances.
- B. Equip compressors, hoists, and other apparatus with mechanical devices necessary to minimize noise and dust. Equip compressors with silencers on intake lines.
- C. Equip gasoline or oil operated equipment with silencers or mufflers on intake and exhaust lines.
- D. Route vehicles carrying material over such streets as will cause least annoyance to public and do not operate on public streets on weekdays between hours of 8:00 p.m. and 7:00 a.m., or on Saturdays or Sundays, or legal holidays unless approved by Owner.

1.30 HAZARDOUS MATERIALS

- A. Applicable Regulations
 - 1. RCRA, 1976 – Resource Conservation and Recovery Act: This federal statute regulates generation, transportation, treatment, storage, and disposal of hazardous waste nationally.
- B. To use an off-site hazardous waste disposal facility, the Contractor must use the Uniform Hazardous Waste Manifest (shipping paper).
- C. Federal, state, and local laws and regulations may apply to the storage, handling, and disposal of hazardous materials and waste.

1.31 BARRIERS AND ENCLOSURES

- A. The Contractor shall furnish, install, and maintain as long as necessary, and remove no longer required adequate barriers, warning signs or lights at all dangerous points throughout the work for protection of property, workers,

and the public. The Contractor shall hold the Owner harmless from damage or claims out of any injury or damage that may be sustained by any person or persons as a result of the work under the contract.

1.32 TANK I.D. PLATES

- A. Prior to any exterior work being performed, the Contractor shall remove the existing tank I.D. plate (if applicable).
- B. Following the completion of all exterior work, the Contractor shall reinstall the tank I.D. plate with new stainless-steel fasteners.

PART 2 – GROUND STORAGE TANK PRODUCTS

2.01 COATINGS

- A. Painting and Coatings
 - 1. The following paint/coating manufacturers are approved for this project: Sherwin Williams and Tnemec.
 - 2. No substitutions by other manufacturers and products will be considered unless a written request for approval is received by the Engineer/Owner at least ten (10) days prior to the bid date.
It is the Contractor's responsibility that the substitution is of equal or better quality. The decision regarding approval or disapproval of the substitution by the Owner will be considered final.
 - 3. The Contractor shall supply the Engineer/Owner with a color chart to allow for ample time for color selection. Colors are to be as follows:
 - a. When multiple coats are required, coatings shall be alternating colors.
 - b. Interior final coat shall be white.
 - c. Exterior final coat shall be selected by the Owner.
 - 4. All coating materials and required thinners for each tank shall be manufactured by the same single source coating manufacturer.
 - 5. All interior wet coatings shall meet all National Sanitation Foundation certification standards for potable water contact.

2.02 ZINC/EPOXY – 2 COAT SYSTEM – WET INTERIOR

- A. Two (2) coat zinc/epoxy system meeting all National Sanitation Foundation certification standards for potable water contact.
- B. Approved suppliers and systems:
 - Manufacturer System
 - Sherwin Williams Galvapak 1k/Sherplate P.W.
 - Tnemec Series 94 H2O/ Series 22

2.03 ZINC / URETHANE / FLUOROPOLYMER – 3 COAT SYSTEM – EXTERIOR

- A. Three (3) coat zinc / urethane / fluoropolymer system.
- B. The Contractor is advised to follow all rules for safety while using isocyanates.
- C. Ultraviolet protection additives mixed at factory only. There will be no tinting or addition of any material other than the manufacturer's thinners.
- D. Approved suppliers and systems:
 - Manufacturer System

Sherwin Williams Galvapak 1k/Acrolon 218HS/Fluorokem HS
Tnemec Series 94 H2O/Series 73/Series V700

2.04 METALS REPAIRS

- A. Steel plating and other structural repairs shall comply with ASTM – A36.
- B. If any significant metal loss (more than ¼") is uncovered during surface preparation operations, the Contractor shall notify the Engineer to determine the necessary repair method.

2.05 REPAIR OF CONCRETE STRUCTURES

- A. Foundation Repair
 - 1. Mortar Clad, Series 218 by Tnemec Co.
 - 2. Sika Gard 75 EpoCem.
- B. Grout Repair
 - 1. The standard to fill holes is an epoxy grout Sika 212 Grout as manufactured by Sika Corporation.
 - 2. Where backer rod is required, use ITP standard closed cell polyethylene foam manufactured by Industrial Thermo Polymers, Ltd., 2316 Delaware Ave., Suite 216, Buffalo, NY 14216, 1-800-387-3847.

2.06 EPOXY / EPOXY – 2 COAT SYSTEM – CONCRETE FOUNDATION

- A. The coating shall be a two (2) coat epoxy polyamide system.
- B. Approved suppliers and manufacturers:
Manufacturer System
Sherwin Williams Macropoxy 5000/Macropoxy 646
Tnemec N69/N69

2.07 EPOXY CAULKING

- A. Epoxy caulking shall be flexible, NSF approved for use in contact with potable water and compatible with the epoxy coating system used in the tank.
- B. Caulk will be two component, polyamine or polyamide cured and 100% solids.
- C. The Coatings manufacturer and caulk material manufacturer shall confirm, in writing, that the internal epoxy coating system is compatible with the 100% solids epoxy caulk material.
- D. Any conditions for, or surface preparation requirements of the epoxy caulk material shall be included in the written confirmation of material compatibility.
- E. An acceptable product for this Project is "Aquatapoxy A7", manufactured by Raven Lining Systems, Tulsa, Oklahoma.

2.08 HAZARDOUS MATERIAL

- A. The tanks existing coatings do not contain levels of Lead and Chromium that are above the toxicity leachate levels.

2.09 ABRASIVE BLAST ALTERNATIVES

- A. Contractor may request an alternative to the abrasive blast material specified in section 2.14. Alternative blast material specifications shall be submitted to Engineer in writing for review and approval prior to use.

2.10 DUST COLLECTORS – AIR FILTRATION UNITS

- A. Furnish and use a dust collector during all blasting work.
- B. Units to be equal in filtration capacity to Eagle Industries dust collectors. Other units may be used, but their substitution will be evaluated on efficiency at 0.5-micron size and airflow movement.
- C. Use 60,000 cfm minimum.
- D. Furnish HEPA filters for dust collection.
- E. Number of dust collectors shall be sufficient to supply a 50ft./minute downward draft at most areas. An average may be considered. Determination of actual containment plan will be the deciding factor. Calculations of airflow shall be included in the containment submittal for Engineer review. Type and sizing of dust collection equipment shall be in accordance with SSPC-Guide 16.
- F. Use only new filters or filters certified clean.
- G. Contractor is responsible for power for air filtration units.

2.11 GROUND TARPS

- A. Use impermeable ground tarps, 20 mils thick.
- B. Use ground tarps able to withstand the anticipated construction traffic without tearing or separating.
- C. Ground tarps shall extend a minimum of three (3) feet outside of containment.
- D. Ground tarps that are impervious to the abrasive blast media, paint debris dusts, and process water and shall be placed on the ground around the tank to prevent contamination of the ground, storm waters and surface waters due to run-off.

2.12 EQUIPMENT COVERING

- A. Use material that is 8-10 mils thick, and 100% impermeable.
- B. Use material resistant to tear and/or rip by mechanical action from abrasive blasting during blasting operations.
- C. Make coverings airtight by use of duct tape at the openings, or other suitable measures.

2.13 AIR DRYER FOR COMPRESSOR

- A. Use air dryers sufficient to remove 98% of the moisture from the compressed air. Size the dryers on total cfm using manufacturer supplied charts. Upon request, supply charts to Engineer for verification.
- B. If the fan is not operable, cease all blasting until the dryer is replaced or repaired.

2.14 ABRASIVE BLAST MATERIAL

- A. The coal slag shall be 20-40 grade, or 30-60 grade.
- B. The abrasive shall be free of moisture, water soluble contaminants, dust, and oil.
- C. The abrasive shall be stored and covered to prevent moisture contamination.
- D. All leaking or spilling bags shall be removed, and affected areas properly cleaned.

- E. All slag abrasive shall meet the requirements of SSPC-AB1 "Mineral and Slag Abrasive" June 1, 1991-Grade 3.
- F. The use of silica sand, flint sand, and glass beads is prohibited.
- G. All abrasive and grit material used, and all equipment supplied shall be subject to approval of the Engineer. The abrasive or grit shall be sharp enough and hard enough to remove the mill scale, rust, and paint, and impart the required surface profile.

PART 2.1 – NOT USED

PART 2.2 – ELEVATED LEG TANK PRODUCTS

2.2.01 COATINGS

- A. Painting and Coatings
 - 1. The following paint/coating manufacturers are approved for this project: Sherwin Williams and Tnemec.
 - 2. No substitutions by other manufacturers and products will be considered unless a written request for approval is received by the Engineer/Owner at least ten (10) days prior to the bid date.
It is the Contractor's responsibility that the substitution is of equal or better quality. The decision regarding approval or disapproval of the substitution by the Owner will be considered final.
 - 3. The Contractor shall supply the Engineer/Owner with a color chart to allow for ample time for color selection.
Colors are to be as follows:
 - a. When multiple coats are required, coatings shall be alternating colors.
 - b. Interior final coat shall be white.
 - c. Exterior final coat shall be selected by the Owner.
 - 4. All coating materials and required thinners for each tank shall be manufactured by the same single source coating manufacturer.
 - 5. All interior wet coatings shall meet all National Sanitation Foundation certification standards for potable water contact.

2.2.02 ZINC / EPOXY – 2 COAT SYSTEM – WET INTERIOR

- A. Two (2) coat zinc/epoxy system meeting all National Sanitation Foundation certification standards for potable water contact.
- B. Approved suppliers and systems:

<u>Manufacturer</u>	<u>System</u>
Sherwin Williams	Galvapak 1k/Sherplate P.W.
Tnemec	Series 94 H2O/Series 22

2.2.03 EPOXY / EPOXY / URETHANE / FLUOROPOLYMER – 4 COAT SYSTEM – EXTERIOR

- A. Four (4) coat epoxy/epoxy/urethane/fluoropolymer system.
- B. The Contractor is advised to follow all rules for safety while using isocyanates.
- C. Ultraviolet protection additives mixed at factory only. There will be no tinting or addition of any material other than the manufacturer's thinners.
- D. Approved suppliers and systems:

<u>Manufacturer</u>	<u>System</u>
Sherwin Williams	Macropoxy 646/Macropoxy 929 Pre-Prime/Acrolon 218HS/Fluorokem HS

Tnemec Series 135/F.C. Typoxy Series 27/Series 73/Series V700

2.2.04 METALS REPAIRS

- A. Steel plating and other structural repairs shall comply with ASTM – A36.
- B. If any significant metal loss (more than ¼") is uncovered during surface preparation operations, the Contractor shall notify the Engineer to determine the necessary repair method.

2.2.05 REPAIR OF CONCRETE STRUCTURES

- A. Foundation Repair
 - 1. Mortar Clad, Series 218 by Tnemec Co.
 - 2. Sika Gard 75 EpoCem.
- B. Grout Repair
 - 1. The standard to fill holes is an epoxy grout Sika 212 Grout as manufactured by Sika Corporation.
 - 2. Where backer rod is required, use ITP standard closed cell polyethylene foam manufactured by Industrial Thermo Polymers, Ltd., 2316 Delaware Ave., Suite 216, Buffalo, NY 14216, 1-800-387-3847.

2.2.06 EPOXY / EPOXY – 2 COAT SYSTEM – CONCRETE FOUNDATION

- A. The coating shall be a two (2) coat epoxy polyamide system.
- B. Approved suppliers and manufacturers:

<u>Manufacturer</u>	<u>System</u>
Sherwin Williams	Macropoxy 5000/Macropoxy 646
Tnemec	N69/N69

2.2.07 ABRASIVE BLAST ALTERNATIVES

- A. Contractor may request an alternative to the abrasive blast material specified in section 2.30. Alternative blast material specifications shall be submitted to Engineer in writing for review and approval prior to use.

2.2.08 GROUND TARPS

- A. Use impermeable ground tarps, 20 mils thick.
- B. Use ground tarps able to withstand the anticipated construction traffic without tearing or separating.
- C. Ground tarps shall extend a minimum of three (3) feet outside of the work area.
- D. Ground tarps that are impervious to the abrasive blast media, paint debris dusts, and process water and shall be placed on the ground around the tank to prevent contamination of the ground, storm waters and surface waters due to run-off.

2.2.09 EQUIPMENT COVERING

- A. Use material that is 8-10 mils thick, and 100% impermeable.
- B. Use material resistant to tear and/or rip by mechanical action from abrasive blasting during blasting operations.
- C. Make coverings airtight by use of duct tape at the openings, or other suitable measures.

2.2.10 AIR DRYER FOR COMPRESSOR

- A. Use air dryers sufficient to remove 98% of the moisture from the compressed air. Size the dryers on total cfm using manufacturer supplied charts. Upon request, supply charts to Engineer for verification.
- B. If the fan is not operable, cease all blasting until the dryer is replaced or repaired.

2.2.11 ABRASIVE BLAST MATERIAL

- A. The coal slag shall be 20-40 grade, or 30-60 grade.
- B. The abrasive shall be free of moisture, water soluble contaminants, dust, and oil.
- C. The abrasive shall be stored and covered to prevent moisture contamination.
- D. All leaking or spilling bags shall be removed, and affected areas properly cleaned.
- E. All slag abrasive shall meet the requirements of SSPC-AB1 "Mineral and Slag Abrasive" June 1, 1991-Grade 3.
- F. The use of silica sand, flint sand, and glass beads is prohibited.
- G. All abrasive and grit material used, and all equipment supplied shall be subject to approval of the Engineer. The abrasive or grit shall be sharp enough and hard enough to remove the mill scale, rust, and paint, and impart the required surface profile.

PART 3 – GROUND STORAGE TANK EXECUTION**3.01 COATING APPLICATION REQUIREMENTS**

- A. Tank Interior Humidity and Temperature
 - 1. During abrasive blast cleaning and painting operations, the relative humidity of the interior air shall not exceed fifty percent (50%). Relative humidity shall be measured by a sling psychrometer or other appropriate psychrometric measuring equipment.
 - 2. The interior air temperature and surface temperature of surfaces to be coated shall be between 50°F and 120°F and at least 5°F above the dew point or as otherwise required by the manufacturer.
 - 3. The Contractor shall achieve the required conditions for interior air conditions through the use of dehumidification equipment.
 - a. The dehumidification equipment shall supply dry, fresh (not recirculated) air within 12 inches of the tank bottom from a system of duct work and blowers. This ventilation system shall operate 24 hrs./day throughout the entire coating cure process.
 - b. Dehumidification shall be maintained until abrasive cleaning operations, coating operations, and coating cure are complete, but not less than ten (10) days.
- B. Tank Exterior Humidity and Temperature
 - 1. No coating shall be applied to wet or damp surfaces or in rain, snow, fog, or mist.
 - 2. No coatings shall be applied when it is expected that the ambient air temperature will fall below 50°F or within 5°F of the dew point within 6 hours after application of coatings or paints.
 - 3. No coating shall be applied when the relative humidity will exceed 85%, or as specified in the coating manufacturer's product data sheet. Relative humidity and dew point shall be measured by use of a sling psychrometer in conjunction with US. Department of Commerce Weather Bureau Psychrometric Tables. If the above conditions are exceeded, coating or painting operations shall be delayed until conditions are favorable.
 - 4. The ambient conditions and surface temperature of the surfaces being coated must be between 50°F and 120°F. The surface temperature shall be at least 5°F above the dew point or within the manufacturer's recommendations.

3.02 DUST CONTAINMENT

- A. The Contractor shall do everything within industry standards to minimize dust as a nuisance, both from site and painting operations.
- B. The Contractor shall complete any additional measures required in these specifications for dust containment. There will be no negotiations for extra compensation for nuisance complaints and corrective measures.
- C. The Contractor shall fully inspect the area, land use, and other pertinent local conditions prior to bidding exterior work.
- D. The Contractor shall not permit dust, abrasive, or paint chips to fall beyond the property line or ground cover.
- E. The Contractor shall protect existing storm sewer inlet(s) by placing a drop-in inlet filter which shall be removed upon completion of painting operations. The inlet filter shall be in accordance with Section 280 of the IDOT Standard Specifications. The storm sewer inlets must be protected within 30 feet of the base of the tank.
- F. The Contractor shall not permit any visual dust release when transferring media from either the interior or exterior of the structure to the dumpster. Suppress all dust with tarps or water, or other preapproved method.
- G. The Contractor shall utilize vacuum attachments on all power tools during exterior surface preparation work performed.

3.03 CONTAINMENT DURING EXTERIOR SURFACE PREPARATION

- A. The Contractor shall furnish and install a total containment system to be used during all dust generating work during exterior surface preparation, which conforms to Section 4.2.2.2 of SSPC Guide 6, SSPC Guide 7, SSPC Guide 16 and SSPC-TU-7
- B. Paint chips shall be contained to an area immediately around the structure. Release outside the structure will not be permitted.
- C. The containment system shall be erected on all sides of the tank for 360-degree coverage, or a moveable system may be utilized.
- D. The roof shall be covered with the containment system. There will be separate vertical tarps from the roof or sidewalls to allow waste from the roof to slip down the sidewalls.
- E. The containment systems shall be supported by temporary braces attached to the roof and ground. Leave space to allow rigging and equipment to be used within the shields. The bracing shall be secured by cables to the ground by use of deadmen.
- F. Any damaged shrouds shall be repaired/replaced immediately. The Contractor shall discontinue work operations until the damaged shrouds are repaired or replaced.
- G. The Contractor shall use air impenetrable walls and roof with either rigid or flexible framing.
- H. All seams shall be sealed by a 2-foot overlap. The Contractor shall completely seal all seams by stitching, taping, caulking, or other sealing measures.
- I. Containment shroud material and superstructure shall be non-penetrating, nylon rip-stop material manufactured by Eagle Industries, or written approved equal. Approval of alternate material will be based on density, weight, support strength, stitching, reinforcement, home office experience, and staff assistance.
- J. The Contractor shall design a containment system for containing and controlling emissions, debris and protecting the air, ground and soil from contaminants resulting from surface preparation and painting operations.
- K. The containment system shall provide a safe working environment and provide for control of emissions.
- L. The containment system shall be maintained free of defects through the course of the project.
- M. The Contractor is responsible for the containment system design, bracing, shields, etc. depending on the size of the structure, availability of space, prevailing wind forces, and local restrictions.

- N. Proposed changes and modifications to the containment system during the course of the work must be submitted in writing and reviewed by the Engineer. The submittal shall address the operational and technical reasons for containment modifications.
- O. Payment is incidental to ground storage tank exterior repaint with full containment.

3.04 CONTAINMENT SYSTEM TANK CONNECTIONS

- A. The Contractor shall request approval of all welding and cutting on the tank for any tank connections.
- B. All approved holes into the tank shall be cut with rounded corners.
- C. The Contractor shall use a welder certified to complete the type and position weld necessary for attachment.
- D. Payment is incidental to ground storage tank exterior repaint with full containment.

3.05 CONTAINMENT SYSTEM OPENINGS

- A. The Contractor shall design a means of ingress and egress of the containment structure. Access shall be through an overlapped door on each side of the chamber.
- B. The size of the opening structure shall be 8' x 8' x 6' high. Minimum clear walking height shall be 54-inches. Minimum width shall be 42-inches. The structure shall be fabricated from scaffolding and covered with overlapping tarps that are secured in-place. The chamber shall be constructed out of 6-foot-high scaffold sections and installed so the majority of the scaffold is extended out from the containment.
- C. An opening for air piping exhaust shall be constructed with a minimum 18-inch-long tunnel securely attached. Maintain the exhaust piping in as straight a line as possible to avoid restricting airflow. Exhaust air attachments may be elsewhere other than the entryway.
- D. An operating HEPA vacuum shall be supplied in the entryway to vacuum off workers leaving the containment. The vacuum shall be clean and serviced.
- E. Payment is incidental to ground storage tank exterior repaint with full containment.

3.06 CONTAINMENT SYSTEM GROUND COVER

- A. Ground tarps shall be provided for the area inside the containment system and a 3-foot diameter around the outside of the containment. Ground tarps shall be impermeable, 20 mils thick that can withstand construction traffic without tearing or separating.
- B. All ground tarps shall be lapped a minimum of 2-feet. Lap the inside ground tarps up 2-feet on the outside of the containment system. Lap the outside ground tarps 2-feet under the inside tarps with slots for cables. This will prevent loss of abrasive material between the ground tarp and vertical containment system.
- C. Payment is incidental to ground storage tank exterior repaint with full containment.

3.07 PRE-SURFACE PREPARATION

- A. The Contractor shall low pressure water clean at 4,000 psi all surfaces and appurtenances to remove sediment, minerals, soot, and other contaminants.
- B. Staining may remain in place prior to abrasive blast cleaning. Engineer to approve cleanliness.

3.08 WET INTERIOR – NEAR WHITE METAL (SSPC-SP10) DRY BLAST

- A. The Contractor shall abrasive blast clean all surfaces and appurtenances to a near white finish (SSPC-SP10), current edition.
- B. Maintain a surface profile of 2.0 – 3.0 mils on abrasive blast cleaned surfaces.
- C. Prior to any primer application, all prepared interior abrasive blast surfaces to be coated must have dust removed by vacuuming or cleaned by an alternative method acceptable to the Engineer.
- D. Once an area is acceptable for painting, apply all coats and allow coating to cure to touch prior to resumption of blasting or blast the entire tank before painting, use dehumidification to hold the blast.
- E. The Contractor is responsible for supplying heat and or dehumidification to maintain blast conditions prior to primer application.

3.09 EXTERIOR – COMMERCIAL (SSPC-SP6) DRY BLAST

- A. The Contractor shall abrasive blast all surfaces of the tank structure to a commercial (SSPC-SP6) finish.
- B. Maintain a surface profile of 2.0-3.0 mils on the abrasive blast cleaned surfaces.
- C. Prior to coating application, all prepared surfaces to be coated shall be cleaned of blast media and dust, to a condition acceptable to the Engineer.

3.10 PROTECTION OF SURFACES

- A. The Contractor shall protect all surfaces, which are not to be painted, from overblasting, spraying, over spray, spatters, or spillage of paint.

PART 3.1 – NOT USED**PART 3.2 – ELEVATED LEG TANK EXECUTION****3.2.01 COATING APPLICATION REQUIREMENTS**

- A. Tank Interior Humidity and Temperature
 - 1. During surface preparation and painting operations, the relative humidity of the interior air shall not exceed fifty percent (50%). Relative humidity shall be measured by a sling psychrometer or other appropriate psychometric measuring equipment.
 - 2. The interior air temperature and surface temperature of surfaces to be coated shall be between 50°F and 120°F and at least 5°F above the dew point or as otherwise required by the manufacturer.
 - 3. The Contractor shall achieve the required conditions for interior air conditions through the use of dehumidification equipment.
 - a. The dehumidification equipment shall supply dry, fresh (not recirculated) air within 12 inches of the tank bottom from a system of duct work and blowers. This ventilation system shall operate 24 hrs./day throughout the entire coating cure process.
 - b. Dehumidification shall be maintained until abrasive cleaning operations, coating operations, and coating cure are complete, but not less than ten (10) days.
- B. Tank Exterior Humidity and Temperature
 - 1. No coating shall be applied to wet or damp surfaces or in rain, snow, fog, or mist.

2. No coatings shall be applied when it is expected that the ambient air temperature will fall below 50°F or within 5°F of the dew point within 6 hours after application of coatings or paints.
3. No coating shall be applied when the relative humidity will exceed 85%, or as specified in the coating manufacturer's product data sheet. Relative humidity and dew point shall be measured by use of a sling psychrometer in conjunction with US. Department of Commerce Weather Bureau Psychrometric Tables. If the above conditions are exceeded, coating or painting operations shall be delayed until conditions are favorable.
4. The ambient conditions and surface temperature of the surfaces being coated must be between 50°F and 120°F. The surface temperature shall be at least 5°F above the dew point or within the manufacturer's recommendations.

3.2.02 DUST CONTAINMENT

- A. The Contractor shall do everything within industry standards to minimize dust as a nuisance, both from site and painting operations.
- B. The Contractor shall complete any additional measures required in these specifications for dust containment. There will be no negotiations for extra compensation for nuisance complaints and corrective measures.
- C. The Contractor shall fully inspect the area, land use, and other pertinent local conditions prior to bidding exterior work.
- D. The Contractor shall not permit dust, abrasive, or paint chips to fall beyond the property line or ground cover.
- E. The Contractor shall protect existing storm sewer inlet(s) by placing a drop-in inlet filter which shall be removed upon completion of painting operations. The inlet filter shall be in accordance with Section 280 of the IDOT Standard Specifications. The storm sewer inlets must be protected within 30 feet of the base of the tank. Payment is incidental to the contract.
- F. The Contractor shall not permit any visual dust release when transferring media from either the interior or exterior of the structure to the dumpster. Suppress all dust with tarps or water, or other preapproved method.
- G. The Contractor shall utilize vacuum attachments on all power tools during exterior surface preparation work performed.

3.2.03 PRE-SURFACE PREPARATION

- A. The Contractor shall low pressure water clean at 4,000 psi all surfaces and appurtenances to remove sediment, minerals, soot, and other contaminants.
- B. Staining may remain in place prior to abrasive blast cleaning. Engineer to approve cleanliness.

3.2.04 WET INTERIOR – NEAR WHITE METAL (SSPC-SP10) DRY BLAST

- A. The Contractor shall abrasive blast clean all surfaces and appurtenances to a near white finish (SSPC-SP10), current edition.
- B. Maintain a surface profile of 2.0 – 3.0 mils on abrasive blast cleaned surfaces.
- C. Prior to any primer application, all prepared interior abrasive blast surfaces to be coated must have dust removed by vacuuming or cleaned by an alternative method acceptable to the Engineer.
- D. Once an area is acceptable for painting, apply all coats and allow coating to cure to touch prior to resumption of blasting or blast the entire tank before painting, use dehumidification to hold the blast.
- E. The Contractor is responsible for supplying heat and or dehumidification to maintain blast conditions prior to primer application.

3.2.05 EXTERIOR – BARE METAL (SSPC-SP11) POWER TOOL CLEAN

- A. The Contractor shall power tool clean any areas of corrosion on the tower exterior to a bare metal finish (SSPC-SP11).
- B. Maintain a surface profile of 1.0-2.0 mils on power tool cleaned surfaces.
- C. Prior to coating application, all prepared surfaces to be coated shall be cleaned of blast media and dust, to a condition acceptable to the Engineer.

3.2.06 PROTECTION OF SURFACES

- A. The Contractor shall protect all surfaces, which are not to be painted, from overblasting, spraying, over spray, spatters, or spillage of paint.

PART 4 – COATING SYSTEM APPLICATION**4.01 GENERAL OBJECTIVE**

- A. The object of these specifications is to provide the material and workmanship necessary to produce quality coating systems. All painting work shall be implemented in strict accordance with the manufacturer's instructions and shall be performed in a manner satisfactory to the Engineer.

4.02 QUALITY OF PAINT

- A. The paint mentioned in the following specifications are set up as standards of quality. The standard "or equal" clause shall apply. No substitution will be considered unless a written request for approval has been received by the Engineer at least 10 days prior to the date for receipt of bids. Each such request shall include the name of the specified material for which a substitute is being requested; the name of the proposed substitute material and a complete description of the proposed substitute including performance and test data and any other information necessary for an evaluation. The burden of proof of the merit of the proposed substitute is upon the proposer. The decision of the Engineer regarding approval or disapproval of the proposed substitution shall be final.
- B. All material shall be brought to the job site in the original sealed and labeled containers of the paint manufacturer and shall be subject to inspection by the Engineer. Colors, where not specified, shall be selected by the Owner.
- C. The Contractor shall submit to the Engineer, immediately upon completion of the job, certification from the paint manufacturer indicating that the quantity of each coating purchased was sufficient to coat all surfaces in accordance with the specifications and manufacturer's recommendations.

4.03 APPLICATION OF PAINT

- A. The Contractor shall apply each coating in accordance with these specifications and the paint manufacturer's recommendations. The coating shall be applied at the specified thickness. If the specified thickness is not obtained, an additional coat(s) of paint shall be applied.
- B. All paint shall be applied in strict accordance with the applicable manufacturer's printed data sheet and container label outlining recommended minimum and maximum surface and air temperatures required for application. Paint shall not be applied to wet or damp surfaces and shall not be applied in rain, snow, fog, or mist, or when the relative humidity exceeds 85%.

- C. No paint shall be applied when it is expected that the relative humidity will exceed 85% and/or the air temperature will drop below recommended levels within 12 hours after paint application. Dew or moisture condensation should be anticipated, and if such conditions are prevalent, painting shall be delayed until certain that the surfaces are dry.
- D. Painting should be completed well in advance of the probable time of day when condensation will occur in order to permit the film an appropriate drying time prior to the formation of moisture on the surface.

4.04 DRY FILM THICKNESS

- A. Dry film thickness shall be measured in accordance with current SSPC PA2, "Dry Paint Thickness with Magnetic Gauges".

4.05 CONTAINMENT / DISPOSAL REQUIREMENTS

- A. The entire tank and structures shall be enclosed, and surface preparation debris contained. Refer to SSPC-Guide 6 (CON), "Guide for Containing Debris Generated During Paint Removal Operations". The containment will serve to contain overspray during coating operations from vehicles, building, and other appurtenances.
- B. The painting Contractor shall cut, and grind flush all exterior containment structure lugs and prepare and paint areas as described in the exterior painting section of these specifications.
- C. Upon removal of the exterior lugs, the painting Contractor shall also repair any damaged interior coating by methods described in the interior painting section of these specifications. Abrasive blasting to bare metal (SSPC-SP10) will be required in the damaged areas.
- D. Paint debris shall be classified as hazardous if after testing for toxic characteristics using the Toxicity Characteristic Leaching Procedure (TCLP) test methods, the leachate contains any of the elements in concentrations at or greater than those listed in 40 CFR 261 or applicable state or local regulations. In any circumstances, the most stringent jurisdictional regulations governing the project location shall apply. The cost for providing this testing will be considered incidental to various pay items or to a specific pay item.

4.06 VENTILATION AND CURE TIMES

- A. Adequate ventilation that will effectively remove solvent vapors shall be provided for proper drying of paint on interior surfaces. Following final coat applications, the tank shall not be disinfected or filled until the coating system is fully cured. Refer to applicable product data sheet(s) for dry time / temperature requirements.

4.07 AMERICAN WATER WORKS ASSOCIATION

- A. All work shall be implemented in accordance with the American Water Works Association's Standard D102-21.

4.08 NSF CERTIFICATION

- A. All coatings in contact with potable water or applied to the inside wet area of the tanks shall be listed by NSF International or UL under ANSI/NSF Standard 61, Section 5, Protective (Barrier) Materials - Potable Water Tank Coatings.

4.09 GROUND STORAGE TANK WET INTERIOR REPAINT

- A. The Contractor shall apply a two (2) coat high build epoxy paint system with a zinc primer to all prepared surfaces and appurtenances.
- B. Surface preparation and paint requirements have been previously defined.
- C. Apply each coat at the following rates:

<u>Manufacturer</u>	<u>Minimum</u>	<u>Maximum</u>
Sherwin Williams	<u>D.F.T. mils</u>	<u>D.F.T. mils</u>
Primer - Corothane/Galvapak 1k	2.0	3.0
<u>Topcoat - Sherplate PW</u>	<u>20.0</u>	<u>30.0</u>
TOTAL	22.0*	33.0*

<u>Manufacturer</u>	<u>Minimum</u>	<u>Maximum</u>
Tnemec	<u>D.F.T. mils</u>	<u>D.F.T. mils</u>
Primer - Series 94 H2O	2.5	3.5
<u>Topcoat - Series 22</u>	<u>20.0</u>	<u>30.0</u>
TOTAL	22.5*	33.5*

*Total does not include stripe coat.

- D. Stripe coat to be applied to all welds, angles, and sharp edges throughout the structure, including above the high-water line and all roof beams, etc.
- E. Each full coat shall be a different color from the previous coat and is to be approved by the Engineer. No color bleed-through should occur if proper application rates are observed.
- F. Apply all coats in uniform color and sheen without streaks, laps, runs, sags, cloudy, or missed areas. Correct all defects before application of the successive coat.
- G. Allow a minimum of twenty-four (24) hours between coats (including stripe coat). Additional time may be necessary if low temperatures require an increase in the necessary cure time.
- H. Maintain forced ventilation for a minimum of four (4) days after topcoat application, time required for cure is dependent on the coating manufacturer and temperature. Record variations of the standard procedures (roof hatch closure because of rain, etc.), and submit to the Engineer. Heat is required if, in the opinion of the Engineer, the integrity of the coating is endangered by cold weather, or if additional cure time will delay the project beyond the substantial completion date.
- I. Maintain internal air movement at 20 ft., at 10 ft., and at 1 ft. above the floor for seven (7) days after painting. Suspend 2,500 cfm fans from the safety grabs at each elevation, at completion of painting.
- J. Payment is a separate line item "GROUND STORAGE TANK WET INTERIOR REPAINT" which the Owner reserves the right to delete.

4.10 GROUND STORAGE TANK EXTERIOR COATING REPAINT WITH FULL CONTAINMENT

- A. The Contractor shall apply a three (3) coat zinc, urethane, fluoropolymer paint system to all exterior steel prepared surfaces and appurtenances.
- B. Surface preparation and paint requirements have been previously defined.
- C. Apply all coatings by brush and roller. Spray application is prohibited unless the containment system is in place.
- D. Apply each coat at the following rates:

<u>Manufacturer</u>	<u>Minimum</u>	<u>Maximum</u>
Sherwin Williams	<u>D.F.T. mils</u>	<u>D.F.T. mils</u>
Primer - Corothane Galvapak 1k	2.0	3.0

Intermediate - Acrolon 218 HS	3.0	4.0
<u>Topcoat - Fluorokem HS</u>	<u>2.0</u>	<u>3.0</u>
TOTAL	7.0	10.0

<u>Manufacturer</u>	Minimum	Maximum
Tnemec	<u>D.F.T. mils</u>	<u>D.F.T. mils</u>
Primer - Series 94 H2O	2.5	3.0
Intermediate - Series 73	2.0	3.0
<u>Topcoat - Series V700</u>	<u>2.0</u>	<u>3.0</u>
TOTAL	6.5	9.0

- E. Each full coat to be a different color from the previous coat and is to be approved by the Engineer. No color bleed-through should occur if proper application rates are observed.
- F. Apply all coats in uniform color and sheen without streaks, laps, runs, sags, cloudy, or missed areas. Correct all defects before application of the successive coat.
- G. Allow a minimum of twenty-four (24) hours between coats. Additional time may be necessary if low temperatures require an increase in the necessary cure time.
- H. Payment is a separate line item "GROUND STORAGE TANK EXTERIOR REPAINT WITH FULL CONTAINMENT" which the Owner reserves the right to delete.

4.11 GROUND STORAGE TANK CONCRETE FOUNDATION REPAIR AND COATING APPLICATION

- A. The Contractor shall remove all loose, soft, or mottled grout from the top of the foundation on the exterior of the tank. Removal of grout shall be by hand, hammer, or chisel.
- B. The Contractor shall pressure wash the grout using a minimum nozzle tip pressure of 2,000 psi on the exterior of the tank. All surfaces shall be free of all standing water or frost in accordance with the manufacturer's recommendations. Surface to be saturated surface dry (SSD).
- C. Properly and thoroughly mix the grout in accordance with the manufacturer's recommendations as a dry mix.
- D. Force the grouting material into the annular space to ensure there are no voids. Make flush with the baseplate on the exterior of the tank.
- E. The Contractor shall apply a two (2) coat epoxy system to all prepared concrete foundation areas.
- F. All foundations are to be water cleaned. Remove dirt 3" below grade around the entire foundation prior to coating, backfill once topcoat is dry to the touch. Apply topsoil and seed to disturbed areas as specified in section 8.02 Site Restoration.
- G. Apply each coat at the following rates:

<u>Manufacturer</u>	Minimum	Maximum
Sherwin Williams	<u>D.F.T. mils</u>	<u>D.F.T. mils</u>
Primer - Macropoxy 5000	1.0	1.5
<u>Topcoat - Macropoxy 646</u>	<u>5.0</u>	<u>10.0</u>
TOTAL	6.0	11.5

<u>Manufacturer</u>	Minimum	Maximum
Tnemec	<u>D.F.T. mils</u>	<u>D.F.T. mils</u>
Primer - Series N69	3.5	5.5
<u>Topcoat - Series N69</u>	<u>3.5</u>	<u>5.5</u>
TOTAL	7.0	11.0

- H. Allow the manufacturer's minimum time between coatings.

- I. Payment is a separate line item "GROUND STORAGE TANK CONCRETE FOUNDATION REPAIR AND COATING APPLICATION" which the Owner reserves the right to delete.

4.12 GROUND STORAGE TANK LOGO

- A. The Contractor shall paint two (2) logos in the same style as the current logos (see attached Ground Storage Tank Logo Example). The logo color and orientation is to be confirmed by the Owner, prior to application.
- B.

<u>Manufacturer</u>	<u>System</u>
Sherwin Williams	Fluorochem HS
Tnemec	V700
- C. Apply lettering and logo coating at 2.0 to 3.0 mils.
- D. Payment is incidental to ground storage tank exterior repaint with full containment.

4.13 ELEVATED LEG TANK WET INTERIOR REPAINT

- A. The Contractor shall apply a two (2) coat high build epoxy paint system with a zinc primer to all prepared surfaces and appurtenances.
- B. Surface preparation and paint requirements have been previously defined.
- C. Apply each coat at the following rates:

<u>Manufacturer</u>	Minimum	Maximum
	<u>D.F.T. mils</u>	<u>D.F.T. mils</u>
<u>Sherwin Williams</u>		
Primer - Corothane/Galvapak 1k	2.0	3.0
<u>Topcoat - Sherplate PW</u>	<u>20.0</u>	<u>30.0</u>
TOTAL	22.0*	33.0*

<u>Manufacturer</u>	Minimum	Maximum
	<u>D.F.T. mils</u>	<u>D.F.T. mils</u>
<u>Tnemec</u>		
Primer - Series 94 H20	2.5	3.5
<u>Topcoat - Series 22</u>	<u>20.0</u>	<u>30.0</u>
TOTAL	22.5*	33.5*

*Total does not include stripe coat.

- D. Stripe coat to be applied to all welds, angles, and sharp edges throughout the structure, including above the high-water line and all roof beams, etc.
- E. Each full coat shall be a different color from the previous coat and is to be approved by the Engineer. No color bleed-through should occur if proper application rates are observed.
- F. Apply all coats in uniform color and sheen without streaks, laps, runs, sags, cloudy, or missed areas. Correct all defects before application of the successive coat.
- G. Allow a minimum of twenty-four (24) hours between coats (including stripe coat). Additional time may be necessary if low temperatures require an increase in the necessary cure time.
- H. Maintain forced ventilation for a minimum of four (4) days after topcoat application, time required for cure is dependent on the coating manufacturer and temperature. Record variations of the standard procedures (roof hatch closure because of rain, etc.), and submit to the Engineer. Heat is required if, in the opinion of the Engineer, the integrity of the coating is endangered by cold weather, or if additional cure time will delay the project beyond the substantial completion date.
- I. Maintain internal air movement at 20 ft., at 10 ft., and at 1 ft. above the floor for seven (7) days after painting. Suspend 2,500 cfm fans from the safety grabs at each elevation, at completion of painting.

- J. Payment is a separate line item "ELEVATED LEG TANK WET INTERIOR REPAINT".

4.14 ELEVATED LEG TANK EXTERIOR OVERCOAT

- A. The Contractor shall apply a four (4) coat epoxy/epoxy/urethane/fluoropolymer paint system to all exterior steel prepared surfaces and appurtenances.
- B. Surface preparation and paint requirements have been previously defined.
- C. Apply all coatings by brush and roller. Spray application is prohibited unless the containment system is in place.
- D. Apply each coat at the following rates:

<u>Manufacturer</u>	<u>Minimum</u>	<u>Maximum</u>
	<u>D.F.T. mils</u>	<u>D.F.T. mils</u>
Sherwin Williams		
Spot Prime - Macropoxy 646	3.0	5.0
Tie-Coat - Macropoxy 929 PrePrime	1.0	2.0
Intermediate - Acrolon 218 HS	2.0	3.0
Topcoat - Fluorokem HS	2.0	3.0
TOTAL	8.0	13.0

<u>Manufacturer</u>	<u>Minimum</u>	<u>Maximum</u>
	<u>D.F.T. mils</u>	<u>D.F.T. mils</u>
Tnemec		
Spot Prime - Series 135	3.0	4.0
Tie-Coat - F.C. Typoxy Series 27	2.0	6.0
Intermediate - Series 73	2.0	3.0
Topcoat - Series V700	2.0	3.0
TOTAL	9.0	16.0

- E. Each full coat to be a different color from the previous coat and is to be approved by the Engineer. No color bleed-through should occur if proper application rates are observed.
- F. Apply all coats in uniform color and sheen without streaks, laps, runs, sags, cloudy, or missed areas. Correct all defects before application of the successive coat.
- G. Allow a minimum of twenty-four (24) hours between coats. Additional time may be necessary if low temperatures require an increase in the necessary cure time.
- H. Payment is a separate line item "ELEVATED LEG TANK EXTERIOR OVERCOAT" which the Owner reserves the right to delete.

4.15 ELEVATED LEG TANK CONCRETE FOUNDATION REPAIR AND COATING APPLICATION

- A. The Contractor shall remove all loose, soft, or mottled grout from the top of the foundation on the exterior of the tank. Removal of grout shall be by hand, hammer, or chisel.
- B. The Contractor shall pressure wash the grout using a minimum nozzle tip pressure of 2,000 psi on the exterior of the tank. All surfaces shall be free of all standing water or frost in accordance with the manufacturer's recommendations. Surface to be saturated surface dry (SSD).
- C. Properly and thoroughly mix the grout in accordance with the manufacturer's recommendations as a dry mix.
- D. Force the grouting material into the annular space to ensure there are no voids. Make flush with the baseplate on the exterior of the tank.
- E. The Contractor shall apply a two (2) coat epoxy system to all prepared concrete foundation areas.

- F. All foundations are to be water cleaned. Remove dirt 3" below grade around the entire foundation prior to coating, backfill once topcoat is dry to the touch. Apply topsoil and seed to disturbed areas as specified in section 8.02 Site Restoration.

- G. Apply each coat at the following rates:

<u>Manufacturer</u>	Minimum <u>D.F.T. mils</u>	Maximum <u>D.F.T. mils</u>
Sherwin Williams		
Primer - Macropoxy 5500	1.0	1.5
<u>Topcoat - Macropoxy 646</u>	<u>5.0</u>	<u>10.0</u>
TOTAL	6.0	11.5

<u>Manufacturer</u>	Minimum <u>D.F.T. mils</u>	Maximum <u>D.F.T. mils</u>
Tnemec		
Primer - Series N69	3.5	5.5
<u>Topcoat - Series N69</u>	<u>3.5</u>	<u>5.5</u>
TOTAL	7.0	11.0

- H. Allow the manufacturer's minimum time between coatings.
- I. Payment is incidental to elevated leg tank exterior overcoat.

4.16 ELEVATED LEG TANK LOGO

- A. The Contractor shall paint two (2) logos in the same style as the current logos (see attached Elevated Leg Tank Logo Example). The logo color and orientation is to be confirmed by the Owner, prior to application.
- B.

<u>Manufacturer</u>	<u>System</u>
Sherwin Williams	Fluorochem HS
Tnemec	V700
- C. Apply lettering and logo coating at 2.0 to 3.0 mils.
- D. Payment is incidental to elevated leg tank exterior overcoat.

PART 5 – METAL EQUIPMENT REPAIR AND REPLACEMENT

5.01 REFERENCES

- A. AWWA D100 Weld Standard
- B. AWS Weld Standard
- C. API 650 Standard

5.02 OMISSIONS

- A. The specifications include all work and materials necessary for completion of the work. Any incidental item(s) of material, labor, or detail(s) required for the proper execution and completion of the work are included.

5.03 DEFINITIONS

- A. Ground Flush: Ground even with adjacent metal, no transition.
- B. Ground Smooth: Ground welds to the point that no cuts or scratches occur when rubbing your gloved hand over the weld. Rebuild any holes or cavities discovered during grinding with additional weld.

5.04 WELDER QUALIFICATION

- A. Certified for type of weld specified.
- B. Welder shall be experienced in industrial or heavy commercial welding and experienced in elevated work.

5.05 SUBMITTALS

- A. Safety Data Sheets for all job materials as required by OSHA.
- B. Welders certification.
- C. Materials list.

5.06 DESIGN SUBMITTALS

- A. All modifications that may be considered structural, as determined by the Board of Professional Engineers, State of Illinois, shall be designed and sealed by a Structural Engineer registered in the State of Illinois. This includes replacement of existing steel, which includes but is not limited to all roof designs and appurtenances, girders, balconies, ladders, and manways/hatches. The cost for providing this information will be considered incidental to various pay items or to a specific pay item.
- B. Drawings included for Part 6 work are included for conceptual design and/or to establish minimal dimensions only. Contractor should verify all dimensions prior to submittal preparations and installation.

5.07 STEEL PLATING AND OTHER STRUCTURAL SHAPES

- A. ASTM – A36.

5.08 BOLTS AND NUTS

- A. Stainless Steel
 - 1. ASTM F594G – 316 stainless steel bolts
 - 2. ASTM F594G – 316 stainless steel nuts
- B. Galvanized Steel
 - 1. ASTM A307 Grade A zinc coated steel bolts
 - 2. ASTM A307 Grade A zinc coated nuts

5.09 WELDS

- A. FINAL – E70XX electrodes
- B. Root – E60XX electrodes
- C. Wire – ER70S electrodes

5.10 CATHODIC CLIPS

- A. Cathodic system clips and coupling for interior, submerged cathodic protection system.

PART 6 – EXECUTION – WORK ITEMS**6.01 ELEVATED LEG TANK FROST FREE ROOF VENT**

- A. The Contractor shall provide a frost-free roof vent that is designed to operate if the screens frosts over.
- B. Screens shall be reinforced with polypropylene frames designed to lift off the bearing surfaces in the event the screens frost over and either positive or negative tank pressure is experienced. Screen blowout provisions during frost conditions shall not be provided. Vent shall be weather-protected type. Entrance of rain or snow shall be prevented by overhanging and overlapping protective cap protruding down to the bottom of the course screens.
- C. Polypropylene mesh screens shall be provided by the Contractor.
- D. See material specification for 24" vent.
- E. Vent shall have flanged bottom to bolt down onto a new installed vent assembly welded to the tank shell. (See Figure 5-1)
- F. Payment is a separate line item "ELEVATED LEG TANK FROST FREE ROOF VENT" which the Owner reserves the right to delete.

6.02 OVERFLOW FLAP GATES

- A. The Contractor shall construct and install a new overflow flap gate. All welds shall be continuous. Flap shall allow for closed positioning during non-flow conditions, and open operation during overflow conditions.
- B. The Contractor shall field verify existing overflow pipe dimensions. Lever arm configuration near hinge may vary if prior written approval is granted by the Engineer.
- C. Use a non-ferrous or stainless-steel screen material with a minimum opening of 1/4 in. x 1/4 in., and a maximum opening of 3/8 in. x 3/8 in. (See Figure 5-2).
- D. Payment is a separate line item "GROUND STORAGE TANK OVERFLOW FLAP GATE" which the Owner reserves the right to delete.
- E. Payment is a separate line item "ELEVATED LEG TANK OVERFLOW FLAP GATE" which the Owner reserves the right to delete.

6.03 WELD CATHODIC COVERS

- A. The Contractor shall weld plates over the cathodic protection access holes in tank roof. (See Drawing 5-8).
- B. Contractor shall complete all welding work prior to any surface preparation or coating application.
- C. Payment is a separate line item "GROUND STORAGE TANK SEAL WELD CATHODIC COVERS" which the Owner reserves the right to delete.
- D. Payment is a separate line item "ELEVATED LEG TANK SEAL WELD CATHODIC COVERS" which the Owner reserves the right to delete.

6.04 SEAM SEAL ROOF PLATE LAP JOINTS

- A. The Contractor shall apply a seam seal on all roof lap seams on the interior wet area on both tanks after the topcoat is dry to the touch. Seal using a caulking gun filling all cracks less than 1 in. separation. Tool sealant as required.
- B. Payment is incidental to ground storage tank wet interior repaint.
- C. Payment is incidental to elevated leg tank wet interior repaint.

6.05 REPLACE MANWAY GASKETS

- A. The Contractor shall remove all existing manway gaskets on both tanks and replace with new gaskets.
- B. Payment is incidental to ground storage tank wet interior repaint.
- C. Payment is incidental to elevated leg tank wet interior repaint.

6.06 GROUND STORAGE TANK CATHODIC PROTECTION SYSTEM UPGRADE

- A. Remove existing equipment in tank interior wet.
- B. Install cathodic clips and pressure fitting for new submerged cp system.
- C. Install new submerged cp system and rectifier. Contractor to supply material and installation submittal.
- D. Corrpro is the approved cathodic protection equipment supplier.
- E. Contractor shall complete all welding work prior to any surface preparation or coating application.
- F. Payment is a separate line item "GROUND STORAGE TANK CATHODIC PROTECTION SYSTEM UPGRADE" which the Owner reserves the right to delete.

6.07 ELEVATED LEG TANK CATHODIC PROTECTION SYSTEM UPGRADE

- A. Remove existing non-functioning equipment in tank interior wet.
- B. Install cathodic clips and pressure fitting for new submerged cp system.
- C. Install new submerged cp system and rectifier. Contractor to supply material and installation submittal.
- D. Corrpro is the approved cathodic protection equipment supplier.
- E. Contractor shall complete all welding work prior to any surface preparation or coating application.
- F. Payment is a separate line item "ELEVATED LEG TANK CATHODIC PROTECTION SYSTEM UPGRADE" which the Owner reserves the right to delete.

6.08 ELEVATED LEG TANK WET INTERIOR ACCESS LADDER

- A. Contractor to replace existing broken interior wet access ladder with a new steel ladder complying with OSHA standards.
- B. Ladder shall have siderails not less than 2 inches x 3/8 inch, with a spacing between siderails of not less than 16 inches and rungs not less than 3/4-inch round (non-slip) or square, spaced 12 inches apart on centers.
- C. Ladder shall extend the full height of the tank interior.
- D. Contractor shall provide a submittal drawing stamped by a structural engineer licensed in the state of Illinois.
- E. Contractor shall complete all welding work prior to any surface preparation or coating application.
- F. Payment is a separate line item for "ELEVATED LEG TANK WET INTERIOR ACCESS LADDER" which Owner reserves the right to delete.

6.09 ELEVATED LEG TANK ROOF CORRAL

- A. Provide a circular roof handrail to encompass all centrally located roof appurtenances.
- B. Install a 42-inch-high railing, 20 feet in diameter and shall include a top rail, intermediate rail, and toe rail on the tank roof. (See Figure 5-5 and 5-6)
- C. Contractor shall relocate the Aviation light to new roof handrail.
- D. Contractor shall relocate antenna mounts and antenna to new roof handrail.
- E. Contractor shall complete all welding work prior to any surface preparation or coating application.

- F. Payment is a separate line item "ELEVATED LEG TANK ROOF CORRAL" which the Owner reserves the right to delete.

6.10 ELEVATED LEG TANK RAISE CATWALK HANDRAIL

- A. Contractor shall furnish material and raise the existing catwalk handrail from its current height to 42 inches accordance with OSHA, AWWA and NFPA code requirements.
- B. Contractor shall furnish and install an intermediate handrail per OSHA, AWWA code requirements.
- C. Contractor shall use 2.5-inch x 2.5-inch x ¼ inch angle iron for vertical posts, supports for new top rail and intermediate rail on balcony.
- D. Contractor shall provide a submittal drawing stamped by a structural engineer licensed in the state of Illinois.
- E. Contractor shall complete all welding work prior to any surface preparation or coating application.
- F. Payment is a separate line item for "ELEVATED LEG TANK RAISE CATWALK HANDRAIL" which Owner reserves the right to delete.

6.11 ELEVATED LEG TANK INTERIOR STIFFENER RING REPAIR

- A. Contractor shall furnish material and labor to repair the damaged section of the interior stiffener ring.
- B. Contractor shall furnish and install new stiffener ring section to match the existing stiffener ring in kind.
- C. Contractor shall field verify any necessary measurements and dimensions.
- D. Contractor shall complete all welding work prior to any surface preparation or coating application.
- E. Payment is a separate line item for "ELEVATED LEG TANK INTERIOR STIFFENER RING REPAIR" which Owner reserves the right to delete.

6.12 TANK INTERIOR ACCESS DOOR

- A. If the Contractor elects to access the ground storage tank interior by cutting an access door into the sidewall of the tank the Contractor shall submit the following for review and approval by the Engineer prior to any work commencing:
 - 1. Tank plan drawing showing proposed location of tank opening.
 - 2. Tank profile drawing showing proposed opening configuration prepared by a structural engineer licensed in the State of Illinois who has designed at least five (5) tank access openings in the past three (3) years.
 - 3. Specifications detailing type of reinforcing, cutting methods, welding procedures, weld x-ray verification procedures, prepared by a structural engineer licensed in the State of Illinois who has specified five (5) projects of the same type in the past three (3) years.
- B. Payment is incidental to the contract.

PART 7 – INSPECTION, TESTING & RECORD KEEPING

7.01 INSPECTION, TESTING & RECORD KEEPING

- A. The Contractor shall schedule and coordinate his work with the Engineer to allow for expeditious inspection by the Owner or their designated representative, including the use of ladders, scaffolds, lighting, and lifts to provide regular access for inspections.
- B. All surfaces ready to receive a coating must be approved by the Engineer before the application of the next succeeding specified coat. The Contractor may, at the direction of the Engineer be required to remove and/or recoat all such work at no additional cost to the Owner.

- C. Wet film thickness readings shall be made by the painting Contractor at least once every thirty (30) minutes to make certain that proper film thickness is being achieved. More frequent checks may be required by the Engineer at his direction.
- D. The Owner reserves the right to perform low voltage holiday tests on the exterior and interior coatings.
- E. The Contractor shall record temperature, humidity, and dew point into a log including date and time reading obtained. The records shall be entered into a Windows compatible file such as Excel and a hard copy submitted with monthly pay requests for those months when coatings are applied. A complete coating summary report for the project is to be furnished to the Engineer at the end of the project, or in the interim, if requested.
- F. Paint films showing sags, checks, blisters, teardrops, curtains, fisheyes, or fat edges will not be accepted. Films exhibiting any of these defects shall be entirely removed and the surface recoated at no additional cost to the Owner.

PART 8 – SITE CLEAN-UP & RESTORATIONS

8.01 SITE CLEAN-UP

- A. The Contractor shall maintain the construction site(s) in a neat and orderly manner throughout the duration of the project. Any issues brought to the attention to the Contractor shall be addressed immediately.

8.02 SITE RESTORATIONS

- A. The Contractor shall restore the work site(s) to the original site condition.
- B. The Contractor is to report any damaged ground at the construction sites in writing prior to mobilization of equipment, otherwise all repairs to the damaged ground will be the responsibility of the Contractor.
- C. Refill all holes, ruts etc. and level area around the construction sites to the original grade.
- D. Fill material to be clean soil, no gravel, rocks, or construction debris is to be used as fill material without the Owner's consent.
- E. Bring soil to a friable condition by disking, harrowing, or otherwise loosening and mixing to a depth of 3 in. – 4 in. Thoroughly break all lumps and clods.
- F. Rake areas to be seeded. Sow seed at a minimum rate of 220 lbs./acre. Use seed intended for the climate.
- G. Work to be completed to the Owner's satisfaction.
- H. Any imported topsoil shall meet IDOT standard specifications for road and bridge construction section 211 and 1081.05(a).
- I. Payment is incidental to the contract.

PART 9 – DISINFECTION

9.01 DISINFECTION

- A. The Contractor shall disinfect the ground storage tank and elevated leg tank interiors following the completion of the work in accordance C652 Chlorination Method No.2 or 3.
- B. Furnish the material and labor necessary to disinfect the structures in the required manner. Promptly repair any defects in the work that may appear.
- C. The Contractor shall hire a third-party that is licensed and certified in the state of Illinois to conduct the field sampling and laboratory analysis. All costs associated with the third-party sampling and analysis are the responsibility of the Contractor.

- D. Do not allow water to enter the distribution system until the structure is proven chemically and bacteriologically safe.
- E. Water vented to waste may not contain any substances in concentrations that can adversely affect the natural environment. Water discharged to the surface shall not contain any measurable total residual chlorine.
- F. The Contractor will be responsible to pay any and all additional expenses if it is necessary to repeat the testing and disinfection procedure as a result of defective work or defective testing.
- G. A minimum of seven (7) days prior to disinfection the Contractor shall submit in writing for approval the disinfection method to be performed including:
 - 1. Schedule of when the samples will be taken
 - 2. Where the samples will be taken from
 - 3. Contact information for the third-party that will be collecting and analyzing the samples. If Method No.3 is selected the Contractor shall include in their submittal the calculations of the weight of disinfectant to be added.
- H. Payment is incidental to the contract.

Project Exhibits

Pressure Vacuum Vent

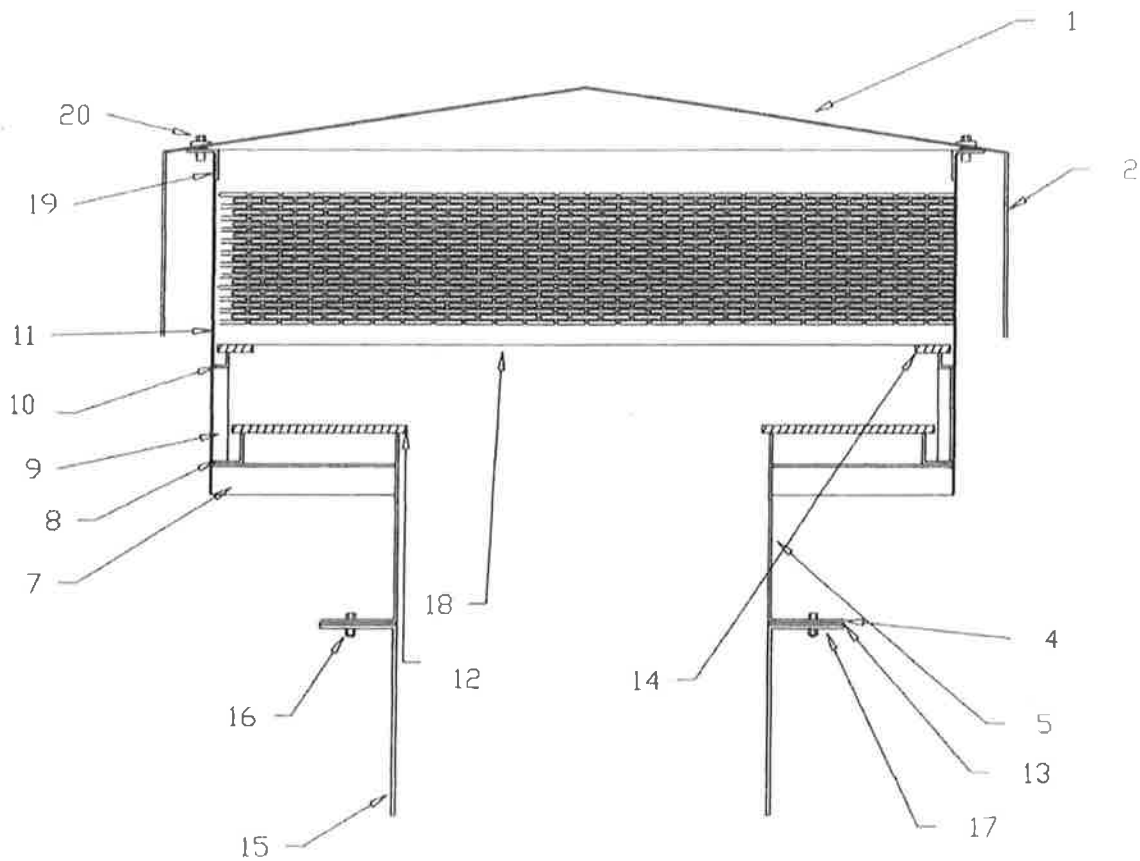


FIGURE 5-1

Material Specification for 24" Vent

1. 1/8" x 54 3/4" plate coned to 1" in 12" min.
2. 1/8" x 12" plate rolled to 54 3/8" I.D.
4. 24" I.D. x 34" O.D. x 3/16" plate, Bolt circle (8) 7/16" dia. Holes @ 15" rad.
5. 12" x 3/16" plate rolled to 24" I.D.
7. (6) 2" x 2" x 3/16" angle 11 7/8" long
8. 2" x 2" x 3/16" angle rolled leg out to 48" O.D.
9. (6) 1" x 1" x 6" angle
10. 1" x 1" x 3/16" angle rolled leg out to 48" O.D.
11. 1/8" x 22" plate with integrated bird screen rolled to 48" I.D.
12. Linear high-density poly-ethylene vacuum pallet 45 1/2" O.D. x 23" I.D. 1/2" tk.
13. 1/8" red rubber gasket 24" I.D. 34" O.D.
14. Linear high-density poly-ethylene pressure pallet 47 1/2" O.D. 43" I.D. 1/2" tk.
15. 1/4" x 12" steel plate rolled to 24" I.D.
16. 3/8" x 1" polypropylene bolt and nut
17. 1/4" steel plate 24 1/2" I.D. x 34" O.D.
18. 16 x 16 x .018 316 polypropylene screen 47 1/2" O.D.
19. 2" x 2" x 3/16" angle rolled leg out to 47 5/8" I.D.
20. 3/8" x 1 1/4" polypropylene bolt and 3/8" wedge washer

***All material is 3003 or 5052 aluminum unless noted otherwise**
***All screen and fastener material are to be made of polypropylene**
All dimensions +/- 1/8" in tolerance

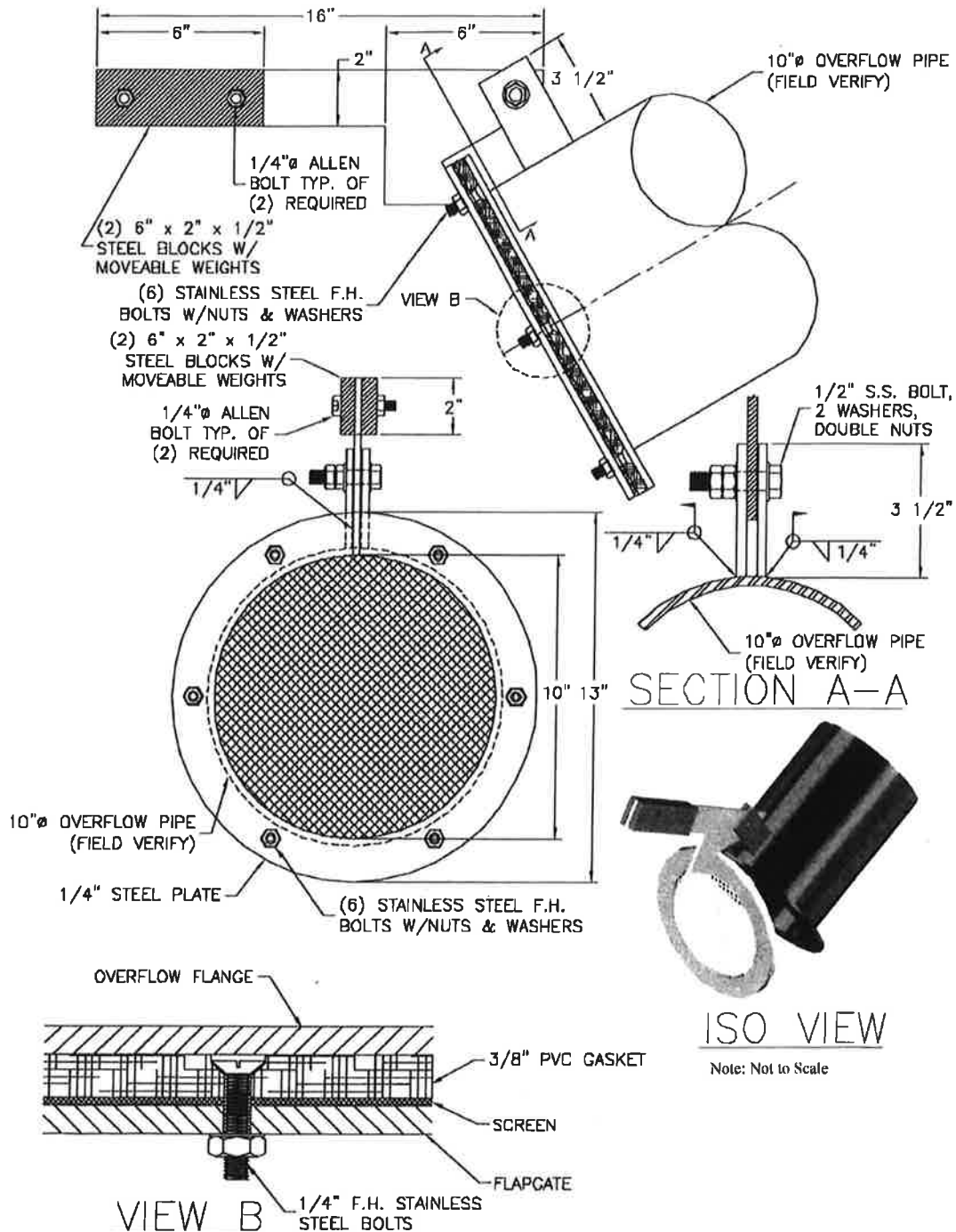


FIGURE 5-2

22-R0568.01
Village of Thornton
IEPA # L17-1359

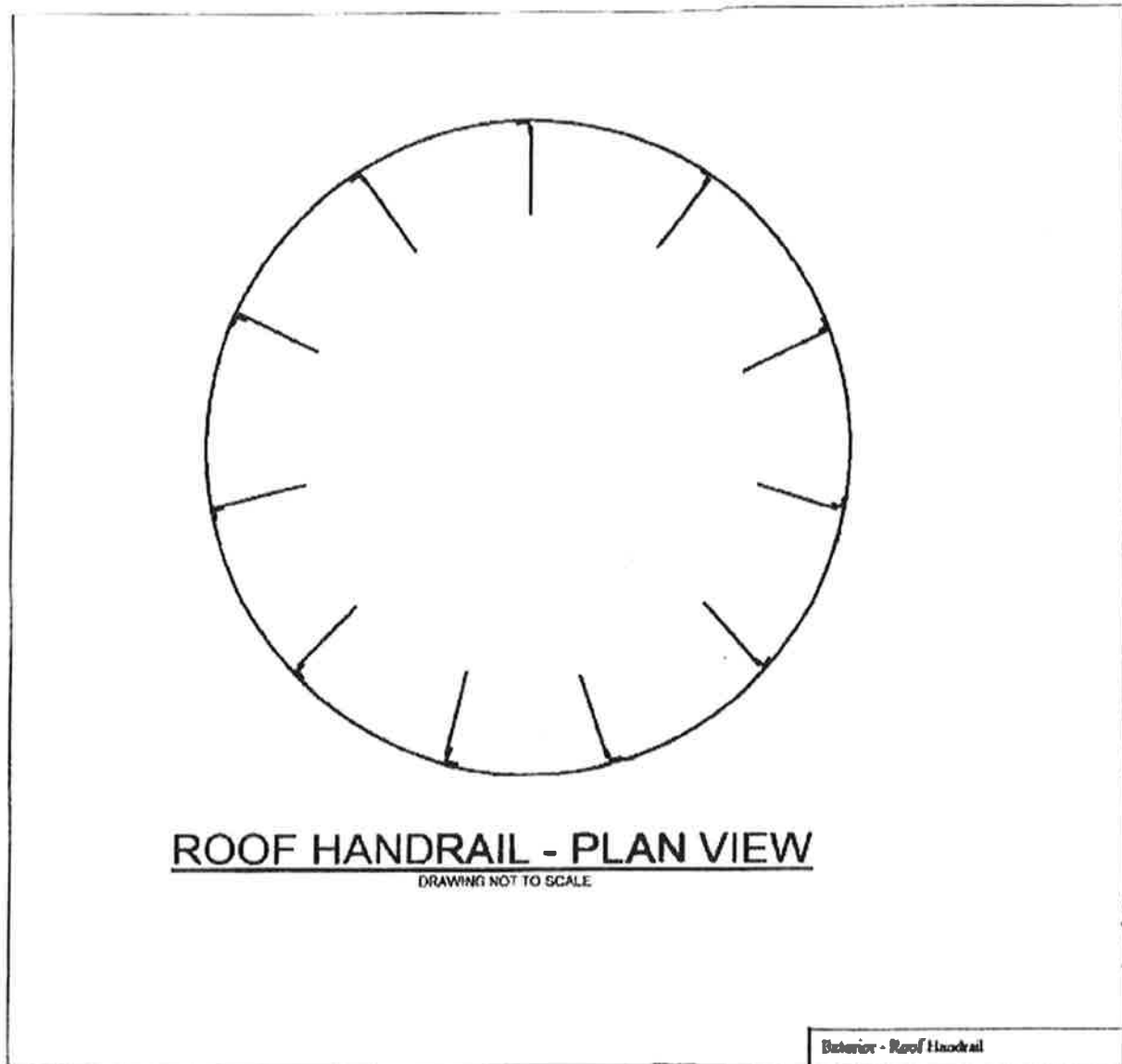


FIGURE 5-5

22-R0568.01
Village of Thornton
IEPA # L17-1359

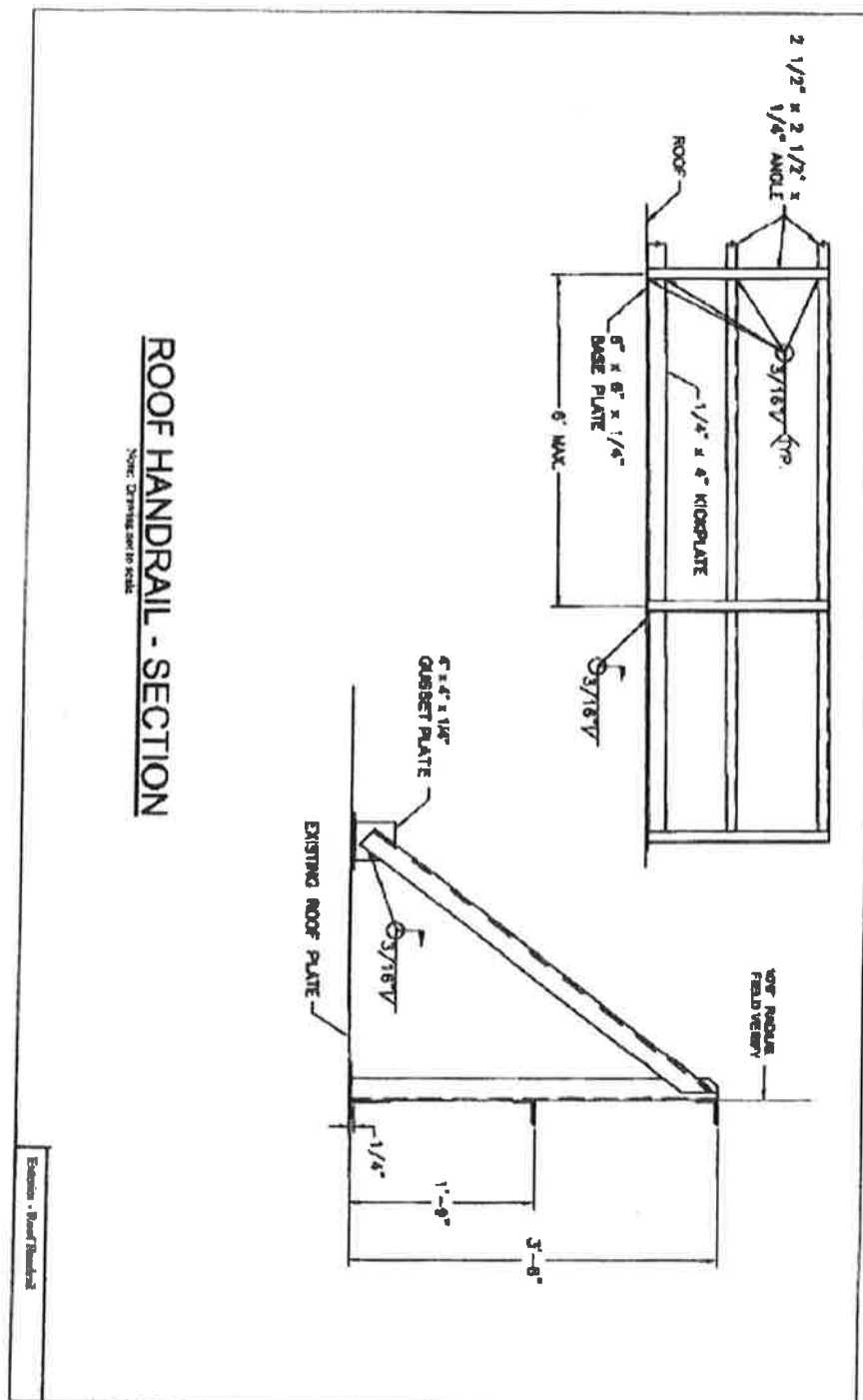
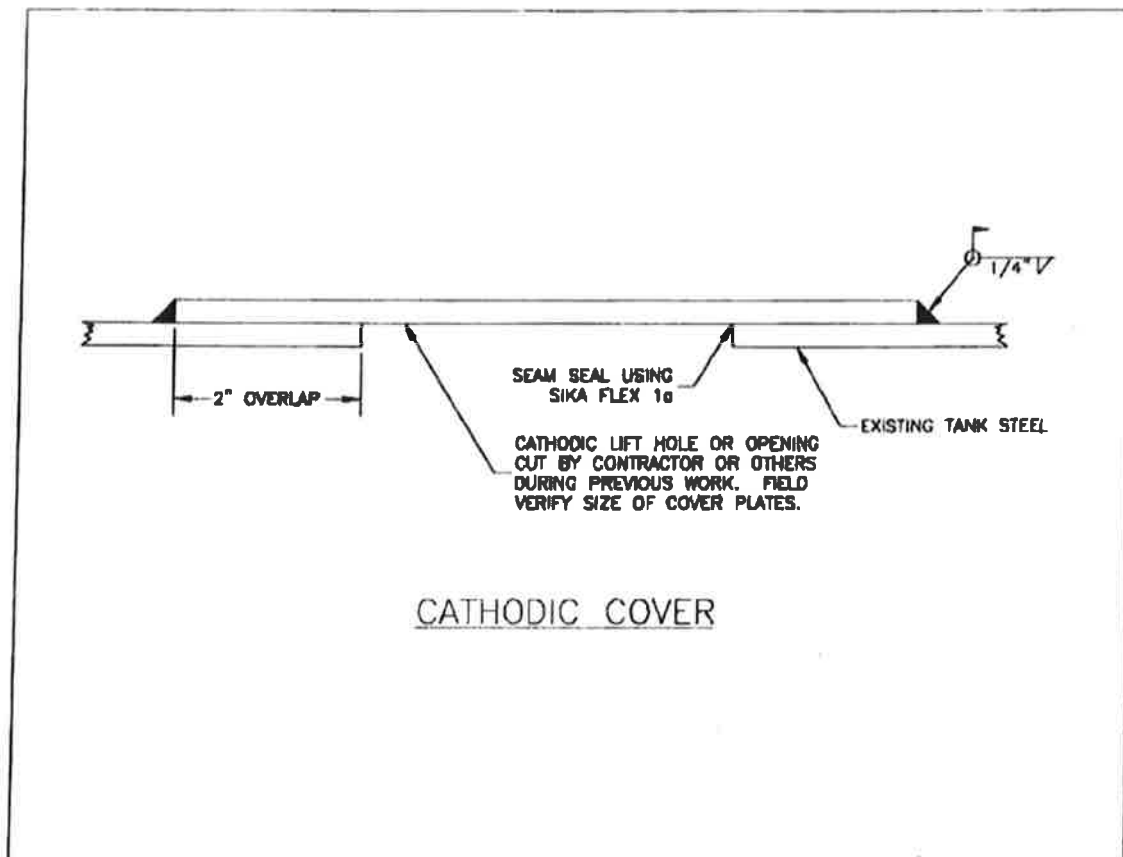


FIGURE 5-6



DRAWING 5-8

Village of Thornton
Ground Storage Tank Limits of Project Site

100 ft

Google Earth
Imaging Landsat / Copernicus

22-R0568.01
Village of Thornton
IEPA # L17-1359

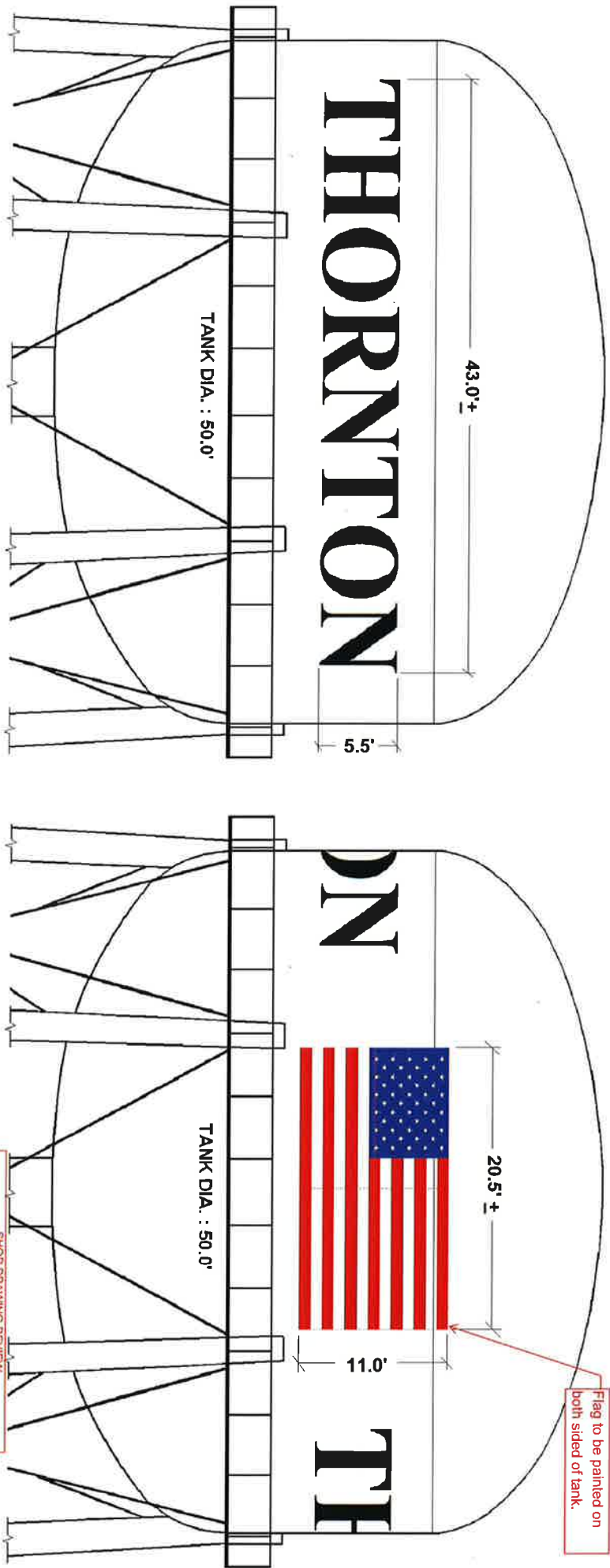




Ground Storage Tank Logo Example



Elevated Leg Tank Logo Example



Village of Thornton IL
400,000 gal ELEVATED TANK PAINTING
ARTWORK AND SIZE MOCKUP

COLORS ARE FOR DISPLAY PURPOSES ONLY. MAY NOT REPRESENT FINAL COLORS

Notice:
Colors shown are close approximation only.
Primer shall include weathering and ghost
colors from actual paint cans's signing.
Rustproofing are appropriate and are
provided for a visual aid.
Final verify tank shall height before
installing patterns.

SHOP DRAWING REVIEW

This review is for general conformance with the design concept, and contract documents. It is not a substitute for a contract. The contractor shall be responsible for the design and construction of the project. The contractor shall be responsible for the design and construction of the project. The contractor shall be responsible for the design and construction of the project.

☐ No Exceptions Taken

☒ Comments As Noted

☐ Revised & Resubmit

☐ Rejected-See Remarks

By: **GAK**

Date: **3/6/2024**

Project No: **22-R0568.04**

Robinson Engineering, LTD

American Flag to be painted on both sides of tank.

PRODUCT INFORMATION



**Protective
&
Marine
Coatings**



Certified to
NSF/ANSI/CAN 61

Meeting Health
Effects Requirements
of NSF/ANSI/CAN
600

COROTHANE® I GALVAPAC 1K ZINC PRIMER

**B65G11
B65RW11**

**GRAY
RED**

Revised: July 31, 2024

PRODUCT INFORMATION

5.14

PRODUCT DESCRIPTION

COROTHANE I GALVAPAC 1K ZINC PRIMER is a moisture curing urethane zinc-rich primer. Designed for low temperature application to steel surfaces.

- Low temperature application - down to 20°F (-7°C)
- NSF approved to Standard 61/600 for potable water
- Abrasion and chemical resistant
- Easy to apply and recoat
- Usable for immersion service with recommended topcoats
- Resistant to mudcracking
- Meets Class B requirements for Slip Coefficient and Creep Resistance, .54
- Enhanced coating strength and edge protection with micaceous iron oxide addition

PRODUCT CHARACTERISTICS

Finish:	Flat
Color:	Gray and Red
Volume Solids:	67% ± 2%
Weight Solids:	91.7% ± 2%
VOC (calculated):	Unreduced: <300 g/L; 2.5 lb/gal Reduced 9% with R7K216: <340 g/L; 2.8 lb/gal

Zinc Content in Dry Film: 85% minimum by weight

Recommended Spreading Rate per coat:

	Standard		AWWA	
	Min.	Max.	Min.	Max.
Wet mils (microns)	4.5 112	6.8 170	3.0 75	6.0 150
Dry mils (microns)	3.0 75	4.0 100	2.0 50	4.0* 100*

~Coverage sq ft/gal (m²/L) 268 6.5 358 8.8 268 6.5 536 13.1

Theoretical coverage sq ft/gal (m²/L) @ 1 mil/25 micron dft 1072 (26.2)

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

*See Recommended Systems on reverse side

Drying Schedule @ 5.0 mils wet (125 microns):

@ 40°F/4.5°C @ 77°F/25°C @ 100°F/38°C
50% RH

To touch:	45 minutes	20 minutes	10 minutes
To recoat:			
minimum. atmospheric:	8 hours	4-6 hours	1 hour
minimum. immersion:	24 hours	12 hours	10 hours
maximum:	12 months	12 months	12 months
To cure:			
atmospheric:	5 days	3 days	1 day
immersion:	14 days	7 days	5 days

If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent.

For potable water service, consult www.nsf.org for details on recoat and dry times at indicated temperature. Sterilize and rinse per AWWA C652.

Shelf Life:	12 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point:	94°F (34°C), PMCC
Reducer*:	Reducer No. 15 (R7K15), Polane Retarder (R7K216), or Reducer No. 111 (R7K111)
Clean Up**:	VOC exempt: VOC Restricted areas (≤25 g/L, or ≤3%): Acetone or MEK

*Reducer No. 111 (R7K111) and Polane Retarder (R7K216) cannot be used for NSF applications. Reducer No. 15 (R7K15) is potable water approved up to 10% by volume.

**Other VOC areas (>25 g/L, or >3%): use Acetone, MEK, R7K15, R7K216 or R7K111. Choose a solvent that is compliant in your area. Confirm compliance with state and local air quality rules before use.

RECOMMENDED USES

- **Immersion Service - potable water:** Meets NSF Standard 61/600 for use in potable water storage.
 - 250,000 gallon untopcoated
 - 20,000 gallon minimum topcoated
- Meets requirements of SSPC Paint Spec No. 40, Type I and Type II, for zinc rich moisture cure urethane primer
- Meets requirements of SSPC Paint 20, Level 1
- As a primer in a urethane coating system for bridges, tanks, chemical, and marine structures
- Ideal for priming water assisted abrasive blasted surfaces where flash rusting or blooming limits the use of conventional zinc rich coatings
- Acceptable for use with cathodic protection with select topcoats
- Conforms to AWWA D102 Inside Coating System #3 (ICS-3), Inside Coating System #5 (ICS-5), Inside Coating System #6 (ICS-6), Outside Coating System #2 (OCS-2), Outside Coating System #3 (OCS-3), Outside Coating System #4 (OCS-4), and Outside Coating System #6 (OCS-6)
- A component of INFINITANK

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP5

System Tested*:

1 ct. Corothane I GalvaPac 1K Zinc Primer @ 3.5 mils (88 microns) dft

1 ct. Corothane I MIO-Aluminum @ 3.0 mils (75 microns) dft

*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	45 mg loss
Adhesion (GalvaPac only)	ASTM D4541; ASTM D3359	1943 psi (ASTM D4541); 5B (ASTM D3359)
Corrosion Weathering	ASTM D5894, 15 cycles, 5000 hours	Rating 10 per ASTM D610 Rusting (field); Rating 10 per ASTM D714 Blistering
Direct Impact Resistance (Galva-Pac only)	ASTM G14	160 in. lb.
Dry Heat Resistance	ASTM D2485	300°F (149°C) continuous, 350°F (177°C) intermittent
Flexibility	ASTM D522, 180° bend, 1/4" mandrel	Passes
Immersion (Galvapac/2 cts Macropoxy 646 NSF)	5 year potable water	Rating 10 per ASTM D610 for Rusting; Rating 10 per ASTM D714 for Blistering
Moisture Condensation Resistance (GalvaPac only)	ASTM D4585, 100°F (38°C), 4000 hours	Rating 10 per ASTM D610 for Rusting; Rating 10 per ASTM D714 for Blistering
Pencil Hardness	ASTM D3363	2H (zinc only)
Salt Fog Resistance (GalvaPac only)	ASTM B117, 5000 hours	Rating 10 per ASTM D610 for Rusting; Rating 10 per ASTM D714 for Blistering
Slip Coefficient* (GalvaPac only)	AISC Specification for Structural Joints Using ASTM A325 or ASTM A490 Bolts	Class B, .54, tension and creep <.005"
Wet Heat Resistance	Non-immersion	190°F (88°C)

*Consult your Sherwin-Williams Representative regarding this product Slip Certification document

106



**Protective
&
Marine
Coatings**



Certified to
NSF/ANSI/CAN 61

Meeting Health
Effects Requirements
of NSF/ANSI/CAN
600

COROTHANE® I GALVAPAC 1K ZINC PRIMER

**B65G11
B65RW11**

**GRAY
RED**

Revised: July 31, 2024

PRODUCT INFORMATION

5.14

RECOMMENDED SYSTEMS

	Dry Film Thickness / ct.	
	Mils	(Microns)
Immersion Service (Potable Water), Steel:		
*AWWA D102: Inside Coating System No. 5 minimum AWWA	10.0	(250)
1 ct. Corothane I GalvaPac 1K Zinc Primer	2.0	(50)
2 ct. SherPlate 600	4.0	(100)
Immersion Services (Potable Water), Steel:		
1 ct. Corothane I GalvaPac 1K Zinc Primer	3.0-4.0	(75-100)
2 cts. SherPlate 600	3.0-18.0	(75-450)
Immersion Services (Potable Water), Ductile Iron Pipe:		
1 ct. Corothane I GalvaPac 1K Zinc Primer	3.0-4.0	(75-100)
2 cts. SherPlate 600	3.0-18.0	(75-450)
Immersion Service (Non-Potable Water), Steel:		
1 ct. Corothane I GalvaPac 1K Zinc Primer	3.0-4.0	(75-100)
2 cts. Corothane I Coal Tar	5.0-7.0	(125-175)
Atmospheric Service, Steel:		
*AWWA D102 Outside Coating System No. 2 minimum AWWA	7.5	(188)
1 ct. Corothane I GalvaPac 1K Zinc Primer	3.0	(75)
1 ct. Corothane Ironox B	3.0	(75)
1 ct. Corothane I HS	1.5	(40)
Atmospheric Service, Steel:		
*AWWA D102: Outside Coating System No. 6 minimum AWWA	6.0	(150)
1 ct. Corothane I GalvaPac 1K Zinc Primer	2.0	(50)
1 ct. SherPlate 600	2.0	(50)
1 ct. Acrolon 218HS	2.0	(50)
Atmospheric Service, Steel:		
1 ct. Corothane I GalvaPac 1K Zinc Primer	3.0-4.0	(75-100)
1 ct. Sher-Loxane 800	4.0-6.0	(100-150)

The systems listed above are representative of the product's use, other systems may be appropriate.

DISCLAIMER

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SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

Iron & Steel
Atmospheric: SSPC-SP6, 2 mil (50 micron) profile preferred
Immersion, with recommended topcoat: SSPC-SP10/NACE 2, 2 mil profile

Ductile Iron Pipe:
Atmospheric: NAPF 500-03-03 Power Tool Cleaning
Buried & Immersion: NAPF 500-03-04 Abrasive Blast Cleaning
Cast Ductile Iron Fittings: NAPF 500-03-05 Abrasive Blast Cleaning

Condition of Surface	Surface Preparation Standards		SSPC	NACE
	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900		
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	C St 2	SP 2	-
Rusted	D St 2	D St 2	SP 2	-
Pitted & Rusted	C St 3	C St 3	SP 3	-
Rusted	D St 3	D St 3	SP 3	-
Power Tool Cleaning	Pitted & Rusted	D St 3	SP 3	-

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature:
air and surface 20°F (-7°C) minimum, 120°F (49°C) maximum
material: 45°F (7°C) minimum

Do not apply over surface ice

Relative humidity: 30% minimum, 99% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging: 3 gallon (11.3L) container
Weight: 28.5 ± 0.2 lb/gal ; 3.42 Kg/L

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

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WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.



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Meeting Health
Effects Requirements
of NSF/ANSI/CAN
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COROTHANE® I GALVAPAC 1K ZINC PRIMER

B65G11

B65RW11

GRAY

RED

Revised: July 31, 2024

APPLICATION BULLETIN

5.14

SURFACE PREPARATIONS

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel, Immersion Service:

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). Remove all weld spatter and round all sharp edges by grinding. Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Iron & Steel, Atmospheric Service:

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Commercial Blast Cleaning per SSPC-SP6. For better performance, use Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Ductile Iron Pipe, Atmospheric Service:

Minimum surface preparation is Power Tool Clean per NAPF 500-03-03. Remove all oil and grease from surface by Solvent Cleaning per NAPF 500-03-01.

Ductile Iron Pipe, Buried and Immersion Service:

Minimum surface preparation is Abrasive Blast Cleaning per NAPF 500-03-04. Ductile iron pipe external surfaces, in some cases, can be damaged by excessive abrasive blast cleaning beyond this standard. Remove all oil and grease from surface by Solvent Cleaning per NAPF 500-03-01.

Ductile Iron Fittings:

Minimum surface preparation is Abrasive Blast Cleaning of Cast Ductile Iron Fittings per NAPF 500-03-05. Remove all oil and grease from surface by Solvent Cleaning per NAPF 500-03-01.

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	OC St 2	OC St 2	SP 3	-
Pitted & Rusted	OC St 2	OC St 2	SP 3	-
Rusted	OC St 3	OC St 3	SP 3	-
Power Tool Cleaning	D St 3	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature:
air and surface 20°F (-7°C) minimum, 120°F (49°C) maximum
material: 45°F (7°C) minimum

Do not apply over surface ice

Relative humidity: 30% minimum, 99% maximum

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

Reducer*.....Reducer No. 15 (R7K15),
Polane Retarder (R7K216), or
Reducer No. 111 (R7K111)

Clean Up**.....VOC Restricted areas (≤25 g/L, or
≤3%): Acetone or MEK

*Reducer No. 111 (R7K111) and Polane Retarder (R7K216) cannot be used for NSF applications. Reducer No. 111 (R7K111) can be used for VOC exempt applications. Reducer No. 15 (R7K15) is potable water approved up to 10% by volume.

**Other VOC areas (>25 g/L, or >3%): use Acetone, MEK, R7K15, R7K216 or R7K111. Choose a solvent that is compliant in your area. Confirm compliance with state and local air quality rules before use.

Airless Spray

Pump.....30:1
Pressure.....2500 - 3000 psi
Hose.....1/4" ID
Tip......017" - .019"
Filter.....60 mesh
Reduction.....see footnote below***

Conventional Spray

Unit.....	Graco	Binks
Gun.....	900	95
Fluid Nozzle.....	070	66/65
Air Nozzle.....	947	66PR
Atomization Pressure.....	60-70 psi	60-70 psi
Fluid Pressure.....	15-20 psi	15-20 psi
Reduction.....	see footnote below***	

Brush

Brush.....Natural bristle
Reduction.....see footnote below***

Roller

Cover.....3/8" natural or synthetic with
solvent resistant core
Reduction.....see footnote below***

***As needed up to 10% by volume with R7K215 or R7K111, and up to 9% by volume with R7K216

If specific application equipment is not listed above, equivalent equipment may be substituted.



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COROTHANE® I GALVAPAC 1K ZINC PRIMER

B65G11

B65RW11

GRAY

RED

Revised: July 31, 2024

APPLICATION BULLETIN

5.14

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix material thoroughly prior to use with a low speed power agitator until completely uniform. After mixing, pour through a 30-60 mesh filter.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:				
	Standard		AWWA	
	Min.	Max.	Min.	Max.
Wet mils (microns)	4.5 112	6.8 170	3.0 75	6.0 150
Dry mils (microns)	3.0 75	4.0 100	2.0 50	4.0* 100*
~Coverage sq ft/gal (m²/L)	268 6.5	358 8.8	268 6.5	536 13.1
Theoretical coverage sq ft/gal (m²/L) @ 1 mil/25 micron dft	1072 (26.2)			
<i>NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.</i>				
<i>*See Recommended Systems on reverse side</i>				

Drying Schedule @ 5.0 mils wet (125 microns):

@ 40°F/4.5°C @ 77°F/25°C @ 100°F/38°C
50% RH

To touch: 45 minutes 20 minutes 10 minutes

To recoat:
minimum. atmospheric: 8 hours 4-6 hours 1 hour
minimum. immersion: 24 hours 12 hours 10 hours
maximum: 12 months 12 months 12 months

To cure:
atmospheric: 5 days 3 days 1 day
immersion: 14 days 7 days 5 days

If maximum recoat time is exceeded, abrade surface before recoating.

Drying time is temperature, humidity, and film thickness dependent.

For potable water service, consult www.nsf.org for details on recoat and dry times at indicated temperature. Sterilize and rinse per AWWA C652.

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Acetone, MEK, Reducer No. 15 (R7K15), Reducer No. 111 (R7K111), or Polane Retarder (R7K216). Clean tools immediately after use with Acetone, MEK, Reducer No. 15 (R7K15), Reducer No. 111 (R7K111), or Polane Retarder (R7K216). Follow manufacturer's safety recommendations when using any solvent.

DISCLAIMER

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PERFORMANCE TIPS

Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

Excessive reduction of material can affect film build, appearance, and adhesion.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Acetone, MEK, Reducer No. 15 (R7K15), Reducer No. 111 (R7K111), or Polane Retarder (R7K216).

Pour a small amount of Reducer No. 15 (R7K15), Reducer No. 111 (R7K111), or Polane Retarder (R7K216) over the top of the paint in the can to prevent skinning or gelling.

Place a temporary cover over the pail to keep excessive moisture, condensation, fog, or rain from contaminating the coating.

It is recommended that partially used cans not be sealed/closed for use at a later date.

An intermediate coat is recommended to provide a uniform appearance of the topcoat.

Not for use with cathodic protection except as indicated under the recommended systems.

Corothane I KA Accelerator is acceptable for use (except NSF applications). See data page 5.98 for details.

Refer to Product Information sheet for additional performance characteristics and properties.

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

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WARRANTY

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Meets Health Effects Requirements of
NSF/ANSI/CAN 600

SHERPLATE PW EPOXY

WITH OPTI-CHECK OAP TECHNOLOGY

PART A	B62W260	WHITE
PART A	B62L260	BLUE
PART B	B62V260	HARDENER
PART B	B62V265	OAP HARDENER

Revised: April 5, 2024

PRODUCT INFORMATION

4.82

PRODUCT DESCRIPTION

SherPlate PW Epoxy is an edge retentive, ultra high solids epoxy amine coating engineered for immersion service in potable water pipes and storage tanks. The rapid return to service and high build, edge retentive properties of this coating provide superior protection.

- One or two coat protection
- Fast return to service
- Low odor
- Dry to walk-on within four hours
- Designed for plural-component application equipment
- Edge retention of greater than 70% can be obtained utilizing B62V260 hardener only
- Potable water epoxy lining certified through NSF in accordance with NSF/ANSI/Can Std.61 and the extractions requirements of NSF/ANSI/CAN 600 for potable water tanks greater than 100 gallons and Pipe ID greater than or equal to 6 inches

PRODUCT CHARACTERISTICS

Finish:	Gloss
Color:	White-Base and Blue (OAP Hardener can be used with either color)
Volume Solids:	100%, mixed
Weight Solids:	100%, mixed
VOC (EPA method #24):	<85 g/L; 0.71 lb/gal, mixed
Mix Ratio:	1:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Tank Lining mils (microns)	16.0 (400)	50.0 (1250)
Pipe Lining mils (microns)	16.0 (400)	50.0 (1250)
~Coverage sq ft/gal (m²/L)	100 (2.5)	32 (0.8)
Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft	1604 (39.4)	

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 20.0-50.0 mils wet (500-1250 microns):

	@ 40°F/4.5°C	@ 77°F/25°C 50% RH	@ 100°F/38°C
To touch:	6 hours	1 hour	35 minutes
To handle:	8-12 hours	3 hours	55 minutes
To recoat:			
minimum:	6 hours	1 hour	35 minutes
maximum:	14 days	14 days	14 days
Foot traffic:	8-12 hours	3 hours	1 hour
To cure:	36 hours	24 hours	12 hours

If maximum recoat time is exceeded, abrade surface before recoating.

Drying time is temperature, humidity, and film thickness dependent.

Sterilize and rinse per AWWA C652.

Pot Life:	7 minutes
Sweat-in-Time:	None required

Shelf Life:	24 months Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point:	230°F (110°C), PMCC, mixed
Reducer:	Not recommended
Clean Up:	MEK (R6K10) or Reducer R7K104

RECOMMENDED USES

For use over prepared steel or masonry surfaces for water including potable water.

- Where rapid return to service and edge protection film build properties are required
- Part B Hardener available with OAP (optically active pigment)
- Meets or exceeds the requirements of AWWA C210-15
- Meets or exceeds AWWA D102
- A component of INFINITANK
- Suitable for use in the Mining & Minerals Industry
- Meets MIL-PRF-23236, Type VII, Class 9/18 requirements for single coat application in potable water tanks
- Refer to www.nsf.org website for allowable tank size listing

PERFORMANCE CHARACTERISTICS

System Tested:

1 ct. SherPlate PW Epoxy @ 30.0 mils (750 microns) dft

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060	22.4 mg loss
Adhesion	ASTM D4541	>2,000 psi
Cathodic Disbondment	ASTM G8	Passes AWWA C210-15 requirements ; 7.7 mm (average)
Edge Retention	MIL-PRF-23236C	80%+ (average)
Elongation	ASTM D638	3.3%
Flexibility	ASTM D522	1/2" (24 hour cure)
Flexural Modulus	ASTM D790	2560 psi
Flexural Strength	ASTM D790	7458 psi
Moisture Condensation Resistance	ASTM D4585, 2000 hours	Passes
Pencil Hardness	ASTM D3363	3H
Shore D Hardness	ASTM D2240	83
Water Vapor Permeance	ASTM D1653, Method B, Condition C	0.259 ± 0.380 grains/ (hr ft ² in Hg)

Immersion (ambient temperature) for the following:

- Deionized Water*.....No effect
- Fresh Water.....Recommended
- Potable Water.....Recommended
- Salt Water.....Recommended
- Sulfuric Acid @ 1% by wt.*.....No effect
- Sodium Hydroxide @ 1% by wt.*.....No effect
- 1% Solution of Sodium Hypochlorite.....Recommended
- AWWA C210-15 Chemical Solutions.....Recommended

*30 days @ ambient (passes AWWA C210-15)

Epoxy coatings may darken or yellow after application and curing.



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SHERPLATE PW EPOXY

WITH OPTI-CHECK OAP TECHNOLOGY

PART A	B62W260	WHITE
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PART B	B62V260	HARDENER
PART B	B62V265	OAP HARDENER

Revised: April 5, 2024

PRODUCT INFORMATION

4.82

RECOMMENDED SYSTEMS

		Dry Film Thickness / ct.
		Mils (Microns)
Steel, Immersion (AWWA C210-15):		
1-2 cts. SherPlate PW Epoxy		16.0-50.0 (400-1250)
Steel, Immersion (AWWA D102):		
1 ct. Optional Primer	*	
1-2 cts. SherPlate PW Epoxy		20.0-50.0 (500-1250)
Steel, Immersion/Vapor Space (AWWA D102):		
1 ct. Corothane I GalvaPac (optional)		2.5-4.0 (63-100)
1 ct. SherPlate PW Epoxy		12.0-20.0 (300-500)
Concrete, Immersion:		
1 ct. Primer	**	
1-2 cts. SherPlate PW Epoxy		20.0-50.0 (500-1250)
Steel, Atmospheric:		
1-2 cts. SherPlate PW Epoxy		20.0-50.0 (500-1250)

*Acceptable Primers for Steel:

Macropoxy 5500LT Primer
Corothane I Gavapac 1K Zinc Primer
Corothane I Galvapac 2K Zinc Primer
Dura-Plate UHS Primer
Zinc Clad PCP Ultra
Sherplate 600

**Acceptable Primers for Concrete:

Macropoxy 240
Corobond 100
Corobond HS
Dura-Plate 235
Dura-Plate UHS Primer
Sherplate 600

The systems listed above are representative of the product's use, other systems may be appropriate.

SAFETY PRECAUTIONS

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SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

Iron & Steel:		
Atmospheric:	SSPC-SP6/NACE 3, 2 mil (50 micron) sharp and angular profile (Medium (G) (ISO 8503-2)) or SSPC-SP12/NACE No. 5, WJ-3/SC-2	
Immersion:	SSPC-SP10/NACE 2, 2-3 mil (50-75 micron) sharp and angular profile (Medium (G) (ISO 8503-2)) or SSPC-SP12/NACE No. 5, WJ-2/SC-2	
Concrete & Masonry:		
Atmospheric:	SSPC-SP13/NACE 6, or ICRI 310.2R CSP2-4	
Immersion:	SSPC-SP13/NACE 6-4.3.1 or 4.3.2, or ICRI 310.2R CSP2-4	

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	C St 2	SP 2	-
Rusted	D St 2	D St 2	SP 2	-
Pitted & Rusted	D St 2	D St 2	SP 2	-
Rusted	C St 3	C St 3	SP 3	-
Pitted & Rusted	D St 3	D St 3	SP 3	-

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature:
air and surface: 40°F (4.5°C) minimum, 110°F (43°C) maximum

For application at 35°F (1.7°C) to 40°F (4.5°C), specific guidelines are required:

- Air & Surface temperature conditions must be expected to remain stable or improve for a period of four hours
- Environmental controls (dehumidification, heating, forced-air ventilation) are recommended to maintain acceptable application conditions

Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging	
Part A:	5 gallon (18.9L) pails and 50 gallon (189L) drums*
Part B:	5 gallon (18.9L) pails and 50 gallon (189L) drums*
*White (Part A) and Standard Hardener (Part B) only	
Cartridge:	300 x 300 mL and 750 x 750 mL
Weight:	11.71 ± 0.3 lb/gal ; 1.4 Kg/L, mixed

WARRANTY

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SHERPLATE PW EPOXY

WITH OPTI-CHECK OAP TECHNOLOGY

PART A	B62W260	WHITE
PART A	B62L260	BLUE
PART B	B62V260	HARDENER
PART B	B62V265	OAP HARDENER

Revised: April 5, 2024

APPLICATION BULLETIN

4.82

SURFACE PREPARATIONS

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel (atmospheric service)

Minimum surface preparation is Commercial Blast Cleaning per SSPC-SP6/NACE 3 or SSPC-SP12/NACE No. 5. For surfaces prepared by SSPC-SP6/NACE 3, first remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. For better performance, use Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2-3 mils / 50-75 microns). For surfaces prepared by SSPC-SP12/NACE No. 5, all surfaces shall be cleaned in accordance with WJ-3/SC2. Pre-existing profile should be approximately 2 mils (50 microns). Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Iron & Steel (immersion service)

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2, or SSPC-SP12/NACE No. 5. For SSPC-SP10/NACE 2, blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2-3 mils / 50-75 microns). For SSPC-SP12/NACE No.5, all surfaces to be coated shall be cleaned in accordance with WJ-2/SC2 standards. Pre-existing profile should be approximately 2 mils (50 microns). Remove all weld spatter. Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Concrete and Masonry

For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 2-3. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910. Primer required. For surface preparation of Concrete, Immersion Service, refer to SSPC-SP13/NACE 6, Section 4.3.1 or 1.3.2 or ICRI No. 310.2R, CSP 2-3.

Follow the standard methods listed below when applicable:

ASTM D4258 Standard Practice for Cleaning Concrete.
ASTM D4259 Standard Practice for Abrading Concrete.
ASTM D4260 Standard Practice for Etching Concrete.
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.
SSPC-SP 13/Nace 6 Surface Preparation of Concrete.
ICRI No. 310.2R Concrete Surface Preparation.

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	C St 2	SP 2	-
Pitted & Rusty	D St 2	D St 2	SP 2	-
Rusty	C St 3	C St 3	SP 3	-
Power Tool Cleaning	D St 3	D St 3	SP 3	-
Pitted & Rusty	D St 3	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature:
air and surface: 40°F (4.5°C) minimum, 110°F (43°C) maximum

For application at 35°F (1.7°C) to 40°F (4.5°C), specific guidelines are required:

- Air & Surface temperature conditions must be expected to remain stable or improve for a period of four hours
- Environmental controls (dehumidification, heating, forced-air ventilation) are recommended to maintain acceptable application conditions

The material should be 85°F-130°F / 29°C-54°C (vary as needed) at the mixing block for optimal atomization based on tip size and pump pressure. **Do not heat above 140°F (60°C).**

Relative humidity: 85% maximum

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

Reduction Not recommended
Clean Up MEK (R6K10) or R7K104

Plural Component Equipment:

Pump WIWA DUOMIX 1:1, Graco Extreme Mix, or Graco XP70
Pressure 4000 psi
Hose 3/8" ID
Tip021" - .025"
Pump heater setting 110°F-130°F (43°C-54°C)*
Material temperature
at gun tip 110°F-130°F (43°C-54°C), vary as needed

Brush For stripe coating and repair only
Brush Nylon/Polyester or Natural Bristle

Roller For stripe coating and repair only
Cover 3/8" woven with solvent resistant core

*Material should be preheated to 110°F (43°C) prior to spraying.

If specific application equipment is not listed above, equivalent equipment may be substituted.



**Protective
&
Marine
Coatings**



Certified to
NSF/ANSI/CAN 61
Meets Health Effects Requirements of
NSF/ANSI/CAN 600

SHERPLATE PW EPOXY

WITH OPTI-CHECK OAP TECHNOLOGY

PART A	B62W260	WHITE
PART A	B62L260	BLUE
PART B	B62V260	HARDENER
PART B	B62V265	OAP HARDENER

Revised: April 5, 2024

APPLICATION BULLETIN

4.82

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions: Mix contents of each component thoroughly using low speed power agitation. Make certain no pigment remains on the bottom or the sides of the can. Then combine one part by volume of Part A with one part by volume of Part B. Thoroughly agitate the mixture with power agitation.

To ensure that no unmixed material remains on the sides or bottom of the cans after mixing, visually observe the container by pouring the material into a separate container.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

	Minimum	Maximum
Tank Lining mils (microns)	16.0 (400)	50.0 (1250)
Pipe Lining mils (microns)	16.0 (400)	50.0 (1250)
~Coverage sq ft/gal (m²/L)	100 (2.5)	32 (0.8)
Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft	1604 (39.4)	

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 20.0-50.0 mils wet (500-1250 microns):

	@ 40°F/4.5°C	@ 77°F/25°C	@ 100°F/38°C
		50% RH	
To touch:	6 hours	1 hour	35 minutes
To handle:	8-12 hours	3 hours	55 minutes
To recoat:			
minimum:	6 hours	1 hour	35 minutes
maximum:	14 days	14 days	14 days
Foot traffic:	8-12 hours	3 hours	1 hour
To cure:	36 hours	24 hours	12 hours

If maximum recoat time is exceeded, abrade surface before recoating.

Drying time is temperature, humidity, and film thickness dependent.

Sterilize and rinse per AWWA C652.

Pot Life: 7 minutes

Sweat-in-Time: None required

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with MEK, R6K10. Clean tools immediately after use with MEK, R6K10. Follow manufacturer's safety recommendations when using any solvent.

DISCLAIMER

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PERFORMANCE TIPS

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross-coat spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

No reduction of material is recommended as this can affect film build, appearance, and adhesion.

Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.

Do not mix previously catalyzed material with new.

Do not apply the material beyond recommended pot life.

Remove and solvent clean tip housing every 20-30 minutes.

For Immersion Service: (if required) Holiday test in accordance with NACE SP0188.

OAP fluorescent pigment can be used as a one or two coat system. When using OAP in a two coat system, use OAP hardener in first coat.

Refer to Product Information sheet for additional performance characteristics and properties.

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

WARRANTY

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MACROPOXY® 646

FAST CURE EPOXY MASTIC

Revised: May 8, 2024

PRODUCT DESCRIPTION

MACROPOXY 646 Fast Cure Epoxy Mastic is a high solids, high build, fast drying, polyamide epoxy designed to protect steel and concrete in industrial exposures. Ideal for maintenance painting and fabrication shop applications. The high solids content ensures adequate protection of sharp edges, corners, and welds. This product can be applied directly to marginally prepared steel surfaces.

INTENDED USES

- Recommended for marine applications, refineries, offshore platforms, fabrication shops, chemical plants, tank exteriors, power plants, water treatment plants, and mining and minerals industry
- Factory ground formulas are available for subsea/immersion service. For a full list of shades please consult Sherwin-Williams

PRODUCT DATA

Finish:	Semi-Gloss		Average Drying Times @ 7.0 mils (175 microns) wet:		
Colors:	Mill White, Black and a wide range of colors available through tinting		35°F (1.7°C)	77°F (25°C)	100°F (38°C)
Volume Solids:	72% ± 2%, mixed, Mill White		50% RH	50% RH	50% RH
VOC (mixed):	<250 g/L; 2.08 lb/gal		Touch:	4-5 hours	2 hours
Mix Ratio:	1:1 by volume		Handle:	48 hours	8 hours
Typical Thickness:			Recoat:		4.5 hours
<u>Recommended Spreading Rate per coat:</u>			minimum:	48 hours	8 hours
	Minimum	Maximum	maximum:	1 year	1 year
Wet mils (microns)	7.0 (175)	13.5 (338)	Cure to service:		
Dry mils (microns)	5.0* (125)	10.0 (250)	atmospheric:	10 days	7 days
~Coverage sq ft/gal (m²/L)	115 (2.9)	230 (5.8)	immersion:	14 days	7 days
Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft	1152 (28.2)		Average Drying Times as intermediate @ 5.0 mils (125 microns) wet:		
*May be applied at 3.0-10.0 mils (75-250 microns) dft as an intermediate in a multicoat system.			Touch:	3 hours	1 hour
NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.			Handle:	48 hours	4 hours
Shelf Life:	36 months, unopened Store indoors at 40°F (4.5°C) to 110°F (43°C).		Recoat:		2 hours
Flash Point:	91°F (33°C), TCC, mixed		minimum:	16 hours	4 hours
Reducer/Clean Up¹:	VOC Restricted Areas (<250 g/L): use Reducer #111 or Oxsol 100		maximum:	1 year	1 year
Weight:	12.9 ± 0.2 lb/gal ; 1.55 Kg/L, mixed, may vary by color		<i>If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent. Paint temperature must be 40°F (4.5°C) minimum.</i>		
¹Other areas (<340 g/L): use Reducer #111, Oxsol 100, Reducer #15, Reducer #58, or MEK up to 10%. Choose a reducer that is compliant in your area. Confirm compliance with state and local air quality rules before use.			Pot Life:	10 hours	4 hours
			Sweat-in-time:	30 minutes	30 minutes
					15 minutes

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Minimum recommended surface preparation:

Iron & Steel:	Atmospheric: SSPC-SP2/3/ ISO8501-1:2007 St 2 or SSPC-SP WJ-3 / NACE WJ-3L Immersion: SSPC-SP10 / NACE 2/ ISO8501-1:2007 Sa 2.5, 2-3 mil (50-75 micron) profile or SSPC-SP WJ-2/NACE WJ-2L
Stainless Steel:	Atmospheric: SSPC-SP16, 1 mil (25 micron) profile
Aluminum & Galvanizing:	SSPC-SP1. If surface has not be weathered for more than 6 months, follow SSPC-SP1 then SSPC-SP16. For fire proofing projects, consult a Sherwin-Williams representative for surface preparation requirements.
Concrete & Masonry:	Atmospheric: SSPC-SP13/NACE 6, or ICRI No. 310.2R CSP 1-3 Immersion: SSPC-SP13/NACE 6-4.3.1
Ductile Iron Pipe:	Atmospheric: NAPF 500-03-03 Power Tool Cleaning Buried & Immersion: NAPF 500-03-04 Abrasive Blast Cleaning Cast Ductile Iron Fittings: NAPF 500-03-05 Abrasive Blast Cleaning



Protective & Marine Coatings

PRODUCT DATA SHEET



MACROPOXY® 646

FAST CURE EPOXY MASTIC

APPLICATION			APPLICATION CONDITIONS	
Airless Spray* Pump 30:1 Pressure 2800-3000 psi (193-206 bar) Hose 1/4" ID (6.3 mm) Tip017"-.023" (0.43-0.58 mm) Filter 60 mesh Reduction As needed up to 10% by volume			Temperature: Air: 35°F (1.7°C) minimum, 120°F (49°C) maximum Surface*: 35°F (1.7°C) minimum, 250°F (120°C) maximum Material: 40°F (4.5°C) minimum At least 5°F (2.8°C) above dew point Relative humidity: 85% maximum	
Conventional Spray* Gun DeVilbiss MBC-510 Fluid Tip E Air Nozzle 704 Atomization Pressure 60-65 psi (4.1-4.5 bar) Fluid Pressure 10-20 psi (0.7-1.4 bar)			*Application to surfaces above 120°F (49°C) is not recommended in VOC Restricted Areas (≤250 g/L). When spraying a surface above 120°F (49°C) in other areas (>250 g/L), please consult with your Sherwin-Williams representative.	
Brush* Brush Nylon/Polyester or Natural Bristle Roller* Cover 3/8" woven with solvent resistant core Plural Component Spray Acceptable			APPROVALS - Suitable for use in USDA inspected facilities - Acceptable for use in Canadian Food Processing facilities, categories: D1, D2, D3 (Confirm acceptance of specific part numbers/rexes with your SW Sales Representative) - Conforms to AWWA D102 OCS #5 - Conforms to MPI # 108 - This product meets specific design requirements for non-safety related nuclear plant applications in Level II, III and Balance of Plant, and DOE nuclear facilities - Meets Class A requirements for Slip Coefficient, 0.36 @ 6 mils / 150 microns dft (Mill White only) - Approved intermediate for NEPCOAT System B - Approved to Norsok M501 system 7B (limited colors) - ISO 12944:2018 approved for C2 to CX	
*Reduction¹ VOC Restricted Areas (≤250 g/L): use Reducer #111 or Oxsol 100 ¹Other areas (≤340 g/L): use Reducer #111, Oxsol 100, or Reducer #15 up to 10%. Choose a reducer that is compliant in your area. Confirm compliance with state and local air quality rules before use. If specific application equipment is not listed above, equivalent equipment may be substituted.			RECOMMENDED SYSTEMS	
Dry Film Thickness / ct.			ADDITIONAL NOTES	
Steel & Ductile Iron, Immersion & Atmospheric 2 Cts. Macropoxy 646 5.0-10.0 (125-250)			Tint Part A with Maxitones at 150% strength. Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color. Tinting is not recommended for immersion service. Can be used as a metalizing sealer. Consult your Sherwin-Williams Representative regarding Product Bulletin: "Sealers for Thermal Spray Metalizing". Quick-Kick Epoxy Accelerator is acceptable for use. See data page for details. Acceptable for concrete floors.	
Steel, Organic Zinc Primer, Atmospheric 1 Ct. Zinc Clad IV (85) 3.0-5.0 (75-125) 1 Ct. Macropoxy 646 5.0-10.0 (125-250)			Application to surfaces above 120°F (49°C) is not recommended in VOC Restricted Areas (≤250 g/L). When spraying a surface above 120°F (49°C) in other areas (>250 g/L), please consult with your Sherwin-Williams representative. Spray apply only. Product will produce an orange peel appearance when applied at elevated temperatures.	
Steel, Inorganic Zinc Primer, Atmospheric 1 Ct. Zinc Clad II (85) 2.0-4.0 (50-100) 1 Ct. Macropoxy 646 5.0-10.0 (125-250)			Topcoating: It is recommended to apply a thinned-down, low wet film thickness mist coat over zinc rich primers to help avoid outgassing. Allow it to tack up and seal the surface. Then apply a full wet film thickness coat as directed.	
Steel, Organic Zinc/Epoxy/Urethane Topcoat 1 Ct. Zinc Clad IV (85) 3.0-5.0 (75-125) 1 Ct. Macropoxy 646 3.0-10.0 (75-250) 1 Ct. Acrolon 7300 2.0-4.0 (50-100)			Mix contents of each component thoroughly with low speed power agitation. Make certain no pigment remains on the bottom of the can. Then combine one part by volume of Part A with one part by volume of Part B. Thoroughly agitate the mixture with power agitation. Allow the material to sweat-in as indicated prior to application. Re-stir before using.	
Steel, Inorganic Zinc/Epoxy/Urethane Topcoat 1 Ct. Zinc Clad II (85) 2.0-4.0 (50-100) 1 Ct. Macropoxy 646 3.0-10.0 (75-250) 1 Ct. Acrolon 7300 2.0-4.0 (50-100)			HEALTH AND SAFETY	
Steel, Organic Zinc/Epoxy/Polysiloxane Topcoat, Atmospheric 1 Ct. Zinc Clad IV (85) 3.0-5.0 (75-125) 1 Ct. Macropoxy 646 3.0-10.0 (75-250) 1-2 Cts. Sher-Loxane 800 4.0-6.0 (100-150)			Refer to the SDS sheet before use. Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.	
Steel: Norsok M501 System 7B/Subsea 2 Cts. Macropoxy 646 7.0 (175)			DISCLAIMER	
Concrete/Masonry, Smooth, Immersion & Atmospheric 2 Cts. Macropoxy 646 5.0-10.0 (125-250)			The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Sheet.	
The systems listed above are representative of the product's use, other systems may be appropriate.			WARRANTY	
The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.				



**Protective
&
Marine
Coatings**

MACROPOXY® 920 PRE-PRIME PENETRATING EPOXY PRE-PRIMER

**PART A
PART B**

**B58T101
B58V10**

**TRANSPARENT
HARDENER**

Revised: July 26, 2022

PRODUCT INFORMATION

4.50

PRODUCT DESCRIPTION

MACROPOXY 920 PRE-PRIME is a 100% solids, penetrating epoxy primer designed for use over marginally prepared steel or concrete surfaces.

- A penetrating sealer for tight rusted surfaces
- A penetrating sealer for concrete and masonry surfaces
- Low viscosity
- Barrier coat for hot solvent topcoats

PRODUCT CHARACTERISTICS

Finish: Medium Sheen

Color: Transparent

Volume Solids: 100%, calculated, mixed
70%, ASTM D2697,
(Helium Pycnometer)

VOC (EPA Method 24): <340 g/L; 2.8 lb/gal, mixed

Mix Ratio: 2 components, 3:1 ratio

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	1.5 (40)	2.0 (50)
Dry mils (microns)	1.5 (40)	2.0 (50)
~Coverage sq ft/gal (m²/L)		
Steel	800 (19.6)	1050 (25.7)
Concrete	400 (9.8)	500 (13.0)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1600 (39.2)	

Drying Schedule @ 2.0 mils wet (50 microns):

	@ 40°F/4.5°C	@ 77°F/25°C 50% RH	@ 120°F/49°C
To touch:	18 hours	9.5 hours	7 hours
Tack-free:	32 hours	17 hours	14 hours
To recoat:			
minimum:	36 hours	12 hours	12 hours
maximum:	30 days	30 days	30 days
<i>Drying time is temperature, humidity, and film thickness dependent.</i>			
Pot Life:	8-10 hours	4 hours	3-4 hours
Sweat-in-Time:	None required		

Shelf Life:	12 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point:	152°F (67°C), PMCC, mixed
Reducer:	Not recommended
Clean Up:	Reducer #54, R7K54

RECOMMENDED USES

For use as a primer / sealer over prepared steel or concrete surfaces.

- Petrochem exploration and offshore platforms
- Over white rusted and zinc rich coatings
- Chalky surfaces in atmospheric conditions
- Industrial applications
- Marine applications
- Over marginally prepared steel when abrasive cleaning is not possible
- Suitable for use in USDA inspected facilities
- Nuclear Power Plants • DOE Nuclear Fuel Facilities
- Nuclear fabrication shops • DOE Nuclear Weapons Facilities
- This product meets specific design requirements for non-safety related nuclear plant applications in Level II, III and Balance of Plant, and DOE nuclear facilities*.

* Nuclear qualifications are NRC license specific to the facility.

PERFORMANCE CHARACTERISTICS

- Designed for industrial and marine environments
- Penetrates existing, tightly adhered rust to provide a "tight" substrate prior to subsequent coats
- Can also be used as a high performance primer/sealer for masonry surfaces
- Not for immersion service
- Dry heat resistance up to 200°F (93°C)

Test Name	Test Method	Results
Critical Radiant Flux*	NFPA 253	1.02 W/cm ²
Surface Burning**	ASTM E84/NFPA 255	Flame Spread Index 15; Smoke Development Index 55
Surface Burning***	ASTM E84/NFPA 255	Flame Spread Index 20; Smoke Development Index 85

*System tested (Report No. IM54.1157-02-01):
Macropoxy 920 Pre-Prime @ 1 mil (25 microns) dft
Cor-Cote HP Epoxy @ 51 mils (1,275 microns) dft

**System tested (Report No. IM54.1157-02-01):
Macropoxy 920 Pre-Prime @ 1.1 mils (27.5 microns) dft
Macropoxy 646 @ 19.8 mils (495 microns) dft

***System tested (Report No. IM54.1157-02-01):
Macropoxy 920 Pre-Prime @ 1.2 mils (30 microns) dft
Phenicon HS Epoxy Phenolic @ 18.8 mils (470 microns) dft

Epoxy coatings may darken or yellow following application and cure



**Protective
&
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Coatings**

MACROPOXY® 920 PRE-PRIME PENETRATING EPOXY PRE-PRIMER

**PART A
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**B58T101
B58V10**

**TRANSPARENT
HARDENER**

Revised: July 26, 2022

PRODUCT INFORMATION

4.50

RECOMMENDED SYSTEMS

		Dry Film Thickness / ct.	
		Mils	(Microns)
Steel:			
1 ct.	Macropoxy 920 Pre-Prime	1.5-2.0	(40-50)
2 cts.	Macropoxy HS	3.0-6.0	(75-150)

Steel, zinc rich primer:

1 ct.	Zinc Clad IV	3.0-5.0	(75-125)
1 ct.	Macropoxy 920 Pre-Prime	1.5-2.0	(40-50)
1 ct.	Macropoxy HS	3.0-6.0	(75-150)
1 ct.	Acrolon 218 HS Acrylic Polyurethane	3.0-6.0	(75-150)

Masonry and Concrete:

1 ct.	Macropoxy 920 Pre-Prime	1.5-2.0	(40-50)
1-2 cts.	Tile-Clad Hi-Solids	2.5-4.0	(63-100)

Previously Painted Surfaces:

1 ct.	Macropoxy 920 Pre-Prime	1.5-2.0	(40-50)
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Acceptable topcoats:

Acrolon 218 HS
Pro Industrial DTM Acrylic
Epo-Plex Multi-Mil Epoxy
Hi-Solids Polyurethane
Macropoxy 646
Macropoxy HS
Sher-Cryl HPA
Sher-Loxane 800
Tile-Clad HS

FIRETEX M89/02, M90, M90/02, and M93/02:

Steel Substrates being primed for FIRETEX only:

1 ct.	Zinc Clad IV	3.0-5.0	(75-125)
1 ct.	Macropoxy 920 Pre-Prime	1.5-2.0	(40-50)

Steel Substrates being primed for FIRETEX only:

1 ct.	Zinc Clad II	2.0-4.0	(50-100)
1 ct.	Macropoxy 920 Pre-Prime	1.5-2.0	(40-50)

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

Iron & Steel: SSPC-SP2
Masonry / Concrete: SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3
Previously Painted: SSPC-SP1

		Surface Preparation Standards			
Condition of Surface		ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal		Sa 3	Sa 3	SP 5	1
Near White Metal		Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast		Sa 2	Sa 2	SP 6	3
Brush-Off Blast		Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted	C St 2	C St 2	SP 2	-
Pitted & Rusted		D St 2	D St 2	SP 2	-
Rusted		C St 3	C St 3	SP 3	-
Power Tool Cleaning	Pitted & Rusted	D St 3	D St 3	SP 3	-

TINTING

May be shaded with up to 2 oz of Maxitoner Colorants per gallon. Not controlled for tint strength.

APPLICATION CONDITIONS

Temperature: 40°F (4.5°C) minimum, 120°F (49°C) maximum
(air, surface, and material)

At least 5°F (2.8°C) above dew point

Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:

Part A: 3 quarts (2.8L) in a 1 gallon (3.78L) container
3 gallons (11.3L) in a 5 gallon (18.9L) container
Part B: 1 quart (0.94L) and 1 gallon (3.78L)
1 gallon (3.78L) and 4 gallons (15.1L) mixed

Weight: 8.47 ± 0.2 lb/gal ; 1.0 Kg/L, mixed

SAFETY PRECAUTIONS

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117

The systems listed above are representative of the product's use, other systems may be appropriate.

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Protective & Marine Coatings

MACROPOXY® 920 PRE-PRIME PENETRATING EPOXY PRE-PRIMER

PART A
PART B

B58T101
B58V10

TRANSPARENT
HARDENER

Revised: July 26, 2022

APPLICATION BULLETIN

4.50

SURFACE PREPARATIONS

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel

Minimum surface preparation is Hand Tool Clean per SSPC-SP2. Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. For better performance, use Commercial Blast Cleaning per SSPC-SP6/NACE 3, blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (1.0-2.0 mils / 25-50 microns). Prime any bare steel within 8 hours or before flash rusting occurs.

Concrete and Masonry

For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910.

Follow the standard methods listed below when applicable:

ASTM D4258 Standard Practice for Cleaning Concrete.
ASTM D4259 Standard Practice for Abrading Concrete.
ASTM D4260 Standard Practice for Etching Concrete.
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.
SSPC-SP 13/Nace 6 Surface Preparation of Concrete.
ICRI No. 310.2R Concrete Surface Preparation.

Previously Painted Surfaces:

If in sound condition, clean the surface of all foreign material. Smooth, hard or glossy coatings and surfaces should be dulled by abrading the surface. Apply a test area, allowing paint to dry one week before testing adhesion. If adhesion is poor, or if this products attacks the previous finish, removal of the previous coating may be necessary. If paint is peeling or badly weathered, clean surface to sound substrate and treat as a new surface as above.

APPLICATION CONDITIONS

Temperature: 40°F (4.5°C) minimum, 120°F (49°C) maximum
(air, surface, and material)
At least 5°F (2.8°C) above dew point

Relative humidity: 85% maximum

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

Reducer Not recommended

Clean-Up Reducer #54, R7K54

Airless Spray (see note on next page)

Pressure.....2200 - 2500 psi
Hose.....1/4" ID
Tip015"
Filter60 mesh

Conventional Spray

Gun Binks 95
Tip66
Cap63 PB
Atomization Pressure.....50 psi
Fluid Pressure.....10 psi

Brush

Brush..... Natural Bristle

Roller

Cover 1/4"-3/8" woven with solvent resistant core

If specific application equipment is not listed above, equivalent equipment may be substituted.

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	C St 2	SP 2	-
Pitted & Rusted	D St 2	D St 2	SP 2	-
Rusted	C St 3	C St 3	SP 3	-
Power Tool Cleaning	D St 3	D St 3	SP 3	-



Protective & Marine Coatings

MACROPOXY® 920 PRE-PRIME PENETRATING EPOXY PRE-PRIMER

PART A
PART B

B58T101
B58V10

TRANSPARENT
HARDENER

Revised: July 26, 2022

APPLICATION BULLETIN

4.50

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Use low speed mechanical agitation to mix Part A and Part B separately, then add 1 part by volume of Part B to 3 parts by volume of Part A. Mix the combined parts using low speed power agitation for at least 5 minutes. Mixed material will generate heat and should be handled appropriately, using all material before pot life expiration, and cleaning lines and equipment immediately after use. Higher temperatures will decrease working pot life, while lower temperatures will increase it.

If reducer solvent is used, add only after both components have been thoroughly mixed.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	1.5 (40)	2.0 (50)
Dry mils (microns)	1.5 (40)	2.0 (50)
~Coverage sq ft/gal (m²/L)		
Steel	800 (19.6)	1050 (25.7)
Concrete	400 (9.8)	500 (13.0)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1600 (39.2)	

Drying Schedule @ 2.0 mils wet (50 microns):

	@ 40°F/4.5°C	@ 77°F/25°C 50% RH	@ 120°F/49°C
To touch:	18 hours	9.5 hours	7 hours
Tack-free:	32 hours	17 hours	14 hours
To recoat:			
minimum:	36 hours	12 hours	12 hours
maximum:	30 days	30 days	30 days
<i>Drying time is temperature, humidity, and film thickness dependent.</i>			
Pot Life:	8-10 hours	4 hours	3-4 hours
Sweat-in-Time:	None required		

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Reducer #54, R7K54. Clean tools immediately after use with Reducer #54, R7K54. Follow manufacturer's safety recommendations when using any solvent.

DISCLAIMER

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PERFORMANCE TIPS

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

No reduction of material is recommended as it can affect film build, appearance, and adhesion.

Do not apply the material beyond recommended pot life.

Do not mix previously catalyzed material with new.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer #54, R7K54.

For better performance in severely corrosive environments, or over heavily rusted/pitted steel or porous concrete and masonry, two coats may be required.

Roll out any puddles.

Airless spray is acceptable for application; however, the product should be back-rolled to eliminate excessive millage and puddles.

Gloss may vary depending on substrate and film thickness.

Can be used as a metalizing sealer. Consult your Sherwin-Williams Representative regarding Product Bulletin: "Sealers for Thermal Spray Metalizing".

Refer to Product Information sheet for additional performance characteristics and properties.

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING CHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.



Protective & Marine Coatings

ACROLON™ 218 HS ACRYLIC POLYURETHANE

PART A	B65-600	GLOSS SERIES
PART A	B65-650	SEMI-GLOSS SERIES
PART B	B65V600	HARDENER

Revised: October 11, 2023

PRODUCT INFORMATION

5.22

PRODUCT DESCRIPTION

ACROLON 218 HS is a polyester modified, aliphatic, acrylic polyurethane formulated specifically for in-shop applications. Also suitable for industrial applications. A fast drying, urethane that provides color and gloss retention for exterior exposure.

- Can be used directly over organic zinc rich primers (epoxy zinc primer and moisture cure urethane zinc primer)
- Color and gloss retention for exterior exposure
- Fast dry
- Outstanding application properties

PRODUCT CHARACTERISTICS

Finish:	Gloss or Semi-Gloss
Color:	Wide range of colors available
Volume Solids:	65% ± 2%, mixed, may vary by color
Weight Solids:	78% ± 2%, mixed, may vary by color
VOC (EPA Method 24):	Unreduced: <300 g/L; 2.5 lb/gal mixed Reduced 10% with R7K15: <340 g/L; 2.8 lb/gal mixed Reduced 9% with MEK, R6K10: <340 g/L; 2.8 lb/gal
Mix Ratio:	6:1 by volume, 1 gallon or 5 gallon mixes premeasured components

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	4.5 (112.5)	9.0 (225)
Dry mils (microns)	3.0 (75)	6.0 (150)
~Coverage sq ft/gal (m²/L)	175 (4.3)	346 (8.5)
Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft	1040 (25.5)	

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 6.0 mils wet (150 microns):

	@ 35°F/1.7°C	@ 77°F/25°C	@ 120°F/49°C
		50% RH	
To touch:	4 hours	1 hour	20 minutes
To handle:	18 hours	9 hours	4 hours
To recoat:			
minimum:	18 hours	8 hours	6 hours
maximum:	3 months	3 months	3 months
To cure:	14 days	7 days	5 days
Pot Life:	4 hours	2 hours	45 minutes
(reduced 5% with Reducer R7K15)			
Sweat-in-Time:	None		
Drying time is temperature, humidity, and film thickness dependent.			
Paint temperature must be at least 40°F (4.5°C) minimum.			

Shelf Life:	Part A* - 36 months, unopened Part B - 24 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C).
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*Aluminum (Part A, Rex # B65SW655) has a shelf life of 24 months.

Flash Point: 55°F (13°C), Seta, mixed

Reducer/Clean Up:

Spray: Reducer R7K15, MEK R6K10, R7K111, Reducer #58

Brush / Roll: Reducer #132, Reducer #58, R7K111

RECOMMENDED USES

Specifically formulated for in-shop applications.

For use over prepared metal and masonry surfaces in industrial environments such as:

- Structural steel
- Rail cars and locomotives
- Conveyors
- Bridges
- Wind Towers - onshore and offshore
- Offshore platforms - exploration and production
- Suitable for use in USDA inspected facilities
- Conforms to AWWA D102 Outside Coating Systems #4 (OCS-4), #5 (OCS-5) & #6 (OCS-6)
- Conforms to MPI# 72 and MPI# 174
- Acceptable for use in high performance architectural applications
- Acceptable for use over and/or under Loxon S1 and Loxon H1 Caulking
- A component of INFINITANK
- Over FIRETEX® hydrocarbon systems
- Suitable for use in the Mining & Minerals Industry
- Approved topcoat for NEPCOAT System B
- Tank exteriors
- Pipelines
- Ships

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP10/NACE 2

System Tested*:

1 ct. Macropoxy 646 @ 6.0 mils (150 microns) dft

1 ct. Acrolon 218 HS Gloss @ 4.0 mils (100 microns) dft

*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance¹	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	43 mg loss
Adhesion³	ASTM D4541	1976 psi
Corrosion Weathering²	ASTM D5894, 27 cycles, 9072 hours	Rating 10 per ASTM D610, for rusting; Rating 10 per ASTM D714, for blistering
Direct Impact Resistance¹	ASTM D2794	70 in. lb.
Dry Heat Resistance^{1,4}	ASTM D2485, Method A	200°F (93°C) Continuous 250°F (121°C) Intermittent
Flexibility¹	ASTM D522, 180° bend, 1/8" mandrel	Passes
Humidity Resistance²	ASTM D4585, 100°F (38°C), 1500 hours	Rating 10 per ASTM D610, for rusting; Rating 10 per ASTM D714, for blistering
Pencil Hardness	ASTM D3363	3H
Salt Fog Resistance³	ASTM B117, 15,000 hours	Rating 10 per ASTM D610, for rusting; Rating 10 per ASTM D714, for blistering

Meets the requirements of SSPC Paint No. 36, Level 3 for white and light colors. Dark colors may require a clear coat.

Complies with ISO 12944-5 C5I and C5M requirements.

Footnotes:

¹ Finish coat only tested

² Primer Zinc-Clad II Plus

Intermediate Macropoxy 646

Finish Acrolon 218 HS

³ Primer Zinc-Clad III HS

⁴ Slight color and/or gloss changes may occur above 200°F (93°C)



Protective & Marine Coatings

ACROLON™ 218 HS ACRYLIC POLYURETHANE

PART A **B65-600** **GLOSS SERIES**
PART A **B65-650** **SEMI-GLOSS SERIES**
PART B **B65V600** **HARDENER**

Revised: October 11, 2023

PRODUCT INFORMATION

5.22

RECOMMENDED SYSTEMS

		Dry Film Thickness / ct.	
		Mils	(Microns)
Steel:			
1 ct.	Macropoxy 646	5.0-10.0	(125-250)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Zinc Clad II Plus	2.0-4.0	(50-100)
1 ct.	Macropoxy 646	3.0-10.0	(75-250)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Zinc Clad IV	3.0-5.0	(75-125)
or	Zinc Clad 4100	3.0-5.0	(75-125)
1 ct.	Macropoxy 646	3.0-10.0	(75-250)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Zinc Clad IV	3.0-5.0	(75-125)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Corothane I-GalvaPac Zinc Primer	3.0-4.0	(75-100)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Epoxy Mastic Aluminum II	6.0	(150)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Recoatable Epoxy Primer	4.0-6.0	(100-150)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Concrete/Masonry:			
1 ct.	Kem Cati-Coat HS Epoxy Filler/Sealer	10.0-20.0	(250-500)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Aluminum/Galvanizing:			
1 ct.	DTM Wash Primer	0.7-1.3	(18-32)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)

FIRETEX ONLY:

Finish Coat for FIRETEX Hydrocarbon Systems:

1 ct. Acrolon 218 HS Polyurethane*

*Consult FIRETEX PFP Specialist for recommended dft range

The systems listed above are representative of the product's use, other systems may be appropriate.

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SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

- * Iron & Steel: SSPC-SP6/NACE 3, 1-2 mil (25-50 micron) profile
- * Galvanizing: SSPC-SP1
- * Concrete & Masonry: SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3
- * Primer required

Surface Preparation Standards				
Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	C St 2	SP 2	-
Pitted & Rusty	D St 2	D St 2	SP 2	-
Rusty	C St 3	C St 3	SP 3	-
Power Tool Cleaning	D St 3	D St 3	SP 3	-

TINTING

Tint Part A with Maxitoner Colorants.

- Extra white tints at 100% tint strength
- Ultradeep base tints at 150% tint strength

Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.

APPLICATION CONDITIONS

Temperature: 35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface)
 40°F (4.5°C) minimum, 120°F (49°C) maximum (material)
 At least 5°F (2.8°C) above dew point
 Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging: 1 gallon (3.78L) mix; 5 gallon (18.9L) mix;
 Part A: .86 gal (3.25L) 4.29 gal (16.2L)
 Part B: .14 gal (0.53L) 0.71 gal (2.7L)
 (premeasured components)

Weight: 11.2 ± 0.2 lb/gal ; 1.3 Kg/L
 mixed, may vary with color

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

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WARRANTY

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Protective & Marine Coatings

ACROLON™ 210 HS ACRYLIC POLYURETHANE

PART A	B65-600	GLOSS SERIES
PART A	B65-650	SEMI-GLOSS SERIES
PART B	B65V600	HARDENER

Revised: October 11, 2023

APPLICATION BULLETIN

5.22

SURFACE PREPARATIONS

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Commercial Blast Cleaning per SSPC-SP6/NACE 3. For better performance, use Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (1-2 mils / 25-50 microns). Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Aluminum

Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning per SSPC-SP1. Primer required.

Galvanized Steel

Allow to weather a minimum of six months prior to coating. Solvent Clean per SSPC-SP1. When weathering is not possible, or the surface has been treated with chromates or silicates, first Solvent Clean per SSPC-SP1 and apply a test patch. Allow paint to dry at least one week before testing adhesion. If adhesion is poor, brush blasting per SSPC-SP7 is necessary to remove these treatments. Rusty galvanizing requires a minimum of Hand Tool Cleaning per SSPC-SP2, prime the area the same day as cleaned or before flash rusting occurs. Primer required.

Concrete and Masonry

For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910. Primer required.

Follow the standard methods listed below when applicable:

ASTM D4258 Standard Practice for Cleaning Concrete.
ASTM D4259 Standard Practice for Abrading Concrete.
ASTM D4260 Standard Practice for Etching Concrete.
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.
SSPC-SP 13/Nace 6 Surface Preparation of Concrete.
ICRI No. 310.2R Concrete Surface Preparation.

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7099:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	C St 2	SP 2	-
Pitted & Rusted	D St 2	D St 2	SP 2	-
Rusted	C St 3	C St 3	SP 3	-
Power Tool Cleaning	D St 3	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature: 35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface)
40°F (4.5°C) minimum, 120°F (49°C) maximum (material)
At least 5°F (2.8°C) above dew point

Relative humidity: 85% maximum

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

Reducer/Clean Up:

Spray.....Reducer R7K15, MEK, Reducer #58, or R7K111
Brush/RollReducer #132, R7K132, Reducer #58, or R7K111

If reducer is used, reduce at time of catalyzation.

Airless Spray

Pressure.....2500 - 2800 psi
Hose.....3/8" ID
Tip013" - .017"
Filter60 mesh
Reduction.....As needed up to 10% by volume with R7K15 or R7K111, or up to 9% with MEK, R6K10*

Conventional Spray

GunBinks 95
Cap63P
Atomization Pressure.....50 - 70 psi
Fluid Pressure.....20 - 25 psi
Reduction.....As needed up to 10% by volume with R7K15 or R7K111, or up to 9% with MEK, R6K10*

Brush

Brush.....Natural Bristle
Reduction.....As needed up to 10% by volume*

Roller

Cover3/8" woven with solvent resistant core
Reduction.....As needed up to 10% by volume*

If specific application equipment is not listed above, equivalent equipment may be substituted.

* Note: Reducing more than maximum recommended level will result in VOC exceeding 340g/L



Protective & Marine Coatings

ACROLON™ 210 HS ACRYLIC POLYURETHANE

PART A	B65-600	GLOSS SERIES
PART A	B65-650	SEMI-GLOSS SERIES
PART B	B65V600	HARDENER

Revised: October 11, 2023

APPLICATION BULLETIN

5.22

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix contents of each component thoroughly with low speed power agitation. Make certain no pigment remains on the bottom of the can. Then combine six parts by volume of Part A with one part by volume of Part B (premeasured components). Thoroughly agitate the mixture with power agitation. Re-stir before using.

If reducer is used, add only after both components have been thoroughly mixed.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	4.5 (112.5)	9.0 (225)
Dry mils (microns)	3.0 (75)	6.0 (150)
~Coverage sq ft/gal (m ² /L)	175 (4.3)	346 (8.5)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1040 (25.5)	

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 6.0 mils wet (150 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 120°F/49°C
To touch:	4 hours	1 hour	20 minutes
To handle:	18 hours	9 hours	4 hours
To recoat:			
minimum:	18 hours	8 hours	6 hours
maximum:	3 months	3 months	3 months
To cure:	14 days	7 days	5 days
Pot Life:	4 hours	2 hours	45 minutes
(reduced 5% with Reducer R7K15)			
Sweat-in-Time:	None		
Drying time is temperature, humidity, and film thickness dependent.			
Paint temperature must be at least 40°F (4.5°C) minimum.			

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Reducer #132, R7K132. Clean tools immediately after use with Reducer #132, R7K132. Follow manufacturer's safety recommendations when using any solvent.

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PERFORMANCE TIPS

Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

Excessive reduction of material can affect film build, appearance, and adhesion.

Do not apply the material beyond recommended pot life.

Do not mix previously catalyzed material with new.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer #15, R7K15 or MEK, R6K10.

Mixed coating is sensitive to water. Use water traps in all air lines. Moisture contact can reduce pot life and affect gloss and color.

Quick-Thane Urethane Accelerator is acceptable for use. See data page 5.97 for details.

E-Z Roll Urethane Defoamer is acceptable for use. See data page 5.99 for details.

If maximum recoat time is exceeded, a light abrasion may be necessary to roughen the surface to promote adhesion before recoating.

Refer to Product Information sheet for additional performance characteristics and properties.

SAFETY PRECAUTIONS

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Protective & Marine Coatings

FLUOROKEM® HS 100

Part A	B65-1560	Satin
	and B65-560	Satin
Part A	B65-1570	Semi-Gloss
	and B65-570	Semi-Gloss
Part A	B65-1580	Gloss
	and B65-580	Gloss
Part B	B65V1580	Hardener
	B65V00012	Accelerator

Revised: April 17, 2023

PRODUCT INFORMATION

5.39

PRODUCT DESCRIPTION

FLUOROKEM HS 100 is a premium, ultra-durable ambient cured high solids fluoropolymer urethane finish. It provides unparalleled color and gloss performance.

- Superior exterior durability
- Fast dry
- Less than 100 g/l VOC
- Chemical and abrasion resistant
- Airless, conventional spray, and brush and roll application
- Ambient temperature cure
- Graffiti resistant

PRODUCT CHARACTERISTICS

Finish:	Gloss, Semi-Gloss, Satin
Color:	Wide range of colors available
Volume Solids:	61% ± 2%, mixed, may vary by color
Weight Solids:	71% ± 2%, mixed, may vary by color
Mix Ratio:	4:1 by volume
VOC (unreduced):	<100 g/l ; 0.83 lb/gal, mixed, may vary by color

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	3.0 (75)	5.0 (125)
Dry mils (microns)	2.0 (50)	3.0 (75)
~Coverage sq ft/gal (m²/L)	325 (8.0)	490 (12)
Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft	978 (24)	

Drying Schedule @ 4.0 mils wet (100 microns):

	@ 30°F/-1°C	@ 40°F/4°C	@ 50°F/10°C	@ 77°F/25°C	@ 120°F/49°C
	50% RH				
To touch:	8 hours ²	8 hours ¹	8 hours	2 hours	1 hour
To handle:	24 hours ²	24 hours ¹	24 hours	5 hours	2 hours
To recoat:					
minimum:	24 hours ²	24 hours ¹	24 hours	5 hours	2 hours
maximum:			45 days	45 days	45 days
To cure:			10 days	7 days	5 days

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.

Pot Life: 2 hours² 2 hours¹ 2.5 hours 2 hours <1 hour

Sweat-in-Time: None required

¹40°F/4°C data above is with 1 oz./gal of B65V00012 accelerator**

²30°F/-1°C data above is with 2 oz./gal of B65V00012 accelerator**

**VOC Restricted Areas (<100 g/L): Do not use the accelerator above 75°F (24°C) if reducing with R7K77.

PRODUCT CHARACTERISTICS (CONT'D)

Shelf Life:	24 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point:	40°F (4.5°C), PMCC or SETA, mixed
Reducer:	
Below 75°F (24°C):	R7K111 (up to 15% by volume)
Between 75°F (24°C) and 90°F (32°C):	R7K77 (up to 5%-10% by volume)
Above 90°F (32°C):	R7K77 (up to 15% by volume)
Clean Up*:	VOC Restricted Areas (≤25 g/L, or ≤3%): use Oxsol 100 or High Solids Compliant Thinner #1 - Fast.

*Other areas (>25 g/L, or >3%): use Oxsol 100, High Solids Compliant Thinner #1 - Fast, or Reducer #15 (R7K15). Choose a solvent that is compliant in your area. Confirm compliance with state and local air quality rules before use.

RECOMMENDED USES

Interior or exterior exposure where extreme weather durability is required.

- Water tanks
- Storage tank exteriors
- Bridges
- Marine
- Municipal building
- Fascias
- Iconic structures
- Stadiums
- Sports complexes
- Museums
- Schools
- High visibility areas
- Logos

PERFORMANCE CHARACTERISTICS

Substrate*: Blasted Steel

Surface Preparation*: SSPC-SP10/NACE 2

System Tested*:

Corothane I GalvaPac 1K Zinc Primer @ 2.5 mils (63 microns) dft

Acrolon 218 HS @ 2.0 mils (50 microns) dft

Fluorokem HS 100 @ 2.0 mils (50 microns) dft

*unless otherwise noted below

Test Name	Test Method	Results
Adhesion	ASTM D4541	2,655 psi
Corrosion Resistance	ASTM B117	3,000 hours
Direct Impact Resistance	ASTM G14	80 in. lb.
Dry Heat Resistance	ASTM D2485	200°F (93°C)
EMMAQUA	ASTM D4141	Pass
Flexibility	ASTM D522, 180° bend, 1/8" mandrel	Pass
Humidity Resistance	ASTM D4585	3,000 hours
Pencil Hardness	ASTM D3363	F



Protective & Marine Coatings

FLUOROKEM® HS 100

Part A	B65-1560	Satin
	and B65-560	Satin
Part A	B65-1570	Semi-Gloss
	and B65-570	Semi-Gloss
Part A	B65-1580	Gloss
	and B65-580	Gloss
Part B	B65V1580	Hardener
	B65V00012	Accelerator

Revised: April 17, 2023

PRODUCT INFORMATION

5.39

RECOMMENDED SYSTEMS

		Dry Film Thickness / ct.	
		Mils	(Microns)
Steel, Atmospheric:			
1 ct.	Corothane I GalvaPac	3.0-4.0	(75-100)
1 ct.	Acrolon 218 HS	3.0-6.0	(75-150)
or	Hi-Solids Polyurethane 250	3.0-5.0	(75-125)
or	Sher-Loxane 800	4.0-6.0	(100-150)
1-2 cts.	FluoroKem HS 100	2.0-3.0	(50-75)
1 ct.	Dura-Plate 235	4.0-8.0	(100-200)
or	Macropoxy 646 Fast Cure	5.0-10.0	(125-250)
or	Epoxy Mastic Aluminum II	4.0-6.0	(100-150)
1 ct.	Acrolon 218 HS	3.0-6.0	(75-150)
or	Hi-Solids Polyurethane 250	3.0-5.0	(75-125)
1-2 cts.	FluoroKem HS 100	2.0-3.0	(50-75)
1 ct.	Macropoxy 646 Fast Cure	5.0-10.0	(125-250)
1-2 cts.	FluoroKem HS 100*	2.0-3.0	(50-75)

*For full coverage and performance, Sherwin-Williams recommends applying 2 coats of FluoroKem HS 100 over Macropoxy 646 Fast Cure primer.

NOTE: AWWA D102 does not recommend a Zinc/Epoxy/Fluoropolymer system, but instead recommends a Zinc/Aliphatic Urethane/Fluoropolymer system for external water tanks.

Concrete/Masonry - Smooth:

1 ct.	Macropoxy 646 Fast Cure	5.0-10.0	(125-250)
1 ct.	Acrolon 218 HS	3.0-6.0	(75-150)
or	Hi-Solids Polyurethane 250	3.0-5.0	(75-125)
1-2 cts.	FluoroKem HS 100	2.0-3.0	(50-75)

The systems listed above are representative of the product's use, other systems may be appropriate.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Minimum recommended surface preparation:

- *Iron & Steel: SSPC-SP6/NACE 3
- *Concrete & Masonry: SSPC-SP13/NACE 6 or ICRI No. 310.2R, CSP 1-3
- *Prime with recommended primers as needed.

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS709:A1	SSPC	NACE
White Metal	Sa 3	SP 5	1
Near White Metal	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	SP 2	-
Pitted & Rusty	D St 2	SP 2	-
Rusty	C St 3	SP 3	-
Power Tool Cleaning	Pitted & Rusty	D St 3	SP 4

TINTING

Do not tint. Custom color matches are available through the Rapid Response Program. Contact your Sherwin-Williams representative for additional information.

APPLICATION CONDITIONS

Temperature*:	30°F (-1°C) minimum, 120°F (49°C) maximum (Air, surface, and material) At least 5°F (2.8°C) above dew point
Relative humidity:	85% maximum

*reference the Drying Schedule tables on pages 1 and 4

ORDERING INFORMATION

Packaging:	
Part A:	1 gallon (3.78L) and 5 gallon (18.9L) containers
Part B:	Quart (0.94L) and 1 gallon (3.78L) containers

Weight (varies by color): 10.3-12.8 ± 0.2 lb/gal ; 1.23-1.53 Kg/L

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED BY STATUTE, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.



Protective & Marine Coatings

FLUOROKEM® HS 100

Part A	B65-1560	Satin
	and B65-560	Satin
Part A	B65-1570	Semi-Gloss
	and B65-570	Semi-Gloss
Part A	B65-1580	Gloss
	and B65-580	Gloss
Part B	B65V1580	Hardener
	B65V00012	Accelerator

Revised: April 17, 2023

APPLICATION BULLETIN

5.39

SURFACE PREPARATIONS

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Commercial Blast Cleaning per SSPC-SP6/NACE 3. For better performance, use Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2-3 mils / 50-75 microns). Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Concrete and Masonry

For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910. Primer required.

Follow the standard methods listed below when applicable:

ASTM D4258 Standard Practice for Cleaning Concrete.
ASTM D4259 Standard Practice for Abrading Concrete.
ASTM D4260 Standard Practice for Etching Concrete.
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.
SSPC-SP 13/Nace 6 Surface Preparation of Concrete.
ICRI No. 310.2R Concrete Surface Preparation.

APPLICATION CONDITIONS

Temperature*:	30°F (-1°C) minimum, 120°F (49°C) maximum (Air, surface, and material) At least 5°F (2.8°C) above dew point
Relative humidity:	85% maximum

*reference the Drying Schedule tables on pages 1 and 4

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

Reducer:

Below 75°F (24°C):	Reducer #111 (R7K111), up to 15% by volume
Between 75°F (24°C) and 90°F (32°C):	R7K77, up to 5%-10% by volume
Above 90°F (32°C):	R7K77, up to 15% by volume

Clean Up*: VOC Restricted Areas (≤25 g/L, or ≤3%): use Oxsol 100 or High Solids Compliant Thinner #1 - Fast.

*Other areas (>25 g/L, or >3%): use Oxsol 100, High Solids Compliant Thinner #1 - Fast, or Reducer #15 (R7K15). Choose a solvent that is compliant in your area. Confirm compliance with state and local air quality rules before use.

Airless Spray

Pump.....	45:1 at 1gpm or greater
Pressure.....	1500-2500 psi
Hose.....	1/4" ID
Tip.....	.013" - .017"
Filter.....	60 mesh
Reduction.....	see Reducer options above

Brush

Brush.....	Natural Bristle
Reduction.....	see Reducer options above

Roller

Cover.....	3/8" woven with solvent resistant core
Reduction.....	see Reducer options above

If specific application equipment is not listed above, equivalent equipment may be substituted.

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	C St 2	SP 2	-
Pitted & Rusty	D St 2	D St 2	SP 2	-
Rusty	C St 3	C St 3	SP 3	-
Power Tool Cleaning	D St 3	D St 3	SP 3	-
Pitted & Rusty	D St 3	D St 3	SP 3	-



Protective & Marine Coatings

FLUOROKEM® HS 100

Part A	B65-1560	Satin
	and B65-560	<i>Satin</i>
Part A	B65-1570	Semi-Gloss
	and B65-570	<i>Semi-Gloss</i>
Part A	B65-1580	Gloss
	and B65-580	<i>Gloss</i>
Part B	B65V1580	Hardener
	B65V00012	Accelerator

Revised: April 17, 2023

APPLICATION BULLETIN

5.39

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix contents of each component thoroughly with low speed power agitation. Make certain no pigment remains on the bottom of the can. Then combine 4 parts by volume of Part A with 1 part by volume of Part B. Thoroughly agitate the mixture with slow speed power agitation for 2-3 minutes.

If reducer solvent is used, add only after both components have been thoroughly mixed.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	3.0 (75)	5.0 (125)
Dry mils (microns)	2.0 (50)	3.0 (75)
~Coverage sq ft/gal (m ² /L)	325 (8.0)	490 (12)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	978 (24)	

Drying Schedule @ 4.0 mils wet (100 microns):

	@ 30°F/-1°C	@ 40°F/4°C	@ 50°F/10°C	@ 77°F/25°C	@ 120°F/49°C
	50% RH				
To touch:	8 hours ²	8 hours ¹	8 hours	2 hours	1 hour
To handle:	24 hours ²	24 hours ¹	24 hours	5 hours	2 hours
To recoat:					
minimum:	24 hours ²	24 hours ¹	24 hours	5 hours	2 hours
maximum:			45 days	45 days	45 days
To cure:			10 days	7 days	5 days

If maximum recoat time is exceeded, abrade surface before recoating.

Drying time is temperature, humidity, and film thickness dependent.

Pot Life: 2 hours² 2 hours¹ 2.5 hours 2 hours <1 hour

Sweat-in-Time: None required

¹40°F/4°C data above is with 1 oz./gal of B65V00012 accelerator**

²30°F/-1°C data above is with 2 oz./gal of B65V00012 accelerator**

**VOC restricted areas (<100 g/L): Do not use the accelerator above 75°F (24°C) if reducing with R7K77.

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Reducer #15 (R7K15), R7K111, or Oxsol 100. Clean tools immediately after use with Reducer #15 (R7K15), Reducer #111 (R7K111), or Oxsol 100. Follow manufacturer's safety recommendations when using solvent.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

PERFORMANCE TIPS

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, over thinning, climate conditions, and excessive film build.

Excessive reduction of material can affect film build, appearance, and adhesion.

Do not apply the material beyond recommended pot life.

Do not mix previously catalyzed material with new.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended down time with Reducer #15 (R7K15), Reducer #111 (R7K111), or Oxsol 100.

Drying time is temperature, humidity, and film thickness dependent.

Always test adhesion by applying a test patch of 2-3 square feet. Allow to dry one week before checking adhesion.

This product is moisture sensitive. Avoid moisture contamination.

Temperatures above 77°F (25°C) will shorten pot life.

NOTE: AWWA D102 does not recommend a Zinc/Epoxy/Fluoropolymer system, but instead recommends a Zinc/Aliphatic Urethane/Fluoropolymer system for external water tanks.

Refer to Product Information sheet for additional performance characteristics and properties.

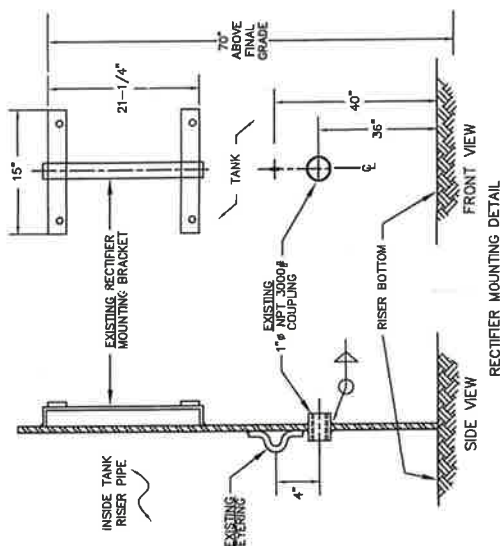
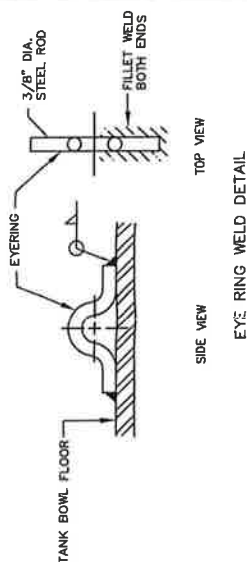
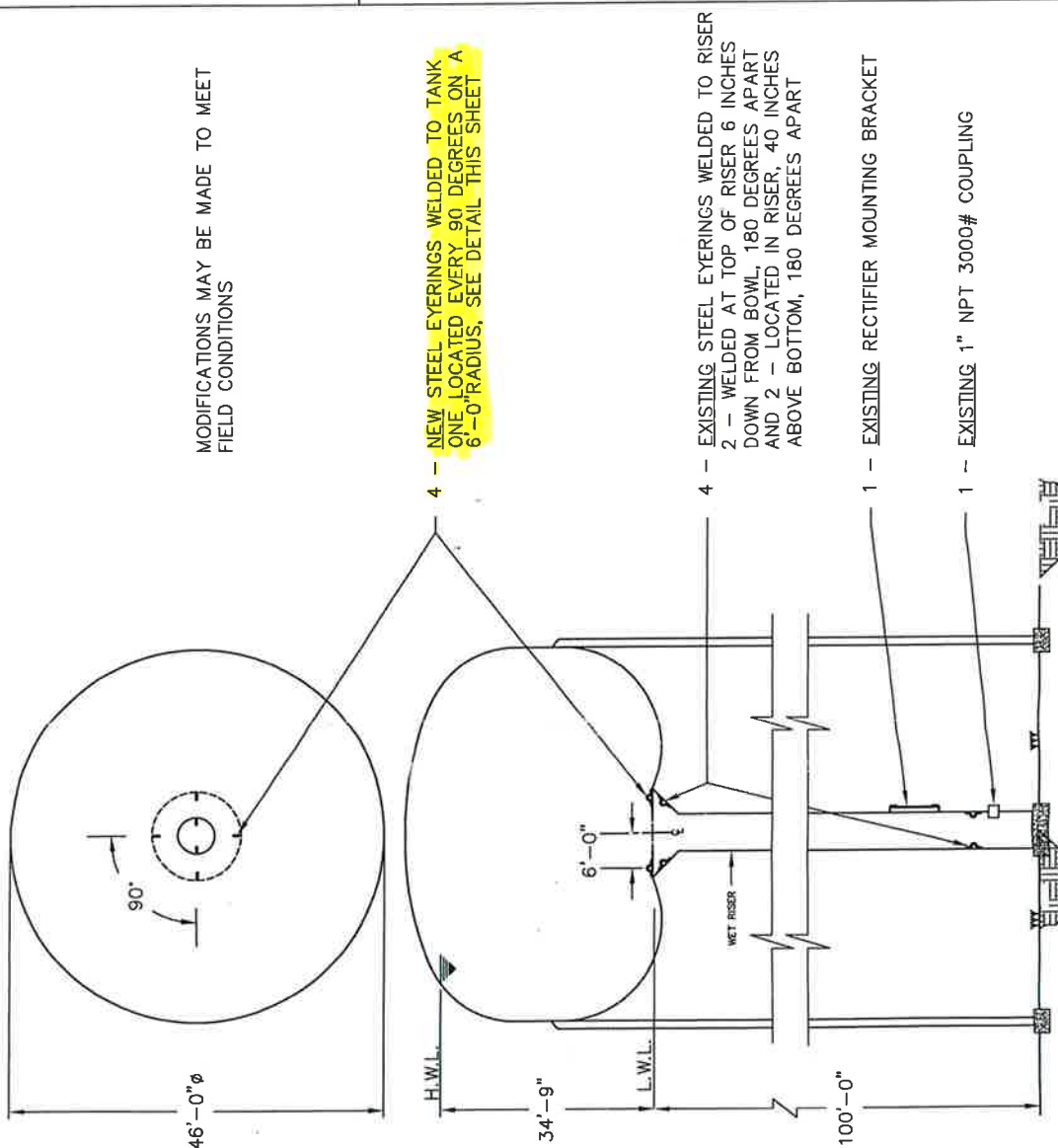
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NOTE: CP HARDWARE TO BE PAINTED IN ACCORDANCE WITH PROJECT SPECIFICATION

[illegible]

INTERNAL CATHODIC PROTECTION DESIGN SUBMITTAL



project name & location:

**500,000 GALLON RESERVOIR
WILLIAMS STREET
VILLAGE OF THORNTON,
ILLINOIS**

prepared for:

ERA VALDIVIA CONTRACTORS, INC.

prepared by:

**CORRPRO WATERWORKS
1055 West Smith Road
Medina, Ohio 44256
330.725.6681
www.corrpro.com**

Stronger. Safer. Infrastructure.

Drinking Water System Components,
Additives and Treatment Units

Drinking Water Products



Underwriters Laboratories, Inc.®

Directory

UNDERWRITERS LABORATORIES INC.

An independent, not-for-profit organization testing for public safety

CORRPRO WATERWORKS MANUFACTURE REFERENCE No. **MH17837**
COMPANY NAME

1055 West Smith Road CERTIFICATE No. _____
ADDRESS

Medina, OH 44256
CITY, STATE, ZIP CODE

The above company is qualified under the Classification and Follow-up Service of Underwriters Laboratories Inc. to furnish Drinking Water Treatment Components Classified with respect to Standard ANSI/NSF 61.

The above mentioned company is therefore authorized to issue this Certificate for the bulk shipment of material described below as it's representation that such material is manufactured in compliance with requirements established by Underwriters Laboratories Inc. for this class of product. This Certificate does not indicate proper application or use of the material and does not apply to other material, which may be used at the location specified.

-- SEE U L PLUMBING AND ASSOCIATED PRODUCTS DIRECTORY --

TRADE DESIGNATION: _____ CATEGORY Mechanical Devices
USE LEVEL: 25,000 Gallon Tanks or Larger



DRINKING WATER SYSTEM COMPONENTS
ANSI / NSF 61
7N53

Date of Issuance of Certificate: _____

Date Material Supplied: _____

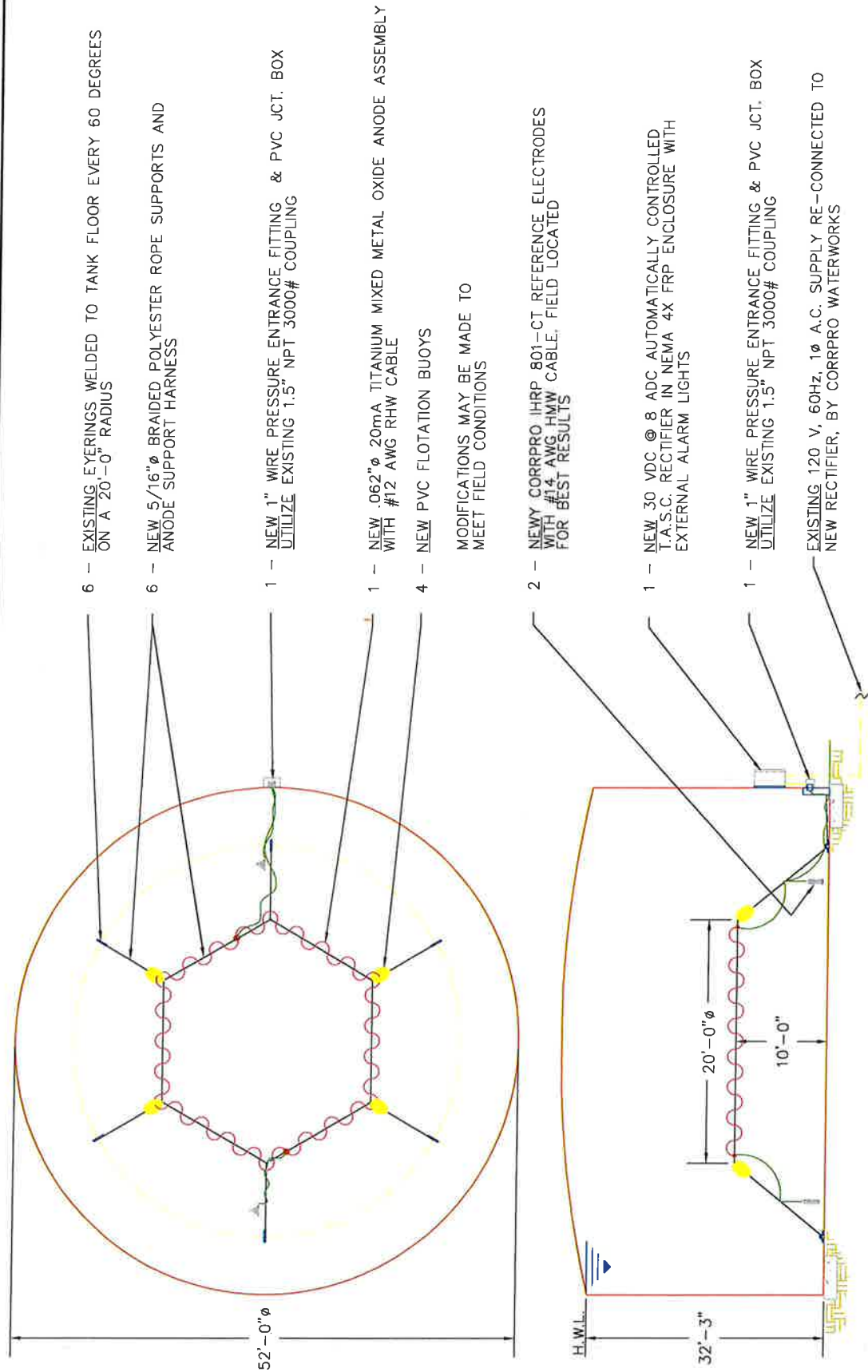
Carrier: Waterworks Crew City/State _____

Description of Container: Corrpro Waterworks Crew

Bill of Lading No. N/A

Shipped To: _____ City/State _____

Signature of Authorized Person : _____

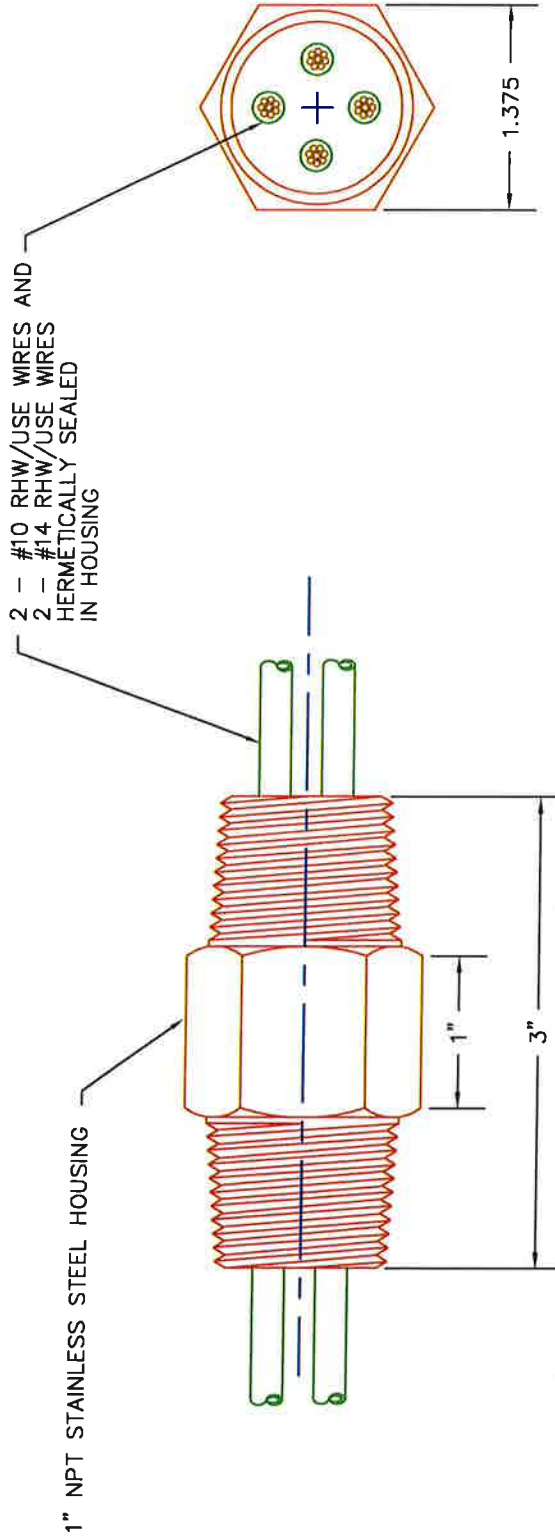


- 6 - EXISTING EYERINGS WELDED TO TANK FLOOR EVERY 60 DEGREES ON A 20'-0" RADIUS
 - 6 - NEW 5/16" ϕ BRAIDED POLYESTER ROPE SUPPORTS AND ANODE SUPPORT HARNESS
 - 1 - NEW 1" WIRE PRESSURE ENTRANCE FITTING & PVC JCT. BOX UTILIZE EXISTING 1.5" NPT 3000# COUPLING
 - 1 - NEW .062" ϕ 20mA TITANIUM MIXED METAL OXIDE ANODE ASSEMBLY WITH #12 AWG RHW CABLE
 - 4 - NEW PVC FLOTATION BUOYS
- MODIFICATIONS MAY BE MADE TO MEET FIELD CONDITIONS
- 2 - NEW CORRPRO IHRP 801-CT REFERENCE ELECTRODES WITH #14 AWG HMW CABLE, FIELD LOCATED FOR BEST RESULTS
 - 1 - NEW 30 VDC @ 8 ADC AUTOMATICALLY CONTROLLED T.A.S.C. RECTIFIER IN NEMA 4X FRP ENCLOSURE WITH EXTERNAL ALARM LIGHTS
 - 1 - NEW 1" WIRE PRESSURE ENTRANCE FITTING & PVC JCT. BOX UTILIZE EXISTING 1.5" NPT 3000# COUPLING
- EXISTING 120 V. 60Hz, 1 ϕ A.C. SUPPLY RE-CONNECTED TO NEW RECTIFIER, BY CORRPRO WATERWORKS

CLEVELAND • ATLANTA • CHICAGO
HOUSTON • NEW ORLEANS • OKLAHOMA CITY
PHILADELPHIA • SAN FRANCISCO



CORRPRO SYSTEM NO. 53136		REFERENCE DRAWINGS		CATHODIC PROTECTION SYSTEM		DRAWN BY S.C.	
NO.	DATE	BY	REVISION	VILLAGE OF THORNTON, ILLINOIS		DESIGNED BY CORRPRO	S.C.
				500,000 GALLON RESERVOIR		DATE	5.31.23
				52'-0" ϕ X 32'-3" H.W.L.		SCALE	NONE
				SYSTEM LAYOUT DRAWING		SHEET	1 OF 1
						DWG. NO.	53136



SPECIFICATION:

WATER TEMPERATURE RANGE: 32° TO 190° F
AMBIENT TEMPERATURE RANGE: MINUS 20° TO 120° F
VOLTAGE RATING: NO. 10 AWG - 600 VOLTS @ 30 AMPS
VOLTAGE RATING: NO. 14 AWG - 600 VOLTS @ 15 AMPS
PRESSURE RATING: 150PSI
NSF 61 CLASSIFIED

FOR USE IN POTABLE WATER:
HIGH CONCENTRATION OF CHLORINE DURING DISINFECTION
COULD REACH LEVELS OF 200-mg/L AVAILABLE CHLORINE

#10 AWG RHW/USE - ANODE CIRCUITS
#14 AWG RHW/USE - REFERENCE ELECTRODES

JDE # 54056312		REFERENCE DRAWINGS		1" WIRE PRESSURE ENTRANCE FITTING 4 WIRE RHW TYPICAL		CATHODIC PROTECTION SYSTEM		DRAWN BY S.C. DESIGNED BY CORRPRO	
								DATE	2015
								SCALE	NONE
								SHEET	1 OF 1
								DWG. No.	JDE54056312



MIXED METAL OXIDE ANODES

De Nora LIDA® Wire Anodes

LIDA wire anodes are copper titanium wire with a mixed metal oxide coating. The mixed metal oxide is a crystalline, electrically conductive coating that activates the titanium and enables it to function as an anode.

LIDA wire anodes are manufactured in two diameters, 1.5 millimeter and 3.0 millimeter.

When applied on titanium the coating has an extremely low consumption rate measured in terms of milligrams per year. As a result of this low consumption rate, the wire diameter remains nearly constant during the life of the anode.

The low consumption rate of the mixed metal oxide coating at the recommended operating current densities result in projected anode lifetimes from 15 to 20 years. Longer or shorter lifetimes may be obtained by varying the current output per foot per wire.

Anode Coating — The coating used on wire is suitable for most cathodic protection applications, but output varies with application.

LIDA mixed metal oxide coating demonstrates a very high chemical stability, even in environments with very low pH values.

Unlike other impressed current anodes, the LIDA® coating is not affected by the generation of chlorine.

Lead Wire Connection — A typical connection between the LIDA wire anode and a header cable, have been used successfully in canistered anodes since 1987.

Applications

- ▶ Canistered anodes
- ▶ Continuous horizontal groundbeds
- ▶ Discontinuous horizontal groundbeds
- ▶ Shallow vertical groundbeds
- ▶ Deep anode groundbeds
- ▶ Above ground storage tanks
- ▶ Underground storage tanks
- ▶ Fresh water

- ▶ Electrical cable shielding
- ▶ Water storage tanks
- ▶ Water treatment equipment

Resistivity Versus Length — Proper current distribution is an important factor in the design and proper use of an anode wire for each application.

For example, if a wire voltage drop of 10% or less is desired for proper current distribution in 1000 ohm-cm water, anode segments of 50 feet should not be exceeded between electrical connections to a header cable with the 1.5 mm diameter wire. By comparison, use of the 3.0 mm diameter wire will permit the use of 110 foot segments, while still allowing the desired 10% voltage drop.

As with all electrical conductors, the operating temperature of the wire effects the resistance. The table below, shows this effect by assuming the wire will operate at the temperature of the surrounding electrolyte. The change in resistivity also changes the maximum ampacity of the wire.

Savings — In many cases, LIDA mixed metal oxide wire anodes offer savings over competitive anodes on an installed cost basis. This is possible by balancing the high current density capability of mixed metal oxide coatings and the ability to tailor to desired lifetimes.

Flexibility of Use — LIDA wire anodes can be used in a wide variety of cathodic protection applications. Their lightweight and malleability allow forming to complex configurations. The copper core provides high conductivity resulting in better current distribution along the entire length of the wire.

ANODES

Impressed Current, Linear, Sacrificial / Galvanic Anodes, and Accessories

Standard Dimensions					
Anode	Nominal Dimensions				Current* Rating mA/ft
	Ø		Length		
	in	mm	ft	m	
→ Special	0.062	1.5	1000	304.8	20
Standard	0.062	1.5	1000	304.8	100
XL	0.062	1.5	1000	304.8	200
*Bases on 20 year design life in calcined petroleum grade coke					

*Bases on 20 year design life in calcined petroleum grade coke

Dimensions											
Nom Wire Size		Diameter Tolerance		Titanium		Copper		Active Surface Area		Weight	
mm	inches	mm	inches	% by Wt	% by Vol	% by Wt	% by Vol	ft ² /ft of length	m ² /m of length	lbs/ft	g/m
1.5	0.062	+0.15	+0.007	36.1	52.7	63.9	47.3	0.017	5.1E-03	0.009	13.7
		-0.0	-0.0000								
3.0	0.118	+0.28	0.010	17.1	29.0	82.9	71.0	0.033	1.0E-02	0.042	82.5
		-0.00	-0.000								

Wire Size mm	1.5
Electrical RES.ohm/m @ 25°C	0.0174
Electrical RES.ohm/m @70°C	0.0204
Max. Wire Amperage @ 25°C, Amps	21
Max. Wire Amperage @ 70°C, Amps	7



CORRPRO® PERMACELL® REFERENCE CELLS

Permacell 801 Permanent Reference Cells

For Accurate Readings in Fresh Water Environments

Routine monitoring is an important part of any cathodic protection maintenance program. To simplify this testing procedure, different types of permanent reference cells can be used. For structures located in fresh water, Corrpro offers the Permacell 801 copper/copper sulfate cell. The cell is made using a 99.99% pure copper coiled element, which is surrounded by a supersaturated paste of copper sulfate. To ensure a low-resistance connection, a lead wire is mechanically bonded and soldered to the copper element. This electrical junction is then encapsulated by a moisture-resistant shrink sleeve for a truly sealed connection. Electrical contact to the electrolyte is accomplished through a filtering plug at the end of the reference electrode. The plug allows accurate potential measurements to be obtained while preventing cell contamination.

In order for a reference to be effective, it must remain electrically stable over time. Corrpro's 801 reference cell delivers unsurpassed stability due to strict quality control procedures implemented during the manufacturing process. Deionized water is used to create the supersaturated solution of copper sulfate, and the copper element is treated with a special cleansing agent before it is installed into the cell's plastic housing. Each cell is also tested for resistance and electrical potential, and the values obtained are recorded and marked on shipping tags attached to the cells. These extra quality steps give the Permacell 801 a 30-year design life and the ability to maintain an electrical potential of within ± 5 millivolts.

Typical Applications

The Permacell 801 is ideal for use in cathodic protection systems operated in fresh water environments. This includes elevated water storage tanks, clarifiers, traveling screens, pasteurizers, locks, dams, and fresh water dock structures. The cell can be operated at temperatures of up to 135°F, but should not be used in waters containing high concentrations of chloride ions.

Ordering Procedure

Permacell 801 is provided standard with fifty feet of insulated lead wire, but it can also be custom manufactured to meet the customer's specifications. To order this reference cell for your particular application, indicate that you need a Corrpro Permacell 801 permanent reference cell, and specify the quantity desired and the lead wire length, size, and insulation, if different from the standard provided. An example is included to illustrate this process.

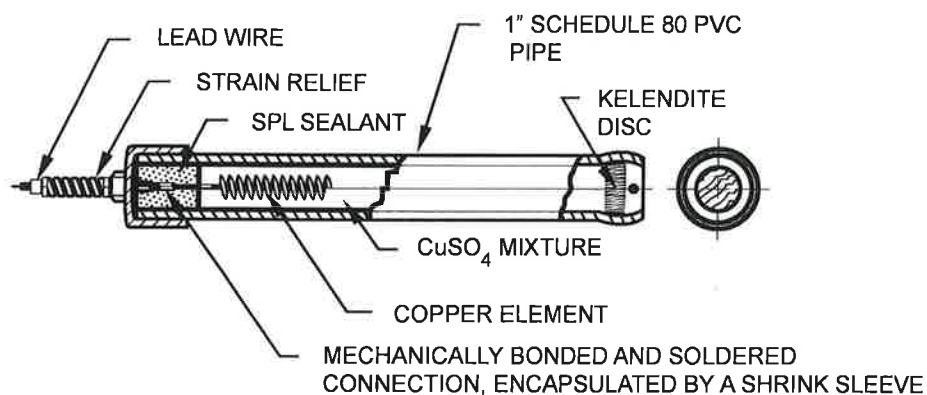
Ordering Procedure Example	
Quantity	10
Product	Permanent Reference Cell
Permacell Model	801
Lead Wire: Length 50 ft = Standard	50 ft
Size #14 AWG = Standard	14 AWG
Insulation HMWPE = Standard	HMWPE

Custom assemblies available, able to use #16, #14, #20, #10, or 8 wires for these assemblies.

Reference Cells / Electrodes and Accessories



Permacell 801 Permanent Reference Cell



Product Specifications

Nominal Dimensions Ø Length	Weight		Electrical Stability	Maximum Temperature		Design Life
	lbs	kg		°F	°C	
1" X 11" (25.4mm x 279.4mm)	2	0.91	±5 millivolts with 3.0 microamp load	135 °F	57.2 °C	30 Years



Specification: RHW-2/USE-2
 Issue Date: 02/15/11
 Supersedes: 02/08/11

Kris-Tech Wire Co.

921 Seneca St. • PO Box 4377 • Rome, NY 13442-4377 USA
 Telephone 315-339-5268 • Fax 315-339-5277
WWW.KRISTECHWIRE.COM

1.0 Scope: This specification describes single conductor crosslinked polyethylene (XLP or XLPE) Type RHW-2 and USE-2 for use at 600 volts or less **RoHS** compliant. It is approved per the NEC for **DIRECT BURIAL**, general-purpose lighting, and power applications at a maximum continuous operating temperature of 90 degrees C in wet and dry locations. Suitable for use in low leakage circuits requiring a dielectric constant of 3.5 or less. **Note:** Sunlight Resistant and VW-1 **available when required**.

2.0 Applicable Standards:

2.1 ASTM B-1, B-3, B-33 and B-8 for copper conductors.

2.2 ICEA S-95-658/NEMA WC70, ICEA S-66-524/NEMA WC7 Cross Linked Polyethylene Insulated Wire&Cable, UL 854 for Service Entrance Cables (incl. Para. 854-38.7 for 300 hr. sunlight resistance) and UL 44 for Thermoset Insulated Wires & Cables, Fed Spec J-C-30B, FAA L-824 Type C 600V

3.0 Conductors: The single copper conductors shall be solid or stranded annealed or hard, coated or uncoated copper per UL83 and ASTM requirements.

4.0 Insulation: The conductor shall be insulated with XLP or XLP-VW-1 as specified and applied tightly to the conductor in a concentric manner. These conductors are "Oil and Gasoline Resistant II". All black insulation is rated and identified "Sunlight Resistant". Other colors of Sunlight Resistant are available upon request. The minimum at any point shall not be less than 90% of the specified average thickness in compliance with UL 44.

5.0 Identification: The wire shall be identified in compliance with UL requirements by surface marking indicating the manufacturer, conductor size, voltage rating, UL symbol, type designation.

6.0 Packaging: Standard length spools have 500 or 2500 feet. Custom lengths are available.

7.0 Testing: The wire shall be continuously spark tested at 7500 Volts DC. Other electrical and mechanical tests shall be in accordance with UL 44, UL 854 and UL 1581.

AWG	Standard Number of Strands	Extra Flexible Stranding	Insulation Thickness Mils	Nominal Overall Diameter – Inches (standard strands)	Approx. Shipping Wgt. (Lbs./Mft.)
14	Solid or 7	41	45	0.16"/0.17"	21
12	Solid or 7	65	45	0.18"/0.19"	30
10	Solid or 7	37 or 105	45	0.20"/0.21"	44
8	7	1, 19, 133	60	0.27"	70
6	7	1, 19, 133	60	0.31"	106
4	7	1, 19, 133	60	0.35"	161
2	7	19, 133	60	0.41"	246
1	19	133	80	0.49"	318
1/0	19	133	80	0.53"	389

Non-standard STRANDING, COLORS, and CUSTOM PACKAGING are available by quotation.



CABLE

Corrpro® HMWPE Direct Burial Cable

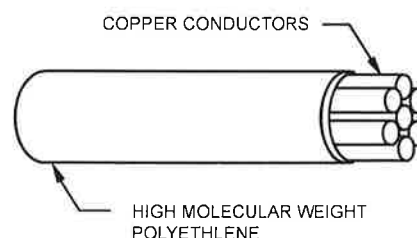
Multi-Purpose Cathodic Protection Cable

Selecting the right cable for connecting anodes, power supplies, and structures is an important part of cathodic protection design. Corrpro makes this selection process easy by offering a cable manufactured specifically for the cathodic protection industry. It is composed of copper wire, which is covered by high-molecular weight polyethylene (HMWPE). The copper wire is stranded and annealed to permit extra flexibility. Because the polyethylene on the cable is approximately twice as thick as on conventional HMWPE wire, it serves as both electrical insulator and mechanical cover for the conductor. This provides Corrpro's cathodic protection cable with outstanding dielectric strength and moisture resistance. During installation, the cable can withstand considerable mechanical abuse without risk of damage to the copper electrical conductor. The polyethylene cover is also chemically resistant, and protects against most substances.

Corrpro's HMWPE cable is manufactured according to strict quality control standards. The polyethylene coating is made to meet American Society for Testing Materials Standard D-1248 for plastic molding and extruded materials. In addition, routine tests are performed to ensure that the cable possesses certain mechanical and electrical properties.

Applications

HMWPE cable is offered in a variety of sizes. It can be used as a header cable on cathodic protection systems, or to make anode-lead or negative-return connections. The thick polyethylene cover permits direct burial of the cable in native soils or submersion in fresh water. The cable exhibits superior flexibility and can be bent without risk of notch propagation. It is not recommended for use in environments containing chlorine, hydrochloric acid or petroleum hydrocarbons.



HMWPE Order Information

Wire Size AWG	Number of Strands	Insulation Thickness		Nominal O.D.	
		in	mm	in	mm
14	7	0.11	2.794	0.299	7.59
12	7	0.11	2.794	.031	7.87
10	7	0.11	2.794	0.34	8.64
8	7	0.11	2.794	0.36	9.14
6	7	0.11	2.794	0.41	10.41
4	7	0.11	2.794	0.46	11.68
2	7	0.11	2.794	0.52	13.21
1	19	0.125	3.175	0.59	14.99
1/0	19	0.125	3.175	0.63	16.00
2/0	19	0.125	3.175	0.67	17.02
4/0	19	0.125	3.175	0.78	19.81



GLADDING

Braided Products, LLC
One Gladding Street
South Otselic, NY 13155
315-653-7211 (fax 4492)

5/16" Round Polyester Braided Rope

Gladding Part Number #10ESTYBX1000
Specification sheet



Gladding's double braided polyester ropes combine high-tenacity polyester yarns into a unique firm round braided rope. The unique construction first twists the yarns in opposite directions and then braids those twisted strands into a stable braided core. Next, the braided core is inserted inside a braided sleeve/jacket made from the same twisted yarns. This twisting process adds stability to the rope resulting in a rope that will not twist and kink. The twisted yarns in both the core and sleeve add excellent abrasion resistance because the twisted fibers aligned with the axis of the rope. This unique rope combines the 100% polyester yarns into a rope that features high strength, low stretch, easy splicing, and excellent abrasion resistance.

Raw Material (Sleeve and core)	100% Polyester
Cover Braid	Sleeve 12 PPI (per 4.5mm)
Core Braid	100% polyester 8c
Diameter	5/16"
Circumference	1"
Approx weight per 100 ft.	3.5
Approx average Breaking Strength in pounds	3,270
Braided construction	Non rotating balanced braid
Specific Gravity	1.38



SPLICING KITS

Scotchcast™ In-line Resin Splicing Kit:

82A Series, Voltage Rating Up to 5 kV Non-shielded, UL 486D Listed, File #EI 02356

Use 82A series kits to insulate and moisture-seal single conductor, non-shielded cables through 5kV and multi-conductor cables through 1000V. Each kit contains a snap-together mill body which fits around the splice, two funnels, tape for sealing mold ends, and Scotchcast 4 epoxy electrical insulating resin in a Unipak™ container for clean and easy handling. These kits may be used for above ground or direct buried applications.

Product Specifications				
Product UPC	Voltage Rating (Max)	Conductor Size	Max Cable O.D.	Max Conn O.D. Sleeve Type
82-A 25016	5 kV	10 - 2 AWG 6 - 30 mm)	0.750" (19 mm)	0.406" (10 mm)
82-A1 25024	5 kV	Up to 2 AWG (30 mm)	0.625" (16 mm)	0.406" (10 mm)
82-A2 25032	5 kV	2 3/0 AWG (35 - 80 mm)	1.0" (25 mm)	0.625" (16 mm)
82-A3 25040	5 kV	3/0 AWG - 400 kcmil (90 - 200 mm)	1.438" (40 mm)	1.0" (25 mm)

Scotchcast™ Wye Resin Splicing Kit: 82-B1, Voltage Rating Up to 5 kV Non-shielded

82-B1 kit insulates and moisture seals wye splices on non-shielded cable through 5 kV and on multi-conductor cables through 1000V. Its rigid two-part transparent molds snap around splices for a tailor-made field splice. Within 30 minutes after the resin is poured, the splice is ready for a long, reliable life. The kit contains Scotchcast 4 electrical insulating resin. This kit may be used for above ground or direct buried applications.

Product Specifications				
Product UPC	Voltage Rating (Max)	Connector Split Bolt (Max)	Connector Crimped (Max)	Max Cable O.D.
82-B1 25057	5kV Single Con 1000V Multiple Cond	4 AWG	2 AWG (19 mm)	0.250" - 0.625" (6 - 16 mm)

Scotchcast™ Flexible Power Cable Splicing Kit: 82-BF1, Voltage Rating Up to 1000V

Scotchcast flexible power cable tape splicing kit 82-BF1 is a permanent splice for use on non-shielded portable power cables and cords with copper conductors rated up to 1000V. It can be used on single conductor or multiple conductor cables using a compression "C" tap connector. The kit contains one piece removable mold tape for sealing mold ends, abrasive cloth and Scotchcast 2130 compound in the Unipak™ container for clean and easy handling. The completed splice is designed for use in weather exposed, direct bury or submerged locations.

Product Specifications			
Product UPC	Voltage Rating (Max)	Connector Size Range	Number of Conductors
82-BF1 08309	1000	Up to 1/0 AWG (50 mm)	1
	1000	-	Multi



SPLICING KITS

Scotchcast™

Scotchcast™ Wye Resin Splicing Kit: 90-B1, Voltage Rating Up to 1000V

90-B1 insulates and moisture-seals wye splices made with the split-bolt type connectors on cable rated through 1000V. Each kit contains a snap-together mold body which fits around the splice, two funnels, tape for sealing mold ends, and Scotchcast 4 epoxy electrical insulating resin in a Unipak™ container for clean and easy handling. These kits may be used for above ground or dried buried applications

Product Specifications				
Product UPC	Voltage Rating (Max)	Connector Split Bolt (Max)	Connector Crimped (Max)	Max Cable O.D.
90-B1 25115	1000	1/0 AWG	2/0 AWG (19 mm)	run 0.50" - 812" (13 - 21 mm) tap max 0.375" (10 mm)



Single Conductor Cable



Multiple Conductor, to 1000 Volt Cable

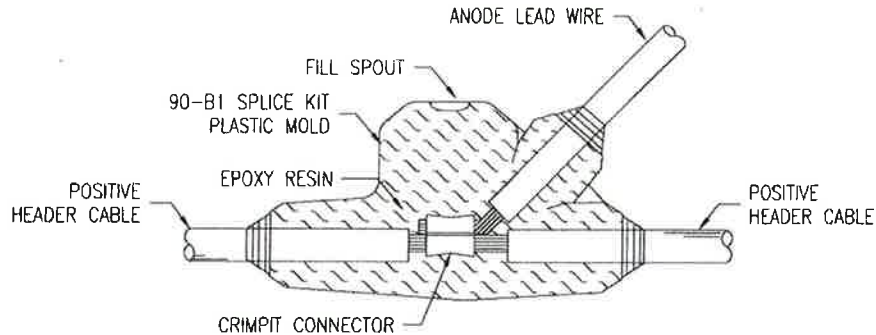
Scotchcast™ Multi-Mold Resin Splicing Kit for Non-Shielded

Cable 85 Series, Voltage Rating Up to 1000 V

Scotchcast 85 Series versatile kits are used to electrically insulate and moisture-seal odd-sized and odd-shaped splices on cables rated through /000V. The flexible plastic mold forms easily around splices and within 30 minutes after the resin is poured, the splice is ready for direct bury or above ground service.

Product Specifications			
Product UPC	Voltage Rating (Max)	Connector Type	Max Conductor Size
85-10 11846	1000	Split bolt compression H or C tap	8 AWG str 4 AWG str
85-12 11847	1000	Split bolt compression H or C tap	1 AWG str 2/0 AWG str
85-14 11848	1000	Split bolt compression H or C tap	2/0 AWG str 4/0 AWG str
85-16 02403	1000	Inline compression split bolt	750 kcmil str. 250 kcmil (run): 2/0 AWG str. (tap)
		Compression H or C tap	500 kcmil (run) 4/0 AWGH str. (tap)

Cable, Wire, Splicing Materials, Bonding Materials, and Accessories



Scotchcast Ordering Information

Kit Number	Typical Use	Maximum Conductor Size AWG (mm)
85-10	Multi-mold Odd Shaped Connections	#4 Stranded (25)
85-12	Multi-mold Odd Shaped Connections	2/0 Stranded (70)
85-14	Multi-mold Odd Shaped Connections	4/0 Stranded (120)
85-16	Multi-mold Odd Shaped Connections	750 kcmil (400)
82-A1	Inline Splices	#2 Stranded (35)
82-A2	Inline Splices	#2 - 3/0 Stranded (35 - 95)
82-A3	Inline Splices	3/0 - 400 kcmil (85 - 203)
82-B1	Wye Splices	#2 Stranded (35)
82-B2	Wye Splices	2/0 Stranded (70)



POTABLE WATER TANK MIXERS

CertiSafe™ Active Tank Mixers blend drinking water in tanks and reservoirs quickly and efficiently. These powerful mixing systems create an environment homogeneous in chemical concentration and temperature, improving water quality from tank to tap.

There's Sort of Safe, or There's CertiSafe.



Contact us today to learn more | 715.262.4488 | kascomarine.com/certisafe

CERTISAFE™ TANK MIXERS

A NEW MOVEMENT IN WATER

WATER QUALITY CHALLENGES

When drinking water is not mixed quickly, evenly, and continuously, it can fall out of EPA compliance, putting the health and safety of your community in danger. Common problems include:

- Thermal and chemical stratification
- Residual loss
- Biofilm buildup
- Nitrification
- Disinfection by-products
- Development of ice caps
- Sediment accumulation



CERTISAFE IS THE SOLUTION

By creating strong, consistent circulation, CertiSafe™ Tank Mixers quickly and evenly move water while eliminating common water quality problems. Available in several HP sizes, multiple mounting orientations, and various control panels, there is a CertiSafe Mixing solution for nearly every size and style of tank. See back page for mounting option and control panel information.



1/2, 3/4, 1, &
2HP Available



120V, 208-240V, &
Solar-Powered Options



3-Year Warranty
Optional 5-year Extended Warranty



ETL Listed to CSA
and UL Standards



NSF/ANSI/CAN
61 & 372 Certified





FASTEST BLEND TIMES

Complete blending in 30 mins - 4 hrs.



LONGEST LASTING MOTORS

Food-grade mineral oil keeps motors cooler so they last longer.



ENGINEERED TO PERFORM

Each HP uses a specific prop to maximize performance.



DURABLE & REBUILDABLE

Units are rebuildable and repairable, keeping costs to a minimum.

CERTISAFE™ SPECIFICATIONS

TANK SIZE	SUPPLY / VOLTAGE	PHASE / HZ	UNIT SIZE (HP)	MIXER MODEL	CABLE LENGTH (FT)	CABLE GAUGE	AMPS	LOCK ROTOR AMPS	THRUST (LBS)
Up to 1MG	120	1 / 60HZ	1/2	2400C61	50	16	5.7	12	31
					75	14			
					100	14			
					150	12			
					200	12			
Up to 2.5MG	120	1 / 60HZ	3/4	3400C61	50	16	7	18	36
					75	14			
					100	14			
					150	12			
					200	12			
Up to 5MG	208-240	1 / 60HZ	3/4	3400HC61	50	14	3.5	9	36
					75	14			
					100	14			
					150	12			
					200	12			
Up to 5MG	120	1 / 60HZ	1	4400C61	50	14	9.1	40	44
					75	14			
					100	12			
					150	10			
					200	10			
Up to 5MG	208-240	1 / 60HZ	1	4400HC61	50	14	4.5	20	44
					75	14			
					100	14			
					150	12			
					200	12			
5MG & Over	208-240	1 / 60HZ	2	8400C61	50	14	9	40	56
					75	14			
					100	12			
					150	12			
					200	12			

Product Notes:

1. Cable gauges in bold indicate quick disconnect included on power cable.
2. Mounting option and control panel sold separately. See next page for details.

CONTROL & MONITOR

Monitor your CertiSafe™ Mixer with various control panels that feature H-O-A control, indicator LED, and SCADA I/O for remote operation.



CS-100 / CS-200



CS-150 / CS-250

MOUNTS

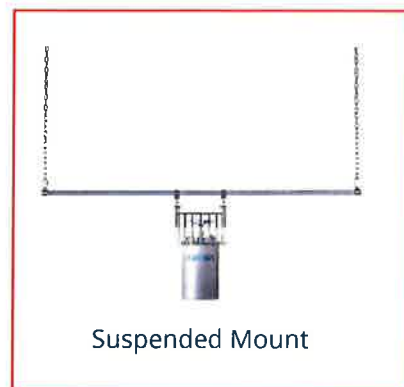
Several mounting options to fit your tank, tower, or reservoir needs.



Floor Mount



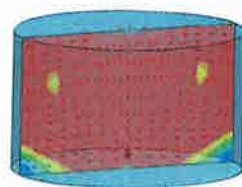
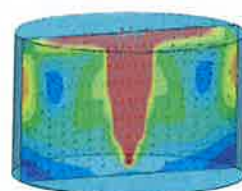
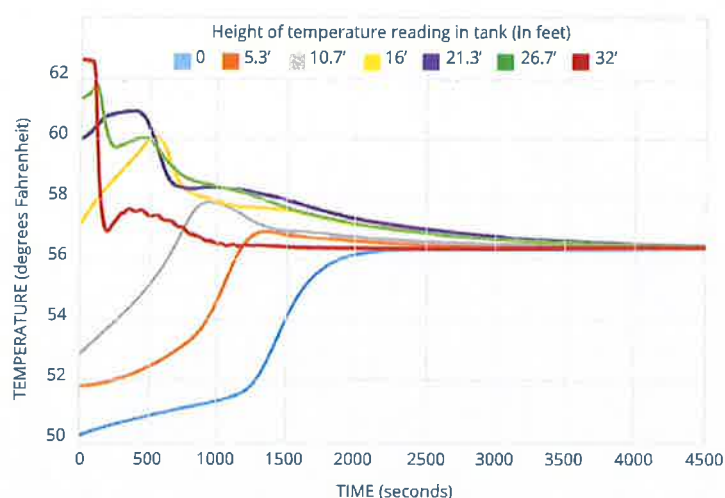
Pipe Mount



Suspended Mount

MIXING CAPABILITIES

Computational fluid dynamics (CFD) and test results using a 3/4HP CertiSafe unit to mix a .5-million-gallon tank show complete mixing in under an hour.



KASCO KNOWS WATER

For more than 50 years, Kasco has developed and deployed water circulators that run reliably in the toughest conditions. The CertiSafe™ Tank Mixer is built on this foundational platform and continues the Kasco tradition of innovation, performance, and excellence in the water quality industry.





CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
08/22/24

Section VII, Item A.

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Specialty Advantage Insurance Services 505 North Brand Blvd Suite 1250 Glendale, CA 92103	CONTACT NAME: GatherGuard Administrator PHONE (A/C, No, Ext): (844) 747-6240 FAX (A/C, No): E-MAIL ADDRESS: gatherguard@intactinsurance.com														
INSURED The Quarry Ballroom 121 S Williams St Thornton, IL 60476	<table><tr><th>INSURER(S) AFFORDING COVERAGE</th><th>NAIC #</th></tr><tr><td>INSURER A: Atlantic Specialty Insurance Company</td><td>27154</td></tr><tr><td>INSURER B:</td><td></td></tr><tr><td>INSURER C:</td><td></td></tr><tr><td>INSURER D:</td><td></td></tr><tr><td>INSURER E:</td><td></td></tr><tr><td>INSURER F:</td><td></td></tr></table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Atlantic Specialty Insurance Company	27154	INSURER B:		INSURER C:		INSURER D:		INSURER E:		INSURER F:	
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COVERAGES	CERTIFICATE NUMBER:	REVISION NUMBER:
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THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE				ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS					
A	X	COMMERCIAL GENERAL LIABILITY				X	GGL040370	09/07/2024	09/08/2024	EACH OCCURRENCE		\$	1,000,000		
			CLAIMS-MADE	X	OCCUR					DAMAGE TO RENTED PREMISES (Ea occurrence)		\$	1,000,000		
	X	Includes Host Liquor								MED EXP (Any one person)		\$	Excluded		
										PERSONAL & ADV INJURY		\$	1,000,000		
	GEN'L AGGREGATE LIMIT APPLIES PER:				GENERAL AGGREGATE					\$	2,000,000				
	X	POLICY		PROJECT						LOC	PRODUCTS - COMP/OP AGG		\$	1,000,000	
		OTHER:													
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident)					\$					
		ANY AUTO								BODILY INJURY (Per person)		\$			
		OWNED AUTOS ONLY		SCHEDULED AUTOS						BODILY INJURY (Per accident)		\$			
	HIRED AUTOS ONLY		NON-OWNED AUTOS ONLY		PROPERTY DAMAGE (Per accident)		\$								
							\$								
		UMBRELLA LIAB			OCCUR				EACH OCCURRENCE		\$				
		EXCESS LIAB			CLAIMS MADE				AGGREGATE		\$				
	DED		RETENTION \$								\$				
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				Y / N N / A						PER STATUTE		OTH-ER	\$	
ANY PROPRIETOR/PARTNER/EXECUTIVE/OFFICER/MEMBER EXCLUDED? (Mandatory in NH)				E.L. EACH ACCIDENT						\$					
If yes, describe under DESCRIPTION OF OPERATIONS below				E.L. DISEASE - EA EMPLOYEE						\$					
				E.L. DISEASE - POLICY LIMIT						\$					

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Event Name: The Quarry Blast
Event Type: Festival and cultural event (outdoors)
Event date(s): 09/07/24
Daily Attendance: 100
Number of Days: 1

CERTIFICATE HOLDER National League of Cities Attention: Erin Rian 660 N. Capitol St. NW Washington, DC 20001 US Thornton Village Hall Annex 115 E. Margaret St #1 Thornton, IL 60476 US	CANCELATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
09/06/23

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INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS					
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR ☒ Includes Host Liquor GEN'L AGGREGATE LIMIT APPLIES PER: ☒ POLICY ☐ PROJECT ☐ LOC OTHER:	X		GGL023413	09/09/2023	09/10/2023	EACH OCCURRENCE \$ 1,000,000					
	DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000											
	MED EXP (Any one person) \$ Excluded											
	PERSONAL & ADV INJURY \$ 1,000,000											
	GENERAL AGGREGATE \$ 2,000,000											
	PRODUCTS - COMP/OP AGG \$ 1,000,000											
	AUTOMOBILE LIABILITY											COMBINED SINGLE LIMIT (Ea accident) \$
	☐ ANY AUTO											BODILY INJURY (Per person) \$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS											BODILY INJURY (Per accident) \$
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY											PROPERTY DAMAGE (Per accident) \$
						\$						
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE \$					
	EXCESS LIAB CLAIMS MADE						AGGREGATE \$					
	DED RETENTION \$						\$					
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE/OFFICER/MEMBER EXCLUDED? ☐ Y / ☒ N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						PER STATUTE ☐ OTH-ER ☐ \$					
							E.L. EACH ACCIDENT \$					
							E.L. DISEASE - EA EMPLOYEE \$					
							E.L. DISEASE - POLICY LIMIT \$					

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Event Name: Quarry Blast
Event Type: Festival and cultural event (outdoors)
Event date(s): 09/09/23
Daily Attendance: 100
Number of Days: 1

CERTIFICATE HOLDER 115 Hubbard Street Thornton, IL 60476 US	CANCELATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
--	--

Melissa Wiak - Re: Event on September 7

From: Angela DeYoung <angelad@getdelmar.com>
To: Melissa Wiak <mwiak@thorntonil.us>
Date: 8/27/2024 11:43 AM
Subject: Re: Event on September 7
Attachments: Insurance Certificate The Quarry Blast one day policy.pdf; quarry-blast-Event-Insurance-Certificate.pdf

Hello, I have attached both certificates. I did send them over to the office yesterday as well via email. I apologize I forgot to attach your address.

Thank you very much.

Angela DeYoung
Del Mar Builders
15255 South 94th Ave.
Suite 500
Orland Park, IL 60462
773-504-6383 - cell

From: Melissa Wiak <mwiak@thorntonil.us>
Sent: Tuesday, August 27, 2024 10:08:31 AM
To: Angela DeYoung <angelad@getdelmar.com>
Subject: RE: Event on September 7

If you can get me certificate of insurance rider that was needed for you and the pilot's insurance by Friday, that would be great. I need to put in the board packet by 4:30 that day.

Thank you.

>>> Angela DeYoung <angelad@getdelmar.com> 8/26/2024 1:42 PM >>>

Good afternoon,

The Quarry Blast is from 12pm-10pm.

We would like to block off Juliete street from the train tracks to Williams Street. We think it would be best if no cars drive down that road. My thought was we could block off both sides of the tracks.

Also, is it possible to get a one-day permit for outdoor band/sound?

Last year we had a DJ outside, and we also hosted our Karaoke Contest outdoors. We are being vigilant in trying to respect all rules and regulations when it comes to noise to ensure that our neighbor feels comfortable.

I apologize for the delay; I was in court today.

Thank you,

Angela

From: Melissa Wiak <mwiak@thorntonil.us>
Sent: Monday, August 26, 2024 12:10 PM
To: Angela DeYoung <angelad@getdelmar.com>
Subject: RE: Event on September 7

I'm putting together the board book for the next meeting. Can you provide me specific times you are hosting the block party and specifically what part of Williams street will be affected?

>>> Angela DeYoung <angelad@getdelmar.com> 8/23/2024 9:28 AM >>>

Good Morning,

I apologize for the delay, this somehow wound up in another folder.

We are almost there.

I did get the certificate of insurance rider that was needed on our end, however I am still patiently waiting for the one from the Pilot.

I hope you are settling in well to the Village!

Thank you for checking in!

Angela DeYoung

From: Melissa Wiak <mwiak@thorntonil.us>
Sent: Wednesday, August 21, 2024 7:57 AM
To: Angela DeYoung <angelad@getdelmar.com>
Subject: Event on September 7

Hello.

I am just now catching up on all emails from my time away. Were you able to get everything settled, aside the Board approval of the block party?

Thank you!



Joe Pisarzewski, Village President
VILLAGE OF THORNTON
PUBLIC WORKS

121 NORTH WOLCOTT STREET • THORNTON, ILLINOIS 60476
PHONE (708) 877-4462 • FAX (708) 877-1627
www.thornton60476.com

Date: 8-27-2024

To: Admin. Melissa Wiak

From: Public Works Supt. Bryan Roberts

Re: Request for line item transfer

02-74-7023 MT Maint-meters

Meter Testing	200
Software Support	1,000
Routine Maintenance	800
Meter replacement	0

During budget as in years past I had kept \$5000.00 in this line item to purchase meters as needed. During the final round of the budget it was removed by previous administration saying we will have all new meters by then and will not have a need to purchase meters in FY25. Meter program has not started yet and I have had to purchase meters to replace non-working meters. I have already purchased \$3905.00 for new meters and need to purchase more. I am requesting we take \$7000.00 out of 02-74-7021 and move it into line item 02-74-7023 to cover the cost of these meters.

Let me know if you have any questions.

Thanks

Bryan Roberts,
Superintendent
Department of Public Works
Village of Thornton
708/877-4462 Office
708/877-1627 Fax
brobert@thorntonil.us



Joe Pisarzewski, Village President
VILLAGE OF THORNTON
PUBLIC WORKS

121 NORTH WOLCOTT STREET • THORNTON, ILLINOIS 60476

PHONE (708) 877-4462 • FAX (708) 877-1627

www.thornton60476.com

Date: 8-27-2024

To: Admin. Melissa Wiak

From: Public Works Supt. Bryan Roberts

Re: Request for line item transfer

02-74-7016 MT Maint-sewers

The Villages sewer lift station went down and was not working at all. Emergency repairs were made to get it up and running again. I am asking for a line item transfer of \$20,000 from the Contingency Fund to 02-74-7016 Maint-Sewers.

Let me know if you have any questions.

Thanks

Bryan Roberts,
Superintendent
Department of Public Works
Village of Thornton
708/877-4462 Office
708/877-1627 Fax
brobert@thorntonil.us



QUOTE-2745995

Billing Address:
THORNTON POLICE DEPT
700 PARK AVE
THORNTON, IL 60476
US

Shipping Address:
THORNTON POLICE DEPT
700 PARK AVE
THORNTON, IL 60476
US

Quote Date:08/09/2024
Expiration Date:08/09/2025
Quote Created By:
Taylor Morris
Taylor.Morris@
motorolasolutions.com

End Customer:
THORNTON POLICE DEPT

Payment Terms:30 NET

Line #	Item Number	Description	Qty	Term
1	SSV00S02251A-SP	SOFTWARE,RETURN SHARING	1	
2	ISV00S01851A	FLEX CAD DELIVERY SERVICES	1	
3	SSV00S02252A-SP	FLEX RETURN SHARING STANDARD MAINTENANCE	1	1 YEAR

Grand Total \$8,037.08(USD)

Notes:

- This quote contains items with approved price exceptions applied against them.
- Unless otherwise noted, this quote excludes sales tax or other applicable taxes (such as Goods and Services Tax, sales tax, Value Added Tax and other taxes of a similar nature). Any tax the customer is subject to will be added to invoices.

Future Maintenance

- Future maintenance is estimated for your planning purposes and is not included in this purchase.
- 2nd-year maintenance will begin 12 months from production implementation.

Term 2 Flex Maintenance Total: \$624.54

The Customer's signature below constitutes its agreement to purchase the licenses, products and/or services according to the terms quoted by Motorola Solutions within this document. This document shall serve as an addendum to the Purchase Agreement previously entered into between the Customer and Motorola Solutions. The terms and conditions of the Purchase Agreement, as well as the related License Agreement and Support Agreement, shall apply to the items quoted herein.

Motorola Solutions, Inc.

Customer



Any sales transaction following Motorola's quote is based on and subject to the terms and conditions of the valid and executed written contract between Customer and Motorola (the "Underlying Agreement") that authorizes Customer to purchase equipment and/or services or license software (collectively "Products"). If no Underlying Agreement exists between Motorola and Customer, then Motorola's Standard Terms of Use and Motorola's Standard Terms and Conditions of Sales and Supply shall govern the purchase of the Products.
Motorola Solutions, Inc.: 500 West Monroe, United States - 60661 -- #: 36-1115800



QUOTE-2745995

By: _____
Name: _____
Title: _____
Date: _____

By: _____
Name: _____
Title: _____
Date: _____



Any sales transaction following Motorola's quote is based on and subject to the terms and conditions of the valid and executed written contract between Customer and Motorola (the "Underlying Agreement") that authorizes Customer to purchase equipment and/or services or license software (collectively "Products"). If no Underlying Agreement exists between Motorola and Customer, then Motorola's Standard Terms of Use and Motorola's Standard Terms and Conditions of Sales and Supply shall govern the purchase of the Products.
Motorola Solutions, Inc.: 500 West Monroe, United States - 60661 - #: 36-1115800



Joe Pisarzewski, Village President
VILLAGE OF THORNTON
PUBLIC WORKS

121 NORTH WOLCOTT STREET • THORNTON, ILLINOIS 60476

PHONE (708) 877-4462 • FAX (708) 877-1627

www.thornton60476.com

Date: 8-27-2024

To: Admin. Melissa Wiak

From: Public Works Supt. Bryan Roberts

Re: Purchase of new John Deere mower

Please see attached quote to purchase John Deere Z997R mower to replace our 2004 Kubota that is 20yrs old with 2556hrs (equivalent to 153,360 miles)

I only got 1 quote because I want to purchase the same exact mower we purchase a few years ago. This way we will have 2 mowers being the same and can get parts and maintenance from one supplier.

Let me know if you have any questions.

Thanks

Bryan Roberts,
Superintendent
Department of Public Works
Village of Thornton
708/877-4462 Office
708/877-1627 Fax
brobert@thorntonil.us



Quote Summary

Prepared For:

VILLAGE OF THORNTON
321 E HARRIET ST
THORNTON, IL 60476
Business: 630-877-4462

Prepared By:

Kevin Bolhuis
Shorewood Home and Auto
3445 Eagle Nest Drive
Crete, IL 60417
Phone: 708-672-7511
kevin@shorewoodhomeandauto.com

Quote Id: 31515127
Created On: 16 August 2024
Last Modified On: 16 August 2024
Expiration Date: 16 September 2024

Equipment Summary	Selling Price	Qty	Extended
JOHN DEERE Z997R DIESEL NA	\$ 22,845.00 X	1 =	\$ 22,845.00
Equipment Total			\$ 22,845.00

Quote Summary

Equipment Total	\$ 22,845.00
Doc Fee	\$ 0.00
SubTotal	\$ 22,845.00
Est. Service Agreement Tax	\$ 0.00
Total	\$ 22,845.00
Down Payment	(0.00)
Rental Applied	(0.00)
Balance Due	\$ 22,845.00

Salesperson : X _____

Accepted By : X _____



KDN Signs

831 North Central Avenue | Wood Dale, Illinois 60191
630-422-1708 | sales@kdnsigns.com | www.kdnsigns.com

Section VII, Item E.

RECIPIENT:

Debbie Pisarzewski

115 East Margaret Street
#1
Thornton, Illinois 60476

Quote #21524

Sent on _____

Total ~~\$32,355.70~~

Product/Service	Description	Qty.	Unit Price	Total
Technical Survey		1	\$425.00	\$425.00*
Permit Procurement		1	\$500.00	\$500.00*
permit costs		1	\$0.00	\$0.00*
EMC Unit (Double-Sided)	3' x 7' 13mm Full Color LED display. *CONTINGENT UPON SURVEY AND MAY BE MODIFIED AFTERWARD	1	\$20,937.00	\$20,937.00
Filler Panel	Filler panel if EMC unit is not an appropriate size and filler panel is needed *CONTINGENT UPON SURVEY MAY BE MODIFIED AFTERWARD	1	\$2,800.00	\$2,800.00*
Installation	Removal of existing EMC unit and installation of new double-sided EMC unit.	1	\$5,600.00	\$5,600.00*
Sales Tax (10%)		1	\$2,093.70	\$2,093.70

Total ~~\$32,355.70~~

\$30,262.00

This quote is valid for the next 30 days, after which values may be subject to change.

Acceptance of Proposal: Acceptance of this Proposal and issuance of a Deposit, Purchase Order or Start Work Order shall be considered Customer's acknowledgement that the scope of work has been interpreted accurately, that all terms and conditions herein are incorporated in and made part of any Purchase Order or Start Work Order and all terms and conditions herein comprise the entire agreement between the parties, and supersede all prior or contemporaneous understandings, agreements, negotiations, representations and warranties, and communications, both written and oral. These Terms and Conditions prevail over any of Customer's general terms and conditions of purchase regardless of whether or when Customer has submitted its purchase order or such terms.

Amendment and Modification: These Terms and Conditions may only be amended



KDN Signs

831 North Central Avenue | Wood Dale, Illinois 60191
630-422-1708 | sales@kdnsigns.com | www.kdnsigns.com

Section VII, Item E.

Notes Continued...

or modified in writing which specifically states that it amends these Terms and Conditions and is signed by an authorized representative of each party.

Payment Terms: Customer shall pay all invoiced amounts due to KDN Signs no later than agreed upon terms from the date of invoice. Customer shall pay interest on all late payments at the rate of 2.0% per month, calculated daily and compounded monthly. Customer shall reimburse KDN Signs for all costs incurred in collecting any late payments, including, without limitation, attorneys' fees, court costs and expenses, whether or not there is a lawsuit. Customer shall not withhold payment of any amounts due and payable by reason of any set-off of any claim or dispute with KDN Signs, whether relating to KDN Signs breach, bankruptcy or otherwise.

Conditional Sales: All sales are conditional: Title to merchandise or material supplied by KDN Signs; does not pass to Customer until paid in full.

Deposits Required: 50% Deposits are required unless credit arrangements have been made at the time of contract approval.

Limitation of Liability: IN NO EVENT SHALL KDN Signs BE LIABLE TO CUSTOMER OR ANY THIRD PARTY FOR ANY LOSS OF USE, REVENUE OR PROFIT OR LOSS OF DATA OR DIMINUTION IN VALUE, OR FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR PUNITIVE DAMAGES WHETHER ARISING OUT OF BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHERWISE, REGARDLESS OF WHETHER SUCH DAMAGES WERE FORESEEABLE AND WHETHER OR NOT KDN SIGNS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND NOTWITHSTANDING THE FAILURE OF ANY AGREED OR OTHER REMEDY OF ITS ESSENTIAL PURPOSE. IN NO EVENT SHALL KDN SIGNS AGGREGATE LIABILITY ARISING OUT OF OR RELATED TO THIS AGREEMENT, WHETHER ARISING OUT OF OR RELATED TO BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHERWISE, EXCEED THE TOTAL OF THE AMOUNTS PAID TO KDN SIGNS FOR THE GOODS SOLD HEREUNDER.

Adequate Access: Customer is to provide adequate access per NEC 600, to all surfaces and the sign mounting location in general.

Engineering Conflicts: Should subsequent structural or professional engineering change to the initial or outlined scope of work; KDN Signs reserves the right to revise this quotation to reflect changes in this scope caused by additional information or changes by the engineers.

Environmental Issues: KDN Signs will notify the customer when excavating a foundation; should any hazardous wastes, garbage or potentially hazardous chemical materials be discovered. It will be the Customer's responsibility to assume all of the costs related to the excavation of this foundation and removal of the tainted spoil material by a certified hazardous waste material hauler.

Fabrication Release Dates: KDN Signs will release for production approved and confirmed orders only after the proper permits have been secured. KDN Signs will proceed with fabrication prior to the issuance of permits; if the customer waives this clause and requests immediate release for production. Customer understands that with this release they assume all financial responsibility for the labor and materials used for the manufacture of these items if the permit is not approved.

Final Connections to Primary Feeds: At the time of installation, the sign or signs will be connected to an approved dedicated sign circuit of adequate capacity, if available/accessible per NEC 600 and within five (5'-0") unobstructed feet of the sign location, provided for by others. Should permanent power not be available at the time of installation, sign installations will be considered complete upon field-testing with a portable power source. Customer will be responsible at the Customer's expense for an electrical hookup at a future date. This clause does not apply, if final connection to be performed by Customer's electricians.

Ground Clause: When installation specifications call for new footings; pricing assumes normal soil conditions. Any required breaking of surface asphalt or overcoming underground obstructions such as rock, marked and unmarked utility lines, frost, sprinkler systems, etc., will be billed as an extra once Customer approval has been obtained.

Landscape Restoration: KDN Signs will not be responsible for any landscape restoration, unless agreed to in writing.

Permit Fees and Permit Procurement: Not included in this proposal or quotation price are the following: Bonds, permits, inspection fees, engineering costs or the time to secure these items. These costs if any will be added to the final invoicing. It is also agreed that Customer will approve documents and assist in the procurement of permitting documents, i.e., Landlord, master sign plans, special local committees and tenant approvals, site plans, plat of survey and elevation drawings, etc.

Plenum Environment: Additional charges will be added to the final invoice for materials and additional labor for plenum environments.

Premium or Overtime Work: Customer agrees to pay additional charges if work is to be performed at a time other than normal working hours. Normal working hours are: Monday through Friday; 7:00 AM to 3:30 P.M. Any other time will be considered premium time and will be billed at the rate of time and one-half, double time after ten hours, for Sunday and holidays.

Removals: The above pricing does not include the removal of any existing signage, unless it is clearly noted in the body of the above quotation. Removals can and will be quoted as a separate line item and added to the final invoice.

Staging Required: The above pricing assumes adequate access to the sign mounting location. Should staging be required for this installation and not previously discussed to incorporate the costs associated; the staging cost will be billed at the rate of cost of the staging plus 20% upon client approval unless otherwise noted.

Underwriters Laboratory Approval: As of February 7, 2001 the City of Chicago requires that all sign installed within the City limits to carry the UL Label. If this General Listing Number is not on file with KDN Signs, Customer's signs will be inspected, brought up to UL 48 standards and labeled by KDN Signs prior to installation. The cost for the inspections, upgrading to standard and labeling will be added to the final invoice as a separate line item.

Wall Surfaces, Penetrations and Obstructions: Pricing assumes that building walls are adequate to support signs using standard anchoring methods. Any wall reinforcement or other special anchoring will be an extra once customer approval has been obtained. Any obstruction in the wall area that is not in plain sight, which causes additional time to be spent on any part of this installation, will be considered an additional cost. Signage hole penetrations through a wall are assumed to be normal stucco, drivit or soft brick construction. If the installer discovers obstructions, Customer shall be billed for special install labor.

Wall Surface Repairs: Upon removal of existing signage, any hole penetration created during installation will be patched with silicone caulk.



KDN Signs

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630-422-1708 | sales@kdnsigns.com | www.kdnsigns.com

Notes Continued...

only. Painting or repair of wall surfaces will be quoted as a separate line item in the body of this quotation.

Termination: In addition to any remedies that may be provided under these Terms and Conditions, KDN Signs may terminate any agreement with Customer with immediate effect upon written notice to Customer, if Customer: (i) fails to pay any amount when due; (ii) has not otherwise performed or complied with any of these Terms and Conditions, in whole or in part; or (iii) becomes insolvent, files a petition for bankruptcy or commences or has commenced against it proceedings relating to bankruptcy, receivership, reorganization or assignment for the benefit of creditors.

Waiver: No waiver by KDN Signs of any of the provisions hereof is effective unless explicitly set forth in writing and signed by KDN Signs. A failure or delay in exercising any right, power or privilege in respect of this Agreement will not be presumed to operate as a waiver, and a single or partial exercise of any right, power or privilege will not be presumed to preclude any subsequent or further exercise, of that right, power or privilege or the exercise of any other right, power or privilege.

* Non-taxable

Signature: _____ Date: _____



■ 1391 Wright Blvd ~ Schaumburg, IL 60193
 □ 67925 C.R. 388 ~ South Haven, MI 49090
 Phone (847) 524-7950 ~ Fax (847) 524-7953

August 20, 2024

Village of Thornton

Attn: Debra L. Pisarzewski
 115 E. Margaret St
 Thornton, IL 60476
 708-877-4456
 clerk@thorntonil.us

Description:

Your cost to remove the existing double face, 32 ½" x 97" electronic message center, and install a new double face watchfire 10mm full color, overall size of 32 ½" x 97", with 7 lines at 3" type, ignite OPX software, life of sign data plan, 4G wireless data plan, 5 years parts and 2 year labor warranty will be...\$25,988.00

Permits and obtaining not included.

_____ Q.T. Sign to provide service for permits and obtaining for additional costs.
 _____ Customer is responsible for any necessary permits, obtaining, complying with all village codes and holds Q.T. Sign harmless.

All applicable taxes additional

50% down for deposit, balance due upon completion.

Terms & Conditions

SKETCH DEPOSIT: The sketch deposit covers minimal costs involved in developing a concept. It does not cover the actual purchase of a custom design, which would be figured at an hourly rate, with a quoted minimum price. The sketch remains the property of the designer.

PRICE QUOTATION GOOD FOR - 48 hours, due to material cost, availability and shortages.

FINISHED art, mechanical, and signs will be released for use by the client only. Mechanical, original art, sketches and materials other than signs originated by the designer are the property of the designer, and will be held for the client, unless otherwise shown..

SPECIAL conditions on client's purchase orders in no way negate the above Conditions of Sale. In ordering the work described above, the client accepts all of these conditions whether noted on his purchase order or not.

IF UNUSUAL DIGGING conditions (i.e.: ledge, water, etc.) are encountered in ground installation, this contract is binding; however, an additional cost based on our labor, plus 15% on sub-contract labor and materials, will be added to the above price.

THE CLIENT agrees to pay all costs of collection in the event of default of payment by the client, including a reasonable attorney's fee. In the event of delinquent payments, the client will be charged a rate of 2% interest for every month after the first 30 days.

Quoted by: Rob Freedman Date: 8/20/24

Acceptance of Proposal:

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature _____ Date _____

Debbie Pisarzewski - Village of Thornton : New Monument Sign Options & Quotes

From: Rod Roeda <rod.roeda@roeda.com>
To: "clerk@thorntonil.us" <clerk@thorntonil.us>
Date: 7/31/2024 6:00 PM
Subject: Village of Thornton : New Monument Sign Options & Quotes
Cc: Signs Roeda <signs@roeda.com>, Alex Roeda <alex.roeda@roeda.com>
Attachments: MR024-798.pdf; 2023_LED_Sign_Buyer_s_Guide.pdf; The Watchfire Difference Handout (2023_08_02 19_58_36 UTC).pdf; 16mm_Product_Fact_Sheet_2023.pdf; 10mm_Product_Fact_Sheet_2023.pdf

Village of Thornton

115 E. Margaret St.

Thornton, IL 60476

Debra Pisarzewski

[708-877-4456](tel:708-877-4456)clerk@thorntonil.us

7/31/24

RE: New Village Hall Monument Sign Options & Quotes.

Attached are Two (2) Size Options for your new sign.

Attached Info Sheets for the different Resolutions for the WatchFire Electronic Message Centers (16mm & 10mm) available.

* 16mm is a nice Full Color Unit, But the 10mm is a Higher Resolution Unit (South Holland Village Hall has a 10mm).

Option A : Includes an Electronic Message Center that has a 2'x7' Viewing Size.

- Option of 16mm Full Color, Total Installed = \$26,043.00.

- Option of 10mm Full Color, Total Installed = \$28,678.00.

Option B : Includes an Electronic Message Center that has a 3'x7' Viewing Size.

- Option of 16mm Full Color, Total Installed = \$30,645.00.

- Option of 10mm Full Color, Total Installed = \$34,986.00.

* Prices INCLUDE Web-Based Software Training.

* All WatchFire brand Electronic Message Centers are Wireless Communication that includes a Life of Sign Data Plan.

* All WatchFire units include a 5 Year Parts Warranty.

* The top Illuminated Header sign cabinet would be LED lighting with a Photocell. All U/L Listed.

*** TERMS : A 50% Deposit would be required to proceed with any of these Options.

Rod Roeda

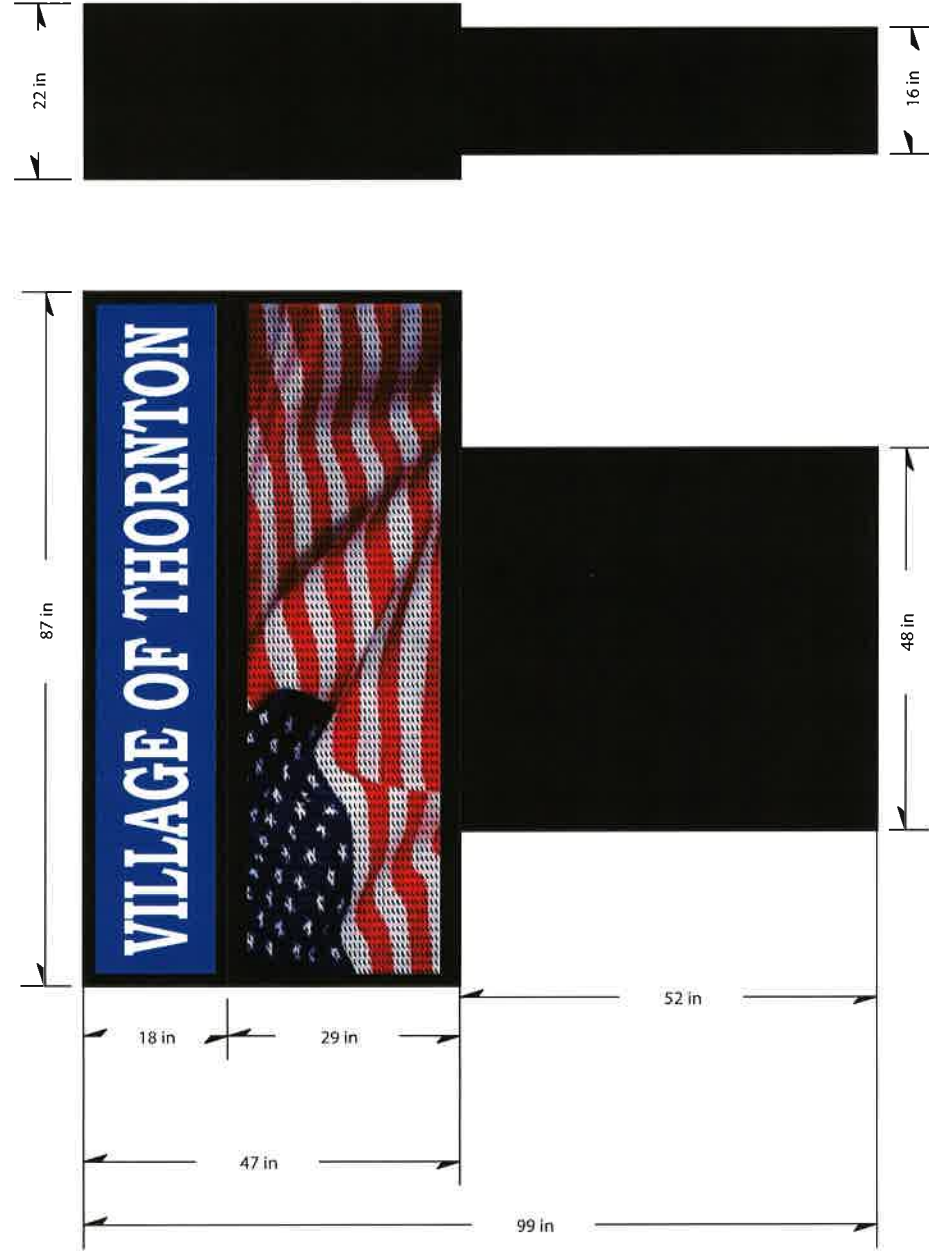
Director, Sign and Vehicle Production

Office: [708-333-3021](tel:708-333-3021) ex.116

Address: 20530 Stoney Island Ave. Lynwood IL 60411



Project Description: 1 New Double Sided LED Illuminated Header Cabinet, w/ 7' x 2' Full Color LED Watchfire Electric Message Center (EMC)



OPTION A



A SIGNED PROOF IS NECESSARY PRIOR TO ANY ORDER BEING PUT INTO PRODUCTION.

LOOK OVER CAREFULLY.

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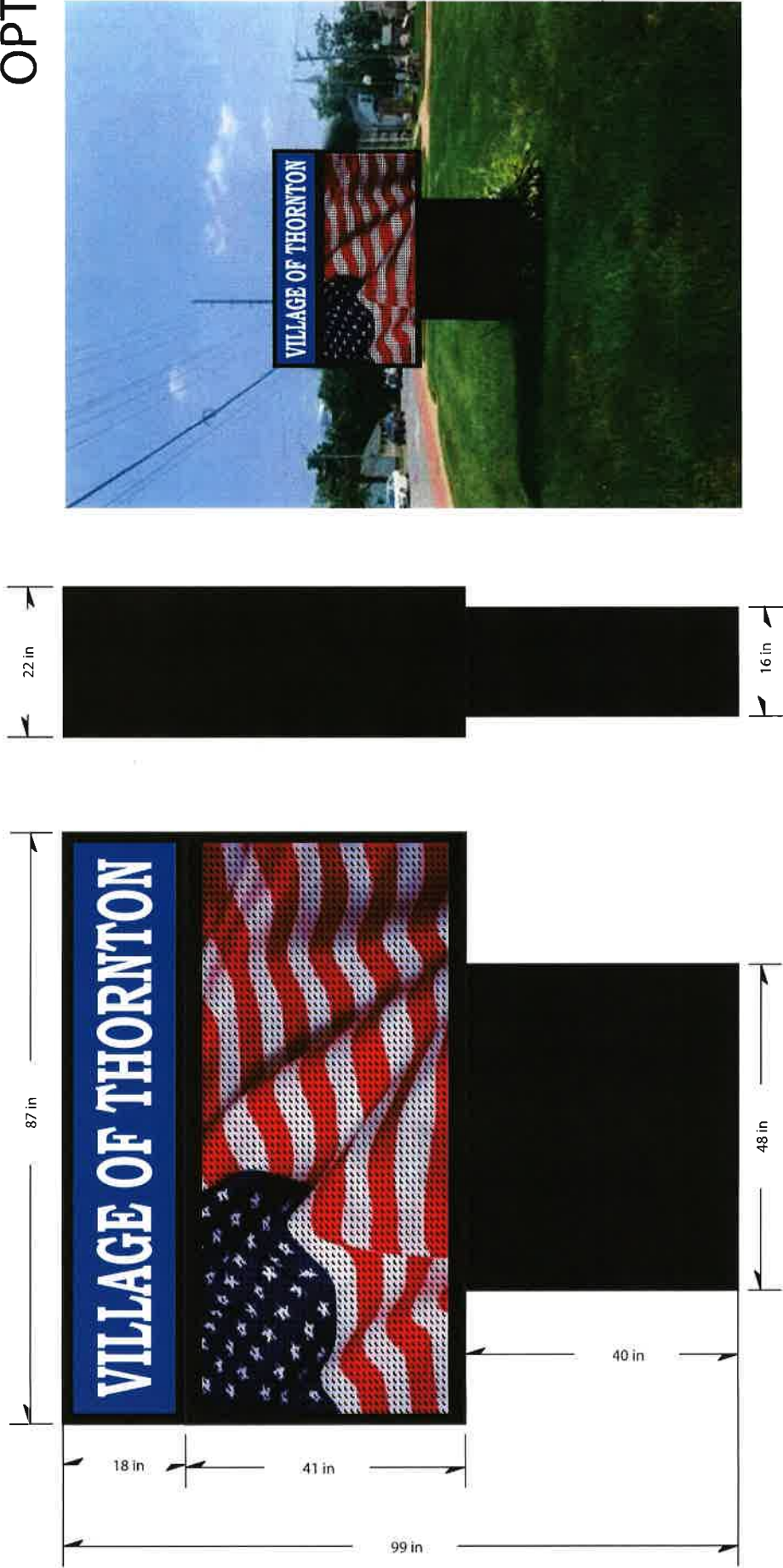
☐ Spelling and punctuation are correct	☐ Approved/Proceed
☐ Names, phone numbers, websites are correct	☐ OK with corrections. Revise as noted
☐ It size is correct (width" x height")	☐ Revise as noted & submit a new proof
☐ It color is correct	

Notes/Revisions:

Section VII, Item E.

Project Description: 1 New Double Sided LED Illuminated Header Cabinet, w/ 7' x 3' Full Color LED Watchfire Electric Message Center (EMC)

OPTION B



A SIGNED PROOF IS NECESSARY PRIOR TO ANY ORDER BEING PUT INTO PRODUCTION.

LOOK OVER CAREFULLY.

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☐ Spelling and punctuation are correct	☐ Approved/Proceed
☐ Names, phone numbers, websites are correct	☐ OK with corrections. Revise as noted
☐ It size is correct (width" x height")	☐ Revise as noted & submit a new proof
☐ It color is correct	

Notes/Revisions:

Section VII, Item E.

<https://signarama.com/locations/il-lansing/>

Payment Terms: 50/50%

Created Date: 8/29/2024

DESCRIPTION: Reorder: LED Sign Replacement

Bill To: Village Of Thornton
115 East Margaret St
Thornton, IL 60476
US

Pickup At: Signarama Lansing
17332 Torrence Ave.
Lansing, IL 60438
US

Requested By: Deb A
Email: clerk@thorntonil.us
Work Phone: (708) 877-4456

Salesperson: House Signarama

NO.	Product Summary	QTY	UNIT PRICE	AMOUNT
1	LED Board 9MM - 3ft by 8ft	1	\$27,761.64	\$27,761.64
1.1	LED Message Boards (EMCs) - 3ft by 8ft			
	Part Qty: 1			
	Text:			
	Number of Faces - 2			
	Stax Brand LED Board			
	Aluminum Frame Dual Wall Extrusion			
	Color Capability 281 Trillion / LED SMD			
	Mounting System Threaded Nut			
	Frame + Bolt			
	Viewing Angles 140 Horizontal / 70			
	Vertical			
	Light Sensor Auto Dimming (Manual			
	Backup)			
	Communication Cellular Router			
	Included			
	Available: Wireless or Direct			
	Connection			
	Control System 1 IBX Controller(s)			
	Sign Software SM Infinity			
	Video 60 Frames per Second			
	NEXT Parts Warranty			
	60 Months			
	4G Cellular Service			
	Lifetime of Display			
	Project Content			
	Months			
	Software Training & Upgrades			
	Lifetime of Display			

1.2	Lightbox - New Cabinet to Hold The Sign Part Qty: 1 Text: Cabinet to Hold the LED Boards 1 Top Double Sided Face Internally Illuminated LED Lights Installation and Disposal of Old Sign Included	Section VII, ItemE.
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Regarding production of custom signs, this estimate is valid based on information from client about the project requirements. Changes by the client after proof and quote approval may result in a change to the price of the produced signs.

Subtotal:	\$27,761.64
Taxes:	\$0.00
Grand Total:	\$27,761.64

Get this for as little as \$1002.2 per month. Ask us for details.

Regarding Installation and onsite services, this quote is for estimation purposes and is not a guarantee of cost for sign services for installation. The Estimate is based on current information from client about the project. Actual cost may change once project elements are finalized. Client agrees that sign service & repair will add on the cost of ballast, LED lights, lamps, sockets, wiring and other components to restore sign illumination as needed only. Client must request and approve complete replacement of lamps. Client may choose to pay for a site survey wherein we will inspect the sign illumination and will provide an itemized list of replacement components the sign needs.

Signarama is independently owned and operated.

Signature: _____

Date: _____

President and Board of Trustees
Village of Thornton
115 E. Margaret Street
Thornton, Illinois 60476

President and Trustees:

The undersigned, Northern Illinois Gas Company (d/b/a Nicor Gas Company) (the “Company”), for and in consideration of the adoption by the authorities of the Village of Thornton, Illinois (the “Municipality”), of an ordinance granting the Company the right to construct, operate and maintain a gas distribution system in the Municipality for a term of 50 years from April 15, 2024 (the “Franchise Ordinance”), hereby agrees for itself, its successors and assigns, that so long as said ordinance shall remain in full force and effect, Company will during each billing year (start and finish of each year shall begin and end with regular meter reading date nearest to January 1) throughout the remainder of the life of said ordinance, supply without charge to the Municipality, an amount of gas not to exceed 8,590 therms (“Therm Allocation”), to be used in buildings which may be occupied from time to time by the Municipality solely for municipal purposes, or such part thereof as may from time to time be so occupied, and not for purposes of revenue.

The Therm Allocation is calculated using the municipality’s population of 2,386 based on the most recent decennial census data. The Therm Allocation will be adjusted by the Company based on each decennial census count. Between decennial census counts, Therm Allocation may be increased on the basis of changes in population of the Municipality as shown by revised or special census. Upon the submission of a written request by the Municipality accompanied by the official State notification of census change, the Therm Allocation will be adjusted by the Company.

For so long as the Franchise Ordinance shall remain in full force and effect, the Municipality’s Therm Allocation will be based on the following revised formula:

First 10,000 of population	3.60 therms per capita;
Next 10,000 of population	2.40 therms per capita;
Next 80,000 of population	1.20 therms per capita;
Next 20,000 of population	1.45 therms per capita;
Over 120,000 of population	1.80 therms per capita.

Page 2
Village of Thornton

None of said gas to be supplied without charge to the Municipality, shall be resold for any purpose whatsoever, and in the event the Municipality uses less than the above-mentioned number of therms of gas in any billing year, there shall be no payment due to the Municipality from the Company, or its successors and assigns, for gas not used during that billing year, nor shall any such unused therms be carried over for the following year's use.

In the event the Company's policy in regard to the practice of supplying gas without charge to municipalities in its present service area is changed at any time in the future, or in the event that the Company in the future provides any other gas utility service benefit as a matter of general policy to all municipalities in such service area, it will inform the Municipality of any such change and, upon acceptance by the Municipality, will grant the Municipality the benefits of such change or benefits under the same conditions applicable to other municipalities.

The Company, for itself, its successors and assigns, reserves the option, however, to reduce the total amount of gas supplied during any one billing year without charge as aforesaid by the amount of any fees which the Municipality may charge the Company for permits, street or parkway openings, or inspections of any kind. Such reduction will be arrived at by the use of the Company's applicable rate for such calculation.

This agreement shall supersede, replace and be in lieu of the provisions as to the supply of gas without charge to the Municipality contained in the previous letter of the Company addressed to the President and Board of Trustees.

GAS ORDINANCE

AN ORDINANCE AUTHORIZING NORTHERN ILLINOIS GAS COMPANY (d/b/a NICOR GAS COMPANY) ITS SUCCESSORS AND ASSIGNS, TO CONSTRUCT, OPERATE AND MAINTAIN A GAS DISTRIBUTING SYSTEM IN AND THROUGH THE VILLAGE OF THORNTON, ILLINOIS.

BE IT ORDAINED BY THE PRESIDENT AND BOARD OF TRUSTEES OF THE VILLAGE OF THORNTON ILLINOIS:

SECTION 1. That the right, permission and authority be and the same are hereby granted to NORTHERN ILLINOIS GAS COMPANY (d/b/a NICOR GAS COMPANY), an Illinois corporation, its successors and assigns (hereinafter referred to as the “Grantee”), to construct, operate and maintain in and through the VILLAGE OF THORNTON (hereinafter referred to as the “Municipality”), in the State of Illinois, for a term of Fifty (50) years, a system for the production, distribution and sale of gas for fuel, heating, power, processing and other purposes within and outside the corporate limits of the Municipality, and to construct, lay, maintain and operate such gas pipes, mains, conductors and other devices, apparatus and equipment as may be necessary or convenient for such system in, under, along and across each and all of the streets, alleys, avenues and other public places in the Municipality, subject to the conditions and regulations hereinafter set forth.

SECTION 2. All pipes, mains, conductors and other appliances, including connections with service pipes, hereafter laid in streets, alleys, avenues or other public places, shall be laid under the supervision of the Committee on Streets and Alleys of the Municipality, or such other duly authorized agent of the Municipality as the Board of Trustees may from time

to time designate. All pipes, mains, conductors and other appliances shall be so located as not to injure unnecessarily any drains, sewers, catch basins, water pipes, pavements or other like public improvements, but should any drain, sewer, catch basin, water pipe, pavement or other like public improvement be injured by such location, the Grantee shall forthwith repair the damage caused by such injury to the satisfaction of the Committee on Streets and Alleys, or such other duly authorized agent, and in default thereof the Municipality may repair such damage and charge the cost thereof to, and collect the same from, the Grantee. The Grantee shall be subject to all reasonable regulations which may now or hereafter be prescribed by general ordinance of the Municipality with respect to the use of the public streets, alleys, avenues and other public places of the Municipality.

SECTION 3. The Grantee shall indemnify, become responsible for and forever save harmless the Municipality from any and all judgments, damages, decrees, costs and expenses, including attorneys' fees, which the Municipality may legally suffer or incur, or which may be legally obtained against the Municipality, for or by reason of the use and occupation of any street, alley, avenue or other public place in the Municipality by the Grantee pursuant to the terms of this ordinance or legally resulting from the exercise by the Grantee of any of the privileges herein granted; except that the indemnity provided for in this Section 3 shall not apply to any liability, judgments, damages, decrees, costs and expenses determined by a court of competent jurisdiction to have resulted from the negligence or intentional acts or omissions of Municipality, its agents and employees.

SECTION 4. After the passage of this ordinance, and within thirty (30) days after passage, this ordinance, if accepted, shall be accepted by the Grantee by its filing with the Village Clerk of the Municipality an unconditional written acceptance hereof, to be duly

executed according to law, and a failure of the Grantee to so accept this ordinance within said period of time shall be deemed a rejection hereof by the Grantee, and the rights and privileges herein granted shall after the expiration of said period of thirty (30) days, if not so accepted, absolutely cease and determine, unless said period of time shall be extended by the Municipality by ordinance duly passed for that purpose and before the expiration of said period of thirty (30) days.

SECTION 5. All provisions of this ordinance which are obligatory upon, or which inure to the benefit of, said NORTHERN ILLINOIS GAS COMPANY (d/b/a NICOR GAS COMPANY) shall also be obligatory upon and shall inure to the benefit of any and all successors and assigns of said Company, and the word “Grantee” wherever appearing in this ordinance shall include and be taken to mean not only said NORTHERN ILLINOIS GAS COMPANY (d/b/a NICOR GAS COMPANY), but also each and all of such successors and assigns.

SECTION 6. This ordinance, if accepted by the Grantee as hereinabove provided, shall be in full force and effect as of April 15, 2024, and from and after the effective date shall supersede, cancel, repeal and be in lieu of any and all other existing or prior grants of right, permission and authority by said Municipality to said Grantee or any predecessor companies or assignors of the Grantee to construct, operate and maintain any system for the production, distribution and sale of gas for fuel, heating, power, processing and any other purposes within the corporate limits of this Municipality, and this ordinance shall likewise cancel all of the obligations under said existing or prior grants.

PASSED BY THE BOARD OF TRUSTEES OF THE VILLAGE OF
THORNTON, ILLINOIS, THIS ____ DAY OF _____, 202_.

Village Clerk

APPROVED BY THE PRESIDENT OF THE VILLAGE OF THORNTON,
ILLINOIS, THIS ____ DAY OF _____, 202_.

President

(Seal)

ATTEST:

Village Clerk

STATE OF ILLINOIS)
COUNTY OF COOK) SS.
VILLAGE OF THORNTON)

I, _____, Village Clerk of the Village of THORNTON, Illinois, do hereby certify that the foregoing is a true and correct copy of an Ordinance duly passed by the Board of Trustees of said Village on the ____ day of _____, 202__, and duly approved by the President of said Village on the ____ day of _____, 202__, the original of which Ordinance is now on file in my office.

I do further certify that I am the legal custodian of all papers, contracts, documents and records of said Village.

WITNESS my hand and the official seal of said Village this ____ day of _____, 202__.

Village Clerk
Thornton, Illinois

(SEAL)