January 23, 2018

Ms. Marina Zambrano
Administrative Assistant
Village of Frankfort
432 West Nebraska Street
Frankfort, Illinois 60423

RE: Visual Structural Inspection and Cost Estimate to
Paint the 1915 50,000 Gallon Elevated Water Tank
Located Behind the Chamber of Commerce
Building at 123 Kansas Street, Frankfort, Illinois

Dear Ms. Zambrano:

Per your request, SEECO Consultants, Inc. performed a visual structural inspection of the existing (4 legs) multi-column elevated water tank located behind the Chamber of Commerce Building at 123 Kansas Street in the Village of Frankfort, Illinois. This scope of work was authorized by you Ms. Marina Zambrano, Village of Frankfort Administrative Assistant through a SEECO contract and proposal dated November 20, 2017 and a signed copy of returned to SEECO Consultants, Inc.

Background

The elevated steel water tank which has a capacity of holding 50,000 gallons of potable water was constructed in 1915 (103 years old) by Chicago Bridge and Iron Company. This elevated water storage tank is supported by four (4) steel lattice columns on four (4) spread footings with diagonal tie rods – 3/4” diameter and turnbuckles for wind load transfer.

The elevated water tank is located in the old downtown area of the Village of Frankfort, Illinois and is surrounded by mixed commercial retail and residential houses. The elevated water tank structure is in extremely close proximity to a residential house and the two (2) south columns are within a few feet of the existing Chamber of Commerce Building. The existing multi-column elevated water tower is an approximately 50,000 gallon capacity coffee can style elevated tank that is currently not in service and the original structural plans are not available per phone conversation with you, Ms. Marina Zambrano, Village of Frankfort Administrative Assistant and the Authors of this report, Mr. Matthew Boladz, EI and Mr. Collin Gray, SE, PE of SEECO Consultants, Inc. on November 15, 2017. It is estimated that the total height of the elevated water tower is approximately 70 feet to 80 feet tall and the estimated tank diameter is approximately 25 feet. Based on the nameplate attached to the southwest column of the elevated water tower, this water tower was constructed by Chicago Bridge and Iron (CBI) in 1915 which makes this tower approximately 103 years old at the time of this report (1/23/2018). The elevated water tank is constructed on four (4) steel lattice laced columns that utilize pop...
rivets for the connections and each column is assumed to be supported by isolated spread footing foundations. The columns are laterally braced with approximately ¼ inch diameter tie rods connected with turnbuckles on a diagonal along the full height of the columns for lateral wind load transfer.

Visual Inspection Summary

A visual structural inspection was performed by Mr. Matthew Boladz, EI, SEECO Consultants, Inc. Structural Engineer and Mr. Collin W. Gray, S.E., P.E., President and Principal Engineer of SEECO Consultants, Inc. on December 18, 2017 and pictures were taken on this day (12/18/2017) as part of the visual structural inspection that are provided in the Photo Album given as an attachment to this letter report. In general the elevated water tower structure appears to be structurally sufficient with minor issues that need to be addressed so that in the long term so they do not become major issues later causing structural instability. Also on the day of the visual inspection (12/18/2017), Mr. Don Berry, Protective and Marine Division-Water and Waste Water Specialist for Sherwin-Williams Company, Paint Manufacturer joined Mr. Matthew Boladz, EI and Mr. Collin W. Gray, S.E., P.E., of SEECO Consultants, Inc. on the water tank site to discuss the condition of the existing paint on the elevated water tower structure and to discuss the type of protective paint system should be selected, and to either fully remove the existing paint or to just use an over coat system.

The tank atop the tower appears to be structurally adequate with no visible issues such as major rust penetration, holes, or visible stress cracking through the paint. The four (4) lattice laced columns appear to be structurally sufficient with no broken cross lattices or no visible bending, torsion, or localized buckling under static loads. The pop rivets appear to be structurally sufficient for the time being however, pop rivets are notorious for failure if a maintenance program is not maintained. While on site (on 12/18/2017), the day was relatively windy and the overall structure appeared to be stable under some wind loading conditions. The tie rods cross bracing for lateral loading do not appear to be bending, under torsion, or out of plumb which would be cause of concern therefore these members appear to be structurally sufficient. The turnbuckle connections of the lateral cross bracing tie rods are in good condition but there is some rust penetration, no visible missing or broken threads on the tie rods and turnbuckle connections and tie rods and are not bent or out of plumb. Refer to Photo No. 8, Photo No. 9, Photo No. 12, and Photo No. 13 of the Photo Album provided in the attachments of this report for the overall view of the elevated water tank and the four (4) tower lattice laced columns with the tie rod cross bracing.

The column base plate connection for all four (4) columns appears to be structurally sufficient with no visible overstressing such as bending or torsional buckling of the baseplates and steel plate stiffeners. The thickness of these plates seem to be sufficient without knowing the original plate design thickness and there were no visible holes, but some scaling is present. This scaling issue would not deem these members structurally deficient. Windblown debris has accumulated
within the base of the four (4) columns which the moisture from this debris can accelerate rusting process and deteriorate the steel columns. This debris should be removed as soon as possible. The exposed top of the four (4) concrete spread footing foundations appear to be structurally sound with some minor cracking cause by the freeze/thaw cycles. It appears that two (2) of the four (4) top of spread footing pedestal have been refinished with a cement grout mix that is starting to chip away and fall off due to the freeze/thaw cycle. It does not appear that the elevated water tank spread footing foundations have settled very much over the structure’s lifespan since these footings are built on very stiff to hard silty clay glacial till. Refer to Photo No. 1 through Photo No. 7 and Photo No. 10 through Photo No. 11 of the Photo Album provided in the attachments of this report for the photographs of the base of the columns and the spread footing conditions.

Majority of the paint is delaminating from the overall structure and large chips of paint are falling off the tank and lattice laced columns exposing the bare steel below causing the structural members to rust. The rust penetration is not too severe as of the inspection on 12/18/2017 but with anymore exposure time the rust will continue to get worse in a short amount of time. It appears that the overall elevated water tank structure has been over coated multiple times in the structure’s lifespan thus far and it appears that the structure has not been sand blasted to bare metal and repainted. The approximate total thickness of the existing paint is 35 mils to 40 mils thick as visually inspected by Mr. Don Berry of Sherwin-Williams Company, Paint Manufacturer. Therefore, it is suspected that the current paint on the structure is a lead based paint which requires special disposal and full containment for the lead based paint so that lead contamination does not occur off the project site.

**Engineering Recommendations**

The overall condition of the approximately 50,000 gallon capacity elevated water tank located behind the Chamber of Commerce Building at 123 Kansas Street in the Village of Frankfort, Illinois is in fair to good condition structurally, however the paint is in poor condition and is providing minimal rust protection to the overall structure. Therefore, since the overall structure is in good condition structurally speaking it is recommended to repaint the tank by fully removing the old paint by means of sand blasting and repainting with a three (3) coat system if the Village of Frankfort decides to keep the tank up since this tank is currently not operational. The new three (3) coat paint system has a lifespan of approximately 20 years to 25 years and can be generally over coated two (2) more times after the initial painting with each additional overcoat lasting approximately 15 years. With a full new painting the tank lifespan can be extended another 50 years to 60 years, however the initial cost to do this work will be large. It is recommended to not just overcoat this structure again due to the condition of the paint below, for the overcoat may start to fail within the first 5 years to 10 years of repainting and the process will occur again thus wasting money.

It is recommended to either fully sand blast the entire structure to bare metal and repaint the tank structure or to take the tank structure down. If no action is taken and the tank structure
goes with no maintenance, the existing paint will continue to deteriorate over time leading to extreme rusting of the structural members that will eventually lead to structural instability and possible failure of the structure and may cause public harm. Each process for sand blasting and repainting and/or deconstructing the tank structure down is summarized below.

1) **Sand Blasting and Repainting Scheme:** If the tank structure is elected to remain standing and the full sand blast to bare metal and repaint is implemented, it is recommended to use a three (3) coat system consisting of a Zinc Primer (first coat), Epoxy (second coat), and Polyurethane (third coat) as specified by Tnemec Company, Paint Manufacturer. Refer to **Tnemec Paint Specifications (6 sheets)** given as an attachment to this letter report for the paint specifications.

Since the entire tank structure will have to be sand blasted down to bare metal and the original paints most likely contains lead, a full lead containment system will have to be implemented during the sand blasting phase and constructed around and above the tank. The containment system has to be air tight so exposure to the outside does not occur and the air inside the containment has to be filtered generally through a recycled system to reduce the amount of lead waste. The containment system will generally be constructed of a scaffolding system around the tank structure and a reinforced roof system to support the scaffolding above the tank structure. The scaffolding system will be wrapped in either air tight trampolines or a shrink wrap system. The lead contaminated waste will have to be disposed of properly at a special waste landfill.

2) **Tank Structure Deconstruction Scheme:** If the tank structure is elected to be torn down, then some consideration should be taken into account such as the site constraints and also lead paint containment and disposal measures. First off, the site constrains need to be addressed. The very tight space around this elevated tank structure will cause deconstruction staging issues such as setting up a large enough crane to hoist the torch cut tank members into a contained pile that will not be a public safety hazard. Temporary bracing will also have to be utilized during the deconstruction process so that the structure does not become unstable and collapse during this process. Also after the elevated tank main structure has been taken down, the elevated water tank spread footing foundations should not be removed from the ground for this will cause the damage to the existing Chamber of Commerce Building foundations and may possibly destabilize the hill slope just north of the elevated water tower structure. It has been brought to the attention of the Principal Author of this report that under new EPA regulations any structure with lead based coatings, the area that will be torch cut will have to be vacuumed sand blasted to keep the lead particulates contained before any torch cutting occurs. The lead contaminated cutting slag cannot simply fall on the ground under the new EPA regulations, which is the reason for the cut area to be sand blasted first. The lead waste will have to be disposed of legally in a special waste land fill. It
should be noted that this lead containment process will increase the cost of deconstruction.

**Engineering Cost Estimates**

Due to the lack of site space, construction staging area, and extremely close proximity to commercial and residential buildings the cost to do either scheme on this site will be increased substantially due to the logistics of the project site. The Principal Author of this report talked to three (3) reputable qualified Tank Painting Contractors that are located in the Chicago Land area that can handle full lead containment and only two (2) painting contractors were interested in bidding this job. These two (2) provided contractors have experience in lead containment projects and have their own equipment for the job. The contact information of the two (2) painting contractors are as follows.

1) ERA Valdivia Contractors, Inc.
   11909 South Avenue O
   Chicago, Illinois 60617
   Contact: Greg Bairaktaris, Senior Project Manager
   Phone: 773-447-8658
   Email: gbairaktaris@eravaldivia.com

2) Tecorp, Inc.
   2221 Muriel Court
   Joliet, Illinois 60433
   Contact: Telly Visvardis
   Phone: 708-745-8313
   Email: tvisvardis@Tecorp.us

ERA Valdivia Contractors, Inc. provided SEEKO Consultants, Inc. with a preliminary estimate bid to complete the work of full sand blasting to bare metal and repainting the elevated water tank with full lead containment procedures as a lump sum price of **$514,000.00** with an additional alternate for Graphics and Label of **$8,000.00**. Please see attached **ERA Valdivia Contractors, Inc. Bid Estimate** for this scope of work.

Tecorp, Inc. did not provide a written estimate bid to SEEKO Consultants, Inc., however a verbal estimate was provided to be **$500,000.00** or greater during the a site visit between the Nick Visvardis of Tecorp, Inc. and the Principal Author of the this report on January 8th, 2018.

An Engineering Estimate to deconstruct the existing elevated water tower structure with lead containment will be in the approximate range of **$150,000.00 to $180,000.00**.
Re: Visual Structural Inspection and Cost Estimate
To Paint the 1915 50,000 Gallon Elevated Water Tank
Located Behind the Chamber of Commerce Building
At 123 Kansas Street, Frankfort, Illinois

If you have any questions concerning this report please call at your convenience at 1/708/429-1666.

Sincerely,

SEECO Consultants, Inc.

[Signature]
Matthew J. Boladz, E.I.
Staff Structural Engineer

[Signature]
Collin W. Gray, S.E., P.E.
President

MB:arm

Via E-Mail: mzambrano@voffil.com

Attachment -
1) Photo Album
2) Themec Company Paint Specifications (6 sheets)
3) ERA Valdivia Paint Contractors Estimated Cost Bid

[Path to file]
PHOTOGRAPH LOG

JOB NO. 11847CS

PROJECT NAME: Visual Structural Inspection & Cost Estimate to Paint the 50,000 Gallon Elevated Water Tower

LOCATION: Behind the Chamber of Commerce Building, 123 Kansas St., Frankfort, IL

DATE: 12/18/17

TAKEN BY: Matt Boladz

VIEW LOOKING: North at the northeast elevated water tank column/foundation.

PHOTOGRAPH NO.: 1

NOTES: The column base plate connection appears to be structurally sufficient with minimal rust penetration, however the paint is delaminated and peeling off and the refinished concrete on top of the foundation is showing freeze/thaw cracking.
**PHOTOGRAPH LOG**

**JOB NO. 11847CS**

<table>
<thead>
<tr>
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<tr>
<td>TAKEN BY</td>
<td>Matt Boladz</td>
</tr>
<tr>
<td>VIEW LOOKING</td>
<td>South at the southeast elevated water tower column/foundation.</td>
</tr>
<tr>
<td>PHOTOGRAPH NO.:</td>
<td>2</td>
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<tr>
<td>NOTES</td>
<td>The column base plate connection appears to be structurally sufficient with minimal rust penetration, however the paint is delaminated and peeling off and the concrete foundation is showing some freeze/thaw cracking.</td>
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LOCATION: Behind the Chamber of Commerce Building, 123 Kansas St., Frankfort, IL
DATE: 12/18/17
TAKEN BY: Matt Boladz
VIEW LOOKING: South at the southwest elevated water tower column/foundation.
PHOTOGRAPH NO.: 3
NOTES: The column base plate connection appears to be structurally sufficient with minimal rust penetration, however the paint is delaminated and peeling off and the concrete foundation is showing minimal freeze/thaw cracking.
PHOTOGRAPH LOG

JOB NO. 11847CS

PROJECT NAME: Visual Structural Inspection & Cost Estimate to Paint the 50,000 Gallon Elevated Water Tower
LOCATION: Behind the Chamber of Commerce Building, 123 Kansas St., Frankfort, IL
DATE: 12/18/17
TAKEN BY: Matt Boladz
VIEW LOOKING: West at the southwest elevated water tower column/foundation.
PHOTOGRAPH NO.: 4
NOTES: The column base plate connection appears to be structurally sufficient with minimal rust penetration, however the paint is delaminated and peeling off and the concrete foundation is showing minimal freeze/thaw cracking. Leaves and debris have accumulated within the base of the column.
PHOTOGRAPH LOG

JOB NO. 11847CS

PROJECT NAME: Visual Structural Inspection & Cost Estimate to Paint the 50,000 Gallon Elevated Water Tower
LOCATION: Behind the Chamber of Commerce Building, 123 Kansas St., Frankfort, IL
DATE: 12/18/17
TAKEN BY: Matt Boladz
VIEW LOOKING: North at the northwest elevated water tower column/foundation.
PHOTOGRAPH NO.: 5
NOTES: The column base plate connection appears to be structurally sufficient with little rust penetration, however the paint is delaminated and peeling off and the concrete foundation is showing some freeze/thaw cracking.
PHOTOGRAPH LOG

JOB NO. 11847CS

PROJECT NAME: Visual Structural Inspection & Cost Estimate to Paint the 50,000 Gallon Elevated Water Tower
LOCATION: Behind the Chamber of Commerce Building, 123 Kansas St., Frankfort, IL
DATE: 12/18/17
TAKEN BY: Matt Boladz
VIEW LOOKING: South at the northwest elevated water tower column/foundation.
PHOTOGRAPH NO.: 6
NOTES: The column base plate connection appears to be structurally sufficient with minimal rust penetration, however the paint is delaminated and peeling off and the concrete foundation is showing some freeze/thaw cracking and crumbling of the surficial concrete at base.
PHOTOGRAPH LOG

JOB NO. 11847CS

![Image of a water tower component]

PROJECT NAME: Visual Structural Inspection & Cost Estimate to Paint the 50,000 Gallon Elevated Water Tower
LOCATION: Behind the Chamber of Commerce Building, 123 Kansas St., Frankfort, IL
DATE: 12/18/17
TAKEN BY: Matt Boladz
VIEW LOOKING: East at the southwest elevated water tower column name plate.
PHOTOGRAPH NO.: 7
NOTES: Name plate of the tower stating Chicago Bridge and Iron constructed this water tower in 1915 making this tower approximately 103 years old.
PHOTOGRAPH LOG

JOB NO. 11847CS

PROJECT NAME: Visual Structural Inspection & Cost Estimate to Paint the 50,000 Gallon Elevated Water Tower
LOCATION: Behind the Chamber of Commerce Building, 123 Kansas St., Frankfort, IL
DATE: 12/18/17
TAKEN BY: Matt Boladz
VIEW LOOKING: Up at the bottom of the elevated water tank.
PHOTOGRAPH NO.: 8

NOTES: The columns and interconnected lateral bracing appear to be structurally sufficient and do not appear to be bent, bowed, or warped out of plumb. The paint appears to be delaminating and peeling off but the steel appears to have little rust penetration and mostly rust discoloring.
### PHOTOGRAPH LOG

**JOB NO. 11847CS**

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<td>VIEW LOOKING:</td>
<td>Up at the bottom of the elevated water tank (zoomed in)</td>
</tr>
<tr>
<td>PHOTOGRAPH NO.:</td>
<td>9</td>
</tr>
<tr>
<td>NOTES:</td>
<td>The paint appears to be delaminating and peeling off but the steel appears to have little rust penetration and mostly rust discoloring. Appears big flakes of paint have fallen off. No noticeable holes have been observed.</td>
</tr>
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**PHOTOGRAPH LOG**

**JOB NO. 11847CS**

![Image of a water tower column base plate connection](image)

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<td><strong>VIEW LOOKING:</strong></td>
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<td><strong>PHOTOGRAPH NO.:</strong></td>
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<tr>
<td><strong>NOTES:</strong></td>
<td>The column base plate connection appears to be structurally sufficient will some rust penetration, however the paint is delaminated and peeling off and the concrete foundation is showing some freeze/thaw cracking at the base.</td>
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PHOTOGRAPH LOG

JOB NO. 11847CS

PROJECT NAME: Visual Structural Inspection & Cost Estimate to Paint the 50,000 Gallon Elevated Water Tower

LOCATION: Behind the Chamber of Commerce Building, 123 Kansas St., Frankfort, IL

DATE: 12/18/17

TAKEN BY: Matt Boladz

VIEW LOOKING: North at the northwest elevated water tank column/foundation connection.

PHOTOGRAPH NO.: 11

NOTES: Column base plate and foundation connection appear to be structurally sufficient with little rust penetration and minimal rust scale on the bolts, plates, and pop rivets. Some leaves and debris has accumulated within the base of the column.
PHOTOGRAPH LOG

JOB NO. 11847CS

PROJECT NAME: Visual Structural Inspection & Cost Estimate to Paint the 50,000 Gallon Elevated Water Tower
LOCATION: Behind the Chamber of Commerce Building, 123 Kansas St., Frankfort, IL
DATE: 12/18/17
TAKEN BY: Matt Boladz
VIEW LOOKING: Northwest and up at the overall view of the elevated water tank.
PHOTOGRAPH NO.: 12
NOTES: The overall condition of the tank appears to be structurally sufficient with no visible holes or visible stress concentrations through the paint. The paint is starting to discolor and deteriorate with little rust penetration.
PHOTOGRAPH LOG

JOB NO. 11847CS

PROJECT NAME: Visual Structural Inspection & Cost Estimate to Paint the 50,000 Gallon Elevated Water Tower

LOCATION: Behind the Chamber of Commerce Building, 123 Kansas St., Frankfort, IL

DATE: 12/18/17

TAKEN BY: Matt Boladz

VIEW LOOKING: West and up at the overall view of the elevated water tank.

PHOTOGRAPH NO.: 13

NOTES: The overall condition of the tank appears to be structurally sufficient with no visible holes or visible stress concentrations through the paint. The paint is starting to discolor and deteriorate with little rust penetration.
ATTACHMENT 2
SPECIFICATIONS FOR EXTERIOR WATER STORAGE TANK REPAINTING

50 MG LATTICE LEG

FRANKFORT, ILLINOIS

JANUARY 2018

GENERAL OBJECTIVE:

The object of these specifications is to provide the material and workmanship necessary to produce a quality coating system. 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.

QUALITY OF PAINT:

The paint products 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.

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.

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.

APPLICATION OF PAINT:

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.

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%.

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. 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.

**DRY FILM THICKNESS:**

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

**TANK PAINTING CONTRACTOR QUALIFICATIONS** Bidder shall submit with the bid:

1) A list of ten (minimum) tanks of like size and painting requirements completed by the bidder within the last three years in the State of Illinois.

2) Documentation pertaining to tank painting work performed in the last five years in the State of Illinois.


5) As a prerequisite to award of the contract, the contractor shall provide proof of participation in apprenticeship and training programs approved and registered with the United States Department of Labor's Bureau of Apprenticeship and Training for all construction contracts in excess of $25,000.
BID WILL BE CONSIDERED "NON RESPONSIVE" IF THESE REQUIREMENTS ARE NOT FULFILLED.

Existing paint systems containing lead and / or other heavy metals may require compliance with certain environmental safety and health regulations during surface procedures. Always reference applicable federal, state and local regulations prior to proceeding.

CONTAINMENT / DISPOSAL REQUIREMENTS:

When required by federal, state or local regulation, the entire tank and structure shall be enclosed and surface preparation debris contained. Refer to SSPC-GUIDE 6 (CON), "Guide for Containing Debris Generated During Paint Removal Operations".

Refer to SSPC-GUIDE 7 (DIS). NOTE: All surface preparation debris must be disposed of in accordance with applicable federal, state and local regulations.

The owner is the generator of and is responsible for the proper containment and disposal of all waste resulting from the surface preparation of this tank(s). As part of this contract, the contractor shall arrange and pay for all containment, tests, permits, transportation and disposal of all waste resulting from the surface preparation of this tank(s) in strict accordance with Illinois EPA regulations. Copies of all documentation required by Illinois EPA regulations shall be submitted to the owner for verification prior to the submission of the contractor's request for final payment.

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.

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.

AMERICAN WATER WORKS ASSOCIATION:

All work shall be implemented in accordance with the American Water Works Association's Standard D102-14.

FIRST ANNIVERSARY INSPECTION:
Approximately 11 months after the completion of the work, the CONTRACTOR and CITY and or the CITY'S representative shall inspect the inside and outside surfaces of the tank, in accordance with Section 5.2 of AWWA Standard D102 to determine whether any repair work is necessary.

GUARANTEE:

The Bid shall be construed to contain a guarantee for a minimum of one (1) year for all materials and workmanship.

Any work proving defective within one year for the date of acceptance shall be redone without additional expense to the CITY for labor or materials.

EXTERIOR COATING SYSTEM – BASE BID

SURFACE PREPARATION:

Remove all oil and grease from the surface prior to blast cleaning. All exterior surfaces shall be abrasive blast cleaned to a Commercial Finish, removing all existing paint, rust, dirt, mill scale and foreign matter by the recommended methods outlined in the SSPC Society of Protective Coating's Specification SP-6. A minimum angular blast profile of 2.0 mils is required.

PRIME COAT:

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series 91-H2O Hydro-Zinc to all bare steel surfaces. This coating shall be applied at a dry film thickness of 2.5 - 3.5 mils.

INTERMEDIATE COAT:

Apply one complete coat of Tnemec Series 66HS Hi-Build Epoxoline at a dry film thickness of 2.0 - 3.0 mils.

FINISH COAT:

Apply one complete coat of Tnemec Series 73-color Endura-Shield at a dry film thickness of 2.0 - 3.0 mils.

LETTERING / LOGO PAINTING:

Two coats Tnemec Series 1074-color Endura-Shield II shall be used for the lettering/logo applied at a dry film thickness of 2.0 per coat.
SCHEDULE OF PRICES

EXTERIOR PAINTING

$ _______________________

LETTERING / LOGO

$ _______________________

CONTAINMENT / DISPOSAL

$ _______________________

TOTAL PROJECT

$ _______________________

HOURLY RATE (PER MAN HOUR) FOR REPAIRS

$ _______________________

EXTERIOR COATINGS SYSTEM - ALTERNATE 1

SURFACE PREPARATION: - Same as Base Bid

PRIME COAT: - Same as Base Bid

INTERMEDIATE COAT:
Apply one complete coat of Tnemec Series 115 UniBond DF at a dry film thickness of 2.0 - 4.0 mils.

FINISH COAT:
Apply one complete coat of Tnemec Series 30 Spra-Saf EN at a dry film thickness of 2.0 - 3.0 mils.
LETTERING / LOGO PAINTING: - Same as Base Bid

Adder or (Deduct) from Total Project $__________________

EXTERIOR COATINGS SYSTEM - ALTERNATE 2

SURFACE PREPARATION:

a. Clean all surfaces in accordance with SSPC-SP 12 LPWC (5,000-10,000 p.s.i.) with a solution of one (1) part household bleach to three (3) parts water to kill all mold and mildew present on the surface. Surface cleanliness shall be as a level as defined by SSPC SP WJ-4.

b. Rinse all surfaces with clean water prior to power tool cleaning.

c. SSPC-SP2 Hand Tool Cleaning or SSPC-SP3 Power Tool Cleaning to remove curled edges, loose rust, scale and deteriorated coatings to obtain a sound rusted surface.

d. All surfaces shall be free of all dirt, dust, grease, oil, and foreign matter prior to painting.

e. All surfaces shall be completely dry prior to painting.

Prime Coat:

Apply one complete coat of Tnemec Series 118 Uni-Bond Mastic at a dry film thickness of 6.0 – 8.0 mils.

Intermediate Coat:

Apply one complete coat of Tnemec Series 118 Uni-Bond Mastic at a dry film thickness of 6.0 – 8.0 mils.

Finish Coats:

Apply two (2) complete coat of Tnemec Series 30 Spra-Saf EN at a dry film thickness of 2.0 - 3.0 mils.

LETTERING / LOGO PAINTING: - Same as Base Bid

Adder or (Deduct) from Total Project $__________________
ATTACHMENT 3
PROPOSAL

January 4, 2018

Proposal Submitted to:

Village of Frankfort
432 West Nebraska Street
Frankfort, IL 60423

Attn: Ms. Marina Zambrano, Utility Dept. Admin. Assistant

Via e-mail: mzambrano@vofil.com

Dear Ms. Zambrano,

Era Valdivia Contractors Inc. proposes to furnish all supervision, labor, material, equipment, and insurance to complete the following work:

Scope of work:
Furnish and install a full enclosure containment system that will be in place during all surface preparation and coating work. Exterior steel surfaces will abrasive cleaned as per SSPC-SP6 (Commercial Blast Cleaning) and concrete bases will be abrasive cleaned as per CSP 3-5 surface texture. On steel surfaces apply full coat of Zinc as primer, Stripe Epoxy coat all connections and edge surfaces, Full Epoxy to steel surfaces as intermediate coat and finish with a full coat of Polyurethane. All coatings as per reference section 09895 – High Performance Coatings –The Sherwin-Williams Paint Company (Attached).

For the lump sum price of:.........................$514,000.00

Additive Alternate 1 – Name/Graphic as Existing $8,000.00

All material is guaranteed to be as specified, and the above work to be performed in accordance with site visit and specifications provided for the above scope of work and substantially completed in a professional manner for the lump sum as indicated per tank.

Schedule: Pricing is based on being performed prior to May 31, 2018

Exclusions/Clarifications:
A) Statutory insurance requirements
B) Incidental damages caused by others will be charged as an extra.
C) Owner to furnish water and staging area
D) Handling generated waste residuals and disposal as per IL /US EPA Guidelines
F) Utilize Steel Grit Abrasive Self Contained and Collection System
G) Dust Collection System – Minimum 30 - 40,000 CFM
H) Containment – Flexible/Frame/Outrigger EVC System
I) Ground cover immediate work area with impermeable tarps at 20 mils thick.
J) Owner to limit access and/or close off work area at around tower tank
K) No interior work of any kind/No welding/No steel repairs
L) Utilizing high pressure generating noise equipment
M) Provide QC/QA staff along with SSPC Lead trained and certified workers.
N) Additional work – as per hourly T & M rate and approved by Owner

We appreciate your business and value the Village of Frankfort as a customer. If you have any question please call me at 773-721-9350 or at 773-447-6658 (Mobile).

Sincerely,
Era Valdivia Contractors, Inc.

Greg Baraktaris
Senior Project Manager/Quality Control Manager
NACE Coating Inspector/CIP Bridge – Level 2 Certified
Cert. No. 26738
SSPC Competent Lead Supervisor

CC: Matthew J. Boladz, Seecon Consultants, Inc.

Note: This proposal may be withdrawn by Era Valdivia Contractors, Inc. if not accepted within 30 days.

**ACCEPTANCE OF PROPOSAL**

Era Valdivia Contractors, Inc. is hereby authorized to furnish all materials, equipment, and labor required to complete the work as described in the above proposal, for which the undersigned agrees to pay the amount stated in said proposal and according to the terms thereof.

Signature: ____________________________ Date: __________________

Title: ________________________________

SSPC – QP1/QP2 Certified Contractor
SECTION 09895
High Performance Coatings

a. ASTM E-337: Test Method for Measuring Humidity with a Psychrometer
b. ASTM D 4444 "Standard Practice for Measurement of Wet Film Thickness by Notch Gages"
c. ASTM Committee D01.23: Test Method for Nondestructive Measurement of Dry Film Thickness of Applied Organic Coatings Using an Ultrasonic Gauge
e. ASTM D 5162 "Standard Practice for Discontinuity (Holiday) Testing of Nonconductive Protective Coating on Metallic Substrates"

4. ANSI – American National Standards Institute
   11 W. 42nd Street
   NY, NY 10036

5. AWWA – American Water Works Association
   6666 W. Quincy Avenue
   Denver, CO 80235
   a. ANSI/AWWA D-100-96: Welded Steel Tanks For Water Storage
   b. ANSI/AWWA D-102-97: Coating Steel Water Storage Tanks
   c. ANSI/AWWA D-103-97: Factory Coated Bolted Steel Tanks

6. API – American Petroleum Institute
   1220 L Street N.W.
   Washington, D.C. 20005
   a. API Standard 620, Design and Construction of Large, Welded, Low Pressure Storage Tanks
   b. API Standard 650, Welded Steel Tanks for Oil Storage
   c. API Recommended Practice 651, Lining of Above Ground Petroleum Storage Tank Bottoms

1.04 Submittals:

A. Submit product data for each component specified including data substantiating that the proposed materials comply with specified requirements, and recommendations by the manufacturer covering all materials.

B. Submit contractors in house quality control program, which shall include an in-house inspector with the minimum requirements of the successful completion of NACE Session II CIP or a third party coatings inspector, for review by the owner's representative.

C. Submit insurance documentation of with a minimum requirement of $1,000,000 Commercial Vehicle combined liability, $1,000,000 general liability insurance, and $1,000,000 workers compensation.
1.05 Quality Assurance

A. Acceptable Manufacturers: A company with a minimum of 5 years experience in manufacturing of, and providing technical service for high performance coating systems equivalent to those specified herein.

B. Single Source Supply: All products described in Part 2.01 shall be manufactured by or approved for use by the manufacturer of the high performance coating system specified herein.

C. Installer Qualifications: A firm experienced in the application of high performance coating systems in the water and waste water treatment industry with a minimum of 5 previously completed projects in the last year. The references shall include, the customers name, address, phone number and dollar amount of the total coatings project.

D. Pre-Installation Conference

1. The contractor, the installation sub-contractor, and the high performance coating system manufacturer’s representative shall meet on site with the owner’s representative. Particular emphasis shall be placed on these specifications, safety, weather conditions, surface preparation, material application, and inspection.

2. The contractor shall submit to the owner’s representative any revisions or changes agreed upon, reasons thereof, and parties agreeing or disagreeing with them.

E. Substrate Conditions: Do not proceed with work until substrate preparation and tolerances have been approved by the owner’s representative, the approved installation sub-contractor, the high performance coating system manufacturer’s representative, and the contractor.

1.06 Delivery, Storage, and Handling

A. Deliver products to the job site in manufacturer’s original, unopened containers bearing manufacturer’s name and label and the following information:

1. Product name
2. Product description (generic product classification)
3. Manufacturer’s lot number
4. Color

B. Store materials in sealed original manufacturer’s containers. Store materials in a protected area out of direct sunlight. Keep containers clean and undamaged. Adhere to manufacturer’s published storage temperature and shelf life recommendations. Protect all materials from freezing.
2.00 PRODUCTS

2.01 Acceptable Manufacturers and Materials

A. The high performance coating system as manufactured by The Sherwin-Williams Company, Cleveland, Ohio or an approved equal to the products specified herein.

2.02 Performance Criteria

A. The high performance coating system shall be resistant to the chemical concentrations, temperatures, and duration of exposure, impact, wear, and abrasion conditions as submitted by the owner or authorized owners' representative. Physical properties of the coatings shall meet or exceed those listed on the product data sheet for the proposed coatings.

3.0 EXECUTION

3.01.1 Surface Preparation

A. The structures to be coated in this specification shall be prepared by method of surface preparation described within the coatings survey for the coating system specified and the following notes shall be part of the specification.

- All pipe penetrations shall be sealed to the substrate that they penetrate utilizing either polyurethane sealant or polysulfide sealant as directed by the coatings manufacturer's representative.
- All skid welds, back-to-back angles, flanges and areas inaccessible to the application of coatings shall be sealed prior to topcoating with either polyurethane sealant or polysulfide sealant as directed by the coatings manufacturer's representative.
- Contrasting colors shall be utilized for each coat in a multiple coat application for ease of visual inspection.
- Brush & Roller applications may require additional coats to achieve the specified dry film thicknesses.
- All interior tank linings and secondary containment covered in this specification shall include preparation work and detailing per detail drawings.
- All coatings systems shall receive a stripe coat application of the primer or intermediate coat on all sharp edges, angles, outside corners, nuts and bolts prior to a full coat over the entire surface.
- The coatings manufacturer shall address all interior tank linings and secondary containment not covered by this survey prior to the bid.
- All cementious repairs shall receive specified surface preparation prior to coatings application.
SECTION 09895
High Performance Coatings

- Allowable chloride contamination shall be 10 micrograms per centimeter square for atmospheric service conditions and 5 micrograms per centimeter square for immersion service conditions.
- Complete mixing instructions, surface preparation, and environmental conditions shall be reviewed and adhered to per manufacturer's product data page.

3.02 Application

A. Paint shall not be applied until an owner's representative provides approval that the surface preparation is compliant to the specified standards.

B. Comply with manufacturer's written installation procedures and individual product data sheet application bulletins.

C. Apply materials in accordance with the coatings specification for the system listed below:

AWWA Outside Coating System (OCS) No. 6 (ZRP/Epoxy/Urethane):

2. Exterior Surfaces
   a. Field: Surface Preparation: SSPC SP6 Commercial Blast Cleaning
   b. Primer Coat: Sherwin Williams Corathane Galvapac 2K Zinc @ 2.0-3.0 mils DFT.
   c. Stripe Coat: Sherwin Williams Macropoxy 646 Epoxy @4.0-6.0 mils DFT.
   d. Intermediate Coat: Sherwin Williams Macropoxy 646 Epoxy @ 4.0-6.0 mils DFT.
   e. Finish Coat: Sherwin Williams Hi-Solids Polyurethane @ 3.0-5.0 mils DFT.

3.03. Inspection and Testing

A. The owner or owner's authorized representative may require the services of an independent testing laboratory to test the installed system.

B. If test results indicate noncompliance with the specification, the following corrective action may be required of the Contractor:

   1. Remove non-compliant systems or components.
   2. Replace system or components in (1)
   3. Assume the testing expenses.

C. Minimum requirements of the chemical resistant system are that it be free of the following:

   1. Uncured material
   2. Inadequate thickness
   3. Pinholes
   4. Blisters
   5. Delamination
   6. Foreign matter
   7. Unspecified materials
3.04. Protection

A. High performance coating systems shall be protected from damage or detrimental elements during cure and until the time of final acceptance.

End of Section 09895