

CITY OF WEST CHICAGO

WHERE HISTORY & PROGRESS MEET

INFRASTRUCTURE COMMITTEE

**Thursday, April 1, 2021
7:00 P.M. – Committee Room A**

During the COVID-19 Pandemic, those wishing to attend public meetings of the Infrastructure Committee are welcome to do so at City Hall. You may attend in person and listen to the audio of the meeting, or via teleconference from home or another location on the Zoom app. Downloading Zoom from zoom.us will provide the audio link to the meeting. Anyone wishing to provide comment on a topic or an agenda item may address the Infrastructure Committee by 4:00 p.m. the day of the meeting. You may do so by either an online form on the City's website, email to publicworks@westchicago.org, or voicemail message at (630) 293-2255. Your comment to the Infrastructure Committee will be read during the Public Participation portion of the agenda.

Meeting ID: 811 1183 4933

Password: 356082

AGENDA

1. Call to Order, Roll Call, and Establishment of a Quorum
2. Approval of Minutes
 - A. Infrastructure Committee of March 4, 2021
3. Public Participation / Presentations
4. Items for Consent
 - A. Waive the Competitive Bidding Process and Authorize the Purchase of Fall Protection Equipment for all Sanitary Sewer Lift Stations from USA Bluebook
 - B. Resolution No. 21-R-0022 - Contract Award – Trotter and Associates, Inc. for Engineering Design Services Related to the Booster Station #8 Rehabilitation Project
 - C. Resolution No. 21-R-0023 - Contract Award – KLM Engineering, Inc. – Professional Engineering Services Related to the Booster Station #8 Ground Storage Tank Rehabilitation Project
 - D. Waive the Competitive Bidding Process and Approve Resolution No. 21-R-0024 - Contract Award – The FLOLO Corporation for Professional Services Related to the Rehabilitation of Three Water Treatment Plant High Service Pump Motors
5. Items for Discussion
6. Unfinished Business
7. New Business
8. Reports from Staff
9. Adjournment

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Ruben Pineda
MAYOR
Nancy M. Smith
CITY CLERK

Michael L. Guttman
CITY ADMINISTRATOR

CITY OF
WEST CHICAGO

WHERE HISTORY & PROGRESS MEET

Draft

MINUTES

INFRASTRUCTURE COMMITTEE

March 4, 2021 7:00 P.M.

1. Call to Order, Roll Call, and Establishment of a Quorum. Chairman Beifuss called the meeting to order at 7:00 P.M. Roll call found Alderman James Beifuss present in-person, and Aldermen Heather Brown, Sandra Dimas, Matt Garling, Alton Hallett, and Joe Morano present via Zoom teleconference. Alderman Jeanne Short was absent.

Staff present in-person included Director of Public Works Robert Flatter. Administrative Assistant Ashley Heidorn and Utility Division Superintendent Rocky Horvath were present via Zoom teleconference. Mayor Pineda has determined that in-person meetings are not practical and prudent.

2. Approval of Minutes

A. Infrastructure Committee Minutes of February 4, 2021. Alderman Brown made a motion, seconded by Alderman Hallett to approve the Meeting Minutes of February 4, 2021.

Roll call was taken. Voting Yea: Aldermen Beifuss, Brown, Dimas, Hallett, and Morano. Voting Nay: 0. Abstaining: Alderman Garling.

3. Public Participation / Presentations. None.

4. Items for Consent. Alderman Brown requested discussion on Consent Items B, C, and E, and Alderman Beifuss requested discussion on Consent Item F. **Alderman Dimas made a motion, seconded by Alderman Brown to approve:**

- A. Resolution No. 21-R-0012 – Contract Award – Starnet Technologies for Services Related to the Lift Station #1 Control Building Repair Project
- D. Resolution No. 21-R-0015 – Contract Award – Emerald Tree Care, LLC for the 2021 Emerald Ash Borer Insecticidal Treatment Program

Roll call found the vote unanimous for approval. Voting Yea: Aldermen Beifuss, Brown, Dimas, Garling, Hallett, and Morano. Voting Nay: 0.

5. Items for Discussion.

4.B. Resolution No. 21-R-0013 – Contract Award – Hillside Addition and Roosevelt Highlands Subdivision Rehabilitation Project. Alderman Brown inquired about the bid results for this project. Mr. Flatter noted that A Lamp Concrete Contractors, Inc. was the lowest bidder on this project, and with any kind of sealed bid the City generally moves forward with the lowest bidder if they are determined to be the lowest responsible bidder. A Lamp Concrete has done satisfactory work for the City in the past, and the provided references were still checked to make sure no problems or complaints have come up since then. **Alderman Dimas made a motion, seconded by Alderman Brown to approve.**

Roll call found the vote unanimous for approval. Voting Yea: Aldermen Beifuss, Brown, Dimas, Garling, Hallett, and Morano. Voting Nay: 0.

4.C. Resolution No. 21-R-0014 – Contract Award – KLM Engineering, Inc. – Professional Engineering Services Related to the 2021 Booster Station #4 Ground Storage Tank Rehabilitation Project. Alderman Brown inquired if KLM Engineering, Inc. looked into these conditions when they were doing some work for the City in 2019. Mr. Flatter explained that the work in 2019 was actually for a different structure but the work being done on Booster Station #4 at that time resulted in the inspection and evaluation of the ground storage tank. Mr. Horvath noted that prior to 2019 the last time inspections were able to be completed was sometime in the 1990s because the station was constantly in use. Mr. Flatter explained that it is common practice to conduct inspections towards the end of the tank's expected useful life so as not to expose the water or system to contamination by more frequent inspections. **Alderman Dimas made a motion, seconded by Alderman Brown to approve.**

Roll call found the vote unanimous for approval. Voting Yea: Aldermen Beifuss, Brown, Dimas, Garling, Hallett, and Morano. Voting Nay: 0.

4.E. Resolution No. 21-R-0016 – Contract Award – Layne Christensen Company for Professional Services Related to the 2021 Well Station No. 10 Rehabilitation Project. Alderman Brown asked if it was worthwhile to use a different company for this project given previous failures after utilizing Layne Christensen in the past. Mr. Horvath explained that the issues at Well Station No. 10 have not really been an issue of workmanship or materials but a result of the water quality that the well actually pumps. In the past when the City has worked with other vendors they have not been as successful for the City as Layne has been. Mr. Flatter noted that Layne installs and services Byron Jackson pumps and motors, which staff believes to be the top of the line well products to use. This well is used almost daily so the rehabilitation is almost to be expected given the environment it must operate under; it is not a reflection of the workmanship of Layne Christensen or the quality of the Byron Jackson pump and motor. Alderman Beifuss inquired what would happen if the motor is determined to be bad, and Mr. Horvath explained that a new motor has been quoted at \$115,772.00 if inspection determines that the current unit cannot be reused. Staff does not believe this will be the case, so that amount

would not be spent unless absolutely necessary. Alderman Brown asked if the City should start budgeting more in the future for other pumps and motors. Mr. Flatter noted that Mr. Horvath actually monitors electric usage and pumpage daily from the nine wells the City has, which gives staff a clue as to when maintenance will be needed in the future. **Alderman Dimas made a motion, seconded by Alderman Brown to approve.**

Roll call found the vote unanimous for approval. Voting Yea: Aldermen Beifuss, Brown, Dimas, Garling, Hallett, and Morano. Voting Nay: 0.

4.F. Resolution No. 21-R-0019 - Contract Award – Crystal Maintenance Services Corporation for 2021 Janitorial Services for Municipal Buildings. Alderman Beifuss requested a status update on this Item. Mr. Flatter explained that Crystal Maintenance provided contractual janitorial services for the City in 2019 as lowest responsible bidder, and the City gave them a one-year extension to provide services in 2020 as well. The City went to bid in 2021, and Atalian US Midwest, LLC, came in as the lowest bidder. Staff checked Atalian’s references, which came back with good recommendations, and Atalian began services on January 3, 2021. On January 11, 2021, Atalian began having difficulty retaining staff and fulfilling its contractual obligations. Then on February 21, 2021, Atalian notified City staff that it was without any personnel to provide janitorial services for any City facility. As a result, the City terminated Atalian’s Contract Agreement on February 22, 2021. City staff turned to Crystal Maintenance for interim cleaning services. Crystal Maintenance submitted the fourth lowest bid for the 2021 Janitorial Services, however, as demonstrated by Atalian, there are no performance guarantees and risks are increased with hiring unknown contractors. Given the urgency and the fact that Crystal Maintenance staff is already familiar with the operations, it is staff’s recommendation to execute a contract with Crystal Maintenance for 2021 Janitorial Services. **Alderman Dimas made a motion, seconded by Alderman Hallett to approve.**

Roll call found the vote unanimous for approval. Voting Yea: Aldermen Beifuss, Brown, Dimas, Garling, Hallett, and Morano. Voting Nay: 0.

6. Unfinished Business. None.

7. New Business. Alderman Brown inquired if the City has other water tanks in need of inspection. Mr. Flatter explained that all of the City’s tanks were inspected in 2020 and repairs are being budgeted for over the next four-to-five years.

Mr. Flatter indicated that the Illinois Department of Transportation reached out to the City regarding the concrete retaining wall along Route 59 near Forest Avenue, which holds up Hahn Place. In January, Mr. Flatter provided review comments on their preliminary design for the wall and suggested a block texture design with paint or stain and graffiti coating, rather than solid concrete, for an aesthetic appeal as part of the gateway into the City. IDOT indicated they would include that in the specifications but they expect the City to incur 100% of the costs, which could be an estimated \$50,000.00. As an unfunded project that would be paid for out of

the Capital Projects Fund, Mr. Flatter wanted to confirm the Committee's thoughts on paying for a more aesthetically pleasing design. Discussion followed. Aldermen Brown and Dimas expressed that they thought a solid concrete wall would be sufficient. Aldermen Beifuss, Garling, and Hallett believed the block design would be more attractive as a gateway to the City. **Alderman Garling made a motion, seconded by Alderman Hallett, to approve the aesthetic improvements recommended by City staff for up to \$60,000.00.**

Roll call was taken. Voting Yea: Aldermen Beifuss, Dimas, Garling, Hallett, and Morano. Voting Nay: 0. Abstaining: Alderman Brown.

8. Reports from Staff. None.

9. Adjournment. At 8:14 P.M., Alderman Hallett made a motion to adjourn, seconded by Alderman Dimas. Roll call found the vote unanimous for approval.

Respectfully submitted,

Ashley Heidorn
Administrative Assistant of Public Works

CITY OF WEST CHICAGO

INFRASTRUCTURE COMMITTEE AGENDA ITEM SUMMARY

ITEM TITLE:

Waive the Competitive Bidding Process and Authorize the Purchase of Fall Protection Equipment for all Sanitary Sewer Lift Stations from USA Bluebook

AGENDA ITEM NUMBER:4.A.**COMMITTEE AGENDA DATE:** April 1, 2021**COUNCIL AGENDA DATE:** April 5, 2021**STAFF REVIEW:** Robert E. Flatter, P.E., Director of Public Works**SIGNATURE** **APPROVED BY CITY ADMINISTRATOR:** Michael L. Guttman**SIGNATURE** _____**ITEM SUMMARY:**

In our continued commitment to staff safety, within the Fiscal Year 2021 Sewer Fund Budget, \$58,500 has been included to purchase and install fall protection equipment at thirteen of the City's sanitary sewer lift stations that currently do not have any fall protection associated with the stations wet well vaults. Fall protection is an assembly of components intended to protect the user against falls from height. In this case providing protection from a fall into a sanitary lift station wet well vault, which is a covered concrete structure or pit where raw sewage flows into and collects prior to being pumped through a sanitary sewer forcemain. The City's various sanitary sewer lift station wet well vaults range between 14 and 40 feet deep.

For staff to perform certain required maintenance tasks at each sanitary sewer lift station, the wet well vault lid/access hatch must remain open. Various maintenance tasks (i.e., cleaning, pulling pumps, replacing floats, etc.) require staff to lean over and/or reach into these wet well vaults. Existing OSHA and Illinois Department of Labor regulations require fall protection be utilized at any height greater than four feet.

After researching available options, staff requests approval to purchase DBI SALA fall arrest systems for all of our lift stations. This fall arrest system includes:

- Body harness for each employee.
- Self-retracting, energy absorbing lifelines.
- Anchor base mounted at each sanitary lift station.
- Anchor post for each sanitary lift station.

The proposed system will allow up to three employees to be secure at one time. City staff are familiar with and trained in the usage of the DBI Sala system as we currently use the equipment at Sanitary Sewer Lift Station #1 (fall protection system installed when the lift station was rehabilitated in 2019).

Pricing was obtained from three vendors with USABlueBook of Gurnee, Illinois, offering the lowest price of \$51,233.36 for all required equipment. Therefore, based on comparable pricing received, City staff is seeking authorization to waive the competitive bidding process and purchase of fall protection equipment for all of the City's sanitary sewer lift stations from USABlueBook, for the amount not to exceed \$51,233.36.

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ACTIONS PROPOSED:

Waive the Competitive Bidding Process and that the West Chicago City Council authorize the purchase of Fall Protection Equipment for all of the City Sanitary Sewer Lift Stations from USABlueBook, for an amount not to exceed \$51,233.36.

COMMITTEE RECOMMENDATION:

CITY OF WEST CHICAGO

INFRASTRUCTURE COMMITTEE AGENDA ITEM SUMMARY

ITEM TITLE:

Resolution No. 21-R-0022 - Contract Award – Trotter and Associates, Inc. for Engineering Design Services Related to the Booster Station #8 Rehabilitation Project

AGENDA ITEM NUMBER:4.B.**COMMITTEE AGENDA DATE:** April 1, 2021**COUNCIL AGENDA DATE:** April 5, 2021**STAFF REVIEW:** Robert E. Flatter, P.E., Director of Public Works**SIGNATURE** **APPROVED BY CITY ADMINISTRATOR:** Michael L. Guttman**SIGNATURE** _____**ITEM SUMMARY:**

Within the Fiscal Year 2021 Water Fund Budget, money has been included for professional engineering design services related to the Booster Station #8 Rehabilitation Project (construction anticipated in Fiscal Year 2022). Booster Station #8, located at 1255 Helena Drive, is one of the City's two booster stations, with associated ground storage tanks, used to increase available water in the distribution system during peak demand periods, which is accomplished with pumps at the booster station that operate based on water system pressure. As more water is drawn or needed from the water distribution system, the overall system pressure drops. Booster stations are used to maintain system pressure, fill water towers, and provide water to fight fires. The site/property containing Booster Station #8 also contains Well Station #8 and Well Station #9.

Booster Station #8 and Well Station #8 (shallow well) were initially constructed together in 1989. Well Station #9 (deep well) was constructed in 1993. No major improvements have been completed at Booster Station #8 since its original construction. Well Station #8 was rehabilitated in 2020 and Well Station #9 was rehabilitated in 2018. After more than 31 years of service life, improvements are warranted at Booster Station #8; the electrical system and motor control equipment is antiquated and unreliable.

Anticipated improvements associated with the Booster Station #8 Rehabilitation Project (Project) will include, but are not limited to, the following:

- Replacement of three existing 75 HP pumps and associated piping and valves.
- Replacement of existing well control panels.
- Replacement of generator controls.
- Addition of variable frequency drives on the three new 75 HP pumps.
- Replacement of pump starters in the existing motor control cabinet (MCC).
- SCADA improvements to incorporate changes and upgrade Programmable Logic Controller (PLC).
- Electrical system improvements/upgrades as determined necessary.

Please note that the existing on-site 0.5 MG ground storage tank also requires improvements, but will be addressed under a separate Infrastructure Committee agenda write-up.

Trotter and Associates, Inc. (Trotter) of St. Charles, Illinois, has recently completed several projects of this nature and previously performed design work for the City. Therefore, City staff asked Trotter for an engineering design proposal for the proposed project. Engineering design services will include, but not be limited to, coordination with effected agencies (i.e., Illinois Environmental Protection Agency (IEPA)),

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permit applications, development of design plans, development of project specifications, and development of bid documents. Trotter and Associates submitted a cost proposal of \$68,900.

It is staff's recommendation that a contract be awarded to Trotter and Associates, Inc. of St. Charles, Illinois, for engineering design services related to the Booster Station #8 Rehabilitation Project, for an amount not to exceed \$68,900.00.

ACTIONS PROPOSED:

Approve Resolution No. 21-R-0022 authorizing the Mayor to execute a contract with Trotter and Associates, Inc., in an amount not to exceed \$69,800.00, for engineering design services related to the Booster Station #8 Rehabilitation Project.

COMMITTEE RECOMMENDATION:

RESOLUTION NO. 21-R-0022

**A RESOLUTION AUTHORIZING THE MAYOR TO EXECUTE
A CONTRACT WITH TROTTER AND ASSOCIATES, INC. FOR
ENGINEERING DESIGN SERVICES RELATED TO THE BOOSTER
STATION #8 REHABILITATION PROJECT**

BE IT RESOLVED by the City Council of the City of West Chicago, in regular session assembled, that the Mayor is hereby authorized to execute a Contract for Professional Engineering Services related to Engineering Design Services for the Booster Station #8 Rehabilitation Project, between Trotter and Associates, Inc. and the City of West Chicago, for an amount not to exceed \$69,800.00, in substantially the form attached hereto and incorporated herein as Exhibit "A".

APPROVED this 5th day of April 2021.

AYES: _____

NAYES: _____

ABSTAIN: _____

ABSENT: _____

Mayor Ruben Pineda

ATTEST:

City Clerk Nancy M. Smith



April 1, 2021

Mr. Robert E. Flatter, P.E.
Director of Public Works
Public Works Department
City of West Chicago
475 Main Street
West Chicago, Illinois 60185

Re: Well No. 8 Pump Station Rehabilitation Design
Professional Services Agreement and Exhibits

Dear Mr. Flatter,

Trotter and Associates, Inc. (ENGINEER) is pleased to provide professional design services to the City of West Chicago (CLIENT) for the Well No. 8 Booster Pumping Station Rehabilitation project (hereinafter referred to as the "PROJECT").

PROJECT UNDERSTANDING

The Well No. 8 Pumping Station and Reservoir is located at 1255 Helena Drive in West Chicago. The facilities include a 500,000-gallon ground level steel reservoir and a building that houses Well No. 8, three booster pumps, a standby power engine generator, generator fuel storage, chlorination equipment, and polyphosphate feed equipment. All the facilities on this site were constructed in 1989, and the site includes space for the future construction of a second 500,000-gallon ground level reservoir.

The project includes the replacement of:

- Three (3) booster pumping units including new variable frequency drives.
- Pump control panels for Wells No. 8 and No. 9.
- SCADA cabinet.
- Engine generator controls.
- Booster pumping station roof.

The rehabilitation of the steel storage reservoir will be completed by others under a separate contract.

SCOPE OF SERVICES

Our services will consist of customary survey services and civil, mechanical, electrical, structural, and related engineering services, incidental thereto, described below.

Task 1: Survey Services

- Perform topographic surveys of the Well No. 8 Pump Station and Reservoir site and adjacent Helena Drive right-of-way. Perform necessary field work to accurately depict permanent features and make field surveys as required to obtain above ground supplemental topographic information relative to planimetric and topographic features within the site limits.

- Obtain invert elevations on manholes/vault structures within the project limits.
- Obtain location of JULIE field marked underground utility locations. The City will request the JULIE locate and will field mark the location of their facilities within the project limits prior to the survey.
- Perform a property boundary survey and locate property corners.

Task 2: Preliminary Design Services

- Select booster pumping units and size pump motors.
- Develop booster pumping system schematic showing instrumentation, system interlinks, and controls signals. Develop SCADA interface requirements.
- Prepare preliminary floor plan and sections for the booster pumping station.
- Prepare preliminary roof plan for pumping station superstructure.
- Prepare preliminary site piping plan.
- Meet with City staff to review the preliminary design, review and discuss City comments.

Task 3: Final Design Services

- Prepare design drawings including General, Civil, Structural, Architectural, Equipment, Electrical drawings showing the general nature of the work and the intent of the design.
- Prepare the Project Manual including Front-End Bidding Documents, General Conditions, Supplementary Conditions, and Technical Specifications.
- Prepare the Engineer's Opinion of Probable Construction Costs.
- Submit permit application to the IEPA for their permit to construct.

Changes to the scope of services outlined in this agreement shall be authorized through execution of an Exhibit D - Contract Addendum. Construction-related services including contract administration and on-site observation will be provided under a separate Agreement.

COMPENSATION

An amount equal to the cumulative hours charged to the Project by each class of ENGINEER's employees times Standard Hourly Rates for each applicable billing class for all services performed on the Project, plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any.

ENGINEER's Reimbursable Expenses Schedule and Standard Hourly Rates are attached to this Exhibit B. Reimbursable Expenses included in the contract are limited to items listed in Exhibit B. All expenses that are not included in Exhibit B shall be considered outside the contract and shall be considered as extra and

compensated for at cost. For example: title commitments, permit fees, architectural renderings, special public meetings, out of town travel expenses, consultant services beyond those identified in the scope, or items specifically requested by the Owner.

The total compensation for services is estimated to be \$68,900 based on the following assumed distribution of compensation:

| | |
|--------------------------|----------|
| Survey Services | \$6,400 |
| Preliminary Design | \$27,400 |
| Final Design | \$34,800 |
| Design Engineering Fees | \$68,600 |
| Reimbursable Expenses | \$300 |
| Total Design Engineering | \$68,900 |

ENGINEER may alter the distribution of compensation between individual phases of the work noted herein to be consistent with services actually rendered but shall not exceed the total estimated compensation amount unless approved in writing by CLIENT. The total estimated compensation for ENGINEER's services included in the breakdown by phases incorporates all labor, overhead, profit, Reimbursable Expenses and ENGINEER's Consultant's charges. The amounts billed for ENGINEER's services will be based on the cumulative hours charged to the PROJECT during the billing period by each class of ENGINEER's employees times Standard Hourly Rates for each applicable billing class, plus Reimbursable Expenses and ENGINEER's Consultant's charges. The Standard Hourly Rates and Reimbursable Expenses Schedule will be adjusted annually as of January 1st to reflect equitable changes in the compensation payable to ENGINEER.

MISCELLANEOUS

This Agreement constitutes the entire agreement between the parties and supersedes any prior oral or written representations. This agreement may not be changed, modified, or amended except in writing signed by both parties. In the event of any conflict among the exhibits, the exhibit of the latest date shall control.

ENGINEER may have portions of the Services performed by its affiliated entities or their employees, in which event ENGINEER shall be responsible for such services and CLIENT shall look solely to ENGINEER as if ENGINEER performed the Services. In no case shall CLIENT'S approval of any subcontract relieve ENGINEER of any of its obligations under this Agreement. However, ENGINEER is not responsible whatsoever for any obligations its subcontractors might have to its [subcontractors'] employees, including but not limited to proper compensation of its employees.

In the event CLIENT uses a purchase order form or other CLIENT developed document to administer this Agreement, the use of such documents shall be for the CLIENT's convenience only, and any provisions, terms or conditions within the CLIENT developed document shall be deemed stricken, null and void. Any provisions, terms or conditions which the CLIENT would like to reserve shall be added to Exhibit C – Supplemental Conditions and agreed to by both parties.

CONTENTS OF AGREEMENT

This Agreement and the Exhibits attached hereto and incorporated herein, represent the entire understanding with respect to the Project and may only be modified in writing signed by both parties.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement.

CLIENT:

Trotter and Associates, Inc.:



By: Ruben Pineda

By: Steve Cieslica, PE

Title: Mayor

Title: Vice President

Effective Date: _____

Date Signed: April 1, 2021

Address for giving notices:

Address for giving notices:

475 Main Street
West Chicago, IL 601875

40W201 Wasco Road, Suite D
St. Charles, IL 60175

Designated Representative:

Designated Representative:

Robert E. Flatter, PE

Steven Cieslica, PE

Title: Director of Public Works

Title: Vice President

Phone Number: 630-293-2255

Phone Number: 630-587 0470

Facsimile Number: 630-293-3028

Facsimile Number: 630-587- 0475

E-Mail Address: RFlatter@westchicago.org

E-Mail Address: s.cieslica@trotter-inc.com

ATTACHMENTS:

EXHIBIT A – STANDARD TERMS AND CONDITIONS

EXHIBIT B – SCHEDULE OF HOURLY RATES AND REIMBURSIBLE EXPENSES

EXHIBIT C – SUPPLEMENTAL GENERAL CONDITIONS

EXHIBIT D – CONTRACT ADDENDUM

CLIENT Initial _____

TAI Initial _____



EXHIBIT A - STANDARD TERMS AND CONDITIONS

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ARTICLE 1 - SERVICES OF ENGINEER

1.01 Scope

A. ENGINEER shall provide the Professional Services set forth herein and in the Letter Agreement.

B. Upon this Agreement becoming effective, ENGINEER is authorized to begin Services.

ARTICLE 2 - CLIENT'S RESPONSIBILITIES

2.01 General

A. Provide ENGINEER with all criteria and full information as to CLIENT's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations; and furnish copies of all design and construction standards which CLIENT will require to be included in the Drawings and Specifications; and furnish copies of CLIENT's standard forms, conditions, and related documents for ENGINEER to include in the Bidding Documents, when applicable.

B. Furnish to ENGINEER any other available information pertinent to the Project including reports and data relative to previous designs, or investigation at or adjacent to the Site.

C. Following ENGINEER's assessment of initially-available Project information and data and upon ENGINEER's request, furnish or otherwise make available such additional Project related information and data as is reasonably required to enable ENGINEER to complete its Basic and Additional Services. Such additional information or data would generally include the following:

1. Property descriptions.
2. Zoning, deed, and other land use restrictions.
3. Property, boundary, easement, right-of-way, and other special surveys or data, including establishing relevant reference points.
4. Explorations and tests of subsurface conditions at or contiguous to the Site, drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site, or hydrographic surveys, with appropriate professional interpretation thereof.
5. Environmental assessments, audits, investigations and impact statements, and other relevant environmental or cultural studies as to the Project, the Site, and adjacent areas.
6. Data or consultations as required for the Project but not otherwise identified in the Agreement or the Exhibits thereto.

D. Give prompt written notice to ENGINEER whenever CLIENT observes or otherwise becomes aware of a Hazardous Environmental Condition or of any other development that affects the scope or time of performance of ENGINEER's services, or any defect or nonconformance in ENGINEER's services or in the work of any Contractor.

E. Authorize ENGINEER to provide Additional Services as set forth in Exhibit D - Addendum of the Agreement as required.

- F. Arrange for safe access to and make all provisions for ENGINEER to enter upon public and private property as required for ENGINEER to perform services under the Agreement.
- G. Examine all alternate solutions, studies, reports, sketches, Drawings, Specifications, proposals, and other documents presented by ENGINEER (including obtaining advice of an attorney, insurance counselor, and other advisors or consultants as CLIENT deems appropriate with respect to such examination) and render in writing timely decisions pertaining thereto.
- H. Provide reviews, approvals, and permits from all governmental authorities having jurisdiction to approve all phases of the Project designed or specified by ENGINEER and such reviews, approvals, and consents from others as may be necessary for completion of each phase of the Project.
- I. Provide, as required for the Project:
 - 1. Accounting, bond and financial advisory, independent cost estimating, and insurance counseling services.
 - 2. Legal services with regard to issues pertaining to the Project as CLIENT requires, Contractor raises, or ENGINEER reasonably requests.
 - 3. Such auditing services as CLIENT requires to ascertain how or for what purpose Contractor has used the moneys paid.
 - 4. Placement and payment for advertisement for Bids in appropriate publications.
- J. Advise ENGINEER of the identity and scope of services of any independent consultants employed by CLIENT to perform or furnish services in regard to the Project, including, but not limited to, cost estimating, project peer review, value engineering, and constructability review.
- K. Furnish to ENGINEER data as to CLIENT's anticipated costs for services to be provided by others for CLIENT so that ENGINEER may make the necessary calculations to develop and periodically adjust ENGINEER's opinion of Total Project Costs.
- L. If CLIENT designates a manager or an individual or entity other than, or in addition to, ENGINEER to represent CLIENT at the Site, the duties, responsibilities, and limitations of authority of such other party shall be disclosed to the ENGINEER and coordinated in relation to the duties, responsibilities, and authority of ENGINEER.
- M. If more than one prime contract is to be awarded for the Work designed or specified by ENGINEER, designate a person or entity to have authority and responsibility for coordinating the activities among the various prime Contractors, and define and set forth the duties, responsibilities, and limitations of authority of such individual or entity and the relation thereof to the duties, responsibilities, and authority of ENGINEER is to be mutually agreed upon and made a part of this Agreement before such services begin.
- N. Attend the pre-bid conference, bid opening, pre-construction conferences, construction progress and other job related meetings, and Substantial Completion and final payment inspections.
- O. Provide the services of an independent testing laboratory to perform all inspections, tests, and approvals of Samples, materials, and equipment required by the Contract Documents, or to evaluate the performance of materials, equipment, and facilities of CLIENT, prior to their incorporation into the Work with appropriate professional interpretation thereof.
- P. Provide inspection or monitoring services by an individual or entity other than ENGINEER (and disclose the identity of such individual or entity to ENGINEER) as CLIENT determines necessary to verify:
 - 1. That Contractor is complying with any Laws and Regulations applicable to Contractor's performing and furnishing the Work.
 - 2. That Contractor is taking all necessary precautions for safety of persons or property and complying with any special provisions of the Contract Documents applicable to safety.
- Q. Provide ENGINEER with the findings and reports generated by the entities providing services pursuant to paragraphs 2.01.O and P.

ARTICLE 3 - TIMES FOR RENDERING SERVICES

3.01 General

- A. ENGINEER's services and compensation under this Agreement have been agreed to in anticipation of the orderly and continuous progress of the Project through completion. Unless specific periods of time or specific dates for providing services are specified in this Agreement, ENGINEER's obligation to render services hereunder will be for a period which may reasonably be required for the completion of said services.
- B. If in this Agreement specific periods of time for rendering services are set forth or specific dates by which services are to be completed are provided, and if such periods of time or dates are changed through no fault of ENGINEER, the rates and amounts of compensation provided for herein shall be subject to equitable adjustment. If CLIENT has requested changes in the scope, extent, or character of the Project, the time of performance of ENGINEER's services shall be adjusted equitably.
- C. For purposes of this Agreement the term "day" means a calendar day of 24 hours.

3.02 Suspension

- A. If CLIENT fails to give prompt written authorization to proceed with any phase of services after completion of the immediately preceding phase, or if ENGINEER's services are delayed through no fault of ENGINEER, ENGINEER may, after giving seven days written notice to CLIENT, suspend services under this Agreement.
- B. If ENGINEER's services are delayed or suspended in whole or in part by CLIENT, or if ENGINEER's services are extended by Contractor's actions or inactions for more than 90 days through no fault of ENGINEER, ENGINEER shall be entitled to equitable adjustment of rates and amounts of compensation provided for elsewhere in this Agreement to reflect, reasonable costs incurred by ENGINEER in connection with, among other

things, such delay or suspension and reactivation and the fact that the time for performance under this Agreement has been revised.

ARTICLE 4 - PAYMENTS TO ENGINEER

4.01 Methods of Payment for Services and Reimbursable Expenses of ENGINEER

- A. *For Basic Services.* CLIENT shall pay ENGINEER for Basic Services performed or furnished under as outlined in the Letter Agreement
- B. *For Additional Services.* CLIENT shall pay ENGINEER for Additional Services performed or furnished as outlined in Exhibit D
- C. *For Reimbursable Expenses.* CLIENT shall pay ENGINEER for Reimbursable Expenses incurred by ENGINEER and ENGINEER's Consultants as set forth in Exhibit B.

4.02 Other Provisions Concerning Payments

- A. *Preparation of Invoices.* Invoices will be prepared in accordance with ENGINEER's standard invoicing practices and will be submitted to CLIENT by ENGINEER, unless otherwise agreed
- B. *Payment of Invoices.* Invoices are due and payable within 30 days of receipt. If CLIENT fails to make any payment due ENGINEER for services and expenses within 30 days after receipt of ENGINEER's invoice therefor, the amounts due ENGINEER will be increased at the rate of 1.0% per month (or the maximum rate of interest permitted by law, if less) from said thirtieth day. In addition, ENGINEER may, after giving seven days written notice to CLIENT, suspend services under this Agreement until ENGINEER has been paid in full all amounts due for services, expenses, and other related charges. Payments will be credited first to interest and then to principal.
- C. *Disputed Invoices.* In the event of a disputed or contested invoice, only that portion so contested may be withheld from payment, and the undisputed portion will be paid.
- D. *Payments Upon Termination.*
 - 1. In the event of any termination under paragraph 6.06, ENGINEER will be entitled to invoice CLIENT and will be paid in accordance with Exhibit B for all services performed or furnished and all Reimbursable Expenses incurred through the effective date of termination.
 - 2. In the event of termination by CLIENT for convenience or by ENGINEER for cause, ENGINEER, in addition to invoicing for those items identified in subparagraph 4.02.D.1, shall be entitled to invoice CLIENT and shall be paid a reasonable amount for services and expenses directly attributable to termination, both before and after the effective date of termination, such as reassignment of personnel, costs of terminating contracts with ENGINEER's Consultants, and other related close-out costs, using methods and rates for Additional Services as set forth in Exhibit B.
- E. *Records of ENGINEER's Costs.* Records of ENGINEER's costs pertinent to ENGINEER's compensation under this Agreement shall be kept in accordance with generally accepted accounting

practices. To the extent necessary to verify ENGINEER's charges and upon CLIENT's timely request, copies of such records will be made available to CLIENT at cost.

- F. *Legislative Actions.* In the event of legislative actions after the Effective Date of the Agreement by any level of government that impose taxes, fees, or costs on ENGINEER's services or other costs in connection with this Project or compensation therefore, such new taxes, fees, or costs shall be invoiced to and paid by CLIENT as a Reimbursable Expense to which a Factor of 1.0 shall be applied. Should such taxes, fees, or costs be imposed, they shall be in addition to ENGINEER's estimated total compensation.

ARTICLE 5 - OPINIONS OF COST

5.01 Opinions of Probable Construction Cost

- A. ENGINEER's opinions of probable Construction Cost provided for herein are to be made on the basis of ENGINEER's experience and qualifications and represent ENGINEER's best judgment as an experienced and qualified professional generally familiar with the industry. However, since ENGINEER has no control over the cost of labor, materials, equipment, or services furnished by others, or over the Contractor's methods of determining prices, or over competitive bidding or market conditions, ENGINEER cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from opinions of probable Construction Cost prepared by ENGINEER. If CLIENT wishes greater assurance as to probable Construction Cost, CLIENT shall employ an independent cost estimator.

5.02 Designing to Construction Cost Limit

- A. If a Construction Cost limit is established between CLIENT and ENGINEER, such Construction Cost limit and a statement of ENGINEER's rights and responsibilities with respect thereto will be specifically set forth in Exhibit C - Supplemental General Conditions.

5.03 Opinions of Total Project Costs

- A. ENGINEER assumes no responsibility for the accuracy of opinions of Total Project Costs.

ARTICLE 6 - GENERAL CONSIDERATIONS

6.01 Standards of Performance

- A. The standard of care for all professional engineering and related services performed or furnished by ENGINEER under this Agreement will be the care and skill ordinarily used by members of ENGINEER's profession practicing under similar circumstances at the same time and in the same locality. ENGINEER makes no warranties, express or implied, under this Agreement or otherwise, in connection with ENGINEER's services.
- B. ENGINEER shall be responsible for the technical accuracy of its services and documents resulting therefrom, and CLIENT shall not be responsible for discovering deficiencies therein. ENGINEER shall correct such deficiencies without additional compensation except to the extent such action is directly attributable to deficiencies in CLIENT-furnished information.

- C. ENGINEER shall perform or furnish professional engineering and related services in all phases of the Project to which this Agreement applies. ENGINEER shall serve as CLIENT's prime professional for the Project. ENGINEER may employ such ENGINEER's Consultants as ENGINEER deems necessary to assist in the performance or furnishing of the services. ENGINEER shall not be required to employ any ENGINEER's Consultant unacceptable to ENGINEER.
- D. ENGINEER and CLIENT shall comply with applicable Laws or Regulations and CLIENT-mandated standards. This Agreement is based on these requirements as of its Effective Date. Changes to these requirements after the Effective Date of this Agreement may be the basis for modifications to CLIENT's responsibilities or to ENGINEER's scope of services, times of performance, or compensation.
- E. CLIENT shall be responsible for, and ENGINEER may rely upon, the accuracy and completeness of all requirements, programs, instructions, reports, data, and other information furnished by CLIENT to ENGINEER pursuant to this Agreement. ENGINEER may use such requirements, reports, data, and information in performing or furnishing services under this Agreement.
- F. CLIENT shall make decisions and carry out its other responsibilities in a timely manner and shall bear all costs incident thereto so as not to delay the services of ENGINEER.
- G. Prior to the commencement of the Construction Phase, CLIENT shall notify ENGINEER of any other notice or certification that ENGINEER will be requested to provide to CLIENT or third parties in connection with the Project. CLIENT and ENGINEER shall reach agreement on the terms of any such requested notice or certification, and CLIENT shall authorize such Additional Services as are necessary to enable ENGINEER to provide the notices or certifications requested.
- H. ENGINEER shall not be required to sign any documents, no matter by whom requested, that would result in the ENGINEER's having to certify, guarantee or warrant the existence of conditions whose existence the ENGINEER cannot ascertain. CLIENT agrees not to make resolution of any dispute with the ENGINEER or payment of any amount due to the ENGINEER in any way contingent upon the ENGINEER's signing any such certification.
- I. During the Construction Phase, ENGINEER shall not supervise, direct, or have control over Contractor's work, nor shall ENGINEER have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected by Contractor, for safety precautions and programs incident to the Contractor's work in progress, nor for any failure of Contractor to comply with Laws and Regulations applicable to Contractor's furnishing and performing the Work.
- J. ENGINEER neither guarantees the performance of any Contractor nor assumes responsibility for any Contractor's failure to furnish and perform the Work in accordance with the Contract Documents.
- K. ENGINEER shall not be responsible for the acts or omissions of any Contractor(s), subcontractor or supplier, or of any of the Contractor's agents or employees or any other persons (except ENGINEER's own employees) at the Site or otherwise furnishing or performing any of the Contractor's work; or for any decision made on interpretations or clarifications of the

Contract Documents given by CLIENT without consultation and advice of ENGINEER.

- L. The General Conditions for any construction contract documents prepared hereunder are to be the "Standard General Conditions of the Construction Contract" as prepared by the Engineers Joint Contract Documents Committee (Document No. 1910-8, 1996 Edition) unless both parties mutually agree to use other General Conditions.

6.02 Authorized Project Representatives

- A. Contemporaneous with the execution of this Agreement, ENGINEER and CLIENT shall designate specific individuals to act as ENGINEER's and CLIENT's representatives with respect to the services to be performed or furnished by ENGINEER and responsibilities of CLIENT under this Agreement. Such individuals shall have authority to transmit instructions, receive information, and render decisions relative to the Project on behalf of each respective party.

6.03 Design without Construction Phase Services

- A. Should CLIENT provide Construction Phase services with either CLIENT's representatives or a third party, ENGINEER's Basic Services under this Agreement will be considered to be completed upon completion of the Final Design Phase or Bidding or Negotiating Phase as outlined in the Letter Agreement.
- B. It is understood and agreed that if ENGINEER's Basic Services under this Agreement do not include Project observation, or review of the Contractor's performance, or any other Construction Phase services, and that such services will be provided by CLIENT, then CLIENT assumes all responsibility for interpretation of the Contract Documents and for construction observation or review and waives any claims against the ENGINEER that may be in any way connected thereto.

6.04 Use of Documents

- A. All Documents are instruments of service in respect to this Project, and ENGINEER shall retain an ownership and property interest therein (including the right of reuse at the discretion of the ENGINEER) whether or not the Project is completed.
- B. Copies of CLIENT-furnished data that may be relied upon by ENGINEER are limited to the printed copies (also known as hard copies) that are delivered to the ENGINEER. Files in electronic media format of text, data, graphics, or of other types that are furnished by CLIENT to ENGINEER are only for convenience of ENGINEER. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk.
- C. Copies of Documents that may be relied upon by CLIENT are limited to the printed copies (also known as hard copies) that are signed or sealed by the ENGINEER. Files in electronic media format of text, data, graphics, or of other types that are furnished by ENGINEER to CLIENT are only for convenience of CLIENT. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk.
- D. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days,

after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the party delivering the electronic files. ENGINEER shall not be responsible to maintain documents stored in electronic media format after acceptance by CLIENT.

- F. When transferring documents in electronic media format, ENGINEER makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by ENGINEER at the beginning of this Project.
- F. CLIENT may make and retain copies of Documents for information and reference in connection with use on the Project by CLIENT. Such Documents are not intended or represented to be suitable for reuse by CLIENT or others on extensions of the Project or on any other project. Any such reuse or modification without written verification or adaptation by ENGINEER, as appropriate for the specific purpose intended, will be at CLIENT's sole risk and without liability or legal exposure to ENGINEER or to ENGINEER's Consultants. CLIENT shall indemnify and hold harmless ENGINEER and ENGINEER's Consultants from all claims, damages, losses, and expenses, including attorneys' fees arising out of or resulting therefrom.
- G. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- H. Any verification or adaptation of the Documents for extensions of the Project or for any other project will entitle ENGINEER to further compensation at rates as defined in Exhibit B.

6.05 Insurance

- A. ENGINEER shall procure and maintain insurance as set forth below:
 - 1. Workers Compensation & Employer's Liability
 - a. Each Occurrence: \$1,000,000
 - 2. General Liability
 - a. Each Occurrence: \$1,000,000
 - b. General Aggregate: \$2,000,000
 - 3. Excess or Umbrella Liability
 - a. Each Occurrence: \$5,000,000
 - b. General Aggregate: \$5,000,000
 - 4. Automobile Liability
 - a. Combined Single Limit (Bodily Injury and Property Damage):
Each Accident \$1,000,000
 - 5. Professional Liability
 - a. Each Occurrence: \$2,000,000
 - b. General Aggregate: \$2,000,000
- B. CLIENT shall cause ENGINEER and ENGINEER's Consultants to be listed as additional insureds on any general liability or property insurance policies carried by CLIENT which are applicable to the Project.
- C. CLIENT shall require Contractor to purchase and maintain general liability and other insurance as specified in the Contract Documents and to cause ENGINEER and ENGINEER's Consultants to be listed as additional insureds with respect to

such liability and other insurance purchased and maintained by Contractor for the Project

- D. CLIENT and ENGINEER shall each deliver to the other certificates of insurance evidencing the coverage.
- E. All policies of property insurance shall contain provisions to the effect that ENGINEER's and ENGINEER's Consultants' interests are covered and that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder.
- F. At any time, CLIENT may request that ENGINEER, at CLIENT's sole expense, provide additional insurance coverage, increased limits, or revised deductibles that are more protective. If so requested by CLIENT, with the concurrence of ENGINEER, and if commercially available, ENGINEER shall obtain and shall require ENGINEER's Consultants to obtain such additional insurance coverage, different limits, or revised deductibles for such periods of time as requested by CLIENT.

6.06 Termination

- A. The obligation to provide further services under this Agreement may be terminated:
- I. *For cause,*
 - a. By either party upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.
 - b. By ENGINEER:
 - 1) upon seven days written notice if ENGINEER believes that ENGINEER is being requested by CLIENT to furnish or perform services contrary to ENGINEER's responsibilities as a licensed professional, or
 - 2) upon seven days written notice if the ENGINEER's services for the Project are delayed or suspended for more than 90 days for reasons beyond ENGINEER's control.
 - 3) ENGINEER shall have no liability to CLIENT on account of such termination.
 - c. Notwithstanding the foregoing, this Agreement will not terminate as a result of such substantial failure if the party receiving such notice begins, within seven days of receipt of such notice, to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt thereof, provided, however, that if and to the extent such substantial failure cannot be reasonably cured within such 30 day period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, 60 days after the date of receipt of the notice.
 2. *For convenience,*
 - a. By CLIENT effective upon the receipt of notice by ENGINEER.
- B. The terminating party under paragraphs 6.06.A.1 or 6.06.A.2 may set the effective date of termination at a time up to 30 days later than otherwise provided to allow ENGINEER to demobilize personnel and equipment from the Site, to complete tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files.

6.07 Controlling Law

- A. This Agreement is to be governed by the law of the state in which the Project is located.

6.08 Successors, Assigns, and Beneficiaries

- A. CLIENT and ENGINEER each is hereby bound and the partners, successors, executors, administrators and legal representatives of CLIENT and ENGINEER (and to the extent permitted by paragraph 6.08.B the assigns of CLIENT and ENGINEER) are hereby bound to the other party to this

Agreement and to the partners, successors, executors, administrators and legal representatives (and said assigns) of such other party, in respect of all covenants, agreements and obligations of this Agreement.

- B. Neither CLIENT nor ENGINEER may assign, sublet, or transfer any rights under or interest (including, but without limitation, moneys that are due or may become due) in this Agreement without the written consent of the other, except to the extent that any assignment, subletting, or transfer is mandated or restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.
- C. Unless expressly provided otherwise in this Agreement:
1. Nothing in this Agreement shall be construed to create, impose, or give rise to any duty owed by CLIENT or ENGINEER to any Contractor, Contractor's subcontractor, supplier, other individual or entity, or to any surety for or employee of any of them.
 2. All duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of CLIENT and ENGINEER and not for the benefit of any other party. The CLIENT agrees that the substance of the provisions of this paragraph 6.08.C shall appear in the Contract Documents.

6.09 Dispute Resolution

- A. CLIENT and ENGINEER agree to negotiate all disputes between them in good faith for a period of 30 days from the date of notice prior to exercising their rights under provisions of this Agreement, or under law. In the absence of such an agreement, the parties may exercise their rights under law.
- B. If and to the extent that CLIENT and ENGINEER have agreed on a method and procedure for resolving disputes between them arising out of or relating to this Agreement, such dispute resolution method and procedure is set forth in Exhibit C, "Supplemental Conditions."

6.10 Hazardous Environmental Condition

- A. CLIENT represents to Engineer that to the best of its knowledge a Hazardous Environmental Condition does not exist.
- B. CLIENT has disclosed to the best of its knowledge to ENGINEER the existence of all Asbestos, PCB's, Petroleum, Hazardous Waste, or Radioactive Material located at or near the Site, including type, quantity and location.
- C. If a Hazardous Environmental Condition is encountered or alleged, ENGINEER shall have the obligation to notify CLIENT and, to the extent of applicable Laws and Regulations, appropriate governmental officials.
- D. It is acknowledged by both parties that ENGINEER's scope of services does not include any services related to a Hazardous Environmental Condition. In the event ENGINEER or any other party encounters a Hazardous Environmental Condition, ENGINEER may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Project affected thereby until CLIENT: (i) retains appropriate specialist consultant(s) or contractor(s) to identify and, as appropriate, abate, remediate, or

remove the Hazardous Environmental Condition; and (ii) warrants that the Site is in full compliance with applicable Laws and Regulations.

- E. CLIENT acknowledges that ENGINEER is performing professional services for CLIENT and that ENGINEER is not and shall not be required to become an "arranger," "operator," "generator," or "transporter" of hazardous substances, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA), which are or may be encountered at or near the Site in connection with ENGINEER's activities under this Agreement.
- F. If ENGINEER's services under this Agreement cannot be performed because of a Hazardous Environmental Condition, the existence of the condition shall justify ENGINEER's terminating this Agreement for cause on 30 days notice.

6.11 Allocation of Risks

A. Indemnification

1. To the fullest extent permitted by law, ENGINEER shall indemnify and hold harmless CLIENT, CLIENT's officers, directors, partners, and employees from and against any and all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) caused solely by the negligent acts or omissions of ENGINEER or ENGINEER's officers, directors, partners, employees, and ENGINEER's Consultants in the performance and furnishing of ENGINEER's services under this Agreement.
2. To the fullest extent permitted by law, CLIENT shall indemnify and hold harmless ENGINEER, ENGINEER's officers, directors, partners, employees, and ENGINEER's Consultants from and against any and all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) caused solely by the negligent acts or omissions of CLIENT or CLIENT's officers, directors, partners, employees, and CLIENT's consultants with respect to this Agreement or the Project.
3. To the fullest extent permitted by law, ENGINEER's total liability to CLIENT and anyone claiming by, through, or under CLIENT for any cost, loss, or damages caused in part by the negligence of ENGINEER and in part by the negligence of CLIENT or any other negligent entity or individual, shall not exceed the percentage share that ENGINEER's negligence bears to the total negligence of CLIENT, ENGINEER, and all other negligent entities and individuals.
4. In addition to the indemnity provided under paragraph 6.11 A.2 of this Agreement, and to the fullest extent permitted by law, CLIENT shall indemnify and hold harmless ENGINEER and its officers, directors, partners, employees, and ENGINEER's Consultants from and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) caused by, arising out of or resulting from a Hazardous Environmental Condition, provided that (i) any such cost, loss, or damage

is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than completed Work), including the loss of use resulting therefrom, and (ii) nothing in this paragraph 6.11 A.4. shall obligate CLIENT to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence or willful misconduct.

5. The indemnification provision of paragraph 6.11 A.1 is subject to and limited by the provisions agreed to by CLIENT and ENGINEER in Exhibit C, "Supplemental Conditions," if any.

6.12 Notices

- A. Any notice required under this Agreement will be in writing, addressed to the appropriate party at its address on the signature page and given personally, or by registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt.

6.13 Survival

- A. All express representations, indemnifications, or limitations of liability included in this Agreement will survive its completion or termination for any reason.

6.14 Severability

- A. Any provision or part of the Agreement held to be void or unenforceable under any Laws or Regulations shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon CLIENT and ENGINEER, who agree that the Agreement shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

6.15 Waiver

- A. Non-enforcement of any provision by either party shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Agreement.

6.16 Headings

- A. The headings used in this Agreement are for general reference only and do not have special significance.

6.16 Definitions

- A. Defined terms will be in accordance with EJCDC No. 1910-1 (1996 Edition)

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CLIENT Initial _____

TAI Initial _____



**EXHIBIT B
SCHEDULE OF HOURLY RATES AND REIMBURSABLE EXPENSES**

2021 Schedule of Hourly Rates

2021 Reimbursable Expenses

| Classification | Billing Rate | Item | Unit | Unit Price |
|----------------------------------|--------------|--|-------------------|--------------|
| Engineering Intern | \$55.00 | Engineering Copies 1- 249 Sq. Ft. | Sq. Ft. | \$0.29 |
| Engineer Level I | \$114.00 | Engineering Copies 250-999 Sq. Ft. | Sq. Ft. | \$0.27 |
| Engineer Level II | \$126.00 | Engineering Copies 1000-3999 Sq. Ft. | Sq. Ft. | \$0.25 |
| Engineer Level III | \$138.00 | Engineering Copies 3999 Sq. Ft. & Up | Sq. Ft. | \$0.23 |
| Engineer Level IV | \$153.00 | Engineering Copies up to 24" by 36" | Each | \$8.00 |
| Engineer Level V | \$173.00 | Color Presentation Grade Large Format Print | Sq. Ft. | \$5.15 |
| Engineer Level VI | \$198.00 | Comb Binding > 120 Sheets | Each | \$4.75 |
| Engineer Level VII | \$208.00 | Comb Binding < 120 Sheets | Each | \$3.50 |
| Engineer Level VIII | \$239.00 | Binding Strips (Engineering Plans) | Each | \$1.00 |
| Principal Engineer | \$245.00 | 5 Mil Laminating | Each | \$1.25 |
| Technician Level I | \$98.00 | Copy 11" x 17" - Color | Each | \$0.50 |
| Technician Level II | \$119.00 | Copy 11" x 17" - Black and White | Each | \$0.25 |
| Technician Level III | \$139.00 | Copy 8.5" x 11" - Color | Each | \$0.25 |
| Technician Level IV | \$151.00 | Copy 8.5" x 11" - Black and White | Each | \$0.12 |
| Senior Technician | \$167.00 | Recorded Documents | Each | \$25.00 |
| GIS Specialist I | \$98.00 | Plat Research | Time and Material | |
| GIS Specialist II | \$114.00 | Per Diem | Each Day | \$30.00 |
| GIS Specialist III | \$155.00 | Field / Survey Truck | Each Day | \$45.00 |
| Clerical Level I | \$66.00 | Postage and Freight | Cost | |
| Clerical Level II | \$78.00 | Mileage | Per Mile | Federal Rate |
| Clerical Level III | \$91.00 | | | |
| Survey Technician Level I | \$66.00 | | | |
| Survey Technician Level II | \$81.00 | | | |
| Survey Crew Chief | \$166.00 | | | |
| Professional Land Surveyor | \$200.00 | | | |
| Department Director | \$198.00 | | | |
| Prevailing Wage Survey Foreman** | \$191.00 | | | |
| Prevailing Wage Survey Worker** | \$186.00 | | | |
| Sub Consultants | Cost Plus 5% | | | |

***Rates will be escalated for Overtime & Holiday Pay to adjust for Premium Time based on the current Illinois Department of Labor Rules*

Note: On January 1st of each year, the fees and hourly rates may be escalated by an amount not to exceed five (5) percent.

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**EXHIBIT C
SUPPLEMENTAL CONDITIONS**

NONE AT THIS TIME

CLIENT Initial _____

TAI Initial _____



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CITY OF WEST CHICAGO

WELL 8 PUMPING STATION REHABILITATION

PAYMENT SCHEDULE - ENGINEERING DESIGN AND PERMITTING

Assumed Start Date: April 5, 2021

Projected Invoicing:

April Invoice (payable in May 2021)

| | |
|--------------------------|-----------------|
| Survey Services | \$6,400 |
| Preliminary Design (15%) | \$4,110 |
| | \$10,510 |

May Invoice (payable in June 2021)

| | |
|--------------------------|-----------------|
| Preliminary Design (80%) | \$21,920 |
| | \$21,920 |

June Invoice (payable in July 2021)

| | |
|-------------------------|-----------------|
| Preliminary Design (5%) | \$1,370 |
| Final Design (25%) | \$8,700 |
| | \$10,070 |

July Invoice (payable in August 2021)

| | |
|--------------------|-----------------|
| Final Design (50%) | \$17,400 |
| | \$17,400 |

August Invoice (payable in September 2021)

| | |
|--------------------|----------------|
| Final Design (25%) | \$8,700 |
| | \$8,700 |

CITY OF WEST CHICAGO

INFRASTRUCTURE COMMITTEE AGENDA ITEM SUMMARY

ITEM TITLE:

Resolution No. 21-R-0023 - Contract Award – KLM Engineering, Inc. – Professional Engineering Services Related to the Booster Station #8 Ground Storage Tank Rehabilitation Project

AGENDA ITEM NUMBER: 4.Cc**COMMITTEE AGENDA DATE:** April 1, 2021**COUNCIL AGENDA DATE:** April 5, 2021**STAFF REVIEW:** Robert E. Flatter, P.E., Director of Public Works**SIGNATURE** **APPROVED BY CITY ADMINISTRATOR:** Michael L. Guttman**SIGNATURE** _____**ITEM SUMMARY:**

Within the Fiscal Year 2021 Water Fund Budget, money has been included for professional engineering design services related to the rehabilitation of the 500,000 gallon ground storage tank associated with Booster Station #8, located at located at 1255 Helena Drive. Construction associated with the Booster Station #8 Ground Storage Tank Rehabilitation Project is anticipated to commence in spring of Fiscal Year 2022.

Booster Station #8, its associated ground storage tank, and Well Station #8 (shallow well) were initially constructed together in 1989. No major improvements have been completed at Booster Station #8 or the associated ground storage tank since its original construction. In 2020, the City hired KLM Engineering, Inc. (KLM) of Woodbury, Minnesota, to evaluate the condition of the Booster Station #8 ground storage tank, and draft an inspection report. KLM's inspection report (attached) identified that after more than 31 years of service life, rehabilitation of the structure is required.

Required improvements include, but are not limited to, the following:

- Sandblasting and repaint of the tank's exterior.
- Removal of obsolete equipment from the interior of the tank (i.e., Cathodic Protection System, brackets, conduits, junction boxes, etc.).
- Seam weld and repair interior joints, seams, and supports.
- Sandblast and repaint the tank's interior.
- Installation of a mixing system inside the tank to improve water quality.
- Installation of OSHA approved safety features.

Estimate cost of required improvements range between \$330,000.00 and \$355,000.00. Competitive bids will be sought for construction once engineering design plans, specifications, and bid documents are finalized.

Being most familiar with the condition of the storage tank and repairs needed, City staff asked KLM for a proposal to provide professional engineering design services related to the Booster Station #8 Ground Storage Tank Rehabilitation Project. Services will include, but not be limited to, development of design plans, development of project specifications, development of bid documents, providing assistance during the bidding process, and construction oversight services. KLM submitted a cost proposal of \$56,344.00.

Therefore, it is staff's recommendation that a contract be awarded to KLM Engineering, Inc. of

CITY OF WEST CHICAGO

Woodbury, Minnesota, for professional engineering services related to the Booster Station #8 Ground Storage Tank Rehabilitation Project, for an amount not to exceed \$56,344.00.

ACTIONS PROPOSED:

Approve Resolution No. 21-R-0023 authorizing the Mayor to execute a Contract with KLM Engineering, Inc. of Woodbury, Minnesota, for professional engineering services related to the Booster Station #8 Ground Storage Tank Rehabilitation Project, for an amount not to exceed \$56,344.00.

COMMITTEE RECOMMENDATION:

RESOLUTION NO. 21-R-0023

**A RESOLUTION AUTHORIZING THE MAYOR TO EXECUTE
A CONTRACT AGREEMENT WITH KLM ENGINEERING, INC.
FOR PROFESSIONAL ENGINEERING SERVICES RELATED TO
THE BOOSTER STATION #8 GROUND STORAGE TANK
REHABILITATION PROJECT**

BE IT RESOLVED by the City Council of the City of West Chicago, in regular session assembled, that the Mayor is hereby authorized to execute a Contract Agreement for Professional Engineering Services related to the Booster Station #8 Ground Storage Tank Rehabilitation Project, between the City of West Chicago and KLM Engineering, Inc., for an amount not to exceed \$56,344.00, in substantially the form attached hereto and incorporated herein as Exhibit "A".

APPROVED this 5th day of April 2021.

AYES: _____

NAYES: _____

ABSTAIN: _____

ABSENT: _____

Mayor Ruben Pineda

ATTEST:

City Clerk Nancy M. Smith

February 10, 2021

Mr. Rocky Horvath
Utility Superintendent
City of West Chicago
475 Main Street
West Chicago, Illinois 60185

Dear Mr. Horvath:

Thank you for the opportunity to submit this proposal to provide engineering and inspection services during the rehabilitation of the 0.5MG Ground Storage Tank, (Booster # 8), in West Chicago, Illinois.

KLM has a staff with the most credentials associated with AWS welding and NACE coating inspections of water storage tanks in the five-state area. When it comes to quality inspections on water towers, KLM sets the standard that other companies try to duplicate. Our dedication to quality inspections can be seen nationally as our projects are represented each year in Tnemec's Tank of the Year calendar contest.

Elgin, Illinois



Kenosha, Wisconsin



Joliet, Illinois



KLM's personnel have been working on water towers since the 1970s. We have tanks that were constructed and painted in the mid-1980s that are just coming up on their first reconditioning. KLM anticipates the tower's coating systems will be in service 20-plus years. This is due to KLM professionals trained to perform proper inspections and holding contractors accountable for quality workmanship.

Our inspections are performed by a professional staff with current and proper credentials. Our inspectors who, work directly under our Structural Engineer and Project Supervisor are certified as both NACE and AWS inspectors. Each employee takes ownership of their project. Our professional staff has a combined 150 years of experience and have successfully completed over 500 rehabilitations of water towers of various sizes. The KLM staff is fluent in the current codes and standards for new and reconditioned water tower projects.

KLM inspectors climb the towers daily to accept or reject the workmanship of the day. The main reason owners hire a professional consultant is to protect the owner's investment. The average tank without a professional inspection usually needs to be repaired after fifteen years compared to KLM projects, which are lasting 20 or more years.

No firm receives respect from tank contractors and subcontractors like KLM. Our role is to provide quality assurance and enforce the specification. KLM is very thorough with our documentation of what and how the work is being performed each day. KLM's reputation of quality is second to none. We stand behind every project we work on.

KLM would like to assist you with our expertise on quality control which will make this a successful project for many years to come. By selecting KLM, you can be assured that the project will be completed to your satisfaction.

We look forward to working with you.

Sincerely,



KLM ENGINEERING, INC.

James Creed
Regional Manager
338 Alana Drive
New Lenox, Illinois 60451
Cell: 651-238-4905
Fax: 651-773-5222
Email: jcreed@klmengineering.com



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DISCLAIMER:

The information in this proposal is confidential, may be legally privileged, and is intended for the sole use of the West Chicago. Access to this proposal by another company is not permitted. If you are not the intended recipient, any disclosure, copying, distribution or any action taken or committed in reliance on it is prohibited.



Proposal

Project Understanding

KLM thoroughly reviewed the requirements for the Number 8 Booster Station as to fulfill the needs of the city. KLM's evaluation report from 2019 and additional records were considered in the preparation of this proposal. Key project team members were brought together to review the previous recommendations and to bring the tower into compliance with current codes, standards and desires of the city.

Benefits to the City of West Chicago

- Today's protective coating systems are designed to last 20-25 years with only minor maintenance. Tight project specifications and full-time inspections give the coating systems the opportunity to realize their intended service life.
- KLM proposes to prepare a specification package specifically designed for water tower reconditioning. Our experience has shown that the more comprehensive the specification is, the more likely it is that the project is completed on time, on budget, with quality workmanship. The KLM specifications will mitigate requests for change orders during reconditioning.
- Welding and full time NACE Coating Inspections during reconditioning assures that the work performed by the contractor is in conformance with the specifications, as to maximize its life expectancy. KLM's inspectors monitor workmanship during all phases of work to verify the contractor's work meets the specification. Utilizing this process, maintenance costs will be reduced by decreasing the number of reconditioning cycles over the life of the tank.
- Our project administration and inspection services provide a buffer between the project specifications and the real-world challenges that can negatively affect project performance. To initiate the project correctly, KLM's project management assures that a qualified contractor is retained at an appropriate cost.

KLM Work Plan

Upon execution of a contract, KLM proposes the following schedule to perform the work:

Pending City council approval:

1. Design Services and Bidding Documents
Completed by KLM Engineering
2. Construction Management and Inspection Services
Spring Construction
3. Warranty Inspection
ROV completed per contract (2 Year)



Design

KLM will also perform at a minimum, the following related specification services:

- Meet with the owner to review plans and specifications.
- Produce preliminary and completed copies of the specifications for the owner.
- Provide an updated cost estimate.
- Advertise specifications.
- Attend and facilitate a mandatory pre-bid meeting.
- Issue specification to bidders and respond (in writing) to bidder questions.
- Tabulate results for Owner's.
- Evaluate contractors' bid proposals for conformance to the specification.
- Recommend (in writing) to Owner the low, qualified bidder(s).
- Prepare Notice of Award and contract Agreement (forward to Owner).

Specifications

Project Requirements

This section includes the City's requirements, complete description of the project, project schedule, execution of contract documents; notice to proceed, project meetings and quality assurance.

Scope of Work: Project Specifications

The project specifications will include:

Advertisements for Bids

This section provides a detailed description of the project and meets the requirements for legal advertisements.

Instruction to Bidders

This section provides precise instructions to bidders including the scope of work, insurance, payments, time of completion, bidder qualifications, taxes and permits, legal requirements, performance and payment bonds and other important project information.

Bid Forms

This section contains the bid proposals, construction time frame alternate bid proposals, legal requirements, and the bidder and subcontractor qualification forms.

Project Requirements

This section includes a complete description of the project, project schedule(s), execution of contract documents; notice to proceed, project meetings, quality assurance, liquidated damages, and legal and technical requirements for executing the scope of work.

Technical Specifications

This section details the technical specifications for structural modifications, surface repairs, interior and exterior surface preparation, exterior abrasive blast containment, disposal of spent abrasives, dehumidification, lettering and logo, submittals, workmanship, unfavorable weather conditions, surface coating and material, repair work, health and sanitary facilities, clean up, ventilation and safety requirements, superintendent, inspection of work, sterilization of tank interiors, and containment plan.

Supplemental Conditions

This section supplements or amends the General Conditions and/or other provisions of the Contract Documents.

General Conditions

This section includes all the General Conditions designed for water tank reconditioning, such as authority of the Engineer, engineering inspection, modifications, additions and subtractions of scope of work, extensions of time, insurance and other appropriate items.

Contract Documents

This section provides the form of agreement to be used between the Owner and Contractor.

Payment and Performance Bond

Bonds for payment and performance are required for this project, as specified by state law.

Appendix A: Photos

This section includes copies of color photographs. This provides the contractor with a clear perspective of the interior/exterior conditions of the tank, and the scope of work involved.

Appendix B: Drawings

This section includes drawings, which define structural repairs or modifications and welding definitions.

Appendix C: Surface Preparation Requirements

This section references excerpts from NACE Standard Practice SP0178-2007 Standard Practice: Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Services for defining welding and grinding requirements of the structural repair or modifications.

Appendix D: Paint Chip Lead Test Results

This section contains paint chip test results for lead and chromium used to calculate the risk factor and classification of containment required for conformance with Federal and State Environmental Regulations.

Appendix E: Lettering and Logo (optional)

If required, this section includes drawings of any required lettering and logo.

Construction Services

Construction Administration

The project manager and project supervisor work together on managing the project. The project supervisor does the initial review of the submittals and communicates with the inspector daily to help enforce the project specifications as necessary. The supervisor is the main contact between the contractor representative and the Owner. The manager does the final review of the submittals and will assist the supervisor as required.

Construction management consists of the following:

- Attend and facilitate preconstruction conference.
- Periodically perform on-site review of project's work status and report to the owner.
- Coordinate progress meetings as necessary.
- Review of meeting minutes.
- Scheduling of inspections.
- Review and approve of the contractor's submittals:
 1. Drawing Reviews
 2. Welder Certifications
 3. Welder Qualifications
 4. Welding Procedures
 5. Coating Materials Submittal
 6. TLCP Sampling Plan
- Project close out administration.
- Establishes warranty date.
- Review of inspector's daily documentation.
- Process change orders.
- Prepare monthly payment request forms.

Construction Observation

The inspector assigned to this project will be a NACE Coating Inspector and/or AWS Certified Welding Inspector. All our inspectors have extensive practical experience and knowledge of water storage tank reconditioning. They are experienced sandblasters, painters, climbers, riggers, coating inspectors, welders and welding inspectors which allow the inspector to perform inspections alongside the contractor to ensure conformance to the project specification.

At a minimum, the field inspections will include the following:

- A preconstruction meeting with the client and contractor to clearly define the role of the Engineer and Inspector, to discuss the intent of the specifications, and to ensure all parties agree to the scope of work and expectations regarding the quality of work.
- Monitor and approval of the structural repairs and modifications for conformance to the specifications.
- Inspection of the abrasive blasting media and equipment for conformance to the specifications and to prevent contamination of surfaces during surface preparation with moisture and oil or other contaminants.
- Monitor the paint removal and disposal process for conformance to the specifications and environmental regulations.
- Monitor the contractors mixing and application of the coatings for conformance to the specifications and the coating manufacturer's recommendations.
- Approve surface preparation samples.
- Record the contractor's progress for adherence to the construction schedule.
- Submit daily and weekly inspection reports. Prepare and file copies of the reports on construction activities.
- Coordinate and review testing of materials for conformance to the specification and environmental regulations.
- Monitor punch list items and subsequent corrective action by the contractor.
- Final inspection, substantial completion, and project acceptance.

Antenna Inspection

Antenna services are not part of this contract.

Warranty Inspection

KLM proposes to perform an ROV warranty inspection on the referenced tank prior to the expiration of the performance bonded two (2) year warranty. The warranty inspection will include an inspection report. Prior to the warranty expiration, KLM will request verification to proceed with the warranty inspection under the terms of this contract. The fixed fee does not include any necessary warranty repair work required.

Deliverables

The City of West Chicago owns and retains this documentation. KLM also retains these records for future reference. Deliverables submitted electronically unless indicated hard copy.

- Professional Engineering Certified plans and specifications
- State Regulatory documentation including permitting, State Agency or Department of Health, TCLP Testing and Waste Tracking
- As-Built drawings
- Contractor Submittals
- Daily Logs & Weather Logs
- Surface Preparation
- Daily Digital Photos
- Weekly Summary & Progress Meeting
- Project Acceptance Certificate
- Warranty Inspection Report (Owner & Contractor)

Proposal Summary

KLM Engineering estimates this to be 9-week project with 8 weeks of inspection services. KLM will provide full-time inspection of 3 weeks for the interior wet surface preparation and primer application and 6 additional trips for intermediate and final coat inspection and testing. We will manage the water tank rehabilitation with comprehensive specifications, engineering, project management, welding inspection, coating inspection, antenna inspection and an ROV warranty inspection as detailed below.

Cost Summary

| | |
|--|--------------------|
| 1. Design Services | \$16,000.00 |
| Total Design Services | \$16,000.00 |
| 2. Construction Management | \$2,920.00 |
| 3. Construction Observation | \$33,924.50 |
| Total Construction Services | \$36,844.00 |
| Total KLM Cost Design and Construction Services | \$52,844.00 |
| 4. Warranty Inspection 2023 | \$3,500.00 |

*Any additional weeks if requested and approved by the City of West Chicago for construction management and inspection services during surface preparation and priming of the interior wet will be billed at \$8,481.00 per week.

*Any additional trips if requested and approved by the City of West Chicago for construction management and inspection services of the intermediate and final coating applications will be billed out at \$1,211.00 per day.

Why Use KLM

KLM is the leader in water tower reconditioning of towers of 500,000-gallons or greater in the Midwest. KLM Engineering, Inc. has been evaluating and reconditioning water towers for over 25 years. Our reference list has customers including the US Military, US Steel, Indian Health Services, State of Illinois, and municipalities ranging from coast to coast and beyond- including Hawaii, Canada, and Europe.

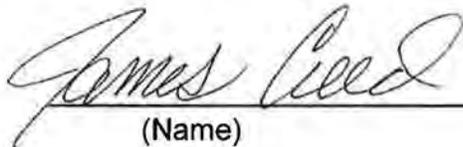
Agreement

This proposal is valid for two (2) months from February 10, 2021. If the City of West Chicago finds this proposal acceptable, please sign and return by mail, fax, or email. We can begin work immediately once a contract has been executed based on the project work schedule.

This agreement, between the City of West Chicago and KLM Engineering, Inc. of Woodbury, Minnesota is accepted by:

(Name) (Title) West Chicago
Illinois

(Date)


(Name) Regional Manager (Title) KLM Engineering, Inc.
Woodbury, Minnesota

February 10, 2021
(Date)

We look forward to working with you.

Sincerely,

KLM ENGINEERING, INC.

James Creed
Regional Manager
Cell: 651-238-4905
Fax: 651-773-5222
Email: jcreed@klmengineering.com





Project Team

Project Team

To provide a combination of client satisfaction and industry expertise, KLM has assembled a staff specific to the needs of our clients. The Project Team, listed in the organizational chart on the previous page, work year-round, with current projects booked into 2021 and beyond. In addition, KLM's staff have an extensive knowledge base, specializing in water storage systems, whether it be inspection, recondition, coatings, new tanks, or telecommunications. To ensure each project is held to the highest of standards, our team consists of Professional Engineers and certified inspectors by the National Association of Corrosion Engineers (NACE) and American Welding Society (AWS). Further details on the expertise of KLM's project team can be found in the preceding pages.



SHAWN MULHERN - PRESIDENT/ CEO/ PRINCIPAL OWNER

Mr. Mulhern has been inspecting, testing, and evaluating water towers for over 36 years. He has been involved in the inspection of over 300 elevated water towers, ground storage reservoirs, and industrial tanks of sizes ranging from 50,000 gallons to 120 million gallons. Shawn is a NACE Level III Certified Coatings Inspector and an American Welding Society (AWS) Associate Welding Inspector. He is also an avid volunteer and educational presenter nation-wide.

EXPERIENCE & EDUCATION

- American Water Works Association
- American Welding Society
- National Association for Corrosion Engineers
- Society for Protective Coatings
- Water Industry Professionals
- 2018 AWWA Benjamin G. Mason Award of Excellence
- AEC Engineering, Inc. | Coating Systems Supervisor
- Neumann Company Contractors, Inc. | Journeyman Painter
- NACE Successful Coating & Lining of Concrete
- Supervisory Leadership | Wilson Learning
- 3M Safety Training Program
- Tnemec Protective Services Seminar
- Industrial Technology | UW-Stout
- NACE III Inspector | No. 1293
- AWS- Welding Inspector No. 89040022
- OSHA Lead Abatement
- NDE Level II TU, PT, MT and vacuum box



RODNEY ELLIS - VICE PRESIDENT/ COO/ PRINCIPAL OWNER

Mr. Ellis has extensive experience working with a wide range of municipalities, military, and industrial facilities. He has worked on hundreds of water storage reservoirs, lead abatement projects, industrial tank reconditioning projects, water treatment plants, and bridges over the past 29 years. Rodney is a NACE Level III Certified Coatings Inspector, and an AWS Certified Welding Inspector. Rodney offers significant benefits to clients because of his work with all types of contractors on many types of complex projects.

EXPERIENCE & EDUCATION

- American Welding Society
- National Association for Corrosion Engineers
- Society for Protective Coatings
- Water Industry Professionals
- AEC Engineering, Inc. | NACE Coatings Inspector
- Neumann Company Contractors, Inc. | Industrial Sandblaster & Painter
- Mount Scenario College
- NACE III Inspector | No. 1686
- AWS- Welding Inspector No. 95040714
- API 653 | Above ground storage tank inspection
- NDE Level II TU, PT, MT, and vacuum box
- OSHA 10



JERRY TELL, P.E. - STRUCTURAL ENGINEER

Mr. Tell is a registered Professional Structural Engineer who has held licenses in multiple states. Jerry has a strong background in structural design of plate structures including heavy lift cranes, water filtration tanks, bulk material silos/ bins and elevated structures. Jerry brings to KLM experience in engineering management with an emphasis on multi-million-dollar projects. Jerry offers KLM clients a dedication to quality workmanship and extensive skill sets in structural analysis and designs.

EXPERIENCE & EDUCATION

- AmClyde Engineered Products | Structural Engineer
- University of Minnesota | Bachelor of Science- Civil Engineering
- Minnesota License | No. 15524
- South Dakota License | No. 13466
- Wisconsin License | No. 25409-6



BEN FELDMAN, P.E. - CIVIL ENGINEER

Mr. Feldman has worked in both the private and public sector starting out his career as an engineer and project manager with the Midwest leader in design of state-of-the-art municipal facilities and other complexes. Ben's project experience ranges from treatment plants, pump stations to distribution studies and maintenance plans. He is also an active member of Minnesota section AWWA as Board Security-Treasurer for over four years. Ben provides KLM's clients with creative, cost-effective solutions, exceptional service, and a level of quality as if it were his own.

EXPERIENCE & EDUCATION

- American Water Works Association
- MN-AWWA Young Professionals
- St. Paul Regional Water Services | Civil III
- SRF Consulting Group, Inc. | Field Engineer
- Anderson-Johnson Associates, Inc. | Project Manager
- University of Minnesota | Bachelor of Science- Civil Engineering
- Minnesota License | No. 49598
- Colorado License | No. 0057334
- OSHA 10



SCOTT KRIESE - PROJECT FIELD SUPERVISOR

Mr. Kriese is a NACE Level III Certified Coatings Inspector with fourteen years of experience on projects including surface preparation, coating application, and inspection services during reconditioning, new tank construction, and structural repairs on water storage tanks and towers. Scott is currently a Project Field Supervisor overseeing NACE inspectors who are performing daily inspections of new and reconditioned water storage tanks. Scott has provided resident inspection services or oversight on hundreds of potable water and fire protection tanks during his tenure at KLM.

EXPERIENCE & EDUCATION

- National Association for Corrosion Engineers
- Society for Protective Coatings
- KLM Engineering, Inc. | Project Field Supervisor
- NACE III Inspector | No. 11236
- OSHA 10



DEWEY PRINZING - VP OF BUSINESS DEVELOPMENT

Mr. Prinzing has been in the construction, inspection, testing, and evaluation industry for more than twenty years. He has been involved in the inspection of elevated water towers, ground storage reservoirs, and industrial tanks of sizes ranging from 50,000 gallons to 3 million. Dewey transitioned his knowledge as a NACE Inspector to his current role in sales. In sales, Dewey successfully assists clients with their various needs whether it be on rehabilitation, new tank construction, structural repairs, evaluations, tank cleaning, or mixing.

EXPERIENCE & EDUCATION

- National Association for Corrosion Engineers
- Society for Protective Coatings
- Water Industry Professionals
- Southwest Manufacturing, Inc. | Regional Sales Manager
- Otte Log Homes | Carpenter
- NACE I Inspector | No. 44811



MICHAEL NOVITZKI - DIRECTOR OF BUSINESS DEVELOPMENT

Mr. Novitzki has been in the sales and marketing industry for over four years. Since joining KLM, Michael has been able to utilize his skills in sales to excel in the water storage industry with a desire to assist communities of all different sizes. Michael has been involved in projects ranging from 50,000 to over one million gallons. Michael's goal to make sure every community has a positive experience regarding their water storage tank is evident in his superior workmanship and making sure the needs of his clients are taken care. He is also a valued member of the AWWA Young Professionals and a MAC Committee liaison.

EXPERIENCE & EDUCATION

- American Water Works Association
- MN-AWWA Young Professionals
- Water Industry Professionals
- First Financial | Director of Sales & Business Development
- New York Life | Financial Advisor
- Target Corporate | Merchandise Analyst
- Holy Cross College | Bachelor of Arts & Science-Finance, Marketing & Spanish
- Series 6
- MRWA Operator Training



JAMES CREED - GREAT LAKES REGIONAL SALES MANAGER

Mr. Creed is the Regional Manager located in our New Lenox, Illinois office. He has a combined 30+ years in the coatings industry primarily in General Industrial, OEM, Marine, Protective Coatings and Linings. The knowledge and understanding of protective coatings, surface preparation, and local, federal, and industry regulations Jim brings to KLM, confirms clients are receiving the most reliable guidance for their assets. Jim is also a NACE Level III Certified Coatings Inspector and SSPC Certified Concrete Coating Inspector.

EXPERIENCE & EDUCATION

- American Water Works Association
- Society for Protective Coatings
- Water Industry Professionals
- National Association for Corrosion Engineers
- The Society for Protective Coatings | Midwest Chapter Board Member
- Carboline Company | Senior Engineer Sales Manager
- Sherwin Williams | Senior Protective Coating Specialist
- NACE III Certified | No. 8970
- SSPC Certified Concrete Coating Inspector | No. 29820
- Engineering Sales Presidents Award | 2017, 2018



TOM QUAMMEN - WEST CENTRAL REGIONAL MANAGER

Mr. Quammen is the Regional Manager located in our Prairie Village, Kansas office. He has a combined 30+ years of water tank/ tower experience, first as a NACE and UT inspector for a small structural engineering firm in Minneapolis, then as a Principal Tnemec Company Representative, first in MN, then CO, ID, MT, NM, NV, UT, and WY. In addition, he has knowledge of structural engineering, extensive protective coatings experience, and ACI/ ICRI training. His skills and experience are an asset to KLM and our clients.

EXPERIENCE & EDUCATION

- American Water Works Association
- KS/MO/CO Rural Water Association
- Water Industry Professionals
- Tnemec Corporate Award (Retired)
- Tnemec Company | Principal, Agency Owner
- AEC Engineers & Designers | Technician
- Twin City Testing | Technician
- Anoka Technical College
- Mankato State University
- CSI CDT
- ICRI Slab Certified



TADD OACHS - TELECOM MANAGER

Mr. Oachs has worked in the telecommunications industry for over 9 years. His knowledge and skill in the field, along with his experience with some of the newest technologies, are an asset to KLM projects. Tadd's extraordinary focus and strategic way of thinking, with his uncanny ability to facilitate clear communication between different teams and departments, is invaluable to completing projects on-time and within budget.

EXPERIENCE & EDUCATION

- St. Cloud University
- Siren Telephone Company | Telecommunications Technician
- CenturyLink | Broadband Technician
- Bear Communications | Installation and Drop Bury Supervisor



LAURIE SYLTE - FINANCE MANAGER

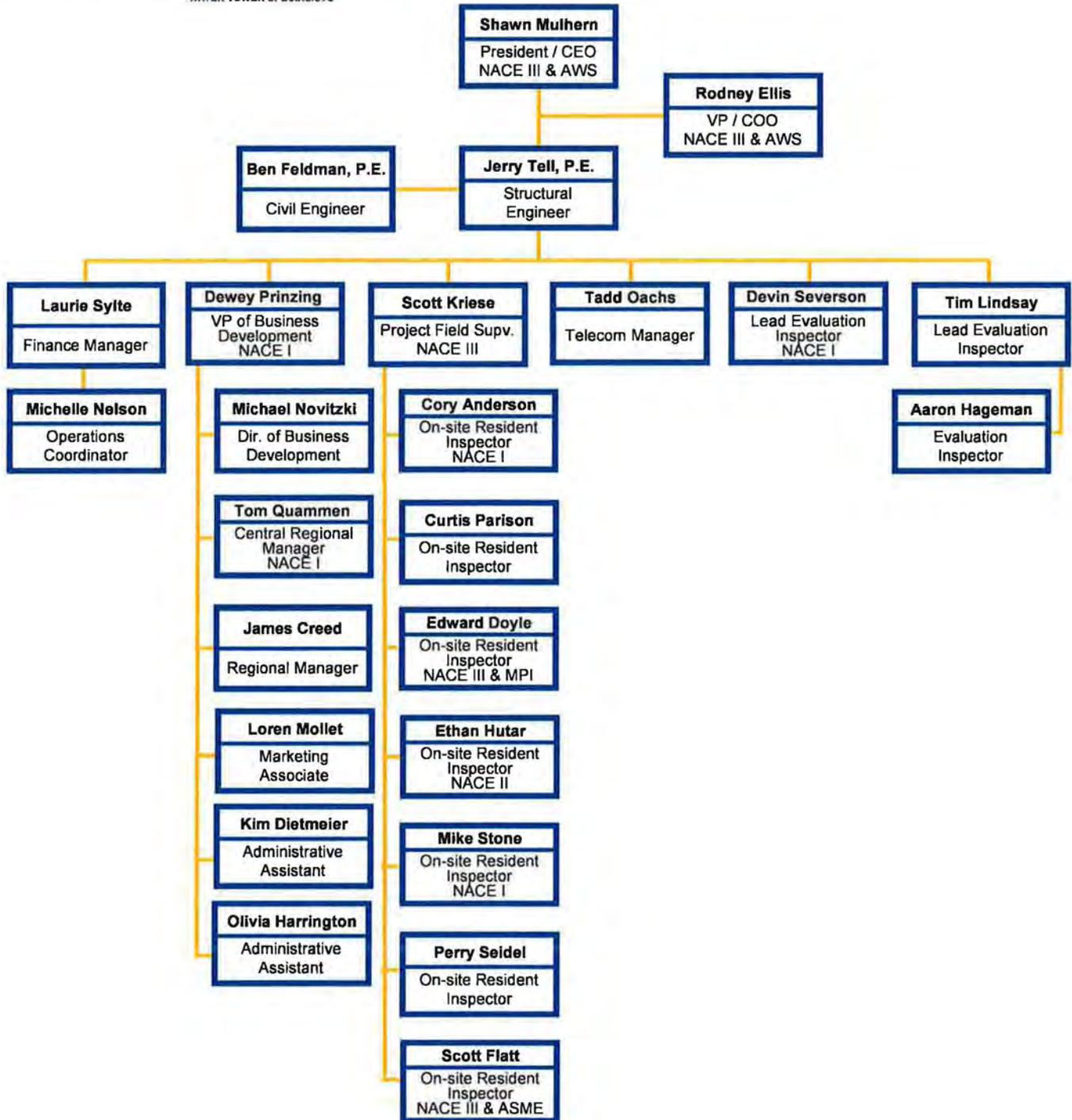
Mrs. Sylte has been in the finance management industry for over 20 years. Of these years, 15 are specific to water storage systems. Laurie excels in project support and budget management for tanks ranging from 25,000 to over a million gallons. She works directly with clients to ensure accounting and budget timelines are met and executed to city and/or council requirements.

EXPERIENCE & EDUCATION

- Somerset Telephone | Finance
- St. Croix Telephone | Finance
- Wisconsin Indian Technical College



KLM Project Team Chart



** All inspectors work directly under a Professional Engineer and a NACE Certified Project Supervisor **



References And Project Profiles

References

The following list contains a hand full of projects completed by KLM in the past five years. In all, KLM averages 15-20 reconditioning projects per year. A more complete list of references can be provided upon request.

Reconditioning Projects:

- Woodlawn Tower
500,000 Gallon Single Pedestal
Owner/ Client: Moorhead Public Service, MN
Contact: Kristofer Knutson, 218-299-5475
***2018 Themec Tank of the Year Runner-Up**
- Skyline & Ella Ave Water Tower
750,000 Gallon Elevated Water Tower
Owner: City of Great Falls, MT
Client: AE2S
Contact: Nathan Weisenburger, 406-217-3711
- East Side Tower
500,000 Gallon Elevated Water Tower
Owner/ Client: City of Rosemount, MN
Contact: Dick Howe, 651-322-2041
- Tower No. 1
500,000 Gallon Single Pedestal
Owner: City of Pelican Rapids, MN
Contact: Robert Schlieman, PE (Apex),
218-844-2585
- South Tower
750,000 Gallon Single Pedestal
Owner/ Client: City of Menomonie, WI
Client: Cedar Corp
Contact: Jeremy Hoyt, 715-232-2395
- Mayhew Tower
500,000 Gallon Single Pedestal
Owner/ Client: City of Sauk Rapids, MN
Contact: Craig Nelson, 320-258-5300
- Lexington/ Diffley Reservoir
4,000,000 Gallon Ground Storage Reservoir
Owner/ Client: City of Eagan, MN
Contact: Jon Eaton, 651-675-5215
- West Tower- Keuhn Park Tower
1,500,000 Gallon Composite
Owner/ Client: City of Sioux Falls, SD
Contact: Darin Freese, 605-373-6971
- Zachary Tower
2,000,000 Gallon Toro Spheroid Tower
Owner/ Client: City of Plymouth, MN
Contact: Kevin Mastey, 763-509-5998
- Tower No. 1
50,000 Gallon Hydrocone
Owner/ Client: City of Vermillion, MN
Contact: Marke Peine, 651-248-3108
- Market Center/ Clock Tower
2,000,000 Gallon Composite
Owner/ Client: City of Eden Prairie, MN
Contact: Rick Wahlen, 952-949-8530
***2017 Themec Tank of the Year 2nd Runner-Up**
- Tower No. 5 & Tower No. 10
500,000 Gallon Single Pedestal
1 Million Gallon Composite
Owner: City of Fargo, ND
Contact: Troy Hall, 701-541-4180
- Flag Avenue Reservoir
1,500,000 Gallon Underground Reservoir
Owner/ Client: City of St. Louis Park, MN
Contact: Aaron Wiesen, 952-924-2673
- North Tower
750,000 Gallon Hydropillar
Owner/ Client: City of Baxter, MN
Contact: Kevin Cassidy, 218-454-511
- Randall Road Tower
1 Million Gallon Single Pedestal
Owner: City of Elgin, IL
Contact: Nora Bertram, 847-931-6744
- Tower No. 1
250,000 Gallon Single Pedestal
Owner/ Client: City of Dodge Center, MN
Contact: Mark Barwald, 507-374-2840
- Tower No. 1
400,000 Gallon Single Pedestal
Owner/ Client: City of Wheaton, MN
Contact: Kris Krenz, 320-563-4110
- Tower No. 1
400,000 Gallon Single Pedestal
Owner/ Client: City of Otsego, MN
Contact: Brad Belair, 763-441-9163
- Tower No. 1
50,000 Gallon Legged Tower
Owner/ Client: USG Interiors, LLC- Red Wing, MN
Contact: Larry Dettmer, 651-309-8020
- North Tower
500,000 Gallon Double Ellipsoidal
Owner/ Client: City of Crookston, MN
Contact: Brandon Carlson, 218-289-0273

Project Profiles

KLM has an unparalleled record of consistently delivering successful projects like yours. KLM has planned, designed, and refurbished water towers for the past twenty years. The longevity of our projects is what we are most proud of. What owners most appreciate is the return in investment KLM brings to each rehabilitation project. The following pages list projects KLM has completed, like the proposed tower for the City of Roseau.

Reconditioning Project Profiles:



City of Eden Prairie, MN Market Center Tower Reconditioning of: 2,000,000 Gallon Composite

Dates of Service: 2016 Reconditioning

Conditions & Services: The Market Center Tower is an iconic structure for the City, with working clocks on the main column. Given the high profile, size, and challenging location of this tower, the City Manager (Rick Wahlen) performed detailed interviews with each bidding consultant and their staff, to select the best qualified firm to provide the engineering and inspection services required by the City. As the awarded consultant, KLM provided design services, construction management, full time AWS welding and NACE coating inspections throughout the duration of the project. Rick was instrumental in the project from the beginning of pre-construction to the final walk through and close out, including personally climbing the tower regularly to confirm the project had met his standards. Given the tight confines of the jobsite, KLM conducted weekly meetings locally to update the neighboring businesses and residents as the project commenced. The project was successful, being completed on time and within budget. ***2017 Tnemec Tank of the Year 2nd Runner Up**



City of Elgin, IL Randall Road Tower Reconditioning of: 1,000,000 Gallon Single Pedestal

Dates of Service: 2016 Evaluation, 2017 Reconditioning

Conditions & Services: A project of this size combined with a short schedule may intimidate some contractors and inspection firms. With the combined efforts of a local contractor and KLM, this successful project was completed on time and within budget. Antenna relocation also played a large part of the project. The efficiency of all parties involved allowed telecommunications to operate without disruption.



City of Lino Lakes, MN Tower No. 1

Reconditioning of: 1,000,000 Gallon Hydropillar

Dates of Service: 2013 Evaluation, 2016 Reconditioning

Conditions & Services: KLM performed a floatdown evaluation of Tower Number 1. KLM worked with the Utilities Supervisor on the project to provide plans and specifications. A qualified contractor was selected to perform the reconditioning of the tower. A full containment system was utilized during the project. KLM provided construction management, full time AWS, NACE inspectors, and antenna management throughout the project. A new logo was painted on two sides of the tower; choosing Tnemec Hydroflon for the topcoat on the exterior of the tower. The tower can be seen from Hwy 35W & 23.



City of Maple Grove, MN Fish Lake Tower

Reconditioning of: 1,500,000 Gallon Hydropillar

Dates of Service: 2011 Mixer, 2014 Evaluation, 2015 Reconditioning

Conditions & Services: This water tower project included a pre-assessment of the conditions, including an updated engineer cost estimate. Plans and specifications were approved as well as a qualified contractor during the bid process. KLM worked with the contractor on submittals including coating selection, drawing reviews, scheduling and more. KLM's Antenna Division worked with multiple cellular carriers to coordinate efforts of relocating cellular equipment to temporary locations during the reconditioning of the tower. KLM conducted weekly meetings on site to synchronize the efforts of the city, engineer, and contractor(s) as the project commenced. The project was successful being completed on time and within budget.



KLM Support Documents



KLM 2021 Fee Schedule

| | |
|--------------------------------|-------------------|
| Principal Associate | \$160.00 per hour |
| Structural Engineering | \$220.00 per hour |
| Professional Engineering | \$195.00 per hour |
| Engineer in Training | \$125.00 per hour |
| Project Manager/Supervisor | \$140.00 per hour |
| Field Inspectors – CWI/NACE | \$130.00 per hour |
| Field Inspectors – NACE I & II | \$125.00 per hour |
| Clerical | \$85.00 per hour |

* Per Client needs, customized pricing is provided based on the total project requirements and time frame.

Reimbursable Expenses

The following expenses are reimbursable to KLM Engineering Inc.:

1. Travel time billed at the labor rates listed above or as contracted.
2. Vehicle mileage billed at \$0.85 per mile. KLM onsite vehicle/trailer will be charged at \$35.00 per day.
3. Daily Per Diem billed at \$180.00 per calendar day or as contracted.
4. Projected related expenses such as onsite rental equipment and sub-contractor or sub-consultants billed at actual cost plus 5%.
5. Production supplies, duplicating, and delivery expenses will be billed at the actual costs incurred, no mark-up.
6. Cell Phone charges will be billed at \$20.00 per week.

**Rates may vary due to location*

KLM ENGINEERING, INC.
TERMS AND CONDITIONS

1. **BASIC SERVICES.** The scope of KLM's work is described in the attached proposal or contract agreement and may not be expanded or reduced except by mutual agreement in writing.
2. **ADDITIONAL SERVICES.** Additional work or services shall not be performed without a duly executed change order or purchase order outlining the scope of additional work on services.
3. **OWNER'S RESPONSIBILITIES.** OWNER shall fully disclose to KLM its knowledge of the condition of the structure and its past and present contents and shall provide KLM with full information regarding the requirements for the project; shall designate an individual to act on OWNER'S behalf regarding the project. If necessary, shall clean and make the structure safe for entry; shall furnish the service of other consultants (including engineers, insurance consultants, accountants, attorneys, etc.) when those services are reasonable required or are reasonably requested by KLM; shall test for pollution and hazardous materials when required by law or requested by KLM; and shall provide all necessary permits and other authorization.
4. **SAFETY.** KLM shall only be responsible for safety of KLM personnel at the work site. The Owner or other persons shall be responsible for the safety of all other persons at the site. Owner shall inform KLM of any known or suspected hazardous materials or unsafe conditions at the work site. If, during the course of the work, such materials, or conditions are discovered, KLM reserves the right to take measures to protect KLM personnel and equipment or to immediately terminate services. Owner agrees to be responsible for payment of such additional protection costs. Upon such discovery, KLM agrees to immediately notify the Owner in writing, of the hazardous materials or unsafe conditions.
5. **HAZARDOUS MATERIALS.** Unless agreed in the scope of work KLM has no responsibility for the discovery, presence, handling, removal or disposal of or exposure of persons to hazardous materials at the project site. To the full extent permitted by the law, OWNER shall defend and indemnify KLM and its employees from all claims, including costs and attorney fees, arising out of the presence of hazardous materials on the job site.
6. **SITE ACCESS AND RESTORATION.** Owner will furnish KLM safe and legal site access. It is understood by Owner that in the normal course of work, some damage to the site or materials may occur. KLM will take reasonable precautions to minimize such damage. Restoration of the site is the responsibility of the Owner, unless agreed to in the scope of work.
7. **STANDARD OF CARE.** KLM will perform services consistent with the level of care and skill normally performed by other firms in the profession at the time of this service and in the geographic area, and under similar budgetary constraints. No other warranty is implied or intended.
8. **SCHEDULING.** Prior to scheduling the OWNER shall furnish a written purchase order or request for the services required and shall give as much notice as possible in advance of the time when the services are desired. Our ability to respond to such an order will depend upon the amount of advance notice provided. If an inspection is canceled or delayed after KLM personnel and/or equipment are in transit to the work site, then the OWNER shall be billed, according to the TERMS AND CONDITIONS, for costs incurred by KLM.
9. **INSURANCE.** KLM will maintain worker's compensation insurance and comprehensive general liability insurance and will provide OWNER with a certificate of insurance upon owner's request.

10. **PAYMENT, INTEREST AND BREACH.** KLM will submit itemized monthly or other periodic invoices for work previously performed. Invoices are due upon receipt. OWNER will inform KLM of invoice questions or disagreements within 15 days of invoice date, unless so informed, invoices are deemed correct. OWNER shall make payment within 30 days after receiving each statement, and overdue payments will bear interest at 1.5 percent per month if OWNER is a business entity and at the legal rate of interest of the state in which the project is located if OWNER is a consumer. If any invoice remains unpaid for 60 days, such non-payment shall be a material breach of this agreement. As a result of such material breach, KLM may, at its sole option, suspend all duties to the Owner or other persons, without liability. Owner will pay all KLM collection expenses and attorney fees relating to past due fees, which the Owner owes under this agreement.
11. **MUTUAL INDEMNIFICATION.** Except as to matters actually covered by insurance purchased by KLM. KLM agrees to hold harmless and indemnify OWNER from and against liability arising out of KLM's negligent performance of the work, subject to any limitations, other indemnification's or other provisions OWNER and KLM have agreed to in writing. Except as to matters actually covered by insurance purchased by OWNER, OWNER agrees to hold harmless and indemnify KLM from and against liability arising out of OWNER'S negligent conduct, subject to any limitations, other indemnification's or other provisions OWNER and KLM have agreed to.
12. **LIMITATION OF LIABILITY.** OWNER agrees to limit KLM's liability to OWNER arising from professional acts, errors or omissions, such that the total aggregate liability of KLM does not exceed KLM's project fees except as to matters actually covered by insurance purchased by KLM.
13. **DELAYS.** If KLM work delays are caused by Owner, work of others, strikes, natural causes, weather, or other items beyond KLM's control, a reasonable time extension for performance of work shall be granted, and KLM shall receive an equitable fee adjustment.
14. **TERMINATION.** After 7 days written notice, either party may elect to terminate work for justifiable reasons. In this event, the OWNER shall pay for all work performed, including demobilization and reporting costs to complete the file project and reports to OWNER.
15. **SEVERABILITY.** Any provisions of this agreement later held to violate a law or regulation shall be deemed void, and all remaining provisions shall continue in force. However, OWNER and KLM will in good faith attempt to replace an invalid or unenforceable provision with one that is valid and enforceable, and which comes as close as possible to expressing the intent of the original provision.
16. **KLM'S DOCUMENTS.** All reports, specifications, drawings and other documents furnished by KLM are part of KLM's services to OWNER for use only for the project, and KLM retains all ownership of said documents regardless of whether the project is completed. OWNER may retain copies for reference in connection with the use and occupancy of the project; but KLM does not represent that the documents are suitable for reuse on extension of the project or on other projects. OWNER and others shall not use the documents on other projects or extensions of this project except by KLM's written agreement. OWNER will defend and indemnify KLM from all claims or losses arising out of the unauthorized use of the documents.
17. **ARBITRATION.** Any controversy or claim for money damages arising out of or relating to the making or performance or interpretation of this AGREEMENT, or the breach of this AGREEMENT, shall be settled by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. The arbitration panel shall consist of three arbitrators, at least one of who is a structural engineer; and the panel may award only money damages and shall not award equitable relief. Judgment upon the arbitration award may be entered in any court having jurisdiction of the parties. The enforceability of these arbitration provision and arbitration awards will be governed by the Federal Arbitration Act.

18. **ARBITRATION FEES.** The prevailing party to any dispute arising out of this AGREEMENT shall be entitled to recover its reasonable fees and costs from the other party.
19. **JOB SITE IMAGES, PHOTOGRAPHY AND VIDEO.** During the term of this contract and thereafter, KLM has permission to take still photographs or video of the site for training, documentation, education or promotional purposes. A signed agreement constitutes the Owner's written permission to use the photographic image or video in the manner described herein. The only identifiable information to be used by KLM will be the Owner's name as displayed on the image. Acceptance of these terms and conditions is considered a legal release by the Owner allowing KLM to use of photographic images as described herein.

CITY OF WEST CHICAGO, ILLINOIS



October
2020

500,000 Gallon Capacity
Helena Drive Reservoir



Ground Storage Reservoir Inspection Report

KLM Project
MN4188

1976 Wooddale Drive, Suite 4 | Woodbury, MN 55125
(651) 773-5111 | Fax (651) 773-5222

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APPENDIX B: Surface Preparation Requirement

APPENDIX C: Inspection and Evaluation Methods

APPENDIX D: Paint Chip Test Results

1.0 PROJECT INFORMATION

KLM Project No.: MN4188 **Customer P. O. Number:** N/A

Tank Owner: City of West Chicago, Illinois **Phone:** 630-293-2255

Street/City/State/Zip: 475 Main Street, West Chicago, IL 60185

Tank Owner Contact: Rocky Horvath, Water Utility Superintendent

Owner's Tank Designation: Helena Drive Reservoir

Tank Description: Ground Storage Reservoir

Tank Street Location: 1255 Helena Drive, West Chicago, IL 60185

Purpose of Inspection: Condition Assessment

Date of Inspection: October 14, 2020

Inspected By: Tim Lindsay and Aaron Hageman

Type of Inspection: KLM Standard ROV Evaluation

Manufacturer: Advance Tank Company **Construction Date:** 1989

Contract No.: 8688 **Design Code:** AWWA D-100-84

Capacity: 500,000-Gallons

Type of Construction: Welded

Tank Diameter: 60'-0"

Height to: Overall 27'-0"

Height to: HWL 24'-0" LWL Grade

Type of Access to Tank Interior: Manway on roof

Tank Construction Drawings: Limited from Owner and KLM

Previous Inspection Records: None available to KLM

EXISTING COATING INFORMATION

| | <u>Interior Wet</u> | <u>Exterior</u> |
|----------------------------------|---------------------|-----------------|
| Date Last Coated | Circa 2010 | Circa 2010 |
| Full or Spot Repair | Spot | Overcoat |
| Coating Contractor | Unknown | Unknown |
| Surface Preparation | Unknown | Wash |
| Paint System | Epoxy | Epoxy/urethane |
| Paint Manufacturer | Unknown | Unknown |
| Lab Lead Test Paint Chips | Yes | Yes |



City of West Chicago, Illinois

500,000 GALLON CAPACITY
HELENA DRIVE RESERVOIR

2.0|EXECUTIVE SUMMARY

The reservoir was evaluated on the interior and exterior in conformance with the following:

- a. KLM Engineering, Inc. Proposal.
- b. General guidelines of AWWA Manual M42 Appendix C "Inspecting and Repairing Steel Water Tanks, and Elevated Tanks for Water Storage."
- c. KLM "Procedures and Guidelines for Inspecting Existing Steel and Concrete Water Storage Tanks."
- d. Appendix C Inspection and Evaluation Methods.

2.1|Inspection and Examination Summary

Based on the inspection data, it appears that some miscellaneous structural modifications and repairs are required. These modifications and repairs serve to bring the reservoir into compliance with OSHA regulations and AWWA standards, allow for better coating bonding, allow for safer access in and on the reservoir and, in some cases, removing unnecessary items.

2.2|Coating Examination Summary

2.2.1|Lead and Chromium Content Analysis

The total lead and chromium content of the interior and exterior coatings were analyzed. The results in Appendix D show a percent lead content below reporting limits for both the interior wet and exterior coatings. Neither coating is classified as lead-based paint. Chromium in the test samples indicate levels from below reporting limits to 0.0038 percent, levels not high enough to be a concern in the waste streams generated during reconditioning. Levels over 0.50 percent chromium could possibly pose problems in waste streams.

2.2.2|Interior Wet Coating

The reservoir was constructed, and interior wet area originally coated, by Advance Tank Company in 1989. Although records are not available, field data shows evidence of prior spot repair attempts estimated to have been performed approximately 10 years ago. The interior coating is in poor condition above the High-Water Line (HWL) with more than 90 percent visible coating failures. Failures consist of widespread peeling and surface corrosion on the roof plates and early stages of aggressive corrosion on the roof support structure. The coating below the HWL is in poor condition with approximately 25 percent visible coating failures. Failures consist mostly of widespread pinhole corrosion throughout the reservoir. Due to age and condition, the interior coating is not a candidate for repairs and should be replaced in its entirety within one (1) year to maximize the life expectancy of the structure. See photos in Appendix A.

2.2.3|Exterior Coating

Based on conditions, field data suggests the exterior was presumably overcoated at the same time as the interior repairs, approximately 10 years ago. The exterior coating is in poor overall condition with widespread

oxidation from UV degradation, exposing the underlying coatings. Oxidation will continue to accelerate, eventually breaking down the underlying coating and exposing the substrate. Due to unknown age, surface preparation and overall condition, the exterior is not considered a candidate for additional overcoats. While the coating could last a couple more years, to manage reservoir reconditioning more cost-effectively, the coating should be replaced in its entirety at the same time as the interior coatings, within one (1) year. See photos in Appendix A.

2.3|Repair and Reconditioning Cost Estimate

The costs for structural repairs and replacing the interior and exterior coatings are estimated between \$330,000 and \$355,000. This estimate is based on current pricing and does not include costs for engineering and/or inspection services. For competitive bids, the project should be bid 9 to 12 months before the desired starting date.

An experienced reservoir-coating contractor with proper crew and equipment should be able to complete the project in nine (9) weeks. At the time of reconditioning, the reservoir will need to be drained and remain off-line during interior structural modifications, abrasive blasting, and painting. However, most of the exterior structural modifications can be performed prior to draining, with the reservoir in-service.

2.4|Remaining Reservoir Life

Based on the inspection data, if the recommended structural repairs and coating replacement are completed within one (1) year, the reservoir will be satisfactory for continued service, provided it is inspected regularly.

Upon reconditioning, the reservoir and coating should first be inspected within the warranty period and every three (3) to five (5) years thereafter. A new interior and exterior coating, if applied and maintained properly, should last at least 20 years.

3.0|RECOMMENDATIONS

The photographs referred to in this section are in Appendix A. The surface preparation requirements for all repairs as well as the requirements for welding are described in Appendix B. The exterior and interior paint chip lead tests are in Appendix D.

Based on an evaluation of the inspection data, the following are our recommendations:

3.1|Interior Wet Structural

- 3.1.1** Seal weld the inside of the joint between the roof plate and the roof access manway. This weld will prevent rust streaking and corrosion in areas inaccessible to paint.
- 3.1.2** Seal weld all 27 bolted roof-framing connections at the outer roof with a 3/16-inch fillet weld. After welding, remove all nuts and bolts. See photos 3 through 5, and 7 and 8.
- 3.1.3** Seal weld all 27 connections where roof rafters attach to the center compression ring. See photo 2.
- 3.1.4** Install one (1) 18-inch diameter by 12-inch deep sump pit in the reservoir floor adjacent to the shell manway. This will facilitate future draining and cleaning. See KLM Drawing No. 52c.
- 3.1.5** Seal weld all seams between the central column support foot and the floor, per AWWA D100-11. See photo 17.

- 3.1.6** Remove the existing cathodic protection system from inside the reservoir. Remove all brackets, conduit, cables, junction boxes, etc. Patch any resulting holes according to Appendix C and AWWA D100-11. See photos 13, 14 and 30.
- 3.1.7** Remove all weld spatter and scab marks below the HWL by air arc gouging, cutting torch, and/or grinding to comply with AWWA D100-11. Prepare the surface per Appendix C. It is estimated that there are 55 man-hours to perform the work.
- 3.1.8** Upon completion of blasting and painting operations install NSF 61 approved rubber neoprene barriers at all connections where the fill pipe rests on the supports. See photos 17 and 18.
- 3.1.9** Replace the gaskets on the two (2) 24-inch diameter round shell manways. See photos 14 and 27.
- 3.1.10** Install a Grid-Bee GS-12 Submersible Mixer in the reservoir to provide mixing capabilities that reduce the likelihood and magnitude of ice formation in cold weather and prevent stratification in warm weather, improving water quality and reducing the necessity of chemical additives such as chlorine. Include the installation of all electrical components and control panel for proper operation through SCADA systems. Refer to KLM Drawing No. 58.

3.2 Interior Wet Coating

- 3.2.1** Past coating repairs have been unsuccessful in stopping the corrosion on the interior wet surfaces below the High-Water Line. Apparent improper surface preparation of the coatings has resulted in widespread delamination and corrosion throughout the reservoir interior. The interior wet coating is not repairable and should be replaced in its entirety within one (1) year to maximize the life expectancy of the structure. See photos 2 through 19.
- 3.2.2** After structural repairs are completed, all the reservoir surfaces should be abrasive blasted to an SSPC-SP-10 Near White Metal Blast and coated with a light-colored zinc/polyamide epoxy system (similar to the Tnemec Series 91-H20 Hydro-Zinc/Series N140 Pota-Pox Plus Epoxy coatings).

3.3 Cathodic Protection System

- 3.3.1** The reservoir has a submerged C. P. system. The corrosion and pitting that is occurring suggests the C. P. system is not working correctly. It also should be noted, C.P. systems are not effective at protecting the reservoir surfaces above the HWL. With the recommended zinc rich primer, cathodic protection is not necessarily required, which can provide long term cost savings. As noted in item 3.1.5, KLM recommends removing the C.P. system in its entirety.

3.4 Exterior Ventilation

- 3.4.1** Replace the non-compliant reservoir vent/final with a 24-inch diameter aluminum pressure pallet style vent, similar to the one shown on KLM Drawing No. 8a. The new vent and vent screen design should meet AWWA D100-11 and local Health Department Regulations. The removable top will improve ventilation, provide access to the reservoir interior during reconditioning, and aid in compliance with OSHA Confined Space Entry Requirements. See photo 20.
- 3.4.2** Install three (3) 24-inch round, hinged cover, roof ventilation manway(s), approximately 90 degrees from the existing/lower roof manway. This will provide additional ventilation during the interior surface preparation and coating and the reservoir should comply with OSHA Confined Space Entry Requirements. See KLM Drawing No. 10a.

- 3.4.3** Remove the abandoned aerator piping penetrating the roof at the tank edge. Repair the resulting hole per AWWA D100-11. Seal weld both inside and outside. See photo 25.
- 3.4.4** Install pipe style roof edge handrail system similar to KLM Drawing No. 16b. See photo 23.
- 3.4.5** Relocate the roof access manway so as not to be in alignment with the shell ladder and keeping it within the new handrail. Current conditions are not OSHA Compliant with the manway, creating a trip hazard while gaining access onto the roof. Repair the resulting hole per AWWA D100-11. Seal weld inside and outside. See photo 23.
- 3.4.6** Install a horizontal lifeline from the shell ladder to the finial/vent. Refer to KLM Drawing No. 24b.
- 3.4.7** Replace the pipe style safety climb device on the shell ladder with an OSHA approved cable style device.
- 3.4.8** According to Ten States Standards, replace the overflow pipe discharge screen with a corrosion resistant, heavy gauge, #24 mesh screen. See photos 28 and 29.
- 3.4.9** Remove the abandoned aerator structure in its entirety, adjacent to the reservoir. See photos 24, 28, 32, and 33.

3.5 Exterior Coatings

- 3.5.1** The exterior coating is in poor overall condition with widespread oxidation from UV degradation, exposing the underlying coatings. Oxidation will continue to accelerate, eventually breaking down the underlying coating and exposing the substrate. Due to unknown age, surface preparation and overall condition, the exterior is not considered a candidate for additional overcoats. While the coating could last a couple more years, to manage reservoir reconditioning more cost-effectively, the coating should be replaced in its entirety at the same time as the interior coatings, within one (1) year. See photos 21 through 29.
- 3.5.2** After structural repairs are completed, all the reservoir surfaces should be abrasive blasted to an SSPC-SP-6 Commercial Blast Clean and coated with a zinc/epoxy/urethane/fluoropolymer system (similar to the Tnemec Series 91-H20 Hydro-Zinc/Series N140 Pota-Pox Plus Epoxy/Series 73 Endurashield/Series 701 Hydroflon coatings).

3.6 Site and Environmental Considerations

- 3.6.1** In conformance with state and federal rules, to maintain air quality and to prevent the drift of dust and fugitive emissions, full containment will be required, including impervious ground cover, a top cover or bonnet, and negative air dust collection.

3.7 Telecommunications Considerations

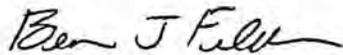
- 3.7.1** The reservoir has no telecommunications equipment, either antennas or other associated equipment. Antennas generally have the effect of dramatically increasing the cost of reconditioning water storage reservoirs. If the owner is considering allowing antennas to be installed on the reservoir, lease agreements should be written to ensure the antenna owners are responsible for increase maintenance costs due to their presence. Installations should be reviewed to ensure that they do not interfere with normal use or maintenance of the reservoir, present safety hazards, or violate state or federal regulations.

4.0|REPAIR AND RECONDITIONING OVERVIEW

KLM recommends structural repairs and interior and exterior coatings replacement be completed within one (1) year. An experienced reservoir-coating contractor with the proper crew and equipment should be able to complete the project in nine (9) weeks.

KLM ENGINEERING, INC.

Report prepared by:



Benjamin Feldman, P.E.
Project Engineer
MN License No. 49598

Report reviewed and certified by:



Rodney Ellis
Vice President/COO
NACE Certified Coatings Inspector No. 1686
AWS/CWI 04040311

October 27, 2020

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APPENDIX A

PHOTOGRAPHS



Photo No. 1
Overall view of the reservoir



Photo No. 2
Center column and roof conditions



Photo No. 3
Condition of roof structure



Photo No. 4
Severe corrosion on roof structure



Photo No. 5
Overflow weir and conditions

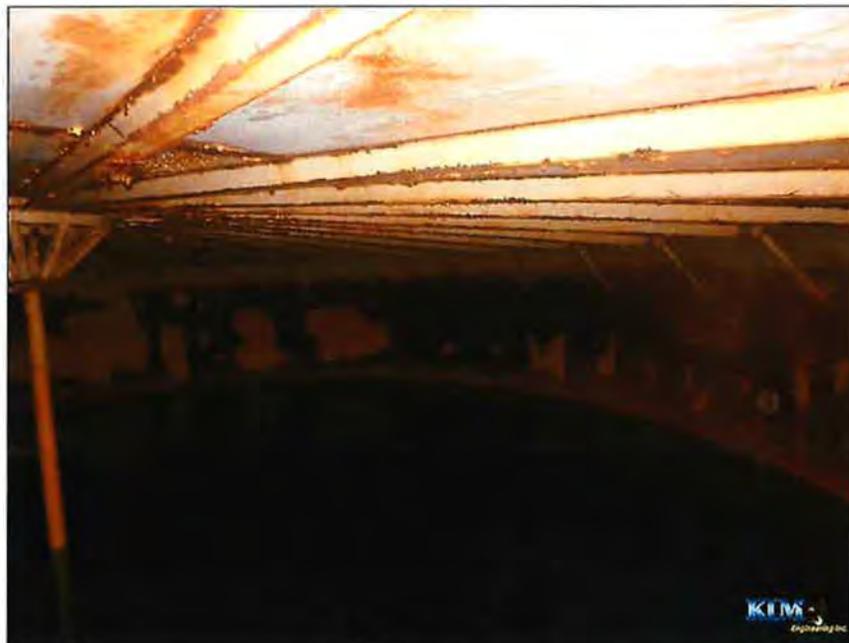


Photo No. 6
Roof and upper shell



Photo No. 7
Roof and upper shell

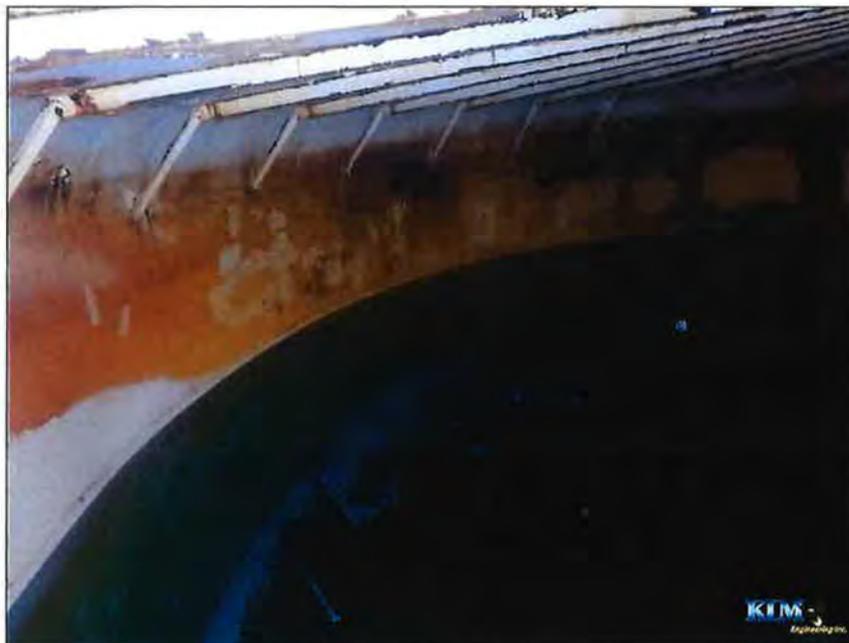


Photo No. 8
Upper shell condition

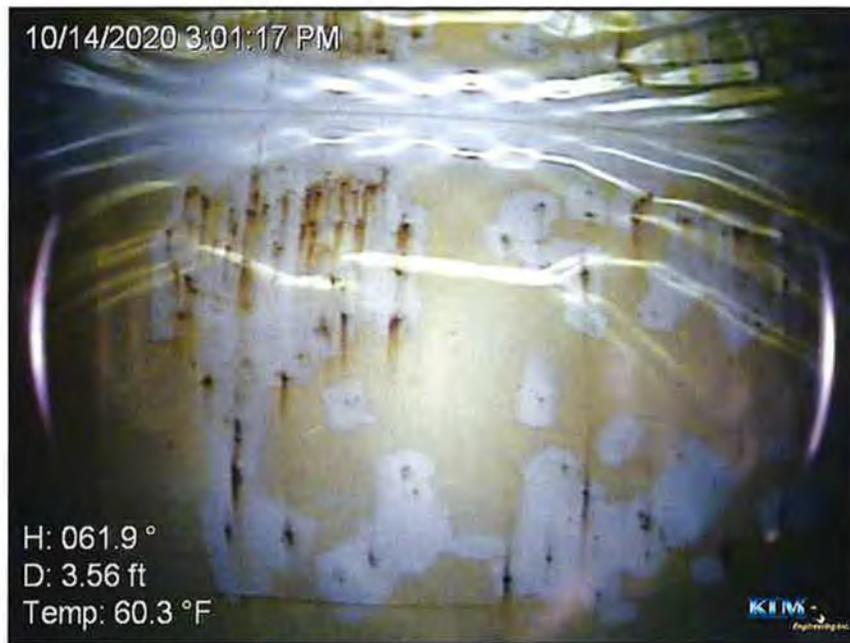


Photo No. 9
Coating failures on spot repairs on shell



Photo No. 10
Condition of upper shell

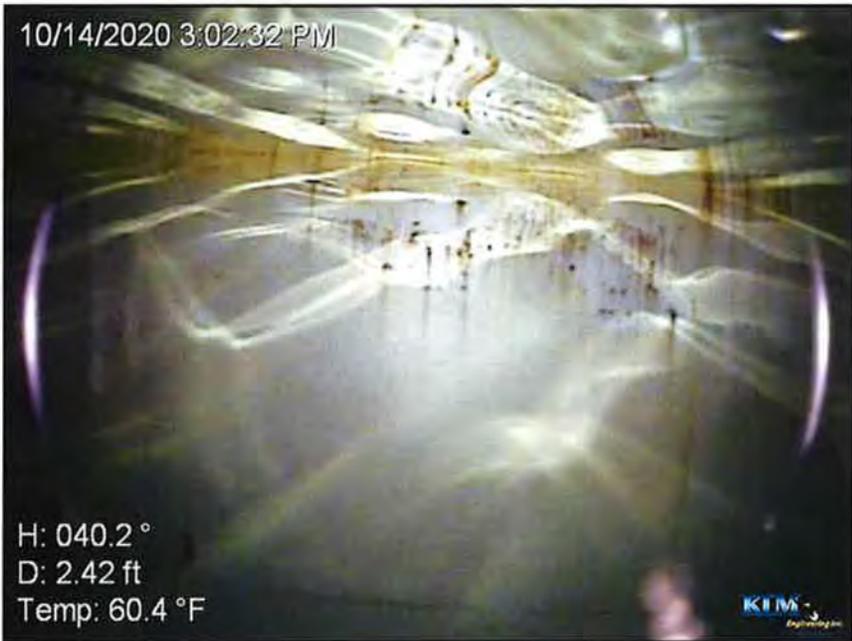


Photo No. 11
Coating failures on spot repairs on shell



Photo No. 12
Lower shell condition



Photo No. 13
Lower shell/floor and fill pipe, Note: cathodic protection connection to shell



Photo No. 14
Shell manway and cathodic protection



Photo No. 15
Paint chip accumulation on floor



Photo No.16
Discharge and conditions



Photo No. 17
Condition of floor, center column and fill pipe with bracing



Photo No. 18
Fill pipe straddled in bracing



Photo No. 19
Condition of floor



Photo No. 20
Vent/finial



Photo No. 21
Roof coating condition



Photo No. 22
Roof coating condition

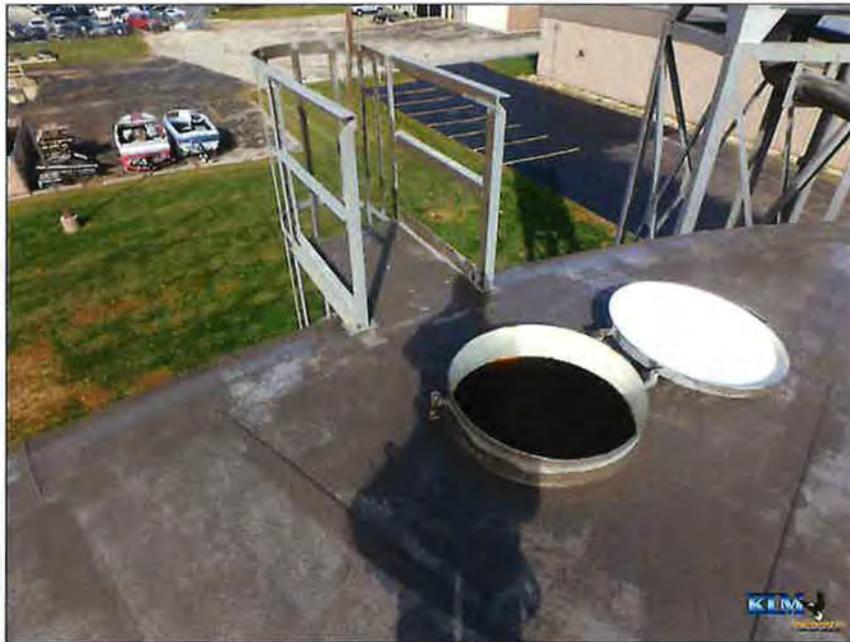


Photo No. 23
Access manway and ladder platform



Photo No. 24
Abandoned aerator



Photo No. 25
Abandoned aerator piping



Photo No. 26
Condition of shell coating



Photo No. 27
Shell manway

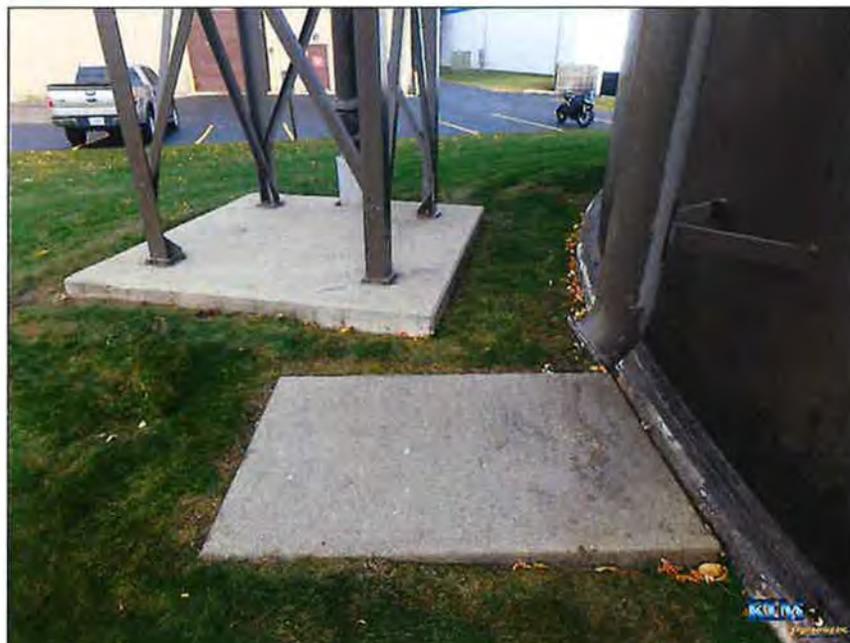


Photo No. 28
Overflow discharge



Photo No. 29
Shell coating condition



Photo No. 30
Shell condition, Note: cathodic protection equipment attached to tank



Photo No. 31
Piping in valve pit

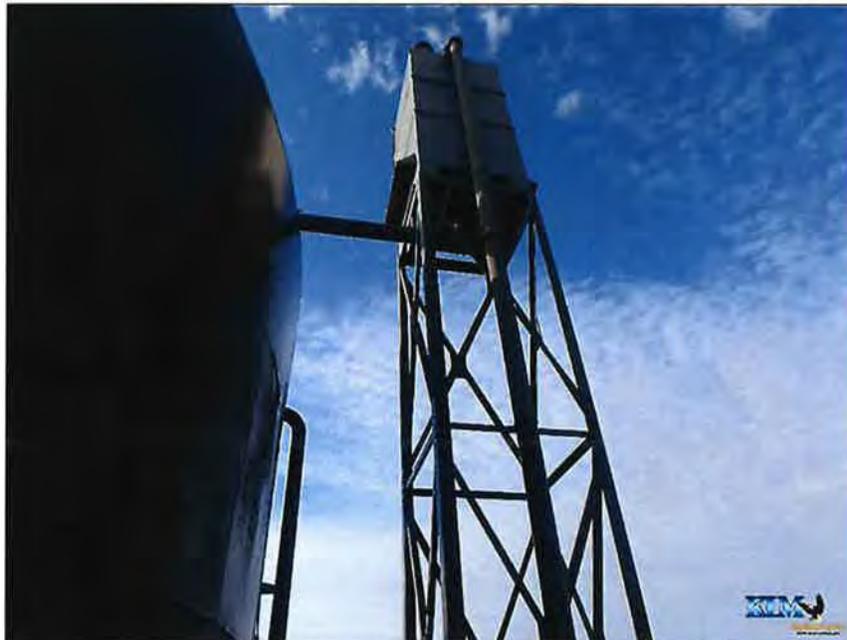


Photo No. 32
Abandoned aerator



Photo No. 33
Abandoned aerator

APPENDIX B

SURFACE PREPARATION REQUIREMENTS



NACE SP0178-2007
(formerly RP0178-2003)
Item No. 21022

Standard Practice

Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Service

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Foreword

When specifying tanks and vessels that are to be internally lined to control corrosion and prevent product contamination, special design, fabrication, and surface finishing practices must be considered to obtain the desired performance of these linings for immersion service. As the corrosiveness of the product increases, the design and fabrication of the tank or vessel becomes more critical relative to the performance of the lining.

This standard presents standard practices for the design, fabrication, and surface finish of metal tanks and vessels that are to be lined for corrosion resistance and to prevent product contamination. The standard explains how the standard practices govern the quality of lining applications. Appendix A contains illustrations depicting both good and bad practices for tanks and vessels to be lined, and Appendix B contains a list of recommended responsibilities to ensure that an acceptable lining application is achieved. Appendix C contains written and graphic descriptions of five degrees of surface preparation of welds in tanks and vessels that may be specified prior to lining.⁽¹⁾

This standard is intended for use or reference by end users, lining specifiers, lining applicators, lining manufacturers, and contracting authorities involved in the surface preparation or lining installation in tanks and vessels intended for chemical immersion service.

This standard practice was originally prepared in 1978 by NACE International Task Group (TG) T-6A-29, a component of Unit Committee T-6A on Coating and Lining Materials for Immersion Service, in collaboration with Unit Committee T-6H on Application and Use of Coatings for Atmospheric Service. The standard was revised in 1989 by TG T-6G-27, a component of Unit Committee T-6G on Surface Preparation for Protective Coatings, and was reaffirmed in 1991 and 1995. It was reaffirmed in 2003 by Specific Technology Group (STG) 04 on Coatings and Linings, Protective: Surface Preparation. The standard was revised in 2007 by TG 295 on Lining, Tanks and Vessels for Immersion Service: Fabrication Details, Surface Finish Requirements, and Proper Design Considerations—Review of NACE Standard RP0178-2003. This TG is administered by STG 04. It is also sponsored by STG 02 on Coatings and Linings, Protective: Atmospheric; STG 03 on Coatings and Linings, Protective: Immersion and Buried Service; and STG 43 on Transportation, Land. This standard is issued by NACE International under the auspices of STG 04.

⁽¹⁾ The visual comparator mentioned in Appendix C is a molded plastic replica that illustrates various degrees of surface finishing for welds prior to coating or lining. Full-seam welds, skip welds, butt welds, lap welds, and others are depicted. For more information contact the NACE FirstService Department, 1440 South Creek Drive, Houston, TX 77084-4906.

NACE International gratefully acknowledges the contributions of the following companies in the preparation of the welding samples and the fabrication of the die from which the plastic replicas have been molded:

Ausimont USA, Inc.,⁽²⁾ Thorofare, NJ
CenterPoint Energy,⁽³⁾ Houston, TX
S.G. Pinney & Associates, Inc.,⁽⁴⁾ Port St. Lucie, FL
The Sherwin-Williams Company,⁽⁵⁾ Cleveland, OH

NACE also gratefully acknowledges the assistance of KTA-Tator Inc.,⁽⁶⁾ Pittsburgh, PA, in developing the weld pattern that was used to mold the plastic replica of weld samples.

In NACE standards, the terms *shall*, *must*, *should*, and *may* are used in accordance with the definitions of these terms in the *NACE Publications Style Manual*, 4th ed., Paragraph 7.4.1.9. *Shall* and *must* are used to state mandatory requirements. *Should* is used to state something considered good and is recommended but is not mandatory. *May* is used to state something considered optional.

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⁽⁴⁾ S.G. Pinney & Associates, Inc., Corporate Office, 1326 S.W. Biltmore St., Port St. Lucie, FL 34983.

⁽⁵⁾ The Sherwin-Williams Company, 101 Prospect Avenue N.W., Cleveland, OH 44115.

⁽⁶⁾ KTA-Tator, Inc., 115 Technology Drive, Pittsburgh, PA 15275.

**NACE International
Standard Practice**

**Design, Fabrication, and Surface Finish Practices for
Tanks and Vessels to Be Lined for Immersion Service**

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Section 1: General

1.1 This standard presents standard practices for the design, fabrication, and surface finish of tanks and vessels to be lined for immersion service. Tanks and vessels may be lined for corrosion control or to prevent product contamination.

1.1.1 Appendix A (mandatory) contains illustrations depicting both good and bad practices for tanks and vessels to be lined for immersion service.

1.1.2 Appendix B (nonmandatory) contains a list of recommended responsibilities of the purchaser (user), designer, fabricator, lining applicator, and inspector to ensure that an acceptable lining application is achieved.

1.1.3 Appendix C (nonmandatory) contains written and graphic descriptions of five degrees of surface preparation of welds in tanks and vessels that may be specified prior to lining. The written descriptions of the five degrees of surface preparation of welds in Appendix C take precedence over the graphics and the companion visual comparator. The graphics are only

pictorial representations of welds and grinding finishes and are not intended to be representative of the integrity of the welds. The "weld condition prior to finishing" is not a typical weld; it is only intended to illustrate defects in welds that must be corrected prior to lining.

1.2 Good welding practices and welding codes govern the integrity of the tank and vessel welds; this standard only addresses surface preparation of the welds for the purpose of lining the tank or vessel for immersion service.

1.3 Other design and construction codes or standards may be used to complement the details given here. When applicable, the requirements of such other codes or standards shall be considered. A partial list of such codes and standards can be found in the Bibliography.

1.4 These standard practices may be used in the design, fabrication, and surface finish of tanks and vessels for services other than immersion, such as dry bulk storage of solid materials.

Section 2: Definitions

Lining: A coating or layer of sheet material adhered to or in intimate contact with the interior surface of a container used to protect the container against corrosion by its contents and/or to protect the contents of the container from contamination by the container material. For the purposes of this standard, *lining* refers to a surface barrier, usually a thin film less than 500 µm (20 mil) thick applied as either a lining or a coating. In common usage, the terms *coating* and *lining* are interchangeable, but in this standard, only the term *lining* is used. The requirements contained herein may or may not apply to heavier, thick-film linings, sheet linings, trowel-applied and pumped-into-place finishes, plasma,

flame-sprayed linings, fiber-reinforced plastic linings, or similar lining materials.

Surface Finish: The degree of smoothness of a surface produced by the removal of sharp edges and the appropriate surface preparation of welds and other rough areas. The term *surface finish* is also used to characterize the degree of smoothness that is necessary to attain a surface to which the lining can be applied satisfactorily in accordance with the lining specification.

Section 3: Design Practices

3.1 Accessibility

3.1.1 All surfaces of the tank or vessel interior shall be readily accessible for surface preparation and lining application (see Figures A1 through A10, Appendix A).

3.1.2 The manway diameter for working entrance and safety reasons during the lining application shall be as large as practical for the tank or vessel being lined.

3.1.2.1 If possible, at least one manway shall be located near ground (working) level, except in

tanks or vessels designed to be buried below grade.

3.1.3 Additional manways and openings should be provided as needed to facilitate ventilation. These must meet safety requirements.

3.2 Joints

3.2.1 Continuous butt-welded joints shall be used whenever possible (see Figure A5, Appendix A).

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3.2.2 Rivets shall not be used.

3.2.3 The use of internal bolted connections should be avoided to the fullest extent possible.

3.2.4 Continuous lap-welded joints may be used but are not preferred. For sheet lining material, this type of construction may not be acceptable.

3.3 Connections

3.3.1 All connections to the tank or vessel shall be flanged.

3.3.2 Threaded connections should not be used in tanks and vessels operating in corrosive environments (see Figure A4, Appendix A). However, if threaded connections cannot be avoided in corrosive environments, these parts shall be fabricated of corrosion-resistant materials, or constructed as shown in Figure A10, Appendix A.

3.3.2.1 CAUTION: Dissimilar metal (galvanic) corrosion occurs when, for example, an alloy is used to replace the steel bottom of a tank, or in a similar circumstance when alloy appurtenances must be part of the construction of a vessel. If a lining is then applied to the steel and part of the alloy (usually 150 to 610 mm [5.9 to 24 in.]), any discontinuity in the lining exposes a small anode surface. Once corrosion starts, it progresses rapidly because of the large exposed alloy cathodic area to the much smaller anodic area. Without the lining, galvanic corrosion causes the steel to corrode at the weld area, but at a much slower rate. The recommended practice is to apply the lining to all of the alloy as well as the steel, thereby eliminating the possible occurrence of a large-cathode-to-small-anode surface.

3.3.3 Nozzle connections to be lined shall be as short as possible and be a minimum of 50 mm (2 in.) in diameter (see Figure A4, Appendix A). Connections less than 50 mm (2 in.) in diameter shall be suitably attached through a reducing flange (see Figure A10, Appendix A). When trowel-applied thick-film linings are required, additional nozzle inside diameter shall be allowed for lining thickness.

3.4 Appurtenances Inside the Tank or Vessel

3.4.1 The standard practices in Sections 3, 4, and 5 shall apply to any item to be installed inside a tank or vessel that is to be lined. Such appurtenances include, but are not limited to, agitators, anti-swirl baffles, outlet connections, gauging devices, vortex breakers, and internal piping.

3.4.2 If appurtenances inside the tank or vessel, including nuts and bolts, cannot be lined, they shall be made of corrosion-resistant materials. (CAUTION: See Paragraph 3.3.2.1.)

3.4.3 If bolted connections are necessary and cannot be made of corrosion-resistant materials, the mating surfaces shall be lined before assembly. Gaskets shall be used on mating surfaces and the sealing surfaces of nuts and bolts to protect the lining.

3.4.4 Dissimilar metals shall be electrically isolated from the steel tank or vessel surface whenever possible. Where dissimilar metals are used, selection shall be such that the galvanic effect is minimized. Other corrosion mitigation methods may be required (see Figure A8, Appendix A).

3.4.5 Heating elements shall be offset from the tank or vessel surface to provide access for surface preparation, application, inspection, and cleaning. Elements shall be positioned so as not to damage the lining system.

3.5 Structural Reinforcement Members

3.5.1 Structural support members should be installed on the exterior of the tank or vessel. However, if such members are installed internally, they shall be fabricated of simple shapes such as smooth, round bars or pipe for ease of applying the lining material.

3.5.2 The use of internal flanged connections, stiffening rings, reinforcement pads, angles, channels, I-beams, and other complex shapes should be avoided. If they must be installed internally, these members shall be fully welded and welds and sharp edges ground to a radius of at least 3.2 mm (0.13 in.) or as agreed between the tank or vessel fabricator, tank or vessel owner, and lining applicator (see Figures A1 and A6, Appendix A).

3.6 Heat Sinks

3.6.1 Heated, forced curing of lining systems is often preferred if not specifically required. During tank or vessel design and fabrication, especially with field-erected units, consideration must be given to avoiding or minimizing heat sink areas. Such areas might include opposite saddles or support lugs, flat bottoms on foundations, and stiffening rings.

3.6.2 These situations may be addressed either by tank or vessel design or by construction or insulation of the foundation or supports. Another possible solution is the use of temporary constructions, such as false floors or temporary shelters, to achieve uniform heating and curing.

Section 4: Fabrication Practices

4.1 All design practices in Section 3 shall apply to all fabrication.

4.2 All welding shall be continuous. Intermittent or spot welding shall not be allowed.

4.3 Fillets and corners must be accessible for grinding.

4.4 Field tanks fabricated for use with high-heat-cured linings (e.g., unmodified phenol formaldehyde thermosetting linings) should have bottoms suitably insulated and installed on properly drained foundations to facilitate proper cure of the lining on the floor of the tank. Because the sand-filled earthen foundation, concrete pad, or other similar foundation is a poor insulator, some means must be considered prior to the application of the lining either to override the heat sink or to distribute the heat uniformly. This may be accomplished in several ways:

(a) with the use of properly sized heaters;

(b) by placing the tank on a concrete pad topped with a 100-mm (4-in.) layer of vermiculite concrete;

(c) by insulating with a high-compressive-strength structural grade insulation between the tank bottom and foundation;

(d) by installing an internal temporary false bottom approximately 1.5 m (5.0 ft) above the floor of the tank prior to the final high-temperature bake; or

(e) by other suitable means that practically and effectively ensure a properly cured lining on the tank floor.

Section 5: Surface Finish Practices

5.1 Sharp edges shall be ground to a smooth radius of at least 3.2 mm (0.13 in.) or as agreed between the tank or vessel fabricator, tank or vessel owner, and lining applicator.

5.2 Tank and vessel internal surfaces to be lined shall not be marred by gouges, handling marks, deep scratches, metal stamp marks, slivered steel, or other surface flaws. Flaws shall be repaired by welding or grinding, as appropriate.

5.2.1 Limits on surface flaw depth and geometry shall be set by agreement between the tank or vessel fabricator, tank or vessel owner, and lining applicator.

5.2.2 All restorative welding shall be performed according to applicable tank or vessel design codes, approved job-specific procedures, or both.

5.3 All rough welds shall be ground to remove sharp edges and other such irregularities (see Figure A2, Appendix A). Chipping may be used to remove sharp edges if followed by grinding. See Appendix C for written and graphic descriptions of five degrees of surface finishing of welds that may be specified preparatory to the lining of tanks and vessels.

5.3.1 The amount of grinding performed shall be judicious and performed only to the extent necessary to

prepare the weld surface and surrounding metal surfaces in accordance with the specification. Over-grinding, which would result in decreasing the wall thickness or the integrity of the weld beyond the limitations imposed by good welding practices, applicable welding codes, or tank or vessel ratings, shall be avoided.

5.4 Automatic machine welds may be acceptable as dictated by the specifications for film continuity.

5.5 All weld spatter and arc strikes must be removed. Chipping may be used if followed by grinding or the use of an abrasive disc.

5.6 If an anti-spatter material is applied adjacent to the weld area prior to welding, the anti-spatter material shall be one that is readily removable. Anti-spatter materials shall be removed prior to abrasive blasting.

5.7 When checking weld continuity, the tank or vessel fabricator shall avoid the use of oils, lubricants, or other foreign materials that would leave a contaminating residue not easily removed by abrasive blasting.

5.8 Surfaces shall be cleaned and decontaminated as required by the governing lining application specification(s).

Bibliography

API⁽⁷⁾ Standard 650 (latest revision). "Welded Steel Tanks for Oil Storage." Washington, D.C.: American Petroleum Institute (API).

API RP 652 (latest revision). "Lining of Aboveground Petroleum Storage Tank Bottoms." Washington, D.C.: API.

ASME⁽⁸⁾ Boiler and Pressure Vessel Code (latest revision). New York, NY: ASME.

Directive 97/23/EC (latest revision). "Pressure Equipment Directive (PED)." Brussels, Belgium: European Commission.⁽⁹⁾

NACE Standard SP0294 (latest revision). "Design, Fabrication, and Inspection of Storage Tank Systems for Concentrated Fresh and Process Sulfuric Acid and Oleum at Ambient Temperatures." Houston, TX: NACE.

⁽⁷⁾ American Petroleum Institute (API), 1220 L Street, NW, Washington, D.C. 20005-4070.

⁽⁸⁾ ASME International (ASME), Three Park Avenue, New York, NY 10016-5990.

⁽⁹⁾ European Commission (EC), Rue de la Loi 200, B-1049 Brussels, Belgium.

**APPENDIX A:
Illustrations of Design, Fabrication, and Surface Finish Practices for Metal Tanks and Vessels to Be Lined for Immersion Service**

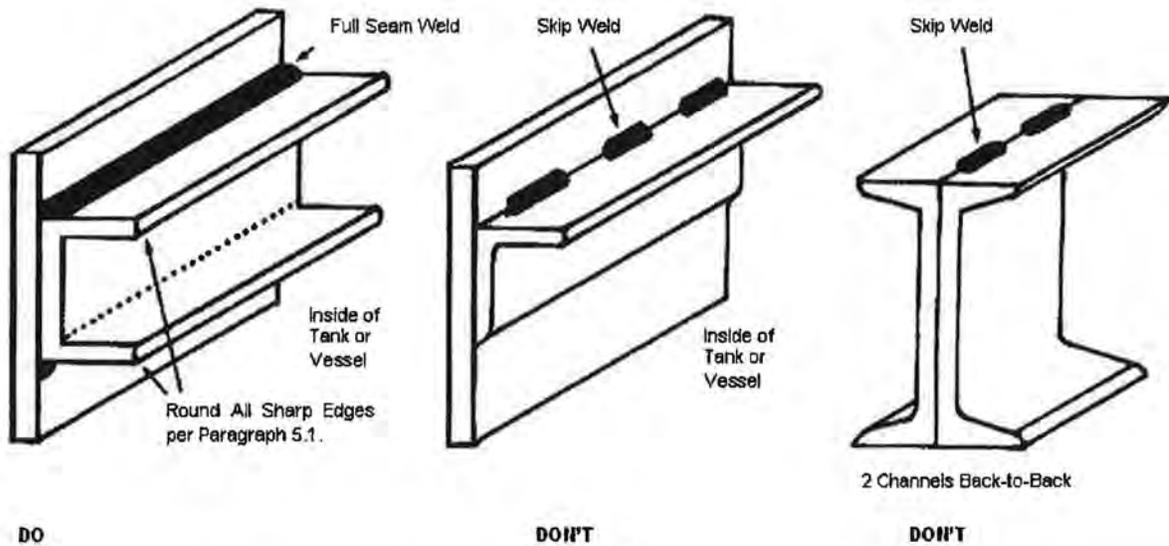


FIGURE A1

All construction involving pockets or crevices that do not drain or that cannot be properly abrasive blasted and lined shall be avoided.

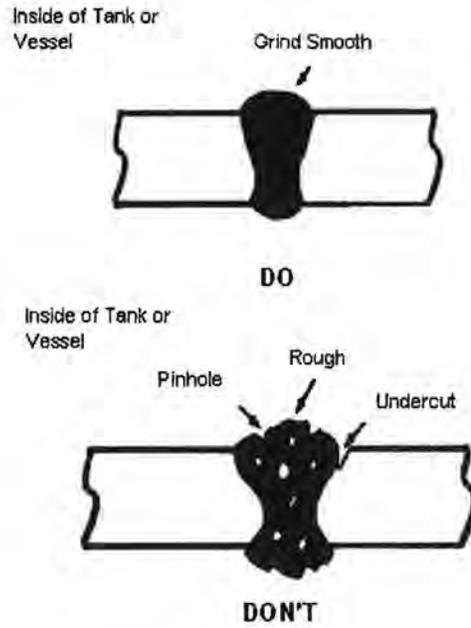


FIGURE A2

All joints shall be continuous full-penetration porosity-free welds. In tanks and vessels that require a 100% holiday-free lining, all welds must be smooth with no holes, high spots, lumps, or pockets. Grinding is required to eliminate sharp edges and high spots. Weld metal shall be used to fill in undercut or pits.

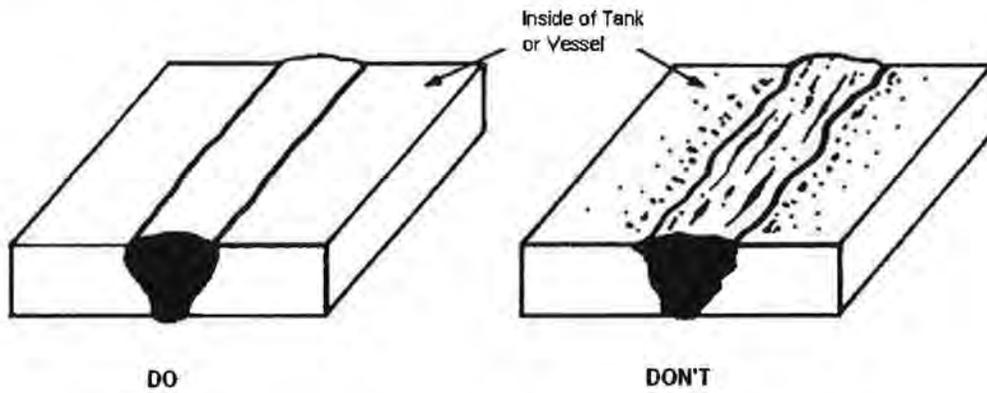


FIGURE A3

All weld spatter shall be removed.

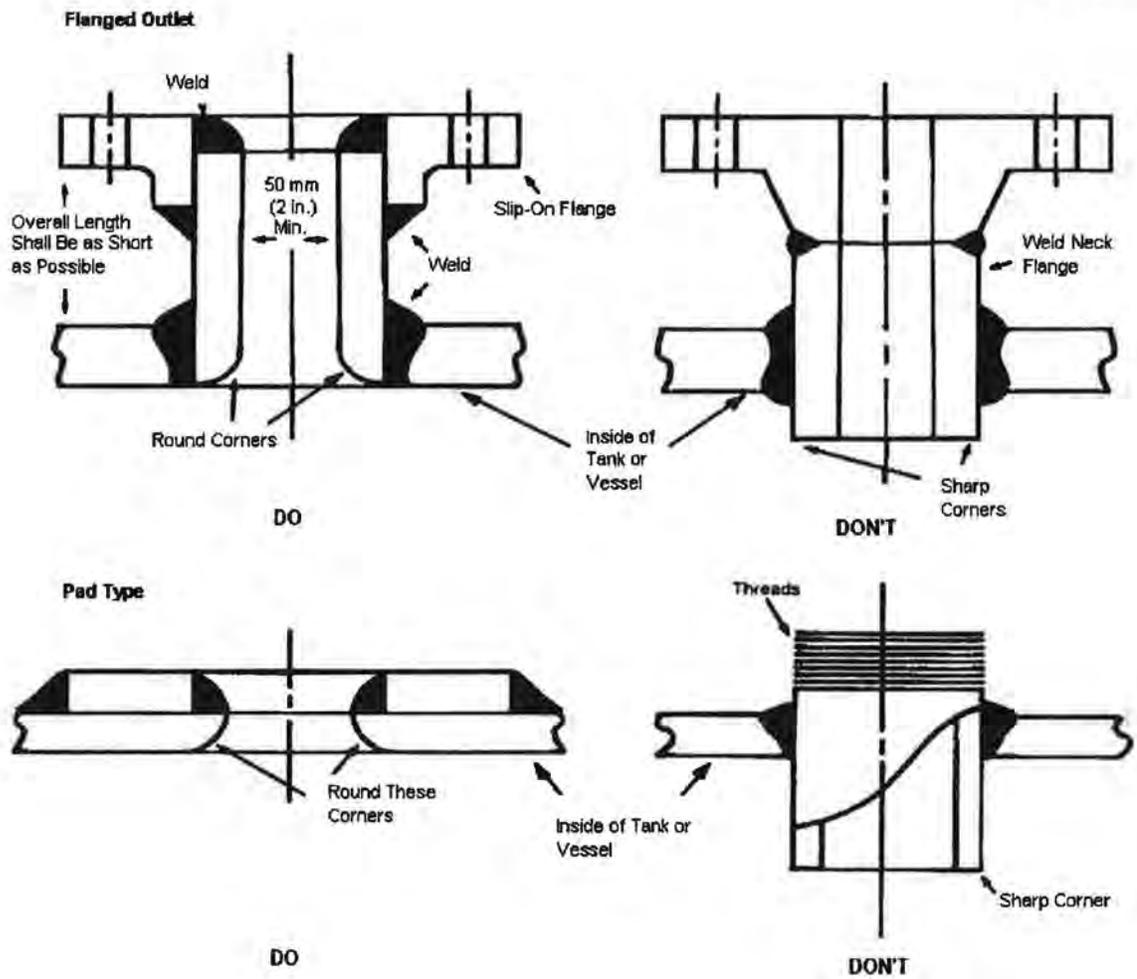


FIGURE A4

The outlets shall be flanged or pad-type rather than threaded. Within pressure limitations, slip-on flanges are preferred because the inside surface of the attaching weld is readily available for rounding edges and grinding. If operating pressure dictates the use of weld neck flanges, the inside surface of the attaching weld is in the throat of the nozzle, making repair of surface irregularities by grinding rather difficult.

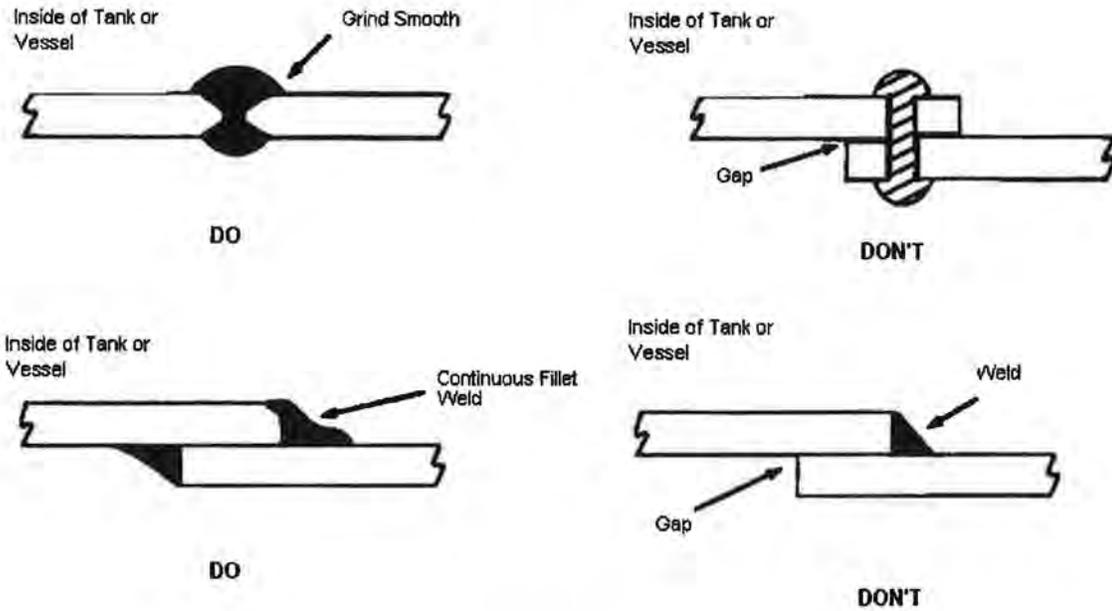


FIGURE A5

Butt welding shall be used whenever possible rather than lap welding or riveted construction.

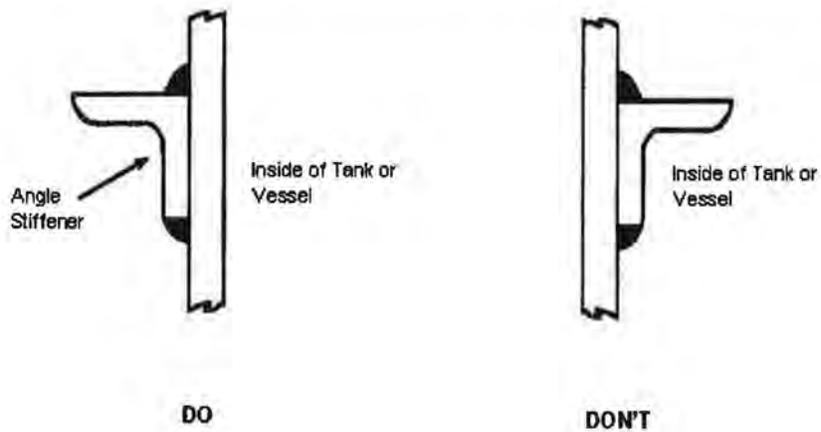


FIGURE A6

Stiffening members should be on the outside of the tank or vessel.

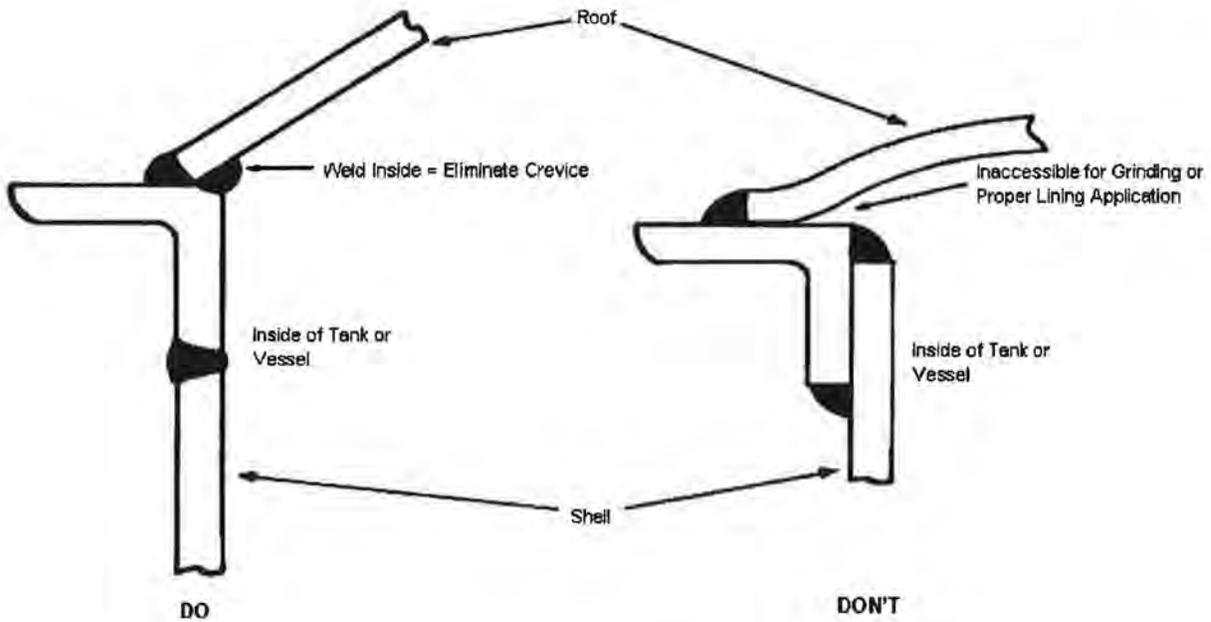


FIGURE A7

Roof-to-Shell Joint. Eliminate crevice and lap weld at roof-to-shell joint in a tank or nonpressure vessel.

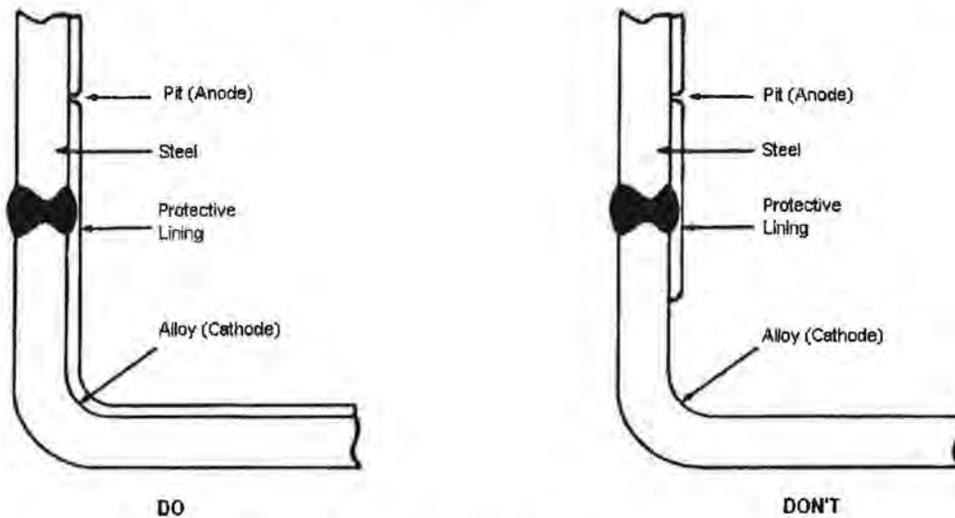


FIGURE A8

Dissimilar metal (galvanic) corrosion occurs when, for example, an alloy is used to replace the steel bottom of a tank, or, in a similar circumstance, when alloy appurtenances must be a part of the construction of a vessel. If a lining is then applied to the steel and part of the alloy (usually 150 to 610 mm [5.9 to 24 in.]), any discontinuity in the lining exposes a small anode surface. Once corrosion starts, it progresses rapidly because of the large exposed alloy cathodic area to the much smaller anodic area. Without the lining, galvanic corrosion causes the steel to corrode at the weld area, but at a much slower rate. The recommended practice is to apply lining to all of the alloy as well as the steel, thereby eliminating the possible occurrence of a large-cathode-to-small-anode surface.

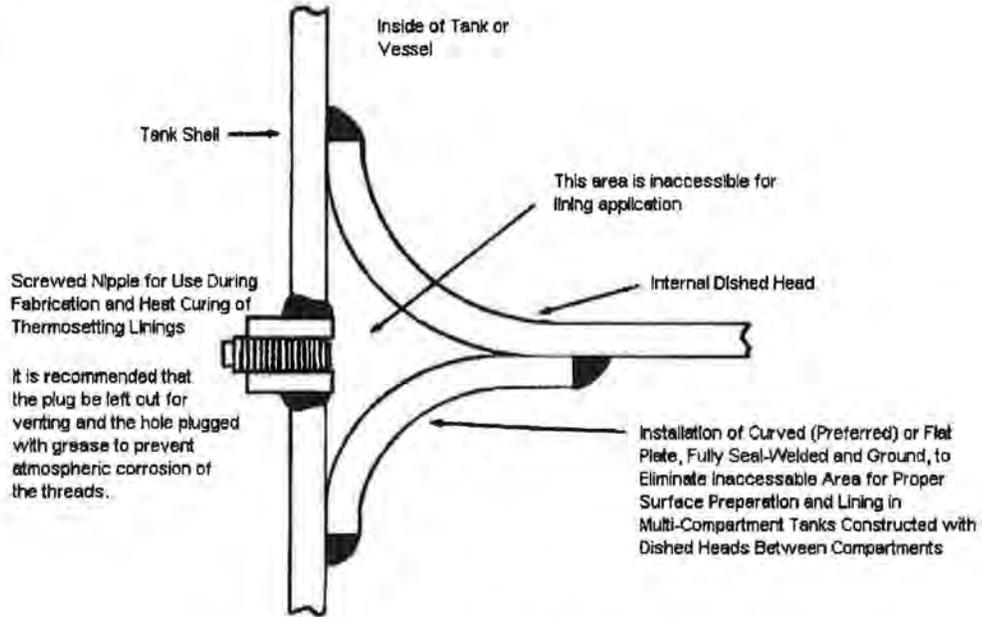


FIGURE A9

A technique (detail of fabrication) to allow for good continuity of lining application for inaccessible areas such as those in multicompartment tanks or vessels.

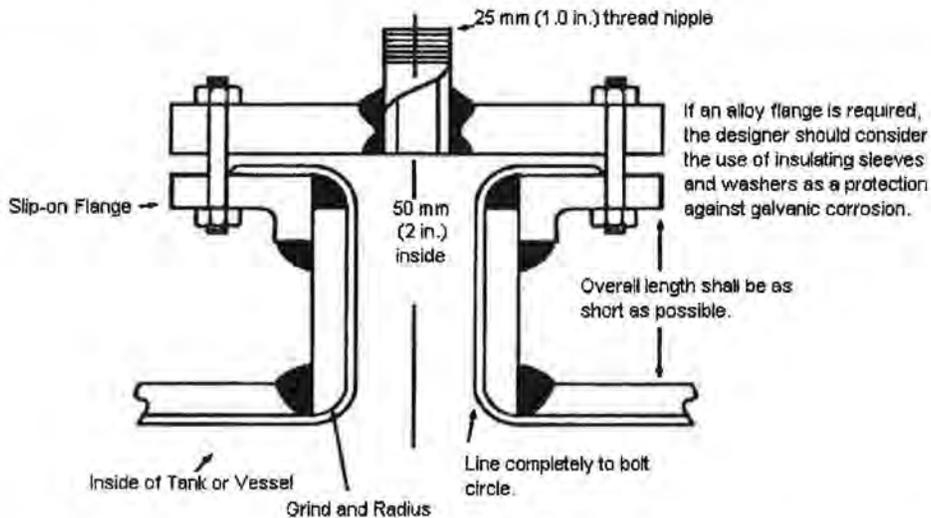


FIGURE A10

Minimum 50-mm (2-in.) diameter nozzle required for most thin-film linings. Thicker-film linings may require a larger-diameter nozzle. This diagram also illustrates fabrication practice where a threaded connection is required in a tank or vessel that requires a holiday-free lining.

APPENDIX B: Recommended Responsibilities

This appendix is a list of recommended responsibilities that should be assigned to the purchaser, designer, fabricator, lining applicator, and inspector in order to obtain a properly designed and fabricated tank or vessel for interior lining.

B1.1 Joint Responsibilities

B1.1.1 The purchaser, designer, fabricator, lining applicator, and inspector(s) should review and agree to the requirements involved before contractual agreements are made.

B1.1.2 The purchaser, in agreement with the fabricator and lining applicator, should assign responsibility for inspection of fabrication, surface finish, and lining application, and such responsibility should be defined in all contracts.

B1.2 Responsibilities of the Purchaser (Owner or User)

B1.2.1 The purchaser should be responsible for specifying and/or approving the detail requirements for design, fabrication, and surface finish to all parties concerned.

B1.2.1.1 The detailed requirements should be fully described in writing and include drawings of the tank or vessel to be fabricated and lined and service requirements.

B1.2.1.2 The purchaser should advise the designer, fabricator, lining applicator, and all inspectors of the detailed requirements, including time schedules, inspection, and acceptable requirements, in writing.

B1.3 Responsibilities of the Designer

B1.3.1 The designer should be responsible for including the required fabrication and surface details on all sketches and drawings related to the tank or vessel.

B1.4 Responsibilities of the Fabricator

B1.4.1 The fabricator should be responsible for adhering to the fabrication and surface finish details shown on the working drawings and described in the tank or vessel specifications.

B1.4.2 Responsibility for an inspection of the blast or any additional welding, grinding, or surface finishing that may be revealed by the surface preparation for lining, plus any subsequent reblasting, should be defined in the lining contract.

B1.4.3 The fabricator, when checking the quality of the weld, should use only those materials that can be readily and thoroughly removed by the fabricator after completion of the inspection procedure.

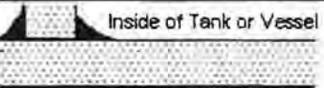
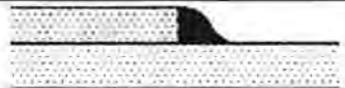
B1.5 Responsibilities of the Lining Applicator

B1.5.1 Responsibility for additional welding, grinding, or surface finishing that may be revealed by the surface preparation for lining, plus any subsequent reblasting, should be defined in the lining contract.

B1.6 Responsibilities of the Inspector(s)

B1.6.1 A qualified inspector whose qualifications and affiliation are acceptable to all parties should be responsible for the verification of fulfillment of design, fabrication, and surface finish requirements.

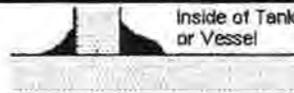
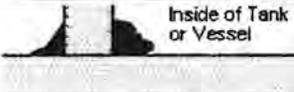
Appendix C—Written and Graphic Descriptions of Various Degrees of Surface Finishing of Welds That May Be Specified in Preparation for Lining of Tanks and Vessels^(A)

| NACE Weld Preparation Designation | Type of Grinding | Butt Weld | Fillet Welded Tee Joint | Lap Weld |
|--|--|---|---|---|
| A | Ground flush and smooth; free of all defects. ^(B) | Weld spatter is removed and all surface imperfections are repaired as necessary. The weld is ground flush with the plate surface. | Not Applicable | Not Applicable |
| | |  | Not Applicable | Not Applicable |
| B | Ground flush | Minor imperfections such as porosity and undercutting exist. The weld is ground flush with the plate surface. | Not Applicable | Not Applicable |
| | |  | Not Applicable | Not Applicable |
| C | Ground smooth; free of all defects. ^(B) | Weld spatter is removed and all surface imperfections are repaired as necessary. The weld is ground smooth and blended into the plate surfaces. | Weld spatter is removed and all surface imperfections are repaired as necessary. The weld is ground smooth and blended into the plate surfaces. | Fillet weld between the two plates. Weld spatter is removed and all surface imperfections are repaired as necessary. The weld is ground smooth and blended into the plate surfaces. |
| | |  |  Inside of Tank or Vessel |  |

^(A) The written descriptions of the various degrees of surface preparation of welds in the appendices of this standard take precedence over the graphics and the companion visual comparator. The graphics are only pictorial representations of welds and grinding finishes and are not intended to be representative of the integrity of the welds. The "weld condition prior to finishing" is not a typical weld; it is only intended to illustrate defects in welds that must be corrected prior to lining. Good welding practices and welding codes govern the integrity of the tank and vessel welds; this standard only addresses surface preparation of the welds for the purpose of lining the tank or vessel for immersion service.

The visual comparator mentioned in Appendix C is a molded plastic replica that illustrates various degrees of surface finishing for welds prior to coating or lining. Full-seam welds, skip welds, butt welds, lap welds, and others are depicted. For more information, contact the NACE International FirstService Department, 1440 South Creek Dr., Houston, Texas 77084-4906 (telephone +1 281/228-6200).

Appendix C (Continued)⁽¹⁾

| NACE Weld Preparation Design | Type of Grinding | Butt Weld | Fillet Welded Tee Joint | Lap Weld |
|-----------------------------------|---|---|---|---|
| D | Ground smooth and blended. ⁽²⁾ | Minor imperfections such as porosity and undercutting exist. Weld spatter is removed; welds are then ground smooth and blended into the plate surfaces. | Minor imperfections such as porosity and undercutting exist. Weld spatter is removed; welds are then ground smooth and blended into the plate surfaces. | Minor imperfections such as porosity and undercutting exist. Weld spatter is removed; welds are then ground smooth and blended into the plate surfaces. |
| | |  |  |  |
| E | Minimal | Sharp projections on the weld bead, slag, and weld spatter are removed. | Sharp projections on the weld bead, slag, and weld spatter are removed. | Sharp projections on the weld bead, slag, and weld spatter are removed. |
| | |  |  |  |
| Weld Condition Prior to Finishing | |  |  |  |

⁽¹⁾ The written descriptions of the various degrees of surface preparation of welds in the appendix of this standard take precedence over the graphics and the companion visual comparator. The graphics are only pictorial representations of the welds and grinding finishes and are not intended to be representative of the integrity of the welds. The "as is" original weld is not a typical weld; it is only intended to illustrate defects in welds that must be corrected prior to coating and lining. Good welding practices and welding codes govern the integrity of the weld; this standard only addresses surface preparation of the welds for the purpose of coating and lining for immersion service.

⁽²⁾ Abrasive blasting in preparation for coating may reveal additional porosity and undercutting. Some applicators request the fabrication to blast the welds to reveal these imperfections prior to requesting inspection of the grinding by the lining applicator. Responsibility for repair of imperfections so revealed should be resolved in the pre-job conference.

The visual comparator mentioned in Appendix C is a molded plastic replica that illustrates various degrees of surface finishing for welds prior to coating or lining. Full-seam welds, skip welds, butt welds, lap welds, and others are depicted. For more information, contact the NACE International FirstService Department, 1440 South Creek Dr., Houston, Texas 77084-4906 (telephone +1 281/228-6200).

SP0178-2007

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NACE International

APPENDIX C

INSPECTION & EVALUATION METHODS

1.0|INSPECTION AND EVALUATION METHODS

Some or all of the following procedures were performed as applicable.

1.1|Methods

1.1.1 The inspection of the base metal and coatings on interior and exterior surfaces included only areas accessible without scaffolding or special rigging. Where possible, the base metal and coating on the interior wet surfaces were examined from either a rubber raft while the tank was being drained, by a Remote Operated Vehicle (ROV) with the tower in service, or with both.

1.1.2 Tank plate thickness was measured at random locations on the liquid holding shell. The overall structural condition of the tank was visually examined.

1.1.3 No structural analysis was done to determine if the tank design complies with the AWWA D100-11 Standard for "Welded Carbon Steel Tanks for Water Storage." However, any observed non-conformance to the AWWA D100-11 standard is noted in this report.

1.1.4 Although compliance with OSHA regulations was not a part of this inspection, any unsafe conditions or violations of current OSHA regulation that were observed are noted in this report.

1.2|Examination and Evaluation Techniques

Some or all of the following procedures were performed as applicable.

1.2.1|Site

The tank site was evaluated for proper drainage conditions affecting access and lead paint abatement during reconditioning.

Also, the following site dimensions were obtained: distance to fence(s), power lines, owner buildings, public property, private property/buildings, school/playgrounds, public parks, and other property.

1.2.2|Foundations

The tank concrete foundation(s) were/was visually examined for cracks, spalling, conditions of grout, indications of distress/settlement, and elevation above grade.

1.2.3|Tank Plate Thickness

Plate thickness measurements were taken using ultrasonic methods (UTM). The readings were taken using a digital readout Nova D-100 Ultrasonic Thickness Gage that has a dual element probe (transducer). The probe's transmitter element sends a short ultrasonic pulse to the material. The pulse, reflected as an echo from the opposite side of the plate

returns to the probe's receiver element. The round-trip time is directly related to the material's thickness.

1.2.4|Coating Thickness

Interior and exterior coatings, where accessible, were tested in accordance with Steel Structures Painting Council SSPC-PA2-82 "Measurement of Dry Film Thickness with Magnetic Gages" using PosiTector-6000-F1 Type 2 magnet flux gages with a fixed probe.

1.2.5|Coating Adhesion

Adhesion testing of the coating to the steel was performed by ASTM D-3359: Shear Adhesion Test, Measuring Adhesion by Tape Test. In addition, subjective coating adhesion evaluation was performed using a penknife.

1.2.6|Coating Cure

The cure of the interior wet coating was evaluated by ASTM D-5402-93 Standard Practice for Assessing the Solvent Resistance of Organic Coatings Using Solvent Rubs and/or with the manufacturer's recommended field method/industry standard procedures.

1.2.7|Coating Serviceability

The estimated remaining coating life or serviceability evaluation was performed using a wide variety of inspection instruments such as dry film thickness gauge, pen knife, Tooke gauge, adhesion tester(s), 30x microscope and serviceability evaluation experience (minimum experience 10 years).

The instrument inspection was combined with a close visual inspection of all the interior coating's accessible areas. This was done to detect any holidays (misses), skips, runs, sags, surface containments, overspray, dry spray, poor coating cohesion, inter-coat delamination, loss of adhesion to the substrate, adverse conditions of the steel underneath the coating, or any other defects affecting the intended service.

1.2.8|Coating Lead and Chromium Content Analysis

Samples may have been taken of the various types of coatings present on the interior and exterior surfaces. Corrosion Control Consultants and Labs of Kentwood, Michigan tests these coatings in conformance with ASTM D-3335 Standard Test Methods for Concentrations of Lead and Chromium in Paint.

APPENDIX D

PAINT CHIP TEST RESULTS

ANALYTICAL LABORATORY REPORT

Friday, October 23, 2020

Page 1 of 3

CUSTOMER: KLM Engineering, Inc.
1976 Wooddale Drive
Woodbury, MN 55125

DATE RECEIVED: Thursday, October 22, 2020
PO/PROJECT #: MN4188
SUBMITTAL #: 2020-10-22-002

LAB NUMBER: AD03500

Sampled By: Tim Lindsay
Job Location: West Chicago, IL
Sample Identification: 1 Interior Wet

Date Sampled: 10/14/2020
Sample Description: Paint Chips

Preparation Method: EPA 3050B-P-M (Acid Digestion for Paints)
Analysis Method: EPA 6010C-M (ICP-AES Method for Determination of Metals)
Date Analyzed: Friday, October 23, 2020

| ELEMENT | RESULT (by dry weight) | REPORTING LIMIT (RL) |
|----------|------------------------|----------------------|
| Cadmium | < RL | 0.00075 % |
| Chromium | 0.0038 % | 0.0013 % |
| Lead | < RL | 0.0025 % |

LAB NUMBER: AD03501

Sampled By: Tim Lindsay
Job Location: West Chicago, IL
Sample Identification: 2 Exterior Roof

Date Sampled: 10/14/2020
Sample Description: Paint Chips

Preparation Method: EPA 3050B-P-M (Acid Digestion for Paints)
Analysis Method: EPA 6010C-M (ICP-AES Method for Determination of Metals)
Date Analyzed: Friday, October 23, 2020

| ELEMENT | RESULT (by dry weight) | REPORTING LIMIT (RL) |
|----------|------------------------|----------------------|
| Cadmium | < RL | 0.00075 % |
| Chromium | < RL | 0.0013 % |
| Lead | < RL | 0.0025 % |

LAB NUMBER: AD03502

Sampled By: Tim Lindsay
Job Location: West Chicago, IL
Sample Identification: 3 Exterior Shell

Date Sampled: 10/14/2020
Sample Description: Paint Chips

Preparation Method: EPA 3050B-P-M (Acid Digestion for Paints)
Analysis Method: EPA 6010C-M (ICP-AES Method for Determination of Metals)
Date Analyzed: Friday, October 23, 2020

| ELEMENT | RESULT (by dry weight) | REPORTING LIMIT (RL) |
|----------|------------------------|----------------------|
| Cadmium | < RL | 0.0011 % |
| Chromium | < RL | 0.0018 % |
| Lead | < RL | 0.0036 % |

GPI Laboratories, Inc. has obtained accreditation under the programs detailed on the final page of the laboratory report. The accreditations pertain only to the testing performed for the elements, and in accordance with the test methods, listed in the scope of accreditation table. Testing which is performed by GPI Laboratories, Inc. according to other test methods, or for elements which are not included in the table fall outside of the current scope of laboratory accreditation.

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ANALYTICAL LABORATORY REPORT

Friday, October 23, 2020

Page 2 of 3

CUSTOMER: KLM Engineering, Inc.
1976 Wooddale Drive
Woodbury, MN 55125

DATE RECEIVED: Thursday, October 22, 2020
PO/PROJECT #: MN4188
SUBMITTAL #: 2020-10-22-002

LAB NUMBER: AD03503

Sampled By: Tim Lindsay

Date Sampled: 10/14/2020

Job Location: West Chicago, IL

Sample Description: Paint Chips

Sample Identification: 4 Exterior Ground

Preparation Method: EPA 3050B-P-M (Acid Digestion for Paints)

Analysis Method: EPA 6010C-M (ICP-AES Method for Determination of Metals)

Date Analyzed: Friday, October 23, 2020

| <u>ELEMENT</u> | <u>RESULT (by dry weight)</u> | <u>REPORTING LIMIT (RL)</u> |
|----------------|-------------------------------|---------------------------------|
| Cadmium | < RL | 0.00075 % |
| Chromium | < RL | 0.0013 % |
| Lead | < RL | 0.0025 % |

GPI Laboratories, Inc. has obtained accreditation under the programs detailed on the final page of the laboratory report. The accreditations pertain only to the testing performed for the elements, and in accordance with the test methods, listed in the scope of accreditation table. Testing which is performed by GPI Laboratories, Inc. according to other test methods, or for elements which are not included in the table fall outside of the current scope of laboratory accreditation.

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ANALYTICAL LABORATORY REPORT

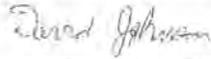
Friday, October 23, 2020

Page 3 of 3

CUSTOMER: KLM Engineering, Inc.
1976 Wooddale Drive
Woodbury, MN 55125

DATE RECEIVED: Thursday, October 22, 2020
PO/PROJECT #: MN4188
SUBMITTAL #: 2020-10-22-002

Unless otherwise noted, the condition of each sample was acceptable upon receipt, all laboratory quality control requirements were met, and sample results have not been adjusted based on field blank or other analytical blank results. Individual sample results relate only to the sample as received by the laboratory.



Digitally signed by David Johnson
Date: 2020.10.23 16:08:15 -04'00'

Tests Reviewed By: David Johnson, Analyst II

Reporting Limit (RL): The lowest concentration of analyte in a sample that can be reported with a defined, reproducible level of certainty. This value is based on the lowest standard used for instrument calibration and must be at least twice the MDL.

GPI Laboratories, Inc. has obtained accreditation under the following programs:

- **National Lead Laboratory Accreditation Program (NLLAP)**
A2LA: American Association for Laboratory Accreditation (Certificate 5033.01) (www.a2la.org)
- **OH: Ohio Department of Health Lead Poisoning Prevention Program, Approval #E10013** (www.odh.ohio.gov)
- **National Environmental Laboratory Accreditation Program (NELAP)**
NY: State of New York Department of Health, Laboratory ID#11609 (Serial # 61448-61452) (518-485-5570)
LA: State of Louisiana Department of Environmental Quality, Laboratory ID#180321 (Certificate 05036) (www.deq.louisiana.gov)
OK: Oklahoma Department of Environmental Quality, Laboratory ID#9993 (Certificate 2020-074) (www.deq.state.ok.us)

Testing which is performed by GPI Laboratories, Inc. according to test methods, or for elements which are not included in the table below fall outside of the current scope of laboratory accreditation. Customers are encouraged to verify the current accreditation status with the individual accreditation programs by calling or visiting the appropriate website for the applicable program.

SCOPE OF ACCREDITATION

Air and Emissions

| Element/Test | Method | Accreditation(s) |
|------------------------------------|---|------------------|
| Suspended Particulates: PM10 / TSP | 40 CFR 50 Appendix J / 40 CFR 50 Appendix B | NY, LA |
| Lead in Airborne Dust | 40 CFR 50 Appendix G | A2LA, LA |
| Lead in Airborne Dust | NIOSH 7300 | A2LA, OH, NY, LA |
| Metals in Airborne Dust | NIOSH 7300 | A2LA |

Solid Chemical Materials

| Element/Test | Method | Accreditation(s) |
|--------------------|-------------------------------------|----------------------|
| TCLP | EPA 1311(Sample Preparation Method) | NY, LA, OK |
| Lead in Soil | EPA 3050B/ EPA 6010C | A2LA, OH, NY, LA, OK |
| Lead in Paint | EPA 3050B/ EPA 6010C | A2LA, OH, NY, LA |
| Lead in Paint | ASTM D 3335-85A/ EPA 6010C | NY |
| Lead in Dust Wipes | EPA 3050B/ EPA 6010C | A2LA, OH, NY, LA |
| Ignitability | EPA 1010A | NY |
| pH | EPA 9045D | NY |

Non-Potable Water / Analysis by ICP

| Element/Test | Method | Accreditation(s) | Method | Accreditation(s) |
|----------------|------------------------------|------------------|-----------|------------------|
| Arsenic | EPA 6010C/ EPA 200.7 Rev 4.4 | NY, LA, OK | EPA 6010C | NY, LA, OK |
| Barium | EPA 6010C/ EPA 200.7 Rev 4.4 | NY, LA, OK | EPA 6010C | NY, LA, OK |
| Cadmium | EPA 6010C/ EPA 200.7 Rev 4.4 | NY, LA, OK | EPA 6010C | NY, LA, OK |
| Chromium | EPA 6010C/ EPA 200.7 Rev 4.4 | NY, LA, OK | EPA 6010C | NY, LA, OK |
| Copper | EPA 6010C/ EPA 200.7 Rev 4.4 | NY, LA, OK | EPA 6010C | NY, LA, OK |
| Lead | EPA 6010C/ EPA 200.7 Rev 4.4 | NY, LA, OK | EPA 6010C | NY, LA, OK |
| Mercury | EPA 245.1 Rev.3/ EPA 7470A | NY, LA, OK | EPA 7471B | NY, LA, OK |
| Nickel | EPA 6010C/ EPA 200.7 Rev 4.4 | NY, LA, OK | EPA 6010C | NY, LA, OK |
| Selenium | EPA 6010C/ EPA 200.7 Rev 4.4 | NY, LA, OK | EPA 6010C | NY, LA, OK |
| Silver | EPA 6010C/ EPA 200.7 Rev 4.4 | NY, LA, OK | EPA 6010C | NY, LA, OK |
| Zinc | EPA 6010C/ EPA 200.7 Rev 4.4 | NY, LA, OK | EPA 6010C | NY, LA, OK |
| Cobalt | --- | --- | EPA 6010C | NY, LA, OK |
| Manganese | --- | --- | EPA 6010C | NY, LA, OK |
| Acid Digestion | EPA 3010A | NY, LA | EPA 3050B | NY, LA |

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CHAIN OF CUSTODY FORM

Send To:
GPI Laboratories, Inc.
 4403 Donker Court, Grand Rapids MI 49512-4054
 (616) 940-3112 | GRLabsInfo@gpinet.com | www.gpinet.com

| FOR LAB USE ONLY | | |
|------------------------|---|--|
| Property Contained | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO <input type="checkbox"/> N/A |
| ASTM E1792 wipes | YES | NO <input checked="" type="checkbox"/> N/A |
| Adequate Ph Adjust | YES | NO <input checked="" type="checkbox"/> N/A |
| Lab notified: By/Date: | | |

| | | | |
|---------------------------------------|---|--|---|
| Company: KLM Engineering, Inc. | Address: 1976 Wooddale Drive, Suite 4 Woodbury, MN 55125 | Company Contact: Laurie Sylte Telephone: 651-773-5111 E-Mail: lsylte@klmengineering.com | P.O./Proj #: MN4188 Location: West Chicago, IL |
|---------------------------------------|---|--|---|

| Matrix | TCLP (Waste) | Metals Content | Other Tests | Turnaround Time | Comments: |
|--|---|---|---|--|-----------|
| <input checked="" type="checkbox"/> Paint Chips <input type="checkbox"/> Soil <input type="checkbox"/> Abrasive <input type="checkbox"/> Wastewater | <input type="checkbox"/> Wipe <input type="checkbox"/> Filter <input type="checkbox"/> Lead <input type="checkbox"/> RCRA (8) Metals | <input type="checkbox"/> Lead <input checked="" type="checkbox"/> Lead, Cad., Chrome <input type="checkbox"/> RCRA (8) Metals | <input type="checkbox"/> pH (Corrosivity) <input type="checkbox"/> Ignitability <input type="checkbox"/> VOC (Method 24, etc) | <input type="checkbox"/> Same Day* <input checked="" type="checkbox"/> Rush* <input type="checkbox"/> Standard | |

GPI Labs accepts Visa, MasterCard, and American Express. *Accelerated Turnaround is not available for every test. Please call for information.

| Laboratory ID | Sample Number | Date/Time Sampled | Sample Identification / Location: | Special Instructions: | Wipes | | | | Air Sampling Filters | | | |
|---------------|---------------|-------------------|-----------------------------------|-----------------------|---------------------|---------|-----------|-------|------------------------------|-------------------------------|---|--|
| | | | | | Area wiped (sq ft.) | Minutes | Flow Rate | UNITS | <input type="checkbox"/> TSP | <input type="checkbox"/> PM10 | <input type="checkbox"/> 37 mm Cassette | |
| A003506 | 1 | 10-14-2020 | Interior Wet | | | | | | | | | |
| A003501 | 2 | 10-14-2020 | Exterior Roof | | | | | | | | | |
| A003502 | 3 | 10-14-2020 | Exterior Shell | | | | | | | | | |
| A003503 | 4 | 10-14-2020 | Exterior Ground | | | | | | | | | |
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Sampled By (Please print) : Tim Lindsay Date Submitted: 10-20-2020 Signature: Michelle Nelson

Received by: _____ Date/Time: _____ Relinquished Date/Time: _____

Received by: _____ Date/Time: _____ Relinquished Date/Time: _____

Method of Shipment: _____

Received for Laboratory by: Anna Fran Date/Time: 10/22/20 10:18 Submittal #: 2020-10-22-002 1/18/17 Form #: 53-12

✓TK
10-22-20
Page 1 of 1

February 10,
2021

Proposal for
Reconditioning Services



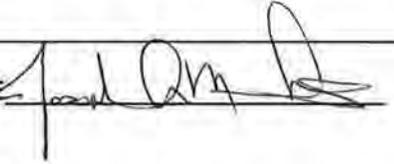
West Chicago, IL 0.5MG Ground Storage Tank Booster Station #8

CITY OF WEST CHICAGO

INFRASTRUCTURE COMMITTEE AGENDA ITEM SUMMARY

ITEM TITLE:

Resolution No. 21-R-0024 - Contract Award – The FLOLO Corporation for Professional Services Related to the Rehabilitation of Three Water Treatment Plant High Service Pump Motors

AGENDA ITEM NUMBER:4.D.**COMMITTEE AGENDA DATE:** April 1, 2021**COUNCIL AGENDA DATE:** April 5, 2021**STAFF REVIEW:** Joseph Munder, Water Treatment Plant Superintendent**SIGNATURE****APPROVED BY CITY ADMINISTRATOR:** Michael L. Guttman**SIGNATURE****ITEM SUMMARY:**

Similar to pumps at a Booster Station, the City's Water Treatment Plant utilizes up to three high service pumps to transfer treated water from ground storage tanks at the Water Treatment Plant into the City's water distribution system for consumption. These high service pumps are driven by specialized 200 HP motors. The existing motors are original and have been in service since January 2005, when the Plant came on-line.

In January 2021, the motor for high service pump #1 began to exhibit symptoms of bearing wear. City staff hired The FLOLO Corporation (FLOLO) of West Chicago, Illinois, to examine the motor and it was determined that the motor needed to be rehabilitated. An analysis of the remaining two motors indicated that they also had symptoms of bearing wear. It was determined that all three motors were in need of rehabilitation.

To allow for each motor to be removed from service, rehabbed, and reinstalled; one new motor was purchased for \$13,910.00 and installed onto High Service Pump #1. Competitive pricing was obtained for the new motor prior to purchase and FLOLO provided the lowest cost. Following the installation of the newly acquired motor, the original motor was then transported to FLOLO's shop for further evaluation. Staff determined that the best course of action would be to have all three original motors rehabilitated, which would result in one of the motors ultimately being retained as a spare, should it be needed in the future.

As the high service pumps and motors are critical to the operation of the City's Water Treatment Plant, and given FLOLO's solid understanding of anticipated needed repairs provided by its evaluation of the first motor, staff recommends the waiver of the competitive bidding process and the award of a contract to The FLOLO Corporation of West Chicago, Illinois, for the removal, rehabilitation, and reinstallation of three high service pump motors associated with the City Water Treatment Plant, for an amount not to exceed \$21,995.00. Said cost proposal includes an additional \$2,000.00 to cover any unanticipated additional parts and services, should such be determined necessary upon inspection.

Adequate funds are available in the Water Fund (06-34-48-4430) to cover this expenditure.

CITY OF WEST CHICAGO

ACTIONS PROPOSED:

Waive the Competitive Bidding Process and approve Resolution No. 21-R-0024 authorizing the Mayor to execute a contract with The FLOLO Corporation for the removal, rehabilitation, and reinstallation of three Water Treatment Plant high service pump motors, for amount not to exceed \$21,995.00

COMMITTEE RECOMMENDATION:

RESOLUTION NO. 21-R-0024

**A RESOLUTION AUTHORIZING THE MAYOR TO
EXECUTE A CONTRACT AGREEMENT WITH THE FLOLO
CORPORATION FOR PROFESSIONAL SERVICES RELATED
TO THE REHABILITATION OF THREE WATER TREATMENT
PLANT HIGH SERVICE PUMP MOTORS**

BE IT RESOLVED by the City Council of the City of West Chicago, in regular session assembled, that the Mayor is hereby authorized to execute a Contract Agreement for Professional Services related to the rehabilitation of three Water Treatment Plant high service pump motors, between the City of West Chicago and The FLOLO Corporation, for an amount not to exceed \$21,995.00, in substantially the form attached hereto and incorporated herein as Exhibit "A".

APPROVED this 5th day of April 2021.

AYES: _____

NAYES: _____

ABSTAIN: _____

ABSENT: _____

Mayor Ruben Pineda

ATTEST:

City Clerk Nancy M. Smith



1400 Harvester Road West Chicago IL, 60185
Phone 630.422.4929 FAX 630.595.1327
e-mail: npbrooks@flogo.com

February 19, 2021

Quotation # 21-08-06-63990Rev2D

**City Of West Chicago
475 Main Street
West Chicago IL, 60185
Ref: Pump 2, and 3 Motors**

Dear Mr. Munder,

Thank you for the opportunity to provide a proposal for **The Removal, Recondition, and Installation of your Existing Motor # 1 Baldor Spec # 18N074X34C4 200HP 460V 1775RPM 447T Chemical Processing Super E AC Pump Motor for Main Plant Pump 1, and 2, and repair of Pump motor 3 for a spare.**

The proposal includes the following for Pump 1 motor:

- 1) Transport pump 1 Motor back to Flolo Repair Facility (Removed from Pump 1 as part of prior job)
- 2) Inspect motor at Flolo shop and perform reconditioning to Include, clean and bake stator, surge test windings, install new standard ball Bearings, check all bearing housing and journal fits Dynamic balance Rotor assemble test and paint.
- 3) Provide quote for any Parts, repairs, bearings, machining needed beyond work scope for approval
- 4) Electrical Disconnecting of Pump Motor 2 and remove with coupling and Inspect Coupling
- 5) Remove Motor # 2 from Pump # 2 and check coupling on site and
- 6) Install Repaired Pump 1 Motor back to Pump 2 Service and Laser Align (see attached disclaimers)
- 7) Transport Pump motor # 2 to Flolo Facility.

Price for these services with adders below \$ 7,695.00
Adders for Pump 1 motor repair to Include
Install AEGIS Shaft ring, new Insulated ODE Bearing, new fan, repair housing

This proposal Includes the following for pump motor 2

- 1) Inspect motor at Flolo shop and perform reconditioning to Include, clean and bake stator, surge test windings, install new standard ball Bearings, check all bearing housing and journal fits Dynamic balance Rotor assemble test and paint.
- 2) Provide quote for any Parts, repairs, bearings, machining needed beyond work scope for approval
- 3) Electrical Disconnecting of Pump Motor 3 and remove with coupling and Inspect Coupling
- 4) Remove Motor # 3 from Pump # 3 and check coupling on site and
- 5) Install Repaired Pump 2 Motor back to Pump 3 Service and Laser Align (see attached disclaimers)
- 6) Transport Pump motor # 3 to Flolo Facility.

Price for these services for Pump 2 motor above with adders below \$ 7,500.00
Adder for AEGIS Ring and Insulated ODE Bearing

The proposal includes the following for Pump 3 motor:

1. Inspect motor at Flolo shop and perform reconditioning to Include, clean and bake stator, surge test windings, install new standard ball Bearings, check all bearing housing and journal fits Dynamic balance Rotor assemble test and paint.
- 2 Provide quote for any Parts, repairs, bearings, machining needed beyond work scope for approval
- 3 Transport Pump 3 motor repaired to plant for customer to store as a spare.

**Price for these services with adders below
Adder for AEGIS ring and Insulated bearing**

\$ 4,800.00

NOTES:

1. This proposal is based on work being performed during Normal Working Hours. Monday thru Friday 7:30am to 4:00pm excluding legal holidays. Additional charges will apply if any services are to be performed on premium time
2. **Field Labor is proposed based on Prevailing Wage Assignment per Request.**
3. Please see laser Alignment disclaimer document.
4. If any repairs, return visits are needed due to circumstances beyond Flolo Control then additional charges will apply.
5. Operator must be on site same day of completion for Flolo to verify Operation.

Delivery: TBD

Terms: Net 30 Days

Freight: Prepaid and Added to Invoice

F.O.B: West Chicago, IL

Quotation Valid: 30 Days

Limited Warranty: see attached copy of Flolo's Standard Terms and Conditions of Sale

Respectfully,

Nick Brooks

The Flolo Corporation

cc: Gregg Flolo

Cc: Dennis Lamb

encl: Terms and Conditions of Sale

Limited Warranty

The Flolo Corporation, hereinafter called **Flolo**, warrants the equipment manufactured by us and services performed by us as described in the quotation to be free from defects in materials and/or workmanship under normal use and service by the purchaser. The warranty on new equipment that has not been modified and/or manufactured by **Flolo**, but is being resold by **Flolo** shall be limited to the manufacturer's warranty. The obligations of **Flolo** are limited to replacing, at **Flolo's** factory, the product or any part or parts of the product which shall, within one year after delivery of the equipment to the original purchaser, be returned to **Flolo** with transportation charges prepaid and which **Flolo's** examination shall disclose to its satisfaction to have been defective. Except as stated above, **Flolo** makes no warranty either expressed or implied; any implied warranty of merchantability or fitness for a particular purpose is disclaimed by **Flolo** and excluded from this sales agreement. There are no warranties, either expressed or implied, which extend beyond the warranty stated above.

Flolo neither assumes nor authorizes any person to assume for it any other liability in connection with the sale of its equipment. This warranty will not apply to any equipment which have been repaired or altered outside of **Flolo's** factory in any way so as, in **Flolo's** judgment, to affect its stability or reliability, nor to any equipment which has been subject to misuse, negligence, or accident. **Flolo** shall not be liable for damages, direct or consequential, or delays, if such occur, on account of defective materials or workmanship or delays in shipment. **Flolo** will not grant any allowance for any repairs or alterations made without the written consent of an officer of **Flolo**. **Flolo** shall in no way be liable or responsible for injuries or damages to persons or property, arising from or out of the use or operation of the equipment herein described. **Flolo** reserves the right to make changes in design, or to make additions to, or improvements in, its product without imposing any obligation upon itself to install them on its product previously manufactured. "No warranty given by a customer of **Flolo** not consistent with the foregoing warranties shall be binding on **Flolo**."

Conditions of Sale - A Part of the Price Quotation Enclosed Herewith

General Conditions: All orders for products or services of **The Flolo Corporation**, hereinafter called **Flolo**, are subject to these conditions of sale. These conditions shall be modified or added to only by a written document signed by an authorized officer of **Flolo**. **Flolo's** failure to respond to any writing, and such failure to respond shall not constitute a waiver of these conditions by **Flolo**.

Prices: Prices quoted on the attached quotation by **Flolo** will be guaranteed for a period of (30) days from the date of the proposal unless stated specifically otherwise in the body of the quotation.

Weights and Dimensions: Weights and dimensions are carefully calculated estimates but are not guaranteed.

Taxes: Published or quoted prices do not include sales, excise, use or similar taxes. Applicable taxes must be paid by the purchaser.

Penalties and Delays: No penalty provision of any kind will be effective unless approved in writing by an officer of **Flolo**. **Flolo** will not be liable for any damages caused by delays beyond its control, including by the way of illustration but not limitation, fires, strikes, acts of God, transportation failures, inability to obtain labor, materials or to have available manufacturing facilities or failure by **Flolo's** suppliers to deliver merchandise. In the event of any such delay, the date of delivery of merchandise from **Flolo** to the purchaser shall be extended for a period of time equal to the time lost by reason of the delay.

Cancellation and Alteration: An order or contract may be canceled or altered by the Purchaser only upon payment of reasonable charges based upon expenses already incurred and commitments already made by **Flolo**. **Flolo** reserves the right to procure and/or manufacture ahead of shipping schedule whenever it is deemed necessary, and such advance procurement or manufacture shall not void buyer's responsibility for cancellation or alteration.

Delivery: Prices are F.O.B. **Flolo** plant or point of shipment, via the carrier selected to be the most economical and dependable. Special handling, packaging, insurance or other abnormal costs will be billed to the Purchaser.

Terms of Payment and Reservation of Title: Unless otherwise specified herein, Terms to the purchaser are net 30 days. **Flolo** reserves the right to require full or partial payment in advance of shipment or to ship C.O.D. On C.O.D. shipments, **Flolo** shall retain title to the merchandise until the terms of delivery are met.

Responsibility: **Flolo** is not responsible for misuse or misapplication of its products, intentional or otherwise. Improper application, installation, failure to provide safety devices for protection measures, or operation above the rated capacity are all beyond the control and responsibility of **Flolo**. Under no circumstances will **Flolo** be liable for consequential or contingent damages.

Return of Equipment: Under no circumstances is equipment to be returned without first obtaining **Flolo's** permission. Unless authority has been granted for return, shipment will be refused. Apparatus built to a customer's specification cannot be returned for credit. Equipment approved for return must be properly packed to protect against physical damage during shipment and must be shipped prepaid.