VILLAGE OF DOWNERS GROVE
Report for the Village
10/4/2022

SUBJECT:	SUBMITTED BY:
Award of Contract - Downers Drive Water Tower Rehab (WP-019)	Andy Sikich Public Works Director

SYNOPSIS

A motion is requested to authorize award of a contract for the Downers Drive Water Tower Rehabilitation Project (WP-019) to Era-Valdivia Contractors, Inc. of Chicago, Illinois in the amount of $2,664,791, which includes a 2% contingency.

STRATEGIC PLAN ALIGNMENT

The goals for 2021-2023 include *Top Quality Infrastructure*.

FISCAL IMPACT

The FY22 budget includes $2,200,000 for this work. The project was bid in early FY22 with the lowest bid in the amount of $2,970,950. The project was then re-bid for FY23 with the anticipation of receiving more favorable bids. The proposed FY23 budget will include $2,600,000 in the Water Fund for this Project. $100,000 of this amount will be allocated for professional engineering services leaving a balance of $2,500,000 for construction. It is anticipated that paint will be ordered, delivered and paid for in FY22, leaving a sufficient budget amount for work in FY23.

RECOMMENDATION

UPDATE & RECOMMENDATION

This item was discussed at the September 20th Council meeting. Based on that discussion, staff is providing the following additional information:

The life expectancy of a water tower can vary depending on its original construction and the level of maintenance performed. With proper maintenance such as the work currently being proposed, a steel radial arm water tower like the Downers Drive tower can last over 100 years.

BACKGROUND

The Downers Drive Water Tower serves the Village's water system as one of seven elevated water storage tanks. It stores 2,000,000 gallons of water and was constructed in 1957 by Chicago Bridge & Iron. The tower's coating system is deteriorating and there are safety-related and operational deficiencies that need to be repaired.

An evaluation of this tank was completed in March 2021. The evaluation looked at the condition of the exterior surface, as well as the interior dry surfaces and interior wet surfaces. At the time of the evaluation the exterior coating system was judged to be in fair to poor condition and it was recommended that the surface be painted within the next one to two years. At the time of the evaluation the interior coating was determined to be in poor condition on the roof and sidewall, with numerous coating failures. The coating on the water tank bowl is in overall good condition, but still had several failures and it was recommended that the wet interior be repainted in one to two years.

The purpose of this construction contract is to correct the current deficiencies and provide a long-lasting coating system. The improvements will include:

- Interior and exterior cleaning and re-coating for corrosion protection
- Safety improvements, including enlarging the wet interior roof hatch, installing additional fall prevention devices, and installing several new safety ladders on the water tank.
- Operational improvements including installing a water tower tank mixing system to improve water quality, and improving the overflow discharge piping to align with the catch basin for proper drainage.

Bids were received on August 24, 2022. A synopsis of the bids is as follows:

Contractor	Base Bid	
Era-Valdivia Contractors, Inc. of Chicago, IL	$2,612,540.00	low bid
Jetco, Ltd. Of Wauconda, IL	$2,740,249.00	
Tecorp, Inc. of Joliet, IL	$3,956,700.00	

Era-Valdivia Contractor, Inc., has successfully completed the painting of water towers in several nearby communities such as the City of Joliet, Village of Villa Park, and the Village of Orland Park. The Village's professional engineering consultant for this project, Christopher B. Burke Engineering, LTD., has reviewed the bids as well. They are familiar with Era-Valdivia Contractors, Inc. and have observed projects of similar scope performed by them and provided a positive endorsement.

ATTACHMENTS

Contract Documents

VILLAGE OF DOWNERS GROVE

COUNCIL ACTION SUMMARY

INITIATED: Public Works (Name) **DATE:** October 4, 2022

RECOMMENDATION FROM: _____ (Board or Department) **FILE REF:** _____

NATURE OF ACTION:

__ Ordinance

__ Resolution

_X_ Motion

__ Other

STEPS NEEDED TO IMPLEMENT ACTION:

Motion to authorize execution of a contract for the Downers Drive Water Tower Rehabilitation Project (WP-019) to Era-Valdivia Contractors, Inc. in the amount of $2,612,540 plus a 2% contingency in the amount of $52,251 for a total not-to-exceed $2,664,791.

SUMMARY OF ITEM:

Adoption of this motion shall authorize execution of a contract for the Downers Drive Water Tower Rehabilitation Project (WP-019) to Era-Valdivia Contractors, Inc. in the amount of $2,612,540 plus a 2% contingency in the amount of $52,251 for a total not-to-exceed $2,664,791.

RECORD OF ACTION TAKEN:

_____

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CALL FOR BIDS – FIXED WORKS PROJECT

I. Name of Company Bidding: Era-Valdivia Contractors, Inc.

II. Instructions and Specifications:
- A. Bid No.: CFB-87-0-2022/DM
- B. For: REHABILITATION OF THE 2,000,000 GALLON LEGGED HIGH TANK
- C. Bid Opening Date/Time: AUGUST 24, 2022 @ 10:00 A.M.
- D. Pre-Bid Conference Date/Time: AUGUST 17, 2022 @ 10:00 A.M. **MANDATORY**
- E. Pre-Bid Conference Location: 4318 DOWNERS DRIVE, DOWNERS GROVE, IL 60515

III. Required of All Bidders:
- A. Bid Deposit: 10%
- B. Letter of Capability of Acquiring Performance Bond: YES

IV. Required of Awarded Contractor(s)
- A. Performance Bond or Letter of Credit: YES
- B. Certificate of Insurance: YES

Legal Advertisement Published: WEDNESDAY, AUGUST 3, 2022

This document comprises 154 pages

RETURN ORIGINAL BID IN SEALED ENVELOPE MARKED WITH THE BID NUMBER AS NOTED ABOVE TO:

VILLAGE OF DOWNERS GROVE
DAVID MOODY
5101 WALNUT AVE.
DOWNERS GROVE, IL 60515
PHONE: 630/434-5460
FAX: 630/434-5495
www.downers.us

CALL FOR BIDS – FIXED WORKS PROJECT

Bid No.: CFB-XX-0-2022/DM

The VILLAGE OF DOWNERS GROVE will receive bids Monday thru Friday, 8:00 A.M. to 5:00 P.M. at the Public Works Building, 5101 Walnut Avenue, Downers Grove, IL 60515.

The Village Council reserves the right to accept or reject any and all bids, to waive technicalities and to accept or reject any item of any Bid.

The documents constituting component parts of this Contract are the following:

I. CALL FOR BIDS

II. TERMS & CONDITIONS

III. GENERAL PROVISIONS

IV. SPECIAL PROVISIONS

V. BID & CONTRACT FORM

All Bidders MUST submit the entire bid package, with one original Bid Form. Upon formal Award, the successful Bid will automatically convert to a Contract, and the successful Bidder will receive a copy of the executed contract upon formal award of the Bid with the Notice of Award.

DO NOT DETACH ANY PORTION OF THIS DOCUMENT. INVALIDATION COULD RESULT.

I. CALL FOR BIDS and INSTRUCTIONS TO BIDDERS

1. GENERAL

1.1 Notice is hereby given that Village of Downers Grove will receive sealed bids up to THE TIME AND DATE SET FORTH ON THE COVER PAGE OF THIS CALL FOR BIDS.

1.2 Defined Terms:

1.2.1 Village – the Village of Downers Grove acting through its officers or agents.

1.2.2 Contract Documents – this document plus any drawings issued therewith, any addenda and the Bidder's completed proposal, bonds and all required certifications.

1.2.3 Bid – this document completed by an individual or entity and submitted to the Village.

1.2.4 Bidder – the individual or entity who submits or intends to submit a bid proposal to the Village.

1.2.5 Contractor – the individual or entity whose bid is selected by the Village and who enters into a contract with the Village.

1.2.6 Work – the construction or service defined herein.

1.2.7 Day – unless otherwise stated all references to "Day" "Days", "day" or "days" shall refer to calendar days.

1.2.8 Proposal Guaranty – the required bid deposit.

1.3 Bids must be received at the Village by the time and date specified. Bids received after the specified time and date will not be accepted and will be returned unopened to the Bidder.

1.4 Bids shall be sent to the Village of Downers Grove, ATTN: DAVID MOODY, in a sealed envelope marked "SEALED BID". The envelope shall be marked with the name of the project, date, and time set for receipt of Bids. The bid package may be submitted any time prior to the time set for receipt of Bids.

1.5 All Bids must be submitted on the forms supplied by the Village and signed by a proper official of the company submitting the Bid. Telephone, email and fax Bids will not be accepted.

1.6 Under penalty of perjury, the Bidder certifies by submitting this Bid that he has not acted in collusion with any other Bidder or potential Bidder.

2. BID PREPARATION

2.1 It is the responsibility of the Bidder to carefully examine the Contract Documents and to be familiar with all of the requirements, stipulations, provisions, and conditions surrounding the proposed Work.

2.2 The Bidder shall inspect the site of the proposed Work in detail, investigate and become familiar with all the local conditions affecting the Work and become fully acquainted with the detailed requirements of the Work. Submitting a Bid shall be a conclusive assurance and warranty that the Bidder has made these examinations and that the Bidder understands all requirements for the performance of the Work. If the Bid is accepted, the Bidder will be responsible for all errors in the Bid resulting from his willing or neglectful failure to comply with these instructions. IN NO CASE WILL THE VILLAGE BE RESPONSIBLE FOR ANY COSTS, EXPENSES, LOSSES OR CHANGES IN ANTICIPATED MARGINS OF PROFIT RESULTING FROM THE WILLING OR NEGLECTFUL FAILURE OF THE BIDDER TO MAKE THESE EXAMINATIONS. THE VILLAGE WILL NOT BE RESPONSIBLE FOR ANY COSTS, EXPENSES, LOSSES OR CHANGES IN ANTICIPATED MARGINS OF PROFIT RESULTING FROM THE WILLING OR NEGLECTFUL FAILURE OF THE CONTRACTOR TO PROVIDE THE KNOWLEDGE, EXPERIENCE AND ABILITY TO PERFORM THE WORK REQUIRED BY THIS CONTRACT. No changes in the prices, quantities or contract provisions shall be made to accommodate the inadequacies of the Bidder, which might be discovered subsequent to award of contract. The Bidder shall take no advantage of any error or omission in the Contract Documents nor shall any error or omission in the Contract Documents serve as the basis for an adjustment of the amounts paid to the Bidder.

2.3 When the Contract Documents include information pertaining to subsurface explorations, borings, test pits, and other preliminary investigations, such information is included solely for the convenience of the Bidder. *The Village assumes no responsibility whatsoever with respect to the sufficiency of the information, and does not warrant, neither expressly nor by implication, that the conditions indicated represent those existing throughout the Work, or that unanticipated developments may not occur.*

2.4 Any information shown in the Contract Documents regarding the locations of underground utility facilities is included solely for the convenience of the Bidder. The Village assumes no responsibility whatsoever with respect to the sufficiency, accuracy or inadequacy of such information. It shall be the Bidder's responsibility to obtain detailed information from the respective utility companies relating to the location of their facilities and the work schedules of the utility companies for removing or adjusting them. Utilities whose facilities may be affected by the work include, but may not be limited to, the following: Nicor, ComEd, SBC, Comcast Cable, Downers Grove Sanitary District, and Village water, storm sewer, and street lighting systems.

2.5 No oral or telephone interpretations of specifications shall be binding upon the Village. All requests for interpretations or clarifications shall be made in writing and received by the Village at least five (5) business days prior to the date set for receipt of Bids or the pre-bid conference, if offered. The Village shall make all changes or interpretations of the Contract Documents in a written addendum and shall provide an addendum to any Bidder of record. Any and all changes to the Contract Documents are valid only if they are included by written addendum to all Bidders. Each Bidder must acknowledge receipt of any addenda by indicating same on the Bid Form. Each Bidder, by acknowledging receipt of any addenda, is responsible for the contents of the addenda and any changes to the Bid therein. Failure to acknowledge any addenda may cause the Bid to be rejected. The Village will not assume responsibility for receipt of any addenda. In all cases, it will be the Bidder’s responsibility to obtain all addenda issued. Bidders will provide written acknowledgement of receipt of each addendum issued with the bid submission.

2.6 An estimate of the quantities of Work to be performed and the materials to be furnished is shown in the Bid Form. It is given as a basis for comparing the properly submitted Bids and shall be used by the Village in awarding the Contract. The Village does not expressly warrant nor imply that the estimated quantities shown will correspond with those quantities required to perform the Work. No Bidder shall plead misunderstanding or deception because of such an estimate of quantities, or because of the character, location or other conditions pertaining to the Work. Payment shall be based on the actual quantities of work properly performed in accordance with the Contract, at the Contract unit prices specified. The Village reserves the right to increase, decrease or omit entirely, any or all items. No allowance will be made for any change in anticipated profits due to an increase or decrease in the original estimate of quantities.

2.7 The Bid shall be executed properly, and Bids shall be made for all items indicated in the Bid Form. The Bidder shall indicate, in figures, a unit price or lump sum price for each of the separate items called for in the Bid Form. The Bidder shall show the products of the respective quantities and unit prices in the column provided for that purpose. The gross sum shown in the place indicated in the Bid Form shall be the summation of said products. All writing shall be with ink or typewriter, except the signature of the Bidder, which shall be written with ink.

2.8 In case of error in the extension of prices in the Bid, the hourly rate or unit price will govern. In case of discrepancy in the price between the written and numerical amounts, the written amount will govern.

2.9 All costs incurred in the preparation, submission, and/or presentation of any Bid including the Bidder's travel or personal expenses shall be the sole responsibility of the Bidder and will not be reimbursed by the Village.

2.10 The Bidder hereby affirms and states that the prices quoted herein constitute the total cost to the Village for all work involved in the respective items, as well as the materials to be furnished in accordance with the collective requirements of the Contract Documents. The Bidder also affirms that this cost includes all insurance, bonds, royalties, transportation charges, use of all tools and equipment, superintendence, overhead expense, profits and other work, services and conditions necessarily involved in the work to be done.

2.11 The Bidder shall complete and submit with the Bid an "Affidavit" (IDOT Form BC-57, or similar) listing all uncompleted contracts, including subcontract work; all pending low bids not yet awarded or rejected, and equipment available.

2.12 The Bidder shall complete and submit with the Bid a "Municipal Reference List" indicating other municipalities for which the Bidder has successfully performed similar work.

3. PRE-BID CONFERENCE

3.1 A pre-bid conference may be offered to provide additional information, inspection or review of current facilities or equipment, and to provide an open forum for questions from Bidders. This pre-bid conference is not mandatory (unless stated “Mandatory” on the cover of this document), but attendance by Bidders is strongly advised as this will be the last opportunity to ask questions concerning the Bid.

3.2 Questions may be posed in writing to the Village (faxed and emailed questions are acceptable) but must be received by the Village prior to the scheduled time for the pre-bid

conference. Questions received will be considered at the conference. An addendum may be issued as a result of the pre-bid conference. Such an addendum is subject to the provisions for issuance of an addendum as set forth in Section 2.5 above.

3.3 No Contract Documents will be issued after a mandatory pre-bid conference except to attendees.

4. BID SUBMISSION

4.1 An original copy of the sealed bid marked as indicated in Section 1 shall be submitted to the Village.

4.2 A bid deposit will be required, which shall not exceed ten percent (10%) of the estimated cost of the work to be furnished. Such bid deposit shall be in the form of a bid bond, certified check, cash or money order. Checks shall be drawn upon a bank of good standing payable to the order of the Village and said deposit shall be forfeited to the Village in the event the Bidder neglects or refuses to enter into a contract and bond when required, with approved sureties, to execute the Work or furnish the material for the price mentioned in his Bid and according to the plans and specifications in case the contract shall be awarded to him.

4.3 Bids shall be publicly opened at the hour and place indicated above.

5. BID MODIFICATION OR WITHDRAWAL

5.1 A Bid that is in the possession of the Village may be altered by a letter bearing the signature of the person authorized for submitting a Bid, provided that it is received prior to the time and date set for the bid opening. Telephone, email or verbal alterations of a Bid will not be accepted.

5.2 A Bid that is in the possession of the Village may be withdrawn by the Bidder, up to the time set for the bid opening, by a letter bearing the signature of the person authorized for submitting Bids. Bids may not be withdrawn after the bid opening and shall remain valid for a period of ninety (90) days from the date set for the bid opening, unless otherwise specified.

6. BID REJECTION

6.1 Bids that contain omissions, erasures, alterations, additions not called for, conditional bids or alternate bids not called for, or irregularities of any kind, shall be rejected as informal or insufficient. Bids otherwise acceptable, which are not accompanied by the proper Proposal Guaranty, shall also be rejected as informal or insufficient. The Village reserves the right however, to reject any or all Bids and to waive such technical error as may be deemed best for the interest of the Village.

7. BIDDER COMPETENCY

7.1 No Bid will be accepted from, or contract awarded to, any person, firm or corporation that is in arrears or is in default upon any debt or contract. The Bidder, if requested, must present evidence to the Village of ability and possession of necessary facilities, and financial resources to comply with the terms of the Contract Documents. Evidence must be presented within three (3) business days.

8. BIDDER DISQUALIFICATION

8.1 Any one or more of the following causes may be considered as sufficient for the disqualification of a Bidder and the rejection of their Bid.

8.1.1 More than one Bid for the same Work from an individual, firm partnership, or corporation under the same or different names.

8.1.2 Evidence of collusion among Bidders.

8.1.3 Unbalanced Bids in which the prices for some items are substantially out of proportion to the prices for other items.

8.1.4 Failure to submit a unit price for each item of Work listed in the Bid Form.

8.1.5 Lack of competency as revealed by financial statement or experience questionnaire.

8.1.6 Unsatisfactory performance record as shown by past work, judged from the standpoint of workmanship and progress.

8.1.7 Uncompleted work which, in the judgment of the Village, might hinder or prevent the prompt completion of this Work.

8.1.8 Failure to submit a signed Bidder's Certificate stating the following:

8.1.8.1 That the Bidder is not barred from bidding on this Contract as a result of a violation of Sections 720 ILCS 5/33-E3 and 720 ILCS 5/33-E4 of the Illinois Compiled Statutes; and

8.1.8.2 The Bidder is not delinquent in the payment of any tax administered by the Illinois Department of Revenue; and

8.1.8.3 The Bidder will maintain the types and levels of insurance required by the terms of this Contract; and

8.1.8.4 The Bidder will comply with the Illinois Prevailing Wage Act, 820 ILCS 130/1 *et seq.*

9. BASIS OF AWARD

9.1 The Village reserves the exclusive right to accept or reject any and all Bids or to waive sections, technicalities and irregularities, or to accept or reject any Bid or any item of any Bid.

10. AWARD OF CONTRACT

10.1 Unless the Village exercises its right to reject all Bids, the Contract will be awarded to that responsible Bidder whose Bid, conforming to the Contract Documents, will be most advantageous to the Village, price and other factors considered. (the credentials, financial information, bonding capacity, insurance protection, qualifications of the labor and management of the firm, past experience and ability to complete the project within time frame required - lowest responsible bidder)

10.2 Unless otherwise specified, if a Contract is not awarded within ninety (90) days after the opening of Bids, a Bidder may file a written request with the Village for the withdrawal of their Bid. The Village will have a maximum of ten (10) days after the receipt of such request to award the Contract or release the Bidder from further obligation by return of

the Bidder's bid deposit. Any attempt or actual withdrawal or cancellation of a Bid by the awarded contractor who has been notified by the Village of the acceptance of said Bid shall be considered a breach of contract.

11. RETURN OF BID DEPOSIT

11.1 The bid deposit of all except the three (3) lowest responsive bidders on each contract will be returned within fifteen (15) days after the opening of Bids. The remaining bid deposits of each contractor will be returned within fifteen (15) days after the Village Council has awarded the contract and the required appurtenances to the contract have been received.

12. FAILURE TO ENTER INTO CONTRACT

12.1 Failure on the part of the successful Bidder to execute a Contract and provide acceptable bonds, as provided herein, within ten (10) days from the date of receipt of the Contract and Notice of Award from the Village, will be considered as just cause for the revocation of the award. The Bidder's bid security shall then be forfeited to the Village, not as a penalty, but in payment of liquidated damages sustained as a result of such failure.

12.2 The Bidder shall not be allowed to claim lack of receipt where the Contract and Notice of Award was mailed by U.S. Postal Services certified mail to the business address listed in his Bid. In case the Village does not receive evidence of receipt within ten (10) days of the date of Notice of Award, the Village may revoke the award. The Bidder shall then forfeit the bid security to the Village, not as a penalty, but in payment of liquidated damages sustained as the result of such failure to execute the Contract.

12.3 By submitting a Bid, the Bidder understands and agrees that, if his Bid is accepted, and he fails to enter into a contract forthwith, he shall be liable to the Village for any damages the Village may thereby suffer.

13. SECURITY FOR PERFORMANCE

13.1 The successful Bidder shall, within ten (10) days after acceptance of the Bidder's Bid by the Village, furnish a Performance Bond and a Materials and Labor Payment Bond acceptable to the Village in the full amount of the Bid. Said bonds shall guarantee the Bidder's performance under the Contract Documents and shall guarantee payment of all subcontractors and material suppliers. Any bond shall include a provision that guarantees faithful performance of the Illinois Prevailing Wage Act, 820 ILCS 130/1 et seq.

14. TAX EXEMPTION

14.1 The Village is exempt from Illinois sales or use tax for direct purchases of materials and supplies. A copy of the Illinois Sales Tax Exemption Form will be issued upon request. The Village's federal identification number will also be provided to the selected Bidder.

15. RESERVED RIGHTS

15.1 The Village reserves the right to waive sections, irregularities, technicalities and informalities to this Contract and to accept any Bid and to reject any and all Bids and to disapprove of any and all subcontractors as may be in the best interest of the Village. Time and date requirements for receipt of Bids, however, will not be waived.

16. CATALOGS AND SHOP DRAWINGS

16.1 Each Bidder shall submit catalogs, descriptive literature, and detailed drawings, where applicable, to fully illustrate and describe the work or material he proposes to furnish.

17. TRADE NAMES AND SUBSTITUTIONS

17.1 Certain materials and equipment are specified by a manufacturer or trade name to establish standards or quality and performance and not for the purpose of limiting competition. Products of other manufacturers may be substituted, if, in the opinion of the Village, they are equal to those specified in quality, performance, design, and suitability for intended use. If the Bidder proposes to furnish an "equal", the proposed "equal" item must be so indicated in the written Bid. Where two or more items are specified, the selection among those specified is the Bidder's option, or he may submit his Bid on all such items. Detail specification sheets shall be provided by Bidder for all substituted items.

II. TERMS AND CONDITIONS

18. VILLAGE ORDINANCES

18.1 The successful Bidder, now the Contractor, will strictly comply with all ordinances of the Village of Downers Grove and laws of the State of Illinois.

19. USE OF VILLAGE'S NAME

19.1 The Contractor is specifically denied the right of using in any form or medium the name of the Village for public advertising unless the Village grants express permission.

20. HOURS OF WORK

20.1 The Contractor shall do no work between the hours of 7:00 p.m. and 7:00 a.m., nor on Saturdays, Sundays or legal holidays, unless otherwise approved in writing by the Village. However, such work may be performed at any time, if necessary, for the proper care and protection of work already performed, or in case of an emergency. All after-hour work is still subject to the permission of the Village. Any work, including the starting and/or idling of vehicles or machinery, or a congregation of workers prior to starting work, which may cause any noise level that can be heard by adjacent residents, performed outside of these hours of work and not authorized by the Village shall be subject to a fine of $250 per day, per violation.

21. PERMITS AND LICENSES

21.1 The Contractor shall obtain all necessary permits and licenses required to complete the Work. The cost of acquisition of all necessary permits, bonds, insurance and services as specified herein shall be considered INCLUDED IN THE TOTAL COST, and no additional compensation will be allowed the Contractor.

22. INSPECTION

22.1 The Village shall have a right to inspect, by its authorized representative, any material, components or workmanship as herein specified. Materials, components or workmanship that have been rejected by the Village as not in accordance with the terms of the contract specifications shall be replaced by the Contractor at no cost to the Village.

23. DELIVERIES

23.1 All materials shipped to the Village must be shipped F.O.B. designated location, Downers Grove, Illinois.

24. SPECIAL HANDLING

24.1 Prior to delivery of any product that is caustic, corrosive, flammable or dangerous to handle, the Contractor will provide written directions as to methods of handling such products, as well as the antidote or neutralizing material required for its first aid before delivery. Contractor shall also notify the Village and provide material safety data sheets for all substances used in connection with this Contract which are defined as toxic under the Illinois Toxic Substances Disclosure to Employees Act.

25. NONDISCRIMINATION

25.1 Contractor shall, as a party to a public contract:

25.1.1 Refrain from unlawful discrimination in employment and undertake affirmative action to assure equality of employment opportunity and eliminate the effects of past discrimination.

25.1.2 By submission of this Bid, the Contractor certifies that he is an "equal opportunity employer" as defined by Section 2000(e) of Chapter 21, Title 42, U.S. Code Annotated and Executive Orders #1l246 and #11375, which are incorporated herein by reference. The Equal Opportunity clause, Section 6.1 of the Rules and Regulations of the Department of Human Rights of the State of Illinois, is a material part of any contract awarded on the basis of this Bid.

25.2 It is unlawful to discriminate on the basis of race, color, religion, sex, marital status, national origin or ancestry, age, physical or mental disability unrelated to ability, military status, order of protection status, sexual orientation, sexual identity, or an unfavorable discharge from military service. Contractor shall comply with standards set forth in Title VII of the Civil Rights Act of 1964, 42 U.S.C. Secs. 2000 et seq., The Human Rights Act of the State of Illinois, 775 ILCS 5/1-101 et seq., and The Americans with Disabilities Act, 42 U.S.C. Secs. 1210l et seq.

26. SEXUAL HARASSMENT POLICY

26.1 The Contractor, as a party to a public contract, shall have a written sexual harassment policy that:

26.1.1 Notes the illegality of sexual harassment.

26.1.2 Sets forth the State law definition of sexual harassment.

26.1.3 Describes sexual harassment utilizing examples.

26.1.4 Describes the Contractor’s internal complaint process including penalties.

26.1.5 Describes the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Human Rights Commission and how to contact these entities; and

26.1.6 Describes the protection against retaliation afforded under the Illinois Human Rights Act.

27. EQUAL EMPLOYMENT OPPORTUNITY

27.1 In the event of the Contractor’s non-compliance with the provisions of this Equal Employment Opportunity Clause, the Illinois Human Rights Act or the Rules and Regulations of the Illinois Department of Human Rights (“Department”), the Contractor may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and the contract may be canceled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation. During the performance of this Contract, the Contractor agrees as follows:

27.1.1 That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, marital status, national origin or ancestry, age, physical or mental disability unrelated to ability, military status, order of protection status, sexual orientation, sexual identity, or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.

27.1.2 That, if it hires additional employees in order to perform this Contract or any portion thereof, it will determine the availability (in accordance with the Department's Rules and Regulations) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.

27.1.3 That, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, marital status, national origin or ancestry, age, physical or mental disability unrelated to ability, military status, order of protection status, sexual orientation, or an unfavorable discharge from military services.

27.1.4 That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the Contractor's obligations under the Illinois Human Rights Act and the Department's Rules and Regulations. If any such labor organization or representative fails or refuses to cooperate with the Contractor in its efforts to comply with such Act and Rules and Regulations, the Contractor will promptly so notify the Department and the contracting agency and will recruit employees from other sources when necessary to fulfill its obligations thereunder.

27.1.5 That it will submit reports as required by the Department's Rules and Regulations, furnish all relevant information as may from time to time be requested by the Department or the contracting agency, and in all respects comply with the Illinois Human Rights Act and the Department's Rules and Regulations.

27.1.6 That it will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and the Department for purpose of investigation to ascertain compliance with the Illinois Human Rights Act and the Department's Rules and Regulations.

27.1.7 That it will include verbatim or by reference the provisions of this clause in every subcontract it awards under which any portion of the contract obligations are undertaken or assumed, so that such provisions will be binding upon such subcontractor. In the same manner as with other provisions of this Contract, the Contractor will be liable for compliance with applicable provisions of this clause by such subcontractors; and further it will promptly notify the contracting agency and the Department in the event any subcontractor fails or refuses to comply therewith. In addition, the Contractor will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivision or municipal corporations.

28. DRUG FREE WORK PLACE

28.1 Contractor, as a party to a public contract, certifies and agrees that it will provide a drug free workplace by:

28.1.1 Publishing a statement:

(1) Notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance, including cannabis, is prohibited in the Village's or Contractor's workplace.
(2) Specifying the actions that will be taken against employees for violations of such prohibition.
(3) Notifying the employee that, as a condition of employment on such contract or grant, the employee will:
(A) abide by the terms of the statement; and
(B) notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.

28.1.2 Establishing a drug free awareness program to inform employees about:
(1) the dangers of drug abuse in the workplace.
(2) the Village's or Contractor's policy of maintaining a drug free workplace.
(3) any available drug counseling, rehabilitation and employee assistance programs.
(4) the penalties that may be imposed upon employees for drug violations.

28.1.3 Providing a copy of the statement required by subparagraph 1.1 to each employee engaged in the performance of the contract or grant and to post the statement in a prominent place in the workplace.

28.1.4 Notifying the contracting or granting agency within ten (10) days after receiving notice under part (3)(B) of subparagraph 1.1 above from an employee or otherwise receiving actual notice of such conviction.

28.1.5 Imposing a sanction on or requiring the satisfactory participation in a drug abuse assistance or rehabilitation program by, any employee who is so convicted as required by section 5 of the Drug Free Workplace Act.

28.1.6 Assisting employees in selecting a course of action in the event drug counseling, treatment and rehabilitation is required and indicating that a trained referral team is in place.

28.1.7 Making a good faith effort to continue to maintain a drug free workplace through implementation of the Drug Free Workplace Act.

29. SUBSTANCE ABUSE PREVENTION ON PUBLIC WORKS PROJECTS ACT

29.1 In the event this is a public works project as defined under the Prevailing Wage Act, 820 ILCS 130/2, Contractor agrees to comply with the Substance Abuse Prevention on Public Works Projects Act , 820 ILCS 265/1 *et seq.*, and further agrees that all of its subcontractors shall comply with such Act. As required by the Act, Contractor agrees that it will file with the Village prior to commencing work its written substance abuse prevention program and/or that of its subcontractor(s) which meet or exceed the requirements of the Act.

30. PREVAILING WAGE ACT

30.1 Contractor agrees to comply with the Illinois Prevailing Wage Act, 820 ILCS 130/1 *et seq.,* for all work completed under this Contract. Contractor agrees to pay the prevailing wage and require that all of its subcontractors pay prevailing wage to any laborers, workers or mechanics who perform work pursuant to this Contract or related subcontract.

For applicable rates, go to the State of Illinois – Department of Labor website (www.state.il.us/agency/idol/rates/rates.HTM) and use the most current DuPage County rate. The Department revises the prevailing wage rates and the Contractor or subcontractor has an obligation to check the Department's website for revisions to prevailing wage rates throughout the duration of this Contract.

30.2 Contractor and each subcontractor shall keep or cause to be kept accurate records of all laborers, mechanics and other workers employed by them on the public works project, which records must include each worker's name, address, telephone number when available, social security number, classification, hourly wage paid (including itemized hourly cash and fringe benefits paid in each pay period), number of hours worked each day, and the starting and ending times of work each day These records shall be open to inspection at all reasonable hours by any representative of the Village or the Illinois Department of Labor and must be preserved for five (5) years from the date of the last payment on the public work.

30.3 Since this is a contract for a public works project, as defined in 820 ILCS 130/2, Contractor agrees to post at the job site in an easily accessible place, the prevailing wages for each craft or type of worker or mechanic needed to execute the contract or work to be performed.

30.4 Because this is a public works project as defined under the Prevailing Wage Act, 820 ILCS 130/2, any and all contractors and subcontractors shall submit certified payroll records to the Village no later than the tenth (10^{th}) day of each calendar month for the immediately preceding month in which construction on a public works project has occurred. WITHOUT THIS PAPERWORK, NO INVOICE SHALL BE PAID BY THE VILLAGE. Contractors and subcontractors must also submit a statement affirming that the records are true and accurate, that the wages paid to each worker are not less than the prevailing rate, and that the contractor and subcontractor are aware that filing false records is a Class A misdemeanor. The records must include the name, address, telephone number, social security number, job classification, hours of work, hourly rate, and start and end time of work each day for every worker employed on the public work. The Village reserves the right to check the pay stubs of the workers on the job. The Village further cautions that payment for any services rendered pursuant to this Contract may be predicated upon receipt of said records.

30.5 In the event that this is a construction project where Motor Fuel tax monies or state grant monies are used in the construction, maintenance and extension of municipal streets, traffic control signals, street lighting systems, storm sewers, pedestrian subways or overhead crossings, sidewalks and off-street parking facilities, and the like, the Village will require an Apprenticeship and Training Certification, attached after the Bidder's Certification.

30.6 Any bond furnished as security for performance shall include a provision that guarantees faithful performance of the Illinois Prevailing Wage Act, 820 ILCS 130/1 et seq.

31. PATRIOT ACT COMPLIANCE

31.1 The Contractor represents and warrants to the Village that neither it nor any of its principals, shareholders, members, partners, or affiliates, as applicable, is a person or entity named as a Specially Designated National and Blocked Person (as defined in Presidential Executive Order 13224) and that it is not acting, directly or indirectly, for or on behalf of a Specially Designated National and Blocked Person. The Contractor further

represents and warrants to the Village that it and its principals, shareholders, members, partners, or affiliates, as applicable are not, directly or indirectly, engaged in, and are not facilitating, the transactions contemplated by this Contract on behalf of any person or entity named as a Specially Designated National and Blocked Person. The Contractor hereby agrees to defend, indemnify and hold harmless the Village, and its elected or appointed officers, employees, agents, representatives, engineers and attorneys, from and against any and all claims, damages, losses, risks, liabilities and expenses (including reasonable attorney's fees and costs) arising from or related to any breach of the foregoing representations and warranties.

32. INSURANCE REQUIREMENTS

32.1 Prior to starting the Work, Contractor and any Subcontractors shall procure, maintain and pay for such insurance as will protect against claims for bodily injury or death, or for damage to property, including loss of use, which may arise out of operations by the Contractor or Subcontractor or any Sub-Sub Contractor or by anyone employed by any of them, or by anyone for whose acts any of them may be liable. Such insurance shall not be less than the greater of coverages and limits of liability specified below or any coverages and limits of liability specified in the Contract Documents or coverages and limits required by law unless otherwise agreed to by the Village.

Workers Compensation	$500,000	Statutory
Employers Liability	$1,000,000 $1,000,000 $1,000,000	Each Accident Disease Policy Limit Disease Each Employee
Comprehensive General Liability	$1,000,000 $2,000,000	Each Occurrence Aggregate ***(Applicable on a Per Project Basis)***
Commercial Automobile Liability	$1,000,000	Each Accident
Professional Errors & Omissions (pursuant to section.9 below)	$2,000,000 $2,000,000	Each Claim Annual Aggregate
Umbrella Liability	$ 5,000,000	

32.2 Comprehensive General Liability Insurance required under this paragraph shall be written on an occurrence form and shall include coverage for Products/Completed Operations, Personal Injury with Employment Exclusion (if any) deleted, Blanket XCU and Blanket Contractual Liability insurance applicable to defense and indemnity obligations and other contractual indemnity assumed under the Contract Documents. The limit must be on a "Per Project Basis".

32.3 Commercial Automobile Liability Insurance required under this paragraph shall include coverage for all owned, hired and non-owned automobiles.

32.4 Workers Compensation coverage shall include a waiver of subrogation against the Village.

32.5 Comprehensive General Liability, Employers Liability and Commercial Automobile Liability Insurance may be arranged under single policies for full minimum limits required, **or** by a combination of underlying policies with the balance provided by Umbrella and/or Excess Liability policies.

32.6 Contractor and all Subcontractors shall have their respective Comprehensive General Liability (including products/completed operations coverage), Employers Liability, Commercial Automobile Liability, and Umbrella/Excess Liability policies endorsed to add the "Village of Downers, its officers, officials, employees and volunteers" as "additional insureds" with respect to liability arising out of operations performed; claims for bodily injury or death brought against the Village by any Contractor or Subcontractor employees, or the employees of Subcontractor's subcontractors of any tier, however caused, related to the performance of operations under the Contract Documents. Such insurance afforded to the Village shall be endorsed to provide that the insurance provided under each policy shall be ***Primary and Non-Contributory***.

32.7 Contractor and all Subcontractors shall maintain in effect all insurance coverages required by the Contract Documents at their sole expense and with insurance carriers licensed to do business in the State of Illinois and having a current A. M. Best rating of no less than A- VIII. In the event that the Contractor or any Subcontractor fails to procure or maintain any insurance required by the Contract Documents, the Village may, at its option, purchase such coverage and deduct the cost thereof from any monies due to the Contractor or Subcontractor, or withhold funds in an amount sufficient to protect the Village, or terminate this Contract pursuant to its terms.

32.8 All insurance policies shall contain a provision that coverages and limits afforded hereunder shall not be canceled, materially changed, non-renewed or restrictive modifications added, without thirty (30) days prior written notice to the Village. Renewal certificates shall be provided to the Village not less than five (5) days prior to the expiration date of any of the required policies. All Certificates of Insurance shall be in a form acceptable to the Village and shall provide satisfactory evidence of compliance with all insurance requirements. The Village shall not be obligated to review such certificates or other evidence of insurance, or to advise Contractor or Subcontractor of any deficiencies in such documents, and receipt thereof shall not relieve the Contractor or Subcontractor from, nor be deemed a waiver of the right to enforce the terms of the obligations hereunder. The Village shall have the right to examine any policy required and evidenced on the Certificate of Insurance.

32.9 If the Work under the Contract Documents includes design, consultation, or any other professional services, Contractor or the Subcontractor shall procure, maintain, and pay for Professional Errors and Omissions insurance with limits of not less than $2,000,000 per claim and $2,000,000 annual aggregate. If such insurance is written on a claim made basis, the retrospective date shall be prior to the start of the Work under the Contract Documents. Contractor and all Subcontractors agree to maintain such coverage for three (3) years after final acceptance of the Project by the Village or such longer period as the Contract Documents may require. Renewal policies during this period shall maintain the same retroactive date.

32.10 Any deductibles or self-insured retentions shall be the sole responsibility of the Insured. At the option of the Village, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Village, its officers, officials, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

33. INDEMNITY AND HOLD HARMLESS AGREEMENT

33.1 To the fullest extent permitted by law, the Contractor shall indemnify, keep and save harmless the Village and its agents, officers, and employees, against all injuries, deaths, strikes, losses, damages, claims, suits, liabilities, judgments, costs and expenses, which may arise directly or indirectly from any negligence or from the reckless or willful misconduct of the Contractor, its employees, or its subcontractors.

33.2 The Contractor shall, at its own expense, appear, defend and pay all charges of attorneys and all costs and other expenses arising therefrom or incurred in connection therewith, and, if any judgment shall be rendered against the Village in any such action, the Contractor shall, at its own expense, satisfy and discharge the same. This agreement shall not be construed as requiring the Contractor to indemnify the Village for its own negligence. The Contractor shall indemnify, keep and save harmless the Village only where a loss was caused by the negligent, willful or reckless acts or omissions of the Contractor, its employees, or its subcontractors.

34. SUBLETTING OF CONTRACT

34.1 No contract awarded by the Village shall be assigned or any part subcontracted without the written consent of the Village. In no case shall such consent relieve the Contractor from his obligation or change the terms of this Contract.

All approved subcontracts shall contain language which incorporates the terms and conditions of this Contract.

35. TERMINATION OF CONTRACT

35.1 The Village reserves the right to terminate the whole or any part of this Contract, upon written notice to the Contractor, for any reason.

35.2 The Village further reserves the right to terminate the whole or any part of this Contract, upon written notice to the Contractor, in the event of default by the Contractor. Default is defined as failure of the Contractor to perform any of the provisions of this Contract or failure to make sufficient progress so as to endanger performance of this Contract in accordance with its terms. In the event that the Contractor fails to cure the default upon notice, and the Village declares default and termination, the Village may procure, upon such terms and in such manner as it may deem appropriate, supplies or services similar to those so terminated. The Village may also contact the issuer of the Performance Bond to complete the Work. The Contractor shall be liable for any excess costs for such similar supplies or services. Any such excess costs incurred by the Village may be set-off against any monies due and owing by the Village to the Contractor.

36. BILLING AND PAYMENT PROCEDURES

36.1 Payment will be made upon receipt of an invoice referencing Village purchase order number. Once an invoice and receipt of materials or service have been verified, the invoice will be processed for payment in accordance with the Village's payment schedule. The Village will comply with the Local Government Prompt Payment Act, 50 ILCS 505/1 et seq., in that any bill approved for payment must be paid or the payment issued to

the Contractor within 60 days of receipt of a proper bill or invoice. If payment is not issued to the Contractor within this 60-day period, an interest penalty of 1.0% of any amount approved and unpaid shall be added for each month or fraction thereof after the end of this 60-day period, until final payment is made.

36.2 The Village shall review each bill or invoice in a timely manner after its receipt. If the Village determines that the bill or invoice contains a defect making it unable to process the payment request, the Village shall notify the Contractor as soon as possible after discovering the defect pursuant to rules promulgated under 50 ILCS 505/1 et seq. The notice shall identify the defect and any additional information necessary to correct it.

36.3 As this Contract is for work defined as a "fixed public work" project under the Illinois Prevailing Wage Act, 820 ILCS 130/2, any contractor or subcontractor is required to submit certified payroll records along with the invoice. No invoice shall be paid without said records.

36.4 Please send all invoices to the attention of: Village of Downers Grove, Accounts Payable, 801 Burlington, Downers Grove, IL 60515.

37. COMPLIANCE WITH OSHA STANDARDS

37.1 Equipment supplied to the Village must comply with all requirements and standards as specified by the Occupational Safety and Health Act. All guards and protectors as well as appropriate markings will be in place before delivery. Items not meeting any OSHA specifications will be refused.

38. CERCLA INDEMNIFICATION

38.1 The Contractor shall, to the maximum extent permitted by law, indemnify, defend, and hold harmless the Village, its officers, employees, agents, and attorneys from and against any and all liability, including without limitation, costs of response, removal, remediation, investigation, property damage, personal injury, damage to natural resources, health assessments, health settlements, attorneys' fees, and other related transaction costs arising under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, 42 U.S.C.A. Sec. 9601, et seq., as amended, and all other applicable statutes, regulations, ordinances, and under common law for any release or threatened release of the waste material collected by the Contractor, both before and after its disposal.

38.2 If the Contractor encounters any waste material governed by the above Act, it shall immediately notify the Village and stop working in the area until the above requirements can be met.

39. COPYRIGHT or PATENT INFRINGEMENT

39.1 The Contractor agrees to indemnify, defend, and hold harmless the Village against any suit, claim, or proceeding brought against the Village for alleged use of any equipment, systems, or services provided by the Contractor that constitutes a misuse of any proprietary or trade secret information or an infringement of any patent or copyright.

40. BUY AMERICA

40.1 The Contractor agrees to comply with 49 U.S.C.5323(j), the Federal Transportation Administration's (FTA) Buy America regulations at 49 C.F.R. Part 661, and any amendments thereto, and any implementing guidance issued by the FTA, with respect to this Contract, when financed by Federal funds (through a grant agreement or cooperative

agreement).

40.2 As a condition of responsiveness, the Contractor agrees to submit with its Bid submission, an executed Buy America Certificate, attached hereto.

41. CAMPAIGN DISCLOSURE

41.1 Any contractor, proposer, bidder or vendor who responds by submitting a bid or proposal to the Village of Downers Grove shall be required to submit with its bid submission, an executed Campaign Disclosure Certificate, attached hereto.

41.2 The Campaign Disclosure Certificate is required pursuant to the Village of Downers Grove Council Policy on Ethical Standards and is applicable to those campaign contributions made to any member of the Village Council.

41.3 Said Campaign Disclosure Certificate requires any individual or entity bidding to disclose campaign contributions, as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4), made to current members of the Village Council within the five (5) year period preceding the date of the bid or proposal release.

41.4 By signing the bid documents, contractor/proposer/bidder/vendor agrees to refrain from making any campaign contributions as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4) to any Village Council member and any challengers seeking to serve as a member of the Downers Grove Village Council.

42. GUARANTEE PERIOD

42.1 The Contractor shall guarantee all work and provide a maintenance bond for the full amount of the contract, covering a minimum period of one (1) year after approval and acceptance of the Work. The bond shall be in such form as the Village may prescribe, unless otherwise noted in the Specifications, and shall be submitted before receiving final payment. If longer guarantee periods are required, they will be noted in the Special Provisions for this project.

43. SUCCESSORS AND ASSIGNS

43.1 The terms of this Contract will be binding upon and inure to the benefit of the parties and their respective successors and assigns; provided, however, that neither party will assign this Contract in whole or in part without the prior written approval of the other. The Contractor will provide a list of key staff, titles, responsibilities, and contact information to include all expected subcontractors.

44. WAIVER OF BREACH OF CONTRACT

44.1 The waiver by one party of any breach of this Contract or the failure of one party to enforce at any time, or for any period of time, any of the provisions hereof will be limited to the particular instance and will not operate or be deemed to waive any future breaches of this Contract and will not be construed to be a waiver of any provision except for the particular instance.

45. CHANGE ORDERS

45.1 The contract price is a “not-to-exceed” cost. At any time additional work is necessary or requested, and the not-to-exceed price is increased thereby, all parties must agree to any change, addition or price increase in writing.

45.2 Change orders for public works projects which authorize an increase in the contract price that is 50% or more of the original contract price or that authorize or necessitate any increase in the price of a subcontract under the contract that is 50% or more of the original subcontract price must be resubmitted for bidding in the same manner by which the original contract was bid. (50 ILCS 525/1)

46. SEVERABILITY OF INVALID PROVISIONS

46.1 If any provisions of this Contract are held to contravene or be invalid under the laws of any state, country or jurisdiction, contravention will not invalidate the entire Contract, but it will be construed as if not containing the invalid provision and the rights or obligations of the parties will be construed and enforced accordingly.

47 GOVERNING LAW AND VENUE

47.1 This Contract will be governed by and construed in accordance with the laws of the State of Illinois. Venue is proper only in the County of DuPage for state cases or the Northern District of Illinois for federal cases.

48. NOTICE

48.1 Any notice will be in writing and will be deemed to be effectively served when deposited in the mail with sufficient first class postage affixed and addressed to the party at the party's place of business. Notices shall be addressed to the Village as follows:

Village Manager
Village of Downers Grove
801 Burlington Ave.
Downers Grove, IL 60515

And to the Contractor as designated on the Contract Form.

49. AMENDMENT

49.1 This Contract will not be subject to amendment unless made in writing and signed by all parties.

50. COOPERATION WITH FOIA COMPLIANCE

50.1 Contractor acknowledges that the Freedom of Information Act does apply to public records in possession of the Contractor or a subcontractor. Contractor and all of its subcontractors shall cooperate with the Village in its efforts to comply with the Freedom of Information Act. 5 ILCS 140/1 et seq.

51. EMPLOYMENT OF ILLINOIS WORKERS ON PUBLIC WORKS ACT

51.1 If the work contemplated by this Contract is funded or financed in whole or in part with State Funds or funds administered by the State, Contractor agrees to comply with the terms of the Employment of Illinois Workers on Public Works Act by employing at least 90% Illinois laborers on the project. 30 ILCS 570/1 et seq. Contractor agrees further to require compliance with this Act by all of its subcontractors.

III. GENERAL PROVISIONS

1. STANDARD SPECIFICATIONS

1.1 The following standards shall govern the construction of the proposed improvements:

1.1.1 Standard Specifications for Water and Sewer Main Construction in Illinois, Seventh Edition, 2014 (the Water & Sewer Specs.); and

1.1.2 Standard Specifications for Road and Bridge Construction as adopted by the Illinois Department of Transportation, January 1, 2016; along with Supplemental Specifications and Recurring Special Provisions as adopted by the Illinois Department of Transportation, January 1, 2019 (collectively the "SSRBC"); and

1.1.3 Water Distribution Specifications, Village of Downers Grove, Illinois, revised January 2017.

1.1.4 Standard Detail Drawings, Village of Downers Grove, Illinois revised January 2018.

1.2 These Contract Documents shall take precedence whenever there are conflicts in the wording or statements made by the above specifications and these Contract Documents.

1.3 Unless otherwise referenced herein, Division I of the Water and Sewer Specs and Section 102 and Articles 104.03, 104.07, 107.02, 107.27, 107.35, 108.10, 108.11, and 108.12 of the SSRBC are hereby ineffective and not a part of this Contract.

2. COOPERATION OF CONTRACTOR

2.1 The Contractor will be supplied with a minimum of 2 sets of approved plans and contract assemblies including Special Provisions, one set of which the Contractor shall keep available on the work site at all times. The Contractor shall give the work site constant attention necessary to facilitate the progress thereof and shall cooperate with the Village in every way possible.

2.2 The Contractor shall have on the work site at all times, as the Contractor's agent, a competent English-speaking representative capable of reading and thoroughly understanding the Contract Documents, and thoroughly experienced in the type of work being performed. The representative shall also be capable of receiving instruction from the Village and shall have full authority to promptly respond to such instruction. He shall be capable of supplying such materials, equipment, tools, labor and incidentals as may be required. The Contractor shall not replace him without prior written notification to the Village.

3. LEGAL REGULATIONS AND RESPONSIBILITY TO THE PUBLIC

3.1 Section 107 of the SSRBC shall govern the Contractor's legal regulations and responsibility to the public, with the following additions:

3.1.1 PROJECT SAFETY. Add the following to Article 107.28:

3.1.1.1 The Contractor shall conduct his work in such a manner as to provide an environment consistent with the safety, health and well being of those engaged in the completion of the Work specified in this Contract.

3.1.1.2 The Contractor shall comply with all State and Federal Safety Regulations as outlined in the latest revisions of the Federal Construction Safety Standards (Series 1926) and with applicable provisions and/or regulations of the Occupation Safety and Health Administration (OSHA) and Standards of the Williams-Stelger Occupational Health Safety Act of 1970 (Revised). SPECIAL ATTENTION SHALL BE PAID TO COMPLIANCE WITH OSHA'S SUBPART P – EXCAVATIONS STANDARD.

3.1.1.3 The Contractor and Village shall each be responsible for their own respective agents and employees.

3.1.1.4 The Contractor shall, prior to performing any work, request information from the Village regarding any existing confined spaces owned by the Village that may be entered in the course of the work and shall obtain all required confined space entry permits prior to entering any confined spaces. Contractor shall follow all current laws and regulations with regard to confined space entry. Contractor shall maintain and, upon request, provide full documentation of compliance with the appropriate confined space permits for each separate confined space entered on the project.

3.1.2 BACKING PRECAUTIONS. Pursuant to Sections 14-139(b) and 14-171.l of the Downers Grove Municipal Code, any motor vehicle which has an obstructed view to the rear and is to be operated at any time in reverse gear on the public streets of the Village by the Contractor or any subcontractor shall either be equipped with a reverse signal alarm (backup alarm) audible above and distinguishable from the surrounding noise level, or shall provide an observer to signal that it is safe to back up.

3.1.3 OVERWEIGHT, OVERWIDTH AND OVERHEIGHT PERMITS. The Village has and supports an overweight truck enforcement program. Contractors are required to comply with weight requirements and safety requirements as established by Illinois Law or Village Ordinance, for vehicles, vehicle operators and specialty equipment. In some instances, specialty equipment for road repairs or construction projects requires the movement of overweight, overwidth, or overheight loads utilizing a Village roadway. Such movement will require obtaining a permit from the Village Police Department's Traffic Supervisor.

3.1.4 BARRICADES AND WARNING SIGNS. The Contractor shall provide the Village with a telephone number of a person or company who is available 24 hours per day, seven days per week, to erect additional barricades or signs. If the Village or its representative deems it necessary for the Public's safety to erect additional barricades or signs during normal working hours, the Contractor will furnish the necessary barricades or signs, and have them in place within 30 minutes. If, after normal working hours, the requested signs are not in place within three hours after the request is made, the Village reserves the right to have the barricades and signs erected. The cost of erecting the barricades and signs shall be deducted by the Village from any payments due the Contractor.

4. PROSECUTION AND PROGRESS

4.1 Section 108 of the SSRBC shall govern the prosecution and progress of the work, with the following additions:

4.1.1 The Contractor shall schedule his work such that all improvements shall be complete by November 30, 2023. The completion date will remain binding throughout the duration of the Contract unless revised in writing by the Village.

4.1.2 The total duration of disturbance for work related to means of public egress through the project site or access to private property (e.g. removal and replacement of curb and gutters, sidewalks, driveway entrances, etc.) must not exceed ten (10) calendar days. The Contractor may use high-early strength concrete, meeting all specifications herein, **at his own expense** to help meet this requirement.

4.1.3 The Contractor shall also make special note of the following work schedule requirements:
(a) N/A

4.1.4 Should the Contractor fail to complete the work on or before the specified completion dates set forth in Sections 4.1.1, 4.1.2, 4.1.3, or within such extended time as may be allowed, the Contractor shall be liable for liquidated damages in accordance with the applicable sections of Article 108.09 of the SSRBC.

4.1.5 Prior to commencing construction, a meeting will be held with the Contractor and the Village. Any questions concerning procedures, general conditions, special provisions, plans or specific items related to the project shall be answered and clarified. No Pre-Construction meeting shall be scheduled until submittals, performance bonds, and certificates of insurance are delivered to, and approved by, the Village.

4.1.6 Weekly progress meetings may be required by the Village. If required, the Contractor shall have a capable person, such as a site superintendent or project manager, attend such meetings and be prepared to report on the prosecution of the Work according to the progress schedule. The Village reserves the right to require adjustments to scheduling of work.

5. MEASUREMENT AND PAYMENT

5.1 Section 109 of the SSRBC shall govern measurement and payment, with the following additions:

5.1.1 Modifies Article 109.07 - Partial payments will be made per Section 36 of Part II of this document (Billing and Payment Procedures.)

5.1.2 The Village will require that partial and final affidavits for all labor, materials and equipment used on the Project and certified payroll records, be submitted with the partial and final payment requests. Such waivers shall indicate that charges for all labor, materials and equipment used on the project have been paid. Partial waivers from suppliers and subcontractors may be submitted after the first payment to the Contractor, and before the subsequent payment to that which they apply. However, partial waivers from the Contractor must accompany the invoice

of the payment to which it applies. All final waivers, from all suppliers and subcontractors MUST accompany the Contractor's invoice upon submittal for final payment. A sworn statement by the Contractor shall accompany full waivers. Such requirement for full waivers is solely for the benefit of the Village and shall not be construed to benefit any other person. Partial payment for work done shall in no way imply acceptance of the work to that date.

5.1.3 For each progress payment made to the Contractor prior to acceptance of the Work by the Village, the Village shall have the right to retain ten percent (10%) of the amount due to the Contractor for each such payment. The Village may, in its sole discretion, reduce the amount to be retained at any time.

Typically, upon completion of 50% of the work, as determined by the Engineer, retainage may be reduced to 5%. Upon substantial completion, as determined by the Engineer, retainage may be reduced to 2%. Additionally, the Village has the right to withhold an amount of money equivalent to complete unfinished work and/or work that may need to be redone.

6. SCOPE OF WORK

6.1 In addition to the Special Provisions in the Detailed Specifications Section below, Section 104 of the SSRBC shall govern scope of work, with the following revisions:

6.1.1 Modify Article 104.02 as follows:

104.02 Alterations, Cancellations, Extensions, Deductions, and Extra Work.

The Department reserves the right to make, in writing, at any time during work, changes in quantities, alterations in work, and the performance of extra work to satisfactorily complete the project. Such changes in quantities, alterations, and extra work shall not invalidate the contract nor release the surety, and the Contractor agrees to perform the work as altered.

If the alterations or changes in quantities significantly change the character of the work under the contract, whether or not changed by any such different quantities or alterations, an adjustment, excluding loss of anticipated profits, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the Contractor in such amount as the Engineer may determine to be fair and equitable.

If alterations or changes in quantities do not significantly change the character of the work to be performed under contract, the altered work will be paid for as provided elsewhere in the contract. The term "significant change" shall be construed to apply only when the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction.

All alterations, cancellations, extensions, and deductions shall be authorized in writing by the Engineer before work is started. Such authorizations shall set up the items of work involved and the method of payment for each item. The Contractor shall accept payment for alterations which result in an increase or decrease in the quantities of work to be performed according to the following.

(a) All increases in work of the type which appear in the contract as pay items accompanied by unit prices will, except as provided under paragraph (d) herein, be paid for at the contract unit prices. Decreases in quantities included in the contract will be deducted from the contract at the unit bid prices. No allowance will be made for delays or anticipated profits.
(b) Major items of work for which the quantities are increased OR DECREASED will be paid for as specified in paragraph (a) above.
(c) Extra work which is not included in the contract as pay items at unit prices and is not included in other items of the contract will be paid for according to Article 109.04.
(d) Extra work for which there is a pay item at unit price in the contract which for any one or more of the following reasons materially increases or decreases the cost of the pay item as bid and which is not included in the prices bid for other items in the contract will be paid for according to Article 109.04. This includes:

(1) Work involving a substantial change of location.
(2) Work which differs in design.
(3) Work requiring a change in the type of construction.

(e) In cases where the Department cancels or alters any portion of the contract items, items which are partially completed will be paid for as specified in Article 109.06.

Claims for extra work which have not been authorized in writing by the Engineer will be rejected.

IV. SPECIAL PROVISIONS

The following Special Provisions shall modify, supercede, or supplement the Standard Specifications referred to in Section III - General Provisions.

Where any section, subsection, paragraph, or subparagraph of the Standard Specifications is *supplemented* by any of the following paragraphs, the provisions of such section, subsection, paragraph, or subparagraph shall remain in effect. The Special Provisions shall govern in addition to the particular Standard Specification so supplemented, and not in lieu thereof.

Where any section, subsection, paragraph, or subparagraph of the Standard Specifications is *amended, voided, or superceded* by any of the following paragraphs, any provision of such section, subsection, paragraph, or subparagraph standing unaffected, shall remain in effect. The Special Provisions shall govern in lieu of any particular provision of the Standard Specification so amended, voided, or superceded, and not in addition to the portion changed.

VILLAGE OF DOWNERS GROVE

DEPARTMENT OF PUBLIC WORKS

ADDENDUM NO. 1

FOR

Rehabilitation of the 2,000,000 Gallon Legged High Tank

CFB-87-0-2022/DM

August 5, 2022

ITEM AND DESCRIPTION:

1. DIXON ENGINEERING, INC. MARCH 2021 Inspection Report
2. Cellular Relocation Plans
3. Replace Section 09 91 13 of the Technical Specifications with the attached revised Section 09 91 13. The intent of this addendum is to comply with NSF600 standards utilizing 100% Solids for all required paint coating systems.

The Acknowledgement of Receipt of Addendum for this addendum MUST be included in the bid package. Bid packages not including signed Acknowledgement Sheets may be REJECTED.

End of Addendum No. 1

VILLAGE OF DOWNERS GROVE

DEPARTMENT OF PUBLIC WORKS

ACKNOWLEDGEMENT OF RECEIPT OF ADDENDUM No.1

PROPOSAL/BID: Rehabilitation of the 2,000,000 Gallon Legged High Tank

PROPOSAL/BID NUMBER: CFB-87-0-2022/DM

PROPOSAL DUE DATE: August 24, 2022

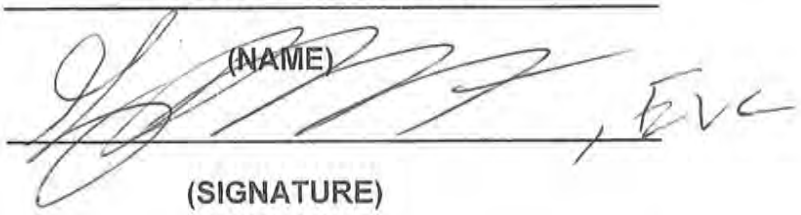
ADDENDUM NO.: 1

PROPOSER/BIDDER: Era-Valdivia Contractors, Inc.

ADDRESS: 11909 S. Avenue O, Chicago, IL 60617

RECEIVED BY: Era-Valdivia Contractors, Inc.

(NAME)



(SIGNATURE)

DATE: 8-24-22

Dixon Engineering, Inc.

Maintenance Inspection

2,000,000 Gallon Radial Arm (Downers Drive Tank)

Downers Grove, Illinois

Inspection Performed: March 31, 2021
Reviewed by Joseph T. Hoban P.E.: April 22, 2021

Dixon Engineering, Inc.
4811 S. 76th St. Ste. 109, Greenfield, WI 53220

Phone (414) 529-1859
Fax (414) 282-7830
http://www.dixonengineering.net
Wisconsin@dixonengineering.net

CONCLUSIONS:

1. The exterior coating is a urethane system. The coating is in fair to poor condition overall. Coating deterioration includes spot failures to the substrate with rust undercutting, topcoat delamination, rust bleedthrough, micro-cracking, and erosion. There are numerous coating failures throughout.

2. The wet interior coating is presumed to be an epoxy system. Below the high-water level coating deterioration includes spot failures to the substrate on the sidewall and bowl. Above the high-water level coating is deteriorating at the roof panels, open lap seams, and at the roof stiffeners.

RECOMMENDATIONS (GENERAL AND IMMEDIATE WORK):

Annually inspect the roof vent, hatches, and any other health or security items on the structure. The work could be performed by in-house personnel or contracted as part of a regular maintenance program.

Schedule regular cleanings and inspections of the tank by an independent third party once every five years as recommended by AWWA.

RECOMMENDATIONS (IMMEDIATE WORK TO MEET ILLINOIS EPA REQUIREMENTS):

The Illinois EPA may allow some of the required changes to be delayed until the next paint project. These items are listed as immediate work since they are currently out of compliance.

1. Install a gasket on the wet interior roof hatch to meet current Illinois EPA requirements. The cost would be incidental to the next painting project or could be performed by in-house personnel.

2. Install a vandal guard on the exterior ladder to meet current Illinois EPA requirements. The estimated cost is $2,000.

RECOMMENDATIONS (WITH THE NEXT PAINT PROJECT):

Complete the recommended work in one to two years. The repairs and upgrades should be completed during the next major tank rehabilitation project when coating repairs are made.

1. Abrasive blast clean the exterior inside a dust tight containment system and repaint with a urethane system. The estimated cost is $1,150,000 plus $130,000 for containment.

2. Abrasive blast clean the entire wet interior and repaint with an epoxy system. The estimated cost is $500,000.

3. Caulk the roof lap seams after the wet interior is repainted. The estimated cost $4,000.

4. Install clips and a pressure fitting for future installation of a submerged cathodic protection system. The estimated cost is $3,000.

5. Remove the tree rubbing on the tank to prevent coating damage. The work can be performed by in-house personnel or obtain a quote from a local landscaper.

6. Recoat the foundations to help prevent deterioration. The cost would be incidental to exterior painting.

7. Remove soil at the riser foundation to expose the top 4 inches. The work can be performed by in-house personnel or obtain a quote from a local landscaper.

8. Repair areas of missing or damaged grout between the steel baseplates and the concrete foundations. The cost would be incidental to the next painting project.

9. Install a handrail on the roof. Install a painter's railing on the roof around the new handrail. The estimated cost is $30,000.

10. Request that the antenna owners return to correct deficiencies in cable routing. The cable routing interferes with climbing on the sidewall. The antenna cable mounting on the legs should be altered so there are no band clamp attachments. Cost for modifying the antenna routing is assumed to be the responsibility of the antenna owners.

11. Relocate all roof antennas to the new roof handrail and remove the existing mounting structure. The cost would be incidental to roof handrail installation.

12. Remove all antennas and antenna cables prior to abrasive blast cleaning and repainting. The cost is assumed to be the responsibly of the antenna owners.

13. Tighten the loose sway rods. The estimated cost is $5,000.

14. Install rigging couplings on the bowl. The cost would be incidental to the next painting project.

15. Modify the overflow pipe discharge so it discharges over the catch basin. The estimated cost is $1,000.

16. Replace the wet interior roof hatch with a 30 inch diameter hatch. The estimated cost is $4,000.

17. Install a handhold at the wet interior roof hatch. The handhold would assist the climber while entering and exiting the opening. The cost would be incidental to the next painting project.

18. Cut off the top 3 inches of the rail fall prevention device at the top of the leg ladder. The cost would be incidental to the next painting project.

19. Install a fall prevention device on the exterior ladder from the stairs to the balcony. The estimated cost is $2,000.

20. Replace the sidewall/roof ladder with a vertical ladder and a step-off platform. The estimated cost is $15,000.

21. Install a wet interior ladder that is equipped with a fall prevention device. The estimated cost is $10,000.

22. Install a mechanical mixer in the wet interior. The estimated cost is $20,000.

23. Remove damaged stiffener/painter's railing sections from the wall and sections that are lying on the bowl in the wet interior. The cost would be incidental to the next paint project.

A DISCUSSION ON RESCUE AND RETRIEVAL OPERATIONS FROM ELEVATED STORAGE TANKS

Working on elevated water storage tanks is inherently dangerous. OSHA regulations give guidelines for the climbing on elevated structures. Contractors and Engineers/Consultants are responsible for their own employees, but even with safety training and proper equipment, accidents can occur. Most rescue squads are local or neighboring fire departments, with some departments having more experience than others. Water storage tanks are designed to store water and are not suited for rescue or retrieval convenience. We recommend that you meet with your local rescue personnel and draft a rescue plan. A copy of the plan should be kept at the tank and with the rescue crew.

OSHA does not require 30 inch manways or hatches but for rescue purposes 30 inch openings would allow enough room for a rescue basket with an injured person on it to pass through. Smaller openings may not be sufficient for retrieval.

Rescue personnel would gain access to the injured person using the existing ladders while attached to fall prevention devices. If possible, the basket would be lowered through the riser and out the opening in the bottom. If needed, the rescue crew would work from the roof inside a handrail. A tripod would be used to attach a winch to the basket. If the basket cannot fit through the riser then it would need to be raised to the roof.

From the roof it is possible to lower the basket over the side to ground level, but that would require a very large winch and increased loading on the attachment point. On a rainy, windy, or snowy day, the objective would be to get rescue personnel off the roof as soon as possible, so lowering through the dry interior is preferred. A helicopter rescue would need to be performed if it is not possible to lower the rescue basket down the dry interior.

Upgrades intended to make a rescue easier are included in this report. Dixon recommends 30 inch manways or hatches where possible and fall prevention devices on all ladders.

COST SUMMARY:

Exterior repaint with containment	$1,280,000
Wet interior repaint	500,000
Caulk roof lap seams	4,000
Cathodic clips and pressure fitting	3,000
Roof handrail and painter's railing	30,000
Tighten sway rods	5,000
Overflow pipe discharge modification	1,000
Wet interior roof hatch	4,000
Fall prevention on ladder under the balcony	2,000
Roof platform	15,000
Vandal guard	2,000
Wet interior ladder	10,000
Mixer	20,000
Sub Total	$1,876,000
Engineering and Contingencies	$200,000
Total	$2,076,000

Notes: Exterior coating is primarily for aesthetics and can be delayed as long as desired since the next paint job cannot be an overcoat. While the appearance will deteriorate the structural integrity should not be impacted.

Exterior repainting will require temporary removal and relocation of the antennas and cables. This cost is not included in these estimates and is assumed to be the responsibility of the antenna owners. Cost is also not included for coordinating with the antenna carriers or for any redesign work needed for antenna mounting or cable routing.

Safety improvements other than the roof handrail and fall prevention devices are optional and can be delayed. Best price for safety improvements would be obtained by including them with the next painting project.

INSPECTION:

On March 31, 2021 Dixon Engineering Inc. performed a maintenance inspection on the 2,000,000 gallon radial arm (Downers Drive Tank) elevated water storage tank owned by the Village of Downers Grove, Illinois. Purposes of the inspection were to evaluate the interior and exterior coating's performance and life expectancy, assess the condition of metal surfaces and appurtenances, review safety and health aspects, and make budgetary recommendations for continued maintenance of the tank. All recommendations with budgeting estimates for repairs are incorporated in this report.

The inspection was performed by Josh Grover, Engineering Technician. The inspector was assisted by John Watson, ROV Operator, and Todd Schaefer, Project Manager.

The wet interior inspection was completed with a remotely operated vehicle (ROV). Video of the inspection and still photos are included with this report. No cleaning was performed in the wet interior during the ROV inspection.

GENERAL INFORMATION:

The tank was built in 1957 by CB&I with a height to low-water level of 90 feet.

CONDITIONS AND RECOMMENDATIONS:

EXTERIOR COATING CONDITIONS:

It is not known when the exterior was last painted. A coating sample was taken and sent to Tnemec Paint Company for lab analysis. Lab results indicate that the exterior coating is a urethane.

The coating is in fair to poor condition overall. The coating is beginning to chalk and fade and there is loss of gloss. Surfaces have faded due to exposure to ultraviolet light which is a normal occurrence for an exterior coating system.

The leg coating is in fair condition with numerous failures. Primary methods of deterioration are spot failures to the substrate with rust undercutting, rust bleedthrough, delaminated topcoat, erosion, and micro-cracking.

The riser and bowl coating is in poor condition with numerous failures. Primary methods of deterioration are spot failures to the substrate with rust undercutting, rust bleedthrough, delaminated topcoat, and erosion.

Coating on the top of the balcony is in poor condition with numerous failures. Primary methods of deterioration are spot failures to the substrate with rust undercutting and rust bleedthrough.

The sidewall coating is in fair condition with numerous failures. Primary methods of deterioration are spot failures to the substrate with rust undercutting, rust bleedthrough,

delaminated topcoat, erosion, and micro-cracking. There is lettering that states "DOWNERS GROVE" on the sidewall in two locations. There is a Village logo on the sidewall in two locations.

The roof coating is in fair to poor condition with numerous failures. Primary methods of deterioration are spot failures to the substrate with rust undercutting, delaminated topcoat, and erosion.

Coating samples were taken during a previous inspection and tested for heavy metals. The coating tested at 0.028 percent lead by weight and 0.020 percent chromium by weight. Samples obtained during this inspection were less than previous samples. Special considerations will be needed during maintenance to avoid contamination of workers and prevent generation of a hazardous waste.

EXTERIOR COATING RECOMMENDATIONS:

Budget for total exterior coating removal and repainting in approximately one to two years or when aesthetics dictate. Fading will continue, and more rust spots will occur decreasing the tank's aesthetic appearance.

Remove the existing coating by dry abrasive blast cleaning the steel to a commercial (SSPC-SP6) condition and apply a urethane system. All blast work would be performed inside a dust tight containment system using negative air pressure. Total removal is recommended because the coating failures are extensive and no longer has proper adhesion.

Since the existing coating contains heavy metals, during abrasive blast cleaning procedures the waste generated may be considered hazardous waste and groundwater leachable. In addition, the airborne particulate of spent abrasive and heavy metal bearing coating may be considered a threat to public health, not only to workers, but also to pedestrians, houses, and business owners in the immediate vicinity. Special provisions in project specifications will be necessary to address hazardous waste, worker safety, and environmental concerns.

The coating system would consist of a full prime coat on the bare metal, a full coat of epoxy, followed by two full coats of urethane. The urethane system offers excellent abrasion resistance with high gloss and sheen retention. The expected life of this system is fifteen years. The system can be overcoated in fifteen years, and a second time approximately fifteen years after the first overcoat, extending the total life of the coating to approximately forty-five years before total removal would be necessary. The tank would be removed from service during the coating project. This is necessary to reduce condensation on the tank's surface. Urethane coatings have a minimum temperature requirement for application and are sensitive to moisture during the curing process. If moisture is present during the curing process, the appearance will become cloudy with little or no gloss. The estimated cost is $1,150,000 plus $130,000 for containment.

WET INTERIOR COATING CONDITIONS:

It is not known when the wet interior was last painted. The coating is presumed to be an epoxy system based on the color and condition. Determining exact coating type is not essential because spot repair is not typically recommended and overcoating in the wet interior is never recommended.

The roof coating is in poor condition with numerous failures. Primary methods of deterioration are spot failures to the substrate, rust bleedthrough, and weld burns. The roof contains open lap seams that have started to rust and streak. Rusting is typical for a roof where the lap seams are open and not seal welded. The presence of rust in the lap seams is not a concern but should be monitored during future inspections for additional corrosion growth.

The sidewall coating is in poor condition with numerous failures. Primary methods of deterioration are spot failures to the substrate and abrasion.

The coating on the bowl is in good condition with numerous failures. Primary methods of deterioration are spot failures to the substrate. The bowl was covered with several inches of sediment that limited the amount of surface visible with the ROV.

The riser was not inspected because the ROV cannot fit past the grate.

Coating samples were taken during a previous inspection and tested for heavy metals. The coating tested at 0.018 percent lead by weight and 0.032 percent chromium by weight. Samples obtained during this inspection were less than previous samples. Special considerations will be needed during maintenance to avoid contamination of workers and prevent generation of a hazardous waste.

WET INTERIOR COATING RECOMMENDATIONS:

Budget to repaint the wet interior in one to two years. Abrasive blast clean the entire wet interior to a near-white metal (SSPC-SP10) condition. Wet interior coating systems must be approved for potable water storage tanks contingent upon meeting requirements of NSF/ANSI 61.

Apply a three-coat epoxy system to the prepared surfaces. Epoxy coating systems are recommended in most applications because they have good adhesion and abrasion resistant qualities. The estimated cost is $500,000.

Caulk the roof lap seams after the wet interior is repainted. The caulk will fill the open seams and help prevent corrosion. The estimated cost is $4,000.

CATHODIC PROTECTION CONDITIONS:

There is no cathodic protection system in the wet interior. The tank has a pressure fitting installed for a future cathodic protection installation.

CATHODIC PROTECTION RECOMMENDATIONS:

Install cathodic clips and a pressure fitting for future installation of floating type cathodic protection system. The estimated cost is $3,000.

SITE CONDITIONS:

Small tree branches are rubbing on a leg of the structure.

SITE RECOMMENDATIONS:

Remove the tree rubbing on the leg to prevent coating damage. The work can be performed by in-house personnel or obtain a quote from a local landscaper.

FOUNDATION AND ANCHOR BOLT CONDITIONS:

The riser foundation is covered with soil and not visible for inspection. The exposed concrete leg foundations are in good condition. There is minor deterioration with some cracking. The cracks are not significant enough to create a structural problem. The exposed leg foundations are coated. The coating is in poor condition with significant erosion.

There are anchor bolts evenly spaced around the riser and anchor bolts on each leg. The anchor bolts are in good condition with no deterioration or steel loss from corrosion.

FOUNDATION AND ANCHOR BOLT RECOMMENDATIONS:

Recoat the exposed concrete with an epoxy coating system to help prevent further deterioration. The cost would be incidental to exterior painting.

Remove soil at the riser foundation to expose the top 4 inches. The work can be performed by in-house personnel or obtain a quote from a local landscaper.

GROUT CONDITIONS:

The grout between the baseplate and the foundation is in fair condition on the legs with approximately two total lineal feet missing.

GROUT RECOMMENDATIONS:

The purpose of the grout is to evenly distribute the load onto the foundation and to prevent water from getting between the foundation and the tank. Repair areas of missing or damaged grout between the steel baseplate and the concrete foundation. The cost would be incidental to exterior painting.

BALCONY CONDITIONS:

The exterior balcony is a walkway with a railing that surrounds the sidewall. The balcony is in good condition overall. The balcony is 24 inches wide with a 43 inch high handrail. The handrail consists of vertical posts with a midrail and a kick plate at the balcony floor.

There is an opening in the balcony walkway at the ladder. There are chains at the opening. There is no cover over the opening.

ROOF HANDRAIL, PAINTER'S RAILING, AND ROOF RIGGING CONDITIONS:

There is an antenna mounting structure on the roof. The tank does not have a painter's railing.

There are enough roof rigging couplings for safety and staging lines during wet interior coating work.

ROOF HANDRAIL, PAINTER'S RAILING, AND ROOF RIGGING RECOMMENDATIONS:

Remove the antenna mounting structure and install an OSHA compliant railing on the roof. The railing would allow tie off locations during routine vent screen inspections and would provide a safe work area for retrieval personnel performing a roof extraction. Install a painter's railing outside the railing. The estimated cost is $30,000.

ANTENNA CONDITIONS:

There are three roof antennas attached to an antenna mounting structure. There are twenty-three antennas and miscellaneous antenna equipment attached to balcony railing. There are eighteen antennas and miscellaneous antenna equipment attached to the legs. Cable routing interferes with climbing at the sidewall ladder. Cables are band clamped to the legs, over time these clamps will move, abrading and damaging the coating.

ANTENNA RECOMMENDATIONS:

Remove all antennas and antenna cables prior to abrasive blast cleaning and repainting. The cost is assumed to be the responsibly of the antenna owners.

Request that the antenna owners return to correct deficiencies in cable routing. The cable routing interferes with climbing on the sidewall. The antenna cable mounting on the legs should be altered so there are no band clamp attachments. Cost for modifying the antenna routing is assumed to be the responsibility of the antenna owners.

Relocate all roof antennas to the new roof handrail and remove the existing mounting structure. The cost would be incidental to roof handrail installation.

SWAY ROD/BOWL SAFETY CONDITIONS:

There are sway rods that connect between the legs. The rods are intended to keep the legs in alignment and are equipped with turnbuckles for adjusting tension. The sway rods are in good condition. Because of the inaccessibility of the upper sway rods the tension could not be determined at every bay. However, based on the accessible bay at ground level it appears that the rods are not in proper tension as designed.

There are riser tie rods that extend from each leg to the riser. The rods are bolted to welded lugs on the riser. The rods help keep the legs and riser in alignment. The riser tie rods are in good condition.

There are no rigging couplings under the bowl for safety line attachments during exterior coating.

SWAY ROD/BOWL SAFETY RECOMMENDATIONS:

Tighten the loose sway rods. The upper sway rod bays were not inspected for tightness, the actual number of loose rods will need to be determined during the next rehabilitation project once the contractor rigs the structure. The estimated cost is $5,000.

Install rigging couplings on the bowl halfway between each leg and the riser. The couplings would be used by contractors for rigging safety lines. Currently the contractor does not have a separate independent tie off location for safety lines. Without additional attachment points the rigging and safety lines would be tied to the same location. The cost would be incidental to the next painting project.

OVERFLOW PIPE CONDITIONS:

The overflow pipe exits the upper sidewall, extends along the sidewall, through the balcony, and down along a leg to ground level. The end of the pipe is equipped with a screened flap gate that is in good condition. The pipe discharges to a catch basin. The air gap meets the required 12-24 inches. The discharge area is in good condition. The overflow does not directly discharge over the catch basin.

OVERFLOW PIPE RECOMMENDATIONS:

Modify the overflow pipe discharge so it discharges over the catch basin. The estimated cost is $1,000.

HATCH AND MANWAY CONDITIONS:

There is a 24 inch diameter roof hatch to the wet interior that is in good condition. The hinged cover is in good condition. There is no handhold next to the hatch to aid the climber while entering and exiting the opening. The hatch was secured with a padlock. The hatch neck curb height meets the minimum height requirement of 4 inches. The hatch cover lip meets the minimum height requirement of 2 inches.

There is a bolted painter's hatch on the roof that is in good condition. The hatch can be used for ventilation and lighting during maintenance work. There was a gasket on the hatch.

There is a 30 inch diameter manway in the riser to the wet interior that is in good condition. There is also a 12 x 18 inch manway in the riser to the wet interior that is in good condition. The manway gaskets showed no signs of leakage and the bolts are in good condition.

HATCH AND MANWAY RECOMMENDATIONS:

Replace the wet interior roof access hatch with a new 30 inch hatch. Average rescue baskets will not pass through the existing hatch. The estimated cost is $4,000.

Install a gasket on the wet interior roof hatch to meet current Illinois EPA requirements. The cost would be incidental to the next painting project or could be performed by in-house personnel.

Install a handhold at the wet interior roof hatch. The handhold would assist the climber while entering and exiting the opening. The cost would be incidental to the next painting project.

VENT CONDITIONS:

The roof vent is a pressure vacuum design that is in good condition. The pressure vacuum plate was properly aligned. There is a large external screen intended to keep birds out and a smaller mesh screen on the interior intended to keep insects out. The screens are in good condition. There is a rain shield over the outer screen.

LADDER CONDITIONS:

The exterior leg ladder starts approximately 18 feet above the ground and extends up to a small platform near the top of the leg column. There is a stairway and ladder that go from the platform to the balcony. The ladder meets OSHA size requirements. The leg ladder is equipped with a rail-type fall prevention device that is in good condition. There is a bolt at the top of the rail fall prevention device that prevents removal of the grab. There is no fall prevention device on the ladder from the stairs to the balcony. There is no longer a vandal guard on the leg ladder.

There is a fixed sidewall/roof ladder that follows the curve of the roof to the center near the vent. The ladder is in good condition. The ladder meets OSHA size requirements. The ladder is equipped with a rail-type fall prevention device that is in good condition.

There is no ladder in the wet interior.

LADDER RECOMMENDATIONS:

Cut off the top 3 inches of the rail fall prevention device at the top of the leg ladder. The cost would be incidental to the next painting project.

Install a vandal guard on the exterior ladder to meet current Illinois EPA requirements. The estimated cost is $2,000.

Install a fall prevention device on the exterior ladder from the stairs to the balcony. The estimated cost is $2,000.

Replace the roof/sidewall ladder with a vertical sidewall ladder that runs up to a step-off platform. The platform would have a handrail that would extend around the roof hatch. The step-off platform and railing will provide a safer working area at the roof hatch. The estimated cost is $15,000.

Install a wet interior ladder that is equipped with a fall prevention device. The estimated cost is $10,000.

FILL/DRAW PIPE CONDITIONS:

The fill/draw pipe stubs in the bottom of the riser and could not be inspected with the ROV.

MIXING CONDITIONS:

There is ice abrasion damage on the sidewall stiffener/painter's railing. The cause is a short circuiting of mixing during inflow and draw allowing ice to form. Tanks with the same pipe for influent and draw are especially susceptible. Many factors are involved such as daily turnover, rate of turnover, and pump turn on and turn off level settings. Using a most of the capacity during a pump down helps with mixing. If operational changes to improve water turnover are not possible, consider installation of a mixing system.

MIXING RECOMMENDATIONS:

There are a few options available to limit ice formation and the short-circuiting effect. A static system would consist of a draft tube over the fill pipe or dispersal tree with check valves. Static systems are expensive and can cost upwards of $60,000. A mechanical mixing system can be installed to assist in situations where turnover is low but will eventually require maintenance since there are moving parts. We recommend a

mechanical mixing system because the device is easily removed during repainting and many can be removed for maintenance or replaced while the tank is in service. The estimated cost is $20,000.

WET INTERIOR SAFETY CONDITIONS:

There is a grate over the riser opening that is in good condition. There is a hinged section on the grate for access. The hinged section appears to be in good condition.

WET INTERIOR METAL CONDITIONS:

The steel structure is in good condition overall. No significant pitting was observed at the coating failures on the sidewall and bowl.

The interior roof is supported by radial stiffeners that are in good condition with minor corrosion at the edges.

There is a horizontal stiffener/painter's railing located at the equator. The stiffener is broken in several places and pieces are lying on the floor of the tank. There are vertical stiffeners that are in good condition with minor corrosion on the edges.

WET INTERIOR METAL RECOMMENDATIONS:

Remove damaged stiffener/painter's railing sections from the wall and sections that are lying on the bowl in the wet interior. The cost would be incidental to the next paint project.

GPI Engineering | Construction | Design | Planning

ANALYTICAL LABORATORY REPORT

Friday, April 9, 2021 Page 1 of 2

CUSTOMER: Dixon Engineering - WI
4811 S. 76th Street Suite 109
Greenfield, WI 53200

DATE RECEIVED: Friday, April 2, 2021
PO/PROJECT #: IL2021TWS-3095
SUBMITTAL #: 2021-04-02-003

LAB NUMBER: AD09640

Sampled By: Andrea Grover
Job Location: Downers Grove, IL 2,000,000 RA
Sample Identification: 1 Exterior riser Lead, Chrome

Date Sampled: 03/31/2021
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: Monday, April 5, 2021

ELEMENT	RESULT (by dry weight)	REPORTING LIMIT (RL)
Chromium	**0.011 %**	0.0013 %
Lead	**0.0068 %**	0.0025 %

LAB NUMBER: AD09641

Sampled By: Andrea Grover
Job Location: Downers Grove, IL 2,000,000 RA
Sample Identification: 2 Wet interior roof Lead, Chrome

Date Sampled: 03/31/2021
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: Monday, April 5, 2021

ELEMENT	RESULT (by dry weight)	REPORTING LIMIT (RL)
Chromium	**0.0099 %**	0.0013 %
Lead	**0.037 %**	0.0025 %

DIXON ENGINEERING, INC.

STEEL TANK FIELD INSPECTION REPORT

LEGGED TANK

DATE: **March 31, 2021**

OWNER: **Village of Downers Grove**
CLIENT CODE: **13-22-06-06**
TANK NAME: **Downers Drive Tank**
LOCATION: Address: **4318 Downers Drive**
City: **Downer Grove**
State: **Wisconsin**
TANK SIZE: Capacity: **2,000,000 gallons**
Bottom (LWL): **90 feet (from nameplate)**
Sidewall height from the balcony to top of wall: **15 feet**
CONSTRUCTION: **Welded**
Type: **Radial arm**
YEAR CONSTRUCTED: **1957**
MANUFACTURER: **CB&I**
CONTRACT NUMBER: **7-4540**
USE: **Potable water and fire protection**
Coating information below is from: **Exterior coating sample taken for type**

COATING HISTORY	EXTERIOR	WET INTERIOR
YEAR COATED	**Unknown**	**Unknown**
SYSTEM	**Urethane**	**Presumed Epoxy**
HEAVY METAL COATING SAMPLES	**Yes-during the 2013 inspection**	**Yes-during the 2013 inspection**
HEAVY METAL BEARING	**Yes 0.028% lead 0.020% chrome**	**Yes 0.018% lead 0.032% chrome**

PERSONNEL: Lead inspector **Josh Grover**
Crew member **Todd Schaefer**, ROV operator **John Watson**
METHOD OF INSPECTION: **ROV**

SITE CONDITIONS

Fenced: **Yes**
Site large enough for contractor's equipment: **Yes**
Control building: **Yes**
Antenna control site: **Yes**
Number: **4**
Type: **Platform**
Location: **Adjacent to tank**
Would antenna sites interfere with containment: **Yes**
Power lines within 50 feet: **No**
Site drainage: **Away from tank**
Indications of underground leakage: **No**
Shrub, tree, etc. encroachment: **Yes**
Rubbing on the tank: **Yes**
Would there be interference with future containment: **No**
Site comments: **There is a small tree growing at a leg. Building on site is scheduled to be demolished**

EXPOSED PIPING

N/A

FOUNDATION

Riser:

Foundation exposed: **No**
Riser foundation comments: **The foundation is covered with soil**

Legs:

Foundations exposed: **Yes**
Exposed height: **0-8 inches**
Exposed foundation condition: **Good**
Damage or deterioration: **Yes**
Type of damage: **Cracks**
Severity: **Minor**
Crack location: **Random**
Total length cracking: **6 feet (0 feet need repair)**
Foundation coated: **Yes**
Coating condition: **Poor**
Type of baseplate gap filler: **Grout**
Condition: **Fair**
Amount missing: **2 feet**
Undermining of foundation: **No**

FOUNDATION

Leg foundation comments: **There is delamination and erosion of the coating**

EXTERIOR COATING

Legs:

Number: **14**
Type: **Tubular**
Dimensions: **5 feet**
Topcoat condition: **Fair**
Previous system condition: **Fair**
Describe coating: **Fading, delaminating, spot coating failures to substrate, rust undercutting, erosion, rust bleedthrough, micro-cracking**
Dry film thickness: **8-14 mils**
Metal condition: **Good**
Leg comments: **There are a few small areas of delamination and micro-cracking. There are 200+ small 1/3 to 3 inch spot coating failures that are randomly throughout and on the baseplates. There is erosion throughout with approximately 50 areas of rust bleedthrough**

Riser:

Type: **Wet**
Diameter: **10 feet**
Topcoat condition: **Poor**
Previous system condition: **Poor**
Describe coating: **Fading, delaminating, spot coating failures to substrate, rust undercutting, erosion, rust bleedthrough**
Mildew growth: **No**
Dry film thickness: **9-14 mils**
Metal condition: **Good**
Bottom shell steel thickness: **0.864 inches**
Riser comments: **There is rust bleedthrough and erosion throughout with 100+ small spot coating failures that are ¼ inch or less**

Bowl:

Topcoat condition: **Poor**
Previous system condition: **Poor**
Describe coating: **Fading, spot coating failures to substrate, rust undercutting, rust bleedthrough**

EXTERIOR COATING

Mildew growth: **Yes light**
Metal condition: **Good**
Bowl comments: **There are 100+ spot coating failures that are ¼ to ½ inch on the arms. The rust bleedthrough is throughout**

Sidewall:

Lettering: **Yes**
Number: **2**
Lettering content: **DOWNERS GROVE**
Logo: **Yes**
Number: **2**
Describe logo: **Village logo**
Topcoat condition: **Fair**
Previous system condition: **Fair**
Describe coating: **Fading, delaminating, spot coating failures to substrate, rust undercutting, erosion, rust bleedthrough, micro-cracking**
Dry film thickness: **16-21 mils**
Metal condition: **Good**
Sidewall comments: **There are approximately one hundred 3 x 4 inch of spot coating failures, thirty plus small spot coating failures throughout, and a few areas of micro-cracking with erosion**

Roof:

Topcoat condition: **Fair to poor**
Previous system condition: **Fair**
Describe coating: **Fading, delaminating, spot coating failures to substrate, rust undercutting, erosion**
Dry film thickness: **15-19 mils**
Metal condition: **Good**
Roof comments: **There are spot coating failures that are uniform around the roof and knuckle that are 3 to 4 inch diameter.**

EXTERIOR APPURTENANCES

Riser Manway:

Size: **12 x 18 inches**
Cover attachment **Bolts**
Metal condition: **Good**
Riser access comments: **The newer manway is 30 inch diameter and is hinged with bolts**

EXTERIOR APPURTENANCES

Anchor Bolts:

Number of bolts per leg: **2**
Diameter: **1 5/8 inches**
Metal condition: **Good**
Number of riser bolts: **6**
Diameter: **1 7/8 inches**
Metal condition: **Good**

Overflow Pipe:

Diameter: **8 inches**
Metal condition: **Good**
Discharge orientation: **Vertical**
Screen condition: **Good**
Percent of screen open: **100**
Mesh size: **12**
Flap gate: **Yes screened**
Condition: **Good**
Air gap: **Yes**
Lowest part of discharge to the ground distance: **24 inches**
Height to elbow: **48 inches**
Overflow discharges to: **Catch basin**
Condition: **Good**
Overflow comments: **The air gap is 24 inches to the ground and 16 inches to the basin. The overflow does not discharge directly over the basin**

Sample Tap:

N/A

Threaded Coupling (for chemical feed on the fill/draw pipe):

N/A

Leg Ladder:

Height to start of ladder: **18 feet**
Toe clearance: **7 inches or greater**
Width of rungs: **16+ inches**
Thickness of rungs: **¾ inch**
Shape of rungs: **Rebar**
Metal condition: **Good**
Fall prevention device: **Yes**

EXTERIOR APPURTENANCES

Type: **Rail**
Function properly: **Yes, there is a bolt at the top that prevents removal of the rail grab**
Cage: **No**
Vandal guard: **No**
Step off platform: **Yes**
Dimensions: **24 x 24 inches**
Ladder comments: **There is remnants of a vandal guard**

Struts and Rods:

Number of bays: **1**
Sway rod metal condition: **Good**
Loose rods: **Yes**
Number of loose rods: **28**

Bowl Rigging Couplings:

N/A

Balcony:

Balcony width: **24 inches**
Railing height: **43 inches**
Midrail style: **Midrail (36 inches and 18 inches)**
Kickplate height: **4 inches**
Vertical post type: **Channel**
Size: **2 x 6 inches**
Top rail type: **Angle**
Size: **2 ½ x 2 ½ inches**
Midrail type: **Angle**
36 inch size: **3 x 4 inches**
18 inch size: **2 x 3 inches**
Opening for access: **Yes**
Location: **Balcony floor**
Size: **23 x 26 inches**
Handhold at opening: **Yes**
Opening security: **Chains**
Coating condition: **Poor**
Describe coating: **Spot coating failures to substrate, rust undercutting, rust bleedthrough**
Metal condition: **Good**
Evidence of water ponding: **No**

EXTERIOR APPURTENANCES

Balcony comments: **There are chains from rail to sidewall on both sides of the ladder opening**

Antennas:

Roof number: **3**
Attached to: **Handrail**
Balcony number: **29**
Attached to: **Railing**
Cable runs: **Along balcony railing, under balcony**
Leg number: **18**
Antenna or cable interference: **Yes**
Cables attached to the ladder
Location: **Sidewall**

Sidewall Ladder:

Design: **Fixed**
Metal condition: **Good**
Toe clearance: **7 inches or greater**
Width of rungs: **16+ inches**
Thickness of rungs: **¾ inch**
Shape of rungs: **Diamond**
Fall prevention device: **Yes**
Type: **Rail**
Function properly: **Yes**
Cage: **No**

Step-off Platform:

N/A

Roof Ladder:

Continuation of sidewall ladder

Roof Antenna Mounting Structure:

Style: **6 sided (approximate diameter 20 feet)**
Height: **44 inches**
Midrail height: **24 inches**
Kick plate height: **4 inches**
Vertical post type: **Tube**
Size: **3 inches**
Top rail type: **Angle**

EXTERIOR APPURTENANCES

Size: **3 x 3 inches**
Midrail type: **Angle**
Size: **3 x 3 inches**
Metal condition: **Good**

Painter's Rail:

N/A

Roof Rigging Points:

Number: **35**
Couplings covered: **Yes**
Covered with: **Plugs**
Metal condition: **Good**

Removable Cathodic Covers:

N/A

Wet Interior Roof Hatch:

Neck size: **24 inches**
Distance from center of the tank (to outer edge): **38 feet**
Shape: **Round**
Handhold at opening: **No**
Curb height: **4 inches**
Cover overlap: **2 inches**
Gasket on cover/neck curb: **No**
Hatch security: **Lock**
Metal condition: **Good**

Bolted Ventilation Hatch:

Neck diameter: **24 inches**
Curb height: **4 inches**
Gasket: **No**
Metal condition: **Good**

Roof Vent:

Number: **1**
Distance from center of the tank (to outer edge): **0 feet**
Type: **Pressure-vacuum**
Neck diameter: **24 inches**
Flange opening diameter: **24 inches**

EXTERIOR APPURTENANCES

Vertical expanded metal condition: **Good**
Interior screen condition: **Good**
Mesh size: **12**
Rain shield: **Yes**
Pressure plate condition **Good, PVC**
Plate free to move: **Yes**
Plate screened: **No**
Height of the lowest screen above the roof: **14 inches**
Metal condition: **Good**

Aviation Lights:

N/A

Electrical:

N/A

WET INTERIOR COATING

Roof:

Topcoat condition: **Poor**
Primer coating condition: **Poor**
Describe coating: **Spot coating failures to substrate, rust bleedthrough, weld burns**
Metal condition: **Good**
Lap seams: **Open**
Condition of lap seams: **Good**
Roof comments: **There is rust streaking from the lap seams and weld burns**

Sidewall:

Topcoat condition: **Poor**
Primer coating condition: **Poor**
Describe coating: **Spot coating failures to substrate, abrasion**
Mineral deposits: **Light**
Metal condition: **Good**
Active pitting: **No**
Previous pitting: **No**
Sidewall comments: **The abrasion is at the equator and the spot coating failures are at the weld seams and are ½-¾ inch diameter**

WET INTERIOR COATING

Tank Bottom:

Partially covered in sediment, not completely inspected with the ROV
Type: **Bowl**
Topcoat condition: **Good**
Primer coating condition: **Good**
Describe coating: **Spot coating failures to substrate**
Mineral deposits: **Light**
Metal condition: **Good**
Active pitting: **No**
Previous pitting: **No**
Sediment depth: **Several inches, more in the troughs**
Bottom comments: **There are numerous spot coating failures on the ribs between radial arms**

Riser:

Could not inspect with ROV

WET INTERIOR APPURTENANCES

Ladder:

N/A

Cathodic Protection:

N/A
Clips: **Yes**
Pressure fitting: **No**
Location of clips: **Bottom of the riser (information from 2013 report)**

Roof Stiffeners:

Radial:
Shape: **Angle**
Connections: **Welded**
Ring Stiffener:
Connections: **Welded**
Coating condition: **Fair**
Metal condition: **Good**

Sidewall Stiffener/Painter's Railing:

Horizontal number: **1**
Location: **Equator**
Vertical stiffeners: **Yes**

WET INTERIOR APPURTENANCES

Coating condition: **Fair**
Metal condition: **Fair**
Sidewall stiffener comments: **The vertical stiffeners are in good condition. Equator painter's railing is damaged and pulled away from the sidewall. Several sections have fallen off and are lying on the bowl**

Overflow Pipe Inlet:

Type: **Vortex break**
Metal condition: **Good**

Fill Pipe (information from the 2013 report):

Diameter: **16 inches**
Height above floor: **32 inches**
Deflector over end: **Yes**
Metal condition: **Good**

Separate Draw Pipe:

N/A

Mixer:

N/A

Riser Safety:

Riser grate: **Yes**
Access opening size: **30 inches**
Opening covered: **Yes**
Metal condition: **Good**
Riser railing: **No**

Siphon:

N/A

Field Inspection Report is prepared from the contractor's viewpoint. It contains information the contractor needs to prepare his bid for any repair or recoating. The engineer uses it to prepare the engineering report. Cost estimates are more accurate if the contractor's problems can be anticipated. While prepared from the contractor's viewpoint, the only intended beneficiary is the owner. These reports are completed with diligence, but the accuracy is not guaranteed. The contractor is still advised to visit the site.

2,000,000 gallon radial arm (Downers Drive Tank) elevated water storage tank owned by the Village of Downers Grove, Illinois.

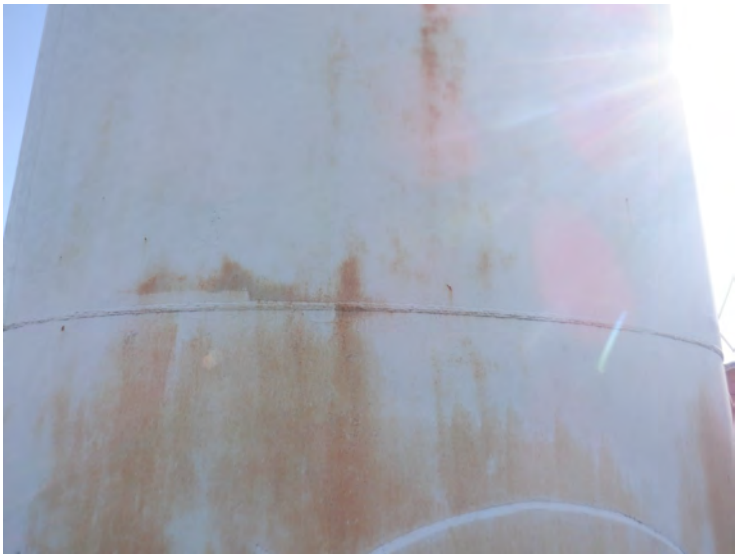
1) The riser foundation is covered with soil and not visible for inspection.

2) The riser anchor bolts are in good condition.

3) There are no coating failures on the riser manway.

4) The secondary riser manway is in good condition.

5) Coating failures on the riser.



6) The riser coating is in poor condition overall.

7) The riser tie rods are in good condition.

8) Minor cracking at a leg foundation.

9) The leg foundations are in good condition overall. The anchor bolts are in good condition.

10) Missing grout between the baseplate and foundation on a leg.

11) Coating failure on a leg.

12) Same.

13) Band clamps attached to a leg for cable routing.

14) The leg coating is in fair condition overall.

15) Many of the sway rods are loose.

16) The overflow discharge is not in line with the catch basin.

17) The screened flap gate on the overflow pipe is in good condition.

18) There is no longer a vandal guard on the leg ladder. The ladder and fall prevention device are in good condition.

19) Coating failures on the bowl.

20) Same.

21) Same.

22) There is a ladder opening in the balcony. There are chains on either side of the opening. There is no fall prevention device on the ladder from the stairs to the balcony.

23) The balcony coating is in poor condition.

24) Same.

25) Coating failure on the sidewall.

26) Same.

27) Same.

28) The sidewall ladder is in good condition. The fall prevention device is in good condition. Antenna cables are attached to the ladder and interfere with climbing.

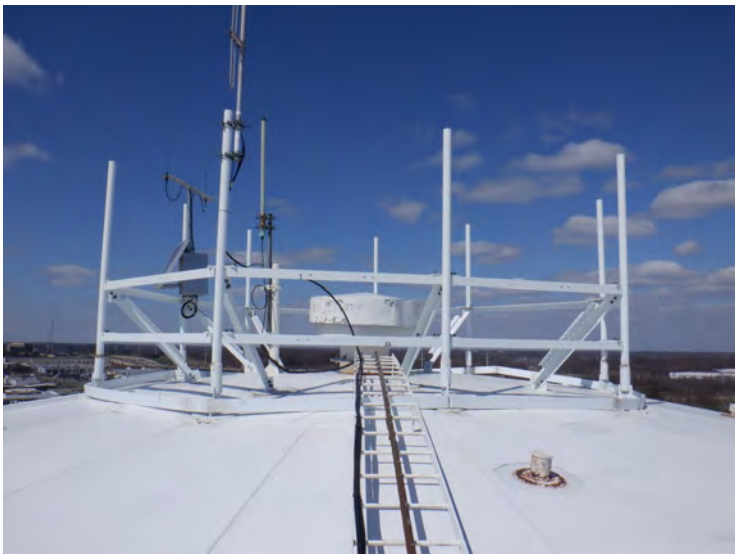
29) The roof ladder is a continuation of the sidewall ladder.

30) Coating failures on the roof knuckle.

31) Same.

32) Coating failures on the roof.

33) Coating failures at a roof rigging coupling.



34) The roof antenna mounting structure is in fair condition.

35) Coating failures on the roof vent.

36) The vertical roof vent screen is in good condition.

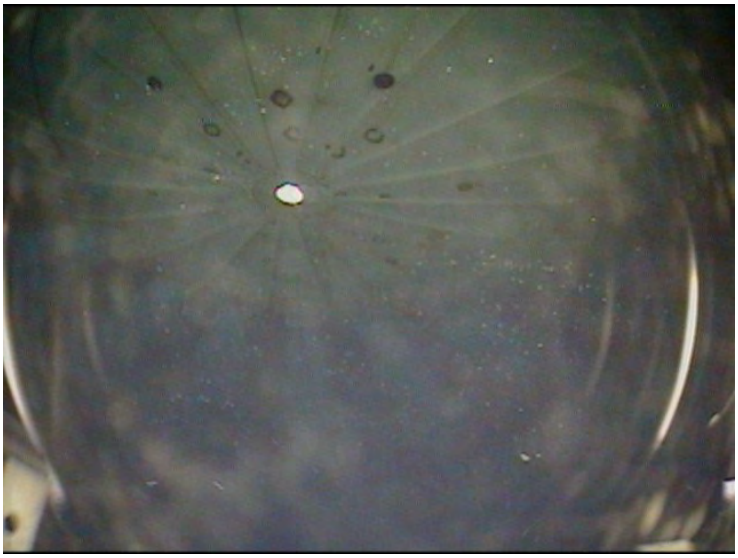
37) The roof vent pressure plate is properly aligned.

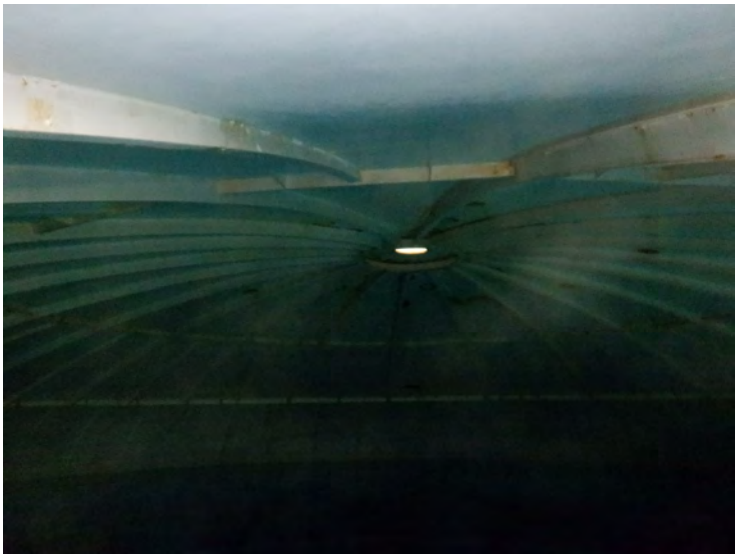
38) The inner screen in the roof vent is intact.

39) There is no gasket on the wet interior roof hatch.

40) The bolted ventilation hatch is in good condition.

41) The wet interior roof coating is in poor condition overall.



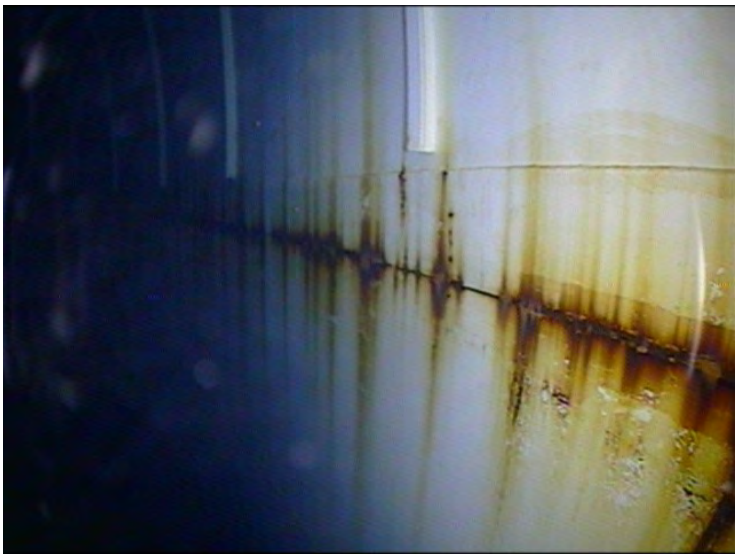


42) Coating failures on the wet interior roof.

43) Same.

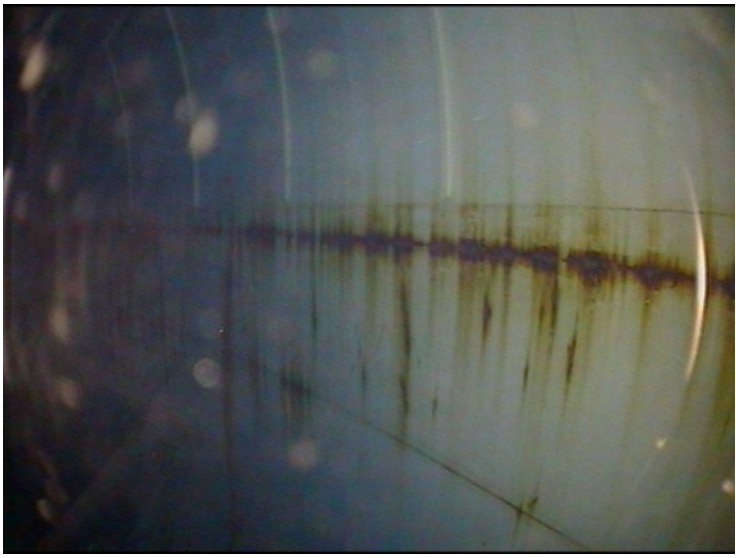
44) Corrosion on the edge of a roof stiffener.

45) Coating failures on the wet interior sidewall.



46) Same.

47) Same.



48) The horizontal angle stiffener/painter's railing is hanging from the equator and there are sections lying on the bowl.

49) Sediment on the wet interior bowl.

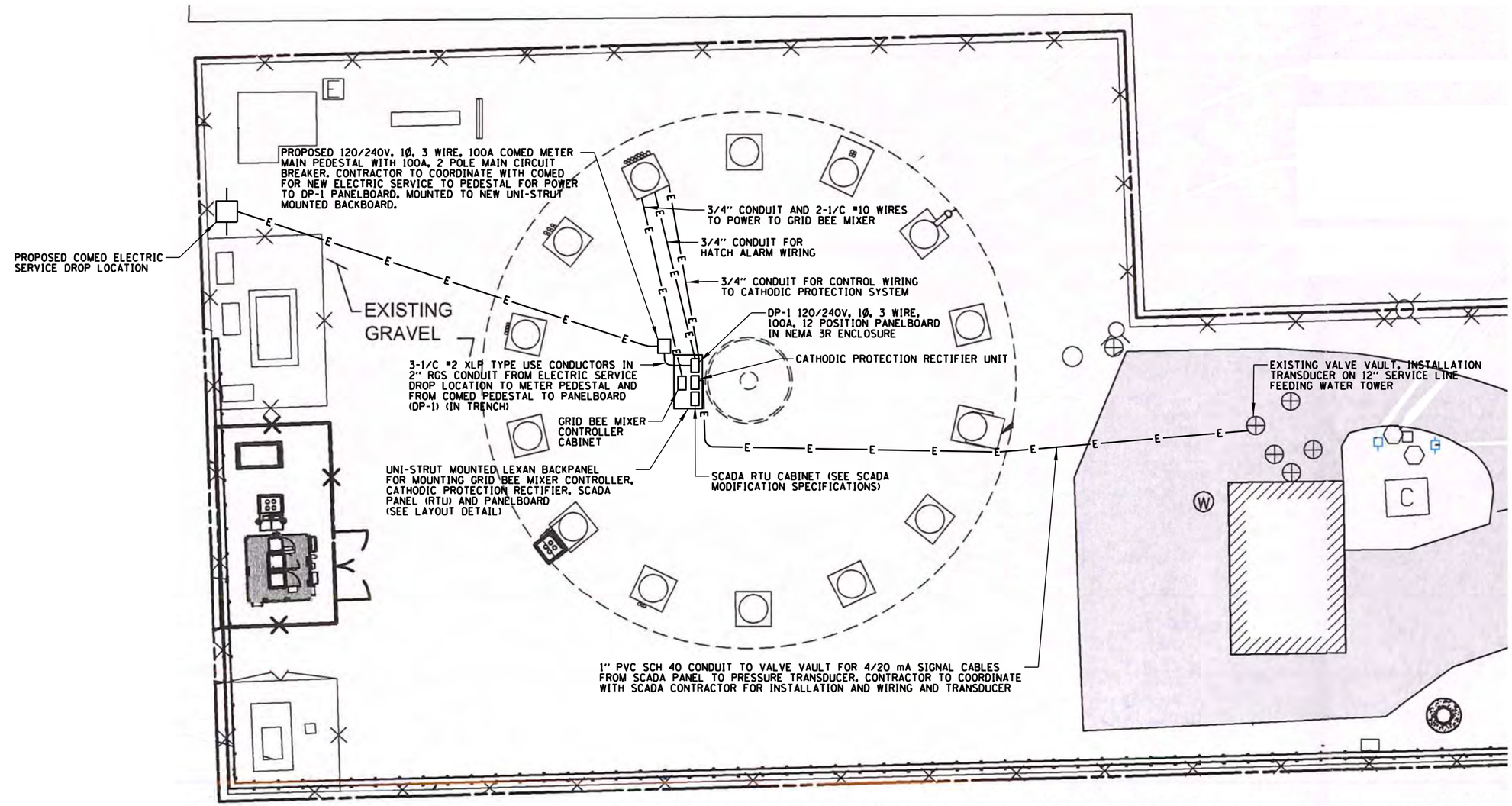
50) Same.

51) Coating failures on the bowl.

52) A piece of the sidewall stiffener/painter's railing on the floor of the tank.

53) Same.

54) There is a grate over the riser in the wet interior.



ELECTRICAL NOTES

1. CONTRACTOR TO COORDINATE THE LOCATION AND ORIENTATION OF ALL CONDUITS AND WIRING SO AS NOT TO INTERFERE WITH LOCATION OF LOGOS AND CELLULAR EQUIPMENT WIRING AND CABLES. ALL CONDUITS SHALL BE INSTALLED ON THE LEGS OF THE TOWER ON THE INBOARD SIDE.

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

CLIENT:
VILLAGE OF DOWNERS GROVE
801 BURLINGTON AVENUE
DOWNERS GROVE, ILLINOIS 60515

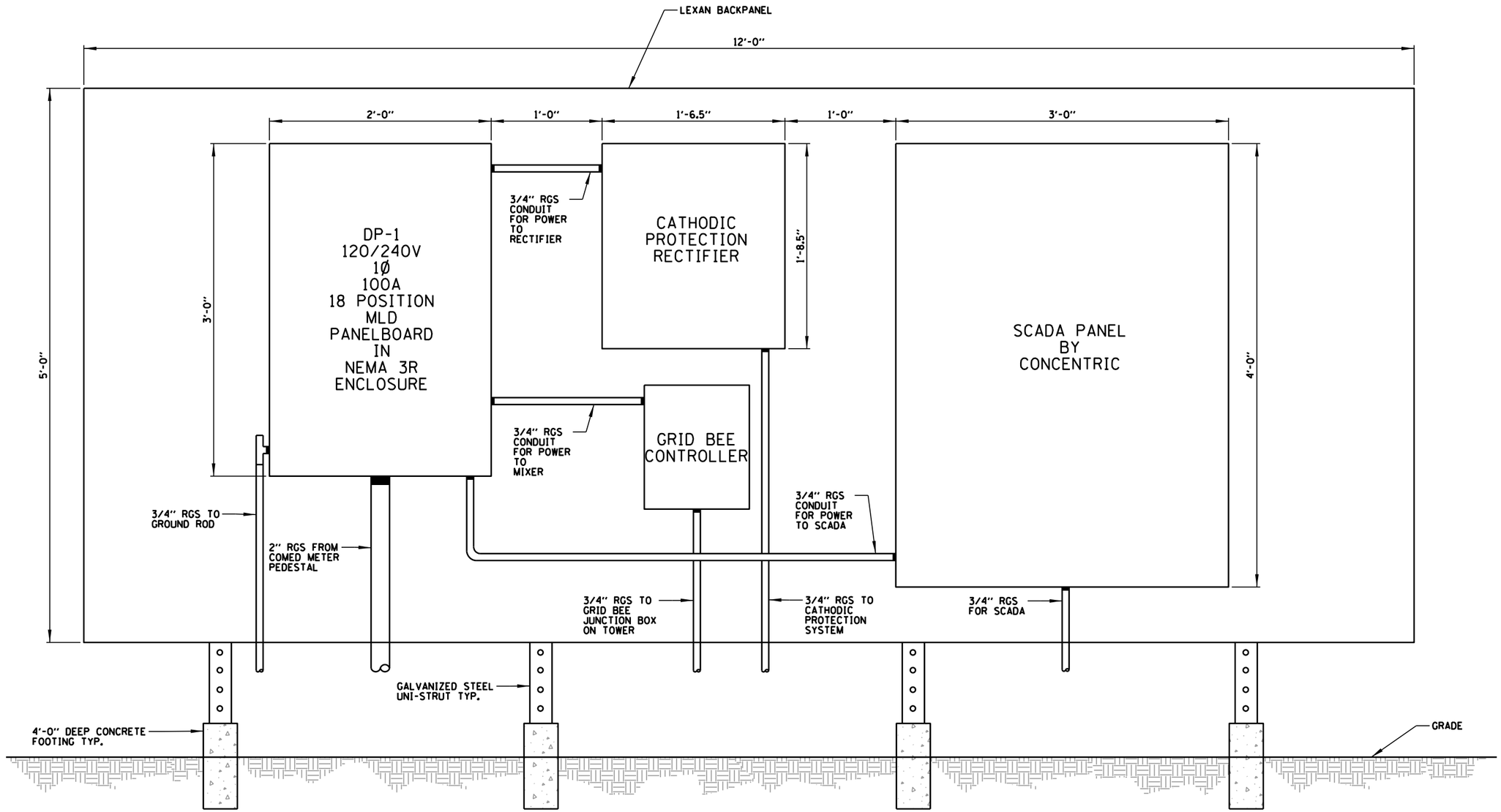
NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\DownersGrove\20286\Mech\DI_PLN_20286.SHT

DSGN.	GAH
DWN.	TJK
CHKD.	GAH
SCALE:	20'
PLOT DATE:	1/10/2022
CAD USER:	tkudla
MODEL:	Default

TITLE:
REHABILITATION OF 2MMG LEGGED HIGH TANK
SITE PLAN
PROPOSED ELECTRICAL SITE PLAN

PROJ. NO.	21-0286
DATE:	1/10/2022
SHEET	1 OF 5
DRAWING NO.	1



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NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\DownersGrove\20286\Mech\02_DET_20286.SHT

DSGN.	GAH
DWN.	TJK
CHKD.	GAH
SCALE:	
PLOT DATE:	1/10/2022
CAD USER:	tkudla
MODEL:	Default

TITLE:
REHABILITATION OF 2MMG LEGGED HIGH TANK UNI-STRUT MOUNTED LEXAN BACKPANEL LAYOUT DETAIL

PROJ. NO.	21-0286
DATE:	1/10/2022
SHEET	2 OF 5
DRAWING NO.	2

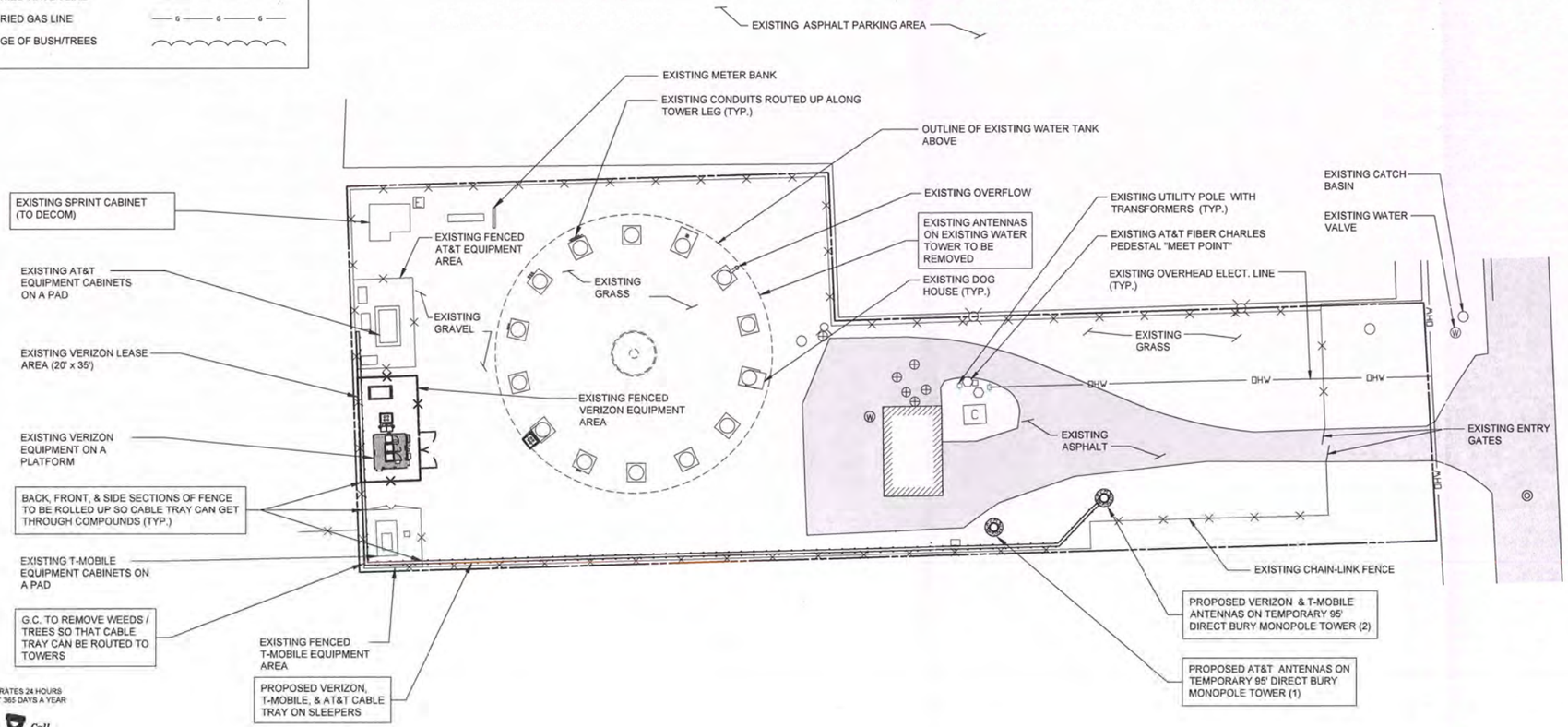
LEGEND

- POWER POLE
- TELEPHONE PEDESTAL
- MANHOLE
- WATER VALVE VAULT
- WATER SERVICE VALVE
- FIRE HYDRANT
- LIGHT POST
- PROPERTY LINE
- FENCE
- OVERHEAD POWER LINE (OHE)
- UNDERGROUND TELCO (UGT)
- UNDERGROUND POWER (UGE)
- BURIED WATER LINE
- BURIED GAS LINE (G)
- EDGE OF BUSH/TREES

SCALE 1" = 20'

0 10' 20' 40'

22" x 34" IS THE FULL SCALE.
11"x17" IS HALF SCALE



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FAX: 847-696-4401

REVISIONS

NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	09/28/21	TJS

VZW LOC. # 269499
ATT SITE # ILL01534
TMO SITE # CH45434A

LISLE EAST - TEMP TOWER
4414 DOWNERS DRIVE
DOWNERS GROVE, IL 60515

DRAWN BY:	XXX
CHECKED BY:	TAZ
DATE:	XX/XX/XX
PROJECT #:	33-XXXX

SHEET TITLE
LOCATION PLAN

SHEET NUMBER
LP

FOR INFORMATION ONLY

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DOWNERS GROVE, ILLINOIS 60515

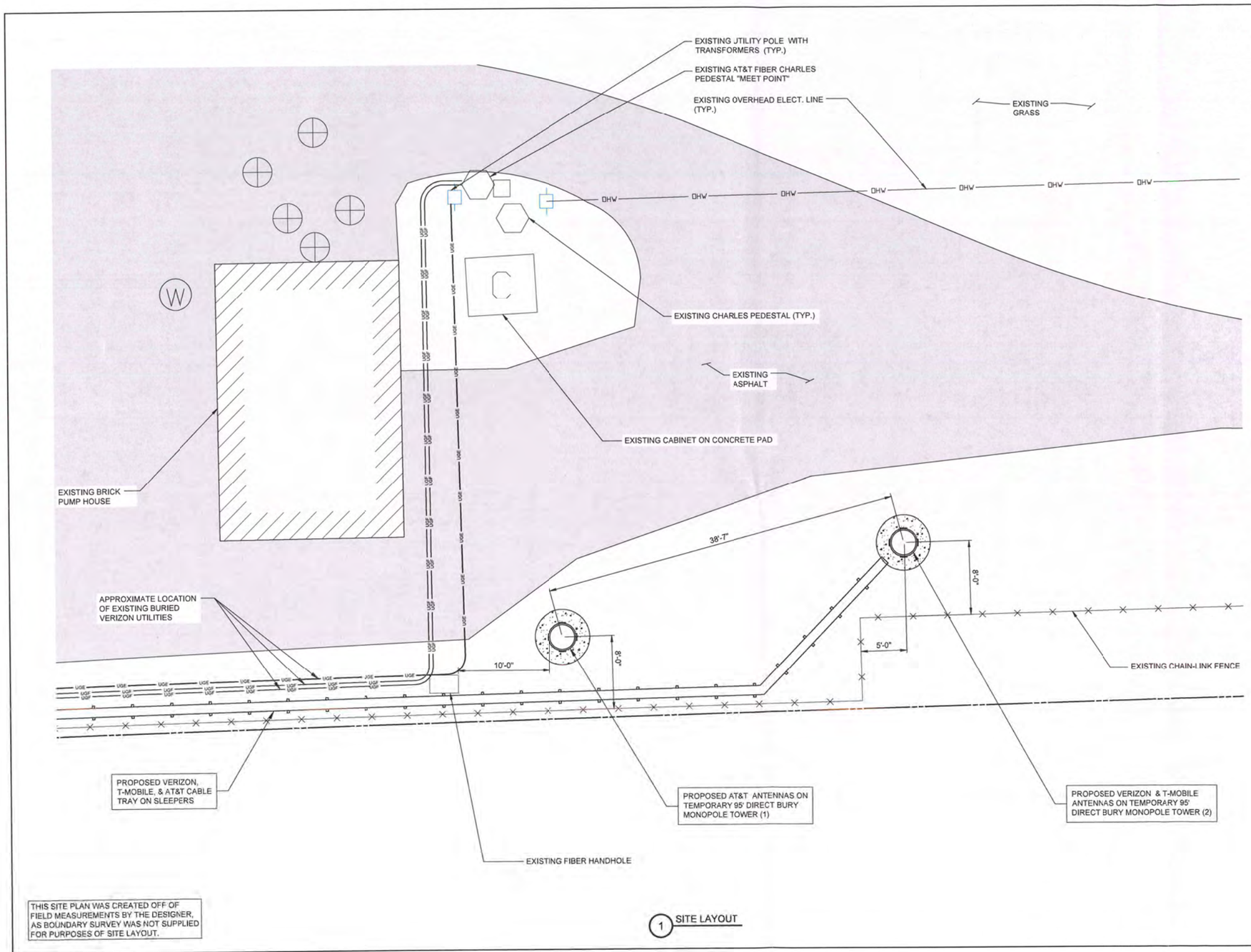
NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\DownersGrove\20286\Mech\03_REC_20286.SHT

DSGN.	GAH
DWN.	TJK
CHKD.	GAH
SCALE:	N.T.S.
PLOT DATE:	1/10/2022
CAD USER:	tkudla
MODEL:	Default

TITLE:
REHABILITATION OF 2MMG LEGGED HIGH TANK
CELLULAR COMPANIES
TEMPORARY RELOCATION PLAN (1 OF 3)

PROJ. NO.	21-0286
DATE:	1/10/2022
SHEET	3 OF 5
DRAWING NO.	3



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FAX: 847-698-6401

REVISIONS

NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR REVIEW	09/28/21	TJS

VZW LOC. # 269499
ATT SITE # ILL01534
TMO SITE # CH45434A

LISLE EAST - TEMP TOWER
4414 DOWNERS DRIVE
DOWNERS GROVE, IL 60515

DRAWN BY:	XXX
CHECKED BY:	TAZ
DATE:	XX/XX/XX
PROJECT #:	33-XXXX

SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
C-1

FOR INFORMATION ONLY

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(847) 823-0500

CLIENT:
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801 BURLINGTON AVENUE
DOWNERS GROVE, ILLINOIS 60515

NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\DownersGrove\210286\Mech\04_REC_210286.SHT

DSGN.	GAH
DWN.	TJK
CHKD.	GAH
SCALE:	N.T.S.
PLOT DATE:	1/10/2022
CAD USER:	tkudla
MODEL:	Default

TITLE:
REHABILITATION OF 2MMG LEGGED HIGH TANK
CELLULAR COMPANIES
TEMPORARY RELOCATION PLAN (2 OF 3)

PROJ. NO.	21-0286
DATE:	1/10/2022
SHEET	4 OF 5
DRAWING NO.	4

NOTE:
THIS DRAWING IS FOR EXHIBIT AND LAYOUT PURPOSES ONLY.

FINAL EXHIBIT PENDING STRUCTURAL ANALYSIS BY OTHERS.

EXISTING AT&T ANTENNAS MOUNTED TO HANDRAIL TO BE REMOVED. ALL MOUNTING HARDWARE NOT WELDED TO TANK TO BE REMOVED AND PAINTED BY CITY PAINTERS.

EXISTING TANK

EXISTING VERIZON ANTENNAS MOUNTED ON EXISTING CATWALK HANDRAIL TO BE RELOCATED TO TEMPORARY 95' DIRECT BURY MONOPOLE TOWER

EXISTING CATWALK HANDRAIL

EXISTING T-MOBILE ANTENNAS MOUNTED TO HANDRAIL TO BE REMOVED. ALL MOUNTING HARDWARE NOT WELDED TO TANK TO BE REMOVED AND PAINTED BY CITY PAINTERS.

EXISTING TOWER LEG (TYP.)

ALL EXISTING CARRIER CABLES ROUTED UP TANK LEGS TO BE REMOVED

EXISTING SHEET METAL CABLE ENCLOSURE AT TOWER LEG

EXISTING CHAIN-LINK FENCE (PARTIALLY SHOWN FOR CLARITY)

EXISTING CARRIER GROUND EQUIPMENT

EXISTING GRADE

EXISTING CHAIN LINK FENCE (PARTIALLY SHOWN FOR CLARITY)

DISTANCE TO TOP OF EXISTING CATWALK HANDRAIL - ±102.9' A.G.L.

DISTANCE TO TOP OF EXISTING TANK - ±137' A.G.L.

OVERALL HEIGHT OF EXISTING WATER TOWER - 154' A.G.L.

VERIZON ANTENNAS ON TEMPORARY 95' DIRECT BURY MONOPOLE TOWER (2)

T-MOBILE ANTENNAS ON TEMPORARY 95' DIRECT BURY MONOPOLE TOWER (2)

TEMPORARY LIGHTNING ROD

TEMPORARY LIGHTNING ROD

AT&T ANTENNAS ON TEMPORARY 95' DIRECT BURY MONOPOLE TOWER (1)

PROPOSED TEMPORARY 95' DIRECT BURY MONOPOLE TOWER (1)

PROPOSED TEMPORARY 95' DIRECT BURY MONOPOLE TOWER (2)

EXISTING BRICK PUMP HOUSE

EXISTING UTILITY POLE WITH TRANSFORMERS (TYP.)

EXISTING CHAIN-LINK FENCE (PARTIALLY SHOWN FOR CLARITY)

DISTANCE TO THE CENTER OF T-MOBILE ANTENNAS = 80'-0" A.G.L.

DISTANCE TO THE CENTER OF VERIZON & AT&T ANTENNAS = 90'-0" A.G.L.

HEIGHT OF TEMPORARY DIRECT BURY MONOPOLE TOWERS 1 & 2 = 95'-0" A.G.L.

OVERALL HEIGHT OF STRUCTURE 1 & 2 = 100'-0" A.G.L.

DIRECT BURY (T.B.D.)

1 SOUTH ELEVATION
SCALE: 3/32" = 1'-0" ±

FULL SCALE PRINT IS ON 22"x34" MEDIA
HALF SCALE PRINT IS ON 11"x17" MEDIA

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REVISIONS

NO.	DESCRIPTION	DATE	BY
	ISSUED FOR REVIEW	09/28/21	T.S

VZW LOC. # 269499
ATT SITE # ILL01534
TMO SITE # CH45434A

LISLE EAST - TEMP TOWER
4414 DOWNERS DRIVE
DOWNERS GROVE, IL
60515

DRAWN BY:	XXX
CHECKED BY:	TAZ
DATE:	XX/XX/XX
PROJECT #:	33-XXXX

SHEET TITLE
SITE ELEVATION

SHEET NUMBER
ANT-1

FOR INFORMATION ONLY

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

CLIENT:
VILLAGE OF DOWNERS GROVE
801 BURLINGTON AVENUE
DOWNERS GROVE, ILLINOIS 60515

NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\DownersGrove\210286\Mech\05_REC_210286.SHT

DSGN.	GAH
DWN.	TJK
CHKD.	GAH
SCALE:	N.T.S.
PLOT DATE:	1/10/2022
CAD USER:	tkudla
MODEL:	Default

TITLE:
REHABILITATION OF 2MMG LEGGED HIGH TANK
CELLULAR COMPANIES
TEMPORARY RELOCATION PLAN (3 OF 3)

PROJ. NO.	21-0286
DATE:	1/10/2022
SHEET	5 OF 5
DRAWING NO.	5

SECTION 09 91 13

PART 1- GENERAL

1.01 SCOPE

A. Description

This Section covers painting materials to be furnished and applied, including preparing surfaces and providing adequate conditions for proper workmanship, as shown on the Drawings and as specified herein.

B. Related Work

1. Sections 01 11 00, 01 11 13 and 01 01 20.
2. Section 01 77 00.

1.02 QUALITY ASSURANCE

A. Acceptable Materials and Manufacturers shall conform to the herein specified material and construction standards.

B. Applicable Standards

All Work shall conform to the applicable provisions of codes, standards and Specifications, as specified herein as follows:

Name	Abbreviation
National Fire Protection Association	NFPA
Steel Structure Painting Council	SSPC
Ten State Standards	--
Painting Steel Water Storage Tanks	AWWA D102

1.03 SUBMITTALS

A. The Contractor shall submit to the Owner's Representative for review product specification of paint materials and descriptions of surface preparation contemplated for the Work to illustrate compliance with applicable requirements of this Section and other Related Work Sections. Submittals shall be in accordance with Section 01 33 00 and as herein specified.

B. Submittals shall include, but not be limited to the following:

1. Project schedule not to exceed 180 consecutive calendar days; and start date not to deviate more than 2 weeks from start date indicated on the preliminary schedule submitted at the time of bid unless otherwise approved by the **Owner**.

2. Surface preparation details including containment methods when and where containments are utilized.

3. Application instructions for each type of coating to be used.

4. Maintenance recommendations for each type of coating used.

5. Color samples for selection and scheduling. (Note: Color to be selected by **Owner** if not specified; refer to Section 01 11 00, Paragraph 2.02 for additional details).

6. MSDS sheets for all products used.

7. Monitoring Plan (refer to Section 01012; Paragraph 3.01), dry film thickness test results and diary of daily painting activities.

8. Product Certification and Waste Manifest in accordance with Section 01800; Paragraphs 2.01 & 2.02.

PART 2- PRODUCT

A. Exterior Coating System

1. Surface Preparation

200,000 Gallon Legged High Tank - 4318 Downers Drive

The entire exterior of these tanks has a high gloss polyurethane clear coat.

a. Solvent clean all visible grease, oil, salt, algae, and residue in accordance with SSPC- SP1.
b. High pressure water clean all exterior surfaces and appurtenances at 5,000-10,000 psi to remove all dirt, chalk, algae, other foreign material, and all brittle or loose coating, rust, and mill scale.
c. Maintain a water jet nozzle distance of 2 in. 10 in. away from the surface.
d. Hold the water jet nozzle with 0° - 15° tip perpendicular (90°) to the surface at all times.

e. Use of a rotating/reciprocating nozzle during water cleaning is permitted but not to increase the pressure of a washer rated lower than required.
f. Do NOT exceed a rate of 10 sq. ft./minute.
g. Power tool clean all surfaces and appurtenances to bare metal (SP11) in areas where steel is exposed or rusted, or where coating is abraded. Retain or produce a surface profile. Surface profile shall be greater than 1.0 mil. Edges of adjacent coating shall be feathered a minimum of ½ in. from the exposed steel with 3M Scotch-Brite clean n strip discs.

2. Prime Coat

Apply one complete coat of Tnemec Series 3600 ProBond or Sherwin-Williams Corathane I Galvapac 2k Zinc to all surfaces. This coating shall be applied at a dry film thickness of 1.0 to 2.0 mils for Tnemec and 2.5 to 4.0 mils for Sherwin-Williams.

3. Spot Prime Coat

Apply one spot prime coat of Tnemec Series 135 Chembuild primer to all power tool cleaned surfaces. This coating shall be applied at a dry film thickness of 4.0-6.0 mils.

4. Penultimate Coat

Apply one complete coat of Tnemec Series 73-color Endura-Shield or Sherwin-Williams Acrolon 218 HS Polyurethane to all surfaces. This coating shall be applied at a dry film thickness of 2.0-3.0 mils. The color lab will select this color.

5. Finish Coat

Apply one complete coat of Tnemec Series V700-color HydroFlon or Sherwin-Williams Fluorokem HS Gloss. This coating shall be applied at a dry film thickness of 2.0-3.0 mils. Color shall be selected by the Engineer/Owner.

6. Lettering / Logo Painting

Two coats of Tnemec Series V700 HydroFlon or Sherwin-Williams Fluorokem HS Gloss shall be used for the lettering / logo. This coating shall be applied at a dry film thickness of 2.0 to 3.0 mils per coat.

B. Interior (Wet) Coating System

1. Surface Preparation

The entire surface shall be abrasive blast cleaned to a Near White Finish, removing all existing paint, rust, dirt, mill scale and foreign matter by the recommended methods outlined in the SSPC Society of Protective Coating's Specification SP-10. A minimum angular anchor profile of 2.0 mils is required.

Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series 91-H_2O Hydro-Zinc or Sherwin-Williams Corathane I Galvapac 2k Zinc to all bare steel surfaces. This coating shall be applied at a dry film thickness of 2.5 - 3.5 mils for Tnemec and 2.5 - 4.0 mils for Sherwin-Williams.

Stripe Coat

After the primer has cured in accordance with the manufacturer's recommendations, apply one stripe coat, by brush only, of Tnemec Series N140-1255 Beige Pota-Pox Plus or Sherwin-Williams Macropoxy 5500 LT Epoxy to all weld seams, edges of unseal welded roof plates, angles, and sharp edges. This coating shall be applied at a dry film thickness of 4.0 - 6.0 mils for Sherwin-Williams.

Finish Coat

Apply one complete coat of Tnemec Series 22-WH11 Off White Epoxoline or Sherwin-Williams Sherplate PW 100% Solids Epoxyat a dry film thickness of 25.0 - 30.0 mils for Tnemec and 30.0 - 35.0 mils for Sherwin-Williams.

C. Interior (Dry) Coating System

1. Surface Preparation

The topside of the upper platform, the topside of the lower condensate plate, the belly of the tank, and the inlet / outlet pipe shall be abrasive blast cleaned to a Commercial Finish in accordance with the recommended methods outlined in the SSPC Society of Protective Coating's Specification SP-6. A minimum angular blast profile of blast profile of 1.5 mils is

required. All other failed surfaces on the interior dry shall be spot abrasive blast cleaned to a Commercial Finish, SSPC SP-6, a minimum angular profile of 1.5 mils is required. Feather edges to form a smooth transition to tight existing paint.

Spot Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series N140-1255 Chicago Beige Pota-Pox Plus or Sherwin-Williams Corathane I Galvapac 2k Zinc primer to all bare steel surfaces. This coating shall be applied at a dry film thickness of 3.0 to 4.0 mils.

Finish Coat

Apply one coat of Tnemec Series N140-15BL Tank White Pota-Pox Plus or two coats of Sherwin-Williams Macropoxy 646 Epoxy at a dry film thickness of 5.0 to 6.0 mils for Tnemec and 4.0 - 6.0 mils for Sherwin-Williams to all primed surfaces.

PART 3- EXECUTION

3.01 GENERAL

A. Do not proceed with the application of paint until the following conditions are met: Proper temperature and humidity, dust free spaces, proper surface preparation. Starting Work constitutes acceptance of conditions and substrates and full responsibility for the quality and suitability of the finished Work.

B. Furnish inspection devices, in good working condition, for the detection of holidays and the measurement of coating film thickness (wet and dry). Inspect surfaces to be painted and conditions of the area before starting Work. Report any defects that render any area or surface unfit to receive paint.

C. Handle and store materials in accordance with the provisions of the Flammable and Combustible Liquids Code, NFPA 30. All materials shall be handled and stored to avoid fire and explosion.

D. Provide masks, gloves, and other protective materials or clothing and furnish special ventilation as necessary or recommended by the paint manufacturer.

E. During surface preparation, contain and dispose of any and

all paint chips/flakes in accordance with Federal, State and/or local requirements, or as otherwise specified.

3.02 DELIVERY TO SITE

All materials furnished shall be labeled. Each label shall indicate the manufacturer's name, the brand name, the type of material as specified, the class of flammability or combustibility if applicable, the color, and the mixing and application instructions. Each container shall be stenciled or embossed at the factory with the product number and name as it appears in the manufacturer's catalog. Deliver materials to the site in unbroken, unopened containers, with labels affixed on each container by the manufacturer. Containers delivered to site which are damaged shall be cause for rejection.

3.03 CONDITIONS FOR APPLYING MATERIALS

A. Materials other than water thinned materials shall be applied only to surfaces that are free of surface moisture as determined by sight or touch.

B. Materials shall not be applied when the temperature of the surfaces to be covered are below recommended levels, or the surrounding atmosphere is below recommended levels, or when the relative humidity exceeds 85 percent.

C. Additional conditions to be satisfied prior to application shall be as specified in Section 01 01 20.

D. Prepare all surfaces to receive materials as required herein or as required by the coatings manufacturer. Clean surfaces to remove all foreign matter. Roughen surface as recommended by the coating manufacturer for proper adhesion of coating to the substrate.

3.04 APPLICATION

A. Mix and apply materials in accordance with the manufacturer's printed instructions. Allow each succeeding coat to dry in accordance with manufacturer's printed instructions.

B. Apply each coat in accordance with these Specifications and the paint manufacturer's recommendations. The coating shall be applied at the specified thickness. If the specified thickness is not obtained, an additional coat(s) of paint shall be applied at no additional cost to the **Owner**.

C. All paint shall be applied in strict accordance with the applicable manufacturer's printed data sheet and container label outlining recommended minimum and maximum surface and air temperatures required for application.

D. Do not paint code required labels, (Underwriters Laboratories, Inc., Factory Mutual, or the like) or any equipment identification, performance ratings, name, or nomenclature plates. Remove any paint inadvertently or previously applied to such items.

E. Protect adjacent surroundings against splash or overspray. Remove materials from surfaces not designated to receive such materials.

F. Finished surfaces shall be uniformly coated with the thickness specified, free of runs, drips, sags, brush marks, holidays, or other defects. Such defects shall be corrected without change in Contract Price.

G. Remove waste rags and coating debris on a daily basis. Keep storage spaces and work areas neat and clean.

3.05 PROTECTIVE COATING SYSTEMS

A. General: The application of any coating or primer indicates the acceptance of and responsibility for the condition of the substrate and the primer thereon.

B. Protect adjacent materials/surroundings/properties/etc. subject to damage by the Work to be performed under this Contract.

C. Exterior Coating System

1. Surface Preparation

200,000 Gallon Legged High Tank - 4318 Downers Drive

The entire exterior of these tanks has a high gloss polyurethane clear coat.

a. Solvent clean all visible grease, oil, salt, algae, and residue in accordance with SSPC- SP1.
b. High pressure water clean all exterior surfaces and appurtenances at 5,000-10,000 psi to remove all dirt, chalk, algae, other foreign material, and all brittle or loose coating, rust, and mill scale.
c. Maintain a water jet nozzle distance of 2 in. 10

in. away from the surface.

d. Hold the water jet nozzle with 0° - 15° tip perpendicular (90°) to the surface at all times.

e. Use of a rotating/reciprocating nozzle during water cleaning is permitted but not to increase the pressure of a washer rated lower than required.

f. Do NOT exceed a rate of 10 sq. ft./minute.

g. Power tool clean all surfaces and appurtenances to bare metal (SP11) in areas where steel is exposed or rusted, or where coating is abraded. Retain or produce a surface profile. Surface profile shall be greater than 1.0 mil. Edges of adjacent coating shall be feathered a minimum of ½ in. from the exposed steel with 3M Scotch-Brite clean n strip discs.

2. Prime Coat

Apply one complete coat of Tnemec Series 3600 ProBond or Sherwin-Williams Corathane I Galvapac 2k Zinc to all surfaces. This coating shall be applied at a dry film thickness of 1.0 to 2.0 mils for Tnemec and 2.5 to 4.0 mils for Sherwin-Williams.

3. Spot Prime Coat

Apply one spot prime coat of Tnemec Series 135 Chembuild primer to all power tool cleaned surfaces. This coating shall be applied at a dry film thickness of 4.0-6.0 mils.

4. Penultimate Coat

Apply one complete coat of Tnemec Series 73-color Endura-Shield or Sherwin-Williams Acrolon 218 HS Polyurethane to all surfaces. This coating shall be applied at a dry film thickness of 2.0-3.0 mils. The color lab will select this color.

5. Finish Coat

Apply one complete coat of Tnemec Series V700-color HydroFlon or Sherwin-Williams Fluorokem HS Gloss. This coating shall be applied at a dry film thickness of 2.0-3.0 mils. Color shall be selected by the Engineer/Owner.

6. Lettering / Logo Painting

Two coats of Tnemec Series V700 HydroFlon or Sherwin-

Williams Fluorokem HS Gloss shall be used for the lettering / logo. This coating shall be applied at a dry film thickness of 2.0 to 3.0 mils per coat.

D. Interior (Wet) Coating System

1. Surface Preparation

The entire surface shall be abrasive blast cleaned to a Near White Finish, removing all existing paint, rust, dirt, mill scale and foreign matter by the recommended methods outlined in the SSPC Society of Protective Coating's Specification SP-10. A minimum angular anchor profile of 2.0 mils is required.

Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series 91-H_2O Hydro-Zinc or Sherwin-Williams Corathane I Galvapac 2k Zinc to all bare steel surfaces. This coating shall be applied at a dry film thickness of 2.5 - 3.5 mils for Tnemec and 2.5 - 4.0 mils for Sherwin-Williams.

Stripe Coat

After the primer has cured in accordance with the manufacturer's recommendations, apply one stripe coat, by brush only, of Tnemec Series N140-1255 Beige Pota-Pox Plus or Sherwin-Williams Macropoxy 5500 LT Epoxy to all weld seams, edges of unseal welded roof plates, angles, and sharp edges. This coating shall be applied at a dry film thickness of 4.0 - 6.0 mils for Sherwin-Williams.

Finish Coat

Apply one complete coat of Tnemec Series 22-WH11 Off White Epoxoline or Sherwin-Williams Sherplate PW 100% Solids Epoxy at a dry film thickness of 25.0 - 30.0 mils for Tnemec and 30.0 - 35.0 mils for Sherwin-Williams.

E. Interior (Dry) Coating System

1. Surface Preparation

The topside of the upper platform, the topside of the lower condensate plate, the belly of the tank, and the inlet / outlet pipe shall be abrasive blast

cleaned to a Commercial Finish in accordance with the recommended methods outlined in the SSPC Society of Protective Coating's Specification SP-6. A minimum angular blast profile of blast profile of 1.5 mils is required. All other failed surfaces on the interior dry shall be spot abrasive blast cleaned to a Commercial Finish, SSPC SP-6, a minimum angular profile of 1.5 mils is required. Feather edges to form a smooth transition to tight existing paint.

Spot Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series N140-1255 Chicago Beige Pota-Pox Plus or Sherwin-Williams Corathane I Galvapac 2k Zinc primer to all bare steel surfaces. This coating shall be applied at a dry film thickness of 3.0 to 4.0 mils.

Finish Coat

Apply one coat of Tnemec Series N140-15BL Tank White Pota-Pox Plus or two coats of Sherwin-Williams Macropoxy 646 Epoxy at a dry film thickness of 5.0 to 6.0 mils for Tnemec and 4.0 - 6.0 mils for Sherwin-Williams to all primed surfaces.

3.06 COMPLETION OF WORK

A. When Work is complete leave all materials properly coated to conform to the above Specifications. Remove and/or clean-up dry fall, overspray, droppings, or spatter from adjacent materials and properties. Make good damage to other work to the satisfaction of Owner's Representative.

B. Furnish two copies and all instructions, manufacturers' certificates, and documents to Owner's Representative.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

A. Payment for the Work specified in this Section will be made at the contract lump sum prices for the below listed Items in the Schedule of Prices:

09 91 13/01, Abrasive Blast and Paint Exterior Coating Including Logos to match existing
09 91 13/02, Abrasive Blast and Paint Wet Interior Coating
09 91 13/03, Full Containment as required
09 91 13/04, Proper and Legal Disposal of Paint Chips/Flakes and Other Debris
09 91 13/05, Recoat Existing Concrete Foundation and Leg Footings

B. These prices shall be full compensation for furnishing all materials, equipment and labor, as well as any and all incidentals necessary to complete the Items.

C. Payment will not be made for any other items except as listed above. All other costs associated with such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain.

END OF SECTION

VILLAGE OF DOWNERS GROVE

DEPARTMENT OF PUBLIC WORKS

ADDENDUM NO. 2

FOR

Rehabilitation of the 2,000,000 Gallon Legged High Tank

CFB-87-0-2022/DM

August 12, 2022

ITEM AND DESCRIPTION:

1. Replace Section 09 91 13 of the Technical Specifications with the attached revised Section 09 91 13. The intent of this addendum is to clarify full abrasive blast required instead of overcoat.

The Acknowledgement of Receipt of Addendum for this addendum MUST be included in the bid package. Bid packages not including signed Acknowledgement Sheets may be REJECTED.

End of Addendum No. 2

VILLAGE OF DOWNERS GROVE

DEPARTMENT OF PUBLIC WORKS

ACKNOWLEDGEMENT OF RECEIPT OF ADDENDUM No.2

PROPOSAL/BID: Rehabilitation of the 2,000,000 Gallon Legged High Tank

PROPOSAL/BID NUMBER: CFB-87-0-2022/DM

PROPOSAL DUE DATE: August 24, 2022

ADDENDUM NO.: 2

PROPOSER/BIDDER: Era-Valdivia Contractors, Inc.

ADDRESS: 11909 S. Avenue O, Chicago, IL 60617

RECEIVED BY: Era-Valdivia Contractors, Inc.

(NAME)

(SIGNATURE)

DATE: 8-24-2022

PAINTING WATER STORAGE TANK

SECTION 09 91 13

PART 1- GENERAL

1.01 SCOPE

A. Description

This Section covers painting materials to be furnished and applied, including preparing surfaces and providing adequate conditions for proper workmanship, as shown on the Drawings and as specified herein.

B. Related Work

1. Sections 01 11 00, 01 11 13 and 01 01 20.
2. Section 01 77 00.

1.02 QUALITY ASSURANCE

A. Acceptable Materials and Manufacturers shall conform to the herein specified material and construction standards.

B. Applicable Standards

All Work shall conform to the applicable provisions of codes, standards and Specifications, as specified herein as follows:

Name	Abbreviation
National Fire Protection Association	NFPA
Steel Structure Painting Council	SSPC
Ten State Standards	--
Painting Steel Water Storage Tanks	AWWA D102

1.03 SUBMITTALS

A. The Contractor shall submit to the Owner's Representative for review product specification of paint materials and descriptions of surface preparation contemplated for the Work to illustrate compliance with applicable requirements of this Section and other Related Work Sections. Submittals shall be in accordance with Section 01 33 00 and as herein specified.

B. Submittals shall include, but not be limited to the following:

1. Project schedule not to exceed 180 consecutive calendar days; and start date not to deviate more than 2 weeks from start date indicated on the preliminary schedule submitted at the time of bid unless otherwise approved by the **Owner**.

2. Surface preparation details including containment methods when and where containments are utilized.

3. Application instructions for each type of coating to be used.

4. Maintenance recommendations for each type of coating used.

5. Color samples for selection and scheduling. (Note: Color to be selected by **Owner** if not specified; refer to Section 01 11 00, Paragraph 2.02 for additional details).

6. MSDS sheets for all products used.

7. Monitoring Plan (refer to Section 01012; Paragraph 3.01), dry film thickness test results and diary of daily painting activities.

8. Product Certification and Waste Manifest in accordance with Section 01800; Paragraphs 2.01 & 2.02.

PART 2- PRODUCT

A. Exterior Coating System

1. Surface Preparation

200,000 Gallon Legged High Tank - 4318 Downers Drive

The entire exterior of these tanks has a high gloss polyurethane clear coat.

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

2. Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series 91-H_2O Hydro-Zinc or Sherwin-Williams Corathane I Galvapac 2k Zinc to all bare steel surfaces. This coating shall be applied at a dry film thickness of 2.5 to 3.5 mils for Tnemec and 2.5 to 4.0 mils for Sherwin-Williams.

3. Additional Prime Coat

Apply by brush only, one additional spot prime coat to all inaccessible and hard to reach areas, such as the inside of anchor bolt chairs, vent, manways, tie rods, turnbuckles, and accessories, with one coat of Tnemec Series N140 Pota-Pox Plus.

4. Intermediate Coat

Apply one complete coat of Tnemec Series 73-color Endura-Shield or Sherwin-Williams Acrolon 218 HS Polyurethane to all surfaces. This coating shall be applied at a dry film thickness of 2.0-3.0 mils. The color lab will select this color.

5. Finish Coat

Apply one complete coat of Tnemec Series V700-color HydroFlon or Sherwin-Williams Fluorokem HS Gloss. This coating shall be applied at a dry film thickness of 2.0-3.0 mils. Color shall be selected by the Engineer/Owner.

6. Lettering / Logo Painting

Two coats of Tnemec Series V700 HydroFlon or Sherwin-Williams Fluorokem HS Gloss shall be used for the lettering / logo. This coating shall be applied at a dry film thickness of 2.0 to 3.0 mils per coat.

B. Interior (Wet) Coating System

1. Surface Preparation

The entire surface shall be abrasive blast cleaned to a Near White Finish, removing all existing paint, rust, dirt, mill scale and foreign matter by the recommended methods outlined in the SSPC Society of Protective Coating's Specification SP-10. A minimum angular anchor profile of 2.0 mils is required.

Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series 91-H_2O Hydro-Zinc or Sherwin-Williams Corathane I Galvapac 2k Zinc to all bare steel surfaces. This coating shall be applied at a dry film thickness of 2.5 - 3.5 mils for Tnemec and 2.5 - 4.0 mils for Sherwin-Williams.

Stripe Coat

After the primer has cured in accordance with the manufacturer's recommendations, apply one stripe coat, by brush only, of Tnemec Series N140-1255 Beige Pota-Pox Plus or Sherwin-Williams Macropoxy 5500 LT Epoxy to all weld seams, edges of unseal welded roof plates, angles, and sharp edges. This coating shall be applied at a dry film thickness of 4.0 - 6.0 mils for Sherwin-Williams.

Finish Coat

Apply one complete coat of Tnemec Series 22-WH11 Off White Epoxoline or Sherwin-Williams Sherplate PW 100% Solids Epoxyat a dry film thickness of 25.0 - 30.0 mils for Tnemec and 30.0 - 35.0 mils for Sherwin-Williams.

C. Interior (Dry) Coating System

1. Surface Preparation

The topside of the upper platform, the topside of the lower condensate plate, the belly of the tank, and the inlet / outlet pipe shall be abrasive blast cleaned to a Commercial Finish in accordance with the recommended methods outlined in the SSPC Society of Protective Coating's Specification SP-6. A minimum angular blast profile of blast profile of 1.5 mils is required. All other failed surfaces on the interior dry shall be spot abrasive blast cleaned to a Commercial Finish, SSPC SP-6, a minimum angular profile of 1.5 mils is required. Feather edges to form a smooth transition to tight existing paint.

Spot Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of

Tnemec Series N140-1255 Chicago Beige Pota-Pox Plus or Sherwin-Williams Corathane I Galvapac 2k Zinc primer to all bare steel surfaces. This coating shall be applied at a dry film thickness of 3.0 to 4.0 mils.

Finish Coat

Apply one coat of Tnemec Series N140-15BL Tank White Pota-Pox Plus or two coats of Sherwin-Williams Macropoxy 646 Epoxy at a dry film thickness of 5.0 to 6.0 mils for Tnemec and 4.0 - 6.0 mils for Sherwin-Williams to all primed surfaces.

PART 3- EXECUTION

3.01 GENERAL

A. Do not proceed with the application of paint until the following conditions are met: Proper temperature and humidity, dust free spaces, proper surface preparation. Starting Work constitutes acceptance of conditions and substrates and full responsibility for the quality and suitability of the finished Work.

B. Furnish inspection devices, in good working condition, for the detection of holidays and the measurement of coating film thickness (wet and dry). Inspect surfaces to be painted and conditions of the area before starting Work. Report any defects that render any area or surface unfit to receive paint.

C. Handle and store materials in accordance with the provisions of the Flammable and Combustible Liquids Code, NFPA 30. All materials shall be handled and stored to avoid fire and explosion.

D. Provide masks, gloves, and other protective materials or clothing and furnish special ventilation as necessary or recommended by the paint manufacturer.

E. During surface preparation, contain and dispose of any and all paint chips/flakes in accordance with Federal, State and/or local requirements, or as otherwise specified.

3.02 DELIVERY TO SITE

All materials furnished shall be labeled. Each label shall indicate the manufacturer's name, the brand name, the type of material as specified, the class of flammability or combustibility if applicable, the color, and the mixing and application instructions. Each container shall be

stenciled or embossed at the factory with the product number and name as it appears in the manufacturer's catalog. Deliver materials to the site in unbroken, unopened containers, with labels affixed on each container by the manufacturer. Containers delivered to site which are damaged shall be cause for rejection.

3.03 CONDITIONS FOR APPLYING MATERIALS

A. Materials other than water thinned materials shall be applied only to surfaces that are free of surface moisture as determined by sight or touch.

B. Materials shall not be applied when the temperature of the surfaces to be covered are below recommended levels, or the surrounding atmosphere is below recommended levels, or when the relative humidity exceeds 85 percent.

C. Additional conditions to be satisfied prior to application shall be as specified in Section 01 01 20.

D. Prepare all surfaces to receive materials as required herein or as required by the coatings manufacturer. Clean surfaces to remove all foreign matter. Roughen surface as recommended by the coating manufacturer for proper adhesion of coating to the substrate.

3.04 APPLICATION

A. Mix and apply materials in accordance with the manufacturer's printed instructions. Allow each succeeding coat to dry in accordance with manufacturer's printed instructions.

B. Apply each coat in accordance with these Specifications and the paint manufacturer's recommendations. The coating shall be applied at the specified thickness. If the specified thickness is not obtained, an additional coat(s) of paint shall be applied at no additional cost to the **Owner**.

C. All paint shall be applied in strict accordance with the applicable manufacturer's printed data sheet and container label outlining recommended minimum and maximum surface and air temperatures required for application.

D. Do not paint code required labels, (Underwriters Laboratories, Inc., Factory Mutual, or the like) or any equipment identification, performance ratings, name, or nomenclature plates. Remove any paint inadvertently or

previously applied to such items.

E. Protect adjacent surroundings against splash or overspray. Remove materials from surfaces not designated to receive such materials.

F. Finished surfaces shall be uniformly coated with the thickness specified, free of runs, drips, sags, brush marks, holidays, or other defects. Such defects shall be corrected without change in Contract Price.

G. Remove waste rags and coating debris on a daily basis. Keep storage spaces and work areas neat and clean.

3.05 PROTECTIVE COATING SYSTEMS

A. General: The application of any coating or primer indicates the acceptance of and responsibility for the condition of the substrate and the primer thereon.

B. Protect adjacent materials/surroundings/properties/etc. subject to damage by the Work to be performed under this Contract.

C. Exterior Coating System

1. Surface Preparation

200,000 Gallon Legged High Tank - 4318 Downers Drive

The entire exterior of these tanks has a high gloss polyurethane clear coat.

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

2. Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series 91-H_2O Hydro-Zinc or Sherwin-Williams Corathane I Galvapac 2k Zinc to all surfaces. This coating shall be applied at a dry film thickness of 2.5 to 3.5 mils for Tnemec and 2.5 to 4.0 mils for Sherwin-Williams.

3. Additional Prime Coat

Apply by brush only, one additional spot prime coat to all inaccessible and hard to reach areas, such as the inside of anchor bolt chairs, vent, manways, tie rods, turnbuckles, and accessories, with one coat of Tnemec Series N140 Pota-Pox Plus.

4. Intermediate Coat

Apply one complete coat of Tnemec Series 73-color Endura-Shield or Sherwin-Williams Acrolon 218 HS Polyurethane to all surfaces. This coating shall be applied at a dry film thickness of 2.0-3.0 mils. The color lab will select this color.

5. Finish Coat

Apply one complete coat of Tnemec Series V700-color HydroFlon or Sherwin-Williams Fluorokem HS Gloss. This coating shall be applied at a dry film thickness of 2.0-3.0 mils. Color shall be selected by the Engineer/Owner.

6. Lettering / Logo Painting

Two coats of Tnemec Series V700 HydroFlon or Sherwin-Williams Fluorokem HS Gloss shall be used for the lettering / logo. This coating shall be applied at a dry film thickness of 2.0 to 3.0 mils per coat.

D. Interior (Wet) Coating System

1. Surface Preparation

The entire surface shall be abrasive blast cleaned to a Near White Finish, removing all existing paint, rust, dirt, mill scale and foreign matter by the recommended methods outlined in the SSPC Society of Protective Coating's Specification SP-10. A minimum angular anchor profile of 2.0 mils is required.

Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series 91-H_2O Hydro-Zinc or Sherwin-Williams Corathane I Galvapac 2k Zinc to all bare steel surfaces. This coating shall be applied at a dry film

thickness of 2.5 - 3.5 mils for Tnemec and 2.5 - 4.0 mils for Sherwin-Williams.

Stripe Coat

After the primer has cured in accordance with the manufacturer's recommendations, apply one stripe coat, by brush only, of Tnemec Series N140-1255 Beige Pota-Pox Plus or Sherwin-Williams Macropoxy 5500 LT Epoxy to all weld seams, edges of unseal welded roof plates, angles, and sharp edges. This coating shall be applied at a dry film thickness of 4.0 - 6.0 mils for Sherwin-Williams.

Finish Coat

Apply one complete coat of Tnemec Series 22-WH11 Off White Epoxoline or Sherwin-Williams Sherplate PW 100% Solids Epoxy at a dry film thickness of 25.0 - 30.0 mils for Tnemec and 30.0 - 35.0 mils for Sherwin-Williams.

E. Interior (Dry) Coating System

1. Surface Preparation

The topside of the upper platform, the topside of the lower condensate plate, the belly of the tank, and the inlet / outlet pipe shall be abrasive blast cleaned to a Commercial Finish in accordance with the recommended methods outlined in the SSPC Society of Protective Coating's Specification SP-6. A minimum angular blast profile of blast profile of 1.5 mils is required. All other failed surfaces on the interior dry shall be spot abrasive blast cleaned to a Commercial Finish, SSPC SP-6, a minimum angular profile of 1.5 mils is required. Feather edges to form a smooth transition to tight existing paint.

Spot Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series N140-1255 Chicago Beige Pota-Pox Plus or Sherwin-Williams Corathane I Galvapac 2k Zinc primer to all bare steel surfaces. This coating shall be applied at a dry film thickness of 3.0 to 4.0 mils.

Finish Coat

Apply one coat of Tnemec Series N140-15BL Tank White

Pota-Pox Plus or two coats of Sherwin-Williams Macropoxy 646 Epoxy at a dry film thickness of 5.0 to 6.0 mils for Tnemec and 4.0 - 6.0 mils for Sherwin-Williams to all primed surfaces.

3.06 COMPLETION OF WORK

A. When Work is complete leave all materials properly coated to conform to the above Specifications. Remove and/or clean-up dry fall, overspray, droppings, or spatter from adjacent materials and properties. Make good damage to other work to the satisfaction of Owner's Representative.

B. Furnish two copies and all instructions, manufacturers' certificates, and documents to Owner's Representative.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

A. Payment for the Work specified in this Section will be made at the contract lump sum prices for the below listed Items in the Schedule of Prices:

09 91 13/01,	Abrasive Blast and Paint Exterior Coating Including Logos to match existing
09 91 13/02,	Abrasive Blast and Paint Wet Interior Coating
09 91 13/03,	Full Containment as required
09 91 13/04,	Proper and Legal Disposal of Paint Chips/Flakes and Other Debris
09 91 13/05,	Recoat Existing Concrete Foundation and Leg Footings

B. These prices shall be full compensation for furnishing all materials, equipment and labor, as well as any and all incidentals necessary to complete the Items.

C. Payment will not be made for any other items except as listed above. All other costs associated with such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain.

END OF SECTION

V. BID and CONTRACT FORM (Village)

*****THIS BID WHEN ACCEPTED AND SIGNED BY AN AUTHORIZED SIGNATORY OF THE VILLAGE OF DOWNERS GROVE SHALL BECOME A CONTRACT BINDING UPON BOTH PARTIES.**

Entire Form Must Be Completed If a Submitted Bid Is To Be Considered For Award

BIDDER:

Era-Valdivia Contractors, Inc.	8-24-2022
Company Name	Date
11909 South Avenue O	gbairaktaris@eravaldivia.com
Street Address of Company	E-mail Address
Chicago, IL 60617	Gregory Bairaktaris
City, State, Zip	Contact Name (Print)
773-721-9350	773-447-6658
Business Phone	24-Hour Telephone
773-721-8027	J. de Valdivia
Business Fax	Signature of Officer, Partner or Sole Proprietor
	Jose G. Valdivia, President
ATTEST: if a Corporation	Print Name & Title
Signature of Corporation Secretary	

We hereby agree to furnish the Village of Downers Grove all necessary materials, equipment, labor, etc. to complete the project within the timeframe specified herein in accordance with the provisions, instructions and specifications for the unit prices shown on the Schedule of Prices.

VILLAGE OF DOWNERS GROVE:	ATTEST:
Authorized Signature	Village Clerk
Title	
Date	Date

In compliance with the specifications, the above-signed offers and agrees, if this Bid is accepted within **90** calendar days from the date of opening, to furnish any or all of the services upon which prices are quoted, at the price set opposite each item, delivered at the designated point within the time specified above.

V. BID and CONTRACT FORM (Contractor)

*****THIS BID WHEN ACCEPTED AND SIGNED BY AN AUTHORIZED SIGNATORY OF THE VILLAGE OF DOWNERS GROVE SHALL BECOME A CONTRACT BINDING UPON BOTH PARTIES.**

Entire Form Must Be Completed If a Submitted Bid Is To Be Considered For Award

BIDDER:

Era-Valdivia Contractors, Inc.	8-24-2022
Company Name	Date
11909 South Avenue O	gbairaktaris@eravaldivia.com
Street Address of Company	E-mail Address
Chicago, IL 60617	Gregory Bairaktaris
City, State, Zip	Contact Name (Print)
773-721-9350	773-447-6658
Business Phone	24-Hour Telephone
773-721-8027	J. de Valdivia
Business Fax	Signature of Officer, Partner or Sole Proprietor
	Jose G. Valdivia, President
ATTEST: if a Corporation	Print Name & Title
Signature of Corporation Secretary	

We hereby agree to furnish the Village of Downers Grove all necessary materials, equipment, labor, etc. to complete the project within the timeframe specified herein in accordance with the provisions, instructions and specifications for the unit prices shown on the Schedule of Prices.

VILLAGE OF DOWNERS GROVE:	ATTEST:
Authorized Signature	Village Clerk
Title	
Date	Date

In compliance with the specifications, the above-signed offers and agrees, if this Bid is accepted within **90** calendar days from the date of opening, to furnish any or all of the services upon which prices are quoted, at the price set opposite each item, delivered at the designated point within the time specified above.

Document A310™ – 2010

Conforms with The American Institute of Architects AIA Document 310

Bid Bond

CONTRACTOR:
(Name, legal status and address)

Era Valdivia Contractors, Inc.
11909 South Avenue O
Chicago, IL 60617

SURETY:
(Name, legal status and principal place of business)

Great American Insurance Company
301 East Fourth Street
Cincinnati, OH 45202
Mailing Address for Notices
Same As Above

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:
(Name, legal status and address)

Village of Downers Grove
801 Burlington
Downers Grove, IL 60515

BOND AMOUNT: 10% Ten Percent of Amount Bid

PROJECT:
(Name, location or address, and Project number, if any)

Rehabilitation of the 2,000,000 Gallon Legged High Tank CFB87-0-2022/DM

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 24th day of August, 2022.

(Witness)

Era Valdivia Contractors, Inc.
(Principal) *(Seal)*

By: J. De Valdivia
(Title)

(Witness) Rebecca M. Johlie

Great American Insurance Company
(Surety) *(Seal)*

By:
(Title) Peter S. Forker, Attorney-in-Fact

GREAT AMERICAN INSURANCE COMPANY®

Administrative Office: 301 E 4TH STREET • CINCINNATI, OHIO 45202 • 513-369-5000 • FAX 513-723-2740

The number of persons authorized by this power of attorney is not more than FOUR

No. 0 21671

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the GREAT AMERICAN INSURANCE COMPANY, a corporation organized and existing under and by virtue of the laws of the State of Ohio, does hereby nominate, constitute and appoint the person or persons named below, each individually if more than one is named, its true and lawful attorney-in-fact, for it and in its name, place and stead to execute on behalf of the said Company, as surety, any and all bonds, undertakings and contracts of suretyship, or other written obligations in the nature thereof; provided that the liability of the said Company on any such bond, undertaking or contract of suretyship executed under this authority shall not exceed the limit stated below.

Name	Address	Limit of Power
PETER S. FORKER TAMMY L. WHICKER STEPHANIE C. ANDERSON REBECCA M. JOHLIE	ALL OF CHICAGO, ILLINOIS	ALL $100,000,000

This Power of Attorney revokes all previous powers issued on behalf of the attorney(s)-in-fact named above.

IN WITNESS WHEREOF the GREAT AMERICAN INSURANCE COMPANY has caused these presents to be signed and attested by its appropriate officers and its corporate seal hereunto affixed this 21ST day of JULY , 2021

Attest

GREAT AMERICAN INSURANCE COMPANY

Assistant Secretary

Divisional Senior Vice President

MARK VICARIO (877-377-2405)

STATE OF OHIO, COUNTY OF HAMILTON - ss:

On this 21ST day of JULY , 2021 , before me personally appeared MARK VICARIO, to me known, being duly sworn, deposes and says that he resides in Cincinnati, Ohio, that he is a Divisional Senior Vice President of the Bond Division of Great American Insurance Company, the Company described in and which executed the above instrument; that he knows the seal of the said Company; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by authority of his office under the By-Laws of said Company, and that he signed his name thereto by like authority.

SUSAN A KOHORST
Notary Public
State of Ohio
My Comm. Expires
May 18, 2025

This Power of Attorney is granted by authority of the following resolutions adopted by the Board of Directors of Great American Insurance Company by unanimous written consent dated June 9, 2008.

RESOLVED: That the Divisional President, the several Divisional Senior Vice Presidents, Divisional Vice Presidents and Divisonal Assistant Vice Presidents, or any one of them, be and hereby is authorized, from time to time, to appoint one or more Attorneys-in-Fact to execute on behalf of the Company, as surety, any and all bonds, undertakings and contracts of suretyship, or other written obligations in the nature thereof; to prescribe their respective duties and the respective limits of their authority; and to revoke any such appointment at any time.

RESOLVED FURTHER: That the Company seal and the signature of any of the aforesaid officers and any Secretary or Assistant Secretary of the Company may be affixed by facsimile to any power of attorney or certificate of either given for the execution of any bond, undertaking, contract of suretyship, or other written obligation in the nature thereof, such signature and seal when so used being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

CERTIFICATION

I, STEPHEN C. BERAHA, Assistant Secretary of Great American Insurance Company, do hereby certify that the foregoing Power of Attorney and the Resolutions of the Board of Directors of June 9, 2008 have not been revoked and are now in full force and effect.

Signed and sealed this 24th day of August , 2022 .

Assistant Secretary

ACKNOWLEDGMENT BY SURETY

STATE OF Illinois }
County of Lake } ss.

On this 24th day of August, 2022, before me personally appeared Peter S. Forker, known to, me to be the Attorney-in-Fact of Great American Insurance Company, the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, at my office in the aforesaid County, the day and year in this certificate first above written.

OFFICIAL SEAL
REBECCA M JOHLIE
NOTARY PUBLIC, STATE OF ILLINOIS
My Commission Expires 9/22/24

Notary Public in the State of Illinois
County of Lake

GREAT AMERICAN®
INSURANCE COMPANIES

Peter S. Forker
Attorney-In-Fact
300 S Riverside Plaza, Suite 1500
Chicago, IL 60606
Email: Peter_Forker@ajg.com

August 17th, 2022

Village of Downers Grove
801 Burlington
Downers Grove, IL 60515

RE: Era Valdivia Contractors, Inc
11909 South Avenue O
Chicago, IL 60617

For: Rehabilitation of the 2,000,000 Gallon Legged High Tank CFB 87-0-2022/DM

To Whom It May Concern:

GREAT AMERICAN INSURANCE COMPANY hereby agrees if ERA VALDIVIA CONTRACTORS, INC is awarded the contract for the above captioned job, we will furnish the required Performance and Payment bonds.

Sincerely,

Peter S. Forker
Attorney-In-Fact
Great American Insurance Company

GREAT AMERICAN INSURANCE COMPANY®

Administrative Office: 301 E 4TH STREET • CINCINNATI, OHIO 45202 • 513-369-5000 • FAX 513-723-2740

The number of persons authorized by
this power of attorney is not more than FOUR

No. 0 21671

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the GREAT AMERICAN INSURANCE COMPANY, a corporation organized and existing under and by virtue of the laws of the State of Ohio, does hereby nominate, constitute and appoint the person or persons named below, each individually if more than one is named, its true and lawful attorney-in-fact, for it and in its name, place and stead to execute on behalf of the said Company, as surety, any and all bonds, undertakings and contracts of suretyship, or other written obligations in the nature thereof; provided that the liability of the said Company on any such bond, undertaking or contract of suretyship executed under this authority shall not exceed the limit stated below.

Name	Address	Limit of Power
PETER S. FORKER	ALL OF	ALL
TAMMY L. WHICKER	CHICAGO, ILLINOIS	$100,000,000
STEPHANIE C. ANDERSON		
REBECCA M. JOHLIE		

This Power of Attorney revokes all previous powers issued on behalf of the attorney(s)-in-fact named above.

IN WITNESS WHEREOF the GREAT AMERICAN INSURANCE COMPANY has caused these presents to be signed and attested by its appropriate officers and its corporate seal hereunto affixed this 21ST day of JULY , 2021 .

Attest

GREAT AMERICAN INSURANCE COMPANY

Assistant Secretary

Divisional Senior Vice President

MARK VICARIO (877-377-2405)

STATE OF OHIO, COUNTY OF HAMILTON - ss:

On this 21ST day of JULY , 2021 , before me personally appeared MARK VICARIO, to me known, being duly sworn, deposes and says that he resides in Cincinnati, Ohio, that he is a Divisional Senior Vice President of the Bond Division of Great American Insurance Company, the Company described in and which executed the above instrument; that he knows the seal of the said Company; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by authority of his office under the By-Laws of said Company, and that he signed his name thereto by like authority.

SUSAN A KOHORST
Notary Public
State of Ohio
My Comm. Expires
May 18, 2025

This Power of Attorney is granted by authority of the following resolutions adopted by the Board of Directors of Great American Insurance Company by unanimous written consent dated June 9, 2008.

RESOLVED: That the Divisional President, the several Divisional Senior Vice Presidents, Divisional Vice Presidents and Divisonal Assistant Vice Presidents, or any one of them, be and hereby is authorized, from time to time, to appoint one or more Attorneys-in-Fact to execute on behalf of the Company, as surety, any and all bonds, undertakings and contracts of suretyship, or other written obligations in the nature thereof; to prescribe their respective duties and the respective limits of their authority; and to revoke any such appointment at any time.

RESOLVED FURTHER: That the Company seal and the signature of any of the aforesaid officers and any Secretary or Assistant Secretary of the Company may be affixed by facsimile to any power of attorney or certificate of either given for the execution of any bond, undertaking, contract of suretyship, or other written obligation in the nature thereof, such signature and seal when so used being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

CERTIFICATION

I, STEPHEN C. BERAHA, Assistant Secretary of Great American Insurance Company, do hereby certify that the foregoing Power of Attorney and the Resolutions of the Board of Directors of June 9, 2008 have not been revoked and are now in full force and effect.

Signed and sealed this 17th day of August , 2022 .

Assistant Secretary

Assurance
Minimizing risk. Maximizing health.™

August 19, 2022

RE: Era-Valdivia Contractors, Inc.
Bid No.: CFB-87-0-2022/DM
Project: Rehabilitation of the 2,000,000 Gallon Legged High Tank

To Whom It May Concern,

After carefully reviewing the bid insurance requirements, Era-Valdivia Contractors, Inc. has the necessary coverages to meet the above mentioned job. If you have any questions, please feel free to contact our office.

Sincerely,

Mitchell Goll
Client Service Representative
P: (847) 463-7319
Mitchell.Goll@marshmma.com

SCHEDULE OF PRICES:

Item No.	Description	Unit	Qty.	Unit Cost	Cost
05 50 00/01	Pit Weld Repairs	Each	200	15.00	3,000.00
05 50 00/02	Weld Seam Repairs	LIN. FT.	300	90.00	27,000.00
05 50 00/03	Install Rigging and Safety Grabs	LSUM	1	6,000.00	6,000.00
05 50 00/04	Remove the Top 3" of Rail Fall Prevention Device at Top of Leg Ladder	LSUM	1	1,500.00	1,500.00
05 52 13/01	Install New Stainless Roof Vent with HDPE Screen	LSUM	1	20,000.00	20,000.00
05 52 13/02	Remove and Replace Antenna Mounting Structure with New Roof Handrail	LSUM	1	25,000.00	25,000.00
05 52 13/03	Remove and Replace Damaged Stiffener/Painter's Railing	LSUM	1	25,000.00	25,000.00
05 52 13/04	Remove and Replace Roof/Sidewall Ladder with Vertical Sidewall Ladder, Walkway Platform and New 25' Dia. Roof Handrail	LSUM	1	20,000.00	20,000.00
05 52 13/05	Remove and Install New Fall Prevention Device and Vandal Guard on Exterior Ladder	LSUM	1	9,000.00	9,000.00
05 52 13/06	Install Wet Interior Ladder Equipped with Fall Prevention Device	LSUM	1	18,000.00	18,000.00
05 52 13/07	Remove and Replace Wet Interior Roof Access Hatch with New 30" Hatch	LSUM	1	5,000.00	5,000.00
05 52 13/08	Install Light Weight Lockable Hatch at Balcony Opening at Ladder Transition	LSUM	1	6,000.00	6,000.00
05 52 13/09	Install New Gasket on Wet Interior Roof Hatch	LSUM	1	800.00	800.00
05 52 13/10	Tighten Sway Rods	LSUM	1	8,000.00	8,000.00
05 52 13/11	Caulk Roof Lap Seams	LSUM	1	4,000.00	4,000.00
05 52 13/12	Repair Areas of Missing or Damaged Grout Between Steel Baseplate and Concrete Foundation	LSUM	1	2,000.00	2,000.00
05 52 13/13	Expose 4" of Footings and Regrade	LSUM	1	2,400.00	2,400.00
05 52 13/14	Install a New Weighted Screened Flap Valve on Overflow Pipe	LSUM	1	5,000.00	5,000.00
05 52 13/15	Remove and Replace Existing Fence Removed for Construction with New Fence	LSUM	1	25,000.00	25,000.00
09 91 13/01	Abrasive Blast & Paint Exterior Coating including Logos to Match Existing	LSUM	1	1,287,000.00	1,287,000.00
09 91 13/02	Abrasive Blast & Paint Wet Interior Coating	LSUM	1	589,000.00	589,000.00
09 91 13/03	Containment	LSUM	1	260,000.00	260,000.00
09 91 13/04	Proper and Legal Disposal of Paint Chips/Flakes and Other Debris	LSUM	1	10,000.00	10,000.00
09 91 13/05	Recoat Existing Concrete Foundation and Leg Footings	LSUM	1	2,000.00	2,000.00
11 20 00/01	Install Grid Bee Water Destratification Mixing System	LSUM	1	48,000.00	48,000.00
26 27 01/01	Electric Service and Distribution	LSUM	1	78,000.00	78,000.00
26 27 19/01	Electrical Cabinet Equipment Backboard	LSUM	1	45,000.00	55,000.00

Item No.	Description	Unit	Qty.	Unit Cost	Cost
	and Installation				
26 42 00/01	Install New Cathodic Protection System with Clips	LSUM	1	28,000.00	28,000.00
26 42 00/02	Service Agreement	LSUM	1	840.00	840.00
27 51 25/01	SCADA System Modifications	LSUM	1	38,000.00	38,000.00
27 51 25/02	Install New SCADA Cabinet and Electrical Conduit	LSUM	1	14,000.00	14,000.00
				TOTAL BID	2,597,540

BIDDER'S CERTIFICATION (page 1 of 3)

With regard to Rehabilitation of the 2,000,000 GL Legged High Tank CFB 87-002022/DM (Name of Project), Bidder Era-Valdivia Contractors, Inc. (Name of Bidder)

hereby certifies the following:

1. Bidder is not barred from bidding this Contract as a result of violations of Section 720 ILCS 5/33E-3 (Bid Rigging) or 720 ILCS 5/33E-4 (Bid-Rotating);

2. Bidder certifies that it has a written sexual harassment policy in place and full compliance with 775 ILCS 5/2-105(A)(4);

3. Bidder certifies that not less than the prevailing rate of wages as determined by the Village of Downers Grove, DuPage County or the Illinois Department of Labor shall be paid to all laborers, workers and mechanics performing work for the Village of Downers Grove. All bonds shall include a provision as will guarantee the faithful performance of such prevailing wage clause. Bidder agrees to comply with the Illinois Prevailing Wage Act, 820 ILCS 130/1 et seq., for all work completed. Bidder agrees to pay the prevailing wage and require that all of its subcontractors pay prevailing wage to any laborers, workers or mechanics who perform work pursuant to this Contract or related subcontract. Bidder and each subcontractor shall keep or cause to be kept an accurate record of each worker's name, address, telephone number when available, the last four digits of the worker's social security number, gender, race, ethnicity, veteran's status, skill level, classification, hourly wage paid (including itemized hourly cash and fringe benefits paid in each pay period), number of hours worked each day, the starting and ending times of work each day, the worker's hourly wage rate, the worker's hourly overtime wage rate, the worker's hourly fringe benefit rates, the name and address of each fringe benefit fund, the plan sponsor of each fringe benefit, if applicable, and the plan administrator of each fringe benefit, if applicable. This record shall be sent to the Illinois Department of Labor no later than the fifteenth (15th) day of each calendar month for the immediately preceding month in which construction on a public works project has occurred. Contractor shall then provide an IDOL certification and case number to the Village. The records must be preserved for five (5) years following completion of the contract. Bidder certifies that Bidder and any subcontractors working on the project are aware that filing false payroll records is a Class A misdemeanor and that the monetary penalties for violations are to be paid pursuant to law by the Bidder, contractor and subcontractor. The Village shall not be liable for any underpayments. If applicable: Since this is a contract for a fixed public works project, as defined in 820 ILCS 130/2, Contractor agrees to post at the job site in an easily accessible place, the prevailing wages for each craft or type of worker or mechanic needed to execute the contract or work to be performed;

4. Bidder certifies that it is in full compliance with the Federal Highway Administrative Rules on Controlled Substances and Alcohol Use and Testing, 49 C.F.R. Parts 40 and 382 and that all employee drivers are currently participating in a drug and alcohol testing program pursuant to the Rules;

5. Bidder further certifies that it is not delinquent in the payment of any tax administered by the Department of Revenue, or that Bidder is contesting its liability for the tax delinquency or the amount of a tax delinquency in accordance with the procedures established by the appropriate Revenue Act. Bidder further certifies that if it owes any tax payment(s) to the Department of Revenue, Bidder has entered into an agreement with the Department of Revenue for the payment of all such taxes that are due, and Bidder is in compliance with the agreement.

BIDDER'S CERTIFICATION (page 2 of 3)

BY: J. Jose Valdivia
Bidder's Authorized Agent Signature

3	6	-	3	5	2	6	3	7	6

FEDERAL TAXPAYER IDENTIFICATION NUMBER
or _____
Social Security Number

Subscribed and sworn to before me this 24 day of August, 2022.

Lucia Munoz
Notary Public

"OFFICIAL SEAL"
LUCIA MUNOZ
NOTARY PUBLIC, STATE OF ILLINOIS
My Commission Expires 02/27/2026

(Fill Out Applicable Paragraph Below)

(a) **Corporation**
The Bidder is a corporation organized and existing under the laws of the State of Illinois, which operates under the Legal name of Era-Valdivia Contractors, Inc., and the full names of its Officers are as follows:

President: Jose G. Valdivia

Secretary: Saul Valdivia

Treasurer: _____

and it does have a corporate seal. (In the event that this bid is executed by other than the President, attach hereto a certified copy of that section of Corporate By-Laws or other authorization by the Corporation which permits the person to execute the offer for the corporation.)

(b) **Limited Liability Company (LLC)**
The Bidder is a LLC organized and existing under the laws of the State of _____, which operates under the legal name of _____, and the full names of its managers or members are as follows:

Manager or Member: _____

Manager or Member: _____

Manager or Member: _____

Manager or Member: _____

BIDDER'S CERTIFICATION (page 3 of 3)

(c) **Partnership**
The partnership does business under the legal name of: _____,
which name is registered with the office of _____ in the State of _____.

Names and Addresses of All Partners:

_____

_____

_____

(d) **Sole Proprietor**
The Bidder is a Sole Proprietor whose full name is: _____;
and if operating under a trade name, said trade name is: _____,
which name is registered with the office of _____ in the State of _____.

6. Are you willing to comply with the Village's insurance requirements within 10 days of the award of the contract? YES NO (circle one)

INSURER`S NAME: Era-Valdivia Contractors, Inc.

AGENT: Assurance - Mitchell Goll, Client Service Representative

Street Address: 20 N. Martingale rad, Suite 100

City, State, Zip Code: Schaumburg, IL 60173

Telephone Number: 847-463-7319

I/We hereby affirm that the above certifications are true and accurate and that I/we have read and understand them.

Print Name of Company: Era-Valdivia Contractors, Inc.

Print Name and Title of Authorizing Signature: Jose G. Valdivia, President

Signature: J. G. Valdivia

Date: 8-24-2022

Illinois Department of Transportation

Affidavit of Availability

For the Letting of 08/24/22

Bureau of Construction
2300 South Dirksen Parkway/Room 322
Springfield, IL 62764

Instructions: Complete this form by either typing or using black ink. "Authorization to Bid" will not be issued unless both sides of this form are completed in detail. Use additional forms as needed to list all work.

Part I. Work Under Contract

List below all work you have under contract as either a prime contractor or a subcontractor. It is required to include all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work which is the responsibility of your company. The uncompleted dollar value is to be based upon the most recent engineer's or owners estimate, and must include work subcontracted to others. If no work is contracted, show NONE.

	1	2	3	4	Awards Pending	Accumulated Totals
Contract Number	ISTHA 4517	64F78	60W34	66E45		
Contract With	FHP	Kraemer	D Const	PT Ferro		
Estimated Completion Date	12/01/22	12/01/23	11/01/22	11/01/22		
Total Contract Price	$807,784	$4,090,500	$490,000	$268,000		
Uncompleted Dollar Value if Firm is the Prime Contractor						$3,736,745
Uncompleted Dollar Value if Firm is the Subcontractor	$425,000	$3,090,500	$490,000	$268,000		$5,023,500
					Total Value of All Work	$8,760,245

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work subcontracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

Earthwork						
Portland Cement Concrete Paving						
HMA Plant Mix						
HMA Paving						
Clean & Seal Cracks/Joints						
Aggregate Bases, Surfaces						
Highway, R.R., Waterway Struc.						
Drainage						
Electrical						
Cover and Seal Coats						
Concrete Construction						$1,414,743
Landscaping						
Fencing						
Guardrail						
Painting	$425,000	$3,090,500	$490,000	$268,000		$7,345,502
Signing						
Cold Milling, Planning, Rotomilling						
Demolition						
Pavement Markings (Paint)						
Other Construction (List)						
Totals	$425,000	$3,090,500	$490,000	$268,000		$8,760,245

Disclosure of this information is REQUIRED to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

Illinois Department of Transportation

Affidavit of Availability

For the Letting of 08/24/22

Bureau of Construction
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	1	2	3	4	Awards Pending	Accumulated Totals
Contract Number	72L58	66F08	62A77	62A76		
Contract With	IDOT	IDOT	Lorig	Lorig		
Estimated Completion Date	07/04/22	12/01/22	12/01/22	12/01/22		
Total Contract Price	$7,457,535	$6,578,092	$72,768	$1,202,883		
Uncompleted Dollar Value if Firm is the Prime Contractor	$325,000	$6,578,092				$10,639,837
Uncompleted Dollar Value if Firm is the Subcontractor			$52,768	$601,442		$5,677,710
					Total Value of All Work	$16,317,547

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work subcontracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

Earthwork						
Portland Cement Concrete Paving						
HMA Plant Mix						
HMA Paving						
Clean & Seal Cracks/Joints						
Aggregate Bases, Surfaces						
Highway, R.R., Waterway Struc.						
Drainage						
Electrical						
Cover and Seal Coats						
Concrete Construction						$1,414,743
Landscaping						
Fencing						
Guardrail						
Painting	$325,000	$6,578,092	$52,768	$601,442		$14,902,804
Signing						
Cold Milling, Planning, Rotomilling						
Demolition						
Pavement Markings (Paint)						
Other Construction (List)						
Totals	$325,000	$6,578,092	$52,768	$601,442		$16,317,547

Disclosure of this information is REQUIRED to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

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	1	2	3	4	Awards Pending	Accumulated Totals
Contract Number	70E74	66M11	66M12	74A67		
Contract With	IDOT	IDOT	IDOT	IDOT		
Estimated Completion Date	12/01/22	12/01/22	12/01/22	12/01/22		
Total Contract Price	$1,899,396	$549,318	$311,138	$149,019		
Uncompleted Dollar Value if Firm is the Prime Contractor	$1,899,396	$549,318	$311,138	$149,019		$13,548,708
Uncompleted Dollar Value if Firm is the Subcontractor						$5,677,710
					Total Value of All Work	$19,226,418

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work subcontracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

Earthwork						
Portland Cement Concrete Paving						
HMA Plant Mix						
HMA Paving						
Clean & Seal Cracks/Joints						
Aggregate Bases, Surfaces						
Highway, R.R., Waterway Struc.						
Drainage						
Electrical						
Cover and Seal Coats						
Concrete Construction						$1,414,743
Landscaping						
Fencing						
Guardrail						
Painting	$1,899,396	$549,318	$311,138	$149,019		$17,811,675
Signing						
Cold Milling, Planning, Rotomilling						
Demolition						
Pavement Markings (Paint)						
Other Construction (List)						
Totals	$1,899,396	$549,318	$311,138	$149,019		$19,226,418

Disclosure of this information is REQUIRED to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

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	1	2	3	4	Awards Pending	Accumulated Totals
Contract Number	66M20					
Contract With	IDOT					
Estimated Completion Date	12/01/22					
Total Contract Price	$511,038					
Uncompleted Dollar Value if Firm is the Prime Contractor	$511,038					$14,059,746
Uncompleted Dollar Value if Firm is the Subcontractor						$5,677,710
					Total Value of All Work	$19,737,456

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

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Earthwork						
Portland Cement Concrete Paving						
HMA Plant Mix						
HMA Paving						
Clean & Seal Cracks/Joints						
Aggregate Bases, Surfaces						
Highway, R.R., Waterway Struc.						
Drainage						
Electrical						
Cover and Seal Coats						
Concrete Construction						$1,414,743
Landscaping						
Fencing						
Guardrail						
Painting	$511,038					$18,322,713
Signing						
Cold Milling, Planning, Rotomilling						
Demolition						
Pavement Markings (Paint)						
Other Construction (List)						
Totals	$511,038					$19,737,456

Disclosure of this information is REQUIRED to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

PAINTERS AND ALLIED TRADES DISTRICT COUNCIL 30

Joint Apprenticeship & Training Fund

November 25, 2013

This letter is to confirm that ERA Valdivia Contractors, Inc. is a signatory contractor of Painters District Council No.30 and is participating in PDC #30's Joint Apprenticeship & Training Fund. Below is a copy of PDC #30 JATF's Apprenticeship Program Certificate of Registration with the United States Department of Labor for the trades of Painters, Glaziers and Drywall Finishers.

For Additional information please call our office at 630-966-1451.

Stephen J. Lefaver
Director of Apprenticeship & Training

**********VOID 90 DAYS FROM ISSUE DATE**********

The United States Department of Labor

Office of Apprenticeship Training, Employer and Labor Services
Bureau of Apprenticeship and Training
Certificate of Registration

PAINTERS & ALLIED TRADES DISTRICT COUNCIL #30
Joint Apprenticeship Training Fund
For the Trades of: Painter , Glazier, & Taper (Drywall Finisher)

Registered as part of the National Apprenticeship Program in accordance with the basic standards of apprenticeship established by the Secretary of Labor

April 7, 1945
Date
IL0047800094
Registration No

R. L. Chao
Secretary of Labor

Administrator, Apprenticeship Training, Employer and Labor Services

1905 Sequoia Drive, Suite 101, Aurora, Illinois 60506 • p 630.966.1451 • f 630.966.1450
www.painters30school.com

The United States Department of Labor

Office of Apprenticeship

Certificate of Registration of Apprenticeship Program

Associated Builders & Contractors of Illinois, Inc.

Elk Grove Village, Illinois

For the Trades – Carpenter, Electrician, Operating Engineer, Painter
Pipefitter, Plumber, Welder, Cement Mason, Roofer, Construction Craft Laborer
Heating & Air Conditioning Mechanic & Installer, and Ironworker

Registered as part of the National Apprenticeship System
in accordance with the basic standards of apprenticeship
established by the Secretary of Labor

February 22, 1989
Date Revised March 3, 2017

IL008890010
Registration No.

DEPARTMENT OF LABOR · UNITED STATES OF AMERICA ·

Administrator, Office of Apprenticeship

U.S. DEPARTMENT OF LABOR
OFFICE OF APPRENTICESHIP CERTIFICATION

Everyone who is accepted into the IEC Apprenticeship program is considered a student until they become employed by a Midwest IEC Contractor Member or a non-member electrical contractor. Once a student has become employed, they must then be registered as an apprentice with the U.S. Department of Labor, Office of Apprenticeship.
The National U.S. Department of labor, Office of Apprenticeship certifies the IEC Apprenticeship Programs. The IEC will closely follow the standards set forth by the Office of Apprenticeship so that this Apprenticeship Program turns out high quality Journeymen and women.

Students and apprentices have been admitted into this program by meeting certain criteria, such as, possessing a high school diploma or GED and/or recommendation from their company regarding their employment. There are other requirements that continue to take effect, such as maintaining employment with an electrical contractor. Additionally, apprentices must follow all the rules and regulations contained in this handbook or become subject to dismissal from the program.

The IEC will become the apprentices' primary sponsor along with their employer and the U.S. Department of Labor, Office of Apprenticeship. Two of the most important criteria to maintain participation with the IEC Apprenticeship Program and Office of Apprenticeship registration are:

- Working full-time for an electrical contractor
- Continuing to attend classes with passing grades

Both items will be covered in more detail in later sections of this manual. The most critical point to remember is that while a registered apprentice under the sponsorship of IEC, the apprentice must work for an electrical contractor and attend class. Failure to do either of these will be grounds for dismissal from the program and registration from the U.S. Department of Labor, Office of Apprenticeship.

Midwest IEC

INDEPENDENT ELECTRICAL CONTRACTORS

CONGRATULATIONS and GOOD LUCK

Midwest IEC is a Chapter of

I E C

PRIDE

INDEPENDENT ELECTRICAL CONTRACTORS

Midwest IEC, 10501 W. 133rd Ave., Cedar Lake, IN 46303 Ph: 219-900-0091, Website: www.midwestiec.org

AMPP™

Era-Valdivia Contractors, Inc.
of
Chicago, IL

has met or exceeded the requirements set forth in the ***AMPP QP Accreditation Program*** *for*

FIELD APPLICATION OF COATINGS
COMPLEX STRUCTURES
SSPC – QP1

Helena Sulinger
Executive Director, AMPP

March 31, 2022 – March 31, 2023
Validation Period

Accreditation for dates listed above to Era-Valdivia Contractor Inc. Chicago, IL
Owners are advised to contact 412-281-2331 ext. 2209 or qpinfo@ampp.org to verify authenticity of accreditation.

Corporate Headquarters: Houston – 15835 Park Ten Place, Houston, TX 77084
Pittsburgh – 800 Trumbull Drive, Pittsburgh, PA 15205

AMPP™

Era-Valdivia Contractors, Inc.

of

Chicago, IL

has met or exceeded the requirements set forth in the ***AMPP QP Accreditation Program*** *for*

INDUSTRIAL HAZARDOUS PAINT REMOVAL

SSPC – QP 2

Helena Suelinger

Executive Director, AMPP

March 31, 2022 – March 31, 2023

Validation Period

Accreditation for dates listed above to Era-Valdivia Contractor Inc. Chicago, IL.
Owners are advised to contact 412-281-2331 ext. 2209 or qpinfo@ampp.org to verify authenticity of accreditation.

Corporate Headquarters: Houston – 15835 Park Ten Place, Houston, TX 77084
Pittsburgh – 800 Trumbull Drive, Pittsburgh, PA 15205

GENERAL REQUIREMENTS FOR TANK PAINTING

MUNICIPAL REFERENCE LIST **

Municipality: Village of Orland Park
Address: 14700 Ravinia Ave, Orland Park, IL 60462
Contact Name: Ken Dado- VOP and Gerald Hennelly - CBBE Phone #: 708-403-6350/847-980-3691
Name of Project: Rehabilitation of Water Tower # 5 and # 7
Contract Value: 653,670.00 + 792,000.00 Date of Completion: 2019/2020

Municipality: Village of Villa Park
Address: 20 S. Ardmore Avenue, Villa Park, IL 60181
Contact Name: Rich Salerno - PW Phone #: 847-962-1289
Name of Project: Rehabilitation of Home Street Legged Water Tank
Contract Value: 865,000.00 Date of Completion: 2020

Municipality: DuPage Water Commission
Address: 600 Butterfield Rd, Elmhurst, IL 60126
Contact Name: Chris Bostic DWC / Brad Schotanus, Todd Schaffer - Dixon Engin. Phone #: 630-516-1915/ 630-376-8322
Name of Project: Various Tanks 5.0 - 7.5 MGL Full Rehabilitation with repairs
Contract Value: 4,387,716.00 Date of Completion: 2015-2017

Municipality: City of Milwaukee Water Dept.
Address: 841 N Broadway 4th floor, Milwaukee, WI 53202
Contact Name: Mark Gremmer - MWD -RE and Dixon Engineering Phone #: 414-286-3630
Name of Project: Rehabiliation with repairs of 6.0 MGL - Water Reservoir LS 35
Contract Value: 1,865,058.00 Date of Completion: 2018

Municipality: City of Joliet Public Works
Address: 150 W Jefferson St, Joliet, IL 60432
Contact Name: Nickolas Gornick - PW Director/KLM Engineering Phone #: 815-405-3666
Name of Project: Various water tanks - full rehabilitation and steel repairs
Contract Value: 1,576,111.00 Date of Completion: 2018-2020

** Upon request, EVC can provide a full reference list showing all rehabilitated potable water tanks as well as all industrial complex coating rehabilitation project as related to full removal and coating work under containment.

GENERAL REQUIREMENTS FOR TANK PAINTING

SUBCONTRACTORS LIST

The Bidder hereby states the following items of work will not be performed by its organization. (List items to be subcontracted as well as the names, addresses and phone numbers of the subcontractors.)

1) Rays Welding, Inc. Type of Work Steel Repairs
Addr: 1251 Paw Paw Ave. City Benton Harbor State MI Zip 49022

2) Orchard Electric Type of Work Electrical Repairs
Addr: 4820 W 129th St. City Alsip State IL Zip 60803

3) Concentric Intergrator Type of Work Scada Upgrades
Addr: 8678 Ridgeland Ave. City Crystal Lake State IL Zip 60012

4) Corrpro/Aegion Corp. Type of Work Cathodics
Addr: 1055 W. Smith Road City Medina State OH Zip 44256

5) _____ Type of Work _____
Addr: _____ City _____ State____ Zip_____

6) _____ Type of Work _____
Addr: _____ City _____ State____ Zip_____

7) _____ Type of Work _____
Addr: _____ City _____ State____ Zip_____

8) _____ Type of Work _____
Addr: _____ City _____ State____ Zip_____

VENDOR W-9 REQUEST FORM

The law requires that we maintain accurate taxpayer identification numbers for all individuals and partnerships to whom we make payments, because we are required to report to the I.R.S all payments of $600 or more annually. We also follow the I.R.S. recommendation that this information be maintained for all payees including corporations.

Please complete the following substitute W-9 letter to assist us in meeting our I.R.S. reporting requirements. The information below will be used to determine whether we are required to send you a Form 1099. Please respond as soon as possible, as failure to do so will delay our payments.

BUSINESS (PLEASE PRINT OR TYPE):

NAME: Era-Valdivia Contractors, Inc.

ADDRESS: 11909 South Avenue O

CITY: Chicago

STATE: Illinois

ZIP: 60617

PHONE: 773-721-9350 **FAX:** 773-721-8027

TAX ID #(TIN): 36-3526376

(If you are supplying a social security number, please give your full name)

REMIT TO ADDRESS (IF DIFFERENT FROM ABOVE):

NAME: Same as above

ADDRESS:

CITY:

STATE: **ZIP:**

TYPE OF ENTITY (CIRCLE ONE):

Individual	Limited Liability Company – Member-Managed
Sole Proprietor	Limited Liability Company- Manager-Managed
Partnership	Medical
(Corporation)	Charitable/Nonprofit
Government Agency	

SIGNATURE: J. Jose Valdivia **DATE:** 8-24-2022

Apprenticeship and Training Certification

(Does not apply to federal aid projects. Applicable only to maintenance and construction projects that use Motor Fuel Tax funds or state grant monies.)

Name of Bidder: Era-Valdivia Contractors, Inc.

In accordance with the provisions of Section 30-22 (6) of the Illinois Procurement Code, the Bidder certifies that it is a participant, either as an individual or as part of a group program, in the approved apprenticeship and training programs applicable to each type of work or craft that the bidder will perform with its own forces. The Bidder further certifies for work that will be performed by subcontract that each of its subcontractors submitted for approval either (a) is, at the time of such bid, participating in an approved, applicable apprenticeship and training program; or (b) will, prior to commencement of performance of work pursuant to this Contract, begin participation in an approved apprenticeship and training program applicable to the work of the subcontract. The Illinois Department of Labor, at any time before or after award, may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and any or all of its subcontractors. Applicable apprenticeship and training programs are those that have been approved and registered with the United States Department of Labor. The Bidder shall list in the space below, the official name of the program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the Bidder is a participant and that will be performed with the Bidder's forces. Types of work or craft work that will be subcontracted shall be included and listed as subcontract work. The list shall also indicate any type of work or craft job category that does not have an applicable apprenticeship or training program. **The Bidder is responsible for making a complete report and shall make certain that each type of work or craft job category that will be utilized on the project is accounted for and listed. Return this with the Bid.**

Painters and allied Trades - DC 30 Cert, Attached

The requirements of this certification and disclosure are a material part of the Contract, and the Contractor shall require this certification provision to be included in all approved subcontracts. In order to fulfill this requirement, it shall not be necessary that an applicable program sponsor be currently taking or that it will take applications for apprenticeship, training or employment during the performance of the work of this Contract.

Print Name and Title of Authorizing Signature: Jose G. Valdivia/President

Signature: J. G. Valdivia

Date: 8-24-2022

BUY AMERICA CERTIFICATION

Certification requirement for procurement of steel, iron, or manufactured products when Federal funds (Grant Agreement or Cooperative Agreement) are used.

Instructions:
Bidder to complete the Buy America Certification listed below. Bidder shall certify EITHER COMPLIANCE OR NON-COMPLIANCE (not both). This Certification MUST BE submitted with the Bidder's bid response.
Special Note: Make sure you have signed only one of the above statements – either Compliance OR Non-Compliance (not both).

Certificate of Compliance

The bidder or offeror hereby certifies that it **will meet** the requirements of 49 U.S.C. 5323(j)(1), as amended, and the applicable regulations in 49 CFR Part 661.

Signature J. De Valdivia

Company Name Era-Valdivia Contractors, Inc

Title President

Date 8-24-2022

Certificate of Non-Compliance

The bidder or offeror hereby certifies that it **cannot comply** with the requirements of 49 U.S.C. 5323(j)(1), as amended, and 49 C.F.R. 661, but it may qualify for an exception pursuant to 49 U.S.C. 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D), and 49 C.F.R. 661.7.

Signature _____

Company Name _____

Title _____

Date _____

AFTER THIS CERTIFICATE HAS BEEN EXECUTED, A BIDDER MAY NOT SEEK A WAIVER.

Note: The U.S/Canadian Free Trade Agreement does not supersede the Buy America requirement.

Suspension or Debarment Certificate

Non-Federal entities are prohibited from contracting with or making sub-awards under covered transactions to parties that are suspended or debarred or whose principals are suspended or debarred. Covered transactions include procurement for goods or services equal to or in excess of $100,000.00. Contractors receiving individual awards for $100,000.00 or more and all sub-recipients must certify that the organization and its principals are not suspended or debarred.

By submitting this offer and signing this certificate, the Bidder certifies to the best of its knowledge and belief, that the company and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any federal, state or local governmental entity, department or agency;

2. Have not within a three-year period preceding this Bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction, or convicted of or had a civil judgment against them for a violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and

4. Have not within a three-year period preceding this application/proposal/contract had one or more public transactions (Federal, State or local) terminated for cause or default.

If the Bidder is unable to certify to any of the statements in this certification, Bidder shall attach an explanation to this certification.

Company Name: Era-Valdivia Contractors, Inc.

Address: 11909 South Avenue O

City: Chicago Zip Code: 60617

Telephone: (773) 721-9350 Fax Number: (773) 721-8027

E-mail Address: gbairaktaris@eravaldivia.com

Authorized Company Signature: J. Jose Valdivia

Print Signature Name: Jose G. Valdivia Title of Official: President

Date: 8-24-2022

CAMPAIGN DISCLOSURE CERTIFICATE

Any contractor, proposer, bidder or vendor who responds by submitting a bid or proposal to the Village of Downers Grove shall be required to submit with its bid submission, an executed Campaign Disclosure Certificate.

The Campaign Disclosure Certificate is required pursuant to the Village of Downers Grove Council Policy on Ethical Standards and is applicable to those campaign contributions made to any member of the Village Council.

Said Campaign Disclosure Certificate requires any individual or entity bidding to disclose campaign contributions, as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4), made to current members of the Village Council within the five (5) year period preceding the date of the bid or proposal release.

By signing the bid documents, contractor/proposer/bidder/vendor agrees to refrain from making any campaign contributions as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4) to any Village Council member and any challengers seeking to serve as a member of the Downers Grove Village Council.

Under penalty of perjury, I declare:

☒ Bidder/vendor has <u>not</u> contributed to any elected Village position within the last five (5) years.

J. Jose Valdivia — Jose G. Valdivia, President

Signature — Print Name

☐ Bidder/vendor has contributed a campaign contribution to a current member of the Village Council within the last five (5) years.

Print the following information:

Name of Contributor: _____
(company or individual)

To whom contribution was made: _____

Year contribution made: _____ Amount: $ _____

_____ _____

Signature — Print Name

BID SUBMITTAL CHECKLIST

GENERAL REQUIREMENTS FOR TANK PAINTING

Each Bidder's Bid Package must be submitted with all requisite forms properly completed, and all documentation included. The following list is not all-inclusive, but is designed to facilitate a good, competitive bidding environment.

1. [X] Instructions to Bidders read and understood. Any questions must be asked according to the instructions.
2. [X] Cover sheet filled-in
3. [X] Bid Form copies filled in. All copies must have original signatures and seals on them.
4. [X] Bid Bond or cashier's check enclosed with bid package.
5. [X] Schedule of Prices completed. Check your math!
6. [X] Bidder Certifications signed and sealed.
7. [X] Letter from Surety ensuring issuance of Performance and Labor Bonds.
8. [X] Letter from Insurance Agent or Carrier ensuring issuance of required job coverage.
9. [X] Municipal Reference List completed.
10. [X] Vendor request form W-9 completed.
11. [X] Affidavit (IDOT Form BC-57, or similar).
12. [X] Bid package properly sealed and labeled before delivery. If sending by mail or messenger, enclose in a second outer envelope or container. Project plan sheets do not have to be included with the bid package.

TECHNICAL SPECIFICATIONS

GENERAL REQUIREMENTS FOR TANK PAINTING

SECTION 01 01 20

PART 1- GENERAL

1.01 SCOPE

A. Description

This Section describes the General Requirements for the Work to be performed under this Contract. The Contractor shall comply with these General Requirements and shall perform all Work in accordance with the Specifications contained in this Section, as supplemented by Specifications in related Special Provisions, and as shown on the Drawings.

1.02 QUALITY ASSURANCE

Acceptable manufacturers for various materials are specified in respective Sections of these Contract Documents. For convenience of designation in the Contract Documents, certain materials are designated by manufacturer trade name or catalog name and number. Such designation shall be deemed to be followed by the words "or equal" whether such words are shown or not. The Contractor may offer materials which are equal to that so indicated or specified at the time of Bid. The burden of proof as to comparative quality and suitability of alternatives/substitutes shall be upon the Contractor. Specified items are preferred. After acceptance of Bid, no substitutions will be allowed, except as stated in the Bid. Each such request for substitution shall include the name of the specified material for which a substitute is being requested; the name of the proposed substitute material; and a complete description of the proposed substitute including performance and test data and any other information necessary for an evaluation. The decision of the **Owner** regarding the use of the proposed substitution shall be final.

1.03 CONTAINMENT/DISPOSAL REQUIREMENTS

When required by Federal, State or local regulation, the entire **water storage tank** and structure shall be enclosed and surface preparation debris contained. Refer to SSPC-GUIDE 6 I (CON), "Guide for Containing Debris Generated During Paint Removal Operations". Also refer to SSPC-GUIDE 7 I (DIS), "Guide for Disposal of Lead-Contaminated Surface Preparation Debris". NOTE: All surface preparation debris must be disposed

of in accordance with applicable Federal, State and local regulations. When containment structures/enclosures are used, they shall not exceed the structural capacity of the **water storage tank** nor place excessive stress on any of the **water storage tank** components. Such containment apparatus shall be designed for rapid lowering in the event of an emergency or wind storm. The enclosure shall be lowered at the end of each day's work.

The **Owner** acknowledges that they are the Generator of and are responsible for the proper containment and disposal of all waste resulting from the surface preparation of the tank. As part of this Contract, the Contractor shall arrange and pay for all containment, tests, permits, transportation and disposal of all waste resulting from the surface preparation of the **water storage tank** in strict accordance with **Illinois** EPA regulations. Copies of all documentation required by **Illinois** EPA regulations shall be submitted to the **Owner** for verification prior to the submission of the Contractor's request for Final Payment, including the properly executed Waste Manifest.

The Contractor shall cut and grind flush all exterior containment structure lugs and prepare and paint areas as specified in the exterior painting Section of these Specifications.

Upon removal of the exterior lugs, the Contractor shall also repair any damaged interior coating by methods described in the interior painting Section of these Specifications. Abrasive blasting to bare metal (SSPC-SP10) shall be required in the damaged areas.

1.04 PROTECTION OF PUBLIC AND PRIVATE PROPERTY

During surface preparation and/or painting the Contractor shall be fully responsible for all public and private property such as, but not limited to, vehicles, buildings or other such property, including any nearby water ways, that damage occurs to, or may occur to, as a direct result of the surface preparation and/or painting. The Contractor shall advise nearby businesses of the Work being performed in an effort to relocate any vehicles that could be damaged by the Contractors operations. THE USE OF SILICA SAND BASED ABRASIVE SHALL NOT BE ALLOWED FOR EXTERIOR SURFACE PREPARATION ON THIS PROJECT. The Contractor shall comply with all OSHA and any other Federal or State safety standards.

1.05 PROPOSED SCHEDULE

The Contractor shall submit a proposed schedule of construction with his/her proposal with a specified completion date.

The Contractor's proposed schedule shall include a starting date for painting the tank, completion date of Work on the tank and the length of time necessary to shut down operation of the tank. The proposed schedule shall also show the number of days to perform interior painting work and the number of days to perform exterior painting work.

The Contractor's proposed schedule shall be used for bid comparison and shall be subject to the revisions or modifications and approval of the **Owner** prior to award of the Contract. Start date shall be as soon as possible (weather permitting) after contract award.

1.06 WATER TOWER DRAINING

The 2,000,000 gallon legged high tank will be completely drained by the **Owner** prior to beginning the Work of this Contract. The Contractor shall notify the **Owner** at least ten (10) working days prior to initiating any of the specified Work, to allow the **Owner** sufficient time to drain the **water storage tank.**

1.07 DISINFECTION AND FILLING OF THE WATER TOWER

Adequate ventilation that will effectively remove solvent vapors shall be provided for proper drying of paint on interior surfaces when interior surfaces of the **water storage tank** require painting. Following final coat application, the **water storage tank** shall not be disinfected or filled until the coating system is fully cured. Refer to applicable product data sheet(s) for dry time/temperature requirements. Disinfection shall be done in accordance with the current American Water Works Association standard, AWWA C652, or as instructed by the **Owner.** The disinfection process shall be repeated, as required, until water samples taken from the **water storage tank**, submitted to an approved **Illinois** EPA laboratory, show a satisfactory analysis. As a minimum, two water samples on two consecutive days shall be taken. The cost of labor, materials and samples for disinfection shall be considered incidental to the cost of this Project.

1.08 AMERICAN WATER WORKS ASSOCIATION

All Work shall be implemented in accordance with the American Water Works Association's Standard D102-11.

1.09 NSF CERTIFICATION

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

1.10 WORK CREW SUPERVISION

The Contractor shall provide qualified supervision of the paint crew at all times while crews are on site and performing the Work of this Contract. The Contractor's supervisor shall be capable of conversing fluently in the English language and shall be authorized by the Contractor to accept and act on requests made by the **Owner's Representative.**

PART 2- PRODUCT

(As specified in Related Work Sections of these Specifications.)

PART 3- EXECUTION

3.01 MONITORING CONSTRUCTION

A. The Contractor shall submit a monitoring plan for review by the **Owner**, which shall outline the schedule, methods, locations, etc., and shall keep a diary of the Contractor's activities. Diary entries shall include, but not be limited to:

1. Date and time.
2. Representatives name(s) visiting the work site.
3. Weather conditions, including (but not limited to): wind speed, wind direction, humidity, dew point, air temperature, and surface temperature. Inclement weather conditions (such as rain or fog) shall also be documented. **Note: Contractor shall provide and maintain on site equipment to monitor weather conditions as required.**
4. Contractor's activities.
5. Work completed since previous visit.
6. Description of observations, deficiencies and conversations with the **Owner's Representative.**

7. Upcoming work.
8. Other items including lost work days and reason for same.
9. Tests conducted (including dry film thickness testing) and the results.

B. Copies of the diary shall be sent to the **Owner's Representative** at the end of each week.

3.02 GENERAL INSPECTIONS

While performing the Work of this Contract, the Contractor shall visually inspect all areas of the **water storage tank** to be painted for deficiencies such as, but not limited to, loose electrical conduits and wiring, faulty or broken lighting, unrestrained piping, unfastened bolts, wobbly ladder assemblies, etc. The Contractor shall report any such deficiencies discovered without delay to the **Owner**.

3.03 RELATED WORK

Additional execution requirements shall be in accordance with the applicable Related Work Sections of these Specifications.

PART 4- MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for the Work specified under this Section. All costs for such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Bid Schedule.

END OF SECTION

SUMMARY OF WORK

SECTION 01 11 00

PART 1- GENERAL

1.01 DESCRIPTION OF WORK

A. General. The Work to be performed consists of furnishing labor, materials, equipment, and supervision as required by the Contract Documents for the **Rehabilitation of the 2,000,000 Gallon Legged High Tank** as required and as herein specified, including any and all accessories associated with the installation. The Contractor shall submit a staged construction schedule to Owner. The Work to be performed is generally summarized to include but not be limited to the following.

B. Work is briefly summarized as follows:

1. Upgrade the general tank security condition to include installation of an electronic monitoring device on the new roof hatch.

2. Install containment curtain with bonnet to encapsulate tower.

3. Abrasive-blast the entire exterior to a SSPC-SP6 Commercial Blast. All weld seams shall be abrasive-blasted to SSPC-SP10 near White Blast. Prime the exterior with two coats zinc-rich primer and apply a urethane intermediate coat. Follow the intermediate coat with one finish color coat. Logos shall be replaced in kind.

4. Abrasive blast the entire interior wet coatings system by full abrasive-blast of all areas of the interior wet to SSPC-SP10 Near White. Prime surface-prepared areas with epoxy and apply two additional coats of epoxy, one stripe coat and one finish coat. Sealing along the roof beams and ceiling with caulk.

5. Install a fail-safe stainless roof vent with HDPE screen in place of the existing mushroom vent to protect against pressure/vacuum damage. This includes installing a flange on the existing vent pipe and providing a gasket between the flanges.

6. Installation of new painter’s rail, access rail, safety grabs, rigging couplings.

7. Interior wet roof repairs, pit weld repairs and weld seam repairs.

8. Remove and replace roof/sidewall ladder with vertical sidewall ladder, walkway platform, and new 25' diameter roof handrail.

9. Remove and install new fall prevention device and vandal guard on all exterior ladders.

10. Remove the top 3" of rail fall prevention device at top of leg ladder.

11. Remove existing interior wet ladder and install new wet interior ladder equipped with fall prevention device.

12. Remove and replace existing wet interior roof access hatch with new 30" hatch with alarm contact and new gasket.

13. Install new lightweight aluminum grating lockable hatch at balcony opening at ladder transition.

14. Tighten loose sway rods.

15. Repair areas of missing or damaged grout between steel baseplate and concrete foundation.

16. Recoat existing concrete foundation and leg footings, expose 4" of footings, and regrade.

17. Install a new weighted screened flap valve on overflow pipe.

18. Remove and replace existing fence which is to be removed to install containment curtain with new chain link fence with slats.

19. Install new SCADA cabinet and electrical conduit.

20. Install a new cathodic protection system as a corrosion prevention measure and connect current draw output reading to SCADA system.

21. Install a new Gridbee GS-12 mixer to thoroughly mix the entire water tank resulting in steady disinfectant residuals, even temperature profiles and uniform water age and connect control panel power on output signal to SCADA system.

22. Install new conduits to the roof of high tank for hatch alarm, cathodic protection, mixer and SCADA outputs. Install conduits to proposed SCADA RTU cabinet from existing valve vault.

23. Provide new electric service conduit and wire from existing meter pedestal to new NEMA 3R, 120/240V, 1Φ 3 wire, 100A, 18 position lighting panelboard.

24. After construction is complete, restore site to preconstruction condition. This Work shall be incidental to the contract.

C. Debris Removal. Included as part of the above Work shall be the removal of Cathodic Protection System and any and all debris resulting from the Work. Such debris shall be legally and properly disposed off site. All fees for such disposal shall be the responsibility of the Contractor.

D. Painting. Paint to match existing. Paint shall be that of nationally recognized manufacturer and suitable for the application. Two coats are required. Owner to select final color of paint.

1.02 LOCATION OF THE WORK

The project work site is located at **4318 Downers Drive, Downers Grove, IL.**

1.03 PHYSICAL CONDITIONS

A. General

The sites on which the Work is to be performed has limited access and boundary constraints, all of which the Contractor accepts full responsibility. Any construction easement(s) or staging area(s) required by the Contractor (other than those that may be shown on the Drawings) shall be the responsibility of the Contractor. Any specialized machinery and/or equipment as required due to the limited access/boundary constraints/type of work to be performed shall be the responsibility of the Contractor.

B. Staging Areas

Prior to staging any equipment, materials, and/or appurtenances as may be required to perform the Work, the Contractor shall obtain the permission of the Owner. Any restoration of a damaged area attributed to Contractor staging shall be the Contractor's responsibility. Any special clean up required to restore disturbed areas shall

be considered incidental to the Contract.

1.04 ACCESS TO JOB SITE

Access to the project site is possible via **existing roadways.**

The Contractor shall comply with the conditions and regulations of controlling agencies of public roads, access, rights-of-way restrictions, and other limitations affecting transportation and ingress and egress at the job site.

1.05 PROJECT BOUNDARIES AND CONTRACTORS USE OF PREMISES

The area of the project is indicated by the Drawings. Subject to restrictions placed upon the Contractor by the Owner, the Contractor may locate his/her facilities within the area as will best suit his/her operations; except that at no time shall the Contractor locate his/her facilities, equipment, or materials in a manner to obstruct access or in any way interfere with the normal operation of the surrounding community and/or the existing facilities.

1.06 ADDRESSING CORRESPONDENCE

All mail pertinent to the Work shall be sent by special delivery unless delivery by regular mail can be accomplished within three days. Receipt of such mail will be promptly acknowledged when acknowledgment is requested. If acknowledgment is requested and is not received in reasonable time, duplicate copies shall be forwarded.

On all correspondence the name and official position of the signer shall be typewritten or printed immediately below the handwritten signature.

All correspondence relating to contractual matters, including prices, delivery and changes in Scope of Work, shall be directed to the Owner with two copies to the Engineer.

The address of the **Owner** is:

Village of Downers Grove
801 Burlington Avenue
Downers Grove, IL 60515

Attention: **David Fieldman**
Village Manager

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will be made for the Work as indicated in the Bidding Schedule and/or as indicated herein.

4.02 PAYMENT

Payment for the Work will be made at the prices for each of the listed categories in the Bidding Schedule.

These prices shall be full compensation for furnishing all materials, equipment and labor, and for performing the Work including installation and testing and providing the required bond(s) and insurance(s) and all incidentals necessary to complete the Work, whether specified or not.

Payment will not be made for any other Items except as listed. All other costs associated with such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain.

END OF SECTION

RESPONSIBILITIES OF CONTRACTOR

SECTION 01 12 00

PART 1- GENERAL

1.01 SCOPE

This Section establishes certain minimum requirements of Contractor's responsibilities for which the Contractor shall be fully liable for during the life of the Project and for the Work of this Contract. Specific details related to the Contractor's specific responsibilities shall be in accordance with applicable requirements of other Sections of these Specifications and/or as shown on the Drawings.

1.02 RESPONSIBILITY OF CONTRACTOR

A. General

The Contractor shall perform all Work of this Contract as shown on the Drawings and as specified in a neat and orderly manner, consistent with the Work Schedule. The Contractor shall be responsible for coordinating all phases of his/her Work with the work of others so as not to interfere with that work being performed by others. The Contractor shall be responsible for notification(s) prior to commencement of Work and/or during construction activities. The Contractor shall be responsible for providing at the Project Site a qualified construction supervisor or Superintendent.

B. Work Schedule

Within ten (10) days after receiving the Notice to Proceed, the Contractor shall submit all items, and information required by Sections 01 31 00 and 01 33 00 including but not limited to a Work Schedule showing the progress to be made on the major portions of the Work; such Work Schedule to be designated to complete the entire Work within the Contract Time stipulated for completion. The Work Schedule shall be subject to the review of the Owner's Representative. If, at any time during the progress of Work, the Owner's Representative is of the opinion that the Contractor is not adhering to such Schedule, the Owner's Representative may request the Contractor to increase his/her force to comply with the Work Schedule. Failure of the Owner's Representative to request this shall not release the Contractor from his/her obligation to complete the Work of this Contract within the specified Contract Time.

C. Supervision and Direction

The Contractor shall supervise and direct the Work. The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The Contractor shall employ and maintain on the Project a qualified construction supervisor or superintendent who shall have been designated in writing by the Contractor as the Contractor's representative at the site. The supervisor or superintendent shall have full authority to act on behalf of the Contractor. All communications given to the supervisor or superintendent shall be as binding as if given to the Contractor. The supervisor or superintendent shall be present on the site at all times as required to perform adequate supervision and coordination of the Work.

D. Safety

The Contractor shall be solely responsible for the safety of persons, property or the Work at or adjacent to the construction site. All decisions relating to safe construction operations, the use and proper application of equipment and materials, and the protection of the general public from construction operations shall be the responsibility of the Contractor. The Contractor shall identify a qualified supervisor or superintendent in writing who shall have the authority to act on behalf of the Contractor relative to Project safety issues. The supervisor or superintendent shall be present on the site at all times as required to maintain safe Project operations.

In the event that the designated construction or safety supervisor or superintendent is absent from the site, the Contractor shall designate a substitute supervisor or superintendent to act in responsible charge of the Work. Any changes in the designated construction supervisor or safety supervisor or superintendent shall be documented by written statement to the Owner and the Owner's Representative at the time of the change.

E. Repair of Damaged Items

The Contractor shall be entirely responsible for damages to water lines, electric conduits and lines, existing structures, drains, sidewalks, curbs, streets, roads, fences, trees, culverts, and other structures of any kind and shall be liable for damages to public and private property. Repair of same shall be Contractor's responsibility and at Contractor's own expense, except

where such items are to be removed and replaced as shown on the Drawings, or as specified by the Contract Documents, and/or as otherwise directed by the Owner's Representative during the course of Work, in which case said replacement unit(s) will be paid for at the Contract unit price, as bid.

F. Compliance

It shall be the responsibility of the Contractor to familiarize himself/herself and comply with all applicable laws, ordinances, rules, regulations and lawful orders of all public authorities bearing on the safety of persons or property or their protection from damage, injury or loss. Further, the Contractor shall comply with all requirements of these Contract Documents, including but not limited to referenced specifications and/or standards as well as the contents of the Occupational Safety and Health Act (OSHA), all codes and ordinances adopted by and in effect by Federal, State, County, Township, and **Village** Governmental Bodies, and any other governmental agencies at any level having authoritative jurisdiction over the area of improvement and the type of Work to be performed.

G. Existing Utilities

Existing utilities are shown on the Drawing according to information obtained from utility companies and surveys. Neither the Owner nor the Engineer will guarantee the accuracy or completeness of this information. The Contractor shall be responsible to make his/her own investigation to determine the existence, nature, and location of all utility lines and appurtenances within the limits of the improvement.

The Contractor shall take due care in all phases of construction to protect any utility which may be affected by the Work of this Contract. Any damages to existing utilities shall be repaired immediately by the Contractor and at the Contractor's own expense.

The Contractor shall be required to cooperate with all utility companies involved in connection with the removal, temporary relocation, reconstruction, or abandonment by these agencies of any and all services or facilities owned or operated by them within the limits of this improvement.

Before performing any Work which may potentially damage, disturb or leave unsupported or unprotected any utility lines or appurtenances encountered, the Contractor shall notify the respective utility or Owner thereof, who will

make the necessary arrangements for relocating, adjusting, or otherwise maintaining or abandoning service lines that fall within the limits of the proposed construction. After such arrangements have been made, the Contractor shall proceed with the Work as directed by the utility involved and the Owner's Representative. When applicable, all utility lines and appurtenances which are to be abandoned shall be removed and disposed of by the Contractor, without damaging existing utilities, and with the approval of the respective utility agency involved.

No extra compensation will be allowed the Contractor for any expense incurred by complying with these requirements, or because of delays, inconvenience, or interruptions in his/her Work resulting from the failure of any utility company to remove, relocate, reconstruct or abandon their services. The responsibility for the prompt and timely removal, relocation, reconstruction or abandonment of the Contractor's own Work with that of the involved utility agencies and/or the Contractor's responsibility to coordinate with any involved utility agency so as to perform the Work of this Contract without delay because of necessary changes in the existing utilities, public or private, shall rest upon the Contractor.

H. Assignment of Contract

The Contractor shall be fully responsible for assignments of the Contract, when assignments are made by the Contractor. Furthermore, no part of the Work herein specified shall be assigned (by the Contractor) without the written consent of the Owner, and in no case shall such consent relieve the Contractor or his/her surety from the obligations herein entered into by the same or change the terms of the Contract Agreement.

I. Discrepancies

The Contractor shall not take advantage of any apparent discrepancies on or between the Drawings and/or Specifications. In the event the Contractor discovers any apparent discrepancy, the Contractor shall be responsible for immediately notifying the Owner's Representative in writing for an interpretation and/or decision; and such decision by the Owner's Representative shall be final. Should the Contractor, having knowledge of any such apparent discrepancy, proceed with the Work, such Work and/or related expenses shall be at the Contractor's own risk and cost.

PART 2- PRODUCTS

Not applicable to this Section.

PART 3- EXECUTION

Not applicable to this Section.

PART 4- MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for the Work specified in this Section. All costs of such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Schedule of Prices.

END OF SECTION

PROJECT MEETINGS

SECTION 01 31 00

PART 1- GENERAL

1.01 PRECONSTRUCTION CONFERENCE

A. General

Within 10 days after issuance of the Notice to Proceed, a preconstruction conference will be held at the location, date, and time to be designated by the Owner.

B. Agenda

The matters to be discussed will include:

1. Construction schedule and progress reports to be submitted by the Contractor as described in Section 01 35 16. Set final completion date for the Work of this Contract in accordance with the Notice to Proceed and identify when restoration will be performed.

2. Details of construction sequence, including the bar chart submitted with the Bid, lead times of equipment procurement, as well as the date by which the Contractor must place his/her material or equipment order to complete the Work within the construction schedule time limitations set in Section 00 41 43 Paragraph 5.

3. Communication and general correspondence procedures between the involved parties. The Owner will designate his/her representative and/or Engineer at the time of this meeting.

4. The names and titles of all persons authorized by the Contractor to represent and execute documents for the Contractor.

5. The names, addresses, and telephone numbers of all those authorized by the Contractor to act for him/her in emergencies. Contractor to provide phone/fax/pager number of those individuals who will be available and responsible for the Work on a 24 hour per day basis, 7 days per week. (Contractor to submit certification as required by Section 00 62 00.)

6. Access and rights-of-way furnished by the Owner.

7. Forms and procedures for Contractor's Submittals as described in Section 01 33 00.

8. Construction equipment and methods proposed by the Contractor. The Contractor shall submit a list of equipment to be used in the Work. **The monitoring plan (as specified by Section 01 33 00) shall also be discussed.**

9. Administrative and general matters as needed, including working hours per Section 00 21 13.

10. Traffic control on existing access roads and parking areas for public and Contractor.

11. (Reserved.)

12. Site and construction/erection equipment layout. Location of Contractor's field office and/or staging plan.

13. Subcontractors.

14. Payment estimates and submittals for payment.

15. Progress meetings during the course of the Work.

1.02 WEEKLY CONSTRUCTION MEETINGS

Construction meetings shall be held at once every week or more frequently as needed or called by the Contractor or the Owner. All matters bearing on the progress and performance of the Work since the preceding progress meetings shall be discussed and resolved, including, without limitation, any previously unresolved matters, deficiencies in the Work or the methods being employed for the Work, and problems, difficulties, or delays which may be encountered, in order that the Work may be constructed on schedule and within cost.

PART 2- PRODUCT

Minutes of construction meetings shall be prepared by the Contractor subject to the review of the Owner or Owners Representative having participated in the meeting.

PART 3- EXECUTION

Minutes of construction meetings shall be submitted to the Owner or Owners Representative no later than 72 hours following the meeting.

PART 4- MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for the Work specified in this Section. All cost of such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Schedule of Prices.

END OF SECTION

PROJECT SCHEDULE, COORDINATION OF CONTRACTS AND LIQUIDATED DAMAGES

SECTION 01 32 00

PART 1- GENERAL

1.01 CONSTRUCTION SCHEDULE

Within 10 days after issuance of the Notice to Proceed, the Contractor shall submit for review by the Owner a construction schedule. The construction schedule shall clearly identify the construction sequencing. The schedule shall be prepared by personnel experienced in construction scheduling. Every week thereafter during the course of the Work, the Contractor shall revise the construction schedule and shall resubmit it to the Owner for review. Revised schedules shall be submitted for discussion at the weekly project meetings.

The construction schedule shall clearly show each unit of Work to be performed under this Contract, and all items in the overall sequencing of the Work, including, but not limited to, tank draining, tank prepping and painting, repair work, equipment installations, and delivery of fabricated items, painting, testing, filling, final check-outs, start-up and placing into operation.

The schedule shall be prepared and maintained on a reproducible medium sufficient in size to show required data clearly for the entire duration of the Contract, and sufficient to permit reproduction for required distribution.

The construction schedule shall be arranged with notations to show how the sequence of Work is affected by Work by other contractors, work by Owner, site restrictions, purchase of materials, seasonal weather variations, and any other items deemed appropriate.

1.02 COORDINATION OF CONTRACTS

The Contractor shall be responsible for the coordination of the Contract.

The Contractor shall cooperate with other contractors and shall not hinder, delay or prevent other contractors from performing work.

1.03 REQUIRED COMPLETION DATES

All Work of this Contract shall be completed **180 consecutive calendar days** from the date of a written notice

from the Owner to proceed **or from a date mutually agreed upon between Owner and Contractor.** The herein specified completion date is intended to include painting Work and depending upon the time of year this Contract is awarded, the Contractor shall commit to either comply with the specified completion date including painting or shall provide an alternative schedule acceptable to the Owner indicating when the painting Work will be completed. For additional details refer to Section 00 52 43, Article IV.

1.04 LIQUIDATED DAMAGES

In case of failure on the part of the Contractor to meet the Contract Completion Date, or any extensions thereof, as bid under the Bid Form (Section 00 41 43), the Contractor shall pay to the Owner as fixed, agreed, and liquidated damages the sum of **$250.00 for each calendar day** that completion is delayed. However, the total amount of liquidated damages to be assessed by the Owner in case of such delays, shall not exceed 10 percent of the original contract price.

In the event that it becomes necessary to terminate the Contractor's right to proceed with the Work under the Contract, such termination shall not relieve the Contractor of any responsibility for liquidated damages as set forth herein. If the Owner so terminates the Contractor's right to proceed, any resulting damage will include, subject to the limitation stated above, such liquidated damages as provided for herein until such reasonable time as may be required for completion of the Work by the Owner.

PART 2- PRODUCTS

Not Applicable to this Section.

PART 3- EXECUTION

Not Applicable to this Section.

PART 4- MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for the Work specified in this Section. All costs of such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Schedule of Prices.

END OF SECTION

EQUIPMENT & MATERIAL SUBMITTALS

SECTION 01 33 00

PART 1- GENERAL

1.01 SCOPE

A. This Section establishes minimum requirements and procedures for Equipment Submittals made by the Contractor for materials and equipment provided for under the Work of this Contract. Specific details for additional drawings, data and information to be submitted shall be in accordance with the applicable requirements of other Sections of these Specifications.

B. Acceptable Manufacturers and Equipment Suppliers for various items of equipment are specified in respective Sections of these Contract Documents. For convenience of designation in the Contract Documents, certain equipment, articles, materials, and processes are designated by manufacturer trade name or catalog name and number. Such designation shall be deemed to be followed by the words "or equal" whether such words are shown or not. The Contractor may offer material or processes which are equal to that so indicated or specified at the time of Bid. The burden of proof as to comparative quality and suitability of alternatives shall be upon the Contractor. Specified items are preferred.

1.02 SUBMITTAL SCHEDULE

The Contractor shall, within 10 days after receiving the Notice to proceed, prepare and submit for review a detailed list of all the submittals which he/she proposes to make to meet the requirements stated herein and those cited in other Sections of the Contract Documents including the dates on which he/she proposes to make such submittals. The list shall include Working Drawings, Field Detail Drawings, Project Record Documents, Quality Control Procedures, and all other items for which a submittal is required. The list shall include identifying references for each item to relate it to the specific item of the Contract Documents.

With each revision or certification of the Construction Schedule, the Contractor shall either revise this schedule of submittals and submit it for review or certify that the previously furnished schedule is still in effect.

After the Submittal Schedule is reviewed by the Owner's Representative, it shall become the basis for the submittal of all items by the Contractor.

1.03 SUBMITTAL REQUIREMENTS

A. General

The Contractor shall furnish for review his/her Submittals as outlined herein and in the Specifications. Submittals shall confirm compliance with the requirements of the Contract Documents. Submittals of equipment drawings shall be made prior to the fabrication of the equipment. The sequence of submission shall be such that information is available for review of each Submittal when it is received. All Submittals furnished formally shall bear an approval stamp or a certification. The stamp or certification shall be signed by an authorized representative of the Contractor. The Contractor's stamp or certification on any Submittals shall constitute a representation to the Owner that the Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, or that he/she assumes full responsibility for doing so, and that he/she has reviewed and coordinated each Submittal with the requirements of the Contract Documents. Before submitting any drawings for review, the Contractor shall obtain approval of the list of drawings he/she proposes to submit, showing sequence of submittal and submittal dates. All drawings shall be submitted in accordance with the Submittal Schedule as previously specified herein.

B. All submittals shall be addressed to the Owner or as otherwise directed by the Owner.

C. Outline Drawings

The Contractor shall submit outline drawings of the equipment to be furnished together with estimated weights, operating forces, external forces, anchoring details, and sufficient overall dimensions, to facilitate preparation of final designs of the structures into which the equipment is to be incorporated.

D. Wiring Diagrams

The Contractor shall submit complete schematic and full-line wiring diagrams for all equipment furnished by him/her. The Contractor shall furnish drawings of switch developments for all instrument and control switches and internal connection diagrams for all instruments, relays, regulators, and other devices. One print of each wiring diagram will be returned on which will be marked the wire notations and cable numbers for outgoing circuits where this information is not otherwise available to the

Contractor. The Contractor shall add this information to his/her drawings. Adequate space shall be allowed on the wiring diagrams to accomplish this.

E. Detail Drawings and Erection Drawing

Before proceeding with fabrication or manufacture of the material and equipment designed and furnished by him/her, the Contractor shall submit the designs, design computations when requested, apparatus ratings, detailed specifications, general assembly drawings, sufficient subassembly drawings, details, and control and wiring diagrams to demonstrate fully that all parts will conform to the provisions and intent of the Contract Documents and to the requirements of their installations, operations, and maintenance. These drawings shall substantially conform to the Bid and Contract Drawings and shall show all necessary dimensions; all field joints and subassemblies in which the Contractor proposes to ship the equipment; locations and sizes of auxiliary connections for oil, grease, water and air; and the terminal boxes and wire sizes for electrical circuits. Before proceeding with fabrication or purchase, the Contractor shall submit shop drawings and/or catalog cuts as appropriate of items designed but not detailed on the Contract Drawings including, but not limited to structural steel and metal frames, covers, and gratings.

F. Field Detail Drawings

Layout drawings for any and all embedded components of the equipment such as but not limited to, piping, conduit, anchor bolts/plates, thimbles, etc. shall be submitted. These drawings shall be based on the Contract Drawings and shall contain sufficient detail for construction in the field.

G. Review of Drawings

1. The Contractor shall make all required submittals in .pdf format. All drawings submitted shall, insofar as practicable, be of one standard size, measuring approximately 24 x 36 inches. The Contractor's drawings shall have a blank area of 4 x 4 inches adjacent to the drawing title block for the review stamp of the Owner's Representative. The Contractor shall verify by inspection of sample reproductions that good legible reproductions can be obtained from the reproducible before submittal.

2. Within two weeks of receipt of shop drawings or manufacturer's data, the Owner's Representative will

return one copy of each drawing and/or data sheet marked to indicate the result of the Owner's Representative's review, as follows:

a. "REVIEWED" - Revision of drawing or data will not be required.

b. "REVIEWED WITH CORRECTIONS" - Contractor shall revise the drawings or data and shall submit four print copies and one reproducible copy for Owner's Representative's records.

c. "REVISE AND RESUBMIT" - Contractor shall revise the drawing or data and shall resubmit the revised drawing or data to the Owner's Representative for review.

d. "REJECTED" - Drawings are non-conforming and do not meet intent of Specifications.

3. Copies marked "REVIEWED" or "REVIEWED WITH CORRECTIONS" authorize the Contractor to proceed with construction or fabrication covered by those drawings or data sheets with corrections, if any, incorporated.

4. Review will not relieve the Contractor of responsibility for conformity to the Contract Documents and correct detail and fit of parts when installed.

5. If minor revisions are made after a drawing has been returned to the Contractor marked "REVIEWED", the Contractor shall furnish without delay one print copy and one reproducible copy subsequent to each revision. No major revision affecting the design shall be made after a drawing has been marked "REVIEWED" without resubmitting the drawing.

6. When prints of drawings have been marked "REVIEWED WITH CORRECTIONS" or "REVISE AND RESUBMIT" the Contractor shall make the necessary corrections and submit four print copies and one paper-type reproducible. Every revision shall be shown by number, date, and subject in a revision block, and in addition, each revised drawing shall have its latest revision clearly indicated. Submitted drawings which do not illustrate these indications will be considered non-conforming.

7. The applicable parts of the requirements of the above paragraphs with reference to the drawings shall apply

equally to design data, catalog cuts, illustrations, printed specifications, draft reports or any other submittals furnished for review.

8. The Contractor shall make any changes in the designs which are necessary to make the equipment conform to the provisions and intent of the Contract Documents, without additional cost to the Owner.

9. Should an error be found in a Contractor's drawing during the erection of structures or installation of equipment, the correction, including any field changes found necessary, shall be noted on the drawing, and it shall be resubmitted for review, and recorded as outlined above.

H. Record Drawings

Prior to completion of the Work under the Contract Documents, the Contractor shall furnish one complete set of full-size permanent reproducible copies of approved quality and type and 3 full size sets of prints of all Contractor's drawings and equipment as finally built, including any field changes.

I. Operating and Maintenance Instructions

1. Two hard copy sets and one .pdf version of detailed operating and maintenance instruction manuals which shall include reduced-size copies of applicable drawings, applicable parts lists and catalogs covering all equipment furnished and which may be needed or useful in operation, maintenance, repairs, dismantling or assembling, and for repair and identification of parts for ordering replacements, shall be furnished as specified.

2. Furnish operation and maintenance manuals for the various types of equipment and systems, as required by the Contract Documents. Unless otherwise indicated, a separate manual shall be furnished for each piece of equipment and/or system. The manual shall include complete information necessary to operate, maintain and repair the equipment and/or system and shall include the following specific requirements:

   a. Table of contents and index.

   b. Brief description of the equipment/system and principal components.

c. Starting and stopping procedures both normal and emergency.

d. Installation, maintenance and overhaul instructions which shall include detailed assembly drawings with parts list and numbers, and recommended spare parts list with recommended quantity, manufacturer's price, suppliers address and telephone number.

e. Recommended schedule for servicing including technical data sheets that indicate weights and types of oil, grease or other lubricants recommended for use and their application procedures.

f. One copy of each component wiring diagram and the system wiring diagram showing wire size and identification.

g. One approved copy of each submittal with any changes made during construction properly noted including test certificates, characteristic curves, factory and field test results.

h. For electrical systems include dimensioned installation drawings, single line diagrams, control diagrams, wiring and connection diagrams, list of material for contactors, relays and controls, outline drawings showing relays and controls, outline drawings showing relays, meters, controls and indication equipment mounted on the equipment or inside cubicles, control and protective schematics and recommended relay settings.

3. Submittal Requirements: One preliminary copy of the manual in .pdf format shall be submitted no later than the date of shipment of equipment, and installation shall not begin until they are accepted by the Owner's Representative. One approved hard copy and one in .pdf format of complete manual shall be delivered to the Owner's Representative prior to Owner's Representative inspections and tests.

J. Language

All drawings, design data, reports, instructions, catalogs, illustrations, and printed specifications shall be submitted in English.

K. System of Units of Measurement

All units of measurement used shall be in the U.S. Customary System.

PART 2- PRODUCTS

(Refer to Paragraph 1.03, Submittal Requirements, of this Section.)

PART 3- EXECUTION

(Refer to Paragraph 1.02, Submittal Schedule, of this Section.)

PART 4- MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for the Work specified in this Section. All costs of such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Schedule of Prices.

END OF SECTION

MATERIAL AND EQUIPMENT

SECTION 01 60 00

PART 1- GENERAL

1.01 SCOPE

A. Description

This Section covers minimum general requirements related to and including, but not limited to the following:

1. Products.
2. Procurement.
3. Transportation and handling.
4. Storage and protection.
5. Product options.
6. Substitutions.

B. Related Work

1. All Sections of the Contract Documents including Bidding Documents and Drawings.

2. Refer to related Specification Sections for details.

1.02 PRODUCTS

A. Products: Means new material, machinery, components, equipment, fixtures and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.

1. As soon as the Contractor receives formal Notice to Proceed, the Contractor shall submit catalog cuts for all paint materials, electrical equipment and long lead time items. Once the catalog cuts are approved, the Contractor shall procure and store these materials so they are readily available for use at the commencement of the physical work of the project. The Contractor will be allowed to submit the material invoices for payment as soon as the materials are procured.

B. Do not use materials and equipment removed from existing facilities or premises, except as specifically permitted by the Contract Documents.

C. Provide interchangeable components of the same manufacturer, for similar components.

1.03 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement or damage.

1.04 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.

B. For exterior storage of fabricated products, place on sloped supports, above ground.

C. Provide off-site storage and protection when site does not permit on-site storage or protection.

D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.

E. Store loose granular materials on solid flat surfaces in a well-drained area. Do not allow mixing with foreign matter.

F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.05 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications.

1.06 SUBSTITUTIONS

A. Owner will consider requests for Substitutions only at time of Bid. Where Specifications indicate "No Substitutions Allowed", the Contractor shall provide the designated

manufacturers equipment without exception.

B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.

C. Document request with complete data substantiating compliance of proposed Substitution with Contract Documents.

D. A request constitutes a representation that the Contractor:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.

2. Will provide the same warranty for the Substitution as for the specified product.

3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.

4. Waives claims for additional costs or time extension which may subsequently become apparent.

5. Will reimburse Owner for review or redesign services associated with re-approval by authorities.

E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

F. Substitution Submittal Procedure:

1. Submit three copies of request for Substitution for consideration 10 days prior to bid date. Limit each request to one proposed Substitution.

2. Submit shop drawings, product data and certified test results attesting to the proposed product equivalence.

3. The Owner will notify Contractor, in writing, of decision to accept or reject request.

END OF SECTION

CUTTING AND PATCHING

SECTION 01 73 29

PART 1- GENERAL

1.01 SCOPE

This Section covers cutting and patching where required to perform the Work of these Contract Documents.

1.02 QUALITY ASSURANCE

Cutting and patching shall be performed in accordance with recognized and applicable standards of construction using materials equal to or exceeding those of the parent structure.

1.03 SUBMITTALS

A. Before doing any cutting as required to complete the Work, submit a written notice to Owners Representative, and the Owner of the specific item involved requesting consent, including:

Description of affected work

Necessity for cutting

Scope of cutting and patching

Trades and products to be used and extent of refinishing

B. Prior to doing cutting and patching identified in writing by Owner's Representative as additional work, submit a cost estimate.

PART 2- PRODUCT

Materials used for replacement of work removed shall be of the same type, style, size, thickness, etc. of like new materials for the type of work to be performed.

PART 3- EXECUTION

3.01 GENERAL

A. Perform all cutting and patching required to complete the Work.

B. Cutting and patching shall include the cutting, fitting, or patching necessary to:

1. Accomplish/perform modifications to existing structures as shown on the Drawings.

2. Remove and replace defective or deteriorated work.

3. Remove and replace work not conforming to the Contract Documents.

C. All Work shall be performed by skilled workers licensed to perform the Work of the trade involved and/or as may be required.

3.02 EXECUTION

A. Protect adjacent portions of the Work and existing facilities from damage due to cutting and patching operations.

B. Restore work which has been cut or removed. Install new products to provide completed Work meeting all requirements of the Contract Documents.

C. Refinish entire surfaces as necessary to provide an even and uniform finish.

PART 4- MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for the Work specified in this Section. All costs of such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Schedule of Prices.

END OF SECTION

MAINTENANCE OF WORK SITE & DAILY CLEAN-UP

SECTION 01 74 00

PART 1- GENERAL

This Section covers general maintenance of the Work Site and daily clean-up which the Contractor shall be responsible for the duration of the Project, and includes, but is not limited to storage, stockpiling and/or protection of materials and Work.

PART 2- PRODUCTS

(Not applicable to this Section.)

PART 3- EXECUTION

3.00 GENERAL

Contractor shall comply with all applicable requirements specified in Section 00 72 23.

3.01 MAINTENANCE OF WORK SITE

The Contractor shall keep the site of the Work and adjacent premises as free from material, debris and rubbish as is practicable, and shall remove same from any portion of the site, if, in the opinion of the Owner's Representative, such material, debris, or rubbish constitutes a nuisance or is objectionable in any way to the public. The Contractor shall remove all machinery, materials, barricades, staging, false-work, debris and rubbish connected with, or caused by said Work, immediately upon the completion of the same and shall clean all structures and Work constructed under this Contract to the satisfaction of the Owner's Representative and leave the premises in an approved condition insofar as affected by the Work under this Contract.

3.02 DAILY CLEAN-UP

Each day before the Contractor shuts down Work operations for the day, the Contractor shall clean all areas in/around/adjacent to the Work site of all dirt, mud, debris, or other items deposited thereupon resulting from the Work.

3.03 RESPONSIBILITY FOR PROTECTION OF MATERIALS

The Contractor shall be responsible for the safe storage of all equipment and materials furnished by, or to, or accepted by the Contractor, and intended for the Work until such equipment or material has been incorporated into the

completed Project. Such equipment and materials as well as their related appurtenances and accessories shall, unless otherwise directed by the Owner, be unloaded at the "staging site" point of delivery, hauled to, and distributed as necessary to the specific Work site of the Project, by the Contractor. They shall at all times be handled with care to avoid damage.

All construction shall be protected by the Contractor to prevent accidental or pre-meditated damage. All cost associated with the supervision, the repair, or the replacement of damaged areas shall be considered incidental to the Contract.

3.04 STOCKPILING MATERIAL

Materials shall be so stockpiled as not to endanger the Work and so that free access may be had at any time to all parts of the Work, and shall be kept neatly piled so as not to inconvenience public travel, private property owners, or adjoining tenants.

At no time shall material be stored in the street.

END OF SECTION

FINAL INSPECTION AND ACCEPTANCE

SECTION 01 77 00

PART 1- GENERAL

1.01 Upon completion of all Work specified in the Contract Documents, the Contractor shall perform final field inspections and tests to verify that the overall performance as specified have been satisfied. Acceptance tests conducted on the completed Work will be witnessed and subject to the approval of the **Owner**.

1.02 When all Work has been completed a thorough inspection will be made by the **Owner** in the company of the Contractor, and if the Work is found to comply with the Specifications, the Work will be formally accepted and the Contractor so notified in writing as to the Final Acceptance of the Work by the **Owner**.

1.03 Should any Work be found to be inadequate, faulty, or otherwise not in accordance with these Specifications, it shall be the Contractor's responsibility to correct such Work at the Contractor's own expense, prior to Final Acceptance.

1.04 The period of material and workmanship guarantees shall commence immediately after Final Acceptance. Upon being notified of the Final Acceptance, the Contractor shall supply, to the **Owner**, a certificate of guarantee which shall guarantee all materials and workmanship for a period of not less than one year or as otherwise specified in subsequent Sections of these Specifications.

PART 2- PRODUCT CERTIFICATION AND WASTE MANIFEST

2.01 The Contractor shall submit to the **Owner** immediately upon completion of all painting, a certification from the paint manufacturer indicating that the quantity of each coating purchased was sufficient to properly coat all surfaces to be painted in accordance with the Specifications and manufacturer's recommendations. This product certification must be submitted and approved by the **Owner** prior to Final Acceptance and Final Payment.

2.02 Provide Waste Manifest, certifying proper disposal of the collected waste in accordance with all applicable laws, filled out by the Contractor, shipper and disposal site. This Waste Manifest must be submitted and approved by the **Owner** prior to Final Acceptance and Final Payment.

PART 3- EXECUTION

3.01 DRY FILM THICKNESS TESTING

Within **15 days** of completion, the Contractor shall perform dry film thickness testing in the presence of the **Owner's Representative**. Dry film thickness shall be measured in accordance with current SSPC PA2, "Dry Paint Thickness with Magnetic Gauges". Contractor shall submit the results of dry film thickness testing to the **Owner**. Test results must be submitted and approved by the **Owner** prior to Final Acceptance and Final Payment.

PART 4- MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for the Work specified under this Section. All costs for such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Schedule of Prices.

END OF SECTION

MISCELLANEOUS METAL REPAIRS

SECTION 05 50 00

PART 1- GENERAL

1.01 SCOPE

This Section covers miscellaneous metal repairs which may be ordered by the Owner during construction, but only after an approved Change Order has been processed. Supports, anchors and other incidentals, where required, shall be included under this Section of Work.

1.02 QUALITY ASSURANCE

A. Acceptable Materials

As specified herein.

B. Applicable Standards

All Work shall conform to the applicable provisions of the codes, standards and Specifications as specified herein and as follows:

Name	Abbreviation
Welded Steel Tank for Water Storage	AWWA D-100
American Society for Testing & Materials	ASTM
Welding	ASME Sect. IX

C. Welding Qualifications

All welders shall be qualified by ASME Section IX requirements for all positions.

D. Field Verification

The Contractor shall verify field conditions and measurements so that the fabricated metals shall fit together properly and be suitable for the field conditions.

1.03 SUBMITTALS

The Contractor shall submit to the Owner's Representative for review drawings, data and information in accordance with the applicable requirements of Section 01 33 00. Submittals shall include but are not limited to drawings showing location, sizes of metal, method of assembly, hardware, fasteners, anchorage, and connection with other work. The drawings shall include a listing of metals used and governing ASTM specifications. Where structural

components are the design of the Contractor, the drawings shall bear the seal of a professional structural engineer registered in the State of Illinois.

PART 2- PRODUCT

2.01 MATERIALS

A. Structural steel shapes, ASTM A36.

B. Bent or cold-formed steel plates, ASTM A283, Grade C.

C. Galvanized carbon steel sheets, ASTM A526, with 1.25 ounces commercial zinc coating, ASTM A525.

D. Gray iron castings, ASTM A48.

E. Bolts and nuts (for general use), Type 304 stainless steel, ASTM A320 unless otherwise specified.

F. High strength bolts shall comply with ASTM A325 with nuts conforming to ASTM A563 and washers complying with ASTM F436.

G. Anchor bolts and connection bolts for steel assemblies shall comply with ASTM A307.

H. Anchor bolts and connection bolts for aluminum shall be stainless steel.

I. Stainless steel, Type 316.

J. (Not used.)

K. Welding Electrodes: Filler metal for welding of structural steel shall comply with AWS Dl.1, Structural Welding Code. Filler metal for welding of aluminum shall comply with AWS Dl.2.

L. Grout: Grout for bedding and grouting structural steel components shall be of non-shrink type grout.

2.02 COATINGS

Galvanizing shall be performed by the hot-dip process after fabrication in compliance with the following standards:

A. Iron and steel hardware, ASTM A153.

B. Rolled, pressed, and forged steel shapes, plates, bars, and strips 1/8 inch thick and heavier, ASTM A123.

C. Assembled steel products, ASTM A386.

PART 3- EXECUTION

3.01 SHOP INSPECTION

Each item of equipment shall be shop assembled to the extent practical and shall be inspected prior to shipment. Minimum requirements for shop inspection shall be a visual exam and a dimensional check to verify that the equipment has been fabricated correctly.

3.02 FABRICATION

A. Design and fabricate all metal parts to comply with the intent and requirements of the Drawings. Make field measurements and prepare templates as required to ensure proper fit. Assemblies shall be fitted together in the shop and delivered to the site complete and ready for installation.

B. Miscellaneous metals shall have holes, connections, and other provisions for accommodating other work. In general, holes for bolts shall be drilled or reamed 1/17-inch larger than the diameter of the bolt. Holes for anchor bolts shall be 1-1/3-times the anchor bolt diameter.

C. Miscellaneous metal work shall be formed to shape and size, with sharp lines and angles. Items shall be sheared and punched to obtain clean, true lines and surfaces. Permanent connections shall be welded. Screws or bolts shall not be used where avoidable, but if used, heads shall be countersunk, screwed tight, and threads nicked to prevent loosening. Curved work shall be sprung evenly.

D. Exposed surfaces shall have smooth finish and sharp, well-defined lines and arises. Joints shall be mill machined to a close fit. Necessary rabbets, lugs, and brackets shall be provided so that work can be assembled in a neat and substantial manner. Metal thicknesses, assembly details, and supports shall provide ample strength and stiffness. Joints shall be designed to prevent trapping of moisture.

E. Fastenings shall be concealed where practical. Metal thickness and details of assembly and supports shall be designed to provide strength and stiffness. Joints exposed to weather shall be formed to exclude water.

F. Expansion anchor bolts shall be of the types and sizes recommended by the manufacturer for the particular application. When set in concrete or masonry, the minimum

penetration of the expansion anchor bolts shall be six times the diameter of the shank.

G. Structural joints made using high strength bolts, hardened washers, and nuts tightened to a high bolt tension shall comply with the "Specification for Structural Joints Using ASTM A325 or A490 Bolts".

H. Welded joints shall comply with AWS Dl.1, Structural Welding Code', and AISC "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings". All welds shall be made by operators who have been previously qualified as prescribed by AWS B3.0, Welding Procedure and Performance Qualification. All welds exposed to view shall be dressed smooth.

I. Anchor holes in concrete or masonry for grouted bolts shall be a minimum of 1-1/2 times the bolt shank diameter. Anchor holes in concrete and masonry for expansion type anchor bolts shall comply with the bolt manufacturer's recommendations.

J. Castings shall be true to pattern, smooth, straight, sound, and free from warp, holes, and other defects that impair strength or appearance.

3.03 PAINTING

A. Paint all surfaces except those which have a galvanized surface finish according to the requirements of Section 09 91 13. Prepare surfaces and prime in compliance with the manufacturer's recommendation for the specific environment to which the metal components will be subjected.

B. Where dissimilar metals contact each other, apply alkali-resistant paint to the more active metal. Where steel work contacts aluminum, apply two coats of aluminum paint over shop coat.

C. Metal components used for miscellaneous metal repairs may be shop or field primed and painted. Contractor shall be responsible for touch-up field painting as required.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Miscellaneous Metal Repair Work specified in this Section; except that measurement will be made as follows:

05 50 00/01, Pit Weld Repairs
05 50 00/02, Weld Seam Repairs
05 50 00/03, Install Piping and Safety Grabs
05 50 00/04, Remove Top 3" of Rail Fall Protection Device at Top of Leg Ladder

4.02 PAYMENT

A. Payment for the Miscellaneous Metal Repair Work (which includes Continuous Seal Weld and Interior Pit Repair Work specified in this Section will be made only after an **Owner** approved Change Order has been processed for work ordered during construction.

B. Payment for Continuous Seal Weld Repair Work specified in this Section will be made at the contract unit price for Continuous Seal Weld Repair, in the Bidding Schedule. This price shall include all labor, tools, materials and equipment for repairs as herein specified.

C. Payment for Interior Pit Weld Repair Work specified in this Section will be made at the contract unit price for Interior Pit Weld Repair, in the Bidding Schedule. This price shall include all labor, tools, materials and equipment for repairs as herein specified.

D. These prices shall be full compensation for furnishing all materials; and for all preparation and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete the miscellaneous metal repairs as required.

E. Payment will not be made for any other items except as listed above. All other costs associated with such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Schedule of Prices.

END OF SECTION

WATER STORAGE TANK REHABILITATION AND RELATED REPAIRS

SECTION 05 52 13

PART 1- GENERAL

1.01 SCOPE

A. Description

This Section covers the rehabilitation and repairs of potable water storage tanks of the elevated or standpipe type and includes furnishing all materials, equipment, tools and labor necessary for the repair and rehabilitation of the elevated and/or standpipe water storage tanks, together with all appurtenant components and associated fittings, and miscellaneous equipment specified in other Sections of these Specifications, including necessary supports and anchors, to be designed, furnished, installed and tested as shown on the Drawings and as specified herein. All fittings, connectors, supports and anchors, where required shall be included under this Section of Work.

B. Related Work

1. Section 09 91 13.
2. Section 26 42 00.
3. Other Sections as herein specified.

1.02 QUALITY ASSURANCE

A. Acceptable Manufacturers

Tank: Chicago Bridge & Iron Company or equal.

Other Items: As required.

B. Applicable Standards

All Work including materials and inspection of the elevated tank shall conform to the applicable and current provisions of the codes, standards, and Specifications, as specified herein, and the following:

Name	Abbreviation
Welded Steel Tank for Water Storage	AWWA D100
Structural Concrete for Buildings	ACI 301
Welding	ASME Sect. IX

C. Welding Qualifications/Supervision

All welders shall be qualified by ASME Section IX requirements for all positions. The contractor shall employ the services of a welding supervisor independent of the tank painting foreman's jurisdiction.

1.03 SUBMITTALS

A. The Contractor shall submit to the Owner's Representative for review product specifications and description, mill certificates, inspection reports, together with instruction manuals, installation procedures, field check-out and testing procedures specified in Section 01300 of all equipment furnished.

1.04 WARRANTY

The herein specified all water storage tank repairs shall be warrantied for a period of 12 months from the date of Final Acceptance of the Work to the extent that the contractor shall be solely responsible for the repair or replacement of defective parts including but not limited to repair of any reported defects during the warranty period which may appear because of faulty workmanship or material furnished under the Specifications. Defects caused by damaging service conditions such as electrolytic, chemical, abrasive or other damaging service conditions are not intended to be covered by this warranty.

PART 2- PRODUCT

2.01 GENERAL

A. The tank and supporting structure are of all-welded steel design. Tank construction is as specified herein.

B. The tank has a shape as shown on the Drawings.

2.02 PERTINENT DATA AND REQUIREMENTS

A. Pertinent Data

1. Time of Completion – **180** calendar days. See **Instructions to Bidders** for additional information and details.

2. Location - As identified in the Bid Form.

3. Nearest Town – Downers Grove, IL.

4. Railroad Siding – Burlington Northern. None immediately adjacent to or through proposed site development.

5. Compressed Air - Not available at site.

6. Corrosion Allowance - None.

7. Ladder and Safety Devices - Required in accordance with state and federal regulations. A ladder safety device meeting OSHA standards is required. Ladders and safety devices shall extend above landing platform. A minimum of two (2) safety ***harnesses*** shall be provided.

8. Inspection Report - An inspection report per Paragraph 11.2.1 of AWWA D100 shall be required for the 1 MG Legged Tank.

2.03 DETAILS OF CONSTRUCTION

A. Details of tank construction (as a minimum) shall be in accordance with AWWA D100. Where contradictions occur, the more stringent shall apply.

B. Install a fail-safe stainless vent in place of the existing mushroom vent to protect against pressure/vacuum damage. This includes installing a flange on the existing vent pipe and providing a gasket between the flanges. The open area of the overflow shall not be considered as venting area. The vent screen shall be a HDPE screen and shall be designed to relieve any pressure or vacuum in the event the screen frosts over or is otherwise clogged. The vent screen shall be easily dismantled to remove the screens for cleaning.

C. Remove and replace antenna mounting structure with a new roof handrail and access rail which shall include the installation and erection of a new 1 ¼" nominal O.D., 42" high x 20'-0" diameter roof handrail. The roof handrail to be centered around the roof access hatch at the roof of the tank. The proposed handrail shall be welded in place in accordance with AWWA Standard D100 and the AWWA Manual M42. Surface preparation and painting shall be in accordance with ¶1.01A(2) of this Section. The Contractor shall also modify balcony railing to be 42" high and increase toe rail to 4".

D. Remove and replace roof/sidewall ladder with vertical sidewall ladder and walkway platform.

E. Remove existing interior wet ladder and install a new wet interior ladder equipped with fall prevention device.

F. Replace the existing 24” diameter roof hatch with a 30” diameter roof hatch. Along with this work, new gaskets shall be installed on the wet interior roof hatch. All new equipment and new welded in place hinges to be repainted with same proposed coating process. The proposed hatches shall be fabricated from steel plate and specifically designed for the use with the tank.

G. Install new lightweight aluminum grating lockable hatch at balcony opening at ladder transition.

H. Tighten loose sway rods.

I. Repair areas of missing or damaged grout between steel baseplate and concrete foundation.

J. Recoat existing concrete foundation and leg footings, expose 4” of footings, and regrade.

K. Install a new weighted screened flap valve on overflow pipe.

L. Remove and replace existing fence which is to be removed to install containment curtain with new chain link fence with slats.

M. Install new SCADA cabinet and electrical conduit.

N. Provide new Grid Bee water destratification equipment with power complete in place.

O. Provide new cathodic protection system with power complete in place.

P. Install new conduits to the roof of high tank for hatch alarm, cathodic protection, mixer, and SCADA outputs. Install conduits to proposed SCADA RTU cabinet from existing valve vault.

Q . Provide new electric service conduit and wire from existing meter pedestal to new NEMA 3R, 120/240V, 1Φ, 100A 18 position lighting panelboard.

PART 3- EXECUTION

3.01 FACTORY TESTING AND INSPECTION

The contractor shall inspect and test components of the tank repairs in accordance with AWWA D100. Certified copies of the shop inspections and test reports shall be furnished to the Owner's Representative.

3.02 INSTALLATION AND TESTING

A. The equipment shall be installed as shown on the Drawings and in accordance with the manufacturer's instructions and recommended best practices. All necessary shims, grout, anchor bolts, and other items required for installation and testing shall be furnished. All items of equipment shall be operated, adjusted, and tested for proper performance in accordance with the manufacturer's recommended test procedure. Any and all excavation, trenching, concreting, backfilling required for the repair and rehabilitation of the Water Storage Tanks shall be performed by the Contractor at the Contractor's expense.

B. After the Contractor has completed all repairs, including painting of the interior wet portion of the High Tank, the Contractor will make piping connections to the tank, furnish, pump and dispose of sufficient water for a single test and sterilization. While under test, the tank Contractor shall chlorinate the tank in accordance with AWWA C652 Method 3. **In addition, disinfecting of the elevated tank shall be in accordance with Section 7.0.18 of the Recommended Standards for Water Works (Latest Edition).** Any leaks which are disclosed by this test shall be repaired by gouging out defective areas and rewelding. All costs associated with such repair work including costs for additional water usage (beyond one time fill provided by the Owner) shall be the responsibility of the Contractor. No repair work shall be done on any joint unless the water in the tank is at least two feet below the point being repaired. After repair work has been completed, the tank shall be retested to verify the integrity of the repair. Any paint damaged by repairs shall be properly restored. The tank shall not be placed in service until satisfactory bacteriological tests have been provided. The Contractor shall work in cooperation with all local agencies who will be conducting the bacteriological tests.

3.03 PAINTING

Painting of the tank and its components shall be in accordance with the applicable requirements of Section 09 91 13, Painting.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

A. Payment for the Work specified in this Section will be made at the lump sum prices for the below listed Items in the Schedule of Prices:

05 52 13/01, Install New Stainless Roof Vent with HDPE Screen
05 52 13/02, Remove and Replace Antenna Mounting Structure with New Roof Handrail
05 52 13/03, Remove and Replace Damaged Stiffener/ Painter's Railing
05 52 13/04, Remove and Replace Roof/Sidewall Ladder with Vertical Sidewall Ladder, Walkway Platform and New 25' Dia. Roof Handrail
05 52 13/05, Remove and Install New Fall Protection Device and Vandal Guard on Exterior Ladder
05 52 13/06, Install Wet Interior Ladder Equipped with Fall Protection Device
05 52 13/07, Remove and Replace Wet Interior Roof Access Hatch with New 30" Hatch
05 52 13/08, Install Lightweight Lockable Hatch at Balcony Opening at Ladder Transition
05 52 13/09, Install New Gasket on Wet Interior Roof Hatch
05 52 13/10, Tighten Sway Rods
05 52 13/11, Caulk Roof Lap Seams
05 52 13/12, Repair Areas of Missing or Damaged Grout Between Steel Baseplate and Concrete Foundation
05 52 13/13, Expose 4" of Footings and Regrade
05 52 13/14, Install a New Weighted Screened Flap Valve on Overflow Pipe
05 52 13/15, Remove and Replace Existing Fence Removed for Construction with New Fencing

B. These prices shall be full compensation for furnishing all materials, equipment and labor as well as any and all incidentals necessary to complete the Items of Work.

C. Payment will not be made for any other items except as listed above. All other costs associated with such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Schedule of Prices.

D. Payment for other items of equipment specified in other Sections of these Specifications will be made at the prices for those respective Items in the Schedule of Prices.

END OF SECTION

PAINTING WATER STORAGE TANK

SECTION 09 91 13

PART 1- GENERAL

1.01 SCOPE

A. Description

This Section covers painting materials to be furnished and applied, including preparing surfaces and providing adequate conditions for proper workmanship, as shown on the Drawings and as specified herein.

B. Related Work

1. Sections 01 11 00, 01 11 13 and 01 01 20.
2. Section 01 77 00.

1.02 QUALITY ASSURANCE

A. Acceptable Materials and Manufacturers shall conform to the herein specified material and construction standards.

B. Applicable Standards

All Work shall conform to the applicable provisions of codes, standards and Specifications, as specified herein as follows:

Name	Abbreviation
National Fire Protection Association	NFPA
Steel Structure Painting Council	SSPC
Ten State Standards	--
Painting Steel Water Storage Tanks	AWWA D102

1.03 SUBMITTALS

A. The Contractor shall submit to the Owner's Representative for review product specification of paint materials and descriptions of surface preparation contemplated for the Work to illustrate compliance with applicable requirements of this Section and other Related Work Sections. Submittals shall be in accordance with Section 01 33 00 and as herein specified.

B. Submittals shall include, but not be limited to the following:

1. Project schedule not to exceed 180 consecutive calendar days; and start date not to deviate more than

2 weeks from start date indicated on the preliminary schedule submitted at the time of bid unless otherwise approved by the **Owner**.

2. Surface preparation details including containment methods when and where containments are utilized.

3. Application instructions for each type of coating to be used.

4. Maintenance recommendations for each type of coating used.

5. Color samples for selection and scheduling. (Note: Color to be selected by **Owner** if not specified; refer to Section 01 11 00, Paragraph 2.02 for additional details).

6. MSDS sheets for all products used.

7. Monitoring Plan (refer to Section 01012; Paragraph 3.01), dry film thickness test results and diary of daily painting activities.

8. Product Certification and Waste Manifest in accordance with Section 01800; Paragraphs 2.01 & 2.02.

PART 2- PRODUCT

A. Exterior Coating System

1. Surface Preparation

200,000 Gallon Legged High Tank – 4318 Downers Drive

The entire exterior of these tanks has a high gloss polyurethane clear coat.

a. Solvent clean all visible grease, oil, salt, algae, and residue in accordance with SSPC- SP1.
b. High pressure water clean all exterior surfaces and appurtenances at 5,000-10,000 psi to remove all dirt, chalk, algae, other foreign material, and all brittle or loose coating, rust, and mill scale.
c. Maintain a water jet nozzle distance of 2 in. 10 in. away from the surface.
d. Hold the water jet nozzle with 0° - 15° tip perpendicular (90°) to the surface at all times.
e. Use of a rotating/reciprocating nozzle during water cleaning is permitted but not to increase

the pressure of a washer rated lower than required.

f. Do NOT exceed a rate of 10 sq. ft./minute.

g. Power tool clean all surfaces and appurtenances to bare metal (SP11) in areas where steel is exposed or rusted, or where coating is abraded. Retain or produce a surface profile. Surface profile shall be greater than 1.0 mil. Edges of adjacent coating shall be feathered a minimum of ½ in. from the exposed steel with 3M Scotch-Brite clean n strip discs.

2. Prime Coat

Apply one complete coat of Tnemec Series 3600 ProBond or Sherwin-Williams Corathane I Galvapac 2k Zinc to all surfaces. This coating shall be applied at a dry film thickness of 1.0 to 2.0 mils for Tnemec and 2.5 to 4.0 mils for Sherwin-Williams.

3. Spot Prime Coat

Apply one spot prime coat of Tnemec Series 135 Chembuild primer to all power tool cleaned surfaces. This coating shall be applied at a dry film thickness of 4.0-6.0 mils.

4. Penultimate Coat

Apply one complete coat of Tnemec Series 73-color Endura-Shield or Sherwin-Williams Acrolon 218 HS Polyurethane to all surfaces. This coating shall be applied at a dry film thickness of 2.0-3.0 mils. The color lab will select this color.

5. Finish Coat

Apply one complete coat of Tnemec Series V700-color HydroFlon or Sherwin-Williams Fluorokem HS Gloss. This coating shall be applied at a dry film thickness of 2.0-3.0 mils. Color shall be selected by the Engineer/Owner.

6. Lettering / Logo Painting

Two coats of Tnemec Series V700 HydroFlon or Sherwin-Williams Fluorokem HS Gloss shall be used for the lettering / logo. This coating shall be applied at a dry film thickness of 2.0 to 3.0 mils per coat.

B. Interior (Wet) Coating System

1. Surface Preparation

The entire surface shall be abrasive blast cleaned to a Near White Finish, removing all existing paint, rust, dirt, mill scale and foreign matter by the recommended methods outlined in the SSPC Society of Protective Coating's Specification SP-10. A minimum angular anchor profile of 2.0 mils is required.

Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series 91-H_2O Hydro-Zinc or Sherwin-Williams Corathane I Galvapac 2k Zinc to all bare steel surfaces. This coating shall be applied at a dry film thickness of 2.5 - 3.5 mils for Tnemec and 2.5 – 4.0 mils for Sherwin-Williams.

Stripe Coat

After the primer has cured in accordance with the manufacturer's recommendations, apply one stripe coat, by brush only, of Tnemec Series N140-1255 Beige Pota-Pox Plus or Sherwin-Williams Macropoxy 5500 LT Epoxy to all weld seams, edges of unseal welded roof plates, angles, and sharp edges. This coating shall be applied at a dry film thickness of 4.0 – 6.0 mils for Sherwin-Williams.

Finish Coat

Apply one complete coat of Tnemec Series 21 Epoxoline or Sherwin-Williams Sherplate PW 100% Solids Epoxy at a dry film thickness of 14.0 – 16.0 mils for Tnemec and 30.0 – 35.0 mils for Sherwin-Williams.

C. Interior (Dry) Coating System

1. Surface Preparation

The topside of the upper platform, the topside of the lower condensate plate, the belly of the tank, and the inlet / outlet pipe shall be abrasive blast cleaned to a Commercial Finish in accordance with the recommended methods outlined in the SSPC Society of Protective Coating's Specification SP-6. A minimum angular blast profile of blast profile of 1.5 mils is required. All other failed surfaces on the interior dry shall be

spot abrasive blast cleaned to a Commercial Finish, SSPC SP-6, a minimum angular profile of 1.5 mils is required. Feather edges to form a smooth transition to tight existing paint.

Spot Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series N140-1255 Chicago Beige Pota-Pox Plus or Sherwin-Williams Corathane I Galvapac 2k Zinc primer to all bare steel surfaces. This coating shall be applied at a dry film thickness of 3.0 to 4.0 mils.

Finish Coat

Apply one coat of Tnemec Series N140-15BL Tank White Pota-Pox Plus or two coats of Sherwin-Williams Macropoxy 646 Epoxy at a dry film thickness of 5.0 to 6.0 mils for Tnemec and 4.0 – 6.0 mils for Sherwin-Williams to all primed surfaces.

PART 3- EXECUTION

3.01 GENERAL

A. Do not proceed with the application of paint until the following conditions are met: Proper temperature and humidity, dust free spaces, proper surface preparation. Starting Work constitutes acceptance of conditions and substrates and full responsibility for the quality and suitability of the finished Work.

B. Furnish inspection devices, in good working condition, for the detection of holidays and the measurement of coating film thickness (wet and dry). Inspect surfaces to be painted and conditions of the area before starting Work. Report any defects that render any area or surface unfit to receive paint.

C. Handle and store materials in accordance with the provisions of the Flammable and Combustible Liquids Code, NFPA 30. All materials shall be handled and stored to avoid fire and explosion.

D. Provide masks, gloves, and other protective materials or clothing and furnish special ventilation as necessary or recommended by the paint manufacturer.

E. During surface preparation, contain and dispose of any and all paint chips/flakes in accordance with Federal, State

and/or local requirements, or as otherwise specified.

3.02 DELIVERY TO SITE

All materials furnished shall be labeled. Each label shall indicate the manufacturer's name, the brand name, the type of material as specified, the class of flammability or combustibility if applicable, the color, and the mixing and application instructions. Each container shall be stenciled or embossed at the factory with the product number and name as it appears in the manufacturer's catalog. Deliver materials to the site in unbroken, unopened containers, with labels affixed on each container by the manufacturer. Containers delivered to site which are damaged shall be cause for rejection.

3.03 CONDITIONS FOR APPLYING MATERIALS

A. Materials other than water thinned materials shall be applied only to surfaces that are free of surface moisture as determined by sight or touch.

B. Materials shall not be applied when the temperature of the surfaces to be covered are below recommended levels, or the surrounding atmosphere is below recommended levels, or when the relative humidity exceeds 85 percent.

C. Additional conditions to be satisfied prior to application shall be as specified in Section 01 01 20.

D. Prepare all surfaces to receive materials as required herein or as required by the coatings manufacturer. Clean surfaces to remove all foreign matter. Roughen surface as recommended by the coating manufacturer for proper adhesion of coating to the substrate.

3.04 APPLICATION

A. Mix and apply materials in accordance with the manufacturer's printed instructions. Allow each succeeding coat to dry in accordance with manufacturer's printed instructions.

B. Apply each coat in accordance with these Specifications and the paint manufacturer's recommendations. The coating shall be applied at the specified thickness. If the specified thickness is not obtained, an additional coat(s) of paint shall be applied at no additional cost to the **Owner.**

C. All paint shall be applied in strict accordance with the applicable manufacturer's printed data sheet and container

label outlining recommended minimum and maximum surface and air temperatures required for application.

D. Do not paint code required labels, (Underwriters Laboratories, Inc., Factory Mutual, or the like) or any equipment identification, performance ratings, name, or nomenclature plates. Remove any paint inadvertently or previously applied to such items.

E. Protect adjacent surroundings against splash or overspray. Remove materials from surfaces not designated to receive such materials.

F. Finished surfaces shall be uniformly coated with the thickness specified, free of runs, drips, sags, brush marks, holidays, or other defects. Such defects shall be corrected without change in Contract Price.

G. Remove waste rags and coating debris on a daily basis. Keep storage spaces and work areas neat and clean.

3.05 PROTECTIVE COATING SYSTEMS

A. General: The application of any coating or primer indicates the acceptance of and responsibility for the condition of the substrate and the primer thereon.

B. Protect adjacent materials/surroundings/properties/etc. subject to damage by the Work to be performed under this Contract.

C. Exterior Coating System

1. Surface Preparation

2,000,000 Gallon Legged High Tank – 4318 Downers Drive

The entire exterior of these tanks has a high gloss polyurethane clear coat.

a. Solvent clean all visible grease, oil, salt, algae, and residue in accordance with SSPC- SP1.
b. High pressure water clean all exterior surfaces and appurtenances at 5,000-10,000 psi to remove all dirt, chalk, algae, other foreign material, and all brittle or loose coating, rust, and mill scale.
c. Maintain a water jet nozzle distance of 2 in. 10 in. away from the surface.
d. Hold the water jet nozzle with 0° - 15° tip perpendicular (90°) to the surface at all times.

e. Use of a rotating/reciprocating nozzle during water cleaning is permitted but not to increase the pressure of a washer rated lower than required.
f. Do NOT exceed a rate of 10 sq. ft./minute.
g. Power tool clean all surfaces and appurtenances to bare metal (SP11) in areas where steel is exposed or rusted, or where coating is abraded. Retain or produce a surface profile. Surface profile shall be greater than 1.0 mil. Edges of adjacent coating shall be feathered a minimum of ½ in. from the exposed steel with 3M Scotch-Brite clean n strip discs.

2. Prime Coat

Apply one complete coat of Tnemec Series 3600 ProBond or Sherwin-Williams Corathane I Galvapac 2k Zinc to all surfaces. This coating shall be applied at a dry film thickness of 1.0 to 2.0 mils for Tnemec and 2.5 to 4.0 mils for Sherwin-Williams.

3. Spot Prime Coat

Apply one spot prime coat of Tnemec Series 135 Chembuild primer to all power tool cleaned surfaces. This coating shall be applied at a dry film thickness of 4.0-6.0 mils.

4. Penultimate Coat

Apply one complete coat of Tnemec Series 73-color Endura-Shield or Sherwin-Williams Acrolon 218 HS Polyurethane to all surfaces. This coating shall be applied at a dry film thickness of 2.0-3.0 mils. The color lab will select this color.

5. Finish Coat

Apply one complete coat of Tnemec Series V700-color HydroFlon or Sherwin-Williams Fluorokem HS Gloss. This coating shall be applied at a dry film thickness of 2.0-3.0 mils. Color shall be selected by the Engineer/Owner.

6. Lettering / Logo Painting

Two coats of Tnemec Series V700 HydroFlon or Sherwin-Williams Fluorokem HS Gloss shall be used for the lettering / logo. This coating shall be applied at a dry film thickness of 2.0 to 3.0 mils per coat.

D. Interior (Wet) Coating System

1. Surface Preparation

The entire surface shall be abrasive blast cleaned to a Near White Finish, removing all existing paint, rust, dirt, mill scale and foreign matter by the recommended methods outlined in the SSPC Society of Protective Coating's Specification SP-10. A minimum angular anchor profile of 2.0 mils is required.

Prime Coat

Immediately after blasting and before any rusting occurs (within 12 hours maximum), apply one coat of Tnemec Series 91-H_2O Hydro-Zinc or Sherwin-Williams Corathane I Galvapac 2k Zinc to all bare steel surfaces. This coating shall be applied at a dry film thickness of 2.5 - 3.5 mils for Tnemec and 2.5 – 4.0 mils for Sherwin-Williams.

Stripe Coat

After the primer has cured in accordance with the manufacturer's recommendations, apply one stripe coat, by brush only, of Tnemec Series N140-1255 Beige Pota-Pox Plus or Sherwin-Williams Macropoxy 5500 LT Epoxy to all weld seams, edges of unseal welded roof plates, angles, and sharp edges. This coating shall be applied at a dry film thickness of 4.0 – 6.0 mils for Sherwin-Williams.

Finish Coat

Apply one complete coat of Tnemec Series 21 Epoxoline or Sherwin-Williams Sherplate PW 100% Solids Epoxy at a dry film thickness of 14.0 – 16.0 mils for Tnemec and 30.0 – 35.0 mils for Sherwin-Williams.

3.06 COMPLETION OF WORK

A. When Work is complete leave all materials properly coated to conform to the above Specifications. Remove and/or clean-up dry fall, overspray, droppings, or spatter from adjacent materials and properties. Make good damage to other work to the satisfaction of Owner's Representative.

B. Furnish two copies and all instructions, manufacturers' certificates, and documents to Owner's Representative.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

A. Payment for the Work specified in this Section will be made at the contract lump sum prices for the below listed Items in the Schedule of Prices:

09 91 13/01, Abrasive Blast and Paint Exterior Coating Including Logos to match existing
09 91 13/02, Abrasive Blast and Paint Wet Interior Coating
09 91 13/03, Full Containment as required
09 91 13/04, Proper and Legal Disposal of Paint Chips/Flakes and Other Debris
09 91 13/05, Recoat Existing Concrete Foundation and Leg Footings

B. These prices shall be full compensation for furnishing all materials, equipment and labor, as well as any and all incidentals necessary to complete the Items.

C. Payment will not be made for any other items except as listed above. All other costs associated with such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain.

END OF SECTION

WATER SUPPLY AND TREATMENT EQUIPMENT

SECTION 11 20 00

PART 1- GENERAL

1.01 EQUIPMENT OVERVIEW

A. These specifications provide the requirements to furnish, install and place into operation a potable tank mixer at Downers Drive 2,000,000 Gallon Water Tower.

1.02 REFERENCES

A. Occupational Safety and Health Administration, OSHA
B. Department of Transportation, DOT
C. NSF / ANSI Standard 61
D. Underwriters Laboratories Inc., UL 508

1.03 QUALITY ASSURANCE

A. Continuous Operation Equipment. The mixer shall operate continuously, all day and all night, using 120 VAC as the power source.

B. No Visual Defects. The mixer shall have no visual defects, and shall have high quality welds, assembly, and corrosion resistant finish.

C. Qualified US Manufacturer. The manufacturer of the mixer shall have extensive experience in the production of such equipment, and the equipment shall be manufactured in the continental United States.

D. Factory Startup Services. Delivery, installation and startup services shall be available, but not included in the bid. For factory delivery and installation, services shall be performed by full time factory employees experienced in the operation of this equipment and who have completed OSHA safety trainings applicable to this type of installation.

E. Warranty. The mixer shall be warranted to be free of defects in materials and workmanship for a period of 5 years. This equipment warranty would run directly from the manufacturer of the equipment to the owner. The equipment warranty would not be part of the contract or any required bond.

1.04 SUBMITTALS

A. The awarded Bidder shall provide [5] copies of the following documents. Upon acceptance of these documents by

the Engineer, the Bidder will be issued a Notice to Proceed, and may then proceed to install the equipment.

1. A qualification statement demonstrating compliance with Section 1.03.

2. Shop drawings for the mixer.

3. Manufacturer's literature, illustrations and specification sheets.

B. Final submittals shall include:

1. A complete installation, operation and maintenance manual.

1.05 FIELD SERVICES

A. Factory Personnel. The installation and startup shall be performed by full time factory employees trained in the operation of the mixer.

B. Safety. Installation personnel shall have received job-specific safety training on (a) Working over Water, (b) Boating Safety, (c) Disinfecting Procedures, (d) Confined Space Entry, (e) Fall Protection, and (f) DOT Compliance.

PART 2- PRODUCT SPECIFICATIONS

2.01 MANUFACTURER

A. Specified Equipment. The mixer shall be manufactured by Medora Corporation, Inc. of Dickinson, ND, or be a pre-approved alternative.

B. Pre-approved Alternative(s). Alternatives to the specified equipment will be considered on the following basis only.

1. Ten (10) Days Before Bid. To offer equipment as a pre-approved alternative, written application from the alternative supplier shall be made to the Engineer at least 10 days in advance of the bid opening.

2. No Material Difference in Quality of Equipment or in Vendor Support. The application should include:

a. A brief description of how the offered alternative does or does not meet each of the specifications in this document.

b. An analysis of how acceptance of the alternative equipment would likely affect the overall water quality goals of the project.

c. A statement of the science and support background of the supplier of the alternative equipment, so that the benefits and costs of the alternative equipment to the Owner can be estimated by the Engineer.

3. Five (5) Days' Notice to Bidders. If the alternative equipment is accepted by the Engineer, an informational addendum to these specifications shall be distributed by the Engineer to plan holders at least 5 days in advance of the bid opening.

2.02 PERFORMANCE AND FEATURES

A. Number of Units Required: To meet the project objectives, the following number of machines are required:

Qty	Model	Tank or Reservoir
1	GridBee GS Potable Tank Mixer	Downers Drive 2,000,000 Gallon Legged High Tank

An unobstructed hatch opening of at least 12 Inch diameter (31cm) round is required for installation of the mixer.

B. Required Flow Rating: Upon request, the manufacturer shall provide Computational Fluid Dynamics modeling supporting the performance of the mixer, with water of 1.0000 specific gravity and similar volumetric properties to the listed tank or reservoir.

C. Complete Mix: The manufacturer guarantees that the subject tank will be completely mixed by the mixer. In continuous operation of the mixer:

1. at least once per 24 hours all water temperatures within the tank shall converge to within 0.8 degrees C, and
2. at least once per 72 hours all chlorine concentrations within the tank shall converge to within 0.18 mg/l.

D. Continuous Operation With 120VAC Power Supply. The mixer shall operate continuously during day and night while connected to electric grid power.

E. Stainless Steel Construction. The mixer shall be constructed primarily of Type 316 stainless steel metal for strength and superior corrosion resistance.

F. Motor. The mixer shall be mechanically operated by a submersible motor that meets the following criteria.

1. Direct Drive, with no gearbox and no lubrication maintenance required.

2. Designed for submersible operation.

3. Designed for Continuous Operation without overheating or compromising motor life expectancy.

4. 120 VAC power source shall be supplied by others and not the mixer manufacturer.

5. Provide power on output signal to existing SCADA panel on site. Contractor shall employ the use of the Village's System Integrator, Concentric, Mr. Randy Olson or Mr. Mike Gryn, Phone # Office (815) 444-3324, Cell # (312) 953-0772.

G. SCADA and Controls. The mixer shall have the option to add an Electric Control Box including a motor current indicator in a 4-20mA analog output and remote on/off control via 24VDC relay.

1. Electrical Timer Box. The mixer equipment shall be supplied with a Control Box capable of disconnecting 120 VAC outgoing power to the mixer equipment and meeting the following criteria:

a. NEMA 4X enclosure shall be provided with protection against condensation and moisture in a marine environment.
b. Timer Box shall be UL 508 Listed for sound electrical design and safety.
c. Timer Box shall include exterior mounted ON/OFF switch, definite purpose contactor for mixer control, exterior mounted run indicator light, grounding lug, 120 VAC standard three-prong male molded plug, and locking latch for security.
d. Timer Box shall include a programmable timer with 16A Resistive, 8A FLA Rated, Single and Double Pole Contact Configuration, 8V A Power Consumption, CR2032(1.5V Lithium) with 3 years Battery Life, 8 On and Off cycles.
e. Timer Box requires a 120 VAC power source, Minimum 20 Amp rated service located near the final placement of the Timer Box. Others and not the mixer equipment manufacture shall supply the 120 VAC power source.

H. Low Elevation Intake: The mixer shall be supplied with an intake capable of being positioned at the lowest elevation of the tank or reservoir floor. The intake level shall bring water into the mixer at horizontal layer within 6 inches (15 cm) of the tank or reservoir floor.

I. Chlorine Boost Connection: The mixer shall be supplied with a connection point for injection of sodium hypochlorite. The connection point shall be compatible with a ½" (1.3 cm) diameter hose and be rated for contact with 12.5% Sodium Hypochlorite solution.

J. The complete mixing system shall be NSF / ANSI Standard 61 and NSF Annex G listed for safe contact with potable water.

K. Maintenance Requirements: The mixer shall operate normally with the following maintenance features.

1. No scheduled lubrication is required of any system components including motor.

2. No spare parts shall be required to be kept on hand.

PART 3- EXECUTION

3.01 CONTRACTOR INSTALLATION

A. Installation, Startup, and On-Site Water Testing. Shall be provided by others and not the factory equipment manufacturer.

3.01 FACTORY INSTALLATION

For Factory Installation, Startup, and On-Site Water Testing, include the information below:

A. The mixer manufacturer shall have capability to provide Installation, Startup, and On-Site Water Testing Services to insure (a) proper machine spatial placement in the reservoir, and (b) proper intake depth setting.

B. The field services shall be performed by full time factory employees experienced in the operation of this equipment, and who have completed safety trainings required for this type of installation in compliance with OSHA regulations including (a) Working over Water, (b) Boating Safety, (c) Disinfecting Procedures, (d) Confined Space Entry, (e) Fall Protection, and (f) DOT Compliance.

C. Within 30 days following installation, the manufacturer shall provide an installation report detailing as described

in submittal section.

D. The mixer manufacturer shall have the following support team available for full service if ever needed following the installation.

1. A minimum of (10) x (2)-member factory crews.

2. A full customer service staff including engineers and science personnel that are trained for assistance in this application.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made of the Work specified in this Section.

4.02 PAYMENT

A. Payment for the Work specified in this Section will be made at the lump sum prices for the below listed Items, in the Schedule of Prices:

11 20 00/01; Install GridBee Water Destratification Mixing System

B. This price shall be full compensation for furnishing and installing all materials; and for all preparation; and for all labor, equipment, tools, and incidentals necessary for the Work as required by the Specifications and Drawings. Payment for excavation and backfill required for installation shall be included in the prices bid for these Items as they pertain.

C. Payment will not be made for any other items except as listed above. All other costs associated with such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain.

END OF SECTION

GENERAL PROVISIONS FOR ELECTRICAL WORK

SECTION 26 00 10

PART 1- GENERAL

1.01 SCOPE

A. This Section describes the general provisions for the Work to be performed under Division 26 - Electrical, of this Contract as well as Division 33 - Utilities, where applicable. The Contractor shall comply with these general provisions and shall perform all Work in accordance with the Specifications contained in this Section, as supplemented by Specification in related Sections, and as shown on the Drawings. Related mechanical work shall be performed in accordance with the applicable provisions of Division 33.

B. The following specifies the minimum general requirements by which the Contractor shall furnish, fabricate, deliver, erect, install, connect and test electrical materials, equipment and systems specified in the respective Sections of Division 26 and shown on the Drawings, so as to constitute a complete and operating electrical installation.

C. The Contractor shall provide all necessary coordination between the suppliers of the specified equipment so as to provide a well-designed and satisfactory operating facility to the Owner. The Contractor is advised that these Specifications are not intended to cover every and all details of the Work. In case(s) where details related to the specified Work are not covered by these Specifications, it shall be the responsibility of the Contractor to include and execute such coordination and Work at no additional cost to the Owner.

D. Items of equipment furnished and installed as a part of the Work under other Sections of the Specifications shall be connected and wired as a part of the Work under this Section.

E. All operating limits of electrical apparatus whether furnished under this Section or in other Sections of the Specifications shall be adjusted in the field to meet the operating conditions reviewed by the Owner's Representative and as required. This shall include settings of all overcurrent and trip devices, limit switches, timers, and control device adjustments, etc.

1.02 QUALITY ASSURANCE

A. Acceptable Manufacturers and Equipment Supplier

1. As shown on the Drawings and/or as specified hereinafter in subsequent Sections.

2. Acceptable manufacturers for various items of equipment are specified in respective Sections of these Contract Documents. For convenience of designation in the Contract Documents, certain equipment, articles, materials, and processes are designated by manufacturer trade name or catalog name and number. Such designation shall be deemed to be followed by the words "or approved equal" whether such words are shown or not. Contractor may offer material or processes which are equal to that so indicated or specified at the time of Bid. The burden of proof as to comparative quality and suitability of alternatives shall be upon Contractor. Specified items are preferred. After acceptance of Bid, no substitutions will be allowed, except as stated in the Bid. (Exception: Where Specifications indicate "No Substitutions Allowed" Contractor shall provide the designated manufacturers equipment without exception.)

B. Applicable Standards

1. All electrical work furnished and installed under this Section shall be in strict compliance with the ordinances and bylaws of the City, State and/or any other political subdivision thereof governing the installation of the electrical work on this Project. In the absence of other more stringent authority, the electrical work shall conform to the requirements of the National Electrical Code.

2. The Contractor shall conform to the latest safety standards as required by the Occupational Safety and Health Administration (OSHA) in all Work performed. In addition, all equipment and materials shall meet all applicable OSHA requirements.

3. All equipment shall be U.L. rated.

1.03 SUBMITTALS

A. The Contractor shall comply with the requirements specified in Section 01 33 00 - Equipment Submittals, and as specified herein.

B. The Contractor shall not install any electrical work for any item of equipment specified under this or other Sections of the Contract until shop drawings of such equipment, reviewed by the Owner's Representative, are made available to him/her. Any such Work installed by the Contractor prior to the Owner's Representative review will be the responsibility of the Contractor and any modification of the electrical work necessary to meet the equipment requirements shall be made without additional compensation.

C. Before fabrication and assembly of equipment, submit the following:

1. Front and rear elevations showing dimensions and the arrangement for each cubicle.

2. Plan and section views, including dimensions and mounting details.

3. Details of bus, connections, terminals, etc., including the complete ground bus arrangement and enclosure ground connections.

4. Single line diagram of equipment and control schematic diagram.

5. Wiring Diagrams

a. Connection diagrams for the wiring of equipment in each cubicle.

b. Interconnection diagrams for the wiring to equipment in other cubicles. Clearly identify the terminal block points for the external wiring to be routed in or out of the cubicles. Provide adequate space on the wiring diagrams for additions (by the Contractor) or cable and wire designations for that external wiring to be routed in or out of the cubicles at the terminal block.

6. Bill of Material.

7. Factory test procedures and protocols.

D. Prior to shipment of the equipment, submit for record and distribution:

1. All drawings as finally reviewed and corrected.

2. Recommended storage instructions.

3. Installation instructions and operating and maintenance manuals.

4. Spare parts bulletins.

5. Factory test reports (certified).

6. Booklet on maintenance procedures for circuit breakers and other equipment.

7. Field test procedures and protocols.

E. After final installation of the equipment the Contractor shall deliver a complete set of reproducible shop drawings of (including schematics, internal point-to-point and interconnecting) diagrams for all equipment and panels showing Work "as installed".

1.04 WARRANTY

All equipment (electrical and/or mechanical) specified by these Specifications shall be warrantied and shall be provided with such warranties covering all parts and labor for a period of one (1) year from the date of Final Acceptance.

PART 2- PRODUCTS

2.01 GENERAL

A. Standard Products

The equipment furnished shall be standard products in production by reputable companies regularly engaged in the manufacture of high-quality equipment of the type specified. Similar equipment shall have been in satisfactory and successful operation for a period of at least two years. All parts of the specified equipment shall be so designed as to be especially adapted for the service required and shall be proportioned, enclosed, or guarded as to have ample and liberal strength and stability to withstand, without damage, the stresses to which they may be subjected during erection or operation. The component parts of duplicate items shall be fabricated on a principle of interchangeability to facilitate ready replacement.

B. Materials

All material incorporated in the equipment shall be new and of first-class quality, free from injurious defects and imperfections, and of the classifications and grades designated. Materials not specifically designated herein shall be subject to the review of the Engineer and shall be suitable for the purpose intended.

2.02 RATINGS

The sizes, ratings, capacities, and performance characteristics of various specified items of equipment and devices are based on currently available standard products, which are available through United States manufacturers. In no case shall the size, rating, capacity or performance characteristic be less than that specified unless approved in writing by the Owner. Ratings and performance characteristics, where applicable, of various devices and items of equipment are specified in respective Sections of these Specifications. All electrical equipment shall be UL listed.

2.03 DETAILS OF CONSTRUCTION

A. Electrical work shall meet requirements of these Specification, product manufacturer's instructions, recommended tolerances and recommended procedures, and as indicated by final reviewed submittals for the Work.

B. Materials shall be of size and thickness indicated. If not indicated, size and thickness shall be selected to provide strength and durability in finished Work for intended application. Work to dimensions indicated, using proven fabrication details.

C. Product finishes, surfaces and edges shall be smooth and free of marks, burrs, seams, roughness and like defects or conditions.

D. Other electrical-mechanical product construction details shall be in accordance with the best engineering practices, applicable code requirements and as specified and/or other Sections of these Specifications.

PART 3- EXECUTION

3.00 GENERAL

A. The Contract Drawings indicate the general details necessary for the complete electrical installation. It shall be the Contractor's responsibility to install all electrical work in a neat and workmanlike manner. The Contractor shall cooperate with others to permit the installation of all of the work without interferences. If changes become necessary to avoid interference between the Work installed under various Sections, the Contractor shall submit to the Owner's Representative, for review, the proposed changes and upon review by the Owner's Representative, proceed with the installation of such changes without additional cost to the Owners.

B. The Contractor shall maintain at the site a set of black-line prints on which shall be accurately shown the actual installation of all Work done under Division 26 and any variation from the Contract Drawings as reviewed by the Owner's Representative including changes in sizes, locations, and dimensions shall be indicated thereon. At the conclusion of the Work, the Contractor shall furnish record drawings in accordance with the General Conditions and as specified herein.

3.01 FACTORY TEST AND INSPECTION

A. All equipment shall be shop-assembled and tested in the manufacturer's shop in accordance with recognized standard practices. Factory tests and inspections shall be conducted to verify that the equipment is operating satisfactorily and in compliance with the Specifications.

3.02 INSTALLATION AND TESTING

A. General: Examine the areas and conditions under which electrical work is to be installed or performed and remedy any conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected.

B. Existing Facilities: Verify existence, location, and operation of existing electrical facilities to be abandoned, removed, altered, modified and/or temporarily relocated to allow activities during construction of the Work.

C. Install electrical work. Meet requirements of these Specifications, product manufacturer's instructions, recommended tolerances, and recommended procedures and as indicated by final reviewed submittals for the Work.

3.03 PAINTING

A. All specified equipment shall be shop-primed and painted in accordance with manufacturer's standard finish.

B. The Contractor shall be responsible for coordination of the compatibility between manufacturer's standard finish and the field paint specified.

PART 4- MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for the Work specified in this Section. All costs for such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Schedule of Prices.

END OF SECTION

WIRES AND CABLES FOR SITE ELECTRICAL WORK

SECTION 26 05 20

PART 1- GENERAL

1.01 SCOPE

A. Description of Work

This Work shall consist of furnishing and installing all wires and cables as shown in the plans, or as directed by the Engineer. The work shall include all labor, materials, tools and equipment necessary to furnish place, and connect all wires, cables, and associated items.

B. Related Work

1. General Electric Requirements

2. Basic Electrical Materials & Methods/Requirements

3. Electric Service and Distribution

4. Underground Conduit Runs

5. Electric Cabinet and Pad

6. Electrical Cabinet Equipment Backboard and Installation

1.02 QUALITY ASSURANCE

Comply with the provisions of the following codes:

A. National Electric Code (NEC)

B. NFPA 70 "National Electrical Code." Conform to applicable codes and regulations regarding toxicity of combustion products of insulating materials.

C. UL Compliance: Provide components which are listed and labeled by UL under the following standards.

UL Std. 486A - Wire connectors and soldering lugs for use with copper conductors.
UL Std. 854 - Service entrance cable.

1.03 SUBMITTALS

The Contractor shall submit to the ENGINEER for review drawings, product specifications and descriptions, in

accordance with the applicable requirements as specified in the Supplemental Conditions for all equipment furnished.

1.04 REFERENCES

Except as modified herein, the Work shall conform to the applicable portions of Sections 801, 810, 820, 821, 822, and 1085 of the Standard Specifications.

1.05 QUALITY ASSURANCE

Comply with the provisions of the following codes:

A. National Electric Code (NEC)

B. NFPA 70 "National Electrical Code." Conform to applicable codes and regulations regarding toxicity of combustion products of insulating materials.

C. UL Compliance: Provide components which are listed and labeled by UL under the following standards.

UL Std. 486A - Wire connectors and soldering lugs for use with copper conductors.

UL Std. 854 - Service entrance cable.

PART 2- PRODUCTS

2.01 WIRES AND CABLES

The material shall meet the requirements of Articles 1085.01, 1085.02, 1085.25, 1085.26, and 1085.27 of the Standard Specifications.

A. Conductor Material- Copper for all wires and cables.

B. Conductor sizes indicated are based on copper.

C. Insulation: Provide cross-linked polyethylene all on conductors.

2.02 CONNECTORS FOR CONDUCTORS

A. Provide UL-listed factory-fabricated, solderless metal connectors of sizes, ampacity ratings, materials, types and classes for applications and for services indicated. Use connectors with temperature ratings equal to or greater than those of the wires upon which used.

B. For each electrical connection, provide complete assembly of materials, including but not necessarily limited to, pressure connectors, terminals (lugs), electrical insulating tape, electrical solder, electrical soldering flux, heat-shrinkable insulating tubing, cable ties, solderless wire-nuts, and other items and accessories as needed to complete splices and terminations of types indicated.

C. Provide electrical connectors and terminals which mate and match, including sizes and ratings, with equipment terminals and are recommended by equipment manufacturer for intended applications.

D. Provide electrical insulating tape, heat-shrinkable insulating tubing and boots, electrical solder, electrical soldering flux, wire nuts and cable ties as recommended for use by accessories manufacturers for type services indicated.

PART 3- EXECUTION

3.01 INSTALLATION REQUIREMENTS

Work under this item shall be performed in accordance with Sections 820, 821, and 822 of the Standard Specifications, except as herein modified.

A. Install electrical cables, wires, and connectors in compliance with the NEC.

B. Pull conductors simultaneously where more than one is being installed in same conduit.

C. Use pulling means such as fish tape, cable, rope, and basket weave wire/cable grips which will not damage cables or conduits. Do not use rope hitches for pulling wire or cable.

D. Keep conductor splices to a minimum.

E. Install splice and tap connectors which are compatible with conductor material, and which possess equivalent or better mechanical strength and insulation rating than conductors being spliced.

F. Provide a minimum of 18" of length of conductors within electrical enclosures and train the conductors to terminal points with no excess. Bundle multiple conductors, with conductors larger than No. 10 AWG cabled in individual

circuits. Make terminations so there is no bare conductor at the terminal.

G. Tighten electrical connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values. Where manufacturer's torqueing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL 486A and UL 486B.

H. Install electrical connections as indicated, in accordance with equipment manufacturer's written instructions and with recognized industry practices, and complying with applicable requirements of UL, NEC and NECA's "Standard of Installation" to ensure that products fulfill requirements.

I. Coordinate with other work, including wires/cables, conduits and equipment installation, as necessary to properly interface installation of electrical connections for equipment with other work.

J. Cover splices with electrical insulating material equivalent to, or of greater insulation resistivity rating, than electrical insulation rating of those conductors being spliced.

K. Prepare cables and wires, by cutting and stripping jacket and insulation properly to ensure uniform and neat appearance where cables and wires are terminated. Exercise care to avoid cutting through tapes which will remain on conductors. Also avoid "ringing" copper conductors while skinning wire.

L. Trim cables and wires as short as practicable and arrange routing to facilitate inspection, testing and maintenance.

M. All wire/cable shall be installed with care to prevent damage to the cable insulation. The contractor shall check the wire/cable for defects as it is being installed. Any defects found shall be reported to the Engineer, and if they may be remedied, they shall be repaired to the satisfaction of the Engineer, or the wire/cable shall be replaced as directed.

N. The wire/cable shall be pulled into the conduit with a minimum of dragging on the ground or pavement. This shall be accomplished by means of reels mounted on jacks or other suitable devices conveniently located for unreeling wire/cable directly into conduit in such a manner as to not damage the wire/cable.

O. Where lubricants are necessary to facilitate installation of the wire/cable, only a vegetable based lubricant may be used for plastic coated wire/cable.

P. Bends in the wire/cable shall conform to the recommended minimum radius as outlined in the NEC.

Q. The wire/cable shall be color coded so that each lead of all circuits may be easily identified and lighting units connected to the proper leg as indicated on the plans and wiring diagram. The smallest conductor or equipment grounding conductor shall always be green in color.

R. All wire or cable in the distribution and control cabinets shall be properly trained and have sufficient slack provided for any rearrangement of equipment for future additions.

S. Any wire/cable terminations or splices, where approved, shall be made in a workmanlike manner. All connectors and insulating tapes and materials shall be approved by the Engineer. Splices and terminations shall be considered incidental to the installation of the wire/cable, and no additional payment shall be made for same.

3.02 FIELD QUALITY CONTROL

A. Prior to energizing, check installed wires and cables with megohm meter to determine insulation resistance levels to assure requirements are fulfilled in accordance with Article 801.14 of the Standard Specifications.

B. Prior to energizing, test wires and cables for electrical continuity and for short-circuits.

C. Subsequent to wire and cable hook-ups, energize circuits and demonstrate proper functioning. Correct malfunctioning units, and retest to demonstrate compliance.

PART 4- MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT

No separate measurement shall be made For Wires And Cables For Site Electrical Work.

4.02 BASIS OF PAYMENT

The work shall be paid as part of the Contract lump sum price for Electrical Cabinet Equipment Backboard and Installation, which shall be payment in full for the work

described herein.

END OF SECTION

UNDERGROUND CONDUIT RUNS

SECTION 26 05 43

PART 1- GENERAL

1.01 SCOPE

A. Description of Work

This Work shall consist of constructing conduit trenches and conduit runs at the locations shown in the plans, or as directed by the Engineer. This work shall include trench and backfill, conduit runs, electrical identification, regrading, and all labor, tools, and equipment necessary to install the conduit runs to connect all components including but not limited to the SCADA system and transducer mixing system alarms, cathodic protection, and the power source, including clean-up and restoration of the locations.

B. Related Work

1. General Electric Requirements

2. Basic Electrical Materials & Methods/Requirements

3. Wire & Cables for Site Electrical Work

4. Electrical Connections for Site Equipment

1.02 STANDARDS

(Not used.)

1.03 SUBMITTALS

In accordance with the Supplemental Conditions, the Contractor shall submit to the ENGINEER for review drawings, product specifications, and description, together with installation instructions and field check-out/testing procedures for all equipment furnished.

1.04 REFERENCES

Work under this item shall be performed in accordance with Sections 801, 810, 812, 821, 868, 1003, and 1085 of the Standard Specifications, except as herein modified; as well as all applicable portions of the National Electric Code (NEC) and National Electrical Manufacturer’s Association (NEMA).

UNDERGROUND CONDUIT RUNS

1.05 GENERAL REQUIREMENTS

A. Conduct site clearing operations to ensure minimum interference with railway, roads, streets, walks and/or adjacent facilities. Do not close traveled ways without written permission form authorities having jurisdiction.

B. Provide protection to prevent damage to existing structures, track, roadway, sidewalk and/or other improvements on or adjacent to the job site. Restore any damaged improvement to its original condition as acceptable to parties having jurisdiction, with no additional compensation due the Contractor.

PART 2- PRODUCTS

2.01 CONDUIT BODIES

A. General: Types, shapes, and sizes shall be as required to meet individual applications and NEC requirements.

B. Unless otherwise noted, all conduit is to be rigid galvanized steel conforming to Articles, 1085.15 and 1085.16 of the Standard Specifications.

2.02 ELECTRICAL WARNING TAPE

The material shall meet the requirements of Article 1085.23 of the Standard Specifications.

2.03 TRENCH BACKFILL

The material shall have an FA 6 gradation conforming to Article 1003.04 of the Standard Specifications, except wet bottom boiler slag as defined in Article 1003.01 will not be permitted.

PART 3- EXECUTION

3.01 INSTALLATION REQUIREMENTS

Work under this item shall be performed in accordance with Article 810.03 of the Standard Specifications, except as herein modified.

A. Complete installation of electrical conduits before starting installation of conductors within conduits.

B. Prevent foreign material from entering conduits by using temporary closure protection.

C. Protect stub-ups from damage where conduits rise from concrete foundations. Arrange so curved portion of bends is not visible above the finished slab.

D. Make bends and offsets so the inside diameter is not effectively reduced. Unless otherwise indicated, keep the legs of a bend in the same plane and the straight legs of offsets parallel.

E. The contractor shall exercise care in installing the conduit to ensure that it is smooth, free from sharp bends or kinks, and has the minimum practical number of bends. Crushed or deformed conduit will not be accepted. All conduit and fittings shall have the burrs and rough edges smoothed, and all conduit runs shall be cleaned and swabbed before installation of electric cables.

F. All conduit is to contain fish tape or pull wires for wire pulls. Use no. 14 AWG zinc-coated steel or monofilament plastic line having not less than 200-lb tensile strength.

G. Install conduit sealing fittings in accordance with the manufacturer's written instructions. Locate fittings at suitable, approved, accessible locations and fill them with UL-listed sealing compound. For concealed conduits, install each fitting in a flush galvanized steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install conduits sealing fittings at the end points.

H. Stub-up Connections: Extend conduits above concrete foundation or ground 6", unless otherwise noted on plans. Extend conductors to equipment with rigid steel conduit. Where equipment connections are not made under this contract, install screwdriver-operated threaded flush plugs flush with slab.

I. Conceal all conduits, unless indicated otherwise. Install conduits at proper elevations.

J. Electrical Warning Tape is to be installed in all conduit trenches, at the location shown on the Drawings.

3.02 TRENCH AND BACKFILL

Work under this item shall be performed in accordance with Article 868.03 of the Standard Specifications. Trench backfill shall be in accordance with Section 2.03 of this specification.

PART 4- MEASUREMENT AND PAYMENT

The work shall be paid as part of the Contract lump sum price for Electrical Cabinet Equipment Backboard and Installation, which shall be payment in full for the work described herein.

END OF SECTION

ELECTRIC SERVICE AND DISTRIBUTION

SECTION 26 27 01

PART 1- GENERAL

1.01 SCOPE

A. This Section covers the requirements for the furnishing, installing and connecting of a complete working installation of the electrical service and distribution system as outlined in related sections of Division 26, specified in detail in other parts of this Section, other related Sections and/or as shown on the Drawings. It should be noted that this Section of the Specification may include some items which are not required for, or related to, the completion of the electrical work for this Project. The Contractor shall coordinate the requirements of the various parts of this Section of the Specifications with the Drawings when ordering materials or performing Work in conformance with the applicable provisions of this Section.

PART 2- PRODUCTS

2.01 ELECTRICAL SERVICES

A. An existing ComEd electrical power service pedestal rated at 120/240 volts, single phase, three (3) wires, 60 Hertz is currently existing on site adjacent to the proposed Electrical Cabinet Equipment Backboard to be located under the water tower.

B. The Contractor's responsibility shall be to supply and install the proposed electrical cabinets and coordinate as required with ComEd to get the existing services operational. The work also includes furnishing the secondary voltage cables and conduit from the proposed ComEd meter to the load side of the panelboard LP-1 from the power company. If required, the Contractor shall coordinate with ComEd to furnish connectors and make connections to the transformer. The underground conduit shall be provided and installed as specified in Part 3 of this Section and as shown on the Drawings.

PART 3- EXECUTION

3.01 GENERAL

A. The methods of installation of Contractor furnished equipment and materials are described in related Sections of these Specifications and as shown on the Drawings and shall in general be in accordance with the manufacturer's and/or Commonwealth Edison's standard procedures and

recognized engineering practices.

B. The intent of these Specifications is to provide and coordinate electrical service from the ComEd service pedestal to the proposed customer owned panelboard LP-1. Underground electrical service/ conduits/ducts shall be installed in accordance with ComEd's requirements.

PART 4- MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT

Separate measurement shall be made for Electric Service and Distribution.

4.02 BASIS OF PAYMENT

The work shall include in the line item price bid for Electrical Service and Distribution, which shall be payment in full for the work described herein.

END OF SECTION

ELECTRICAL CABINET EQUIPMENT BACKBOARD AND INSTALLATION

SECTION 26 27 19

PART 1- GENERAL

1.01 SCOPE

A. Description of Work

This Work shall consist of furnishing, installing and testing the proposed equipment backboard and cabinets and the related wiring as shown on the Drawings or as directed by the Engineer. The work in this section shall include all labor, materials, tools and equipment to furnish and install the backboard panel and associated wiring connections associated with the proposed SCADA panel, panelboard, rectifier and mixing system controller. Work of this Section shall also include all items as required for providing and installing the lighting control cabinet equipment pad.

B. Related Work

1. General Electric Requirements

2. Basic Electrical Materials & Methods/Requirements

3. Disconnects & Circuit Breakers

4. New Platform Lighting Units

5. Underground Conduit Runs

6. Wire & Cables for Site Electrical Work

7. Electrical Connection for Site Equipment

1.02 QUALITY ASSURANCE

Regulatory Requirements: Comply with provisions of the following codes:

A. NFPA 70 "National Electrical Code": Conform to applicable codes and regulations regarding the internal wiring of the cabinet.

B. UL Compliance: Provide components which are listed and labeled by UL under the following standards.

1. UL Standards 50 and 508 for enclosure.

2. UL Standard 486A for wire connector.

3. UL Standard 854 for power cables.

1.03 SUBMITTALS

The Contractor shall submit to the ENGINEER for review drawings, product specifications and descriptions, including control schematic diagrams, wiring connection diagrams, together with installation instruction, and operating and maintenance procedures in accordance with the applicable requirements specified in the Supplemental Conditions for all equipment furnished.

PART 2- PRODUCTS

2.01 ELECTRICAL CABINETS

The Contractor shall furnish the electrical cabinets and board per the Drawings and Specifications.

A. The cabinets shall be rain tight and dust tight (NEMA Type 3R).

B. Body and door ground studs shall provide positive ground.

C. Furnish plastic plugs to provide seals to mounting holes.

D. Cabinet ssizes shall be as noted on the Drawings and coordinated by the Contractor.

2.02 ELECTRICAL EQUIPMENT BACKBOARD PAD

Equipment backboard shall be supported by Uni-strut and concrete footing consisting of poured-in-place reinforced concrete type adequately sized to support the structure. Concrete and related concrete products shall be in accordance with the details shown on the plans.

PART 3- EXECUTION

3.01 EXAMINATION

A. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. General: Install equipment in accordance with manufacturer's written instructions.

B. Wiring Methods: Install wiring in conduits.

C. Wiring within Enclosures: Provide adequate length of conductors. Bundle, lace, and train the conductors to terminal points with no excess. Provide and use lacing bars.

D. Splices, Taps, and Terminations: Make splices, taps and terminations on numbered terminal strips injunction, pull, and outlet boxes, terminal cabinets and equipment enclosures.

3.03 GROUNDING

A. Provide equipment grounding connections for system. Tighten connections to comply with tightening torques specified in UL Standard 486A to assure permanent and effective grounds.

B. Provide grounding electrodes, made of steel with copper welded exterior, 3/4" in diameter and 10 feet in length as shown on drawings.

C. Provide a solid copper grounding bar of 2" wide x 4" long x 1/4" thick and mount at lower left comer of the structure.

D. Connect the grounding electrode and grounding bar to the grounding stud of the panelboard.

E. Ground equipment and conductor to eliminate shock hazard. Provide 5-ohm ground at main equipment location. Measure, record, and report ground resistance.

F. For additional requirements refer to all other electrical ssections.

3.04 FIELD QUALITY CONTROL

A. Pretesting: Upon completing installation of the system, align, adjust, and balance the system and perform complete pretesting. Determine, through pretesting, the conformance of the system to the requirements of the drawings and specifications. Correct deficiencies observed in pretesting. Replace malfunctioning or damaged items with new and retest until satisfactory performance and conditions are achieved.

B. Testing: Upon completion of pretesting, notify the Engineer and Village of Downers Grove a minimum of 10 days in advance, of acceptance tests performance schedule and conduct tests in his presence. Provide a written record of test results.

C. Inspection: Make observations to verify that units and controls are properly labeled, and interconnecting wires and terminals are identified.

D. Retesting: Rectify deficiencies indicated by tests and completely retest work affected by such deficiencies at Contractor's expense. Verify by the system test that the total system meets the specifications and complies with applicable standards.

3.05 CLEANING AND PROTECTION

A. Prior to final acceptance, clean system components and protect from damage and deterioration.

PART 4- MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT

Separate measurement shall be made for Electrical Cabinet Equipment Backboard and Installation.

4.02 BASIS OF PAYMENT

The work shall be paid as part of the Contract lump sum price for Electrical Cabinet Equipment Backboard and Installation, which shall be payment in full for the work described herein.

END OF SECTION

CATHODIC PROTECTION

SECTION 26 42 00

PART 1- GENERAL

1.01 SCOPE

This Section covers the cathodic protection system, related electrical panels and associated accessories including but not limited to power unit, conduit, wires and cables, junction boxes, anodes and all other necessary appurtenances to be designed, furnished, installed, and tested as shown on the Drawings and as specified herein. All fittings, connectors, hangers, supports, anchors and accessories where required, not otherwise specifically provided for in these Specifications, but necessary to complete the various systems shall be included under this Section of Work. Any and all miscellaneous electrical work required for installation and to electrically connect and provide for a complete and operational system shall be included under this Section of Work.

1.02 QUALITY ASSURANCE

A. Acceptable Supplier

The cathodic protection equipment supplier shall utilize personnel who have been engaged in the design and installation of impressed current corrosion control systems for five (5) or more years. The Work shall be performed under the direction of a licensed professional engineer or a person with N.A.C.E. certification who has experience in water tank cathodic protection design. Equipment shall be as manufactured by Corrpro Waterworks, Inc. (@ 330-725-6681); no exceptions allowed.

B. Applicable Standards

All Work shall conform to the applicable provisions of the codes, standards, and Specifications, as specified herein and the following:

Name	Abbreviation
American Water Works Association	AWWA D104
National Electrical Code	NEC
Underwriters Laboratories	UL
National Association of Corrosion Engineers	NACE

1.03 SUBMITTALS

A. The Contractor shall submit to the Owner's Representative for review drawings, design details, product specifications, and description, including control schematic diagrams, wiring connection diagrams, together with instruction manuals, installation instructions, operating and maintenance manuals and field check-out, start-up and testing procedures specified in Section 01300 for all equipment furnished.

B. Submit copy of ANSI/NSF 61 classification for all system components located within the tank.

PART 2- PRODUCT

2.01 GENERAL

A. General. All materials and equipment shall conform to the Specifications listed below. All products shall have minimum ratings as specified herein. Identification symbols and nomenclature where used in this Section are the same as those shown on the Drawings. Paragraphs of these Specifications describing the requirements of a single item of equipment shall apply equally to all identical items of equipment to be furnished.

B. Standard Products. All materials shall be new and conform to the applicable portion of these Specifications. The materials to be furnished under these Specifications shall be the standard product of manufacturers regularly engaged in the production of such equipment and shall be the manufacturer's latest standard design.

C. Special Products. The supplier of the power units, anodes and other special cathodic protection materials and equipment shall have a minimum of five (5) continuous years of successful experience in the manufacture, installation and service of cathodic protection systems for similar tank structures.

2.02 EQUIPMENT CRITERIA AND OPERATION

A. Type. The proposed cathodic protection system shall be of the automatic impressed current type with IR Drop Free mode of operation to control corrosion of the submerged steel surfaces of a potable water storage tank.

B. Design Criteria. The criteria for protection shall be based on a tank-to-water potential, IR drop free, within a range of -0.850 volts to -1.050 volts relative to a stationary copper-copper sulfate reference electrode. This potential shall be measured free of the effect of voltage gradients (IR drops). The potential shall be measured with protective current being applied as recommended in NACE Standard RPO 388-88 latest version and/or ANSI/AWWA D104-91.

C. Design Requirements. The cathodic protection system shall be designed based upon capacity and performance requirements as follows:

1. Total submerged surface area of the tank. Total surface area includes high water level in tank and wet risers including draft tube recirculation piping, which are 30" diameter or larger.

2. Total bare surface area to be protected will be a minimum of 25% of total surface area.

3. Type of coating and condition of coating.

4. Minimum current density of 0.5 MA/ft^2 bare surface area.

5. Chemical analysis of water including resistivity expressed in ohm-cm.

6. Tank being susceptible to icing.

7. Minimum anode design life of twenty (20) years.

8. Selection, dimensions and layout of system components specified hereinafter.

D. Mode of Operation. The proposed power unit shall be capable of operating in the following three (3) modes with the selection of the desired operating mode made on the front panel without additional equipment or tools with access limited to authorized personnel only.

1. Manual Mode. The power unit shall operate as a constant current rectifier continuously delivering preselected current to the anodes. In this mode, the automatic control shall be locked out without affecting the preprogrammed settings. The output of the power unit shall be regulated from 0-100% of rated capacity without the use of transformer taps.

2. Auto-1 Mode. In the Auto-1 mode, the controller shall automatically and continuously monitor the potential of the structure and make necessary adjustments in the current output to maintain the structure potential at the preselected value. A single reference electrode placed within 1 to 2 cm. from the protected structure shall be used to measure the potential and control operation of the power unit.

3. Auto-2 Mode (IR Drop Free). The Auto-2 model shall function the same as Auto-1 except the potential shall be monitored against a reference electrode located some distance from the protected structure. The measured and displayed potential shall be free of IR drop error.

E. Data. The following data shall be used as the basis for system design.

ITEM	TANK DATA
Type:	Elevated-Legged
Style:	Welded Steel
Capacity:	2 Million Gallons
Tank Height:	160’ ±
Tank Diameter:	N/A
Draft Tube Mixer:	None; per Village

2.03 DETAILS OF CONSTRUCTION

A. General. The existing anodes and suspension system will need to be removed and replaced under this contract. This Specification outlines the minimum quality required for long-term economy and reliability of the cathodic protection power unit (rectifier) which is solid state, air-cooled and consisting of the necessary potential control circuitry, transformers, rectifiers, circuit breaker, meter, wiring, terminals and appurtenances of adequate capacity to meet the requirements of the system. Multiple D.C. output circuits exist, each circuit consists of separate transformers, rectifier and control. The output of each circuit is electronically controlled in all modes of operation. The entire unit is field serviceable. The unit is designed to operate on 110 volts, 1 phase, 60 hertz, A.C.

B. Existing Transformer. The transformer is of the separate primary and secondary type and shall withstand continuous operation 10% above rated input voltage at the maximum rated D.C. output. The transformer is designed for a maximum hot spot heat rise not to exceed 50°C.

C. Existing Rectifiers. The rectifier unit(s) performs in accordance with ANSI/AWWA Standard D104-04 Section 4: 4.1.1.1.1, IR drop free system and include:

1. Transformer
2. Selenium or silicon rectifying elements
3. Circuit breaker(s)
4. Lightning, surge and overload protection
5. Provision for air-cooling operation
6. Voltmeter(s) and ammeter(s)
7. Weatherproof cabinet in accordance with NEMA 4R requirements
8. Provision to vary current output from 0% to 100% of rated capacity
9. Provisions for mounting, grounding and locking
10. Provision for 110-120 volt, 60Hz, single phase AC power
11. DC output capacity in volts and amperes in accordance with Design Criteria and Requirements specified in Paragraph 2.02
12. Number of circuits or separate rectifiers in accordance with Design Criteria and Requirements specified in Paragraph 2.02
13. Automatic controller is AWWA D104-04, Type A and adjusts current output to compensate for changes in water level, temperature of water, water chemistry, and cathodic polarization and shall include the following provisions:

    a. Utilize long-life reference electrode(s) mounted in tank
    b. Monitor the tank-to-water potential, free of IR drop
    c. Automatically adjust the tank-to-water potential, free of IR drop, to a preset value
    d. Operate within 25MV of preset value
    e. Limit current to a preset value
    f. Utilize potential meter(s) to display tank-to-water potential, free of IR drop

D. Proposed Long Life Reference Electrode(s). The permanent reference electrode shall consist of a copper-copper sulfate electrode which shall be manufactured to remain stable (plus or minus 10 MV) for a minimum of ten (10)

years. The reference electrode to lead wire connection shall be encapsulated to prevent water migration.

The stationary reference electrode shall be positioned in the tank water to provide the most representative measurements for the submerged surface area(s).

E. Proposed Anode Suspension System. The anode suspension system shall be designed to be resistant to ice damage and in accordance with ANSI/AWWA Standard D104-04, Section 4.2.4.1.1 Type A, Horizontal System.

The anode suspension system shall consist of a minimum 5/16" polyester cord. The cord shall be secured to steel anchors welded to the side wall of the tank bowl or to the exterior of the dry access column of spheroidal type tanks and the side wall of wet risers which are 30" diameter or larger. All cord to cord connections shall be tied and taped.

Handhole assemblies used for the installation of vertical anode suspension systems from the roof of the tank shall consist of a 6" diameter steel cover, rubber gasket and a steel bar and bolt assembly for each 5" diameter access opening.

F. Proposed Anode Materials. The anode materials shall be selected in accordance with Design Criteria and Requirements specified in Paragraph 2.02 and shall consist of one of the following:

1. Minimum .062" diameter platinized niobium with 25 micro inches of platinum. The wire anode shall be continuous with a maximum of two (2) anode to header connections.

2. Minimum .062" diameter titanium with a precious metal oxide coating. The wire anode shall be continuous with a maximum of two (2) anode to header connections.

All anode to header cable connections shall be sealed to prevent water migration.

G. Proposed Pressure Entrance Fitting. For icing tanks the pressure entrance fitting shall accommodate anode and reference electrode lead wires at the base of the tank. The fitting shall be manufactured to prevent leakage through the fitting and to prevent water migration through the wire insulation.

The entrance fitting shall be sized for a maximum 1.5 inch Schedule 80 steel coupling.

H. Existing Control Circuits. The control circuits are designed to continuously monitor the potential of the structure and automatically regulate the protective current as required to maintain the potential at the preselected level. The current output of the unit is controlled to prevent overprotection.

I. Existing Circuit Breaker. The circuit breaker shall be of the single phase, 2 pole, series trip, manually reset, magnetic type not affected by change in ambient temperature.

J. Wiring. Wiring for the cathodic protection system and equipment shall be as follows:

1. Existing Power Unit Wiring. The wires to connect components of the power unit are stranded or solid copper meeting the requirements of the N.E.C. for allowable current carrying capacities. The D.C. output terminals are conveniently located and are sized to accommodate wires as required for safe operation of the cathodic protection system.

2. Proposed Wiring Within Tank. All wiring within the tank shall be insulated to prevent copper conductor to water contact.

3. Proposed Exterior Tank Wiring. All wiring on the exterior of the tank shall be insulated and run in rigid conduit.

K. Proposed Hardware. All hardware used in conjunction with the system shall be protected against corrosion.

L. SCADA. The contractor will need to employ the use of the Village system integrator, Automatic Controls Services, for DC output connection from proposed Cathodic Protection System to existing Village SCADA. Contact Mr. Bill Schmitz (Office) (630) 357-1780, (Cell) (630) 399-8844.

M. ANSI/NSF 61. All materials in contact with the water, or exposed to the interior of the tank, shall be classified in accordance with ANSI/NSF 61 Drinking Water System Components".

PART 3- EXECUTION

3.01 FACTORY TESTING

All equipment shall be inspected and tested in the manufacturer's shops. Monitoring and control devices shall be functionally tested to verify correct operation and that all component parts function properly.

3.02 INSTALLATION AND TESTING

A. General. The equipment shall be installed as shown on the Drawings in accordance with the manufacturer's instructions and recommended best practices. All necessary items required for installation and testing shall be furnished. All items of equipment shall be operated, adjusted, and tested for proper performance in accordance with the manufacturer's recommended test procedure. All miscellaneous electrical work required for electrification of the cathodic protection system, including conduit and wiring, shall be in accordance with local codes and standards.

B. Field Supervisory Personnel. The equipment manufacture shall provide the services of factory trained field supervisory personnel who shall perform all necessary checkouts and energize and adjust the system to operate within the specified criteria. The factory trained field supervisory personnel shall be responsible for adjusting the system to perform in accordance with specified design criteria as well as conducting potential profile measurements.

C. Qualifications. The cathodic protection field supervisory personnel shall have a minimum of five (5) years' experience installing and servicing the types of system described by these Specifications. The system shall be installed by personnel specifically trained by the cathodic equipment manufacturer to provide all workmanship required for corrosion control performance.

D. Performance. All work shall be in accordance with the following requirements:

1. Components of the cathodic protection system shall be installed in the manner and at the locations as shown on the design drawings prepared by the cathodic equipment manufacturer.
2. Pressure entrance fitting shall be installed in accordance with AWWA D100-96, Section 3.13.

3. Welding, cutting and coating shall be in accordance with AWWA Standards D100, D102 and D105.
4. Welding of steel coupling and anchors for horizontal anode suspension and rectifier mounting bracket shall be coordinated and furnished by the Contractor prior to coating the tank. Cutting of 5" diameter access openings for vertical anode suspension shall be coordinated and furnished by the Contractor as required. The cathodic protection equipment manufacturer shall furnish installation drawings and materials to the Contractor prior to tank coating.
5. Electrical continuity of all section of bolted or riveted tanks shall be furnished by the Contractor.
6. Materials and equipment shall be inspected prior to installation. Any defective component shall be repaired or replaced.
7. Electrical work shall be in accordance with the National Electrical Code.
8. Lead wires shall be installed to prevent damage from abrasion.
9. Electrical connections within the tank shall be sealed to prevent water migration.
10. The rectifier is mounted at a convenient height (eye level) above grade for monitoring and service purposes.
11. AC power to the rectifier shall be provided as shown on the Drawings.
12. Disinfection of the tank shall be in accordance with the applicable requirements of Section 01012.

E. Energizing System. After the system is installed and the tank is filled, the cathodic protection field supervisory personnel shall provide startup service which includes energizing, testing and adjusting the system for optimum performance of the cathodic protection system. This startup service shall be in accordance with ANSI/AWWA D104-04 Section 5.2 Testing, 5.2.1 Field Test for Type A, IR Drop-Free System. This startup service shall be coordinated with the Owner and/or Owner's Representative.

All tank-to-water potential measurements shall be conducted with a calibrated portable copper-copper sulfate reference electrode and a portable high impedance voltmeter. A minimum of five (5) locations shall be measured. All test data shall be reviewed and evaluated by the corrosion specialist in the regular employment of the cathodic protection equipment manufacturer.

The final test and adjustment of the system shall be conducted approximately twelve (12) months after the

startup service.

F. Monitoring During Guarantee Period. The cathodic protection equipment manufacturer shall furnish self-addressed report cards to be completed by the Owner. Report cards received by the cathodic protection equipment manufacturer during the one-year guarantee and service period shall be evaluated for system performance.

G. Service Agreement. The cathodic protection equipment manufacturer shall furnish a Service Agreement for the type of system installed. The Service Agreement shall include the annual service rate and a complete description of the scope of work proposed. The Service Agreement for annual inspection and potential testing shall be in accordance with AWWA D104-04 Appendix C and include as a minimum:

1. One (1) annual job site visit.
2. Tank-to-water potential measurements conducted at representative locations within the tank. A minimum of five (5) locations shall be measured.
3. Measurements shall be conducted with a portable high impedance voltmeter and a calibrated copper-copper sulfate reference cell.
4. Adjustment for optimum corrosion control shall be in accordance with criteria for protection.
5. Data recorded shall provide sufficient information to evaluate the performance of the system relating to criteria for protection.
6. In the event additional work is required, the cathodic equipment manufacturer shall submit a report with recommendations for optimizing corrosion control.

3.03 PAINTING

All equipment specified in this Section shall be shop painted with the manufacturer's standard finish. Contractor shall be responsible for touch-up field painting as required.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

A. Payment for the Work specified in this Section will be made

at the lump sum prices for the below listed Items, in the Schedule of Prices:

26 42 00/01, Install New Cathodic Protection System with Clips
26 42 00/02, Service Agreement

B. These prices shall be full compensation for furnishing all materials, equipment and labor as well as any and all incidentals necessary to complete the Items of Work to provide a complete and operational system.

C. Payment will not be made for any other items except as listed above. All other costs associated with such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Schedule of Prices.

END OF SECTION

SCADA SYSTEM MODIFICATIONS

SECTION 27 51 25

PART 1- GENERAL

1.01 SCOPE

A. Description

This section covers the instrumentation and control equipment upgrades, together with related accessories to be furnished, installed, programmed and tested as shown on the Drawings and as specified herein. All piping, conduits, wiring, fittings, connectors, supports and anchors, where required shall be included under this Section of Work.

B. Related Work

1. Division 26 - Electrical.
2. Other Sections as specified herein.

1.02 QUALITY ASSURANCE

A. Acceptable Manufacturers

1. SCADA modifications shall be performed by Village's preferred System Integrator, Concentric, Contact: Randy Olson or Mike Gryn @ (815) 444-3324. No exceptions.

B. Applicable Standards, Codes and Permits

All Work performed and all materials furnished or otherwise used shall be in accordance with the National Electric Code, the National Electrical Safety Code, and applicable local regulations and ordinances. Where required by applicable codes, materials and equipment shall be listed by Underwriters' Laboratories or other testing organizations acceptable to the governing authority. The Contractor shall, at his/her own expense, arrange for and obtain all necessary permits, inspections, and approvals by the proper authorities in local jurisdiction of such Work.

C. Coordination

Instrument and control systems shall be designed and coordinated for proper operation with related equipment and materials furnished by other suppliers under other Sections of these Specifications, and where applicable, to related existing equipment. All instruments and control devices shall be applied in full conformity with the drawings, specifications, engineering data, instructions, and

recommendations of the instrument or device manufacturer and the related equipment manufacturer.

Review of drawings submitted prior to the final determination of related equipment shall not relieve the Contractor from supplying systems in full compliance with the specific requirements of the related equipment.

Related equipment and materials may include, but will not be limited to, pump controls, supervisory control equipment, telemetry, flow meter, conduit, cable, and piping as described/specified in other Sections of these Specifications all as associated with this Project.

Installation drawings shall be prepared for interconnecting wiring and piping between the related equipment and the equipment furnished under this Section. All interconnecting wiring shall be appropriate for the service and shall result in a properly functioning system.

Coordination with other sub-contractors and/or Owner designated contractors, and supervision of installation shall be provided by the Contractor as required during construction.

1.03 SUBMITTALS

The Contractor shall submit to the Owner's Representative for review detailed shop drawings, product specifications and descriptions, including control schematic diagrams, internal wiring diagrams, interconnecting wiring diagrams, sample screen displays, together with instruction manuals, installation instructions, operating and maintenance manuals and field check-out, start-up and testing procedures as specified in Section 01 33 00 for all equipment furnished.

1.04 MATERIAL DELIVERY, STORAGE AND HANDLING

It is anticipated that no new equipment will be needed for this work. The work will be programming existing SCADA equipment only.

PART 2- PRODUCTS

2.01 GENERAL

A. All materials and equipment shall conform to the specifications listed below and shall be equal to the products listed below by brand name and catalog number. Identification symbols and nomenclature where used in this

Section are the same as those shown on the Drawings. Paragraphs of these Specifications describing the requirements for a single item of equipment shall apply equally to all identical items of equipment to be furnished.

2.02 DESCRIPTION/OPERATIONAL AND PERFORMANCE REQUIREMENTS

The Village recently had a new SCADA system installed. The Contractor shall be responsible for the following:

A. Provide new 1" RGS conduit and wiring from the valve vault piping in vault to the SCADA panel back board mounted RTU mounted to the new back board panel to monitor operating pressure at the valve. This will include all necessary asphalt removal and replacement as well as all above and below grade penetrations to the vault and dry riser.

B. Provide new (4) ¾" RGS conduit and wiring from roof access hatch to SCADA RTU panel on the back board, for the alarm signal the power and control to cathodic protection rectifier mixer. This will include the proposed limit switch at the roof hatch and connection of this device to the SCADA panel to monitor if the roof hatch is open or closed.

2.03 INSTRUMENTATION

Instrumentation shall consist of existing primary sensing elements and transmitters for pressure sensing. Sensors and transmitters should be existing at locations indicated on the Drawings.

PART 3- EXECUTION

3.01 FACTORY TEST AND INSPECTION

Not applicable.

3.02 INSTALLATION AND TESTING

A. General

The programming shall be installed as shown on the Drawings and in accordance with the manufacturer's instructions and recommended best practices. All necessary fittings, connectors, supports, anchors and other items required for installation and testing shall be furnished. All items of equipment shall be operated, adjusted and tested for proper performance in accordance with the manufacturer's recommended test procedure.

B. Instrumentation Installation

The instrumentation equipment shall be installed by the Contractor or his/her subcontractors. The services of the System Integrator's technical representative shall be provided as necessary to calibrate, test and advise others of procedures for installation, adjustment and operation of equipment, devices, components, etc. all in accordance with the requirements of other Sections of the Specifications. System Supplier shall be responsible for performing any and all software engineering and programming/calibrating required by these Specifications and as directed by the Owner to provide a complete and operational installation. The System Integrator's technical representative shall be factory-trained and shall perform all necessary coordination to check-out, start-up and place into operation the water works facilities as well as instruct Owner personnel in the control and operation of the herein specified equipment.

Installation of instrumentation equipment shall be in accordance with the following:

1. Field Wiring. Field wiring materials and installation shall conform to the requirements of the electrical Sections.

2. Field Piping. Field piping materials and installation shall conform to the requirements of the piping Sections.

3. Field-Mounted Instruments. Instruments shall be mounted so that they may be readily approached and easily serviced and so that all appurtenant devices may be easily operated. Installation details for some instruments are indicated on the Drawings. Unless otherwise indicated on the Drawings, instruments which include local indicators shall be mounted so that the indicator is approximately 5'-0" above the floor. Indicators shall be oriented for ease of viewing. Transmitters shall be mounted on corrosion-resistant pipe supports suitable for floor, wall or bracket mounting.

4. Field Calibration. A technical representative of the System Supplier shall calibrate each instrument and shall provide a written calibration report for each instrument indicating the results and final tuning adjustment settings. Instrument calibration shall be accomplished prior to a checkout of the operation of the system. Field calibration work shall also include

any and all necessary software modification required.

5. Systems Check. A technical representative of the System Integrator shall participate in the checkout of the control systems. If interrelated devices furnished by other suppliers, such as valve actuators, and/or motor controls, do not perform properly when placed in service, the technical representative shall use suitable test equipment to introduce a simulated signal to verify or measure signals from those devices as may be required to locate the source of trouble or malfunction. A written report stating the results of such tests shall be furnished, if requested by the Owner's Representative, as necessary to assign responsibility for corrective measures.

C. Customer Training

The Contractor shall employ the services of the Village's System Integrator, Automatic Control Services, to provide a qualified representative at the job site to train the Owner's personnel in operating and maintaining the equipment. The representative shall be a skilled, factory-trained technician capable of providing services to supervise and inspect the installation and start-up operation of all systems, as well as to instruct Owner's operating personnel in the operation and maintenance of the equipment. The training session shall include a technical explanation of the equipment and an actual hands-on demonstration. The training session shall consist of one 8 hour working day, and the schedule shall be arranged and coordinated with the Owner.

3.03 PAINTING

All equipment specified in this Section shall be shop painted with the manufacturer's standard finish.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

A. Payment for the Work specified in this Section will be made at the contract lump sum prices for the below listed Items in the Schedule of Prices:

27 51 25/01; Modifications to Existing SCADA System
27 51 25/02; Install New SCADA Cabinet and Electrical Conduit

B. These prices shall be full compensation for furnishing all materials; for all preparation/installation/programming and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete these items for instrumentation equipment installation as shown on the Drawings.

C. Payment will not be made for any other items except as listed above. All other costs associated with such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Schedule of Prices.

END OF SECTION

GENERAL PROVISIONS FOR MECHANICAL WORK

SECTION 33 05 50

PART 1- GENERAL

1.01 SCOPE

A. This Section describes the general provisions for the Work to be performed under Division 22 – Plumbing, Division 33 - Utilities of this Contract as well as Division 26 - Electrical, where applicable. The Contractor shall comply with these general provisions and shall perform all Work in accordance with the Specifications contained in this Section, as supplemented by Specifications in related Sections, and as shown on the Drawings. Related electrical work shall be performed in accordance with the applicable provisions of Division 26.

B. The following specifies the minimum general requirements for the furnishing, installation and testing of the materials and equipment. Additional details of items furnished, and installation and testing procedures are specified under individual Sections of the Specifications.

C. The Contractor shall provide all necessary coordination between the suppliers of the specified equipment so as to provide a well-designed and satisfactory operating facility to the Owner. The Contractor is advised that these Specifications are not intended to cover every and all details of the Work. In case(s) where details related to the specified Work are not covered by these Specifications, it shall be the responsibility of the Contractor to include and execute such coordination and Work at no additional cost to the Owner.

1.02 QUALITY ASSURANCE

A. Acceptable Manufacturers and Equipment Suppliers.

Acceptable manufacturers for various items of equipment are specified in respective Sections of these Contract Documents. For convenience of designation in the Contract Documents, certain equipment, articles, materials, and processes are designated by manufacturer trade name or catalog name and number. Such designation shall be deemed to be followed by the words "or equal" whether such words are shown or not. The Contractor may offer material or processes which are equal to that so indicated or specified at the time of Bid. Such offers must be in accordance with the hereinafter specified

requirements. The burden of proof as to comparative quality and suitability of alternatives shall be upon the Contractor. Specified items are preferred. After acceptance of Bid, no substitutions will be allowed, except as stated in the Bid. (Exception: Where Specifications indicate "No Substitutions Allowed" the Contractor shall provide the designated manufacturers equipment without exception.)

B. Applicable Standards

Systems as installed by the Contractor shall be in accordance with all applicable Specifications included in these Contract Documents and shall conform to State, Federal and/or Local codes and regulations. Any conflicts between Drawings or Specifications or applicable codes regulations and/or authorities having jurisdiction, shall be brought immediately to the Owner's attention. In such cases, the more stringent requirements or design practices shall govern and shall be complied with, without any extra cost to the Owner.

C. Field Verification

The Contractor shall verify field conditions, measurements and dimensions so as to assure that all items of equipment shall fit properly and be suitable for the field conditions.

D. Proposed Substitute Equipment

Comply with requirements of Section 01 33 00.

1.03 SUBMITTALS

A. General

The Contractor shall comply with the requirements specified in Section 01 33 00 - Submittals, and as specified herein.

B. Materials

1. The Contractor shall submit lists of material, equipment, apparatus, and accessories intended for use.

2. The Contractor shall include with all submittals all physical and performance data, including materials, manufacturer's names, model numbers, weights, sizes, capacities, temperatures,

pressures, flow rates, performance curves, electrical ratings, finishes, colors, dimensions, accessories, and all other data required to completely describe the equipment and to indicate compliance with the Specifications.

C. Shop Drawings and Testing Procedures

1. The Contractor shall submit for review dimensioned outline shop drawings showing the general arrangement of the equipment to be furnished, in accordance with the specified submittal schedule, and/or as otherwise specified herein.

2. Before proceeding with the manufacture of the equipment, the Contractor shall submit for review general assembly shop drawings, subassembly shop drawings, detail shop drawings, calculations, design data, catalog cuts and similar engineering documents required to demonstrate fully that all parts will conform to the provisions and intent of the Specifications and to the requirements of their installation, operation, and maintenance. These shop drawings shall show all necessary dimensions and fabrication details, including the design of welded and bolted joint connections, tolerances of fits and clearances, and all field joints and subassemblies in which the Contractor proposes to ship the equipment. Design criteria, calculations, and detailed specifications, shall be submitted for the design of all major components and for other features or details when requested.

3. All submittals by the Contractor shall be certified by the respective equipment manufacturer.

4. The Contractor shall submit complete full-line wiring diagrams covering all equipment furnished. The Contractor shall furnish shop drawings of switch developments for all instrument and control switches and internal connection diagrams for all instruments, relays, regulators, etc. The Owner's Representative will return one print of each wiring diagram on which will be marked the wire notations and cable numbers for outgoing circuits where this information is not otherwise available to the Contractor. The Contractor shall add this information to his shop drawings. Adequate space shall be allowed on the wiring diagrams to accomplish this.

5. Shop drawings shall include electrical devices, accessories and wiring furnished as component parts of mechanical equipment and shall show arrangement and dimensions.

6. The Contractor shall prepare and submit shop drawings for all work areas, indicating solutions to space problems and coordination with requirements in other Sections. These shop drawings, as a requirement of this Division, shall indicate superimposed items of all Divisions and Sections involved in congested areas, including, but not limited to, piping, structural work, electrical work and ceiling work.

7. Protocol of all shop and field testing procedures shall be submitted. In addition and prior to conducting testing activities at the site, the Contractor shall prepare a test program, showing the sequence of work required for specified tests. This program shall be in the form of a plan drawing to the extent practical and shall be exclusive of all other plans and schedules required under this Contract. This program shall be supplemental by sketches, text, bar diagrams, showing the sequence of work required for testing.

D. Operating and Maintenance Manuals

1. Upon completion of the Work, the Contractor shall furnish to the Owner six (6) complete sets of operating instructions, maintenance instructions, parts lists, and all other bulletins and brochures pertinent to the operation and maintenance of the mechanical equipment and systems provided and two (2) CDs in PDF format.

2. The operating and maintenance manuals shall be bound in durable binders, labeled to correspond with all mechanical systems shown or specified, and indexed into sections such as, but not limited to, the following:

   a) A chart tabulating all types of pipe and pipe fittings, valves and piping specialties installed in each system.

   b) Manufacturer's brochures, including names, addresses and telephone numbers, for all items installed in each system. Identify items by item number shown on the Contract Documents.

Reference the manufacturer's part or model number and the system in which it is installed.

c) All major equipment such as pumps, valves, compressors and related equipment, including shop drawings.

d) Lubrication charts for equipment requiring lubrication, listing each item of equipment, proper lubricant and dates lubricated, and a lubrication schedule.

e) List of consumable items, parts, and supplies, with applicable price lists.

E. Certificates

At the completion of the construction, the Contractor shall submit to the Owner's Representative for review, written certification that all mechanical systems have been tested, and that the installation and performance of these systems conform to the requirements of the Specifications.

1.04 WARRANTY

All specified equipment shall be warrantied and shall be provided with such warranties covering all parts and labor for a period of one (1) year from the date of Final Acceptance unless otherwise specified in subsequent Sections of these Specifications.

PART 2- PRODUCTS

2.01 GENERAL

A. Standard Products

The equipment furnished shall be standard products in production by reputable companies regularly engaged in the manufacture of high-quality equipment of the type specified. Similar equipment shall have been in satisfactory and successful operation for a period of at least two years. All parts of the specified equipment shall be so designed as to be especially adapted for the service required and shall be proportioned, enclosed, or guarded as to have ample and liberal strength and stability to withstand, without damage, the stresses to which they may be subjected during erection or operation. The component parts of duplicate items shall be

fabricated on a principle of interchangeability to facilitate ready replacement.

B. Materials

All materials incorporated in the equipment shall be new and of first-class quality, free from injurious defects and imperfections, and of the classifications and grades designated. Materials not specifically designated herein shall be subject to the review of the Owner's Representative and shall be suitable for the purpose intended.

2.02 RATINGS

The sizes, ratings, capacities, and performance characteristics of various specified items of equipment and devices are based on currently available standard products, which are available through United States manufacturers and/or suppliers. In no case shall the size, rating, capacity or performance characteristic be less than that specified unless approved in writing by the Owner. Ratings and performance characteristics, where applicable, of various devices and items of equipment are specified in respective Sections of these Specifications. All electrical components of mechanical equipment shall be UL rated.

2.03 DETAILS OF CONSTRUCTION

A. Nameplates

Each item of manufactured equipment furnished under the Specifications shall have a permanent nameplate affixed thereto in a readily visible place, showing the serial number, the name and address of the manufacturer, rated capacity, speed, electrical characteristics, and other pertinent data, as applicable and as specified herein after. Nameplates of distributing agents alone will not be acceptable.

B. Samples

The Contractor shall furnish to the Owner's Representative for review, when requested or required by the Specifications, samples of all materials and finishes to be used in the execution of the Work. Such samples shall be submitted before the Work is commenced and in ample time to permit examination thereof. All materials furnished and finishes applied shall be fully equal to the reviewed samples found to be acceptable.

C. Loose Parts

All loose parts, spare parts, fasteners, anchor bolts and other non-attached pieces shall be properly tagged. A loose parts list shall accompany the equipment to identify loose parts.

D. Lifting Provisions

Equipment shall be equipped with adequate provisions for lifting, such as, lifting lugs, threaded holes for removable eyebolts, holes for sling passage, etc. to facilitate initial placement and future moving. All items such as, but not limited to, lifting beams, slings and other devices necessary for handling during placement and/or removal of the equipment shall be provided by the Contractor and shall remain the property of the Owner.

E. Anchor Bolts

Anchor bolts, nuts and washers shall be adequate for the intended use. Each anchor bolt shall be furnished with all required flat washers, lock washers and nuts. Anchor bolts shall be furnished by the Contractor as a part of each piece of equipment.

F. Spare Parts

(As specified in subsequent Sections of these Specifications.)

G. Guards

All rotating equipment such as but not limited to belt and chain drives, exposed gearing and shafting and flywheels, clutches, fan blades, stub shafts, couplings, etc. shall be completely guarded from all directions. Guards shall enclose the top, bottom ends, front and back of the drive assembly to prevent access to the danger zone during equipment operation. All guards shall be checked for proper running clearances and adjusted as required.

2.04 RELATED ELECTRICAL FEATURES OF MECHANICAL EQUIPMENT

A. General

Electrical equipment shall conform to NEC, UL, ANSI, and NEMA Standards. The installed equipment shall conform to ANSI-C1, "National Electrical Code", considering the atmospheric and climatic conditions and the elevation at

the project site.

B. Wiring and Conduit

Wiring of the control panels and component parts shall be in accordance with the applicable requirements of Division 26.

PART 3- EXECUTION

3.00 FABRICATION AND WORKMANSHIP

A. General

Like parts and spare parts shall be interchangeable wherever possible. Surface finish of machined parts shall be adequate for their functional requirements. Machining of fits on renewable parts shall be accurate and to specified dimensions so that replacements made to drawing sizes may be readily installed. All work shall be done by workers skilled in their various trades and completed in a thorough manner following the best modern practices.

During erection the Contractor shall take the necessary precautions to prevent foreign objects or dirt from entering piping or equipment. All openings in equipment shall remain closed and protected during installation until ready for make-up of pipe connections or matching of sectionalized equipment. Damaged covers shall be repaired or replaced immediately to protect the interior of piping or equipment against weather or other contamination.

B. Electric Welding

1. Minimum Weld Requirements

All welds shall be made continuous. The minimum size of fillet welds shall be 1/4 inch. All butt welds shall be full penetration welds welded from both sides.

2. Preparation of Base Material

Members to be joined by welding shall be cut to shape and size by mechanical means such as shearing, machining, grinding, or by gas or arc cutting, to suit the conditions. Design of welded joints and selection of weld filler metal shall allow thorough penetration and good fusion of the weld with the base metal. The edges of surfaces to

be welded shall be sound metal free of visible defects, such as lamination or defects caused by cutting operations, and free from rust, oil, grease, and other foreign matter.

3. Weld Finish

Welds shall in general be treated so that they will display good appearance and a surface suitable for painting. Structure welds shall be ground and blended to avoid stress raisers. All welds which required nondestructive examinations shall be dressed by chipping and grinding as required for good interpretation by the selected weld examination methods.

4. Welding Qualifications

The qualification of welding procedures, welders, and welding operators for all welding including weld repairs, shall conform to the AWS D1.1, "Structural Welding Code". Contractor shall furnish the facilities, all equipment, materials and other articles required to perform qualification tests of his welders and welding operators. Certificates of welders' qualifications shall be submitted when requested.

5. Technique of Welding

The technique of welding, the appearance and quality of the welds, and the methods used in correcting defective work shall conform to the AWS D1.1, "Structural Welding Code". Special care shall be taken to avoid undercuts along the seams or warping of the structure. If undercuts appear along the welds, they shall be filled using a small diameter electrode of the same composition as the original electrode.

C. Fabrication of Structural Steel

1. If straightening is necessary, it shall be done by methods that will not injure the metal. Sharp kinks or bends will be cause for rejection of the material. Shearing and cutting shall be carefully performed, and all portions of the Work which will be exposed to view after completion shall be neatly finished.

2. Design and fabrication of structural parts shall conform to the applicable provisions of the AISC "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings", of the AISC "Code of Standard Practice for Steel Buildings and Bridges".

D. Machine Work

1. General

All tolerances, allowances, and gauges for metal fits between plain (non-threaded) cylindrical parts shall conform to ANSI-B4.1, "Preferred Limits and Fits for Cylindrical Parts", for the class of fit as shown or otherwise required. Sufficient machining stock shall be allowed on parts to be machined to insure true surfaces of solid materials. Finished contact or bearing surfaces shall be true and exact to secure full contact. Journal and sliding surfaces shall be polished, and all surfaces shall be finished with sufficient smoothness and accuracy to ensure proper operation when assembled. All drilled holes for bolts which are intended to match other drilled holes shall be accurately located and drilled from templates. No machining shall be done on working surfaces of "Lubrite" bushings or washers.

2. Finished Surfaces

All surfaces that are indicated on the Drawings or those that require machining for their intended function, or those that are usually machined according to good workshop practice shall be machined. Surface finish qualities shall be adequate for the intended use and shall be indicated on the Contractor's drawings and shall be in accordance with ANSI-B46.1, "Surface Texture". Compliance with specified surface will be determined by sense of feel and by visual inspection of the Work compared to standard roughness specimens, in accordance with the provisions of ANSI B46.1.

3. Unfinished Surfaces

So far as practicable, all Work shall be laid out to secure proper matching of adjoining unfinished surfaces. Where there is a large discrepancy between adjoining unfinished surfaces they shall be

chipped and ground smooth, or machined, to secure proper alignment. Unfinished surfaces shall be true to the lines and dimensions shown on the Drawings and shall be chipped or ground free of all projections and rough spots. Depressions or holes not affecting the strength or usefulness of the parts may be filled in an approved manner. Corrosion resistant steel seal plates shall have all surfaces thoroughly cleaned and those in contact with seals shall have a smooth and even surface.

4. Pins and Pin Holes

Pin holes shall be bored true to gauges, smooth and straight, and at right angles to the axis of the member. The boring shall be done after the member is securely fastened in position.

5. Protection of Machined Surfaces

a. Machine-finished surfaces shall be thoroughly cleaned of foreign matter. Finished surfaces of large parts and other delicate surfaces shall be protected with wooden pads or other suitable means. Unassembled pins and bolts shall be oiled and wrapped with moisture resistant paper or protected by other means in keeping with good engineering practice.

b. Finished surfaces of ferrous metals to be in bolted contact shall be washed with a rust inhibitor and given one thin coat of Tung oil.

E. Lubrication

Solvents shall not be used on "Lubrite" bearings. Before assembly all bearing surfaces, journals, and grease and oil grooves shall be carefully cleaned and lubricated with an approved oil or grease. After assembly, each lubricating system shall be flushed and filled with an approved lubricant in accordance with the equipment manufacturer's written recommendations. "Lubrite" bearings shall not be greased and shall be assembled dry according to the manufacturer’s instructions.

3.01 FACTORY TEST AND INSPECTION

A. Test of Materials. All materials or parts used in the equipment shall be tested, unless otherwise directed, in conformity with applicable methods prescribed by the

ASTM, or such other organization as may be specifically required, and in general accordance with the best commercial methods. When requested, tests shall be made in the presence of the Owner's Representative. Stocked material may be used, provided evidence is furnished to the Owner's Representative to show that such material meets the requirements specified herein, in which case tests on stocked materials may be waived.

B. Test Certificates. Certified material test reports shall be furnished in triplicate to the Owner's Representative as soon as possible after the tests are made. The test certificate shall identify the component for which the material is to be used and shall contain all information necessary to verify compliance with the Specifications.

C. Shop Assembly and Tests. The shop assemblies and tests specified for the various items of equipment shall be conducted. The completed shop inspection forms shall be signed by the Contractor or his representative. Copies of all shop inspection records shall be furnished to the Owner's Representative. No equipment shall be shipped from the manufacturer's shops until it has been inspected. Prior to the major shop assemblies and tests the Contractor shall submit an outline of the procedures and test he plans to demonstrate fulfillment of the requirements specified. Where witnessing of shop testing is required by these Contract Documents, the Contractor shall give sufficient notification to the Owner's Representative (as specified) so that such factory testing may be witnessed. Costs which may be incurred by the Owner's Representative directly related to witnessing of shop tests (such as travel and lodging) will be the responsibility of the Owner. All other costs related to shop testing shall be considered incidental to the items of Work to which they pertain and shall be included in the lump sum price of the specified equipment.

3.02 INSTALLATION AND TESTING

A. Receiving, Handling and Storage. The Contractor shall be responsible for the receiving, handling and storing of all materials and equipment required for the Work. Installation and maintenance instructions shall accompany all equipment delivered to site. All materials and equipment shall be stored to protect them from the weather and injury prior to installation. Damaged materials and equipment shall not be installed.

B. Installation. The equipment shall be installed as shown on the Drawings and in accordance with the manufacturer's

instructions and recommended best practices. All equipment shall be installed in a neat, accurate and workmanlike manner. Equipment shall be set level, true to line, at correct elevation and in proper orientation as shown on the Drawings. Equipment set on concrete foundations shall be properly grouted (with non-shrink grout) in such a manner to eliminate any voids which may be present under the base. Where shims are used and where shims are not removed after the grout sets, care shall be taken to totally cover any exposed surface areas which may result in a void. All necessary shims, grout, anchor bolts, and other items required for installation shall be furnished by the Contractor. In addition, certain anchor bolts when supplied by equipment suppliers shall be installed by the Contractor. The Contractor shall inspect all materials and equipment delivered to the site to assure compliance with the associated reviewed shop drawings. If the Contractor discovers any defect in material or equipment, he shall notify the Owner's Representative immediately. Any Work performed by the Contractor after such discovery, until authorized in writing by the Owner's Representative, will be done at the Contractor's risk and the cost of correcting such work shall be borne by the Contractor. In addition, any material or equipment installed by the Contractor prior to the completion of the Owner's Representative's review, will be done at the Contractor's risk and the cost of correcting such work shall be borne by the Contractor. Where trenching, excavation, backfilling and/or concreting is required for the equipment installation the Contractor shall perform such activities in accordance with the applicable requirements of IDOT Standard Specifications.

C. Adjustments/Alignment/Leveling. The Contractor shall perform all adjustment, fitting, cleaning and calibration of components to be incorporated into the Work to assure correct operation and workmanlike installation. As minimum requirements, the Contractor shall provide/comply with the following:

1. Mild carbon steel leveling plates or smooth-troweled surfaces shall be provided at all anchor bolts in concrete bases as required for leveling.

2. All equipment, unless furnished with leveling screws or otherwise specified, shall be leveled with stainless steel shims at each anchor bolt, shim on both sides of each bolt, and at intermediate points as required to prevent distortion of the equipment. Shims shall have

square cut edges, not trimmed or sheared, and shall be of varying thickness to minimize the number of shims required.

3. Rotating mechanical equipment shall be set, leveled, aligned, and inspected with precision tools such as steel straight edge, dial indicator, graduated levels, transit, etc. The alignment shall be accomplished prior to making-up any piping flange connections. After units have been aligned, the piping flange bolts shall be tightened. Sufficient alignment checks shall be made to verify that there is no load or strain on the installed equipment and that the drive shaft and the driven shaft are within the manufacturer's specified tolerances for alignment.

4. Electric motors shall be checked for correct direction of rotation prior to connection to driven equipment.

D. Field Testing. All necessary piping, pipe closures, gates, meters, valves, and other test equipment required for testing shall be furnished by the Contractor. All items of equipment shall be operated, adjusted and tested for proper performance in accordance with the manufacturer’s recommended test procedure, and as otherwise specified herein. Before final grouting of equipment is done, after alignment is completed, and before any final performance tests are made, the Contractor shall notify the Owner's Representative so that such alignment may be inspected and tests may be witnessed by the Owner's Representative.

The Contractor shall then test, operate and calibrate as necessary to demonstrate proper performance of the equipment in the presence of the Owner's Representative. Should it become necessary for any items of equipment to be retested, the Contractor shall perform all necessary Work, including removal, repair or replacing, reinstallation and retesting of the defective equipment. The Contractor will not be reimbursed for the cost of such Work associated with the retesting of defective equipment, if the defect was due to the Contractor's negligence or lack of workmanship.

E. Maintenance and Operation of Equipment and Materials. All equipment and appurtenances installed shall be provided with proper oil and lubricants by the Contractor before being placed in operation. All permanent equipment furnished under these Specifications shall be properly

maintained and operated by the Contractor until the Work is accepted by the Owner.

F. Field Check-Out and Start-Up Procedure. The Contractor shall complete all new Work to the maximum extent possible before making actual tie-in and final connection to existing systems. Tie-ins requiring cutting and patching shall be performed in accordance with applicable requirements, best recommended procedures and as specified herein. No tie-in shall be made until authorized by the Owner. The Contractor shall advise the Owner in sufficient time (minimum 24 hours) to arrange for proper coordination with Existing Systems and scheduled cut-ins and tie-ins.

3.03 PAINTING

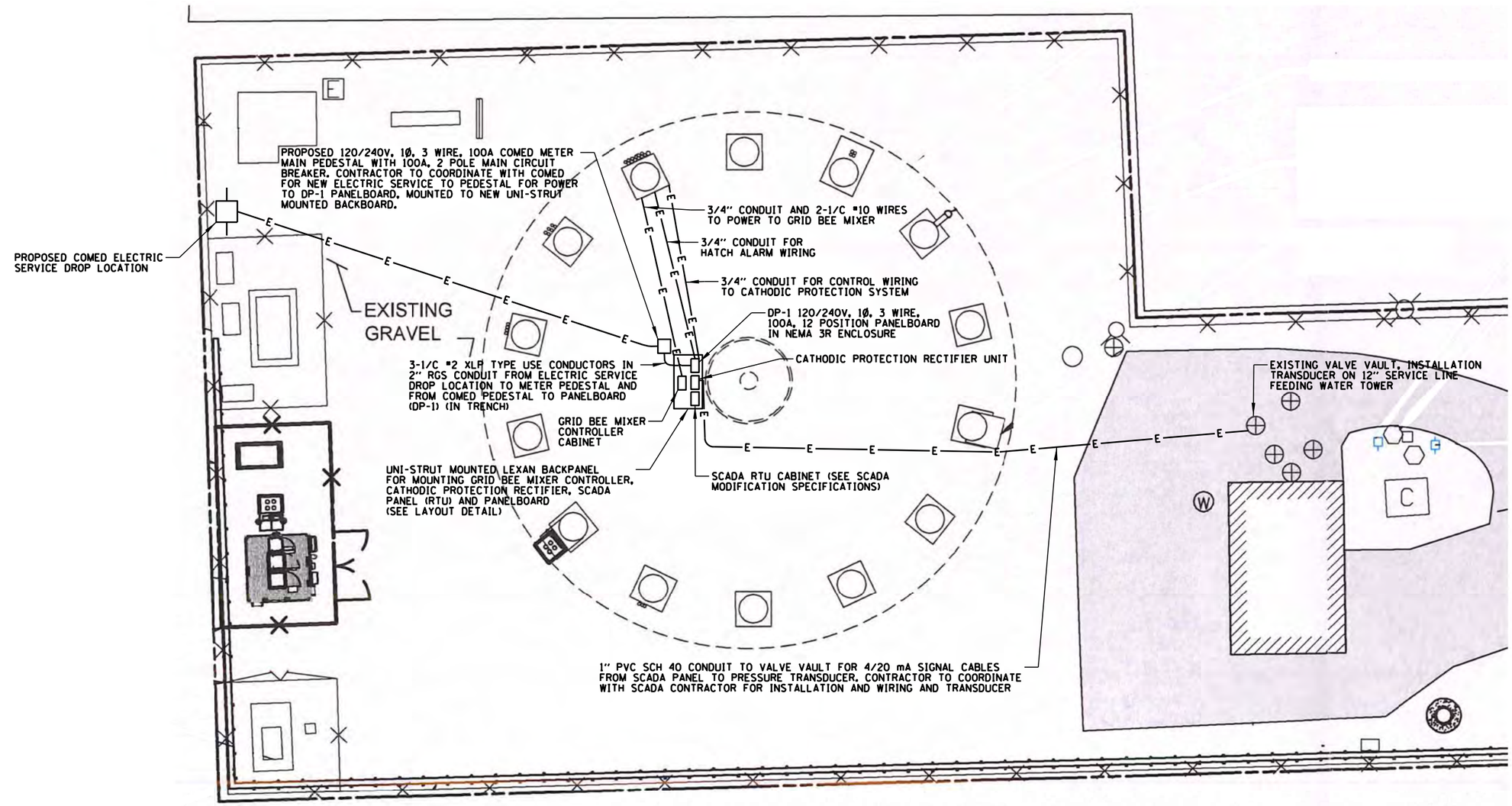
A. All equipment shall be shop-primed and painted in accordance with Section 09 91 13 and/or as specified in subsequent Sections of these Specifications. All equipment shall be field painted in accordance with Section 09900 and/or as specified in subsequent Sections of these Specifications.

B. The Contractor shall be responsible for coordination of the compatibility between the manufacturer's standard finish and field-paint specified.

PART 4- MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for Work specified in this Section. All costs for such Work shall be considered incidental and shall be included in the prices bid for the various items to which they pertain in the Schedule of Prices.

END OF SECTION



ELECTRICAL NOTES

1. CONTRACTOR TO COORDINATE THE LOCATION AND ORIENTATION OF ALL CONDUITS AND WIRING SO AS NOT TO INTERFERE WITH LOCATION OF LOGOS AND CELLULAR EQUIPMENT WIRING AND CABLES. ALL CONDUITS SHALL BE INSTALLED ON THE LEGS OF THE TOWER ON THE INBOARD SIDE.

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

CLIENT:
VILLAGE OF DOWNERS GROVE
801 BURLINGTON AVENUE
DOWNERS GROVE, ILLINOIS 60515

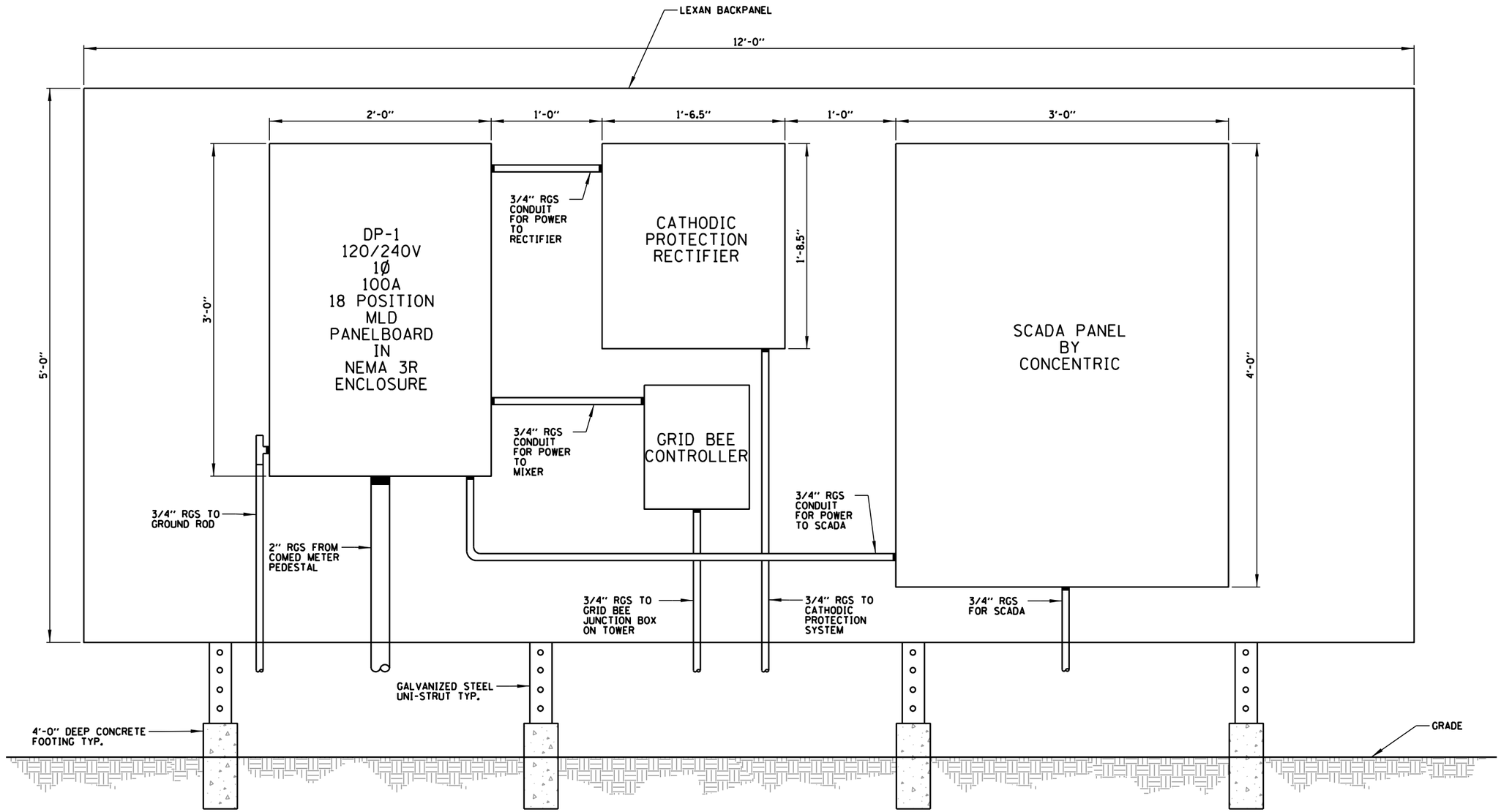
NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\DownersGrove\20286\Mech\DI_PLN_20286.SHT

DSGN.	GAH
DWN.	TJK
CHKD.	GAH
SCALE:	20'
PLOT DATE:	1/10/2022
CAD USER:	tkudla
MODEL:	Default

TITLE:
REHABILITATION OF 2MMG LEGGED HIGH TANK
SITE PLAN
PROPOSED ELECTRICAL SITE PLAN

PROJ. NO.	21-0286
DATE:	1/10/2022
SHEET 1	OF 5
DRAWING NO.	1



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DOWNERS GROVE, ILLINOIS 60515

NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\DownersGrove\20286\Mech\02_DET_20286.SHT

DSGN.	GAH
DWN.	TJK
CHKD.	GAH
SCALE:	
PLOT DATE:	1/10/2022
CAD USER:	tkudla
MODEL:	Default

TITLE:
REHABILITATION OF 2MMG LEGGED HIGH TANK UNI-STRUT MOUNTED LEXAN BACKPANEL LAYOUT DETAIL

PROJ. NO.	21-0286
DATE:	1/10/2022
SHEET	2 OF 5
DRAWING NO.	2

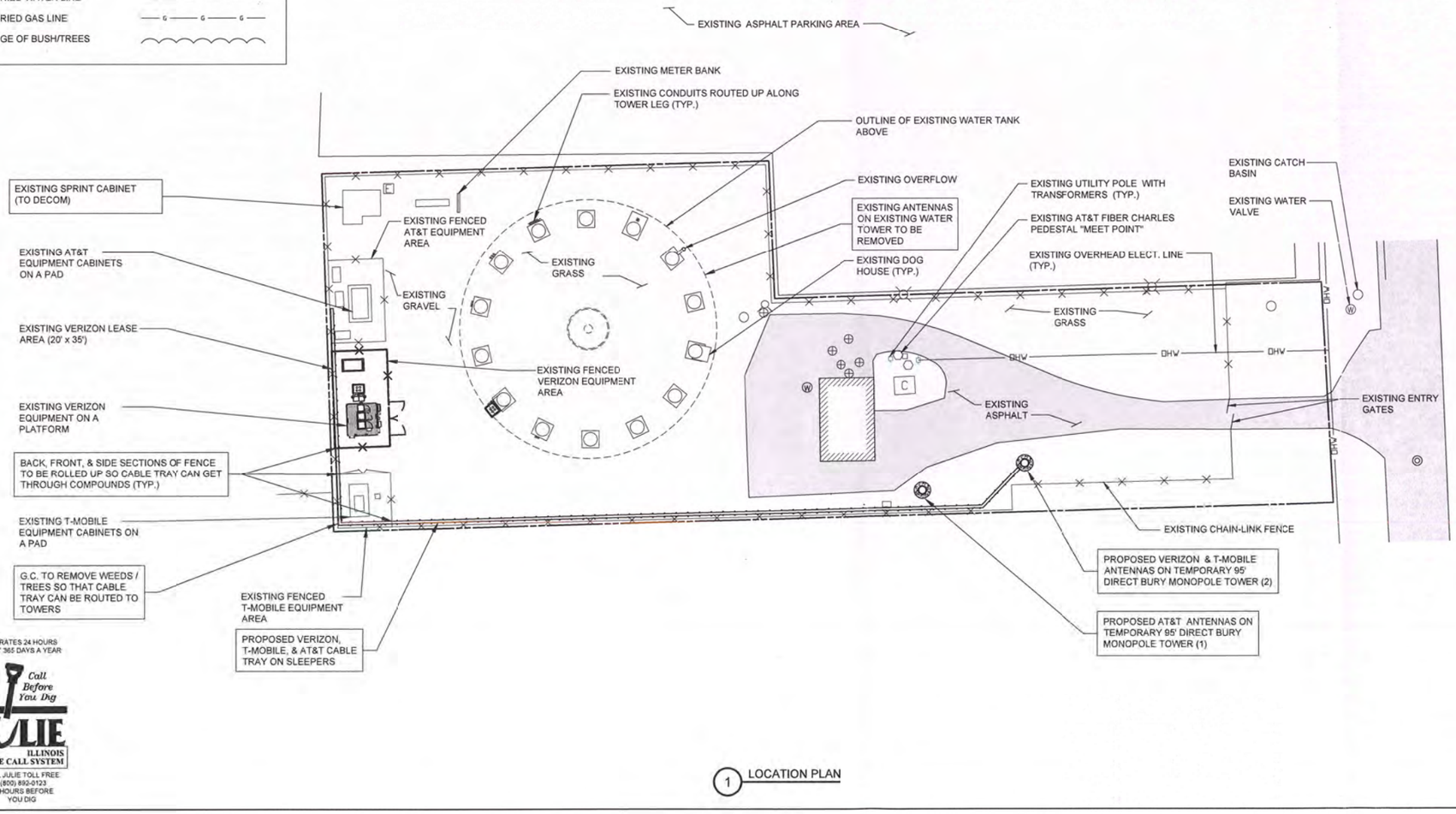
LEGEND

- POWER POLE
- TELEPHONE PEDESTAL
- MANHOLE
- WATER VALVE VAULT
- WATER SERVICE VALVE
- FIRE HYDRANT
- LIGHT POST
- PROPERTY LINE
- FENCE
- OVERHEAD POWER LINE (OHE)
- UNDERGROUND TELCO (UGT)
- UNDERGROUND POWER (UGE)
- BURIED WATER LINE
- BURIED GAS LINE (G)
- EDGE OF BUSH/TREES

SCALE 1" = 20'

0 10' 20' 40'

22" x 34" IS THE FULL SCALE.
11"x17" IS HALF SCALE



1 LOCATION PLAN

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FAX: 847-696-4401

REVISIONS

NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	09/28/21	TJS

VZW LOC. # 269499
ATT SITE # ILL01534
TMO SITE # CH45434A

LISLE EAST - TEMP TOWER
4414 DOWNERS DRIVE
DOWNERS GROVE, IL 60515

DRAWN BY:	XXX
CHECKED BY:	TAZ
DATE:	XX/XX/XX
PROJECT #:	33-XXXX

SHEET TITLE
LOCATION PLAN

SHEET NUMBER
LP

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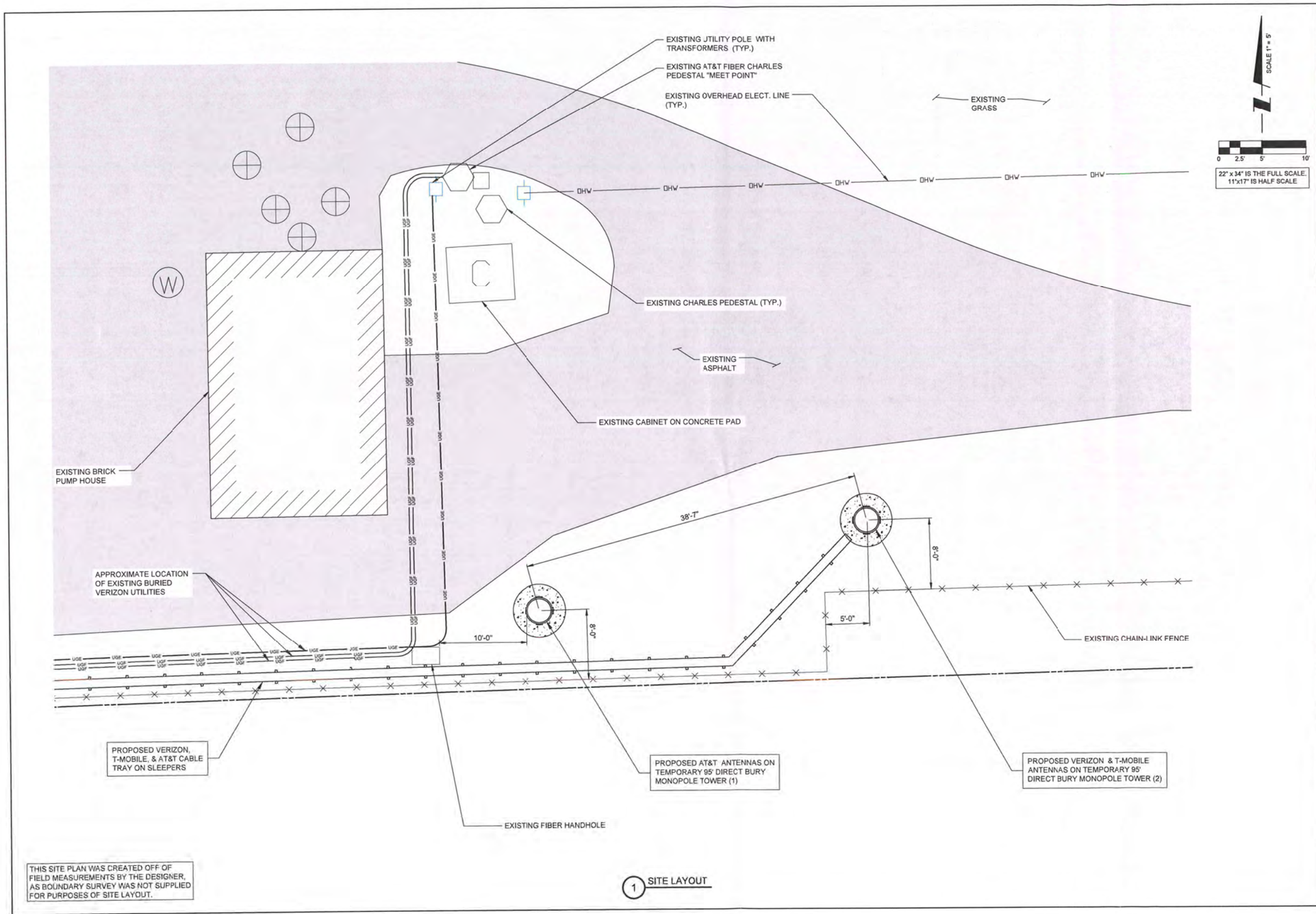
FILE NAME: N:\DownersGrove\20286\Mech\03_REC_20286.SHT

DSGN.	GAH
DWN.	TJK
CHKD.	GAH
SCALE:	N.T.S.
PLOT DATE:	1/10/2022
CAD USER:	tkudla
MODEL:	Default

TITLE:
REHABILITATION OF 2MMG LEGGED HIGH TANK
CELLULAR COMPANIES
TEMPORARY RELOCATION PLAN (1 OF 3)

PROJ. NO.	21-0286
DATE:	1/10/2022
SHEET	3 OF 5
DRAWING NO.	3



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REVISIONS

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1	ISSUED FOR REVIEW	09/28/21	TJS

VZW LOC. # 269499
ATT SITE # ILL01534
TMO SITE # CH45434A

LISLE EAST - TEMP TOWER
4414 DOWNERS DRIVE
DOWNERS GROVE, IL 60515

DRAWN BY:	XXX
CHECKED BY:	TAZ
DATE:	XX/XX/XX
PROJECT #:	33-XXXX

SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
C-1

FOR INFORMATION ONLY

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Rosemont, Illinois 60018
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CLIENT:
VILLAGE OF DOWNERS GROVE
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DOWNERS GROVE, ILLINOIS 60515

NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\DownersGrove\210286\Mech\04_REC_210286.SHT

DSGN.	GAH
DWN.	TJK
CHKD.	GAH
SCALE:	N.T.S.
PLOT DATE:	1/10/2022
CAD USER:	tkudla
MODEL:	Default

TITLE:
REHABILITATION OF 2MMG LEGGED HIGH TANK
CELLULAR COMPANIES
TEMPORARY RELOCATION PLAN (2 OF 3)

PROJ. NO.	21-0286
DATE:	1/10/2022
SHEET	4 OF 5
DRAWING NO.	4

NOTE:
THIS DRAWING IS FOR EXHIBIT AND LAYOUT PURPOSES ONLY.

FINAL EXHIBIT PENDING STRUCTURAL ANALYSIS BY OTHERS.

EXISTING AT&T ANTENNAS MOUNTED TO HANDRAIL TO BE REMOVED. ALL MOUNTING HARDWARE NOT WELDED TO TANK TO BE REMOVED AND PAINTED BY CITY PAINTERS.

EXISTING TANK

EXISTING VERIZON ANTENNAS MOUNTED ON EXISTING CATWALK HANDRAIL TO BE RELOCATED TO TEMPORARY 95' DIRECT BURY MONOPOLE TOWER

EXISTING CATWALK HANDRAIL

EXISTING T-MOBILE ANTENNAS MOUNTED TO HANDRAIL TO BE REMOVED. ALL MOUNTING HARDWARE NOT WELDED TO TANK TO BE REMOVED AND PAINTED BY CITY PAINTERS.

EXISTING TOWER LEG (TYP.)

ALL EXISTING CARRIER CABLES ROUTED UP TANK LEGS TO BE REMOVED

EXISTING SHEET METAL CABLE ENCLOSURE AT TOWER LEG

EXISTING CHAIN-LINK FENCE (PARTIALLY SHOWN FOR CLARITY)

EXISTING CARRIER GROUND EQUIPMENT

EXISTING GRADE

EXISTING CHAIN LINK FENCE (PARTIALLY SHOWN FOR CLARITY)

DISTANCE TO TOP OF EXISTING CATWALK HANDRAIL - ±102.9' A.G.L.

DISTANCE TO TOP OF EXISTING TANK - ±137' A.G.L.

OVERALL HEIGHT OF EXISTING WATER TOWER - 154' A.G.L.

VERIZON ANTENNAS ON TEMPORARY 95' DIRECT BURY MONOPOLE TOWER (2)

T-MOBILE ANTENNAS ON TEMPORARY 95' DIRECT BURY MONOPOLE TOWER (2)

TEMPORARY LIGHTNING ROD

TEMPORARY LIGHTNING ROD

AT&T ANTENNAS ON TEMPORARY 95' DIRECT BURY MONOPOLE TOWER (1)

PROPOSED TEMPORARY 95' DIRECT BURY MONOPOLE TOWER (1)

PROPOSED TEMPORARY 95' DIRECT BURY MONOPOLE TOWER (2)

EXISTING BRICK PUMP HOUSE

EXISTING UTILITY POLE WITH TRANSFORMERS (TYP.)

EXISTING CHAIN-LINK FENCE (PARTIALLY SHOWN FOR CLARITY)

DISTANCE TO THE CENTER OF T-MOBILE ANTENNAS = 80'-0" A.G.L.

DISTANCE TO THE CENTER OF VERIZON & AT&T ANTENNAS = 90'-0" A.G.L.

HEIGHT OF TEMPORARY DIRECT BURY MONOPOLE TOWERS 1 & 2 = 95'-0" A.G.L.

OVERALL HEIGHT OF STRUCTURE 1 & 2 = 100'-0" A.G.L.

DIRECT BURY (T.B.D.)

1 SOUTH ELEVATION
SCALE: 3/32" = 1'-0" ±

FULL SCALE PRINT IS ON 22"x34" MEDIA
HALF SCALE PRINT IS ON 11"x17" MEDIA

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REVISIONS

NO.	DESCRIPTION	DATE	BY
	ISSUED FOR REVIEW	09/28/21	T.B

VZW LOC. # 269499
ATT SITE # ILL01534
TMO SITE # CH45434A

LISLE EAST - TEMP TOWER
4414 DOWNERS DRIVE
DOWNERS GROVE, IL
60515

DRAWN BY:	XXX
CHECKED BY:	TAZ
DATE:	XX/XX/XX
PROJECT #:	33-XXXX

SHEET TITLE
SITE ELEVATION

SHEET NUMBER
ANT-1

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(847) 823-0500

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DSGN.	GAH
DWN.	TJK
CHKD.	GAH
SCALE:	N.T.S.
PLOT DATE:	1/10/2022
CAD USER:	tkudla
MODEL:	Default

TITLE:
REHABILITATION OF 2MMG LEGGED HIGH TANK
CELLULAR COMPANIES
TEMPORARY RELOCATION PLAN (3 OF 3)

PROJ. NO.	21-0286
DATE:	1/10/2022
SHEET	5 OF 5
DRAWING NO.	5