VILLAGE OF DOWNERS GROVE
Report for the Village
1/13/2026

SUBJECT:	SUBMITTED BY:
Award of Contract: Fleet Fuel System Replacement (FL-002)	David Moody Director of Public Works

SYNOPSIS

A motion is requested to authorize award of a contract for the replacement of the fleet fuel system, to Stenstrom Petroleum Services Group, of Rockford, IL, in the amount of $1,353,913, which includes a 10% contingency.

STRATEGIC PLAN ALIGNMENT

The goals for 2025-2027 include *Exceptional Municipal Services*.

FISCAL IMPACT

The FY26 budget includes $1,700,000.00 for the replacement of the fleet fuel system.

RECOMMENDATION

Approval on the January 13, 2026 active agenda.

BACKGROUND

The Village of Downers Grove's fleet fuel system was constructed around 1997 as part of the new Public Works facility. The current fuel system provides B20 biodiesel, unleaded fuel, and Compressed Natural Gas (CNG) for the Village's fleet of vehicles. Many of the fleet fuel system components are almost thirty (30) years old and are nearing the end of their useful life. It is important to be proactive in the replacement of the fleet fuel system to avoid disruptions to Village operations, and/or significant environmental impacts caused by leaking underground storage tanks.

In November 2024, the Village awarded a contract to Clark Dietz for engineering services for the fleet fuel system replacement. Clark Dietz performed an analysis of the current fuel system and recommended the following:

- Replace the underground storage tanks with double wall fiberglass tanks
- Replace the submersible pumps and containment pumps
- Replace the underground fuel piping.
- Replace the fuel dispensers
- Replace the existing inventory system, leak detection system and ground water monitoring system
- Replace concrete pavement, island, and bollards

- Consolidate the electrical connections into one panel and locate closer to the fuel island.
- Decommission and remove the existing CNG station
- Replace the fuel system canopy.

Based on these recommendations a Call for Bids for the replacement of the fleet fuel system was issued and two (2) bids were received on December 16, 2025. A synopsis of the bids is as follows:

Contractor	Base Bid	Alternate Bid	
Stenstrom Petroleum Services Group	$1,082,570.00	$1,230,830.00	Low Bid
Crowne Industries	$1,120,808.00	$1,288,690.00	

The bid was issued with a base bid replacing the current fleet fuel system as it is today. The current fuel system has a 10,000 gallon underground storage tank for unleaded, and a 10,000 gallon underground storage tank for B20 biodiesel. An alternate bid was issued along with the base bid soliciting pricing to increase the number of underground storage tanks to three (3) to allow for the future expansion to B100 biodiesel. B100 biodiesel is a renewable, biodegradable fuel manufactured domestically from vegetable oils, animal fats, or recycled restaurant grease (U.S. Dept. of Energy). Heavy duty diesel trucks equipped to run on B100 produce significantly less CO2 emissions. Both the base bid and the alternate bid include removing the current CNG station. The CNG station is currently used by only a handful of existing vehicles and the annual maintenance costs have begun to exceed the value of maintaining the station.

After analyzing the received bids, Stenstrom Petroleum Services Group (Stenstrom) was the low bidder for both the base bid and the alternate bid. Staff recommends awarding a contract to Stenstrom for the alternate bid that includes the addition of a B100 biodiesel tank. The addition of a B100 biodiesel tank helps the Village move towards the goal of reducing quantifiable emissions throughout Village operations, one of the objectives of the Environmental Sustainability Plan. Stenstrom received a positive reference from the City of Evanston for a similar project. In addition, Stenstrom has worked for the Village in the past on regulatory compliance and repairs to the current fleet fuel system, and staff have been pleased with their work.

ATTACHMENTS

Contract Documents.

VILLAGE OF DOWNERS GROVE

COUNCIL ACTION SUMMARY

INITIATED: Public Works (Name) **DATE:** January 13, 2026

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

NATURE OF ACTION:

__ Ordinance

__ Resolution

_X_ Motion

__ Other

STEPS NEEDED TO IMPLEMENT ACTION:

Motion to authorize a contract for the replacement of the fleet fuel system, to Stenstrom Petroleum Services Group, in the amount of $1,353,913, which includes a 10% contingency.

SUMMARY OF ITEM:

Adoption of this motion shall authorize a contract for the replacement of the fleet fuel system, to Stenstrom Petroleum Services Group, in the amount of $1,353,913, which includes a 10% contingency.

RECORD OF ACTION TAKEN:

_____

_____

_____

l\mw\cas.26\PW-Fleet Fuel-MOT

Clark Dietz
Engineering Quality of Life®

January 2, 2026

David Moody
Director of Public Works
Village of Downers Grove
5101 Walnut Avenue,
Downers Grove, IL 60515

Re: CFB-32-0-2025/DM – Fleet Fuel System Replacement Bidding Analysis and Letter of Recommendations

Dear Mr. Moody,

This letter provides an analysis of a general contractor bid, announced on December 16, 2025 for CFB-32-022025, Fleet Fuel System Replacement project at the Village of Downers Grove Public Works facility.

1. Project Bidding

A Notice to Bidders was released to the public on November 10, 2025, through Demand Star online plan room. The following Contractors and Suppliers downloaded drawings and specifications for the project prior to bid opening.

Contractor/Supplier Name	Location	Type	Bid Received
Abbey Paving	Aurora, IL	Subcontractor	N/A
Cardinal Compliance	Arlington Heights, IL	Subcontractor	N/A
ConstructConnect	Cincinnati, OH	Plan Room	N/A
Crowne Industries	Streamwood, IL	Prime Contractor	Yes
Dodge Data	Arlington, TX	Plan Room	N/A
ELMHURST CHICAGO STONE CO.	Elmhurst, IL	Supplier	N/A
Engberg Anderson, Inc.	Milwaukee, WI	Architects – N/A	N/A
ePlan	Columbia, MO	Planroom	N/A
Gale Construction Company of Illinois	Joliet, IL	Planroom	N/A
GovGuide	Arlington, TX	Planroom	N/A
Joseph J. Henderson & Son, Inc.	Gurnee, IL	Prime Contractor	No
Kendall Co. Inc.	Newtown	N/A	N/A
LuAva, Inc	Park Ridge	Subcontractor	N/A
O'Day Equipment LLC	Fargo, ND	Supplier	N/A
Onvia, Inc. - Content Department	Seattle, WA	Planroom	N/A
Stenstrom Petroleum Services Group	Rockford, IL	Prime Contractor	Yes
Strategic Demolition & Excavation	Elmwood Park, IL	Subcontractor	N/A
Structures Construction	Chicago, IL	Prime Contractor	No
Syntech Systems	Tallahassee, FL	Supplier	N/A

We had made efforts to reach out to contractors to make them aware of this project. The non mandatory Prebid meeting for this project was held November 14, 2025.

2. Bid Review

Bids for the project were opened on December 16, 2025, at 10:00 am. Two bids were received as summarized below.

Contractor	Addendums Acknowledged	Bond Amount	Base Bid	Alternate Bid
Crowne Industries (Crowne)	Yes	5% bond	$1,120,808.00	$1,288,690.00
Stenstrom Group (Stenstrom)	Yes	5% bond	$1,082,570.00	$1,230,830.00

Bis received from both contractors was reviewed for completeness. All required paperwork, including bonds, appears to be included.

CD estimate summary is listed below. This estimate was based on 100% Construction Documents completed in August 2025.

Contractor	Base Bid	Contingency	Allowance (In Bid)	Allowance (Project)	Total
Base Bid	$1,447,196.34	$121,920.50	$25,000.00	$150,000.00	$1,744,117.00
Alternate Bid	$1,547,509.71	$130,371.50	$25,000.00	$150,000.00	$1,852,881.00

Total projected budget including construction contingency for the alternate bid was $1,852,881.00.

Stenstrom was the apparent responsive low bidder for this project. Clark Dietz team had a conversation with their project manager, Jason Reed, associated with project scope and following items were clarified.

- Stenstrom has included 750 tons of contaminated soil removal and backfill in their pricing. Any additional removal and installation will be based on unit cost as listed in their proposal.
- Haul off and disposal of ground water/dewatering was not included in their bid. Per contract documents, this work was contractor's responsibility, however based on conversations with both bidders it was determined that this was difficult to quantify because of unknowns. We contacted Crowne to verify their understanding, and they confirmed that the work was not included in their bids either. Any contaminated liquid removal required during construction would be based on $1.50/Gal.
- The bid received includes the unsuitable material allowance for $25,000.00. This amount is in addition to the 750 tons included in their pricing. This could be used for any additional contaminated soil removal or could potentially result in a negative change order.
- Stenstrom included cast-in-place concrete pads for tank foundations. They indicated that this item can be value engineered and prefabricated Deadman loads can be utilized for this application. This could result in potential savings to the project.

Clark Dietz team has not directly worked with Stenstrom on past projects. However, the references provided by Stenstrom were contacted. One positive feedback was received from the City of Evanston for a similar project. In addition to this, we understand that Stenstrom has worked on this site in the past and has a working relationship with the village.

3. Recommendation:

Based on our review of the bids, we recommend accepting the Alternate Bid received from Stenstrom Inc, in the amount of $1,230,830.00 for following reasons.

- The bid received is $316,679.71 below the total estimate of $1,547,509.71 and which leaves construction contingency and allowance for temporary fueling at $150,000.
- Stenstrom has acknowledged the scope of work can be completed within the project timeline as long as equipment lead times are not exceeded.
- Stenstrom has experience working with the village in similar projects and capacity.

If you have any questions, please do not hesitate to call me.

Sincerely,

Clark Dietz, Inc.

Nirav Patel, PE
Project Manager
E-mail: Nirav.patel@clarkdietz.com

cc:
Gabriel Lopez, Village of Downers Grove, glopez@downers.us
Scott Drabicki, Clark Dietz, Scott.Drabicki@clarkdietz.com
Ben Broshar, Clark Dietz, Ben.Broshar@clarkdietz.com

CALL FOR BIDS – FIXED WORKS PROJECT

I. Name of Company Bidding: Stenstrom Petroleum Services Group

II. Instructions and Specifications:

A. Bid No.: CFB-32-0-2025/DM
B. For: Fleet Fuel System Replacement
C. Bid Opening Date/Time: December 8, 2025 at 10:00am
D. Pre-Bid Conference Date/Time: November 14, 2025 at 10:00am, OPTIONAL
E. Pre-Bid Conference Location: 5101 Walnut Avenue, Downers Grove, IL 60515

III. Required of All Bidders:

A. Bid Deposit: 5%
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: Monday, November 10th, 2025

This document comprises 228 pages.

Submit bid ELECTRONICALLY through DemandStar or return ORIGINAL and a PDF version on one (1) USB flash drive in a sealed envelope marked with the Bid Number as noted above to:

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

CALL FOR BIDS – FIXED WORKS PROJECT

Bid No.: CFB-32-0-2025/DM

The VILLAGE OF DOWNERS GROVE will receive bids Monday through Friday, 8:00 A.M. to 4:30 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.

ELECTRONIC BIDDING

The Village of Downers Grove is now accepting bids submitted electronically. All bidders must be registered with DemandStar in order to access bid documents and submit an electronic bid. If you are not registered, a free agency subscription to the Village of Downers Grove account is available by going to www.demandstar.com/register.rsp. If you are registered with DemandStar, but subscribed to another agency, you do not need to modify your subscription. The Village maintains an Open Access account whereby all bidding information and e-bidding capabilities are accessible under any subscription plan. Incomplete submittals may be rejected as non-responsive. Infrequent or first-time users of electronic bidding are encouraged to upload their bid responses at least 24 hours prior to bid opening. The Village is not responsible for submittal errors or incomplete bid submissions. For technical issues or concerns, bidders may contact DemandStar Supplier support directly at hello@demandstar.com or at 866-273-1863. All bids must be received prior to the Due Date and Time set forth above and on the cover page of this document. Bid Opening will be conducted in person at where all bids received will be publicly opened and read aloud immediately following the Due Date and Time. Bidders, their authorized agents, and interested parties are invited to join.

SPECIFICATIONS MUST BE MET AT THE TIME THE BID IS DUE.
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. PLEASE DO NOT BIND ANY PORTION OF THE BID WITH STAPLES.ALL PAGES OF THE BID MUST BE SUBMITTED SINGLE-SIDED.

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 "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.

Please do not bind any portion of the bid with staples.

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, whether the Bidder participates in an apprenticeship and training program approved by and registered with the United States Department of Labor's Bureau of Apprenticeship and Training 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 Failure on the part of the successful Bidder to provide the Village a construction schedule for approval within ten (10) calendar days from the date of receipt of the Notice of Award from the Village, and, if required, provide a modified construction schedule as requested by the Village within an additional five (5) calendar days, may be considered as just cause for the revocation of the award. In such case, 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.

12.3 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.

12.4 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 Sundays or legal holidays. The Contractor shall do no work on Saturdays, unless otherwise approved in writing by the Village. If approved by the Village, allowed work hours on Saturdays shall be between the hours of 8:00 a.m. and 3:00 p.m. 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, which shall be deducted from the value of work completed.

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, 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. These records shall be open to inspection at all reasonable hours by any representative of the Village or the Illinois Department of Labor (IDOL) 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 IDOL 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. WITHOUT THIS PAPERWORK, NO INVOICE SHALL BE PAID BY THE VILLAGE. Filing false records is a Class A misdemeanor.

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 the 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	Each Accident
	$1,000,000	Disease Policy Limit
	$1,000,000	Disease Each Employee
Comprehensive General Liability	$2,000,000	Each Occurrence
	$2,000,000	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	Each Claim
	$2,000,000	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 selfinsured 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 selfinsured 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 and pursuant to section 30.4 of this Call For Bid, the Contractor shall provide an IDOL certification and case number to the Village 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, Public Works, 5101 Walnut Ave., 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

850 Curtiss St.
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.

52. DISADVANTAGED BUSINESS ENTERPRISE (DBE) CERTIFICATION

52.1 Pursuant to 35 ILCS 200/18-50.2, Contractor and all subcontractors are required to complete and submit a Vendor DBE certification, regardless of DBE status. Contractor shall complete and require all its subcontractors to complete the DBE certification for this project at www.downers.us/vss. The information necessary for the Contractor and all subcontractors to complete the certification includes the following: DBE Classification (minority-owned, women-owned, persons with disabilities-owned, veteran-owned, or none); if DBE, whether the company holds a certificate or self-certifies; if self-certifying, whether the company qualifies as a small business under the U.S. Small Business Administration standards; the company's name, address, city, state and zip code; company's contact person's name, title, telephone number and email address. NO PAYMENTS WILL BE MADE TO THE CONTRACTOR BY THE VILLAGE UNLESS AND UNTIL ALL OF THE CERTIFICATIONS FOR THE CONTRACTOR AND SUBCONTRACTORS HAVE BEEN COMPLETED.

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, 2022; along with Supplemental Specifications and Recurring Special Provisions as adopted by the Illinois Department of Transportation, January 1, 2024 (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, 2019.

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 assign a superintendent for the work per Sections 105.06 and 108.06 of the SSRBC and as amended herein. The Contractor's superintendent shall be involved in the work to the extent necessary to prosecute the work per the Contract. Furthermore, the superintendent shall be required to attend weekly progress meetings, provide two-week schedules of expected construction activities, provide updated overall construction schedules and, if required by the Engineer, acknowledge and sign IDOT Form BC-239 Weekly Report of Resident. The Contractor shall not replace the superintendent 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 WilliamsStelger 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 14139(b) and 14171.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 **October 31, 2026.** 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:

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. In addition, the Contractor shall be liable for additional costs incurred by the Village due to the delay for construction engineering services, which shall be deducted from the value of work completed.

4.1.5 Upon substantial completion of the project, the Engineer will deliver to the Contractor a punch list as well as a due date for completion of the punch list. If the Contractor fails to complete the punch list by the stated punch list completion date, 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 ~~or when a major item, defined as an item whose total original contract cost plus any additions exceeds ten percent of the total original contract amount, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity.~~

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 ~~by not more than 125 percent or reduced to not less than 75 percent of the original contract quantities~~ OR DECREASED will be paid for as specified in paragraph (a) above. ~~Any adjustments for increased quantities for major items of work increased more than 125 percent shall only apply to that portion in excess of 125 percent of original contract quantities. Any adjustments made for major items of work which are decreased to less than 75 percent of the original contract quantities shall apply to the actual amount of work performed.~~

(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, supersede, 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 superseded* 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 superseded, and not in addition to the portion changed.

SP-1 STANDARD SPECIFICATIONS ADOPTED BY REFERENCE

The IDOT Standard Specifications for Road and Bridge Construction, the Supplemental Specifications and Recurring Special Provisions, and the Bureau of Design and Environment Special Provisions (BDE's), latest editions as adopted by reference and shall apply to and govern civil site work where applicable.

The above referenced as the "Standard Specifications" or "SSRBC", will apply for individual items unless otherwise modified by the special provisions included in the Project Manual. IDOT Standard Specifications are intended to govern the site civil work included in the project. If a conflict exists between individual item specification and the IDOT Standard Specifications, the work shall be completed as directed by the Engineer. No additional compensation will be allowed.

SP-2 GENERAL CONSTRUCTION REQUIREMENTS

The following general requirements are intended to govern the overall priority for the performance of the work described in this contract. As general requirements, they are not intended to dictate to the Contractor the precise method by which these tasks shall be performed.

The Contractor shall maintain traffic flow on all public streets. Adequate signing and flagging is of particular importance for safe travel of all residents.

Protection of Work

The Contractor shall be responsible to provide personnel to protect their work from third party damage. Should any of the new work be damaged, it shall be removed and replaced at the Contractor's expense. The Contractor shall schedule their work so that the concrete placed, takes its initial set during daylight hours. Claims of darkness shall not be reason to relieve the Contractor from responsibility.

Cleaning Up

The Contractor shall, at all times, keep the premises free from an accumulation of waste material or rubbish caused by their employees or work. At the end of the day, they shall remove all rubbish from and about the streets and sidewalks. All tools, form boards, and surplus materials shall be removed and relocated to any temporary on-site storage location assigned by the Village or its Engineer, and shall leave his work "broom clean" or its equivalent, unless more precisely defined. Upon completion of the work called for by the contract, and upon final inspection and acceptance, the Contractor shall remove any remaining rubbish, tools, form boards, and surplus materials completely from the work site.

In case of dispute, the Village may remove the rubbish and any other materials and charge the cost to the Contractor.

SP-3 TRAFFIC CONTROL, MAINTENANCE OF TRAFFIC, DETOURS

Description: This item shall include the furnishing, installing, maintaining, relocating, and removing of all traffic control devices and personnel used for the purpose of regulating, warning, or directing traffic during the construction of this project. Placement and maintenance of all traffic control devices shall be in accordance with the applicable parts of Article 107.14 and Section 701 of the Standard Specifications and included Highway Standards. All traffic control devices used on this project shall conform to the Standard Specifications for Traffic Control Devices and the Illinois Manual on Uniform Traffic Control Devices and as indicated on the Traffic Control Plan. No waiving of these requirements will be allowed without prior written approval of the Engineer.

The Contractor shall protect all workers engaged in the project, and shall provide for safe and convenient public travel by providing adequate traffic control under all circumstances. Such circumstances may include, but not be limited to, work performed along the route under construction, road closures for construction operations of any type, or when any section of the road is opened to traffic prior to completion of all work. The Contractor shall ensure that work zone in question is properly signed, barricaded, and otherwise marked.

The Contractor will be responsible for the proper location, installation, and arrangement of all traffic control devices during the period of construction. All open excavations shall be protected by Type I barricades equipped with working bi-directional flashing lights at each end of the excavation, as well as at 50-foot intervals between ends for excavations greater than 50 feet in length and weighted down by one sandbag per each barricade.

In the event that one direction of vehicular travel must be closed, the Contractor shall use certified flaggers (minimum of two) to direct traffic around the work area. The Engineer shall approve proper signing and barricading of the lane closures, and shall issue written authorization prior to closure.

In the event that both directions of vehicular travel must be closed, the Contractor shall set up a detour route to direct traffic around the work area. The Engineer shall approve proper signing and barricading of the detour route and shall issue written authorization prior to closure. Where it is necessary to establish a temporary detour, all the requirements of the Standard Specifications and MUTCD shall be met.

The Contractor shall maintain their operations in a manner such that traffic flow shall not be substantially impeded during the construction of the proposed improvements. Where traffic must cross open trenches during a given work day, the Contractor shall provide steel plates at street intersections and driveways. Prior to the end of a given work day, the pavement surface shall be temporarily restored.

No open excavation may be left overnight or on the weekend without the express written permission of the Engineer.

As the condition and location of the work changes, the Contractor shall maintain all traffic control devices and personnel engaged in traffic control, in a manner that will accommodate the changing particulars of the work at any given time. Advance warnings, detour and directional information and other controls or directions necessary for safe passage of traffic around the work site shall be reviewed and changed, if necessary, to meet the needs of the situation. Signage erected, but not necessary or proper for the situation ahead shall be covered or taken down. Barricading and signage shall be monitored by the Contractor on a daily basis to ensure that it meets the requirements for work zone safety for the conditions of the particular work being performed.

In the event public sidewalk must be closed, the Contractor shall provide SIDEWALK CLOSED AHEAD signs adjacent to the closure and at the nearest intersections to the closure. If the closure occurs an intersection, the Contractor shall provide SIDEWALK CLOSED USE OTHER SIDE signs at the corner(s) opposite the closed sidewalk.

Access to all properties shall remain open at all times unless work is taking place in the immediate vicinity, requiring that access be restricted on a temporary basis. Full access must be restored immediately upon the completion of any work blocking said access, and full access must be restored to all properties over

weekends and legal holidays unless approved by the Engineer. Special consideration to hours and location of work near school shall be made to allow for full and safe access during normal student arrival and departure schedules. The Contractor is responsible for all traffic control and this item is incidental to the cost of the overall contract work.

The Contractor shall provide a name and phone number of a responsible party capable of providing emergency service, 24 hours per day, for the duration of the Project.

DEFICIENCY CHARGE:
The primary concern of the Village is to maintain a safe travel way for the public and a safe environment for the work in the construction zone. The Contractor is expected to comply with the Standard Specifications, contract plans, the Special Provisions, and directions from the Engineer concerning traffic control and protection. The Contractor shall provide a telephone number where a responsible individual can be contacted on a 24-hour-a-day basis to receive notification of any deficiencies regarding traffic control and protection. The Contractor shall immediately respond correcting traffic control deficiencies by dispatching workers, materials, and equipment to correct such deficiencies.

Failure to comply with the Contract or as directed by the Engineer as it relates to corrections or modifications to the traffic control and protection will result in a deduction of either $1,000 or 0.05 percent of the awarded contract value, whichever is greater, in accordance with Article 105.03. This charge is separate from the cost of any corrective work ordered. The Contractor shall not be relieved of any contractual responsibilities by the Village's actions.

SP-4 CONSTRUCTION STAKING AND RECORD DRAWINGS

The Contractor shall furnish and place all construction layout stakes for this project. Competent personnel with suitable equipment shall conduct this work, supervised by a licensed Illinois Land Surveyor. The Contractor shall be responsible for having the finished work conform substantially to the lines, grades, elevations and dimensions shown on the plans.

The Contractor shall provide adequate control points to construct the individual Project elements, and shall provide the Engineer with adequate control in close proximity to check the compliance of the elements constructed.

The Contractor shall record all field notes in standard survey field notebooks and those books shall become the property of the Village at the completion of the Project. All notes shall be neat, orderly and in an accepted format.

Prior to final payment and within 28 calendar days of substantial completion, as determined in section III.4.1.1, the Contractor shall provide the Village with record drawings showing the location of all subsurface installation. Significant changes to the design plans shall also be depicted. Red-lined plans or electronically-generated as-built plans are acceptable. Digital copies of as-built drawings must also be provided (TIF files or approved equal), along with two full-sized paper copies.

SP-5 PRECONSTRUCTION VIDEOTAPING

Description: This work shall consist of furnishing all materials and labor required to perform a videotape survey of the construction limits, adjacent parking areas, right-of-way, and adjacent structures bordering the work. This shall include, but not be limited to, existing buildings, garages, pavements, curb and gutter,

sidewalks, fences, trees and landscaping. Two (2) copies of the videotape shall be furnished to the Owner on a flash drive. Videotaping shall be performed by a reputable company meeting the approval of the Owner, in the presence of a representative of the Owner, and shall be performed prior to the commencement of construction. The videotape survey shall serve as a basis for establishing damage that has occurred as a result of construction operations.

SP-6 STREET SWEEPING AND DUST CONTROL

Description: All roadway surfaces shall be kept free of dirt, mud, dust and debris of any kind throughout every phase of the project. Dirt, mud, dust and debris of any kind shall be removed from the pavement surface to the satisfaction of the Engineer by any one or combination of the following: approved mechanical sweeping equipment, manual labor, or other approved techniques.

Whenever ordered by the Engineer, especially for locations subject to a particularly high volume of traffic, the Contractor shall mechanically sweep the work site.

SP-7 TREE PROTECTION

Description: Municipal Codes regarding trees, including tree protection requirements for public parkway trees, are located in Chapter 24 of the Downers Grove Municipal Code. Specifically, Municipal Codes 24-7 and 24-8 detail the public parkway tree protection sizes and fines for violations.

Tree protection shall include avoiding damage to the above ground tree branches and trunk, and the below ground root system and surrounding soil. Tree crowns and trunks shall not suffer any branch or bark loss. Roots shall be protected from compaction, storage of materials, severing, regrading of the parkway or excavation unless specifically noted on the project plan sheets.

The value or partial value of the tree lost shall be determined by the Village Forester using the most current edition of the Guide for Plant Appraisal (prepared by the Council of Tree & Landscape Appraisers and the International Society of Arboriculture) and the most current edition of the Species Ratings & Appraisal Factors for Illinois (prepared by the Illinois Arborist Association). The total cost determined for the damage shall be deducted from the payments made to the Contractor for the project. Should the Village hire another Contractor or tree service to complete pruning work, these costs shall also be deducted from the payments made to the Contractor.

SP-8 EROSION AND SEDIMENT CONTROL

Description: Throughout each and every phase of the project, all downstream ditches and storm sewers shall be protected from the run-off of roadway surfaces, excavations, and other construction activities generating the movement of dirt, mud, dust and debris. This work shall consist of constructing temporary erosion and sedimentation control systems as shown on the plans or as directed by the Engineer. The work shall be placed by methods and with materials in accordance with Sections 280, 1080 and 1081 of the Standard Specifications, except as amended herein.

All downstream ditches shall be protected from erosion and sedimentation by the installation of silt fence or ditch checks; straw bales shall not be used. Piles of excavated material and/or trench backfill material, allowed to be in place in excess of three days, shall be protected against erosion and sedimentation runoff by use of silt fence. Storm sewer inlet structures or manholes shall be protected by temporary placement of geotextile fabric, filter baskets, or solid lids, as authorized in the field by the Engineer.

Erosion and sedimentation control measures as indicated in the Erosion Control Plan, or as directed by the

Engineer shall be installed on the project site prior to beginning any construction activities which will potentially create conditions subject to erosion. Erosion control devices shall be in place and approved by the Engineer as to proper placement and installation prior to beginning other work. Erosion control protection for Contractor equipment storage sites, plant sites, and other sites shall be installed by the Contractor and approved by the Engineer prior to beginning construction activities at each site. All erosion and sedimentation control items must reference and be in accordance with the SWPPP standards and documentation. All contractors will be required to sign a document acknowledging this procedure. Any specific work done by each Contractor must comply with any SWPPP regulations. If erosion control items are deemed by the Engineer to not be in compliance and need to be replaced or repaired due to construction activities of each Contractor following the installation of initial erosion and sediment control items, these items shall be incidental to each Contractors' overall contract work.

Perimeter Erosion Barrier: Work shall consist of supplying, placement, maintenance, and removal of compost filter socks as shown on the plans or as directed by the Engineer.

Inlet Filters: Work shall consist of supplying, installing, maintaining/cleaning, and removal of inlet filters as shown on the plans or as directed by the Engineer. Inlet filters shall be ADS FLEXSTORM CATCH-IT IL Inlet Filters, or approved equal.

SP-9 TEMPORARY SURFACE OVER TRENCH - AGGREGATE (CA-6), 6”

Description: This work shall consist of construction, maintenance, and removal of an aggregate surface course for temporary roads and approaches as specified in Section 107.09 of the SSRBC.

Aggregate surface shall be constructed in accordance with the applicable portions of Section 402 of the SSRBC, except that the equipment required for the work will be as directed by the Engineer.

Maintenance shall consist of placing and compacting additional aggregate of the same type and gradation as the surface aggregate.

Aggregate used for temporary access shall be of CA-6 gradation and shall meet the requirements of Section 1004.04 of SSRBC, except the use of crushed concrete and slag will not be allowed. The top portion of the temporary aggregate surface will be capped with four inches (4”) of **bituminous grindings** to assist with dust control.

When the use of the aggregate for temporary roads and approaches is discontinued, the surface aggregate placed in its construction and maintenance shall be removed and either utilized in the permanent construction or otherwise disposed of as specified in Section 202.03.

SP-10 COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT

Description (removal): This work shall consist of the removal of existing P.C.C. Curb and Gutter of the type and size at the locations noted. This work shall be performed in accordance with Section 440 of the Standard Specifications, except as amended herein.

During removal operations Contractor shall take special care not to damage or extend sawed joint into adjacent appurtenances which are to remain in place. During machine sawing operations Contractor shall also take special care to remove, clean, or otherwise account for any residue / slurry produced by the sawing so material will not be tracked by either vehicular or foot traffic onto adjacent appurtenances which are to remain in place.

Description (placement): This work shall consist of the placement of P.C.C. Curb or Curb and Gutter, of the type, size and location shown on the plans. All P.C.C. Curb and Gutter shall be placed by methods and materials as specified in Articles 606 and 1020 of the SSRBC, except as amended herein.

Placement of P.C.C. Combination Curb and Gutter shall include the following:

a) The use of Class SI Portland cement concrete, 6.05 cwt/cy mix, with 6% air entrainment, 3" slump;
b) The placement of four inches (4") min. Type B, CA-6 compacted aggregate base;
c) The saw cutting of 2 inch deep joints at not more than 15-foot intervals, within 24 hours after being placed;
d) The placement of 2 dowel bars into the gutter portion of existing concrete curb, and at expansion joints, in accordance with the detail shown on the plans;
e) The placement of 3/4 inch pre-molded expansion joint filler perpendicular to the centerline of the roadway for the full depth of the curb and gutter, where abutting existing concrete curb and gutter, at 10 feet either side of a utility structure, at construction joints at the ends of pours, at not more than 90 foot intervals;
f) The proper curing of all concrete work utilizing the methods and materials outlined in Articles 424 and 1022.01 of the SSRBC (Type 2 membrane curing with red dye is preferred);
g) The backfilling of all curb work with materials approved by the Engineer.

At locations shown on the plans or where directed by the Engineer the contractor will use High-early strength concrete. The desired concrete mix shall have a minimum compressive strength of 3,000 psi at 24 hours. Mix design shall be submitted to the Engineer for review and approval.

All voids existing between newly placed P.C.C Gutter and the adjacent roadway pavement not proposed to be replaced shall be filled with Class SI concrete, prior to bituminous surface placement, to a point 1-1/2 inches below finish grade. This work shall be considered incidental.

If placement of P.C.C. gutter takes place prior to April 15, or after October 15, the gutter shall be properly cured and that followed by the application of protective coat in accordance with Article 420.18 of the Standard Specifications.

SP-11 CLASS D PATCH, 4", SPECIAL

Description: This work shall consist of pavement patching by methods and with materials in accordance with Sec. 442 of the Standard Specifications, except as amended herein.

The Contractor shall not use equipment of excessive size or weight that causes damage to existing pavement or appurtenances. Any damage done to the existing pavement or appurtenances that are to remain in place shall be repaired or removed and replaced by the contractor at his/her own expense, as directed by the Engineer.

Pavement patching shall include the saw cutting of existing pavement, transportation and disposal of all pavement, sub-base and subgrade materials to depth not less than four inches (4") in accordance with Sections 202, 205 and 440 of the Standard Specifications where marked in the field by the Engineer. Pavement patches shall vary in area but minimum width shall be measured at three feet (3').

Where applicable the existing subbase shall be leveled and compacted. Where remaining base is existing

HMA, PCC or brick, the bottom of each prepared hole shall be free of all loose material and a bituminous prime shall be applied to the bottom prior to replacement of HMA patches.

The hot-mix asphalt material shall conform to the requirements for Hot-Mix Asphalt Binder Course, IL-19.0, N50.

Paragraph 5 of Article 442.11 of the SSRBC is deleted and is replaced by: *No additional compensation will be made for repairing subbase damage or for material adhering to removed pavement.*

SP-12 STORM SEWER REMOVAL (SIZE SPECIFIED)

Description: This work shall consist of the removal of storm sewers including laterals.

Excavation of trenches shall be performed according to the applicable requirements of Article 550.04 of the SSRBC.

Backfilling for the removed storm sewer shall be considered incidental to Storm Sewer Removal.

SP-13 TRENCH BACKFILL

Description: All trenches and excavations under or within 2' of paved areas or structures, as shown on plans or as directed by the Engineer in the field, will require aggregate Trench Backfill.

Materials: Trench Backfill, as defined in the Water and Sewer Specs, shall consist of Final Backfill, Initial Backfill, Haunching, and Bedding (see detail within this special provision). Allowable aggregate gradations, as defined in Sections 1003 and 1004 of the Standard Specifications, shall be as follows:

- Final Backfill: CA-6 or FA-6
- Initial Backfill: CA-6 or FA-6
- Haunching: CA-7
- Bedding: CA-7

All trench backfill material shall be placed and compacted in accordance with Section 550.07 of the Standard Specifications. Per the Standard Specifications, compaction Method 3 (jetting) of Initial Backfill and Final Backfill shall not be used with CA-6 material. Compaction Method 3 (jetting) of Initial Backfill and Final Backfill shall only be used with FA-6 material. Per the SSRBC, trench backfill material that has been compacted with Method 3 (jetting) shall be allowed to settle and dry for at least 10 days before any pavement or structure is placed above it.

All backfilling shall be done in accordance with Section 20-4.06 of the Water and Sewer Specs. All trenches and excavations not under or within 2' of paved areas or structures shall be backfilled by any acceptable method which will not dislodge or damage the pipe, or cause bridging action in the trench. In turf areas, Trench Backfill shall consist of Initial Backfill, Haunching, and Bedding and the balance of the backfill may be approved excavated material.

Basis of Payment: Payment shall be made for the furnishing and placement of Final Backfill only as defined in the Water and Sewer Specs. Furnishing and placement of Bedding, Haunching, and Initial Backfill shall be considered incidental to the contract price for installation of the utility pipe. Final Backfill will be measured in cubic yards in place, except that the quantity for which payment will be made shall not exceed the volume of the trench as computed by using the maximum width of trench permitted by the

SSRBC. Trench Backfill material exceeding of the maximum quantity herein specified shall be furnished by the Contractor at their own expense. Disposal of the surplus excavated material that is replaced by Trench Backfill shall be incidental to payment for Trench Backfill.

SP-14 STORM SEWERS (MATERIAL, TYPE, SIZE SPECIFIED)

Description: This item shall consist of the construction of Storm Sewer.

The pipe shall be placed so that the entire length of the pipe will have full bearing. No blocking of any kind shall be used to adjust the pipe to grade except when used with concrete encasement.

Laying of sewer pipe shall be accomplished to line and grade in the trench only after it has been de-watered and the foundation and/or bedding has been prepared. Mud, silt, gravel, and other foreign material shall be kept out of the pipe and off the jointing surface.

All pipe laid shall be retained in position so as to maintain alignment and joint closure until sufficient backfill has been completed to adequately hold the pipe in place. All pipes shall be laid to conform to the prescribed line and grade shown on the Plans.

The sewer pipe, unless otherwise approved by the Engineer, shall be laid up grade from point of connection on the existing sewer or from a designated starting point. The sewer pipe shall be installed with the bell end forward or upgrade, unless approved otherwise. When pipe laying is not in progress, the forward end of the pipe shall be kept tightly closed with an approved temporary plug.

If deemed necessary by the Engineer, all pipe and manholes shall pass an ex-filtration test in accordance with ASTM C-969-02 prior to acceptance. All testing shall be done under supervision of the Engineer, who shall be notified 48 hours prior to testing.

The following specific items shall be considered incidental to storm sewer pipe construction.

1. Removal of all surplus trench excavation from site.
2. Excavation for and placement of bedding material.
3. Support of trenches, including any necessary bracing or shoring.
4. De-watering of trench or excavation.
5. Placement and compaction of backfill as Haunching and Initial Backfill, as defined in the Water and Sewer Specs, by vibratory plate or other approved mechanical device.
6. Coring into existing drainage structures where connections are called for on the plans.
7. Sawcutting of pavement and/or curb and gutter.

SP-15 RESTORATION

Description: This item shall be done in accordance with the applicable portions of Sec. 252 of the Standard Specifications and the following provisions.

As contract work progresses restoration work shall commence in a timely manner in areas where permanent placement of new curb and gutter, driveways, sidewalks, etc., has been completed. Under no circumstances shall the Contractor prolong final grading, shaping and sod placement so that the entire project can be permanently restored at the same time.

This work shall consist of the excavation, topsoiling, and sodding as directed by the Engineer.

All topsoil to be used for restoration shall be obtained from outside the limits of this improvement, transported to the site and placed at required locations to a minimum depth of 4". All materials shall meet the requirements of Art. 1081.05 of the Standard Specifications. All placement of topsoil shall meet the requirements of Sec. 211 of the Standard Specifications.

All sod shall meet the requirements of Art. 1081.03 of the Standard Specifications. All placement of sod shall meet the requirements of Sec. 252 of the Standard Specifications.

Supplemental watering shall be provided as necessary to ensure establishment.

SP-16 EXPLORATORY EXCAVATION

Description: This item shall consist of excavating an area for the purpose of locating existing utilities within the construction limits of the proposed improvements. The Contractor shall perform exploratory trenching for all existing utilities potentially in conflict with the proposed improvements. The Contractor shall proactively perform exploratory trenching in a timely fashion to help mitigate delays, if any, caused by conflicts with existing utilities. The Contractor shall also perform exploratory trenching as directed by the Engineer. It shall be the responsibility of the Contractor to immediately inform the Engineer of any conflicts with existing utilities in conflict with the proposed improvements.

After the excavation has been inspected, it shall be backfilled as directed by the Engineer. If it is located within 2’ of a paved area (existing or proposed), the excavation shall be backfilled with Trench Backfill as specified herein. Otherwise, the excavation shall be backfilled with excavated material compacted to the satisfaction of the Engineer. Any excess material shall be disposed of in accordance with Article 202.03 of the IDOT Standard Specifications.

SP-17 NON-SPECIAL WASTE DISPOSAL

Description: This item shall be done in accordance with the applicable portions of Sec. 669 of the Standard Specifications except as modified herein.

Construction Requirements: The Contractor shall be responsible for satisfactory removal and disposal of all waste material, asphalt, concrete, stone, dirt, and debris generated or discovered in the course of the work.

The temporary storing of excavated materials shall not be allowed unless approved by the Engineer. It shall be the Contractor's responsibility to find an approved dumpsite for debris and any excavated materials. The Village will not provide one.

The Contractor shall be responsible for properly disposing of the excavated soils at an acceptable landfill, and providing the Village with all of the proper paperwork to document the material disposal with the IEPA.

All additional work to satisfy these requirements shall be the responsibility of the Contractor.

All costs that include but are not limited to all required testing, lab analysis, and certification by a licensed professional engineer (PE) or licensed professional geologist (PG) for properly disposing of the material at an acceptable landfill shall be the responsibility of the Contractor.

SP-18 PROJECT MANUAL

Description: Attached project manual and corresponding specifications are considered special provisions to the Village of Downers Grove contract requirements. In the event of discrepancies between village provided documents and project manual, the language listed in the project manual shall prevail to the extent of any such discrepancy or inconsistency. If a discrepancy is identified, contractor shall provide a written notice to engineer via RFI process.

SCHEDULE OF PRICES:

LUMP SUM PRICE – BASE BID	
BASE BID	$ 1,082,570

LUMP SUM PRICE – ALTERNATE BID	
ALTERNATE BID	$ 1,230,830

12/15/2025

UNIT COST

-Haul off and remove more or less than 750 ton of contaminated soils = $62 per ton add or deduct

-Supply and install more or less than 750 ton of clean stone = $34 per ton add or deduct

-Haul off and dispose of ground water from new excavation if necessary = $1.50 per gallon
---Please note that this does not include rental of a frac tank as could be needed if ground water is found to be more than can be kept up with 6,000 gallon tanker trucks

SCOPE OF WORK ADDITIONS OR CHANGES IF ALTERNATE IS CHOSEN

- **Supply and install (1) 10,000 gallon tank and (1) split compartment tank with (2) 5,000 gallon compartments (Drawing shows two separate 5,000 gallon tanks, but using one split compartment tank would provide a significant cost savings)**
- **All additional sumps, risers, spill buckets, overfill drop tubes would all be included for new 3rd tank**
- **All additional product and vent piping for new 3rd tank would be included**
- **Additional submersible pump would be included**
- **Additional dispenser would be included**
- **All needed extra Veeder Root tank gauge equipment would be included for new 3rd tank and extra piping**
- **All needed extra electrical would be included for new 3rd tank**
- **All extra start up would be included for 3rd tank and extra equipment**

12/15/2025

- Supply and install two tank top single wall submersible sumps
- Supply and install 3HP submersible pumps
- Supply and install double wall fiberglass product piping
- Supply and install fiberglass single wall vent piping with steel vent riser to up above the canopy
- Supply and install all necessary 4" steel risers for fill, probe, interstice and vapor risers
- Supply and install double wall grade level spill buckets for each new tank
- Supply and install new overfill drop tubes for each new tank
- Supply and install new canopy drain lines from new canopy footings and connect with existing lines as shown on drawings
- Complete backfill to subgrade
- Supply and install new 70' X 30' X 17' canopy per bid drawings
- Perform the following electrical as part of this bid work
- 1) Demo existing Fueling System & CNG System.
- 2) Supply & Install NEMA 4X Troughs as shown.
- 3) Supply & Install Panel FI-PA.
- 4) All conduit to be rigid type conduit as specified
- 5) Pipe & Wire from EMP3 to New Panel FI-PA.
- 6) Supply & Install 100AMP Breaker in EMP3.
- 7) Pipe & Wire 2-Dispensers.
- 8) Pipe & Wire 2-Tanks
- 9) Install Pipe & Wire Tank Overfill Alarm.
- 10) Install Pipe & Wire TLS.
- 11) Supply & Install 2-Estop Button.
- 12) Supply, Pipe & Wire 10-Canopy lights.
- Supply and install new stainless steel island form
- Pour concrete in new island form
- Pour new curb per bid drawings
- Pour new fueling aprons per bid drawings
- Install new asphalt at each end of fueling aprons per bid drawings
- Supply and install two dual product/dual hose dispensers including hanging hardware and hose retractors
- Supply and install new fuel management system for new fueling system
- Supply and install new Veeder Root tank gauge for tank level monitoring and leak detection as well as leak detection for product piping
- Once owner has supplied fuel, return start up and purge new system
- Perform complete set of OSFM required test on fuel system
- Schedule and attend final inspection
- Remove and dispose of existing CNG system in adjacent landscaped island
- Island area to be backfilled a rough graded as need
- Others to perform final grading and seeding per specifications

12/15/2025

STENSTROM

PLEASE NOTE THAT ITEMS HIGHLIGHTED IN YELLOW BELOW ARE ITEMS THAT WERE INCLUDED AS PART OF THIS BID DUE TO IT BEING NEEDED TO PERFORM THE WORK, BUT THESE ITEMS WERE NOT SPECIFICALLY STATED IN THE SCOPE OF WORK. OR ITEMS THAT WERE STATED IN THE SCOPE OF WORK THAT CANNOT BE BID IN ANY OTHER WAY BUT UNIT COST.

DOWNERS GROVE FUEL SYSTEM REPLACEMENT SCOPE OF WORK AND NOTES

- IL OSFM permitting for removal of existing fuel system and installation of new fuel system
- Schedule and attend all required OSFM inspections
- Local permits as needed, assumes fees are waived
- As specified, go to site and take soil boring of ground near canopy footings to prepare for type so soils that are found. We would also take a sample from near the tanks to obtain a landfill profile sample so soil can be removed during excavation process instead of stockpiled on site
- Remove and properly dispose of existing canopy
- Breakout, haul off and dispose of existing concrete included canopy footings, slab concrete and curbing as shown in demolition drawings
- Excavate to uncover existing tanks, product piping and vent piping
- Drain product piping of any remaining fuel and remove piping including vent piping
- Check tanks for vapors and remove vapors as needed for a safe removal
- Remove tanks and set above ground to prepare for cleaning them
- Open up tanks and remove any remaining fuel or fuel sludges
- Once tanks are cleaned, dismantle tanks and place in dumpster for disposal
- Provide Environmental consultant to tank required samples and perform analytical as required for IL OSFM including required report
- Supply and install slide rail shoring for installation of two new 10,000 gallon tanks
- Excavate for new tanks
- **Bid includes removal and haul off to class D landfill up to 750 Ton of contaminated soil. Soil coming from an existing tank hose must go to a class D Landfill (see unit cost at the end of this scope of work for add or deduct for more or less than 750 Ton)**
- **Bid does not include any dewatering of tank excavation (See unit cost at the end of this scope of work)**
- Once excavation is complete, pour hold down pad as drawing specify
- Hold down pad to includes imbedded anchor points to attached straps to
- Supply and install 12" stone bedding for new tanks
- Supply and set (2) 10,000 gallon double walled underground fiberglass storage tanks
- Supply and install hold down straps
- Backfill tanks to top to prepare for tank top and piping work
- **Total backfill for this work includes up to 750 ton of clean stone (see unit cost if more or less stone is needed)**
- Excavate for and pour new canopy footings
- Supply and install two single wall dispenser sumps

PROJECT MANUAL

Village of Downers Grove
5101 Walnut Ave.
Downers Grove, IL 60515

Downers Grove Fleet Fuel System Replacement

Date: October 14, 2025

Issued for Bid

Clark Dietz: Project No. D03425001

Clark Dietz, Inc.
1815 S. Meyers Rd, Suite 470
Oakbrook Terrace, IL 60181
P – 630.413.4130

Professional Consulting and Design Services

Clark Dietz
Engineering Quality of Life™

SECTION 00 01 00

TABLE OF CONTENTS

END OF SECTION

SECTION 01 10 00

SUMMARY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Documents.
B. Contract Description.
C. Scheduling of Work.
D. Construction Schedule.
E. Construction Sequence.
F. Contractor's Use of Site.
G. Owner Occupancy.
H. Specification Conventions.

1.2 RELATED DOCUMENTS

A. Documents related to the Work include:
   1. Contract Drawings
   2. General Provisions of the Contract including General and Supplementary Conditions
   3. All other Sections included herein as part of the Project Manual
   4. Addendum to the Drawings and Project Manual issued during Bidding

1.3 CONTRACT DESCRIPTION

A. Base Bid Work of the Project includes the following:
   1. Demolition of existing fuel island, pavement, tanks, piping, electrical conduits and wiring.
   2. Provide new concrete foundations, fuel island canopy supports, tank pads and dispenser sumps. Furnish and install new fuel island components including two tanks, piping, fuel management systems, DEF dispensers and fuel dispensers.
   3. Install new pavement for the new fuel island.
   4. Provide landscaping components for new island.

B. Alternate Bid Work of the Project includes the following:
   1. Demolition of existing fuel island, pavement, tanks, piping, electrical conduits and wiring.
   2. Provide new concrete foundations, fuel island canopy supports, tank pads and dispenser sumps. Furnish and install new fuel island components including three tanks, piping, fuel management systems, DEF dispensers and fuel dispensers.
   3. Install new pavement for the new fuel island.
   4. Provide landscaping components for new island.

C. The Contract Documents indicate the Work of the contract and related requirements and conditions that have an impact on the Work. Related requirements and conditions that are indicated on the Contract Documents include, but are not necessarily limited to the following:
   1. Existing site conditions and restrictions on use of the Site.

1.4 SCHEDULING OF WORK

A. Scheduling of Work
   1. With the exception of work listed in this Section, the Contractor may schedule his work in any manner he deems appropriate to complete the contract within the time allowed. The Contractor is cautioned that some of the work may have to be performed during other than normal working hours and that the Owner may revise the schedule whenever the Owner finds it necessary to maintain work progression, or to protect the Owner's facility, or to maintain continuous, satisfactory operation of existing facilities.

2. Following is an anticipated project schedule. Contractor will be responsible for providing an update schedule once notice to proceed has been awarded.
   a. Contract Award – By 12/15/2025
   b. Construction Shop Drawings/Review – By 01/31/2026
   c. Pre-Construction Meeting – 03/09/2026
   d. Mobilization – 03/16/2026
   e. Substantial Completion – 09/30/2026
   f. Final Completion – 10/31/2026
3. The Contractor shall submit a Construction Progress Schedule at every progress meeting.
4. The Contractor is responsible for the means and methods necessary to accomplish the work in compliance with the specified criteria. Access must be maintained for personnel and equipment to enter and maintain the facility at all times. All shutdowns must be coordinated with the Owner a minimum of 72 hours prior. All shutdowns must occur during low flow periods as defined by the Owner.

B. Coordination with Others
1. The Owner will attempt to keep the Contractor informed of changes to existing contracts and award of subsequent contracts that may affect the Contractor. Schedules of operations for other contractors working will be made available to the Contractor upon request.

1.5 CONSTRUCTION SCHEDULE

A. The work described in this Section shall be shown in the Construction Progress Schedule. All construction steps, procedures and temporary facilities shall be approved by the Owner prior to implementation by the Contractor. The monthly updates of the Schedule of Construction shall show any changes in the proposed work, including proposed shutdown work.

B. The completion schedule for this contract requires timely transmittal of contract submittals for review by the Engineer. The identification and transmittal of all submittals required for completion of the phase of work described above is the Contractor's responsibility.

C. The Contractor shall be held responsible for all direct and indirect delays resulting from the Contractor's failure to identify and transmit the submittals required to successfully complete the contract work within the time specified.

D. The following early submittals shall be submitted within ten days after Notice to Proceed:
1. Construction Schedule
2. Health and Safety Plan
3. Site Security plan/requirements

1.6 CONSTRUCTION SEQUENCE

A. To be determined

1.7 CONTRACTOR'S USE OF SITE

A. Limit use of site and premises to allow Owner occupancy.

B. Construction Operations: Construction operations to be coordinated with the Owner.

C. Time Restrictions for Performing Work: Work hours are to be coordinated with the Owner.

D. Utility Outages and Shutdown are to be coordinated with the Owner.

1.8 OWNER OCCUPANCY

A. The Owner will occupy the premises during the entire period of construction for the conduct of normal operations.

B. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations.

C. Schedule the Work to accommodate Owner occupancy.

1.9 SPECIFICATION CONVENTIONS

A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words “shall be” are included by inference where a colon (:) is used within sentences or phrases.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 13 10

NPDES PERMIT AND STORM WATER POLLUTION PREVENTION PLAN

PART 1 – GENERAL REQUIREMENTS

1.1. WORK INCLUDES

A. LOCAL STORMWATER MANAGEMENT CERTITIFCATION

1. This work shall be done in accordance with the county Stormwater Management Certification requirements. The General Contractor will be required to comply with all terms of the permit. The A/E will prepare the required applications. As part of the application, the General Contractor will be required to complete any Contractor Certifications or Contractor Statements and submit it to the A/E for permit application.

END OF SECTION

SECTION 01 20 00

CONTINGENCY ALLOWANCES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Contingency allowances.

1.2 CONTINGENCY ALLOWANCES

A. Include in Contract a stipulated sum/price of $25,000.00 for use upon Owner's instruction as a contingency allowance.

B. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead, and profit will be included in Change Orders authorizing expenditure of funds from this contingency allowance.

C. Funds will be drawn from contingency allowance only by Change Order.

D. At closeout of Contract, funds remaining in contingency allowance will be credited to Owner by Change Order.

END OF SECTION

SECTION 01 29 76

PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related documents

B. Payment requests

1.2 PAYMENT REQUESTS

A. General: Except as otherwise indicated, the progress payment cycle is to be regular. Each application must be consistent with previous applications and payments. Certain applications for payment, such as the initial application, the application at substantial completion, and the final payment application involve additional requirements.

1. Waivers of Lien: For each payment application, submit waivers of lien from every entity (including Contractor) who could lawfully and possibly file a lien in excess of $1,000 arising out of the Contract, and related to work covered by the payment. Submit partial waivers for the amount requested, prior to deduction or retainage, on each item. When the application shows completion of an item, submit final or full waivers. The Owner reserves the right to designate which entities involved in the work must submit waivers.
2. Waiver Delays: Each progress payment must be submitted with Contractor's waiver for the period of construction covered by the application. At the Contractor's option, each progress payment may be submitted with waivers from the subcontractors or sub-subcontractors and suppliers for the previous period of construction covered by the previous application. The final payment application must be submitted together with or preceded by final or complete waivers from every entity involved with performance of the work covered by the payment request.
3. Waiver Forms: Submit waivers on forms, and executed in a manner, acceptable to Owner.
4. Sworn Statement: Each progress payment must be submitted with a sworn statement showing subcontractors and material suppliers and the payment status of each. Form of the sworn statement shall be subject to approval of the Owner.

B. Payment Application Times: The "date" for each progress "payment" is as indicated in Owner-Contractor Agreement or, if none is indicated therein, it is the 15th day of each month. The period of construction work covered by each payment request is period indicated in Owner-Contractor Agreement or, if none is indicated therein, it is period ending 15 days prior to date for each progress payment, and starting day following end of preceding period. Dates shall be confirmed at the preconstruction meeting.

C. Application Preparation: Except as otherwise indicated, complete every entry provided for on the form, including notarization and execution by authorized persons. Incomplete applications will be returned by Owner without action. Listing must include amounts of change orders issued prior to last day of the "period of construction" covered by application.

D. Initial Payment Application: The principal administrative actions and submittals which must precede or coincide with submittal of contractor's first payment application can be summarized as follows, but not necessarily by way of limitation:

1. Schedule of Values
2. Schedule of Submittals (Section 01 33 00).
3. Listing of Contractor's staff assignments.
4. Waiver of Lien and Sworn Statement.

E. Monthly Payment Application: The principal administrative actions and submittals which must precede or coincide with submittal of contractor's first payment application can be summarized as follows, but not necessarily by way of limitation:
1. Updated Schedule.
2. Revised Schedule of Submittals (Section 01 33 00), if applicable.
3. Updated listing of Contractor's staff assignments, if applicable.
4. Waiver of Lien, Including Subcontractor Lien Waivers, and Sworn Statement.

F. Application at Time of Final Completion: Following issuance of Owner's final "certificate of substantial completion", and also in part as applicable to prior certificates on portions of completed work as designated, a "special" payment application may be prepared and submitted by Contractor. The principal administrative actions and submittals which must proceed or coincide with such special applications can be summarized as follows, but not necessarily by way of limitation:
1. Warranties (guarantees), maintenance agreements and similar provisions of contract documents.
2. Test records, maintenance instructions, start-up performance reports, and similar change-over information germane to Owner's occupancy, use, operation and maintenance of completed work.
3. Final cleaning of the work.
4. Application for reduction (if any) of retainage, and consent of surety.
5. Advice to Owner on coordination of shifting insurance coverages, including proof of extended coverages as required.
6. Listing of Contractor's incomplete work, recognized as exceptions to Engineer's certificate of substantial completion.
7. Compact disc with project photos.

G. Final Payment Application: The administrative actions and submittals which must precede or coincide with submittal of contractor's final payment application can be summarized as follows, but not necessarily by way of limitation:
1. Completion of project closeout requirements.
2. Completion of items specified for completion beyond time of substantial completion (regardless of whether special payment application was previously made).
3. Assurance, satisfactory to Owner, that unsettled claims will be settled and that work not actually completed and accepted will be completed without undue delay.
4. Transmittal of required project construction records to Owner.
5. Proof, satisfactory to Owner, taxes, fees and similar obligations of Contractor have been paid.
6. Removal of temporary facilities, services, surplus materials, rubbish and similar elements.
7. Consent of surety for final payment.

H. Application Transmittal: Submit 3 executed copies of each payment application, one copy of which is completed with waivers of lien, sworn statement and similar attachments. Transmit each copy with a transmittal form listing those attachments, and recording appropriate information related to application in a manner acceptable to Owner. Transmit to Owner by means ensuring receipt within 24 hours.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Coordinating interruptions in Owner's operations.

B. Coordination and project conditions.

C. Special reports.

D. Preconstruction meeting.

E. Progress meetings.

F. Weekly report.

G. Cutting and patching.

H. Special procedures.

I. Cleaning and protection.

J. Conservation.

1.2 COORDINATING INTERRUPTIONS IN OWNER'S OPERATIONS

A. Show all anticipated operational interruptions of the Owner's facilities on the progress schedule.

B. Coordinate all operational interruptions with the Owner at least 48 hours prior to commencing with the work. The Owner may require that the Contractor reschedule work as required to maintain the operation of their facilities.

C. Except as specified herein, all operations must be maintained during construction. The Contractor is responsible for all, temporary electrical, and temporary communications that are necessary to continue the Owner's operation of their facilities.

1.3 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of various sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.

B. Verify utility requirements and characteristics of operating equipment are compatible with utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, operating equipment.

C. Coordinate space requirements, supports, and installation of mechanical and electrical Work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

D. In finished areas except as otherwise indicated conceal pipes within construction.

E. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Owner's occupancy.

F. During Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

G. Limitations on construction area usage as well as specific requirements that impact utilization are indicated by Contract Documents. Schedule deliveries so as to minimize space and time requirements for storage of materials and equipment on construction area.

1.4 SPECIAL REPORTS

A. Accident Reports: Prepare and submit reports of significant accidents, at site and anywhere else work is in progress. Record and document data and actions. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

1.5 PRECONSTRUCTION MEETING

A. Engineer will schedule an initial progress meeting with the Contractor and Owner, recognized as the preconstruction meeting, after Notice of Award.

B. The preconstruction meeting will be an organizational meeting. Agenda items may include:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of Subcontractors, list of products, schedule of values, and progress schedule.
5. Designation of personnel representing parties in Contract and Engineer.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
7. Scheduling.
8. Use of premises by Owner and Contractor.
9. Owner's requirements.
10. Survey and layout.
11. Security and housekeeping procedures.
12. Application for payment procedures.
13. Procedures for testing.
14. Procedures for maintaining record documents.
15. Requirements for start-up of equipment.
16. Inspection and acceptance of equipment put into service during construction period.

1.6 PROGRESS MEETINGS

A. In addition to other project meetings held for other purposes, hold a general progress meeting with the Engineer and Owner throughout progress of the Work at weekly intervals.

B. The schedule of the progress meetings will be determined during the preconstruction meeting. In general, progress meetings will be coordinated with preparation of the payment request.

C. Review each entity's present and future needs including interface requirements, time, sequences, deliveries, access, site utilization, temporary facilities and services, hours of work, hazards and risks, housekeeping, change orders, and documentation of information for payment requests. Discuss whether each element of current work is ahead of schedule, on time, or behind schedule in relation with updated

progress schedule. Determine how behind-schedule work will be expedited, and secure commitments from entities involved in doing so. Discuss whether schedule revisions are required to ensure that current work and subsequent work will be completed within Contract Time. Review everything of significance which could affect progress of the work.

D. Updating Schedules: Immediately following each progress meeting, where revisions to progress schedule have been made or recognized, revise and reissue progress schedule as described in Section 01 33 00.

E. Attendance Required: Job superintendent, major subcontractors and suppliers, and others as appropriate to agenda topics for each meeting.

F. Agenda:
1. Review minutes of previous meetings, if applicable.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems impeding planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 SPECIAL PROCEDURES

A. Materials: As specified in product sections, match existing with new products for patching and extending work.

B. Employ skilled and experienced installers to perform work.

C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.

D. Remove unsuitable material not marked for salvage. Replace materials as specified for finished Work.

E. Remove debris and abandoned items from area and from concealed spaces.

F. Prepare surface and remove surface finishes to permit installation of new work and finishes.

G. Remove, cut, and patch Work in manner to minimize damage and to permit restoring products and finishes to original or specified condition.

H. Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with neat transition to adjacent finishes.

I. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.

J. Finish surfaces as specified in individual product sections.

3.2 CLEANING AND PROTECTION

A. General: During handling and installation of work at the project site, clean and protect work in progress and adjoining work on the basis of continuous maintenance.

B. Limiting Exposures of Work: To the extent possible through reasonable control and protection methods, supervise performance of the work in such a manner and by such means which will ensure that none of the work, whether completed or in progress, will be subjected to harmful, dangerous, damaging or otherwise deleterious exposure during the construction period. Such exposures include, where applicable, but not by way of limitation the following:

1. Water or ice.
2. Solvents.
3. Chemicals.
4. Light.
5. Puncture.
6. Abrasion.
7. Heavy traffic.
8. Misalignment.
9. Excessive weathering.
10. Unprotected storage.
11. Improper shipping or handling.
12. Theft.
13. Vandalism.

3.3 CONSERVATION

A. It is a requirement for supervision and administration of the work that construction operations be carried out with the maximum possible consideration given to conservation of energy, water and materials.

END OF SECTION

SECTION 01 32 23

SURVEY AND LAYOUT DATA

PART 1 – GENERAL REQUIREMENTS

1.1. WORK INCLUDES

A. Base and Alternative Bids:

1. Contractor to provide layout for all site improvements including the following:

a. Site subgrade within the grading limits shown on the Civil Site plans.
b. All site utilities – storm sewer, sanitary sewer, domestic water, and fire protection.
c. All site utilities will require staking to the location and elevations shown on the Civil Site plans.
d. Changes to any new utility location, route, or elevation must be approved by A/E before work can proceed.
e. 3D grading contours provided by A/E may be used for GPS rough grading purposes only. Final grading of subgrade and base course shall be staked to the locations and elevations shown on the Civil Site plans

1.2. RELATED WORK

1. Specified Elsewhere:

1. Section 30 05 00 – IDOT and BDE Special Provision

2. By Others:

1. A/E will provide:
a. Topographic survey of the site, giving all grades and lines of streets, alleys, pavements, and adjoining properties, rights-of-way, encroachments, boundaries, and contours of the building site.
b. Locations, dimensions and data pertaining to the existing:
1) Buildings.
2) Underground Obstructions.
3) Trees and Landscaping.
4) Utilities.
5) Pavements.
c. Location and coordinates for survey horizontal control points.
d. Benchmark location, reference, and elevation of each.
e. Provide 2D CADD drawings of site improvements.
f. Provide 3D CADD drawings of site grading contours.

3. Topographic and property surveys, ground elevations, obstructions on site, locations and depths of sewers, conduits, pipes, existing structures, curbs, pavements, and tracts have been obtained from reliable sources. The accuracy of this data is not guaranteed and is furnished solely as an accommodation to the Contractor. Use of this data shall be at the Contractor's discretion. No additional compensation will be granted due to the Contractor's lack of knowledge of site conditions. Prior to bid submission, conduct any additional surveys and soil tests you may deem necessary to verify the accuracy of the information provided. Additional surveys and tests made by the Contractor shall be made at no cost to the Using Agency.

1.3. QUALITY ASSURANCE

1. Qualifications of Surveyor:

    1. Five years of experience in layout of similar or more difficult complexity.

1.4. SUBMITTALS

1. Submit resume of surveyor for documentation purposes only.

2. A/E may at any time require written verification of grades, lines, and levels by a licensed surveyor as work progresses. Contractor signed agreement for the use of electronic files provided by A/E.

1.5. ELECTRONIC FILES AGREEMENT

To: _____ (Contractor)

From: _____ (Consultant)

1. In accepting and utilizing the electronic media generated and furnished by the Consultant, the Contractor agrees that all such electronic files are instruments of service of the Consultant, who shall be deemed the author, and shall retain all common law, statutory law, and other rights including copyrights.

2. The Contractor agrees not to reuse these electronic files, in whole or in part, for any purpose other than the project. The Contractor agrees not to transfer these electronic files to others without the prior written consent of the Consultant. The Contractor further agrees to waive all claims against the Consultant, resulting in any way from any unauthorized changes to or reuse of the electronic files for any other project by anyone other than the Consultant.

3. The Contractor is aware that differences could exist between the electronic files delivered and the printed hard-copy construction documents. In the event of a conflict between the signed construction documents prepared by the Consultant, and the electronic files, the signed or sealed hard-copy construction documents shall govern.

4. In addition, the Contractor agrees, to the fullest extent permitted by law, to indemnify and hold harmless the Consultant, its officers, directors, employees and subconsultants against all damages, liabilities or costs, including reasonable attorneys' fees and defense costs, arising from any changes made by anyone other than the Consultant, or from any reuse of the electronic files without prior written consent of the Consultant.

Offered by:	Accepted by:
_____	_____
Name	Name
_____	_____
Title	Title
_____	_____
Name of Consultant	Name of Contractor
_____	_____
Date	Date

END OF DOCUMENT

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submittal procedures.

B. Owner's/Engineer's Action.

C. Proposed products list.

D. Product data.

E. Shop drawings.

F. Design data.

G. Test reports.

H. Certificates.

I. Manufacturer's instructions.

J. Operation and Maintenance manuals.

K. Manufacturer's field reports.

L. Construction photographs.

1.2 SUBMITTAL PROCEDURES

A. Transmit each submittal with Engineer accepted form to engineer and owner via email/online construction management program.

B. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.

C. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, appropriate to submittal.

D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.

E. Schedule submittals to expedite Project and deliver to Engineer as directed below for electronic submittals. Coordinate submission of related items.

F. For each submittal review, allow 15 days excluding delivery time to and from Contractor. Where the submittal must be held for coordination, the Engineer will so advise the Contractor.

G. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work.

H. Allow space on submittals for Contractor and Engineer review stamps.

I. When revised for resubmission, identify changes made since previous submission.

J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

K. Submittals not requested will not be recognized or processed.

L. Except for samples, electronic submittals are required.

M. Electronic submittals are required to conform to all of the submittal requirements listed above.

N. Email electronic submittals to the Engineer.

O. Submit electronic documents as a single portable electronic file (.pdf). Contractor should request an exception for documents that are not sent in pdf format or are sent as multiple files. Electronic files will be rejected if they are not clearly legible.

P. Submittals delivered electronically will be returned to the Contractor as electronic files. Engineer will return:
1. Engineer’s review form and comments
2. Contractor’s transmittal form
3. Submittal materials only if comments on the materials are required.

1.3 OWNER’S/ENGINEER’S ACTION

A. Unless otherwise noted, the Owner and Engineer will review each submittal and mark with appropriate "Action".

B. Action Stamp: The Owner and Engineer will stamp each submittal to be returned with a uniform, self-explanatory action stamp, appropriately marked and executed to indicate whether the submittal returned is for unrestricted use, final-but-restricted use (as marked), must be revised and resubmitted (use not permitted) or without action (as explained on the transmittal form).

C. Final Unrestricted Release: Where the submittals are marked as follows, the work covered by the submittal may proceed provided it complies with the requirements of the contract documents; acceptance of the work will depend upon that compliance.
1. Marking: "No Exception Taken".

D. Final-But-Restricted Release: When the submittals are marked as follows, the work covered by the submittal may proceed provided it complies with the Owner/Engineer's notations, corrections marked on the submittal, and with the requirements of the contract documents; acceptance of the work will depend on that compliance.
1. Marking: "Make Corrections Noted".

E. Returned to Resubmittal: When the submittal is marked as follows, do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise the submittal or prepare a new submittal in accordance with the Owner/Engineer's notations stating the reasons for returning the submittal. Repeat if necessary to obtain a different action marking. Do not permit submittals with the following marking to be used at the project site, or elsewhere where work is in progress.
1. Marking:
    a. "Rejected".
    b. "Revise and Resubmit".

c. "Submit Specified Item."

1.4 PROPOSED PRODUCTS LIST

A. Within 15 days after date of Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.5 PRODUCT DATA

A. Information required specifically as product date includes manufacturer's standard printed recommendations for application and use, compliance with recognized standards of trade associations and testing agencies, and the application of their labels and seals (if any), special notation of dimensions which have been verified by way of field measurement, and special coordination requirements for interfacing the material, product or system with other work.

B. Collect required product data into a single submittal for each unit of work or system. Mark each copy to show which choices and options are applicable to the project. Where product data has been printed to include information on several similar products, some of which are not required for use on the project, or are not included in this submittal, mark the copies to show clearly that such information is not applicable.

C. Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents. Product data submittal is required for information and record and to determine that the products, materials and systems comply with the provisions of the contract documents. Therefore, the initial submittal is also the final submittal, except where the Engineer observes that there is non-compliance with the provisions of the contract documents and returns the submittal to the Contractor marked with the appropriate "Action".

D. Unless submitted electronically, submit number of copies Contractor requires, plus three copies Engineer will retain.

E. Identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

F. Where product data must be specially prepared for required products, materials or systems, because standard printed data is not suitable for use, submit data as "shop drawings" and not as "product data".

G. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

H. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.6 SHOP DRAWINGS

A. Shop Drawings: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
1. Include signed and sealed calculations to support design.

2. Submit drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.

D. Make revisions and provide additional information when required by authorities having jurisdiction.

E. Information required on shop drawings includes, dimensions, identification of specific products and materials which are included in the work, compliance with specified standards and notations of coordination requirements with other work. Provide special notation of dimensions that have been established by field measurement. Highlight, encircle or otherwise indicate deviations from the contract documents on the shop drawings.

F. Do not permit shop drawing copies without an appropriate final "Action" marking by the Engineer to be used in connection with the work.

G. Unless submitted electronically, submit number of opaque reproductions Contractor requires, plus three copies Engineer will retain.

H. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.7 DESIGN DATA

A. Submit for Engineer's knowledge as contract administrator or for Owner.

B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

C. Unless submitted electronically, submit number of opaque reproductions Contractor requires, plus three copies Engineer will retain.

1.8 TEST REPORTS

A. Submit for Engineer's knowledge as contract administrator or for Owner.

B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

C. Unless submitted electronically, submit number of opaque reproductions Contractor requires, plus three copies Engineer will retain.

1.9 CERTIFICATES

A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Engineer, in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

D. Unless submitted electronically, submit number of opaque reproductions Contractor requires, plus three copies Engineer will retain.

1.10 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Engineer for delivery to Owner in quantities specified for Product Data.

B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.11 MANUFACTURER'S OPERATION AND MAINTENANCE MANUALS

A. Obtain installation, operation, and maintenance manuals from manufacturers and suppliers for each item of equipment furnished under the Contract. Submit three copies of each complete manual to the Owner within 90 days after approval of shop drawings, product data, and samples and not later than the date of shipment of each item of equipment to the project site.

B. Manuals shall be provided for each piece of equipment including individual components and subsystems of complete assemblies. The section of the manual on operation shall describe the function of each component and its relationship to the system of which it is a part. Where several models, options, or styles are described, the manual shall identify the items actually provided.

C. The manual shall contain the following:
1. An 8-1/2 x 11 inch typewritten sheet listing the manufacturer's identification, including order number, model, and serial number and location of parts and service centers.
2. A separate 8-1/2 x 11 inch typewritten list of recommended stock of parts, including part number and quantity.
3. Complete replacement parts list and drawings.
4. Performance data and rating tables.
5. Specific instructions for installation, operation, adjustment, and maintenance.

D. Each manual shall be bound in a folder and labeled to identify the contents and project to which it applies.

E. Operation and maintenance manuals specified herein are in addition to any operation, maintenance, or installation instructions required by the Contractor to install, test, and start up equipment.

1.12 MANUFACTURER'S FIELD REPORTS

A. Submit reports for Engineer's benefit as contract administrator or for Owner.

B. Unless submitted electronically, submit two copies of the report within 5 days of observation to Engineer for information.

C. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.13 CONSTRUCTION PHOTOGRAPHS

A. Take pre-construction digital photos as evidence of existing project. The photos shall be submitted prior to working in each room.

B. With the application at time of Final Completion: Deliver compact discs with .jpg files to Owner with project record documents. Catalog and index files by room number.

1.14 SUBMITTAL SCHDULE

A. A proposed preliminary submittal schedule is attached to this Section.

B. Contractor shall submit his own Schedule of Submittals with the Initial Payment Application.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 40 00

QUALITY PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Quality control and control of installation.
B. Tolerances.
C. References.
D. Labeling.
E. Source and quality of materials and equipment.
F. Examination.
G. Preparation.

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. When manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform Work by persons qualified to produce required and specified quality.

F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

H. After the installation is completed, contractor is responsible for assisting owner with equipment commissioning. The commissioning authority for this project consists of representatives from owner and engineer. The commissioning requirements are listed in various specifications and divisions.

1.3 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES

A. For products or workmanship specified by association, trade, or other consensus standards, complies with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date for receiving bids, except where specific date is established by code.

C. Obtain copies of standards where required by product specification sections.

D. When specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

E. Neither contractual relationships, duties, responsibilities of parties in Contract, nor those of Engineer shall be altered from Contract Documents by mention or inference otherwise in reference documents.

1.5 LABELING

A. Attach label from agency approved by authority having jurisdiction for products, assemblies, and systems required to be labeled by applicable code.

B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label.
1. Model number.
2. Serial number.
3. Performance characteristics.

1.6 SOURCE AND QUALITY OF MATERIALS AND EQUIPMENT

A. The source of materials to be used shall be in accordance with the Contract Documents and as approved by the Engineer before delivery. The approval of the source of any material shall continue as long as the material conforms to the Specifications.

B. All material not conforming to the requirements of the Specifications shall be considered as defective and shall be removed from the Work. If in place, faulty materials shall be removed by the Contractor at his expense and replaced with acceptable material unless permitted otherwise by the Owner. No defective materials which have been subsequently corrected shall be reused until approval has been given.

C. Upon failure of the Contractor to comply immediately with any order of the Engineer to remove and replace defective material, the Owner shall have authority to remove and replace defective materials, and to deduct the cost of removal and replacement from any monies due or to become due to the Contractor. Failure to reject any defective materials or work at the time of installation shall in no way prevent later rejection when such defects are discovered, nor obligate the Owner to final acceptance.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Verify utility services are available, of correct characteristics, and in correct locations.

END OF SECTION

SECTION 01 42 16

DEFINITIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Description of requirements.
B. Definitions.

1.2 DESCRIPTION OF REQUIREMENTS

A. This section specifies procedural and administrative requirements for compliance with governing regulations and codes and standards imposed upon the Work. These requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with regulations, codes and standards.
   1. The term "Regulations" is defined to include laws, statutes, ordinances and lawful orders issued by governing authorities, as well as those rules, conventions and agreements within the construction industry which effectively control the performance of the Work regardless of whether they are lawfully imposed by governing authority or not.

B. Governing Regulations: Refer to General and Supplementary Conditions for requirements related to compliance with governing regulations.

1.3 DEFINITIONS

A. General Explanation: Certain terms used in contract documents are defined in this article. Definitions and explanations contained in this section are not necessarily complete but are general for the Work to the extent that they are not stated more explicitly in another element of the contract documents.

B. General Requirements: Provisions and requirements of other Division 01 sections apply to the entire work of the Contract and, where so indicated, to other elements which are included in the project.

C. Indicated: The term "indicated" is a cross-reference to graphic representations, notes or schedules on the drawings, to other paragraphs or schedules in the specifications, and to similar means of recording requirements in contract documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used in lieu of "indicated", it is for the purpose of helping the reader locate the cross-reference, and no limitation of location is intended except as specifically noted.

D. Directed, Requested, etc.: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted", and "permitted" mean "directed by the Owner", "requested by the Owner", and similar phrases. However, no such implied meaning will be interpreted to extend the Owner's responsibility into the Contractor's area of construction supervision.

E. Approve: Where used in conjunction with the Engineer's response to submittals, requests, applications, inquiries, reports and claims by the Contractor, the term "approved" will be held to limitations of the Engineer's responsibilities and duties as specified in General and Supplementary Conditions. In no case will the Engineer's approval be interpreted as a release of the Contractor from responsibilities to fulfill requirements of contract documents or acceptance of the Work, unless otherwise provided by requirements of the contract documents.

F. Project Site: The term "project site" means the space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing other construction as part of the project or

other projects. The extent of the project site is shown on the drawings and may or may not be identical with the description of the land upon which the project is to be built.

G. Furnish: The term "furnish" is used to mean "supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations."

H. Install: The term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, applying, working to dimension, protecting, cleaning and similar operations."

I. Provide: The term "provide" means "to furnish and install, complete and ready for the intended use."

J. Installer: The "installer" is "the entity" (person or firm) engaged by the Contractor, its subcontractor or sub-subcontractor for performance of a particular element of construction at the project site, including installation, erection, application and similar required operations. It is a requirement that installers are experienced in the operations they are engaged to perform.

K. Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests of the Work, either at the project site or elsewhere, and to report, and (if required) interpret results of those inspections or tests.

L. Commissioning Agent/Authority: Assigned personnel that will work with contractors to ensure that building construction project meets the operational requirements of the client.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 42 19

REFERENCE STANDARDS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Description of requirements.
B. Specification format and content explanation.
C. Drawing symbols.
D. Industry standards.
E. Governing regulations/authorities.

1.2 DESCRIPTION OF REQUIREMENTS

A. This section specifies procedural and administrative requirements for compliance with governing regulations and codes and standards imposed upon the Work. These requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with regulations, codes and standards.
   1. The term "Regulations" is defined to include laws, statutes, ordinances and lawful orders issued by governing authorities, as well as those rules, conventions and agreements within the construction industry which effectively control the performance of the Work regardless of whether they are lawfully imposed by governing authority or not.

B. Governing Regulations: Refer to General and Supplementary Conditions for requirements related to compliance with governing regulations.

1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION

A. General: This article is provided to help the user of these specifications more readily understand the format, language, implied requirements and similar conventions of content. None of the following explanations shall be interpreted to modify the substance of contract requirements.
   1. Production Methods: Portions of these specifications have been produced by editing master specifications and the standard specifications covenants applicable to construction; they may contain minor deviations from traditional writing formats. Such deviations are a natural result of this production technique, and no other meaning shall be implied.

B. Specification Format: These specifications are organized based upon the Construction Specifications Institute's 48-Division format. The organization of these specifications into Divisions, Sections or Trade Headings conforms generally to recognized industry practice.

C. Specification Content: This project specification has been produced employing certain conventions in the use of language as well as conventions regarding the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
   1. In certain circumstances, language used in specifications and other contract documents is of the abbreviated type. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural and plural words will be interpreted as singular where applicable and where the full context of the contract documents so indicates.
   2. Imperative Language is used generally in the specifications. Requirements expressed imperatively are to be performed by the Contractor. At certain locations in the text, for clarity, contrasting subjective language is used to describe responsibilities which must be fulfilled indirectly by the Contractor, or by others when so noted.

D. Methods of Specifying: Techniques or methods of specifying requirements vary throughout the text. The method used for specifying one element of the Work has no bearing on requirements for another element of the Work.

E. Assignment of Specialists: In certain circumstances, the specification requires or implies that specific elements of the Work are to be assigned to specialists who must be engaged to perform that element of the Work. Such assignments are special requirements over which the Contractor has no choice or option. They are intended to establish which party or entity involved in a specific element of the Work is considered as being sufficiently experienced in the indicated construction processes or operations to be recognized as "expert" in those processes or operations. Nevertheless, the ultimate responsibility for fulfilling all contract requirements remains with the Contractor.
   1. These requirements should not be interpreted to conflict with the enforcement of building codes and similar regulations governing the Work. They are also not intended to interfere with local trade union jurisdictional settlements and similar conventions.

F. Trades: The use of certain titles such as "carpentry" in the specification, is not intended to imply that the Work must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter". It also is not intended to imply that the requirements specified apply exclusively to tradespersons of that corresponding generic name.

1.4 DRAWING SYMBOLS

A. General: Except as otherwise indicated, graphic symbols used on the drawings are those symbols recognized in the construction industry for purposes indicated. Where not otherwise noted, symbols are defined by "Architectural Graphic Standards", published by John Wiley & Sons, Inc., seventh edition.

1.5 INDUSTRY STANDARDS

A. Applicability of Standards: Except where more explicit or stringent requirements are written into the contract documents, applicable construction industry standards have the same force and effect as if bound into or copied directly into the contract documents. Such industry standards are made a part of the contract documents by reference. Individual specification sections indicate which codes and standards the Contractor must keep available at the project site for reference.
   1. Referenced standards (standards referenced directly in the contract documents) take precedence over standards that are not referenced but generally recognized in the industry for applicability to the Work.
   2. Unreferenced Standards: Except as otherwise limited by the contract documents, standards not referenced but recognized in the construction industry as having direct applicability will be enforced for performance of the Work. The decision as to whether an industry code or standard is applicable, or as to which of several standards are applicable, is the sole responsibility of the Engineer.

B. Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of contract documents.
   1. Updated Standards: At the request of the Engineer, Contractor or governing authority, submit a change order proposal where an applicable industry code or standard has been revised and reissued after the date of the contract documents and before the performance of the Work affected. The Engineer will decide whether to issue a change order to proceed with the updated standard.

C. Conflicting Requirements: Where compliance with two or more standards is specified, and where these standards establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the contract documents specifically indicate otherwise. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Engineer for a decision before proceeding.
   1. Minimum Quantities or Quality Levels: In every instance the quantity or quality level shown or specified is intended to be the minimum to be provided or performed. Unless otherwise indicated, the actual Work may either comply exactly, within specified tolerances, with the minimum quantity or quality specified, or may exceed that minimum within reasonable limits. In complying with these requirements, the indicated numeric values are minimum or maximum values, as noted, or as appropriate for the context of the requirements. Refer instances of uncertainty to the Engineer for decision before proceeding.

D. Copies of Standards: The contract documents require that each entity performing work be experienced in that part of the Work being performed. Each entity is also required to be familiar with industry standards

applicable to that part of the Work. Copies of applicable standards are not bound with the contract documents.

1. Where copies of standards are needed for proper performance of the Work, the Contractor is required to obtain such copies directly from the publication source.
2. Although copies of standards needed for enforcement of requirements may be required submittals, the Engineer reserves the right to require the Contractor to submit additional copies as necessary for enforcement of requirements.

E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations as referenced in contract documents are defined to mean the associated names. Both names and addresses are subject to change, and are believed to be, but are not assured to be, accurate and up-to-date as of date of contract documents:

1. ANSI - American National Standards Institute, 1430 Broadway, New York, NY 10018, (212) 354-3300
2. ASTM - ASTM, 655 Fifteenth Street NW, Washington, DC 20005, (202) 639-4025
3. AWS - American Welding Society, P.O. Box 351040, 550 Le Jeune Road NW, Miami, FL 33135, (305) 443-9353

F. Federal Government Agencies: Names and titles of federal government standard or specification producing agencies are frequently abbreviated. The following acronyms or abbreviations as referenced in the contract documents indicate names of standard or specification producing agencies of the federal government. Names and addresses are subject to change but are believed to be, but are not assured to be, accurate and up-to-date as of the date of the contract documents.

1. EPA - Environmental Protection Agency, 401 M Street SW, Washington, DC 20460, (202) 829-3535
2. OSHA - Occupational Safety and Health Administration (U.S. Department of Labor), Government Printing Office, Washington, DC 20402, (202) 783-3238

1.6 GOVERNING REGULATIONS/AUTHORITIES

A. General: The procedure followed has been to contact governing authorities where necessary to obtain information needed for the purpose of preparing contract documents; recognizing that such information may or may not be of significance in relation to the Contractor's responsibilities for performing the Work. Contact governing authorities directly for necessary information and decisions having a bearing on performance of the Work.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Temporary Utilities:
   1. Temporary electricity.
B. Construction Facilities:
   1. Vehicular access, Parking, and Paved Area Use.
   2. Progress cleaning and waste removal.
C. Temporary Controls:
   1. Barriers.
   2. Security.
D. Construction Aids:
   1. Temporary runways, scaffolding, and ladders.
   2. Welding
E. Removal of utilities, facilities, and controls.

1.2 TEMPORARY ELECTRICITY

A. Owner will pay cost of energy used. Exercise measures to conserve energy. Utilize Owner’s existing power service.

B. Do not disrupt Owner's use of service.

C. Complement existing power service capacity and characteristics as required for construction operations.

D. If temporary wiring interferes with construction or the Owner’s operation of the facility, it shall be relocated.

E. Permanent convenience receptacles may be utilized during construction.

F. When temporary service is no longer needed, remove all temporary electrical facilities from the site.

1.3 TEMPORARY SANITARY FACILITIES

A. Contractor shall provide temporary sanitary facility for their use. Contractor will be responsible for maintenance and upkeep of these facilities for the duration of the project. Location of these facilities will be determined by owner and will be coordinated with contractor.

B. Chemical toilets and their maintenance shall meet the requirements of State and local health regulations and ordinances. Any facilities or maintenance methods failing to meet these requirements shall be corrected immediately.

C. At end of construction, return existing facilities used for construction operations to same or better condition as original condition.

1.4 VEHICULAR ACCESS, PARKING, AND PAVED AREA USE

A. Use designated existing on-site roads for construction traffic.

B. Use of designated existing on-site streets and driveways used for construction traffic and parking is permitted. Tracked vehicles not allowed on paved areas.

C. Do not allow heavy vehicles or construction equipment in parking areas.

D. Maintenance:
   1. Maintain traffic and parking areas in sound condition free of excavated material, construction equipment, products, mud, snow, and ice.

1.5 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing spaces.

C. Broom and vacuum clean interior areas prior to start of surface finishing and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and rubbish from site as needed and dispose off-site.

1.6 SECURITY

A. Security Program:
   1. Protect Work from theft, vandalism, and unauthorized entry.
   2. Initiate program in coordination with Owner's existing security system at project mobilization.
   3. Maintain program throughout construction period until Owner acceptance precludes need for Contractor security.

1.7 TEMPORARY RUNWAYS, SCAFFOLDING, AND LADDERS

A. Provide temporary ladders, ramps, and runways as required for performance and inspection of the work. The above facilities shall be constructed and maintained in accordance with the applicable Federal, State, and Municipal regulations and codes.

B. Furnish, erect, and maintain all scaffolding required for this work. Scaffolding shall be constructed and maintained in accordance with applicable State and Federal laws and local ordinances. Scaffolding shall be promptly removed after serving its purpose.

C. The structural strength and safety of scaffolding, runways, covers, railings, ladders, stairs, etc., and compliance with law shall be the sole responsibility of the Contractor.

1.8 WELDING

A. Provide all welding equipment and welding provisions needed to complete work.

B. Contractor shall provide electrician to support welding work.

1.9 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion or as soon as the Engineer deems permissible.

B. Clean and repair damage caused by installation or use of temporary work.

C. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

D. Surfacing and sub-base material used for temporary road and parking areas shall be removed, unless otherwise directed by the Engineer.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 55 00

ACCESS ROAD AND PARKING AREAS

PART 1 – GENERAL REQUIREMENTS

1.1. WORK INCLUDES

A. Base and Alternative Bids:

1. Contractor provides:

a. Provide and maintain vehicle access to site and within site.
b. Remove temporary traffic control devices, equipment and facilities when no longer required.
c. Provide, relocate, and maintain barriers (barricades and fences), signs and lights for vehicle and pedestrian traffic control as shown on the Traffic Control and Staging Plan.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 01 56 00 – Temporary Barriers

1.3 REFERENCES

A. IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2022.

B. IDOT Standard Drawings as listed or shown on the plans.

1.4 ROADS AND PARKING AREAS

A. Construct and maintain roads, drives, walks and parking facilities to provide uninterrupted access to construction offices, mobilization, work, storage areas and other areas indicated on the drawings for execution of the Contract.

B. Provide access for emergency vehicles. Maintain driveways a minimum of 15 feet wide between and around combustible materials in storage and mobilization areas.

C. Keep fire hydrants and water control valves free from obstruction or damage and accessible for use.

D. Additional access roads other than provided herein requested by a Contractor shall be at the requesting Contractor's expense and approved by the A/E. Removal and restoration of the area to original condition shall also be at the contractor's expense.

1.5 TRAFFIC CONTROL

A. Provide and maintain traffic control devices in all areas shown on the Traffic Control and Staging Plan.

B. Relocate barriers and signs as necessary for construction operations as directed by the A/E.

C. Provide traffic control in accordance with appropriate articles in the IDOT Standard Specification for Road and Bridge Construction, Section 700, and National Manual on Uniform Traffic Control Devices including the Illinois Supplement.

END OF SECTION

SECTION 01 56 00

TEMPORARY BARRIERS

PART 1 – GENERAL

1.1. WORK INCLUDES

A. Base and Alternative Bids:

1. Contractor provides:

a. Barricades with lights, construction signs with lights, plastic open mesh fencing and moveable chain link fence panels at locations required by the IDOT Standard Specifications for Road and Bridge Construction, State and District IDOT Traffic Control Standards, and the Manual on Uniform Traffic Control Devices.
b. Maintain fences, barricades, signs and lights during entire construction period. Relocate as construction progresses.
c. Remove barricades, signs and fences when no longer required.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 01 55 00 – Access Road and Parking Areas

1.3 REFERENCES

A. IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2022.

B. IDOT Standard Drawings as listed or shown on the plans.

1.4 PRODUCTS

A. Barricades, signs and lights shall be in accordance with the IDOT Standard Specifications and Drawings.

B. Plastic open mesh fencing (snow fence) shall be orange, four (4) feet tall with metal posts at ten (10) foot maximum spaces. Fence shall be secured to the posts with ties.

C. Moveable chain link fence panels, six (6) feet tall.

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Products.
B. Product delivery requirements.
C. Product storage and handling requirements.
D. Product options.
E. Product substitution procedures.
F. Equipment electrical characteristics and components.

1.2 PRODUCTS

A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.

B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.

C. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

A. Manufactured materials and products shall be delivered as needed for installation.

B. Transport and handle products in accordance with manufacturer's instructions.

C. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged, in original packages, containers, or bundles, as packaged by the manufacturer with manufacturer's name, brand, seals, and labels intact.

D. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

E. Materials other than those designated within the Specifications or approved by the Owner shall not be delivered to the project site.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store, protect, and preserve products in accordance with manufacturers' instructions. Store all materials in a manner to facilitate inspection and to prevent damage, contamination, or intermixing.

B. Repair any damage resulting from improper storage procedures, including damage caused by condensation or the elements. If products cannot be repaired to the specified condition as determined by the Engineer, Contractor shall replace them at no additional cost.

C. Contractor shall properly coordinate delivery of equipment/materials to limit to the maximum extent possible storage time on site.

D. Store with seals and labels intact and legible.

E. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

F. For exterior storage of fabricated products, place on sloped supports above ground.

G. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

H. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.

I. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

J. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description, subject to the review of product data and concurrence by the Owner as specified in Section 01 33 00.

B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article. Substitutions are subject to concurrence by the Owner as specified in Section 01 33 00.

1.6 PRODUCT SUBSTITUTION PROCEDURES

A. Engineer will consider requests for Substitutions only within 15 days after date of Owner-Contractor Agreement.

B. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.

C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

D. A request constitutes a representation that Contractor:
   1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
   2. Will provide same warranty for Substitution as for 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 having jurisdiction.

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 Contract Documents.

F. Substitution Submittal Procedure:

1. Submit request for Substitution for consideration in accordance with the requirements of Section 01 33 00. Limit each request to one proposed Substitution.
2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
3. Engineer will notify Contractor in writing of decision to accept or reject request.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Description of requirements.

B. Prerequisites to substantial completion.

C. Prerequisites to final completion.

D. Final cleaning.

E. Starting of systems.

F. Protecting installed construction.

G. Project record documents.

H. Operation and maintenance data.

I. Manual for equipment and systems.

J. Spare parts and maintenance products.

1.2 DESCRIPTION OF REQUIREMENTS

A. Project closeout is the term used to describe certain collective project requirements, indicating completion of the Work that is to be fulfilled near the end of the Contract time in preparation for final acceptance and occupancy of the Work by the Owner, as well as final payment to the Contractor and the normal termination of the Contract.

B. Specific requirements for individual units of work are included in the appropriate sections.

C. Time of closeout is directly related to "Final Completion"; therefore, the time of closeout may be either a single time period for the entire Work or a series of time periods for individual elements of the Work that have been certified as substantially complete at different dates. This time variation, if any, shall be applicable to the other provisions of this section.

1.3 PREREQUISITES TO SUBSTANTIAL COMPLETION

A. General: Complete the following before requesting the Engineer's inspection for certification of substantial completion, either for the entire Work or for portions of the Work. List known exceptions in the request.
   1. In the progress payment request that coincides with, or is the first request following, the date substantial completion is claimed, show either 100% completion for the portion of the Work claimed as "substantially complete", or list incomplete items, the value of incomplete work, and reasons for the Work being incomplete. Include supporting documentation for completion as indicated in these contract documents.
   2. Submit a statement showing an accounting of changes to the Contract Sum.
   3. Submit specific warranties, workmanship/maintenance bonds, final certifications and similar documents.

4. Obtain and submit releases enabling the Owner's full, unrestricted use of the Work.
5. Submit record drawings, maintenance manuals, damage or settlement survey, and similar final record information.
6. Discontinue and remove temporary facilities and services from the project site, along with construction tools and facilities.

B. Inspection Procedures: Upon receipt of the Contractor's Request for Substantial Completion, the Engineer will either proceed with inspection or advise the Contractor of unfilled prerequisites.
1. Following the initial inspection, the Engineer will either prepare the certificate of substantial completion or will advise the Contractor of work which must be performed before the certificate will be issued. The Engineer will repeat the inspection when requested and when assured that the Work has been substantially completed.
2. Results of the completed inspection will form the initial "punch-list" for final acceptance.

1.4 PREREQUISITES TO FINAL ACCEPTANCE

A. General: After the “punch-list” items have been completed the Contractor may request the Engineer's final inspection (Request for Final Completion) for certification of final completion, and final payment as required by the General Conditions. List known exceptions, if any, in the request.
1. Submit executed Request for Final Completion with executed “punch-list”.
2. Submit the final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
3. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
4. Submit a certified copy of the Engineer's final punch-list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance and has been endorsed and dated by the Engineer.
5. Submit consent of surety.
6. Submit a final liquidated damages settlement statement, acceptable to the Owner.

B. Re-inspection Procedure: The Engineer will re-inspect the Work upon receipt of the Contractor's notice that the work, including punch-list items resulting from earlier inspections, has been completed, except for these items whose completion has been delayed because of circumstances that are acceptable to the Engineer.
1. Upon completion of re-inspection, the Engineer will either prepare a certificate of final completion or will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, the re-inspection procedure will be repeated.

1.5 Turnover Meeting

A. Owner will require that the contractor schedule a HVAC “Controls Turn-Over” meeting, as a condition of acceptance for substantial completion prior to Owner Training.

B. The general contractor, design engineer, mechanical contractor, controls contractor and Owner’s representative must all attend the meeting. At this meeting, the controls contractor will be required to demonstrate that the entire HVAC system is 100% complete and functional. 100%Complete and functional is defined as demonstration that the system(s) can operate per the sequence of operations as written in the design documents.

C. Substantial completion of the project shall not be completed until the performance testing has been acceptable by the Owner. Mechanical Contractor, Controls Contractor and Design Engineer shall revisit site as necessary to complete the performance tests until Owner accepts the substantial completion. Additional site visits by the design and contracting team shall not be considered additional services and shall not be charged to the owner.

D. Contractor shall provide digital and hard copies of the O & M manuals and record drawings at turnover. Ensure all record drawings are scanned as individual sheets.

1.6 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.

B. Except as otherwise indicated or requested by the Engineer, remove temporary protection devices and facilities which were installed during the course of the Work to protect previously completed Work during the remainder of the construction period.

C. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.

D. Clean filters of operating equipment.

E. Clean site; sweep paved areas, rake clean landscaped surfaces.

F. Remove waste and surplus materials, rubbish, and construction facilities from site. Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site. Do not bury debris or excess materials on the Owner's property. Remove waste materials from the site and dispose of in a lawful manner.

1.7 STARTING OF SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems with Manufacture’s Representative.

B. Notify Engineer seven days prior to start-up of each item.

C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.

D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.

E. Verify wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable manufacturer's representative and Contractors' personnel in accordance with manufacturers' instructions.

G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

H. Submit a written report in accordance with Section 01 33 00 - Submittal Procedures that equipment or system has been properly installed and is functioning correctly.

1.8 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

F. Prohibit traffic from landscaped areas.

1.9 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Reviewed Shop Drawings, Product Data, and Samples.
6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction. Protect from deterioration and loss in a secure, fire-resistive location.

D. Provide access to record documents for Owner and Engineer reference during normal working hours.

E. Record information concurrent with construction progress, not less than weekly. All record documents must be kept up to date on a continuous basis by all contractors and subcontractors. Failure to do so will result in withholding additional money from monthly payment requests.

F. Record Specifications:
1. Maintain one complete copy of the Project Manual, including specifications and addenda, and one copy of other written construction documents such as change orders and similar modifications issued in printed form during construction.
2. Legibly mark and record at each product section description of actual products installed, including the following:
a. Manufacturer's name and product model and number.
b. Product substitutions or alternates utilized.
c. Changes made by Addenda and modifications.

G. Record Drawings and Shop Drawings:
1. Legibly mark each item to record actual construction including:
a. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
b. Field changes of dimension and detail.
c. Details not on original Contract drawings.
2. Mark whichever drawing is most capable of showing the actual "field" condition fully and accurately; however, where shop drawings are used for mark-up, record a cross-reference at the corresponding location on the working drawings.
a. Mark record sets with red erasable pencil and, where feasible, use other colors to distinguish between variations in separate categories of work.
b. Mark-up new information which is known to be important to the Owner and Engineer but was not shown on either contract drawings or shop drawings.
c. Note related change-order numbers where applicable.
d. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.

H. Record Product Data: Maintain one copy of each product data submittal. Mark these documents to show significant variations in the actual Work performed in comparison with the submitted information. Include both variations in the products as delivered to the site, and variations from the manufacturer's instructions and recommendations for installation. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned at a later date by direct observation. Note related change orders and mark-up of record drawings and specifications.
   1. Upon Completion of mark-up, submit complete set of record product data to the Engineer for the Owner's records.

I. Miscellaneous Record Submittals: Refer to other sections of these specifications for requirements of miscellaneous record-keeping and submittals in connection with the actual performance of the Work. Immediately prior to the date or dates of substantial completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Engineer for the Owner's records.

J. Submit documents to Engineer with claim for final Application for Payment.

1.10 OPERATION AND MAINTENANCE DATA

A. Submit data bound in 8-1/2 x 11-inch text pages, three D side ring binders with durable covers and digital copies of all manuals at closeout.

B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.

C. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

D. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

E. Contents: Prepare Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
   1. Part 1: Directory, listing names, addresses, and telephone numbers of Engineer, Contractor, Subcontractors, and major equipment suppliers.
   2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
      a. Significant design criteria.
      b. List of equipment.
      c. Parts list for each component.
      d. Operating instructions.
      e. Maintenance instructions for equipment and systems.
      f. Maintenance instructions for [special] finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
   3. Part 3: Project documents and certificates, including the following:
      a. Shop drawings and product data.
      b. Certificates.
      c. Originals of warranties and bonds.

1.11 MANUAL FOR EQUIPMENT AND SYSTEMS

A. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

B. Submit one copy of completed volume15 days prior to final inspection. Draft copy be reviewed and returned, with Engineer comments. Revise content of document sets as required prior to final submission.

C. Submit two sets of revised final volumes in final form within 10 days after final inspection.

D. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.

E. Include manufacturer's printed operation and maintenance instructions.

F. Additional Requirements: As specified in individual product specification sections.

G. Include listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

1.12 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance, and extra products in quantities specified in individual specification sections.

B. Deliver to Project site and place in location as directed by Owner; obtain receipt prior to final payment.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Preparation.
B. Examination.
C. Equipment Removal.
D. Salvage Requirements.
E. Demolition.

1.2 CLOSEOUT SUBMITTALS

A. Project Record Documents: Accurately record actual locations of capped utilities, concealed utilities discovered during demolition, and subsurface obstructions.

1.3 QUALITY ASSURANCE

A. Conform to applicable code for demolition work, dust control, products requiring electrical disconnection and re-connection.

B. Conform to applicable code for procedures when hazardous or contaminated materials are discovered.

C. Obtain required permits from authorities having jurisdiction.

1.4 SCHEDULING

A. Cooperate with Owner in scheduling noisy operations and waste removal that may impact Owners operation and adjoining spaces.

B. Coordinate with the Owner any building service interruptions.

1. Do not disable or disrupt building fire or life safety systems without three calendar days prior written notice to Owner.
2. Schedule tie-ins to existing systems to minimize disruption.
3. Coordinate Work to ensure fire alarms, smoke detectors, emergency lighting, exit signs and other life safety systems remain in full operation in occupied areas.

1.5 PROJECT CONDITIONS

A. Conduct demolition to minimize interference with adjacent building areas.

B. Cease operations immediately if structure appears to be in danger and notify Engineer. Do not resume operations until directed.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

A. Mark location and termination of utilities.

B. Erect, and maintain temporary barriers and security devices at locations indicated, including warning signs and lights, and similar measures, for protection of the Owner and existing improvements indicated to remain.

C. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued Owner occupancy, where necessary.

D. Prevent movement of structure; provide temporary bracing and shoring as required to ensure safety of existing structure.

E. Provide appropriate temporary signage including signage for exit or building egress.

F. Do not close or obstruct building egress path.

3.2 EXAMINATION

A. Examine existing equipment and structures indicated to be demolished before demolition.

B. Determine where removals may result in structural deficiency or unplanned building collapse during demolition. Coordinate demolition sequence and procedures to prevent structures from becoming unstable.

C. Determine where demolition may affect structural integrity or weather resistance of adjacent buildings or structures indicated to remain.

1. Identify measures required to protect adjacent buildings and structures from damage.
2. Identify remedial work including patching, repairing, bracing, and other work required to leave buildings and structures indicated to remain in structurally sound and weathertight and watertight condition.

3.3 EQUIPMENT REMOVAL

A. Piping, fittings, equipment, and accessories to be replaced as shown on the Contract Drawings shall be removed by the Contractor.

B. The piping, fittings, equipment, and accessories shall be removed from the site by the Contractor at his own expense. The equipment shall be removed from the site within seven (7) days of removing it from the building.

3.4 SALVAGE REQUIREMENTS

A. Coordinate with Owner/Engineer to identify equipment required to be removed and delivered to Owner.

B. Tag components and equipment Owner designates for salvage. Identification tags shall remain intact on all removed equipment and identify the date and location from which the salvaged item was removed.

C. Protect designated salvage items from demolition operations until items can be removed.

D. Remove materials to be re-installed or retained in manner to prevent damage. Store and protect in accordance with requirements of Section 01 60 00.

E. Carefully remove building components and equipment indicated to be salvaged.

F. Package small and loose parts to avoid loss.

G. Mark equipment and packaged parts to permit identification and consolidation of components of each salvaged item.

H. Prepare assembly instructions consistent with disassembled parts. Package assembly instructions in protective envelope and securely attach to each salvaged item.

3.5 DEMOLITION

A. Contractor is not allowed to bring a dumpster to the site. At the end of working day, all removed items shall be hauled away and disposed of at the contractor expense.

B. Maintain protected egress from and access to adjacent existing buildings at all times.

C. Do not close or obstruct roadways or sidewalks without Owner approval.

D. Cease operations immediately if structure appears to be in danger and notify Engineer.

E. Disconnect and remove designated utilities within demolition areas.

F. Cap and identify abandoned utilities at termination points when utility is not completely removed. Annotate Record Drawings indicating location and type of service for capped utilities remaining after demolition.

G. Demolish in orderly and careful manner. Protect existing improvements and supporting structural members.

H. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.

I. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

J. The owner may choose to allow storage of removed materials in mechanical room if space is available.

K. Conduct demolition to minimize interference with adjacent building areas.

L. Project site does not allow contractor to bring a dumpster onsite.

M. At the end of working day, contractor must haul away and dispose all removed materials at the contractor expense. The owner may choose to allow storage of removed materials in mechanical room if space is available.

END OF SECTION

SECTION 02 65 00

UNDERGROUND STORAGE TANK REMOVAL

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This Specification section applies to all demolition, construction and renovation projects that require the removal, decommissioning, and destruction of underground storage tanks (USTs) in accordance with all applicable regulations.

B. Description of Work: The Contractor shall perform the work under this section in accordance with all local, state and federal rules and regulations including but not limited to Illinois Environmental Protection Agency (Illinois EPA), United States Environmental Protection Agency (USEPA), Illinois Office of the State Fire Marshal (OSFM), and Occupational Safety and Health Agency (OSHA) regulations. There are two existing USTs in the system (one tank stores diesel and one tank stores unleaded gasoline) currently serving the Village of Downers Grove Public Works Department Fuel Island. Planned demolition/construction activities at the site include the removal of the two existing USTs in the system. Therefore, the Contractor shall perform the following.

1. Submit the UST removal application to the OSFM at least 30 days prior to the removal of the UST. The Owner will provide the Contractor with all required information to secure the UST removal permit.
2. Coordinate the UST removal schedule with the OSFM and Village of Downers Grove Fire Inspector.
3. Pump-out and dispose of product and sludge prior to removal of the UST system from the site. Pump-out contaminated water and other miscellaneous liquids that may be present in the UST basin to facilitate the UST system removal.
4. Excavate and temporarily stockpile onsite the overburden and excavated soils above and around the UST sufficient to facilitate the UST removal. The excavated material shall be placed on and covered by plastic sheeting (6-mil minimum) sufficient to prevent stormwater runoff from impacting the site or storm drain catch basins.
5. Remove and dispose of all UST piping, ancillary equipment, electric conduit, and accessories related to the UST system.
6. Clean tank interiors and dispose of tank washwater as special waste.
7. Where the existing UST system is not backfilled by the proposed UST system, backfill the UST system excavation with the removed overburden and excavated soils temporarily stockpiled on site. Any remaining UST excavation void should be backfilled with virgin quarry stone to grade.
8. Backfill and compact excavation areas using approved backfill materials. Restore the surface impacted by the UST removal similar to match the surrounding finished surface.

1.2 DEFINITIONS

A. IEPA: Illinois Environnemental Protection Agency.

B. Backfill: granular or cohesive material that is utilized to backfill the UST excavation to grade prior to the replacement of the paved surface

C. Connected Piping: all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to the UST system through which regulated substances flow.

D. Owner's Representative: means the entity that will perform environmental oversight on behalf of the Owner.

E. Excavation Zone: the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of removal.

F. Hazardous Waste: any substance as defined by:

1. 40 CFR Part 261.
2. Illinois Environmental Protection Act 415 ILCS 5/3.220; and Section 809.103 of Title 35: Environmental Protection; Subtitle G: Waste Disposal; Chapter I: Pollution Control Board.
3. Section 3001 of the Resource Conservation and Recovery Act of 1976, P.L. 94-580.

G. IDOT: Illinois Department of Transportation.

H. Manifest: the form provided or prescribed by the IEPA and used for identifying name, quality, routing, and destination of special waste during its transportation from point of generation to the point of disposal, treatment, or storage.

I. Motor Fuel: petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any grade of gasohol, and is typically used in the operation of a motor engine.

J. Noncommercial Purposes: with respect to motor fuel means not for resale.

K. Non-hazardous Special Waste: any substance as defined in Title 35: Environmental Protection; Subtitle G: Waste Disposal; Chapter I: Pollution Control Board; Subchapter i: Solid Waste and Special Waste Hauling; Part 809: Non-Hazardous Special Waste Classifications; Subpart A: General Provisions; Section 809.103.

L. OSHA: Occupational Safety and Health Administration.

M. Operator: any person in control of, or having responsibility for, the daily operation of the UST system.

N. Petroleum UST System: an underground storage tank system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing heating oils, motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

O. Pipe or Piping: a hollow cylinder or tubular conduit that is constructed of non-earthen materials.

1. Regulated Substance: includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils. This includes: Any substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (but not including any substance regulated as a hazardous waste under subtitle C), and
2. Petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

P. Release: any spilling, leaking, emitting, discharging, escaping, leaching or disposing from an UST

into surface/subsurface soils, groundwater or the environment.

Q. User: the entity for which or on whose behalf the Owner has undertaken to cause the Work to be performed.

1.3 SUBMITTALS

A. The Contractor shall submit copies of the following to the Owner a minimum of seven (7) calendar days prior to scheduling a UST removal:

1. Equipment and methods for adjacent structure protection and UST removal procedures prior to start of any Work.
2. Proof of OSHA training in compliance with the Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120) for workers who will be involved in the UST system removal.
3. Contractor's Site-Specific Health and Safety Plan. The plan shall comply with all OSHA requirements. The plan must be submitted to the Owner within 10 calendar days of issuance of the Notice-to-Proceed (NTP). The work shall be performed under the direct supervision of a trained, experienced site supervisor. The plan should at a minimum include the following:

    a. Name(s) of key personnel and alternates responsible for site safety.
    b. Describe the risks associated with each operation conducted.
    c. Type of personnel training and responsibilities and to handle the specific hazardous situations they may encounter.
    d. Describe the protective clothing and equipment to be worn by personnel during various site operations.
    e. Describe any site-specific medical surveillance requirements.
    f. Describe the program for the periodic air monitoring, personnel monitoring, and environmental sampling, if needed.
    g. Describe the actions to be taken to mitigate existing hazards to make the work environment less hazardous.
    h. Define site control measures including a site map.
    i. Establish procedures for personnel and equipment and transporting trucks to ensure that impacted soils are not tracked off site on to non-impacted areas of the site.
    j. Set forth the site Standard Operating Procedures (SOPs). SOPs are those activities that can be standardized (i.e., decontamination procedures and respirator fit testing).
    k. Set forth a Contingency Plan for the safe and effective response to emergencies.
4. Operating licenses and permits for each special waste hauler and details of hauling routes from the site to the disposal facilities. Copies of all daily reports, transport manifests, disposal receipts and treatment records. Copies shall be required on a weekly basis.
5. Any air sampling data collected during the course of the Work, including OSHA compliance air monitoring.
6. Disposal information for any soil, product, sludge, tank washwater, and liquid removed from the site. This information should include, at a minimum, the following:

    a. Facility Name, Address, and Telephone Number.
    b. Site Contact.
    c. Permit Number.

7. Copies of UST(s) removal permit.
8. Copies of waste characterization analytical results for disposal of contaminated soil, product, sludge, tank washwater, and contaminated groundwater within one calendar day.
9. Certificate of Destruction from a steel reclamation facility within seven (7) calendar days after

the tank removal.

1.4 SUBMITTAL REVIEW

A. Review of submittals or any comments made does not relieve the Contractor from compliance with the requirements of the specifications. The purpose of this check is to review for general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor is responsible for confirming and correlating all quantities and dimensions; electing techniques of construction; coordinating the Work; and performing the Work in a safe and satisfactory manner, in compliance with all contract documents, specifications, and applicable laws and regulations.

B. The Contractor must not begin any Work applicable to this section until all required submittals have been reviewed and accepted by the Owner.

1.5 PROJECT CONDITIONS

A. Conditions of USTs: the Owner assumes no responsibility for actual condition of the storage tank to be removed.

B. Condition of Piping and Conduit: the Owner assumes no responsibility for actual condition of piping and conduit to be removed.

C. Contractor is totally responsible for handling and removal of all materials associated with UST system removal as required by local state and federal regulations.

D. Salvage Items: Reuse of items is not allowed unless specified otherwise. Storage tanks are to be rendered unusable before removing from job site.

E. Traffic: Conduct demolition operations and removal of debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from the applicable governing agency and the Owner. Provide alternate routes around closed or obstructed traffic ways if required by the governing agency.

F. Damages: Promptly replace or repair any damage caused to adjacent pavement, utilities or facilities by removal operations at no additional cost. Work shall be performed to the satisfaction of the Owner and Owner's Representative.

G. Utility Services: Maintain existing utilities and protect against damage during removal operations. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the Owner. Provide temporary services during interruptions to existing utilities as acceptable to the Owner.

1.6 QUALITY CONTROL

A. The removal of the UST system is governed by local, state and federal regulations and/or guidelines, which include, but are not necessarily limited to, the following:

1. Village of Downers Grove Code and Regulations.
2. USEPA, 40 CFR Part 280, Subpart E, dated February 2023 or latest version.
3. Title 41 of Illinois Administrative Code (41 IAC): Fire Protection Chapter I: State Fire Marshal, Parts 174, 175, 176, and 177, dated October 2018 or latest version.

4. National Fire Protection Association Code.
5. All other USEPA, IEPA, Village of Downers Grove, Illinois Department of Transportation (IDOT), and OSHA regulations.

1.7 RECORDKEEPING

A. The Contractor shall provide documentation of labor, equipment, materials, and laboratory analysis used for the removal and disposal of soils and liquids to the Owner and Owner's Representative on a weekly basis.

1.8 COORDINATION OF WORK

A. The Contractor shall coordinate and schedule the performance of Work with the least disruption as possible to the daily site activities.

B. The Contractor shall obtain a permit to remove the tank from the site from the OSFM within 48 hours of the discovery of any UST(s). The Contractor shall also schedule and coordinate the presence of the OSFM's representative(s) on site for the scheduled day of tank removal. The tank must not be removed from the ground without the OSFM representative(s) being present on site.

C. The Contractor shall provide the Owner and Owner's Representative advance written notice (minimum 48-hours) of the anticipated removal date. The Contractor must coordinate all UST removal activities with the Owner and Owner's Representative.

D. The Contractor shall cooperate with and coordinate Work progress with the Owner and Owner's Representative. Soils excavated from the UST basin shall be stockpiled near (2 feet or greater in accordance with safe excavation practices) the excavation or at an area deemed suitable by the Owner and Owner's Representative. The Contractor shall collect and analyze any soil samples from the UST excavation necessary to complete the OSFM site assessment form. The Contractor shall also visually inspect the underground storage tank for his own records. The Contractor shall record or otherwise document the closure activities. The excavation shall be backfilled with the excavated soil and/or gravel the same day after removal and sampling activities unless directed by the Owner to do otherwise.

1.9 SPECIAL REQUIREMENTS

A. Qualifications

1. The UST Removal Contractor(s) shall be fully experienced and knowledgeable in the safe work procedures and regulatory requirements for removing, cleaning and disposal of underground storage tanks in accordance with all applicable local state and federal regulations.
2. The UST Contractor(s) shall be capable of performing all Work including providing necessary services, equipment, tools, labor and material for the removal, cleansing and disposal of underground storage tank and piping containing heating oil, and/or petroleum, including the restoration of the site work area. The Contractor shall be capable of providing contingency services upon encountering soils or liquids that exceed 35 ILL. ADM. CODE SECTION 742, APPENDIX B, TABLE A; TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO) values for 35 ILL. ADM CODE 740
   APPENDIX A Target Compound List (TCL) parameters when so directed by the Owner and/or Owner's Representative.
3. The UST Contractor(s), Subcontractor(s) and their employees shall be thoroughly trained in safe work practices, procedures, and regulatory requirements applicable to the removal, cleaning and disposal of underground storage tank systems containing heating oil and/or

petroleum. The UST Contractor(s), Subcontractor(s) and their employees shall be responsible for removal, cleaning and disposal of tanks and associated soils, liquids and piping and shall be properly trained and hold current certifications. The UST Contractor(s), Subcontractor(s) and their employees on site shall have received a minimum of 40 hours of health and safety instruction in accordance with OSHA 29 CFR part 1910.120(e).

4. The UST Contractor(s) must be currently registered with the Office of the Illinois State Fire Marshal as a Remover of Underground Storage Tanks (Decommissioning) in accordance with Illinois Administrative Code, Title 41: Fire Protection, Chapter 1: Office of the State Fire Marshal, Part 170: Storage, Transportation, Sale and Use of Petroleum and Other Regulated Substances, as amended.

1.10 PROTECTION OF FACILITIES

A. The Contractor shall protect existing structures, services and utilities against damage. Exercise care to protect any and all of the User's, and adjacent properties including, but not limited to, equipment, utilities, buildings, landscaping and fencing. Any damage shall be repaired to the satisfaction of the User, or the User of the adjacent properties at the Contractor's expense.

B. The Contractor shall, in writing, bring to the attention of the Owner and Owner's Representative any obstacles, impairments or other items that may prohibit the performance of Work at least 72 hours prior to the start of Work.

C. The Contractor shall take all necessary precautions to protect structures, equipment, pavement, walks, utilities, etc. against movement or settlement during Work.

PART 2 - PRODUCTS

2.1 REMOVAL OF TANK CONTENTS

A. The Contractor shall furnish all necessary materials and equipment complying with local, state and federal Rules and Regulations to fulfill the scope of work described herein.

2.2 TANK REMOVAL

A. The Contractor shall furnish all necessary materials and equipment complying with local, state and federal Rules and Regulations to fulfill the scope of work described herein.

2.3 REMOVAL AND DISPOSAL OF CONTAMINATED SOILS AT A PERMITTED SUBTITLE D LANDFILL SITE

A. The Contractor shall furnish all necessary means, products, tools, and equipment required to fulfill the scope of work described in the Specifications as applicable for this Project.

B. Soil removal and disposal is addressed in further detail in 3.2.G

C. of this Section.

2.4 BACKFILL MATERIALS

A. The Contractor shall submit a certification letter from the Owner/Operator of the backfill source that all imported material is virgin material mined directly from the source quarry.

PART 3 - EXECUTION

3.1 UST CONTENTS REMOVAL PROCEDURES

A. Pump out tank contents:

1. Drain product from piping back into the tank, taking care to avoid spilling product. Use only explosion proof pumps or hand pumps.
2. Remove petroleum products, sludge, water, and liquid wastes from the tank directly into haul truck or in an aboveground IDOT-approved container for offsite disposal. The suction hose shall be maneuvered along the tank bottom so that the maximum possible quantity of liquid is stripped from the interior.
3. Liquids shall be temporarily stored in aboveground IDOT-approved containers or may be pumped directly into a tank truck for immediate disposal if the determination is made in advance. Waste removal from the site shall be performed only by properly licensed waste haulers in strict accordance with IEPA guidelines, including requirements for testing, laboratory analysis and manifesting. Coordinate location of temporary storage with the Owner and Owner's Representative.
4. Residue from tanks shall be treated with caution. Tank residues shall be disposed of in accordance with all applicable state and federal laws and regulations. Provide documentation of the proper disposal of all tank product and wastes to the Owner and Owner's Representative.

3.2 UST REMOVAL PROCEDURES

1. Purge storage tanks of flammable and combustible gases: Observing all required safety precautions, disconnect all piping and compounds, except for the vent pipe which is to remain connected until purging is completed. Temporarily plug all other openings so that all vapors shall be forced through the vent opening. Vapors shall be purged by one of the several methods listed in API/1604-87.
2. Instrument for detecting and measuring Lower Explosive Limits (LEL) and oxygen levels shall be always maintained and operated continuously at the job site when work is being performed in areas which are or may become hazardous. Instrument shall be properly calibrated according to the manufacturer's specifications and checked and maintained accordingly.
3. OSHA standards for confined space entry and hazardous material regulations shall be strictly followed.
4. Disconnect and remove existing electrical lines to USTs pumps.

A. Excavate above and around the UST(s):

1. Remove and dispose of all pavement, concrete, and debris associated with the UST.
2. The Contractor shall be responsible for locating all existing utilities, which will be encountered during removal operations. The Contractor shall protect the utilities as required to complete the Work.
3. Excavate soil above and around tanks. Excavating area shall be large enough to uncover the profile of the tank and piping to complete removal.
4. Excavate and temporarily stockpile onsite the overburden and excavated soils above and around the UST sufficient to facilitate the UST removal. The excavated material shall be placed on and covered by plastic sheeting (6-mil minimum) sufficient to prevent stormwater runoff from impacting the site or storm drain catch basins.
5. After the UST has been removed, the Contractor shall collect and analyze any soil samples from the UST excavation necessary to complete the OSFM site assessment form.

B. Storage tank removal:

1. Check tanks for combustible gases. Purge tanks again as necessary.

2. Remove all associated tank piping, and tank hold down components including straps and concrete dead-man.
3. Remove tank in accordance with API recommended practice 1604.
4. After tank(s) have been removed from the ground, place the tank on a stable level surface for inspection.

C. Storage tank cleaning:

1. Cut holes in tanks using non-sparking tools to facilitate tank cleaning. Only cold cut equipment shall be used. The total surface area of all the holes shall be a minimum of 2% of the total surface area of the tank, or minimum of 9 square feet each opposite side or end. The Contractor shall have fire extinguishers on-site during cutting of tanks.
2. Clean tanks in accordance with API recommended practice 2015.
3. UST removed from the excavation zone shall be cleaned on-site the day of removal. The tank will then be temporarily stored on-site until proper disposal arrangements are made.
4. Disposal of tank cleaning washwater:The Contractor shall submit samples of tank cleaning washwater and sludge to an independent laboratory for analysis as required by disposal facility. Submit copies of the analytical report and chain-of-custody form to the Owner and Owner's Representative.
5. Transporter of tank cleaning washwater and sludge shall be an Illinois licensed special waste hauler. The disposal facility shall be approved by the IEPA.
6. The Contractor shall prepare manifests required for transportation and disposal of washwaters and sludge. Submit copies of manifests to the Owner and Owner's Representative.

D. Disposal of storage tanks:

1. All tanks shall be taken to an appropriate disposal facility (e.g., scrap steel reclaimed or landfill). Tanks shall not be retained by the Contractor or reused in any manner.
2. Tanks shall be labeled with legible letters at least two inches high, as follows: TANK HAS CONTAINED (name of product)

3.

NOT VAPOR FREE NOT SUITABLE FOR STORAGE OF FOOD OR LIQUIDS INTENDED FOR HUMAN OR ANIMAL CONSUMPTION DATE OF REMOVAL: (month/day/year)

4. In addition, tanks which have or may have contained leaded fuels shall be labeled as:

TANK HAS CONTAINED LEADED GASOLINE LEAD VAPORS MAY BE RELEASED IF HEAT IS APPLIED TO TANK SHELL

5. Tanks, piping and components shall be removed from the site on the same day the site is excavated. If transportation on the day of removal is not possible, materials shall be secured on-site until disposal agreements are made.
6. Provide a certificate of destruction signed by the Contractor and a representative of the

disposal/recycling facility to the Owner and Owner's Representative.

7. The excavation must be securely fenced to prevent access by unauthorized personnel until backfilled.

E. Storm Water Run-on/Run-off and Dewatering

1. The Contractor shall implement surface grading, pumping and/or combination of silt fence, sandbags, tarpaulins, plastic sheeting, and movable straw bales, as approved by the Owner and Owner's Representative, to prevent storm water runoff from entering the tank excavation or stockpiled material until the area has been backfilled.

F. Storm water that has come in contact with any portion of the contaminated soil as a result of the Contractor's failure to prevent contact with excavated soils or the excavation shall be collected and disposed of at the Contractor's own expense or as determined by the Owner and Owner's Representative.

G. Soil Removal and Disposal

1. All excavation shall be performed in accordance with OSHA requirements and guidelines.
2. In the event soils will be disposed off-site, the Contractor shall collect a sufficient amount of representative soil samples from the UST excavation for laboratory analysis to obtain a waste stream authorization from the disposal facility.
3. The Contractor shall submit the soil samples to the laboratory and pay for the cost of analyzing the constituents required by the disposal facility.

3.3 DISPOSAL OF MATERIALS

A. General: Remove daily from site accumulated debris, rubbish, and other materials resulting from piping and dispenser removal activities.

B. Removal: Dispose of materials removed from site in accordance with the Title 35 Illinois Administrative Code regulations. Transport and legally dispose of all materials and equipment. Comply with manifest regulations of all removed and disposed equipment and materials. Materials that shall be removed include, but are not limited to, the following:

1. Underground Storage Tanks
2. Piping
3. Soils and sludges
4. Paving materials, including but not limited to, concrete and asphalt
5. Product from storage tank and piping, and tank cleaning washwater
6. Free product and liquids if encountered during the UST removal process
7. Liquids/water from excavation and dewatering operations

3.4 SITE ASSESSMENT

A. Upon removal of the UST(s), the Owner's Representative may conduct a site assessment and collect soil samples as needed. A representative of the OSFM will also render an opinion as to whether a release has occurred.

B. If no release is confirmed, the Contractor shall complete removal of the tank, disposal of the tank, and backfill the excavation.

C. If a release is confirmed, the Contractor shall complete removal of the tank, dispose of the tank and

backfill the excavation. Removal of additional impacted soils will be determined by the Owner or the Owners Representative.

D. The excavation shall remain open until all Contractor and Owner/Owner Representative sampling is completed. The Contractor is responsible for providing fencing and access control to prevent unauthorized access to the excavation by unauthorized personnel in accordance with applicable rules and regulations.

3.5 BACKFILLING OF THE EXCAVATION

A. The Contractor shall not backfill excavation areas without approval of the Owner and Owner's Representative. If the Contractor backfills the excavation area without obtaining approval from the Owner and Owner's Representative, the backfill materials shall be excavated, transported and disposed of at a permitted Subtitle D Landfill, if required, at the Contractor's own expense.

B. The UST basin shall be backfilled in accordance with the project specifications or as directed by the Owner. The Contractor shall utilize suitable on-site materials or imported granular CA-6 stone consistent with Illinois DOT gradation. Compact backfill materials in accordance with the project specification.

C. For each off-site source of backfill materials, the Contractor shall provide to the Owner and Owner's Representative a certification letter from the Owner of the source that all imported material is virgin material mined directly from the source quarry.

D. Site Restoration: Restore the site according to the Architect/Engineer design plan, or as directed by the Owner.

3.6 DUST CONTROL

A. The Contractor shall control dust by all necessary means, including but not limited to covering trucks, stockpiles and open materials, watering haul roads, sweeping paved roads, and limiting the speed of all on-site vehicles.

END OF SECTION

SECTION 03 11 13

CONCRETE FORMWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

A. General formwork.

B. Forms and coatings.

C. Form ties and accessories.

1.2 RESPONSIBILITY

A. The Contractor shall be solely responsible for the ability of formwork to produce members of the size, shape, and exterior finish required, for the structural adequacy of the forms to carry construction loads without excessive deflection, and for the safe use of forms in connection with completion of the concrete work. The Contractor shall be responsible for any injury or damage arising from inadequate forms or from premature removal of formwork.

1.3 SUBMITTALS

A. Samples and Certifications

B. Samples and certifications shall be submitted in accordance with Section 01 33 00 Submittal Procedures.

1.4 REFERENCED STANDARDS

A. Formwork design, construction, and removal shall conform to ACI 301, Standard Specifications for Structural Concrete.

PART 2 PRODUCTS

2.1 FORMWORK

A. Form Ties: Form ties shall be a watersealing snap in type or tapered thru bolt type. The large end of tapered thru bolt ties shall be on the liquid side of the wall.

B. Plywood Forms and Liners: Plywood forms and liners shall be minimum grade B High Density Overlay Concrete Form Panels, Class I.

C. Lumber: Formwork lumber shall be straight and clean. All nails shall be withdrawn and surfaces in contact with concrete shall be thoroughly cleaned before reuse.

D. Metal Forms: Metal forms shall be fabricated from carbon steel sheets conforming to ASTM A569.

PART 3 EXECUTION

3.1 PREPARATIONS

A. Fastening Devices for Other Work: Coordinate with other trades and properly place and locate in position all necessary dowels, bolts, anchors, anchor slots, inserts, sleeves, openings, hangers, metal ties and other fastening devices required for attachment and support of adjacent work. Securely anchor all embedded items.

3.2 FORMWORK REQUIREMENTS

A. General:
1. Formwork shall comply with ACI 347 and to shape, lines and dimensions of the members as indicated on the Drawings. Joints in forms shall be horizontal or vertical. Forms shall be properly braced or tied to maintain position and shape under all dead and live loads and to prevent leakage. Forms shall be assembled so their removal will not damage the concrete. Tolerances for formed surfaces shall be in compliance with ACI 301.
2. Lumber formwork may be used for surfaces which will not be exposed to view. Use plywood or metal forms for exposed surfaces.
3. Provide temporary openings at the base of forms greater than 4 feet high, if necessary, to facilitate cleaning and inspection immediately before depositing concrete.
4. All external corners of concrete exposed to view shall be chamfered by using 3/4 inch by 3/4 inch by 45 degree wood stripping, except as otherwise indicated on the Contract Documents.

B. Grade A Forms
1. Unless otherwise indicated, Grade A forms shall be used for all exposed concrete.
2. Grade A forms shall consist of steel forms lined with 3/16 inch thick tempered hardboard or 1/4 inch thick plywood, or by using plywood forms.
3. Full sized sheets shall be used wherever possible. The edges of all sheets shall be straightened to insure tight, close fitting joints. Bulges or depressions more than 1/8 inch in 4 feet will not be permitted. Open joints which would permit leakage shall be sufficient cause for rejection of forms. Other tolerances shall be as allowed by ACI 347.

C. Grade B Forms
1. Use lumber, plywood or metal forms. All joints shall be solidly backed, aligned and made leakproof.
2. Unless otherwise indicated, Grade B Forms are intended for use where concrete will not be exposed to view, such as below grade, below normal liquid levels in water retaining structures, or inside manholes, boxes, vaults, etc.

D. Surface Treatment of Formwork: The inside surface of lumber forms shall be soaked with clean water prior to placing concrete. All other forms shall be treated with an approved form oil or lacquer. If oil is used, all excess oil shall be wiped off.

E. Inspection of Formwork: Concrete shall not be placed until the forms have been inspected by the Owner to assure surfaces in conformance with the Drawings and Specifications.

F. Removal of Forms: Forms shall be removed in accordance with requirements of ACI 301, without damaging the concrete. Leave shoring in place until concrete will safely support its own weight plus any live loads that may be placed upon it.

END OF SECTION

SECTION 03 15 05

CONCRETE ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Construction joints.

B. Anchors and inserts.

C. Waterstops.

1.2 SUBMITTALS

A. Samples and Certifications: Samples and certifications for all materials herein shall be submitted in accordance with Section 01 33 00 Submittal Procedures.

PART 2 PRODUCTS

2.1 JOINT FILLERS

A. Joint fillers shall be products of the following manufacturers, or equal:
1. W. R. Meadows, Inc., Hampshire, Illinois.
2. JD Russell Company, Shelby Township, MI

B. Preformed Sponge Rubber Joint Filler: Preformed sponge rubber joint filler shall conform to ASTM D1752, Type I.

C. Preformed Cork Joint Filler: Preformed cork joint filler shall conform to ASTM D1752, Type II.

D. Preformed Bituminous Fiber Joint Filler: Preformed bituminous fiber joint filler shall be non-extruding type conforming to ASTM D1751.

E. Control Joint Strips: Control joint strips shall have a minimum depth of 25 percent of slab thickness and a minimum thickness of 1/8 inch.

2.2 JOINT SEALANTS

A. Sealants for joints shall be as indicated under Execution and in accordance with Section 07 90 00.

B. PVC Waterstop:
1. Waterstop shall be virgin polyvinyl chloride (PVC) and shall be dense, homogeneous and uniform. Holes and imperfections shall be cause for rejection.
2. All waterstops shall be multiple rib type unless otherwise noted on the Drawings. Waterstop for construction joints shall be 6 inch by 3/16 inch minimum split waterstop or 6 inch by 3/16 inch minimum with 3/16 inch minimum inside diameter hollow center bulb unless noted otherwise on the Drawings. Waterstop for expansion joints shall be 9 inch by 3/8 inch with 3/4 inch minimum inside diameter hollow center bulb. Where size and type of waterstop are not

indicated, 6 inch by 3/16 inch minimum with 3/16 inch minimum inside diameter hollow center bulb shall be used.

3. Provide prefabricated tees, crosses, and other configurations as required for all intersections of waterstop.
4. Retrofit PVC Waterstop shall be Greenstreak styles 609 or equivalent. Steel material including batten bars and bolts shall be stainless steel. Waterstop shall be supplied as a complete system including waterstop, batten bar, anchor bolts, and epoxy gel.

C. Pre-formed Hydrophilic Waterstop:
1. Hydrophilic (bentonite-free) waterstops shall be Hydrotite CJ10202k as manufactured by Greenstreak Plastic Products Co., or Adeka Ultraseal MC2010 as manufactured by Asahi Denka.
2. Hydrophilic waterstop shall be the type which expands in the presence of water to form a watertight joint seal without damaging the concrete in which it is cast.
3. Bonding agent for hydrophilic waterstop shall be the manufacturer's recommended adhesive for wet, rough concrete.

D. Non-Swelling Waterstop:
1. Non-swelling waterstop shall be preformed SF302 Synko-Flex or equal.

PART 3 EXECUTION

3.1 PREPARATION

A. Remove existing concrete and provide openings for installation of new work as indicated on Contract Documents. Repair all damage to existing work caused by concrete removal.

3.2 CONSTRUCTION JOINTS

A. General
1. Arrange construction joint bulkheads to allow concrete to be placed between construction joints in one continuous operation.
2. Provide construction joints with shear transfer keyways and waterstop as indicated. Unless otherwise indicated on the Drawings, spacing of construction joints for walls shall not exceed 40 feet.
3. Erect bulkheads where shown on the Drawings. Bulkheads shall be at right angles to the main reinforcement and shall produce a tongue and grooved joint of the configuration indicated on the Drawings. Install waterstop as indicated.
4. Obtain the Owner’s approval if it becomes necessary to eliminate or relocate construction joints shown on the Drawings.
5. Tops of edge forms, bulkheads and screeds shall be set to the finished elevations and to provide uniform pitch to drains as indicated on Drawings.

B. Horizontal Joints: Provide methods of achieving a leak proof joint. No horizontal construction joints will be permitted in slabs, beams, or girders.

C. Vertical Joints: Joints in reinforced slabs, beams, and girders shall be perpendicular to the axis or plane of the members joined.

D. Expansion Joints: General: Provide expansion joints and waterstop where indicated. Joint fillers shall be placed on each side of waterstop.

E. Interior Horizontal Joints: Unless otherwise indicated, provide preformed sponge rubber or preformed cork filler. Allow for installation of two component traffic grade polyurethane sealant in compliance with Section 07 90 00.

F. Exterior Horizontal Joints: For drives, pavements, parking areas, walks and slabs on grade, provide preformed non extruding asphalt strip or bituminous fiber joint filler set 1/8 inch below finished surface unless otherwise indicated. Tool concrete edges on each side of joint. No sealant is required.

G. Interior and Exterior Vertical Joints: Unless otherwise indicated, provide preformed sponge rubber or cork filler with allowance for installation of two component polysulfide sealant in compliance with Section 07 90 00.

H. Submerged Horizontal and Vertical Joints: Unless otherwise indicated, provide preformed sponge rubber or cork filler with allowance for installation of two component polyurethane or two part polysulfide sealant as required in compliance with Section 07 90 00. Contractor shall submit sealant manufacturer's recommendation that his product is suitable for this application.

3.3 WATERSTOPS

A. Provide continuous waterstops.

B. Embed approximately half of the waterstop on each side of the joint. Field splice and join PVC waterstop with heat sealing butt joints.

C. All splices and joints shall be in accordance with the manufacturer's recommendations to produce a water tight joint. Lap splices will not be permitted. Support and protect the waterstop during construction. Repair or replace all damaged waterstop.

D. Installation of Retrofit PVC Waterstop shall strictly follow manufacturer's instructions including preparation of existing concrete surfaces. Contractor shall notify 2 working days prior to commencing surface preparation and installation of waterstop.
   1. Existing surfaces to receive retrofit waterstop shall be clean and free from any loose or foreign material. Surface shall be given a light sandblast or hydroblast finish to 1/8-inch amplitude prior to application of epoxy and waterstop.
   2. Retrofit waterstops shall be set in a bed of epoxy over a sandblasted surface with stainless steel batten bars and 1/4-inch diameter stainless steel anchors at 6 inches on center, staggered, and in accordance with the manufacturer's written recommendations.

E. Hydrophilic Waterstop
   1. Where a hydrophilic waterstop is called for in the Contract Documents, it shall be installed with the manufacturer's instructions and recommendations except as modified herein.
   2. When requested by the Engineer, the Contractor shall arrange for the manufacturer to furnish technical assistance in the field.
   3. Hydrophilic waterstop shall only be used where complete confinement by concrete is provided. Hydrophilic waterstop shall not be used in expansion or contraction joints nor in the first 6 inches of any non-intersecting joint.
   4. The hydrophilic waterstop shall be located as near as possible to the center of the joint and it shall be continuous around the entire joint. The minimum distance from the edge of the waterstop to the face of the member shall be 5 inches.
   5. Where the thickness of the concrete member to be placed on the hydrophilic waterstop is less than 12 inches, the waterstop shall be placed in grooves formed or ground into the concrete.

The groove shall be at least 3/4 inch deep and 1-1/4 inches wide. When placed in the groove, the minimum distance from the edge of the waterstop to the face of the member shall be 2.5 inches.

6. Where a hydrophilic waterstop is used in combination with PVC waterstop, the hydrophilic waterstop shall overlap the PVC waterstop for a minimum of 6 inches and shall be adhered to PVC waterstop with single component water-swelling sealant as recommended by manufacturer.
7. The hydrophilic waterstop shall not be installed where the air temperature falls outside the manufacturer's recommended range.
8. The concrete surface under the hydrophilic waterstop shall be smooth and uniform. The concrete shall be ground smooth if needed. Alternately, the hydrophilic waterstop shall be bonded to the surface using an epoxy grout which completely fills all voids and irregularities beneath the waterstop material. Prior to installation, the concrete surface shall be wire brushed to remove any laitance or other materials that may interfere with the bonding of epoxy.
9. The hydrophilic waterstop shall be secured in place with concrete nails and washers at 12-inch maximum spacing. This shall be in addition to the adhesive recommended by the manufacturer.

F. Non-Swelling Waterstop
1. Where a Synko-Flex waterstop is called for in the Contract Documents, it shall be installed with the manufacturer's instructions and recommendations.

END OF SECTION

SECTION 03 30 00

CAST IN PLACE CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Concrete mixtures.

B. Mixing.

C. Transporting.

D. Placement schedule.

E. Depositing and consolidating.

F. Slab finishing.

G. Curing.

H. Formed surface finishing.

1.2 SUBMITTALS

A. Samples and Certifications: Samples and certifications shall be submitted in accordance with Section 01 33 00 Submittal Procedures. Unless otherwise indicated, submit certifications for all products and samples as may be specifically requested by the Engineer.

B. Product Data: Submit manufacturer's literature for all admixtures proposed for the work.

C. Delivery Tickets: Submit delivery tickets in accordance with ASTM C94 for each batch of ready mixed concrete. Information on the ticket shall include class of concrete, water content, time of loading, truck number, admixtures, and quantity.

D. Mix Design
1. At least 35 days prior to placing concrete, the Contractor shall submit proposed mix proportions and samples of proposed materials to the testing laboratory [retained by the Owner][retained by the Contractor]. The laboratory will prepare a detailed report of the 7 day and 28 day compressive strength, slump, and air entrainment of the concrete mix submitted. The strength determination for each class of concrete will be based on not less than three concrete specimens of each age.
2. The laboratory will employ techniques to adjust for mechanical vibrators and any special devices or equipment to be used for the work. The Contractor shall inform the Owner and the Testing Laboratory of proposed techniques and devices.
3. As an alternate to items 1 and 2 above, the mix design may be based upon field experience. Contractor shall submit all data and calculations necessary to show compliance with Section 5.3 of ACI 318-11 / ACI 350-06.

E. Placement Schedule: Submit a concrete placement schedule showing the pouring sequence and location of construction and contraction joints not indicated on the Drawings to the maximum extents possible.

1.3 QUALITY CONTROL

A. Materials and Methods: Materials and methods of mixing and placing concrete shall conform to ACI 301, Specifications for Structural Concrete.

B. Laboratory Tests
1. The Contractor will retain the services of testing laboratory and pay all laboratory costs to make tests and submit reports. The testing laboratory shall conform to ASTM C1077.
2. The Contractor shall provide all necessary labor and devices to obtain samples and provide field curing.
3. As directed by the Engineer, the testing laboratory will provide for inspection of the concrete batch plant to see that the concrete is properly mixed and that the consistency of mix is being controlled.
4. The laboratory will immediately submit two copies of laboratory reports on all strength tests to the Engineer, the local building authority, if required, the concrete contractor, and the supplier. Reports will be made on a form acceptable to the Engineer and will indicate delivery ticket numbers, strength, slump, air entrainment, admixtures, concrete temperature, pour location, date, age, and remarks on properties changes.

C. Compressive Strength Tests: Sample specimens for strength tests of Class A concrete shall be taken not less than once a day, nor less than once for each 50 cubic yards of concrete placed, nor less than once for each 5000 square feet of surface area for slabs and/or walls. Five specimens shall be secured in accordance with ASTM C172. Three specimens will be laboratory cured in accordance with ASTM C31. The other two shall be cured entirely under field conditions. Compressive strength tests will be made at the age of 7 days on one field cured and one laboratory cured specimen. Compressive strength tests will be made at the age of 28 days on one field cured and two laboratory cured specimens. All tests shall comply with ASTM C39.

D. Enforcement of Strength Requirements:
1. For Class A Concrete, the average of any three consecutive compressive strength test results on laboratory cured specimens shall be greater than the specified strength, f'c. No individual laboratory cured strength test result shall fall below the specified strength by more than 500 psi when f'c is 5000 psi or less, or by more than 0.10f'c when f'c is more than 5000 psi. Each strength test result will be the average of two laboratory cured cylinders from the same sample test at 28 days. These criteria also apply to accelerated strength testing at the day the specified f'c is to be achieved.
2. If more than one of the laboratory cured specimens is below the specified strength, or if the strengths of field cured specimens are more than 10% below the strength of the corresponding laboratory cured specimens, the Engineer will determine the appropriate corrective measures to be provided at the Contractor's expense.

E. Slump Tests: Tests for slump will be made when directed by the Engineer in accordance with ASTM C143. Excessive slump is cause for rejection of concrete prior to placement.

F. Air Entrainment Tests: At least two air content tests will be made each day, and when change in consistency of the concrete mix is noted. The air content tests will be made in accordance with ASTM C138, C173, C231, or AASHTO T152.

G. Adverse Weather Conditions:
   1. Comply with ACI 305 or 306 for hot or cold weather concreting.
   2. Do not mix salt, chemicals, or other foreign materials with the concrete to prevent freezing without approval of the Engineer. Maintain the temperature of concrete above 50 degrees F for 5 days after placement. When high early strength portland cement concrete is used, the temperature shall not be less than 70 degrees F for 2 days or 50 degrees F for 3 days. Transition the concrete to the outside temperature at a rate of 1 degree F each hour for the first 24 hours and 2 degrees F each hour thereafter.
   3. In no case shall the temperature of concrete exceed 90 degrees F at the time of placement. If insulated forms are used, the temperature of the concrete mixture shall not exceed 80°F at time of placement.
   4. If the Engineer determines that heat of hydration may cause excessive concrete temperatures and subsequent detrimental effects, the concrete mixture shall not exceed 60°F at time of placement for critical pours.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

A. Water: Water shall be clean and potable.

B. Cement: Portland cement shall be ASTM C150 Type I.

C. Pozzolan: Pozzolans shall conform to ASTM C618 and shall have a loss of ignition less than three percent.

D. Admixture shall be added to concrete mix at time of batching at mixing plant

E. Aggregate:
   1. Fine and coarse aggregate shall be clean, hard, natural, or manufactured material conforming to ASTM C33.
   2. The nominal maximum size of the aggregate shall not be larger than one fifth of the narrowest dimension between forms, one third of the depth of slabs, nor three fourths of the minimum clear spacing between individual reinforcing bars or bundles of bars or pretensioning tendons. Coordinate with maximum aggregate sizes specified hereafter for classes of concrete. These limitations may be waived if, in the judgement of the Engineer, workability and methods of consolidation are such that the concrete can be placed without honeycomb or void.

F. Admixtures:
   1. Admixtures shall conform to ASTM C260 (air entrainment) or C494 (chemical admixtures) and shall be products of one of the following manufacturers, or equivalent.
      a. W. R. Grace and Co.
      b. Euclid Chemical Co.
      c. Master Builders Solutions, BASF
      d. Sika Chemical Corp.

G. Fiber-reinforced additive shall be polypropylene type according to ASTM C1116 Section 4.1.3 Type III. Fibers shall be fibrillated with a length of 2” +/- 1/2” and diameter shall be less than 0.002 inch.

2.2 MISCELLANEOUS MATERIALS

A. Vapor Barrier: Vapor barrier shall have 0.015 inches (15 mils) minimum thickness and shall be according to ASTM E-1745, Class B. Permeance shall be 0.03 perms or less.

B. Curing and Sealing Compound: Curing compound shall be a colorless liquid acrylic formulated to comply with ASTM C309, Type 1, Class B. All interior floor slabs shall be cured and sealed with a colorless liquid acrylic formulated to comply with ASTM C309, Type 1, Class B and with ASTM C1315, Type 1, Class B.

C. Membrane Curing Compound: Membrane curing compound shall conform to ASTM C309, Type 1 or Type 1-D. Type 1-D compound shall only be used for P.C.C. pavement.

D. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.

E. Moisture Retaining Cover: One of the following, complying with ASTM C 171.

F. Waterproof paper.

G. Polyethylene film.

H. Polyethylene-coated burlap.

I. Silicon Water Repellent: Silicon water repellent shall be a 5% Silicon Solution complying with Fed. Spec. SS W 110 and manufactured by W. R. Grace, W. R. Meadows, Euclid Chemical Co., or equivalent.

J. Hardener: Hardener shall be a colorless fluosilicate-base solution of chemically active hardening agents.

2.3 BONDING COMPOUND, GROUT, AND MORTAR MIXTURES

A. Epoxy Bonding Compound: Epoxy bonding compound for joining new to existing concrete shall be Sikadur Hi Mod by Sika Chemical Co., Thiopoxy by W. R. Grace and Co., Euco Epoxy 452 or 620 by Euclid Chemical Co., or equivalent.

B. Non Epoxy Bonding Compound: Non epoxy bonding compound for joining new to existing concrete where bonding compound cannot be placed immediately prior to pouring of new concrete shall be Weld crete by Larsen Products Corp., Euco Weld by Euclid Chemical Co., or equal. Rewettable bonding compound shall be protected from all sources of moisture prior to pouring new concrete.

C. Cement Grout: Mix 1 part cement and 1 part sand with water to a thick paint consistency. Add white cement to match color of adjacent concrete. Sand shall pass a No. 18 sieve.

D. Non Shrink Grout: Non shrink grout shall be a premixed, nonferrous, cementitious mixture with a 28 day strength of at least 6000 psi. Grout shall not shrink. Mixtures to be placed in excess of 1 inch thickness may include 3/8 inch pea gravel.

E. Expansive Grout: Expansive grout shall be a premixed, nonferrous, cementitious mixture with a minimum 28 day strength of 3500 psi. Air entraining content shall be as recommended by the manufacturer. Grout shall expand no more than .10% nor less than .03%.

F. Epoxy Grout:
1. The two components of epoxy bonding compound shall be mixed in compliance with the manufacturer's instructions. If permitted by the manufacturer the epoxy bonding compound may be combined with approximately 1 1/2 parts of oven dry sand to 1 part of the bonding compound, by volume. Mixing of trial batches may be necessary to determine the best proportions.
2. The sand for epoxy grout shall meet the following gradation and shall be oven dry:

Sieve Size	No. 8	No. 50	No. 100
% Passing	100	30+15	5+5

G. Patching Mortar:
1. Mix 1 part portland cement to 3 parts fine aggregate. Add white cement to match color of adjacent surface. Provide test patch for approval by owner prior to patching on exposed concrete. Mix with minimum amount of water necessary.

H. Chemical Anchoring:
1. Chemical Adhesive: The chemical adhesive used for each type of load application shall be in accordance with the manufacturer's recommendations and product limitations. Chemical adhesives for bonding reinforcement dowel bars, and threaded anchors shall be one of the following:
   a. Adhesives Technologies: Ultrabond 365, RT66 SF
   b. Dayton Superior / Unitex: Pro-Poxy 400
   c. Hilti Inc: HVA or HVU method 2; HIT HY-150, HIT HY-150 MAX, HIT HY-200R, HY-10+
   d. ITW Ramset/Red Head: Epcon Maxima 7 method 2, Epcon Impact method 1, Epcon A7 Acrylic
   e. Kelken Construction: Keligrout 101P
   f. MKT Fastening: LiquidRoc 300; LiquidRod 700
   g. Power Fasteners: AC100+Gold; Hammer Capsule, method 1
   h. SIKA Corp: Sikadur Anchor Fix-2, Fix-2 Arctic
   i. Simpson Strong-Tie Co: VGC method 2; Acrylic-Tie AT
   j. W.R. Meadows: Sealtight Poly-Grip

2.4 CONCRETE MIXTURES

A. General:
1. Concrete not indicated otherwise shall be Class A concrete.
2. The proportions of cement, aggregate, and water shall be selected by the Contractor in accordance with ACI 301 to provide a plastic and workable mix. Coarse aggregate shall be limited to prevent harshness and honeycombing. Coarse aggregate size shall not be greater than the maxima listed for the various classes of concrete and as previously specified under aggregate.

B. Class A Concrete: Class A structural concrete shall have a 28 day f'c strength of 4000 psi, shall contain not less than 564 pounds cementitious material per cubic yard, shall have a water cement plus pozzolan ratio of not more than 0.45, and shall contain 4 percent to 6 percent entrained air, by volume, except interior slabs subject to abrasion shall not contain more than 3 percent entrained air. If a pozzolan is used, it shall not exceed 140 pounds per cubic yard of concrete. In addition, Class A concrete shall contain a water reducing, densifying admixture and have a maximum slump of 4 inches. The maximum aggregate size for concrete for columns, beams, and formed slabs shall be 1 inch. The maximum aggregate size for other concrete construction shall be 1 1/2 inches.

C. Class B Concrete: Class B lean concrete shall have a 28 day f'c strength of 2500 psi, it shall contain not less than 420 pounds of cementitious material per cubic yard of concrete, shall have a water cement plus pozzolan ratio of not more than 0.71, and shall have a 5 inch maximum slump. The maximum aggregate size shall be 2 inches. If a pozzolan is used, it shall not exceed 100 pounds per cubic yard of concrete.

D. Class C Concrete: Class C concrete shall have a 28 day strength of 3,000 psi and shall contain 4 6% of entrained air by volume. The mixture shall contain not less than 470 pounds of cementitious material per cubic yard of concrete and shall have a water cement plus pozzolan ratio of not more than 0.55 (6 1/4 gallons per bag of cement). Maximum aggregate size shall be 2 inches, and the maximum slump shall be 4 inches. If a pozzolan is used, it shall not exceed 115 pounds per cubic yard of concrete.

E. Controlled Low Strength Material (CLSM): CLSM shall conform to Section 1019 of the Illinois Department of Transportation Standards Specifications for Road and Bridge Construction.

F. Fiber-reinforcement: When required, fiber reinforcement shall be added at a dosage range between 1 to 1.5 pounds per cubic yard.

G. Admixtures:
   1. Water reducing densifying admixture added to Class A concrete shall reduce the water cement ratio while maintaining slump and compressive strength. Use as manufacturer recommends.
   2. Other admixtures may be proposed by the Contractor or requested by the Engineer and shall be provided at no additional cost to the Owner. Subject to approval, admixtures may be used for the following:
      a. To increase slump up to 50% while maintaining compressive strength and water cement ratio.
      b. To retard set during hot weather.
      c. To retard set at the surface to expose aggregate.

H. Calcium chloride, admixtures containing calcium chloride, or admixtures not approved in writing by the Engineer are prohibited.

PART 3 EXECUTION

3.1 PREPARATIONS

A. Subgrade Preparation: The subgrade and/or bedding shall be compacted and free of frost. If placement is allowed at temperatures below freezing, provide temporary heat and protection as required to remove all frost. Saturate the subgrade approximately 8 hours before placement and sprinkle ahead of the placement of concrete in areas where vapor barrier is not used. Remove all standing water, ice, mud, and foreign matter before concrete is deposited. Mud slabs shall be provided where necessary to obtain a dry and stable working platform for placement of slabs.

B. Vapor Barrier: On porous subgrade or beddings, or where indicated on the Drawings, provide vapor barrier. Lay vapor barrier sheets with 6 inch edge laps and tape or seal with mastic. Stretch and weight edges and laps to maintain their positions until concrete is placed. Coordinate with placement of reinforcement specified in Section 03 21 05 Concrete Reinforcement.

C. Batching:

1. Materials for concrete shall be proportioned according to the approved design mix and batched using either automatic or manually operated batching equipment. If manual operation is employed, fine and coarse aggregates and bulk cement shall be measured separately by weight. Proportioning aggregates for fractional bags of cement will not be permitted unless the cement is weighed for each batch. Weighing equipment shall be arranged to permit compensation for changes in weight of moisture contained in the aggregate and shall be accurate to within 1 percent of the net load being weighed. The scale beam shall indicate at least the last 100 pounds of each aggregate required for the batch.
2. Water shall be measured to within 1 pint of the total amount required per batch. Admixtures shall be measured by weight or volume to an accuracy of 3 percent.

D. Mixing and Transporting Concrete:
1. Concrete shall be ready mixed or job mixed at the Contractor's option. Ready mixed concrete shall be mixed and delivered to the project in accordance with ASTM C94. Job mixed concrete shall be in accordance with the requirements of ACI 301.
2. Concrete shall be in its final position within one hour after the water and aggregate have been added to the cement, except that in cool weather (50°F or less), the Engineer may authorize a lapsed time of up to one and one half hours.
3. Concrete shall be transported from the mixer to place of final deposit in such manner to prevent separation or loss of ingredients.

3.2 GENERAL CONCRETE AND GROUT

A. Placement Schedule:

All structural concrete	Class A Concrete
Mud slabs, thrust blocks, etc	Class B Concrete
Flow channels in manholes and structures, steep slopes, and massive fill configurations	Class C Concrete
Bedding under structural steel bearing plates	Non-shrink Grout
Equipment installation and leveling	Non-shrink Grout or Expansive Grout
Heavy vibrating equipment	Epoxy Grout
Post and anchors installation	Chemical Adhesive

3.3 DEPOSITING CONCRETE

A. General
1. Concrete shall be placed in accordance with the requirements of ACI 301 and within 10 feet of its final position. Place concrete only during normal working hours unless the Engineer is notified at least 24 hours in advance. Concrete shall not be placed until the Engineer has approved the formwork, reinforcement, and embedded items and debris has been removed.
2. Whenever new concrete is to be placed against existing surfaces, roughen and clean the surface to improve bond and apply bonding compound in accordance with the manufacturer's recommendations.
3. Maximum height of free fall during placement of concrete shall not exceed 4 feet. Where free fall would exceed allowed maximum height, use "elephant trunks", tremies, chutes, belt conveyors or similar aids to place concrete.

B. Depositing Formed Concrete:
   1. Except for beams, columns, or other deep structural monolithic members, place concrete in level layers no more than 24 inches deep. To prevent cold joints between layers, each successive layer shall be placed and consolidated before the preceding layer has taken its initial set. Place concrete in a continuous operation until the section is complete.
   2. Concrete shall be directly placed in its final position, shall not be spaded, moved with vibrators, or permitted to fall over rods, spacers, reinforcement, or other embedded items. Any mortar coating which is more than two hours old shall be removed from items to be embedded. Hoppers with trunks, tremies, and/or other means of placement shall be used as necessary.

C. Stopping and Resuming
   1. Whenever a wall pour is stopped at an intermediate height, the exposed surfaces of the joint shall be made straight and level.
   2. Before depositing new concrete against concrete that has hardened, retighten forms and remove foreign matter and laitance. Previously cast surfaces shall be coated with bonding compound.

D. Depositing Slabs and Flatwork
   1. Provide runways and chutes to discharge concrete close to final position to minimize spreading and segregation.
   2. Place slabs on grade for tanks using formed construction joints. Maximum size of pour shall be 40 feet each way for slabs with wire mesh reinforcement and 60 feet each way for slabs with bar reinforcement. Allow 24 hours between pours of adjacent slabs. Provide joints as specified or shown. Set continuous expansion joint strips between slabs and abutting vertical surfaces as indicated on the Drawings.
   3. Slabs-on-grade for buildings shall be placed in a checkerboard or lane fashion. Crack control joints consisting of either construction or contraction joints shall be placed such that the area bounded by the joints does not exceed 600 square feet. The aspect ratio (length to width) of the slab units formed by the joint layout shall not exceed 1.25 to 1. Re-entrant corners are not permitted. Allow 24 hours between pours of adjacent slabs. Submit layout of joint location in accordance with Section 1.2E.
   4. Structural concrete slabs shall be of one course monolithic construction.

E. Consolidating Formed Concrete
   1. Thoroughly compact all concrete with internal vibrators having a minimum frequency of 8000 vibrations per minute and sufficient amplitude and/or hand spading or rodding immediately after depositing, taking care to prevent any movement of the forms or reinforcement. Vibrate adjacent to waterstops and bulkheads to obtain a continuous bond and eliminate surface defects.
   2. Vertically insert and withdraw vibrators to consolidate each lift, partially penetrating the previous lift. Do not drag the vibrator nor allow it to come in contact with reinforcement or formwork. Do not attempt to laterally move concrete with the vibrators.

3.4 FINISHING SLABS AND FLATWORK

A. Finish Schedule
   1. Unless otherwise indicated, provide the following slab finishes:

Description	Concrete Finish
Depressed setting beds for tile	Float
Class B and Class C concrete surfaces	Float
Submerged slabs and tank slab toppings	1 troweling

Resilient tile or carpet floor covering	2 trowelings
Seamless flooring	3 trowelings
Painted floors	3 trowelings
Exposed slabs	3 trowelings & sealer
Steps, stair landings	Non-slip aggregate
Ramps, walks, and pavement	Float & broom finish

B. Concrete Tolerances:
   1. Concrete shall be within 1/4 inch of a 10 foot straightedge in all directions except where slabs are dished for drains. Deviations from the elevation indicated shall not exceed 1/4 inch.
   2. Slabs sloped for drainage shall not have depressions which retain water.

C. Screeding:
   1. Immediately after placement, screed concrete with straightedges or power strikeoffs. Do not use roller screeds or vibrating screeds.
   2. Stakes for wet screeds shall be driven down flush with subgrade or pulled out as work progresses to avoid disturbing screeded concrete.
   3. For drains in level slabs, form a 5 foot diameter depression approximately 1/2 inch below the adjacent slab surface.
   4. Unless otherwise indicated on the Drawings, slabs sloped for drainage shall be uniformly pitched toward the drains at 1/8 inch per foot. Form a dished depression at drains unless otherwise indicated.

D. Darbying: Immediately after screeding, darby surface with wood or magnesium darby to eliminate ridges and to fill in voids left by screeding.

E. Float Finish
   1. Float concrete using magnesium or aluminum hand floats or power floats after the concrete has stiffened to a point where only a 1/4 inch indentation can be imparted by normal foot pressure.
   2. Float finish shall result in a uniform, smooth, granular texture. After floating, check slab tolerances with 10 foot straightedge. Fill low spots with fresh concrete; do not sprinkle with dry cement.

F. Trowel Finish
   1. Where scheduled, or indicated, trowel with steel trowels after floating.
   2. Initial troweling shall be done either by power or by hand with the trowel blade kept as flat as possible against concrete surface to prevent washboard or chatter effect.
   3. Second troweling may be done by power if three trowelings are scheduled. If two trowelings are specified, second troweling shall be done by hand.
   4. Third troweling shall be done by hand and shall continue until the concrete is consolidated to a uniform, smooth, dense surface free of trowel marks and irregularities.
   5. Allow sufficient time between successive trowelings to allow the concrete to become harder. Each successive troweling shall be done with trowels that are progressively smaller and are tipped more to increase compaction of the concrete surface.

G. Broom Finish: Broom at right angles to direction of traffic to give a non skid finish. Use a fine, soft bristled broom for pedestrian ramps and walks, and a coarse, hard bristled broom for vehicular pavement.

H. Hardened Finish: Where indicated, apply 3 coats of floor hardener in accordance with manufacturer's printed directions. Use the quantity recommended by the manufacturer. The surface shall be clean and dry before the hardener is applied. Upon completion, leave concrete surfaces clean and without discoloration or traces of excess hardener. Concrete surfaces to be hardened shall be wet cured with an absorptive or moisture retaining cover.

I. Non-Slip Finish: Incorporate non slip aggregate in the surface of flatwork in accordance with the manufacturer's directions and at a uniform rate of not less than 50 pounds per 100 square feet. Aggregate shall be applied immediately after floating the surface and embedded flush with the surface. The surface shall be given at least two trowelings.

J. Control Joints: Control joints for non-structural slabs shall consist of partial depth plastic strips set flush with finished surface or 1/8 inch wide joints cut with a diamond saw. Control joints shall be one quarter to one third the depth of the slab unless otherwise indicated.

K. Saw joints as soon as concrete has hardened sufficiently so aggregate will not be dislodged but before shrinkage stresses develop cracks. Sawn joints shall be filled with joint sealant in accordance with Section 07 90 00 Joint Protection.

3.5 PROTECTION AND CURING

A. General: Comply with ACI 305 and 306 for protecting and curing concrete in hot and cold weather. Fresh concrete shall be protected from rain. Cure all concrete for a minimum period of 7 days (3 days for high early strength concrete) after placing. Provide coverings or curing compound for conventional concrete that is less than 7 days old when forms are removed.

B. Flatwork
1. Immediately after finishing, begin curing by covering with constantly saturated moisture retaining fabrics, impervious sheeting, or membrane curing compounds. Surfaces shall be thoroughly wetted with a fine spray before they are covered with sheeting.
2. Sheeting shall provide complete surface coverage with all joints lapped at least 4 inches, and shall be placed and secured in a manner that will not mar or damage the concrete surface.

C. Membrane Curing Compounds:
1. Apply compound in accordance with manufacturer's recommendations. Apply by spraying in a two coat continuous operation. Apply the coats at right angles to each other with a coverage of 200 square feet per gallon per coat. Begin application not later than 4 hours after finishing of the surface. The application shall result in an uninterrupted adherent film free of defects.
2. On surfaces scheduled to receive sealants, paint, seamless flooring, or other adhesive bonded finishes, either the membrane curing compound shall be compatible with the bonding agent or the curing compound shall be removed by sandblasting, acid etching or grinding, to the satisfaction of the installer of the finish surfacing. Bonded surfaces that fail to adhere to the concrete shall be removed and replaced at no additional cost to the Owner.

3.6 DEFECTIVE CONCRETE

A. All concrete not formed as indicated on the Drawings within tolerances specified in ACI 347 shall be removed and replaced.

B. Concrete requiring structural repairs shall either be replaced or, with prior written approval of the Engineer regarding materials, methods and procedures, may be repaired with epoxy grout.

C. Concrete that has a defective surface shall be patched or replaced. If patching does not restore the quality and appearance of the surface, the defective concrete shall be replaced.

D. Temperature and shrinkage cracks which develop prior to final acceptance of the work shall be repaired. Contractor shall propose repair methods to be approved by Engineer.

3.7 FINISHING FORMED CONCRETE

A. Patching:
1. After inspection by the Owner, patch tie holes and defective areas. Where necessary, chip out defective areas to a minimum depth of 1 inch. Wet the area to be patched and the surrounding 6 inches to prevent absorption of water from the patching mortar and/or apply a brush coat of bonding compound or cement grout immediately prior to patching with mortar.
2. Thoroughly compact patching mortar into place and screed, leaving the patch slightly higher than the surrounding surface. For holes passing entirely through the wall use a plunger grout gun to force the mortar through the wall, starting at the back face. Leave undisturbed for a period of one to two hours to permit initial shrinkage before final finishing. The patch shall be finished to match the texture and appearance of the adjoining surface.
3. If form ties are removed completely from wall, place rubber seal in center at wall and epoxy grout under pressure from both sides.
4. All patching shall be cured for three days and then inspected for shrinkage cracks. Excessive cracking shall warrant complete removal and replacement of the patch.

B. Ordinary Finish: The finish resulting directly from formwork shall be used for all surfaces which will be hidden from view by earth, submergence in water, or hidden by subsequent construction or coatings, except as otherwise indicated. Patch as specified.

C. Smooth Finish:
1. Unless otherwise indicated on the Drawings, smooth finish shall be provided for all interior and exterior cast-in-place concrete surfaces permanently exposed to view. Smooth finish shall be produced by using Grade A formwork and the following finish operations:
2. After patching as specified, grind joint marks and fins smooth using a fine carborundum or abrasive stone with clean water. Remove all oil stains by scrubbing the surface with stiff bristle brushes and a 5 to 10 percent muriatic acid solution. After the stains are removed, rinse the surface thoroughly with clean water.

D. Rubbed Finish:
1. Where specifically indicated on the Drawings, produce a rubbed finish on exterior and interior cast in place concrete surfaces permanently exposed to view. Do not provide rubbed finish where waterproofing coating is required.
2. Rubbed finish shall be produced by using Grade A formwork and the following finishing operations. As soon as possible after casting and immediately after patching, wet surfaces and grind with a No. 16 carborundum stone or a mechanical finisher to produce a smooth dense surface free from stains, pits, fins, and irregularities. After grinding, dampen the concrete and paint the entire surface with cement grout. Vigorously work the cement grout into the surface with a cork float or other suitable float. When the grout has set to the point that it will not be pulled out of holes or depressions, the entire surface shall be finished with a sponge rubber float to remove all excess grout.
3. After thorough drying remove all loose grout by scrubbing the surface with a dry burlap or carpet float. Complete the entire rubbed finish for any one area the day it is started. The rubbing operation for any one area shall proceed continuously in an irregular patchwork fashion to eliminate linear horizontal or vertical overlaps.

4. After all rubbed areas are finished once, allow at least 24 hours for the grout to set and perform the rubbing operation, without grinding, a second time.

E. Silicone Water Repellent:
1. Silicone water repellent shall be provided on all permanently exposed concrete surfaces of water retaining structures and where indicated elsewhere. Do not provide silicone water repellent where waterproofing coating is required.
2. Clean all surfaces as required to remove all dirt or stains before applying the water repellent. Apply by spray at the rate of not less than 1 gallon per 125 square feet per coat and in accordance with the manufacturer's recommendations. Apply only to dry surfaces and at temperatures above 40 degrees F. Protect adjacent work from spatter by masking or other suitable methods. Immediately remove any misplaced material from glass and other work using cloths and the proper solvent.

3.8 MISCELLANEOUS CONCRETE WORK

A. Concrete Stairs and Steps: Use Class A concrete. Provide non-slip nosings for treads and landings, as specified in Division 5. Remove the forms as soon as the concrete develops sufficient strength. Provide non-slip aggregate treads and landings and rubbed finish on exposed vertical surfaces.

B. Equipment Pads and Supports: Provide concrete equipment pads and supports as indicated and conforming to approved shop drawings. Fastening devices and accessories shall be located by templates or setting diagrams furnished by the manufacturer. Use Class A concrete with rubbed finish on exposed vertical surfaces.

C. Correcting Slab Tolerances: Slabs exceeding specified tolerances shall have high spots ground down and low spots filled with epoxy resin floor leveler. Epoxy resin shall be applied in strict accordance with the manufacturer's printed instruction.

D. Watertightness of Concrete Structures: All concrete structures which will contain liquid or are located below groundwater level shall be leak tested in accordance with Section 01660 and made watertight. Repair all cracks and defects that allow leakage during the guarantee period.

3.9 CLEAN UP

A. All concrete floor construction shall have the surfaces thoroughly scrubbed and cleaned with clear water. Cleaning shall be done immediately before application of finish flooring or coating. After cleaning, the slabs shall be protected until they are accepted for floor finishing work.

B. Clean all surfaces affected by the Concrete Work. No extraneous concrete or discoloration shall be left on any construction.

END OF SECTION

SECTION 07 18 00

TRAFFIC COATINGS GENERAL

1.1 SUMMARY

A. Section Includes: Fluid-applied membrane coating for pedestrian and vehicular traffic on the fuel island and adjoining concrete.

B. Related Requirements:

1. Section 079000 - Joint Protection: Joints between traffic membrane and membrane termination.

1.2 REFERENCE STANDARDS

A. ASTM International:
1. ASTM D903 - Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
2. ASTM D1044 - Standard Test Method for Resistance of Transparent Plastics to Surface Abrasion.
3. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.3 PREINSTALLATION MEETINGS

A. Section 013000 - Administrative Requirements: Requirements for preinstallation meeting.

1.4 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit product characteristics and limitations, and identify dissolving solvents, fuels, and potential destructive compounds.

C. Qualifications Statements:

1. Submit qualifications for manufacturer and applicator.
2. Submit manufacturer's approval of applicator if applicable.

1.5 CLOSEOUT SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for closeout procedures.

B. Operation and Maintenance Data: Submit procedures for stain removal, surface repair, and cleaning.

PART 2 - PRODUCTS

2.1 TRAFFIC MEMBRANE

A. Manufacturers:

1. Ardex.
2. AVM Industries, Inc.
3. Carlisle Coatings & Waterproofing Inc.
4. Crossfield Products Corp.
5. Euclid Chemical Company (The); an RPM company.
6. Gaco Western LLC.
7. Key Resin Company.
8. LymTal International Inc.
9. Master Builders Solutions.
10. NEOGARD®, a Division of Hempel (USA), Inc.
11. Pacific Polymers®; ITW Polymers Sealants North America.
12. Parex USA, Inc.
13. Pecora Corporation.
14. POLY-CARB, Inc.
15. Sherwin-Williams Company (The).
16. Soprema, Inc.
17. Tremco Incorporated.
18. Urethane Polymers International, Inc.
19. Substitutions: Specified in Section 016000 - Product Requirements

B. Sealant:
1. Compatible with system and adjacent materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that substrate is ready to receive Work and that surface is clean, dry, and free of substances that could affect bond.

C. Do not begin Work until:

1. Concrete substrate has cured in accordance with manufacturer’s recommendations.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Clean substrate surface free of foreign matter.

C. Patch concrete substrate with filler to produce surface conducive to bond.

D. Protect adjacent surfaces.

3.3 PROTECTION

A. Section 017000 - Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Restrict traffic from area where materials are being installed or are curing.

C. Do not permit traffic over unprotected surfaces.

END OF SECTION

SECTION 07 90 00

JOINT PROTECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Preparing substrate surfaces.

B. Sealant(s) and joint backing.

1.2 SUBMITTALS

A. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, color available, as per Division 1 and compliance with ASTM C920.

1.3 QUALITY ASSURANCE

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Employ only experienced craftsman, skilled in the installation of specified products.

1.4 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

B. Acceptable Manufacturers: All materials shall be products of one of the following manufacturers, or equal:
   1. W.R. Meadows, Inc.
   2. W.R. Grace and Co.
   3. Sika Chemical Corp.
   4. Dow Corning Corp.

PART 2 PRODUCTS

2.1 SEALANTS

A. Sealants shall be as follows:

	Acrylic Emulsion (Type A-1)	Acrylic (Type A-2)	Polysulfide (Type P5)	Poly-urethane (Type PV-1)	Poly-urethane (Type PV-2)	Silicone (Type S-1)	Silicone (Type S-2)
Type	S	S	S or M	S or M	S or M	S or M	S or M
Grade	NS	NS	P or NS	P	NS	P	NS
Class	12-1/2	12-1/2	25	25	25	25	25
Use	NT	NT	T or NT	T	NT	T	NT
Hardness	15-50	15-50	25-50	25-50	15-50	25-50	15-50
Elongation	2-5%	5-10	15-25	15-25	15-25	15-25	15-25
Service Temp	0 - 160	0 - 160	-20 - 160	-20 - 160	-20 - 160	-20 - 160	-20 - 160

All as per ASTM C920
All non-staining
All to be non-staining
Color(s) to be selected

Legend

Type:
- S - single component sealant
- M - multi component sealant

Grade:
- P - pourable or self leveling sealant
- NS - non-sag or gunable sealant

Class:
- 25 - withstand 25% increase/decrease in joint width
- 12-1/2 - withstand 12-1/2 increase in joint width

Use:
- T - Use in traffic areas (vehicular and pedestrian)
- NT - Use in non-traffic areas (15-50 hardness reading)
- M - Use with masonry/mortar
- G - Use on glass
- A - Use on aluminum
- O - Use on other materials

Hardware:
- T - Traffic 25-50 hardness reading.
- NT - Non Traffic 15-50 hardness reading.

Peel Adhesion: As per ASTM A920.

2.2 SCHEDULE

Feature	Sealant Type
Control joints in masonry.....	Polysulfide.
Sawed control joints in concrete slabs.....	Epoxy, 3-component.
Expansion joints in concrete and masonry, interior.....	Polysulfide or Polyurethane.
Expansion joints in concrete and masonry, exterior.....	Polysulfide or rubber-asphalt.
Submerged joints in concrete.....	Polysulfide, 2-component.
Around frames and louvers in exterior walls.....	Silicone or polyurethane.
Joints in sills and thresholds.....	Silicone or polysulfide.
Stone Panels.....	Polysulfide or polyurethane or silicone.
Ceiling joints in precast concrete deck units.....	Polysulfide or polyurethane or silicone.
Around frames in interior walls.....	Paintable acrylic.

Sealants shall be compatible with adjacent materials.

2.3 POLYSULFIDE AND POLYURETHANE SEALANT

A. Polysulfide and polyurethane sealants shall be Grade P or NS. Sealants used for submerged concrete joints shall be approved for use, by the manufacturer, in waste water.

2.4 SILICONE

A. One part non-acid curing silicone: "Dow Corning 790" or equal.

2.5 EPOXY

A. All interior non metallic floor slab sawed control joints shall be filled with Sikadur 51 by Sika Chemical Corp., or equal.

2.6 BACK UPS AND FILLERS

A. Back-ups and fillers shall be non-absorbent and non-staining, compatible with sealant and primer. Do not use materials impregnated with oil or bitumen.

B. Resilient fillers shall be closed cell resilient urethane foam, polyvinyl chloride foam, polythylene foam, vinyl or sponge rubber, or polychloroprene tubes or rods. Fillers shall be approximately 25 percent to 50 percent wider than the joint. Braiding hose or rod stock to obtain sufficient size not permitted.

C. Supporting type fillers shall be closed cell rigid foam, cork or non-impregnated fiber board of the size and shape indicated and as required for proper installation of sealant.

2.7 BOND BREAKERS

A. Bond Breakers shall be polyethylene tape with pressure sensitive adhesive, aluminum foil or wax paper.

2.8 PRIMERS

A. Primers shall be non staining type, as recommended by manufacturer of sealant for the material in contact.

2.9 COLORS

A. All sealant and caulking compounds shall be non staining and color fast. Colors shall be selected by the E/A but, in general, shall match the adjacent surfaces. At least four appropriate colors shall be available from which selections can be made.

PART 3 EXECUTION

3.1 INSPECTION OF SURFACES

A. Examine all surfaces to be sealed or caulked and correct all conditions preventing proper installation. Application of sealant or caulking shall constitute acceptance of the surface.

3.2 PREPARATION OF SURFACES

A. Prepare surfaces to receive sealant or caulking in strict compliance with the manufacturer's recommendations. Joints shall be raked out and cleaned to full width and depth required to accommodate back up and sealant materials. Remove dirt, oil, grease, and all loose materials that would inhibit bond.

B. Metal and non porous surfaces shall be solvent cleaned and wiped dry to remove residue.

C. Concrete and masonry surfaces shall be sound and fully cured. Remove form oils, curing compounds, water repellents, and laitance. Test for sealant adhesion; if required the surfaces shall be completely cleaned by chemical or mechanical means.

3.3 APPLICATION

A. Follow manufacturer's printed instructions regarding mixing, surface preparation, primer, application and curing of sealants. Apply sealants in strict accordance with the manufacturer's timing and temperature requirements.

B. Install suitable back up material to provide sealant dimensions as detailed. When using back up of hose or rod stock, roll the material into the joint to avoid lengthwise stretching.

C. Oakum or rope yarn packing may be used to fill voids more than 3/4" deep. Compact to a dense, solid mass. Completely fill the joint with caulking applying sufficient pressure to force out all air.

D. Use bond breaker strip where required between sealant and supporting type back up material and in all joints where sufficient room for back up does not exist.

E. Protect adjacent surfaces by applying masking tape in continuous strips in alignment with joint edges. Remove tape immediately after sealant has been tooled.

F. The depth of sealant shall be equal to joint width in joints up to 1/2 inch wide, 1/2 inch deep for joints 1/2 inch to 1 inch wide and a depth of 1/2 the width for joints over 1 inch wide.

G. Point or tool joint surface slightly concave. When tooling white or light colored sealants, follow recommendations of the sealant manufacturer to avoid staining.

3.4 PROTECTION AND CLEANING

A. Temporarily cover or protect joints from injury until the compound has set and protective surface films have formed.

B. Clean sealant from adjacent surfaces. Use solvent or cleaning agent as recommended by the sealant manufacturer. All finished work shall be left in a neat, clean condition. Stained or damaged adjacent work shall be repaired or replaced.

END OF SECTION

SECTION 09 91 13

EXTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

Section includes surface preparation and the application of paint systems on the following exterior substrates:

Steel.
1. Galvanized metal.

Related Requirements:

Section 099123 "Interior Painting" for surface preparation and the application of paint systems on interior substrates.
2. Section 099600 "High-Performance Coatings" for special-use coatings.

1.3 DEFINITIONS

Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

Product Data: For each type of product. Include preparation requirements and application instructions.

A. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

Submit Samples on rigid backing, 8 inches square.
1. Step coats on Samples to show each coat required for system.
2. Label each coat of each Sample.
3. Label each Sample for location and application area.

Product List: For each product indicated, include the following:

Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
4. Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
5. VOC content.

1.5 MAINTENANCE MATERIAL SUBMITTALS

Furnish extra materials**, from the same product run,** that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

Paint: 5 percent, but not less than 1 gal. of each material and color applied.

1.6 DELIVERY, STORAGE, AND HANDLING

Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

Maintain containers in clean condition, free of foreign materials and residue.

1. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

A. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

Benjamin Moore & Co.

1. PPG Architectural Finishes, Inc.
2. Sherwin-Williams Company (The).

2.2 PAINT, GENERAL

MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

A. Material Compatibility:

Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

1. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.

B. Colors: To be confirmed with Owner and Architect

2.3 BLOCK FILLERS

Block Filler, Latex, Interior/Exterior: **MPI #4.**

2.4 PRIMERS/SEALERS

Primer, Alkali Resistant, Water Based: **MPI #3.**

A. Primer, Bonding, Water Based: **MPI #17.**

B. Primer, Bonding, Solvent Based: **MPI #69.**

2.5 METAL PRIMERS

Primer, Alkyd, Anti-Corrosive for Metal: **MPI #79.**

A. Primer, Galvanized: As recommended in writing by topcoat manufacturer.

2.6 SOLVENT-BASED PAINTS

Alkyd, Exterior, Semi-Gloss (Gloss Level 5): **MPI #94.**

2.7 SOURCE QUALITY CONTROL

Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.

1. Testing agency will perform tests for compliance with product requirements.
2. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

A. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

B. Proceed with coating application only after unsatisfactory conditions have been corrected.

Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and paint systems indicated.

A. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

B. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

C. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer.

D. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

E. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

3.3 APPLICATION

Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual."

Use applicators and techniques suited for paint and substrate indicated.

1. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.

2. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.
3. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
4. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 FIELD QUALITY CONTROL

Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

Contractor shall touch up and restore painted surfaces damaged by testing.

1. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

A. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

B. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

C. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

Steel Substrates:

Alkyd System:

Prime Coat: Primer, alkyd, anticorrosive for metal, MPI #79.

a. Intermediate Coat: Exterior alkyd enamel matching topcoat.

Galvanized-Metal Substrates:

Alkyd System:

Prime Coat: Primer, galvanized metal**, as recommended in writing by topcoat manufacturer for exterior use on galvanized-metal substrates with topcoat indicated**.

b. Intermediate Coat: Exterior alkyd enamel matching topcoat.

c. Topcoat: Alkyd, exterior, semi-gloss (Gloss Level 5)**, MPI #94**.

END OF SECTION

SECTION 09 91 23

INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on the following interior substrates:

1. Concrete.
Steel.
Galvanized metal.
Gypsum board.
Cotton or canvas insulation covering.
ASJ insulation covering.

B. Related Requirements:

1. Section 051200 "Structural Steel Framing" for shop priming of metal substrates with primers specified in this Section.
Section 099113 "Exterior Painting" for surface preparation and the application of paint systems on exterior substrates.

1.3 DEFINITIONS

A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

Samples for Verification: For each type of paint system and in each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches square.
Step coats on Samples to show each coat required for system.
Label each coat of each Sample.
Label each Sample for location and application area.

B. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

1.5 MOCKUP

A. Provide samples that designate prime & finish coats as a system to verify system compliance and coverage.

Do not proceed with remaining work until the Architect approves the mock-up samples

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials[, from the same product run,] that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 5 percent, but not less than 1 gal. of each material and color applied.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
Remove rags and waste from storage areas daily.

1.8 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Benjamin Moore & Co.
PPG Architectural Finishes, Inc.
Sherwin-Williams Company (The).

2.2 PAINT, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. Colors: Match Architect's samples.

2.3 PRIMERS/SEALERS

A. Primer Sealer, Latex, Interior:[MPI #50.]

1. Sherwin Williams, ProMar 200 Zero Interior Latex Primer.

2.4 METAL PRIMERS

A. Primer, Rust-Inhibitive, Water Based:[MPI #107.]

1. Sherwin Williams, Pro Industrial, ProCryl Universal Primer.

B. Primer, Alkyd, Anti-Corrosive, for Metal:[MPI #79.]

C. Primer, Galvanized, Water Based:[MPI #134.]

2.5 WATER-BASED PAINTS

A. Latex, Interior, Flat, (Gloss Level 1): MPI #53.

1. Sherwin Williams; Super Paint Interior Flat Latex.

B. Latex, Interior, (Gloss Level 3): MPI #52.

1. Sherwin Williams; ProMar 200 Zero VOC, Interior Latex Eg-Shel

C. Latex, Interior, Semi-Gloss, (Gloss Level 5): MPI #54.

1. Sherwin Williams, ProMar 200 Interior Latex Gloss.

D. Light Industrial Coating, Interior, Water Based (Gloss Level 3): MPI #151.

1. Sherwin Williams, Pro Industrial, Precatalyzed Water Based Epoxy.

2.6 SOLVENT-BASED PAINTS

A. Alkyd, Interior, Semi-Gloss (Gloss Level 5): MPI #47.

2.7 DRY FOG/FALL COATINGS

A. Dry Fall, Latex, Flat: MPI #118.

1. Sherwin Williams; Pro Industrial, Waterborne Acrylic Dryfall.

2.8 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.

Testing agency will perform tests for compliance with product requirements.

Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.

Gypsum Board: 12 percent.

B. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.

Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

B. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

C. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer.

D. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

E. Cotton or Canvas Insulation Covering Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.

Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint the following work where exposed in equipment rooms:

a. Uninsulated metal piping.
Uninsulated plastic piping.
Pipe hangers and supports.
Metal conduit.
Plastic conduit.
Tanks that do not have factory-applied final finishes.
Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.

2. Paint the following work where exposed in occupied spaces:

a. Equipment, including panelboards.
Uninsulated metal piping.
Uninsulated plastic piping.
Pipe hangers and supports.
Metal conduit.
Plastic conduit.
Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
Other items as directed by Architect.

3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.

If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

B. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

A. CONCRETE - (Walls & Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place)

1. Latex Systems

a. Eg-Shel Finish
1st Coat: S-W Loxon Concrete & Masonry Primer Sealer, A24W8300
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series
(4.0 mils wet, 1.7 mils dry per coat)

B. METAL – Aluminum/ Galvanized

1. Latex Systems

a. Semi-Gloss Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
(5.0 mils wet, 2.0 mils dry)
2nd Coat: S-W ProClassic® Waterborne Acrylic Semi-Gloss Enamel, B31 Series
3rd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss Enamel, B31 Series(4.0 mils wet, 1.3 mils dry per coat)
Eg-Shel Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
(5.0 mils wet, 2.0 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series
(.0 mils wet, 1.7 mils dry per coat)

2. Alkyd Systems (Waterbased Acrylic-Alkyd for Door Frames, Railings, etc.)

a. Semi-Gloss Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
(5.0 mils wet, 2.0 mils dry)
2nd Coat: S-W S-W Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series
3rd Coat: S-W S-W Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series
(4.0-5.0 mils wet, 1.4-1.7 mils dry per coat)

C. METAL Ferrous- (Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous & Ornamental Iron, Sashes, Doors, Partitions)

1. Latex Systems

a. Semi-Gloss Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
(5.0 mils wet, 2.0 mils dry)
2nd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss Enamel, B31 Series
3rd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss Enamel, B31 Series
(4.0 mils wet, 1.3 mils dry per coat)

2. Alkyd Systems (Waterbased Acrylic-Alkyd)

a. Semi-Gloss Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
(5.0 mils wet, 2.0 mils dry)
2nd Coat: S-W S-W Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series
3rd Coat: S-W S-W Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series
(4.0-5.0 mils wet, 1.4-1.7 mils dry per coat)

D. DRYWALL (Walls, Ceilings, Gypsum Board, Plaster Board, etc.)

1. Latex Systems

a. Semi-Gloss Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
(4.0 mils wet, 1.6 mils dry per coat)
Eg-Shel Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series
(4.0 mils wet, 1.7 mils dry per coat)
Flat Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.5 mils dry)

2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-2600 Series
(4.0 mils wet, 1.6 mils dry per coat)

2. Epoxy Systems (Pre-Catalyzed Waterbased Epoxy – Dark Color Accent Walls)

a. Eg-Shel Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W Pre-Catalyzed Waterbased Epoxy Eg-Shel, K45-150 Series
3rd Coat: S-W Pre-Catalyzed Waterbased Epoxy Eg-Shel, K45-150 Series
(4.0 mils wet, 1.5 mils dry per coat)

3.7 COLOR SCHEDULE

A. Refer to Drawings for paint color selections

END OF SECTION

SECTION 10 73 16

PRE-ENGINEERED METAL CANOPIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Freestanding, pre-engineered metal canopies including concrete foundation, steel framing, metal roof, roof drains and leaders, fascia components, and metal ceiling and accessories.

1.2 RELATED SECTIONS

A. Section 03 30 00 - Cast-in-Place Concrete.

B. Section 05 05 00 - Metal Materials, Methods and Fastening.

C. Section 07 90 00 - Joint Protection.

D. Division 26 - Electrical: Electrical wiring and connections.

1.3 REFERENCES

A. American Institute of Steel Construction, Inc. (AISC): AISC 360 - Specification for Structural Steel Buildings (copyrighted by AISC, ANSI approved).

B. American Society of Civil Engineers (ASCE): ASCE 7-16 - Minimum Design Loads for Buildings and Other Structures (copyrighted by ASCE, ANSI approved).

C. American Welding Society (AWS): AWS D1.1 - Structural Welding Code - Steel (copyrighted by AWS, ANSI approved).

D. ASTM International (ASTM):
1. ASTM A36/A36M - Standard Specification for Structural Steel.
2. ASTM A325/A325M - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
3. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
4. ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Steels of Structural Quality.
5. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
6. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic Cement Grout (Non Shrink).
7. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength
8. ASTM F2329 - Standard Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners

E. National Association of Architectural Metal Manufacturers (NAAMM): NAAMM MFM - Metal Finishes Manual.

F. National Fire Protection Association (NFPA): NFPA 70 - National Electrical Code (copyrighted by NFPA, ANSI approved) - hereinafter referred to as NEC.

G. 2018 International Building Code – hereinafter referred to as IBC.

1.4 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide pre-engineered canopies capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated for the specific location where Canopy will be installed:
   1. Uniform Pressure: As indicated on Drawings.
      a. Minimum design wind load per ASCE 7-16, CH. 26.
   2. Snow Load: As indicated on drawings.
      a. Minimum design snow load per ASCE 7-16, CH. 7.
   3. Seismic Performance: Minimum design seismic criteria per ASCE 7-16, CH. 11 to 15.
   4. Bottom of foundations founded a minimum of 48” below finish grade.

B. Thermal Movements: Pre-engineered canopies that allow for thermal movements resulting from the following maximum range change in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.
   1. Engineering Calculations: Based on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   2. Temperature Change Range:
      a. Ambient: 120 degrees F.
      b. Material Surfaces: 180 degrees F.

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Construction details, material descriptions, dimensions of individual components and profiles, and finishes.
   2. Preparation instructions and recommendations.
   3. Storage and handling requirements and recommendations.
   4. Installation methods.

C. Geotechnical Investigation: Provide a geotechnical report based on a minimum of (1) soil boring to a minimum depth of 20 feet at the approximate location of the canopy foundations.
   1. The investigation shall be conducted in accordance with IBC Section 1803.2 and reported in accordance with IBC Section 1803.6. The report shall be signed and sealed by a professional engineer licensed in Illinois.

D. Shop Drawings:
   1. Include plans, elevations, sections, details, and attachments to other work.
   2. Canopy Supplier: Complete canopy drawings including foundation design signed and sealed by a structural engineer licensed in Illinois where canopy is to be installed.

E. Samples:
   1. For initial color selection and each specified finish in form of manufacturer's color charts showing full range of colors and finishes available.
      a. Where finishes involve normal color variations, include samples showing full, range of variations expected.
   2. For verification purposes, prior to installation.

F. Certificates: Product certificates signed by manufacturer certifying material compliance with specified performance characteristics and criteria, and physical requirements.

G. Warranty: Documents specified herein.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in engineering and manufacturing pre-engineered canopies with a minimum documented experience of twenty years and with a quality assurance program utilizing a quality inspection for each system.

B. Welding:
1. Qualify procedures and personnel according to the following:
a. In accordance with AWS D1.1; with E70XX electrodes.
b. Structural Shop Welding: Done by certified welders.
2. Steel Shop Connections: Welded and field connections are to be bolted, unless otherwise noted on the Drawings. Shop welds may be changed to field welds with approval of the project engineer.
3. Slag: Clean from welds and inspect.

C. Steel Finish: Painted with red oxide rust-inhibitive primer.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NEC, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

E. Source Limitations: Obtain pre-engineered metal canopy through one source from a single manufacturer who shall manufacture the canopy.

F. Product Options:
1. Information on the Drawings and in the Specifications establishes requirements for system's aesthetic effects and performance characteristics.
a. Aesthetic Effects: Indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
1) Do not modify intended aesthetic effects, as judged by the Engineer or Owner, except with the Engineer’s/Owner’s approval.
2) If modifications are proposed, submit comprehensive explanatory data to the Engineer for review.
b. Performance Characteristics: Indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.
2. Drawings: Indicate size, profiles, and dimensional requirements of pre-engineered metal canopies and are based on the specific system indicated.
a. Refer to Section 01 60 00 - Product Requirements.

G. Coordination: Contractor is responsible for the following items.
1. Conduct site meetings to verify project requirements, substrate conditions, utility connections, manufacturer's drawings and installation instructions.
a. Comply with Division 1 section on project meetings.
2. Prepare for and pour concrete footers for pre-engineered metal canopies.
a. Manufacturer will provide the following items.
1) Footing drawings as per 2018 IBC Section 1807.3 designed and sealed by structural engineer licensed in Illinois.
2) Prints and rebar details for concrete footings
3) Anchor bolts to be embedded in concrete footer.
4) Items must be delivered to project site in time for installation.
5) Cast-in-place concrete and precast concrete items shall be sufficiently cured and have attained minimum concrete design strength prior to steel framing erection.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Protect components and accessories from corrosion, deformation, damage, and deterioration when stored at job site. Keep materials free from dirt and foreign matter.

1.8 PROJECT CONDITIONS

A. Field Measurements: Contractor is to verify location and elevation of footings relative to finished grade, columns, and other construction contiguous with pre-engineered metal canopies by field measurements before fabrication and indicate measurements on shop drawings.

PART 2 PRODUCTS

2.1 MANUFACTURERS

2.2 MATERIALS

A. Cast-in-Place Concrete
1. Concrete shall be Class A according to Section 03 30 00.

B. Structural Steel: Hot-dip-galvanized.
1. Material and Work: Conform to the latest AISC 360.
2. Wide Flange I-Beam: Conform to ASTM A572/A572M GR.50, Fy equal to 50 ksi.
3. Other Rolled Sections: Conform to ASTM A36/A36M, Fy equal to 36 ksi.
4. Square and Rectangular Tubing: Conform to ASTM A500/A500M, Grade B, Fy equal to 46 ksi.
5. Plate steel shall conform to ASTM A36/A36M, Fy equal to 36 ksi.
6. Structural Steel Finish: Painted with rust inhibitive, red oxide primer.

C. Sheet Metal:
1. Decking: Minimum 3 x 16 inch by 20 gage smooth white, ASTM A653/A653M GR40, Fy equal to 40 ksi, galvanized steel with baked enamel finish.
2. Center and Tapered Gutter: 24 gage hot-dip galvanized steel baked enamel finish.
3. Perimeter Gutter: 20 gage hot-dip galvanized steel baked enamel finish.
4. Internal Downspout: PVC. 3 inch diameter.
5. Seamless gutter profiles up to 40 feet in length.

2.3 PRE-ENGINEERED METAL CANOPIES

A. Manufacturer's canopy components consisting of the following.
1. Flexible frame with fixed base.
2. Steel Framing System: Stacked I Beam construction transferring the moment to the concrete footing without requiring a rigid connection between steel frame members.
3. Beam Arrangements: Allow for cantilever design which can bring columns from the perimeter of the structure to the inner protected zones between the drive lanes.
4. Design meeting site structural wind, snow and seismic requirements.

B. Canopy Fascia:
1. Aluminum Composite Panel (ACM): Fluorocarbon paint finish, masked on one side.
a. Warranted for 10 or 20 years depending on color and finish.
2. Laminated Foam Core Fascia: 2 inch (51 mm) expanded virgin polystyrene.
a. Panel Face: 24 gage hot-dip galvanized steel with a baked enamel finish.
b. Backing: 24 gage galvanized steel.
c. Finish Warranty: Against cracking, checking, peeling, or adhesion failure.
1) Duration: 5, 10, 20 years depending on color selection.

C. Canopy Lighting: Built-in recessed lighting within canopy structure.
1. 10 Die-Cast aluminum lights, recessed, with driver and optical chamber, serviceable

from below canopy.
2. Finish to match canopy finishes.
3. Pre-wired for a single point connection with canopy mounted photocell.
4. 120V, 1 ph, 60 hz, 8000 lumnes, 60,000 hrs, 5000k.

D. Canopy Finishes: Comply with NAAMM MFM for recommendations for applying and designating finishes.
1. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces may not be acceptable unless approved by the engineer or the owner.

E. Fabrication: Fabricate pre-engineered canopies completely in factory.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Examine areas and conditions under which the work is to be installed, and notify the Contractor in writing, with a copy to the Owner and the Engineer, of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.
1. Contractor shall provide site specific geotechnical investigations to ensure canopy manufacturer's structural engineer is provided with all necessary site specific conditions for foundation design.
2. Furnish and erect concrete foundations in accordance with the Canopy manufacturer's structural engineer's requirements.
3. Examine supporting foundations for compliance with manufacturer's requirements, including installation tolerances and other conditions affecting performance of supporting members.
4. Check installed anchor bolts for accuracy. Verify that bearing surfaces are ready to receive the work.
5. Verify the rough-in of required mechanical and electrical services prior to placement of the structure.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Set pre-engineered metal canopy plumb and aligned. Level base plates true to plane with full bearing on concrete bases.

B. Fasten pre-engineered metal canopy columns to anchor bolts.

C. Provide Anchor Bolts as Follows:
1. Anchor bolts or foundation bolts will be set by the contractor in accordance with approved site specific drawings. Use of a plywood template is recommended. Remove template prior to column erection.
2. Anchor bolts shall conform to ASTM F1554 Grade 55, galvanized according to ASTM F2329 including nuts and washers, and shall have a minimum of 7 inches (178 mm) of exposed thread and 23 inch (584 mm) minimum embedment with 1-1/4 inch (32 mm) nut and washer as embedment end.
3. Shrinkage-resistant grout shall be ASTM C1107, factory-packaged, aggregate grout, non-corrosive, non-staining, mixed with water to consistency suitable for application and a 30 minute working time installed by the Contractor.

D. Prior to steel erection of any kind, the Contractor shall grade, backfill and otherwise prepare the job site to allow for rolling scaffold and ensure safe working conditions including the removal or relocation of overhead power lines.

E. All anchor bolts and/or leveling plates shall be set within 1/4 inch (6 mm) tolerance on layout and grade level.

F. Temporary electrical power shall be coordinated with owner and provided by the contractor.

G. Connect electrical power service to power distribution system according to requirements specified in Division 26 - Electrical.

3.4 ADJUSTING AND CLEANING

A. After completing installation, inspect exposed finishes and repair damaged finishes.

3.5 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair, or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 13 10 00

FUELING SYSTEMS AND EQUIPMENT

PART 1 GENERAL

1.1 SUMMARY

A. This section includes the performance requirements for the replacement of the fuel island, associated piping, equipment, electrical feeds, and controls. These requirements herein are intended to provide a basis for competitive bidding by qualified contractors for the work included.

B. The work includes:
   1. New equipment and systems:
      a. Underground Fuel Tanks
      b. Fuel dispensers
      c. Underground fuel piping
      d. Fuel pumps
      e. Concrete paving.
      f. Fuel Management Systems (see 13 10 01)
      g. Containment sumps for pumps, tank fill openings, tank level control openings, piping, and dispensers.
      h. DEF Storage and Dispensing Unit.
      i. Steel curb protectors.
      j. Bollards.
      k. Fuel Piping Specialties.
      l. Leak detection system.
   2. Obtaining all required permits, approvals and inspections, from the office of the State Fire Marshall (OSFM).
   3. Selection of all the equipment and components to provide a complete and functional installation that meets the requirements of these specifications and drawings.
   4. Installation of electrical work in accordance with division 26 of these specifications.

C. Fuel Systems including storage tanks, fuel dispensers, leak monitoring, pumps, piping, valves, and specialties shall be provided as a complete package by a single source supplier.

1.2 REFERENCES

A. OSFM – Division of Petroleum & Chemical Safety
   1. Statutes:
      a. 225 ILCS 729: Petroleum Equipment Contractors Licensing Act
      b. 430 ILCS 15: Gasoline Storage Act
      c. 415 ILCS 5/57 Section of Environmental Protection Act pertaining to Underground Storage Tanks
   2. Rules:
      a. Title 41, Chapter I, Part 172, Petroleum Equipment Contractor Licensing
      b. Title 41, Chapter I, Part 174, General Requirements for Underground Storage Tanks
      c. Title 41, Chapter I, Part 175, Technical Requirements for Underground Storage Tanks
      d. Title 41, Chapter I, Part 176, Administrative Requirements for Underground Storage Tanks

e. Title 41, Chapter I, Part 177, Compliance Certification for Underground Storage Tanks

B. Illinois Administrative Code
1. Rules:
a. Title 35, Chapter I, Parts 201, 218, and 219, Vapor Recovery Rules

C. NFPA – National Fire Protection Association
1. NFPA 30 – Flammable and Combustible Liquids Code
2. NFPA 30A – Code for Motor Fuel Dispensing Facilities and Repair Garages

D. UL – Underwriters Laboratory
1. UL 79 – Standard for Power-Operated Pumps for Petroleum Dispensing Products.
2. UL 536 - Flexible Metallic Hose.
3. UL 567 - Pipe Connectors for Flammable Liquids and Combustible Liquids and LP-Gas.
4. UL 842 - Valves for Flammable Fluids.
5. UL 971 – Standard for Nonmetallic Underground Piping for Motor Vehicle, High Blend, and Aviation and Marine Fuels.
6. UL 1316 – Standard for Fiber Reinforced Underground Tanks for Flammable and Combustible Liquids

E. ASTM International:
1. ASTM D2310 - Standard Classification for Machine-Made "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe.
2. ASTM D2996 - Standard Specification for Filament-Wound Fiberglass (Glass-Fiber-Reinforced Thermosetting Resin) Pipe.

1.3 SUBMITTALS

A. Shop Drawings: Indicate layout of piping systems, including equipment, critical dimensions, and sizes. Show piping system routing, pipe sizes, elevations, fitting and valve locations, and manhole locations. Indicate on shop drawings leak detection systems and fuel management system architecture.

B. Product Data: Submit manufacturer’s catalog information for piping, fitting, valves, specialties, tanks, dispensers, leak detection devices, and containment sumps. For pumps, submit certified pump curves showing performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable. Include electrical characteristics and connection requirements. Submit also, manufacturer model number, dimensions, and service sizes.

C. Test Reports: Submit written test results for piping system pressure test.

D. Manufacturer's Installation Instructions: Submit piping system, piping accessories, pumps, and leak detection and location system data.

E. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of pumps, valves, piping systems, and system components.

B. Operation and Maintenance Data: Submit spare parts lists for pumps and leak detection and location system.

1.5 QUALITY ASSURANCE

A. The contractor shall be licensed by the OSFM as a UST Contractor.

B. The contractor shall have certified employee actively supervising the project, as required by the OSFM, including supervising all sub-contractors, at all times when work is in progress.

C. Contractor's staff as well as all sub-contractors and venders shall carry personal documentation required by the OSFM, at all times while on the City premises.

D. Contractor shall meet all requirements listed in REFERENCES above.

E. Make equipment and system component selections using the normal standard of care and in compliance with and approved by the OSFM.

F. List and label pumps in accordance with UL 79.

G. List and label piping in accordance with UL 971.

H. List and label tanks in accordance with UL 1316.

I. Work shall be performed in accordance with all applicable codes.

1.6 QUALIFICATIONS

A. Supplier/Installer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Leak Detection Systems: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site in original factory packaging, labeled with manufacturer's identification.

B. Protect from weather and construction traffic, dirt, water, chemical, and damage, by storing in original packaging.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Do not install underground piping when bedding is wet or frozen.

1.9 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

1.10 COORDINATION

A. Coordinate trenching, excavating, bedding, and backfilling of buried piping systems.

B. Coordinate with installation of concrete and prefabricated canopy.

1.11 WARRANTY

A. Double Wall Fiberglass Tanks: 1-year manufacturing, workmanship, or materials. 30-year external or internal corrosion.

B. Fueling Equipment and Specialties (dispensers, pumps, leak monitoring, fuel dispensing, piping, and fittings): 2-year manufacturer's warranty.

1.12 PRODUCT SUBSTITUTIONS

A. Product substitutions shall be at the sole discretion of the engineer and will be considered for equivalent products as described in part 2 of this section.

PART 2 PRODUCTS

2.1 UNDERGROUND FUEL TANKS

A. Manufacturers:
   1. Xerxes.
   2. Fiberglass Tank Solutions
   3. NOV

B. Product Description: UL1316 certified fiberglass reinforced plastic (FRP) double wall underground storage tank.

C. Construction: Double wall, structural ribbing, with glass-reinforced interstitial space.

D. Ratings:
   1. Internal load: 5 psig.
   2. Surface Load: H-20 traffic rating.
   3. Hydrostatic Pressure: 7 feet overburden at top of tank.
   4. Interstitial space: 20 psig.

E. Accessories:
   1. Leak detection: Provide discriminating interstitial sensor with leader cable. Sensor shall report the presence of fluid and identify hydrocarbons. Compatible with automatic tank gauge.
   2. Anchor Straps (25,000 lbs) and mounting hardware including turnbuckles and concrete anchors.
   3. Manway(s) and penetrations as required.
   4. Threaded pump fitting.
   5. Threaded accessory fitting(s).
   6. Containment Collars and adhesive.

2.2 DISPENSERS

A. Manufacturers (Dispensers):
   1. Gasboy.
   2. Wayne.
   3. Or Equal.

B. Manufacturers (Fittings and Specialties):

1. A.Y. McDonald.
2. OPW.
3. Or Equal.

C. Description: Multi-dispensing electronic register fleet fuel dispenser

D. Construction: Welded frame constructed of 13-gauge minimum G90 galvanized steel with Type 304 stainless steel removable top and side panels, locking tamper proof lower panels. Face load cast aluminum nozzle boot for island configuration. Capable of dispensing diesel, B100 biodiesel, and unleaded fuel from separate nozzles. Gas, oil, and UV resistant dial face with one-piece polycarbonate overlay, black print on white background, with cutouts for display.

E. Hardware:
1. Display: Volume only (gallons) 1-inch backlit LCD, display on front and back of cabinet.
2. Pulser: Electronic, dual phase 1000:1 with error detection, compatible with fuel management system.
3. Meter: Four-piston positive displacement flow-through CFT meter with self-cleaning central chamber.
4. Filter/Strainer: 10 micron particulate or water alert filter internal to dispenser upstream of meter. 80-mesh removable strainer.
5. Valves: 2-stage solenoid valve.
6. Piping: 1-1/2-inch NPT inlet with 1-inch steel tube feedline. 1-inch NPT discharge.
7. Electrical: Explosion-proof junction box for field wiring.
8. Totalizer: Internal electronic, displayed on LCD by magnetic switch, whole units up to 999,999.
9. Fuel Management Interface: direct connection compatible with fuel management system or pulse output.
10. Hose retriever: Standard hose hook.
11. B100 biodiesel compatible hardware.

F. Performance:
1. Unit of Measure: US Gallons
2. 50 psi working pressure.
3. +/-0.25% meter accuracy.
4. 22 GPM flow rating
5. Ambient Temperature: -22°F to 131°F
6. Relative Humidity rating: 20% to 95% non-condensing.

G. Electrical: 120V, 60HZ, 1-Phase

H. Regulatory:
1. UL Approved.
2. National Conference of Weights & Measures certified.
3. FCC Part 15 Compliant.

I. Accessories:
1. Hose – 16-foot length.
2. Single-use breakaway fitting.
3. Swivel fitting.
4. Nozzle.

2.3 FUEL OIL PIPING – BURIED

A. Manufacturers:

1. Dualoy.
2. Or Equal.

B. FRP: ASTM D2310 and ASTM D2996, UL 971 listed coaxial double wall filament wound glass fiber reinforced epoxy pipe with integral epoxy liner and exterior coating.
   1. Fittings: Compression molded, filament wound, fiberglass reinforced epoxy with adhesive-bonded clamshell containment fittings.
   2. Joints: Tapered bell and spigot adhesive bonded.

C. Accessories: Provide with seals, couplings, glue kits, impact valves, terminations, adapters, closer sleeves with test ports, and leak detection.

D. Underground pipe marker: Provide bright-colord plastic ribbon tape, continuously printed, minimum 6-inches wide and 4-mil thick, manufactured for direct-burial service. Provide trace wire.

2.4 SUBMERSIBLE TURBINE PUMP

A. Manufacturers:
   1. Veeder-Root.
   2. Franklin Electric.
   3. Or Equal.

B. Product Description: UL 79 certified, multi-stage, self-lubricating submersible centrifugal type pump threaded for standard 4-inch tank opening.

C. Pump:
   1. Manifold head: Manifold and extractable packer assembly, sealed with 2-inch NPT opening, purge screw, line check valve, pressure relief valve, with completely isolated electrical box, and lifting lug, with threaded hydrostatic test port.
   2. Impeller: Positive, non-slip rotation, splined to shaft.
   3. Inlet: Horizontal, with particulate screen, variable length inlet with collett gripping mechanism and set screw.

D. Ratings:
   1. -40°F to 105°F fluid temperature.
   2. -20°F to 125°F ambient temperature.
   3. 0.86 to 0.95 fluid specific gravity.
   4. 70SSU @ 60°F maximum fluid viscosity.

E. Control: Microprocessor STP controller with integral 30-A/250 VAC power relay. Provide with automatic shutoff and reset for dry run, locked rotor, or high current conditions. Provide communication with dispenser and automatic tank gauge.

F. Electrical: Integral electrical disconnect in the manifold assembly. Permanent split capacitor motor, rated explosion proof in Class 1 Group D petroleum products. Windings hermetically sealed with thermal overload with automatic reset. Quick disconnect-type connector for servicing. Characteristics as scheduled on the drawings.

G. Performance: As scheduled on the drawings.

H. Accessories: Flex lines, piping connections, electrical feeders, controls, leak detection.

2.5 TANK SUMPS AND MANHOLES

A. Manufacturers:
   1. OPW.
   2. Or Equal.

B. Product description: Polyethylene single-piece tank sump with adjustable height riser, and mechanically fastened sealed cover. Size as required for application.

C. Manhole: 30-inch diameter raintight H-20 rated cover, labeled for application.

D. Leak Detection: Solid state, non-discriminating optical liquid level sensor compatible with automatic tank gauge.

E. Accessories: Seals for conduit and pipe penetration, seals for interface with tank.

2.6 DISPENSER CONTAINMENT SUMPS

A. Manufacturers:
   1. OPW.
   2. Or Equal.

B. Product description: Polyethylene single-piece watertight containment sump with rain-lip, size to match dispensers. Provide with structural reinforcing as required.

C. Leak Detection: Solid state, non-discriminating optical liquid level sensor compatible with automatic tank gauge.

D. Accessories: Stabilizer bars for shear valve installation, and conduit entry seals.

2.7 DIESEL EXHAUST FLUID STORAGE AND DISPENSING UNIT

A. Manufacturers:
   1. Gemrik.
   2. Or Equal.

B. Product description: Factory assembled climate-controlled diesel exhaust fluid storage and dispensing unit.

C. Construction: Powder coated aluminum shelter, stainless steel bolts or rivets, locking gas-piston assisted doors with three-position hinges, fully insulated enclosure.

D. DEF System: Forklift access for standard 330 Gallon tote(s). Size as scheduled on the plans. Closed loop dispense and fill system, self-priming DEF pump, hose reel with 33-foot hose, digital dispense meter, stainless steel automatic shut-off nozzle, factory piped and wired. Provide with pulse meter integrated with fuel-management system.

E. Electrical: Single-point power connection through single phase, 120V exterior junction box, Interior GFCI receptacles with manual shut-off, electric heater with thermostat, all components factory wired.

2.8 STEEL CURB FORMS

A. Manufacturers:

1. OPW.
2. Or Equal.

B. Product description: 13-inch high, minimum 9-inch above grade, type 304 stainless steel curb forms.

2.9 PROTECTIVE BOLLARDS

A. Manufacturers:
1. OPW.
2. Or Equal.

B. Dimensions: U-shaped 72-inches tall for 36-inch bury depth, by 72-inch width, flat on top with 16-inch radius bends

C. Construction: Schedule 40 primed black steel for field painting.

D. Finish: Color to be selected by owner.

2.10 FUEL PIPING SPECIALTIES

A. Manufacturers:
1. OPW.
2. A.Y. McDonald.
3. Or Equal.

B. Tank Fill Connections: Brass with cam-type locking aluminum cap with steel chain, capable of locking with padlock.

2.11 AUTOMATIC TANK GAUGE

A. Manufacturers:
1. Veeder Root.
2. OPW.
3. Or Equal.

B. Product Description: Wall mounted fuel system monitoring and control module with color LCD touch screen display, with communication ports and universal sensor or probe inputs, quantity as required to support the site-specific systems. Automatic tank gauge shall be capable of the following:
1. Product Inventory Management (Tank Gauging)
2. Dispenser Interface
3. Pump Monitoring
4. Tank Leak Testing
5. Interstitial Leak Monitoring
6. Reporting
7. Generating Alarms
8. Interfacing with Fuel Management System

C. Console: Minimum 7-inch color touch screen LCD panel. The system shall support a web-based user interface, network printing, SD or MicroSD storage, and password protection.

D. Product Inventory Management (Tank Gauging): Provide sensors and cabling as required for inventory monitoring. Console shall display inventory status graphically. The system shall monitor and report product level, water level, gross product volume, temperature compensated product volume, gross

water volume, product temperature, maximum capacity, and percent capacity. The system shall detect and record product deliveries. The system shall be capable of monitoring above-ground and underground storage tanks.

E. Dispenser Interface: Provide sensors and cabling as required for dispenser interfacing. The system shall communicate with fuel dispensers through TCP/IP or serial communication pathways. The system shall monitor and collect dispenser transaction data.

F. Pump Monitoring: System shall communicate with STP controllers through RS-485 communication. The system shall monitor, record, detect, and reset fault conditions. The system shall disable pumps when water is detected. The system shall display the current status of the pump controllers.

G. Tank Leak Testing: The console shall be capable of performing a static tank tightness test to 0.1 GPH threshold in accordance with USEPA 40 CFR 280 (D).

H. Interstitial Leak Monitoring: The system shall continuously monitor wet or dry secondary containment locations including tanks, piping, and secondary containment sumps.

I. Reporting: The system shall generate the following reports:
   1. Inventory
   2. Delivery history.
   3. Transaction data.
   4. Pump controller status.
   5. Tank Leak test.
   6. Sensor status.
   7. Alarm history.

J. Alarms: The system shall produce audible and visual alarms. The system shall communicate alarms to a computer via ethernet or via email. Alarms shall be generated for the following events, at minimum:
   1. Leak.
   2. Overfill.
   3. High Level.
   4. Sudden Loss.
   5. High Water.
   6. Low Inventory.

K. Interface to Fuel Management System: The system shall be capable of interfacing with the fuel management system specified in Section 13 10 01.

PART 3 EXECUTION

3.1 ADMINISTATIVE REQUIREMENTS

A. Obtain and pay for UST Contractor Licenses required by OSFM.

B. Obtain and pay for employee certifications and supervise the project with certified employees as required by OSFM.

C. Prepare, pay for and obtain all permits and approvals required by the OSFM for this work.

D. Schedule and coordinate all inspections required by the OSFM and have OSFM present during portions of the work as required by OSFM.

E. Provide final approval by OSFM for the completed installation.

3.2 ON-SITE REQUIREMENTS

A. Supervise all on-site project activities in accordance with OSFM requirements.

B. Provide protective barriers as required to prevent unauthorized vehicle and personnel entry.

C. Photograph project activity daily form a minimum of 8 owner selected locations to document progress and locations. Submit photographs electronically with labels, time and date.

D. Photograph other relevant portions of the installation as needed to document conditions and locations. Submit photographs electronically with labels, time and date.

E. Communicate daily with the owner's representative about the use of the site and vehicular traffic on the site.

F. Arrange for delivery and receiving of materials and equipment by the contractor's staff. The City will not accept deliveries, unless specific arrangements are made with the City's sole approval.

3.3 DAMAGE TO PROPERTY

A. The contractor shall take care not to damage any property. Protect surfaces, buildings, vehicles, and equipment that might be damaged from contractor's activities.

B. Make repairs to any damages, caused by contractor's activities, to original condition and to the owner's satisfaction.

C. Document damage with photographs and submit to the owner.

3.4 INSTALLATION – TANKS

A. Install in accordance with manufacturer's installation manual and operating guidelines.

B. Lift tank into final location with the manufacturer's provided lifting lugs, and according to the lifting requirements.

C. Install in accordance with NFPA 30 and 30A, and all national, state, and local requirements.

D. Anchor tanks as required by the manufacturer.

3.5 INSTALLATION – PIPING

A. Ream pipe and tube ends. Remove burrs.

B. Remove scale and dirt on inside of piping before assembly.

C. Place bedding material at trench bottom to provide uniform bedding for piping, level bedding materials in one continuous layer as recommended by the manufacturer.

D. Install pipe on prepared bedding.

E. Route pipe in straight line.

F. Install pipe to allow for expansion and contraction without stressing pipe or joints.

G. Install in accordance with NFPA 30 and 30A, and all national, state, and local requirements.

3.6 INSTALLATION – PUMPS

A. Install flexible connectors at or near pumps.

B. Install piping accessories furnished loose with pump package.

3.7 INSTALLATION – AUTOMATIC TANK GAUGE

A. Install at location shown or indicated on the drawings. Provide wall mounting hardware and coordinate final location with the owner.

B. Provide 120 volt 1-phase electrical power from an existing source. Use the existing emergency power system, if available.

C. Provide all inter connection wiring and communication cabling required for a complete and operational system.

3.8 TESTING

A. Test tank before and after installation in accordance with manufacturer's installation manual and operating guidelines.

B. Leak test piping at pressure recommended by manufacturer. Replace piping where leakage occurs.

3.9 PROTECTION OF FINISHED WORK

A. Protect all finished work from damage until final completion and acceptance by the owner.

END OF SECTION

SECTION 13 10 01

FUEL MANAGEMENT SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. This section includes the performance requirements for the new fuel management system (FMS) and associated pedestal fuel island terminal, hardware, and software. These requirements herein are intended to provide a basis for competitive bidding by qualified contractors for the work included.

B. The contractor shall provide a Fuel Management System for the fueling systems on the site.

C. The contractor shall provide a new file server workstation at the location as indicated on the plans.

D. The work includes:
   1. New FMS including:
      a. Software and hardware
      b. Fuel Site Controllers
      c. Wiring and communication cabling
      d. Fuel Island Terminal
      e. Start-up
      f. Training
   2. Obtaining all required permits, approvals and inspections, from the office of the State Fire Marshall (OSFM).
   3. Selection of all the equipment and components to provide a complete and functional installation that meets the requirements of these specifications and drawings.
   4. Installation of electrical work in accordance with division 26 of these specifications.

E. FMS shall be provided as a complete package by a single source supplier and shall be compatible with fueling equipment specified in Section 13 10 00.

1.2 REFERENCES

A. OSFM – Division of Petroleum & Chemical Safety
   1. Statutes:
      a. 225 ILCS 729: Petroleum Equipment Contractors Licensing Act
      b. 430 ILCS 15: Gasoline Storage Act
      c. 415 ILCS 5/57 Section of Environmental Protection Act pertaining to Underground Storage Tanks
   2. Rules:
      a. Title 41, Chapter I, Part 172, Petroleum Equipment Contractor Licensing
      b. Title 41, Chapter I, Part 174, General Requirements for Underground Storage Tanks
      c. Title 41, Chapter I, Part 175, Technical Requirements for Underground Storage Tanks
      d. Title 41, Chapter I, Part 176, Administrative Requirements for Underground Storage Tanks

e. Title 41, Chapter I, Part 177, Compliance Certification for Underground Storage Tanks

B. NFPA – National Fire Protection Association
1. NFPA 30 – Flammable and Combustible Liquids Code
2. NFPA 30A – Code for Motor Fuel Dispensing Facilities and Repair Garages

C. Guidelines, Codes, and Rules are listed for reference only and are not necessarily all inclusive.

1.3 SUBMITTALS

A. Shop Drawings: Indicate the following:
1. Trunk cable schematic showing control-unit locations and trunk data conductors.
2. Connected data points, including connected control unit and input device.
3. System graphics showing monitored systems, data (connected and calculated) point addresses, and operator notations.
4. System configuration with peripheral devices, batteries, power supplies, diagrams, modems, and interconnections.
5. Description and sequence of operation for operating, user, and application software.

B. Product Data: Submit data for each system component and software module.

C. Manufacturer's Installation Instructions: Submit installation instruction for each control system component.

D. Qualifications: Submit proof of manufacturer, installer, and programmer qualifications.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit fuel management system user manual and training reports.

1.5 QUALITY ASSURANCE

A. The contractor shall be licensed by the OSFM as a UST Contractor.

B. The contractor shall have certified employee actively supervising the project, as required by the OSFM, including supervising all sub-contractors, at all times when work is in progress.

C. Contractor’s staff as well as all sub-contractors and venders shall carry personal documentation required by the OSFM, at all times while on the premises.

D. Contractor shall meet all requirements listed in REFERENCES above.

E. Make equipment and system component selections using the normal standard of care and in compliance with and approved by the OSFM.

F. Work shall be performed in accordance with all applicable codes.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site in original factory packaging, labeled with manufacturer's identification.

B. Protect from weather and construction traffic, dirt, water, chemical, and damage, by storing in original packaging.

1.7 QUALIFICATIONS

A. Fuel Management Systems: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.8 COORDINATION

A. Coordinate trenching, excavating, bedding, and backfilling of buried conduit systems.

1.9 PRODUCT SUBSTITUTIONS

A. Product substitutions shall be at the sole discretion of the engineer and will be considered for equivalent products as described in part 2 of this section.

PART 2 PRODUCTS

2.1 FILE SERVER WORKSTATION

A. Manufacturers:
1. Dell Corporation.
2. Compaq Corporation.
3. HP Inc.

B. Workstation Client Hardware Stations: The system shall be capable of supporting at least 64 clients (minimum of 16 simultaneous users) using a standard Web browser such as Internet Explorer™ or operating on any standard computer that supports the current version of Internet Explorer™.

C. Personal Computer: Windows PC compatible with sufficient memory and hard drive storage to support graphics, reports, and communication requirements. Furnish with the following minimum configuration requirements:
1. Processor: Intel(R) Core(TM) i7 or current i9, speed of 3.5Hz or better
2. Hard Drive: 1 Terabyte SSD.
3. Memory: 16 GB DDR SDRAM.
4. DVD drive internal or external
5. Ports: Required serial, parallel, network communications, USB, and cables for proper system operation.
6. Expansion Slots: 1 used for LAN card, 1 available.
7. LAN Card: EtherNet - RJ45 (10/100 Mb minimum).
8. Graphics: Super video graphic adapter (SVGA), minimum 1024 x 768 pixels, 2.0-MB EDO video memory.
9. Monitor: Minimum of 21 inch color, flat panel display.
10. Operating System: Windows 10

D. The server shall be located in the Public Works Facility as directed by the owner.

2.2 SOFTWARE

A. Shall operate over a server with content delivered to user via browser.

B. Shall poll multiple TCP/IP based fuel control systems simultaneously.

C. Shall provide all existing features of Windows.

D. Shall use Microsoft SQL server database for storing and managing transaction data. Shall be capable of 50 different reports.

E. Shall provide control for Public Works Fuel Island and include capability of expanding the system in the future.

F. The fuel management software shall be capable of displaying the fleet equipment, inventory monitoring, and generating reports.

G. The software shall host an access database for user data and shall have the capability to limit the fuel dispensed per operator and restrict the product type.

2.3 PEDESTAL FUEL ISLAND TERMINAL

A. The pedestal fuel island terminal shall manage transactions with the dispensers and shall interface with the Automatic Tank Gauge specified in Section 13 10 00 via RS-485 communication. Contractor shall determine compatibility of systems and products.

B. Shall be mounted with anchor bolts in the existing or new poured concrete fuel island.

C. Shall be weatherproof stainless-steel construction with back-lit 10” liquid crystal color graphics display and magnetic card swipe access rated NEMA 3R, with Lexan weather-shield.

D. Shall be 120volt 1 phase, 250 watts. Shall have dual card readers and audible tactile alpha character keypad. Shall have user defined images.

E. Shall serve all product dispensers at fuel island and be capable of serving 32 hoses.

F. Coordinate final card/key configuration with the owner.

2.4 WIRING

A. Provide wiring as specified by manufacturer’s site specific instructions.

B. Provide new conduit as specified in Division 26.

PART 3 EXECUTION

3.1 ADMINISTATIVE REQUIREMENTS

A. Obtain and pay for UST Contractor Licenses required by OSFM.

B. Obtain and pay for employee certifications and supervise the project with certified employees as required by OSFM.

C. Prepare, pay for and obtain all permits and approvals required by the OSFM for this work.

D. Schedule and coordinate all inspections required by the OSFM and have OSFM present during portions of the work as required by OSFM.

E. Provide final approval by OSFM for the completed installation.

3.2 ON-SITE REQUIREMENTS

A. Supervise all on-site project activities in accordance with OSFM requirements.

B. Photograph project activity daily form of selected locations to document progress and locations. Submit photographs electronically with labels, time and date.

C. Photograph other relevant portions of the installation as needed to document conditions and locations. Submit photographs electronically with labels, time and date.

D. Communicate daily with the owner's representative about the use of the site and vehicular traffic on the site.

E. Arrange for delivery and receiving of materials and equipment by the contractor's staff. The owner will not accept deliveries, unless specific arrangements are made with the Owner's sole approval.

3.3 DAMAGE TO PROPERTY

A. The contractor shall take care not to damage any property. Protect surfaces, buildings, vehicles, and equipment that might be damaged from contractor's activities.

B. Make repairs to any damages, caused by contractor's activities, to original condition and to the owner's satisfaction.

C. Document damage with photographs and submit to the owner.

3.4 PROTECTION OF FINISHED WORK

A. Protect all finished work from damage until final completion and acceptance by the owner.

3.5 INSTALLATION – FILE SERVER WORKSTATION

A. Install at location shown or indicated on the drawings. Provide wall mounting hardware and coordinate final location with the owner.

B. Provide 120 volt 1-phase electrical power from an existing source. Use the existing emergency power system, if available.

C. Provide all inter connection wiring and communication cabling required for a complete and operational system.

3.6 INSTALLATION - PEDESTAL FUEL ISLAND TERMINAL

A. Install at location shown or indicated on the drawings. Proved anchor bolts and mounting hardware and coordinate final location with the owner.

B. Provide 120 volt 1-phase electrical power. Use the existing emergency power system, if available.

C. Provide all inter-connect wiring and communication cabling to a complete and operational system.

3.7 TRAINING

A. Provide training to the owner for all system on at least two separate days for at least 4 total hours.

B. Some training may run concurrently for the items specified above. Coordinate exact scheduling with the owner.

C. Provide an agenda to the owner 48 hours in advance of pre-scheduled training.

D. Document training and all present during training and include in the O&M manuals

END OF SECTION

SECTION 26 05 19

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.1 SUMMARY

A. This section includes the performance requirements for the replacement and upgrades to the existing fuel island, associated piping, electrical feeds, controls, and concrete paving. These requirements herein are intended to provide a basis for competitive bidding by qualified contractors for the work included. This section includes removal and installation of building wire and cable; and wiring connectors and connections.

B. The work includes:
1. Selective demolition of and protection of equipment and systems that will be re-used including but not limited to:
   a. Building wire
   b. Cable
   c. Wiring connectors and connections
2. Replacement of:
   a. Fuel dispensers
   b. Fuel pumps
3. Removal and re-installation:
   a. Pedestal mounted e-stop.
   b. Electrical feeders and control wiring.
   c. Leak detection wiring.
4. Extension of existing systems:
   a. Extend the existing leak detection system to serve the new containment components including but not limited to building wire and cable; and wiring connectors and connections.
5. New Fuel Management System
6. Obtaining all required permits, approvals and inspections, from the office of the State Fire Marshall (OSFM).

1.2 REFERENCES

A. OSFM – Division of Petroleum & Chemical Safety

B. International Electrical Testing Association:
1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.

C. National Fire Protection Association:
1. NFPA 70 - National Electrical Code.

1.3 SYSTEM DESCRIPTION

A. Product Requirements: Provide products as follows:
1. All conductors shall be stranded, except for drops to outlets and switches which may be solid.
2. Conductor not smaller than 12 AWG for power and lighting circuits.

3. Conductor not smaller than 14 AWG for control circuits.
4. Increase wire size in branch circuits to limit voltage drop to a maximum of 3 percent.

B. Wiring Methods: Provide the following wiring methods:
1. Branch Circuits: Use only building wire, Type THHN/THWN insulation, in raceway.

1.4 QUALITY ASSURANCE

A. Provide wires, cables, connectors and splices that are UL listed and labeled.

PART 2 PRODUCTS

2.1 BUILDING WIRE

A. Product Description: Single conductor insulated wire.

B. Conductor: Copper.

C. Insulation Voltage Rating: 600 volts.

D. Insulation Temperature Rating: 90 degrees C.

E. Insulation Material: Thermoplastic.

2.2 UNSHIELDED CABLE

A. Manufacturers:
1. Belden.
2. Approved equal.

B. Product Description: TIA/EIA 568, 100-ohm, unshielded twisted pair with pairs and size of copper conductor as indicated and as recommended by equipment manufacturer.

2.3 SHIELDED CABLE

A. Manufacturers:
1. Belden.
2. Approved equal.

B. Product Description: TIA/EIA 568, 150-ohm shielded, twisted-pair cable with pairs and size of copper conductor as indicated and as recommended by equipment manufacturer.

2.4 WIRING CONNECTORS

A. Factory fabricated wiring connectors of size, ampacity rating, material, type, and class for application and service indicated.

B. High pressure crimp connectors shall be used for #6 AWG and larger conductors. Connectors shall be color keyed with insulating sealing collars. Split bolt type connectors will not be acceptable.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify interior of building has been protected from weather.

B. Verify mechanical work likely to damage wire and cable has been completed.

C. Verify raceway installation is complete and supported.

3.2 PREPARATION

A. Completely and thoroughly swab raceway before installing wire.

3.3 EXISTING WORK

A. Remove exposed abandoned wire and cable, including abandoned wire and cable above accessible ceiling finishes. Patch surfaces where removed cables pass through building finishes.

B. Disconnect abandoned circuits and remove circuit wire and cable. Remove abandoned boxes when wire and cable servicing boxes is abandoned and removed. Install blank cover for abandoned boxes not removed.

C. Provide access to existing wiring connections remaining active and requiring access. Modify installation or install access panel.

D. Extend existing circuits using materials and methods as specified.

E. Clean and repair existing wire and cable remaining or wire and cable to be reinstalled.

3.4 INSTALLATION

A. Route wire and cable to meet Project conditions.

B. Neatly train and lace wiring inside boxes, equipment, and panelboards.

C. Run all wire in conduit, unless otherwise indicated in the Contract Documents.
1. All analog wiring must be installed in a separate conduit system.
2. All control wiring must be installed in a separate conduit system.
3. All power and lighting wiring must be installed in a separate conduit system.

D. Identify and color code wire and cable. Identify each conductor with its circuit number or other designation indicated.

E. Special Techniques--Building Wire in Raceway:
1. Pull conductors into raceway at same time.
2. Install building wire 4 AWG and larger with pulling equipment.

F. Special Techniques - Cable:
1. Protect exposed cable from damage.
2. Use suitable cable fittings and connectors.

G. Special Techniques - Wiring Connections:
1. Clean conductor surfaces before installing lugs and connectors.
2. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
3. Tape uninsulated conductors and connectors with electrical tape to 150 percent of insulation rating of conductor.
4. Install high pressure crimp connectors for copper conductor splices and taps, 6 AWG and larger.
5. Install solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.

3.5 WIRE COLOR

A. General:
1. For wire sizes 10 AWG and smaller, install wire colors in accordance with the following:
a. Black and red for single phase circuits at 120/240 volts.
b. Black, red, and blue for circuits at 120/208 volts single or three phase.
c. Orange, brown, and yellow for circuits at 277/480 volts single or three phase.
2. For wire sizes 8 AWG and larger, identify wire with colored tape at terminals, splices and boxes. Colors are as follows:
a. Black and red for single phase circuits at 120/240 volts.
b. Black, red, and blue for circuits at 120/208 volts single or three phase.
c. Orange, brown, and yellow for circuits at 277/480 volts single or three phase.
3. For a 4 wire delta connected system when 1 phase winding is grounded, the conductor having higher phase voltage to ground shall be orange in color.

B. Neutral Conductors: White. When two or more neutrals are located in one conduit, individually identify each with proper circuit number.

C. Branch Circuit Conductors: Install three or four wire home runs with each phase uniquely color coded.

D. Feeder Circuit Conductors: Uniquely color code each phase.

E. Ground Conductors:
1. For 6 AWG and smaller: Green.
2. For 4 AWG and larger: Identify with green tape at both ends and visible points including junction boxes.

3.6 FIELD QUALITY CONTROL

A. Inspect and test in accordance with NETA ATS, except Section 4.

B. Perform inspections and tests listed in NETA ATS, Section 7.3.1.

END OF SECTION

SECTION 26 05 29

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Conduit supports.
2. Formed steel channel.
3. Spring steel clips.
4. Sleeves.
5. Mechanical sleeve seals.
6. Firestopping relating to electrical work.
7. Firestopping accessories.
8. Equipment bases and supports.

B. Related Sections:
1. Section 03 30 00 - Cast-In-Place Concrete: Product requirements for concrete for placement by this section.

1.2 REFERENCES

A. ASTM International:
1. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
2. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
3. ASTM E814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
4. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems.

B. FM Global:
1. FM - Approval Guide, A Guide to Equipment, Materials & Services Approved By Factory Mutual Research For Property Conservation.

C. National Fire Protection Association:
1. NFPA 70 - National Electrical Code.

D. Underwriters Laboratories Inc.:
1. UL 263 - Fire Tests of Building Construction and Materials.
2. UL 723 - Tests for Surface Burning Characteristics of Building Materials.
3. UL 1479 - Fire Tests of Through-Penetration Firestops.
4. UL 2079 - Tests for Fire Resistance of Building Joint Systems.
5. UL - Fire Resistance Directory.

E. Intertek Testing Services (Warnock Hersey Listed):
1. WH - Certification Listings.

1.3 DEFINITIONS

A. Firestopping (Through-Penetration Protection System): Sealing or stuffing material or assembly placed in spaces between and penetrations through building materials to arrest movement of fire, smoke, heat, and hot gases through fire rated construction.

1.4 SYSTEM DESCRIPTION

A. Firestopping Materials: ASTM E119, ASTM E814, UL 263 or UL 1479 to achieve fire ratings as noted on Drawings for adjacent construction, but not less than 1-hour fire rating.

B. Firestop interruptions to fire rated assemblies, materials, and components.

1.5 PERFORMANCE REQUIREMENTS

A. Firestopping: Conform to applicable code for fire resistance ratings and surface burning characteristics.

1.6 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data:
   1. Hangers and Supports: Submit manufacturers catalog data including load capacity.
   2. Firestopping: Submit data on product characteristics, performance and limitation criteria.

1.7 QUALITY ASSURANCE

A. Through Penetration Firestopping of Fire Rated Assemblies: UL 1479 or ASTM E814 with 0.10 inch water gage minimum positive pressure differential to achieve fire F-Ratings and temperature T-Ratings as indicated on Drawings, but not less than 1-hour.
   1. Wall Penetrations: Fire F-Ratings as indicated on Drawings, but not less than 1-hour.
   2. Floor and Roof Penetrations: Fire F-Ratings and temperature T-Ratings as indicated on Drawings, but not less than 1-hour.
      a. Floor Penetrations Within Wall Cavities: T-Rating is not required.

B. Through Penetration Firestopping of Non-Fire Rated Floor and Roof Assemblies: Materials to resist free passage of flame and products of combustion.
   1. Noncombustible Penetrating Items: Noncombustible materials for penetrating items connecting maximum of three stories.
   2. Penetrating Items: Materials approved by authorities having jurisdiction for penetrating items connecting maximum of two stories.

C. Fire Resistant Joints in Fire Rated Floor, Roof, and Wall Assemblies: ASTM E1966 or UL 2079 to achieve fire resistant rating as indicated on Drawings for assembly in which joint is installed.

D. Fire Resistant Joints Between Floor Slabs and Exterior Walls: ASTM E119 with 0.10 inch water gage minimum positive pressure differential to achieve fire resistant rating as indicated on Drawings for floor assembly.

E. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years experience.

1.9 PRE-INSTALLATION MEETINGS

A. Not Used.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Accept materials on site in original factory packaging, labeled with manufacturer's identification.

C. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging.

1.11 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

B. Do not apply firestopping materials when temperature of substrate material and ambient air is below 60 degrees F.

C. Maintain this minimum temperature before, during, and for minimum 3 days after installation of firestopping materials.

PART 2 PRODUCTS

2.1 CONDUIT SUPPORTS

A. Manufacturers:
1. Thomas & Betts.
2. Minerallac Company.
3. nVent (CADDY).

B. Hanger Rods: Threaded high tensile strength galvanized carbon steel with free running threads.

C. Beam Clamps: Malleable Iron, with tapered hole in base and back to accept either bolt or hanger rod. Set screw: hardened steel.

D. Conduit clamps for trapeze hangers: Galvanized steel, notched to fit trapeze with single bolt to tighten.

E. Conduit clamps - general purpose: One-hole malleable iron for surface mounted conduits.

2.2 FORMED STEEL CHANNEL

A. Manufacturers:
1. Atkore International (Unistrut).
2. Eaton (B-Line).

B. Product Description:
1. Indoor Use: Galvanized 12 gage thick steel. With holes 1-1/2 inches on center.
2. Outdoor Use: 12 gage thick type 304 Stainless Steel. With holes 1-1/2 inches on center.

2.3 SPRING STEEL CLIPS

A. Manufacturers:
1. Eaton (B-Line).
2. Minerallac Company.

B. Product Description: Mounting hole and screw closure.

2.4 SLEEVES

A. Sleeves for cables Through Non-fire Rated Floors: PVC pipe.

B. Sleeves for cables Through Non-fire Rated Beams, Walls, Footings, and Potentially Wet Floors: Steel pipe.

C. Sleeves for cables Through Fire Rated and Fire Resistive Floors and Walls, and Fire Proofing: Prefabricated fire rated sleeves including seals, UL listed.

D. Fire-stopping Insulation: Glass fiber type, non-combustible.

2.5 MECHANICAL SLEEVE SEALS

A. Manufacturers:
1. Link-Seal.

B. Product Description: Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between object and sleeve, connected with bolts and pressure plates causing rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.

2.6 FIRESTOPPING

A. Manufacturers:
1. 3M.
2. Hilti, Inc.

B. Product Description: Different types of products by multiple manufacturers are acceptable as required to meet specified system description and performance requirements; provide only one type for each similar application.
1. Silicone Firestopping Elastomeric Firestopping: Single component silicone elastomeric compound and compatible silicone sealant.
2. Foam Firestopping Compounds: Single component foam compound.
3. Formulated Firestopping Compound of Incombustible Fibers: Formulated compound mixed with incombustible non-asbestos fibers.
4. Fiber Stuffing and Sealant Firestopping: Composite of mineral fiber stuffing insulation with silicone elastomer for smoke stopping.
5. Mechanical Firestopping Device with Fillers: Mechanical device with incombustible fillers and silicone elastomer, covered with sheet stainless steel jacket, joined with collars, penetration sealed with flanged stops.
6. Intumescent Firestopping: Intumescent putty compound which expands on exposure to surface heat gain.
7. Firestop Pillows: Formed mineral fiber pillows.

C. Color: Red.

2.7 FIRESTOPPING ACCESSORIES

A. Primer: Type recommended by firestopping manufacturer for specific substrate surfaces and suitable for required fire ratings.

B. Dam Material: Permanent:

1. Sheet metal.

C. Installation Accessories: Provide clips, collars, fasteners, temporary stops or dams, and other devices required to position and retain materials in place.

D. General:
1. Furnish UL listed products or products tested by independent testing laboratory.
2. Select products with rating not less than rating of wall or floor being penetrated.

E. Non-Rated Surfaces:
1. Stamped steel, chrome plated, hinged, split ring escutcheons or floor plates or ceiling plates for covering openings in occupied areas where conduit is exposed.
2. For exterior wall openings below grade, furnish modular mechanical type seal consisting of interlocking synthetic rubber links shaped to continuously fill annular space between conduit and cored opening or water-stop type wall sleeve.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify openings are ready to receive sleeves.

C. Verify openings are ready to receive firestopping.

3.2 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter affecting bond of firestopping material.

B. Remove incompatible materials affecting bond.

C. Install damming materials to arrest liquid material leakage.

D. Obtain permission from Engineer before using powder-actuated anchors.

E. Do not drill or cut structural members.

3.3 INSTALLATION - HANGERS AND SUPPORTS

A. Anchors and Fasteners:
1. Concrete Structural Elements: Provide expansion anchors.
2. Steel Structural Elements: Provide beam clamps or spring steel clips.
3. Concrete Surfaces: Provide expansion anchors.
4. Hollow Masonry, Plaster, and Gypsum Board Partitions: Provide toggle bolts or hollow wall fasteners.
5. Solid Masonry Walls: Provide expansion anchors.
6. Sheet Metal: Provide sheet metal screws.
7. Wood Elements: Provide wood screws.

B. Install conduit and raceway support and spacing in accordance with NEC.

C. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.

D. Install multiple conduit runs on common hangers.

E. Supports:
1. Fabricate supports from structural steel or formed steel channel. Install hexagon head bolts to present neat appearance with adequate strength and rigidity. Install spring lock washers under nuts.
2. Install surface mounted cabinets and panelboards with minimum of four anchors.
3. In wet and damp locations install steel channel supports to stand cabinets and panelboards 1 inch off wall.

3.4 INSTALLATION - FIRESTOPPING

A. Install material at fire rated construction perimeters and openings containing penetrating sleeves, piping, ductwork, conduit and other items, requiring firestopping.

B. Apply primer where recommended by manufacturer for type of firestopping material and substrate involved, and as required for compliance with required fire ratings.

C. Apply firestopping material in sufficient thickness to achieve required fire and smoke rating.

D. Compress fibered material to maximum 40 percent of its uncompressed size.

E. Place foamed material in layers to ensure homogenous density, filling cavities and spaces. Place sealant to completely seal junctions with adjacent dissimilar materials.

F. Place intumescent coating in sufficient coats to achieve rating required.

G. Remove dam material after firestopping material has cured.

H. Fire Rated Surface:
1. Seal opening at floor, wall, ceiling and roof as follows:
a. Install sleeve through opening and extending beyond minimum of 1 inch on both sides of building element.
b. Size sleeve allowing minimum of 1 inch void between sleeve and building element.
c. Pack void with backing material.
d. Seal ends of sleeve with UL listed fire resistive silicone compound to meet fire rating of structure penetrated.

I. Non-Rated Surfaces:
1. Seal opening through non-fire rated wall, floor, ceiling, and roof opening as follows:
a. Install sleeve through opening and extending beyond minimum of 1 inch on both sides of building element.
b. Size sleeve allowing minimum of 1 inch void between sleeve and building element.
c. Install type of firestopping material recommended by manufacturer.
2. Exterior wall openings below grade: Assemble rubber links of mechanical seal to size of conduit and tighten in place, in accordance with manufacturer's instructions.

3.5 INSTALLATION - EQUIPMENT BASES AND SUPPORTS

A. Provide housekeeping pads of concrete, minimum 3-1/2 inches thick and extending 6 inches beyond supported equipment. Refer to Section 03 30 00.

B. Using templates furnished with equipment, install anchor bolts, and accessories for mounting and anchoring equipment.

C. Construct supports of formed steel channel. Brace and fasten with flanges bolted to structure.

3.6 INSTALLATION - SLEEVES

A. Exterior watertight entries: Seal with adjustable interlocking rubber links.

B. Conduit penetrations not required to be watertight: Sleeve and fill with silicon foam.

C. Set sleeves in position in forms. Provide reinforcing around sleeves.

D. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.

E. Extend sleeves through floors 1 inch above finished floor level. Caulk sleeves.

F. Where conduit or raceway penetrates floor, ceiling, or wall, close off space between conduit or raceway and adjacent work with fire stopping insulation and caulk airtight.

3.7 FIELD QUALITY CONTROL

A. Inspect installed firestopping for compliance with specifications and submitted schedule.

3.8 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for cleaning.

B. Clean adjacent surfaces of firestopping materials.

3.9 PROTECTION OF FINISHED WORK

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Protect adjacent surfaces from damage by material installation.

END OF SECTION

SECTION 26 05 33

RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. This section includes the performance requirements for the replacement and upgrades to the existing fuel island, associated piping, electrical feeds, controls, and concrete paving. These requirements herein are intended to provide a basis for competitive bidding by qualified contractors for the work included. This section includes conduit, outlet boxes, pull and junction boxes.

B. The work includes:
   1. Selective demolition of and protection of equipment and systems that will be re-used including but not limited to:
      a. Conduit
      b. Outlet boxes
      c. Pull and junction boxes
   2. Replacement of:
      a. Fuel dispensers
      b. Fuel pumps
      c. Fuel Management Systems
   3. Removal and re-installation:
      a. Pedestal mounted e-stop.
      b. Pedestal Fuel Console.
      c. Electrical feeders and control wiring.
      d. Leak detection wiring.
   4. Extension of existing systems:
      a. Extend the existing leak detection system to serve the new containment components including but not limited to conduit, outlet boxes, pull and junction boxes.
   5. Obtaining all required permits, approvals and inspections, from the office of the State Fire Marshall (OSFM).

1.2 REFERENCES

A. OSFM – Division of Petroleum & Chemical Safety

B. American National Standards Institute:
   1. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.

C. National Fire Protection Association:
   1. NFPA 70 - National Electrical Code.

D. National Electrical Manufacturers Association:
   1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
   2. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.

1.3 SYSTEM DESCRIPTION

A. Provide raceway to extend and complete wiring system.

B. Underground: Provide rigid galvanized steel. Provide cast metal boxes or nonmetallic handhole.

C. In or Under Slab on Grade: Provide rigid galvanized steel. Provide cast or nonmetallic metal boxes.

D. Outdoor Locations, Above Grade: Provide rigid galvanized steel. Provide cast metal outlet, pull, and junction boxes.

1.4 QUALITY ASSURANCE

A. Provide conduit, outlet boxes, pull and junction boxes that are UL listed and labeled.

1.5 DESIGN REQUIREMENTS

A. Minimum Raceway Size: 3/4 inch.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

PART 2 PRODUCTS

2.1 METAL CONDUIT

A. Rigid Steel Conduit: ANSI C80.1.

B. Fittings and Conduit Bodies: NEMA FB 1; material to match conduit.

2.2 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

A. Product Description: Interlocked steel construction with PVC jacket.

B. Fittings: NEMA FB 1.

2.3 OUTLET BOXES

A. Cast Boxes: NEMA FB 1, Type FD, cast feralloy. Furnish gasketed cover by box manufacturer. Furnish threaded hubs.

2.4 PULL AND JUNCTION BOXES

A. Manufacturers:
1. Hoffman.
2. Thomas & Betts Corp.

B. Surface Mounted Cast Metal Box: NEMA 250, Type as required for area classification; flat-flanged, surface mounted junction box:
   1. Material: Galvanized cast iron.
   2. Cover: Furnish with ground flange, neoprene gasket, and stainless steel cover screws.

C. In-Ground Cast Metal Box: NEMA 250, Type 6, outside flanged, recessed cover box for flush mounting:
   1. Material: Galvanized cast iron.
   2. Cover: Nonskid cover with neoprene gasket and stainless steel cover screws.
   3. Cover Legend: "ELECTRIC".

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify outlet locations and routing and termination locations of raceway prior to rough-in.

3.2 EXISTING WORK

A. Remove exposed abandoned raceway, including abandoned raceway above accessible ceiling finishes. Cut raceway flush with walls and floors, and patch surfaces.

B. Remove concealed abandoned raceway to its source.

C. Disconnect abandoned outlets and remove devices. Remove abandoned outlets when raceway is abandoned and removed. Install blank cover for abandoned outlets not removed.

D. Maintain access to existing boxes and other installations remaining active and requiring access. Modify installation or provide access panel.

E. Extend existing raceway and box installations using materials and methods compatible with existing electrical installations, or as specified.

F. Clean and repair existing raceway and boxes to remain or to be reinstalled.

3.3 INSTALLATION

A. Ground and bond raceway and boxes in accordance with Section 26 05 26.

B. Fasten raceway and box supports to structure and finishes in accordance with Section 26 05 29.

C. Identify raceway and boxes in accordance with Section 26 05 53.

D. Arrange raceway and boxes to maintain headroom and present neat appearance.

3.4 INSTALLATION - RACEWAY

A. Raceway routing is shown in approximate locations unless dimensioned. Route to complete wiring system.

B. Arrange raceway supports to prevent misalignment during wiring installation.

C. Support raceway using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.

D. Group related raceway; support using conduit rack. Construct rack using steel channel specified in Section 26 05 29; provide space on each for 25 percent additional raceways.

E. Do not support raceway with wire or perforated pipe straps. Remove wire used for temporary supports

F. Do not attach raceway to ceiling support wires or other piping systems.

G. Construct wireway supports from steel channel specified in Section 26 05 29.

H. Route exposed raceway parallel and perpendicular to walls.

I. Route raceway installed above accessible ceilings parallel and perpendicular to walls.

J. Route conduit in and under slab from point-to-point.

K. Maximum Size Conduit in Slab Above Grade: 1 inch. Do not cross conduits in slab.

L. Maintain clearance between raceway and piping for maintenance purposes.

M. Maintain 12-inch clearance between raceway and surfaces with temperatures exceeding 104 degrees F.

N. Cut conduit square using saw or pipe cutter; de-burr cut ends.

O. Bring conduit to shoulder of fittings; fasten securely.

P. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for minimum 20 minutes.

Q. Install conduit hubs to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.

R. Install no more than equivalent of three 90-degree bends between boxes. Install conduit bodies to make sharp changes in direction, as around beams. Install factory elbows for bends in metal conduit larger than 2-inch size.

S. Avoid moisture traps; install junction box with drain fitting at low points in conduit system.

T. Install fittings to accommodate expansion and deflection where raceway crosses seismic, control and expansion joints.

U. Install suitable pull string or cord in each empty raceway except sleeves and nipples.

V. Install suitable caps to protect installed conduit against entrance of dirt and moisture.

W. Surface Raceway: Install flat-head screws, clips, and straps to fasten raceway channel to surfaces; mount plumb and level. Install insulating bushings and inserts at connections to outlets and corner fittings.

X. Close ends and unused openings in wireway.

3.5 INSTALLATION - BOXES

A. Install wall mounted boxes at elevations to accommodate mounting heights as indicated on Drawings or specified in section for outlet device.

B. Adjust box location up to 10 feet prior to rough-in to accommodate intended purpose.

C. Orient boxes to accommodate wiring devices oriented as specified in Section 26 27 26.

D. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.

E. In Accessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.

F. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.

G. Do not install flush mounting box back-to-back in walls; install with minimum 6 inches separation. Install with minimum 24 inches separation in acoustic rated walls.

H. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.

I. Install stamped steel bridges to fasten flush mounting outlet box between studs.

J. Install flush mounting box without damaging wall insulation or reducing its effectiveness.

K. Install adjustable steel channel fasteners for hung ceiling outlet box.

L. Do not fasten boxes to ceiling support wires or other piping systems.

M. Support boxes independently of conduit.

N. Install gang box where more than one device is mounted together. Do not use sectional box.

O. Install gang box with plaster ring for single device outlets.

3.6 INTERFACE WITH OTHER PRODUCTS

A. Install conduit to preserve fire resistance rating of partitions and other elements, using materials and methods in accordance with contract documents.

B. Route conduit through roof openings for piping and ductwork or through suitable roof jack with pitch pocket. Coordinate location with roofing installation.

C. Locate outlet boxes to allow luminaires positioned as indicated on Drawings.

D. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.

3.7 ADJUSTING

A. Section 01 70 00 - Execution and Closeout Requirements: Testing, adjusting, and balancing.

B. Adjust flush-mounting outlets to make front flush with finished wall material.

C. Install knockout closures in unused openings in boxes.

3.8 CLEANING

A. Clean interior of boxes to remove dust, debris, and other material.

B. Clean exposed surfaces and restore finish.

END OF SECTION

SECTION 26 05 53

IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Nameplates.
2. Labels.
3. Wire markers.
4. Underground Warning Tape.

1.2 SUBMITTALS

A. None Required.

1.3 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of tagged devices; include tag numbers.

1.4 QUALITY ASSURANCE

A. Not Used.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years experience.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Accept identification products on site in original containers. Inspect for damage.

C. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.

D. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

B. Install labels and nameplates only when ambient temperature and humidity conditions for adhesive are within range recommended by manufacturer.

1.8 EXTRA MATERIALS

A. None Required.

PART 2 PRODUCTS

2.1 NAMEPLATES

A. Product Description: Engraved multi-layer laminated plastic. Normal system shall use nameplates with black letters on white background.

B. Letter Size:
1. See Part 3 for letter sizes at specified locations.

2.2 LABELS

A. Labels: Machine generated vinyl adhesive tape, with 3/16 inch black letters on white background.

2.3 WIRE MARKERS

A. Manufacturers:
1. Brady.
2. Ideal Industries.

B. Description: Vinyl coated cloth tape type wire markers.

C. Legend:
1. Power and Lighting Circuits: Branch circuit number.
2. Control Circuits: Control wire number as indicated on schematic and interconnection diagrams.

2.4 UNDERGROUND WARNING TAPE

A. Manufacturers:
1. Brady.
2. Ideal Industries.

B. Description: 3 inch wide plastic tape, detectable type, colored red with suitable warning legend describing buried electrical lines.

PART 3 EXECUTION

3.1 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

3.2 EXISTING WORK

A. Install new identification on all existing equipment to remain in accordance with this section.

3.3 GENERAL

A. Provide all warning labels to electrical equipment as required per NEC 110.16 and 110.21. Provide available fault current labeling to service equipment as required per NEC 110.24.

B. Provide a sign at the service-entrance equipment indicating type and location of on-site emergency power sources per NEC 700.7.

C. Provide a sign at each service disconnect indicating “Service Disconnect”, per NEC 230.70(B).

3.4 BOX IDENTIFICATION

A. All junction and pull boxes shall be identified by color, based on the following color scheme:

System	Color(s)
Power Wiring – 480/277V	Brown
Power Wiring – 208/120V	White
Controls	Blue

B. The means of junction and pull box identification shall be as follows:
   1. Boxes 8” Square or Smaller – Exposed.
      a. Color identified utilizing fully painted covers. If box contains power wiring, the box shall be further identified with circuit numbers and source panel designation, using machine-generated adhesive label or engraved nameplate.
   2. Boxes Larger than 8” Square – Exposed.
      a. Color identified utilizing 4” x 4” minimum-sized painted patch, or color-correct engraved nameplate. If box contains power wiring, the box shall be further identified with circuit numbers and source panel designation using machine-generated adhesive label or engraved nameplate. Letter height shall be ½” minimum.

3.5 ELECTRICAL EQUIPMENT IDENTIFICATION

A. Provide nameplates of minimum letter height as scheduled below.
   1. All Panelboards (Distribution, Branch, Sub-feed, and Feed-Through), Switchboards and Motor Control Centers: 1 inch; identify equipment designation (same designation used by the main distribution center). 1/2 inch; identify voltage rating, source and room location of the source.
   2. Circuit Breakers, Switches, and Motor Starters in Distribution Panelboards, Switchboards and Motor Control Centers: 1/2 inch; identify circuit number and load served, including location.
   3. Individual Disconnect Switches, Enclosed Circuit Breakers, and Motor Starters: 1/2 inch; identify voltage, source and load served.
   4. Transformers: 1 inch (25 mm); identify equipment designation. 1/2 inch (13 mm); identify primary and secondary voltages, primary source and location, and secondary load and location.

3.6 DEVICE IDENTIFICATION

A. Provide labels indicating electrical panel and circuit number at all devices. Label shall be installed on the device plate.

3.7 INSTALLATION

A. Install identifying devices after completion of painting.

B. Nameplate Installation:
   1. Install nameplate parallel to equipment lines.

2. Install nameplate for each electrical distribution and control equipment enclosure with corrosive-resistant mechanical fasteners, or adhesive.
3. Install nameplates for each control panel and major control components located outside panel with corrosive-resistant mechanical fasteners, or adhesive.
4. Secure nameplate to equipment front using screws.
5. Secure nameplate to inside surface of door on recessed panelboard in finished locations.
6. Install nameplates for the following:
    a. Panelboards.
    b. Transformers.
    c. Service Disconnects.
    d. VFDs

C. Label Installation:
1. Install label parallel to equipment lines.
2. Install label for identification of individual control device stations, and remote mounted control devices.
3. Install labels for permanent adhesion and seal with clear lacquer.

D. Wire Marker Installation:
1. Install wire marker for each conductor at panelboard gutters, pull boxes, outlet and junction boxes and each load connection.
2. Mark control cabling at each end. Install additional marking at accessible locations along the cable run.

E. Underground Warning Tape Installation:
1. Install underground warning tape along length of each underground conduit, raceway, or cable 6 to 8 inches below finished grade, directly above buried conduit, raceway, or cable.

END OF SECTION

SECTION 26 27 16

ELECTRICAL CABINETS AND ENCLOSURES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Hinged cover enclosures.
2. Cabinets.
3. Terminal blocks.
4. Accessories.

B. Related Requirements:
1. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
2. Section 26 05 29 - Hangers and Supports for Electrical Systems.
3. Section 26 05 33 - Raceway and Boxes for Electrical Systems.

1.2 REFERENCE STANDARDS

A. National Electrical Manufacturers Association:
1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
2. NEMA ICS 4 - Industrial Control and Systems: Terminal Blocks.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit manufacturer's standard data for enclosures, cabinets, and terminal blocks.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Not Used.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years experience.

PART 2 PRODUCTS

2.1 HINGED COVER ENCLOSURES

A. Manufacturers:
1. Hoffman.
2. Wiegmann.

B. Description: NEMA 250, enclosure. NEMA Type and construction as identified on the drawings.
1. Covers: Continuous hinge, held closed by hasp and staple for padlock.

2. Furnish interior metal panel for mounting terminal blocks and electrical components where required; finish with white enamel.
3. Enclosure Finish: Manufacturer's standard enamel.

2.2 CABINETS

A. Manufacturers:
1. Hoffman.
2. Wiegmann.

B. Description:
1. Boxes: Galvanized steel.
2. Box Size: As required or as identified on the drawings.
3. Backboard: Furnish interior metal panel for mounting terminal blocks where required. Paint matte white.
4. Fronts: Steel, surface type door with concealed hinge, and flush lock.

C. Fabrication
1. Furnish metal barriers to form separate compartments wiring of different systems and voltages.
2. Furnish accessory feet for free-standing equipment.

D. Finishes:
1. Finish with gray baked enamel.

2.3 TERMINAL BLOCKS

A. Manufacturers:
1. Eaton.
2. Schneider Electric USA (Square D).

B. Description:
1. Terminal Blocks: NEMA ICS 4.
2. Power Terminals: Unit construction type with closed back and tubular pressure screw connectors, rated 600 volts.
3. Signal and Control Terminals: Modular construction type, suitable for channel mounting, with tubular pressure screw connectors, rated 300 volts.
4. Furnish ground bus terminal block, with each connector bonded to enclosure.

2.4 PLASTIC RACEWAY

A. Manufacturers:
1. Legrand North America, LLC (Wiremold).
2. Panduit Corp

B. Description: Plastic channel with hinged or snap-on cover.

2.5 CORROSION PROTECTION

A. Manufacturers; Emitter:
1. Cortec Corporation.
2. Approved Equal.
3. Description: Foam emitter to provide long term protection against corrosion by airborne contaminants.

a. For each enclosure, furnish quantity as indicated in manufacturers instructions to protect the enclosure.

B. Manufacturers; Absorber:
1. Cortec Corporation.
2. Approved Equal.
3. Description: Plastic cup with breathable membrane to absorb corrosive gasses from the enclosure.
a. For each enclosure, furnish quantity as indicated in manufacturers instructions to protect the enclosure.

PART 3 EXECUTION

3.1 DEMOLITION

A. Remove abandoned cabinets and enclosures. Patch surfaces.

3.2 REPAIR

A. Not Used.

3.3 INSTALLATION

A. Install enclosures and boxes plumb. Anchor securely to wall and structural supports at each corner in accordance with Section 26 05 29.

B. Install cabinet fronts plumb.

3.4 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.

B. Clean existing cabinets and enclosures to remain or to be reinstalled.

C. Clean electrical parts to remove conductive and harmful materials.

D. Remove dirt and debris from enclosure.

E. Clean finishes and touch up damage.

END OF SECTION

SECTION 26 28 19

ENCLOSED SWITCHES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes fusible and nonfusible switches.

B. Related Sections:
1. Section 26 28 13 - Fuses.

1.2 REFERENCES

A. National Electrical Manufacturers Association:
1. NEMA FU 1 - Low Voltage Cartridge Fuses.
2. NEMA KS 1 - Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum).

B. International Electrical Testing Association:
1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit switch ratings and enclosure dimensions.

1.4 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.

B. Project Record Documents: Record actual locations of enclosed switches and ratings of installed fuses.

PART 2 PRODUCTS

2.1 FUSIBLE SWITCH ASSEMBLIES

A. Manufacturers:
1. ABB (formerly General Electrical Co.).
2. Eaton.
3. Square D Co.

B. Product Description: NEMA KS 1, Type HD with externally operable handle interlocked to prevent opening front cover with switch in ON position, enclosed load interrupter knife switch. Handle lockable in OFF position.

C. Fuse clips: Designed to accommodate NEMA FU 1, Class R fuses.

D. Enclosure: NEMA KS 1, type as indicated on Drawings. Fabricate enclosure from steel finished with manufacturer's standard gray enamel.

E. Service Entrance: Switches identified for use as service equipment are to be labeled for this application. Furnish solid neutral assembly and equipment ground bar.

2.2 NONFUSIBLE SWITCH ASSEMBLIES

A. Manufacturers:
1. ABB (formerly General Electrical Co.).
2. Eaton.
3. Square D Co.

B. Product Description: NEMA KS 1, Type HD with externally operable handle interlocked to prevent opening front cover with switch in ON position enclosed load interrupter knife switch. Handle lockable in OFF position.

C. Enclosure: NEMA KS 1, type as indicated on Drawings. Fabricate enclosure from steel finished with manufacturer's standard gray enamel.

D. Service Entrance: Switches identified for use as service equipment are to be labeled for this application. Furnish solid neutral assembly and equipment ground bar.

2.3 SWITCH RATINGS

A. Switch Rating: Horsepower rated sized as indicated on Drawings.

B. Short Circuit Current Rating: UL listed for 10,000 rms symmetrical amperes when used with or protected by Class H or K fuses (30-600 ampere), 200,000 rms symmetrical amperes when used with or protected by Class R or Class J fuses (30-600 ampere switches employing appropriate fuse rejection schemes), 200,000 rms symmetrical amperes when used with or protected by Class L fuses (800-1200 ampere).

PART 3 EXECUTION

3.1 EXISTING WORK

A. Disconnect and remove abandoned enclosed switches.

B. Maintain access to existing enclosed switches and other installations remaining active and requiring access. Modify installation or provide access panel.

C. Clean and repair existing enclosed switches to remain or to be reinstalled.

3.2 INSTALLATION

A. Install enclosed switches plumb. Provide supports in accordance with Section 26 05 29.

B. Height: 5 feet to operating handle.

C. Install fuses for fusible disconnect switches. Refer to Section 26 28 13 for product requirements.

D. Install engraved plastic nameplates in accordance with Section 26 05 53.

E. Apply adhesive tag on inside door of each fused switch indicating NEMA fuse class and size installed.

3.3 FIELD QUALITY CONTROL

A. Section 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.

B. Inspect and test in accordance with NETA ATS, except Section 4.

C. Perform inspections and tests listed in NETA ATS, Section 7.5.

END OF SECTION

SECTION 30 05 00

ADOPTION BY REFERENCE IDOT PROVISIONS

PART 1 – GENERAL REQUIREMENTS

IDOT SPECIFICATIONS AND SPECIAL PROVISIONS

The IDOT Standard Specifications for Road and Bridge Construction, the Supplemental Specifications and Recurring Special Provisions, and the Bureau of Design and Environment Special Provisions (BDE's), latest editions, by the Illinois Department of Transportation (IDOT) are adopted by reference and shall apply to and govern the work where applicable.

The above provisions are referenced as the "IDOT Standard Specifications", will apply for individual items unless otherwise modified by the special provisions included in the Project Manual. IDOT Standard Specifications are intended to govern the site civil work included in the project. If a conflict exists between individual item specification and the IDOT Standard Specifications, the work shall be completed as directed by the Engineer. No additional compensation will be allowed.

The following is a list of the items where the IDOT Standard Specifications shall apply, along with the appropriate Section number. The following items may also be modified by special provisions included in the Project Manual. Measurement and payment do not apply to this project.

Item No.	Section
Coordination of the Contract Documents	105.05
Cooperation with Utilities	105.07
Survey Control Points	105.09
Control of Materials	106
Legal Regulation and Responsibility to the Public	107
Clearing, Tree Removal and Protection, Care and Repair of Existing Plant Material	201
Earth and Rock Excavation	202
Borrow and Furnished Excavation	204
Embankment	205
Trench Backfill	208
Topsoil and Compost	211
Seeding	250
Mulch	251
Planting Woody Plants	253
Temporary Erosion Control and Sediment Control	280
Filter Fabric	282
Subgrade Preparation	301
Granular Subbase	311
Aggregate Base Course	351
Hot Mix Asphalt Binder and Surface Course	406
Portland Cement Concrete Pavement	420
Portland Cement Concrete Sidewalk & Detectable Warnings	424
Removal of Existing Pavement and Appurtenances	440
Pavement Patching	442
Removal of Existing Structures	501
Storm Sewers	550
Storm Sewer Removal and Installation	551
Controlled Low-Strength Material, Backfill	593
Adjusting Frames and Grates of Drainage and Utility Structures	603
Frame, Grates, and Median Inlets	604

Concrete Gutter, Curb, Median, and Paved Ditch	606
Removal and Disposal of Regulated Substances	669
Work Zone Traffic Control and Protection	701
Sign Panels	720
Removal of Sign Panels and Sign Panel Assemblies	724
Telescoping Steel Sign Support	728
Pavement Striping	780
Underground Conduit	810
Handholes	814
Electric Cable in Conduit	817
Electric Cable	873
Materials	1000
Equipment	1100

INDEX FOR SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS

CHECK SHEET FOR RECURRING SPECIAL PROVISIONS

LRS 3 Work Zone Traffic Control Surveillance
LRS 4 Flaggers in Work Zones

CHECK SHEET FOR RECURRING LOCAL ROADS AND STREETS SPECIAL PROVISIONS

LR 702 Construction and Maintenance Signs

ILLINOIS DEPARTMENT OF TRANSPORTATION BUREAU OF DESIGN AND ENVIRONMENT SPECIAL PROVISIONS (BDE)

80427 Work Zone Traffic Control Devices
80445 Seeding
80451 Portland Cement Concrete

END OF SECTION

SECTION 31 10 00

SITE CLEARING

PART 1 – GENERAL REQUIREMENTS

1.1. WORK INCLUDES

A. Contractor provides removing and site clearing of all features and utilities as shown on the Site Demolition Plan including the following:

1. Removing surface debris.
2. Removing designated concrete and asphalt pavements, asphalt surface, sidewalks, and combination curbs and gutters.
3. Milling asphalt pavement and aggregate base course.
4. Removing, salvaging, and stockpiling existing asphalt milling and aggregate base course materials.
5. Removing designated trees, bushes, shrubs, and other plant life including root ball.
6. Excavating earth and topsoil.
7. Excavating, backfilling with granular backfill, and compacting trenches or excavation for removal of sewers, utilities and pits for buried utility structures.
8. Removing sign unit, sign posts, and parking bumper blocks.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 01 13 10 - NPDES Permit and Storm Water Pollution Prevention Plan
2. Section 30 05 00 – IDOT Provisions

1.3 QUALITY ASSURANCE

A. Conform to Articles 107.01, 107.19, and 202.03 of the IDOT Standard Specifications for disposal of debris.

B. Coordinate clearing work with utility companies.

C. The contractor will be required to comply with all terms of the National Pollution Discharge Elimination System (NPDES) or local watershed development permits.

PART 2 - EXECUTION

2.1 EXAMINATION

A. Verify existing plant life designated to remain is tagged or identified.

B. Identify waste area or salvage area for placing removed materials.

2.2 PREPARATION

A. Call Local Utility Line Information service J.U.L.I.E. at 8-1-1 not less than 48 hours before performing Work.

1. Request underground utilities to be located and marked within and surrounding construction areas.
2. Other utilities which do not subscribe to the JULIE System and have utilities which are affected by the construction shall also be contacted for assistance in locating Using Agency's facilities. The General Contractor shall locate existing utilities that do not subscribe to the JULIE system by methods including potholing, probing, electronic locating using Contractor's own equipment, visual survey of nearby facilities (manholes, inlets, street boxes, hydrants, and the like), Using Agency's utility maps, and any method deemed by the Contractor to be sufficient to prevent any damage or disruption to existing utilities.

2.3 PROTECTION

A. Locate, identify, and protect utilities indicated to remain, from damage.

B. Protect trees, plant growth, and features designated to remain. Perform tree pruning, tree root pruning, and tree trunk protection in accordance with Section 201 of the IDOT Standard Specifications.

C. Protect benchmarks, survey control points, and existing structures from damage or displacement.

2.4 CLEARING

A. Clear areas required for access to site and execution of Work in accordance with Section 201 of the IDOT Standard Specifications.

B. Remove trees and shrubs as indicated on the plans including root systems in accordance with Section 201 of the IDOT Standard Specifications.

2.5 REMOVAL

A. Remove debris, rock, and extracted plant life from site.

B. Remove designated concrete and asphalt pavements, asphalt surface, sidewalks, and combination curbs and gutters as indicated on the plans and in accordance with Sections 440, 442, and 501 of the IDOT Standard Specifications.

C. Remove sewers, utility lines, structures, cleanouts, conduits, and appurtenances as indicated on the plans and in accordance with Sections 551 and 605 of the IDOT Standard Specifications.

D. Remove existing signs and sign panel assemblies in accordance with 724 of the IDOT Standard Specifications.

END OF SECTION

SECTION 31 20 00

EARTH MOVING

PART 1 – GENERAL

1.1. WORK INCLUDES

A. Contractor provides:

1. Preparing subgrades for footings, foundations, slabs-on-grade, pavements sidewalks, monolithic curbs and combination curbs and gutters.

2. Topsoil excavation and stockpiling.

3. Topsoil placement.

4. Satisfactory soil excavating, backfilling, and compacting for buildings, pavements, sidewalks, combination curbs and gutters, monolithic curbs, and structures subgrades.

5. Borrow Soil. Contractor shall furnish, haul, and compact additional satisfactory clay soils to the project site to meet the new site paving and building structural subgrade fill.

6. Base course for building concrete slabs-on-grade.

7. Aggregate base course for pavements, monolithic curbs and combination curbs and gutters at locations shown on the plans.

8. Aggregate subbase course for pavements, monolithic curbs and combination curbs and gutters at locations shown on the plans.

9. Excavating, backfilling and compacting trenches for sewers, utilities and pits for buried utility structures in accordance to the backfill methods shown on the civil plans.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 01 13 10 - NPDES Permit and Storm Water Pollution Prevention Plan
2. Section 30 05 00 – IDOT and BDE Special Provision

1.3 DEFINITIONS

A. Backfill: Fine aggregate, coarse aggregate, or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

C. Base Course: Aggregate layer placed between the subbase course and pavement or slab-on-grade.

D. Subbase Course: Aggregate layer placed between the subgrade and base course for concrete and hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

E. Subgrade: Uppermost surface of an excavation or the top surface of a soil fill or backfill immediately below base course, subbase course, or topsoil materials.

F. Soil Modification: Modified soil layer composed of soil, water and a lime modifier.

G. Soil Fill: Satisfactory soil materials used for embankment fill to subgrade elevation.

H. Borrow Soil: Satisfactory soil imported from off-site for use as soil fill.

I. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by A/E. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by A/E. Unauthorized excavation, as well as remedial work directed by A/E, shall be without additional compensation.

J. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or 3/4 cu. yd. for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:

1. Excavation of Footings, Trenches, and Pits: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch- wide, maximum, short-tip-radius rock bucket; rated at not less than 138-hp flywheel power with bucket-curling force of not less than 28,700 lbf and stick-crowd force of not less than 18,400 lbf with extra-long reach boom; measured according to SAE J-1179.
2. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 230-hp flywheel power and developing a minimum of 47,992-lbf breakout force with a general-purpose bare bucket; measured according to SAE J-732.

K. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

L. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.4 SUBMITTALS

A. Product Data: For each type of the following manufactured products required:

1. Controlled low-strength material, including design mixture.

B. Qualification Data: For qualified testing agency.

C. Material Test Reports: For each material proposed for borrow soil and backfill as follows:

1. Trench Backfill.
2. Controlled Low-Strength Material.
3. Borrow Soil.

1.5 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

B. Conform to the following Sections of the IDOT Standard Specifications:

1. Section 202 – Earth and Rock Excavation
2. Section 204 – Borrow and Furnished Excavation
3. Section 205 - Embankment
4. Section 208 – Trench Backfill
5. Section 211 – Topsoil and Compost
6. Section 280 – Temporary Erosion Control and Sediment
7. Section 301 – Subgrade Preparation
8. Section 302 – Soil Modification
9. Section 311 – Granular Subbase
10. Section 351 – Aggregate Base Course
11. Section 593 – Controlled Low-Strength Material
12. Section 1003 – Fine Aggregate
13. Section 1004 – Coarse Aggregate

1.6 PROJECT CONDITIONS

A. Utility Locator Service: Notify utility locator service J.U.L.I.E. for area where Project is located before beginning earth moving operations.

B. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures are in place.

C. All satisfactory topsoil material shall be excavated, hauled, and stockpiled within the construction limits and as directed by the engineer. any topsoil material remaining after topsoil placement is completed shall be stockpiled at location directed by the Engineer. Topsoil material contaminated with unsatisfactory soils, trash, vegetation, bushes, stumps, root system, and debris shall be legally disposed of off-site.

D. All satisfactory clay soils from site earthwork, site utility trenches and structures, structural excavation shall be used for new site embankment subgrade fill. Additional satisfactory clay soils required to meet the new embankment subgrade fill elevations shall be furnished by the Contractor.

E. Borrow Soil. Contractor shall furnish, haul, and compact additional satisfactory clay soils to the project site to meet the new site paving and building structural subgrade fill.

F. All soils including topsoil from site utility trenches and structures including existing utility demolition, and removal of waste materials including unsatisfactory soils, trash, vegetation, bushes, stumps, root system, and debris shall be legally disposed of off-site.

G. Soils classified as (OL) Organic silts and organic silty clay of low plasticity and (OH) Organic clays of medium to high plasticity shall be removed under new paving subgrade within the following limits:

a. 2 foot outside of edge of sidewalk, pavement, curb, combination curb and gutter within project property.
b. 2 foot outside of edge of pavement and combination curb and gutter for entrances within Right-of-Way.

1.7 SOIL, AGGREGATE, AND GRAVEL MATERIALS

A. Satisfactory Soils: Soil Classification Groups GW, GP, GM, GC, SW, SP, SM, SC, CL, and ML according to ASTM D 2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

1. Liquid Limit: 45 or less.
2. Plasticity Index: 20 or less.

B. Unsatisfactory Soils: Soil Classification Groups, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
2. Where unsuitable soil is discovered the Contractor shall excavate the soil to the limits approved by the Geotechnical Testing Agency and disposed of off site of Using Agency's property. The excavated area shall be backfilled with materials and methods as directed by the Geotechnical Testing Agency and the A/E.

C. Subbase Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 sieve. CA-1 coarse aggregate for construction access and subbase course.

D. Base Course: CA-6 coarse aggregate.

E. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 sieve.

F. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch (25-mm) sieve and not more than 8 percent passing a No. 200 sieve.

G. FA-6 Sand: Fine aggregate in accordance with Section 1003 of the IDOT Standard Specifications.

H. CA-16: Coarse aggregate in accordance with Section 1004 of the IDOT Standard Specifications.

I. CA-6: Coarse aggregate in accordance with Section 1004 of the IDOT Standard Specifications.

J. CA-7: Coarse aggregate in accordance with Section 1004 of the IDOT Standard Specifications.

K. CA-2: Coarse aggregate in accordance with Section 1004 of the IDOT Standard Specifications.

1.8 CONTROLLED LOW-STRENGTH MATERIAL

A. Controlled Low-Strength Material: Self-compacting, flowable concrete material in accordance with Section 593 of the IDOT Standard Specifications.

PART 2 – EXECUTION

2.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.

B. Protect and maintain erosion and sedimentation controls during earth moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

2.2 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

2.3 EXPLOSIVES

A. Explosives: Do not use explosives.

2.4 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
2. Where replacement backfill is used in footing undercuts, the excavations should be widened at least eight (8) inches in all directions from the edge of the footing for each foot of excavation depth below the design footing base elevation.
3. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

B. Excavations at Edges of Tree- and Plant-Protection Zones:

1. Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.

2.5 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

2.6 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit.

C. Trench Bottoms: Excavate trenches 4 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.

1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

D. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.

2.7 SUBGRADE INSPECTION

A. Notify A/E, Using Agency provided inspection agency, and Using Agency's on-site field representative when excavations have reached required subgrade.

B. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 25 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction. Limit vehicle speed to 3 mph.
2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by A/E, and replace with compacted backfill or earth fill material as directed.

C. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by A/E, without additional compensation.

2.8 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by A/E.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by A/E.

2.9 STORAGE OF SOIL MATERIALS

A. Stockpile excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

2.10 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
2. Surveying locations of underground utilities for Record Documents.
3. Testing and inspecting underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring and bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

2.11 UTILITY TRENCH BACKFILL

A. Backfill utility trenches after final connection and testing are completed.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

C. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

D. Trenches under Footings: Backfill trenches excavated under footings with controlled low-strength material to bottom of footings.

E. Backfill voids with compacted CA-7 or CA-16 aggregate while removing shoring and bracing.

F. Place and compact initial backfill of satisfactory soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.

1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

G. Controlled Low-Strength Material: Place backfill of controlled low-strength material over the pipe or conduit to final subgrade elevation at locations and detail shown on the civil plans. Coordinate backfilling with utilities testing.

H. Place and compact FA-6 sand backfill to final subgrade elevation at locations and detail shown on the civil plans.

I. Place and compact CA-16 aggregate backfill to final subgrade elevation at locations and detail shown on the civil plans.

J. Install aluminized warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

2.12 FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so soil fill material will bond with existing material.

B. Place and compact fill material in layers to the required subgrade elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under building slabs, use borrow soil material and salvaged aggregate material from existing aggregate base course excavated from site and as detailed on the civil plans.
4. Under footings and foundations, use engineered fill or CA-7 coarse aggregate.

C. Place fill on subgrades free of mud, frost, snow, or ice.

2.13 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by -2 to +3 percent and is too wet to compact to specified dry unit weight.

2.14 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
C. Beneath footings, loose sand soils shall be densified to a depth of at least ½ the footing width below the foundation bearing depth for the proposed footings. The sands should be densified to at least 65% of the material's relative density (ASTM D 4253/4254). The soils beneath footings should be tested during and after the densification process.

1. If the sands cannot be improved in-place, as recommended, they should be removed and replaced with engineered fill to the required depth. For placement of engineered fill beneath the footings, the foundation excavation should extend laterally at least 8 inches beyond the edges of each footing for each foot of over-excavation depth below the foundation base elevation. The over-excavated depth should then be backfilled up to the foundation base elevation with sand or crushed limestone placed in lifts and compacted to at least 95% of the material's standard Proctor maximum dry density or at least 65% of the material's maximum relative density (ASTM D 4253/4254). Each lift of new engineered fill should be observed and tested. If lean concrete is utilized to reestablish the bearing level, the excavation should extend laterally beyond the edges of the footing at least six (6) inches to ensure sufficient cross-section below the footing and reduce the potential for eccentric loading

D. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:

1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent for cohesive soils (SM, SC, CL, and ML); and 98 percent for (GW, GP, GM, GC, SW, and SP). Compaction should extend laterally from the edge of the perimeter footings and pavements at least 8 inches for every foot of fill placed beneath the footing/subgrade.
2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent.
3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 90 percent.

4. For utility trenches, compact each layer of initial and final backfill soil material at 95 percent for cohesive soils (SM, SC, CL, and ML); and 98 percent for (GW, GP, GM, GC, SW, and SP) beneath structures and pavements; and 90 percent for remaining areas.

2.15 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Grass Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1/2 inch.
3. Pavements: Plus or minus 1/2 inch.
4. Base Course: Plus or minus 1/2 inch.
5. Synthetic Turf: Plus or minus 1/2 inch.

C. Comply with requirements of Storm Water Pollution Prevention Plan (SWPPP).

2.16 BASE COURSE AND SUBBASE COURSE UNDER PAVEMENTS AND WALKS

A. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place subbase course and base course under pavements and walks as follows:

1. Place base course material over subbase at locations shown on the plans.
2. Shape subbase course and base course to required elevations and cross-slope grades.
3. Place subbase course and base course 6 inches or less in compacted thickness in a single layer.
4. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 98 percent of maximum dry unit weight according to ASTM D 698.

2.17 FIELD QUALITY CONTROL

A. Special Inspections: A/E will engage a qualified special inspector to perform the following special inspections:

1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
2. Determine that fill material and maximum lift thickness comply with requirements.
3. Determine, at the required frequency, that in-place density of compacted fill complies with requirements.

B. Testing Agency: Owner provided inspection agency to perform tests and inspections.

C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

D. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by A/E.

E. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.
2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet or less of wall length, but no fewer than two tests.
3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length, but no fewer than two tests.

F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

2.18 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

D. Comply with requirements of Storm Water Pollution Prevention Plan (SWPPP).

2.19 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. All satisfactory topsoil material shall be excavated, hauled, and stockpiled within the construction limits and as directed by the engineer. any topsoil material remaining after topsoil placement is completed shall be stockpiled at location directed by the Engineer. Topsoil material contaminated with unsatisfactory soils, trash, vegetation, bushes, stumps, root system, and debris shall be legally disposed of off-site.

B. All satisfactory clay soils from site earthwork, site utility trenches and structures, structural excavation shall be used for new site embankment subgrade fill. Additional satisfactory clay soils required to meet the new embankment subgrade fill elevations shall be furnished by the Contractor.

C. Borrow Soil. Contractor shall furnish, haul, and compact additional satisfactory clay soils to the project site to meet the new site paving and building structural subgrade fill.

D. All soils including topsoil from site utility trenches and structures including existing utility demolition, and removal of waste materials including unsatisfactory soils, trash, vegetation, bushes, stumps, root system, and debris shall be legally disposed of off-site.

E. Soils classified as (OL) Organic silts and organic silty clay of low plasticity and (OH) Organic clays of medium to high plasticity shall be removed under new paving subgrade within the following limits:

a. 2 foot outside of edge of sidewalk, pavement, curb, combination curb and gutter within project property.

b. 2 foot outside of edge of pavement and combination curb and gutter for entrances within Right-of-Way.

END OF SECTION

SECTION 31 23 19

DEWATERING

PART 1 – GENERAL REQUIREMENTS

1.1 WORK INCLUDES

A. Contractor provides:

1. All labor, materials and equipment necessary to temporarily dewater the site during construction.

1.2 RESPONSIBILITY

A. The Contractor is solely responsible for the design, installation, operation, and subsequent removal of dewatering systems and their safety and conformity with local codes and regulation.

1.3 SITE DEWATERING

A. At all times during excavation and underground construction, ample means and equipment shall be provided with which to remove promptly and dispose of properly all water entering any excavation or other parts of the work. The dewatering system shall remain in operation until all underground construction is completed and accepted. All excavations shall be kept dry.

B. The dewatering system shall take into consideration the construction procedures, the soil type, and the depth of the foundation relative to the ground water level.

C. Water pumped or drained from the work hereunder shall be disposed of in a suitable manner without damage to adjacent property or to other work under construction. Any and all damage caused by dewatering the work shall be promptly repaired by Contractor at his/her expense.

D. The Contractor shall provide a standby system for emergency operation in case of failure of the primary means of dewatering.

END OF SECTION

SECTION 32 11 23

AGGREGATE BASE COURSE

PART 1 – GENERAL REQUIREMENTS

1.1. WORK INCLUDES

A. Contractor provides:

1. Furnish, place, and compact Aggregate Base Course CA-6 under HMA and concrete pavements and sidewalks at locations and thickness shown on the plans.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 30 05 00 – IDOT and BDE Special Provision
2. Section 31 20 00 – Earth Moving

1.3 REFERENCES

A. IDOT Standard Specifications for Road and Bridge Construction, Adopted January 1, 2022.

1.4 SUBMITTALS

A. Product Submittals

1. Material Source:

a. IDOT approved source for coarse aggregate gradation CA-6.

PART 2 - PRODUCTS

2.1 BASE COURSE MATERIAL

B. The Aggregate Base Course material shall be coarse aggregate gradation CA-6 in accordance with Section 1004 of the IDOT Standard Specifications.

PART 3 - EXECUTION

3.1 INSTALLATION

A. This work shall be performed in accordance with Section 311 and 351 of the IDOT Standard Specifications.

END OF SECTION

SECTION 32 13 13

CONCRETE PAVING

PART 1 – GENERAL REQUIREMENTS

1.1 WORK INCLUDES

A. Contractor provides:

1. Portland cement concrete pavement (including class c patches) and sidewalk at locations and thickness shown on the plans and constructed according to the details shown on the Plans.

2. Portland cement concrete barrier curb as shown on the plans and constructed according to the details shown on the plans.

3. Contractor shall use High Range Water Reducer – Superplasticizer on site to increase slump for workability and to avoid affecting the mix design cement/water ratio and final strength. Adding water to concrete will not be allowed.

4. Wire mesh at driveways, concrete street patches, and reinforced concrete sidewalk sections (where shown on the Plans.)

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 30 05 00 – IDOT and BDE Special Provision
2. Section 31 20 00 – Earth Moving
3. Section 32 11 23 – Aggregate Base Course

1.3 REFERENCES

A. IDOT Standard Specifications for Road and Bridge Construction, Adopted January 1, 2022.

1.4 SUBMITTALS

A. Product Submittals:

1. Material Source:

a. IDOT approved concrete plant.

2. Mix Design:

a. IDOT approved concrete mix design for Class SI Portland Cement Concrete.

PART 2 - PRODUCTS

2.1 PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS C PATCHES

A. Materials for the Portland Cement Concrete Pavement system shall be in accordance with Section 420 of the IDOT Standard Specifications. Materials for the Class C Patches shall be in accordance

with Section 442 of the IDOT Standard Specifications.

2.2 PORTLAND CEMENT CONCRETE SIDEWALK

A. Materials for the Portland Cement Concrete Sidewalk system shall be in accordance with Section 424 of the IDOT Standard Specifications.

2.3 PORTLAND CEMENT CONCRETE CURB OR GUTTER

A. Materials for the Concrete Curb or Gutter shall be in accordance with Section 606 of the IDOT Standard Specifications.

2.4 HIGH RANGE WATER REDUCER - SUPERPLASTICIZER

A. Complies with the requirements of ASTM C 494, Types A & F admixtures.

B. Complies with the requirements of AASHTO M 194.

C. ANSI/NSF STD 61.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Portland cement concrete pavement, sidewalk, and class c patch work shall be performed in accordance with Section 420, 424, and 442 of the IDOT Standard Specifications.

B. Sidewalk curb ramps shall be constructed according to the ADAAG, the Illinois Accessibility code, and as shown on the plans and details.

C. Concrete Curb or Gutter work shall be performed in accordance with Section 606 of the IDOT Standard Specifications and as shown on the plans and details.

END OF SECTION

SECTION 32 16 13

CONCRETE CURB AND GUTTER

PART 1 – GENERAL REQUIREMENTS

1.1 WORK INCLUDES

A. This Section includes furnishing and installing concrete curb and gutter, including:

1. Excavation and subgrade preparation
2. Formwork and reinforcement
3. Concrete placement and finishing
4. Curing and protection

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 31 20 00 – Earth Moving
2. Section 32 01 29 – Saw Cutting and Removal
3. Section 32 12 16 – Asphalt Paving
4. Section 03 30 00 – Cast-in-Place Concrete

1.3 REFERENCES

A. IDOT Standard Specifications for Road and Bridge Construction, Adopted January 1, 2022.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Aspahlt Binder: Performance graded asphalt binder conforming to AASHTO M320

B. Aggregates: Crushed stone or gravel meeting local IDOT gradation requirements

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is properly compacted and at required elevation

B. Confirm all underground utilities are located and protected

3.2 INSTALLATION

A. Set forms to line and grade

B. Place concrete in continuous operation between joints

C. Apply curing compound immediately after finishing

D. Perform slump, air content, and compressive strength tests per ASTM standards

3.3 PROTECTION

A. Protect curb and gutter from damage during curing and adjacent construction

END OF SECTION

SECTION 32 92 19

SEEDING AND MULCH

PART 1 – GENERAL REQUIREMENTS

1.1 WORK INCLUDES

A. Contractor provides:

1. This work shall consist of preparing the seedbed, permanent seeding, fertilizing, mulch, and erosion control blanket of all disturbed earth areas within the project construction limits as shown on the plans.

2. Any areas disturbed beyond the project construction limits by the Contractor's construction operations shall be seeded and mulched at the Contractor's expense.

3. Temporary erosion control seeding will be required for all disturbed areas that has not been permanently seeded before November 1 of each year of construction.

4. Furnish and install all erosion and sediment control items in accordance with the Stormwater Pollution Prevention Plan and the IDOT Standard Specifications for Road and Bridge Construction.

1.2. RELATED WORK

A. Specified Elsewhere:

1. Section 01 13 10 - NPDES Permit and Storm Water Pollution Prevention Plan
4. Section 30 05 00 – IDOT and BDE Special Provision
5. Section 31 20 00 – Earth Moving

1.3. REGULATORY REQUIREMENTS

A. The contractor will be required to comply with all terms of the soil erosion and sediment control permit.

1.4 REFERENCES

A. IDOT Standard Specifications for Road and Bridge Construction, Adopted January 1, 2022.

1.5 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

1. Product Data:

a. Seeding
b. Fertilizer
c. Erosion control blanket
d. Temporary Ditch Checks
e. Inlet Filters
f. Silt Fence
g. The Contractor shall supply the proper certifications and weight tickets for seed and fertilizer.

1.4 WARRANTY

A. The Contractor shall maintain the seeded areas until substantial and warranty start from substantial.

PART 2 - PRODUCTS

2.1 SEEDING

A. Seeding shall be Class 1 – Lawn Mixture in accordance with Article 250.07 of the IDOT standard Specifications.

B. Temporary erosion control seeding shall be Class 7 – Temporary Turf Cover Mixture in accordance with Article 250.07 of the IDOT Standard Specifications.

2.2 FERTILIZER

A. Nitrogen, phosphorus, and potassium fertilizer nutrients shall be applied in accordance with Article 250.04 of the IDOT Standard Specifications.

2.3 EROSION CONTROL BLANKET

A. The erosion control blanket shall be knitted straw blanket in accordance with Article 251.04 and 1081.10(b) of the IDOT Standard Specifications.

2.4 INLET AND PIPE PROTECTION, PERIMETER EROSION BARRIER, TEMPORARY DITCH CHECKS

A. Install in accordance with Section 280 of the IDOT Standard Specifications. Silt fence shall be the only permissible perimeter erosion barrier. Inlet filters shall be the drop-in only kind as shown in the Plans.

2.6 STABILIZED CONSTRUCTION ENTRANCE

A. Provide and install stabilized construction entrance with materials noted in the Plans.

PART 3 - EXECUTION

3.1 INSTALLATION

A. This work shall be performed in accordance with Sections 250, 251, 280, 281, and 282 of the IDOT Standard Specifications.

B. To prevent erosion and to satisfy the requirements of the soil erosion and sediment control permit, seeding, fertilizing, and mulching should be completed as soon as possible after the completion of topsoil placement. The Contractor will be responsible for the permanent seeded areas until they are fully established which may require re-seeding and mulching of any bare areas until seed growth is established.

C. Temporary erosion control seeding will be required for all disturbed areas that has not been permanently seeded before November 1 of each year of construction.

D. Install stabilized construction entrance in accordance with Sections 303 and 311.

END OF SECTION

SECTION 32 93 00

PLANTINGS

PART 1 – GENERAL REQUIREMENTS

1.1 WORK INCLUDES

A. Contractor provides:

1. This work shall consist of furnish plants and planting soil required, bed preparation, plant pits, pruning, planting, supplements, backfill, wrapping, staking, protection, watering, mulching, fertilizing, and maintenance.

1.2. RELATED WORK

A. Specified Elsewhere:

1. Section 32 92 19 – Seeding and Mulch

1.3. REGULATORY REQUIREMENTS

A. The contractor will be required to comply with all terms of local permits.

1.4 REFERENCES

A. IDOT Standard Specifications for Road and Bridge Construction, Adopted January 1, 2022.

1.5 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

1. Product Data:

a. Fertilizer Manufacturer's Certificate of Compliance: Written documentation verifying compliance with chemical analysis of fertilizer furnished.
b. Product Data: Provide all nursery stock submittal materials in accordance with IDOT Standard Specifications.

1.4 WARRANTY

A. All plants, including trees, will have a 2-year establishment and warranty period.
B. At the conclusion of the establishment and warranty period, a final inspection of planting will be made to determine the conditions of Work. When Work does not comply with Specifications, Contractor shall replace rejected work. Replacement plants will include a second establishment period. Remove rejected plants and materials from the Site.

PART 2 - PRODUCTS

2.1 PLANT MATERIALS

A. The type of plant material shall be as specified in the plans.

2.2 FERTILIZER

A. Nitrogen, phosphorus, and potassium fertilizer nutrients shall be applied in accordance with Article 250.04 of the IDOT Standard Specifications.

PART 3 - EXECUTION

3.1 INSTALLATION

A. The Contractor shall be responsible for the protection of all trees not scheduled for removal.
B. Protection shall include fencing, wrapping, shoring, tunneling or other measures.
C. Trees that are to be planted shall conform to IDOT Article 253.
D. Perennial plant materials shall conform to IDOT Article 254.

3.2 DELIVERY AND STORAGE

A. Notify the A/E of the delivery schedule in advance so the plant material may be inspected upon arrival at the Site. Remove unacceptable plant material from the Site immediately.
B. Protect plants during delivery to prevent damage to root balls or desiccation of leaves. Protect trees during transport by tying in the branches and covering all exposed branches.
C. The use of equipment, such as "tree spades," is permitted provided the plant balls are sized in accordance with ANSI Z60.1 and tops are protected from damage.
D. Deliver fertilizer and amendments to the Site in the original, unopened containers bearing the manufacturer's guaranteed chemical analysis, name, trade name or trademark, and in conformance to state and federal law. In lieu of containers, fertilizer and amendments may be furnished in bulk and a certificate indicating the above information shall accompany each delivery.
    1. Keep seed, amendments, and fertilizer in dry storage away from contaminants.
    2. Store plants not installed on the day of arrival at the Site as follows:
        i. Shade and protect plants from the wind when stored outside.
        ii. Heel in bare root plants.
        iii. Protect plants stored on the Project from drying out at all times by covering the balls or roots with moist sawdust, wood chips, shredded bark, peat moss, or other similar mulching material.
        iv. Keep plants, including those in containers, in a moist condition until planted, by watering with fine mist spray.

3.3 PLANT INSTALLATION

A. Layout individual tree and shrub locations and areas for multiple plantings.
B. Stake locations and outline areas. Center holes at staked locations.
C. Verify the location of any underground utilities and adjust locations as necessary
D. Do not start planting work until layout is approved by the Engineer.
E. Make minor adjustments as required.
F. Do not begin Work on plant holes until after finish grading has been completed.
G. Dig plant pits so that they have vertical sides and flat bottoms. When pits are dug with an auger and the sides of the pits become glazed, scarify the glazed surface. Size the plant pits as shown on Drawings, otherwise, the minimum allowable dimensions of plant pits shall be as follows:
    1. Pit depths shall be no deeper than the root ball, and should only be deep enough to apply no more than 1” of topsoil over the highest lateral root.
    2. Pit diameters shall be twice the ball or root spread; for ball or root spread from 2 to 4 feet, pit diameters shall be 2 feet greater.
    3. For ball or root spread over 4 feet, pit diameters shall be 1-1/2 times the ball or root spread.
H. Where existing soil is to be used in place, till new ground cover and plant beds to a depth of 4 inches. Spread compost or other soil amendments uniformly over the bed to depth of 2 inches and thoroughly incorporate it into the existing soil to a depth of 4 inches using a roto-tiller or similar type of equipment to obtain a uniform and well pulverized soil mix. During tillage operations, remove all sticks, stones, roots, and other objectionable materials. Bring plant beds to a smooth and even surface conforming to established grades.

I. In areas of new grading where existing soil is being replaced for the construction of new ground cover and plant beds, remove 8 inches of existing soil and replace with topsoil. Plant beds shall be brought to a smooth and even surface conforming to established grades.
J. Using topsoil form earth saucers or water basins for watering around plants.
K. Treat plant saucers, shrub, and ground cover bed areas, prior to mulching, with an approved pre-emergent herbicide.
L. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be landscaped or restored. Remove contaminated subsoil.
M. Rototill or aerate any planting soil compacted by operations.
N. Prune immediately prior to planting to remove stock damaged during transport and movement.
O. Handle balled and bur lapped, and container-grown plants only by the ball or container. Remove container-grown plants in such a way to prevent damage to plants or root system.
P. Set plants plumb and hold in position until sufficient soil has been firmly placed around the roots or ball. Set plants in relation to surrounding grade so that the highest lateral root is no more than 1" below the finished grade.
Q. Plant perennial and ground cover plants after the mulch is in place. Avoid contaminating the mulch with the planting soil.
R. For balled and burlapped plants, carefully remove excess burlap and tying materials and fold back. Where plastic wrap or treated burlap is used in lieu of burlap, completely remove these materials before backfilling.
S. The root flare shall not be lower than the finish grade.
T. Backfill plants with planting soil mixture as specified to approximately half the depth of the ball and then tamp and water. Tamp and water remainder of backfill Planting Soil Mixture; then form earth saucers or water basins around isolated plants with topsoil.

3.4 WATERING

A. Watering of the plants shall be the responsibility of the Contractor. Water may be purchased from the local municipality.

3.5 MULCHING

A. Place mulch material within 48 hours of the second watering, unless otherwise approved by A/E. Dish top of backfill to allow for mulching.
B. For trees, provide 4 inch thickness of mulch and work into top of backfill and finish to maintain dish or level with adjacent finish grades as shown in the Drawings. For other plants, provide mulch depth as indicated on plans.
C. Do not place mulch directly against any stems or bark.

3.6 PROTECTION

A. Protect landscape work and materials from damage due to landscape operations, operation by other contractors, trades, and trespassers.
B. Maintain protection during installation and maintenance periods.
C. Guy and stake trees immediately after planting if needed due to potential wind damage.
D. Inspect tree trunks for injury, improper pruning, and insect infestation/disease and take corrective measures before wrapping.
E. Wrap trees at end of growing season and remove prior to following growing season. Wrap all trees from the ground to the first major branch.

3.7 CLEANUP AND RESTORATION

A. During landscape work keep pavements clean and work area in an orderly condition.
B. Treat, restore, or replace in kind turf, sod, plantings, or other facilities damaged by Contractor's operations.
C. Remove all excess excavated soils from plant holes from the Site.
D. Collect and dispose of all excess materials, packaging, and containers.

3.8 MAINTENANCE

A. During the Plant Establishment Period the Contractor shall:
    1. Water all plants to maintain an adequate supply of moisture within the root zone. An adequate supply of moisture is the equivalent of 1 inch of absorbed water per week

either through natural rainfall or augmented by periodic watering. Apply water at a moderate rate so as not to displace the mulch or flood the plants.

2. Water plants for 45 days.
3. Prune plants and replace mulch as required.
4. Replace and restore stakes, guy wires, and eroded plant saucers as required.
5. In plant beds and saucers, remove grass, weeds, and other undesired vegetation, including the root growth, before they reach a height of 3 inches.
6. Spray with approved insecticides and fungicides to control pests and ensure plant survival in a healthy growing condition, as directed by the A/E.
7. Remove plants that die during this period and replace each plant with one of the same size and species.

B. The Contractor is not responsible for theft or damage to plants by non-contractor vehicles or vandalism once plants are installed and approved.

END OF SECTION

Clark Dietz, Inc.
1815 S. Meyers Rd, Suite 470
Oakbrook Terrace, IL 60181

p 630.413.4130

clarkdietz.com

Clark Dietz

Engineering Quality of Life™

1.3. QUALITY ASSURANCE

1. Qualifications of Surveyor:

    1. Five years of experience in layout of similar or more difficult complexity.

1.4. SUBMITTALS

1. Submit resume of surveyor for documentation purposes only.

2. A/E may at any time require written verification of grades, lines, and levels by a licensed surveyor as work progresses. Contractor signed agreement for the use of electronic files provided by A/E.

1.5. ELECTRONIC FILES AGREEMENT

To: Stenstrom Petroleum Services Group (Contractor)

From: _____ (Consultant)

1. In accepting and utilizing the electronic media generated and furnished by the Consultant, the Contractor agrees that all such electronic files are instruments of service of the Consultant, who shall be deemed the author, and shall retain all common law, statutory law, and other rights including copyrights.

2. The Contractor agrees not to reuse these electronic files, in whole or in part, for any purpose other than the project. The Contractor agrees not to transfer these electronic files to others without the prior written consent of the Consultant. The Contractor further agrees to waive all claims against the Consultant, resulting in any way from any unauthorized changes to or reuse of the electronic files for any other project by anyone other than the Consultant.

3. The Contractor is aware that differences could exist between the electronic files delivered and the printed hard-copy construction documents. In the event of a conflict between the signed construction documents prepared by the Consultant, and the electronic files, the signed or sealed hard-copy construction documents shall govern.

4. In addition, the Contractor agrees, to the fullest extent permitted by law, to indemnify and hold harmless the Consultant, its officers, directors, employees and subconsultants against all damages, liabilities or costs, including reasonable attorneys' fees and defense costs, arising from any changes made by anyone other than the Consultant, or from any reuse of the electronic files without prior written consent of the Consultant.

Offered by:	Accepted by:
_____	Nate Meyer
Name	Name
_____	Director of Sales & Construction
Title	Title
_____	Stenstrom Petroleum Services Group
Name of Consultant	Name of Contractor
_____	_____
Date	Date 12/03/25

END OF DOCUMENT

V. BID and CONTRACT FORM

*****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:

Stenstrom Petroleum Services Group
Company Name

2422 Center Street
Street Address of Company

Rockford, IL, 61108
City, State, Zip

815-398-6250
Business Phone

Business Fax

12/3/2025
Date

JasonR@rstenstrom.com
E-mail Address

Jason Reed
Contact Name (Print)

815-398-6250
24-Hour Telephone

Signature of Officer, Partner or Sole Proprietor

Bobby Stenstrom, Owner
Print Name & Title

ATTEST: if a Corporation

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 and in accordance with the provisions, instructions and specifications for the unit prices shown on the Schedule of Prices.

VILLAGE OF DOWNERS GROVE:

Authorized Signature

Title

Date

ATTEST:

Village Clerk

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.

BIDDER'S CERTIFICATION (page 1 of 3)

With regard to Downers Grove Fleet Fuel System (Name of Project), Bidder Stenstrom Petroleum Services Group (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: _____
Bidder's Authorized Agent Signature

3	6	-	3	4	2	6	4	0	3

FEDERAL TAXPAYER IDENTIFICATION NUMBER
or _____
Social Security Number
Subscribed and sworn to before me
this 3rd day of December, 20 25.

_____
Notary Public

(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 Stenstrom Petroleum Services Group, and the full names of its Officers are as follows:

President: Bobby Stenstrom

Secretary: Todd Issac

Treasurer: Brianne Canova

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 ByLaws 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: Stenstrom Petroleum Services Group

AGENT: Aon Risk Services Central, Inc.

Street Address: 200 East Randolph

City, State, Zip Code: Chicago, IL 60601

Telephone Number: 312-282-2806

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: Stenstrom Petroleum Services Group

Print Name and Title of Authorizing Signature: Bobby Stenstrom, Owner

Signature: _____

Date: 12/03/25

MUNICIPAL REFERENCE LIST

Municipality: Four Rivers Sanitation Authority
Address: 3501 Kishwaukee St., Rockford, IL 61109
Contact Name: Julia Scott-Valdez Phone #: 815-387-7425
Name of Project: FRSA UST Removal & Replacement
Contract Value: $1,025,463.00 Date of Completion: November 2025

Municipality: Will County DOT
Address: 302 N. Chicago Street, Joliet, IL
Contact Name: Kevin Lynn Phone #: 815-740-4712
Name of Project: Will County Fuel Tank Replacement
Contract Value: $1,889,251.00 Date of Completion: November 2025

Municipality: City of Rockford
Address: 500 S. Independence Ave., Rockford, IL 61102
Contact Name: Mark Kalousek Phone #: 779-348-7664
Name of Project: COR Fuel System Modernization
Contract Value: $1,394,477.00 Date of Completion: November 2025

Municipality: City of Evanston
Address: 2100 Ridge Road, Evanston, IL 60201
Contact Name: Stephanie Levine Phone #: 847-448-8043
Name of Project: City of Evanston - Public Works
Contract Value: $1,577,362.00 Date of Completion: September 2025

Municipality: IDOT
Address: Multiple Locations
Contact Name: Rafael Gomez Phone #: 847-846-2790
Name of Project:
Contract Value: Date of Completion:

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) McGee Corportation Type of Work Canopy

Addr: 12701 East Independence Blvd City Matthews State IN Zip 28106

2) Eagle Environmental Consultant Type of Work Enviromental

Addr: 3805 Illinois Ave City St. Charles State IL Zip 60174

3) Austin Electrical Type of Work Electrical

Addr: 131 Airport Drive City Joliet State IL Zip 60431

4) _____ Type of Work _____

Addr: _____ City _____ State____ Zip_____

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_____

CERTIFICATION OF QUALIFICATIONS

Project Team

Project Manager: Nate Meyer

Superintendent: Mark Bennett

Team Member: Jason Reed

Team Member: _____

Team Member: _____

Team Member: _____

Team Member: _____

Team Member: _____

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: Stenstrom Petroleum Services Group

ADDRESS: 2422 Center Street

CITY: Rockford

STATE: Illinois

ZIP: 61108

PHONE: 815-398-6250 **FAX:**

TAX ID #(TIN): 36-3426403
(If you are supplying a social security number, please give your full name)

REMIT TO ADDRESS (IF DIFFERENT FROM ABOVE):

NAME:

ADDRESS:

CITY:

STATE: **ZIP:**

TYPE OF ENTITY (CIRCLE ONE):

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

SIGNATURE: Carrie Mayer **DATE:** 12/03/25

Apprenticeship and Training Certification

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 Village of Downers Grove, 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 listed below. Return this with the Bid. This Certification will be used to determine the lowest responsible bidder in accordance with the Village Council Policy regarding Purchasing Procedures.**

_____

_____

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.

Certificate of Compliance

The bidder hereby certifies that it and its subcontractors participate in an applicable apprenticeship program.

Signature _____

Company Name Stenstrom Petroleum Services Group

Title Owner

Date 12/03/25

Certificate of Non-Compliance

The bidder hereby certifies that it or its subcontractors do not participate in an applicable apprenticeship program.

Signature _____

Company Name Stenstrom Petroleum Services Group

Title Owner

Date 12/03/25

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 _____

Company Name Stenstrom Petroleum Services Group

Title Owner

Date 12/03/25

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 Stenstrom Petroleum Services Group

Title Owner

Date 12/03/25

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 $25,000.00. Contractors receiving individual awards for $25,000.00 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: Stenstrom Petroleum Services Group

Address: 2422 Center Street

City: Rockford, IL Zip Code: 61108

Telephone: (815) 398-6250 Fax Number: ( )

E-mail Address: BobS@rstenstrom.com

Authorized Company Signature:

Print Signature Name: Bobby Stenstrom Title of Official: Owner

Date: 12/03/25

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 not contributed to any elected Village position within the last five (5) years.

Signature — Bobby Stenstrom (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: N/A
(company or individual)

To whom contribution was made: N/A

Year contribution made: N/A Amount: $ N/A

N/A

Signature — Print Name

BID SUBMITTAL CHECKLIST

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. ☒ Instructions to Bidders read and understood. Any questions must be asked according to the instructions.

2. ☒ Cover sheet filled-in

3. ☒ Bid Form copies filled-in. All copies must have original signatures and seals on them.

4. ☒ Bid Bond or cashier's check enclosed with bid package.

5. ☐ Schedule of Prices completed. Check your math!

6. ☒ Bidder Certifications signed and sealed.

7. ☒ Letter from Surety ensuring issuance of Performance and Labor Bonds.

8. ☒ Letter from Insurance Agent or Carrier ensuring issuance of required job coverage.

9. ☒ Municipal Reference List completed.

10. ☒ Vendor request form W-9 completed.

11. ☒ Apprenticeship and Training Certification completed.

12. ☒ Affidavit (IDOT Form BC-57, or similar).

13. ☐ 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.

VILLAGE OF DOWNERS GROVE

DEPARTMENT OF PUBLIC WORKS

ADDENDUM NO. 1

FOR

FLEET FUEL SYSTEM REPLACEMENT

CFB-32-0-2025/DM

DECEMBER 02, 2025

ITEM AND DESCRIPTION:

1. The Due Date for CFB-32-0-2025/DM has been extended to December 16, 2025 at 10:00am.

The Acknowledgement of Receipt of Addendum for this addendum MUST be included in the proposal package. Proposal packages that do not include the signed Acknowledgement Sheets may be REJECTED.

End of Addendum No. 1

DECEMBER 02, 2025

VILLAGE OF DOWNERS GROVE

DEPARTMENT OF PUBLIC WORKS

ACKNOWLEDGEMENT OF RECEIPT OF ADDENDUM

PROPOSAL/BID: FLEET FUEL SYSTEM REPLACEMENT

PROPOSAL/BID NUMBER: CFB-32-0-2025/DM

PROPOSAL DUE DATE: December 16, 2025 @ 10:00am

ADDENDUM NO.: 1

PROPOSER/BIDDER: Stenstrom Petroleum

ADDRESS: 2422 Center Street - Rockford, IL 61108

RECEIVED BY: Jason Reed

(NAME)

(SIGNATURE)

DATE: 12-15-2025

VILLAGE OF DOWNERS GROVE

DEPARTMENT OF PUBLIC WORKS

ADDENDUM NO. 2

FOR

FLEET FUEL SYSTEM REPLACEMENT

CFB-32-0-2025/DM

DECEMBER 08, 2025

ITEM AND DESCRIPTION:

1. QUESTION: Do bidders need professional liability insurance since they are not designing the fueling station?

   ANSWER: No, bidders do not need professional liability coverage.

The Acknowledgement of Receipt of Addendum for this addendum MUST be included in the proposal package. Proposal packages that do not include the signed Acknowledgement Sheets may be REJECTED.

End of Addendum No. 2

DECEMBER 08, 2025

VILLAGE OF DOWNERS GROVE

DEPARTMENT OF PUBLIC WORKS

ACKNOWLEDGEMENT OF RECEIPT OF ADDENDUM

PROPOSAL/BID: FLEET FUEL SYSTEM REPLACEMENT

PROPOSAL/BID NUMBER: CFB-32-0-2025/DM

PROPOSAL DUE DATE: December 16, 2025 @ 10:00am

ADDENDUM NO.: 2

PROPOSER/BIDDER: Stenstrom Petroleum

ADDRESS: 2422 Center Street, Rockford, IL 61108

RECEIVED BY: Jason Reed

(NAME)

(SIGNATURE)

DATE: 12-15-2025

INTERNATIONAL UNION OF OPERATING ENGINEERS
LOCAL UNION NO. 150, 150B, 150A, 150C, 150RA, 150D, 150G, 150M
AFFILIATED WITH THE A.F.L.-C.I.O. AND BUILDING TRADES DEPARTMENT

JAMES M. SWEENEY
PRESIDENT-BUSINESS MANAGER

(708) 482-8800 - FAX (708) 482-7186
6200 JOLIET ROAD
COUNTRYSIDE, IL 60525-3992

April 23, 2024

Stenstrom Excavation & Blacktop
2422 Center Street
Rockford, IL 61108

Re: Proof of Compliance with 30 ILCS 500/30-22(6)
Our File No. MI-00321

Dear Sir or Madam:

At the request of Stenstrom Excavation & Blacktop, I am providing you with evidence of the Company's compliance with the apprenticeship requirements in 30 ILCS 500/30-22(6) of the Illinois Procurement Code. I am submitting this letter along with apprenticeship certificates (Nos.IL012020003 and IL008780173).

As a signatory contractor with the International Union of Operating Engineers, Local 150, AFL-CIO, Stenstrom Excavation & Blacktop, is required by Collective Bargaining Agreement to participate in an applicable apprenticeship and training program approved by and registered with the United States Department of Labor's Bureau of Apprenticeship and Training. The attached certificates are evidence of compliance with the U.S. Department of Labor's apprenticeship requirements.

Thank you for your cooperation in this matter. If you have any questions or concerns, please do not hesitate to contact me.

Very truly yours,

IUOE, Local 150, AFL-CIO
District 1 dispatch office

Maribel Hernandez

Enclosures: Certificates

The United States Department of Labor

Office of Apprenticeship

Certificate of Registration of Apprenticeship Program

Operating Engineers Local 150 Apprenticeship Fund
Wilmington, Illinois
For the Trade – Operating Engineer

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

Date: December 31, 1978
Revised June 23, 2011

Registration No. IL008780173

Secretary of Labor

Administrator, Office of Apprenticeship

The United States Department of Labor

Office of Apprenticeship

Certificate of Registration of Apprenticeship Program

Operating Engineers Local 150 Apprenticeship Fund
Wilmington, Illinois
For the Trade – Operating Engineer (Heavy Equipment Technician)

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

May 5, 2002
Date *Revised June 21, 2011*

Registration No. *IL012020003*

Hilda L. Solis
Secretary of Labor

Administrator, Office of Apprenticeship

The United States Department of Labor

Office of Apprenticeship

Certificate of Registration of Apprenticeship Program

Electricians Joint Apprenticeship & Training Trustees Local #134

Alsip, Illinois

For the Trades of: Electrician, Telecommunications Technician & Residential Wireman

Registered as part of the National Apprenticeship System

in accordance with the basic standards of apprenticeship

established by the Secretary of Labor

December 31, 1978

Date ***Revised: May 22, 2013***

IL015780001

Registration No.

DEPARTMENT OF LABOR · UNITED STATES OF AMERICA

Hilda L. Solis

Secretary of Labor

Administrator, Office of Apprenticeship

The United States Department of Labor

Office of Apprenticeship

Certificate of Registration of Apprenticeship Program

N. I. Cement Masons & Plasterers JATC Local #11

Woodstock, Illinois

For the Trades - Cement Mason and Plasterer

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

July 26, 1989

Date

Revised: May 19, 2016

Registration No.

IL004890005

Secretary of Labor

Administrator, Office of Apprenticeship

The United States Department of Labor

Office of Apprenticeship

Certificate of Registration of Apprenticeship Program

Illinois Laborers' & Contractors Joint Apprenticeship & Training Program
Mt. Sterling, Illinois

For the Trade - Construction Craft Laborer

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

Registered - February 3, 1997

Date

Revised - April 20, 2021

Registration No. ILO01970001

Administrator, Office of Apprenticeship

Document A310™ – 2010

Conforms with The American Institute of Architects AIA Document 310

Bid Bond

CONTRACTOR:
(Name, legal status and address)
Stenstrom Petroleum Services Group
2422 Center St
Rockford, IL 61108

SURETY:
(Name, legal status and principal place of business)
Travelers Casualty and Surety Company of America
One Tower Square
Hartford, CT 06183
Mailing Address for Notices

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
5101 Walnut Avenue
Downers Grove, IL 60515

BOND AMOUNT: 5% Five Percent of Amount Bid

PROJECT:
(Name, location or address, and Project number, if any)
Fleet Fuel System Replacement

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 3rd day of December, 2025.

Carrie Mayes
(Witness)

Stenstrom Petroleum Services Group
(Principal) *(Seal)*
By:
(Title) Brianne Canova, CFO

David Bowman
(Witness)

Travelers Casualty and Surety Company of America
(Surety) *(Seal)*
By: Stephanie Amborn
(Title) Stephanie Amborn Attorney-in-Fact

TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA
HARTFORD, CONN.

TRAVELERS

Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Stephanie Amborn** of **ROCKFORD**, **Illinois**, their true and lawful Attorney(s)-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **21st** day of **April**, **2021**.

TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA HARTFORD, CONN. — TRAVELERS CASUALTY AND SURETY COMPANY HARTFORD, CONN. — ST. PAUL FIRE AND MARINE INSURANCE COMPANY CORPORATE SEAL

State of Connecticut

City of Hartford ss.

By: _____
Robert L. Raney, Senior Vice President

On this the **21st** day of **April**, **2021**, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of each of the Companies, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of said Companies by himself as a duly authorized officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June**, **2026**

ANNA P NOWIK NOTARY PUBLIC CONNECTICUT

_____
Anna P. Nowik, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of each of the Companies, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of each of the Companies, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this **3rd** day of December, 2025.

TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA HARTFORD, CONN. — TRAVELERS CASUALTY AND SURETY COMPANY HARTFORD, CONN. — ST. PAUL FIRE AND MARINE INSURANCE COMPANY CORPORATE SEAL

_____
Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney(s)-in-Fact and the details of the bond to which this Power of Attorney is attached.

ATTORNEY-IN-FACT AFFIDAVIT

STATE OF ILLINOIS

COUNTY OF WINNEBAGO

Before me, a Notary Public, personally came Stephanie Amborn, known to me, and known to be the Attorney-in-Fact of Travelers Casualty and Surety Company of America, which executed the attached bond as surety, who deposed and said that his signature and the corporate seal of said Travelers Casualty and Surety Company of America were affixed by order and authority of said Company's Board of Directors, and that the execution of the attached bond is the free act and deed of Travelers Casualty and Surety Company of America.

Given under my hand and seal this 3rd day of December, 2025.

Notary Public

OFFICIAL SEAL
JULIE ANN TRESEMER
Notary Public - State of Illinois
Commission No. 893430
My Commission Expires July 10, 2028

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY) 12/03/2025

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

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

PRODUCER	CONTACT NAME:	
Aon Risk Services Central, Inc. Chicago IL Office 200 East Randolph Chicago IL 60601 USA	PHONE (A/C, No, Ext): (866) 283-7122	FAX (A/C, No.): (800) 363-0105
	E-MAIL ADDRESS:	

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
Stenstrom Petroleum Service Group 2422 Center Street Rockford IL 61108 USA	INSURER A: Zurich American Ins Co	16535
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** 570116942715 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT X LOC OTHER:			GL0820059000	04/01/2025	04/01/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$2,000,000 $1,000,000 $10,000 $2,000,000 $4,000,000 $4,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			BAP 8200591-00	04/01/2025	04/01/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$2,000,000
	UMBRELLA LIAB OCCUR EXCESS LIAB CLAIMS-MADE DED RETENTION						EACH OCCURRENCE AGGREGATE	
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N: N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		WC820058900	04/01/2025	04/01/2026	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT	$1,000,000 $1,000,000 $1,000,000

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

CERTIFICATE HOLDER

Village of Downers Grove Public Works
5101 Walnut Ave
Downers Grove IL 60515 USA

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Services Central Inc.

Holder Identifier :

Certificate No : 570116942715

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
Stenstrom Petroleum Services Group

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☑ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.
2422 Center St.

6 City, state, and ZIP code
Rockford, IL 61108

Requester's name and address (optional)

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number
			–			–				

or

Employer identification number
3	6	–	3	4	2	6	4	0	3

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here Signature of U.S. person ▶ [signature] Date ▶ 12/04/25

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*