

Bid Documents

For

Village of Sheffield

**Excess Flow Facilities
(RE-BID)**

January, 2024

VILLAGE OF SHEFFIELD
EXCESS FLOW FACILITIES - RE-BID

JANUARY, 2024




ENGINEER'S SEAL & SIGNATURE

2/15/24
DATE

Prepared by
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Illinois

Professional Design Firm
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INVITATION FOR BIDS

The Village of Sheffield will receive Bids for Excess Flow Facilities – RE-BID until 10:00 A.M., on Friday, May 24th, 2024, at the office of the Village Clerk, 121 S. Church Street, Sheffield, IL 61361, at which time and place all bids will be publicly opened and read aloud. **Bids must be hand-delivered at the time of bidding. Any other method of delivery must be pre-arranged with the Village Clerk as the Clerk's office and post office may not be staffed during normal business hours.**

The project is described as follows: This construction of a new sanitary relief sewer, excess flow pumping station, new force main, excess flow storage lagoon, and drain back sewer to the existing Wastewater Treatment Plant.

Contract Documents, including Plans and Technical Specifications, may be examined at the following locations:

Chamlin & Associates, Inc., 4152 Progress Boulevard, Peru, IL 61354

Plans and specifications may be accessed on-line at www.chamlin.com.

Copies of the Bid Documents may be obtained by depositing \$50 with Chamlin & Associates, Inc., 4152 Progress Blvd., Peru, IL 61354 for each set of documents so obtained.

A certified check or bank draft, payable to the order of Village of Sheffield negotiable U.S. Government bonds (at par value) or a satisfactory Bid Bond executed by the Bidder and an acceptable surety in an amount equal to five percent (5%) of the total Bid shall be submitted with each Bid.

The successful Bidder shall provide at least 50% of all labor required for the completion of this project.

This project is funded in whole or in part with grant funds from the Community Development Block Grant (CDBG) program. Attention is called to the fact that:

- 1. Not less than the Federal prevailing wages as set forth in the Contract Documents must be paid on this project.**
- 2. The work to be performed under this contract is subject to the requirements of Section 3 24 CFR Part 75.**
- 3. The Contractor must ensure that employees and applicants for employment are not discriminated against because of their race, color, religion, sex, or national origin.**

Prime/General Contractor, or any potential subcontractor, must not be excluded from participating in any federal assistance program [24 CFR 85, Subpart C 85.35; HUD 4010].

The Village of Sheffield reserves the right to reject any or all Bids or to waive any informalities in the bidding.

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Bid and Contract Documents**

Bids may be held by the Village of Sheffield for a period not to exceed 30 days from the date of the opening of Bids for the purpose of reviewing the Bids and investigating the qualifications of Bidders, prior to awarding of the Contract.

Date 04/24/2024

Village of Sheffield

By Mary Lanham

Title Village President

INSTRUCTIONS TO BIDDERS

1. USE OF SEPARATE BID FORMS

These Contract Documents include a complete set of bidding and contract forms which are for the convenience of Bidders and are not to be detached from the Contract Document, filled out, or executed. **Separate copies of Bid Forms are furnished for that purpose.**

2. INTERPRETATIONS OF ADDENDA

No oral interpretation will be made to any Bidder as to the meaning of the Contract Documents or any part thereof. Every request for such an interpretation shall be made in writing to the Local Public Agency. Any inquiry received seven or more days prior to the date fixed for opening the Bids will be given consideration. Every interpretation made to a Bidder will be in the form of an Addendum to the Contract Documents, and when issued, will be on file in the office of the Local Public Agency and the office of the Engineer at least five days before Bids are opened. In addition, all Addenda will be mailed to each person holding Contract Documents, but it shall be the Bidder's responsibility to make inquiry as to the Addenda issued. All such Addenda shall become part of the Contract and all Bidders shall be bound by such Addenda, whether or not received by the Bidders.

3. INSPECTION OF SITE

Each Bidder should visit the site of the proposed work and fully acquaint himself with the existing conditions there relating to construction and labor and should fully inform himself as to the facilities involved, the difficulties and restrictions attending the performance of the Contract. The Bidder should thoroughly examine and familiarize himself with the Drawings, Technical Specifications, and all other Contract Documents. The Contractor by the execution of the Contract shall in no way be relieved of any obligation under it due to his failure to receive or examine any form or legal instrument or to visit the site and acquaint himself with the conditions there existing and the Local Public Agency will be justified in rejecting any claim based on facts for which he should have been on notice as a result thereof.

4. ALTERNATIVE BIDS

No alternative bids will be considered unless alternative bids are specifically requested by the technical specifications.

5. BIDS

- a. All Bids must be submitted on forms supplied by the Local Public Agency and shall be subject to all requirements of the Contract Documents,

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including the Drawings, and these **INSTRUCTIONS TO BIDDERS**. All Bids must be regular in every respect and no interlineations, excisions or special conditions shall be made or included in the Bid Form by the Bidder.

- b. Bid Documents including the Bid, the Bid Guaranty, the Non-Collusion Affidavit, the Certification of Bidder Regarding Equal Employment Opportunity and the Statement of Bidder's Qualifications (if requested) shall be enclosed in envelopes (outer and inner), both of which shall be sealed and clearly labeled with the words "Bid Documents", project number, name of Bidder, and date and time of bid opening in order to guard against premature opening of the Bid.
- c. The Local Public Agency may consider as irregular any Bid on which there is an alteration of or departure from the Bid Form hereto attached and at its option may reject the same.
- d. If the Contract is awarded, it will be awarded by the Local Public Agency to a responsible Bidder on the basis of the lowest Bid and the selected Alternative Bid items, if any. The Contract will require the completion of the work according to the Contract Documents.
- e. Each Bidder shall include in his Bid the following information:

Principals

Names

Social Security Numbers

Home Addresses (City, State, Zip Code and Telephone Numbers)

Firm

Name

Treasury Number

Address

City, State and Zip Code and Telephone Numbers

6. BID GUARANTY

- a. The Bid must be accompanied by a Bid guaranty which shall not be less than five percent (5%) of the amount of the Bid. At the option of the Bidder, the guaranty may be a certified check, bank draft, negotiable U.S. Government Bonds (at par value), or a Bid bond in the form attached. The Bid bond shall be secured by a guaranty or a surety company listed in the latest issue of U.S. Treasury Circular 570. The amount of such Bid bond shall be within the maximum amount specified for such Company in said Circular 570. No Bid will be considered unless it is accompanied by the required guaranty. Certified check or bank draft must be made payable to

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the order of (Local Public Agency). Cash deposits will not be accepted. The Bid guaranty shall insure the execution of the Agreement and the furnishings of the surety bond or bonds by the successful Bidder, all as required by the Contract Documents.

- b. Revised Bids submitted before the opening of Bids, whether forwarded by mail or telegram, if representing an increase in excess of two percent (2%) of the original Bid, must have the Bid guaranty adjusted; accordingly, otherwise the Bid will not be considered.
- c. Certified checks or bank drafts, or the amount thereof, Bid bonds, and negotiable U.S. Government bonds of unsuccessful Bidders will be returned as soon as practical after the opening of the Bids.

7. COLLUSIVE AGREEMENTS

- a. Each Bidder submitting a Bid to the Local Public Agency for any portion of the work contemplated by the documents on which bidding is based shall execute and attach thereto, an affidavit substantially in the form herein provided, to the effect that he has not entered into a collusive agreement with any other person, firm, or corporation in regard to any Bid submitted.
- b. Before executing any subcontract the successful Bidder shall submit the name of any proposed subcontractor for prior approval and an affidavit substantially in the form provided in Section 103 hereof.

8. STATEMENT OF BIDDER'S QUALIFICATIONS

Each Bidder shall upon request of the Local Public Agency submit on the form furnished for that purpose (a copy of which is included in the Contract Documents), a statement of the Bidder's qualifications, his experience record in constructing the type of improvements embraced in the contract, his organization and equipment available for the work contemplated, and, when specifically requested by the Local Public Agency, a detailed financial statement. The Local Public Agency shall have the right to take such steps as it deems necessary to determine the ability of the Bidder to perform his obligations under the Contract and the Bidder shall furnish the Local Public Agency all such information and data for this purpose as it may request. The right is reserved to reject any Bid where an investigation of the available evidence or information does not satisfy the Local Public Agency that the Bidder is qualified to carry out properly the terms of the Contract.

9. UNIT PRICES

The unit price for each of the several items in the proposal of each Bidder shall include its pro-rata share of overhead so that the sum of the products obtained

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by multiplying the quantity shown for each item by the unit price Bid represents the total Bid. Any Bid not conforming to this requirement may be rejected as informal. The special attention of all Bidders is called to this provision, for should conditions make it necessary to revise the quantities, no limit will be fixed for such increased or decreased quantities nor extra compensation allowed, provided the net monetary value of all such additive and subtractive changes in quantities of such items of work (i.e., difference in cost) shall not increase or decrease the original contract price by more than 25 percent (25%), except for work not covered in the Drawings and Technical Specifications as provided for in Section 109 hereof. If lump-sum Bids are deemed advisable due to local conditions, this section must be revised accordingly.

10. CORRECTIONS

Erasures or other changes in the Bids must be explained or noted over the signature of the Bidder.

11. TIME FOR RECEIVING BIDS

- a. Bids received prior to the advertised hour of opening will be securely kept sealed. The officer whose duty it is to open them will decide when the specified time has arrived. No Bid received thereafter will be considered, except when a Bid arrives by United States mail after the time fixed for opening, but before the reading of all other Bids is completed, and it is shown to the satisfaction of the Local Public Agency that the non-arrival on time was due solely to delay in the mails for which the Bidder was not responsible, such Bid will be received and considered.
- b. Bidders are cautioned that, while telegraphic modifications of Bids may be received as provided above, such modifications, if not explicit and if in any sense subject to misinterpretation, shall make the Bid so modified or amended, subject to rejection.

12. OPENING OF BIDS

At the time and place fixed for the opening of Bids, the Local Public Agency will cause to be opened and publicly read aloud every Bid received within the time set for receiving Bids, irrespective of any irregularities therein. Bidders and other persons properly interested may be present, in person or by representative.

13. WITHDRAWAL OF BIDS

Bids may be withdrawn on written or telegraphic request dispatched by the Bidder in time for delivery in the normal course of business to the time fixed for opening; provided that written confirmation of any telegraphic withdrawal over the signature of the Bidder is placed in the mail and postmarked prior to the time set for Bid opening. The Bid guaranty of any Bidder withdrawing his Bid in accordance with the foregoing conditions will be returned promptly.

14. AWARD OF CONTRACT: REJECTION OF BIDS

- a. The Contract will be awarded to the responsible Bidder submitting the lowest Bid complying with the conditions of the Invitation for Bids. The Bidder to whom the award is made will be notified at the earliest possible date. The Local Public Agency, however, reserves the right to reject any and all Bids and to waive any informality in Bids received whenever such rejection or waiver is in its interest.
- b. The Local Public Agency reserves the right to consider as unqualified to do the work of general construction any Bidder who does not habitually perform with his own forces the major portions of the work involved in construction of the Improvements embraced in this Contract.

15. EXECUTION OF AGREEMENT: PERFORMANCE AND PAYMENT BOND

- a. Subsequent to the award and within ten (10) days after the prescribed forms are presented for signature, the successful Bidder shall execute and deliver to the Local Public Agency an Agreement in the form included in the Contract Documents in such number of copies as the Local Public Agency may require.
- b. Having satisfied all conditions of award as set forth elsewhere in these documents, the successful Bidder shall, within the period specified in paragraph "a" above, furnish a surety bond in a penal sum not less than the amount of the Contract as awarded, as security for the faithful performance of the Contract, and for the payment of all persons, firms or corporations to whom the Contractor may become legally indebted for labor, materials, tools, equipment, or services of any nature including utility and transportation services, employed or used by him in performing the work. Such bond shall be in the same form as that included in the Contract Documents and shall bear the same date as, or a date subsequent to that of the Agreement. The current power of attorney for the person who signs for any surety company shall be attached to such bond. This bond shall be signed by a guaranty or surety company listed in the latest issue of the U.S. Treasury Circular 570 and the penal sum shall

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be within the maximum specified for such company in said Circular 570. If applicable State laws require separate bonds as security (1) for the faithful performance of the Contract and (2) for the payment of all services, labor, and materials, paragraph "b" above must be revised in accordance with the statutory requirements of the particular State. These bonds shall be signed by a guaranty or surety company listed in the latest of the U.S. Treasury Circular 570 and the total penal sum shall be within the maximum specified for such company in said Circular 570.

- c. The failure of the successful Bidder to execute such Agreement and to supply the required bond or bonds within ten days after the prescribed forms are presented for signature, or within such extended period as the Local Public Agency may grant, based upon reasons determined sufficient by the Local Public Agency, shall constitute a default, and the Local Public Agency may either award the Contract to the next lowest responsible Bidder or readvertise for Bids, and may charge against the Bidder the difference between the amount of the Bid and the amount for which a Contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the Bid Bond. If a more favorable Bid is received by readvertising, the defaulting Bidder shall have no claim against the Local Public Agency for a refund.

16. WAGES AND SALARIES

- a. Attention of Bidders is particularly called to the requirements concerning the payment of not less than the prevailing wage and salary rates specified in the Contract Documents and the conditions of employment with respect to certain categories and classifications of employees. See GENERAL CONDITIONS, PART II, Federal Labor Standards.
- b. The rates of pay set forth under GENERAL CONDITIONS, PART II, are the minimums to be paid during the life of the Contract. It is therefore the responsibility of Bidders to inform themselves as to local labor conditions, such as the length of workday and work week, overtime compensation, health and welfare contributions, labor supply and prospective changes or adjustments of rates.

17. EQUAL EMPLOYMENT OPPORTUNITY

Attention of Bidders is particularly called to the requirement for ensuring that employees and applicants for employment are not discriminated against because of their race, color, religion, sex or national origin. (See Section 134 hereof.)

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven (7) days after bid opening. No contract shall be awarded unless such report is submitted.

CERTIFICATION BY BIDDER

NAME AND ADDRESS OF BIDDER (Include ZIP Code)

-
1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.
 Yes No
-
2. Compliance reports were required to be filed in connection with such contract or subcontract.
 Yes No
-
3. Bidder has filed all compliance reports due under applicable instructions.
 Yes No None Required
-
4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended?
 Yes No

NAME AND TITLE OF SIGNER (Please type)

SIGNATURE

DATE

Replaces Form HUD-1238.CD-1, which is obsolete.

HUD-950.1(11-78)

CONTRACTOR'S REQUIREMENTS

- The Prime Contractor must submit the "Intent to Comply with Section 3" form with the bid packet. Failure to do so shall result in the bid being incomplete.
- The Prime Contractor must notify all sub-contractors of their responsibilities under Section 3
- The Prime Contractor must provide a permanent workforce breakdown of all current employees and identify those Section 3 workers that were hired within the last five years.
- The Prime Contractor must provide an estimated breakdown of potential hires for the awarded project and timeline of anticipated hiring
- The Prime Contractor must refrain from contracting with sub-contractors as to whom they have received notice or have knowledge that the sub-contractors have been found in violation of the regulations in 24 CFR 75.
- Maintain records that document a good faith effort to utilize Section 3 workers and Target Section 3 workers as trainees and employees and any other qualitative efforts to comply with Section 3. (Requirement applies to both contractors and sub-contractors.)

Recordkeeping requirements for recipients are found at 24 CFR § 75.31. The contractor is required to maintain documentation to demonstrate compliance with the regulations and is responsible for requiring their subcontractors to maintain or provide any documentation that will assist recipients in demonstrating compliance, including documentation that shows hours worked by Section 3 workers and Targeted Section 3 workers.

S A M P L E

**CERTIFICATION OF BIDDER REGARDING SECTION 3
AND SEGREGATED FACILITIES**

Name of Prime Contractor

Project Name and Number

The undersigned hereby certifies that

- a. Section 3 provisions are included in the Contract
- b. An "Intent to Comply with Section 3" was certified and submitted as part of the bid proceedings.
- c. No segregated facilities will be maintained, as required by Title IV of the Civil Rights Act of 1964.

Signer Name _____

Title _____

SIGNATURE

DATE

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Community Development Block Grant Program (CDBG)
Davis Bacon Labor Standards Provisions**

**U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM**

**CONTRACTOR'S CERTIFICATION CONCERNING
LABOR STANDARDS AND PREVAILING WAGE REQUIREMENTS**

TO (Appropriate Recipient): Village of Sheffield Date : _____
Project Number 05856.00
c/o Adrienne Ries, Village Clerk
121 S. Church St., P.O. Box 218 Sheffield, IL 61361 Project Name Sheffield – Excess Flow Facilities

1. The undersigned, having executed a contract with the Village of Sheffield for the construction of the above-identified project, acknowledges that:
- a. The Labor Standards provisions are included in the aforesaid contract;
 - b. Correction of any infractions of the aforesaid conditions, including infractions by any of his subcontractors and any lower tier subcontractors, is his responsibility;

2. He certifies that:
- a. Neither he nor any firm, partnership or association in which he has substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6(b) of the Regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5) or pursuant to Section 3(a) of the Davis-Bacon Act, as amended (40 U.S.C. 276a-2[a]).
 - b. No part of the aforementioned contract has been or will be subcontracted to any subcontractor if such subcontractor or any firm, corporation, partnership or association in which such subcontractor has a substantial interest is designated as an ineligible contractor pursuant to any of the aforementioned regulatory or statutory provisions.

3. He agrees to obtain and forward to the aforementioned recipient within ten days after the execution of any subcontract, including those executed by his subcontractors and any lower tier subcontractors, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements executed by the subcontractors.

4. He certifies that:
- a. The legal name and the business address of the undersigned are: _____
 - b. The undersigned is:
 A SINGLE PROPRIETORSHIP A CORPORATION ORGANIZED IN THE STATE OF _____
 A PARTNERSHIP OTHER ORGANIZATION

- c. The name, title and address of the owner, partners or officers of the undersigned are:
- | NAME | TITLE | ADDRESS |
|------|-------|---------|
| | | |
| | | |
| | | |

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d. The names and addresses of all other persons, both natural and corporate, having a substantial interest in the undersigned, and the nature of the interest are (if none, so state):

NAME	ADDRESS	NATURE OF INTEREST

e. The names, addresses and trade classifications of all other building construction contractors in which the undersigned has a substantial interest are (if none, so state):

NAME	ADDRESS	TRADE CLASSIFICATION

 (Contractor)

Date _____ By _____

WARNING

U.S. Criminal Code, Section 1010, Title 18, U.S.C. provides in part: "Whoever . . . makes, passes, utters or publishes any statement, knowing the same to be false . . . shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

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 Davis Bacon Labor Standards Provisions**

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
 COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM

**SUBCONTRACTOR'S CERTIFICATION
 CONCERNING LABOR STANDARDS & PREVAILING WAGE REQUIREMENTS**

TO (APPROPRIATE RECIPIENT) _____ DATE _____

C/O _____ PROJECT NUMBER (IF ANY) _____

PROJECT NAME _____

1. The undersigned, having executed a contract with _____
 (CONTRACTOR or SUBCONTRACTOR)

_____ for _____
 (NATURE OF WORK)

in the amount of \$ _____ in the construction of the above-identified project, certifies that:

- a. The Labor Standards Provisions of The Contract For Construction are included in the aforesaid contract.
- b. Neither he nor any firm, corporation, partnership or association in which he has a substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6(b) of the regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5), or pursuant to Section 3(a) of the Davis-Bacon Act, as amended (40 U.S.C. 276a-2(a)).
- c. No part of the aforementioned contract has been or will be subcontracted to any subcontractor if such subcontractor or any firm, corporation, partnership or association in which such subcontractor has a substantial interest is designated as an ineligible contractor pursuant to the aforesaid regulatory or statutory provisions.

2. He agrees to obtain and forward to the contractor, for transmittal to the recipient, within ten days after the execution of any Lower tier subcontract, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements, executed by the Lower tier subcontractor, in duplicate.

The workmen will report for duty on or about _____ (Date)

3. He certifies that:

a. The Legal name and the business address of the undersigned are:

b. The undersigned is:

- A SINGLE PROPRIETORSHIP A CORPORATION ORGANIZED IN THE STATE OF _____
- A PARTNERSHIP OTHER ORGANIZATION (DESCRIBED): _____

c. THE NAME, TITLE AND ADDRESS OF THE OWNER, PARTNERS OR OFFICERS OF THE UNDERSIGNED ARE:

NAME	TITLE	ADDRESS

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d. The names and addresses of all other persons, both natural and corporate, having a substantial interest in the undersigned, and the nature of the interest are (If none, so state):

NAME	ADDRESS	NATURE OF INTEREST

e. The names, addresses and trade classifications of all other building construction contractors in which the undersigned has a substantial interest are (If none, so state):

NAME	ADDRESS	TRADE CLASSIFICATION

Subcontractor: _____

By: _____ Date: _____
 (Signature)

WARNING

U.S. CRIMINAL CODE, SECTION 1010, TITLE 18, U.S.C., PROVIDES IN PART: "WHOEVER, . . . MAKES, PASSES, UTTERS OR PUBLISHES ANY STATEMENT, KNOWING THE SAME TO BE FALSE. . . SHALL BE FINED NOT MORE THAN \$5,000 OR IMPRISONED NOT MORE THAN TWO YEARS, OR BOTH."

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ESTIMATED PROJECT WORKFORCE BREAKDOWN - TABLE B

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
JOB CATEGORY	TOTAL EST. POSITIONS	NO. POSITIONS BY PERMANENT EMPLOYEES	NO. POSITIONS NOT CURRENTLY OCCUPIED	NO. POSITIONS TO BE FILLED WITH L.I.P.A.R. *
OFFICERS/SUPERVISORS				
PROFESSIONALS				
TECHNICIANS				
HOUSING SALES/RENTAL/ MANAGEMENT				
OFFICE CLERICAL				
SERVICE WORKERS				
OTHERS				
TRADE:				
JOURNEYMAN				
HELPERS				
APPRENTICES				
MAXIMUM NO. TRAINEES				
OTHERS				
TRADE:				
JOURNEYMAN				
HELPERS				
APPRENTICES				
MAXIMUM NO. TRAINEES				
OTHERS				
TRADE:				
JOURNEYMAN				
HELPERS				
APPRENTICES				
MAXIMUM NO. TRAINEES				
OTHERS				
TOTALS:				

*Lower Income Project Area residents.

Individuals residing within the Village of Sheffield whose family income does not exceed 80% of the median income in the SMSA.

_____ COMPANY

CONTRACT

THIS AGREEMENT made this the [Date] day of [Month] , [Year] , by and between [Contractor]
(a corporation organized and existing under the laws of the State of [State]) (a partnership consisting of) (an individual trading as) [**SEE Note 1**] hereinafter called the "Contractor", and Village of Sheffield hereinafter called the "Local Public Agency."

Special Notes:

Note 1. Strike out the two terms not applicable.

WITNESSETH, that the Contractor and the Local Public Agency for the considerations stated herein mutually agree as follows:

ARTICLE 1. Statement of Work. The Contractor shall furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment and services, including utility and transportation services, and perform and complete all work required for the construction of the Improvements embraced in the Project; namely, [**SEE Note 2**] a new sanitary relief sewer, excess flow pumping station, new force main, excess flow storage lagoon and drain back sewer to the existing Wastewater Treatment Plant for the Village of Sheffield and required supplemental work for the Excess Flow Facilities (RE-BID) project, all in strict accordance with the contract documents including all addenda thereto, numbered [# of Addenda's] , dated and , all as prepared by Chamlin & Associates, Inc. acting and in these contract documents preparation, referred to as the "Engineer".

Special Notes:

Note 2. Identify the principal items of Contract such as grading, paving, water mains, sewer lines, treatment facilities, etc.

ARTICLE 2. The Contract Price. The Local Public Agency will pay the Contractor for the performance of the Contract in current funds, for the total quantities of work performed at the **unit prices** stipulated in the Bid for the several respective items of work completed subject to additions and deductions as provided in Section 109 hereof.

~~**ARTICLE 2. The Contract Price.** The Local Public Agency will pay the Contractor for the performance of the Contract, in current funds, subject to additions and deductions as provided in Section 109 hereof, the sum of _____ Dollars (\$ _____).~~

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ARTICLE 3. The Contract. The executed contract documents shall consist of the following components:

- a. This Agreement
- b. Addenda
- c. Invitation for Bids
- d. Instructions to Bidders
- e. Signed Copy of Bid
- f. General Conditions, Parts I and II
- g. Special Conditions
- h. Technical Specifications
- i. Drawings (*as listed in the Schedule of Drawings*)

This Agreement, together with other documents enumerated in this ARTICLE 3, which said other documents are as fully a part of the Contract as if hereto attached or herein repeated, forms the Contract between the parties hereto. In the event that any provision in any component part of this Contract conflicts with any provision of any other component part, the provision of the component part first enumerated in this ARTICLE 3 shall govern, except as otherwise specifically stated.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed in original copies on the day and year first above written.

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(SEE Note 4)

Owner:
Village of Sheffield

(typed or printed name of organization)

By: _____
(individual's signature)

Date: _____
(date signed)

Name: _____
(typed or printed)

Title: Village President

(typed or printed)

Attest: _____
(individual's signature)

Title: _____
(typed or printed)

Address for giving notices:
121 S. Church St., P.O. Box 218

Sheffield, IL 61361

Contractor:

(typed or printed name of organization)

By: _____
(individual's signature)

Date: _____
(date signed)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Attest: _____
(individual's signature)

Title: _____
(typed or printed)

Address for giving notices:

Special Notes: Note 4. Supply a description of the Contractor (e.g., proprietorship, partnership, corporation)

CORPORATE CERTIFICATIONS

I, _____, certify that I am the _____ of the corporation named as Contractor herein; that _____ who signed this Agreement on behalf of the Contractor, was then _____ of said corporation; that said Agreement was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Corporate
Seal

(Corporate Secretary)

PERFORMANCE AND PAYMENT BOND (OR BONDS)

Following the Form of Agreement, insert the approved form of the statutory *surety bond or bonds* to insure the performance of the Contract and payment of labor and materials. In addition to the corporation signatures of the surety company(ies) on the bond(s), each bond should be *countersigned* by the surety company's attorney-in-fact, authorized to act within the state in which the project is situated.

CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned, _____, the duly authorized and acting legal representative of the Village of Sheffield do hereby certify as follows:

I have examined the attached Contract(s) and Performance and Payment Bond(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements are adequate and have been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions, and provisions thereof.

Date: _____

Note: Delete phrase "Performance and Payment Bonds" when not applicable.

GENERAL SPECIFICATIONS

GENERAL CONDITIONS PART I

101. DEFINITIONS

Whenever used in any of the Contract documents, the following meanings shall be given to the terms herein defined:

- a. The term "*Contract*" means the Contract executed by the Local Public Agency and the Contractor, of which these GENERAL CONDITIONS, PARTS I AND II form a part.
- b. The term "*Local Public Agency*" means the Grantee or in this instance, the (*name of local government*) which is authorized to undertake this Contract.
- c. The term "*Contractor*" means the person, firm or corporation entering into the Contract with the Local Public Agency to construct and install the Improvements embraced in this Contract.
- d. The term "*Project Area*" means the area within which are the specified Contract limits of the Improvements contemplated to be constructed in whole or in part under this contract.
- e. The term "*Engineer*" means **Chamlin & Associates, Inc.**, Engineer in charge, serving the Local Public Agency with architectural or engineering services, his successor, or any other person or persons, employed by said Local Public Agency for the purpose of directing or having in charge the work embraced in this Contract, the said Engineer acting directly or having in charge the work embraced in this Contract, the said Engineer having general charge of the work or through any assistant having immediate charge of a portion thereof limited by the particular duties entrusted to him.
- f. The term "*Local Government*" means the town, village, city, county(ies) or other political subdivision of the State of Illinois within which the Project Area is situated.
- g. The term "*Contract Documents*" means and shall include the following: Executed Contract, Addenda (*if any*), Invitation for Bids, Instructions to Bidders, Signed Copy of Bid, General Conditions, Parts I and II, Special Conditions, Technical Specifications, and Drawings (*as listed in the Schedule of Drawings*).

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- h. The term “*Subcontractor*” means an individual, firm, or corporation having a contractual responsibility with the general contractor or with any other subcontractor for the performance of a part of the work at the site.
- i. The term “*Drawings*” means the drawings listed in the Schedule of Drawings.
- j. The term “*Technical Specifications*” means that part of the Contract Documents which describes, outlines and stipulates: the quality of the materials to be furnished; the quality of workmanship required; and the methods to be used in carrying out the construction work to be performed under this Contract.
- k. The terms “*Addendum*” or “*Addenda*” mean any changes, revisions or clarifications of the Contract Documents which have been duly issued by the Local Public Agency to prospective Bidders prior to the time of receiving Bids.
- l. The term “*Secretary*” means the Secretary of Housing and Urban Development, or other person who may be at the time acting in the capacity or authorized to perform the functions of such secretary, or the authorized representative thereof.
- m. The term “*Department*” means the Illinois Department of Commerce and Economic Opportunity.

102. SUPERINTENDENCE BY CONTRACTOR

- a. Except where the Contractor is an individual and gives his personal superintendence to the work, the contractor shall provide a competent superintendent, satisfactory to the Local Public Agency and the Engineer, on the work at all times during working hours with full authority to act for him. The Contractor shall also provide an adequate staff for the proper coordination and expediting of his work.
- b. The Contractor shall lay out his own work and he shall be responsible for all work executed by him under the Contract. He shall verify all figures and elevations before proceeding with the work and will be held responsible for any error resulting from his failure to do so.

103. SUBCONTRACTS

- a. The Contractor shall not execute an agreement with any subcontractor or permit any subcontractor to perform any work included in this contract until he has submitted a Non-Collusion Affidavit from the subcontractor in substantially the form shown on the following page and has received

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written approval of such subcontractor from the Local Public Agency.

- b. No proposed subcontractor shall be disapproved by the Local Public Agency except for cause.
- c. The Contractor shall be as fully responsible to the Local Public Agency for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

State of _____)

County of _____) ss.

_____, being first duly sworn, deposes and says that:

1. He is _____ of _____, hereinafter referred to as the "subcontractor";
2. He is fully informed respecting the preparation and contents of the subcontractor's Proposal submitted by the subcontractor to _____, the Contractor for certain work in connection with the _____ Contract pertaining to the Project in Sheffield, Illinois;
3. Such subcontractor's Proposal is genuine and is not a collusive or sham proposal;
4. Neither the subcontractor nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Proposal in connection with such Contract or to refrain from submitting a Proposal in connection with such Contract, or has in any manner, with any other Bidder, firm or person to fix the price or prices in said subcontractor's Proposal, or to secure through collusion, conspiracy, connivance or unlawful agreement any advantage against the Village of Sheffield (Local Public Agency) or any person interested in the proposed Contract; and
5. The price or prices quoted in the subcontractor's Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed)

(Title)

Subscribed and sworn to before me.

this ____ day of _____, _____

(Notary Public)

My commission expires: _____.

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- d. The Contractor shall cause appropriate provision to be inserted in all subcontracts relative to the work to require compliance by each subcontractor with the applicable provisions of the Contract.
- e. Nothing contained in the Contract shall create any contractual relation between any subcontractor and the Local Public Agency.
- f. The Contractor shall not award work to Subcontractor(s) in excess of 50 percent of the contract price without prior written approval of the Local Public Agency.

104. OTHER CONTRACTS

The Local Public Agency may award, or may have awarded other contracts for additional work, and the Contractor shall cooperate fully with such other Contractors, by scheduling his own work with that to be performed under other Contracts as may be directed by the Local Public Agency. The Contractor shall not commit or permit any act which will interfere with the performance of work by any other Contractor as scheduled.

105. FITTING AND COORDINATION OF WORK

The Contractor shall be responsible for the proper fitting of all work and for the coordination of the operations of all trades, subcontractors, or materialmen engaged upon this Contract. He shall be prepared to guarantee to each of his subcontractors the locations and measurements which they may require for the fitting of their work to all surrounding work.

106. MUTUAL RESPONSIBILITY OF CONTRACTORS

If, through acts or neglect on the part of the Contractor, any other Contractor or any subcontractor shall suffer loss or damage on the work the Contractor shall settle with such other Contractor or subcontractor by agreement or arbitration, if such other Contractor or subcontractor will so settle. If such other Contractor or subcontractor shall assert any claim against the Local Public Agency on account of any damage alleged to have been so sustained, the Local Public Agency will notify this Contractor, who shall defend at his own expense any suit based upon such claim, and, if any judgment or claims against the Local Public Agency shall be allowed, the Contractor shall pay or satisfy such judgment or claim and pay all costs and expenses in connection therewith.

107. PROGRESS SCHEDULE

- a. The Contractor shall submit for approval immediately after execution of the Agreement, a carefully prepared Progress Schedule, showing the proposed dates of starting and completing each of the various sections of

the work, the anticipated monthly payments to become due the Contractor, and the accumulated percent of progress each month.

- b. ~~If a lump sum Contract Price is deemed advisable, the following paragraph should be added here:~~

~~COST BREAKDOWN – The Contractor shall submit to the Local Public Agency a breakdown of his estimated cost of all Site Preparation work, so arranged and itemized as to meet the approval of the Local Public Agency. The breakdown shall be submitted promptly after execution of the agreement and before any payment is made to the Contractor for the work performed under the Contract. After approval by the Local Public Agency the unit prices established in the breakdown shall be used in estimating the amount of partial payments to be made to the Contractor.~~

108. PAYMENTS TO CONTRACTOR

1. Partial Payments

- a. The Contractor shall prepare the requisition for partial payment as of the last day of the month and submit it, with the required number of copies, to the Engineer for approval. The amount of the payment due the Contractor shall be determined by adding to the total value of work completed to date, the value of materials properly stored on the site and deducting (1) ten percent (10%) of the total amount, to be retained until final payment and (2) the amount of all previous payments. The total value of work completed to date shall be based on the estimated quantities of work completed and on the unit prices contained in the agreement. The value of materials properly stored on the site shall be based upon the estimated quantities of such materials and the invoice prices. Copies of all invoices shall be available for inspection of the Engineer.

Payment shall be made to the Contractor within 45 days of the Local Public Agency's (at the engineer's recommendation) approval of a partial pay request.

- b. Monthly or partial payments made by the Local Public Agency to the Contractor are moneys advanced for the purpose of assisting the Contractor to expedite the work of construction. The Contractor shall be responsible for the care and protection of all materials and work upon which payments have been made until final acceptance of such work and materials by the Local Public Agency. Such payments shall not constitute a waiver of the right of the Local Public Agency to require the fulfillment of all terms of the Contract and the delivery of all improvements embraced in this Contract complete and satisfactory to the Local Public Agency in all details.

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- c. ~~If a lump sum contract price is deemed advisable, revise the third sentence in paragraph (a.) under "Partial Payments" to read as follows:~~

~~The total value of work completed to date shall be based upon the estimated quantities of work completed to date on each item and the unit prices established in the COST BREAKDOWN and adjusted in accordance with the value of work completed to date on approved change orders.~~

2. Final Payment

- a. After final inspection and acceptance by the Local Public Agency of all work under the Contract, the Contractor shall prepare his requisition for final payment which shall be based upon the carefully measured or computed quantity of each item of work at the applicable unit prices stipulated in the Agreement. The total amount of the final payment due the Contractor under this contract shall be the amount computed as described above less all previous payments.

Final payment to the Contractor shall be made subject to his furnishing the Local Public Agency with a release in satisfactory form of all claims against the Local Public Agency arising under and by virtue of his Contract, other than such claims, if any, as may be specifically excepted by the Contractor from the operation of the release as provided under Section 113 hereof. Final payment is also contingent upon the Local Public Agency's receipt of a complete set of "as built" drawings approved by the project engineer based upon information provided by the contractor.

- b. ~~If a lump sum Contract Price is deemed advisable, the following paragraph should be added here:~~

~~The amount of the final payment due the contractor shall be the lump sum shown in the Agreement or this sum as adjusted by approved change orders~~

- c. The Local Public Agency, before paying the final estimate, may require the Contractor to furnish releases or receipts from all subcontractors having performed any work and all persons having supplied materials, equipment (installed on the Project) and services to the Contractor, if the Local Public Agency deems the same necessary in order to protect its interest. The Local Public Agency, however, may if it deems such action advisable make payment in part or in full to the Contractor without requiring the

furnishing of such releases or receipts and any payments so made shall in no way impair the obligations of any surety or sureties furnished under this Contract.

- d. Withholding of any amount due the Local Public Agency under Section 303, entitled Liquidated Damages, under SPECIAL CONDITIONS, shall be deducted from the final payment due the Contractor.

3. Withholding Payments

- a. The Local Public Agency may withhold from any payment otherwise due the Contractor so much as may be necessary to protect the Local Public Agency and if it so elects may also withhold any amounts due from the Contractor to any subcontractors or material dealers, for work performed or material furnished by them. The foregoing provisions shall be construed solely for the benefit of the Local Public Agency and will not require the Local Public Agency to determine or adjust any claims or disputes between the Contractor and his subcontractors or Material Dealers, or to withhold any moneys for their protection unless the Local Public Agency elects to do so. The failure or refusal of the Local Public Agency to withhold any moneys from the Contractor shall in no way impair the obligations of any surety or sureties under any bond or bonds furnished under this Contract.

4. Payments Subject to Submission of Certificates

Each payment to the Contractor by the Local Public Agency shall be made subject to submission by the Contractor of all written certifications required of him and his subcontractors by Section 215 hereof.

109. CHANGES IN THE WORK

- a. The Local Public Agency may make changes in the scope of work required to be performed by the Contractor under the Contract or making the Contract, and without relieving or releasing the Contractor from any of his obligations under the Contract or any guarantee given by him pursuant to the Contract provisions, and without affecting the validity of the guaranty bonds, and without relieving or releasing the surety or sureties of said bonds. All such work shall be executed under the terms of the original Contract unless it is expressly provided otherwise.
- b. Except for the purpose of affording protection against any emergency endangering health, life, limb or property, the Contractor shall make no change in the materials used or in the specified manner of constructing and/or installing the Improvements or supply additional labor, services or

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materials beyond that actually required for the execution of the Contract, unless in pursuance of a written order from the Local Public Agency authorizing the Contractor to proceed with the change. No claim for an adjustment of the Contract Price will be valid unless so ordered.

- c. If applicable unit prices are contained in the Agreement (established as a result of either a unit price bid or a Supplemental Schedule of Unit Prices) the Local Public Agency may order the Contractor to proceed with desired unit prices specified in the Contract, provided that in case of a unit price contract the net value of all changes does not increase or decrease the original total amount shown in the Agreement by more than 25 percent (25%) in accordance with the Section entitled Unit Prices, under Instructions to Bidders.
- d. If applicable unit prices are not contained in the Agreement or if the total net change increases or decreases the total Contract Price more than 25 percent (25%), the Local Public Agency shall, before ordering the Contractor to proceed with desired changes, request an itemized proposal from him covering the work involved in the change after which the procedure shall be as follows:
 1. If the proposal is acceptable the Local Public Agency will prepare the change order in accordance therewith for acceptance by the Contractor and
 2. If the proposal is not acceptable and prompt agreement between the two parties cannot be reached, the Local Public Agency may order the Contractor to proceed with the work on a cost-plus-limited basis. A cost-plus-limited basis is defined as the net cost of the Contractor's labor, materials and insurance plus 15 percent (15%) of said net cost to cover overhead and profit, the total cost not to exceed a specified limit.
- e. Each change order shall include in its final form:
 1. A detailed description of the change in the work.
 2. The Contractor's proposal (if any) or a confirmed copy thereof.
 3. A definite statement as to the resulting change in the Contract Price and/or time.
 4. The statement that all work involved in the change shall be performed in accordance with contract requirements except as modified by the change order.

- f. The procedures as outlined in this section for a unit price contract also apply in the case of a lump sum contract.

110. CLAIMS FOR EXTRA COST

- a. If the Contractor claims that any instructions by Drawings or otherwise involve extra cost or extension of time, he shall, within ten days after the receipt of such instructions, and in any event before proceeding to execute the work, submit his protest thereto in writing to the Local Public Agency, stating clearly and in detail the basis of his objections. No such claim will be considered unless so made.
- b. Claims for additional compensation for extra work, due to alleged errors in ground elevations, contour lines, or bench marks, will not be recognized unless accompanied by certified survey data, made prior to the time the original ground was disturbed, clearly showing that errors exist which resulted, or would result, in handling more material, or performing more work, than would be reasonably estimated from the Drawings and maps issued.
- c. Any discrepancies which may be discovered between actual conditions and those represented by the Drawings and maps shall at once be reported to the Local Public Agency and work shall not proceed except at the Contractor's risk, until written instructions have been received by him from the Local Public Agency.
- d. If, on the basis of the available evidence, the Local Public Agency determines that an adjustment of the Contract Price and/or Time is justifiable, the procedure shall be as provided in Section 109 thereof.

111. TERMINATION, DELAYS AND LIQUIDATED DAMAGES

- a. *Right of the Local Public Agency to Terminate Contract.* In the event that any of the provisions of this Contract are violated by the Contractor, or by any of his subcontractors, the Local Public Agency may serve written notice upon the Contractor and the surety of its intention to terminate the contract, such notices to contain the reasons for such intention to terminate the Contract, and unless within ten (10) days after the serving of such notice upon the Contractor, such violation or delay shall cease and satisfactory arrangement of correction be made, the Contract shall, upon the expiration of said ten (10) days, cease and terminate. In the event of any such termination, the Local Public Agency shall immediately serve notice thereof upon the surety and the Contractor and the surety shall have the right to take over and perform the Contract; provided, however, that if the surety does not commence performance thereof within ten (10) days from the date of the mailing to such surety of notice of termination, the Local Public Agency may take over the work and prosecute the same

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to completion by Contract or by force account for the account and at the expense of the Contractor and the Contractor and his surety shall be liable to the Local Public Agency for any excess cost occasioned the Local Public Agency thereby, and in such event the Local Public Agency may take possession of and utilize in completing the work, such materials, appliances, and plant as may be on the site of the work and necessary therefore.

- b. *Liquidated Damages for Delays.* If the work is not completed within the time stipulated in Section 302 hereof, including any extension of time for excusable delays as herein provided, then the Contractor will pay to the Local Public Agency the amount for liquidated damages as specified in the Bid for each calendar day that the Contractor shall be in default. The Contractor and his sureties shall be liable to the Local Public Agency for the amount thereof.
- c. *Excusable Delays.* The right of the Contractor to proceed shall not be terminated nor shall the Contractor be charged with liquidated damages for any delays in the completion of the work due:
 1. To any acts of the Government, including controls or restrictions upon or requisitioning of materials, equipment, tools, or labor by reason of war, National Defense, or any other national emergency;
 2. To any acts of the Local Public Agency;
 3. To causes not reasonably foreseeable by the parties to this Contract at the time of the execution of the Contract which are beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God or of the public enemy, acts of another Contractor in the performance of some other contract with the Local Public Agency, fires, floods, epidemics, quarantine, restrictions, strikes, freight embargoes, and weather of unusual severity such as hurricanes, tornadoes, cyclones and other extreme weather conditions; and
 4. To any delay of any subcontractor occasioned by any of the causes specified in subparagraphs (1), (2), and (3) of this paragraph "c".

Provided, however, that the Contractor promptly notifies the Local Public Agency within ten (10) days in writing of the cause of the delay. Upon receipt of such notification the Local Public Agency shall ascertain the facts and the cause and extent of delay. If, upon the basis of the facts and the terms of this Contract, the delay is properly excusable, the Local Public Agency shall extend the time for completing the work for a period of time commensurate with the period of excusable delay.

112. ASSIGNMENT OR NOVATION

The Contractor shall not assign or transfer, whether by an assignment or novation, any of its rights, duties, benefits, obligations, liabilities, or responsibilities under this Contract without the written consent of the Local Public Agency; provided, however, that assignments to banks, trust companies, or other financial institutions may be made without the consent of the Local Public Agency. No assignment or novation of this Contract shall be valid unless the assignment or novation expressly provides that the assignment of any of the Contractor's rights or benefits under the Contract is subject to a prior lien for labor performed, services rendered, and materials, tools, and equipment supplied for the performance of the work under this Contract in favor of all persons, firms, or corporations rendering such labor or services or supplying such materials, tools, or equipment.

113. DISPUTES

- a. All disputes arising under this Contract or its interpretation except those disputes covered by FEDERAL LABOR STANDARDS PROVISIONS under GENERAL CONDITIONS, PART II whether involving law or fact or both, or extra work, and all claims for alleged breach of contract shall within ten (10) days of commencement of the dispute be presented by the Contractor to the Local Public Agency for decision. All papers pertaining to claims shall be filed in quadruplicate. Such notice need not detail the amount of the claim but shall state the facts surrounding the claim in sufficient detail to identify the claim, together with its character and scope. In the meantime, the Contractor shall proceed with the work as directed. Any claim not presented within the time limit specified in this paragraph shall be deemed to have been waived, except that if the claim is of a continuing character and notice of the claim is not given within ten (10) days of its commencement, the claim will be considered only for a period commencing ten (10) days prior to the receipt by the Local Public Agency of notice thereof.
- b. The Contractor shall submit in detail his claim and his proof thereof. Each decision by the governing body of the Local Policy Agency will be in writing and will be mailed to the Contractor by registered or certified mail, return receipt requested, directed to his last known address.
- c. If the Contractor does not agree with any decision of the Local Public Agency, he shall in no case allow the dispute to delay the work but shall notify the Local Public Agency promptly that he is proceeding with the work under protest and he may then except the matter in question from the final release.

114. TECHNICAL SPECIFICATIONS AND DRAWINGS

Anything mentioned in the Technical Specifications and not shown on the Drawings or shown on the Drawings and not mentioned in the Technical Specifications shall be of like effect as if shown on or mentioned in both. In case of difference between Drawings and Technical Specifications, the Technical Specifications shall govern. In case of any discrepancy in Drawings, or Technical Specifications, the matter shall be immediately submitted to the Local Public Agency, without whose decision, said discrepancy shall not be adjusted by the Contractor, save only at his own risk and expense.

115. SHOP DRAWINGS

- a. All required shop drawings, machinery details, layout drawings, etc. shall be submitted to the Engineer in 6 copies for approval sufficiently in advance of requirements to afford ample time for checking, including time for correcting, resubmitting, and rechecking if necessary. The Contractor may proceed, only at his own risk, with manufacture or installation of any equipment or work covered by said shop drawings, etc. until they are approved and no claim, by the Contractor for extension of the contract time shall be granted by reason of his failure in this respect.
- b. Any drawings submitted without the Contractor's stamp of approval will not be considered and will be returned to him for proper resubmission. If any drawings show variations from the requirements of the Contract because of standard shop practice or other reason, the Contractor shall make specific mention of such variation in his letter of transmittal in order that, if acceptable, suitable action may be taken for proper adjustment of contract price and/or time; otherwise the Contractor will not be relieved of the responsibility for executing the work in accordance with the Contract even though the drawings have been approved.
- c. If a shop drawing is in accord with the Contract or involves only a minor adjustment in the interest of the Local Public Agency not involving a change in contract price or time, the Engineer may approve the drawing. The approval shall be general, shall not relieve the Contractor from his responsibility for adherence to the contract or for any error in the drawing, and shall contain in substance the following:

"The modification shown on the attached drawing is approved in the interest of the Local Public Agency to effect an improvement for the Project and is ordered with the understanding that it does not involve any change in the Contract Price or time; that it is subject generally to all Contract stipulation and covenants; and that it is without prejudice to any and all rights of the Local Public Agency under the Contract and surety bond or bonds."

116. REQUESTS FOR SUPPLEMENTARY INFORMATION

It shall be the responsibility of the Contractor to make timely requests of the Local Public Agency for any additional information not already in his possession which should be furnished by the Local Public Agency under the terms of this Contract, and which he will require in the planning and execution of the work. Such requests may be submitted from time to time as the need is approached, but each shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay. Each request shall be in writing, and list the various items and the latest date by which each will be required by the Contractor. The first list shall be submitted within two weeks after Contract award and shall be as complete as possible at that time. The Contractor shall, if requested, furnish promptly any assistance and information the Engineer may require in responding to these requests of the Contractor. The Contractor shall be fully responsible for any delay in his work or to others arising from his failure to comply fully with the provisions of this Section.

117. MATERIALS AND WORKMANSHIP

- a. Unless otherwise specifically provided for in the Technical Specifications, all workmanship, equipment, materials and articles incorporated in the work shall be new and the best grade of the respective kinds for the purpose. Where equipment, materials, articles or workmanship are referred to in the Technical Specifications as equal to any particular standard, the Engineer shall decide the question of equality.
- b. The Contractor shall furnish to the Local Public Agency for approval the manufacturer's detailed specifications for all machinery, mechanical and other special equipment, which he contemplates installing together with full information as to type, performance characteristics, and all other pertinent information as required, and shall likewise submit for approval as required full information concerning all other materials or articles which he proposes to incorporate in the work. (See Section 118 thereof.)
- c. Machinery, mechanical and other equipment, materials or articles installed or used without such prior approval shall be at the risk of subsequent rejection.
- d. Materials specified by reference to the number or symbol of a specific standard, such as an A.S.T.M. Standard, a Federal Specification or other similar standard, shall comply with requirements in the latest revision thereof and any amendment or supplement thereto in effect on the date of the Invitation for Bids, except as limited to type, class or grade, or modified in such reference. The standards referred to, except as modified in the Technical Specifications, shall have full force and effect as though printed therein.

- e. The Local Public Agency may require the Contractor to dismiss from the work such employee or employees as the Local Public Agency or the Engineer may deem incompetent, or careless, or insubordinate.

118. SAMPLES, CERTIFICATES AND TESTS

- a. The Contractor shall submit all material or equipment samples, certificates, affidavits, etc. as called for in the contract documents or required by the Engineer, promptly after award of the contract and acceptance of the Contractor's bond. No such material or equipment shall be manufactured or delivered to the site, except after acceptance of the Contractor's bond. No such material or equipment shall be manufactured or delivered to the site, except at the Contractor's own risk, until the required samples or certificates have been approved in writing by the Engineer. Any delay in the work caused by late or improper submission of samples or certificates for approval shall not be considered just cause for an extension of the contract time.
- b. Each sample submitted by the Contractor shall carry a label giving the name of the Contractor, the project for which it is intended, and the name of the producer. The accompanying certificate or letter from the Contractor shall state that the sample complies with the contract requirements, shall give the name and brand of the product, its place of origin, the name and address of the producer and all specifications or other detailed information which will assist the Engineer in passing upon the acceptability of the sample promptly. It shall also include the statement that all materials or equipment furnished for use in the project will comply with the samples and/or certified statements.
- c. Approval of any materials shall be general only and shall not constitute a waiver of the Local Public Agency's right to demand full compliance with Contract requirements. After actual deliveries, the Engineer will have such check tests made as he deems necessary in each instance and may reject materials and equipment and accessories for cause, even though such materials and articles have been given general approval. If materials, equipment or accessories which fail to meet check tests have been incorporated in the work, the Engineer will have the right to cause their removal and replacement by proper materials or to demand and secure such reparation by the Contractor as is equitable.
- d. Except as otherwise specifically stated in the Contract, the costs of sampling and testing will be divided as follows:
 - 1. The Contractor shall furnish without extra cost, including packing and delivery charges, all samples required for testing purposes, except those samples taken on the project by the Engineer;

2. The Contractor shall assume all costs of retesting materials which fail to meet contract requirements;
3. The Contractor shall assume all costs of testing materials offered in substitution for those found deficient;
4. The Local Public Agency will pay all other expenses.

119. PERMITS AND CODES

- a. The Contractor shall give all notices required by and comply with all applicable laws, ordinances, and codes of the Local Government. All construction work and/or utility installations shall comply with all applicable ordinances and codes, including all written waivers. Before installing any work, the Contractor shall examine the Drawings and Technical Specifications for compliance with applicable ordinances and codes and shall immediately report any discrepancy to the Local Public Agency. Where the requirements of the Drawings and Technical Specifications fail to comply with such applicable ordinances or codes, the Local Public Agency will adjust the Contract by Change Order to conform to such ordinances or codes (unless waivers in writing covering the difference have been granted by the governing body or department) and make appropriate adjustment in the Contract Price or stipulated unit prices.

Should the Contractor fail to observe the foregoing provisions and proceed with the construction and/or install any utility at variance with any applicable ordinance or code, including any written waivers (notwithstanding the fact that such installation is in compliance with the Drawings and Technical Specifications), the Contractor shall remove such work without cost to the Local Public Agency, or a Change Order will be issued to cover only the excess cost the Contractor would have been entitled to receive if the change had been made before the Contractor commenced work on the items involved.

- b. The Contractor shall, at his own expense, secure and pay to the appropriate department of the Local Government the fees or charges for all permits for street pavement, sidewalks, sheds, removal of abandoned water taps, sealing of house connection drains, pavement cuts, buildings, electrical, plumbing, water, gas and sewer permits required by the local regulatory body or any of its agencies.
- c. The Contractor shall comply with applicable local laws and ordinances governing the disposal of surplus excavation, materials, debris and rubbish on or off the Project Area and commit no trespass on any public or private property in any operation due to or connected with the Improvements embraced in this Contract.

120. CARE OF WORK.

- a. The Contractor shall be responsible for all damages to person or property that occur as a result of his fault or negligence in connection with the prosecution of the work and shall be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance, whether or not the same has been covered in whole or in part by payments made by the Local Public Agency.
- b. The Contractor shall provide sufficient competent watchmen, both day and night, including Saturdays, Sundays, and holidays, from the time the work is commenced until final completion and acceptance.
- c. In an emergency affecting the safety of life, limb or property, including adjoining property, the Contractor, without special instructions or authorization from the Local Public Agency, is authorized to act at his discretion to prevent such threatened loss or injury, and he shall so act. He shall likewise act if instructed to do so by the Local Public Agency. Any compensation claimed by the Contractor on account of such emergency work will be determined by the Local Public Agency as provided in Section 109 hereof.
- d. The Contractor shall avoid damage as a result of his operations to existing sidewalks, streets, curbs, pavements, utilities (except those which are to be replaced or removed), adjoining property, etc., and he shall at his own expense completely repair any damage thereto caused by his operations.
- e. The Contractor shall shore up, brace, underpin, secure, and protect as may be necessary, all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be in any way affected by the excavations or other operations connected with the construction of the Improvements embraced in this Contract. The Contractor shall be responsible for the giving of any and all required notices to any adjoining or adjacent property owner or other party before the commencement of any work. The Contractor shall indemnify and save harmless the Local Public Agency from any damages on account of settlements or the loss of lateral support of adjoining property and from all loss or expense and all damages for which the Local Public Agency may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.

121. ACCIDENT PREVENTION

- a. No laborer or mechanic employed in the performance of this Contract shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health or safety as determined

under construction safety and health standards promulgated by the Secretary of Labor.

- b. The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the site, which occur as a result of his prosecution of the work. The safety provisions of applicable laws and building and construction codes shall be observed and the Contractor shall take or cause to be taken such additional safety and health measures as the Local Public Agency may determine to be reasonably necessary. Machinery, equipment and all hazards shall be guarded in accordance with the safety provisions of the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, Inc., to the extent that such provisions are not in conflict with applicable laws.
- c. The Contractor shall maintain an accurate record of all cases of death, occupational disease, or injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the Contract. The Contractor shall promptly furnish the Local Public Agency with reports concerning these matters.
- d. The Contractor shall indemnify and save harmless the Local Public Agency from any claims for damages resulting from property damage, personal injury and/or death suffered or alleged to have been suffered by any person as a result of any work conducted under this Contract.

122. SANITARY FACILITIES

The Contractor shall furnish, install and maintain ample sanitary facilities for the workers. As the needs arise, a sufficient number of enclosed temporary toilets shall be conveniently placed as required by the sanitary codes of the State and Local Government. Drinking water shall be provided from an approved source, so piped or transported as to keep it safe and fresh and served from single service containers or satisfactory types of sanitary drinking stands or fountains. All such facilities and services shall be furnished in strict accordance with existing and governing health regulations.

123. USE OF PREMISES

- a. The Contractor shall confine his equipment, storage of materials, and construction operations to the Contract Limits as shown on the Drawings and as prescribed by ordinances or permits, or as may be desired by the Local Public Agency, and shall not unreasonably encumber the site or public rights of way with his materials and construction equipment.

- b. The Contractor shall comply with all reasonable instructions of the Local Public Agency and all existing state and local regulations regarding signs, advertising, traffic, fires, explosives, danger signals, and barricades.

124. REMOVAL OF DEBRIS, CLEANING, ETC.

The Contractor shall periodically, or as directed during the progress of the work, remove and legally dispose of all surplus excavated material and debris, and keep the Project Area and public rights-of-way reasonably clear. Upon completion of the work, he shall remove all temporary construction facilities, debris and unused materials provided for the work, and put the whole site of the work and public rights-of-way in a neat and clean condition. Trash burning on the site of the work will be subject to prior approval of the Local Public Agency and existing State and local regulations.

125. INSPECTION

- a. All materials and workmanship shall be subject to inspection, examination, or test by the Local Public Agency and the Engineer at any and all times during manufacture or construction and at any and all places where such manufacture or construction is carried on. The Local Public Agency shall have the right to reject defective material and workmanship or require its correction. Unacceptable workmanship shall be satisfactorily corrected. Rejected material shall be promptly segregated and removed from the Project Area and replaced with material of specified quality without charge therefore. If the Contractor fails to proceed at once with the correction of rejected workmanship or defective material, the Local Public Agency may by contract or otherwise have the defects remedied or rejected materials removed from the Project Area and charge the cost of the same against any monies which may be due the Contractor, without prejudice to any other rights or remedies of the Local Public Agency.
- b. The Contractor shall furnish promptly all materials reasonably necessary for any tests which may be required. (See Section 118 hereof.) All tests by the Local Public Agency will be performed in such manner as not to delay the work unnecessarily and will be made in accordance with the provisions of the Technical Specifications.
- c. The Contractor shall notify the Local Public Agency sufficiently in advance of backfilling or concealing any facilities to permit proper inspection. If any facilities are concealed without approval or consent of the Local Public Agency, the Contractor shall uncover for inspection and recover such facilities all at his own expense, when so requested by the Local Public Agency.
- d. Should it be considered necessary or advisable by the Local Public Agency at any time before final acceptance of the entire work to make an

examination of work already completed by uncovering the same, the Contractor shall on request promptly furnish all necessary facilities, labor, and material. If such work is found to be defective in any important or essential respect, due to fault of the Contractor or his subcontractors, the Contractor shall defray all the expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, the actual cost of labor and material necessarily involved in the examination and replacement, plus 15 percent of such costs to cover superintendence, general expenses and profit, shall be allowed the Contractor and he shall, in addition, if completion of the work of the entire Contract has been delayed thereby, be granted a suitable extension of time on account of the additional work involved.

- e. Inspection of materials and appurtenances to be incorporated in the Improvements embraced in this Contract may be made at the place of production, manufacture or shipment, whenever the quantity justifies it, and such inspection and acceptance, unless otherwise stated in the Technical Specifications, shall be final, except as regards (1) latent defects, (2) departures from specific requirements of the Contract, (3) damage or loss in transit, or (4) fraud or such gross mistakes as amount to fraud. Subject to the requirements contained in the preceding sentence, the inspection of materials as a whole or in part will be made at the Project Site.
- f. Neither inspection, testing, approval nor acceptance of the work in whole or in part, by the Local Public Agency or its agents, shall relieve the Contractor or his sureties of full responsibility for materials furnished or work performed not in strict accordance with the Contract.

126. REVIEW BY LOCAL PUBLIC AGENCY

The Local Public Agency, its authorized representatives and agents and the Representative for the Secretary, and representatives of the department shall, at all times have access to and be permitted to observe and review all work, materials, equipment, payrolls, personnel records, employment conditions, material invoices, and other relevant data and records pertaining to this Contract, provided, however, that all instructions and approval with respect to the work will be given to the Contractor only by the Local Public Agency through its authorized representatives or agents.

127. FINAL INSPECTION

When the Improvements embraced in this Contract are substantially completed, the Contractor shall notify the Local Public Agency in writing that the work will be ready for final inspection on a definite date which shall be stated in the notice. The notice will be given at least ten (10) days prior to the date stated for final inspection and bear the signed concurrence of the representative of the Local

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Public Agency having charge of inspection. If the Local Public Agency determines that the status of the Improvements is as represented, it will make the arrangements necessary to have final inspection commenced on the date stated in the notice, or as soon thereafter as is practicable. The inspection party will also include the representatives of each department of the Local Government having in charge improvements of like character when such Improvements are later to be accepted by the Local Government.

128. DEDUCTION FOR UNCORRECTED WORK

If the Local Public Agency deems it not expedient to require the Contractor to correct work not done in accordance with the Contract Documents, an equitable deduction from the Contract Price will be made by agreement between the Contractor and the Local Public Agency and subject to settlement, in case of dispute, as herein provided.

129. INSURANCE

The Contractor shall not commence work under this contract until he has obtained all the insurance required under this paragraph and such insurance has been approved by the Local Public Agency, nor shall the Contractor allow any subcontractor to commence work on his subcontract until the insurance required of the subcontractor has been obtained and approved.

- a. *Compensation Insurance:* The Contractor shall procure and shall maintain during the life of this contract Workmen's Compensation Insurance as required by applicable State or territorial law for all of his employees to be engaged in work at the site of the project under this contract and, in case of any such work sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Workmen's Compensation Insurance. In case any class of employees engaged in hazardous work on the project under this contract is not protected under the Workmen's Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide adequate employer's liability insurance for the protection of such of his employees as are not otherwise protected.
- b. *Contractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance:* The Contractor shall procure and shall maintain during the life of this Contract Contractor's Public Liability Insurance, Contractor's Property Damage Insurance and Vehicle Liability Insurance in the amounts specified in the Special Conditions.
- c. *Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance:* The Contractor shall require each of his

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subcontractors to procure and to maintain during the life of his subcontract, Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance of the type and in the amounts specified in the Special Conditions specified in subparagraph (b) hereof.

- d. *Scope of Insurance and Special Hazards:* The insurance required under subparagraphs (b) and (c) hereof shall provide adequate protection for the Contractor and his subcontractors, respectively, against damage claims which may arise from operations under this Contract, whether such operations be by the insured or by anyone directly or indirectly employed by him and, also against any of the special hazards which may be encountered in the performance of this Contract as enumerated in the Special Conditions.
- e. *Builder's Risk Insurance (Fire and Extended Coverage):* Until the project is completed and accepted by the Local Public Agency, the Local Public Agency, or Contractor (at the Local Public Agency's option as indicated in the Special Conditions) is required to maintain Builder's Risk Insurance (*fire and extended coverage*) on a 100 percent completed value basis on the insurable portion of the project for the benefit of the Local Public Agency, the Contractor, and subcontractors as their interests may appear. The Contractor shall not include any costs for Builder's Risk Insurance (*fire and extended coverage*) premiums during construction unless the Contractor is required to provide such insurance; however, this provision shall not release the Contractor from his obligation to complete, according to plans and specifications, the project covered by the contract, and the Contractor and his surety shall be obligated to full performance of the Contractor's undertaking. **Builder's Risk not required for this project.**
- f. *Proof of Carriage of Insurance:* The Contractor shall furnish the Local Public Agency with certificates showing the type, amount, class of operations covered, effective dates and date of expiration of policies. Such certificates shall also contain substantially the following statement: "*The insurance covered by this certificate will not be cancelled or materially altered, except after ten (10) days written notice has been received by the Local Public Agency.*"

130. PATENTS "Not Required"

The Contractor shall hold and save the Local Public Agency, its officers, and employees, harmless from liability of any nature or kind, including costs and expenses, for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the Contract, specifically stipulated in the Technical Specifications.

131. WARRANTY OF TITLE

No material, supplies, or equipment to be installed or furnished under this Contract shall be purchased subject to any chattel mortgage or under a conditional sale, lease-purchase or other agreement by which an interest therein or in any part thereof is retained by the seller or supplier. The Contractor shall warrant good title to all materials, supplies, and equipment installed or incorporated in the work and upon completion of all work, shall deliver the same together with all improvements and appurtenances constructed or placed thereon by him to the Local Public Agency free from any claims, liens, or charges. Neither the Contractor nor any person, firm, or corporation furnishing any material or labor for any work covered by this Contract shall have any right to a lien upon any improvement or appurtenance thereon. Nothing contained in this paragraph, however, shall defeat or impair the right of persons furnishing materials or labor to recover under any bond given by the Contractor for their protection or any rights under any law permitting such persons to look to funds due the Contractor in the hands of the Local Public Agency. The provisions of this paragraph shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing materials for the work when no formal contract is entered into for such materials.

132. GENERAL GUARANTY

Neither the final certificate of payment nor any provision in the Contract nor partial or entire use of the Improvements embraced in this Contract by the Local Public Agency or the public shall constitute an acceptance of work not done in accordance with the Contract or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall promptly remedy any defects in the work and pay for any damage to other work resulting therefrom which shall appear within a period of 12 months from the date of final acceptance of the work. (Indicate in the preceding blank the number of calendar months over which the guaranty will extend. This period of time should be determined in line with the character of the improvements and local practice in this respect.)

The Local Public Agency will give notice of defective materials and work with reasonable promptness.

133. COMPLIANCE WITH AIR AND WATER ACTS

In compliance with the Clean Air Act, as amended, 42 U.S.C. 1857 et. seq., the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et. seq., and the regulations of the Environmental Protection Agency with respect thereto, the Contractor agrees that:

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1. Any facility to be utilized in the performance of this Contract or any subcontract shall not be a facility listed on the EPA List of Violating Facilities pursuant to 40 CFR 15.20.
2. He will comply with all requirements of Section 114 of the Clean Air Act as amended, (42 U.S.C. 1857c-8) and Section 308 of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251) relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations & guidelines issued thereunder.
3. He will promptly notify the owner of any notification received from the Director, Office of Federal Activities, EPA, indicating that a facility utilized or to be utilized for the Contract is under consideration to be listed on the EPA List of Violating Facilities.
4. He will include or cause to be included the provisions of paragraphs (1) through (4) of this section in every nonexempt subcontract and that he will take such action as the Government may direct as a means of enforcing such provisions.

134. EQUAL EMPLOYMENT OPPORTUNITY

1. If the contract amount is \$10,000 or less, the following conditions shall apply:

During the performance of this contract the Contractor agrees as follows:

- a. The Contractor will not discriminate against any employee or the applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the owner setting forth the provisions of this nondiscrimination clause.
- b. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

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- c. The Contractor will cause the foregoing provisions to be inserted in all subcontracts for any work covered by this contract so that such provisions will be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.
2. Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246). *(Applicable to contracts/subcontracts exceeding \$10,000.)*
- a. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
 - b. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area.

Timetables	Goals for Minority participation for each trade	Goal for female participation in each trade
Bureau County	18.4	6.9%

These goals are applicable to all the Contractor's construction work *(whether or not it is federal or federally assisted)* performed in the covered area.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3 (a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

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- c. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
 - d. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is in North along Reed Street from North Street to a grass field adjacent to the existing Sheffield Wastewater Treatment Plant in Bureau County, Sheffield, Illinois.
3. Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246), definitions:
- a. As used in these specifications:
 - i. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - ii. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - iii. "Federal Employer Identification Number" (FEIN) means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - iv. "Minority" includes:

Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

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American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

- b. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
- c. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
- d. The Contractor shall implement the specific affirmative action standards provided in paragraphs 3a through 3p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
- e. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

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- f. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
- g. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its efforts to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - i. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - ii. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - iii. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
 - iv. Provide immediate written notification to the Director when the union or unions with which the Contractor has a

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collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

- v. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 3b above.
- vi. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- vii. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- viii. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

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- ix. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- x. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.
- xi. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- xii. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- xiii. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
- xiv. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- xv. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

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- xvi. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

- h. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (*3a through p*). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 3a through p of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation shall not be a defense for the contractor's non-compliance.

- i. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (*for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized*).

- j. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

- k. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

- l. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to ~~Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs.~~ Any Contractor who fails to carry out such sanctions

and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

- m. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 3 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
- n. The Contractor shall designate a responsible official to monitor all employment-related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (*e.g., mechanic, apprentice, trainee or laborer*), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
- o. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (*e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program*).

135. SECTION 504 OF THE REHABILITATION ACT OF 1973 (If \$2,500 or Over)

Affirmative Action for Workers With Disabilities

- 1. The Contractor will not discriminate against any employee or applicant for employment because of physical or mental disability in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as the following: Employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

2. In the event of the Contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
3. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, provided by or through the contracting officer. Such notices shall state the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees with disabilities and applicants for employment, and the rights of applicants and employees.
4. The Contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 504 of the Rehabilitation Act of 1973 and is committed to take affirmative action to employ and advance in employment individuals with disabilities.
5. The Contractor will include the provisions of this clause in every subcontract or purchase order of \$2,500 or more unless exempted by rules, regulations, or orders of the Secretary issued pursuant to Section 504 of the Act, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for non-compliance.

136. SECTION 402 VETERANS OF THE VIETNAM ERA (If \$10,000 or Over)

Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era

1. The Contractor will not discriminate against any employee or applicant for employment because he or she is a disabled veteran or veteran of the Vietnam era in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified disabled veterans and veterans of the Vietnam era without discrimination based upon their disability or veteran status in all employment practices such as the following: employment upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.
2. The Contractor agrees that all suitable employment openings of the Contractor which exist at the time of the execution of this Contract and those which occur during the performance of this Contract, including those not generated by this Contract and including those occurring at an

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establishment of the Contract other than the one wherein the Contract is being performed but excluding those of independently operated corporate affiliates, shall be listed at an appropriate local office of the State employment service system wherein the opening occurs. The Contractor further agrees to provide such reports to such local office regarding employment openings and hires as may be required.

State and local government agencies holding Federal contracts of \$10,000 or more shall also list all their suitable openings with the appropriate office of the State employment service but are not required to provide those reports set forth in paragraphs (4) and (5).

3. Listing of employment openings with the employment service system pursuant to this clause shall be made at least concurrently with the use of any other recruitment source or effort and shall involve the normal obligations which attach to the placing of a bona fide job order, including the acceptance or referrals of veterans and non-veterans. The listing of employment openings does not require the hiring of any particular job applicant or from any particular group of job applicants, and nothing herein is intended to relieve the Contractor from any requirements in Executive Orders or regulations regarding nondiscrimination in employment.
4. The reports required by paragraph (2) of this clause shall include, but not be limited to, periodic reports which shall be filed at least quarterly with the appropriate local office or, where the Contractor has more than one hiring location in a State, with the central office of that State employment service. Such reports shall indicate for each hiring location (1) the number of individuals hired during the reporting period, (2) the number of non-disabled veterans of the Vietnam era hired, (3) the number of disabled veterans of the Vietnam era hired, and (4) the total number of disabled veterans hired. The reports should include covered veterans hired for on-the-job training under 38 U.S.C. 1787. The Contractor shall submit a report within 30 days after the end of each reporting period wherein any performance is made on this contract identifying data for each hiring location. The Contractor shall maintain at each hiring location copies of the reports submitted until the expiration of one year after final payment under the Contract, during which time these reports and related documentation shall be made available, upon request, for examination by any authorized representatives of the contracting officer or of the Secretary of Labor. Documentation would include personnel records respecting job openings, recruitment, and placement.
5. Whenever the Contractor becomes contractually bound to the listing provisions of this clause, it shall advise the employment service system in each State where it has establishments of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these provisions and has so advised the State system, there is

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no need to advise the State system of subsequent contracts. The Contractor may advise the State system when it is no longer bound by this Contract clause.

6. This clause does not apply to the listing of employment openings which occur and are filled outside of the 50 States, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands.
7. The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
8. In the event of the Contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
9. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, provided by or through the contracting officer. Such notice shall state the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era for employment, and the rights of applicants and employees.
10. The Contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding that the Contractor is bound by the terms of the Vietnam Era Veterans Readjustment Assistance Act and is committed to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam Era.
11. The Contractor will include the provisions of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulation, or orders of the Secretary issued pursuant to the Act, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance.

**137. SECTION 109 OF THE HOUSING AND COMMUNITY DEVELOPMENT ACT
OF 1974**

No person in the United States shall on the ground of race, color, national origin, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this title.

138. “SECTION 3” COMPLIANCE IN THE PROVISION OF TRAINING, EMPLOYMENT AND BUSINESS OPPORTUNITIES

Any contract or subcontract awarded by a recipient or contractor shall include the following clause (referred to as a Section 3 clause):

- a. The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3), contributes to the establishment of stronger, more sustainable communities by ensuring that employment and other economic opportunities generated by Federal financial assistance for housing and community development programs are, to the greatest extent feasible, directed toward low- and very low-income persons, particularly those who receive Federal financial assistance for housing and those residing in communities where the financial assistance is expended.
- b. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 75, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 75 regulations.
- c. The contractor agrees to send to each labor organization or representative or workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this Section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.
- d. The Contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 75, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 75. The Contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 75.

- e. The Contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the Contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 75 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 75.
- f. Noncompliance with HUD's regulations in 24 CFR part 75 may result in sanctions, termination of this Contract for default, and debarment or suspension from future HUD assisted contracts.

139. NONSEGREGATED FACILITIES

The Contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The Contractor covenants that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. As used in this paragraph the term "segregated facilities" means any waiting rooms, work areas, rest rooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. The Contractor agrees that prior to award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause, that he will retain such certifications in his files.

140. INTEREST OF CERTAIN FEDERAL AND OTHER OFFICIALS

1. No member of or delegate to the Congress of the United States and no Resident Commissioner shall be admitted to any share or part of this Contractor to any benefit to arise from same: Provided, that the foregoing provision of this section shall not be construed to extend to this Contract if made with a corporation for its general benefit.
2. No member, officer, or employee of the Grantee, or its designees or agents, no member of the governing body of the locality in which the Project is located, and no other public official of such locality or localities who exercises any functions or responsibilities in connection with the Project during his tenure or for one year thereafter, shall have any interest,

direct or indirect, in any Contract or Subcontract, or the proceeds thereof, for work to be performed under this Contract.

The Contractor will include the provisions of paragraphs (1) and (2) in every Subcontract so that such provisions will be binding upon each Subcontractor.

141. AMERICANS WITH DISABILITIES ACT

Title II of the Americans with Disabilities Act specifically requires that all newly constructed or altered streets, roads, highways, and pedestrian walkways must contain curb ramps or other sloped areas at any intersection having curbs or other barriers to entry from a street level or pedestrian walkway and that all newly constructed or altered street level pedestrian walkways must have curb ramps at intersections. Newly constructed or altered street level pedestrian walkways must contain curb ramps or other sloped areas at intersections to streets, roads, or highways [28 CFR 35.151(e)].

GENERAL SPECIFICATIONS

GENERAL CONDITIONS PART II

(Federal Labor Standards Provisions)

200. SEE ATTACHMENT - 2 CFR Ch. II (1-1-14 Edition) Pt. 200, App. II

201. APPLICABILITY

The Project or Program to which the work covered by this Contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

202. WAGE RATES AND FRINGE BENEFITS FOR LABORERS AND MECHANICS

All laborers and mechanics employed upon the work covered by this Contract shall be paid unconditionally and not less often than once each week, and without subsequent deduction or rebate on any account (except such payroll deductions as are made mandatory by law and such other payroll deductions as are permitted by the applicable regulations issued by the Secretary of Labor, United States Department of Labor, pursuant to the Anti-Kickback Act hereinafter identified), the full amount due at time of payment computed at wage rates not less than those contained in the wage determination decision of said Secretary of Labor (**a copy of which is attached and herein incorporated by reference**), regardless of any contractual relationship which may be alleged to exist between the Contractor or any subcontractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of this section, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. All laborers and mechanics employed upon such work shall be paid in cash, except that payment may be by check if the employer provides or secures satisfactory facilities approved by the Local Public Agency or Public Body for the cashing of the same without cost or expense to the employee. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(v) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph (a)(4) of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for

the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (a)(1)(iii) of this section) and the Davis-Bacon poster (WH-1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

203. UNDERPAYMENTS OF WAGES OR SALARIES

In case of underpayment of wages by the Contractor or by any subcontractor to laborers or mechanics employed by the Contractor or subcontractor upon the work covered by this Contract, the Local Public Agency or Public Body in addition to such other rights as may be afforded it under this Contract shall withhold from the Contractor, out of any payments due the Contractor, so of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in paragraph (a) of this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

204. ANTICIPATED COSTS OF FRINGE BENEFITS

If the Contractor does not make payments to a trustee or other third person, he may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing fringe benefits under a plan or program of a type expressly listed in the wage determination decision of the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. A copy of any findings made by the Secretary of Labor in respect to fringe benefits being provided by the Contractor must be submitted to the Local Public Agency or Public Body with the first payroll filed by the Contractor subsequent to receipt of the findings.

205. OVERTIME COMPENSATION REQUIRED BY CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (76 State. 357-360: Title 40 U.S.C., Sections 327-332)

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- a. *Overtime Requirements.* No Contractor or subcontractor contracting for any part of the Contract work which may require or involve the employment of laborers or mechanics, including watchmen and guards, shall require or permit any laborer or mechanic in any workweek in which he is employed on such work to work in excess of 40 hours in such work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of 40 hours in such work week, as the case may be.
- b. *Violation: Liability for Unpaid Wages Liquidated Damages.* In the event of any violation of the clause set forth in paragraph (a), the Contractor and any subcontractor responsible therefore shall be liable to any affected employee for his unpaid wages. In addition such Contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic employed in violation of the clause set forth in paragraph (a), in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in paragraph (a).
- c. *Withholding for Liquidated Damages.* The Local Public Agency or Public Body shall withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor, such sums as may administratively be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for liquidated damages as provided in the clause set forth in paragraph (b).
- d. *Subcontracts.* The Contractor shall insert in any subcontracts the clauses set forth in paragraphs (a), (b), and (c) of this Section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.

206. APPRENTICES AND TRAINEES

- a. *Apprentices.* Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for

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probationary employment as an apprentice. The allowable ratio of apprentices to journeymen in any craft classification shall not be greater than the ratio permitted to the contractor as to his entire force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not a trainee as defined in paragraph 2, below, or is not registered or otherwise employed as stated above, shall be paid the wage rate determined by the Secretary of Labor for the classification of work he actually performed. The contractor or subcontractor will be required to furnish to the contracting officer or a representative of the Wage-Hour Division of the U.S. Department of Labor written evidence of the registration of his program and apprentices as well as the appropriate ratios and wage rates (expressed in percentages of the journeymen hourly rates), for the area of construction prior to using any apprentices on the contract work. The wage rate paid apprentices shall be not less than the appropriate percentage of the journeyman's rate contained in the applicable wage determination.

- b. *Trainees.* Except as provided in 29 CFR 5.15 trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification, by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training. The ratio of trainees to journeymen shall not be greater than permitted under the plan approved by the Bureau of Apprenticeship and Training. Every trainee must be paid at not less than the rate specified in the approved program for his level of progress. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Bureau of Apprenticeship and Training shall be paid not less than the wage rate determined by the Secretary of Labor for the classification of work he actually performed. The Contractor or subcontractor will be required to furnish the contracting officer or a representative of the Wage-Hour Division of the U.S. Department of Labor written evidence of the certification of his program, the registration of the trainees, and the ratios and wage rates prescribed in that program. In the event the Bureau of Apprenticeship and Training withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- c. *Equal Employment Opportunity.* The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

207. EMPLOYMENT OF CERTAIN PERSONS PROHIBITED

No person under the age of sixteen years and no person who, at the time, is serving sentence in a penal or correctional institution shall be employed on the work covered by this Contract.

208. REGULATIONS PURSUANT TO SO-CALLED COPELAND ANTI-KICKBACK ACT

The Contractor shall comply with the applicable regulations of the Secretary of Labor, United States Department of Labor, made pursuant to the Copeland Anti-Kickback Act (Title 40 U.S.C., Section 276c), and any amendment or modifications thereof, shall cause appropriate provisions to be inserted in subcontracts to insure compliance therewith by all subcontractors subject thereto, and shall be responsible for the submission of affidavits required by subcontractor thereunder, except as said Secretary of Labor may specifically provide for reasonable limitations, variations, tolerance, and exemptions from the requirements thereof.

209. EMPLOYMENT OF LABORERS OR MECHANICS NOT LISTED IN AFORESAID WAGE DETERMINATION DECISION

Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the Contract will be classified or reclassified conformably to the wage determination by the Local Public Agency or Public Body, and a report of the action taken shall be submitted by the Local Public Agency or Public Body, through the Secretary of Housing and Urban Development, to the Secretary of Labor, United States Department of Labor. In the event the interested parties cannot agree on the proper classification or reclassification of a particular class of laborers and mechanics to be used, the question accompanied by the recommendation of the Local Public Agency or Public Body shall be referred, through the Secretary of Housing and Urban Development, to the Secretary of Labor for final determination.

210. FRINGE BENEFITS NOT EXPRESSED AS HOURLY WAGE RATES

The Local Public Agency or Public Body shall require, whenever the minimum wage rate prescribed in the Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly wage rate and the Contractor is obligated to pay cash equivalent of such a fringe benefit, an hourly cash equivalent thereof to be established. In the event the fringe benefit expressed as an hourly cash equivalent cannot be determined, the Local Public Agency shall refer its recommendation through HUD to DOL for determination.

211. POSTING WAGE DETERMINATION DECISIONS AND AUTHORIZED WAGE DEDUCTIONS

The applicable wage poster of the Secretary of Labor, United States Department of Labor, and the applicable wage determination decisions of said Secretary of Labor with respect to the various classification of laborers and mechanics employed and to be employed upon the work covered by this Contract, and a statement showing all deductions, if any, in accordance with the provisions of this Contract, to be made from wages actually earned by persons so employed or to be employed in such classifications, shall be posted at appropriate conspicuous points at the site of the work.

212. COMPLAINTS, PROCEEDINGS, OR TESTIMONY BY EMPLOYEES

No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

213. CLAIMS AND DISPUTES PERTAINING TO WAGE RATES

Claims and disputes pertaining to wage rates or to classifications of laborers and mechanics employed upon the work covered by this Contract shall be promptly reported by the Contractor in writing to the Local Public Agency or Public Body for referral by the latter through the Secretary of Housing and Urban Development to the Secretary of Labor, United States Department of Labor, whose decision shall be final with respect thereto.

214. QUESTIONS CONCERNING FEDERAL STATUTES AND REGULATIONS

All questions arising under this Contract which relate to the application or interpretation of (a) the aforesaid Anti-Kickback Act, (b) the Contract Work Hours and Safety Standards Act, (c) the aforesaid Davis-Bacon Act, (d) the regulations issued by the Secretary of Labor, United States Department of Labor, pursuant to said Acts, or (e) the labor standards provisions of any other pertinent Federal statute, shall be referred, through the Local Public Agency or Public Body and the Secretary of Housing and Urban Development, to the Secretary of Labor, United States Department of Labor, for said Secretary's appropriate ruling or interpretation which shall be authoritative and may be relied upon for the purposes of this Contract.

215. PAYROLLS AND BASIC PAYROLL RECORDS OF CONTRACTOR AND SUBCONTRACTORS

The Contractor and each subcontractor shall prepare his payrolls on forms satisfactory to and in accordance with the instructions to be furnished by the Local Public Agency or Public Body. The Contractor shall submit weekly to the

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Local Public Agency or Public Body two certified copies of all payrolls of the Contractor and of the subcontractors, it being understood that the Contractor shall be responsible for the submission of copies of payrolls of all subcontractors. Each such payroll shall contain the "Weekly Statement of Compliance" set forth in Section 3.3 of Title 29, Code of Federal Regulations. The payrolls and basic payroll records of the Contractor and each subcontractor covering all laborers and mechanics employed upon the work covered by this Contract shall be maintained during the course of the work and preserved for a period of 3 years thereafter. Such payrolls and basic payroll records shall contain the name and address of each such employee, his correct classification, rate of pay (including rates of contributions or costs anticipated of the types described in Section 1(b) (2) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. In addition, whenever the Secretary of Labor has found under Section 5.5(a) (iv) of Title 29, Code of Federal Regulations, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b) (2) (B) of the Davis-Bacon Act, the Contractor or subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual costs incurred in providing such benefits. The Contractor and each subcontractor shall make his employment records with respect to persons employed by him upon the work covered by this Contract available for inspection by authorized representatives of the Secretary of Housing and Urban Development, the Local Public Agency or Public Body, and the United States Department of Labor. Such representatives shall be permitted to interview employees of the Contractor or of any subcontractor during working hours on the job.

216. SPECIFIC COVERAGE OF CERTAIN TYPES OF WORK BY EMPLOYEES

The transporting of materials and supplies to or from the site of the Project or Program to which this Contract pertains by the employees of the Contractor or of any subcontractor, and the manufacturing or furnishing of materials, articles, supplies, or equipment on the site of the Project or Program to which this Contract pertains by persons employed by the Contractor or by any subcontractor shall, for the purposes of this Contract, and without limiting the generality of the foregoing provisions of this Contract, be deemed to be work to which these Federal Labor Standards Provisions are applicable.

217. INELIGIBLE SUBCONTRACTORS

The Contractor shall not subcontract any part of the work covered by this Contract or permit subcontracted work to be further subcontracted without the Local Public Agency's or Public Body's prior written approval of the subcontractor. The Local Public Agency or Public Body will not approve any

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subcontractor for work covered by this Contract who is at the time ineligible under the provisions of any applicable regulations issued by the Secretary of Labor, United States Department of Labor or the Secretary of Housing and Urban Development, to receive an award of such subcontract.

218. PROVISIONS TO BE INCLUDED IN CERTAIN SUBCONTRACTS

The Contractor shall include or cause to be included in each subcontract covering any of the work covered by this Contract, provisions which are consistent with these Federal Labor Standards Provisions and also a clause requiring the subcontractors to include such provisions in any lower tier subcontracts which they may enter into, together with a clause requiring such insertion in any further subcontracts that may in turn be made.

219. BREACH OF FOREGOING FEDERAL LABOR STANDARDS PROVISIONS

In addition to the causes for termination of this Contract as herein elsewhere set forth, the Local Public Agency or Public Body reserves the right to terminate this Contract if the Contractor or any subcontractor whose subcontract covers any of the work covered by this Contract shall breach any of these Federal Labor Standards Provisions. A breach of these Federal Labor Standards Provisions may also be grounds for debarment as provided by the applicable regulations issued by the Secretary of Labor, United States Department of Labor.

GENERAL SPECIFICATIONS

SPECIAL CONDITIONS

301. PROJECT SITE

(The "*Special Conditions*" provide a flexible Division of the Contract Documents in which to place provisions which contain elements that vary from one project to another, and which cover situations peculiar to the Project involved. The conditions outlined may require modification to fit the local situation or it may be necessary to include additional provisions to amplify the Contract requirements.)

The Project Area consists of the area within the property limits bounded in general by grass field North along Reed Street from North Street adjacent to the existing Sheffield Waste Water Treatment Plant all as shown on the Plans for the Village of Sheffield, Excess Flow Facilities (RE-BID) designated as Drawing No. 05856-00.

302. TIME FOR COMPLETION

a. The work which the Contractor is required to perform under this Contract shall be commenced at the time stipulated by the Local Public Agency in the Notice to Proceed to the Contractor and shall be fully completed within 200 consecutive calendar days thereafter.

303. LIQUIDATED DAMAGES

As actual damages for any delay in completion of the work which the Contractor is required to perform under this contract are impossible of determination, the Contractor and his Sureties shall be liable for and shall pay to the Local Public Agency the sum of seven hundred and fifty dollars, \$750 as fixed, agreed and liquidated damages for each calendar day of delay from the above stipulated for completion, or as modified in accordance with Section 109 hereof, until such work is satisfactorily completed and accepted.

(The minimum amount of the liquidated damages per calendar day should be sufficient to reimburse the Local Public Agency for all salaries for inspectors, the HUD Site Representative, and overhead expense due to the Contractor having failed to complete the Improvements embraced in this Contract within the time stipulated for completion.)

304. SPECIAL HAZARDS

The Contractor's and his Subcontractor's Public Liability and Property Damage Insurance shall provide adequate protection against the following special hazards:

N/A

305. CONTRACTOR'S AND SUBCONTRACTOR'S PUBLIC LIABILITY, VEHICLE LIABILITY, AND PROPERTY DAMAGE INSURANCE

As required under Section 129 of the General Conditions the Contractor's Public Liability Insurance and Vehicle Liability Insurance shall be in an amount not less than \$1,000,000 for injuries, including accidental death, to any one person, and subject to the same limit for each person, in an amount not less than \$1,000,000 on account of one accident, and Contractor's Property Damage Insurance in an amount not less than \$1,000,000

The Contractor shall either: (1) require each of his subcontractors to procure and to maintain during the life of his subcontract, Subcontractor's Public Liability and Property Damage insurance of the type and in the same amounts as specified in the preceding paragraph, or (2) insure the activities of his subcontractors in his own policy.

See Supplementary Conditions under Chamlin Forms for detailed insurance requirements.

306. BUILDER'S RISK INSURANCE

As provided in the General Conditions, Section 129 (e), the Contractor will maintain Builder's Risk Insurance (fire and extended coverage) on a 100 percent completed value basis on the insurable portions of the project for the benefit of the Local Public Agency, the Contractor, and all subcontractors, as their interests may appear.

307. RESPONSIBILITIES OF CONTRACTOR

Except as otherwise specifically stated in the Contract Documents and Technical Specifications, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, heat, power, transportation, superintendence, temporary construction of every nature, charges, levies, fees or other expenses and all other services and facilities of every nature whatsoever necessary for the performance of the Contract and to deliver all Improvements embraced in this Contract complete in every respect within the specified time.

308. COMMUNICATIONS

- a. All notices, demands, requests, instructions, approvals, proposals, and claims must be in writing.
- b. Any notice to or demand upon the Contractor shall be sufficiently stated on the signature page of the Agreement (or at such other office as the Contractor may from time to time designate in writing to the Local Public Agency), or if deposited in the United States mail in a sealed, postage-prepaid envelope, or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to such office.
- c. All papers required to be delivered to the Local Public Agency shall, unless otherwise specified in writing to the Contractor, be delivered to the Village Clerk

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at 121 S. Church St., Sheffield, IL 61361, and any notice to or demand upon the Local Public Agency shall be sufficiently given if so delivered, or if deposited in the United States mail in a sealed, postage-prepaid envelope, or delivered with charges prepaid to any telegraph company for transmission to said Local Public Agency at such address, or to such other representatives of the Local Public Agency or to such other address as the Local Public Agency may subsequently specify in writing to the Contractor for such purposes.

- d. Any such notice shall be deemed to have been given as of the time of actual delivery or (in the case of mailing) when the same should have been received in due course of post, or (in the case of telegrams) at the time of actual receipt, as the case may be.
- e. This section does not apply to decisions given pursuant to Section 113(b) of this Contract.

309. JOB OFFICES (NOT APPLICABLE)

- a. The Contractor shall furnish and maintain, during construction of the Improvements embraced in this Contract, adequate facilities on the Project Area or adjacent thereto for the use of the Local Public Agency and its Engineers, as follows:
- b. The Contractor and his subcontractors may maintain such office and storage facilities on the Site as are necessary for the proper conduct of the work to be performed on the Site. The Local Public Agency shall be consulted with regard to locations. **NOT APPLICABLE**
- c. Upon completion of the Improvements, or as directed by the Local Public Agency, the Contractor shall remove all such temporary structures and facilities from the Site, same to become his property, and leave the Site of the work in the condition required by the Contract.
- d. Consideration should be given to the deletion of paragraph "a" if the time set for completion of the Improvements is less than sixty (60) days. It may also be deleted if a job office has been otherwise provided or usable space is available in existing buildings.
- e. If a job office is required, specify in detail the facilities and services required, such as adequate office space, light, heat, hot and cold water, toilet facilities, janitor service, local telephone, closets, plan racks, etc.

310. PARTIAL USE OF SITE IMPROVEMENTS

The Local Public Agency, at its election, may give notice to the Contractor and place in use those sections of the Improvements which have been completed, inspected and can be accepted as complying with the Technical Specifications and if in its opinion, each such section is reasonably safe, fit, and convenient for the use and accommodation for which it was intended, provided;

- a. The use of such sections of the Improvements shall in no way impede the completion of the remainder of the work by the Contractor.

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- b. The Contractor shall not be responsible for any damages or maintenance costs due directly to the use of such sections.
- c. The use of such sections shall in no way relieve the Contractor of his liability due to having used defective materials or to poor workmanship.
- d. The period of guarantee stipulated in the Section 132 hereof shall not begin to run until the date of the final acceptance of all work which the Contractor is required to construct under this Contract.

311. WORK BY OTHERS (NOT APPLICABLE)

(It may be that local ordinances or regulations require connections, or disconnections, from utilities or sewers to be made by designated departments or companies. These facts should be obtained and inserted in this Section. The costs, if any, to the Contractor should be stated in paragraph "b". Delete such items not applicable.)

The following work will be done by others:

- a. *At no expense to the Contractor.*
 - 1. On Site:
 - a.
 - b.
 - etc.
 - 2. Off Site:
 - a.
 - b.
- b. *At the expense of the Contractor.*
 - 1. On Site:
 - a.
 - b.
 - etc.

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312. CONTRACT DOCUMENTS AND DRAWINGS

The Local Public Agency will furnish the Contractor without charge 4 copies of the Contract Documents, including Technical Specifications and Drawings. Additional copies requested by the Contractor will be furnished at cost.

GENERAL SPECIFICATIONS

SCHEDULE OF DRAWINGS

**VILLAGE OF SHEFFIELD
EXCESS FLOW FACILITIES
RE-BID**

<u>Drawing No.</u>	<u>Date</u>	<u>Title</u>
1	01-29-2024	Cover
2	01-29-2024	General Notes, Summary, Misc.
3	01-29-2024	Details
4	01-29-2024	Manhole and Air Release
5	01-29-2024	Boring Logs
6	01-29-2024	Lift Station Details
7-11	01-29-2024	Plan & Profile Highway Standards
12	01-29-2024	Lagoon Site Plan
13	01-29-2024	Lagoon Site Details
14	01-29-2024	MH-3 Details
15	01-26-2024	Lift Station Diagram

All Drawings (*and technical specifications*) for the Improvements embraced in the Contract which will be taken over and maintained by the Local Government for public use should be:

1. prepared in accordance with local standards and ordinances; and
2. approved in the designated head of the proper department of the Local Government, before being included in the Contract Documents.

TECHNICAL SPECIFICATIONS

The Engineer must prepare and attach to these Contract Documents, detailed Technical Specifications covering all items of work involved in the construction of the Improvements as planned. All Technical Specifications for utilities and other underground construction must contain appropriate Sections covering the recording of all necessary data and measurements required for the preparation of the "As-Built" Drawings as specified.

DAVIS-BACON WAGE RATE DECISIONS

**WAGE RATE DECISIONS
WILL BE UPDATED PRIOR
TO THE BID BY ADDENDUM.**

**WAGE RATE DECISIONS
CURRENT AT THE TIME OF BID
MUST BE INCLUDED WITH YOUR BID.**

"General Decision Number: IL20240012

Superseded General Decision Number: IL20230012

State: Illinois

Construction Types: **Heavy and Highway**

Counties: **Bureau**, Carroll, Henry, Jo Daviess, Lee, Ogle, Rock Island, Stephenson, Whiteside and Winnebago Counties in Illinois.

HEAVY CONSTRUCTION PROJECTS (including Sewer & Water Line Construction & Drainage Projects) & HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects, and railroad construction; bascule, suspension & spandrel arch bridges; bridges designed for commercial navigation; bridges involving marine construction, other major bridges).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a

conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024
1	03/15/2024
2	04/05/2024

* CARP0004-010 05/01/2023

HENRY and ROCK ISLAND COUNTIES

	Rates	Fringes
CARPENTER.....	\$ 35.86	33.30

* CARP0174-002 05/01/2023

BUREAU COUNTY

	Rates	Fringes
CARPENTER.....	\$ 38.80	36.10

* CARP0790-004 05/01/2023

CARROLL, JO DAVIESS, LEE, OGLE (Oregon and South thereof), STEPHENSON, and WHITESIDE COUNTIES

	Rates	Fringes
CARPENTER.....	\$ 46.76	35.61

* CARP0792-002 05/01/2023

OGLE (Northern One-Half), and WINNEBAGO COUNTIES

	Rates	Fringes
CARPENTER.....	\$ 48.00	34.37

ELEC0051-005 01/01/2024

BUREAU & HENRY (Annawan, Burns, Cambridge, Galva, Kewanee, Weller, and Westerfield TWPS)

	Rates	Fringes
Line Construction		
Groundman/Equipment Operator (All crawler type equipment larger than D-4, 15 ton crane or larger).....	\$ 52.63	32.5%+7.25
Groundman/Truck Driver.....	\$ 39.92	32.5%+7.25
Lineman and Substation Technician.....	\$ 58.58	32.5%+7.25

ELEC0145-003 12/04/2023

CARROLL (Townships of Fair Haven, Freedom, Mount Carroll, Salem, Savanna, Washington, Woodland & York), JO DAVIESS (Townships of Council Hill, Derinda, Dunleith, East Galena, Elizabeth, Guilford, Hanover, Menominee, Rawlins, Rice, Scales Mound, Vinegar Hill & West Galena), HENRY (Except Annawan,

Burns, Cambridge, Galva, Kewanee, Weller, and Westerfield TWPS)
 ROCK ISLAND & WHITESIDE (Townships of Albany, Clyde, Erie,
 Fenton, Fulton, Garden Plain, Lyndon, Mount Pleasant, Newton,
 Prophetstown, Union Grove & Ustick) COUNTIES

	Rates	Fringes
Line Construction		
Cable Splicer.....	\$ 53.12	33%+7.00
Dynamiter.....	\$ 43.92	33%+7.00
Groundman Equipment		
Operator.....	\$ 41.61	33%+7.00
Groundman Truck Driver.....	\$ 36.15	33%+7.00
Groundman.....	\$ 34.64	33%+7.00
Lineman, Technician, Heavy		
Equipment Operator.....	\$ 52.67	33%+7.00

FOOTNOTE:

A. PAID HOLIDAYS: Memorial Day, Independence Day, Labor Day,
 and Thanksgiving Day

 ELEC0145-005 12/05/2022

CARROLL (Chadwick, Mt. Carroll, Savanna and Thompson TWPS),
 HENRY (Excluding Annawan, Burns, Cambridge, Galva, Kewanee,
 Weller, and Westerfield TWPS), JO DAVIESS (Savanna Ordnance
 Depot), WHITESIDE (Remainder of County), and ROCK ISLAND
 COUNTIES

	Rates	Fringes
CABLE SPLICER.....	\$ 40.25	25.47
ELECTRICIAN.....	\$ 39.25	25.39

 ELEC0176-005 06/01/2023

BUREAU and HENRY (Annawan, Burns, Cambridge, Galva, Kewanee,
 Weller, and Wethersfield Twps) COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 50.45	44.96

 ELEC0196-002 03/06/2023

CARROLL (Townships of Cherry Grove, Elkhorn Grove, Lima, Rock
 Creek, Shannon & Wysox), JO DAVIESS (Townships of Apple River,
 Berreman, Pleasant Valley, Nora, Rush, Stockton, Thompson,
 Wards Grove, Warren & Woodbine), LEE, OGLE, STEPHENSON,
 WHITESIDE (Townships of Genesee, Hahnaman, Hopkins, Hume,
 Jordan, Montmorency, Sterling & Tapico) & WINNEBAGO COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator.....	\$ 49.22	34%+7.00+A
Groundman Truck Driver.....	\$ 39.19	34%+7.00+A
Groundman.....	\$ 37.81	34%+7.00+A
Lineman, Substation		
Technician, Cable Splicing		
Technician, Digger		
Operator, Crane Operator		
20 tons and above, and		
Signal Technician.....	\$ 59.17	34%+7.00+A

FOOTNOTE: A. PAID HOLIDAYS: Memorial Day, Independence Day, Labor Day, and Thanksgiving Day

 ELEC0364-002 05/29/2023

CARROLL (Cherry Grove, Shannon, Rock Creek, Lima, Wysox, Elkhorn Grove TWPS), JO DAVIESS (Warren, Rush, Nora, Stockton, Wards Grove, Pleasant Valley, and Berrenman TWPS), LEE, OGLE, STEPHENSON, WHITESIDE (Genesee, Jordan, Hopkins, Sterling, Hume, Montgomery, Tampico, and Hahnman TWPS) and WINNEBAGO COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 54.00	40.40

 ENGI0150-004 06/01/2023

CARROLL, JO DAVIESS, LEE, OGLE, STEPHENSON, WHITESIDE (Eastern Half) and WINNEBAGO COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment		
Group 1.....	\$ 50.90	47.80
Group 2.....	\$ 50.35	47.80
Group 3.....	\$ 49.05	47.80
Group 4.....	\$ 47.60	47.80
Group 5.....	\$ 46.15	47.80

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt Plant; Asphalt Heater and Planer combination; Asphalt Spreader; Asphalt Silo Tender; Autograder, GOMACO or similar; Belt Loader; Caisson Rigs; Car Dumper, Central Redi-Mix Plant; Combination Backhoe Front End Loader Machine (1 cu yd or over Backhoe bucket with attachments); Backhoe with Shear attachment; Concrete Breaker (truck mounted); Concrete Conveyor; Concrete Paver over 27E cu ft; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Hammerhead, Linden, Peco and machines of a like nature; Creter Crane; Crusher, stone; Derricks; Derrick Boats; Derricks, traveling; Dredges; Field Mechanic Welder; Formless Curb and Gutter Machine; Gradall and machines of a like nature; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver mounted; Hoists, one, two, and three Drum; Hydraulic Backhoes; Locomotive, all Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill-Crawler or Skid Rig; Rock Drill truck mounted; Roto Mill Grinder, 36" and over; Roto Mill Grinder, less than 36"; Slip- Form Paver; Soil Test Drill Rig, truck mounted; Straddle Buggies; GCI Crane and similar; Hydraulic Telescoping Form (tunnel); Tie Back Machine; Tractor Drawn Belt Loader: Tractor Drawn Belt Loader with attached Pusher; Tractor with boom; Tractaire with attachment; Traffic Barrier Conveyor Machine; Raised or Blind Hoe Drill (Tunnel & Shaft); Trenching Machine; Truck Mounted Concrete Pump with boom; Truck mounted Concrete Conveyor; Underground Boring and/or Mining Machines under 5 ft; Wheel Excavator & Widener (Apsco)

GROUP 2: Batch Plant; Bituminous Mixer; Bobcats over .75 cu yd; Boiler and Throttle Valve; Bulldozer; Car Loader Trailing Conveyors; Combination Backhoe Front End Loader Machine, less than 1 cu yd Backhoe Bucket with attachments; Compressor and Throttle Valve; Compressor, common receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S series to and including 27 cu ft; Concrete Spreader; Concrete Curing Machine, Burlap Machine; Belting Machine and Sealing Machine; Conveyor Muck Cars (Haglund or similar type); Finishing Machine-Concrete; Greaser Engineer; Highlift Shovels or Front End Loader; Hoist-Sewer Dragging Machine; Hydraulic Boom Trucks, all attachments; Locomotives, Dinky; Pump Cretes, Squeeze Cretes-Screw Type pumps, Gypsum Bulker and Pump; Roller Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc self-Propelled; Scoops-Tractor Drawn; Self-propelled Compactor; Spreader-Chip- Stone etc; Scraper; Scraper-Prime Mover in Tandem regardless of size (add \$1.00 to to Group 2 hourly rate for each hour and for each machine attached thereto); Tank Car Heater; Tractors, Push, pulling Sheeps Foot, Disc, or Compactor, etc; Tug Boats

GROUP 3: Boilers; Brooms, all power propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer, two bag and over; Conveyor, Portable; Farm type Tractors used for mowing, seeding, etc; Fireman on Boilers; Forklift Trucks; Grouting Machines; Hoists, Automatic; Hoists, all Elevators; Hoists, Tugger single Drum; Jeep Diggers; Pipe Jacking Machines; Post-hole Digger; Power Saw, Concrete, Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with A-Frame; Work Boats; Tamper-Form motor driven

GROUP 4: Air compressor - Small 185 and under (1 to 5 not to exceed a total of 300 ft); Air Compressor - Large over 185; Asphalt Spreader Backend Man; Combination - Small Equipment Operator; Generators - Small 50 kw and under; Generators - Large , over 50 kw; Heaters, Mechanical; Hydraulic power unit (Pile Driving, Extracting or Drilling); Light Plants All (1 to 5); Pumps, over 3" (1 to 3, not to exceed a total of 300 ft); Pumps, Well Points; Tractaire; Welding Machines (2 through 5); Winches, 4 small electric drill winches; Bobcats up to and including .75 cu yd

GROUP 5: Oilers

PREMIMUM PAY:

Long Boom :

Cranes & Derricks 90' to 150' including jib receive an extra \$.50 per hour. Cranes & Derricks over 150' including jib receive an extra \$.50 per hour plus an additional \$.10 for each additional 10' of boom or jib.

Capacity Pay:

Cranes & Derricks with maximum capacity exceeding 50 ton with less than 90' of boom or jib shall be compensated \$.01 per hour for each ton of the rated capacity in excess of 50 ton.

Long Boom pay and Capacity pay cannot be combined.

Crane mounted earth auger, raised and blind hole drills, and truck mounted drill rigs receive an extra \$.50 per hour.

Creter Cranes:

When the Creter Crane is equipped with a conveyor system capable of extending 70' or more, the engineer shall receive an extra \$.50 per hour.

Truck Mounted Concrete Pumps:

When the Truck Mounted Concrete Pump is equipped with a boom, which is capable of extending 90' or more, the engineer shall receive \$.50 per hour extra.

Truck Mounted Concrete Conveyor:

Truck Mounted Concrete Conveyors equipped with conveyors that are capable of extending 90' or more, the engineer shall receive an extra \$.50 per hour.

Underground Work:

Employees working in tunnels, shafts, etc. shall be paid an additional \$.40 per hour. Employees working under air pressure 1/2 pound to 7 pounds shall receive an additional \$.50 per hour. Employees working under air pressure of 7 pounds or over shall receive \$.65 per hour more.

Mining Machines- Boring Machines:

The crew operating and maintaining the Mining Machines shall be compensated an additional \$.50 per hour.

* ENGI0150-016 06/01/2022

BUREAU COUNTY (The portion lying east and north of Highway 26 from the Town or Village of Bureau to the northern Bureau County line.)

	Rates	Fringes
OPERATOR: Power Equipment		
Group 1	\$ 53.30	46.00
Group 2.....	\$ 52.75	46.00
Group 3.....	\$ 50.70	46.00
Group 4.....	\$ 49.30	46.00
Group 5.....	\$ 48.10	46.00

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt Plant*; Asphalt Heater and Planer combination; Asphalt Heater Scarfire*; Asphalt Spreader; Autograder; ABG Paver*; Backhoes with Caisson Attachment*; Belt Loader*; Caisson Rigs*; Car Dumper, Central Redi-Mix Plant*; Combination Backhoe Front End Loader Machine (1 cu yd or over Backhoe bucket with attachments); Concrete Breaker (truck mounted)*; Concrete Conveyor; Concrete Paver over 27E cu ft*; Concrete Placer*; Concrete Tube Float; Cranes, all attachments*; Cranes, Hammerhead, Linden, Peco and machines of a like nature*; Creter Crane; Crusher, stone etc.; All Derricks; Derrick Boats; Derricks, traveling*; Dredges*; Field Mechanic Welder; Formless Curb and Gutter Machine; Gradall and machines of a like nature; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver mounted*; Hoists, one, two, and three Drum; Hydraulic Backhoes; Locomotive, all Mucking Machine; Pile Drivers and Skid Rig*; Pre- Stress Machine; Pump Cretes Dual Ram (Requires frequent lubrication and water)*; Rock/Track Tamper; Rock Drill truck mounted; Roto Mill Grinder, 36" and over*; Roto Mill Grinder, less than 36"; Slip- Form Paver*; Soil Test Drill Rig, truck mounted*; Straddle Buggies; Hydraulic Telescoping Form (tunnel);

Tractor Drawn Belt Loader*; Tractor Drawn Belt Loader with attached Pusher (two engineers); Tractor with boom; Tractaire with attachments; Raised or Blind Hoe Drill (Tunnel & Shaft)*; Trenching Machine; Truck Mounted Concrete Pump with boom; Underground Boring and/or Mining Machines 5 ft in diameter and over tunnel, etc.*; Underground Boring and/or Mining Machines under 5 ft; Wheel Excavator* & Widener (Apsco)

GROUP 2: Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozer; Car Loader Trailing Conveyors; Combination Backhoe Front End Loader Machine, less than 1 cu yd Backhoe Bucket with attachments; Compressor and Throttle Valve; Compressor, common receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S series to and including 27 cu ft; Concrete Spreader; Concrete Curing Machine, Burlap Machine; Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or similar type); all Drills; Finishing Machine-Concrete; Greaser Engineer; Highlift Shovels or Front End Loader; Hoist-Sewer Dragging Machine; Hydraulic Boom Trucks, all attachments; Hydro-Blaster requires two operators (one Group 4); Hydraulic Boom Trucks (All attachments); Locomotives, Dinky; Off-Road Hauling Units (including articulating); Laser Screed; Pump Cretes, Squeeze Cretes-Screw Type pumps, Gypsum Bulker and Pump; Rock Drill-Crawler or Skid*; Rock Drill-Truck Mounted*; Roller Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc. Self-Propelled; Scoops-Tractor Drawn; Self-propelled Compactor; Spreader-Chip-Stone etc; Scraper; Scraper-Prime Mover in Tandem regardless of size (add \$1.00 to to Group 2 hourly rate for each hour and for each machine attached thereto); Tank Car Heater; Tractors, Push, Pulling Sheeps Foot, Disc, Compactor, etc; Tug Boats

GROUP 3: Boilers; Brooms, all power propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer, two bag and over; Conveyor, Portable; Farm type Tractors used for mowing, seeding, etc; Fireman on Boilers; Forklift Trucks; Grouting Machines; Hoists, Automatic; Hoists, all Elevators; Hoists, Tugger single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete, Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with A-Frame; Work Boats; Tamper-Form motor driven

GROUP 4: Air compressor - Small 250 and under (1 to 5 not to exceed a total of 300 ft); Air Compressor - Large over 250; Combination - Small Equipment Operator; Generators - Small 50 kw and under; Generators - Large, over 50 kw; Heaters, Mechanical; Hydraulic power unit (Pile Driving, Extracting or Drilling); Hydro-Blaster requires two operators (one Group 2); Light Plants All (1 to 5); Pumps, over 3" (1 to 3, not to exceed a total of 300 ft); Tractaire; Welding Machines (2 through 5); Winches, 4 small electric drill winches

GROUP 5: Bobcats (All); Brick Forklifts; Directional Boring Machine Locator; Oilers

*Equipment requires an Oiler

 ENGI0150-020 06/01/2023

HENRY (Western Half), ROCK ISLAND, and WHITESIDE (Western Half)
 COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment		
Group 1.....	\$ 41.50	38.05
Group 2.....	\$ 39.50	38.05
Group 3.....	\$ 36.85	38.05
Group 4.....	\$ 35.80	38.05

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Crane (Friction or Hydraulic, regardless of size or attachments); Tow or Push Boat

GROUP 2: Asphalt Heater-Planer Unit; Asphalt Paver; Asphalt Paver Screed; Asphalt Plant; Automatic Curbing Machine; Backfiller (throw bucket); Blastholer Self-Propelled Rotary Drill or Similar Machines; Boom Tractor or Side Boom; Boring Machine (Directional, Vertical or Horizontal); Building Hoist (1,2 or 3 drums); Caisson Auguring Machines; Central Redi-Mix Plant; Chip Spreader; Cleaning & Priming Machine; Combination Backhoe Front End Loader; Combination Concrete Finishing Machine and Float; Concrete Breaker or Hydro-Hammer; Concrete Conveyor or Pump; Concrete Paver; Concrete Spreader; Concrete Wheel Saw (Large self-propelled); Crusher (Stone, Concrete, Asphalt, etc.); Curing-Tinning Machine; Dipper Dredge Crane man; Dipper Dredge Operator; Dual Purpose Truck (Boom, Winch, etc.); Excavator; Farm-Type Tractor Operating Scoop or Scraper or with Power Attachment; Forklift (6000 lb. capacity); Grader, Motor Grader, Motor Patrol, Auto Grader, Form Grader, Pull Grader, Sub Grader, Elevating Grader; Group Equipment Greaser; Guard Rail Post Driver; Hoists; Hydraulic Dredge Leverman or Engineer; Hydro-Vac Truck Mounted or Pull Type, and Similar Equipment; Laser Screed; Loader (Track, Rubber Tire or Articulated); Locomotive Engineer; Mechanic-Welder; Mechanical Loaded Log Chippers or Similar Machines; Milling Machine; Mucking Machine; Pile Driver; Pipe Bending; Pug Mill; Road Widener-Shoulder Spreader; Scraper (self-propelled); Self-Propelled Roller or Tire Roller (on Asphalt or Blacktop), Sheep Foot or Pad Foot Compactor; Shovel; Slip Form Paver; Steel Track-Type Tractor (Dozer, Push Cat, etc.); Transfer or Shuttle Buggy; Trenching Machine (40 H.P. & over); Work Boat.

GROUP 3: Articulated Off-Road Haul Unit; Asphalt Booster; Boiler (Engineer or Fireman); Conveyor Over 20 H.P.; Distributor; Driver on Truck Crane or Similar Machines; Elevator; Farm-Type Tractor (Without Power Attachment); Fireman & Pump Operator at Asphalt Plant; Forklift (Less than 6000 lb. capacity); Grout Pump; Light Plant; Mechanical Broom; Mud Jack; Self-Propelled Roller (Other than listed in Group 2); Straddle Carrier; Trench Machine (Under 40 H.P.).

GROUP 4: Air Compressor (400 C.F.M. or over); Compact Loader (Rubber Tire, Track & Utility); Engine Driven Welding Machine; Mechanical Heater (other than steam boiler); Small Outboard Motor Boat (Safety Boat & Life Boat); Water Pump (More than one well point pump).

 * ENGI0649-005 04/01/2024

HENRY (Eastern Half) and BUREAU (Western Half) COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment		
Group 1.....	\$ 46.67	40.35+A
Group 2.....	\$ 43.14	40.35+A
Group 3.....	\$ 37.36	40.35+A

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Cranes: Overhead Cranes; Hydro Crane; Shovels; Crane type Backfiller; Tower Cranes-Mobile, Crawler, Stationary; Derricks, Hoist (3 drum); Draglines; Drott Yumbo & similar types considered as Cranes; 360 Degrees Swing Excavator, Backhoe; Derrick Boats; Pile Driver and Skid Rigs; Clam Shell; Locomotive Cranes; Road Pavers (Single Drum, Dual Drum, Tri Batcher); Motor Patrol & Power Blades (Dunmore, Elevating & similar types); Mechanics; Central Concrete Mixing Plant Operator; Asphalt Batch Plant Operator and Plant Engineer; Gradall; Caisson Rigs; Skimmer Scoop, Koehring Scooper; Dredges (all types); Hoptoe; All Cherry Pickers; Work Boat; Ross Carrier; Helicopter; Dozer; Tournadozer; Tournapulls (all & similar types); Concrete and all recycle machines, Multiple Unit Earth Movers; 75 cents per hour for each scoop over one; Scoops (all sizes); Pushcats; Endloaders (all types); Asphalt Surfacing Machine; Slip Form Paver; Rock Crusher; Material Crusher (outside pits and quarries); Screening Plants (outside pits and quarries); Tunnel Boring Machine; Heavy Equipment Greaser (Top Greaser on Spread); CMI, Auto Grade, CMI Belt Placer (3 track & similar types); Side Booms; Starting Engineer on Pipeline or Construction (eleven 11 pieces or more); Asphalt Heater & Planer Combination; Wheel Tractors with Dozer, Hoe or End Loader attachments; CAT Earthwork Compactors and similar types; Blaw Knox Spreader & similar types; Trench Machines; Pump Crete, Belt Crete, Squeeze Crete, Screw Type Pumps & Gypsum; Creter Crane; Concrete Pump Truck; Formless Finishing Machines; Flaherty Spreader or similar types; Screedman on Laydown Machine; Vermeer Concrete Saw; Laser Screed; Span Saw; Dredge Leverman; Dredge Engineer; Lull or similar type; Hydro-Boom Truck; Guard Rail Machine.

GROUP 2: Bulker & Pump; Power Launches; Boring Machine & Pipe Jacking Machine; Dinkeys; Carts, powered haul unit for a boring machine; P-H one Pass Soil Cement Machines and similar types: Wheel Tractor; Back-Fillers; Euclid Loader; Fork Lifts; Jeep with Ditching Machines or other attachments; Tuneluger; Automatic Cement & Gravel Batching Plants; Mobile Drills Soil Testing and similar types); Pugmill with Pump; All 1 and 2 Drum Hoists; De-watering Systems; Straw Blower; Hydro Seeder; Bump Grinders, Self Propelled; Assistant Heavy Equipment Greaser; Apsco Spreader Tractors (Track-Type w/o Power Units pulling Rollers); Rollers on Asphalt, Brick, or Macadam; Concrete Breakers; Concrete Spreaders; Cement Strippers; Cement Finishing Machines & CMI Texture & Reel Curing Machines;

Vibro-Tampers & similar types self-propelled; Mechanical Bull-Floats; Self-Propelled Concrete Saw; Truck Mounted Power Saws; Curb Cutters; Mixers over 3 bags to 27E; Winch & Boom Trucks; Tractor pulling Power Blade or Elevating Grader; Porter Rex Rail; Clary Screed; Mule pulling Rollers; Pugmill w/o Pump; Barber Greene or similar Loaders; Track Type Tractor with power unit attached; Fireman; Spray Machine on paving; Curb Machine; Paved Ditch Machine; Power Broom; Self-Propelled Sweepers; Self-Propelled Conveyors; Power Subgrader; Oil Distributor; Straight Tractor; Truck Crane Oiler; Truck Type Oilers; Directional Boring Machine; Horizontal Directional Drill; Articulating End Dump Vehicles; Starting Engineer (6 to 10 pieces).

- GROUP 3: Straight Framed Truck and Truck Mounted Vac Unit, Starting Engineer (3 to 5 pieces); Trac Air Machine w/o attachments; Rollers, 5 tons & under on earth & gravel; Form Grader; Bulk Cement Plant; Oilers.
- Escalated Rate on Crane, Derrick Booms, and Tower Cranes: Additional \$1.00 per hour over scale when Crane or Derrick is positioned 50 ft. or more above adjacent ground level or water level. \$.05 per hour, per foot, over 90 feet including jib. \$.02 per hour, per ton - over 50-ton capacity.
 - Operating engineers who operate Lattice Boom Crawler Cranes, Lattice Boom Truck Cranes, Telescopic Boom Cranes less than 17.5 Tons, Tower Cranes, Overhead Cranes and have been Certified by the National Commission for the Certification of Crane Operators on the equipment they operate shall receive \$1.60 per hour over scale.
- A. On designated Hazardous Waste jobs, operators shall receive:
 Level A add \$4.00 to the appropriate group rate; Levels B and C add \$3.00 to the appropriate group rate; and Level D add \$2.00 to the appropriate group rate.

 IRON0111-003 07/01/2023

CARROLL (Thompson, Savanna & vicinity), HENRY, JO DAVIESS (East Dubuque, Galena, Hanover, & vicinity), KNOX (Galesburg and area North of the City), MERCER (except Southwest Part), ROCK ISLAND, WARREN (includes Northwest Part), and WHITESIDE (Western Half) COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 36.73	29.71

IRON0444-004 06/01/2022

Bureau County

	Rates	Fringes
IRONWORKER.....	\$ 45.50	38.90

IRON0498-002 06/01/2021

CARROLL (Remainder), JO DAVIESS (Remainder), LEE, OGLE, STEPHENS, WHITESIDE (Eastern Half), and WINNEBAGO COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 41.37	44.41

 LABO0032-002 05/01/2023

WINNEBAGO COUNTY

	Rates	Fringes
LABORER		
General Laborer.....	\$ 43.19	34.91
Skilled Laborer.....	\$ 46.54	34.91

LABORER DESCRIPTIONS

General Laborer: Carpenter Tender, Tool Cribman, Fireman or Salamander Tender, Flagman, Gravel Box Man, Bumpman & Spotter, Form Handler, Material Handler, Fencing Laborer, Cleaning Lumber, Pit Man, Material Checker, Landscaper, Unloading Explosives, Laying of Sod, Planting of Trees, Asphalt Workers With Machine & Layers, Asphalt Plant Laborer, Wrecking, Fire-proofing, Driving Stakes, Stringlines for All Machinery, Window Cleaning, Demolition Worker, Explosive Handling, Trimming & Removal of Trees, Multi-Plate Pipe, Pilot Cars for Traffic Control, Power Rigging

Skilled Laborer: Asbestos abatement worker, Hazardous Waste Worker, Handling Any Materials with any Foreign Matter Harmful to Skin or Clothing, Track Labor, Cement Handler, Chloride Handler, Unloading & Laborers with Steel Workers & Re-Bars, Wet Concrete Workers, Tunnel Tenders in Free Air, Batch Dumper, Mason Tender, Kettle & Tar Man, Tank Cleaner, Plastics Installer, Scaffold Worker, Motorized Buggies or Motorized Unit Used for Wet Concrete or Handling of Building Materials, Laborers with De-Watering Systems, Sewer Workers Plus Depth, Vibrator Operator, Cement Silica, Clay, Fly Ash, Lime & Plasters Handlers (Bulk or Bag); Cofferdam Worker Plus Depth, Concrete Paving, Placing Cutting & Tying of Reinforcing, Deck Hand, Dredge Hand and Shore Laborer, Bankman on Floating Plant, Grade Checker, Power Tools, Front End Man on Chip Spreader, Caisson Worker Plus Depth, Gunnite Nozzleman, Leadman on Sewer Work, Welder, Cutter, Burner & Torchman, Chain Saw Operator, Jackhammer & Drill Operator, Layout Man and/or Tile Layer, Steel Form Setter - Street & Highway, Air Tamping Hammerman, Signal Man On Crane, Concrete Saw Operator, Screenman on Asphalt Paver, Tending Masons With Hot Material or Where Foreign Materials are used, Mortar Mixer Operator, Multiple Concrete Duct - Leadman, Luteman, Asphalt Raker, Curb Asphalt Machine Operator, Ready Mix Scaleman Permanent Portable or Temporary Plant, Laborer Handling Masterplate or Similar Materials, Laser Beam Operator, Concrete Burning Machine Operator, Coring Machine Operator, Plaster Tender, Underpinning & Shoring of Buildings, Pump Man, Manhole & Catch Basin, Dirt & Stone Tamper, Hoseman on Concrete Pump.

 LABO0309-001 01/01/2023

ROCK ISLAND COUNTY

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 32.31	23.50
GROUP 2.....	\$ 32.81	23.50

GROUP 3.....\$ 33.44 23.50

LABORER CLASSIFICATIONS

GROUP 1: Flagman, Dumpman, Spotter, Broom Man, Removal of Trees, Fencing Laborers, Cleaning of Forms or Lumber (in Bone Yard), Moving and/or Maintenance of Flares and Barricades, Operation of all Hand, Electric, Air, Hydraulic, or Mechanically Powered Tools under the the Laborers' including Jackhammers, Tampers, Air Spades, Augers, Concrete Saws, Chain Saws, Utility Saws, Rock Drills, Vibrators, Mortar Mixer, Power and Hand Saw (When Clearing Timber), General Laborer (Not Elsewhere Covered), Craft- Tender, Material Checker, Material Handler, Form Handler, Concrete Dumper, Puddler, Explosives Handler, Center Strip, Reinforcing in Concrete, Wire Mesh Handler and Installer, Prime Mover or any Mechanical Device Taking the Place of Concrete Buggy or Wheel-Barrow, Sandpoint Setter, Asphalt Kettleman, Sheeting Hammer Drivers, Laying and Joining of Telephone Conduit, Gas Distribution Men, Pipe Setter On Laterals, Drain Tiles, Culvert Pipe, and Storm Sewer Catch Basin Leads, Catch Basins, Manholes, Batch Dumpers, Tank Cleaners, Cofferdam Worker, Bankman on Floating Plant, Jointman With Pipelayers Back-up Man (Corker, Joint Maker) With Pipe Setter On Sewer and Water Mains, Batterboard Man or Laser Operator on Sewer and Water Main, Laborer in Ditch, or Tunnel, on Sewer or Water Mains and Telephone Conduit, Cutters, Burners, Torchman, Gravel Box Man, Asphalt Plant Laborer, Concrete Plant Laborer, Deck Hand, Unloading of Steel and Rebar, Laser Beam Operator, Wrecking Laborers.

GROUP 2: Asphalt Raker or Luteman, Head Form Setter, Head Dynamite Man (Powderman) Head String or Wireline Man (on paving), Pipe Setter on Sewer or Water Main, Gunnite Nozzle Man, Asphalt or Concrete Curb Machine Operator, Head Grade Man, Head Tunnel Miner, Concrete Burning Machine Operator, Coring Machine Operator, Welder, Hazardous Waste Worker, Asbestos Abatement Worker.

GROUP 3 - Concrete Specialist

LAB00393-002 05/01/2022

BUREAU COUNTY

	Rates	Fringes
LABORER		
Group 1.....	\$ 34.11	30.07
Group 2.....	\$ 34.31	30.07
Group 3.....	\$ 34.51	30.07
Group 4.....	\$ 35.11	30.07
Group 5.....	\$ 36.11	30.07

LABORER CLASSIFICATIONS

GROUP 1: UNSKILLED - All classifications not listed below

GROUP 2: SEMI-SKILLED - Handling of materials treated with oil, creosote, asphalt and/or foreign material harmful to skin or clothing; Track laborers; Cement handlers; Chloride handlers; Unloading and laborers with Steel Workers and Re-bars; Concrete Workers (wet); Batch Dumpers; Mason Tenders; Kettle and Tar Men; Tank Cleaners; Plastic Installers; Scaffold Workers; Motorized buggies or

motorized unit used for wet concrete or handling of building materials; Laborers with de-watering systems; Sewer workers plus depth; Vibrator Operators; Motor Mixer Operators; Cement Silica, clay, fly ash, lime and plasters, handlers (bulk or bag); Cofferdam workers plus depth; Concrete paving, placing, cutting and tying of reinforcing; Deck hand, dredge hand and shore laborers; Backmen on floating plant; Asphalt workers with machine and layers; Grade checker; Power tools; Driving all stakes, stringlines for all machinery; Setting and building of manholes and catch basins; Stripping of all concrete forms except paving forms; All concrete paving and slope walls, placing, cutting and tying of reinforcing (re-bars and wire mesh)

GROUP 3: SKILLED - Mason Tenders; Caisson Workers plus depth; Gunnite Nozzle Men; Lead Man on Sewer Work; Welders, Cutters, Burners & Torchmen; Chain Saw Operators; Paving Breaker, Jackhammer & Drill Operators; Layout Man and/or tile layer; Steel Form Setters (Street & Hwy); Air Tamping hammerman; Signal man on Crane; Concrete Saw Operator; Screenman on Asphalt Pavers; Front End Man on Chip Spreader; Laborers tending masons with hot materials or where foreign materials are used; Multiple Concrete duct-leadman; Luteman; Asphalt Raker; Curb Asphalt Machine Operator; Ready mix scalemen, permanent, portable or temporary plant; Laborers handling masterplate or similar materials; Laser Beam Operator; Coring Machine Operator; Plasterer Tenders; Underpinning and Shoring of Building; Material selector when working with firebrick or castable materials; Fire Watch; Signalling of all power equipment; Tree Topper or Trimmer

GROUP 4: Dynamite man

GROUP 5: Asbestos Abatement Worker and Hazardous Waste Worker

LABO0538-005 05/01/2023

HENRY COUNTY

	Rates	Fringes
LABORER		
General Laborer.....	\$ 33.96	27.41
Skilled Laborer.....	\$ 34.96	27.41

LABORER CLASSIFICATIONS

General Laborer: All classifications not listed below.

Skilled Laborer: Flaggers; Traffic Control and all associated work; Handling of materials treated with oil, creosote, asphalt and/or foreign material harmful to skin or clothing; Track Laborers; Chloride Handlers; Unloading and Laborers with Steel Workers and Re-bars; Concrete Workers (wet); Batch Dumpers; Mason Tenders; Kettle and Tar Men; Plastic Installers; Scaffold Workers; Motorized buggies or motorized unit used for wet concrete or handling of building materials; Laborers with de-watering systems; Sewer workers plus depth; Vibrator Operators; Motor Mixer Operators; Cement Silica, clay, fly ash, lime and plasters, handlers (bulk or bag); Cofferdam Workers plus depth; Concrete paving, placing, cutting and tying of reinforcing; Deckhand, dredge hand and shore laborers; Backmen on floating plant; Asphalt Workers with machine and layers; Grade Checker; Power Tools; Stripping of all concrete forms

except paving forms, dumpmen and spotters, when necessary;
 Caisson Workers plus depth; Gunnite Nozzle Men; Tunnel
 Helpers in free air; Rod and Chainmen; Welders, Cutters,
 Burners, and Torchmen; Chainsaw Operator; Paving Breaker,
 Jackhammer and Drill Operator, Layout man and /or Tile
 Layer; Steel Form Setters - street and highway, Air Tamping
 Hammerman; Signalman on Crane Concrete Saw Operator;
 Screedman on Asphalt Pavers; Front End Man on Chip
 Spreader; Multiple Concrete Duct; Luteman, Asphalt Raker;
 Curb Asphalt Machine Operator.

 LABO0727-002 05/01/2023

CARROLL, JO DAVIESS, LEE, OGLE, STEPHENSON, and WHITESIDE
 COUNTIES

	Rates	Fringes
LABORER		
General Laborer.....	\$ 44.82	33.35
Skilled Laborer.....	\$ 48.17	33.35

LABORER CLASSIFICATIONS

General Laborer: Carpenter Tender, Tool Cribman, Fireman or
 Salamander Tender, Flagman, Gravel Box Man, Dumpman &
 Spotter, Form Handler, Material Handler, Fencing Laborer,
 Cleaning Lumber, Pit Man, Unloading Explosives, Removal of
 Trees, Asphalt Workers With Machine & Layers, Asphalt Plant
 Laborer, Wrecking, Fireproofing, Driving Stakes,
 Stringlines for all Machinery, Window Cleaning.

Skilled Laborer: Handling any Materials with any Foreign
 Matter Harmful to Skin or Clothing, Track Labor, Cement
 Handler, Chloride Handler, Unloading & Laborers with Steel
 Workers & Re-Bars, Wet Concrete Workers, Tunnel Tenders in
 Free Air, Batch Dumper, Mason Tender, Kettle & Tar Man,
 Tank Cleaner, Plastic Installer, Scaffold Worker, Motorized
 Buggies or Motorized Unit Used for Wet Concrete or so
 Handling of Building Materials, Laborers with De- Watering
 Systems, Sewer Workers Plus Depth, Vibrator Operator;
 Cement Silica, Clay, Fly Ash, Lime & Plasters Handlers
 (Bulk or Bag); Cofferdam Worker Plus Depth, Concrete
 Paving, Placing Cutting & Tying of Reinforcing, Deck Hand,
 Dredge Hand and Shore Laborer, Bankman on Floating Plant,
 Grade Checker, Power Tools, Front End Man on Chip Spreader,
 Caisson Worker plus Depth, Gunniter Nozzleman, Leadman on
 Sewer Work, Welder, Cutter, Burner & Torchman, Chain Saw
 Operator, Jackhammer & Drill Operator, Layout Man and/or
 Tile Layer, Steel Form Setter - Street & Highway, Air
 Tamping Hammerman, Signal Man on Crane, Concrete Saw
 Operator, Screenman on Asphalt Paver, Tending Masons with
 Hot Material or where Foreign Materials are used, Mortar
 Mixer Operator, Multiple Concrete Duct - Leadman, Luteman,
 Asphalt Raker Curb Asphalt Machine Operator, Ready Mix
 Scaleman Permanent Portable or Temporary Plant, Laborer
 Handling Masterplate or Similar Materials, Laser Beam
 Operator, Concrete Burning Machine Operator, Coring Machine
 Operator, Plaster Tender, Underpinning & Shoring of
 Buildings, Pump Man, Manhole & Catch Basin, Dirt & Stone
 Tamper, Hoseman on Concrete Pump.

 PAIN0030-004 06/01/2023

BOONE, JO DAVIESS, LEE, OGLE, STEPHENSON AND WINNEBAGO COUNTIES

	Rates	Fringes
PAINTER		
Brush, Roller, Spray, Sandblasting, Paperhanger, Drywall Finishing, Taper, and Spray Structural Steel..	\$ 43.90	28.51

 PAIN0030-010 06/01/2023

BUREAU, FORD, HANCOCK, LA SALLE, LIVINGSTON, MCDONOUGH, MCLEAN,
 PUTNAM AND STARK COUNTIES

	Rates	Fringes
PAINTER		
Brush, Roller, Pressure Roller, Spray, Airless Spray, Sandblasting, Taper, Drywall Taper/Finisher, Structural Steel, and Bridges.....	\$ 40.00	26.90

 PAIN1178-001 06/01/2022

CARROLL, HENRY, ROCK ISLAND, AND WHITESIDE COUNTIES

	Rates	Fringes
PAINTER		
Bridges.....	\$ 32.00	17.37
Brush and Roller.....	\$ 30.00	17.37
Spray, Structural Steel, & Sandblasting.....	\$ 30.50	17.37

 PLAS0011-004 06/01/2023

CARROLL, JO DAVIESS, LEE, OGLE, STEPHENSON, AND WHITESIDE
 (Except Erie and area Southwest thereof) COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 38.48	38.77
PLASTERER.....	\$ 38.98	36.58

 PLAS0011-005 06/01/2023

BUREAU COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 40.50	33.54

 PLAS0011-017 06/01/2023

WINNEBAGO COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 41.03	36.39

 PLAS0018-007 06/01/2015

HENRY COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 36.70	22.08

 PLAS0018-036 01/01/2020

ROCK ISLAND COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 28.52	24.04

 * TEAM0325-002 07/01/2023

CARROLL (North of Route. #72 & East of Route #78), JODAVIESS
 (East of Route #78, excluding Stockton), STEPHENSON, and
 WINNEBAGO COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2 or 3 Axles.....	\$ 43.47	25.45
4 Axles.....	\$ 43.62	25.45
5 Axles.....	\$ 43.82	25.45
6 Axles.....	\$ 43.93	25.45

FOOTNOTE: .20 cents additional per axle over 6 axles.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes;
~~Air Compressor and Welding Machines, including those pulled~~
 by cars, pick-up trucks and tractors; Ambulances; Batch
 Gate Lockers; Batch Hopperman; Car and Truck Washers; Forl
 Lifts and Hoisters; Helpers;
 Mechanics Helpers and Greasers; Oil Distributors, two-man
 operation; Pavement Breakers
 Pole Trailer, up to 40 feet; Power Mower Tractors; Skipman;
 Slurry Trucks, two-man operation; Teamsters; Truck Drivers
 hauling warning lights, barricades, and portable toilets on
 the job site

Group 2 - Dump Crets and Adgetators under 7 yards; Dumpsters,
 Track Trucks, Euclids, Hug Bottom Dump Turnapulls or
 Turnatrailers when pulling other than self-loading
 equipment or similar equipment under 16 cubic yards; Mixer
 Trucks under 7 yards; Ready-Mix Plant Hopper Operator;
 Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over;
 Dumpsters, Track Trucks, Euclids, Hug Bottom Dump
 Turnapulls or Turnatrailers when pulling other than
 self-loading equipment or similar equipment over 16 cubic
 yards; Explosives and/or Fission Material Trucks; Mixer
 Trucks 7 yards or over; Mobile Cranes while in transit; Oil
 Distributors, one-man operation
 Pole Trailer, over 40 feet; Pole and Expandable Trailers
 hauling material over 50 feet long, additional \$0.50 per
 hour; Slurry Trucks, one-man operation; Winch Trucks, 3
 axles or more

*Mechanic*Truck Welder and Truck Painter; *Winter Rate:
 Between Dec. 15 and Feb. 28 the mechanic and welder rate
 shall be \$2.00 less than the scheduled scale. Truck Painter
 and Truck Welder classifications shall only apply in areas
 where and when it has been a past area practice;
 Dual-purpose vehicels, such as mounted crane tucks with

hoist and accessories
 Group 4 - Foreman; Master Mechanic; Self-loading equipment
 like P.B. and trucks with scoops on the front

 * TEAM0330-003 06/01/2019

LEE (East of Route 251, Compton, Lee, Paw Paw, Scarboro, &
 Steward), and OGLE (North of Route 72/East of Route 251,
 Adeline, Byron, Creston, Dement, Forreston North of Route 72,
 Leaf River North of Route 72, Lynnville, Monroe, Rochelle, &
 Scott) COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2-3 AXLES.....	\$ 38.23	0.25+a
4 AXLES.....	\$ 38.38	0.25+a
5 AXLES.....	\$ 38.58	0.25+a
6 AXLES.....	\$ 38.78	0.25+a

FOOTNOTE: a. \$868.50 per week
 An additional \$.20 per axle shall be paid for all vehicles
 with more than six (6) axles.
 Paid Holidays: New Year's Day, Memorial Day, Independence
 Day, Labor Day, Thanksgiving Day, and Christmas Day.
 900 straight time hours or more in 1 calendar year for the
 same employer shall receive 1 week paid vacation; 3 years -
 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20
 years - 4 weeks paid vacation.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes;
 Air Compressor and Welding Machines, including those pulled
 by cars, pick-up trucks and tractors; Ambulances;
 Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car
 and Truck Washers; Carry Alls; Forl Lifts and Hoisters;
 Helpers; Mechanics Helpers and Greasers; Oil Distributors,
 two-man operation; Pavement Breakers; Pole Trailer, up to
 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick
 Change Barrier; Self-Propelled Chip Spreader; Shipping and
 Receiving Clerks and Checkers; Skipman; Slurry Trucks,
 two-man operation; Slurry Trucks, Conveyor Operated - 2 or
 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen
 and Dockmen; Truck Drivers hauling warning lights,
 barricades, and portable toilets on the job site
 Group 2 - Dispatcher; Dump Crets and Adgetators under 7
 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump
 Turnapulls or Turnatrailers when pulling other than
 self-loading equipment or similar equipment under 16 cubic
 yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper
 Operator; Winch Trucks, 2 Axles
 Group 3 - Dump Crets and Adgetators, 7 yards and over;
 Dumpsters, Track Trucks, Euclids, Hug Bottom Dump
 Turnapulls or Turnatrailers when pulling other than
 self-loading equipment or similar equipment over 16 cubic
 yards; Explosives and/or Fission Material Trucks; Mixer
 Trucks 7 yards or over; Mobile Cranes while in transit; Oil
 Distributors, one-man operation; Pole Trailer, over 40
 feet; Pole and Expandable Trailers hauling material over 50
 feet long;
 Slurry Trucks, one-man operation; Winch Trucks, 3 axles or

more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it has been a past area practice; Asphalt Plant Operators in areas where it has been past practice
 Group 4 - Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

 TEAM0371-004 05/01/2022

HENRY and ROCK ISLAND COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1.....	\$ 41.00	22.37
Group 2.....	\$ 41.58	22.37
Group 3.....	\$ 41.90	22.37
Group 4.....	\$ 42.25	22.37
Group 5.....	\$ 43.36	22.37

CLASSIFICATIONS:

- GROUP 1: Drivers on 2 axles hauling less than 9 tons; air compressor & welding machines and brooms, including those pulled by separate units; Truck Driver Helper, warehouse employees; Mechanic Helpers; greasers and tiremen; pick-up trucks when hauling material, tools, or workers to and from and on the job site; and forklifts up to 6,000 lb capacity.
 GROUP 2: 2 or 3 axles hualing more than 9 tons but hauling less than 16 tons; A-frame winch trucks; hydrolift trucks; Vactor Trucks or similar equipment when used for transportation purposes; Forklift over 6,000 lb.capacity; winch trucks; and four axle combiation units.
 GROUP 3: 2, 3 or 4 Axles hauling 16 tons or more; 5-Axles or more combination units; drivers on water pulls; articulated dump trucks; mechanics and working forepersons.
 GROUP 4: Low Boy and Oil Distributors.
 GROUP 5: Drivers who require special protective clothing while employed on hazardous waste work.

 TEAM0722-001 05/01/2022

BUREAU, CARROLL (West of Route78/South of Route 72), JODAVIESS (West of Route 78), LEE (West of Route 251), OGLE (South of Route 72/West of Route 251), and WHITESIDE COUNTIES

	Rates	Fringes
TRUCK DRIVER		
<u>Group 1.....</u>	<u>\$ 40.91</u>	<u>22.10</u>
<u>Group 2.....</u>	<u>\$ 41.50</u>	<u>22.10</u>
<u>Group 3.....</u>	<u>\$ 41.77</u>	<u>22.10</u>
<u>Group 4.....</u>	<u>\$ 42.16</u>	<u>22.10</u>
<u>Group 5.....</u>	<u>\$ 43.26</u>	<u>22.10</u>

CLASSIFICATIONS:

- GROUP 1: Drivers on 2 axles hauling less than 9 tons; air compressor & welding machines and brooms, including those pulled by separate units; Truck Driver Helper, warehouse employees; Mechanic Helpers; greasers and tiremen; pick-up trucks when hauling material, tools, or workers to and from

and on the job site; and forklifts up to 6,000 lb capacity.

GROUP 2: 2 or 3 axles hauling more than 9 tons but hauling less than 16 tons; A-frame winch trucks; hydrolift trucks; Vactor Trucks or similar equipment when used for transportation purposes; Forklift over 6,000 lb.capacity; winch trucks; and four axle combination units.

GROUP 3: 2, 3 or 4 Axles hauling 16 tons or more; 5-Axles or more combination units; drivers on water pulls; articulated dump trucks; mechanics and working forepersons.

GROUP 4: Low Boy and Oil Distributors.

GROUP 5: Drivers who require special protective clothing while employed on hazardous waste work.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example:

PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination

- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

A. APPLICABILITY

The Project or Program to which the construction work covered by this Contract pertains is being assisted by the United States of America, and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

1. Minimum wages and fringe benefits

i. All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in 29 CFR 5.5(d) and (e), the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(v) of these contract clauses; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under 29 CFR 5.5(a)(1)(iii)) and the Davis-Bacon poster (WH-1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

ii. Frequently recurring classifications

A. In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to 29 CFR 5.5(a)(1)(iii), provided that:

1. The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;
2. The classification is used in the area by the construction industry; and
3. The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

B. The Administrator will establish wage rates for such classifications in accordance with 29 CFR 5.5(a)(1)(iii)(A)(3). Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

iii. Conformance

A. The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be

classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

1. The work to be performed by the classification requested is not performed by a classification in the wage determination; and
 2. The classification is used in the area by the construction industry; and
 3. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- B. The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.
 - C. If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to DBAconformance@dol.gov. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
 - D. In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
 - E. The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under 29 CFR 5.5 (a)(1)(iii)(C) and (D). The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to 29 CFR 5.5 (a)(1)(iii)(C) or (D) must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- iv. **Fringe benefits not expressed as an hourly rate**
Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- v. **Unfunded plans**
If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in 29 CFR 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
- vi. **Interest** In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding

i. Withholding requirements

The U. S. Department of Housing and Urban Development may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in 29 CFR 5.5(a) for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in 29 CFR 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work (or otherwise working in construction or development of the project under a development statute) all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in 29 CFR 5.5(a)(3)(iv), HUD may on its own initiative and after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

ii. Priority to withheld funds

The Department has priority to funds withheld or to be withheld in accordance with 29 CFR 5.5(a)(2)(i) or (b)(3)(i), or both, over claims to those funds by:

- A. A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- B. A contracting agency for its procurement costs;
- C. A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- D. A contractor's assignee(s);
- E. A contractor's successor(s); or
- F. A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901-3907.

3. Records and certified payrolls

i. Basic record requirements

- A. Length of record retention.** All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.
- B. Information required** Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.
- C. Additional records relating to fringe benefits.** Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(v) that the wages of any laborer or mechanic include the amount of any

costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

D. Additional records relating to apprenticeship Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

ii. Certified payroll requirements

A. Frequency and method of submission The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to HUD if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the certified payrolls to the applicant, sponsor, owner, or other entity, as the case may be, that maintains such records, for transmission to HUD. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system

B. Information required The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i)(B), except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.*, the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the sponsoring government agency (or the applicant, sponsor, owner, or other entity, as the case may be, that maintains such records).

C. Statement of Compliance Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

1. That the certified payroll for the payroll period contains the information required to be provided under 29 CFR 5.5(a)(3)(ii), the appropriate information and basic records are being maintained under 29 CFR 5.5 (a)(3)(i), and such information and records are correct and complete;
2. That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly

from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

3. That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.
 - D. **Use of Optional Form WH-347** The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the "Statement of Compliance" required by 29 CFR 5.5(a)(3)(ii)(C).
 - E. **Signature** The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.
 - F. **Falsification** The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.
 - G. **Length of certified payroll retention** The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.
- iii. **Contracts, subcontracts, and related documents** The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

iv **Required disclosures and access**

- A. **Required record disclosures and access to workers** The contractor or subcontractor must make the records required under 29 CFR 5.5(a)(3)(i)–(iii), and any other documents that HUD or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by 29 CFR 5.1, available for inspection, copying, or transcription by authorized representatives of HUD or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.
- B. **Sanctions for non-compliance with records and worker access requirements** If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to 29 CFR 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.
- C. **Required information disclosures** Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to HUD if the agency is a party to

the contract, or to the Wage and Hour Division of the Department of Labor. If the Federal agency is not such a party to the contract, the contractor, subcontractor, or both, must, upon request, provide the full Social Security number and last known address, telephone number, and email address of each covered worker to the applicant, sponsor, owner, or other entity, as the case may be, that maintains such records, for transmission to HUD, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. **Apprentices and equal employment opportunity**

i. **Apprentices**

- A. **Rate of pay** Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- B. **Fringe benefits** Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.
- C. **Apprenticeship ratio** The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to 29 CFR 5.5(a)(4)(i)(D). Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in 29 CFR 5.5(a)(4)(i)(A), must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.
- D. **Reciprocity of ratios and wage rates** Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

- ii **Equal employment opportunity** The use of apprentices and journeyworkers under this part must be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

5 **Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6 Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (11), along with the applicable wage determination(s) and such other clauses or contract modifications as the U.S. Department of Housing and Urban Development may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate.

7 Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8 Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9 Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

i. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or 29 CFR 5.12(a).

ii. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or 29 CFR 5.12(a).

iii. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11 Anti-retaliation It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

i. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, or 29 CFR parts 1, 3, or 5;

ii. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, or 29 CFR parts 1, 3, or 5;

iii. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, or 29 CFR parts 1, 3, or 5; or

iv. Informing any other person about their rights under the DBA, Related Acts, or 29 CFR parts 1, 3, or 5.

B. Contract Work Hours and Safety Standards Act (CWHSSA)

The Agency Head must cause or require the contracting officer to insert the following clauses set forth in 29 CFR 5.5(b)(1), (2), (3), (4), and (5) in full, or (for contracts covered by the Federal Acquisition Regulation) by reference, in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses must

be inserted in addition to the clauses required by 29 CFR 5.5(a) or 4.6. As used in this paragraph, the terms “laborers and mechanics” include watchpersons and guards.

1. **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in 29 CFR 5.5(b)(1) the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchpersons and guards, employed in violation of the clause set forth in 29 CFR 5.5(b)(1), in the sum of \$31 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in 29 CFR 5.5(b)(1).
3. **Withholding for unpaid wages and liquidated damages**
 - i. **Withholding process** The U.S Department of Housing and Urban Development or the recipient of Federal assistance may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in 29 CFR 5.5(b) on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in 29 CFR 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.
 - ii **Priority to withheld funds** The Department has priority to funds withheld or to be withheld in accordance with 29 CFR 5.5(a)(2)(i) or (b)(3)(i), or both, over claims to those funds by:
 - A. A contractor’s surety(ies), including without limitation performance bond sureties and payment bond sureties;
 - B. A contracting agency for its procurement costs;
 - C. A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor’s bankruptcy estate;
 - D. A contractor’s assignee(s);
 - E. A contractor’s successor(s); or
 - F. A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901-3907.
4. **Subcontracts.** The contractor or subcontractor must insert in any subcontracts the clauses set forth in 29 CFR 5.5(b)(1) through (5) and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in 29 CFR 5.5(b)(1) through (5). In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss,

due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

- 5 Anti-retaliation** It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:
- i. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in 29 CFR part 5;
 - ii. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or 29 CFR part 5;
 - iii. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or 29 CFR part 5; or
 - iv. Informing any other person about their rights under CWHSSA or 29 CFR part 5.
- C. CWHSSA required records clause** In addition to the clauses contained in 29 CFR 5.5(b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other laws referenced by 29 CFR 5.1, the Agency Head must cause or require the contracting officer to insert a clause requiring that the contractor or subcontractor must maintain regular payrolls and other basic records during the course of the work and must preserve them for a period of 3 years after all the work on the prime contract is completed for all laborers and mechanics, including guards and watchpersons, working on the contract. Such records must contain the name; last known address, telephone number, and email address; and social security number of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid; daily and weekly number of hours actually worked; deductions made and actual wages paid. Further, the Agency Head must cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph must be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview workers during working hours on the job.
- D. Incorporation of contract clauses and wage determinations by reference** Although agencies are required to insert the contract clauses set forth in this section, along with appropriate wage determinations, in full into covered contracts, and contractors and subcontractors are required to insert them in any lower-tier subcontracts, the incorporation by reference of the required contract clauses and appropriate wage determinations will be given the same force and effect as if they were inserted in full text.
- E. Incorporation by operation of law** The contract clauses set forth in this section (or their equivalent under the Federal Acquisition Regulation), along with the correct wage determinations, will be considered to be a part of every prime contract required by the applicable statutes referenced by 29 CFR 5.1 to include such clauses, and will be effective by operation of law, whether or not they are included or incorporated by reference into such contract, unless the Administrator grants a variance, tolerance, or exemption from the application of this paragraph. Where the clauses and applicable wage determinations are effective by operation of law under this paragraph, the prime contractor must be compensated for any resulting increase in wages in accordance with applicable law.

F. HEALTH AND SAFETY

The provisions of this paragraph (F) are applicable where the amount of the prime contract exceeds **\$100,000**.

1. No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his or her health and safety, as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.
2. The contractor shall comply with all regulations issued by the Secretary of Labor pursuant to 29 CFR Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96), 40 U.S.C. § 3701 et seq.
3. The contractor shall include the provisions of this paragraph in every subcontract, so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

NOTICE OF AWARD

To: Village of Sheffield
Engineer: Chamlin & Associates, Inc.
Bidder: _____

Project Description: Excess Flow Facilities (RE-BID) - a new sanitary relief sewer, excess flow pumping station, new force main, excess flow storage lagoon and drain back sewer to the existing Wastewater Treatment Plant.

The OWNER has considered the BID submitted by you for the above described WORK in response to its Advertisement for Bids dated _____, _____, and information for Bidders.

You are hereby notified that our BID has been accepted for items in the amount of _____.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, payment BOND and certificates of insurance within ten (10) calendar days from the date of the Notice to you.

If you fail to execute said Agreement and to furnish said BONDS with ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____, _____

Village of Sheffield
Owner

By: _____

Title: Village President

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged.

By: _____
This the _____ day of _____, _____
By: _____
Title: _____

**IL Department of Commerce & Economic Opportunity
Community Development Block Grant Program (CDBG)
Davis Bacon Labor Standards Provisions**

NOTICE TO PROCEED

To: Village of Sheffield

Date: _____

Engineer: Chamlin & Associates, Inc.

Project: Sheffield – Excess Flow Facilities
(RE-BID)

Contractor: _____

Address: _____

You are hereby notified to commence WORK in accordance with the Agreement dated _____, _____, on or before _____, _____, and you are to complete the WORK within _____ consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, _____.

Village of Sheffield

Owner

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED

is hereby acknowledged by _____

this the _____ day of

_____, _____

By _____

Title _____

REPRODUCTION OF CONTRACT DOCUMENTS FOR CONSTRUCTION OF FEDERALLY ASSISTED WATER AND SEWER PROJECTS

CHANGE ORDER

Change Order No. _____
Date: _____
Agreement Date: _____

NAME OF PROJECT: _____

OWNER: _____

CONTRACTOR: _____

The following changes are hereby made to the CONTRACT DOCUMENTS:

Justification:

Change to CONTRACT PRICE: \$ _____

Original CONTRACT PRICE: \$ _____

Current CONTRACT PRICE Adjusted by previous CHANGE ORDER: \$ _____

The CONTRACT PRICE due to this CHANGE ORDER will be (increased) (decreased) by:
\$ _____

The new CONTRACT PRICE including this CHANGE ORDER will be: \$ _____

Change to CONTRACT TIME:

The CONTRACT TIME will be (increased) (decreased) by _____ calendar days.

The date for completion of all work will be _____ (Date).

Approvals Required:

To be effective this order must be approved by the signatories below.

Requested by: _____

Recommended by: _____

Ordered by: _____

Accepted by: _____

**IL Department of Commerce & Economic Opportunity
Community Development Block Grant Program (CDBG)
Davis Bacon Labor Standards Provisions**

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENT: that

(Name of Contractor)

(Address of Contractor)

Corporation

a _____, hereinafter called PRINCIPAL, and
(Corporation, Partnership, or Individual)

(Name of Surety)

hereinafter called SURETY, are held and firmly bound unto
Village of Sheffield

(Name of Owner)

121 S. Church St., P.O. Box 218 Sheffield, IL 61361

(Address of Owner)

hereinafter called OWNER in the total aggregate penal sum of _____
Dollars (\$_____).

in lawful money of the United States, for the payment of which sum well and truly to be made,
we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and
severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the PRINCIPAL entered into a
certain contract with the OWNER, dated the _____ day of _____, a copy of
which is hereto attached and made a part hereof for the construction of:

**IL Department of Commerce & Economic Opportunity
Community Development Block Grant Program (CDBG)
Davis Bacon Labor Standards Provisions**

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER with or without notice to the SURETY and during the one year guaranty period and if the PRINCIPAL shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said SURETY, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that it is expressly agreed that the BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the CONTRACT as so amended. The term "Amendment", wherever used in this BOND, and whether referring to this BOND, the Contract or the Loan Documents shall include any alteration, addition, extension, or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the PRINCIPAL shall abridge the right of the other beneficiary hereunder, whose claim may be unsatisfied. The OWNER is the only beneficiaries hereunder.

**IL Department of Commerce & Economic Opportunity
Community Development Block Grant Program (CDBG)
Davis Bacon Labor Standards Provisions**

IN WITNESS WHEREOF, this instrument is executed in _____
Number
counterparts, each one of which shall be deemed an original, this the _____ day of _____.

ATTEST:

Principal

(Principal) Secretary

(SEAL)

By _____ (s)

(Witness to Principal)

(Address)

(Address)

Surety

ATTEST:

Witness to Surety

BY _____
Attorney-in-Fact

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of Contract.

If CONTRACTOR is partnership, all partners should execute BOND.
IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.

IL Department of Commerce & Economic Opportunity
Community Development Block Grant Program (CDBG)
Davis Bacon Labor Standards Provisions

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENT: that

(Name of Contractor)

(Address of Contractor)

Corporation
a _____, hereinafter called PRINCIPAL, and
(Corporation, Partnership, or Individual)

(Name of Surety)

hereinafter called SURETY, are held and firmly bound unto
Village of Sheffield

(Name of Owner)
121 S. Church St., P.O. Box 218 Sheffield, IL 61361

(Address of Owner)

hereinafter called OWNER and unto all persons, firms, and corporations who or which may furnish labor, or who furnish materials to perform as described under the contract and to their successors and assigns in the total aggregate penal sum of _____ Dollars (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the PRINCIPAL entered into a certain contract with the OWNER, dated the _____ day of _____, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the PRINCIPAL shall promptly make payment to all persons, firms, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extensions or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on construction of such WORK, and for all labor cost incurred in such WORK including that by a SUBCONTRACTOR, and to any mechanic or materialman lien holder whether it acquires its lien by operation of State or Federal law; then this obligation shall be void, otherwise to remain in full force and effect.

**IL Department of Commerce & Economic Opportunity
Community Development Block Grant Program (CDBG)
Davis Bacon Labor Standards Provisions**

PROVIDED, that beneficiaries or claimants hereunder shall be limited to the SUBCONTRACTORS, and persons, firms, and corporations having a direct contract with the PRINCIPAL, or its SUBCONTRACTORS.

PROVIDED, FURTHER, that the said SURETY for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of this contract or to the WORK or to the SPECIFICATIONS.

PROVIDE, FURTHER, that no suit or action shall be commenced hereunder by any claimant: (a) Unless claimant, other than one having a direct contract with the PRINCIPAL shall have given written notice to any two of the following: The PRINCIPAL, the OWNER, or the SURETY above named within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy that amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the PRINCIPAL, OWNER, or SURETY, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer. (b) After the expiration of one (1) year following the date of which PRINCIPAL ceased work on said CONTRACT, is being understood, however, that if any limitation embodied in the BOND is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

PROVIDED, FURTHER, that it is expressly agreed that this BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the Contract as so amended. The term "Amendment", wherever used in this BOND and whether referring to this BOND, the Contract, or the Loan Documents shall include any alteration, addition, extension or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

**IL Department of Commerce & Economic Opportunity
Community Development Block Grant Program (CDBG)
Davis Bacon Labor Standards Provisions**

IN WITNESS WHEREOF, this instrument is executed in _____
Number
counterparts, each one of which shall be deemed an original, this the _____ day of _____.

ATTEST:

Principal

(Principal) Secretary

(SEAL)

By _____ (s)

(Witness to Principal) _____
(Address)

(Address)

Surety

ATTEST:

Witness to Surety BY _____
Attorney-in-Fact

(Address) _____
(Address)

NOTE: Date of BOND must not be prior to date of Contract.

If CONTRACTOR is partnership, all partners should execute BOND.
IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.

APPENDIX 3-6-B

MINORITY WORKFORCE GOALS

<u>COUNTY</u>	<u>GOAL PERCENT</u>	<u>COUNTY</u>	<u>GOAL PERCENT</u>
ADAMS	3.1	LEE	4.6
ALEXANDER	11.4	LIVINGSTON	18.4
BOND	11.4	LOGAN	4.0
BOONE	6.3	MACON	7.6
BROWN	3.1	MACOUPIN	11.4
BUREAU	18.4	MADISON	14.7
CALHOUN	11.4	MARION	11.4
CARROLL	3.4	MARSHALL	3.3
CASS	4.0	MASON	3.3
CHAMPAIGN	7.8	MASSAC	5.2
CHRISTIAN	4.0	MCDONOUGH	3.3
CLARK	2.5	MCHENRY	19.6
CLINTON	14.7	MCLEAN	2.5
COLES	4.8	MENARD	4.5
COOK	19.6	MERCER	3.4
CRAWFORD	2.5	MONROE	14.7
CUMBERBLAND	4.8	MONTGOMERY	11.4
DEKALB	18.4	MOULTRIE	4.0
DEWITT	4.0	OGLE	4.6
DOUGLAS	4.8	PEORIA	4.4
DUPAGE	19.6	PERRY	11.4
EDGAR	4.8	PIATT	4.8
EDWARDS	3.5	PIKE	3.1
EFFINGHAM	11.4	POPE	5.2
FAYETTE	11.4	PULASKI	11.4
FORD	4.8	PUTNAM	18.4
FRANKLIN	4.8	RANDOLPH	11.4
FULTON	3.3	RICHLAND	11.4
GALLATIN	3.5	ROCK ISLAND	4.6
GREENE	11.4	SALINE	3.5
GRUNDY	18.4	SANGAMON	4.5
HAMILTON	3.5	SCHUYLER	3.3
HANCOCK	3.4	SCOTT	4.0
HARDIN	5.2	SHELBY	4.0
HENDERSON	3.4	STARK	3.3
HENRY	4.6	STEPHENSON	4.6
IROQUOIS	18.4	ST. CLAIR	14.7
JACKSON	11.4	TAZEWELL	4.4
JASPER	11.4	UNION	11.4
JEFFERSON	11.4	VERMILLION	4.8
JERSEY	11.4	WABASH	3.5
JODA VIESS	0.5	WARREN	3.3
JOHNSON	11.4	WASHINGTON	11.4
KANE	19.6	WAYNE	11.4
KANKAKEE	9.4	WHITE	3.5
KENDALL	18.4	WHITESIDE	3.4
KNOX	3.3	WILL	19.6
LASALLE	18.4	WILLIAMSON	11.4
LAWRENCE	3.5	WINNEBAGO	6.3
LAKE	19.6	WOODFORD	4.4

Female workforce goals (all counties): 6.9 percent

SOURCE: Federal Register/Vol.45 No.194/Friday, October 3, 1990, Notices Pages 65987-65988

This content is from the eCFR and is authoritative but unofficial.

Title 2 – Grants and Agreements

Subtitle A – Office of Management and Budget Guidance for Grants and Agreements

Chapter II – Office of Management and Budget Guidance

Part 200 – Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards

Source: 85 FR 49543, Aug. 13, 2020, unless otherwise noted.

Source: 85 FR 49539, Aug. 13, 2020, unless otherwise noted.

Authority: 31 U.S.C. 503

Source: 78 FR 78608, Dec. 26, 2013, unless otherwise noted.

Appendix II to Part 200—Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable.

- (A) Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.
- (B) All contracts in excess of \$10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement.
- (C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of “federally assisted construction contract” in 41 CFR Part 60–1.3 must include the equal opportunity clause provided under 41 CFR 60–1.4(b), in accordance with Executive Order 11246, “Equal Employment Opportunity” (30 FR 12319, 12935, 3 CFR Part, 1964–1965 Comp., p. 339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at 41 CFR part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”
- (D) Davis-Bacon Act, as amended (40 U.S.C. 3141–3148). When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141–3144, and 3146–3148) as supplemented by Department of Labor regulations (29 CFR Part 5, “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part

3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

- (E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701–3708). Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.
- (F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.
- (G) Clean Air Act (42 U.S.C. 7401–7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251–1387), as amended—Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251–1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).
- (H) Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.
- (I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any

other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

(J) See § 200.323.

(K) See § 200.216.

(L) See § 200.322.

[78 FR 78608, Dec. 26, 2013, as amended at 79 FR 75888, Dec. 19, 2014; 85 FR 49577, Aug. 13, 2020]

CHAMLIN FORMS

**PREPARED BY
CHAMLIN & ASSOCIATES, INC.
4152 PROGRESS BOULEVARD
PERU, IL 61354**

SUPPLEMENTARY CONDITIONS

STANDARD SPECIFICATION REFERENCE

Unless otherwise stated, all work on this project shall be governed by the "Standard Specifications for Water and Sewer Main Construction in Illinois," latest edition. Any reference to the specifications of the Illinois Department of Transportation (IDOT) included herein shall mean the latest edition of the Standard Specifications for Road and Bridge Construction prepared by the State of Illinois Department of Transportation. Any work relative to this project not covered by specifications, the special provision or the plan documents shall be covered by the above-mentioned Standard Specifications.

GENERAL CONDITIONS AND OTHER RELATED FRONT-END DOCUMENTS

Be advised that any conflict between the Standard General Conditions contained in Section A and Instructions to Bidders, General Conditions and other related documents as required by DCEO regulations in Section B, the DCEO documents shall apply.

UTILITIES

The Contractor shall be responsible for notifying all utilities prior to any excavation. Locations of utilities shown on these plans are approximate and shall be verified by the Contractor prior to any excavation with no additional compensation.

INSURANCE

The **minimum** limits of the Contractor's Liability Insurance as indicated in the Standard General Conditions, Article 6.03 – Contractor's Insurance, shall be as follows:

- A. Claims under workers' compensation, disability benefits, and other similar employee benefit acts, the limits should be the Statutory Limits.
- B. Claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees, the **minimum** limits should be \$1,000,000.
- C. Claims for damages because of bodily injury, occupational sickness or disease, or death of any person other than Contractor's employees, the **minimum** limits should be \$1,000,000.
- D. Claims for damages insured by reasonably available personal injury liability coverage which are sustained by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor or by any other person for any other reason, the **minimum** limits should be \$1,000,000.
- E. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom, the **minimum** limits should be \$1,000,000.
- F. Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle, the **minimum** limits should be \$1,000,000.

In addition to the above coverages, the Contractor shall carry an umbrella/Excess Liability policy in the amount of **not less than** \$2,000,000 which should include Employer's Liability Coverage.

The Contractor, as indicated in Article 6.03.C shall extend insurance to both the Owner and the Engineer for the liability coverages listed above, by endorsement as **additional primary and non-contributory insureds**. A copy of the endorsement which adds the additional insureds to the policy shall also be provided as well as **Waivers of Subrogation** endorsements for the General Liability and Worker's Compensation policies.

Regarding Commercial General Liability Insurance, Products/Completed Operations Coverage shall be maintained and evidence of continuation provided to the Owner and each other additional insured for **three years** after final payment.

BUILDER'S RISK INSURANCE

Per Article 6.04.A of the General Conditions, the **Contractor** shall purchase and maintain Builder's Risk Insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof. Any deductible will be the responsibility of the Contractor.

SAM.GOV

Bidders must have a SAM Unique Entity ID assigned and a complete, active SAM registration prior to contract award [85 FR 49523, 25.205], and not be excluded from participating in any federal assistance program [24 CFR 85, Subpart C 85.35]. Sub-contractors are not required to be registered as they are not paid directly from grant funds.

SECTION 3 COMPLIANCE

The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u. See "Attachment to Agreement – Section 3 Clause

VENUE OF LAWSUITS

The parties of this Contract agree that if any dispute arising from the pursuit of said Contract requires the filing of a lawsuit, venue of such lawsuit shall be in the Circuit Court of Bureau County, Illinois.

SUBSTANCE ABUSE PREVENTION PROGRAM

Before the Contractor and any subcontractor commences work, the Contractor and any subcontractor shall have in place a written Substance Abuse Prevention Program for the prevention of substance abuse among its employees which meets or exceeds the requirements in Public Act 95-0635 as enacted by the Illinois General Assembly or shall have a collective bargaining agreement in effect dealing with the subject matter of Public Act 95-0635.

The Contractor and any subcontractor shall file with a public body: a copy of the substance abuse prevention program along with a cover letter certifying that their program meets the requirements of the Act, or a letter certifying that the Contractor or a subcontractor has a collective bargaining agreement in effect dealing with the subject matter of this Act.

The apparent low Bidder, upon notification of contract award by the Owner, shall submit the required documents with the executed contract documents and insurance certificates. The Contractor is responsible for obtaining all appropriate documentation from their subcontractors and submitting to the Engineer.

PREVAILING WAGE RATES

All wages paid by the Contractor and each subcontractor shall be in compliance with the Davis-Bacon Act as defined by the United States Department of Labor. The Contractor shall be responsible to notify each subcontractor of the wage rates set forth in this contract and any revisions thereto. If the Department of Labor revises the wage rates, the revised rate as provided by the public body shall apply to this contract and the Contractor will not be allowed additional compensation on account of said revisions. **Updated wage rate decisions will be issued per addendum. Contractor shall include with their Bid the Davis-Bacon wage rates current at the time of bid opening.**

A copy of the Federal Labor Standards Provisions is included herein.

The Contractor and each subcontractor shall make and keep, for a period of not less than 3 years, records of all laborers, mechanics, and other workers employed by them on the project; the records shall include each worker's name, address, telephone number when available, social security number, classification or classifications, the hourly wages paid in each period, the number of hours worked each day, and the starting and ending times of work each day.

The Contractor and each subcontractor shall submit monthly, in person, by mail, or electronically, a certified payroll to the public body in charge of the project. The certified payroll shall consist of a complete copy of the records. The certified payroll shall be accompanied by a statement signed by the contractor or subcontractor which avers that:

- (i) such records are true and accurate.
- (ii) the hourly rate paid to each worker is not less than the general prevailing rate of hourly wages required; and
- (iii) the contractor or subcontractor is aware that filing a certified payroll that he or she knows to be false is a Class B misdemeanor.

Upon 2 business days' notice, the Contractor and each subcontractor shall make available for inspection the records to the public body in charge of the project, its officers and agents, and to the Director of Labor and his deputies and agents at all reasonable hours at a location within this State. The Contractor and each subcontractor shall permit his/her employees to be interviewed on the job, during working hours, by compliance investigators of the Department of Labor.

EMPLOYMENT OF ILLINOIS WORKERS ON PUBLIC WORKS

If at the time this Contract is executed, or if during the term of this Contract, there is excessive unemployment in Illinois as defined in the Illinois Workers on Public Works Act, 30 ILCS 570-0.01 *et seq.*, as two consecutive months of unemployment exceeding 5%, the Contractor agrees to employ Illinois laborers. An "Illinois laborer" is defined as any person who has resided in Illinois for at least thirty (30) days and intends to become or remain an Illinois resident.

BUILD AMERICA BY AMERICA (BABA)

The BABA Act is applicable to this project. The Build America, Buy America (BABA) requires that products purchased in connection with infrastructure projects funded by Federal Financial assistance programs must be produced in the United States.

OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION RULES & REGULATIONS

All work described herein and as shown on the accompanying plan sheets shall comply in all respects to pertinent articles of the current edition of the State and Federal Governments' rules and regulations concerning occupational safety and health standards.

Within Section 1926.652(a), OSHA requires that every jobsite with excavations must have a "Competent Person" present to evaluate the potential for hazards to employees. It shall be the responsibility of the Contractor to provide the required "Competent Person" as defined below.

He must ensure that every trench 5' or more in depth has a protective system. He must ensure that every trench less than 5' undergoes an inspection to determine whether a collapse hazard to employees exists. If a collapse hazard is detected, an appropriate protective system must be used.

A "Competent Person" is defined as one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous or dangerous to employees and who has the authorization to take prompt corrective measures to eliminate them.

"Competent Person" responsibilities:

- Understand the standards and any and all data provided.
- Select proper protective system based on soil type
- Recognize and reclassify soil after changing conditions
- Conduct air test for hazard atmospheres
- Design structural ramps
- Locate underground installations/utilities
- Monitor water removal equipment
- Perform inspections prior to work daily
- Inspect after each hazard-increasing event
- Responsible for ensuring OSHA compliance

**VILLAGE OF SHEFFIELD
EXCESS FLOW FACILITIES
(RE-BID)**

JANUARY, 2024

TECHNICAL SPECIFICATIONS

**PREPARED BY
CHAMLIN & ASSOCIATES, INC.
4152 PROGRESS BOULEVARD
PERU, IL 61354**

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SECTION 01 1000 - SUMMARY

PART 1 GENERAL

1.1 SUMMARY

- A. This project includes construction of a new sanitary relief sewer, excess flow pumping station, new force main, excess flow storage lagoon, and drain back sewer to the existing Waste Water Treatment Plant. This includes, but is not limited to:
1. 799 L.F. 12" PVC sanitary sewer.
 2. 48 L.F. 6" PVC DR-18 force main.
 3. 1,138 L.F. 8" PVC DR-18 force main.
 4. Lift station and appurtenances.
 5. Valve vault.
 6. Excess Flow Storage Lagoon.

CONVENTIONS

- B. These Specifications are written in imperative mood and streamlined form. This imperative language is directed to Contractor unless specifically noted otherwise. The words "shall be" are included by inference where a colon (:) is used within sentences or phrases.
- C. In addition to these Specifications, the following documents shall be considered standard specifications for this project:
1. Illinois Department of Transportation's "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022, and "Supplemental Specifications and Recurring Special Provisions," current edition. These two (2) documents shall herein be referred to as the "Roadway Specifications."
 2. Illinois Society of Professional Engineers' "Standard Specifications for Water and Sewer Construction in Illinois," 8th Edition, adopted in 2020. This document shall herein be referred to as the "Water and Sewer Specifications."
- D. In case of conflict between the above-referenced "Standard Specifications" and the Drawings and Specifications for this project, the Drawings and Specifications for this project will govern.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

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SECTION 01 1500 – PROJECT COORDINATION

PART 1 GENERAL

1.1 CONTRACTOR RESPONSIBILITY

- A. The General Contractor shall be responsible for all project coordination and shall provide a single point of contact, whose name should be included in the package, to the Owner for all issues related to the administration of this construction contract. In addition, the Contractor shall provide a full-time, on-site Project Superintendent whose name and resume should be included in the bid package.

1.2 JOB SITE ADMINISTRATION

- A. At no time will any work be performed on the site without the Project Superintendent being present without the prior approval of the Engineer. The Engineer, as a rule, will not respond to questions relating to the work from sub-contractors, crew foremen, etc. The Project Superintendent will be responsible to keep the Engineer informed of the day-to-day activity schedule, particularly if there are times when on-site work is not continuous, such that observation and resident inspection can be coordinated.

END OF SECTION

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SECTION 01 2000 - PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Schedule of Values.
- B. Application for Payment.
- C. Change procedures.
- D. Defect assessment.
- E. Alternates.

1.2 SCHEDULE OF VALUES

- A. Submit printed schedule on AIA G703 - Continuation Sheet for G702.
- B. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement for review and approval of the Engineer.
- C. Format: Utilize Schedule of Quantities/Summary of Quantities established in the Contract Documents for Unit Price Contracts.
- D. Include within each line item, direct proportional amount of Contractor's overhead and profit.
- E. Revise schedule to list approved Change Orders with each Application for Payment.

1.3 APPLICATION FOR PAYMENT

- A. Submit three copies of each Application for Payment on AIA G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet for G702. Contractor's electronic media driven form will be considered and requires Engineer's approval.
- B. Content and Format: List items per the Engineer approved Schedule of Values.
- C. Submit updated construction schedule with each Application for Payment.
- D. Payment period: Payment periods shall be one-month intervals. The beginning and ending date of the pay periods will be discussed and determined at the Pre-Construction Conference.
- E. Submit with transmittal letter as specified for Submittals in Section 01 3300 - Submittal Procedures.
- F. Submit partial waivers of lien from the Contractor and his suppliers and subcontractors.

- G. Substantiating Data: When Engineer requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:
1. Partial release of liens from major Subcontractors and vendors.
 2. Affidavits/invoices attesting to off-site stored products and associated insurance certificate.
 3. Affidavits/invoices attesting to on-site stored products stored but not installed.
 4. Construction Progress Schedule, revised and current.

1.4 CHANGE PROCEDURES

- A. Submittals: Submit name of individual who is authorized to receive change documents and is responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.
- B. Engineer will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions in writing to the Contractor.
- C. Engineer may issue Proposal Request or Notice of Change including a detailed description of proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change with stipulation of overtime work required and with the period of time during which the requested price will be considered valid. Contractor will prepare and submit estimate within 3 days.
- D. Contractor may propose changes by submitting a request for change to Engineer, describing proposed change and its full effect on the Work. Include a statement describing reason for the change and the effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on the Work by separate or other Contractors. Document requested substitutions in accordance with Section 01 2500 – Substitution Procedures.
- E. Stipulated Sum/Price Change Order: Based on Proposal Request/Notice of Change and Contractor's fixed price quotation or Contractor's request for Change Order as approved by Engineer.
- F. Construction Change Directive: Engineer may issue directive, on Engineer's designated form, signed by Owner, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.
- G. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract. The Engineer will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.
- H. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.
- I. Document each quotation for change in Project Cost or Time with sufficient data to allow evaluation of quotation.

- J. Change Order Forms: Change Orders shall be processed on the Engineer's provided Change Order Form found in these Specifications.
- K. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.
- L. Correlation of Contractor Submittals:
 - 1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
 - 2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
 - 3. Promptly enter changes in Project Record Documents.

1.5 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of Engineer, it is not practical to remove and replace the Work, Engineer will direct appropriate remedy or adjust payment.
- C. The defective Work may remain, but unit sum/price will be adjusted to new sum/price at discretion of Engineer and Owner.
- D. Defective Work will be partially repaired according to instructions of Engineer and Owner, and unit sum/price will be adjusted to new sum/price at discretion of Engineer and Owner.
- E. Individual specification sections may modify these options or may identify specific formula or percentage sum/price reduction.
- F. Authority of Engineer and Owner to assess defects and identify payment adjustments is final.
- G. Non-Payment for Rejected Products: Payment will not be made for rejected products for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products not completely unloaded from transporting vehicle.
 - 4. Products placed beyond lines and levels of required work.
 - 5. Products remaining on hand after completion of the Work.
 - 6. Loading, hauling, and disposing of rejected products.

1.6 ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement. The Owner-Contractor Agreement may identify certain Alternates to remain an Owner option for a stipulated period of time.
- B. Coordinate related Work and modify surrounding Work.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 2500 - SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality assurance.
- B. Product substitution procedures.

1.2 QUALITY ASSURANCE

- A. Contract is based on products and standards established in Contract Documents.
- B. Products specified define standard of quality, type, function, dimension, appearance, and performance required.
- C. Substitution Proposals: Permitted for specified products except where specified otherwise. Do not substitute products unless substitution has been accepted and approved by the Engineer.

1.3 PRODUCT SUBSTITUTION PROCEDURES

- A. For other specified products or manufacturers, prior to the Bid Date:
 - 1. Engineer may consider requests for substitutions submitted no less than 15 days before the Bid Date.
 - 2. Accepted substitutions will be announced via Addendum no less than 5 days before the Bid Date.
 - 3. Substitutions shall be documented in accordance with Paragraph D below.
- B. Following Notice to Proceed:
 - 1. Engineer may consider requests for substitutions only within 15 days after issuance of Notice to Proceed.
 - 2. Substitutions shall be documented in accordance with Paragraph D below.
- C. Document each request with complete data, substantiating compliance of proposed substitution with Contract Documents, including:
 - 1. Manufacturer's name and address, product, trade name, model, or catalog number, performance and test data, and reference standards.
 - 2. Itemized point-by-point comparison of proposed substitution with specified product, listing variations in quality, performance, and other pertinent characteristics.
 - 3. Reference to Article and Paragraph numbers in Specification Section.
 - 4. Cost data comparing proposed substitution with specified product and amount of net change to Contract Sum.
 - 5. Changes required in other Work.
 - 6. Availability of maintenance service and source of replacement parts as applicable.
 - 7. Certified test data to show compliance with performance characteristics specified.
 - 8. Samples when applicable or requested.
 - 9. Other information as necessary to assist Engineer's evaluation.

- D. A request constitutes a representation that Bidder/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 document and coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 4. Waives claims for additional costs or time extension that may subsequently become apparent.
 5. Will coordinate installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.
 6. Will reimburse Owner and Engineer for review or redesign services associated with approved substitutions.
- 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 three copies of requests for substitutions for consideration. 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.
- G. Working Days
1. Working days for this project will not be extended as a result of re-design for substituted equipment.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 3000 - ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Coordination and Project conditions.
- B. Field engineering.
- C. Preconstruction meeting.
- D. Progress meetings.
- E. Closeout meeting.

1.2 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, with provisions for accommodating items installed later.
- B. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion.
- C. After Substantial Completion, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of completed, satisfactory work.

1.3 FIELD ENGINEERING

- A. The Owner shall employ a land surveyor and field engineer (the Engineer). The Contractor shall notify the Engineer a minimum of 2 days prior to the start of the work.
- B. When construction layout/stakeout is required, the Contractor shall notify the Engineer a minimum of 2 days prior to the required layout. Requests made for staking/layout with less than 2 days advanced notice may not be accommodated and any delay in the Contract time or increase in Contractor's expenses shall be the sole responsibility of the Contractor.
- C. Locate and protect survey control and reference points. Promptly notify Engineer of discrepancies discovered.
- D. Control datum for survey is that shown on Drawings.
- E. Verify setbacks and easements; confirm drawing dimensions and elevations.
- F. Maintain complete and accurate log of control and survey points as Work progresses.

- G. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- H. Promptly report to Engineer loss or destruction of reference points or relocation required because of changes in grade or other reasons.
- I. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Engineer.

1.4 PRECONSTRUCTION MEETING

- A. Engineer will schedule and preside over meeting after Notice of Award.
- B. Attendance Required: Engineer, Owner, Resident Project Representative, appropriate governmental agency representatives, Construction Manager, major Subcontractors, and Contractor.
- C. Minimum Agenda:
 - 1. Submission of list of Subcontractors, list of products, schedule of values, and Progress Schedule.
 - 2. Designation of personnel representing parties in Contract.
 - 3. Communication procedures.
 - 4. Procedures and processing of requests for interpretations, field decisions, field orders, submittals, substitutions, Applications for Payments, proposal request, Change Orders, and Contract closeout procedures.
 - 5. Scheduling.
 - 6. Critical Work sequencing.
 - 7. Use of premises by Owner and Contractor.
 - 8. Safety, security and housekeeping procedures.
- D. Engineer: Record minutes and distribute copies to participants within two days after meeting, with copies to Contractor, Owner, and those affected by decisions made.

1.5 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
 - 1. Engineer will make arrangements for meetings, prepare agenda with copies for participants, and preside over meetings.
- B. Attendance Required: Contractor's Job Superintendent, major subcontractors and suppliers, Engineer, and Owner, as appropriate to agenda topics for each meeting.
- C. Minimum Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of Work progress.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems impeding planned progress.
 - 5. Review of submittal 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.

D. Engineer: Record minutes and distribute copies to participants within two days after meeting, with copies to Contractor, Owner, and those affected by decisions made.

1.6 CLOSEOUT MEETING

A. Schedule Project closeout meeting with sufficient time to prepare for requesting Substantial Completion. Preside over meeting and be responsible for minutes.

B. Attendance Required: Contractor, major Subcontractors, Engineer, Owner, and others appropriate to agenda.

C. Engineer shall provide notification 14 days in advance of meeting date.

D. Minimum Agenda:

1. Start-up of facilities and systems.
2. Operations and maintenance manuals.
3. Testing, adjusting, and balancing.
4. System demonstration and observation.
5. Operation and maintenance instructions for Owner's personnel.
6. Contractor's inspection of Work.
7. Contractor's preparation of an initial "punch list."
8. Procedure to request Engineer inspection to determine date of Substantial Completion.
9. Completion time for correcting deficiencies.
10. Inspections by authorities having jurisdiction.
11. Certificate of Occupancy and transfer of insurance responsibilities.
12. Partial release of retainage.
13. Final cleaning.
14. Preparation for final inspection.
15. Closeout Submittals:
 - a. Project record documents.
 - b. Operating and maintenance documents.
 - c. Operating and maintenance materials.
 - d. Affidavits.
16. Final Application for Payment.
17. Contractor's demobilization of Site.
18. Maintenance.

E. Engineer: Record minutes and distribute copies to participants within two days after meeting, with copies to Contractor, Owner, and those affected by decisions made.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 ALTERATION PROCEDURES

- A. Entire facility will be occupied for normal operations during progress of construction. Cooperate with Owner in scheduling operations to minimize conflict and to permit continuous usage.
 - 1. Perform Work not to interfere with operations of occupied areas.
 - 2. Keep utility and service outages to a minimum and perform only after written approval of Owner.
 - 3. Clean Owner-occupied areas daily. Clean spillage, overspray, and heavy collection of dust in Owner-occupied areas immediately.
- B. Cut, move, or remove items as necessary for access to Work. Replace and restore at completion.
- C. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- D. Remove debris and abandoned items from area and from concealed spaces.
- E. Prepare surface to permit installation of new Work.
- F. Where new Work abuts or aligns with existing Work, provide smooth and even transition.
- G. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to Engineer for review.

END OF SECTION

SECTION 01 3216 - CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Submittals.
- B. Format.
- C. Review and evaluation.
- D. Distribution.

1.2 SUBMITTALS

- A. Within 14 days after date of Notice to Proceed, submit draft of proposed complete bar chart schedule for review. Include written certification that major Subcontractors have reviewed and accepted proposed schedule.
- B. Within 7 days after joint review, submit revised Progress Schedule.
- C. Submit updated schedules with each Application for Payment.
- D. Schedule Updates:
 - 1. Overall percent complete, projected and actual.
 - 2. Completion progress by listed activity and subactivity, to within five working days prior to submittal.
 - 3. Changes in Work scope and activities modified since submittal.
 - 4. Delays in submittals or resubmittals, deliveries, or Work.
 - 5. Adjusted or modified sequences of Work.
 - 6. Other identifiable changes.
 - 7. Revised projections of progress and completion.
- E. Narrative Progress Report:
 - 1. Submit with each monthly submission of Progress Schedule.
 - 2. Summary of Work completed during the past period between reports.
 - 3. Work planned during the next period.
 - 4. Explanation of differences between summary of Work completed and Work planned in previously submitted report.
 - 5. Current and anticipated delaying factors and estimated impact on other activities and completion milestones.
 - 6. Corrective action taken or proposed.

1.3 FORMAT

- A. Bar chart schedule to include at least:

1. Identification and listing in chronological order of those activities reasonably required to complete the Work, including:
 - a. Subcontract Work.
 - b. Major equipment design, fabrication, factory testing, and delivery dates including required lead times.
 - c. Move-in and other preliminary activities.
 - d. Equipment and equipment system test and startup activities.
 - e. Project closeout and cleanup.
 - f. Work sequences, constraints, and milestones.
2. Listings identified by Specification Section number.
3. Identification of the following:
 - a. Horizontal time frame by year, month, and week.
 - b. Duration, early start, and completion for each activity and subactivity.
 - c. Critical activities and Project float.
 - d. Subschedules to further define critical portions of Work.

1.4 REVIEW AND EVALUATION

- A. Participate in joint review and evaluation of schedules with Engineer at each submittal.
- B. Evaluate Project status to determine Work behind schedule and Work ahead of schedule.
- C. After review, revise schedules incorporating results of review, and resubmit within 7 days.

1.5 DISTRIBUTION

- A. Following joint review, distribute copies of updated schedules to Contractor's Project site file, to Subcontractors, suppliers, and Engineer.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 3300 - SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Definitions.
- B. Submittal procedures.
- C. Proposed product list.
- D. Product data.
- E. Use of electronic CAD files of Project Drawings.
- F. Shop Drawings.
- G. Samples.
- H. Design data.
- I. Test reports.
- J. Certificates.
- K. Manufacturer's instructions.
- L. Manufacturer's field reports.
- M. Erection Drawings.
- N. Contractor review.
- O. Engineer review.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Engineer's and Contractor's responsive action.
- B. Informational Submittals: Written and graphic information and physical Samples that do not require Engineer's and Contractor's responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

- A. Transmit each submittal to Engineer.

- 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 according to requirements of the Work and Contract Documents.
 - E. Include lead time required for all items being submitted.
 - F. Schedule submittals to expedite Project, and submit electronic submittals via email as PDF electronic files. Coordinate submission of related items.
 - G. For each submittal for review, allow 15 days excluding delivery time to and from Contractor.
 - H. Identify variations in Contract Documents and product or system limitations that may be detrimental to successful performance of completed Work.
 - I. Allow space on submittals for Contractor and Engineer review stamps.
 - J. When revised for resubmission, identify changes made since previous submission.
 - K. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.
 - L. Submittals not requested will not be recognized nor processed.
 - M. Incomplete Submittals: Engineer will not review. Complete submittals for each item are required. Delays resulting from incomplete submittals are not the responsibility of Engineer.
- 1.4 PROPOSED PRODUCT 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, model number, and lead time of each product.
 - B. For products specified only by reference standards, indicate manufacturer, trade name, model or catalog designation, and reference standards.
- 1.5 PRODUCT DATA
- A. Product Data: Action Submittal: Submit to Engineer for review for assessing conformance with information given and design concept expressed in Contract Documents.
 - B. Submit electronic submittals via email as PDF electronic files to Engineer, or as opaque copies (number required by Contractor, plus three copies Engineer will retain).

- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- E. After review, produce copies and distribute.

1.6 ELECTRONIC CAD FILES OF PROJECT DRAWINGS

- A. Electronic CAD Files of Project Drawings: May only be used to expedite production of Shop Drawings for the Project. Use for other Projects or purposes is not allowed.
- B. Electronic CAD Files of Project Drawings: Distributed only under the following conditions:
 - 1. Use of files is solely at receiver's risk. Engineer does not warrant accuracy of files. Receiving files in electronic form does not relieve receiver of responsibilities for measurements, dimensions, and quantities set forth in Contract Documents. In the event of ambiguity, discrepancy, or conflict between information on electronic media and that in Contract Documents, notify Engineer of discrepancy and use information in hard-copy Drawings and Specifications.
 - 2. CAD files do not necessarily represent the latest Contract Documents, existing conditions, and as-built conditions. Receiver is responsible for determining and complying with these conditions and for incorporating addenda and modifications.
 - 3. User is responsible for removing information not normally provided on Shop Drawings and removing references to Contract Documents. Shop Drawings submitted with information associated with other trades or with references to Contract Documents will not be reviewed and will be immediately returned.
 - 4. Receiver shall not hold Engineer responsible for data or file clean-up required to make files usable, nor for error or malfunction in translation, interpretation, or use of this electronic information.
 - 5. Receiver shall understand that even though Engineer has computer virus scanning software to detect presence of computer viruses, there is no guarantee that computer viruses are not present in files or in electronic media.
 - 6. Receiver shall not hold Engineer responsible for such viruses or their consequences, and shall hold Engineer harmless against costs, losses, or damage caused by presence of computer virus in files or media.

1.7 SHOP DRAWINGS

- A. Shop Drawings: Action Submittal: Submit to Engineer for assessing 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 a professional Engineer responsible for designing components shown on Shop Drawings.
 - 1. Include signed and sealed calculations to support design.

2. Submit Shop Drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
 3. Make revisions and provide additional information when required by authorities having jurisdiction.
- D. Submit electronic submittals via email as PDF electronic files to Engineer, or as opaque copies (number required by Contractor, plus three copies Engineer will retain).
- E. After review, produce copies and distribute.

1.8 SAMPLES

- A. Samples: Action Submittal: Submit to Engineer for assessing conformance with information given and design concept expressed in Contract Documents.
- B. Samples for Selection as Specified in Product Sections:
1. Submit to Engineer for aesthetic, color, and finish selection.
 2. Submit Samples of finishes, textures, and patterns for Engineer selection.
- C. Submit Samples to illustrate functional and aesthetic characteristics of products, with integral parts and attachment devices. Coordinate Sample submittals for interfacing work.
- D. Include identification on each Sample, with full Project information.
- E. Submit number of Samples specified in individual Specification Sections; Engineer will retain one Sample.
- F. Reviewed Samples that may be used in the Work are indicated in individual Specification Sections.
- G. After review, produce copies and distribute.

1.9 DESIGN DATA

- A. Informational Submittal: Submit data for Engineer's knowledge as Contract administrator or for Owner.
- B. Submit information for assessing conformance with information given and design concept expressed in Contract Documents.

1.10 TEST REPORTS

- A. Informational Submittal: Submit reports for Engineer's knowledge as Contract administrator or for Owner.
- B. Submit test reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.11 CERTIFICATES

- A. Informational Submittal: 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.

1.12 MANUFACTURER'S INSTRUCTIONS

- A. Informational Submittal: Submit manufacturer's installation instructions for Engineer's knowledge as Contract administrator or for Owner.
- B. Submit printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, to Engineer in quantities specified for Product Data.
- C. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.13 MANUFACTURER'S FIELD REPORTS

- A. Informational Submittal: Submit reports for Engineer's knowledge as Contract administrator or for Owner.
- B. Submit report within 7 days of observation to Engineer for information.
- C. Submit reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.14 ERECTION DRAWINGS

- A. Informational Submittal: Submit Drawings for Engineer's knowledge as Contract administrator or for Owner.
- B. Submit Drawings for information assessing conformance with information given and design concept expressed in Contract Documents.
- C. Data indicating inappropriate or unacceptable Work may be subject to action by Engineer or Owner.

1.15 CONTRACTOR REVIEW

- A. Review for compliance with Contract Documents and approve submittals before transmitting to Engineer.
- B. Contractor: Responsible for:

1. Determination and verification of materials including manufacturer's catalog numbers.
 2. Determination and verification of field measurements and field construction criteria.
 3. Checking and coordinating information in submittal with requirements of Work and of Contract Documents.
 4. Determination of accuracy and completeness of dimensions and quantities.
 5. Confirmation and coordination of dimensions and field conditions at Site.
 6. Construction means, techniques, sequences, and procedures.
 7. Safety precautions.
 8. Coordination and performance of Work of all trades.
- C. Stamp, sign or initial, and date each submittal to certify compliance with requirements of Contract Documents.
- D. Do not fabricate products or begin Work for which submittals are required until approved submittals have been received from Engineer.

1.16 ENGINEER REVIEW

- A. Do not make "mass submittals" to Engineer. "Mass submittals" are defined as six or more submittals or items in one day or 20 or more submittals or items in one week. If "mass submittals" are received, Engineer's review time stated above will be extended as necessary to perform proper review. Engineer will review "mass submittals" based on priority determined by Engineer after consultation with Owner and Contractor.
- B. Informational submittals and other similar data are for Engineer's information, do not require Engineer's responsive action, and will not be reviewed or returned with comment.
- C. Submittals made by Contractor that are not required by Contract Documents may be returned without action.
- D. Submittal approval does not authorize changes to Contract requirements unless accompanied by letter of acceptance and/or Change Order.
- E. Owner may withhold monies due to Contractor to cover additional costs beyond the second submittal review.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 4000 - QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality control.
- B. Tolerances.
- C. References.
- D. Labeling.
- E. Testing and inspection services.
- F. Manufacturers' field services.
- G. Examination.
- H. Preparation.

1.2 QUALITY CONTROL

- 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 the minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work using persons qualified to produce required and specified quality.
- F. Supervise performance of Work in such manner and by such means to ensure that Work, whether completed or in progress, will not be subjected to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.
- G. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.
- H. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

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' recommended tolerances and tolerance requirements in reference standards. When such tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.

1.4 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply 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 as of date of Contract Documents except where specific date is established by code.
- C. Obtain copies of standards and maintain on Site when required by product Specification Sections.
- D. When requirements of indicated reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.
- E. Neither contractual relationships, duties, or responsibilities of parties in Contract nor those of Engineer shall be altered from Contract Documents by mention or inference in reference documents.

1.5 LABELING

- A. Attach label from agency approved by authorities having jurisdiction for products, assemblies, and systems required to be labeled by applicable codes.
- 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.
- C. Manufacturer's Nameplates, Trademarks, Logos, and Other Identifying Marks on Products: Not allowed on surfaces exposed to view in public areas, interior or exterior.

1.6 TESTING AND INSPECTION SERVICES

- A. Owner will employ and pay for specified services of an independent firm to perform testing and inspection.
- B. Independent firm will perform tests, inspections, and other services specified in individual Specification Sections and as required by the Engineer and Owner.
 - 1. Laboratory: Authorized to operate in the State of Illinois.

- C. Reports shall be submitted by independent firm to Engineer and Contractor, indicating observations and results of tests and compliance or noncompliance with Contract Documents.
- D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - 1. Notify Engineer and independent firm 48 hours before expected time for operations requiring services.
 - 2. Make arrangements with independent firm and pay for additional Samples and tests required for Contractor's use.
- E. Employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work according to requirements of Contract Documents.
- F. Retesting or re-inspection required because of nonconformance with specified or indicated requirements shall be performed by same independent firm on instructions from Engineer. Payment for retesting or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.
- G. Agency Responsibilities:
 - 1. Test Samples of mixes submitted by Contractor.
 - 2. Provide qualified personnel at Site. Cooperate with Engineer and Contractor in performance of services.
 - 3. Perform indicated sampling and testing of products according to specified standards.
 - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 5. Promptly notify Engineer and Contractor of observed irregularities or nonconformance of Work or products.
 - 6. Perform additional tests required by Engineer.
 - 7. Attend preconstruction meetings and progress meetings.
- H. Agency Reports: After each test, promptly submit 2 copies of report to Engineer and Contractor. When requested by Engineer, provide interpretation of test results.
- I. Limits on Testing Authority:
 - 1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency or laboratory may not approve or accept any portion of the Work.
 - 3. Agency or laboratory may not assume duties of Contractor.
 - 4. Agency or laboratory has no authority to stop the Work.

1.7 MANUFACTURER'S FIELD SERVICES

- A. When specified in individual specification Sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe Site conditions, conditions of surfaces and installation, quality of workmanship, startup of equipment, testing, adjusting, and balancing of equipment, and commissioning as applicable, and to initiate instructions when necessary.
- B. Report observations and Site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing site conditions and substrate 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.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

END OF SECTION

SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary Utilities:
 - 1. Temporary lighting for construction purposes.
 - 2. Temporary water service.
 - 3. Temporary sanitary facilities.
- B. Construction Facilities:
 - 1. Field offices and sheds.
 - 2. Vehicular access.
 - 3. Parking.
 - 4. Progress cleaning and waste removal.
 - 5. Traffic regulation.
- C. Temporary Controls:
 - 1. Barriers.
 - 2. Dust control.
 - 3. Erosion and sediment control.
 - 4. Noise control.
 - 5. Pollution control.
- D. Removal of utilities, facilities, and controls.

1.2 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain lighting for construction operations.
- B. Provide and maintain 1 watt/sq ft lighting to exterior staging and storage areas and portions of site required after dark for security purposes.
- C. Maintain lighting and provide routine repairs.

1.3 TEMPORARY WATER SERVICE

- A. Provide and pay for suitable quality water service as needed to maintain specified conditions for construction operations.

1.4 TEMPORARY SANITARY FACILITIES

- A. Provide, pay for, and maintain required facilities and enclosures. Provide facilities at time of Project mobilization.

1.5 FIELD OFFICES AND SHEDS

- A. The Contractor shall provide a field office as required for his Work. The use of a field office and any associated utility costs are the Contractor's option and are not required as a part of the Contract, and any costs associated with these items shall be considered incidental to the Contract.
- B. Storage Areas and Sheds: Size to storage requirements for products of individual Sections, allowing for access and orderly provision for maintenance and for inspection of products to requirements of Section 01 6000 – Product Requirements. The Contractor shall provide storage areas and sheds as required for his Work. The use of a storage area and sheds and any associated utility costs are the Contractor's option and are not required as a part of the Contract, and any costs associated with these items shall be considered incidental to the Contract.
- C. Preparation: Fill and grade site for temporary structures sloped for drainage away from structures.
- D. Removal: **At completion of Work remove buildings, foundations utility services, and debris.** Restore areas.

1.6 VEHICULAR ACCESS

- A. For timely, efficient progress of the Work, construct temporary all-weather access roads to serve construction area, of width and load-bearing capacity to accommodate unimpeded traffic for construction purposes, Owner's access, and emergency vehicles.
- B. Construct temporary bridges and culverts to span low areas and allow unimpeded drainage.
- C. Provide unimpeded access for emergency vehicles. Maintain 20-foot-wide driveways with turning space between and around combustible materials.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Temporary vehicular access shall be incidental to the Contract.

1.7 PARKING

- A. Provide temporary gravel surface parking areas to accommodate construction personnel.
- B. Locate as approved by the Engineer and Owner.
- C. If Site space is not adequate, provide additional off-Site parking.
- D. Do not allow heavy vehicles or construction equipment in parking areas.
- E. Designate one parking space each for Owner and Engineer.
- F. Permanent Pavements and Parking Facilities:
 - 1. Bases for permanent roads and parking areas may be used for construction traffic.
 - 2. Avoid traffic loading beyond paving design capacity. Tracked vehicles not allowed.

3. Use of approved permanent parking structures is permitted.

G. Maintenance:

1. Maintain traffic and parking areas in sound condition free of excavated material, construction equipment, products, mud, snow, ice, and the like.
2. Maintain existing paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original condition.

H. Removal, Repair:

1. Remove temporary materials and construction at Substantial Completion.
2. Repair existing permanent facilities damaged by use, to original condition.

I. Mud from Site Vehicles: Provide means of removing mud from vehicle wheels before entering streets.

J. Temporary parking as described shall be incidental to the Contract.

1.8 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, before enclosing spaces.
- C. Broom and vacuum clean interior areas before starting surface finishing and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and rubbish from Site as required and dispose of off-site.

1.9 TRAFFIC REGULATION

A. Haul Routes:

1. Consult with authorities having jurisdiction and establish public thoroughfares to be used for haul routes and Site access.

B. Traffic Signs and Signals:

1. Provide signs at approaches to Site and on Site, at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.
2. Relocate signs and signals as Work progresses, to maintain effective traffic control.

C. Removal:

1. Remove equipment and signs when no longer required.
2. Repair damage caused by installation.
3. Remove post settings to depth of 2 feet.

1.10 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition. Owner's access to site shall be maintained at all times.
- B. Protect non-owned vehicular traffic, stored materials, Site, and structures from damage.

1.11 DUST CONTROL

- A. Execute Work by methods that minimize raising dust from construction operations.
- B. Provide positive means to prevent airborne dust from dispersing into atmosphere.

1.12 EROSION AND SEDIMENT CONTROL

- A. Grade Site to drain. Maintain excavations free of water. Provide, operate, and maintain necessary pumping equipment.
- B. Protect Site from puddles or running water. Provide water barriers and/or silt fence as required to protect Site from soil erosion.
- C. Plan and execute construction by methods to control surface drainage from cuts and fills from borrow and waste disposal areas. Prevent erosion and sedimentation.
- D. Minimize surface area of bare soil exposed at one time.
- E. Provide temporary measures including berms, dikes, drains, and other devices to prevent water flow.
- F. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
- G. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- H. Comply with sediment and erosion control plan indicated on Drawings.
- I. The Contractor will be required to strictly adhere to the Storm Water Pollution Prevention Plan (SWPPP). It will be the Contractor's responsibility upon the start of construction to properly complete all tasks and complete all paperwork associated with the SWPPP.

1.13 NOISE CONTROL

- A. Provide methods, means, and facilities to minimize noise produced by construction operations.

1.14 POLLUTION CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances and pollutants produced by construction operations.

- B. Comply with pollution and environmental control requirements of the Illinois Environmental Protection Agency.

1.15 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, and materials before Final Application for Payment inspection.
- B. Remove underground installations to minimum depth of 2 feet. Grade Site as indicated on Drawings.
- C. Clean and repair damage caused by installation or use of temporary Work.
- D. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

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SECTION 01 6000 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Products.
- B. Product delivery requirements.
- C. Product storage and handling requirements.
- D. Product options.

1.2 PRODUCTS

- A. At minimum, comply with specified requirements and reference standards.
- B. Specified products define standard of quality, type, function, dimension, appearance, and performance required.
- C. Furnish products of qualified manufacturers that are suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise. Confirm that manufacturer's production capacity can provide sufficient product, on time, to meet Project requirements.
- D. Domestic Products: Except where specified otherwise, domestic products are preferred and interpreted to mean products mined, manufactured, fabricated, or produced in United States or its territories.

1.3 PRODUCT DELIVERY REQUIREMENTS

- A. Transport and handle products according to manufacturer's instructions.
- B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products; use methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

- A. Store and protect products according to manufacturer's instructions.
- B. Store products with seals and labels intact and legible.
- C. Store sensitive products in weathertight, climate-controlled enclosures in an environment suitable to product.
- D. For exterior storage of fabricated products, place products on sloped supports aboveground.

- E. Provide secure, insured off-Site storage and protection when Site does not permit on-Site storage or protection.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store products; use methods to prevent soiling, disfigurement, or damage.
- I. 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: Products complying with specified reference standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and complying with 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, according to Section 01 2500 - Substitution Procedures.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 7000 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Starting of systems.
- D. Demonstration and instructions.
- E. Testing, adjusting, and balancing.
- F. Protecting installed construction.
- G. Project record documents.
- H. Operation and maintenance data.
- I. Manual for materials and finishes.
- J. Manual for equipment and systems.
- K. Spare parts and maintenance products.
- L. Product warranties and product bonds.
- M. Maintenance service.

1.2 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's review.
- B. Provide submittals to Engineer required by authorities having jurisdiction.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.3 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Clean debris from the site.

- C. Clean site: sweep paved areas, rake clean landscaped surfaces.
- D. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.4 STARTING OF SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Engineer and Owner 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 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 3300 - Submittal Procedures that equipment or system has been properly installed and is functioning correctly.

1.5 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. Demonstrate Project equipment instructed by qualified manufacturer's representative who is knowledgeable about the Project.
- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- E. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at equipment location.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

- G. Required instruction time for each item of equipment and system is specified in individual sections.

1.6 TESTING, ADJUSTING AND BALANCING

- A. The Contractor shall provide and pay for the required independent firm or manufacturer's representatives required to perform testing, adjusting, and balancing specified in individual product Sections.
- B. Reports will be submitted by independent firm/manufacturer's representative to Engineer indicating observations and results of tests and indicating compliance or non-compliance with requirements of Contract Documents.

1.7 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. Prohibit traffic from landscaped areas.

1.8 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.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish first floor datum.

2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
4. Field changes of dimension and detail.
5. Details not on original Contract drawings.

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

1.9 OPERATION AND MAINTENANCE DATA

- A. Submit data bound in 8-1/2 x 11 inch (A4) text pages, three D side ring capacity expansion binders with durable plastic covers.
- 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 process flow 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. Air and water balance reports.
 - c. Certificates.
 - d. Photocopies of warranties and bonds.
- F. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

- G. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy to be reviewed and returned after final inspection, with Engineer comments. Revise content of document sets as required prior to final submission.
- H. Submit three sets of revised final volumes in final form within 10 days after final inspection.

1.10 MANUAL FOR MATERIALS AND FINISHES

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Engineer will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.
- C. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy to be reviewed and returned after final inspection, with Engineer comments. Revise content of document sets as required prior to final submission.
- D. Submit three sets of revised final volumes in final form within 10 days after final inspection.
- E. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Include information for re-ordering custom manufactured products.
- F. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- G. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.
- H. Additional Requirements: As specified in individual product specification sections.
- I. Include listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.11 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Engineer will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.
- C. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy to be reviewed and returned after final inspection, with Engineer comments. Revise content of document sets as required prior to final submission.

- D. Submit three sets of revised final volumes in final form within 10 days after final inspection.
- E. 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.
- F. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- G. Include color coded wiring diagrams as installed.
- H. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and special operating instructions.
- I. **Maintenance Requirements:** Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- J. Include servicing and lubrication schedule, and list of lubricants required.
- K. Include manufacturer's printed operation and maintenance instructions.
- L. Include sequence of operation by controls manufacturer.
- M. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- N. Include control diagrams by controls manufacturer as installed.
- O. Include Contractor's coordination drawings, with color coded piping diagrams as installed.
- P. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- Q. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- R. Include test and balancing reports as specified in Section 01 4000 - Quality Requirements.
- S. Additional Requirements: As specified in individual product specification sections.
- T. 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.

1.13 PRODUCT WARRANTIES AND PRODUCT BONDS

- A. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
- B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.
- C. Verify documents are in proper form, contain full information, and are notarized.
- D. Co-execute submittals when required.
- E. Include Table of Contents and assemble in three D side ring binder with durable plastic cover.
- F. Submit prior to final Application for Payment.
- G. Time of Submittals:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
 - 2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing date of acceptance as beginning of warranty or bond period.

1.14 MAINTENANCE SERVICE

- A. Furnish service and maintenance of components indicated in specification sections during warranty period.
- B. Examine system components at frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by manufacturer of original component.
- D. Do not assign or transfer maintenance service to agent or Subcontractor without prior written consent of Owner.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 26 1000 - ELECTRICAL

PART 1 GENERAL

1.1 SUMMARY

A. Work Included:

1. These Electrical Specifications cover the providing of a complete electrical system of proper voltage, capacity, and location, from the point of electric service to the various loads as shown herein on the accompanying Drawings. The labor, materials, equipment, appliances, and services necessary to accomplish in compliance with the Contract Documents all electrical work required by this project shall be provided by the Contractor.
2. Accomplishing of the electrical work shall include furnishing and installing of all necessary wiring to provide lighting, heating, cooling, and ventilating as required; all necessary power wiring and outlets as required; all power wiring of mechanical equipment requiring an electrical connection; all necessary communications and control wiring for electrical and mechanical equipment as required, or as shown on the Drawings or enumerated in these specifications.
3. The Contractor shall familiarize himself with existing conditions via an on-site inspection of the site and building(s), which familiarization is to be accomplished prior to bidding.

B. Scope:

1. It is the intention of the specifications and the related portions of the accompanying Drawings to cause all systems indicated to be furnished complete, in every respect, to include furnishing and installing all equipment needed and usually furnished in connection with such a system, whether specifically mentioned or not, except such parts as are specifically excluded.
2. The Drawings showing the arrangement of the buildings and electrical equipment with wiring interlineation, figures, and details shall be considered as part of and illustrating these specifications.
3. The Drawings are not intended to show all details or any special construction which may be found necessary as work progresses. Any work necessary, due to such lack of such detail, shall be done by the Contractor at no extra cost to the Owner.

1.2 QUALITY ASSURANCE

- A. Codes – Materials and Equipment: All materials and equipment shall conform with the most current NEMA, UL, NEC, Local Utility, and Local Electrical Code standards or higher, including subsequent revisions. The reference of articles and clauses of the NEC is for convenience and does not imply that other articles and clauses do not also apply.
- B. Codes – Work: All work shall be in accordance with the current edition and subsequent revisions of the National Electrical Code (NEC) and any other applicable building codes.
- C. Conflicts: In the case of conflict between or among pertinent codes, standards, and regulations, the most stringent requirement shall take precedence and govern over the remaining requirements.

- D. Warranty: Unless otherwise noted, the Contractor's warranty shall be in accordance with the General Conditions for a time period of one year from the date of final acceptance.

1.3 SUBMITTALS

- A. Section 01 3300 – Submittal Procedures: Requirements for submittals.
- B. Product Data: Within 35 calendar days after the Contractor has received Owner's "Notice to Proceed," the Contractor shall submit one PDF of shop drawings for approval by the Engineer for all apparatus and accessories, and cuts for specialties, proposed to be furnished and installed under the Contract. This submittal shall include, but not be limited to:
1. Materials list of items proposed to be provided under this Section.
 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 3. Shop drawings showing general layout, installation, materials, finishes, construction and assembly, and wiring and clearances between equipment proposed to be furnished and a building structure.
 4. Manufacturer's recommended installation procedures which, when approved by the Engineer will become the basis for accepting or rejecting actual installation procedures used on the work.
 5. A conduit layout indicating conduit and wire sizes, a schedule of phenolic name plates, and catalog numbers, options, and other manufacturer's information for equipment provided under this Section.
- C. Manuals:
1. Upon completion of this portion of the work, and as a condition of its acceptance, deliver to the Engineer three copies of operation and maintenance manuals compiled in accordance with the provisions of Section 01 7000 , and containing, in addition to other prescribed data:
 - a. The single-line electrical wiring diagram for each piece of electrical equipment.
 - b. Sequence of operation of the controls.
 - c. Operating instructions including complete details, adjustments, and instructions relating to the controls of the equipment.
 - d. Parts lists.
 - e. Lubrication requirements.
 - f. Maintenance requirements of all equipment furnished under this Section.
 2. The enumerated operating and maintenance instructions for the electrical equipment furnished under this Section shall be grouped by major item and bound together in one folder before submitting to the Engineer.

1.4 PRODUCT HANDLING

- A. Delivery and Storage: Materials delivered to the job site shall be properly marked, with markings corresponding to those shown on the approved shop drawings, to identify the location for which they are intended. Materials shall be stored in a manner to maintain identification and prevent damage, off the ground, using pallets or other supports, in a dry location, off walkways and other locations where damage may occur, and to prevent easy access for inspection.
- B. Protection: The Contractor shall protect all electrical materials scheduled to remain and shall replace items which are damaged during construction.

PART 2 PRODUCTS

2.1 ASSOCIATED ELECTRICAL EQUIPMENT TO BE FURNISHED WITH MECHANICAL

- A. Mechanical equipment such as electric valves, pumps, and other similar equipment that is being supplied by a manufacturer as a "package" item, shall comply with these Electrical Specifications.
- B. All items furnished as "package" items shall also include all associated electrical motors and/or loads, electrical controls, panels, limit switches, alarms and other miscellaneous electrical equipment unless otherwise indicated in these specifications or on the related portion of the accompanying Drawings. The only items that would not normally be supplied as a part of the "package" would be the electrical service to the equipment and all necessary conduit, wiring and installation which would be provided by the Contractor.
- C. It shall be the Contractor's responsibility to furnish all equipment, material and labor that is not furnished as a part of said "package" and is required to provide a complete and operable installation. No additional expense shall be incurred by the Owner due to any misunderstandings between the Contractor and supplier.

2.2 GROUNDING MATERIALS

- A. Ground rods shall be 3/4" diameter by 10 foot minimum length, copper clad steel or as shown on plans.
- B. Electrode clamps shall be suitable for connecting up to 1/0 AWG copper stranded conductor.
- C. All grounding materials shall be UL-approved.

2.3 DISTRIBUTION EQUIPMENT

- A. All distribution equipment including disconnects, switchboards, and/or distribution panels will be complete with wired protective devices, accessories, and enclosed in cabinets as indicated.
- B. Distribution equipment shall be of the dead-front type and provide protection for individual circuits as specified or according to NEC Article 240.

2.4 WIRE, CONDUIT, AND WIRING DEVICES

- A. All conductors, insulation qualities, size, and current capacities shall, as a minimum, conform to NEC Article 310 and Chapter 9.
- B. Unless otherwise shown on the related portions of the accompanying Drawings, all power and control wires shall be new code wires type "THWN" or "THHN".
- C. No wire smaller than #12 B and S gauge shall be used for power or control wiring. Control wiring may be #14 or #16.

- D. All wires shall be 98% conductivity, solid, copper wire, stranded. All devices receiving stranded wire shall be designed for stranded wire terminations.
- E. Analog communications wire shall be 4 to 20 ma, shielded, twisted pair, #9463 as manufactured by Belden Wire and Cable of Richmond, IN or equal or as detailed on the Drawings.
- F. RGS conduit shall mean rigid galvanized steel conduit. RNC shall mean rigid non-metallic conduit. Heavy wall RGS shall be used for all exposed conduit, interior and exterior. Underground conduit shall be RNC. Conduit in rooms with masonry walls shall be in the walls and may be EMT, including above ceilings.
- G. Conduit shall be NEC approved, have a minimum size as determined by the code, be no smaller than 3/4" in diameter and conform to NEC Article 300.
- H. All conduit may be installed exposed, unless noted otherwise.
- I. Conduit fittings shall be oblong forms. Pull or junction boxes shall be provided where necessary to facilitate installation of conductors and to support vertical runs of conductors, which support shall be in accordance with the NEC.
- J. All wiring devices consisting of junction boxes, pull boxes, outlet boxes, wire-ways duct, plug-in buss duct, receptacles and switches shall conform to the NEC Articles 370 and 380 as applicable, unless specified higher in the Contract Documents.
- K. Switches for the control of the lighting fixtures shall be Hubbell, Leviton, P&S, or equal. Switches shall have ivory handles.
- L. Plug receptacles shall Hubbell, Leviton, P&S, or equal with an ivory color. Ground fault circuit interrupting "GFCI" receptacles shall be Bryant, Challenger, or equal.
- M. Outlet boxes used with RGS conduit shall be FS type for switches and plug receptacles and 4" round cast type for lighting outlets, all with blank or special cast corners and gaskets as required.
- N. Plates for switches, receptacles, and other outlets shall be ivory.
- O. Interior devices shall be encased in an enclosure rated NEMA 1 as a minimum, unless specified higher on the Contract Documents.
- P. Exterior devices shall be completely weatherproofed, encased in an enclosure rated NEMA 3R or 4, an enclosure providing a greater degree of protection or an enclosure as specified. Switches and receptacles shall be of the weatherproof type, with cap provided and installed.
- Q. In designated spaces, conduit, fixtures, switches, and all other items, not mentioned but required for complete installation of electrical system, shall be as required for a Class I, Division I location in accordance with NEC Article 500.
- R. All electrical panels, whether floor mounted, wall mounted or frame mounted, shall have the working space required by Article 110 of the NEC delineated by a four inch wide yellow stripe on the floor. This stripe may be either painted or a purpose-made floor marking tape.

- S. Where forward and reverse contactors are required, they shall be both mechanically and electrically interlocked to prevent simultaneous operation. The electrical interlock shall be permissive.

2.5 LIGHTS

- A. Light fixtures shall, as a minimum, be listed by Underwriter's Laboratories, Inc.
- B. Interior: Interior light fixtures shall meet the requirements of damp locations. They shall be complete with lamps and ready to operate. Fluorescent lamps shall be cool-white. All fixtures shall be UL-approved.
- C. Exterior: Exterior lights including fixtures, hardware, and controls shall be as shown in the Lighting Fixtures, shall be UL-approved for operating outside, and are to be supplied with lamps, ready to operate.
- D. Light fixtures in hazardous areas shall be rated for use in those areas.

2.6 NAMEPLATES

- A. Nameplates are required on all major pieces of equipment, including but not limited to: generators, automatic transfer switches, motor starters, control panels, transformers, variable frequency drives, distribution panel boards, power and lighting panels, disconnect switches, and motor control centers including all unit compartments with their miscellaneous controls therein. Nameplates shall be phenolic with white letters on a black background.

PART 3 EXECUTION

3.1 INTRODUCTION

- A. To the extent indicated, the wire and conduit size, the type and capacity of control equipment, special appurtenances, lights and fixtures, and any special installation requirements shall be as defined, scheduled, or shown. Locations shown on panel boards, motors, outlets, fixtures, transformers and other equipment are approximate. The single-line wiring diagram, if included, indicates motor sizes and types of controls.
- B. It should be noted that on all small motors, the sizes indicated are approximate only. Final sizes must be determined from the actual equipment purchased, and breakers or fused disconnects, starters, conduit, and wire must be supplied at no extra compensation for the motor sizes actually installed.

3.2 EXISTING UTILITIES

- A. The Contractor shall be responsible for verifying the location of existing utilities indicated on the related portions of the accompanying Drawings and for determining the location of existing utilities not shown. Where unmarked utility lines, underground obstructions or piping may be uncovered on the premises, the Contractor shall notify the utility company having jurisdiction thereof, take all necessary measures to prevent interruption of services that may be damaged or

interrupted through the Contractor's own negligence, and be responsible for immediate repair and/or restoration at his expense. Buried utilities shown on the Drawings are for information only, and not guaranteed to be accurate.

3.3 PROJECT CONDITIONS

- A. If existing conditions prohibit installation or installation as shown on the related portions of the accompanying Drawings, the Contractor shall contact the Engineer for a solution.

3.4 COOPERATION

- A. During construction, the Contractor shall confer with other contractors whose work may affect the work under this Section, and make arrangements or changes to avoid interference or improper operation of the system.
- B. All electrical equipment furnished by other trades shall have manufacturer's instructions provided and shall be checked by the Contractor performing the electrical work as to their suitability for the particular installation before proceeding with installation or wiring of them.

The Contractor shall consult the Contract Documents and specifications of trades providing the equipment and controls for control wiring diagrams and shall refer to their shop drawings, in order to become familiar with equipment, type and operation, their location, and extent of work required for installing, wiring, and connecting them.

3.5 PROTECTION OF COMPLETED WORK

- A. The Contractor shall protect the work completed, and repair it or replace it if damage should occur. Equipment and materials installed prior to the painting of a room shall be protected against paint damage. Equipment and materials installed shall be clean, inside and out, prior to acceptance of work by the Engineer.

3.6 STARTUP OF SYSTEMS

- A. Equipment manufacturers shall supply the services of qualified technical personnel during startup or for preliminary adjustments of equipment. There shall be no limit with regard to amount of time required by the startup technician to complete startup procedures. Startup shall be considered as being complete only when all equipment is operating to the satisfaction of the Engineer and the Owner. Services of said technicians shall also be supplied as needed after startup in the event of equipment failure or malfunction during the warranty period and also for instruction of operating personnel in the use of equipment. Startup must be completed before the expiration of working days specified in the Contract Documents.
- B. If in the opinion of the Engineer or the Owner, based on performance, a particular technician is not totally qualified in the area of work involved, the equipment manufacturer shall provide the services of a more qualified technician.
- C. It shall be the Contractor's responsibility to coordinate the efforts of all technical personnel involved in the startup of a particular system.

- D. Startups shall be scheduled at times that are convenient for the Owner and the Engineer and shall interfere with normal plant operations as little as possible.

3.7 TESTING AND INSPECTION

- A. The Contractor shall provide test equipment, temporary wiring, labor and materials required to perform necessary testing. Six copies of all test results, including a list of the persons present for the testing, shall be submitted to the Engineer.
- B. The Contractor shall provide a licensed electrician or a registered professional electrical engineer to inspect and certify in writing to the Engineer that the complete electrical system complies with the Drawings and specifications and the latest issue of the National Electric Code.
- C. Upon completion of the entire electrical system and once all wires and cables are in place and connected, the system shall be tested for the following:
 - 1. Open-phase (hot) wires, open neutral and open ground.
 - 2. Reverse polarity and reverse-phase (hot) and ground.
 - 3. Grounded or shorted phase (hot) wires.
 - 4. Grounds and crosses between control wiring conductors.
 - 5. Proper operation of all connected devices.
- D. All work shall be performed in a good workmanlike manner as judged by the Engineer.
- E. The Contractor shall correct all deficiencies or problems found prior to making application for final payment.

3.8 FINAL INSPECTION

- A. After all construction is completed and the system is ready for operation and the Engineer has been provided with a signed copy of the test data and a certification that all required tests are complete and the system is ready for use, the Contractor shall contact and notify the Engineer that the project is ready for final inspection. The Engineer will inspect the project within five working days of this notification. The job shall not be considered complete until the Engineer has approved all work as acceptable and complete.

3.9 INSTALLATION/ERECTION

- A. All electrical equipment and conduit, including accessories and appurtenances, shall be installed straight, true, level, plumb, and either parallel to or at right angles with the building, except as stated herein or as shown on the related portions of the accompanying Drawings and with verbal confirmation from the Engineer at the time of installation.
- B. Listed or labeled equipment shall be installed and in accordance with instructions included in the listing or labeling.
- C. Every precaution has been taken to ensure that the related portions of the accompanying Drawings do comply with these specifications. If the Contractor feels some item or items may not comply with these specifications, the Contractor shall notify the Engineer for a solution.

3.10 ANCHORS

- A. The electrical equipment shall be firmly attached to the structure using anchors, screws, and/or hangers, which are UL-listed for the use intended. The use of the tie wire, metal stripping and other non-UL-listed equipment for electrical use shall not be permitted.
- B. Anchors used in structural steel shall have location and type approved by the Engineer prior to installation (to prevent structural damage from occurring).

3.11 CIRCUIT LABELING

- A. The Contractor shall affix printed labels to the inside of all load centers and panels and these labels shall identify each circuit number and load description of the circuit loads.
- B. Circuits and ratings shall be identified on all protective devices or on the inside of the device cover, including fused disconnects and fuse blocks with fuse size and type included.
- C. All wire shall be tagged at all junction points.
- D. Circuit labels shall be protected by a clear plastic covering, clear varnish coating, or transparent mending tape.

3.12 ELECTRIC SERVICE

- A. Coordinate requirements with electrical utility.

3.13 GROUNDING

- A. Provide grounding for the entire electric installation. The following are included as requiring grounding: electric service, its equipment and enclosures, conduits and enclosures, neutral or identified conductor of any interior wiring system, main switchboards, power and lighting panel boards, control centers, and non-current carrying parts of motors, starter, controllers, instrument cases, light fixtures, outdoor light fixtures and all equipment in hazardous locations.
- B. All locations where ground rods are necessary, install per utility requirements & NEC Article 250.53. They shall be spaced a minimum of eight feet apart from each other, and shall be as close to the electric entrance point of the building or site service entrance point as practical. The top of the ground rods shall be embedded to a depth of at least six inches below finished grade.

3.14 EQUIPMENT FOR DISTRIBUTION

- A. Color coded wiring shall be installed to match that provided by the various manufacturers of the distribution equipment.

3.15 CONTROL EQUIPMENT

- A. Install the control equipment, to consist of control centers or starters, contactors, fused disconnects or breakers, accessories and appurtenances, and remote control and automatic devices to provide control as indicated.

- B. In cases where starters are furnished as an integral part of motor-operated equipment, only fused disconnects or circuit breakers will constitute the control equipment. Factory and site assembled control equipment will be installed and wired to conform with NEC Article 384 to perform as designed in a convenient, orderly, and accessible location for further maintenance and testing. Provide room for future additions where space is available.

3.16 WIRING

- A. Equipment and Controls: The Contractor shall provide conduit, wiring, and connect motors and other electrically-operated equipment as specified in the Contract Documents. He shall also install and provide support for and connect and starters, other control devices, and control panels furnished for such motors and equipment, complete all circuits, tag all junction points, test operation, leave in satisfactory operating condition, and meet the other requirements of these specifications.
- B. Interior: Interior wiring shall include electrical conduits, conductors, wiring devices, supports, other materials, and the installations, required to distribute electric current from distribution centers for all purposes as indicated and specified.
- C. Exterior: Exterior wiring shall include overhead and underground electrical conductors, wiring devices, supports, other materials, and the installations required to distribute electric current between centers where apparatus will be exposed to outdoor weather conditions.
- D. The installation of all conductors shall conform, as a minimum, to NEC Article 310 and Chapter 9.
- E. Installation of underground wires shall be accomplished in accordance with the National Electric Code and requirements of the local utility company. All underground electric shall have two foot minimum cover.
- F. All conduit runs as indicated are diagrammatic and exact routing of conduit shall suit job conditions. Conduit installation shall conform to NEC Article 300.
- G. All empty conduits as specified shall be installed, tested, and proved to be clear of at least 85% of the inside diameter of the conduit size, capped, and a drawing of the route submitted to the Engineer.
- H. Exterior conduit runs shall be installed sloping away from all junction and pull boxes and free of all moisture, watertight, and protected to eliminate any possible mechanical damage.
- I. Unless otherwise shown on the related portions of the accompanying Drawings, switches shall be mounted approximately four feet above the floor.
- J. Switches shall be placed in gang boxes at locations where more than one switch is necessary.
- K. All receptacles shall be mounted at heights shown on the Drawings.
- L. Ground fault circuit interrupting "GFCI" receptacles shall be installed in accordance with NEC and shall, as a minimum, be the most upstream receptacle device installed in a circuit.

3.17 LIGHTING

- A. The Contractor shall install lighting fixtures in the sizes and types as shown in the Contract Documents. Fixtures shall be completely wired.
- B. Interior: Interior lighting shall be installed in a manner to meet the requirements of damp locations. In addition, the installation shall include providing surface mounting and grounding according to the manufacturer's directions, utilizing silicone sealant where necessary, allowing three days curing time of any sealant inside a fixture before closing it, properly covering all holes in fixture bases per UL and NEC, and preventing entry by mud wasps in a reasonably practical manner.
- C. Exterior: Exterior lighting shall meet the requirements as indicated for interior lighting, and additionally shall be accomplished in accordance with the details as shown on the accompanying Drawings.

3.18 SIGNAL AND ALARM SYSTEMS

- A. All signals and alarms as specified and furnished with equipment will be wired and installed as required to perform the function specified.
- B. The Contractor shall install in accordance with the manufacturer's instructions all wiring, conduit, and outlet boxes required for the completion of the signal and alarm systems.
- C. All wiring shall be in conduit and of the same approved type as used for electric light and power wiring, and shall meet the requirements of all applicable codes.
- D. As a minimum, the sizes of the different wires shall be those specified by the manufacturer. All wires shall be tagged at all junction points and shall test free from grounds or crosses between conductors.
- E. Final connections between equipment and the wiring system shall be made under direct supervision of a representative of the manufacturer.

END OF SECTION

SECTION 26 3213 – STANDBY GENERATOR

PART 1 GENERAL

1.1 SUMMARY

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

1.2 SUMMARY

- A. This Section includes packaged engine-generator sets suitable for use in applications with the features as specified and indicated where the engine generators will be used as the Standby power source for the system.

1.3 DEFINITIONS

- A. Emergency Standby Power (ESP): Per ISO 8528: The maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 hours of operation per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. The permissible average power output (Ppp) over 24 hours of operation shall not exceed 70 percent of the ESP unless otherwise agreed by the RIC engine manufacturer.
- B. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of packaged engine generator indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. In addition, include the following:
 - 1. Thermal damage curve for generator.
 - 2. Time-current characteristic curves for generator protective device.
 - 3. Sound test data, based on a free field requirement.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, and location and size of each field connection
 - 1. Dimensioned outline plan and elevation drawings of engine-generator set and other components specified.
 - 2. Wiring Diagrams: Control interconnection, Customer connections.
- C. Certifications:
 - 1. Submit statement of compliance which states the proposed product(s) is certified to the emissions standards required by the location for No Preference.

1.5 INFORMATIONAL SUBMITTALS

- A. Source quality-control test reports.
 - 1. Certified summary of prototype-unit test report. See requirements in Part 2 "Source Quality Control" Article Part A. Include statement indicating torsional compatibility of components.
 - 2. Certified Test Report: Provide certified test report documenting factory test per the requirements of this specification, as well as certified factory test of generator set sensors per NFPA110 level 1.
 - 3. List of factory tests to be performed on units to be shipped for this Project.
 - 4. Report of exhaust emissions and compliance statement certifying compliance with applicable regulations.
- B. Warranty:
 - 1. Submit manufacturer's warranty statement to be provided for this Project.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Manufacturer Qualifications: A qualified manufacturer. Maintain, within 100 miles of Project site, a service center capable of providing training, parts, and emergency maintenance repairs.
- C. Source Limitations: Obtain packaged generator sets and auxiliary components through one source from a single manufacturer.
- D. Comply with NFPA 37 (Standard For the Installation and Use of Stationary Combustion Engines and Gas Turbines).
- E. Comply with NFPA 70 (National Electrical Code. Equipment shall be suitable for use in systems in compliance to Article 700, 701, and 702).
- F. Comply with NFPA 110 (Emergency and Standby Power Systems) requirements for Level 1 emergency power supply system.

1.7 PROJECT CONDITIONS

- A. Environmental Conditions: Engine-generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:
 - 1. Ambient Temperature: 0.0 deg C (32.0 deg F) to 38.0 deg C (100.0 deg F).
 - 2. Relative Humidity: 0 to 95 percent.
 - 3. Altitude: Sea level to 500.0 feet (152.0 m).

1.8 WARRANTY

- A. Base Warranty: Manufacturer shall provide base warranty coverage on the material and workmanship of the generator set for a minimum of twenty-four (24) months for Standby product and twelve (12) months for Prime/Continuous product from registered commissioning and start-up.

PART 2 PRODUCTS

2.1 ENGINE-GENERATOR SET

- A. Factory-assembled and -tested, engine-generator set.
- B. Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments.
 - 1. Rigging Information: Indicate location of each lifting attachment, generator-set center of gravity, and total package weight in submittal drawings.
- C. Capacities and Characteristics:
 - 1. Power Output Ratings: Electrical output power rating for Standby operation of not less than 60.0kW, at 80 percent lagging power factor, 120/240, Series Delta, Three phase, 3 -wire, 60 hertz.
 - 2. Alternator shall be capable of accepting maximum 423.0 kVA in a single step and be capable of recovering to a minimum of 90% of rated no load voltage. Following the application of the specified kVA load at near zero power factor applied to the generator set.
 - 3. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component. The engine-generator nameplate shall include information of the power output rating of the equipment.
- D. Generator-Set Performance:
 - 1. Steady-State Voltage Operational Bandwidth: 1.0 percent of rated output voltage from no load to full load.
 - 2. Transient Voltage Performance: Not more than 11 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within 3 seconds. On application of a 100% load step the generator set shall recover to stable voltage within 10 seconds.
 - 3. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency from no load to full load.
 - 4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
 - 5. Transient Frequency Performance: Not more than 4 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within 1 seconds. On application of a 100% load step the generator set shall recover to stable frequency within 10 seconds.
 - 6. Output Waveform: At full load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for any single harmonic. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50.
 - 7. Sustained Short-Circuit Current: (For engine-generator sets using a PMG-excited alternator) For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 8 seconds without damage to generator system components. For a 1-phase, bolted short circuit at system output terminals, system shall regulate both voltage and current to prevent over-voltage conditions on the non-faulted phases.
 - 8. Start Time: Comply with NFPA 110, Level 1, Type 10, system requirements.

9. Ambient Condition Performance: Engine generator shall be designed to allow operation at full rated load in an ambient temperature under site conditions, based on highest ambient condition. Ambient temperature shall be as measured at the air inlet to the engine generator for enclosed units, and at the control of the engine generator for machines installed in equipment rooms.

2.2 ENGINE

- A. Fuel: Liquefied Petroleum Gas (Propane)
- B. Rated Engine Speed: 1800RPM.
- C. Lubrication System: The following items are mounted on engine or skid:
 1. Lube oil pump: shall be positive displacement, mechanical, full pressure pump.
 2. Filter and Strainer: Provided by the engine manufacturer of record to provide adequate filtration for the prime mover to be used.
 3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.
- D. Engine Fuel System: The engine fuel system shall be installed in strict compliance to the engine manufacturer's instructions
- E. Governor: Adjustable isochronous, with speed sensing. The governing system dynamic capabilities shall be controlled as a function of engine coolant temperature to provide fast, stable operation at varying engine operating temperature conditions. The control system shall actively control the fuel rate as appropriate to the state of the engine generator. Fuel rate shall be regulated as a function of starting, accelerating to start disconnect speed, accelerating to rated speed, and operating in various isochronous states.
- F. Cooling System: Closed loop, liquid cooled
 1. The generator set manufacturer shall provide prototype test data for the specific hardware proposed demonstrating that the machine will operate at rated standby load in an outdoor ambient condition of 40 deg C.
 2. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
 3. Size of Radiator overflow tank: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.
 4. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gage glass and petcock.
 5. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
 6. Duct Flange: Generator sets installed indoors shall be provided with a flexible radiator duct adapter flange.
- G. Muffler/Silencer: Selected with performance as required to meet sound requirements of the application, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements. For generator sets with outdoor enclosures the silencer shall be inside the enclosure.

- H. Air-Intake Filter: Engine-mounted air cleaner with replaceable dry-filter element and restriction indicator.
- I. Starting System: 12 or 24V, as recommended by the engine manufacturer; electric, with negative ground.
 - 1. Components: Sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in Part 1 "Project Conditions" Article.
 - 2. Cranking Cycle: As required by NFPA 110 for level 1 systems.
 - 3. Battery Cable: Size as recommended by engine manufacturer for cable length as required. Include required interconnecting conductors and connection accessories.
 - 4. Battery Compartment: Factory fabricated of metal with acid-resistant finish.
 - 5. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation. The battery charging alternator shall have sufficient capacity to recharge the batteries with all parasitic loads connected within 4 hours after a normal engine starting sequence.
 - 6. Battery Chargers: Unit shall comply with UL 1236, provide fully regulated, constant voltage, current limited, battery charger for each battery bank. It will include the following features:
 - a. Operation: Equalizing-charging rate based on generator set manufacturer's recommendations shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.
 - b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 20 deg C to plus 40 deg C to prevent overcharging at high temperatures and undercharging at low temperatures.
 - c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.
 - d. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.
 - e. Provide LED indication of general charger condition, including charging, faults, and modes. Provide a LCD display to indicate charge rate and battery voltage. Charger shall provide relay contacts for fault conditions as required by NFPA 110.
 - f. Enclosure and Mounting: NEMA, Type 1, wall-mounted cabinet.

2.3 CONTROL AND MONITORING

- A. Engine generator control shall be microprocessor based and provide automatic starting, monitoring, protection and control functions for the unit.
- B. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of generator set. When mode-selector switch is switched to the on position, generator set starts. The off position of same switch initiates generator-set shutdown. (Switches with different configurations but equal functions are acceptable.) When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of the local (generator set-mounted) and/or remote emergency-stop switch also shuts down generator set.

- C. Manual Starting System Sequence of Operation: Switching on-off switch on the generator control panel to the on position starts generator set. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of the local (generator set-mounted) and/or remote emergency-stop switch also shuts down generator set.
- D. Configuration: Operating and safety indications, protective devices, system controls, engine gages and associated equipment shall be grouped in a common control and monitoring panel. Mounting method shall isolate the control panel from generator-set vibration. AC output power circuit breakers and other output power equipment shall not be mounted in the control enclosure.
- E. Indicating and Protective Devices and Controls: As required by NFPA 110 for Level 1 system, and the following:
1. AC voltmeter (3-phase, line to line and line to neutral values).
 2. AC ammeter (3-phases).
 3. AC frequency meter.
 4. AC kVA output (total and for each phase). Display shall indicate power flow direction.
 5. Ammeter-voltmeter displays shall simultaneously display conditions for all three phases.
 6. Emergency Stop Switch: Switch shall be a red "mushroom head" pushbutton device complete with lock-out/tag-out provisions. Depressing switch shall cause the generator set to immediately stop the generator set and prevent it from operating.
 7. Fault Reset Switch: Supply a dedicated control switch to reset/clear fault conditions.
 8. DC voltmeter (alternator battery charging).
 9. Engine-coolant temperature gage.
 10. Engine lubricating-oil pressure gage.
 11. Running-time meter.
 12. Generator-voltage and frequency digital raise/lower switches. Rheostats for these functions are not acceptable. The control shall adjustment of these parameters in a range of plus or minus 5% of the voltage and frequency operating set point (not nominal voltage and frequency values.)
 13. AC Protective Equipment: The control system shall include over/under voltage, over current, short circuit, loss of voltage reference, and over excitation shut down protection. There shall be an overload warning, and overcurrent warning alarm.
 14. Status LED indicating lamps to indicate remote start signal present at the control, existing alarm condition, not in auto, and generator set running.
 15. A graphical display panel with appropriate navigation devices shall be provided to view all information noted above, as well as all engine status and alarm/shutdown conditions (including those from an integrated engine emission control system). The display shall also include integrated provisions for adjustment of the gain and stability settings for the governing and voltage regulation systems.
 16. Panel lighting system to allow viewing and operation of the control when the generator room or enclosure is not lighted.
 17. DC control Power Monitoring: The control system shall continuously monitor DC power supply to the control, and annunciate low or high voltage conditions. It shall also provide an alarm indicating imminent failure of the battery bank based on degraded voltage recover on loading (engine cranking).

2.4 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

- A. Comply with NEMA MG 1.
- B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.
- C. Electrical Insulation: Class H
- D. Temperature Rise: 105 / Class F environment.
- E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, over speed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.
- F. Permanent Magnet Generator (PMG) shall provide excitation power for optimum motor starting and short circuit performance.
- G. Enclosure: Drip-proof.
- H. Voltage Regulator: SCR type, Separate from exciter, providing performance as specified. The voltage regulation system shall be microprocessor-controlled, full wave rectified, and provide a pulse-width modulated signal to the exciter. No exceptions or deviations to these requirements will be permitted.
- I. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.
- J. Subtransient Reactance: 15 percent maximum, based on the rating of the engine generator set.

2.5 OUTDOOR GENERATOR-SET ENCLOSURE

- A. Description: Weather Steel housing. Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Instruments, control, and battery system shall be mounted within enclosure.
- B. Construction:
 - 1. Hinged Doors: With padlocking provisions. Restraint/Hold back hardware to prevent door to keep door open at 180 degrees during maintenance. Rain lips over all doors.
 - 2. Exhaust System:
 - a. Muffler Location: Within enclosure.
 - 3. Hardware: All hardware and hinges shall be stainless steel.
 - 4. Mounting Base: Suitable for mounting on sub-base fuel tank or housekeeping pad.
 - 5. A weather protective enclosure shall be provided which allows the generator set to operate at full rated load with a static pressure drop equal to or less than 0.5 inches of water.
- C. Engine Cooling Airflow through Enclosure: Housing shall provide ample airflow for engine generator operation at rated load in an ambient temperature of 40 deg C.

- D. Sound Performance: Reduce the sound level of the engine generator while operating at full rated load to a maximum of 72 dBA measured at any location 7 m from the engine generator in a free field environment.
- E. Site Provisions:
 - 1. Lifting: Complete assembly of engine generator, enclosure shall be designed to be lifted into place as a single unit, using spreader bars.

2.6 VIBRATION ISOLATION DEVICES

- A. Vibration Isolation: Generators installed on grade shall be provided with elastomeric isolator pads integral to the generator, unless the engine manufacturer requires use of spring isolation.

2.7 FINISHES

- A. Indoor and Outdoor Enclosures and Components: Powder-coated and baked over corrosion-resistant pretreatment and compatible primer. Manufacturer's standard color or as directed on the drawings.

2.8 SOURCE QUALITY CONTROL

- A. Prototype Testing: Factory test engine-generator set using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.
 - 1. Tests: Comply with NFPA 110, Level 1 Energy Converters. In addition, the equipment engine, skid, cooling system, and alternator shall have been subjected to actual prototype tests to validate the capability of the design under the abnormal conditions noted in NFPA110. Calculations and testing on similar equipment which are allowed under NFPA110 are not sufficient to meet this requirement.
- B. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:
 - 1. Test engine generator set manufactured for this Project to demonstrate compatibility and functionality.
 - 2. Full load run.
 - 3. Maximum power.
 - 4. Voltage regulation.
 - 5. Steady-state governing.
 - 6. Single-step load pickup.
 - 7. Simulated safety shutdowns.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with packaged engine-generator manufacturers' written installation, application, and alignment instructions and with NFPA 110.

- B. Equipment shall be installed by the contractor in accordance with final submittals and contract documents. Installation shall comply with applicable state and local codes as required by the authority having jurisdiction. Install equipment in accordance with manufacturer's instructions and instructions included in the listing or labeling of UL listed products.
- C. Installation of equipment shall include furnishing and installing all interconnecting wiring between all major equipment provided for the on-site power system. The contractor shall also perform interconnecting wiring between equipment sections (when required), under the supervision of the equipment supplier.
- D. Equipment shall be installed on concrete housekeeping pads. Equipment shall be permanently fastened to the pad in accordance with manufacturer's instructions and seismic requirements of the site.
- E. Equipment shall be initially started and operated by representatives of the manufacturer. All protective settings shall be adjusted as instructed by the consulting engineer.
- F. All equipment shall be physically inspected for damage. Scratches and other installation damage shall be repaired prior to final system testing. Equipment shall be thoroughly cleaned to remove all dirt and construction debris prior to initial operation and final testing of the system.
- G. On completion of the installation by the electrical contractor, the generator set supplier shall conduct a site evaluation to verify that the equipment is installed per manufacturer's recommended practice.

3.2 ON-SITE ACCEPTANCE TEST

- A. The complete installation shall be tested to verify compliance with the performance requirements of this specification following completion of all site work. Testing shall be conducted by representatives of the manufacturer, with required fuel supplied by Contractor. The Engineer shall be notified in advance and shall have the option to witness the tests. The generator set manufacturer shall provide a site test specification covering the entire system. Tests shall include:
 - B. Prior to start of active testing, all field connections for wiring, power conductors, and bus bar connections shall be checked for proper tightening torque.
 - C. Installation acceptance tests to be conducted on site shall include a "cold start" test, a two hour full load (resistive) test, and a one-step rated load pickup test in accordance with NFPA 110. Provide a resistive load bank and make temporary connections for full load test, if necessary.
 - D. Perform a power failure test on the entire installed system. This test shall be conducted by opening the power supply from the utility service, and observing proper operation of the system for at least 2 hours. Coordinate timing and obtain approval for start of test with site personnel.

3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

3.4 SERVICE AND SUPPORT

- A. The generator set supplier shall maintain service parts inventory for the entire power system at a central location which is accessible to the service location 24 hours per day, 365 days per year. The inventory shall have a commercial value of \$3 million or more. The manufacturer of the generator set shall maintain a central parts inventory to support the supplier, covering all the major components of the power system, including engines, alternators, control systems, paralleling electronics, and power transfer equipment.
- B. The generator set shall be serviced by a local service organization that is trained and factory certified in generator set service. The supplier shall maintain an inventory of critical power system replacement parts in the local service location. Service vehicles shall be stocked with critical replacement parts. The service organization shall be on call 24 hours per day, 365 days per year. The service organization shall be physically located within 100 miles of the site.
- C. The manufacturer shall maintain model and serial number records of each generator set provided for at least 20 years.

END OF SECTION

SECTION 26 3600 – AUTOMATIC TRANSFER SWITCHES

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. This Section includes transfer switches rated 600 V and less, including the following:
 - 1. Automatic transfer switches
 - 2. Remote annunciation systems
- B. Related Sections include the following

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, weights, operating characteristics, furnished specialties, and accessories.
 - 1. Technical data on all major components of all transfer switches and other products described in this section. Data is required for the transfer switch mechanism, control system, cabinet, and protective devices specifically listed for use with each transfer switch. Include steady state and fault current ratings, weights, operating characteristics, and furnished specialties and accessories.
 - 2. Single Line Diagram: Show connections between transfer switch, power sources and load
- B. Shop Drawings: Dimensioned plans, elevations, sections, and details showing minimum clearances, conductor entry provisions, gutter space, installed features and devices, and material lists for each switch specified.
 - 1. Dimensioned outline drawings of assembly, including elevations, sections, and details including minimal clearances, conductor entry provisions, gutter space, installed features and devices and material lists for each switch specified.
 - 2. Internal electrical wiring and control drawings.
 - 3. Interconnection wiring diagrams, showing recommended conduit runs and point-to-point terminal connections to generator set.
 - 4. Installation and mounting instructions, including information for proper installation of equipment to meet seismic requirements.
- C. Manufacturer and Supplier Qualification Data
 - 1. The transfer switch manufacturer shall be certified to ISO 9001 International Quality Standard and shall have third party certification verifying quality assurance in design/development, production, installation, and service, in accordance with ISO 9001.
 - 2. The manufacturer of this equipment shall have produced similar equipment for a minimum period of 10 years. When requested, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement

- D. Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:
 - 1. Features and operating sequences, both automatic and manual.
 - 2. List of all factory settings of relays, timers and protective devices; provide setting and calibration instructions where applicable.
- E. Warranty documents demonstrating compliance with the project's contract requirements.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: The equipment supplier shall maintain a service center capable of providing training, parts, maintenance and emergency repairs to equipment, including transfer switch generator sets and remote monitoring equipment (if applicable) at the site within a response period of less than (eight hours or appropriate time period designated for Project) from time of notification.
 - 1. The transfer switch shall be serviced by technicians employed by, and specially trained and certified by, the generator set supplier and the supplier shall have a service organization that is factory-certified in both generator set and transfer switch service. The supplier shall maintain an inventory of critical replacement parts at the local service organization, and in service vehicles. The service organization shall be on call 24 hours per day, 365 days per year.
 - 2. Submit names, experience level, training certifications, and locations for technicians that will be responsible for servicing equipment at this site.
 - 3. The manufacturer shall maintain model and serial number records of each transfer switch provided for at least 20 years.
- B. Source Limitations: All transfer switches are to be obtained through one source from a single manufacturer. The generator set manufacturer shall warrant transfer switches to provide a single source of responsibility for products provided.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked as suitable for use in emergency, legally required or optional standby use as appropriate for the connected load.
- D. The automatic transfer switch installation and application shall conform to the requirements of the following codes and standards:
 - 1. Transfer switches and enclosures shall be UL 1008 listed and labeled as suitable for use in emergency, legally required, and optional standby applications.
 - 2. CSA 282, Emergency Electrical Power Supply for Buildings, and CSA C22.2, No. 14-M91 Industrial Control Equipment
 - 3. NFPA 70, National Electrical Code. Equipment shall be suitable for use in systems in compliance with Articles 700, 701 and 702.
 - 4. Comply with NEMA ICS 10-1993 AC Automatic Transfer Switches
 - 5. IEEE 446 – Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
 - 6. EN55011, Class B Radiated Emissions and Class B Conducted Emissions
 - 7. IEC 1000-4-5 (EN 61000-4-5); AC Surge Immunity

8. IEC 1000-4-4 (EN 61000-4-4) Fast Transients Immunity
 9. IEC 1000-4-2 (EN 61000-4-2) Electrostatic Discharge Immunity
 10. IEC 1000-4-3 (EN 61000-4-3) Radiated Field Immunity
 11. IEC 1000-4-6 Conducted Field Immunity
 12. IEC 1000-4-11 Voltage Dip Immunity
 13. IEEE 62.41, AC Voltage Surge Immunity
 14. IEEE 62.45, AC Voltage Surge Testing
- E. Comply with NFPA 99 – Essential Electrical Systems for Healthcare Facilities
- F. Comply with NFPA 110 – Emergency and Standby Power Systems. The transfer switch shall meet all requirements for Level 1 systems, regardless of the actual circuit level.
- G. The manufacturer shall warrant the material and workmanship of the transfer switch equipment for a minimum of one (1) year from registered commissioning and start-up, or eighteen (18) months from date of shipment.
- H. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, and etc. during the minimum noted warranty period described above.

1.5 PROJECT CONDITIONS

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service:
1. Notify (Architect/Construction Manager/Owner) no fewer than (insert appropriate number) days in advance of proposed interruption of electrical service.
 2. Do not proceed with interruption of electrical service without (Architect/Construction Manager/Owner's) written permission.
 3. Do not energize any new service or distribution equipment without notification and permission of the (Architect/Construction Manager/Owner).

1.6 COORDINATION

- A. Size and location of concrete bases and anchor bolt inserts shall be coordinated. Concrete, reinforcement and formwork must meet the requirements specified in Division 03. See section "INSTALLATION" for additional information on installation

PART 2 PRODUCTS

2.1 GENERAL TRANSFER-SWITCH PRODUCT REQUIREMENTS

- A. Transfer switches utilizing molded case circuit breakers to not meet the requirements of this specification and will not be accepted.
- B. Provide transfer switches in the number and ratings that are shown on the drawings.

- C. Indicated Current Ratings: Apply as defined in UL 1008 for continuous loading and total system transfer.
- D. Fault-Current Closing and Withstand Ratings: UL 1008 WCR ratings must be specifically listed as meeting the requirements for use with protective devices at installation locations, under specified fault conditions. Withstand and closing ratings shall be based on use of the same set of contacts for the withstand test and the closing test.
- E. Solid-State Controls: All settings should be accurate to +/- 2% or better over an operating temperature range of - 40 to + 60 degrees C (- 40 to + 140 degrees F).
- F. Resistance to Damage by Voltage Transients: Components shall meet or exceed voltage-surge withstand capability requirements when tested according to IEEE C62.41. Components shall meet or exceed voltage-impulse withstand test of NEMA ICS 1.
- G. Electrical Operation: Accomplished by a non-fused, momentarily energized solenoid or electric motor operator mechanism, mechanically and electrically interlocked in both directions (except that mechanical interlock is not required for closed transition switches).
- H. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.
 - 1. Switches using molded-case switches or circuit breakers, or insulated case circuit breaker components are not acceptable.
 - 2. Transfer switches shall be double-throw, electrically and mechanically interlocked, and mechanically held in the Source 1 and Source 2 positions.
 - 3. Main switch contacts shall be high pressure silver alloy. Contact assemblies shall have arc chutes for positive arc extinguishing. Arc chutes shall have insulating covers to prevent inter-phase flashover.
 - 4. Contacts shall be operated by a high-speed electrical mechanism that causes contacts to open or close within three electrical cycles from signal.
 - 5. Transfer switch shall be provided with flame retardant transparent covers to allow viewing of switch contact operation but prevent direct contact with components that could be operating at line voltage levels.
 - 6. The transfer switch shall include the mechanical and control provisions necessary to allow the device to be field-configured for operating speed. Transfer switch operation with motor loads shall be as is recommended in NEMA MG1.
 - a. Phase angle monitoring/timing equipment is not an acceptable substitute for this functionality
 - 7. Transfer switches designated on the drawings as "3-pole" shall have a full current-rated neutral bar with lugs.
 - 8. Transfer switches designated on the drawings as "service entrance" switches shall meet the requirements of section "SERVICE ENTRANCE TRANSFER SWITCHES" of this specification.
- I. Factory wiring: Transfer switch internal wiring shall be composed of pre-manufactured harnesses that are permanently marked for source and destination. Harnesses shall be connected to the control system by means of locking disconnect plug(s), to allow the control system to be easily disconnected and serviced without disconnecting power from the transfer switch mechanism

- J. Terminals: Terminals shall be pressure type and appropriate for all field wiring. Control wiring shall be equipped with suitable lugs, for connection to terminal strips.
- K. Enclosures: All enclosures shall be third-party certified for compliance to NEMA ICS 6 and UL 508, unless otherwise indicated:
 - 1. The enclosure shall provide wire bend space in compliance to the latest version of NFPA70, regardless of the direction from which the conduit enters the enclosure.
 - 2. Exterior cabinet doors shall provide complete protection for the system's internal components. Doors must have permanently mounted key-type latches. Bolted covers or doors are not acceptable.
 - 3. Transfer switches shall be provided in enclosures that are third party certified for their intended environment per NEMA requirements.

2.2 AUTOMATIC TRANSFER SWITCHES

- A. Comply with requirements for Level 1 equipment according to NFPA 110.
- B. Indicated current ratings:
 - 1. Refer to the Project drawings for specifications on the sizes and types of transfer switch equipment, withstand and closing ratings, number of poles, voltage and ampere ratings, enclosure type, and accessories.
 - 2. Main contacts shall be rated for 600 VAC minimum.
 - 3. Transfer switches shall be rated to carry 100% of rated current continuously in the enclosure supplied, in ambient temperatures of -40 to +60 degrees C (-40 to +140 degrees F), relative humidity up to 95% (non-condensing), and altitudes up to 10,000 feet (3000 meters).
- C. Relay Signal: Control shall include provisions for addition of a pre-transfer relay signal, adjustable from 0 to 60 seconds, to be provided if necessary for elevator operation, based on equipment provided for the project.
- D. Transfer switches that are designated on the drawings as 3-pole shall be provided with a neutral bus and lugs. The neutral bus shall be sized to carry 100% of the current designated on the switch rating.
- E. Automatic Transfer Switch Control Features
 - 1. The transfer switch control system shall be configurable in the field for any operating voltage level up to 600 VAC. Voltage sensing shall be monitored based on the normal voltage at the site. Systems that utilize voltage monitoring based on standard voltage conditions that are not field configurable are not acceptable.
 - 2. All transfer switch sensing shall be configurable from an operator panel or from a Windows XP or later PC-based service tool. Designs utilizing DIP switches or other electromechanical devices are not acceptable.
 - 3. The transfer switch shall provide a relay contact signal prior to transfer or re-transfer. The time period before and after transfer shall be adjustable in a range of 0 to 60 seconds.
 - 4. The control system shall be designed and prototype tested for operation in ambient temperatures from - 40 degrees C to + 60 degrees C (- 40 to +140 degrees F). It shall be designed and tested to comply with the requirements of the noted voltage and RFI/EMI standards.

5. The control shall have optically isolated logic inputs, high isolation transformers for AC inputs and relays on all outputs, to provide optimum protection from line voltage surges, RFI and EMI.
 6. The transfer switch network monitoring equipment, when supplied, shall be provided with a battery-based auxiliary power supply to allow monitoring of the transfer switch when both AC power sources are non-operational.
 7. The indicator panel LEDs shall display:
 - a. Which source the load is connected to (Source 1 or Source 2)
 - b. Which source or sources are available
 - c. When switch is not set for automatic operation, the control is disabled
 - d. When the switch is in test/exercise mode
 8. The indicator shall have pushbuttons that allow the operator to activate the following functions:
 - a. Activate pre-programmed test sequence
 - b. Override programmed delays, and immediately go to the next operation
 - c. Reset the control by clearing any faults
 - d. Test all of the LEDs by lighting them simultaneously
 9. The alphanumeric digital display shall be vacuum fluorescent-type, clearly visible in both bright sunlight and no-light conditions over an angle of 120 degrees, and shall display the following:
 - a. AC voltage for all phases, normal and emergency
 - b. Source status: connected or not connected.
 10. The display panel shall be password-protected, and allow the operator to view and make adjustments:
 - a. Set nominal voltage and frequency for the transfer switch
 - b. Adjust voltage and frequency sensor operation set points
 - c. Set up time clock functions
 - d. Set up load sequence functions
 - e. Enable or disable control functions including program transition
 - f. View real-time clock data, operation log (hours connected, times transferred, failures) and service history
- F. Transfer Switch Control Panel: The transfer switch shall have a microprocessor-based control with a sealed membrane panel incorporating pushbuttons for operator-controlled functions, and LED lamps for system status indicators. Panel display and indicating lamps shall include permanent labels.
- G. Control Functions: Functions managed by the control shall include:
1. Software adjustable time delays:
 - a. Engine start (prevents nuisance genset starts in the event of momentary power fluctuation): 0 to 120 seconds (default 3 sec)
 - b. Transfer normal to emergency (allows genset to stabilize before load is transferred): 0 to 120 seconds (default 3 sec)
 - c. Re-transfer emergency to normal (allows utility to stabilize before load is transferred from genset): 0 to 30 minutes (default 3 sec)
 - d. Engine cooldown: 0 to 30 minutes (default 10 min)
 - e. Programmed transition: 0 to 60 seconds (default 3 sec)
- H. Control features shall include:

1. Programmable genset exerciser: A field-programmable control shall periodically start and run the generator with or without transferring the load for a preset time period, then re-transfer and shut down the generator after a preset cool-down period.
2. In event of a loss of power to the control, all control settings, real-time clock setting and the engine start-time delay setting will be retained.
3. The system continuously logs information including the number of hours each source has been connected to the load, the number of times transferred, and the total number of times each source has failed. An event recorder stores information, including time and date-stamp, for up to 50 events.
4. Re-Transfer Inhibit Switch: Inhibits automatic re-transfer control so automatic transfer switch will remain connected to emergency power source as long as it is available regardless of condition of normal source.
5. Transfer Inhibit Switch: Inhibits automatic transfer control so automatic transfer switch will remain connected to normal power source regardless of condition of emergency source.

I. Control Interface

1. Provide one set Form C auxiliary contacts on both sides, operated by transfer switch position, rated 10 amps 250 VAC.

J. Engine Starting Contacts

1. One isolated and normally closed pair of contacts rated 10A at 32 VDC minimum.

2.3 SERVICE ENTRANCE TRANSFER SWITCHES

- A. Transfer switches must be specifically intended for service entrance applications, and labeled "Suitable for service entrance use only"
- B. Transfer switch shall meet NEC requirements for emergency, legally required and standby applications as specified in UL 1008.
- C. Entire transfer switch including enclosure must be listed and labeled to UL 1008; switches with only the mechanism listed are not acceptable.
- D. Molded case circuit breaker must be UL 489 listed.
- E. Malfunction of annunciator or communication link shall not affect functions of automatic transfer switch. In the event of failure of communication link, automatic transfer switch automatically reverts to stand-alone, self-contained operation.
- F. Automatic transfer-switch sensing, controlling, or operating function shall not depend on remote panel for proper operation. The remote annunciation system shall not prevent transfer to the alternate source when the primary power source fails, nor prevent return to the primary source if the alternate source fails.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Design each fastener and support to carry load indicated by seismic requirements and according to seismic-restraint details. See Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
- B. Identify components according to Division 26 Section "Identification for Electrical Systems."
- C. Set field-adjustable intervals and delays, relays, and engine exerciser clock.
- D. Design each fastener and support to carry load indicated by seismic requirements and according to seismic-restraint details. See Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
- E. Identify components according to Division 26 Section "Identification for Electrical Systems."
- F. Set field-adjustable intervals and delays, relays, and engine exerciser clock.
- G. Wiring to Remote Components: Match type and number of cables and conductors to control and communication requirements of transfer switches as recommended by manufacturer. Increase raceway sizes at no additional cost to Owner if necessary to accommodate required wiring.
- H. Field control connections shall be made on a common terminal block that is clearly and permanently labeled.
- I. Transfer switch shall be provided with AL/CU mechanical lugs sized to accept the full output rating of the switch. Lugs shall be suitable for the number and size of conductors shown on the drawings.
- J. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."
- K. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.2 SOURCE QUALITY CONTROL

- A. Prior to shipping, factory shall test and inspect components, assembled switches, and associated equipment to ensure proper operation.
- B. Factory shall check transfer time and voltage, frequency, and time-delay settings for compliance with specified requirements.
- C. Factory shall perform dielectric strength test complying with NEMA ICS 1.

3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: The supplier of the transfer switch(es) and associated equipment shall inspect, test, and adjust components, assemblies, and equipment installations, including connections, and report results in writing.
- B. Manufacturer's representative shall perform tests and inspections and prepare test reports.
- C. After installing equipment and after electrical circuitry has been energized, installer shall test for compliance with requirements.
 - 1. Perform recommended installation tests as recommended in manufacturer's installation and service manuals.
 - 2. After energizing circuits, demonstrate interlocking sequence and operational function for each switch.
 - a. Simulate power failures of normal source to automatic transfer switches and of emergency source with normal source available.
 - b. Verify time-delay settings.
 - c. Verify that the transfer switch is accurately metering AC voltage.
 - d. Verify proper sequence and correct timing of automatic engine starting, transfer time delay, retransfer time delay on restoration of normal power, and engine cool-down and shutdown.

3.4 DEMONSTRATION

- A. After generator set installation, the generator and transfer switch supplier shall conduct a complete operation, basic maintenance, and emergency service seminar covering generator set and transfer switch equipment, for up to 10 people employed by the Owner.
 - 1. The seminar shall include instruction on operation of the transfer equipment, normal testing and exercise, adjustments to the control system, and emergency operation procedures.
 - 2. The class duration shall be at least 1 hour in length and include practical operation with the installed equipment.

END OF SECTION

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SECTION 31 0510 – SUBSURFACE INVESTIGATION

PART 1 GENERAL

1.1 DESCRIPTION

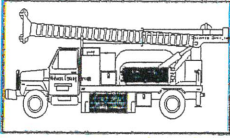
- A. Subsurface soil investigations have been conducted at the site by “Midwest Testing,” hereinafter referred to as the “Soils Engineer.” See attached.
- B. The soil investigation was obtained only for the Engineer’s use in design. A Geotechnical Report which includes the boring logs is attached and are for Bidder’s information only but are not a warranty of subsurface conditions. Boring locations are indicated on the Drawings.
- C. Bidders should visit the site and acquaint themselves with all existing conditions prior to bidding. Bidders may make their own subsurface investigations to satisfy themselves as to site subsurface conditions, but all investigations shall be performed only under the schedules and arrangements approved, in advance, by the Engineer.

PART 2 PRODUCTS – Not used.

PART 3 EXECUTION – Not used.

END OF SECTION

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Midwest Testing Services, Inc.
 3705 Progress Blvd.
 Peru, IL 61354

BORING LOG

Sheet 1 of 1

Phone: 815-223-6696
 Fax: 815-223-6659
 e-mail: mts37@comcast.net

Client: Chamlin & Associates, Inc.
 Project Name: Proposed Sheffield WWTP Lagoons
 Project Site: CR 600 E (N. Reed St.)
Sheffield, IL

Boring No. B-1
 Surface Elev. 663.41
 Auger Depth 21.00 Rotary Depth NA
 Start Date 08/27/22 Finish Date 08/27/22

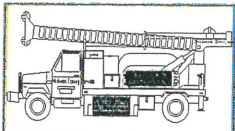
Location: See Boring Location Map
41.3630389°, -089.7429578°

SAMPLES						DRILLED BY	
Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Randy Safranski Diedrich D-50 Turbo	

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
663.41											
662.41	Medium Stiff 22" Black Silty Clay Topsoil		1								
661.41			2								
660.41	Soft to Medium Stiff Brown/Gray Silty Clay with Sand Seams		3	1	SS	0.6	3	B	26		
659.41			4								
658.41	Soft Brown/Gray Silty Clay Till		5	2	SS	0.4	2	B	18		
657.41			6								
656.41			7								Water
655.41	Medium Stiff to Stiff Brown/Gray Silty Clay Till with Sand Seams		8	3	SS	1.2	6	B	13		
654.41			9								
653.41	Stiff Brown Silty Clay Till		10	4	SS	1.5	9	B	13		
652.41			11								
651.41			12								
650.41	Stiff Brown/Gray Silty Clay Till		13	5	SS	1.6	9	B	13		
649.41			14								
648.41			15	6	SS	1.6	9	B	12		
647.41			16								
646.41	Stiff Gray Silty Clay Till		17								
645.41			18	7	SS	1.5	8	B	12		
644.41			19								
643.41			20	8	SS	1.4	8	B	13		

Groundwater Data: Water 4-feet below top of ground elevation after 24-hours.

Comments: Bucket Sample taken from 2-foot to 9-foot depth.



Midwest Testing Services, Inc.

3705 Progress Blvd.

Peru, IL 61354

BORING LOG

Sheet 1 of 1

Phone: 815-223-6696

Fax: 815-223-6659

e-mail: mts37@comcast.net

Client: Chamlin & Associates, Inc.
 Project Name Proposed Sheffield WWTP Lagoons
 Project Site: CR 600 E (N. Reed St.)
Sheffield, IL

Boring No. B-2
 Surface Elev. 666.87
 Auger Depth 21.00 Rotary Depth NA
 Start Date 08/27/22 Finish Date 08/27/22

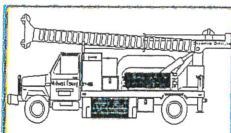
Location: See Boring Location Map
41.3630363°, -089.7424427°

SAMPLES						DRILLED BY
Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)
						Randy Safranski Diedrich D-50 Turbo

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
666.87											
665.87	Medium Stiff 22" Black Silty Clay Topsoil		1								
664.87	Medium Stiff to Stiff Brown/Gray Silty Clay		2								
663.87	Loose Brown Fine Sand		3	1	SS	1.2	6	S	22		
662.87			4								
661.87	Stiff Brown/Gray Silty Clay Till		5	2	SS	1.4	9	B	12		
660.87			6								
659.87			7								
658.87	Medium Stiff to Stiff Brown/Gray Silty Clay Till with Sand Seams		8	3	SS	1.2	6	B	13		Water
657.87			9								
656.87	Medium Stiff Brown Silty Clay Till		10	4	SS	1.0	4	B	15		
655.87			11								
654.87			12								
653.87	Medium Stiff to Stiff Brown/Gray Silty Clay Till		13	5	SS	1.4	5	B	13		
652.87			14								
651.87			15	6	SS	1.4	5	B	14		
650.87	Stiff Gray Silty Clay Till		16								
649.87			17								
648.87			18	7	SS	1.4	5	B	15		
647.87	Loose Gray Silt		19								
646.87	Very Loose Gray Very Fine Sand		20	8	SS	---	2	---	10		

Groundwater Data: Water 8-feet below top of ground elevation after 24-hours.

Comments: Bucket Sample taken from 1-foot to 9-foot depth.



Midwest Testing Services, Inc.
 3705 Progress Blvd.
 Peru, IL 61354

BORING LOG

Sheet 1 of 1

Phone: 815-223-6696

Fax: 815-223-6659

e-mail: mts37@comcast.net

Client: Chamlin & Associates, Inc.
 Project Name Proposed Sheffield WWTP Lagoons
 Project Site: CR 600 E (N. Reed St.)
Sheffield, IL

Boring No. B-3
 Surface Elev. 659.60
 Auger Depth 21.00 Rotary Depth NA
 Start Date 08/27/22 Finish Date 08/27/22

Location: See Boring Location Map
41.3613236^o, -089.7415638^o

SAMPLES							DRILLED BY	
Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	Randy Safranski Diedrich D-50 Turbo	
							REMARKS	
							Water	
1	SS	1.0	6	B	19			
2	SS	---	27	---	14			
3	SS	1.2	5	B	14			
4	SS	1.4	5	B	14			
5	SS	1.5	7	B	13			
6	SS	1.7	8	B	13			
7	SS	1.5	7	B	13			
8	SS	1.5	7	B	13			

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet
659.60			
658.60	Medium Stiff 24" Black Silty Clay Topsoil		1
657.60	Medium Stiff Brown/Gray Silty Clay		2
656.60	Loose Gray Fine Sand		3
655.60			4
654.60	Medium Dense Brown Gravely Loam		5
653.60			6
652.60	Medium Stiff to Stiff Brown/Gray Silty Clay Till with Sand Seams		7
651.60			8
650.60			9
649.60			10
648.60			11
647.60			12
646.60	Medium Stiff to Stiff Gray Silty Clay Till		13
645.60			14
644.60			15
643.60			16
642.60			17
641.60			18
640.60			19
639.60			20

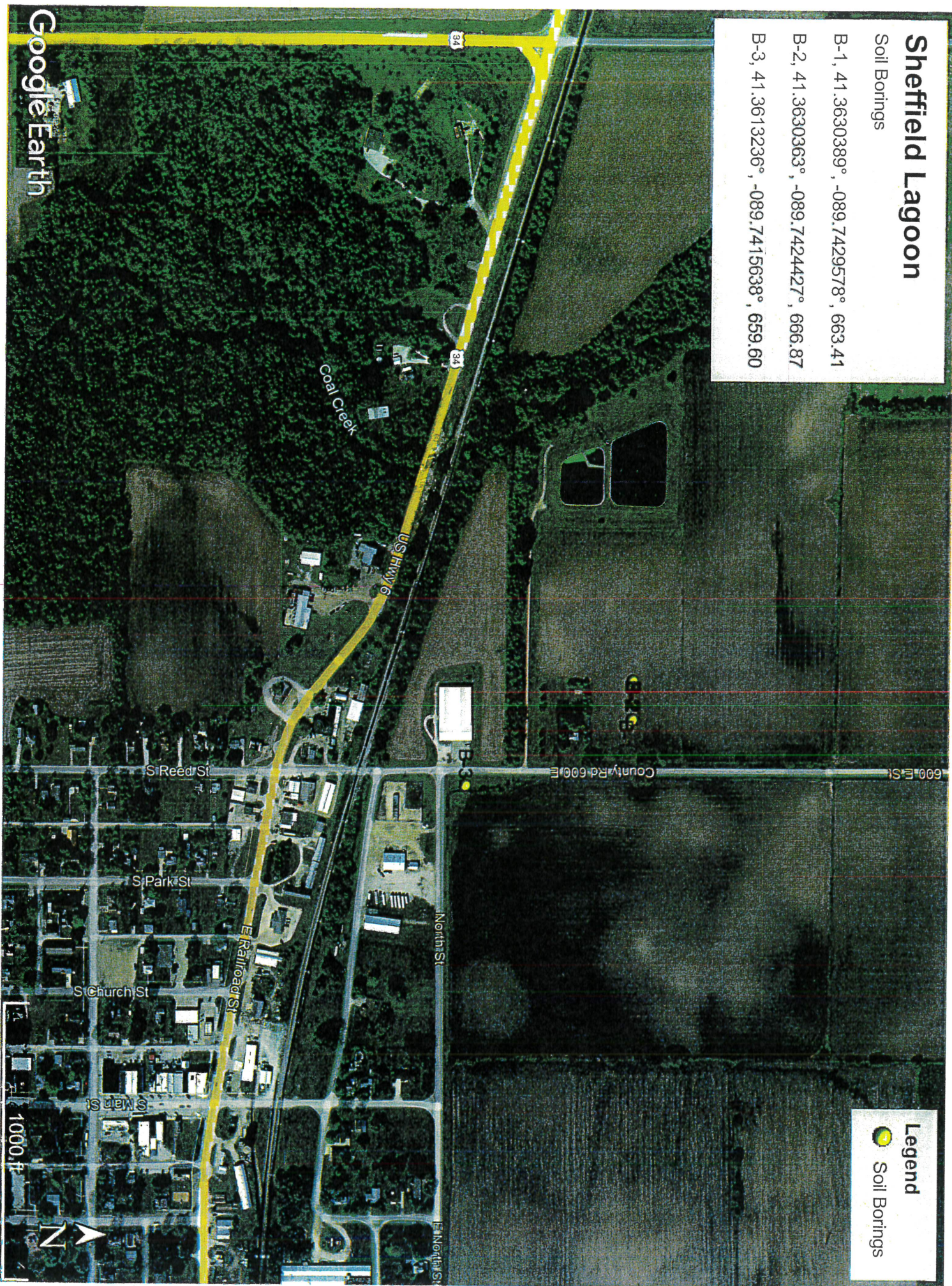
Groundwater Data: Water 3-feet below top of ground elevation after 24-hours.
 Comments:

Sheffield Lagoon

Soil Borings

- B-1, 41.3630389°, -089.7429578°, 663.41
- B-2, 41.3630363°, -089.7424427°, 666.87
- B-3, 41.3613236°, -089.7415638°, 659.60

- Legend**
-  Soil Borings



SECTION 31 0513 - SOILS FOR EARTHWORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Subsoil materials.
 - 2. Topsoil materials.

1.2 SUBMITTALS

- A. Section 01 3300 – Submittal Procedures: Requirements for submittals.
- B. Materials Source: Submit name of imported materials source.
- C. Manufacturer's Certificate: Certify products meet or exceed specified requirements and Report of Soils Exploration.

PART 2 PRODUCTS

2.1 SUBSOIL MATERIALS

- A. Subsoil Type:
 - 1. Select or local borrow.
 - 2. Graded.
 - 3. Free of lumps larger than 2 inches, rocks larger than 2 inches, and debris.
 - 4. Inorganic silty clays conforming to ASTM D2487 Group Symbol CL.
 - 5. Granular soils conforming to ASTM D2487 Group Symbol SM.

2.2 TOPSOIL MATERIALS

- A. Topsoil Type: Conforming to Section 1081.06 of the Roadway Specifications.
 - 1. Select.
 - 2. Graded.
 - 3. Free of roots, rocks larger than ¼ inch, subsoil, debris, large weeds and foreign matter

2.3 SOURCE QUALITY CONTROL

- A. Section 01 4000 – Quality Requirements: Testing and analysis of soil material.
- B. Testing and Analysis of Subsoil Material: Perform in accordance with ASTM D698 and ASTM D1557.
- C. Testing and Analysis of Topsoil Material: Perform in accordance with ASTM D698 and ASTM D1557.
- D. When tests indicate materials do not meet specified requirements, change material and retest.
- E. Furnish materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.1 EXCAVATION

- A. Excavate subsoil and topsoil from areas designated. Strip topsoil to full depth of topsoil in agricultural fields and 6" to 10" in all other locations.
- B. Stockpile excavated material meeting requirements for subsoil materials. Topsoil materials shall be windrowed parallel to sanitary sewer far enough away to prevent intermixing with subsoil and construction traffic will not run over windrow.
- C. Remove excess excavated materials, subsoil, and topsoil not intended for reuse, from site. Coordinate location with Owner.
- D. Remove excavated materials not meeting requirements for subsoil materials and topsoil materials from site.

3.2 STOCKPILING

- A. Stockpile materials on site at locations designated by Engineer.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Stockpile topsoil 8 feet high, maximum, and protect from erosion.
- E. Prevent intermixing of soil types or contamination.
- F. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
- G. Stockpile unsuitable or hazardous materials on impervious material and cover to prevent erosion and leaching, until disposed of.

3.3 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

SECTION 31 0516 - AGGREGATES FOR EARTHWORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Coarse aggregate materials.
 - 2. Fine aggregate materials.

PART 2 PRODUCTS

2.1 COARSE AGGREGATE MATERIALS

- A. Coarse Aggregate Type CA-3, CA-6, CA-10, CA-11: Crushed stone conforming to Section 1004 of the Roadway Specifications.

2.2 FINE AGGREGATE MATERIALS

- A. Fine Aggregate Type FA-6: Sand conforming to Section 1003 of the Roadway Specifications.

2.3 SOURCE QUALITY CONTROL

- A. Section 01 4000 – Quality Requirements: Testing and inspection services.
- B. Testing and analysis shall be performed in accordance with ASTM D1557, ASTM D4318, and ASTM C136.
- C. When tests indicate materials do not meet specified requirements, change material and retest.
- D. Provide materials of each type from same source throughout the Work.
- E. Aggregate material must be from an IDOT-approved source.

PART 3 EXECUTION

3.1 EXCAVATION

- A. Stockpile excavated material meeting requirements for coarse aggregate materials and fine aggregate materials.
- B. Remove excess excavated materials, coarse aggregate materials and fine aggregate materials not intended for reuse, from site.
- C. Remove excavated materials not meeting requirements for coarse aggregate materials and fine aggregate materials from site.

3.2 STOCKPILING

- A. Stockpile materials on site at locations designated by Engineer.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate different aggregate materials with dividers or stockpile individually to prevent mixing.
- D. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
- E. Stockpile unsuitable materials on impervious material and cover to prevent erosion and leaching, until disposed of.

3.3 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

SECTION 31 2316 - EXCAVATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Soil densification.
 - 2. Excavating for parking areas.
 - 3. Excavating for slabs-on-grade.
 - 4. Excavating for Site structures.
 - 5. Excavating for landscaping.

1.2 SUBMITTALS

- A. Section 01 3300 – Submittal Procedures: Requirements for submittals:
- B. Excavation Protection Plan: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations to support plan.
- C. Shop Drawings: Indicate soil densification grid for each size and configuration footing requiring soils densification.

1.3 QUALITY ASSURANCE

- A. Prepare excavation protection plan under direct supervision of professional engineer experienced in design of this Work and licensed in State of Illinois.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

- A. Call JULIE not less than three working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
- B. Identify required lines, levels, contours, and datum.
- C. Notify utility company to remove and relocate utilities.
- D. Protect utilities indicated to remain from damage.

- E. Protect plant life, lawns, rock outcroppings, and other features remaining as portion of final landscaping.
- F. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.2 SOIL DENSIFICATION – VIBRATORY COMPACTION

- A. Granular soils located at the subgrade below structures shall be recompacted with vibratory equipment.

3.3 EXCAVATION

- A. Underpin adjacent structures which may be damaged by excavation Work.
- B. Excavate subsoil to accommodate lift station wetwell and valve vault, and construction operations.
- C. Excavate to working elevation for piling Work.
- D. Compact disturbed load bearing soil in direct contact with foundations to original bearing capacity; perform compaction according to Section 31 2317 Trenching.
- E. Slope banks with machine to angle of repose or less until shored.
- F. Do not interfere with 45-degree bearing splay of foundations.
- G. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- H. Trim excavation. Remove loose matter.
- I. Remove lumped subsoil, boulders, and rock. Remove larger material as specified in Section 31 2323 – Fill.
- J. Notify Engineer of unexpected subsurface conditions.
- K. Correct areas over excavated or where unsuitable material is removed with CA-7 material. No fines.
- L. Remove excess and unsuitable material from Site.
- M. Repair or replace items indicated to remain damaged by excavation.

3.4 FIELD QUALITY CONTROL

- A. Section 01 4000 – Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Request inspection of excavation and controlled fill operations according to applicable code.

- C. Request visual inspection of bearing surfaces by Engineer and inspection agency before installing subsequent Work.

3.5 PROTECTION

- A. Prevent displacement or loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- C. Protect structures, utilities and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth operations.

END OF SECTION

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SECTION 31 2317 - TRENCHING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Excavating trenches for utilities.
 2. Compacted fill from top of utility bedding to subgrade elevations.
 3. Backfilling and compaction.

1.2 DEFINITIONS

- A. Utility: Any buried pipe, duct, conduit, or cable.

1.3 SUBMITTALS

- A. None required.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with the Roadway Specifications and the Water & Sewer Specifications.
- B. Maintain one copy of each document on site.

1.5 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.6 COORDINATION

- A. Section 01 3000 – Administrative Requirements: Coordination and project conditions.
- B. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.

PART 2 PRODUCTS

2.1 FILL MATERIALS

- A. Initial Backfill and Trench Backfill: CA-10 or CA-11 coarse aggregate as described in Section 31 0516 – Aggregates for Earthwork. Aggregate for trench backfill shall be crushed, washed, angular, limestone with 6% max deleterious material. "pea gravel" and "buckshot" ARE NOT ACCEPTABLE.
- B. Bedding and Haunching: CA-10 or CA-11 coarse aggregate as described in Section 31 03516 – Aggregates for Earthwork.

- C. Granular Structural Fill: CA-7 coarse aggregate as described in Section 31 0516 – Aggregates for Earthwork. Aggregate for structural fill shall be crushed limestone with 6% max deleterious material. “Breaker rock” is an acceptable alternative.
- D. Granular Fill: CA-6 coarse aggregate as described in Section 31 0516 – Aggregates for Earthwork. Aggregate for granular fill shall be crushed limestone with 6% max deleterious material.
- E. Subsoil Fill: Excavated material as described in Section 31 0513 – Soils for Earthwork.
- F. Concrete: Class SI concrete as described in pertinent section of the Roadway Specifications.

PART 3 EXECUTION

3.1 LINES AND GRADES

- A. Lay pipes to lines and grades indicated on Drawings.
 - 1. Engineer reserves right to make changes in lines, grades, and depths of utilities when changes are required for Project conditions.
- B. Use laser-beam instrument with qualified operator to establish lines and grades.

3.2 PREPARATION

- A. Call JULIE not less than three working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
- B. Identify required lines, levels, contours, and datum locations.
- C. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- D. Protect benchmarks, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- E. Maintain and protect above and below grade utilities indicated to remain.

3.3 TRENCHING

- A. Excavate subsoil required for utilities to utility service.
- B. Remove lumped subsoil, boulders, and rock.
- C. Perform excavation within 24 inches of existing utility service in accordance with utility’s requirements.
- D. Do not advance open trench more than 200 feet ahead of installed pipe.

- E. Cut trenches sufficiently wide to enable installation and allow inspection. Remove water or materials that interfere with Work.
- F. Excavate bottom of trenches maximum 2 feet wider than outside diameter of pipe.
- G. Excavate trenches to depth indicated on Drawings. Provide uniform and continuous bearing and support for bedding material and utilities.
- H. Do not interfere with 45 degree bearing splay of foundations.
- I. When Project conditions permit, slope side walls of excavation starting 2 feet above top of pipe. When side walls cannot be sloped, provide sheeting and shoring to protect excavation as specified in this section.
- J. When subsurface materials at bottom of trench are loose or soft, excavate to greater depth as directed by Engineer until suitable material is encountered.
- K. Cut out soft areas of subgrade not capable of compaction in place. Backfill with CA-7 material and compact to density equal to or greater than requirements for subsequent backfill material.
- L. Trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.
- M. Correct areas over excavated with compacted backfill as specified for authorized excavation.
- N. Stockpile subsoil in area designated on site and protect from erosion.

3.4 SHEETING AND SHORING

- A. Sheet, shore, and brace excavations to prevent danger to persons, structures and adjacent properties and to prevent caving, erosion, and loss of surrounding subsoil.
- B. Support trenches more than 4 feet deep excavated through unstable, loose, or soft material. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation.
- C. Design sheeting and shoring to be removed at completion of excavation work.
- D. Repair damage caused by failure of the sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.
- E. Repair damage to new Work from settlement, water or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.

3.5 BACKFILLING

- A. Backfill trenches to contours and elevations with unfrozen fill materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.

- C. Place material in continuous layers as follows:
1. Bedding, Haunching and Initial Backfill: Maximum 8 inches compacted length.
 2. Over Excavation: Maximum 8 inches compacted length.
 3. Trench Backfill: Maximum 8 inches compacted depth.
- D. Employ placement method that does not disturb or damage foundation perimeter drainage or utilities in trench.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Do not leave more than 50 feet of trench open at end of working day.
- G. Protect open trench to prevent danger to Owner or the public.
- H. TRENCH REPAIR-GRASS AREAS
1. After pipe has been properly embedded, excavated material free of rock 3" or larger, frozen material or large roots may be placed in trench and compacted as described elsewhere in the Section.
 2. After sub-soil is placed and compacted to within 6" of finished grade, provide 6" of fertile topsoil, lightly compacted, over trench and any area damaged by construction.
 3. Within two (2) weeks of the installation of pipe, within any given area, seed shall be applied with fertilizer and mulch.
 4. Subsoil shall be compacted to 90% max dry density.
- I. TRENCH REPAIR-GRASS AREAS SPECIAL
1. This work pertains to trench repair in grass areas with part of the trench within 2' of the edge of shoulders, walkways, drives or as described on Drawings.
 2. After pipe has been properly embedded, place and compact final backfill to within 12" of finished grade.
 3. After final backfill is placed and compacted, place and compact sub-soil to within 6" of finished grade, provide 6" of fertile topsoil, lightly compacted, over trench and any other grass areas damaged by construction.
 4. Repair any other surface type damaged by construction.
 5. Final backfill shall be compacted to 95% max dry density.
- J. TRENCH REPAIR-HMA DRIVES
1. This work pertains to any HMA drives.
 2. After pipe has been properly embedded, provide final backfill as described in 2.1.A of this Section and compact as described elsewhere in this Section.
 3. Should any part of the trench be within 2' of the edge of the shoulder, walkway, or drive surface, final backfill will be required.
 4. After final backfill is placed and compacted, provide aggregate base course and HMA to the thickness indicated on Drawings.
 5. All drives shall be re-opened at the end of each work day.
 6. As a minimum, the final repair shall be made using the same type of surface and thickness as removed or damaged during excavation.
 7. If existing surface is A-3 (oil & chip), HMA material shall be used for restoration.
 8. Final backfill shall be compacted to 95% max dry density.

K. TRENCH REPAIR-P.C.C. DRIVES

1. This work pertains to any concrete surfaced drives.
2. After pipe has been properly embedded, provide final backfill as described in 2.1.A of this Section and compact as described elsewhere in this Section.
3. Should any part of the trench be within 2' of the edge of the shoulder, walkway or drive surface, final backfill will be required.
4. After final backfill is placed and compacted, provide aggregate base course and concrete to the thickness indicated on Plan Sheets.
5. All drives shall be re-opened by the end of each work day.
6. As a minimum, the final repair shall be made using the same type of surface and thickness as removed or damaged during excavation.
7. Provide saw cut joints as required by Engineer.
8. Final backfill shall be compacted to 95% max dry density.

L. TRENCH REPAIR-P.C.C. SIDEWALKS, 4"

1. This work pertains to any concrete surfaced sidewalks.
2. After pipe has been properly embedded, provide final backfill as described in 2.1.A of this Section and compact as described elsewhere in this Section.
3. Should any part of the trench be within 2' of the edge of the shoulder, walkway or drive surface, final backfill will be required.
4. After final backfill is placed and compacted, provide aggregate base course and concrete to the thickness indicated on Plan Sheets.
5. All sidewalks shall be re-opened by the end of each work day.
6. As a minimum, the final repair shall be made using the same type of surface and thickness as removed or damaged during excavation.
7. This item pertains only to sidewalks outside of driveways.
8. Final backfill shall be compacted to 95% max dry density.

M. TRENCH REPAIR-P.C.C. SIDEWALKS, 6"

1. This work pertains to any concrete surfaced sidewalks.
2. After pipe has been properly embedded, provide final backfill as described in 2.1.A of this Section and compact as described elsewhere in this Section.
3. Should any part of the trench be within 2' of the edge of the shoulder, walkway or drive surface, final backfill will be required.
4. After final backfill is placed and compacted, provide aggregate base course and concrete to the thickness indicated on Plan Sheets.
5. All sidewalks shall be re-opened by the end of each work day.
6. As a minimum, the final repair shall be made using the same type of surface and thickness as removed or damaged during excavation.
7. This pay item pertains only to sidewalks within driveways except P.C.C. drives.
8. Final backfill shall be compacted to 95% max dry density.

N. TRENCH REPAIR-AGGREGATE

1. This work pertains to any aggregate surfaced shoulders, drives, or parking areas.
2. After pipe has been properly embedded, provide final backfill as described in 2.1.A of this Section and compact as described elsewhere in this Section.
3. Should any part of the trench be within 2' of the edge of the shoulder, walkway or drive surface, final backfill will be required.

4. After final backfill is placed and compacted, provide aggregate surface course to the thickness indicated on Plan Sheets.
5. All drives shall be re-opened by the end of each work day.
6. As a minimum, the final repair shall be made using the same type of surface and thickness as removed or damaged during excavation.
7. Final backfill shall be compacted to 95% max dry density.

O. TRENCH REPAIR-ROADWAY

1. This work pertains to any roadway surface.
2. After pipe has been properly embedded, provide final backfill as described in elsewhere in this Section.
3. Should any part of the trench be within 2' of the edge of the bituminous surface final backfill will be required.
4. After final backfill is placed and compacted to 95% max dry density, place and compact Aggregate Base Course, Type B 10", place P.C.C., 8" dowel patch into existing concrete pavement.

P. TRENCH REPAIR – AGRICULTURAL AREAS

1. Backfilling and surface restoration shall be in accordance with the "Pipeline Construction Standards and Policies" as recommended by the Illinois Department of Agriculture included in these specifications elsewhere.

Q. Do all excavation, backfilling and grading in such a manner that finish grades shall be as indicated on plans.

R. Grades not otherwise indicated shall be uniform levels or slopes between points where elevations are given or between such points and existing finished grades. Abrupt changes in slopes shall be rounded.

S. "Water jetting" the excavation areas will not be allowed on this project.

T. Deposit backfill in layers not exceeding 24" in grass areas and agricultural areas. Compact each layer to 90% of maximum dry density as determined by Standard Proctor Test. Under pavements or grass area special, compact each layer to 95% of max dry density as determined by Standard Proctor Test. Hoe-mounted vibration compactor plate is to be used.

U. For any compaction done by hand operated mechanical compactors, the maximum layer of backfill material shall be 8". Compact to 90% of maximum dry density as determined by Standard Proctor Test.

3.6 TOLERANCES

- A. Section 01 4000 – Quality Requirements: Tolerances.
- B. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.

3.7 FIELD QUALITY CONTROL

- A. Section 01 4000 – Quality Requirements: Field testing, testing, adjusting, and balancing.

- B. Perform laboratory material tests in accordance with ASTM D1557 (Modified Proctor).
- C. Perform in place compaction tests in accordance with the following:
 - 1. Density Tests: ASTM D2922.
 - 2. Moisture Tests: ASTM D3017.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.

3.8 PROTECTION OF FINISHED WORK

- A. Section 01 7000 – Execution and Closeout Requirements: Protecting finished work.
- B. Reshape and re-compact fills subject to vehicular traffic during construction.

END OF SECTION

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SECTION 31 2319 - DEWATERING

PART 1 GENERAL

1.1 SUMMARY

- A. This section has been included to be used as a guide should the Contractor elect to provide dewatering as part of this project. Although this section is included this operation shall be considered incidental to the project.
- B. Section Includes:
 - 1. Dewatering system.
 - 2. Surface water control system.
 - 3. System operation and maintenance.
 - 4. Water disposal.

1.2 DEFINITIONS

- A. Dewatering includes the following:
 - 1. Lowering of ground water table and intercepting horizontal water seepage to prevent ground water from entering excavations and trenches.
 - 2. Reducing piezometric pressure within strata to prevent failure or heaving of excavations and trenches.
 - 3. Disposing of removed water.
- B. Surface Water Control: Removal of surface water within open excavations.

1.3 SYSTEM DESCRIPTION

- A. Provide dewatering and surface water control systems to permit Work to be completed on dry and stable subgrade.
- B. Furnish standby equipment stored at Project site and ready for immediate use upon failure of dewatering equipment. This shall include standby diesel generator for backup power and pumps that are critical to the dewatering system.

1.4 PERFORMANCE REQUIREMENTS

- A. Design dewatering systems to:
 - 1. Lower water table within areas of excavation to minimum three (3) feet below bottom of excavation to permit Work to be completed on dry and stable subgrade.
 - 2. Relieve hydrostatic pressures in confined water bearing strata below excavation to eliminate risk of uplift or other instability of excavation.
 - 3. Prevent damage to adjacent properties, buildings, structures, utilities, and facilities from construction operations.
 - 4. Prevent loss of fines, quick condition, or softening of foundation subgrade.
 - 5. Maintain stability of sides and bottoms of excavations and trenches.

- B. Design surface water control systems to:
 - 1. Collect and remove surface water and seepage entering excavation.

1.5 SUBMITTALS

- A. Section 01 3300 – Submittal Procedures: Requirements for submittals.
- B. Shop Drawings:
 - 1. Indicate dewatering system layout, well depths, well screen lengths, dewatering pump locations, pipe sizes and capacities, grades, filter sand gradations, surface water control devices, valves, and water disposal method and location.
 - 2. Indicate primary and standby power system location and capacity.
 - 3. Indicate layout and depth of monitoring wells, piezometers and flow measuring devices for system performance measurement.
 - 4. Include detailed description of dewatering system installation procedures and maintenance of equipment.
 - 5. **Include description of emergency procedures to follow when problems arise.**
- C. Product Data: Submit data for each of the following:
 - 1. Dewatering Pumps: Indicate sizes, capacities, priming method, motor characteristics.
 - 2. Pumping equipment for control of surface water within excavation.
- D. Design Data: Signed and sealed by professional engineer.
 - 1. Indicate design values, analyses, and calculations to support design.
 - 2. Include description and profile of geology, soil, and groundwater conditions.
- E. Field Reports: Test and monitoring reports as specified in Field Quality Control article.

1.6 CLOSEOUT SUBMITTALS

- A. Section 01 7000 – Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Record actual locations and depths of capped wells and piping abandoned in place.

1.7 QUALITY ASSURANCE

- A. Comply with authorities having jurisdiction for the following:
 - 1. Drilling and abandoning of wells used for dewatering systems.
 - 2. Water discharge and disposal from pumping operations.

1.8 QUALIFICATIONS

- A. Installer: Company specializing in performing work of this Section with minimum of 15 years documented experience and responsible for design, operation, and maintenance of dewatering system.
 - 1. Assume sole responsibility for dewatering and surface water control systems and for loss or damage resulting from partial or complete failure of protective measures and settlement or resultant damage caused by ground water control operations.

1.9 SEQUENCING

- A. Section 01 1000 – Summary: Requirements for sequencing.
- B. Sequence work to obtain required permits before start of dewatering operations.
- C. Sequence work to install and test monitoring systems minimum 7 days before testing and operating dewatering systems.
- D. Sequence work to install and test dewatering and surface water control systems minimum 7 days before starting excavation and trenching.

1.10 COORDINATION

- A. Section 01 3000 – Administrative Requirements: Requirements for coordination.
- B. Coordinate work to permit the following construction operations to be completed on dry stable substrate.
 - 1. Trenching for utilities specified in Section 31 2317 – Trenching.

PART 2 PRODUCTS

2.1 DEWATERING EQUIPMENT

- A. Select dewatering equipment to meet specified performance requirements.

2.2 ACCESSORIES

- A. Valves and Fittings: Furnish valves and fittings to isolate each well from header pipe and to prevent loss of pump prime.
- B. Filter Sand: ASTM C33; natural river or bank sand; washed; free of silt, clay, loam, friable or soluble materials, and organic matter; graded to suit well screen.
- C. Grout: Mixture of Portland cement and bentonite clay or sand suitable for sealing abandoned wells and piping.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 3000 – Administrative Requirements: Verification of existing conditions before starting work.
- B. Conduct additional borings and investigations to supplement subsurface investigations identified in Section 31 0510 – Subsurface Investigation as required to complete dewatering system design.
- C. Call JULIE not less than three working days before performing Work.

1. Request underground utilities to be located and marked within and surrounding construction areas.
- D. Employ licensed land surveyor to provide following documentation:
 1. Survey existing adjacent buildings, structures, and improvements for position and elevation of principal elements before and after completion of dewatering operations.

3.2 PREPARATION

- A. Protect existing adjacent buildings, structures, and improvements from damage caused by dewatering operations.

3.3 DEWATERING SYSTEM

- A. Install dewatering system in accordance with shop drawings.
- B. **Locate system** components to allow continuous dewatering operations without interfering with installation of permanent Work and existing public rights-of-way, sidewalks, and adjacent buildings, structures, and improvements.
- C. Drill wells in sizes and to depth indicated. Provide temporary surface casing when required to stabilize soil while advancing well.
- D. Contractor shall provide dewatering equipment as required to maintain a dry and stable bottom trench for the installation of all sanitary sewer, water main, process piping, foundation excavation, etc.
- E. Dewatering may require the use of well points or wells to lower the water table below the trench or foundation excavation or the use of a sump pump.
- F. Contractor shall furnish, operate and maintain all dewatering equipment including providing electrical service to operate the equipment.
- G. Test well for proper water flow through well screen and pumping rate for dewatering system.
- H. Cover and seal top of well until pump is installed.
- I. Install pumps in accordance with manufacturer's instructions.
- J. Connect pumps to discharge header. Install valves to permit pump isolation.

3.4 SURFACE WATER CONTROL SYSTEM

- A. Provide ditches, berms, and other devices to divert and drain surface water from excavation area as specified in Section 31 2500 – Erosion and Sedimentation Controls.
- B. Divert surface water and seepage water within excavation areas into sumps and pump water into drainage channels in accordance with requirements of agencies having jurisdiction.

- C. Control and remove unanticipated water seepage into excavation.

3.5 SYSTEM OPERATION AND MAINTENANCE

- A. Operate dewatering system continuously until backfilling is complete.
- B. Provide supervision of dewatering system by personnel skilled in operation, maintenance, and replacement of system components.
- C. Conduct daily observation of dewatering system and monitoring system. Make required repairs and perform scheduled maintenance.
- D. Fill fuel tanks before tanks reach 25 percent capacity.
- E. Start emergency generators at least twice each week to check operating condition.
- F. When dewatering system cannot control water within excavation, notify Engineer and stop excavation work.
 - 1. Supplement or modify dewatering system and provide other remedial measures to control water within excavation.
 - 2. Demonstrate dewatering system operation complies with performance requirements before resuming excavation operations.
- G. Modify dewatering and surface water control systems when operation causes or threatens to cause damage to new construction, existing site improvements, adjacent property, or adjacent water wells.
- H. Correct unanticipated pressure conditions affecting dewatering system performance.
- I. Do not discontinue dewatering operations without Engineer's approval.

3.6 WATER DISPOSAL

- A. Discharge water into area drainage.
- B. Provide erosion control for the water discharge.

3.7 SYSTEM REMOVAL

- A. Remove dewatering and surface water control systems after dewatering operations are discontinued.
- B. Abandon dewatering wells in accordance with the Illinois Department of Public Health requirements.
- C. Repair damage caused by dewatering and surface water controls systems ore resulting from failure of systems to protect property.

3.8 FIELD QUALITY CONTROL

- A. Section 01 4000 – Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. After dewatering system is installed, perform pumping test to determine when selected pumping rate lowers water level in well below pump intake. Adjust pump speed, discharge volume, or both to ensure proper operation of each pump.
 - 1. Ground water elevation.
- C. Monitor ground water discharge for sand content. Sample and test water from each well weekly for sand content. Maximum permitted sand content 5 parts per million.
- D. Survey existing adjacent buildings, structures, and improvements to detect movement in comparison to original elevations during dewatering operations.
 - 1. Notify Engineer immediately of measured movement.
- E. Submit ~~initial~~ installation reports including the following:
 - 1. Installation and development reports for well points and pumps.
 - 2. Test reports of monitoring well water analysis.
 - 3. Initial dewatering flow rates.
- F. Submit weekly monitoring reports including the following:
 - 1. Dewatering flow rates.
 - 2. Test reports of discharge water analysis.
 - 3. Maintenance records for dewatering and surface water control systems.

END OF SECTION

SECTION 31 2323 - FILL

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Backfilling building perimeter to subgrade elevations.
 - 2. Backfilling Site structures to subgrade elevations.
 - 3. Fill under slabs-on-grade.
 - 4. Fill under paving.
 - 5. Fill for over-excavation.

1.2 SUBMITTALS

- A. Section 01 3300 – Submittal Procedures: Requirements for submittals.
- B. Samples: Submit, in air-tight containers, an adequate quantity of the material sample for laboratory testing.
- C. Materials Source: Submit name of imported fill materials and suppliers.
- D. Manufacturer's Certificate: Aggregate materials must have IDOT certification.

1.3 QUALITY ASSURANCE

- A. Perform Work according to the Roadway Specifications.

PART 2 PRODUCTS

2.1 FILL MATERIALS

- A. Subsoil Fill: As specified in Section 31 0513 – Soils for Earthwork.
- B. Structural Fill: CA-6 and CA-7.
- C. Granular Fill: FA-6, CA-6 and CA-7 as specified in Section 31 0516 – Aggregate for Earthwork. Granular materials excavated from the site structures will be acceptable as long as it doesn't contain a significant amount of clay and silts.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 3000 – Administrative Requirements: Coordination and project conditions.
- B. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.

- C. Verify underground tanks are anchored to their own foundations to avoid flotation after backfilling.
- D. Verify structural ability of unsupported walls to support loads imposed by fill.

3.2 PREPARATION

- A. Compact subgrade to density requirements for subsequent backfill materials.
- B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with granular fill and compact to density equal to or greater than requirements for subsequent fill material.
- C. Scarify subgrade surface to depth of 2 inches.
- D. Proof roll to identify soft spots; fill and compact to density equal to or greater than requirements for subsequent fill material.

3.3 BACKFILLING

- A. Backfill areas to contours and elevations with unfrozen materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- C. Place fill material in continuous layers as follows:
 - 1. Subsoil Fill: Maximum 9 inch loose lift depth for cohesive soils and 12 inch loose lift depth for granular soils and compacted.
 - 2. Structural Fill: Maximum 12 inch loose lift depth and compacted.
 - 3. Granular Fill: Maximum 12 inch loose lift depth and compacted.
- D. Employ placement method that does not disturb or damage other Work.
- E. Maintain optimum moisture content of backfill materials to attain required compaction density.
- F. Backfill against supported foundation walls. Do not backfill against unsupported foundation walls.
- G. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.
- H. Slope grade away from building minimum 2 percent slope for minimum distance of 10 feet, unless noted otherwise.
- I. Make gradual grade changes. Blend slope into level areas.
- J. Remove surplus backfill materials from Site.
- K. Leave fill material stockpile areas free of excess fill materials.

3.4 TOLERANCES

- A. Section 01 4000 – Quality Requirements: Tolerance.
- B. Top Surface of Backfilling within Building Areas: Plus or minus 1/4 inch from required elevations.
- C. Top Surface of Backfilling under Paved Areas: Plus or minus 1/4 inch from required elevations.
- D. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.

3.5 FIELD QUALITY CONTROL

- A. Section 01 4000 – Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Perform laboratory material tests in accordance with ASTM D1557.
- C. Perform in place compaction tests according to following:
 - 1. Density Tests: ASTM D2922.
 - 2. Moisture Tests: ASTM D3017.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace, and retest.
- E. Frequency of Tests: As recommended in the Report of Soils Exploration and by a geotechnical consultant.
- F. Proof roll compacted fill surfaces under slabs-on-grade, paving.

3.6 PROTECTION OF FINISHED WORK

- A. Section 01 7000 – Execution and Closeout Requirements: Protecting finished work.
- B. Reshape and re-compact fills subjected to vehicular traffic.

3.7 SCHEDULE

- A. Interior Slab-On-Grade:
 - 1. Fill Type: Subsoil fill as required in Section 31 0513 – Soils for Earthwork, construct to the bottom of the aggregate base for slab-on-grade, 9 inch loose lifts, compacted to 95 percent of the modified Proctor maximum density.
 - 2. Aggregate Base: IDOT Gradation CA-6 or CA-7, 12 inches thick, compacted to 95 percent modified Proctor maximum density.
- B. Exterior Side of Foundation Walls:
 - 1. Fill Type: CA-6 or CA-7, 10 inches below the finished grade elevation, 12 inch thickness per lift, compact uniformly to 90 percent of the modified Proctor maximum density.
- C. Underground Tanks Floor Slabs:

1. Subgrade Fill Type: IDOT Gradation CA-6 or CA-7, 12 inch thickness, vibratory compaction or tamping with backhoe bucket.
- D. Fill under Grass Areas:
1. Fill Type: Subsoil fill as required in Section 31 0513 – Soils for Earthwork, to 8 inches below finish grade, compact uniformly to 90 percent modified Proctor maximum density.
- E. Fill under Aggregate Entrance and Sidewalks:
1. Compact subsoil to 95 percent of its modified Proctor maximum dry density.
 2. Fill Type: Subsoil fill as required in Section 31 0513 – Soils for Earthwork, 13 to 15 inches below finished grade for aggregate driving areas and 10 inches below finished grade for sidewalks, compact uniformly to 95 percent of modified Proctor maximum density.
- F. Fill to Correct Over-Excavation:
1. Fill Type: CA-7. Vibratory compaction or by tamping with backhoe bucket.

END OF SECTION

SECTION 31 2500 - EROSION AND SEDIMENTATION CONTROLS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Silt fence.
 2. Culvert inlet protection – silt fence.
 3. Stabilized construction entrance.
 4. Dewatering.
 5. Ditch checks (manufactured).
 6. Dust control.
 7. Temporary concrete washout facility.
 8. Sump pit.
 9. Erosion control blanket.
 10. Site stabilization.
 11. Field quality control.
 12. Cleaning.
 13. Protection.

1.2 SUBMITTALS

- A. Section 01 3300 – Submittal Procedures: Requirements for submittals.

1.3 CLOSEOUT SUBMITTALS

- A. Section 01 7000 – Execution and Closeout Requirements: Requirements for submittals.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with requirements of all related Sections.

- B. Perform Work in accordance with the Illinois Urban Manual.

- C. Maintain one copy of each document on site.

1.5 PRE-INSTALLATION MEETINGS

- A. Section 01 3000 – Administrative Requirements: Pre-installation meeting.

- B. Convene minimum one week prior to commencing work of this Section.

1.6 ENVIRONMENTAL REQUIREMENTS.

- A. Section 01 6000 – Product Requirements: Environmental conditions affecting products on site.

PART 2 PRODUCTS

2.1 ROCK, GEOTEXTILES, AGGREGATE, AND OTHER REQUIRED MATERIALS

- A. Furnish materials in accordance with the Illinois Urban Manual.

2.2 PLANTING MATERIALS

- A. Seeding and Soil Supplements: Class 2 mix, as specified in the Roadway Specifications. Fertilize as specified in the Roadway Specifications.
- B. Heavy Duty Erosion Control Blanket: Knitted straw mat as specified in the Roadway Specifications.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 3000 – Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify compacted subgrade granular base, stabilized soil is acceptable and ready to support devices and imposed loads.
- C. Verify gradients and elevations are correct.

3.2 SILT FENCE

- A. In accordance with Standard Drawing IUM-620 and Code 920 of the Illinois Urban Manual.

3.3 CULVERT INLET PROTECTION – SILT FENCE

- A. In accordance with Standard Drawing IL-508SF and Code 808 of the Illinois Urban Manual.

3.4 STABILIZED CONSTRUCTION ENTRANCE

- A. In accordance with Standard Drawing IL-630 and Code 930 of the Illinois Urban Manual.

3.5 DEWATERING

- A. In accordance with Code 813 of the Illinois Urban Manual.

3.6 DITCH CHECK (MANUFACTURED)

- A. In accordance with Standard Drawing IUM-514 and Code 814 of the Illinois Urban Manual.

3.7 DUST CONTROL

- A. In accordance with Code 825 of the Illinois Urban Manual.

- B. If water is used to control dust, the Contractor shall apply as needed or as directed by the Engineer or Owner.

3.8 TEMPORARY CONCRETE WASHOUT FACILITY

- A. In accordance with Code 954 and Standard Drawing IUM-654SB, IUM-654BW or IUM-654ET, Contractor's choice, of the Illinois Urban Manual.

3.9 TEMPORARY SEDIMENT TRAP

- A. In accordance with Code 960 and Standard Drawing IL-660 of the Illinois Urban Manual.

3.10 SUMP PIT

- A. In accordance with Standard Drawing IL-650 and Code 950 of the Illinois Urban Manual.

3.11 EROSION CONTROL BLANKET

- A. In accordance with Standard Drawing IUM-530 and Code 830 of the Illinois Urban Manual.

3.12 SITE STABILIZATION

- A. Incorporate erosion control devices indicated on the Drawings or described herein into the Project at the earliest practicable time.
- B. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.
- C. Stockpile and waste pile heights shall not exceed 35 feet. Slope stockpile sides at 2:1 or flatter.
- D. Stabilize any disturbed area of affected erosion control devices on which activity has ceased and which will remain exposed for more than 20 days.
 - 1. During non-germinating periods, apply mulch at recommended rates.
 - 2. Stabilize disturbed areas which are not at finished grade and which will be disturbed within one year in accordance with Section 32 9219 – Seeding at 50 percent of permanent application rate with no topsoil.
 - 3. Stabilize disturbed areas which are either at finished grade or will not be disturbed within one year in accordance with Section 32 9219 – Seeding.
- E. Stabilize diversion channels, sediment traps, and stockpiles immediately.

3.13 FIELD QUALITY CONTROL

- A. Section 01 4000 – Quality Requirements and Section 01 7000 – Execution Requirements: Field inspecting, testing, adjusting and balancing.

3.14 CLEANING

- A. Section 01 7000 – Execution Requirements: Requirements for cleaning.

- B. When sediment accumulation in sedimentation structures has reached a point one-third depth of sediment structure or device, remove and dispose of sediment.
- C. Do not damage structure or device during cleaning operations.
- D. Do not permit sediment to erode into construction or site areas or natural waterways.
- E. Clean channels when depth of sediment reaches approximately one half channel depth.

3.15 PROTECTION

- A. Section 01 7000 – Execution Requirements: Requirements for protecting finished Work.

3.16 POLLUTION CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

END OF SECTION

SECTION 32 3113 - CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Fence framework, fabric, and accessories.
 2. Excavation for post bases.
 3. Concrete foundation for posts and center drop for gates.
 4. Manual gates and related hardware.

1.2 SYSTEM DESCRIPTION

- A. Fence Height: 8 feet nominal.
- B. Line Post Spacing: At intervals not exceeding 10 feet.
- C. Fence Post and Rail Strength: Conform to ASTM F1043 Heavy Industrial Fence quality.

1.3 SUBMITTALS

- A. Section 01 3300 – Submittal Procedures: Requirements for submittals.
- B. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, gates, and schedule of components.
- C. Product Data: Submit data on fabric, posts, accessories, fittings and hardware.
- D. Manufacturer's Installation Instructions: Submit installation requirements.

1.4 CLOSEOUT SUBMITTALS

- A. Section 01 7000 – Execution and Closeout Requirements: Closeout procedures.
- B. Operation and Maintenance Data: Procedures for submittals.

1.5 QUALITY ASSURANCE

- A. Perform installation according to ASTM F567 and manufacturer's instructions.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years documented experience.
- B. Installer: Company specializing in performing work of this Section with a minimum of three years documented experience.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Section 01 6000 – Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Deliver fence fabric and accessories in packed cartons or firmly tied rolls.
- C. Identify each package with manufacturer's name.
- D. Store fence fabric and accessories in secure and dry place.

PART 2 PRODUCTS

2.1 DIMENSIONAL DATA

- A. General:
 - 1. Pipe sizes indicated are commercial pipe sizes.
 - 2. Tube sizes indicated are nominal outside dimensions.
 - 3. H-section sizes indicated are normal flange dimensions.
 - 4. Roll-formed section sizes indicated are the nominal outside dimensions.

2.2 GALVANIZING

- A. On steel framework and appurtenances, provide galvanized finish with not less than the following weight of zinc per square feet.
 - 1. Pipe: 2.0 oz. complying with ASTM A120.
 - 2. H-sections and square tubing: 2.0 oz., complying with ASTM A123.
 - 3. Hardware and accessories: Comply with Table I of ASTM A153.
 - 4. Fabric: 2.0 oz., complying with Class II of ASTM A121.

2.3 FABRIC

- A. New fabric shall be Number 9 gauge or 0.148" wires in 2" mesh, with top and bottom selvages twisted and barbed. Fabric shall be galvanized after weaving.
- B. Provide fabric in one-piece, in widths to match existing.

2.4 BARBED WIRE

- A. Provide three (3) strands of aluminum-coated, 12-1/2 gauge twisted wire with 14 gauge, 4 point round aluminum bars spaced 5" conforming to ASTM A-585.

2.5 POSTS, RAILS, AND ASSOCIATED ITEMS

- A. End, Corner, Slope, and Pull Posts: Provide all new material with the following minimum sizes and weights:

Material and Dimensions

Lbs. per Lineal Feet

Pipe, 2.875" outside dimension:	5.79
Tubing, 2-1/2" square:	5.70
Roll-formed section, 3-1/2" x 3-1/2":	5.14

- B. Line Posts: Provide all new material with minimum sizes and weights as follows (match existing):

<u>Material and Dimensions</u>	<u>Lbs. per Lineal Feet</u>
Pipe, 2.375" outside dimension:	3.65
H-section, 2.25" x 1.95" x 0.143":	0.10

- C. Gate Posts: Provide new gate posts for supporting gate leaves, of double gate installation, for nominal leaf widths as follows:

<u>Material and Dimensions</u>	<u>Lbs. per Lineal Feet</u>
Pipe, 4" outside dimension:	9.10
Tubing, 3" square:	9.10
H-section, 4":	14.00

1. Over 13-foot wide leaves and up to 18-foot wide: Use 6.625" outside diameter pipe weighing 14.0 lbs. per lineal foot.
2. Over 18-foot wide leaves: Use 8.625" outside diameter pipe weighing 24.70 lbs. per lineal foot.
3. Provide means for attaching top rail securely to each gate, corner, pull, slope, and end post.

- D. Post Brace Assemblies:

1. Provide slope and pull posts, with horizontal brace located at mid-height of fabric at end and gate posts, and at both sides of corner posts.
2. Use 1.660" outside diameter pipe weighing 1.80 lbs. per lineal foot for horizontal brace.
3. Use 3/8" diameter rod with turnbuckle for diagonal truss.

- E. Tension Wire: Provide Number 7 gauge galvanized, coiled spring wire at top and bottom of fabric.

- F. Post Tops:

1. Provide steel, wrought iron or malleable iron designed as weathertight closure cap, which will accommodate barbed wire.
2. Provide one cap for each post.
3. Provide caps without openings for top rail.

- G. Stretcher Bars:

1. Provide one-piece lengths equal to full height of fabric, with a minimum cross-section of 3/16" x 3/4".
2. Provide one stretcher bar for each gate and end post, and two for each corner, slope, and pull post, except where fabric is woven integrally into the post.

- H. Stretcher bar bands:

1. Provide steel, wrought iron, or malleable iron spaced not over 15" on centers, to secure stretcher bars to end, corner, pull, slope, and gate posts.

2. Bands may be used also with special fittings for securing rails to end, corner, pull, slope, and gate posts.

2.6 GATES

A. Chain Link Swing Gates:

1. Gate frames shall be fabricated in accordance with ASTM F900 using galvanized steel tubular members of sufficient size, shape and weight. Provide welded connections forming rigid one-piece unit.
2. Chain link fence fabric mesh, gauge and color shall match fence. Install fabric with hook bolts and tension bars at all sides, no substitution. Attach to gate frame at not more than 15" on center.
3. Hardware materials: Hot dipped galvanized or malleable iron shapes to suit gate size.
4. Hinges: Structurally capable of supporting gate leaf and allow opening and closing without binding. Non-liftoff type hinge design shall permit gate to swing 180° inward.
5. Latch: Forked type capable of retaining gate in closed position and have provisions for padlock. Latch shall permit operation from either side of gate.
6. Keeper: Provide keeper for each gate leaf over 5 feet wide. Gate keeper shall consist of mechanical device for securing free end of gate when in full open position.
7. Double gates: Provide drop rod to hold inactive leaf. Provide gate stop pipe to engage center drop rod. Provide locking device and padlock eyes as an integral part of latch, requiring one padlock for locking both gate leaves.
8. Barbed wire top: Incorporate provisions for barbed extensions by extending vertical members 13" to accommodate three strands of barbed wire.

B. Chain Link Cantilever Slide Gate:

1. Gate frame shall be fabricated in accordance with ASTM F1184, Type 11, Class 2, using 2" square aluminum members, ASTM B221, alloy and temper 6063-T6, weighing 0.94 lb/ft. Weld members together forming rigid one-piece frame integral with top track (no substitution). Frame members to be square, straight and true to within 1 mm over a 40 foot span in an unstressed state. Provide two truck assemblies for each gate leaf.
2. Bracing: Provide diagonal adjustable length truss rods of 3/8" galvanized steel, in each panel of gate frames.
3. Top track/rail: Enclosed combination one-piece track and rail, aluminum extrusion with weight of 3.72 lb/ft. Track to withstand reaction load of 2,000 lb.
4. Truck assembly: Swivel type, zinc die cast, with four sealed lubricant ball bearing rollers, 2" in diameter, 9/16" in width, and two side rolling wheel to ensure truck alignment in track (no substitution). Mount trucks on post brackets using 7/8" dia. ball bolts with 1/2" shank. Truck assembly to withstand same reaction load as track, 2,000 lb.
5. Gate hangers, latches, brackets, guide assemblies, and stops: Malleable iron or steel, galvanized after fabrication. Provide positive latch with provisions for padlocking.
6. Bottom guide wheel assemblies: Each assembly shall consist of two 3" dia. rubber wheels, straddling bottom horizontal gate rail, allowing adjustment to maintain gate frames plumb and in proper alignment. Attach one assembly to each guide post.
7. Gate posts: For gates under 31'-0" – galvanized steel 4" OD, Schedule 40 pipe, ASTM F1083, weighing 9.1 lb/ft. Provide one latch post and two support posts for single slide gates and four support posts for double slide gates.

2.7 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Wire Ties:
 - 1. For tying fabric to the line posts, use Number 9 gauge wire ties spaced 12" on centers.
 - 2. For tying fabric to rails and braces, use Number 9 gauge wire ties spaced 24" on centers.
 - 3. For tying fabric to tension wire, use Number 11 gauge hog rings spaced 24" on centers.
 - 4. Manufacturer's standard wire ties will be acceptable if of equal strength and durability.
- B. Concrete: Comply with provisions of Section 03 3000 – Cast-in-Place Concrete for 2,500 psi concrete.

PART 3 EXECUTION

3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which Work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

- A. General:
 - 1. Install posts at a maximum spacing of 10 feet on centers.
 - 2. Install corner or slope posts where changes in direction or grade exceed a 30° deflection.
- B. Excavating:
 - 1. Drill holes for post footings in firm, undisturbed or compacted soil strictly adhering to the dimensions and spacing shown.
 - 2. Post hole dimensions:
 - a. Provide 30" deep by 8" dia. foundations for line posts for five foot fabric height and less.
 - b. Provide 36" deep by 8" dia. foundations for line posts for fabric heights exceeding five feet.
 - c. Provide 36" deep by 12" diameter foundations for all other posts.
 - 3. Spread soil from excavations uniformly adjacent to the fence line, or on adjacent areas of the site if so directed.
 - 4. When solid rock is encountered near the surface, drill the rock at least 12" for line posts and at least 18" for end, pull, gate, and corner posts. Drill hole at least 1" greater dia. than the largest dimension of the post to be placed.
 - 5. If solid rock is below soil overburden, drill to full depth required, except penetration into rock need not exceed minimum depths specified above.
- C. Setting Posts:
 - 1. Remove loose and foreign materials from sides and bottoms of holes, and moisten soil prior to placing concrete.
 - 2. Center and align posts in holes.
 - 3. Place concrete around posts in a continuous pour, and vibrate or tamp for consolidation.

4. Check each post for vertical and top alignment, and hold in position during placement and finishing operations.
 5. At gate posts only, the top 12" of concrete footing shall be formed with a circular paper form. Provide a 1/2" chamfer on exposed edge. Top of footing shall be troweled smooth and sloped or domed to direct water away from posts.
 6. Extend footings for gate posts to the underside of bottom hinge.
 7. Set keepers, stops, sleeves, and other accessories into concrete as required. All exposed concrete edges shall be chamfered.
 8. Keep exposed concrete surfaces moist for at least seven days after placement, or cure with membrane curing material or other curing method approved by the Engineer.
 9. Grout-in those posts which are set into sleeved holes, concrete constructions, or rock excavations using non-shrink Portland cement grout or other grouting material approved by the Engineer.
- D. Concrete Strength:
1. Allow concrete to attain at least 75 percent of its minimum 28-day strength before rails, tension wires, and/or fabric is installed.
 2. Do not, in any case, install such items in less than seven days after placement of concrete.
 3. Do not stretch and tension fabric and wire, and do not hang gates until concrete has attained its full design strength.
- E. Rails and Bracing:
1. Install fence with a top and bottom tension wire.
 2. Install tension wires parallel to the line of fabric by weaving through the fabric and tying to each post with not less than Number 6 gauge galvanized wire, or by securing the wire to the fabric.
- F. Installing Fabric:
1. Leave approximately 2" between finish grade and bottom selvage.
 2. Excavate high points in the ground to clear the bottom of the fence.
 3. Place and compact fill to within 1" of the bottom of the fabric in depressions.
 4. Pull fabric taut and tie to posts, rails, and tension wires.
 5. Install fabric on outward side facing side of fence, and anchor to framework so that the fabric remains in tension after pulling force is removed.
 6. Install stretcher bars by threading through or clamping to fabric on 4" centers, and secure to posts with metal bands spaced 15" on centers.
- G. Installing Gates:
1. Install gates plumb and level, and secure for full opening without interference.
 2. Install ground-set items in concrete for anchorage in accordance with the fence manufacturer's recommendations and as approved by the Engineer.
 3. Lubricate and adjust the hardware for smooth operation.
 4. Set keeper, stops, and sleeves into concrete.
- H. Miscellaneous:
1. Use U-shaped tie wires, conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted at least two full turns.
 2. Bend ends of wire to minimize hazards to persons and clothing.
 3. Fasteners:

- a. Install nuts for tension band and hardware bolts on side of fence opposite fabric side.
 - b. Peen the ends of bolts to prevent removal of nuts.
4. Repair coatings damaged in the shop or field erection using hot-applied repair compound applied in accordance with its manufacturer's recommendations as approved by the Engineer.

END OF SECTION

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SECTION 32 9119 - LANDSCAPE GRADING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Final grade topsoil for finish landscaping except through agriculture fields.

PART 2 PRODUCTS

2.1 MATERIAL

- A. Topsoil: Topsoil material shall be fertile agricultural soil, typical for locality, capable of sustaining vigorous plant growth, taken from drained site, free of subsoil, clay or impurities, plants, weeds and roots and shall be approved by the Engineer and in accordance with Section 211 of the Roadway Specifications.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 3000 – Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify building and trench backfilling have been inspected.
- C. Verify substrate base has been contoured and compacted.

3.2 PREPARATION

- A. Protect landscaping and other features remaining as final Work.
- B. Protect new structures, fences, sidewalks, utilities, paving, etc.

3.3 SUBSTRATE PREPARATION

- A. Eliminate uneven areas and low spots.
- B. Remove debris, roots, branches, stones, in excess of 1/4 in size. Remove contaminated subsoil.
- C. Scarify surface to depth of 3 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.4 PLACING TOPSOIL

- A. Place topsoil in areas where seeding is required to nominal depth of 8 inches. Place topsoil during dry weather.

- B. Fine grade topsoil to eliminate rough or low areas. Maintain profiles and contour of subgrade.
- C. Remove roots, weeds, rocks, and foreign material while spreading.
- D. Manually spread topsoil close to building to prevent damage.
- E. Lightly roll placed topsoil.
- F. Remove surplus subsoil and topsoil from Site.
- G. Lightly compact placed topsoil.
- H. Leave stockpile area and Site clean and raked, ready to receive landscaping.

3.5 TOLERANCES

- A. Top of Topsoil: Plus or minus 1/2 inch.

3.6 PROTECTION OF INSTALLED WORK

- A. Prohibit construction traffic over topsoil.

END OF SECTION

SECTION 32 9219 - SEEDING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Fertilizing.
 - 2. Seeding.
 - 3. Hydroseeding.
 - 4. Mulching.
 - 5. Maintenance.

1.2 DEFINITIONS

- A. Weeds: Vegetative species other than specified species to be established in given area.

1.3 SUBMITTALS

- A. Section 01 3300 – Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data for seed mix, fertilizer, mulch, and other accessories.

1.4 CLOSEOUT SUBMITTALS

- A. Section 01 7000 – Execution and Closeout Requirements: Requirements for submittals.
- B. Operation and Maintenance Data: Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

1.5 QUALITY ASSURANCE

- A. Provide seed mixture in containers showing percentage of seed mix, germination percentage, inert matter percentage, weed percentage, year of production, net weight, date of packaging, and location of packaging.
- B. Perform Work according to these Specifications and the Roadway Specifications.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 6000 – Product Requirements: Product storage and handling requirements.
- B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
- C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

1.7 MAINTENANCE SERVICE

- A. Maintain seeded areas immediately after placement until grass is well established and exhibits vigorous growing condition.

PART 2 PRODUCTS

2.1 SEED MIXTURE

- A. Furnish seeding materials in accordance with Sections 250 and 1081 of the Roadway Specifications. Seed mixture shall be Class 1A Salt Tolerant Lawn Mixture.

2.2 ACCESSORIES

- A. Mulching Material:
 - 1. Furnish materials in accordance with Sections 251 and 1081 of the Roadway Specifications. Mulch shall be applied using Method 2, Procedure 2.
 - 2. Oat or wheat straw, free from weeds, foreign material detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.
- B. Fertilizer:
 - 1. Furnish materials in accordance with Section 250 and 1081 of the Roadway Specifications.
 - 2. Commercial grade; recommended for grass; to the following proportions: 1/3 nitrogen fertilizer nutrients, 1/3 phosphorus fertilizer nutrients; and 1/3 potassium fertilizer nutrients.
- C. Water: Clean, fresh and free of substances or matter capable of inhibiting vigorous growth of grass.
- D. Erosion Fabric:
 - 1. Furnish materials in accordance with Section 251 and 1081 of the Roadway Specifications.
 - 2. Erosion fabric shall be excelsior blanket, or Engineer approved equal.

2.3 SOURCE QUALITY CONTROL

- A. Section 01 4000 – Quality Requirements: Testing, inspection and analysis requirements.
- B. Provide recommendation for fertilizer application rates for specified seed mix as result of testing.
- C. Testing is not required when recent tests and certificates are available for imported topsoil. Submit these test results to testing laboratory. Indicate, by test results, information necessary to determine suitability.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 3000 – Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify prepared soil base is ready to receive Work of this Section.

3.2 FERTILIZING

- A. Apply fertilizer at application rate of 270 lb/acre (90 lb/acre of each fertilizer nutrient).
- B. Apply after smooth raking of topsoil and prior to roller compaction.
- C. Do not apply fertilizer at same time or with same machine used to apply seed.
- D. Mix fertilizer thoroughly into upper 2 inches of topsoil.
- E. Lightly water soil to aid dissipation of fertilizer. Irrigate top level of soil uniformly.

3.3 SEEDING

- A. Apply seed at rates specified in Section 250 of the Roadway Specifications. Place seed evenly in two intersecting directions. Rake in lightly.
- B. Do not seed areas in excess of that which can be mulched on same day.
- C. Planting Season: April through October. Seed shall not be placed between June 15th and August 31st without Engineer's approval.
- D. Do not sow immediately following rain, when ground is too dry, or when winds are over 12 mph.
- E. Roll seeded area with roller not exceeding 112 lb/linear ft.
- F. Immediately following seeding and compacting, apply mulch in accordance with Section 251 of the Roadway Specifications.
- G. Mulch shall be applied using Method 2, Procedure 2.
- H. Apply water with fine spray immediately after each area has been mulched. Saturate to 4 inches of soil.
- I. Maintain clear of shrubs and trees.

3.4 SEED PROTECTION

- A. Cover seeded slopes where grade is 4 to 1 or greater and ditch slopes and bottoms with erosion control blanket. Roll fabric onto slopes without stretching or pulling. Mulch will not be required in areas where erosion control blanket is placed.

- B. Lay fabric smoothly on surface, bury top end of each section in 6 inch deep excavated topsoil trench. Overlap edges and ends of adjacent rolls minimum 12 inches. Backfill trench and rake smooth, level with adjacent soil.
- C. Secure outside edges and overlaps at 36 inch intervals with stakes or staples.
- D. Lightly dress slopes with topsoil to ensure close contact between fabric and soil.
- E. At sides of ditches, lay fabric laps in direction of water flow. Lap ends and edges minimum 6 inches.

3.5 MAINTENANCE

- A. Water to prevent grass and soil from drying out.
- B. Roll surface to remove minor depressions or irregularities.
- C. Control growth of weeds. Apply herbicides. Remedy damage resulting from improper use of herbicides.
- D. Immediately reseed areas showing bare spots.
- E. Repair washouts or gullies.
- F. Protect seeded areas with warning signs during maintenance period.

END OF SECTION

SECTION 33 0513 – MANHOLES AND STRUCTURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Monolithic concrete manholes and structures with transition to cover frame, covers, anchorage, and accessories.
 - 2. Modular precast concrete manhole and structures with tongue-and-groove joints with transition to cover frame, covers, anchorage, and accessories.
 - 3. Bedding and cover materials.

1.2 DESIGN REQUIREMENTS

- A. Equivalent strength: Based on structural design of reinforced concrete as outlined in ACI 318.
- B. Design of Lifting Devices for Precast Components: In accordance with ASTM C913.
- C. Design of Joints for Precast Components: In accordance with ASTM C913; maximum leakage of 0.025 gallons per hour per foot of joint at 3 feet of head.

1.3 SUBMITTALS

- A. Section 01 3300 – Submittal Procedures: Requirements for submittals.
- B. Shop Drawings: Indicate manhole and structure locations, elevations, piping sizes and elevations of penetrations.
- C. Product Data: Submit cover and frame construction, features, configuration, and dimensions.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with the requirements of this Section and Water and Sewer Specifications.
- B. Maintain one copy of each document on site.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 6000 – Product Requirements: Product storage and handling requirements.

- B. Comply with precast concrete manufacturer's instructions for unloading, storing, and moving precast manholes and structures.
- C. Store precast concrete manholes and structures to prevent damage to Owner's property or other public or private property. Repair property damaged from materials storage.
- D. Mark each precast structure by indentation or waterproof paint showing date of manufacture, manufacturer, and identifying symbols and numbers shown on Drawings to indicate its intended use.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 6000 – Product Requirements.
- B. Maintain materials and surrounding air temperature to minimum 50 degrees F prior to, during, and 48 hours after completion of masonry work.
- C. Cold Weather Requirements: ACI 530.

PART 2 PRODUCTS

2.1 MANHOLES AND STRUCTURES

- A. Manhole and Structure Sections: Reinforced precast concrete in accordance with ASTM C478 with gaskets in accordance with ASTM C443.
 - 1. Joints for Precast Manholes and Structures: In accordance with ASTM C913; maximum leakage of 0.025 gallons per hour per foot of joint at three feet of head. Joints shall be tongue-and-groove type.
 - 2. Cone Top Section: Eccentric type.
 - 3. Foundation Slab: Precast concrete poured monolithically with manhole barrel section.
 - 4. Flat Top Slab: Provide as vertical depth requires. Shall have a two foot diameter opening with 2" curb when castings will be set directly on top of the slab.

2.2 FRAMES AND COVERS

- A. Product Description: ASTM A48/A48M, Class 30B; Cast iron construction.
 - 1. Sanitary sewer manhole castings: American-made, heavy duty frame, machined flat bearing surface, and removable lid. Lid shall be a closed lid with pick holes, self-sealing gasket, and lid marked "SANITARY."

2.3 ACCESSORIES

- A. Manhole and Structure Steps: Formed polypropylene rungs; 3/4 inch diameter; 12 inches wide; 16 inches on center vertically. Formed integral with manhole sections.
- B. Sanitary Manhole Chimney Seal: External type; constructed out of EPDM rubber with a minimum thickness of 60 mil; width at required minimum 7 inches; "C" shaped mechanical upper compression band. Shall be "SURSEAL" type as manufactured by Mar Mac Construction

Products, or equal. The use of external type seal with flat slab top shall not be permitted unless the flat slab top has an integrally cast curb around opening of a height of 2 inches minimum.

- C. Sanitary Manhole Joint Seals: Reference paragraph 3.4.E of this Section.
- D. Sanitary Manhole, Pipe to Manhole Connector: In accordance with ASTM C923; flexible, rubber type connectors with stainless steel expansive sleeve and one or more stainless steel clamping bands.
- E. Manhole and Structure Joint Sealants:
 - 1. Preformed Joint Sealants: In accordance with ASTM C990.
 - 2. Elastomeric Joint Sealants: In accordance with ASTM C920.

2.4 BEDDING AND COVER MATERIALS

- A. Bedding: CA-7 coarse aggregate as specified in Section 31 2317 – Trenching.
- B. Aggregate Backfill: Trench backfill, CA-7 coarse aggregate as specified in Section 31 2317 – Trenching, in areas to be paved or within two feet of paved area.
- C. Soil Backfill from Above Pipe Embedment: Excavated subsoil with no rocks over 6 inches in diameter, frozen earth or foreign matter in areas to be seeded. Reference Section 31 0513 – Soils for Earthwork and Section 31 2317 – Trenching.
- D. The Contractor shall strictly follow the manufacturer's backfilling directions and shall use materials in accordance with those directions.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 3000 – Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify items provided by other sections of Work are properly sized and located.
- C. Verify built-in items are in proper location, and ready for roughing into Work.
- D. Verify correct size of manhole and structure excavation.

3.2 PREPARATION

- A. Coordinate placement of inlet and outlet pipe or duct sleeves required by other sections.
- B. Do not install manholes and structures where site conditions induce loads exceeding structural capacity of manholes or structures.

- C. Inspect precast concrete manholes and structures immediately prior to placement in excavation to verify manholes and structures are internally clean and free from damage. Remove and replace damaged units.

3.3 INSTALLATION – GENERAL

- A. Excavation and Backfill:
 - 1. Excavate for manholes and structures in accordance with Section 31 2316 – Excavation in location and to depth shown. Provide clearance around sidewalls of manhole or structure for construction operations and granular backfill.
 - 2. When groundwater is encountered, prevent accumulation of water in excavations in accordance with Section 31 2319 – Dewatering. Place manholes or structures in dry trench.
 - 3. Where possibility exists of watertight manhole or structure becoming buoyant in flooded excavation, anchor manhole or structure to avoid flotation.
- B. Place manhole sections plumb and level, trim to correct elevation.
- C. Install manholes and structures supported at proper grade and alignment on crushed stone bedding and as shown on Drawings.
- D. Backfill excavations for manholes and structures in accordance with Section 31 0516 – Aggregates for Earthwork, Section 31 2317 – Trenching, and the Drawings.
- E. Grout base of shaft sections to achieve slope to exit piping. Trowel smooth. Contour to form continuous drainage channel.

3.4 PRECAST CONCRETE MANHOLE AND STRUCTURE INSTALLATION

- A. Lift precast manholes and structures at lifting points designated by manufacturer.
- B. When lowering manholes and structures into excavations and joining pipe to units, take precautions to ensure interior of pipeline and manhole or structure remains clean.
- C. Set precast manholes and structures bearing firmly and fully on crushed stone bedding.
- D. Assemble multi-section manholes and structures by lowering each section into excavation. Lower, set level, and firmly position base section before placing additional sections.
- E. Joint Sealants: All joints in precast sections shall be sealed by application of Ram-Nek RN 103 joint sealant butyl rope (3/4 inch thickness min.) applied to both the shoulder and ledge to form continuous seal for full perimeter of precast structure. In addition, the Contractor shall apply to each joint a Press Seal Corporation EZ-Wrap 12 inch butyl joint wrap applied in accordance with the manufacturer's recommendations.
- F. Remove foreign materials from joint surfaces and verify sealing materials are placed properly. Maintain alignment between sections by using guide devices affixed to lower section.
- G. Verify manholes and structures installed to satisfy required alignment and grade.

- H. Pipe Connections for Field-Created Opening in Structure: Install grouting ring (A-Lok or Press-Seal Gasket Corporation WS Waterstop or approved equal) and seal with non-shrink concrete grout, as indicated on Drawings.
- I. Cut pipe to finish flush with interior of manhole or structure.
- J. Grout base of shaft sections to achieve slope to exit piping. Trowel smooth. Contour to form continuous drainage channel.

3.5 FIELD QUALITY CONTROL

- A. Section 01 4000 – Quality Requirements and Section 01 7000 – Execution Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Sanitary manholes shall be vacuum tested in accordance with the Water and Sewer Specifications.
- C. In all cases, maintain sewer/water separation in accordance with the Water and Sewer Specifications.

END OF SECTION

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SECTION 33 0523 - HORIZONTAL DIRECTIONAL DRILLING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Excavation for approach trenches and pits.
 2. Horizontal directional drilling.
 3. Pipe.

1.2 DESIGN REQUIREMENTS

- A. Design Criteria:
1. Drilling Steering System: Remote with continuous electronic monitoring of boring depth and location.
 2. Directional Change Capability: 90 degree with 35 foot radius curve.
 3. Ratio of Reaming Diameter to Pipe Outside Diameter:
 - a. Nominal Pipe Diameter of 6 Inches and Smaller: 1.5 maximum.
 - b. Nominal pipe diameter larger than 6 Inches: Submit recommended ratio and reaming procedures for review.

1.3 SUBMITTALS

- A. Section 01 3300 - Submittal Procedures: Requirements for submittals.
- B. Shop Drawings:
1. Submit technical data for equipment, method of installation, and proposed sequence of construction.
 2. Include information pertaining to pits, dewatering, method of spoils removal, equipment size and capacity, equipment capabilities including installing pipe on radius, type of drill bit, drilling fluid, method of monitoring line and grade and detection of surface movement, name plate data for drilling equipment and mobile spoils removal unit.
- C. Product Data:
1. Identify source of water used for drilling.
 2. Submit copy of approvals and permits for use of water source.
- D. Installer Qualifications: Submit history of previous work completed of equivalent nature and scope. Include qualification and experience of key personnel.
- E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.4 CLOSEOUT SUBMITTALS

- A. Section 01 7000 - Execution Requirements: Requirements for submittals.

- B. Project Record Documents: Record actual locations of pipe and invert elevations.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.
- D. Record actual depth of pipe at 25 foot intervals.
- E. Record actual horizontal location of installed pipe.
- F. Show depth and location of abandoned bores.
- G. Record depth and location of drill bits and drill stems not removed from bore.

1.5 QUALITY ASSURANCE

- A. Perform work in accordance with the following:
 - 1. NUCA HDD Installation Guidelines.
 - 2. ASTM F1962.
- B. Perform Work in accordance with these Specifications, the Roadway Specifications, and the Water and Sewer Specifications.

1.6 QUALIFICATIONS

- A. Installer: Company specializing in performing work of this section with minimum 10 years documented experience.
 - 1. Work Experience: Include projects of similar scope and conditions.
 - 2. Furnish list of references upon request.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 6000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Provide temporary end caps and closures on piping and fittings until pipe is installed.
- C. Protect pipe from entry of foreign materials and water by temporary covers, completing sections of work, and isolating parts of completed system.
- D. Accept products on site in manufacturer's original containers or configuration. Inspect for damage.
- E. Use shipping braces between layers of stacked pipe. Stack piping lengths no more than 3 layers high.
- F. Store field joint materials indoors in dry area in original shipping containers. Maintain storage temperature of 60 to 85 degrees F.
- G. Support pipes with nylon slings during handling.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 6000 - Product Requirements: Environmental conditions affecting products on site.
- B. Conduct operations so as not to interfere with, interrupt, damage, destroy, or endanger integrity of surface or subsurface structures or utilities, and landscape in immediate or adjacent areas.

1.9 COORDINATION

- A. Section 01 3000 - Administrative Requirements: Requirements for coordination.
- B. Coordinate work with utilities within construction area.

PART 2 PRODUCTS

2.1 DRILLING FLUID

- A. Drilling Fluid: Liquid bentonite clay slurry; totally inert with no environmental risk.

2.2 PIPE

- A. Reference Section 33 300 – Sanitary Sewer Systems.

2.3 FILL MATERIALS

- A. Subsoil Fill: See Section 33 0513 – Soil For Earthwork.

2.4 WATER SOURCE

- A. Water: Potable, obtained from utility source.

2.5 UNDERGROUND PIPE MARKERS

- A. Trace Wire: Electronic detection materials for non-conductive piping products.
 - 1. Tracer wire for pipe shall be twelve (12) gauge copper, metallurgically bonded to a steel core and covered with a minimum of 45 mil of HDPE. Wire shall be specifically designed for directional drilling applications.
 - 2. Tracer wire for 1" pipe shall be provided integrally with pipe (see Section 2.2.B).

2.6 ACCESSORIES

- A. Granular Backfill for Trench Approaches and Pits to Finish Grade: Trench backfill meeting the requirements of Section 31 2317 – Trenching.
- B. Soil Backfill for Trench Approaches and Pits to Finish Grade: Subsoil with no rocks over 4 inches in diameter, frozen earth or foreign matter.

- C. Casing Spacers and End-Seals:
 - 1. Casing spacers stainless steel, provided at manufacturer's recommended spacing.
 - 2. Casing end-seals shall be neoprene seals with T-304 stainless steel bands.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 3000 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify connection to existing piping system size, location, and invert elevations are in accordance with Drawings.

3.2 PREPARATION

- A. Call J.U.L.I.E. not less than three working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
- B. Locate, identify, and protect utilities indicated to remain from damage.
- C. Identify required lines, levels, contours, and datum locations.
- D. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- E. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.3 DEWATERING

- A. Intercept and divert surface drainage, precipitation, and groundwater away from excavation through use of dikes, curb walls, ditches, pipes, sumps or other means.
- B. Develop and maintain substantially dry subgrade during drilling and pipe installation.
- C. Comply with Storm Water Pollution Prevention Plan for dewatering to any watercourse, prevention of stream degradation, and erosion and sediment control.
- D. Dewatering shall be incidental to the Contract.

3.4 EXISTING WORK

- A. As much as is reasonable, maintain access to existing roadways, facilities, and other remaining active installations requiring access. Modify installation as necessary to maintain access.

3.5 EXCAVATION

- A. Excavate subsoil as specified in Section 31 2316 - Excavation.
- B. Excavate approach trenches and pits in accordance with shop drawings and as site conditions require. Minimize number of access pits.
- C. Provide sump areas to contain drilling fluids.
- D. Install excavation supports as specified in Section 31 2316 - Excavation.
- E. Restore areas after completion of drilling and carrier pipe installation.

3.6 DRILLING

- A. Drill pilot bore with vertical and horizontal alignment as indicated on Drawings.
- B. Guide drill remotely from ground surface to maintain alignment by monitoring signals transmitted from drill bit.
 - 1. Monitor depth, pitch, and position.
 - 2. Adjust drill head orientation to maintain correct alignment.
- C. Inject drilling fluid into bore to stabilize hole, remove cuttings, and lubricate drill bit and pipe.
- D. Continuously monitor drilling fluid pumping rate, pressure, viscosity, and density while drilling pilot bore, back reaming, and installing pipe to ensure adequate removal of soil cuttings and stabilization of bore.
 - 1. Provide relief holes when required to relieve excess pressure.
 - 2. Minimize heaving during pullback.
- E. Calibrate and verify electronic monitor accuracy during first 50 feet of bore in presence of Engineer before proceeding with other drilling. Excavate minimum of four test pits spaced along first 50 feet bore to verify required accuracy. When required accuracy is not met, adjust equipment or provide new equipment capable of meeting required accuracy.
- F. After completing pilot bore, remove drill bit.

3.7 DRILLING OBSTRUCTIONS

- A. When obstructions are encountered during drilling, notify Engineer immediately. Do not proceed around obstruction without Engineer's approval.
- B. For conditions requiring more than 3 feet deviation in horizontal alignment, notify Engineer immediately. Do not proceed without Engineer's approval.
- C. Maintain adjusted bore alignment within easement or right-of-way.

3.8 PIPE INSTALLATION

- A. After completing pilot bore, remove drill bit. Install reamer and pipe pulling head.
 - 1. Select reamer with minimum bore diameter required for pipe installation.
- B. Where included, attach pipe to pipe pulling head for casing pipe. Pull reamer and pipe to entry pit along pilot bore.
- C. Inject drilling fluid through reamer to stabilize bore and lubricate pipe.
- D. Install piping with horizontal and vertical alignment as shown on Drawings.
- E. Protect and support pipe being pulled into bore so pipe moves freely and is not damaged during installation.
- F. Install carrier pipe with casing spacers and end-seals. Casing spacers shall be provided at manufacturer's recommended spacing.
- G. Do not exceed pipe manufacturer's recommended pullback forces.
- H. Install trace wire continuous with each bore. Splice trace wire only at intermediate bore pits. Tape or insulate trace wire to prevent corrosion and maintain integrity of pipe detection.
 - 1. Terminate trace wire for each pipe run at structures along pipe system.
 - 2. Provide extra length of trace wire at each structure, so trace wire can be pulled 3 feet out top of structure for connection to detection equipment.
 - 3. Test trace wire for continuity for each bore before acceptance.
- I. Provide sufficient length of pipe to extend past termination point to allow connection to other pipe sections.
- J. Allow minimum of 24 hours for stabilization after installing pipe before making connections to pipe.
- K. Mark location and depth of bore with spray paint on paved surfaces, and wooden stakes on non-paved surfaces at 25 foot intervals.

3.9 SEWER CROSSING

- A. Maintain 18" vertical and 10' horizontal clearance from all existing water mains and services.

3.10 SLURRY REMOVAL AND DISPOSAL

- A. Contain excess drilling fluids at entry and exit points until recycled or removed from site. Provide recovery system to remove drilling spoils from access pits.
- B. Remove, transport and legally dispose of drilling spoils.

1. Do not discharge drilling spoils in sanitary sewers, storm sewers, or other drainage systems.
 2. When drilling in suspected contaminated soil, test drilling fluid for contamination before disposal.
- C. When drilling fluid leaks to surface, immediately contain leak and barricade area from vehicular and pedestrian travel before resuming drilling operations.
- D. Complete cleanup of drilling fluid at end of each work day.

3.11 BACKFILL

- A. Install backfill in boring pits as specified in Section 31 2323 – Fill.

3.12 ERECTION TOLERANCES

- A. Section 01 4000 - Quality Requirements: Tolerances.
- B. Maximum Variation From Horizontal Position: 12 inches.
- C. Maximum Variation From Vertical Elevation: 1 inch.
- D. Minimum Horizontal and Vertical Clearance From Other Utilities: 12 inches.
- E. When pipe installation deviates beyond specified tolerances, abandon bore, remove installed pipe, re-bore, and reinstall pipe in correct alignment.
- F. Fill abandoned bores greater than 3 inches in diameter with grout or flowable fill material.

3.13 FIELD QUALITY CONTROL

- A. Section 01 4000 - Quality Requirements and Section 01 7000 - Execution Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Upon completion of pipe installation, test pipe in accordance with the Water and Sewer Specifications.
- C. Compaction Testing: As specified in Section 31 2323 - Fill.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

3.14 MANUFACTURER'S FIELD SERVICES

- A. Section 01 4000 - Quality Requirements: Requirements for manufacturer's field services.
- B. Certify that equipment for drilling has been properly set-up and is ready for drilling.

3.15 CLEANING

- A. Upon completion of drilling and pipe installation, remove drilling spoils, debris, and unacceptable material from approach trenches and pits. Clean up excess slurry from ground.
- B. Restore approach trenches and pits to original condition.
- C. Remove temporary facilities for drilling operations in accordance with Section 01 5000 - Temporary Facilities and Controls.

END OF SECTION

SECTION 33 3100 – SANITARY SEWER SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

- A. Sanitary sewer pipe and fittings for open-cut gravity and force main.
- B. Underground pipe markers.
- C. Bedding and cover materials.

1.2 SUBMITTALS

- A. Section 01 3330 – Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit catalog cuts and other pertinent data indicating proposed materials, accessories, details, and construction information.
- C. Submit reports indicating field tests made and results obtained.
- D. Manufacturer's Installation Instructions:
 - 1. Indicate special procedures required to install product specified.
 - 2. Submit detailed description of procedures for connecting new sewer to existing sewer line and directional drilling and/or pipe jacking installation.
- E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.3 CLOSEOUT SUBMITTALS

- A. Section 01 7000 – Execution Requirements: Requirements for submittals.
- B. Project Record Documents: Record location of pipe runs, connections, manholes, cleanouts, and invert elevations.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with the Roadway Specifications.
- B. Perform Work in accordance with the Water and Sewer Specifications.

1.5 PRE-INSTALLATION MEETINGS

- A. Section 01 3000 – Administrative Requirements: Pre-installation meeting.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 6000 – Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Block individual and stockpiled pipe lengths to prevent moving.

1.7 COORDINATION

- A. Section 01 3000 – Administrative Requirements: Requirements for coordination.
- B. Coordinate the Work with authorities having jurisdiction.
- C. Notify affected utility companies per utility company requirements.

PART 2 PRODUCTS

2.1 SANITARY SEWER PIPE AND FITTINGS

- A. Open Cut Sewers:
 - 1. Sanitary Sewer Pipe and Fittings 4” to 16”:
 - a. Plastic Pipe: ASTM D3034, Type PSM, Poly Vinyl Chloride (PVC) material; SDR-26; bell and spigot rubber ring sealed gasket joint.
 - 1) Fittings: PVC; SDR 26. Insertion type tees are not allowed on smaller pipe unless approved by the Engineer in writing prior to installation.
 - 2) Gasket: ASTM F477.
 - b. Bell Joint: ASTM D3212.
- B. Force Main Open Cut
 - 1. Polyvinyl Chloride (PVC) I.P.S. Pressure Sewer Pipe: ASTM D2241, PVC 1120 (12454-B) or PVC 1220 (12454-C) or PVC 2120 (14333-D), DR-18.
 - a. Joints: ASTM D3139 and ASTM F477 PVC flexible elastomeric seals. Solvent-cement couplings are not permitted.
 - b. Fittings: 4” and larger ductile iron: AWWA C110 and AWWA C111. Ductile iron, compact fittings, AWWA C153.
 - 1) All fittings shall be mechanical joint unless otherwise noted on the Drawings.
 - 2) All fittings shall be cement mortar lined and asphalt coated per AWWA C104.
 - 3) Mega-Lug type fully restrained glands shall be provided for each fitting and shall be incidental to the fittings.
 - c. The pipe shall be labeled with the words “Forced Sewer.” May also substitute green detectable marking tape for pipe label requirement.
- C. Force Main, Directionally-Drilled:
 - 1. Polyvinyl Chloride (PVC) restrained joint, SDR-17, pressure pipe, ASTM D1784/ASTM D2241.
 - a. Joints: All restrained joints shall be comprised of precision-machined grooves on the pipe and in the coupling, which also allows a spline to be inserted resulting in a fully circumferential restrained joint which locks the piping coupling together. O-rings shall

be rated for permanent use. Lubricants shall be as recommended by the pipe manufacturer.

- b. All pipes shall provide a minimum tensile strength at yield of 3600 psi.

D. Gravity Sewer, Directionally-Drilled:

- 1. Polyvinyl Chloride PVC restrained joint, SDR-26, pressure pipe, ASTM D1784/ASTM D2241

- a. Joints: All restrained joints shall be comprised of precision-machined grooves on the pipe and in the coupling, which also allows a spline to be inserted resulting in a fully circumferential restrained joint which locks the piping coupling together. O-rings shall be rated for permanent use. Lubricants shall be as recommended by the pipe manufacturer.
- b. All pipes shall provide a minimum tensile strength at yield of 3600 psi.

2.2 UNDERGROUND PIPE MARKERS

- A. Plastic Ribbon Tape: Bright colored, continuously printed "CAUTION BURIED FORCE MAIN BELOW," minimum 3 inches wide by 4 mil thick, manufactured for direct burial service.
- B. Trace Wire: #12 AWG solid steel core with copper metallurgically bonded to it, as manufactured by Copperhead Industries or approved equal. Provide manufacturer-approved splice connectors where required.
- C. Tracer Wire Access Box: Shall be cast iron with ABS tube permanently attached. Tamper resistant cast iron lid, green in color, rated for roadway use, with terminal connectors on bottom for the purpose of attaching tracer wire as manufactured by Copperhead Industries, or approved equal. Install a fiberglass marking post next to the access box. Marking post color shall be green with warning label attached. Warning label shall be marked with as a minimum "WARNING SEWER PIPELINE." Tracer wire access box shall be installed every 1,000 feet.

2.3 BEDDING AND COVER MATERIALS

- A. Bedding and Haunching:
 - 1. Open cut sewers only.
 - 2. Fill Type as specified in Section 31 2317 – Trenching.
- B. Initial Backfill:
 - 1. Open cut sewers only.
 - 2. Fill Type as specified in Section 31 2317 – Trenching.
- C. Final Backfill:
 - 1. Soil Backfill: As specified in Section 31 0513 – Soils for Earthwork.
 - 2. Trench Backfill: As specified in Section 31 2317 – Trenching.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 3000 – Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify trench cut and excavation base is ready to receive work and excavations, dimensions, and elevations are as indicated on the Drawings.

3.2 PREPARATION

- A. Correct over excavation with coarse aggregate.
- B. Remove large stones or other hard matter capable of damaging pipe or impeding consistent backfilling or compaction.
- C. Protect and support existing sewer lines, utilities and appurtenances.
- D. Maintain profiles of utilities. Coordinate with other utilities to eliminate interference. Notify the Engineer where crossing conflicts occur.

3.3 BEDDING

- A. Excavate pipe trench in accordance with Section 31 2316 – Aggregates for Earthwork.
- B. Excavate to lines and grades shown on the Drawings or required to accommodate installation of encasement.
- C. Dewater excavations to maintain dry conditions and preserve final grades at bottom of excavation.
- D. Provide sheeting and shoring in accordance with Section 31 2317 – Trenching.
- E. Place bedding material at trench bottom, level materials in continuous layer.

3.4 INSTALLATION – PIPE

- A. Open Cut:
 - 1. Install pipe, fittings, and accessories in accordance with ASTM D2321.
 - 2. Lay pipe to slope gradients noted on the Drawings. Begin at downstream end and progress upstream.
 - 3. Assemble and handle pipe in accordance with manufacturer's instructions except as modified on the Drawings or by the Engineer.
 - 4. Keep pipe and fittings clean until work is completed and accepted by the Engineer and Owner. Cap open ends during periods of work stoppage.
 - 5. Lay bell and spigot pipe with bells upstream.
 - 6. Install plastic ribbon continuous over top of pipe buried two foot above pipe line; coordinate with Section 31 2317 – Trenching.

7. Provide bypass pumping of sanitary sewage around work areas as required.
8. This operation shall be considered incidental to the project.

3.5 BACKFILLING

- A. Backfill around sides and to top of pipe in accordance with 31 2317 – Trenching.
- B. Maintain optimum moisture content of bedding material to attain required compaction density.

3.6 INSTALLATION – THRUST RESTRAINT

- A. Provide valves, tees, bends, caps, and plugs with concrete thrust blocks. Pour concrete thrust blocks against undisturbed earth. Locate thrust blocks at each elbow or change of pipe direction to resist resultant force and so pipe and fitting joints will be accessible for repair. Provide 2 sq ft thrust restraint bearing on subsoil.

3.7 FIELD QUALITY CONTROL

- A. Section 01 4000 – Quality Requirements and Section 01 7000 – Execution Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Perform low pressure air testing and deflection testing on the entire length of gravity sanitary sewers in accordance with the Water and Sewer Specifications. Minimum test pressure shall be 8 psi.
- C. Compaction Testing: In accordance with ASTM D1157, ASTM D698, AASHTO T180, ASTM D2922, and ASTM 3017.
- D. When tests indicate Work does not meet specified requirements, remove work, replace and retest.
- E. In all cases, maintain sewer/water separation in accordance with Water and Sewer Specifications.
- F. Force main shall be pressure tested as required for water main. The Contractor shall provide all required fittings, valves, connections, and equipment to perform pressure test.

3.8 PROTECTION OF FINISHED WORK

- A. Section 01 7000 – Execution Requirements: Requirements for protecting finished Work.
- B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

END OF SECTION

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SECTION 40 0523 – VALVES AND ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

- A. Work included: Provide valves where shown on the Drawings, as specified herein, and as needed for a complete and proper installation including, but not necessarily limited to:
1. All process related valves, operators and appurtenances.

1.2 QUALITY ASSURANCE

- A. Codes and regulations:
1. In addition to complying with the specified requirements, comply with pertinent regulations of:
 - a. Local Building Code.
 - b. Illinois Department of Public Health Plumbing Code.
 - c. Water & Sewer Main Specifications.
 2. In the event of conflict between or among specified requirements and pertinent regulations, the more stringent will govern when so directed by the Engineer.

1.3 SUBMITTALS

- A. Section 01 3300 – Submittal Procedures: Requirements for submittals.
- B. Product Data: Within 30 calendar days after the Contractor has received the Owner's "Notice to Proceed," submit:
1. Materials list of items proposed to be provided under this Section.
 2. Manufacturer's specifications, catalog cuts, and other data needed to prove compliance with the specified requirements.
 3. Shop drawings and other data as required to indicate method of installing and attaching equipment, except where such details are fully shown on the Drawings.

PART 2 – PRODUCTS

2.1 VALVES AND ACCESSORIES

- A. Check Valves – Wastewater:
1. Check valves for sewage service shall be Val-Matic swing flex, flanged, Victaulic Series 317 Grooved Check Valves with rubber seat, or approved equal. All grooved end valves shall meet AWWA C-509 laying length requirements and be from one manufacturer.
- B. Plug Valves – Wastewater and Sludge:
1. Valves shall be Val-Matic Cam-Central eccentric plug valves, Victaulic Series 365 Grooved Plug Valves or approved equal. All grooved end valves shall meet AWWA C-509 laying length requirements and be from one manufacturer.

2. Valves 2" and smaller shall be lever actuated, quarter turn.
3. Valves 8'-0" above finished floor shall be gear actuated with 8" chain wheel. Final length of chain shall be determined after installation of valve.
4. Valves below 8'-0" above finished floor, shall be gear actuated with 8" handwheel.
5. Valves located within aeration tanks and digestion tanks shall be gear actuated with floor stand and handwheel as indicated on the Drawings. The gear actuator shall be capable of operating on a 100% liquid submersed environment.
6. Valves to be buried shall be gear actuated for buried service with operating nut. The Contractor shall be responsible for providing two properly sized operating tee handles.
7. Buried valves shall have a cast iron valve box having a minimum 5-1/4" dia., and lid. The lid shall not be labeled.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install valves according to AWWA C517 and as recommended by manufacturer.
- B. Install plug valves in horizontal piping with stem horizontal; install plug valves in vertical piping with plug at top when closed.
- C. Install such that plugs are on top when OPEN and on pressure side when CLOSED.

3.2 TESTING AND ADJUSTING

- A. Provide personnel and equipment, and arrange for and pay the costs of, all required tests and inspections required.
- B. Where tests show materials or workmanship to be deficient, replace or repair as necessary, and repeat the tests until the specified standards are achieved.
- C. Adjust the system to optimum standard of operation.

END OF SECTION

SECTION 40 0559 – STAINLESS STEEL SLIDE GATES

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment and incidentals required to install, ready for operation and field test stainless steel gates and appurtenances as shown on the Contract Drawings and as specified herein.
- B. The gates and appurtenances shall be supplied in accordance with the latest edition of AWWA C561 Standard for Fabricated Stainless Steel Slide Gates as modified herein. The allowable leakage rate for the stainless steel gates in this specification shall be 1/2 the allowable leakage listed in the latest revision of AWWA C561.

1.2 SUBMITTALS

- A. Provide the following information to confirm compliance with the specification in addition to the submittal requirements specified in Section 01 3300.
 - 1. Complete description of all materials including the material thickness of all structural components of the frame and slide.
 - 2. Installation drawings showing all details of construction, details required for installation, dimensions and anchor bolt locations.
 - 3. Maximum bending stress and deflection of the slide under the maximum design head.
 - 4. The location of the company headquarters and the location of the principle manufacturing facility. Provide the name of the company that manufactures the equipment if the supplier utilizes an outside source.

1.3 QUALITY ASSURANCE

- A. Qualifications
 - 1. All of the equipment specified under this Section shall be furnished by a single manufacturer with a minimum of 20 years experience designing and manufacturing water control gates. The manufacturer shall have manufactured water control gates for a minimum of 100 projects.

PART 2 EQUIPMENT

2.1 GENERAL

- A. Gates shall be as specified herein and have the characteristics and dimensions shown on the Contract Drawings.
- B. Leakage shall not exceed 0.05 gpm/ft of wetted seal perimeter in seating head and unseating head conditions.

- C. The gate shall utilize self-adjusting seals. Due to the difficulty of accessing gates when they are in service, gates that utilize adjustable wedges, wedging devices or pressure pads are not acceptable.
- D. All structural components of the frame and slide shall be fabricated of stainless steel having a minimum thickness of 1/4-inch and shall have adequate strength to prevent distortion during normal handling, during installation and while in service.
- E. Slide gate frames shall be shipped fully assembled with the invert member welded to the side frames and the slide installed in the frame unless the overall width of the slide gate exceeds 96 inches or the overall height of the slide gate exceed 25 feet.
- F. All welds shall be performed by welders with AWS D1.6 certification.
- G. Finish: Mill finish on stainless steel. Welds shall be sandblasted to remove weld burn and scale. All iron and steel components shall be properly prepared and shop coated with a primer.

H. Materials:

Components

Frame Assembly and Retainers
Slide and Stiffeners
Stem
Anchor Studs, Fasteners and Nuts
Invert Seal (Upward Opening Gates Only)
Seat/Seals and Facing

Lift Nuts
Pedestals and Wall Brackets
Operator Housing

Materials

Stainless Steel, Type 304L, ASTM A240
Stainless Steel, Type 304L, ASTM A240
Stainless Steel, Type 304, ASTM A276
Stainless Steel, Type 316, ASTM A276
Neoprene ASTM D-2000 or EPDM
Ultra-High Molecular Weight Polyethylene
ASTM D4020
Bronze ASTM B584
Stainless Steel, Type 304L, ASTM A240
Cast aluminum or ductile iron

2.2 FRAME

- A. The frame assembly, including the guide members, invert member and yoke members, shall be constructed of formed stainless steel plate with a minimum thickness of 1/4-inch.
 - 1. Frame design shall allow for embedded mounting, mounting directly to a wall with stainless steel anchor bolts and grout or mounting to a wall thimble with stainless steel mounting studs and a mastic gasket material. Mounting style shall be as shown on the Contract Drawings.
 - 2. All wall mounted or wall thimble mounted gates shall have a flange frame. Flat frame gates are not acceptable.
 - 3. The structural portion of the frame that incorporates the seat/seals shall be formed into a one-piece shape for rigidity. Guide members that consist of two or more bolted structural members are not acceptable. Guide member designs where water loads are transferred through the assembly bolts are specifically not acceptable.
 - 4. Gussets shall be provided as necessary to support the guide members in an unseating head condition. The gussets shall extend to support the outer portion of the guide assembly and shall be positioned to ensure that the load is transferred to the anchor bolts or the wall thimble studs.

5. The frame shall extend to accommodate the entire height of the slide when the slide is in the fully opened position on upward opening gates or downward opening weir gates.
6. On self-contained gates, a yoke shall be provided across the top of the frame. The yoke shall be formed by two structural members affixed to the top of the side frame members to provide a one-piece rigid assembly. The yoke shall be designed to allow removal of the slide.
7. A rigid stainless steel invert member shall be provided across the bottom of the opening. The invert member shall be of the flush bottom type on upward opening gates.
8. A rigid stainless steel top seal member shall be provided across the top of the opening on gates designed to cover submerged openings.
9. A rigid stainless steel member shall be provided across the invert of the opening on downward opening weir gates.

2.3 SLIDE

- A. The slide and reinforcing stiffeners shall be constructed of stainless steel plate. All structural components shall have a minimum thickness of 1/4-inch.
 1. The slide shall not deflect more than 1/360 of the span or 1/16 inch, whichever is smaller, under the maximum design head.
 2. When the width of the gate opening multiplied by the maximum design head is greater than 120 square feet, the portion of the slide that engages the guide members shall be of a "thick edge" design. The thick edge portion of the slide shall have a minimum thickness of 3 inches.
 3. Reinforcing stiffeners shall be welded to the slide and mounted horizontally. Vertical stiffeners shall be welded on the outside of the horizontal stiffeners for additional reinforcement.
 4. The stem connector shall be constructed of two angles or plates. The stem connector shall be welded to the slide. A minimum of two bolts shall connect the stem to the stem connector.

2.4 SEALS

- A. All gates shall be provided with a self-adjusting seal system to restrict leakage in accordance with the requirements listed in this specification.
 1. The seat/seals shall extend to accommodate the 1-1/2 x the height of the slide when the slide is in the fully closed or fully opened position.
 2. All upward opening gates shall be provided with a resilient seal to seal the bottom portion of the gate. The seal shall be attached to the invert member or the bottom of the slide and it shall be held in place with stainless steel attachment hardware.
 3. All downward opening weir gates shall be provided with UHMW polyethylene seat/seals across the invert member.
 4. The seal system shall be durable and shall be designed to accommodate high velocities and frequent cycling without loosening or suffering damage.
 5. All seals must be bolted or otherwise mechanically fastened to the frame or slide. Arrangement with seals that are force fit or held in place with adhesives are unacceptable.
 6. The seals shall be mounted so as not to obstruct the water way opening.
 7. Gates that utilize rubber "J" seals or "P" seals are not acceptable.
 8. The seal system shall have been factory tested to confirm negligible wear (less than 0.01") and proper sealing. The factory testing shall consist of an accelerated wear test comprised of

a minimum of 25,000 open-close cycles using a well-agitated sand/water mixture to simulate fluidized grit.

2.5 STEM

- A. A threaded operating stem shall be utilized to connect the operating mechanism to the slide. On rising stem gates, the threaded portion shall engage the operating nut in the manual operator or motor actuator. On non-rising stem gates, the threaded portion shall engage the nut on the slide.
1. The threaded portion of the stem shall have a minimum outside diameter of 1 1/2 inches. Stem extension pipes are not acceptable.
 2. The stem shall be constructed of solid stainless steel bar for the entire length, the metal having a tensile strength of not less than 75,000 psi.
 3. The stem shall be threaded to allow full travel of the slide unless the travel distance is otherwise shown on the Contract Drawings.
 4. Maximum L/R ratio for the unsupported part of the stem shall not exceed 200.
 5. In compression, the stem shall be designed for a critical buckling load caused by a 40 lb effort on the crank or handwheel with a safety factor of 2, using the Euler column formula.
 6. The stem shall be designed to withstand the tension load caused by the application of a 40 lb effort on the crank or handwheel without exceeding 1/5 of the ultimate tensile strength of the stem material.
 7. The threaded portion of the stem shall have machine rolled threads of the full Acme type with a 16 microinch finish or better. Stub threads are not acceptable.
 8. Stems of more than one section shall be joined by stainless steel or bronze couplings. The coupling shall be bolted to the stems.
 9. Stems, on manually operated gates, shall be provided with adjustable stop collars to prevent over closing of the slide.

2.6 STEM GUIDES

- A. Stem guide shall be provided when necessary to ensure that the maximum L/R ratio for the unsupported part of the stem is 200 or less.
1. Guide brackets shall be fabricated of stainless steel and shall be outfitted with UHMW or bronze bushings.
 2. Adjustable in two directions.

2.7 WALL THIMBLES

- A. Wall thimbles shall be provided when shown on the Contract Drawings.
1. The wall thimble depth shall be equal to the thickness of the concrete wall in which the thimble is to be mounted.
 2. Wall thimbles shall be fabricated stainless steel construction of adequate section to withstand all operational and reasonable installation stresses.
 3. Wall thimbles shall be constructed of 1/4-inch minimum thickness stainless steel and the front face shall have a minimum thickness of 1/4-inch.
 4. The fabrication process shall ensure that the wall thimble is square and plumb and the front face is sufficiently flat to provide a proper mounting surface for the gate frame.
 5. The face of the wall thimble shall only be machined if recommended by the gate manufacturer. If the wall thimble is to be machined, the front face shall have a minimum thickness of 1/4-inch after machining.

6. A water stop shall be welded around the periphery of the thimble. Wall thimbles shall be designed to allow thorough and uniform concrete placement during installation.
7. Studs and nuts shall be stainless steel. Water stop may be stitch welded.
8. A suitable gasket or mastic shall be provided to seal between the gate frame and the wall thimble.

2.8 MANUAL OPERATORS

- A. Unless otherwise shown on the Drawings, gates shall be operated by a manual handwheel or a manual crank-operated gearbox. The operator shall be mounted on the yoke of self contained gates or on the pedestal of non-self contained gates.
 1. The gate manufacturer shall select the proper gear ratio to ensure that the gate can be operated with no more than a 40 lb. effort when the gate is in the closed position and experiencing the maximum operating head.
 2. An arrow with the word "OPEN" shall be permanently attached or cast onto the operator to indicate the direction or rotation to open the gate.
 3. Handwheel operators shall be fully enclosed and shall have a cast aluminum housing
 - a. Handwheel operators shall be provided with a threaded cast bronze lift nut to engage the operating stem.
 - b. Handwheel operators shall be equipped with roller bearings above and below the operating nut.
 - c. Positive mechanical seals shall be provided above and below the operating nut to exclude moisture and dirt and prevent leakage of lubricant out of the hoist.
 - d. The handwheel shall be removable and shall have a minimum diameter of 15 inches.
 4. Crank-operated gearboxes shall be fully enclosed and shall have a cast aluminum or ductile iron housing.
 - a. Gearboxes shall have either single or double gear reduction depending upon the lifting capacity required.
 - b. Gearboxes shall be provided with a threaded cast bronze lift nut to engage the operating stem.
 - c. Bearings shall be provided above and below the flange on the operating nut to support both opening and closing thrusts.
 - d. Gears shall be steel with machined cut teeth designed for smooth operation.
 - e. The pinion shaft shall be stainless steel and shall be supported on ball or tapered roller bearings.
 - f. Positive mechanical seals shall be provided on the operating nut and the pinion shafts to exclude moisture and dirt and prevent leakage of lubricant out of the hoist.
 - g. The crank shall be cast aluminum or cast iron with a revolving nylon grip.
 - h. The crank shall be removable.
 5. All gates having widths in excess of 72 inches and widths greater than twice their height shall be provided with two gearboxes connected by an interconnecting shaft for simultaneous operation.
 - a. Interconnecting shafting shall be constructed of aluminum or stainless steel.
 - b. Flexible couplings shall be provided at each end of the interconnecting shaft. Couplings shall be stainless steel or non-metallic.
 - c. One crank shall be provided to mount on the pinion shaft of one of the gearboxes.
 6. An extended operator system utilizing chain and sprockets shall be furnished by the manufacturer when the centerline of the crank or handwheel, on a non-gearred operator, is located over 48 in above the operating floor. Chain wheels are not acceptable.

- a. A removable stainless steel or aluminum cover shall be provided to enclose chain and sprockets.
 - b. The extended operator system shall lower the centerline of the pinion shaft to 36 in above the operating floor.
 - c. A handwheel may be utilized in conjunction with a gearbox in lieu of the extended operator system if the centerline of the pinion shaft is 60-in or less above the operating floor.
7. Pedestals shall be constructed of stainless steel. Aluminum pedestals are not acceptable.
- a. The pedestal height shall be such that the handwheel or pinion shaft on the crank-operated gearbox is located approximately 36 in above the operating floor.
 - b. Wall brackets shall be used to support floor stands where shown on the Drawings and shall be constructed of stainless steel.
 - c. Wall brackets shall be reinforced to withstand in compression at least two times the rated output of the operator with a 40 lb. effort on the crank or handwheel.
 - d. The design and detail of the brackets and anchor bolts shall be provided by the gate manufacturer and shall be approved by the Engineer. The gate manufacturer shall supply the bracket, anchor bolts and accessories as part of the gate assembly.
8. Operators shall be equipped with fracture resistant clear butyrate or lexan plastic stem covers.
- a. The top of the stem cover shall be closed.
 - b. The bottom end of the stem cover shall be mounted in a housing or adapter for easy field mounting.
 - c. Stem covers shall be complete with indicator markings to indicate gate position.
9. When shown on the Contract Drawings, provide 2 inch square nut, mounted in a floor box, with a non rising stem.
- a. The square nut shall be constructed of bronze.
 - b. The floor box shall be constructed of stainless steel or cast iron and shall be set in the concrete floor above the gate as shown.
 - c. Provide one aluminum or stainless steel T-handle wrench for operation.

2.9 ANCHOR BOLTS

- A. Anchor bolts shall be provided by the gate manufacturer for mounting the gates and appurtenances.
1. Quantity and location shall be determined by the gate manufacturer.
 2. If epoxy type anchor bolts are provided, the gate manufacturer shall provide the studs and nuts.
 3. Anchor bolts shall have a minimum diameter of 1/2-inch.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Installation of the gates and appurtenances shall be done in a workmanlike manner. It shall be the responsibility of the Contractor to handle, store and install the equipment specified in this Section in strict accordance with the manufacturer's recommendations.

- B. The Contractor shall review the installation drawings and installation instruction prior to installing the gates.
- C. The gate assemblies shall be installed in a true vertical plane, square and plumb.
- D. The Contractor shall fill the void in between the gate frame and the wall with non-shrink grout as shown on the installation drawing and in accordance with the manufacturer's recommendations.
- E. The Contractor shall add a mastic gasket between the gate frame and wall thimble (when applicable) in accordance with the manufacturer's recommendations.

3.2 FIELD TESTING

- A. After installation, all gates shall be field tested in the presence of the Engineer and Owner to ensure that all items of equipment are in full compliance with this Section. Each gate shall be cycled to confirm that they operate without binding, scraping, or distorting. The effort to open and close manual operators shall be measured and shall not exceed the maximum operating effort specified above. Each gate shall be water tested by the Contractor, at the discretion of the Engineer and Owner, to confirm that leakage does not exceed the specified allowable leakage.

END OF SECTION

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SECTION 40 9513 – PUMP STATION CONTROL PANEL

PART 1 GENERAL

1.1 SUMMARY

- A. Work under this section includes furnishing and installation of controls and associated appurtenances for the lift station.

1.2 RELATED WORK

- A. Note Used

1.3 REFERENCES

- A. Use latest revision of all references
- B. National Electric Code

1.4 SUBMITTALS

- A. Electrical control systems.
- B. Electrical diagrams showing integration of all electrical and control components.
- C. Outline dimensions and general arrangement drawings of each enclosure and panel board.
- D. Pump control floats and mounting hardware.
- E. Circuit Breakers and Starters

1.5 SPECIAL SUBMITTAL REQUIREMENT

- A. Submit all electrical system submittals within four weeks after award for approval by the project engineer. Submittals shall include the following information as a minimum:
 - 1. Electrical schematics
 - 2. Enclosure dimensional drawings
 - 3. Complete layout drawing with dimensions.
 - 4. Manufacturer data sheet for all components
 - 5. Complete bill of material
 - 6. 1 year warranty certificate

PART 2 PRODUCTS

2.1 Control Product Supplier

- A. The panel supplier shall provide the pumps and controls as an entire system for complete responsibility.

2.2 WIRING

- A. Conform to the National Electrical Code, State, local, and NEMA Electrical Standards.
- B. Provide properly sized solid copper wire with minimum 600V insulation.
- C. Color code control wiring.

2.3 WIRING CONDUIT

- A. Provide properly sized conduit for all wiring.

2.4 CONTROL SYSTEM

- A. Provide standard products, UL labeled, automatic control equipment with proven field performance.
- B. The control panel shall be manufactured by an UL certified panel facility and shall meet all UL508A standards (Industrial control equipment). The panel shall be provided with a serialized UL508 label.
- C. Provide all new components, factory assembled, wired, tested, and covered by complete electrical drawings and instructions in order to assure proper system interconnections, reliability, and long-term operation.
- D. All materials to be furnished shall be the standard products of a manufacturer regularly engaged in the production of such equipment and shall be the manufacturer's latest standard design.
- E. Wiring within panels and boxes shall be installed neatly without the use of excessive amounts of wire.
- F. Where circuits and terminals are provided for connection of wires by others, space and a clear path within the panel or box shall be provided by the control manufacturer to allow the installation of these wires without disturbance of the control wiring.
- G. Adequately ground the electrical system.

2.5 CONTROL PANEL ENCLOSURE AND COMPONENTS

- A. Enclosure
 - 1. Lockable NEMA 4X 304 stainless steel tamper resistant U.L. approved enclosure with a dead front on piano hinges and three point latching system and include an interior panel light.
 - 2. The inside swing door shall be on a separate hinge system.
 - 3. The exterior door shall have an engraved nameplate of the lift station.
- B. Power Terminal Block: Locate at the bottom of the enclosure to facilitate bottom conduit entry and to insure sound electrical integrity of the incoming power connections.

- C. Circuit Breakers: Supply a thermal magnetic molded case circuit breaker to provide short circuit protection for each separate circuit as follows.
1. Circuit #1 – pump #1
 2. Circuit #2 – pump #2
 3. Circuit #3 – controls
 4. Circuit #4 – receptacle
 5. Circuit #5 – ½ HP Sump pump
 6. Circuit #6 – Generator Heater (15 Amp)
 7. Circuit #7 – Generator Charger (15 Amp)
 8. Circuit #8 – Site light
- D. Control Transformer - A control power transformer with primary fusing shall be provided required to provide 120 volts service.
- E. GFI Receptacle: Provide a 120VAC, 20 amp, duplex GFI receptacle mounted in the enclosure inner door for operator convenience.
- F. Control Transformer - A control power transformer with primary fusing shall be provided required to provide 120 volts service.
- G. Pump Contactors: NEMA rated magnetic motor starters with manually resettable overload heaters to match the existing pump motors listed below:
1. Lift Station -
Number of submersible pumps: 2
Motor size: 10 hp
FLA: 26 A
Voltage: 240/3/60
- H. Controller: The Lift Station Pump Controller shall be off-the-shelf, preprogrammed, and dedicated to the application, microprocessor-based controller capable of monitoring process variable inputs and automatically control one to three pumps. Systems using a one of a kind, non-standardized, custom programming generic controllers represent additional complexity and unproven operation and thus are not in conformance to the intent of these specifications and will not be acceptable.
- I. Pump Controls: Provide a Hand-Off-Auto (H-O-A switch), 3 position, heavy duty type selector switch.
- J. Pump Running Light: Provide door mounted, replaceable bulb, push to test, green pilot lights for each pump. The light shall be operated from a respective starter auxiliary contact to indicate a “pump running” condition.
- K. Pump Seal Failure & Over Temp: Provide inner door mounted, Relay. The light shall be wired to indicate a “seal pump failure” or “over temp” condition.
- L. Running Time Meter: Provide three 120 VAC meters measuring hours and tenths of hours of operation up to 99999.9 hours. This project includes construction of a new sanitary relief sewer, excess flow pumping station, new force main, excess flow storage lagoon, and drain back sewer to the existing Waste Water Treatment Plant. This includes, but is not limited to:

1. Use one meter for each pump and a meter that will be energized whenever both pumps run at the same time.
 2. Meter shall operate from the control voltage by an auxiliary contact on the motor starter.
- M. Submersible Level Sensor: A loop powered submersible level transmitter shall be provided to sense the tank 1 water level. The level transducer shall sense level by measuring the hydrostatic head pressure associated with water levels above the base of the diaphragm. A linear and proportional, to hydrostatic head pressure, 4-20 mA signal shall be produced and input to the main controller. The transducer shall be installed in accordance with manufacturer's instructions.
- N. Backup Float Controller: The controller shall be multi-function pump controller designed to operate two pumps. The unit can be configured to operate as a backup controller or a duplex controller. The controller shall operate using 1-4 float switches.
- O. Backup Float Switches: Mechanical control float switches shall be supplied with the control panel.
1. The float switches shall come with a quick release float switch connection system designed to be installed directly in a wet well. A 4-port manifold shall connect 1-4 float switches for level control.
- P. Anti-Condensation Heater: A compartment heater shall be supplied and mounted at the bottom portion of the Control panel. The heater shall be positioned away from heat sensitive components directly above the heater. Construction should be vulcanized fiberglass-reinforced silicone rubber encapsulating a nickel alloy heating element with an integrated thermostat.
- Q. Alarm: Provide enclosure top mounted weatherproof alarm light with a red Lexan lens. Alarm light shall be activated during any alarm event (water level, seal failure, etc.) and have a push to test button.
- R. Wiring Diagram: Provide an as-built wiring diagram laminated in plastic and a pouch on the interior of the panel door for storage.

PART 3 EXECUTION

3.1 FLOAT INSTALLATION

- A. Install float switches in the wet well per manufacturer's instructions.

3.2 ENCLOSURE INSTALLATION

- A. Provide all mounting, hardware and fixtures necessary to mount control panel as shown on the plans.

3.3 WIRING INSTALLATION

- A. Wire in accordance with the NEC.
- B. Place all wiring, including the wiring between the lift station and control panel, in conduit.

- C. Install float wires and pump wires in separate conduits.
- D. No splices or junction boxes shall be allowed in the wet well.
- E. Seal all conduits from the lift station to the junction box to prevent gases from entering the control panel.
- F. Connect all newly installed components into existing panel and insure that all switches, lights, and meters function properly.

3.4 START-UP/FIELD TESTING

- A. Provide the services of a factory trained, qualified representative to inspect the completed installation, make adjustments necessary to place the system in trouble-free operation and instruct the operating personnel in the proper maintenance and operation of the equipment.
- B. Perform start-up testing under field conditions.
- C. Perform an operational test under field conditions during the project final inspection.
 - 1. Verify float system operation for pump #1, pump #2, and pump #1 and pump #2 in combination.
 - 2. Verify operation of pilot lights and alarm light.
 - 3. Verify pump alternation.
 - 4. Verify operation of HOA switches.
 - 5. Verify operation of selector switch.
 - 6. Verify operation of hour meters.
 - 7. Verify operation of emergency generator receptacle.
 - 8. Verify operation of GFI receptacle.
 - 9. Check setting of overload heaters on each motor starter.
- D. Test and record voltages and amperages of each pump.
- E. Perform pump test to verify operating capacity of each pump.
- F. Record hour meter readings and pump counters.
- G. Place system into complete operation.
- H. Provide written certification from the manufacturer to the project engineer that the installation is in accordance with the manufacturer's requirements and the warranty is validated.

END OF SECTION

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SECTION 43 2139 - SUBMERSIBLE PUMPS

PART I GENERAL

1.1 SUMMARY

- A. Section Includes: Submersible pumps.

1.2 SUBMITTALS

- A. Product Data: Information concerning materials of construction, fabrication, and protective coatings.
- B. Shop Drawings:
 - 1. Detailed dimensions for materials and equipment, including wiring and control diagrams, performance charts and curves, installation and anchoring requirements, fasteners, and other details.
- C. Manufacturer's Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.
- D. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- E. Manufacturer Reports: Indicate that equipment has been installed according to manufacturer's instructions.
- F. Qualifications Statement:
 - 1. Submit qualifications for manufacturer.

1.3 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations and final orientation of equipment and accessories.

1.4 QUALITY ASSURANCE

- A. The pumping units shall conform to all applicable requirements of NEMA, IEEE, NEC, SWPA and Hydraulic Institute. For said requirements, the revision and/or version in effect on the date of public bid opening shall apply.
- B. The pumps shall be manufactured by a company regularly engaged in the manufacture and assembly of submersible units for a minimum of five (5) years.
- C. The manufacturer shall assume full responsibility for the compatibility of the supplied components with the application.
- D. The motor and pump shall be manufactured by one company providing sole source responsibility for the warranty of the total unit, both pump, motor, and all supplied hardware, cabling, and other components.

1.5 WARRANTY

- A. For municipal application, pumps shall be prorated warranted for a period of 5 years from defects in material and/or workmanship in accordance with the manufacturer's normal warranty statement.

PART 2 PRODUCTS

2.1 SUBMERSIBLE PUMPS

A. Scope:

1. Furnish and install 2 submersible pumps.
2. Each pump shall be capable of delivering 500 GPM at 50.95' with a shut off head of 85.33 TDH (minimum).

B. OPERATING CONDITIONS

1. The required units shall be non-clog, inverter-duty rated submersible pumps passing at minimum a 3" spherical solid.
2. The pump shall have a continuously rising head capacity curve from run-out flow through shutoff.
3. The pump shall be designed to operate continuously for extended periods at any point in the allowable operating range of the curve without cavitation, overheating or excessive vibration. The motor nameplate horsepower rating shall not be greater than specified herein.
4. Performance Data:
 - a. Pump Item Number: SL1.30. A40.100
 - b. Number of Units Required: 2
 - c. Rated Duty Point Condition
 - 1) Capacity (Flow): 500 gpm
 - 2) Total Dynamic Head (TDH): 50.95 feet
 - d. Minimum Motor HP Required: 10 HP
 - e. Maximum Pump Operating Speed: 1760 RPM
 - f. Electrical Characteristics Required
 - 1) Voltage: 230V
 - 2) Phase: 3 PH
 - 3) Frequency: 60 Hz
 - g. Minimum Shutoff Head: 85.33 Feet
 - h. Minimum Spherical Diameter Passage Through the Impeller: 3"
 - i. Minimum Discharge Size: 4 in
 - j. Pumped Liquid: Water

C. PUMP DESIGN

1. Each pump shall have a flanged guide claw attached to the pump discharge flange by an ANSI flange connection. A replaceable Nitrile Butadiene Rubber (NBR) profile seal shall be provided as an integral part of the guide claw to form a leak-proof seal with the base discharge elbow.
2. The guide claw shall direct the pump down by two vertical guide rails to the discharge connection in a simple linear movement without tilting the pump side wards. There shall be no need for any personnel to enter the wet well in order to remove the pumps. No portion of

the pump shall be supported directly on the bottom of the wet well in order to remove the pumps. No portion of the pump shall be supported directly on the bottom of the wet well, guide rails or lifting chain. A cast iron or fabricated steel base plate with integral guide rail holders shall be provided. The base plate shall be designed with an integral 90 degree elbow.

D. PUMP CONSTRUCTION

1. Major pump components including, casing, impellers, motor frame shall of at minimum Class 35B cast iron with smooth surfaces devoid of blowholes or other irregularities.
2. All exposed nuts or bolts shall be 316 stainless steel. All metal surfaces coming into contact with the pumped media, other than stainless steel, shall be protected by a factory applied Impact-resistance powder coating finish on the exterior of the pump.
3. Critical mating surfaces where watertight sealing is required shall be machined and fitted with NBR O-rings. Joint sealing will be the result of controlled compression of rubber O-rings in two planes and O-ring contact of four sides without the requirement of a specific torque limit. Rectangular cross-sectioned gaskets requiring specific torque limits to achieve compression shall not be considered as adequate or equal.
4. Pump shaft shall be Stainless Steel. Pump and motor shall be shipped from the factory as a finished product. Pumps that are assembled outside of the manufacturer's facility are not allowed.
5. Pump housing and motor housing shall be fastened together by a 316 stainless steel clamp in lieu of bolts for easy serviceability.

E. CABLE AND CABLE ENTRY SEAL

1. The power cable shall be sized in accordance with NEC and IEC standards and shall be 49 feet and available in longer optional sizes. The outer jacket of the cable shall be oil resistant chloroprene rubber.
2. The pump shall be equipped with a leak-proof stainless steel cable plug where the unscreened conductors of the cable are cast into the plug by means of a two-component sealant to prevent moisture from entering the motor via the cable core.
3. The pump cable end (plug) is fastened with a union nut and O-ring to provide sealing against liquid penetration and shall incorporate in its design the ability to quick disconnect the power cable from the pump without the need to enter the pump. This cable plug shall allow the same plug be utilized for 230/460 volt applications without the need to enter the pump.
4. The cable entry shield shall be water tight to a depth of 65 feet.

F. PUMP MOTOR

1. The pump motor shall be an induction type, IE3 component design with a squirrel cage rotor, shell type design, housed in an air filled, watertight chamber according to IEC class IP 68 and NEMA MG1, part 31. Oil filled motors shall not be considered acceptable or equal. Stator housing to be ASTM A-48 Class 35B.
2. The motor shall be explosion proof and inverter duty rated approved for use in Class 1, Division 1, Group C & D hazardous areas. The stator windings and stator leads shall be insulated with moisture resistant Class H insulation rated for 356°F (180°C).
3. The stator shall be trickle impregnated and heat shrunk fitted into the cast iron stator housing. The use of bolts, pins or other fastening devices requiring penetration of the stator housing is not acceptable. The motor shall be designed for continuous duty handling pumped media of 104°F (40°C) and capable of up to 20 spaced starts per hour.
4. The motor shall have voltage tolerance of plus or minus 10%. The motor shall be designed for operation up to 104°F (40°C) ambient temperature with a temperature rise of class A.

5. The motor horsepower shall be adequate so that the pump is non-overloading throughout the entire pump performance curve from shut-off through run-out. Service factor shall be 1.15.
- G. COOLING SYSTEM
1. Pump shall be of submersible design cooled by ambient fluids with no additional cooling system required.
- H. BEARINGS
1. The pump shaft shall rotate on two bearings. Motor bearings shall be grease lubricated for the life of the bearing. The upper motor bearing and lower bearings shall compensate for axial thrust and radial forces and shall consist of a roller bearing and angular contact ball bearing.
 2. Main bearing is double-row angular contact ball bearing and support bearing is a single-row deep groove ball bearing.
 3. Minimum bearing life shall be L10, 50,000 hours within the AOR.
- I. MECHANICAL SEALS
1. Mechanical seal shall be a cartridge style encased with a 316 stainless steel housing
 2. Primary seal faces shall be silicon carbide / silicon carbide and secondary seal faces shall be carbon / ceramic.
- J. PUMP SHAFT
1. Pump Shaft must have a short overhang and be dynamically balanced to eliminate shaft deflection. Pump shaft shall be duplex stainless steel EN 1.4462 / UNS S31803 to retain better corrosion resistance and tensile strength. Duplex stainless steel shaft shall have superior chemical resistance properties for Municipal or Industrial applications.
- K. IMPELLER
1. The enclosed single channel vaneless tube style impeller shall be of heavy duty cast iron ASTM A48 class 35B. The impeller shall not have any leading edges so clogging is prevented in the impeller. Impellers with leading edges shall not be allowed.
 2. The impeller shall be wet balanced by means of the hydraulic forces calculated into the design of the impeller and performed according to the measuring principles of ISO 21940. This balancing is in compliance to ANSI/HI 11.6 Declaration letter can be provided upon request. All other impellers that are dry balanced shall not be acceptable.
 3. Optional vortex impeller is offered in heavy duty cast iron ASTM A48 class 35B or in stainless steel EN 1.4408/AISI 316 as an option.
 4. Single channel tube impellers shall be fitted with a stainless steel removable wear ring that is threaded to improve fiber handling and enhanced wear resistance on the sealing system. Cast iron wear rings or insert rings shall not be acceptable.
- L. VOLUTE
1. The pump volute shall be single piece cast iron, ASTM A48, Class 35B with smooth passages large enough to pass any solids that may enter the suction. Minimum thru let shall be 3 1/2". Pump housing and motor housing shall be fastened together by a 316 stainless steel clamp in lieu of bolts for easy serviceability.
- M. LIFTING BAIL

1. Lifting bail shall be cast 316 stainless steel bolted to the top of the pump. Bail shall be constructed so that the pump is in proper position to connect to the elbow.

N. AUTO COUPLING SYSTEM

1. Pumps shall be equipped with a complete auto coupling system to include factory upper guide rail brackets, base elbow, guide claw. Fabricated non factory components will not be accepted.
2. Upper guide rail bracket shall be 304 stainless steel.
3. Base elbow shall have a smooth interior to allow for specific solids passage. Base elbow shall be gray cast iron, ASTM A-48, Class 35B, with smooth surfaces devoid of blowholes or other irregularities. Base elbows shall have a factory applied spray coating.
4. Minimum guide rail diameter shall be 2" SCH40S. Guide rails to be 304 stainless steel.

O. Pump Protection

1. Each pump shall incorporate three thermal switches, one per stator phase wind and be connected in series, to monitor the temperature of the motor. Should the thermal switches open, the motor shall be stopped and an alarm indication shall be activated.
2. Pumps shall have one normally closed moisture switches. The moisture switches shall be incorporated into the pump to sense moisture in the bottom of the stator housing. The switch shall be wired in series so that if a switch opens the motor is de-energized and the pump is stopped.

P. Factory Testing

1. All factory testing shall be conducted. All testing is to be performed at the pump manufacturer's facility.
2. A performance curve shall be completed after the test and included in the final data package.
3. Field/functional testing will be performed to insure proper mechanical operation at the jobsite. All testing to be used for evaluation shall be performed at the pump manufacturer's facility.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify layout and orientation of pumps, accessories, and piping connections.

3.2 SHIPPING, DELIVERY, STORAGE, AND HANDLING

- A. Submersible pumps shall ship fully assembled.
- B. The skidded pump and related equipment shall be unloaded, stored and installed in strict accordance with the manufacturer's Installation and Operating Instructions. The Contractor shall review in detail and implement items relating to mounting, lubrication, power requirements and pump rotation as contained in the manufacturer's Installation and Operating Instructions to ensure proper warranty. If storage is planned to be longer than three (3) months or in a harsh environment, the manufacturer's long term storage instructions must be followed.

3.3 INSTALLATION

- A. Install pumps and accessories where indicated on Drawings and according to manufacturer's instructions.
- B. Provide and connect piping, accessories, and power and control conduit and wiring to make system operational, ready for startup.
- C. Flush piping with clean water.

3.4 START-UP FIELD SERVICE

- A. The pump manufacturer's representative shall include in bid at minimum one (1) days' start-up field service for the purpose of supervising pump start-up and instruction of proper pump operation and maintenance.

3.5 SERVICE PROVIDED BY FACTORY REPRESENTATIVE TIME ON SITE

- A. Supervise field run test – 1/2 day
- B. Instruct owner in proper start up procedures as well as operations of the pump – 1/2 day

END OF SECTION