

**PROJECT MANUAL FOR  
ROUTE 83 LIFT STATION PROJECT**



**VILLAGE OF VILLA PARK  
20 SOUTH ARDMORE AVENUE  
VILLA PARK, ILLINOIS 60181**

**OCTOBER 2014**

**NOT FOR BID**

**PROJECT MANUAL**

**ROUTE 83 LIFT STATION PROJECT  
GENERAL TABLE OF CONTENTS**

	<b><u>PAGE</u></b>
ADVERTISEMENT FOR BIDS .....	001115-1 to 001115-2
INSTRUCTIONS TO BIDDERS .....	001116-1 to 001116-10
BID FORM .....	004005-1 to 004005-8
CONTRACT .....	005000-1 to 005000-6
PERFORMANCE BOND .....	006101-1 to 006101-2
LABOR AND MATERIAL PAYMENT BOND .....	006111-1 to 006111-2
GENERAL CONDITIONS .....	1 to 42
SUPPLEMENTARY CONDITIONS .....	007300-1 to 007300-13
WAGE RATES .....	007310-1 to 007310-07
<b>SPECIFICATIONS:</b>	
<b>DIVISION 1 - GENERAL REQUIREMENTS</b>	
SECTION 011100 SUMMARY OF WORK.....	011100-1 to 011100-2
SECTION 012000 MEASUREMENT AND PAYMENT.....	012000-1 to 012000-4
SECTION 013300 SUBMITTAL.....	013300-1 to 013300-3
SECTION 015000 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS.....	015000-1 to 015000-2
SECTION 015600 PROTECTION OF ENVIRONMENT .....	015600-1 to 015600-2
SECTION 017000 CONTRACT CLOSEOUT .....	017000-1 to 017000-2
SECTION 017836 WARRANTIES .....	017836-1 to 017836-2
<b>DIVISION 31 - EARTHWORK</b>	
SECTION 312050 SITE PREPARATION & EARTHWORK.....	312050-1 to 312050-27
SECTION 312316 EXCAVATION, FILLING & BACKFILLING FOR STRUCTURES .....	312316-1 to 312316-6
SECTION 312333 TRENCHING & BACKFILING FOR UTILITIES.....	312333-1 to 312333-9
<b>DIVISION 32 – EXTERIOR IMPROVEMENTS</b>	

SECTION 329200 SODDING .....329200-1 to 329200-3

DIVISION 33 - UTILITIES

SECTION 333222 SUBMERSIBLE PUMPS .....333222-1 to 333222-7

NOT FOR BID

**SECTION 001115**  
**ADVERTISEMENT FOR BIDS**  
**VILLAGE OF VILLA PARK**

**PROJECT: ROUTE 83 LIFT STATION PROJECT**

This project consists of the replacement of existing appurtenances in a sanitary sewage lift station located on the west side of Route 83 south of the intersection of St. Charles Road and Route 83 in the Village of Villa Park, Illinois. The work will include the installation of a new flow meter, duplex submersible pumps, piping, electrical work, tie-in to the existing Supervisory Control and Data Acquisition (SCADA) system, new wet well top and cover, demolition, and site restoration.

**BID DEADLINE:** 11:00 A.M. LOCAL TIME, Tuesday, November 11, 2014

**NOTICE:** Sealed proposals for the **ROUTE 83 LIFT STATION PROJECT** will be received by the Village of Villa Park, Illinois, at the reception desk in the Public Works Building, 11 West Home Avenue, until the Bid Deadline. Immediately thereafter, the proposals will be publicly opened and read aloud at the Conference Room in the Public Works Building. Notwithstanding the foregoing, the OWNER reserves the right to defer, postpone, delay, or reschedule the Bid Opening for such time and to such date as the OWNER, in its sole discretion, determines is in the best interest of the OWNER.

Proposals shall be submitted in accordance with the Contract Documents prepared by the Village of Villa Park, Department of Public Works.

**MANDATORY PRE-BID MEETING:** A mandatory pre-bid meeting will be held at the Village's Public Works Building at 9 AM LOCAL TIME on November 4, 2014. The Public Works Building is located at 11 West Home Avenue in Villa Park. All bidders are responsible for signing in, and identifying which bidding party they represent. The party's name on the pre-bid sign-in sheet must match the party's name under which their bid is received.

**BID SECURITY:** Bid security in the amount of not less than 10% of the Bid shall accompany each Bid in accordance with the Instructions to Bidders.

**CONTRACT SECURITY:** The Bidder to whom a Contract is awarded shall be required to furnish both a Performance Bond and a Payment Bond acceptable to the OWNER for 100% of the Contract Price, in accordance with the requirements of the Contract Documents.

**RIGHTS RESERVED:** The OWNER reserves the right to reject any and all bids, to waive any informalities or technicalities in bidding, and to accept the Bid which best serves the interests of the OWNER. The OWNER shall, in its sole discretion, determine what does or does not constitute an informality or technicality, and in submitting a Bid, Bidder agrees to be bound by that determination.

**WAGE RATES:** All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout including the Prevailing Wage Act (820 ILCS 130) and the employment of Illinois Workers of Public Works Act (30 ILCS 570). The CONTRACTOR shall be required to pay not less than the prevailing wages on the project as established by the OWNER. Copies of these wage rates are on file in the office of the Public Works Department and incorporated in the Contract Documents.

**CONTRACT DOCUMENTS:** The Bidding Documents are on file for inspection at the office of the Public Works Department, 11 West Home Avenue, Villa Park, Illinois and may also be obtained from the office listed above for a non-refundable fee of \$50.00.

**QUESTIONS:** Written questions regarding the Bidding Documents will be received by Burns & McDonnell Engineering Company until November 6, 2014, 4:00p.m. local time via facsimile or e-mail. Questions should be directed to Mr. Ravi Jayaraman, P.E. at rjayaraman@burnsmcd.com by facsimile at (630) 724-3201.

**PUBLISHED BY AUTHORITY OF  
THE VILLAGE OF VILLA PARK, ILLINOIS, DU PAGE COUNTY.**

BY: \_\_\_\_\_

Vydas Juskelis  
Director of Public Works

**SECTION 001116  
INSTRUCTIONS TO BIDDERS**

**SPECIAL NOTICE TO BIDDERS.**

The **ROUTE 83 LIFT STATION PROJECT** consists of, as described in **Section 01010 "Summary of Work"**, Part 1 - GENERAL, 1.01 PROJECT DESCRIPTION.

**ARTICLE 1. Defined Terms.**

Terms used in these instructions to Bidders which are defined in the Standard General Conditions of the Construction Contract EJCDC C-700 have the meanings assigned to them in the General Conditions. The term "Bidder" means one who submits a Bid directly to OWNER, as distinct from a sub-bidder, who submits a bid to a Bidder. The term "Successful Bidder" means the lowest, qualified, responsible and responsive Bidder to whom OWNER (on the basis of OWNER'S evaluation as hereinafter provided) makes an award. The term "Bidding Documents" includes the Advertisement for Bids, Instructions to Bidders, the Bid Form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

**ARTICLE 2. Copies of Bidding Documents.**

- 2.01.** Complete sets of the Bidding Documents in the number and for the deposit sum stated in the Advertisement for Bids may be obtained from the office of Public Works Department, 11 West Home Avenue, Villa Park, Illinois.
- 2.02** Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Document.
- 2.03.** OWNERS and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

**ARTICLE 3. Qualifications of Bidders.**

- 3.01.** Bidders shall comply with all applicable Federal, State and local laws and requirements, and shall further meet the qualifications prescribed in this and other sections of these specifications.
- 3.02** Bidder, in submitting a Bid, certifies that Bidder is in compliance with all applicable Federal, State and local laws and requirements, and that Bidder further meets the qualifications prescribed in this and other sections of these specifications. OWNER'S determination as to the compliance and qualifications of the Bidder shall be final, and Bidder, in submitting a Bid, agrees to be bound by that determination.
- 3.03.** Bidder, in submitting a Bid, certifies that Bidder is in compliance with the following requirements and qualifications. Bidder further certifies that Bidder is able to provide written evidence of Bidder's compliance with the following requirements and qualifications. Bidder shall, upon request by OWNER, submit such written

evidence within five (5) calendar days of OWNER'S request, as well as any other written evidence which OWNER may deem necessary for the purpose of evaluating Bidder's qualifications.

- 3.03.01.** Bidder shall be qualified to do business in the State of Illinois.
- 3.03.02.** Bidder shall possess either a valid Federal Employer Tax Identification Number (FEIN) or a valid Social Security Number (SSN).
- 3.03.03.** Bidder shall be able to provide a street address and description of the Bidder's place of business, and the mailing address of the business, if different from the street address.
- 3.03.04.** Bidder shall be able to provide the number of years Bidder has been engaged in the contracting business under the present firm name, and the name of the state where incorporated.
- 3.03.05.** Bidder shall be able to provide a list of the property and equipment available to the Bidder.
- 3.03.06.** Bidder shall be able to provide a financial statement demonstrating that the Bidder has the financial resources to meet all obligations related to the Work.
- 3.03.07.** Bidder shall maintain insurance policies with the coverages required by the Contract, and with the minimum limits of coverage required by the Contract. Bidder shall be able to provide current certificate(s) of insurance for the insurance policies held by Bidder, demonstrating that Bidder holds insurance policies with the coverages required by the contract, and with the minimum limits of coverage required by the Contract.
- 3.03.08.** Bidder shall have constructed a minimum of three (3) projects of a similar nature in the immediate past five (5) years. Bidder shall be able to provide a list of all projects of a similar nature constructed by Bidder in the immediate past five (5) years, which list shall contain the minimum of three (3) such projects, which list shall provide a description and the location(s) of all such projects, and shall contain the Bidder's performance record and references, as well as the names and current contact information, including addresses and telephone numbers, of persons who acted as owners' representatives for those projects and who have knowledge of those projects, and whom Bidder agrees OWNER may contact for the purpose of verifying Bidder's performance and references.
- 3.03.09.** Bidder shall be able to provide a list of three (3) references (name, address and telephone number) with knowledge of the integrity and business practices of the bidder. Such references may not be persons who have been employed by Bidder as employees.
- 3.03.10.** Bidder shall be able to provide a list of projects presently under Contract, the awarded Contract amount of each, the approximate adjusted Contract

amount of each (if applicable), and the dollar amount or percent of completion of each.

- 3.03.11.** Bidder shall be able to provide a list of Contracts which have resulted in lawsuits, whether against Bidder as a prime contractor, against Bidder as a subcontractor, or against Bidder as a party in any other capacity; or against subcontractors or suppliers performing work for Bidder or under Contract held by Bidder.
- 3.03.12.** Bidder shall be able to provide a list of Contracts defaulted.
- 3.03.13.** Bidder shall be able to provide a statement indicating whether or not Bidder has ever filed bankruptcy.
- 3.03.14.** Bidder shall be able to provide a list of all officers of the firm, which list shall also indicate those officers who, while in the employ of the firm or in the employ of previous firms, were associated with Contracts which resulted in lawsuits, Contracts defaulted, or firms which filed for bankruptcy.
- 3.03.15.** Bidder shall maintain personnel guaranteed to be employed in the responsible charge of the Work, which personnel possess sufficient technical experience to ensure the satisfactory completion of the Work. Bidder shall be able to provide the names and technical experience of such personnel, as well as statements as to whether the personnel have or have not performed satisfactorily on other contracts of like nature and magnitude or comparable difficulty at similar rate of progress.
- 3.03.16.** Bidder shall be able to provide a list of subcontractors and suppliers anticipated to be employed by Bidder for the purpose of completing the Work, including the firm name, street address and description of place of business; mailing address of business (if different); phone, fax and e-mail contact information of business; name of primary contact; and a list of any projects or contracts for which Bidder currently owes monies to said firm, which list shall include a description of the project or contract, the amount currently due to said firm, the period of time for which those monies have been owed, and the expected date of payment of those monies.
- 3.03.17.** Bidder shall participate in active apprenticeship and training programs approved by and registered with the United States Department of Labor Bureau of Apprenticeship and Training for each of the trades of work contemplated under the Contract. Bidder shall be able to provide evidence of Bidder's participation in such apprenticeship and training programs.
- 3.03.18.** Bidder shall only employ subcontractors who meet the requirements prescribed in this section and other sections of these specifications.
- 3.03.19.** Bidder shall be able to provide such other information as may assist OWNER in determining whether the Bidder is adequately prepared to fulfill the Contract.

- 3.04.** These requirements and qualifications are not intended to discourage bidding, to make it difficult for qualified Bidders to submit Bids, or to discourage beginning contractors. The purpose of these requirements and qualifications is to allow OWNER to obtain sufficient information about Bidder's financial state, available equipment, personnel, and previous work experience so that OWNER may mitigate the hazards involved in awarding contracts to parties who may not be qualified to perform the Work as specified.

**ARTICLE 4. Examination of Contract Documents and Site.**

- 4.01.** It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the Work, (c) consider Federal, state and local Laws and Regulations that may affect cost, progress, performance or furnishing of the Work, (d) study and carefully correlate Bidder's observations with the Contract documents, and (e) notify ENGINEER of all conflicts, errors or discrepancies in the Contract documents. Bidders must satisfy themselves of the accuracy of the estimated quantities in the BID schedule by examination of the site and a review of the drawings and specifications including addenda. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.
- 4.02.** No exploration or testing of subsurface conditions at the site have been performed, as such information is not pertinent to work included in this project.
- 4.02.01** The information regarding the equipment make, model or type and other conditions relating to the existing facility conditions which are at or contiguous to the site which have been utilized as follows by the Bidder: Bidder may rely upon the accuracy of the technical data contained in such drawings but not upon the completeness thereof for the purposes of bidding or construction. Non-technical information shall not be relied upon for accuracy.
- 4.03.** Information and data reflected in the Contract Documents with respect to Underground Facilities at or contiguous to the site is based upon information and data furnished to OWNER and ENGINEER by owners of such underground facilities or others, and OWNER does not assume responsibility for the accuracy of completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.
- 4.04.** Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, underground facilities and other physical conditions, and possible changes in the Contract Documents due to differing conditions appear in Paragraphs 4.02, 4.03 and 4.04 of the General Conditions.
- 4.05.** Before submitting a Bid, each Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface and underground facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of

the work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

- 4.06.** On request in advance, OWNER will provide each Bidder access to the site to conduct such explorations and tests, as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.
- 4.07.** The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by Contractor in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by Contractor. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by OWNER unless otherwise provided in the Contract Documents.
- 4.08** The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- 4.09** The Engineer is Burns & McDonnell of 1431 Opus Place, Downers Grove, Illinois 60515 Phone: 630-724-3200
- 4.10** The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

#### **ARTICLE 5. Interpretations and Addenda.**

- 5.01.** All questions about the meaning or intent of the Contract documents are to be directed in writing to ENGINEER. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than two (2) days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will not be given, except as part of any pre-bid conference, or, if given, will be without legal effect.
- 5.02** Addenda may also be issued to modify the Bidding Documents as deemed advisable by OWNER or ENGINEER.

## **ARTICLE 6. Bid Security.**

- 6.01.** Each Bid must be accompanied by Bid security made payable to OWNER in an amount of ten percent (10%) of the Bidder's maximum Bid price and in the form of a certified or bank check or a Bid Bond (on form attached, if a form is prescribed) issued by a surety meeting the requirements of Paragraph 5.01 of the General Conditions.
- 6.02.** The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract and furnished the required contract security, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract and furnish the required contract security within ten days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by the OWNER until the seventh day after the Effective Date of the Contract, whereupon Bid security furnished by such Bidders will be returned. Bid security with Bids which are not competitive will be returned within seven days after the Bid opening.

## **ARTICLE 7. Contract Time.**

The number of days within which, or the dates by which the Work is to meet the requirements for Substantial Completion as set forth in Paragraph SC 14.04 of the Supplementary Conditions, and also the number of days within which, or the dates by which the Work is to meet the requirements for Final Completion and be ready for final payment in accordance with Paragraph 14.07 of the General Conditions, (the Contract Time) are set forth in the Contract.

## **ARTICLE 8. Liquidated Damages.**

Provisions for liquidated damages are set forth in the General or Supplementary Conditions, Bid Form and Contract.

## **ARTICLE 9. Substitute or "Or-Equal" Items.**

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Contract. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in Paragraphs 6.05 of the General Conditions and may be supplemented in the General Requirements.

## **ARTICLE 10. Subcontractors, Suppliers and Others.**

- 10.01.** If OWNER requests the identity of any Subcontractors, Suppliers, or other persons or organizations to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Contract, the apparent Successful Bidder,

and any other Bidder so requested, shall within seven (7) calendar days after the Bid opening submit to OWNER a list of all such Subcontractors, Suppliers and other persons and organizations proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person or organization if requested by OWNER. If OWNER or ENGINEER after due investigation have reasonable objection to any proposed Subcontractor, Supplier, other person or organization, either may before the Notice of Award is given request the apparent Successful Bidder to submit an acceptable substitute in which case the apparent Successful Bidder shall submit an acceptable substitute, that Bidder's price will be increased (or decreased) by the difference in cost occasioned by such substitution and OWNER may consider such price adjustment in evaluating Bids and making the contract award. If apparent Successful Bidder declines to make any such substitution, OWNER may award the contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers and other persons and organizations. The declining to make requested substitutions will not constitute grounds for sacrificing the Bid security of any Bidder. Any Subcontractor, Supplier, other person or organization listed and to whom OWNER or ENGINEER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Contract as provided in Paragraph 6.06.B of the General Conditions.

- 10.02.** In contracts where the Contract Price is on the basis of Cost-of-the-Work Plus a Fee, the apparent Successful Bidder, prior to the Notice of Award, shall identify in writing to OWNER those portions of the Work that such Bidder proposes to subcontract and after the Notice of Award may only subcontract other portions of the Work with OWNER's written consent.
- 10.03** No CONTRACTOR shall be required to employ any Subcontractor, Supplier, other person or organization against whom CONTRACTOR has reasonable objection.

#### **ARTICLE 11. Bid Form.**

- 11.01.** The Bid Form is included with the Bidding Documents; additional copies may be obtained from ENGINEER (or the issuing office).
- 11.02.** All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. Those not applicable to the Bidders response shall be marked "Not Applicable". Only one copy of the BID form is required.
- 11.03.** Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.

- 11.04. Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.
- 11.05. All names must be typed or printed below the signature.
- 11.06. The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Form).
- 11.07. The address and telephone number for communications regarding the Bid must be shown.

#### **ARTICLE 12. Submission of Bids.**

- 12.01 Bids shall be submitted at the time and place indicated in, and according to, the Advertisement or Invitation to Bid and shall be enclosed in an opaque, sealed envelope, marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and name and address of the Bidder and accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it, addressed to Village Clerk, Village Hall, 20 S. Ardmore Avenue, Villa Park, Illinois 60181.

#### **ARTICLE 13. Modification and Withdrawal of Bids.**

- 13.01. Bids may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids any time prior to opening of Bids. Such notice shall be in writing over the signature of the Bidder or by fax; if by fax, written confirmation over the signature of the Bidder shall be mailed and postmarked on or before the date and time set for receipt of Bids, and it shall be so worded as not to reveal the amount of the original Bid. No bidder may withdraw a BID within 90 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period; the time may be extended by mutual agreement between the OWNER and the BIDDER.
- 13.02. Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.
- 13.03. After the Bid opening, no Bid may be modified, withdrawn, or canceled by the Bidder during the time period noted in Article 15 without consent of the OWNER.
- 13.04. Bid Security shall be in an amount sufficient for the Bid as modified or resubmitted.

#### **ARTICLE 14. Opening of Bids.**

Bids will be opened and (unless obviously non-responsive) read aloud publicly. An abstract of the amounts of the base Bids and major alternates (if any) will be made available to Bidders after the opening of Bids.

#### **ARTICLE 15. Bids to Remain Subject to Acceptance.**

All bids will remain subject to acceptance for thirty days after the date of the Bid opening, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to that date. The Acceptance period may be extended to an additional 30 days upon written notice to all bidders by the owner.

#### **ARTICLE 16. Award of Contract.**

- 16.01.** OWNER reserves the right to reject any and all Bids, to waive any and all informalities not involving price, time or changes in the Work and to negotiate contract terms with the successful Bidder, and the right to disregard all nonconforming, nonresponsive, unbalanced or conditional Bids. Also, OWNER reserves the right to reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet; any other pertinent standard or criteria established by OWNER. Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- 16.02.** In evaluating Bids, OWNER will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid form or prior to the Notice of Award.
- 16.03.** OWNER may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Supplementary Conditions. OWNER also may consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Award.
- 16.04.** OWNER may conduct such investigations as OWNER deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of Bidders, proposed Subcontractors, Suppliers and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to OWNER'S satisfaction within the prescribed time.
- 16.05.** If contract is to be awarded, it will be awarded to the lowest Bidder whose evaluation by OWNER indicates to OWNER that the award will be in the best interest of the Project.

**16.06.** If the Contract is to be awarded, OWNER will give the Successful Bidder a Notice of Award within thirty days after the day of the Bid Opening.

**ARTICLE 17. Contract Security.**

A performance BOND and a payment BOND, each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract. Paragraph 5.01 of the General Conditions and the Supplementary Conditions set forth OWNER'S requirements as to Performance and Payment Bonds. When the Successful Bidder delivers the executed Contract to OWNER, it must be accompanied by the required Performance and Payment Bonds.

Attorneys-in-fact who sign BID BONDS or payment BONDS and performance BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

**ARTICLE 18. Signing of Contract.**

When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Contract with all other written Contract Documents attached. Within ten days thereafter CONTRACTOR shall sign and deliver the required number of counterparts of the Contract and attached documents to OWNER with the required Bonds. Within ten days thereafter OWNER shall deliver one fully signed counterpart to CONTRACTOR. Each counterpart is to be accompanied by a complete set of the Drawings with appropriate identification.

**ARTICLE 19. Wage Rates.**

Each CONTRACTOR or Subcontractor performing Work on this Project shall comply in all respects with all laws governing the employment of labor, Social Security, and Unemployment Insurance of both the State and Federal government. There shall be paid each employee engaged in Work under this Contract at the site of the Project, no less than the minimum wage for the classifications of labor employed in compliance with 820 ILCS 130/1 et seq. as now existing or hereafter amended. A copy of "General Prevailing Hourly Rates" is hereinafter included.

In accordance with 820 ILCS 130/5, the CONTRACTOR and each subcontractor shall make and keep, for a period of not less than 3 years, recording 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 OWNER. 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) 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 OWNER, its officers and agents, and to the Director of Labor and his deputies and agents at all reasonable hours at a location within the 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 or the Department of Labor.

**ARTICLE 20. Sales and Use Taxes.**

OWNER is exempt from ILLINOIS State Sales and Use Taxes on materials and equipment to be incorporated in the Work. Said taxes shall not be included in the Contract Price.

**ARTICLE 21. Equal Employment Opportunity Requirements.**

**21.01.** In connection with the performance of Work under this Contract CONTRACTOR agrees, and shall require his subcontractors to agree, not to discriminate against or intimidate any employee or applicant for employment because of race, color, creed, sex, religion, physical or mental handicap unrelated to ability.

**21.02.** In connection with the performance of Work under this Contract, CONTRACTOR agrees, and shall require his subcontractors to agree, to conform to the Rules and Regulations of the ILLINOIS Fair Employment Practices Commission in effect on the date of Bid submission.

**END OF SECTION**

**NOT FOR BID**

**SECTION 004005  
BID FORM**

**PROJECT IDENTIFICATION:  
ROUTE 83 LIFT STATION PROJECT  
THIS BID IS SUBMITTED TO:**

**Village of Villa Park  
20 South Ardmore Avenue  
Villa Park, ILLINOIS 60181**

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into a Contract with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract time indicated in his Bid and in accordance with the other terms and condition of the Contract Documents.
2. BIDDER accepts all of the terms and conditions of the Advertisement for Bids and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance as outlined in the Instructions to Bidders after the day of Bid opening. Bidder will sign and submit the Contract with the Bonds and other documents required by the Bidding Requirements within ten days after the date of OWNER'S Notice of Award.
3. In submitting this Bid, BIDDER represents, as more fully set forth in the Contract, that:
  - (a) BIDDER has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

DATE	NUMBER
_____	_____
_____	_____
_____	_____

- (b) BIDDER has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.
  - (c) BIDDER has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions, which are identified in the Supplementary Conditions as provided in Paragraphs 4.02 and 4.03 of the General Conditions, and accepts the determination set forth in Paragraph SC-4.02.A.1 of the Supplementary Conditions of the extent of the technical data contained in such reports and drawings upon which BIDDER is entitled to rely.
  - (d) BIDDER has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests and studies (in addition to or to supplement those referenced to in (c) above) which pertain to the subsurface or physical conditions at the site or otherwise may affect the

cost, progress, performance or furnishing of the work as BIDDER considers necessary for the performance or furnishing of the work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraphs 4.02 and 4.03 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports or similar information or data that will be required by BIDDER for such purposes.

- (e) BIDDER has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by BIDDER in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.04 of the General Conditions.
- (f) BIDDER has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
- (g) BIDDER has given ENGINEER written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER.
- (h) This BID is genuine and not made in interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other BIDDER to submit a false or sham BID; BIDDER has not solicited or induced any person, firm or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other BIDDER or over OWNER.

**4. BID SCHEDULE IS ON THE FOLLOWING PAGE**

**PROJECT IDENTIFICATION:**  
**ROUTE 83 LIFT STATION PROJECT**

Village of Villa Park  
20 South Ardmore Avenue  
Villa Park, ILLINOIS 60181

**BID SCHEDULE**

Item No.	Description	Unit	Approximate Number of Units	Price Per Unit	Extension
1	Mobilization/Demobilization	Lump Sum	1		
2	Concrete Wet Well Modifications	Lump Sum	1		
3	Mechanical Piping and Valves	Lump Sum	1		
4	Submersible Pumping Equipment	Lump Sum	1		
5	Electrical Work	Lump Sum	1		
6	Lawn Restoration	Lump Sum	1		
<b>Sum of Bid Prices (Items 1, 2, 3, 4, 5 and 6)</b>					

The BIDDER,

FIRM NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY, STATE: \_\_\_\_\_

TELEPHONE NO: \_\_\_\_\_

FAX NO: \_\_\_\_\_

Hereby submits a bid to complete the work, ROUTE 83 LIFT STATION PROJECT, as herein described, for the TOTAL CONTRACT PRICE (the sum of extensions of the Bid Schedule):

\$ \_\_\_\_\_ . \_\_\_\_\_ (in numerals)

\_\_\_\_\_ (in words)

5. BIDDER accepts the provisions of the Contract regarding Contract Time, Substantial Completion, and Final Completion as provided in Paragraph 3.1 of the Contract.

BIDDER accepts the provisions of the Contract regarding liquidated damages in the event of failure to complete the Work on time as provided in Paragraph 3.2 of the Contract.

OWNER reserves the right to reject any Bid in which all of the items in the Bid are not properly filled out.

6. The following documents are attached to and made a condition of this bid:

- (a) Required Bid Security in the amount of ten percent (10%) of the Bid in the form of:

\_\_\_\_\_ (Certified Check or Bid Bond)

In the amount of: \_\_\_\_\_ (Dollars or Percent)

- (b) A tabulation of Subcontractors and other persons and organizations required to be identified in this Bid in accordance with stat laws applicable where the Work is to be performed.
- (c) Statement of the Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to the award of the Contract.

7. Communications concerning this Bid shall be addressed to the Bidder as indicated below:

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY, STATE: \_\_\_\_\_

TELEPHONE NO: \_\_\_\_\_

FAX NO: \_\_\_\_\_

8. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

9. \_\_\_\_\_, having submitted a bid on a contract  
(Name of Contractor)

for the **ROUTE 83 LIFT STATION PROJECT**, as generally described in the Advertisement for Bids, to the Village of Villa Park, hereby certifies that said contractor is not barred from bidding on the aforementioned contract as a result of a violation of either Section 33E-3 or 33E-4 of Article 33E of Chapter 720 of the ILLINOIS Compiled Statutes (70 ILCS 5/33E-3 and 5/33E-4).

By: \_\_\_\_\_  
Authorized Agent of Contractor

Subscribed and sworn to before me

This \_\_\_\_ day of \_\_\_\_\_, 20\_\_

Notary Public

SUBMITTED ON \_\_\_\_\_, 20\_\_

CONTRACTOR'S LICENSE NO. \_\_\_\_\_

I hereby certify that, as Bidder, I/We have examined and carefully prepared this Bid from the Bidding Documents and have checked the same in detail before submitting this Bid, and that all statements herein are made on behalf of:

An Individual

By: \_\_\_\_\_ (SEAL)  
(Individual's Name)

doing business as: \_\_\_\_\_

Business address: \_\_\_\_\_

\_\_\_\_\_

Telephone No.: \_\_\_\_\_

Fax No: \_\_\_\_\_



Subscribed and sworn to me this

\_\_\_\_\_ Day of \_\_\_\_\_, 20\_\_.

Notary or other officer authorized  
to administer oaths.

My commission expires:

(Bidders should not add any conditions or qualifying statements to this Bid as otherwise the bid may be declared irregular as being not responsive to the advertisement. **BIDDERS SHALL USE THIS BID FORM IN SUBMITTING THEIR BIDS.**

**END OF SECTION**

**SECTION 004313  
BID BOND**

KNOW ALL MEN BY THESE PRESENTS: that we

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

as Principal, hereinafter called the Principal, and

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

a corporation duly organized under the laws of the State of \_\_\_\_\_ as Surety,  
hereinafter called Surety, are held and firmly bound unto

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

as Obligee, hereinafter called the Owner, in the sum of \_\_\_\_\_  
\_\_\_\_\_ dollars (\$ \_\_\_\_\_), for the payment of which sum,  
well and truly to be made, Principal and said Surety, bind ourselves, our heirs, executors, administrators,  
successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a Bid for \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOW, THEREFORE, if the Owner shall accept the Bid of Principal and the Principal shall enter into a Contract with the Owner in accordance with the terms of such Bid, and give such Bond or Bonds as may be specified in the Bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of Principal to enter such Contract and give such Bond or Bonds, if the Principal shall pay to the Owner the difference not to exceed the penalty hereof between the amount specified in said Bid and such larger amount for which the Owner may in good faith contract with another party to perform the Work covered by said Bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

DOCUMENT 004313 - BID BOND: Continued

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_.

PRINCIPAL

(CORPORATE SEAL)

By \_\_\_\_\_  
\_\_\_\_\_

SURETY

By \_\_\_\_\_  
\_\_\_\_\_

ATTORNEY-IN-FACT

(CORPORATE SEAL)

(This Bond shall be accompanied with  
Attorney-in-Fact's authority from Surety)

END OF DOCUMENT 004313

**SECTION 005000  
CONTRACT**

THIS CONTRACT is dated as of the \_\_\_\_\_ day of \_\_\_\_\_ in the year 20\_\_\_\_ by and between the VILLAGE OF VILLA PARK, ILLINOIS (hereinafter called

OWNER) and \_\_\_\_\_ doing business as (an individual) or (a partnership) or (a corporation) (hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

**ARTICLE 1. WORK**

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows: ROUTE 83 LIFT STATION PROJECT

**ARTICLE 2. ENGINEER**

The Project has been designed by the Burns & McDonnell Engineering Company, Inc. The Village of Villa Park, or his ENGINEER who is to act as OWNER'S representative, assume all duties and responsibilities and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

**ARTICLE 3 - CONTRACT TIME**

- 3.1.** The Work will meet the requirements for Substantial Completion as defined in Article 1 of the Supplementary Conditions within ninety (90) calendar days, including Saturdays, Sundays and holidays, from the date when the Contract Time commences to run as provided in Paragraph 2.03 of the General Conditions, and will meet the Requirements for Final Completion and be ready for final payment in accordance with Paragraph 14.07 of the General Conditions within one hundred and twenty (120) calendar days, including Saturdays, Sundays and holidays, from the date when the Contract Time commences to run.
- 3.2.** Failure to Complete the Work on Time. OWNER and CONTRACTOR recognize that time is of the essence to the contract and that OWNER will suffer financial loss if the Work is not completed within the calendar days stipulated in the Contract as specified in Paragraph 3.1 above or within such extended time as may have been allowed in accordance with Article 12 of the General Conditions. Should CONTRACTOR fail to complete the Work within the calendar days stipulated in the contract or within such extended time as may have been allowed, CONTRACTOR shall be liable and shall pay OWNER the amount shown in the following schedule of deductions, not as a penalty but as liquidated damages, for each day of overrun in the contract time or such extended time as may have been allowed. This liquidated damages provision, as an obligation to the Owner, shall further apply to the Contractor's Surety. Permitting Contractor or Surety to

continue and finish the Work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of Owner of its rights under the Contract. The liquidated damages for failure to complete the contract on time are approximate, due to the impracticality of calculating and proving actual delay costs. This schedule of deductions establishes the cost of delay to account for administration, engineering, inspection, and supervision during periods of extended and delayed performance. The costs of delay represented by this schedule are understood to be a fair and reasonable estimate of the costs that will be borne by OWNER during extended and delayed performance by CONTRACTOR of the Work, remaining incidental work, correction of work improperly completed, or repair of work damaged as a result of CONTRACTOR.

Schedule of Deductions for Each  
Day of Overrun in Contract Time

<u>Contract Amount</u>		<u>Daily Charges</u>
<u>From More Than</u>	<u>To and Including</u>	<u>Per Calendar Day</u>
\$ 0	\$ 25,000	\$ 300.00
25,000	100,000	375.00
100,000	500,000	550.00
500,000	1,000,000	725.00
1,000,000	2,000,000	900.00
2,000,000	3,000,000	1,100.00
3,000,000	5,000,000	1,300.00
5,000,000	7,500,000	1,450.00
7,500,000	And over	1,650.00

The liquidated damage amount specified will accrue and be assessed for each and every calendar day of overrun, including Saturdays, Sundays and holidays, beyond the number of calendar days stipulated for Substantial Completion in the Contract as specified in Paragraph 3.1 above, until the Work meets the requirements for Substantial Completion. The liquidated damage amount specified will accrue and be assessed for each and every calendar day of overrun, including Saturdays, Sundays and holidays, beyond the number of calendar days stipulated for Final Completion in the Contract as specified in Paragraph 3.1 above, until the Work meets the requirements for Final Completion. OWNER will deduct these liquidated damages from any monies due or to become due to CONTRACTOR from OWNER.

**ARTICLE 4. CONTRACT PRICE**

- 4.1.** OWNER shall pay CONTRACTOR for completion of the work in accordance with the Contract Documents in current funds as shown in the Bid Form as accepted by OWNER.

## **ARTICLE 5 - PAYMENT PROCEDURES**

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

- 5.1.** Progress Payments. OWNER will make monthly progress payments on account of the Contract Price on the basis of CONTRACTOR'S Application for Payment as recommended by ENGINEER. All progress payments will be on the basis of the progress of Work measure by the schedule of values provided for in the General Conditions and the Supplementary Conditions.
- 5.2.** Final Payment. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07B of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said Paragraph 14.07C

## **ARTICLE 6 - CONTRACTOR'S REPRESENTATIONS**

CONTRACTOR makes the following representations:

- 6.1.** CONTRACTOR has familiarized itself with the nature and extent of the Contract Documents, Work site locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.
- 6.2.** CONTRACTOR has studied carefully all reports of explorations and tests of subsurface conditions and drawings of physical conditions which are identified in the Supplementary Conditions as provided in Paragraphs 4.02 and 4.03 of the General Conditions, and accepts the determination set forth in Paragraph SC-4.02.A.1 of the Supplementary Conditions of the extent of the technical data contained in such reports and drawings upon which CONTRACTOR is entitled to reply.
- 6.3.** CONTRACTOR has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, reports and studies (in addition to or to supplement those referred to in Paragraph 6.2 above) which pertain to the subsurface or physical conditions at or contiguous to the site or otherwise may affect the cost, progress, performance or furnishing of the Work as CONTRACTOR considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraphs 4.02 and 4.03 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are or will be required by CONTRACTOR for such purposes.
- 6.4.** CONTRACTOR has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations,

investigations, explorations, tests, reports, studies or similar information or data in respect of said Underground Facilities are or will be required by CONTRACTOR in order to perform and furnish the Work at the Contract Price, with the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.04 of the General Conditions.

- 6.5. CONTRACTOR has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
- 6.6. CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

#### **ARTICLE 7 - CONTRACT DOCUMENTS**

The Contract Documents which comprise the entire Contract between OWNER and CONTRACTOR concerning the Work consist of the following:

- 7.1. This Contract
- 7.2. Performance and Payment Bonds
- 7.3. Standard General Conditions
- 7.4. Supplementary Conditions
- 7.5. Project Specifications
- 7.6. Drawings
- 7.7. Addenda
- 7.8. Instructions to Bidders
- 7.9. Advertisement for Bids
- 7.10. CONTRACTOR'S Bid
- 7.11. Documentation submitted by CONTRACTOR prior to Notice of Award
- 7.12. Notice of Award
- 7.13. Notice to Proceed
- 7.14. Change Order
- 7.15. The following which may be delivered or issued after the Effective Date of the Contract and are not attached hereto: All Written Amendments and other

documents amending, modifying, or supplementing the Contract Documents pursuant to Paragraphs 3.04 of the General Conditions.

## **ARTICLE 8 - MISCELLANEOUS**

- 8.1.** Terms used in this Contract which are defined in Article 1 of the General Conditions will have the meanings indicated in the General Conditions.
- 8.2.** No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.
- 8.3.** OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

### **8.4 COVENANT AGAINST CONTINGENT FEES**

The CONTRACTOR shall warrant that no person or selling agency has been employed or retained to solicit or secure the contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee. For breach or violation of this warranty, the owner shall have the right to annul the contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

### **8.5 WAGE PROVISIONS**

The CONTRACTOR shall pay prevailing wages in accordance with the Illinois Prevailing Wage Act (820 ILCS 130).

8.6. \_\_\_\_\_, having executed a contract for  
(Name of CONTRACTOR)

the ROUTE 83 LIFT STATION PROJECT, as generally described in the Advertisement for Bids, with the Village of Villa Park, hereby certifies that said contractor is not barred from executing said contract as a result of a violation of either Section 33E-3 or 33E-4 of Article 33E of Chapter 720 of the ILLINOIS Compiled Statutes (720 ILCS 5/33E-3 and 5/33E-4).

By: \_\_\_\_\_  
Authorized Agent or CONTRACTOR

Subscribed and sworn to before me

This \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Notary Public

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Contract in triplicate. One counterpart each has been delivered to OWNER, CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by ENGINEER on their behalf.

This Contract will be effective on \_\_\_\_\_, 20\_\_.

OWNER: VILLAGE OF VILLA PARK CONTRACTOR: \_\_\_\_\_

BY: \_\_\_\_\_ BY: \_\_\_\_\_

TITLE: VILLAGE PRESIDENT TITLE: \_\_\_\_\_

(CORPORATE SEAL)

(CORPORATE SEAL)

Attest: \_\_\_\_\_  
Address for giving notices:

Attest: \_\_\_\_\_  
Address for giving notices:

VILLAGE OF VILLA PARK

\_\_\_\_\_

20 S. ARDMORE AVENUE

\_\_\_\_\_

VILLA PARK, IL 60181

\_\_\_\_\_

License No. \_\_\_\_\_  
(If required by State or Municipal Law)

**END OF SECTION**

**SECTION 006101  
PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

as Principal, hereinafter called Contractor, and

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

as Surety, hereinafter called Surety, are held and firmly bound unto

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

as Oblige, hereinafter called Owner, in the amount of \_\_\_\_\_ dollars (\$ \_\_\_\_\_), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written Agreement dated \_\_\_\_\_ 20\_\_\_\_, entered into a contract with Owner for \_\_\_\_\_

\_\_\_\_\_ which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the Owner. Whenever Contractor shall be, and declared by Owner to be in default under the Contract, the Owner having performed Owner's obligations, thereunder, the Surety may promptly remedy the default, or shall promptly:

- A. Complete the Contract in accordance with its terms and conditions, or
- B. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if the Owner elects, upon determination by the Owner and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Owner, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract Price," as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any amendments thereto, less the amount properly paid by Owner to Contractor.

DOCUMENT 006101 - PERFORMANCE BOND: Continued

Any suit under this Bond must be instituted before the expiration of two years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators, or successors of the Owner.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_.

CONTRACTOR

(CORPORATE SEAL)

By \_\_\_\_\_  
\_\_\_\_\_

SURETY

COUNTERSIGNED: Resident Agent

State of \_\_\_\_\_

By \_\_\_\_\_  
\_\_\_\_\_

By \_\_\_\_\_  
\_\_\_\_\_

ATTORNEY-IN-FACT

(CORPORATE SEAL)

\_\_\_\_\_  
\_\_\_\_\_

(This Bond shall be accompanied with Attorney-in-Fact's authority from Surety)

Approved as to Form:

\_\_\_\_\_  
\_\_\_\_\_  
Attorney for \_\_\_\_\_

END OF DOCUMENT 006101

**SECTION 006111  
LABOR AND MATERIAL PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

as Principal, hereinafter called Contractor, and

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

as Surety, hereinafter called Surety, are held and firmly bound unto

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

as Oblige, hereinafter called Owner, for the use and benefit of claimants as hereinbelow defined, in the amount of \_\_\_\_\_ dollars (\$ \_\_\_\_\_), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written Agreement dated \_\_\_\_\_, 20\_\_\_\_, entered into a contract with Owner for \_\_\_\_\_

\_\_\_\_\_ which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

- A. A claimant is defined as one having a direct contract with the Contractor or with a Subcontractor of the Contractor for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental of equipment directly applicable to the Contract.
- B. The above named Contractor and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of 90 days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this Bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.
- C. No suit or action shall be commenced hereunder by any claimant:
  - 1. Unless claimant other than one having a direct contract with Contractor, shall have given written notice to any two of the following: the Contractor, the Owner, or the Surety

DOCUMENT 006111 - LABOR AND MATERIAL PAYMENT BOND: continued

within 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 the 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 Contractor, 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.

2. After the expiration of one year following the date on which Contractor ceased Work on the Contract, it being understood, however, that if any limitation embodied in this 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.
  3. Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.
- D. The amount of this Bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this Bond.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_.

CONTRACTOR

(CORPORATE SEAL)

\_\_\_\_\_  
By \_\_\_\_\_  
\_\_\_\_\_

SURETY

COUNTERSIGNED: Resident Agent  
State of \_\_\_\_\_

\_\_\_\_\_  
By \_\_\_\_\_  
\_\_\_\_\_

By \_\_\_\_\_  
\_\_\_\_\_

ATTORNEY-IN-FACT

(CORPORATE SEAL)

\_\_\_\_\_  
\_\_\_\_\_  
(This Bond shall be accompanied with  
Attorney-in-Fact's authority from Surety)

Approved as to Form:

\_\_\_\_\_  
\_\_\_\_\_  
Attorney for \_\_\_\_\_

END OF DOCUMENT 006111

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly By



PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*a practice division of the*  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN COUNCIL OF ENGINEERING COMPANIES

AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by



The Associated General Contractors of America



Construction Specifications Institute

Copyright ©2002

National Society of Professional Engineers  
1420 King Street, Alexandria, VA 22314

American Council of Engineering Companies  
1015 15th Street, N.W., Washington, DC 20005

American Society of Civil Engineers  
1801 Alexander Bell Drive, Reston, VA 20191-4400

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Nos. C-520 or C-525 (2002 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001) (2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800) (2002 Edition).

## TABLE OF CONTENTS

	<u>Page</u>
ARTICLE 1 - DEFINITIONS AND TERMINOLOGY .....	6
1.01 <i>Defined Terms</i> .....	6
1.02 <i>Terminology</i> .....	8
ARTICLE 2 - PRELIMINARY MATTERS .....	9
2.01 <i>Delivery of Bonds and Evidence of Insurance</i> .....	9
2.02 <i>Copies of Documents</i> .....	9
2.03 <i>Commencement of Contract Times; Notice to Proceed</i> .....	9
2.04 <i>Starting the Work</i> .....	9
2.05 <i>Before Starting Construction</i> .....	9
2.06 <i>Preconstruction Conference</i> .....	9
2.07 <i>Initial Acceptance of Schedules</i> .....	9
ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE .....	10
3.01 <i>Intent</i> .....	10
3.02 <i>Reference Standards</i> .....	10
3.03 <i>Reporting and Resolving Discrepancies</i> .....	10
3.04 <i>Amending and Supplementing Contract Documents</i> .....	11
3.05 <i>Reuse of Documents</i> .....	11
3.06 <i>Electronic Data</i> .....	11
ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS .....	11
4.01 <i>Availability of Lands</i> .....	11
4.02 <i>Subsurface and Physical Conditions</i> .....	12
4.03 <i>Differing Subsurface or Physical Conditions</i> .....	12
4.04 <i>Underground Facilities</i> .....	13
4.05 <i>Reference Points</i> .....	13
4.06 <i>Hazardous Environmental Condition at Site</i> .....	13
ARTICLE 5 - BONDS AND INSURANCE .....	14
5.01 <i>Performance, Payment, and Other Bonds</i> .....	14
5.02 <i>Licensed Sureties and Insurers</i> .....	15
5.03 <i>Certificates of Insurance</i> .....	15
5.04 <i>Contractor's Liability Insurance</i> .....	15
5.05 <i>Owner's Liability Insurance</i> .....	16
5.06 <i>Property Insurance</i> .....	16
5.07 <i>Waiver of Rights</i> .....	17
5.08 <i>Receipt and Application of Insurance Proceeds</i> .....	17
5.09 <i>Acceptance of Bonds and Insurance; Option to Replace</i> .....	17
5.10 <i>Partial Utilization, Acknowledgment of Property Insurer</i> .....	18
ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES .....	18
6.01 <i>Supervision and Superintendence</i> .....	18
6.02 <i>Labor; Working Hours</i> .....	18
6.03 <i>Services, Materials, and Equipment</i> .....	18
6.04 <i>Progress Schedule</i> .....	18
6.05 <i>Substitutes and "Or-Equals"</i> .....	19
6.06 <i>Concerning Subcontractors, Suppliers, and Others</i> .....	20
6.07 <i>Patent Fees and Royalties</i> .....	21
6.08 <i>Permits</i> .....	21
6.09 <i>Laws and Regulations</i> .....	21
6.10 <i>Taxes</i> .....	22
6.11 <i>Use of Site and Other Areas</i> .....	22
6.12 <i>Record Documents</i> .....	22
6.13 <i>Safety and Protection</i> .....	22
6.14 <i>Safety Representative</i> .....	23

6.15	<i>Hazard Communication Programs</i> .....	23
6.16	<i>Emergencies</i> .....	23
6.17	<i>Shop Drawings and Samples</i> .....	23
6.18	<i>Continuing the Work</i> .....	24
6.19	<i>Contractor's General Warranty and Guarantee</i> .....	24
6.20	<i>Indemnification</i> .....	24
6.21	<i>Delegation of Professional Design Services</i> .....	25
<b>ARTICLE 7 - OTHER WORK AT THE SITE</b> .....		25
7.01	<i>Related Work at Site</i> .....	25
7.02	<i>Coordination</i> .....	26
7.03	<i>Legal Relationships</i> .....	26
<b>ARTICLE 8 - OWNER'S RESPONSIBILITIES</b> .....		26
8.01	<i>Communications to Contractor</i> .....	26
8.02	<i>Replacement of Engineer</i> .....	26
8.03	<i>Furnish Data</i> .....	26
8.04	<i>Pay When Due</i> .....	26
8.05	<i>Lands and Easements; Reports and Tests</i> .....	26
8.06	<i>Insurance</i> .....	26
8.07	<i>Change Orders</i> .....	26
8.08	<i>Inspections, Tests, and Approvals</i> .....	26
8.09	<i>Limitations on Owner's Responsibilities</i> .....	27
8.10	<i>Undisclosed Hazardous Environmental Condition</i> .....	27
8.11	<i>Evidence of Financial Arrangements</i> .....	27
<b>ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION</b> .....		27
9.01	<i>Owner's Representative</i> .....	27
9.02	<i>Visits to Site</i> .....	27
9.03	<i>Project Representative</i> .....	27
9.04	<i>Authorized Variations in Work</i> .....	27
9.05	<i>Rejecting Defective Work</i> .....	27
9.06	<i>Shop Drawings, Change Orders and Payments</i> .....	28
9.07	<i>Determinations for Unit Price Work</i> .....	28
9.08	<i>Decisions on Requirements of Contract Documents and Acceptability of Work</i> .....	28
9.09	<i>Limitations on Engineer's Authority and Responsibilities</i> .....	28
<b>ARTICLE 10 - CHANGES IN THE WORK; CLAIMS</b> .....		28
10.01	<i>Authorized Changes in the Work</i> .....	28
10.02	<i>Unauthorized Changes in the Work</i> .....	29
10.03	<i>Execution of Change Orders</i> .....	29
10.04	<i>Notification to Surety</i> .....	29
10.05	<i>Claims</i> .....	29
<b>ARTICLE 11 - COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK</b> .....		30
11.01	<i>Cost of the Work</i> .....	30
11.02	<i>Allowances</i> .....	31
11.03	<i>Unit Price Work</i> .....	31
<b>ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES</b> .....		32
12.01	<i>Change of Contract Price</i> .....	32
12.02	<i>Change of Contract Times</i> .....	33
12.03	<i>Delays</i> .....	33
<b>ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK</b> .....		33
13.01	<i>Notice of Defects</i> .....	33
13.02	<i>Access to Work</i> .....	33
13.03	<i>Tests and Inspections</i> .....	33
13.04	<i>Uncovering Work</i> .....	34
13.05	<i>Owner May Stop the Work</i> .....	34
13.06	<i>Correction or Removal of Defective Work</i> .....	34
13.07	<i>Correction Period</i> .....	34
13.08	<i>Acceptance of Defective Work</i> .....	35
13.09	<i>Owner May Correct Defective Work</i> .....	35
<b>ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION</b> .....		36
14.01	<i>Schedule of Values</i> .....	36
14.02	<i>Progress Payments</i> .....	36

14.03	<i>Contractor's Warranty of Title</i> .....	37
14.04	<i>Substantial Completion</i> .....	37
14.05	<i>Partial Utilization</i> .....	38
14.06	<i>Final Inspection</i> .....	38
14.07	<i>Final Payment</i> .....	38
14.08	<i>Final Completion Delayed</i> .....	39
14.09	<i>Waiver of Claims</i> .....	39
ARTICLE 15	- SUSPENSION OF WORK AND TERMINATION .....	39
15.01	<i>Owner May Suspend Work</i> .....	39
15.02	<i>Owner May Terminate for Cause</i> .....	39
15.03	<i>Owner May Terminate For Convenience</i> .....	40
15.04	<i>Contractor May Stop Work or Terminate</i> .....	40
ARTICLE 16	- DISPUTE RESOLUTION .....	41
16.01	<i>Methods and Procedures</i> .....	41
ARTICLE 17	- MISCELLANEOUS .....	41
17.01	<i>Giving Notice</i> .....	41
17.02	<i>Computation of Times</i> .....	41
17.03	<i>Cumulative Remedies</i> .....	41
17.04	<i>Survival of Obligations</i> .....	41
17.05	<i>Controlling Law</i> .....	41
17.06	<i>Headings</i> .....	41

## GENERAL CONDITIONS

### ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

---

#### 1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*--A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract

Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*-- Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *Engineer*--The individual or entity named as such in the Agreement.

20. *Field Order*--A written order issued by Engineer which requires minor changes in the Work but

which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

23. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*--The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*--A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*--Polychlorinated biphenyls.

31. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. *Progress Schedule*--A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Schedule of Submittals*--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. *Schedule of Values*--A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

41. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

42. *Site*--Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

43. *Specifications*--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and

workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

44. *Subcontractor*--An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

45. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

48. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

49. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

50. *Unit Price Work*--Work to be paid for on the basis of unit prices.

51. *Work*--The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

52. *Work Change Directive*--A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be

performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

## 1.02 Terminology

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

### B. Intent of Certain Terms or Adjectives

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered", "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

### C. Day

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

### D. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

- a. does not conform to the Contract Documents, or
- b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or
- c. has been damaged prior to Engineer's - recommendation of final payment (unless responsibility for the protection thereof has been

assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

#### *E. Furnish, Install, Perform, Provide*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## ARTICLE 2 - PRELIMINARY MATTERS

---

### 2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

### 2.02 *Copies of Documents*

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

### 2.03 *Commencement of Contract Times; Notice to*

#### *Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

### 2.04 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

### 2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

### 2.06 *Preconstruction Conference*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

### 2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with

Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT,  
AMENDING, REUSE

---

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids),

except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's written interpretation or clarification.

### 3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaption by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

### 3.06 *Electronic Data*

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party..

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

## ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

### 4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

#### 4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

#### 4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

#### C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for

Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

#### 4.04 *Underground Facilities*

A. *Shown or Indicated*: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any

Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

#### 4.05 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

#### 4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings*: Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified

in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 5 - BONDS AND INSURANCE

---

### 5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

### 5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

### 5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

### 5.04 *Contractor's Liability Insurance*

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
  - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
  - b. by any other person for any other reason;
5. 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; and
6. 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.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and

any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

#### 5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

#### 5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and

subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

#### 5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities

identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

#### 5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order .

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary

shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

#### 5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

#### 5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

## ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

---

#### 6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with

the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

#### 6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

#### 6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used,

cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

#### 6.04 Progress Schedule

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

#### 6.05 Substitutes and "Or-Equals"

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. "Or-Equal" Items: If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

#### 2. Substitute Items

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;

b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:

a) all variations of the proposed substitute item from that specified, and

b) available engineering, sales, maintenance, repair, and replacement services;

4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

**B. Substitute Construction Methods or Procedures:** If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

**C. Engineer's Evaluation:** Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

**D. Special Guarantee:** Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

**E. Engineer's Cost Reimbursement:** Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

**F. Contractor's Expense:** Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

#### 6.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed

by any Subcontractor or Supplier, Contractor will obtain the same.

#### 6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

#### 6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

#### 6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or

Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

#### 6.10 Taxes

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

#### 6.11 Use of Site and Other Areas

##### A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable,

brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

#### 6.12 Record Documents

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

#### 6.13 Safety and Protection

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities

not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

#### 6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

#### 6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

#### 6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent

threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

##### 1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*: Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals , any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

##### C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance and design criteria,

installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

#### *D. Engineer's Review*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

#### *E. Resubmittal Procedures*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

#### 6.18 *Continuing the Work*

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

#### 6.19 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

#### 6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners,

employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

#### 6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

## ARTICLE 7 - OTHER WORK AT THE SITE

---

### 7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

### 7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

### 7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

## ARTICLE 8 - OWNER'S RESPONSIBILITIES

---

### 8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

### 8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

### 8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

### 8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.06 *Insurance*

A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

---

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of

such other individual or entity will be as provided in the Supplementary Conditions.

#### 9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

#### 9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

#### 9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

#### 9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be

final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

#### 9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

#### 9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be respon-

sible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

## ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

---

### 10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

### 10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

### 10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

### 10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

### 10.05 *Claims*

A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim, shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such

Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,
2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

## ARTICLE 11 - COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

---

### 11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim.

Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

*B. Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

*C. Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

*D. Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

## 11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

*B. Cash Allowances*

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

*C. Contingency Allowance*

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

*11.03 Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

**ARTICLE 12 - CHANGE OF CONTRACT PRICE;  
CHANGE OF CONTRACT TIMES**

---

*12.01 Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
  - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
  - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
  - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
  - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
  - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
  - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

## 12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

## 12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract

Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

## ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

### 13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to

Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

### 13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

### 13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and
3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor

without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

### 13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

### 13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of

Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

#### 13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

#### 13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals

and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications .

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

#### 13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

#### 13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply

with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

## ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

---

### 14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

### 14.02 *Progress Payments*

#### A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

#### B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the

results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may

be necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

#### *C. Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

#### *D. Reduction in Payment*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

c. there are other items entitling Owner to a set-off against the amount recommended; or

d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

#### 14.03 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

#### 14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to

Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

#### 14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

#### 14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with

Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 14.07 *Final Payment*

##### A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

b. consent of the surety, if any, to final payment;

c. a list of all Claims against Owner that Contractor believes are unsettled; and

d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

##### B. *Engineer's Review of Application and Acceptance*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment

and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

##### C. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and , will be paid by Owner to Contractor.

#### 14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

#### 14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's

continuing obligations under the Contract Documents;  
and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

## ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

---

### 15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

### 15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety ) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

### 15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

#### 15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

### ARTICLE 16 - DISPUTE RESOLUTION

---

#### 16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision

becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim to another dispute resolution process, or

3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

### ARTICLE 17 - MISCELLANEOUS

---

#### 17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

#### 17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in

accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

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

17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

**SECTION 007300  
SUPPLEMENTARY CONDITIONS**

**GENERAL**

The following supplements shall modify, change, delete from, and add to the "Standard General Conditions of the Construction Contract." 2002 Edition EJCDC C-700. Where any Article, Paragraph or Subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such Article, Paragraph or shall remain in effect and the supplementary provisions shall be considered as added thereto. Where any Article, Paragraph or Subparagraph in the General Conditions is amended, voided or superseded by any of the following paragraphs, the provisions of such Article, Paragraph or Subparagraph not so amended, voided or superseded shall remain in effect.

**ARTICLE 1 – DEFINITIONS AND TERMINOLOGY**

Amend the definition entitled "ENGINEER" to read:

"ENGINEER - the Village Engineer of Villa Park or his designee."

Amend the definition entitled "OWNER" to read as follows:

"The Village of Villa Park."

**ARTICLE 2 - PRELIMINARY MATTERS**

**SC 2.01.B** Delete Paragraph 2.01.B of the General Conditions in its entirety and insert the following in its place:

Evidence of Insurance:

"Before any Work at the Site is started, CONTRACTOR shall deliver to OWNER with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by the OWNER ) which CONTRACTOR is required to purchase and maintain in accordance with ARTICLE 5."

**SC 2.01** Add a new Paragraph 2.01.C immediately after Paragraph 2.01.B of the General Conditions which is to read as follows:

"The Agreement, Bonds, Evidence of Insurance, and such other portions of the Contract Documents as may be required shall be executed and delivered by CONTRACTOR to OWNER within 10 days after receipt of the Notice of Award. OWNER shall determine the number of counterparts required. OWNER will execute the counterparts. OWNER, CONTRACTOR, and ENGINEER shall each receive an executed counterpart of the Contract Documents and additional conformed copies distributed as required."

**SC 2.03** Delete Paragraph 2.03 of the General Conditions in its entirety and insert the following in its place:

"The Contract Time will commence on the date established in the Notice to Proceed issued by OWNER to CONTRACTOR, but in no event shall the Contract Time commence to run later than the 30th day after the effective date of the Contract, unless agreement in writing is provided by the OWNER. A Notice to Proceed may be given at any time within the 30 days after the effective date of the Contract."

**SC 2.06** Delete Paragraph 2.06 of the General Conditions in its entirety and insert the following in its place:

- A. After delivery of the executed Contract to OWNER, but before CONTRACTOR starts the Work at the Site, a conference will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A.
- B. The conference will be held at a location selected by OWNER. The conference will be attended by: CONTRACTOR'S Office Representative, CONTRACTOR'S General Superintendent, Any Subcontractors' or Suppliers' representatives whom CONTRACTOR may desire to invite or ENGINEER may request. including OWNER'S Representatives and Local Utilities Representatives. A suggested format would include, but not be limited to, the following subjects:
  - 1. Discuss proposed construction progress schedule to be submitted by CONTRACTOR in accordance with Section 01300 of the Specifications.
  - 2. Check of required bonds and insurance certifications prior to Notice to Proceed.
  - 3. Liquidated damages.
  - 4. Shop drawing submittal and approval procedure.
  - 5. Chain of command, direction of correspondence, and Coordinating responsibility between CONTRACTORS.
  - 6. Request for a weekly job meeting for all involved.
  - 7. Equal opportunity requirements.
  - 8. Laboratory testing of material requirements.
  - 9. Inventory of material stored on-site provisions.
  - 10. Progress payment procedure and estimate.

**ARTICLE 4 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS**

**SC 4.02.A.1** Amend Subparagraph 4.02.A.1 of the General Conditions to read as follows: Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; including the following:

None

## **ARTICLE 5 - BONDS AND INSURANCE**

**SC 5.01.C** Add the following language at the end of Paragraph 5.01.C of the General Conditions:

"In addition, no further progress payments under the Agreement will be made by OWNER until CONTRACTOR complies with the provisions of this Article."

**SC 5.03 through 5.06** Delete Paragraphs 5.03 through 5.06 inclusive of the General Conditions and insert the following:

SC 5.03 "CONTRACTOR'S Insurance Requirements:

- A. CONTRACTOR shall not commence Work under the Contract until he has obtained all insurance required under this Article to provide protection from claims which may arise out of or result from CONTRACTOR'S performance of the Work and CONTRACTOR'S other obligations under the Contract Documents whether such performance is by CONTRACTOR, by any Subcontractor, by anyone directly or indirectly employed by them or by anyone for whose acts any of them may be liable. CONTRACTOR shall procure and maintain for the duration of the Contract insurance of such types and in such amounts as may be necessary to protect himself and the interests of the OWNER against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the CONTRACTOR, his agents, representatives, employees, or subcontractors. As a minimum, CONTRACTOR shall secure and maintain the types of insurance as hereinafter specified, and shall submit evidence to OWNER on an annual basis that the insurance coverage are in force. The form and limits of such insurance, together with the underwriter thereof in each case, shall be acceptable to OWNER, but regardless of such acceptance it shall be the responsibility of CONTRACTOR to maintain adequate insurance coverage until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing defective Work in accordance with Paragraph 13.07 Failure of CONTRACTOR to maintain adequate coverage shall not relieve him of any contractual responsibility or obligation.

1. Public Liability and Property Damage Insurance

a. For CONTRACTOR

This insurance shall protect the CONTRACTOR from claims for bodily injury, personal injury, and property damage (except automotive equipment), which may arise because of the nature of the work, or from operations under this CONTRACT.

b. For OWNER

The separate policy of insurance shall name the OWNER and its employees and officials as additional insured. The original insurance policy shall be submitted for retention by the OWNER. This separate policy shall provide coverage to said OWNER and its employees and officials with respect to said work. Both bodily injury, personal injury, and property damage insurance must be on an occurrence basis, and said policy shall provide that the coverage afforded thereby shall be primarily coverage to the full limit of liability stated in the declarations, and if said OWNER and its employees and officials have other insurance against the loss covered by said policy, that other insurance shall be excess insurance only.

c. Property Insurance

CONTRACTOR shall purchase and maintain until final payment property insurance upon the work at the site to the full insurable value thereof. This insurance shall include the interests of OWNER, CONTRACTOR, and Subcontractors, (all of whom shall be listed as insured or additional insured parties), shall insure against the perils of fire and extended coverage, shall include "all-risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage, and such other perils as may be provided in paragraph SC 5.3.4., and shall include damages, losses and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property. If not covered under the "all-risk" insurance or otherwise provided in the Supplementary Conditions, CONTRACTOR shall purchase and maintain similar property insurance on portions of the work stored on and off the site or in transit when such portions of the work are to be included in an Application for Payment.

d. Amount of Coverage

Each of the above public liability and property damage policies of insurance shall provide coverage in the following minimum limits of liability: For bodily injury, \$3,000,000 each occurrence;

property damage, \$1,000,000 on account of any one occurrence with an aggregate limit of not less than \$3,000,000.

e. Subcontractors

The public liability and property damage insurance shall not be deemed to require the CONTRACTOR to have his Subcontractors named as co-insured in his policy of public liability and property damage, but the policy shall protect him from contingent liability which may arise from the operations of his Subcontractors. Also, the CONTRACTOR, shall secure certificates of insurance as evidence that each Subcontractor carries insurance to provide coverage under this Contract to the same limits as is required by the CONTRACTOR. The CONTRACTOR shall submit copies of his Subcontractors insurance certificates to the OWNER as evidence of insurance coverage.

f. Included Coverage

The above public liability and property damage insurance shall also include the following coverage:

- (1) Comprehensive
- (2) Premises
- (3) Contractor's protective (Subcontractors to the CONTRACTOR) Liability.
- (4) Personal injury (false arrest, malicious prosecution and unlawful detention or imprisonment; libel, slander, and defamation of character; wrongful eviction, invasion of privacy and wrongful entry). Employee exclusion shall be removed.
- (5) Broad Form Property Damage.
- (6) XCU (explosion, collapse, underground damage). Exclusions deleted when applicable to operations performed by the CONTRACTOR or his Subcontractors.
- (7) Completed operation and product liability coverage for the life of the Contract and maintain such coverage for a period of three (3) years after final acceptance of the work by the OWNER.
- (8) CONTRACTOR Liability with respect to the hold harmless Agreement as herein stated.

g. Comprehensive Automobile Liability

This insurance shall cover owned, hired, and other non-owned automobiles and shall protect the CONTRACTOR from claims for bodily injury or property damage which may arise from the use of motor vehicles engaged in various operations under this

Contract. The automobile insurance shall provide minimum limits of liability for bodily injury of \$500,000 for each person and \$1,000,000 each occurrence, and \$500,000 of property damage each occurrence.

h. Umbrella Policy

At the option of the CONTRACTOR, primary limits may be less than required, with an umbrella policy providing the additional limits needed. This form of insurance will be acceptable provided that the primary and umbrella policies both provide the insurance coverage herein required, and further provided that the umbrella policy minimum limits of coverage are \$5,000,000 per occurrence and \$5,000,000 aggregate. The umbrella coverage shall not apply to the OWNER'S protective policy.

2. Worker's Compensation Insurance

Before beginning the work, the CONTRACTOR shall furnish to the OWNER satisfactory proof that he has taken out, for the period covered by the work under this Contract, full worker's compensation insurance and, in addition, employee's liability insurance in an amount not less than \$1,000,000 for each occurrence, for all persons whom he may employ in carrying out the work contemplated under this Contract. In the event that the work of this Contract falls within the jurisdiction of the United States Longshoreman's and Harbor Workers Compensation Act and liability under Admiralty and Railroad Employees Federal Liability Act CONTRACTOR shall extend his worker's compensation insurance to provide and maintain in full force and effect during the period covered by this Contract insurance coverage under one or both of these Acts. Policies hereunder shall include an "all states" endorsement.

The insurer shall agree to waive all rights of subrogation against the OWNER, its officials, employees and volunteers for losses arising from work performed by CONTRACTOR for the OWNER.

3. Worker's Occupational Diseases Insurance

Worker's occupational disease insurance shall be taken out covering all persons whom the CONTRACTOR may employ in carrying out the work contemplated under this Contract.

4. Builder's Risk Insurance \*~~Applicable~~/**Not Applicable**

"All Risk" builder's risk insurance, in an amount equal to the contract price, shall cover, but shall not be limited to, fire, lightning, windstorm, hail, explosion, riot, riot attending a strike, civil commotion, smoke damage, damage by aircraft or vehicles, vandalism and malicious mischief, theft, collapse, flood, and earthquake. This insurance shall

name the OWNER and the Contractor as insured and shall include coverage, but not by way of limitation, for all damage or loss to the work and to appurtenances, to materials and equipment to be used on the project while the same are in transit, or stored on or off the project site, and to construction plant and temporary structures.

#### 5. Contractor's Pollution Liability

Contractor's Pollution Liability shall name the OWNER and Contractor as insured, and shall have limits of not less than \$1.0 million (\$1,000,000) per claim with coverages for:

- a. Property damage including physical injury to or destruction of tangible property including the resulting the loss of use thereof , clean up costs, and the loss of use of tangible property that has not been physically injured or destroyed;
- b. Defense including costs, charges and expenses incurred in the investigation adjustment or defense of claims for such compensatory damages;

For losses caused by pollution conditions that arise from the Services of the CONTRACTOR.

**SC 5.07** Delete Paragraph 5.07 of the General Conditions in its entirety and insert the following:

#### SC 5.07 Waiver of Rights

- A. "OWNER and CONTRACTOR waive all rights against each other for all losses and damages caused by any of the perils covered by the policies of insurance provided in response to paragraphs in this document and any other property insurance applicable to the work, and also waive all such rights against the Subcontractors, and all other parties named as insured in such policies for losses and damages so caused. As required by Paragraph 6.06.G, each Subcontractor between contractor, and a Subcontractor will contain similar waiver provisions by the Subcontractor in favor of Owner, CONTRACTOR, and all other parties named as insured. None of the above waivers shall extend to the rights that any of the insured parties may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued."
- B. "OWNER and CONTRACTOR intend that any policies provided in response to this document shall protect all of the parties insured and provide primary coverage for all losses and damages caused by the perils covered thereby.

Accordingly, all such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights

of recovery against any of the parties named as insured or additional insured, and if the insurers require separate waiver forms to be signed by any Subcontractor, CONTRACTOR will obtain the same."

**SC 5.08 and 5.09** Delete Paragraphs 5.08. and 5.09 of the General Conditions in their entirety.

## **ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES**

**SC 6.05.G** Add a new Paragraph 6.05 G immediately after Paragraph 6.05.F which is to read as follows:

"When substitutes are proposed and accepted by ENGINEER, and it is found that such substitutes alter the design or space requirements indicated on Drawings, CONTRACTOR shall be responsible for the costs involved to revise the design and construction, including the costs associated with the Work of other contractors due to such variance in design or space requirements. Therefore, CONTRACTOR shall thoroughly investigate the design parameters, conditions, and space requirements, with respect to the Contract Drawings and Specifications prior to requesting substitutes."

**SC 6.06.A and 6.06.B** Delete Paragraphs 6.06.A and 6.06.B of the General Conditions in their entirety and insert the following:

- A. CONTRACTOR shall not employ any Subcontractor or other person or organization (including those who are to furnish the principle items of material or equipment), whether initially or as a substitute, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, other person or organization against whom he has reasonable objection.
- B. Acceptance of any Subcontractor, other person or organization by OWNER shall not constitute a waiver of any right of OWNER to reject defective Work or Work not in conformance with the Contract Documents. If OWNER, after due investigation, has reasonable objection to any Subcontractor, other person or organization proposed by CONTRACTOR, CONTRACTOR shall submit an acceptable substitute. CONTRACTOR shall not, without the consent of OWNER, make substitution for any Subcontractor, other person or organization who has been accepted by OWNER.

**SC 6.06.G** Delete Paragraph 6.06 G of the General Conditions in its entirety and insert the following:

"All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the OWNER and contains waiver provisions as required by Paragraph SC 5.07 CONTRACTOR shall pay each Subcontractor a just share of any insurance

monies received by CONTRACTOR on account of losses under policies issued pursuant to Paragraph SC 5.03.A.4.”

**SC 6.08** Add the following language at the end of Paragraph 6.08 of the General Conditions which is to read as follows:

“Copies of all permits and licenses prepared or obtained by CONTRACTOR shall be submitted to OWNER prior to the commencement of construction. Copies of all permits and licenses obtained by OWNER shall be made available to CONTRACTOR and maintained by CONTRACTOR at project site.”

**SC 6.20** Delete Article 6.20 of the General Conditions in its entirety and insert the following in its place:

“To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold the Village, its officials, agents, consultants, representatives and employees (the “Indemnified Village Parties”) harmless against all injuries, deaths, loss, damages, claims, patent claims, suits, liabilities, judgments, cost and expenses (the “Claims”), which may in anywise accrue against the Indemnified Village Parties, including attorney’s fees and court costs, arising in whole, in part, or as a consequence of the performance of the work by the Contractor, its employees or subcontractors. The Contractor shall, at its own expense, appear, defend and pay all charges of attorneys and all costs and other expenses arising therefrom or incurred in connection therewith, and, if any judgment shall be rendered against the Indemnified Village Parties, in any such action, the Contractor shall, at its own expense, satisfy and discharge the same. Without limiting the generality of the foregoing indemnity, the Contractor shall indemnify, defend and hold the Indemnified Village Parties harmless from all Claims brought pursuant to any statute, law, order, or decree, which Claim arises from or is related to the Contractor’s performance of the work. Contractor expressly understands and agrees that any performance bond or insurance policies required by this contract, or otherwise provided by the Contractor, shall in no way limit the responsibility to indemnify, keep and save harmless and defend the Indemnified Village Parties as herein provided.”

## **ARTICLE 8 - OWNER'S RESPONSIBILITIES**

**SC 8.01** Delete Paragraph 8.01 of the General Conditions in its entirety.

## **ARTICLE 10 - CHANGES IN THE WORK**

**SC 10.03** Amend the first sentence of Paragraph 10.03 of the General Conditions to read as follows:

"OWNER, after consideration and approval, may execute appropriate Change Orders (or Written Amendments) with CONTRACTOR covering."

And as so amended, Paragraph 10.03 remains in effect.

## **ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION**

**SC 14.02.A.3** Amend Paragraph 14.02.A.3 of the General Conditions by deleting the word "Agreement" and inserting the words "Supplemental Conditions" in its place.

And as so amended, Paragraph 14.02.A.3 remains in effect.

**SC 14.02.A.4** Add new Paragraphs 14.02.A.4 and 14.02.A.5 after Paragraph 14.02.A.3 of the General Conditions which are to read as follows:

4. "Retainage:

After each Application for Payment has been found acceptable by OWNER, OWNER will pay an amount equal to the value of the Work completed less any previous payments to CONTRACTOR. An amount will be retained on each payment in accordance with the following schedule:

- (1) Ten percent (10%) until FINAL COMPLETION.
- (2) Retainage may be reduced after SUBSTANTIAL COMPLETION at the discretion of the ENGINEER

5. Per Public Act 87-773, effective January 1, 1993, which amended the Local Government Prompt Payment Act the following is included:

“When a contractor receives any payment, the contractor shall pay each subcontractor and material supplier in proportion to the work completed by each subcontractor and material supplier their application less any retention. If the contractor receives less than the full payment due under the public construction contract, the contractor shall be obligated to disburse on a pro rate basis those funds received, with the contract, subcontractor, and material suppliers each receiving a prorated portion based on the amount of payment. When, however, the public owner does not release the full payment due under the contract because there are specific areas of work or materials the contractor is rejecting or because the contractor has otherwise determined such areas are not suitable for payment, then those specific subcontractors or suppliers involved shall not be paid for that portion of the work rejected or deemed not suitable for payment and all other subcontractors and suppliers shall be paid in full. If the contractor, without reasonable cause, fails to make any payment to his subcontractors and material suppliers within 15 days after receipt of payment under the public construction contract, the contractor shall pay to his subcontractors and material suppliers, in addition to the payment due them, interest in the amount of 2% per month, calculated from the expiration date of the 15 day period until fully paid. This subsection shall also apply to any payments made by subcontractors and material suppliers to their subcontractors and material suppliers and to all payments made to lower their subcontractors and material suppliers throughout the contracting chain.

**SC 14.02.B.1** Amend the first sentence of Paragraph 14.02.B.1 of the General Conditions by deleting the words "ten days" and inserting the words "30 days" in its place.

And as so amended, Paragraph 14.02.B.1 remains in effect.

**SC 14.02.B.5** Add two new Paragraphs 14.02.B.5.e and 14.02.B.5.f immediately after Paragraph 14.02.B.5.d of the General Conditions which are to read as follows:

- e. the CONTRACTOR failed to supply lien waivers for materials, equipment, and Subcontract Work completed to date.
- f. Of reasonable doubt that the Work can be completed for the unpaid balance of the Contract Price.

And as so amended, Paragraph 14.02.B.5 remains in effect.

**SC 14.04.B** Delete Paragraph 14.04.B of the General Conditions in its entirety and replace it with the following:

- B. Within a reasonable time after Contractor's notification, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor.

And as so amended, Paragraph 14.04.B remains in effect.

**SC 14.04.D** Delete Paragraph 14.04.D in its entirety.

**SC 14.04.E** Amend Paragraph 14.04.E of the General Conditions by deleting the following words "on the tentative list." and insert the following words "required by the Contract Documents." in their place.

And as so amended, Paragraph 14.04.E remains in effect.

**SC 14.05** Delete Paragraph 14.05.A.4 of the General Conditions in its entirety.

And as so amended, Paragraph 14.05 remains in effect.

**SC 14.09** Delete Paragraph 14.09.A.1 of the General Conditions in its entirety.

And as so amended, Paragraph 14.09 remains in effect.

**SC 14.10** Add a new paragraph immediately after Paragraph 14.09 of the General Conditions which is to read as follows:

“Liquidated Damages:

Should CONTRACTOR or Surety fail to complete the Work within the time set forth in paragraph 3.1 of the Contract Documents or within such extra time as may be allowed by extension, there shall be deducted from any monies due or that may become due CONTRACTOR or Surety the sum set forth in paragraph 3.2 of the Contract Documents

for each and every calendar day, including Sundays and holidays, that the Work shall remain uncompleted. This sum shall be considered and treated not as a penalty but as fixed, agreed, and liquidated damages due OWNER from CONTRACTOR or Surety because of OWNER'S loss of income and other costs incurred resulting from the failure to complete the Work within the time specified. Permitting CONTRACTOR or Surety to continue and finish the Work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of OWNER of its rights under the Contract.

## **ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION**

**SC 15.01** Amend the first sentence of Paragraph 15.01 of the General Conditions by deleting the words "and Engineer".

And as so amended, Paragraph 15.01 remains in effect.

**SC 15.03** Amend the first sentence of Paragraph 15.4 of the General Conditions by deleting the words "and ENGINEER".

And as so amended, Paragraph 15.03 remains in effect.

**SC 15.04** Delete Paragraph 15.04 of the General Conditions in its entirety and replace it with the following: "If through no act or fault of CONTRACTOR, the Work is suspended for a period of more than 120 consecutive days by OWNER or under an order of court, or other public authority, the CONTRACTOR may, upon seven days' written notice to OWNER, terminate the Agreement and recover from OWNER payment on the same terms as provided in Paragraph 15.03.

## **ARTICLE 16 – DISPUTE RESOLUTION**

**SC 16.01** Delete Article 16 of the General Conditions in its entirety and insert the following in its place:

**SC 16.01** Methods and Procedures

A. The OWNER and CONTRACTOR may request mutual mediation of any Claim submitted to ENGINEER for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. OWNER and CONTRACTOR shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

**ARTICLE 17 - MISCELLANEOUS**

**SC 17.01** Amend Paragraph 17.01.A.2 of the General Conditions by inserting the words "(return receipt)" immediately following the words, "certified mail."

And as so amended, Paragraph 17.01 remains in effect.

**SC 17.01 B** Add a new Paragraph 17.01.B immediately after Paragraph 17.01.A of the General Conditions which is to read as follows:

"Whenever any provision of the Contract Documents requires the delivery of any Bond, Agreement, Certificate of Insurance or any other item, it shall be deemed to have been validly delivered if given in person to the individual, to a member of the firm or to an officer of the corporation for whom it is intended, or if given at or sent by registered or certified mail (return receipt), postage prepaid, to the last business address known to him who delivers the article."

**SC 17.02** Amend Paragraph 17.02 of the General Conditions by deleting the second sentence in its entirety.

And as so amended, Paragraph 17.02 remains in effect.

**END OF SECTION**

**NOT FOR BID**

**SECTION 007310  
WAGE RATES**

## Du Page County Prevailing Wage for October 2014

(See explanation of column headings at bottom of wages)

Trade Name	RG	TYP	C	Base	FRMAN	*M-F>8	OSA	OSH	H/W	Pensn	Vac	Trng
ASBESTOS ABT-GEN		ALL		38.200	38.700	1.5	1.5	2.0	13.78	10.12	0.000	0.500
ASBESTOS ABT-MEC		BLD		35.100	37.600	1.5	1.5	2.0	11.17	10.76	0.000	0.720
BOILERMAKER		BLD		44.240	48.220	2.0	2.0	2.0	6.970	17.54	0.000	0.350
BRICK MASON		BLD		42.580	46.840	1.5	1.5	2.0	9.850	13.60	0.000	1.030
CARPENTER		ALL		43.350	45.350	1.5	1.5	2.0	13.29	13.75	0.000	0.630
CEMENT MASON		ALL		39.250	41.250	2.0	1.5	2.0	12.70	17.14	0.000	0.450
CERAMIC TILE FNSHER		BLD		35.810	0.000	1.5	1.5	2.0	10.55	8.440	0.000	0.710
COMMUNICATION TECH		BLD		32.650	34.750	1.5	1.5	2.0	9.550	15.16	1.250	0.610
ELECTRIC PWR EQMT OP		ALL		37.890	51.480	1.5	1.5	2.0	5.000	11.75	0.000	0.380
ELECTRIC PWR GRNDMAN		ALL		29.300	51.480	1.5	1.5	2.0	5.000	9.090	0.000	0.290
ELECTRIC PWR LINEMAN		ALL		45.360	51.480	1.5	1.5	2.0	5.000	14.06	0.000	0.450
ELECTRIC PWR TRK DRV		ALL		30.340	51.480	1.5	1.5	2.0	5.000	9.400	0.000	0.300
ELECTRICIAN		BLD		38.160	41.980	1.5	1.5	2.0	9.550	18.29	4.680	0.680
ELEVATOR CONSTRUCTOR		BLD		49.900	56.140	2.0	2.0	2.0	12.73	13.46	3.990	0.600
FENCE ERECTOR	NE	ALL		35.840	37.840	1.5	1.5	2.0	13.01	11.51	0.000	0.300
FENCE ERECTOR	W	ALL		45.060	48.660	2.0	2.0	2.0	10.52	18.81	0.000	0.400
GLAZIER		BLD		40.000	41.500	1.5	2.0	2.0	12.49	15.99	0.000	0.940
HT/FROST INSULATOR		BLD		48.450	50.950	1.5	1.5	2.0	11.47	12.16	0.000	0.720
IRON WORKER	E	ALL		43.000	45.000	2.0	2.0	2.0	13.45	20.65	0.000	0.350
IRON WORKER	W	ALL		45.060	48.660	2.0	2.0	2.0	10.52	18.81	0.000	0.400
LABORER		ALL		38.000	38.750	1.5	1.5	2.0	13.78	10.12	0.000	0.500
LATHER		ALL		43.350	45.350	1.5	1.5	2.0	13.29	13.75	0.000	0.630
MACHINIST		BLD		44.350	46.850	1.5	1.5	2.0	6.760	8.950	1.850	0.000
MARBLE FINISHERS		ALL		31.400	32.970	1.5	1.5	2.0	9.850	13.10	0.000	0.600
MARBLE MASON		BLD		41.780	45.960	1.5	1.5	2.0	9.850	13.42	0.000	0.760
MATERIAL TESTER I		ALL		28.000	0.000	1.5	1.5	2.0	13.78	10.12	0.000	0.500
MATERIALS TESTER II		ALL		33.000	0.000	1.5	1.5	2.0	13.78	10.12	0.000	0.500
MILLWRIGHT		ALL		43.350	45.350	1.5	1.5	2.0	13.29	13.75	0.000	0.630
OPERATING ENGINEER		BLD	1	47.100	51.100	2.0	2.0	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		BLD	2	45.800	51.100	2.0	2.0	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		BLD	3	43.250	51.100	2.0	2.0	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		BLD	4	41.500	51.100	2.0	2.0	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		BLD	5	50.850	51.100	2.0	2.0	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		BLD	6	48.100	51.100	2.0	2.0	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		BLD	7	50.100	51.100	2.0	2.0	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		HWY	1	45.300	49.300	1.5	1.5	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		HWY	2	44.750	49.300	1.5	1.5	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		HWY	3	42.700	49.300	1.5	1.5	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		HWY	4	41.300	49.300	1.5	1.5	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		HWY	5	40.100	49.300	1.5	1.5	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		HWY	6	48.300	49.300	1.5	1.5	2.0	17.10	11.80	1.900	1.250
OPERATING ENGINEER		HWY	7	46.300	49.300	1.5	1.5	2.0	17.10	11.80	1.900	1.250
ORNAMNTL IRON WORKER E		ALL		43.900	46.400	2.0	2.0	2.0	13.36	17.24	0.000	0.650
ORNAMNTL IRON WORKER W		ALL		45.060	48.660	2.0	2.0	2.0	10.52	18.81	0.000	0.400
PAINTER		ALL		41.730	43.730	1.5	1.5	1.5	10.30	8.200	0.000	1.350
PAINTER SIGNS		BLD		33.920	38.090	1.5	1.5	1.5	2.600	2.710	0.000	0.000
PILEDRIIVER		ALL		43.350	45.350	1.5	1.5	2.0	13.29	13.75	0.000	0.630

PIPEFITTER	BLD	46.000	49.000	1.5	1.5	2.0	9.000	15.85	0.000	1.780
PLASTERER	BLD	41.250	43.760	1.5	1.5	2.0	9.700	13.08	0.000	0.980
PLUMBER	BLD	46.650	48.650	1.5	1.5	2.0	13.18	11.46	0.000	0.880
ROOFER	BLD	39.700	42.700	1.5	1.5	2.0	8.280	10.06	0.000	0.530
SHEETMETAL WORKER	BLD	44.000	46.000	1.5	1.5	2.0	10.65	13.06	0.000	0.820
SPRINKLER FITTER	BLD	49.200	51.200	1.5	1.5	2.0	11.25	9.500	0.000	0.450
STEEL ERECTOR	E ALL	42.070	44.070	2.0	2.0	2.0	13.45	19.59	0.000	0.350
STEEL ERECTOR	W ALL	45.060	48.660	2.0	2.0	2.0	10.52	18.81	0.000	0.400
STONE MASON	BLD	42.580	46.840	1.5	1.5	2.0	9.850	13.60	0.000	1.030
SURVEY WORKER	-> NOT IN EFFECT	ALL	37.000	37.750	1.5	1.5	2.0	12.97		
9.930	0.000	0.500								
TERRAZZO FINISHER	BLD	37.040	0.000	1.5	1.5	2.0	10.55	10.32	0.000	0.620
TERRAZZO MASON	BLD	40.880	43.880	1.5	1.5	2.0	10.55	11.63	0.000	0.820
TILE MASON	BLD	42.840	46.840	1.5	1.5	2.0	10.55	10.42	0.000	0.920
TRAFFIC SAFETY WRKR	HWY	32.750	34.350	1.5	1.5	2.0	6.550	6.450	0.000	0.500
TRUCK DRIVER	ALL 1	32.550	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.150
TRUCK DRIVER	ALL 2	32.700	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.150
TRUCK DRIVER	ALL 3	32.900	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.150
TRUCK DRIVER	ALL 4	33.100	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.150
TUCKPOINTER	BLD	41.620	42.620	1.5	1.5	2.0	9.850	12.61	0.000	0.650

Legend:

RG (Region)

TYP (Trade Type - All,Highway,Building,Floating,Oil & Chip,Rivers)

C (Class)

Base (Base Wage Rate)

FRMAN (Foreman Rate)

M-F>8 (OT required for any hour greater than 8 worked each day, Mon through Fri.

OSA (Overtime (OT) is required for every hour worked on Saturday)

OSH (Overtime is required for every hour worked on Sunday and Holidays)

H/W (Health & Welfare Insurance)

Pensn (Pension)

Vac (Vacation)

Trng (Training)

## Explanations

DUPAGE COUNTY

IRON WORKERS AND FENCE ERECTOR (WEST) - West of Route 53.

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties.

Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration. If in doubt, please check with IDOL.

#### EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

TRAFFIC SAFETY - work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

#### CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

#### COMMUNICATIONS TECHNICIAN

Low voltage installation, maintenance and removal of telecommunication facilities (voice, sound, data and video) including telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area networks), LAN (local area networks), and ISDN (integrated system digital network), pulling of wire in raceways, but not the installation of raceways.

#### MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all

rigging for heavy work, the handling of all material that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installation of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and exteriors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and exterior which are installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

#### OPERATING ENGINEER - BUILDING

Class 1. Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson Attachment; Batch Plant; Benoto (requires Two Engineers); Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Conveyor (Truck Mounted); Concrete Paver Over 27E cu. ft; Concrete Paver 27E cu. ft. and Under; Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, One, Two and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Lubrication Technician; Manipulators; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes: Squeeze Cretes-Screw Type Pumps; Gypsum Bulker and Pump; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-Form Paver; Straddle Buggies; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Rock Drill (Self-Propelled); Rock Drill

(Truck Mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators; Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Low Boys; Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches; Bobcats (up to and including  $\frac{3}{4}$  cu yd.) .

Class 4. Bobcats and/or other Skid Steer Loaders (other than bobcats up to and including  $\frac{3}{4}$  cu yd.); Oilers; and Brick Forklift.

Class 5. Assistant Craft Foreman.

Class 6. Gradall .

Class 7. Mechanics.

#### OPERATING ENGINEERS - HIGHWAY CONSTRUCTION

Class 1. Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines: ABG Paver; Backhoes with Caisson Attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Tower Cranes of all types; Creter Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dowell Machine with Air Compressor; Dredges; Formless Curb and Gutter Machine; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Truck Mounted; Hoists, One, Two and Three Drum; Hydraulic Backhoes; Backhoes with shear attachments; Lubrication Technician; Manipulators; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Rock/Track Tamper; Roto Mill Grinder; Slip-Form Paver; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Trenching Machine; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole Drills (Tunnel Shaft); Underground Boring and/or Mining Machines 5 ft. in diameter and over tunnel, etc; Underground Boring and/or Mining Machines under 5 ft. in diameter; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (Less than 1 cu. yd. Backhoe Bucket or over or 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); Drills, All; Finishing Machine - Concrete; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; All

Locomotives, Dinky; Off-Road Hauling Units (including articulating)/2 ton capacity or more; Non Self-Loading Ejection Dump; 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): Tank Car Heater; Tractors, Push, Pulling Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 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 Machine; 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.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Hydro- Blaster; Light Plants, All (1 through 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.

Class 5. Bobcats (all); Brick Forklifts; Oilers.

Class 6. Field Mechanics and Field Welders

Class 7. Gradall and machines of like nature.

#### TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled Dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors 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, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls 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, 1-man operation; Pole Trailer, over 40 feet; Pole

and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

#### TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

#### Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 for wage rates or clarifications.

#### LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

**NOT FOR BID**

**SECTION 011100  
SUMMARY OF WORK**

**PART 1 GENERAL**

**1.01 PROJECT DESCRIPTION:**

**A. DESCRIPTION:**

This Project consists of the replacement of an existing sanitary lift station including demolition of various surface amenities including the tops of the existing wet well as well as the associated piping and pumps to 20 feet below grade, replacing with submersible pumps, electronic controls, and piping; tying into the existing Supervisory Control and Data Acquisition (SCADA) system and all other modifications necessary to have a fully operating lift station. The lift station is located south of the intersection of St. Charles Road and Route 83 on the west side of Route 83 near the dead-end of S. Riverside Court in the Village of Villa Park, Illinois.

**1.02 IDENTIFICATION OF DRAWINGS:**

A. Work included is shown on Drawings included within these Contract Documents.

**1.03 FORM OF SPECIFICATIONS:**

A. These Specifications are written in Construction Specifications Institute (CSI) three-part format (General, Products, and Execution).

B. Items of work are specified by section. Specifications or requirements of one or more sections may apply or be referenced in other sections.

C. CONTRACTOR shall perform or provide items of work stated and comply with requirements stated in each section unless specifically assigned to other contractors or OWNER.

D. The term "provide" shall mean "furnished and installed by CONTRACTOR".

**1.04 CONTRACTOR'S USE OF PREMISES:**

A. Coordinate use of premises under direction of ENGINEER.

B. Assume full responsibility for protection and safekeeping of products under this Contract.

C. Obtain and pay for use of additional storage or work areas needed for operations at no additional cost to OWNER.

D. Conduct operations to ensure least inconvenience to general public.

1.05

WORKING HOURS:

- A. CONTRACTOR shall schedule normal work hours between 7:00 a.m. and 5:00 p.m. Monday through Saturday. Work during other hours will be allowed only as authorized by OWNER. Work between 7:00 am and 5:00 pm on Saturday may be authorized by ENGINEER.
- B. If CONTRACTOR requests to work outside of the standard eight (8) hour work day or forty (40) hour work week, and the request has received approval from the OWNER, the CONTRACTOR shall assume responsibility for the cost of the inspection provided by the ENGINEER. The rates at which the inspection time is to be compensated will be determined by the OWNER.

**\*\*\* END OF SECTION \*\*\***

**SECTION 012000  
MEASUREMENT AND PAYMENT**

**PART 1 GENERAL**

**1.01 REQUIREMENTS INCLUDED:**

- A.
- B. This Section describes the measurement and payment for the Work to be done under the items included in this Contract.
- C. Each unit or lump-sum price stated in the Bid shall constitute full compensation as herein specified for each item of work completed in accordance with the Contract Documents. The price shall be full compensation for furnishing all materials and for all labor, equipment, fees, tools and incidentals necessary to complete the item as included in the Contract Documents.
- D. No separate measurement and payment shall be made for Work not specifically listed in this Section. It shall be understood that all Work necessary to complete the Contract as included in the Contract Documents shall be included in cost of the unit and lump sum items included in the Contract.
- E.

**1.02 DESCRIPTION OF BID ITEMS:**

- A. General:
  - 1. Provide necessary labor, materials, equipment, supervision, and other services to construct each bid item as required by Contract Documents.
- B. Bid Items:
  - 1. **Bid Item No. 1 – MOBILIZATION/DEMOBILIZATION**
    - a. Include Costs of:
      - 1) All costs associated with complete performance of the PROJECT.
    - b. Measurement and Payment:
      - 1) Measurement for **MOBILIZATION/DEMOBILIZATION** shall consist of the complete mobilization and demobilization of equipment and materials from the project location. This bid item shall be paid for at the lump sum price for **MOBILIZATION/DEMOBILIZATION**.
    - c. Payment:
      - 1) For **MOBILIZATION/DEMOBILIZATION** shall include the cost of work listed herein in the lump sum unit price of **MOBILIZATION/DEMOBILIZATION**.

2. **Bid Item No. 2 – CONCRETE WET WELL MODIFICATIONS**

- a. Materials and Installation as Described in:
- 1) Division 2 – Sitework
  - 2) Division 3 - Concrete
- b. Include Costs of:
- 1) Site preparation, removal and disposal of existing top of structure, fillets and materials as needed and excavation.
  - 2) Materials and installation of a concrete wet well top that can support H-20 loading complete with duplex hatch for access to the submersible pumps.
  - 3) Sealing around all pipe penetrations.
  - 4) Filleting the bottom of the wet well to eliminate any dead spots where solids could accumulate.
  - 5) Materials and installation of vent.
  - 6) Cleanup.
  - 7) Other appurtenant and incidental work.
  - 8) General requirements of section listed.
- c. Do Not Include Costs of:
- 1) Work included in other bid items.
- d. Measurement for Payment:
- 1) Measurement for the **CONCRETE WET WELL MODIFICATIONS** shall consist of the complete installation of a **CONCRETE WET WELL MODIFICATIONS**. This bid item shall be paid for at the lump sum price.
- e. Payment:
- 1) For the **CONCRETE WET WELL MODIFICATIONS** include cost of work listed herein in the lump sum price for the **CONCRETE WET WELL MODIFICATIONS**.

3. **Bid Item No. 3 – MECHANICAL PIPING AND VALVES**

- a. Materials and Installation as Described in:
- 1) Work described in other bid items.
- b. Include Costs of:
- 1) Mechanical piping, fitting and valve materials and installation of all force main piping within the project, including in the wet well, between the wet well and valve vault, in the valve vault, and the forcemain leaving the valve vault.
  - 2) All standard mechanical piping fittings required.
  - 3) All necessary demolition, excavation and backfill and removal and disposal of material as needed.
  - 4) Cleanup.

- 5) Other appurtenant and incidental work.
- 6) General requirements of section listed.
- c. Do Not Include Costs of:
  - 1) Work included in other bid items.
- d. Measurement for Payment:
  - 1) Measurement for **MECHANICAL PIPING** shall consist of the complete installation of **MECHANICAL PIPING**. This bid item shall be paid for at the lump sum price.
- e. Payment:
  - 1) For the **MECHANICAL PIPING** include cost of work listed herein in lump sum unit price for **MECHANICAL PIPING**.

4. **Bid Item No. 4 – SUBMERSIBLE PUMPING EQUIPMENT**

- a. Include Costs of:
  - 1) Material and accessories.
  - 2) Removal of existing submersible pumping equipment, floats, guide rails, piping, and other associated pumping related equipment.
  - 3) Installation of the two (2) duplex pumps.
  - 4) Installation of two (2) stainless steel guide rail systems and accessories.
  - 5) Installation of the pressure transducer and floats for level control and alarms.
  - 6) All electrical conduit and cable required for a fully operational submersible pump system and level monitoring assembly.
  - 7) Control panel, with portable generator plug
  - 8) Cleanup.
  - 9) Other appurtenant and incidental work.
- b. Do Not Include Costs of:
  - 1) Work included in other bid items.
- c. Measurement for Payment:
  - 1) Measurement for the **SUBMERSIBLE PUMPING EQUIPMENT** shall consist of the complete installation of the **SUBMERSIBLE PUMPING EQUIPMENT**. This bid item shall be paid for at the lump sum price.
- d. Payment:
  - 1) Payment for the **SUBMERSIBLE PUMPING EQUIPMENT** shall include the cost of work listed herein in lump sum price for the **SUBMERSIBLE PUMPING EQUIPMENT**.

5. **Bid Item No. 5 – ELECTRICAL WORK**

- a. Include Costs of:

- 1) Material and accessories.
  - 2) All equipment, materials, labor and appurtenances required for the complete installation of all electrically operated or controlled facilities within the project including pumping operation and required SCADA modifications as shown on the Contract Documents.
  - 3) All necessary demolition, excavation and backfill and removal and disposal of material as needed.
  - 4) Cleanup.
  - 5) The proposed access gate on the existing fence shown on Electrical Drawing sheet E003.
  - 6) Other appurtenant and incidental work.
- b. Do Not Include Costs of:
- 1) Work included in other bid items.
- c. Measurement for Payment:
- 1) Measurement for the **ELECTRICAL WORK** shall consist of the complete performance of **ELECTRICAL WORK** of the material and to the dimensions shown on the plans.
- d. Payment:
- 1) Payment for the **ELECTRICAL WORK** shall include the cost of work listed herein in the lump sum price for **ELECTRICAL WORK**.

6. **Bid Item No. 6 – LAWN RESTORATION**

- 1) Include Costs of:
  - 1) Material and accessories.
  - 2) Furnish and install 4 inches of top soil, fertilizer and grass seed on all disturbed areas.
  - 3) Cleanup.
  - 4) Other appurtenant and incidental work.
- 2) Do Not Include Costs of:
  - 1) Work included in other bid items.
- 3) Measurement for Payment:
  - 1) Measurement for the **LAWN RESTORATION** shall consist of the complete installation of **LAWN RESTORATION**. This bid item shall be paid for at the unit price.
- 4) Payment:
  - 1) Payment for the **LAWN RESTORATION** shall include the cost of work listed herein in the lump sum unit price for the **LAWN RESTORATION**.

**\*\*\* END OF SECTION \*\*\***

**SECTION 013300  
SUBMITTAL**

**PART 1 GENERAL**

**1.01 DESCRIPTION:**

- A. This section contains requirements for submittals of construction progress schedules, shop drawings, and other submittals required by Contract Documents.
- B. Submittal for Review:  
Submit required materials for ENGINEER'S review in accordance with requirements of Contract Documents.

**1.02 CONSTRUCTION PROGRESS SCHEDULES:**

- A. Prepare and submit construction progress schedule in accordance with requirements of General Conditions.
- B. No work shall be done between 5:00 p.m. and 7:00 a.m., nor, on Saturdays, Sundays, or legal holidays without written permission of OWNER. However, emergency work may be done with permission from ENGINEER.
- C. Prepare schedules in form of a horizontal bar chart, CPM, or other approved format.
  - 1. Provide separate horizontal bar for each item.
  - 2. Show dates for beginning and completion of each item of construction.
  - 3. Allow space for notations and future revisions.
- D. Provide a weekly workforce schedule every Friday prior to 5:00 p.m. indicating the CONTRACTOR's and SUBCONTRACTOR's employees by IDOL classification that shall be working at the project site the following week. The CONTRACTOR shall update this schedule throughout the week as necessary. Failure to provide this weekly workforce schedule on time and to accurately maintain it shall void the contract time extension and hourly rate compensation provisions under Section 1010-1.06(c).

**1.03 SUBMITTALS:**

- A. Submit shop drawings, certifications, and samples required in specification sections.
- B. CONTRACTOR'S responsibilities shall include:
  - 1. Review shop drawings, certifications, and samples prior to submittal.
  - 2. Determine and verify:
    - a. Field measurements.
    - b. Field construction criteria.
    - c. Catalog numbers and similar data.
    - d. Conformance with specifications.
  - 3. Coordinate each submittal with requirements of work and of Contract Documents.

4. Notify ENGINEER in writing, at time of submittal, of deviations in submittals from requirements of Contract Documents.
5. Do not begin fabrication or other work which requires submittals until return of submittals with ENGINEER approval.
6. Designate in construction progress schedule, dates for submittal and receipt of reviewed shop drawings, certifications and samples.
7. The Superintendent on the job shall have a Portable Phone, which shall be available during the working day.

C. Submittals shall contain:

1. Date of submittal and dates of previous submittals.
2. Project title and number.
3. Contract identification.
4. Names of:
  - a. CONTRACTOR
  - b. Supplier
  - c. Manufacturer
5. Identification of product, with identification numbers, and drawing and specification section numbers.
6. Field dimensions, clearly identified.
7. Identify details required on drawings and in specifications.
8. Show manufacturer and model number, give dimensions, and provide clearances.
9. Relation to adjacent or critical features of work or materials.
10. Applicable standards, such as ASTM or Federal Specification numbers.
11. Identification of deviations from Contract Documents.
12. Identification of revisions on resubmittals.
13. Eight (8) inch by three (3) inch blank space for CONTRACTOR and ENGINEER stamps.
14. CONTRACTOR'S stamp, signed, certifying to review of submittal, verification of products, field measurement, field construction criteria, and coordination of information within submittal with requirements of work and Contract Documents.

D. Resubmittal requirements shall include:

1. Corrections or changes in submittals required by ENGINEER. Resubmittals are required until approved.
2. Shop drawings and product data:
  - a. Revise initial drawings or data and resubmit as specified for initial submittal.
  - b. Indicate changes which have been made other than those requested by ENGINEER.
3. Submit new samples as required for initial submittal.

E. Distribute reproductions of shop drawings and copies of product data which carry ENGINEER'S stamp approval to:  
CONTRACTOR'S file.  
Subcontractors.  
Supplier or fabricator.

F. ENGINEER'S duties include:

- 1) Review submittals with reasonable promptness and in accordance with schedule.
- 2) Affix stamp and signature, and indicate requirements for resubmittal or approval of submittal.
- 3) Return submittals to CONTRACTOR for distribution or for resubmittal.

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 SUBMITTAL REQUIREMENTS:

A. Provide complete copies of required submittals as follows:

1. Construction progress schedule:
  - a. Two copies of initial schedule
  - b. Two copies of any revision
2. Shop drawings: three copies
3. Preconstruction video recording: one copy
4. Other required submittals:
  - a. Three copies if required for review
  - b. Two copies if required for record

B. Deliver required copies of submittal to ENGINEER.

**\*\*\* END OF SECTION \*\*\***

**NOT FOR BID**

**SECTION 015000**  
**CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

**PART 1 GENERAL**

**1.01 DESCRIPTION:**

- A. Furnish, install and maintain temporary facilities and controls required for construction; remove on completion of work.

**PART 2 PRODUCTS**

**2.01 MATERIALS – GENERAL:**

- A. Temporary construction materials may be new or used, but must be adequate in capacity for required usage, shall not create unsafe conditions, and shall not violate requirements of applicable codes and standards.

**2.02 TEMPORARY SANITARY FACILITIES**

- A. The CONTRACTOR shall provide temporary sanitary toilet facilities conforming to state and local health and sanitation regulations, in sufficient number for use by CONTRACTOR'S and SUBCONTRACTOR's employees.
- B. Maintain in sanitary condition and properly supplied with toilet paper.
- C. Remove from site before final acceptance of work.

**2.03 TEMPORARY FIRE PROTECTION**

- A. Fire hydrants, hoses, and manual alarm stations, and fire extinguishers shall remain accessible at all times to the OWNER and not be blocked by the CONTRACTOR'S and SUBCONTRACTOR's work, even on a temporary basis.

**2.04 TEMPORARY SITE WORK:**

- A. Exercise caution to minimize increase in suspended solids and turbidity in surface waters within and adjacent to construction area. Spoils are not to be deposited in surface waters. Control and minimize sediment runoff and excavation erosion to surface waters.

**2.05 DAMAGE TO EXISTING PROPERTY:**

- A. Be responsible for replacing or repairing damage to existing buildings, sidewalks, roads, parking lot surfacing, utilities, and other existing assets.
- B. CONTRACTOR shall take measures to insure that debris does not enter any of the OWNER'S facilities (including but not limited to sanitary and storm sewers, valve vaults and boxes). If debris does enter these facilities, the CONTRACTOR shall take immediate corrective action to remove all of the debris.

2.06 SECURITY:

- A. Security will not be provided by OWNER.
- B. CONTRACTOR shall be held responsible for loss or injury to persons or property where his work is involved, and shall provide such security take such precautionary measures as deemed necessary to protect CONTRACTOR'S and OWNER'S interests.

2.07 TEMPORARY PARKING

- A. Make arrangements for parking area for employee's vehicles.
- B. Costs involved in obtaining this parking area shall be borne by CONTRACTOR.

2.08 2.08 TEMPORARY FENCING

- A. If required to protect the CONTRACTOR's work, the CONTRACTOR shall provide temporary fencing sufficient to prevent trespass by public into active construction areas as specified in Section 01570.
- B. Materials shall be sufficiently durable to be effective for the duration of the work. Materials that are, in the opinion of the OWNER or ENGINEER, decrepit or unsightly shall be immediately removed and replaced by the CONTRACTOR.

2.09 PORTABLE PHONE:

- A. The Superintendent of the job must have a portable phone, so he may be reached at all times during the working day.

PART 3 EXECUTION

3.01 GENERAL:

- A. Provide and operate systems to ensure continuous service.
- B. Modify and extend systems as work progress requires.

3.02 REMOVAL:

- A. Completely remove temporary materials and equipment when their use is no longer required.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities.
- C. Restore existing or permanent facilities used for temporary services to specified, or to original condition.

**\*\*\* END OF SECTION \*\*\***

**SECTION 015600  
PROTECTION OF ENVIRONMENT**

**PART 1 GENERAL**

**1.01 DESCRIPTION:**

- A. CONTRACTOR, in executing work, shall maintain work areas on-site and off-site free from environmental pollution that would be in violation of any federal, state or local regulations. By submitting a bid, the CONTRACTOR indicates that it is aware that the properties adjacent to the project are residential and the OWNER will require the CONTRACTOR to adhere to site appearance, and noise and dust control standards that it enforces in residential neighborhoods.

**1.02 PROTECTION OF SEWERS:**

- A. Take adequate measures to prevent impairment of operation of existing sewer system. Prevent construction material, pavement, concrete, earth, or other debris from entering sewer or sewer structure.
- B. Divert sewage flow interfering with construction to sewers leading to wastewater treatment plant. Prior to commencing excavation and construction, submit to ENGINEER for review, detailed plans, including routing and connections, required to handle and dispose of sanitary wastes. By reviewing plan, ENGINEER neither accepts responsibility for adequacy thereof nor for damages to public or private property resulting therefrom, such responsibilities remain with CONTRACTOR.

**1.03 PROTECTION OF WATERWAYS:**

- A. Observe rules and regulations of State of Illinois and agencies of U.S. government prohibiting pollution of any lake, stream, river or wetland by dumping of refuse, rubbish, dredge material or debris therein.
- B. Provide holding ponds or approved method which will handle, carry through, or divert around work flows, including storm flows and flows created by construction activity, so as to prevent excessive silting of waterways or flooding damage to property.
- C. Comply with procedures outlined in U.S. EPA manuals entitled, "Guidelines for Erosion and Sedimentation Control Planning and Implementation", Manual EPA-72-015 and "Processes, Procedures, and Methods to Control Pollution Resulting from All Construction Activity", Manual EPA-43019-73-007.

**1.04 DISPOSAL OF EXCESS EXCAVATED AND OTHER WASTE MATERIALS:**

- A. Dispose of excess excavated material not required or suitable for backfill and other waste material in a lawful manner.

**1.05 PROTECTION OF AIR QUALITY:**

- A. Minimize air pollution by wetting down bare soils during windy periods, requiring use of properly operating combustion emission control devices on construction vehicles and equipment used by CONTRACTORS, and encouraging shutdown of motorized equipment not actually in use.
- B. Trash burning will not be permitted on construction site.
- C. If temporary heating devices are necessary for protection of work, such devices shall be of type that will not cause air pollution.

1.06 USE OF CHEMICALS:

- A. Chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, must show approval of either U.S. EPA or U.S. Department of Agriculture or any other applicable regulatory agency.
- B. Use of such chemicals and disposal of residues shall be in conformance with manufacturer's instructions.

1.07 NOISE AND DUST CONTROL:

- A. Conduct operations to cause least annoyance to residents in vicinity of work, and comply with applicable local ordinances.
- B. Equip compressors, hoists, and other apparatus with such mechanical devices as may be necessary to minimize noise and dust. Equip compressors with silencers on intake lines.
- C. Equip gasoline or oil operated equipment with silencers or mufflers on intake and exhaust lines.
- D. Line storage bins and hoppers with material that will deaden sounds.
- E. Conduct operation of dumping rock and of carrying rock away in trucks so as to cause minimum of noise and dust.
- F. Allowable route for vehicles carrying excavated soil, rock, concrete, or other material will be approved by OWNER. Do not operate on public streets between hours of 5:00 p.m. and 7:00 a.m., or on Saturdays, Sundays or legal holidays unless approved by OWNER.
- G. Keep paved areas clean and free of materials contributing to dust. Applicable environmental regulations for dust prevention will be strictly enforced. Provide an application of water to minimize dust from unpaved areas in the construction area at the ENGINEER's direction, if required.
- H. All watering described herein shall be done with a spray application. An open end hose will not be acceptable. The method of watering shall meet the approval of the ENGINEER.

**\*\*\* END OF SECTION \*\*\***

**SECTION 017800  
CONTRACT CLOSEOUT**

**PART 1 GENERAL**

**1.01 DESCRIPTION:**

- A. This section describes an orderly and efficient transfer of the completed work to the OWNER.

**1.02 QUALITY ASSURANCE:**

- A. Prior to requesting inspection by the ENGINEER, use adequate means to assure that the work is completed in accordance with the specified requirements and is ready for the requested inspection.

**1.03 PROCEDURES:**

A. Substantial completion:

1. Follow the procedures outlined in Paragraph 14.04 of the Supplementary Conditions.

B. Final completion:

1. Prepare and submit the notice required by the first sentence of Paragraph 14.11 of the General Conditions.
2. Verify that the work is complete including, but not necessarily limited to the items mentioned in Paragraph 14.12 of the General Conditions.
3. Certify that:
  - a. Contract Documents have been reviewed;
  - b. Work has been inspected for compliance with the Contract Documents;
  - c. Work has been completed in accordance with the Contract Documents;
  - d. Work has been tested as required;
  - e. Work is completed and ready for final inspection.
4. The ENGINEER will make an inspection to verify status of completion.
5. Should the ENGINEER determine that the work is incomplete or defective:
  - a. The ENGINEER will promptly so notify the CONTRACTOR, in writing, listing the incomplete or defective work;
  - b. The CONTRACTOR will remedy the deficiencies promptly and notify the ENGINEER when ready for re-inspection.
6. When the ENGINEER determines that the work is acceptable under the Contract Documents, he will request the CONTRACTOR to make closeout submittals.

- C. Project Closeout and Final Submittals include, but are not necessarily limited to:
1. A final statement of accounting to be submitted by the CONTRACTOR to the ENGINEER, showing all adjustments to the Contract Sum. The ENGINEER will prepare a Final Pay Request to be submitted to the OWNER. Accompanying this Final Pay Request will be evidence of payment and final waivers of lien from the CONTRACTOR, subcontractors and material suppliers.

**\*\*\* END OF SECTION \*\*\***

## SECTION 017836

### WARRANTIES

#### PART 1 - GENERAL

##### 1.01 SUMMARY:

- A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.
  - 1. Refer to the GENERAL CONDITIONS for terms of the Contractor's period for correction of the Work.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  - 2. Procedures for submitting warranties: SECTION 013300.
  - 3. Contract closeout procedures: SECTION 017800.
  - 4. Specific requirements for warranties on products and installations specified to be warranted: DIVISIONS 2 through 48.
  - 5. Certifications and other commitments and agreements for continuing services to Owner: Specified throughout the Contract Documents.
- C. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve Suppliers, manufacturers, and Subcontractors required to countersign special warranties with Contractor.

##### 1.02 DEFINITIONS:

- A. Standard product warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by manufacturer to Owner.
- B. Special warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for Owner.

##### 1.03 WARRANTY REQUIREMENTS:

- A. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.
- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether Owner has benefited from use of the Work through a portion of its anticipated useful service life.
- D. Owner's Recourse: Expressed warranties made to Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the Law. Expressed warranty periods shall not be interpreted as limitations on the time in which Owner can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- E. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, Owner reserves the right to refuse to accept the Work, until Contractor presents evidence that entities required to countersign such commitments are willing to do so.

1.04 SUBMITTALS:

- A. Submit written warranties to Engineer prior to the date certified for Substantial Completion. If the Certificate of Substantial Completion designates a commencement date for warranties other than the Date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of Engineer.
  1. When a designated portion of the Work is completed and occupied or used by Owner, by separate agreement with Contractor during the construction period, submit properly executed warranties to Engineer within 15 days of completion of that designated portion of the Work.
- B. When the Contract Documents require Contractor, or Contractor and a Subcontractor, Supplier, or manufacturer to execute a special warranty, prepare a written document that contains appropriate terms and identification, ready for execution by required parties. Submit a draft to Owner, through Engineer, for approval prior to final execution.
- C. Prepare a written document utilizing the appropriate form, ready for execution by Contractor, or by Contractor, Subcontractor, Supplier, or manufacturer. Submit a draft to Owner, through Engineer, for approval prior to final execution.
  1. Refer to DIVISIONS 2 through 48 Sections for specific content requirements and particular requirements for submitting special warranties.
- D. Form of Submittal: At Final Completion, compile 2 copies of each required warranty properly executed by Contractor, or by Contractor, Subcontractor, Supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Contract Documents.
- E. Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the installer.
  2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," and as required by SECTION 013300.
  3. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PRODUCTS Not Applicable

EXECUTION Not Applicable

**END OF SECTION 017836**

**SECTION 312050  
SITE PREPARATION AND EARTHWORK**

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. This Section includes all subgrade preparation, excavating, trenching, filling, backfilling (including controlled low-strength material (CLSM)), compacting, grading, riprapping, topsoiling, and all related items necessary to complete the Work indicated or specified.

**1.02 REFERENCES:**

- A. Applicable Standards:
1. American Society for Testing and Materials (ASTM) (Equivalent AASHTO standards may be substituted as approved):
    - a. C33 - Concrete Aggregates.
    - b. C88 - Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
    - c. C94/C94M - Ready-Mix Concrete.
    - d. C144 - Aggregate for Masonry Mortar.
    - e. C150 - Portland Cement.
    - f. C173/C173M - Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
    - g. C231 - Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
    - h. C403/C403M - Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance.
    - i. C940 - Test Method for Expansion and Bleeding of Freshly Mixed Grouts for Preplaced-Aggregate Concrete in the Laboratory.
    - j. D75 - Practice for Sampling Aggregates.
    - k. D422 - Test Methods for Particle-Size Analysis of Soils.
    - l. D698 - Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup>).
    - m. D1140 - Test Methods for Amount of Material in Soils Finer than the No. 200 (75  $\mu$ m) Sieve.
    - n. D1241 - Materials for Soil-Aggregate Subbase, Base, and Surface Courses.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

- o. D1556 – Test Method for Density and Unit Weight of Soil In-place by the Sand Cone Method.
  - p. D1557- Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup>).
  - q. D2167 - Test Method for Density and Unit Weight of Soil in-Place by the Rubber Balloon Method.
  - r. D2487 - Classification of Soils for Engineering Purposes (Unified Soil Classification System).
  - s. D3776 – Test Methods for Mass per Unit Area (Weight) of Fabric.
  - t. D4253 - Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.
  - u. D4254 - Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
  - v. D4318 - Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
  - w. D4546 - Test Methods for One-Dimensional Swell or Settlement Potential of Cohesive Soils.
  - x. D4632 - Test Method for Grab Breaking Load and Elongation of Geotextiles.
  - y. D4751 - Test Method for Determining the Apparent Opening Size of a Geotextile.
  - z. D4832 - Test Method for Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders.
  - aa. D4833 - Test Method for Index Puncture Resistance of Geotextiles, Gemembranes, and Related Products.
  - bb. D5084 - Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter.
  - cc. D5239 - Practice for Characterizing Fly Ash for use in Soil Stabilization
  - dd. D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
- 2. Occupational Safety and Health Administration (OSHA):
    - a. 29 CFR Part 1926 - Safety and Health Regulations for Construction.
  - 3. Standard Specifications for Road and Bridge Construction, State of Illinois.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

1.03 SUBMITTALS:

- A. Submit as specified in DIVISION 1.
- B. Includes, but not limited to, the following:
  - 1. Test results from laboratory testing of proposed borrow material.
  - 2. Test results from laboratory testing of granular material and trench stabilization material.
  - 3. Test results from laboratory testing of CLSM.
  - 4. Erosion control plan.
  - 5. Dewatering Plan.
  - 6. Sheeting and Shoring Excavation Plan.
- C. Where selecting an option for excavation, trenching, and shoring in compliance with local, state, or federal safety regulations such as OSHA 29 CFR Part 1926 or successor regulations, which require design by a registered professional engineer, submit (for information only and not for Engineer approval) the following:
  - 1. Copies of design calculations and notes for sloping, benching, support systems, shield systems, and other protective systems prepared by or under the supervision of a professional engineer legally authorized to practice in the jurisdiction where the Project is located.
  - 2. Documents provided with evidence of registered professional engineer's seal, signature, and date in accordance with appropriate state licensing requirements.

1.04 QUALITY ASSURANCE:

- A. Sampling and Testing:
  - 1. Tests to determine conformance with all requirements of this Specification for quality and properties of all Contractor -secured materials, including borrow materials (both on or off Site) proposed for use, shall be performed by an independent, commercial laboratory retained and compensated by Contractor, and approved by Engineer.
  - 2. When incorporating materials into the Project, quality control testing will be performed during construction by a testing laboratory retained and compensated by Owner.

1.05 PROJECT CONDITIONS:

- A. Lines and grades shall be as indicated. Owner will furnish benchmarks, base lines, and reference points as necessary to permit Contractor to lay out and construct the Work properly.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

- B. Carefully maintain all benchmarks, monuments, and other reference points and replace as directed by Engineer if disturbed or destroyed.
- C. Temporary Erosion and Sediment Controls: Furnish, install, construct, and maintain temporary measures to control erosion and minimize the siltation of intermittent streams and the pollution of private properties. Temporary erosion and sediment control measures shall be constructed in substantial compliance with local, state, federal, and jurisdictional agency's regulations and Contract Drawings (if applicable). Temporary erosion and sediment control measures shall be maintained until completion of the Work.
- D. Disposition of Utilities:
  - 1. Existing underground utilities are shown on Contract Drawings using the best information available at the time of Drawing preparation. Contractor shall identify, locate and protect all underground utilities which may be affected by construction under this Contract before starting excavation or other Site construction activities which could damage existing utilities.
  - 2. Remove or relocate only as indicated, specified, or directed. Provide a minimum 48-hours' notice to Engineer and receive written notice to proceed before interrupting any utility service.
  - 3. Adequately protect from damage all active utilities and remove or relocate only as indicated or approved.
  - 4. Report active, inactive, and abandoned utilities encountered in excavating and grading operations that are not indicated on Contract Drawings. Remove, plug, or cap as directed by Engineer.
  - 5. Provide as-constructed drawings of Underground Facilities either not shown or found at locations that differ from those shown on Contract Drawings.
  - 6. Provide a minimum of 48 hours' notice to the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) prior to starting the sanitary relief station.
- E. Survey work, to accurately determine locations, elevations, and quantities of Contract pay items, shall be performed during the course of construction by Professional Surveyor registered in the state of Illinois. Surveyor shall be retained and compensated by Contractor. Contractor shall notify Engineer prior to commencing survey work.

PART 2 - PRODUCTS

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

2.01 MATERIALS ENCOUNTERED:

- A. Suitable Materials: Materials suitable for use in embankment and fill include material that is free of debris, roots, organic matter, frozen matter, and which is free of stone having any dimension greater than 2 inches in areas requiring a high degree of compaction, or 4 inches in other embankment and fill areas:
1. Cohesionless materials include gravels, gravel-sand mixtures, sands, and gravelly sands generally exclusive of clayey and silty material with the following properties:
    - a. Are free-draining.
    - b. Impact compaction will not produce a well-defined moisture-density relationship curve.
    - c. Maximum density by impact methods will generally be less than by vibratory methods.
    - d. Generally less than 15% by dry weight of soil particles pass a No. 200 (75  $\mu$ m) square-mesh sieve.
  2. Cohesive materials include materials made up predominately of silts and clays generally exclusive of sands and gravel with the following properties:
    - a. Impact compaction will produce a well-defined, moisture-density relationship curve.
    - b. Are not free draining.
- B. Unsuitable Materials: Materials unsuitable for use in embankment and fill include all material that contains debris, roots, organic matter, frozen matter, shale particles, or material containing gravel or stone with any dimension greater than 2 inches in areas requiring a high degree of compaction or 4 inches in other embankment and fill areas, or other materials that are determined by Engineer as too wet or otherwise unsuitable for providing a stable subgrade or stable foundation for structures.
- C. Material used for embankment or fill:
1. For soils used below structural elements, such as footings, slabs, pavements, and mats, that portion of material passing the No. 40 (425  $\mu$ m) square-mesh sieve shall have a liquid limit not exceeding 40 and a plasticity index not exceeding 25 when tested in accordance with ASTM D4318.
- D. All Materials encountered, regardless of type, character composition and condition thereof, shall be considered "unclassified" for the purpose of payment. Determine quantity of various

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

materials to be excavated prior to submitting Bid. Rock encountered shall be handled at no extra cost to Owner.

- E. Materials to be excavated shall be classified as follows for purpose of payment:
1. Common Excavation: Includes all materials excavated other than rock excavation and all boulders or detached pieces or solid rock, (prior to blasting,) less than 2 cubic yards in volume.
  2. Rock Excavation: Includes boulders 2 cubic yards or more in volume and materials that cannot be removed without systematic drilling and blasting such as materials in ledges or aggregate conglomerate deposits that are so firmly cemented as to possess the characteristics of solid rock. Hard and compacted materials such as cemented gravel, glacial till, shale, and relatively soft or disintegrated rock that can be loosened by a large tractor mounted hydraulic ripper without continuous and systematic drilling and blasting will not be considered as "rock". Material will not be considered as "rock" because of intermittent drilling and blasting that is performed merely to increase production.
- F. Waste Materials:
1. Waste materials, as described for purposes of this Section, consist of unsuitable materials, excess suitable material, rock, demolition debris, and other materials considered unacceptable for use as fill, and which are not environmentally contaminated. Waste materials shall not include environmental pollutants, hazardous substances, contaminated products, by-products, samples, or waste materials of any kind that are regulated under environmental laws.
  2. Dispose of waste materials in accordance with the requirements of Clean Construction or Demolition Debris (CCDD) requirements. The Engineer will provide an executed Form LPC-663 to the Contractor.

2.02 BORROW MATERIALS:

- A. Suitable fill materials, granular materials, and topsoil obtained from locations arranged for by Contractor off the Site. Required to the extent sufficient suitable materials are not obtained from excavation and trenching.
- B. Obtain, excavate, haul, handle, place, and compact borrow materials.
- C. Borrow materials shall not exhibit characteristics of high shrink-swell potential as determined from Atterberg limit tests (ASTM D4318) and/or swell tests (ASTM D4546) unless otherwise specified herein.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

2.03 GRANULAR MATERIAL:

- A. Crushed stone or crushed gravel indicating a loss of not more than 15% after 5 cycles when tested for soundness with sodium sulfate as described in ASTM C88 and conforming to one of the following gradations:

Standard Square Mesh Sieve			ASTM C33
<u>U.S. Size or No.</u>	<u>Metric Opening</u>	<u>Percent Passing</u>	No. 67 Stone
			<u>Percent Passing</u>
1 inch	25.00 mm	--	100
3/4-inch	19.00 mm	100	90 to 100
1/2-inch	12.50 mm	60 to 100	--
3/8-inch	9.50 mm	--	20 to 55
No. 4	4.75 mm	0 to 5	0 to 10
No. 8	2.36 mm	--	0 to 5

Use at all locations where granular material is required unless otherwise indicated or specified.

- B. Pipe Bedding Material for exterior coated steel pipe and coated buried tanks shall be clean, natural sand conforming to ASTM C144 (masonry aggregate) or ASTM C33 (fine concrete aggregate) with not more than 5% by weight passing the No. 200 sieve.

Standard Square Mesh Sieve		ASTM C33	ASTM C144
<u>U.S. Size or No.</u>	<u>Metric Opening</u>	<u>Percent Passing</u>	<u>Percent Passing</u>
3/8-inch	9.50 mm	100	--
No. 4	4.75 mm	95 to 100	100
No. 8	2.36 mm	80 to 100	95 to 100
No. 16	1.18 mm	50 to 85	70 to 100
No. 30	600 µm	25 to 60	40 to 75
No. 50	300 µm	10 to 30	10 to 35
No. 100	150 µm	2 to 10	2 to 15
No. 200	75 µm	--	0 to 5

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

2.04 EMBANKMENT AND FILL MATERIAL:

- A. Material shall be free of roots or other organic matter, refuse, ashes, cinders, frozen earth, or other unsuitable material.
- B. Use suitable material sufficiently friable for embankment to provide a dense mass free of voids and capable of satisfactory compaction.
- C. Do not use material containing gravel, stones, or shale particles greater in dimension than one-half the depth of the layer or lift to be compacted.
- D. Moisture content shall be that required to obtain specified compaction of the soil or as indicated.
- E. Perform moisture curing by wetting or drying of the material as required to attain required compaction criteria.

2.05 TRENCH STABILIZATION MATERIAL:

- A. Granular material as specified or conform to ASTM D1241, Gradation A or B, well-graded, with not more than 10% passing No. 200 (75  $\mu$ m) sieve.

2.06 RIPRAP:

- A. Riprap Material:
  - 1. Quarry-run stone with stones weighing 80 to 150 pounds each. At least 90% shall weigh more than 80 pounds each.
  - 2. Stones shall be durable, free from cracks, seams, and other defects which would tend to increase deterioration from natural causes.
  - 3. Dirt, sand, or clay shall not exceed 5% by weight.
  - 4. Quantity of rock with an elongation greater than 3:1 shall not exceed 20% of the mass. No stone shall have an elongation greater than 4:1.
  - 5. Not more than 10% of the stone shall show splitting, crumbling, or spalling when subjected to 5 cycles of the sodium soundness test as required by ASTM C88.
  - 6. In lieu of conforming to above specified test requirements, material with a proven history of satisfactory performance may be approved for use in the Work provided certification of this history is acceptable to Engineer.
- B. Filter Materials:
  - 1. Filter Blanket:
    - a. Material shall be crushed natural stone with the following gradation:

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

Standard Square-Mesh Sieve

<u>U.S. Size or No.</u>	<u>Metric Opening</u>	<u>Percent Passing by Weight</u>
4-inch	100.00 mm	100
3-inch	75.00 mm	80 to 100
2-inch	50.00 mm	70 to 90
3/4-inch	19.00 mm	45 to 60
No. 4	4.75 mm	20 to 30
No. 10	2.00 mm	5 to 15
No. 40	425 $\mu$ m	0 to 5

- b. Gradation shall not vary from low limit on one sieve to high limit on adjacent sieve or vice versa.
- c. Sampling procedure shall conform to ASTM D75.
- d. Material shall not have a loss of more than 15% after 5 cycles when tested for soundness with sodium sulfate as described in ASTM C88.

2. Geotextile Fabric

- a. Geotextile Fabric shall be a nonwoven fabric consisting of continuous chain polymeric filaments or yarns of polyester, or polypropylene formed into a stable network by needle punching.
- b. Geotextile Fabric shall be resistant to mildew and rot, ultraviolet radiation, insects and rodents.
- c. Geotextile Fabric shall conform to the following minimum requirements which shall be the minimum average roll values for the roll of geotextile:
  - (1) Weight: 15 oz/sq yd as determined by ASTM D3776.
  - (2) Puncture Strength: 195 lbs as determined by ASTM D4833.
  - (3) Grab Tensile Strength: 380 lbs as determined by ASTM D4632.
  - (4) Elongation at Failure: 50% as determined by ASTM D4632.
  - (5) Apparent Opening Size: 100 sieve as determined by ASTM D4751.

2.07 CONTROLLED LOW-STRENGTH MATERIAL (CLSM OR FLOWABLE FILL):

A. Materials:

- 1. Portland cement Type I or Type II conforming to ASTM C150.
- 2. Fly ash conforming to ASTM C618 for Class C.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

3. Fine aggregate (sand) conforming to ASTM C33 or C144.
4. Water, clean and potable, conforming to ASTM C94.
5. Shrinkage compensator shall be proportioned in accordance with the manufacturer's recommendations, and as tested by ASTM C940.
6. Admixtures for air entrainment or other purposes conforming to ASTM C173 or C231, or other appropriate standards referenced by manufacturer.
7. Bentonite in proportions indicated or as required for the Project within areas of U.S. Army Corps of Engineers flood protection systems.

B. Mix Design:

1. Mix design for CLSM (flowable fill) shall be in accordance with the requirements of IDOT Standards.
2. Submit details of the proposed mix design along with strength test results from an approved laboratory retained by Contractor. Commercial brand mixtures that have documented prior mix design strength history may be used with prior submittal of appropriate test results, mix design indicating conformance with these requirements, and approval by Engineer.
3. Mix design shall permit adjustments in proportions of fine aggregate and/or water to achieve proper solid suspension and optimum flowability with approval of Engineer, and providing for the calculated yield to be maintained at one cubic yard for the given batch weights.
4. Mix design shall meet requirements for minimum and/or maximum strengths indicated.
5. Consistency of the mix shall be that of a batter, not thin and/or watery.
6. Typical design for trial mixes of CLSM (flowable fill), unless otherwise indicated to provide a minimum volume of one cubic yard (0.76 cubic m), is as follows:
  - a. Nonremovable CLSM:

(1) Cement	100 lbs (45.3 kg)
(2) Class C Fly Ash	300 lbs (136 kg)
(3) Sand	2766 lbs (1255 kg)
(4) Water	417 lbs (190 kg)
(5) Air Entrainment	4 %
(6) Shrinkage Compensator	In accordance with manufacturer
7. Bentonite powder, if required, shall be blended with the cement and fly ash prior to adding any water to the mix, with a minimum of 20% by dry weight of combined cement

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

and fly ash cementitious material. Blending and mixing of bentonite shall be complete and uniform, without balling-up or concentration of bentonite in clumps. Proportions of mix and mixing placement shall not adversely affect overall physical properties required for the in-place CLSM, yet provide for self-healing of any cracks that may develop over time due to shrinkage or other forces upon CLSM.

8. Flowable fill (CLSM) shall exhibit the following physical properties:
  - a. Nonremovable CLSM Mixes:
    - (1) Minimum unconfined compressive strength of 150 psi at 28 days.
    - (2) In place compressive strength at least 98% of design compressive strength after 1 year.
  - b. Provide for set-up within 12 hours.
  - c. Evaporation of bleed water shall not result in shrinkage of more than 1/8-inch per foot (3 mm per 300 mm) of flowable fill (CLSM) thickness.

PART 3 - EXECUTION

3.01 DEMOLITION:

- A. Remove existing structures and improvements as required (as indicated) to perform new construction.
- B. Carefully dismantle, in a manner to avoid damage, all materials and equipment indicated to be relocated or returned to Owner.
- C. Material or equipment, specified or indicated to be relocated or returned to Owner, that is damaged due to Contractor 's negligence shall be repaired or replaced, as determined by Engineer, at no additional cost to Owner.
- D. Materials not indicated or specified to be relocated or returned to Owner shall become property of Contractor and be disposed of as specified in "Waste Materials," this Part.
- E. Perform demolition work to protect existing facilities, structures, and property which are to remain, against damage from operations, falling debris, or other cause.
- F. Make provisions for temporarily accommodating flows in existing facilities that are to be relocated or disturbed.
- G. Take precautions to guard against movement or settlement, and provide shoring and bracing as necessary.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

- H. If at any time safety of existing structure to remain is endangered, cease operations, notify Engineer, and do not resume operations prior to approval.
- I. Remove concrete by jack hammering, sawing, core drilling, or other approved method.
- J. Remove existing pavement by jack hammering, sawing, scarifying, or other approved methods except as follows:
  - 1. Existing asphaltic or portland cement concrete pavement shall be sawed at point where pavement indicated to remain ends and pavement indicated to be removed begins.
  - 2. Existing portland cement concrete pavement shall be removed back to the nearest joint unless otherwise indicated or approved by Engineer.

3.02 SITE PREPARATION:

- A. Sediment (Silt) Fence:
  - 1. Install silt fence as indicated and as follows:
    - a. On the downslope side(s) of all disturbed areas.
    - b. On the downslope side(s) of all stockpile areas.
  - 2. Inspection:
    - a. Daily in areas of active construction or equipment operation.
    - b. Weekly in areas with no construction or equipment operation.
    - c. Within 24 hours of each 0.5-inch or greater rainfall event.
    - d. Complete inspection reports after each inspection and submit to Engineer within 2 working days.
  - 3. Maintenance:
    - a. Remove sediment from behind silt fence when it reaches one-third the height of fence. Place removed sediment in topsoil stockpile areas.
    - b. Any silt fence damaged so it can not perform its intended function shall be replaced as indicated or as directed by Engineer.
    - c. Remove silt fence after area has been surfaced or seeded and has been accepted by Engineer.
    - d. Payment for silt fence replacement shall conform to the Unit Price for Silt Fence stated in AGREEMENT.
- B. Construction Access:
  - 1. Immediately remove by shoveling and/or sweeping all sediment tracked from the construction area onto Site access roads. Place sediment in stockpile areas.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

C. Clearing and Grubbing:

1. Perform only in areas where earthwork or other construction operations are to be performed.
2. Protect tops, trunks, and roots of existing trees which are to remain on Site.
3. Clear areas and dispose of other trees, brush, and vegetation before starting construction.
4. Remove tree stumps and roots larger than 3 inches in diameter and backfill resulting excavations with compacted, suitable material.
  - a. Dispose of debris from clearing and grubbing and demolition at a location off the Site, as arranged for by Contractor, at no additional cost to Owner.
5. Contractor may claim and salvage any timber or other debris which may be considered of value, but shall not delay in any manner either this Contract or other work with salvaging operations.

D. Stripping:

1. Remove topsoil from areas within limits of excavation, trenching and borrow, and areas designated to receive embankment and compacted fill as follows:
2. Scrape areas clean of all brush, grass, weeds, roots, and other material.
3. Strip to depth of approximately 6 inches or to a sufficient depth to remove excessive roots in heavy vegetation or brush areas and as required to segregate topsoil, or as directed by Engineer.
4. Stockpile topsoil in areas where it will not interfere with construction operations or existing facilities. Stockpiled topsoil shall be reasonably free of subsoil, debris, and stones larger than 2 inches in diameter.
5. Remove waste from the Site. Unsuitable topsoil shall not be stockpiled and shall be removed from site.

3.03 EXCAVATION AND TRENCHING:

A. Sheeting and Bracing:

1. Design, furnish, place, maintain, and subsequently remove, to extent required, a system of temporary supports for cut and cover, open cut, or trench excavations, including bracing, dewatering, and associated items to support sides and ends of excavations where excavation slopes might endanger in-place or proposed improvements, extend beyond construction right-of-ways, or as otherwise specified or indicated.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

2. Provide all materials on Site prior to start of excavation in each section, and make such adjustments as are required to meet unexpected conditions.
3. Space and arrange sheeting and bracing as required to exclude adjacent material and according to stability of excavation slopes.
4. Assess existing conditions including adjacent property and possible effects of proposed temporary works and construction methods; and select and design such support systems, methods, and details as will assure safety to the public, adjacent property, and the completed Work.
5. Modify or relocate underground facilities, at no additional cost to Owner, if existing underground facilities interfere with Contractor's proposed method of support.
6. Use caution in areas of underground facilities, which shall be exposed by hand or other excavation methods acceptable to Owner.
7. Perform sheeting, shoring, and bracing in accordance with safety and protection requirements of the Contract Documents.
8. Provide sheeting, shoring, and bracing for trench excavation in subgrade of excavation when required to prevent movement of the main excavation support system.
9. Provide shoring, sheeting, and bracing as indicated or as needed to meet the following requirements:
  - a. Prevent undermining and damage to all structures, buildings, underground facilities, pavements, and slabs.
  - b. Perform excavations with vertical banks where necessary for construction activities or as indicated, and also within all limits of excavation noted on Drawings.
  - c. Design excavation support system and components to support lateral earth pressures, unrelieved hydrostatic pressures, utility loads, traffic and construction loads, and building and other surcharge loads to allow safe and expeditious construction of permanent structures without movement or settlement of the ground, and to prevent damage to or movement of adjacent buildings, structures, underground facilities, and other improvements. Design shall account for staged removal of bracing to suit the sequence of concrete placement for permanent structures and backfill.
  - d. Except as otherwise specified herein, shoring and sheeting materials may be extracted and reused at Contractor's option; however, Contractor shall remove and replace any existing structure or underground facility damaged during shoring and

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

sheeting. Remove sheeting and bracing as backfill progresses. Fill voids left after withdrawal with sand or other material approved by Engineer.

- e. Where shoring and sheeting materials must be left in-place in the completed Work to prevent settlements to or damage within adjacent structures or as directed by Engineer, backfill the excavation to 3 feet below finished grade and remove the remaining exposed portion of shoring before completing backfill. If soldier piles and wood lagging are used for shoring, remove wood lagging to within 3 feet of finished grade in incremental steps of approximately 6 inches as backfill is placed, or to Contractor's design if more stringent. Location of all shoring and sheeting left in-place shall be documented on Contractor-furnished construction record drawings and provided to Engineer and Owner.
10. Contractor shall be solely responsible for proper design, installation, operation, maintenance, and any failure of any component of the system. Review by Engineer of drawings and data submitted by Contractor shall not in any way be considered to relieve Contractor from full responsibility for errors therein or from the entire responsibility for complete and adequate design and performance of the sheeting and shoring system.
  11. Provision for Contingencies:
    - a. Performance of components of the support system shall be monitored for both vertical and horizontal movement daily
    - b. Provide a contingency plan or alternative procedure for implementation, if system does not adequately perform.
    - c. Keep materials and equipment necessary to implement the contingency plan readily available.
  12. Damages:
    - a. Document all existing damage to adjacent facilities and submit information to Owner prior to performing any excavation. Documentation shall include a written description, diagrams, measurements, and appropriate photographs.
    - b. Repair all damage resulting from Contractor's excavation and remove and replace all undermined pavements with Owner-approved equal, either concrete or asphalt, at no expense to Owner and in accordance with Project Documents.
- B. Explosives: Blasting will not be permitted.
- C. Excavation for Structures:
1. Excavate area adequate to permit efficient erection and removal of forms.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

2. Trim to neat lines where details call for concrete to be deposited against earth.
  3. Excavate by hand in areas where space and access will not permit use of machines.
  4. Notify Engineer immediately when excavation has reached the depth indicated.
  5. Overexcavate and replace any localized zones of excessively wet, unstable, organic, yielding, or low bearing capacity materials as directed by Engineer. Restore bottom of excavation to proper elevation with compacted granular material in areas overexcavated. Correct at no additional cost to Owner when overexcavated without authority or to stabilize bottom rendered unsuitable through negligence or improper dewatering or other operations.
  6. Top with 3-inch concrete seal coat where indicated and where required to provide satisfactory subgrade for structural base slabs.
- D. Trenching for Underground Utilities:
1. Side Walls:
    - a. Make vertical or sloped within specified trench width limitations below a plane 12 inches above top of pipe.
    - b. Make vertical or stepped as required for stability, above a plane 12 inches above top of pipe.
    - c. Excavate without undercutting sidewalls.
  2. Trench Depth:
    - a. Excavate to depth sufficient to provide the minimum bedding requirements for the pipe being placed.
    - b. Do not exceed that indicated where conditions of bottom are satisfactory.
    - c. Increase depth as necessary to remove unsuitable supporting materials.
    - d. Maintain a minimum of 5 feet 6 inches of soil cover above top of pipe.
  3. Trench Bottom:
    - a. Protect and maintain when suitable natural materials are encountered.
    - b. Remove rock fragments and materials disturbed during excavation or raveled from trench walls.
    - c. Restore to proper subgrade with trench stabilization material or timber mat topped with trench stabilization material when overexcavated.
  4. Trench Width:
    - a. Excavate trench to a width which will permit satisfactory jointing of pipe and thorough tamping of bedding and backfill.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

b. Do not exceed following trench widths:

- (1) For single pipe installation, maintain trench widths below a plane 12 inches above top of pipe as follows:

<u>Nominal Pipe Size</u>	<u>Trench Width</u>	
	<u>Minimum</u>	<u>Maximum</u>
Less than 24"	Pipe od + 1'	Pipe od + 2'
24" to 60"	Pipe od + 2'	Pipe od + 4'
Larger than 60"	Pipe od + 3'	Pipe od + 5'

- (2) For multiple pipe installations maintain trench widths below a plane 12 inches above the top of the largest pipe as follows:

<u>Nominal Pipe Size of Outside Pipe</u>	<u>Trench Clearances</u>	
	<u>Minimum from Outside Pipe</u>	<u>Maximum from Outside Pipe</u>
Less than 24"	6"	12"
24" to 60"	12"	24"
Larger than 60"	18"	30"

- (3) Above plane defined in (1) and (2), no maximum limit.
- (4) Maximum trench width limitations shall apply in all areas more than 3 feet (1 meter) from manhole or structure walls.
- (5) Maximum width shall be as near the minimum specified as can be controlled by construction equipment and methods used.
5. Fill and Embankment Areas: Perform trenching only after compacted fill or embankments have reached an elevation of not less than 1 foot above top of pipe.
6. Limit maximum length of open trench to 30 feet in advance and to 20 feet behind pipe installation.
7. Test Pits:
- a. Excavate test pits sufficiently in advance of trenching to enable adequate planning of construction procedure.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

- b. Locate as follows:
  - (1) When unstable material is suspected that may require special protective measures.
  - (2) Where groundwater may require special handling methods.
  - (3) Where indicated or otherwise approved.
  - (4) Where interference or conflict with other utilities or structures could affect alignment of pipe.
- c. To depth required to obtain information desired.

E. Dewatering

- 1. Control grading around excavations to prevent surface water from flowing into excavation areas.
- 2. Drain or pump as required to continually maintain, including days not normally worked, all excavations free of water or mud from any source, and discharge to approved drains or channels. Commence when water first appears and continue as required to keep excavation free of standing water during entire time excavation is open.
- 3. Use pumps of adequate capacity to ensure rapid drainage of area, and construct and use drainage channels and subdrains with sumps required.
- 4. When water is found in excavation due to Contractor negligence, remove unsuitable excessively wet subgrade materials and replace with approved compacted fill material as directed by Engineer and at no additional cost to Owner.

F. Waste Materials:

- 1. Remove unsuitable materials from Work area as excavated.
- 2. Deposit such materials in locations and within areas indicated or designated by Engineer.
- 3. Material shall become property of Contractor and shall be disposed of off Site at locations arranged for by Contractor.
- 4. Segregate excess suitable materials and topsoil from unsuitable materials for possible use by others. Place excavated rock in interior of waste area fills so it will not be exposed to view.
- 5. Grade waste areas and leave free-draining with an orderly, neat appearance. Side slopes shall not be steeper than 3 horizontal to 1 vertical. Topsoil, seed, and mulch waste areas.

3.04 EARTHWORK:

A. Subgrades:

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

1. General:
  - a. Excavate or backfill as required to construct subgrades to elevations and grades indicated.
  - b. Remove all unsuitable material and replace with acceptable fill material and perform all wetting, drying, shaping, and compacting required to prepare subgrade.
  - c. Proofrolling: Exposed area to receive fill, backfill, or embankment shall be proofrolled to detect localized zones of excessively wet, unstable, organic, or low bearing capacity materials as follows:
    - (1) Proofroll as a single-pass operation with conventional compaction equipment during subgrade preparation and prior to placement of fill, and as a spot check process without the need for complete coverage per unit area of tire. Soft spots shall be overexcavated, backfilled, and compacted with suitable material.
    - (2) Proofroll within limits of proposed construction of footings, slabs, mats, or pavement and to extent of 10 feet beyond proposed exterior walls and stated limits, or as otherwise noted. Proofroll with loaded dump truck, loaded pan scraper, 15 - ton light class pneumatic tired roller compactor, or equivalent. Ground contact pressure of 80 psi and average speed of 5 miles per hour shall be maintained and continue until extent of soft spots is determined with not less than one pass per unit area of tire. Soft spots shall be overexcavated, backfilled, and compacted with suitable material.
2. Subgrade for Fills and Embankments: Roughen by discing or scarifying and wet or dry top 6 inches as required to bond with fill or embankment.
3. Subgrade for Roadways, Drives, Parking Areas:
  - a. Extend subgrade the full width of pavement or base course, plus 1 foot in each direction.
  - b. Cohesive Soil Subgrades: Compact the top 6 inches of subgrade for traffic areas and railroads in embankment or excavation to a minimum of 95% of maximum dry density. Optimum moisture and maximum dry density shall be determined by ASTM D698 (ASTM D1557).
  - c. Cohesionless Soil Subgrades: Compact the top 6 inches of subgrade for traffic areas and railroads in embankment or excavation to not less then 80% of relative dry density as determined by ASTM Methods D4253 and D4254.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

4. Subgrades for Concrete Slabs on Grade, Mats, and Footings:
  - a. Compact cohesive soil subgrades to a minimum of 95% of maximum dry density. Optimum moisture and maximum dry density shall be determined by ASTM D698 (ASTM D1557).
  - b. Where subgrade consists of cohesionless granular materials, compact to not less than 80% relative density as determined by ASTM D4253 and D4254.
- B. Embankments and Fills:
  1. Construct embankments to contours and elevations indicated, using suitable approved material from excavations and borrow areas:
    - a. Place fill material in maximum 8-inch loose lifts.
    - b. Place embankment only on subgrades approved by Engineer.
    - c. Do not place snow, ice, or frozen earth in fill; do not place fill on a frozen surface.
  2. Obtain compaction by the controlled movement of compaction equipment approved by Engineer during placing and grading of layers and to minimum density specified for indicated locations.
  3. Except as indicated or specified otherwise, compact cohesive soils to a minimum of 95% of maximum dry density. Optimum moisture and maximum dry density shall be as determined by ASTM D698 (ASTM D1557).
  4. In areas of fill supporting structures or under paved areas, compact cohesive soils to a minimum of 95% of maximum dry density. Optimum moisture and maximum dry density shall be as determined by ASTM D698 (ASTM D1557).
  5. Except as indicated or specified otherwise, compact cohesionless soils to not less than 75% relative density as determined by ASTM Method D4253 and D4254.
- C. Pipe Embedment:
  1. Pipe bedding shall be as indicated, using granular material.
  2. Place granular embedment as follows:
    - a. With level bottom layer at proper grade to receive and uniformly support pipe barrel throughout its length.
    - b. Form shallow depression under each joint to facilitate jointing.
    - c. Form depression under each joint so that no part of bell or coupling is in contact with trench when pipe is placed in position.
    - d. Add second layer simultaneously to both sides of pipe with care to avoid displacement.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

- e. Complete promptly after completion of jointing operations.
  - f. Substitute for any part of earth backfill to within 2 feet of final grade at Contractor's option.
3. Compact granular embedment as follows:
    - a. In loose lifts not exceeding 12 inches in depth.
    - b. Rod, spade, or use pneumatic or vibratory equipment:
      - (1) As required to obtain not less than 80% relative density as determined by ASTM Method D4253 and D4254.
      - (2) Throughout depth of embedment.
    - c. Compaction using flooding or water spraying techniques will not be allowed.
  4. Earth pipe embedment shall be as indicated and shall be used at impervious trench checks. Shape trench bottom to fit pipe and backfill throughout depth of trench with impervious materials. Compact to minimum of 95% of maximum dry density. Optimum moisture and maximum dry density shall be determined by ASTM D698 (ASTM D1557).
- D. Backfilling:
1. Backfill for structures and trenches shall be as specified in "Embankments and Fills," this Section, with the following additional provisions:
  2. Structures:
    - a. Backfill only after concrete has attained 70% design strength.
    - b. Backfill adjacent to structures only after a sufficient portion of structure has been built to resist imposed load.
    - c. Remove all debris from excavation prior to placement of material.
    - d. Place backfill in level loose lifts of thickness within compacting ability of equipment used but not to exceed 8 inches in thickness.
    - e. Perform backfilling simultaneously on all sides of structures.
    - f. Exercise extreme care in use of heavy equipment in areas adjacent to structures. Equipment operated within 10 feet of any wall shall not exceed 20,000 pounds gross weight.
    - g. Material above a 45° plane intersecting the footing shall not include rock fragments incapable of passing a 6-inch screen, and no shale whether disintegrated or not.
  3. Trenches:
    - a. Backfill for trenches shall be as specified for structures and as follows:

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

- (1) Complete promptly upon completion of pipe embedment and approval to proceed.
  - (2) Use hand methods to a plane 12 inches above top of pipe.
  - (3) Mechanical methods shall be acceptable where hand backfill is not required.
  - (4) Backfill in lifts of thickness within compacting ability of equipment used, but not greater than 8 inches.
  - (5) Until compacted depth over conduit exceeds 3 feet, do not drop fill material over 5 feet. Distance may then be increased 2 feet for each additional foot of cover.
4. Controlled Low - Strength Material (CLSM):
- a. Place CLSM (flowable fill) by means of chute, drop pipe, pump, bucket, or other method approved by Engineer to maintain consistency, flowability, and strength of in-place final product. Fill all voids and place to indicated grades or minimum elevations noted without use of a vibrator.
  - b. Open ends of area to be backfilled shall be plugged or built-up with a temporary bulkhead arrangement to prevent loss of CLSM during placement or during curing.
  - c. Prevent movement of any adjacent structure or pipe conduit:
    - (1) Anchor pipe or structure to prevent uplift or movement prior to placement of CLSM.
    - (2) Prevent intrusion of CLSM into interior sections of structure or pipe.
    - (3) If any such movement or intrusion occurs, affected structures or pipe shall be cleaned and may require excavation, removal, and replacement of CLSM to intended final fill elevation.
  - d. CLSM is intended for placement within a hole that is dry or maintained with a positive dewatering operation. If it is necessary to place CLSM under water, method for placement and mix design shall be submitted to Engineer for approval at least 10 working days prior to any intended pours.
  - e. Monitor surface elevation of placed CLSM and document any shrinkage or settlement of initial placement volume. Provide information of shrinkage and/or settlement of initial lift to Engineer prior to placement of any additional layers or completion of CLSM placement to final indicated elevation. CLSM shall not be covered with soil or other imposed loading until a minimum compressive strength of 30 psi is attained or until a minimum of 12 hours' cure time has elapsed.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

Minimum strengths shall be demonstrated by laboratory test results or if permitted by Engineer, by failure to deform or crush the fill with an equivalent 30 psi applied loading in the field.

- g. Protect CSLM from freezing while curing with insulated blankets or other approved methods.
- h. Where air may become trapped under slabs due to grade beams or other structural components, holes shall be drilled at locations indicated, or as directed by Engineer to allow for uniform placement of CLSM entirely within the void region. Plugs shall be installed to confine CLSM, as needed. It is not intended that raising or leveling of any slabs or structural elements shall occur from placement methods.

E. Site Grading:

- 1. Excavate, fill, compact fill, and rough grade to bring Project area outside buildings to subgrades as follows:
  - a. For surfaced areas, to underside of respective surfacing or base course.
  - b. For areas to receive topsoil, to a minimum of 4 inches below finished grade.
  - c. When rock is encountered in grading areas outside buildings, overexcavate to depth specified and backfill to grade with compacted fill:
    - (1) Under surfaced areas, to 6 inches below top of respective subgrades for such areas.
    - (2) Under lawn and planted areas, to 24 inches below finished grade, except that boulder or protruding rock outcrop, if so indicated, shall be left undisturbed.
- 2. Grading:
  - a. Grade and compact all areas within Project area, including excavated and filled sections and adjacent transition areas, reasonably smooth, and free from irregular surface changes.
  - b. Degree of finish for rough grading shall be that ordinarily obtained from blade grader or scraper operations except as otherwise specified with due allowance for topsoil (and sod).
  - c. Finished grades shall generally be not more than 0.1 foot above or below those indicated.
  - d. Finish all ditches, swales, and gutters to drain readily.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

- e. Unless otherwise indicated, slope the subgrade evenly to provide drainage away from all structures in all directions at a grade not less than 1/4 inch per foot for a minimum distance of 10 feet.
- f. Provide roundings at top and bottom of banks and at other breaks in grade.

3.05 TOPSOILING:

- A. Material: Use the most suitable material obtained from stripping operations and borrow when required.
  - 1. Placement:
    - a. Clear areas free of vegetation, rock, and other materials which would interfere with grading and tillage operations.
    - b. Bond topsoil to subgrade by scarifying subgrade to a depth of 2 inches.
    - c. Spread topsoil to a minimum depth of 4 inches where grading operations have left less than 4 inches of topsoil in place.
    - d. Grade topsoil to bring areas to grades as indicated, to ensure that all surfaces are left in an even and properly compacted condition, and to prevent ponding of water in depressions.
  - 2. Cleanup:
    - a. Clean surface free of all stones or other objects larger than 2 inches in least dimension, all roots, brush, wire, grading stakes, and other objectionable materials.
    - b. Keep paved areas clean and promptly remove rock and dirt dropped upon surfacing.

3.06 MAINTENANCE:

- A. Protect newly graded and topsoiled areas from actions of the elements.
- B. Fill and repair settling or erosion occurring prior to acceptance of the Work, and reestablish grades to required elevations and slopes.
- C. Under provisions of the guarantee, correct any settlement of embankment, fill, or backfill and damages created thereby within 1 year after acceptance of the Work. Make repairs within 10 days after notification by Owner of settlement.

3.07 CLEANUP AND RESTORATION

- A. Restoration: The contractor shall remove all excess material and restore all turf and terrain and other property that are disturbed, damaged or destroyed due to construction or maintenance by the utility, all to the satisfaction of the Village. This includes restoration of

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

entrances and side roads. Restoration of roadway surfaces shall be made using materials and methods approved by the director of public works. Such cleanup and repair may be required to consist of backfilling, regrading, resodding, or any other requirement to restore the right of way to a condition substantially equivalent to that which existed prior to the commencement of the project.

- B. Sodding: All disturbed grass areas in the rights of way shall be restored with sod, unless otherwise approved by the director of public works. All sod delivered to the job site shall be kept moist and protected from exposure to the sun, wind, and freezing conditions until it is to be placed on the topsoil (depth of 6 inches minimum). After the disturbed grass areas have been topsoiled, the area shall be carefully graded and fine raked, then covered with sod. The sod shall be placed and rolled on the prepared surface with the edges in close contact and alternate courses staggered. The sod shall be placed only when the air temperature is less than ninety degrees Fahrenheit (90°F). Starter fertilizer, having a mixture of nitrogen, phosphorus and potassium nutrients at a percentage of 6:24:24 of active ingredients, respectively, shall be spread at the rate specified in article 252.03 of the "Standard Specifications For Road And Bridge Construction". The contractor shall maintain the sod on a daily basis and water as needed for a period of fifteen (15) consecutive days after which the contractor shall request the property owner adjacent to the sodded area to assume the maintenance responsibility. The contractor shall then contact the public works department to request inspection of the sod. The public works department shall evaluate the sod at the end of the fifteen (15) day watering period. Should the sod not survive the fifteen (15) day period, the contractor shall remove and replace the sod, and water again for the same time period. After the fifteen (15) day watering period, the public works department will reevaluate the new sod. Upon acceptance by the public works department, the contractor shall notify the adjacent property owner and request the owner to assume the maintenance responsibility, continuing to water the sod until the root system has taken hold. The contractor must send a copy of this notification to the engineering division of the public works department; otherwise the contractor shall remain responsible for maintenance of the sod.
- C. Completion Of Work; Final Inspection: At the completion of all work, including restoration, the contractor shall contact the engineering division of the public works department to request a final inspection. If any work is rejected, the engineering division will notify the contractor in writing.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

3.08 FIELD QUALITY CONTROL:

A. Compaction:

1. Owner will, through services of an independent laboratory, test all embankments, fills, and subgrades under this Contract to determine conformance with specified density relationships.
2. Method of test may be either of the following at Engineer's option:
  - a. ASTM D1556
  - b. ASTM D2167.
  - c. ASTM D6938.
3. The frequency of in-place compaction testing including density and moisture content will be as follows:
  - a. At least one test for every 1,000 cubic yards of material placed in a mass fill.
  - b. At least one test for every 200 cubic yards of fill placed in trenches or surrounding structures.
  - c. At least one test per 2,500 square feet per lift of compacted soil liner or fill in roadbed.
  - d. At least one test for every 2,500 square feet of subgrade for fill or soil liner.
  - e. At least one test for every 100 feet of roadway for road subgrades and crushed rock base course.
  - f. At least one test for every 500 square feet per lift in structural fill or on subgrades for foundations.
  - g. At least one test for every shift of compaction operations on a mass fill.
4. At least one test when Engineer suspects quality of moisture control or effectiveness of compaction. Remove or scarify fill failing to meet required densities and recompact as necessary to achieve specified results.
5. Removal of in-place material and replacement with approved new material will be required if scarifying and recompaction do not produce the required densities.
6. Perform at least one classification test (ASTM D2487) and one moisture-density test (ASTM (D698) (D1557)) on soil used in fill or backfill operations during construction.
  - a. Each sample shall be taken from trenches or other excavations as directed by Engineer and should be generally representative of distinguishably differing materials encountered and used for backfill or fill.

SECTION 312050 - SITE PREPARATION AND EARTHWORK: continued

- b. Perform one set of tests at the beginning of excavation and one additional set of tests when material properties vary (more or less plastic, different color, more or less granular, or other conditions) from the material initially tested.
  - c. Additional tests shall be performed when directed by Engineer.
- B. Controlled Low-Strength Material (CLSM):
- 1. Determine unconfined compressive strength using cylinders of CLSM sampled, handled, cured, and tested in accordance with ASTM D4832. Perform a minimum of one set of four cylinders for every 150 cubic yards of CLSM placed but not less than one set for each day's placement, unless otherwise directed by Engineer.
  - 2. Determine bearing strength, if required by Engineer, using penetration testing in accordance with ASTM C403.
  - 3. Test flow of CLSM, if required by Engineer, in accordance with ASTM C939.
- C. Subgrades:
- 1. Engineer will inspect all subgrades to determine conformance with indicated lines and grades.
  - 2. Subgrades for roadways, drives, parking areas, and railroads shall have a maximum deviation of not more than 1/2 inch in any 10 feet when tested with a 10-foot straightedge applied parallel with and at right angles to centerlines of subgrade areas. Actual grade shall not be more than 0.1 foot from indicated grade.

END OF SECTION 312050

**NOT FOR BID**

**SECTION 312316  
EXCAVATION, FILLING, AND BACKFILLING FOR STRUCTURES**

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. This Section includes all necessary excavation, filling, and backfilling for structures and all related Work, including duct banks and manholes.
- B. Related Work Specified Elsewhere:
  - 1. Site Preparation and Earthwork: SECTION 312050.
  - 2. Trenching and Backfilling for Utilities: SECTION 312333.
  - 3. Concrete: DIVISION 3.

**1.02 REFERENCES:**

- A. Applicable Standards:
  - 1. American Association of State Highway and Transportation Officials (AASHTO):
    - a. T99 - The Moisture-Density Relations of Soils Using a 5.5-lb Rammer and a 12-Inch Drop.
  - 2. American Society for Testing and Materials (ASTM):
    - a. D4253 - Test Method for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.
    - b. D4254 - Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
  - 3. Occupational Safety and Health Administration (OSHA):
    - a. Part 1926 - Safety and Health Regulations for Construction.

**1.03 SUBMITTALS:**

- A. Submit as specified in DIVISION 1.
- B. Where selecting an option for excavation, trenching, and shoring in compliance with local, state, or federal safety regulations such as "OSHA Part 1926" or successor regulations, which require design by a registered professional engineer, submit (for information only and not for Engineer approval) the following:
  - 1. Copies of design calculations and notes for sloping, benching, support systems, shield systems, and other protective systems prepared by or under the supervision of a

SECTION 312316 - EXCAVATION, FILLING, AND BACKFILLING FOR STRUCTURES: continued

professional engineer legally authorized to practice in the jurisdiction where the Project is located.

2. Documents provided with evidence of registered professional engineer's seal, signature, and date in accordance with appropriate state licensing requirements.

PART 2 - PRODUCTS

2.01 FILL AND BACKFILL MATERIAL:

- A. Earth Backfill: Use suitable material as specified in SECTION 312050,.
- B. Granular Fill: Use material as specified in SECTION 312333, PART 2 for granular pipe embedment.

2.02 CONCRETE:

- A. Includes all concrete used to restore bottom of excavation to proper elevation, and in concrete seal coats.
- B. Concrete shall be as specified in DIVISION 3.

PART 3 - EXECUTION

3.01 EXCAVATION:

- A. Perform as specified in SECTION 312050 and as follows:
  1. Excavate area adequate to permit efficient erection and removal of forms.
  2. Trim to neat lines where details call for concrete to be deposited against earth.
  3. Excavate by hand in areas where space and access will not permit use of machines.
  4. Notify Engineer immediately when excavation has reached the depth indicated. Do not proceed further until approved.
  5. Restore bottom of excavation to proper elevation with compacted granular fill in areas overexcavated, as approved.
  6. Top with 75-mm concrete seal coat if required to provide satisfactory subgrade for structural base slabs.
    - a. Seal coat shall conform to applicable requirements of DIVISION 3.
  7. Use sides of trenches to form sides of duct banks where possible and where sides of trench are vertical, stable, and excavated to the proper line.

SECTION 312316 - EXCAVATION, FILLING, AND BACKFILLING FOR STRUCTURES: continued

B. Sheeting and Bracing:

1. Design, furnish, place, maintain, and subsequently remove, to the extent required, a system of temporary supports for cut and cover, open cut, or trench excavations, including bracing, dewatering, and associated items to support the sides and ends of the excavations where excavation slopes might endanger in-place or proposed improvements, extend beyond construction right-of-ways, or where specified or indicated.
2. Provide on-Site prior to start of excavation in each section, and make such adjustments as are required to meet unexpected conditions.
3. Space and arrange sheeting and bracing as required to exclude adjacent material and according to the stability of excavation slopes.
4. Contractor shall make his own assessment of existing conditions including adjacent property, the possible effects of his proposed temporary works and construction methods, and shall select and design such support systems, methods, and details as will assure safety to the public, adjacent property, and the completed Work.
5. Modify or relocate Underground Facilities, at no additional cost to Owner or Engineer, if existing Underground Facilities interfere with Contractor's proposed method of support.
6. Employ caution in the areas of Underground Facilities, which shall be exposed by hand or other excavation methods acceptable to Owner.
7. Perform sheeting, shoring, and bracing for trench excavation, for Underground Facilities, and for other purposes in accordance with the safety and protection requirements of the General Conditions.
8. Provide sheeting, shoring, and bracing for trench excavation in the subgrade of the excavation to prevent movement of the main excavation support system.
9. Provide shoring, sheeting, and bracing as indicated or specified to meet the following requirements:
  - a. Prevent undermining and damage to all structures, buildings, Underground Facilities, pavements and slabs.
  - b. Excavations shall be accomplished with vertical banks where necessary for construction activities or as indicated, and also within all limits of excavation noted on the Drawings.

SECTION 312316 - EXCAVATION, FILLING, AND BACKFILLING FOR STRUCTURES: continued

- c. Design excavation support system and components to support lateral earth pressures, unrelieved hydrostatic pressures, utility loads, traffic and construction loads, and building and other surcharge loads to allow the safe and expeditious construction of the permanent structures without movement or settlement of the ground, and to prevent damage to or movement of adjacent buildings, structures, Underground Facilities, and other improvements. The design shall account for staged removal of bracing to suit the sequence of concrete placement for permanent structures and backfill.
  - d. Except as otherwise specified herein, shoring and sheeting materials may be extracted and reused at Contractor's option; however, Contractor shall remove and replace any existing structure or Underground Facility damaged during shoring and sheeting. Remove sheeting and bracing as backfill progresses. Fill voids left after withdrawal with sand or other approved material.
  - e. Where shoring and sheeting materials must be left in-place in the completed Work to prevent settlements or damage to adjacent structures or as directed by Resident Project Representative, backfill the excavation to within 1 meter (3 feet) below the finished grade and remove the remaining exposed portion of the shoring before completing the backfill. If soldier piles and wood lagging are used for shoring, remove wood lagging to within 1 meter (3 feet) of finished grade in incremental steps of approximately 150 mm (6 inches) as the backfill is constructed, or to Contractor's design if more stringent. The location of all shoring and sheeting left in-place shall be documented on drawings and provided to Engineer and Owner.
10. Contractor shall be solely responsible for proper design, installation, operation, maintenance, and any failure of any component of the system. Review by Engineer of the design and data submitted by Contractor shall not relieve Contractor from full responsibility for errors therein or from the entire responsibility for complete and adequate design and performance of the sheeting and shoring system.
  11. Provision for Contingencies:
    - a. The performance of the components of the support system shall be monitored for both vertical and horizontal movement daily.

SECTION 312316 - EXCAVATION, FILLING, AND BACKFILLING FOR STRUCTURES: continued

- b. A contingency plan or alternative procedure shall be provided for implementation, if the designed system does not adequately perform.
  - c. The materials and equipment necessary to implement the contingency plan shall be kept readily available.
12. Damages:
- a. Contractor shall document all existing damage to adjacent facilities and submit the information to Owner prior to performing any excavation. Documentation shall include a written description, diagrams, measurements, and appropriate photographs.
  - b. Repair all damage resulting from Contractor's excavation and remove and replace all undermined pavements with Owner-approved equal, either concrete or asphalt, at Contractor's expense and in accordance with Project Documents.

3.02 FILLING AND BACKFILLING:

A. Granular Fill:

1. Place on prepared subgrade where indicated, prior to placing concrete in slabs on grade.
2. Lifts shall not exceed 6 inches in loose-layer thickness.
3. Compact to 85% relative density as referenced to ASTM D4253 and D4254.

B. Earth Backfill:

1. Backfill only after concrete has attained 70% design strength.
2. Backfill adjacent to structures only after, in the opinion of Engineer, a sufficient portion of the structure has been built to resist the imposed load.
3. Remove all debris from excavation prior to placement of material.
4. The slope bounding the excavation, if steeper than 6 horizontal: 1 vertical, shall be stepped or serrated prior to placing the backfill material.
5. Perform backfilling simultaneously on all sides of structures.
6. Place backfill in level layers not exceeding 4 to 8 inches in loose-layer thickness.
7. Exercise extreme care in the use of heavy equipment in areas adjacent to structures.
8. Compact to 95% of maximum dry density. Optimum moisture and maximum dry density shall be determined by AASHTO T99. Accomplish without inundation or flooding.

SECTION 312316 - EXCAVATION, FILLING, AND BACKFILLING FOR STRUCTURES: continued

3.03 FIELD QUALITY ASSURANCE:

A. Compaction:

1. Owner will, through services of an independent laboratory, test all filling and backfilling for structures to determine conformance with density relationships specified.
2. Method of test shall be as specified in SECTION 312050, PART 3.
3. The frequency of tests shall be in compliance with jurisdictional requirements (or as otherwise required by Owner).

END OF SECTION 312316

**SECTION 312333  
TRENCHING AND BACKFILLING FOR UTILITIES**

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. This Section includes:
1. Excavation, sheeting, bracing, and all operations necessary for the preparation of trenches for bedding of pipes and pipe appurtenances, conduit, and buried cable.
  2. Pipe embedments and encasements.
  3. Backfilling of trenches.
- B. Related Work Specified Elsewhere:
1. Site Preparation and Earthwork: SECTION 312050.
  2. Excavation, Filling, and Backfilling for Structures: SECTION 312316.
  3. Concrete: DIVISION 3.

**1.02 REFERENCES:**

- A. Applicable Standards:
1. American Association of State Highway and Transportation Officials (AASHTO):
    - a. M147 - Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses.
    - b. T99 - The Moisture-Density Relations of Soils Using a 5.5-Pound Rammer and a 12-Inch Drop.
    - c. T104 - Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate.
  2. American Society for Testing and Materials (ASTM):
    - a. D4253 - Test Method for Maximum Index Density of Soils Using a Vibratory Table.
    - b. D4254 - Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
  3. Occupational Safety and Health Administration (OSHA):
    - a. Part 1926 - Safety and Health Regulations for Construction.
  4. State of Illinois Standard Specifications for Highway Construction.

SECTION 312333 - TRENCHING AND BACKFILLING FOR UTILITIES: continued

1.03 SUBMITTALS:

- A. Submit as specified in DIVISION 1.
- B. Includes, but not limited to, the following:
  - 1. Steel reinforcement for concrete encasement.
  - 2. Steel reinforcement for concrete cradle.
  - 3. Concrete Submittals as specified in DIVISION 3.
- C. Where selecting an option for excavation, trenching, and shoring in compliance with local, state, or federal safety regulations such as "OSHA Part 1926" or successor regulations, which require design by a registered professional engineer, submit (for information only and not for Engineer approval) the following:
  - 1. Copies of design calculations and notes for sloping, benching, support systems, shield systems, and other protective systems prepared by or under the supervision of a professional engineer legally authorized to practice in the jurisdiction where the Project is located.
  - 2. Documents provided with evidence of registered professional engineer's seal, signature, and date in accordance with appropriate state licensing requirements.

PART 2 - PRODUCTS

2.01 GRANULAR PIPE EMBEDMENT:

- A. Material:
  - 1. Coarse Aggregate No.6 of the State of Illinois Standard Specifications for Highway Construction.
  - 2. Gravel or crushed stone which shall not have a loss of more than 15% after five cycles when tested for soundness with sodium sulfate as described in AASHTO T104.
- B. Gradation:

<u>Standard Square-Mesh Sieve</u>		
<u>Percent Passing</u>	<u>Metric Opening</u>	<u>U.S. Size or No.</u>
100	19.00 mm	3/4-inch
60-100	12.50 mm	1/2-inch
0-5	4.75 mm	No. 4

SECTION 312333 - TRENCHING AND BACKFILLING FOR UTILITIES: continued

2.02 TRENCH STABILIZATION MATERIAL:

- A. Material shall be one of the following:
  - 1. As specified in this PART 2 Granular Pipe Embedment.
  - 2. Conform to AASHTO M147, Gradation A or B.

2.03 CONCRETE:

- A. Concrete and reinforcing steel shall conform to applicable requirements of DIVISION 3.

2.04 TRENCH BACKFILL MATERIALS:

- A. Obtain from the following:
  - 1. Borrow from location off Site.
  - 2. As specified for pipe embedment.
  - 3. Combination of above.
- B. Free from organic matter, refuse, ashes, cinders, frozen, or other unsuitable material.
- C. Gravel, rock, or shale particle size limited as follows:
  - 1. Not to exceed 2 inches in greatest dimension within 12 inches of pipe or conduit and upper 18 inches of trench.
  - 2. Gravel, rock, or shale not allowed within 12 inches of buried cable.
  - 3. Maximum dimension one-half the depth of layer to be compacted in other areas.
- D. Contain sufficient fine materials to provide a dense mass free of voids and capable of satisfactory compaction.
- E. Have moisture content enabling satisfactory placement and compaction.
- F. Blended or otherwise processed to provide required gradation.
- G. Use granular material as specified for pipe embedment trench stabilization under pavements shoulders driveways berms and median strips.

PART 3 - EXECUTION

3.01 TRENCHING:

- A. Equipment and Methods:
  - 1. Types of Equipment and methods may be at Contractor's option, where structures or other facilities are not endangered.

SECTION 312333 - TRENCHING AND BACKFILLING FOR UTILITIES: continued

2. Equipment and methods shall be subject to approval of jurisdictional agency where stability or usefulness of other facilities may be impaired.
  3. Perform by hand methods when required to save or protect trees, culverts, utilities, or other structures above or below ground.
  4. Maximum length of open trench shall be limited to 30 feet in advance and to 20 feet behind pipe installation, except as approved.
- B. Side Walls:
1. Make vertical or slope within specified trench-width limitations below a horizontal plane 12 inches above top of pipe.
  2. Vertical or stepped as required for stability, above a horizontal plane 12 inches above top of pipe.
  3. Sheet and brace where necessary. Conform to applicable requirements of SECTION 312316.
  4. Excavate without undercutting.
- C. Trench Depth:
1. Depth shall be sufficient to provide the minimum bedding requirements for the pipe being placed.
  2. Do not exceed the indicated depth where conditions of bottom are satisfactory.
  3. Increase depth as necessary to remove unsuitable supporting materials.
- D. Trench Bottom:
1. Protect and maintain when suitable natural materials are encountered.
  2. Remove rock fragments and materials disturbed during excavation or raveled from trench walls.
  3. Restore to proper subgrade with trench-stabilization material or timber mat topped with trench-stabilization material when overexcavated:
    - a. Correct, at no additional cost to Owner, when trench is overexcavated without authority or to stabilize bottom rendered unsuitable through negligence or improper operations.
    - b. Placement of Trench Stabilization Material:
      - (1) Compact in lifts not exceeding 6-inch loose thickness:
        - (a) With pneumatic or vibratory equipment.
        - (b) To density specified for granular pipe embedment.

SECTION 312333 - TRENCHING AND BACKFILLING FOR UTILITIES: continued

E. Trench Width:

1. Excavate trench to a width which will permit satisfactory jointing of the pipe and thorough tamping of the bedding.
2. Minimum Trench Width:
  - a. Below Centerline of Pipe:

<u>Nominal Pipe Size</u>	<u>Min. Clearance from Pipe Walls</u>
Less than 24"	6"
24"	7"
30"	8.5"
36"	10"
42"	11.5"
48"	12.5"
54"	13.5"
60"	14"
66"	14.5"
72"	15"
78"	15.5"
84"	16"
90"	16.5"
96"	17"
102"	17.5"
108"	18"

F. Trenching in Fill Areas: Perform trenching in fill areas only after compacted fill has reached an elevation of not less than 1 foot above the top of the pipe.

G. Test Pits:

1. Excavate test pits sufficiently in advance of trenching to enable adequate planning of construction procedure.
2. Locate as follows:
  - a. Where unstable material is suspected that may require special protective measures.
  - b. Where groundwater may require special handling methods.
  - c. Where advisable to assess adequacy of blasting pattern.
  - d. Where indicated or otherwise approved.

SECTION 312333 - TRENCHING AND BACKFILLING FOR UTILITIES: continued

- e. Where interference or conflict with other utilities or structures could affect alignment of pipe.
3. With lateral dimension not less than minimum trench width specified for location excavated.
4. To depth required to obtain information desired.

3.02 PIPE EMBEDMENTS AND ENCASEMENTS:

A. Granular Pipe Embedment:

1. Place granular embedment as follows:
  - a. Level bottom layer at proper grade to receive and uniformly support pipe barrel throughout its length.
  - b. Form shallow depression under each joint to facilitate grouting.
  - c. Form depression under each joint so that no part of bell or coupling is in contact with trench when pipe is placed in position.
  - d. Add second layer simultaneously to both sides of the pipe with care to avoid displacement.
  - e. Complete promptly after (completion of jointing operations) (grouting of joint) and approval to proceed.
  - f. Substitute for any part of earth backfill to within 2 feet of final grade at Contractor's option.
2. Compact granular bedding as follows:
  - a. In lifts not exceeding 12 inches in compacted depth.
  - b. Rod, spade, or use pneumatic or vibratory equipment:
    - (1) As required to obtain not less than 80% relative density as determined by ASTM Method D4253 and D4254.
    - (2) Throughout depth of embedment.

B. Arch and Total Concrete Encasement:

1. Include in locations indicated or where approved by Engineer to correct overwidth trench condition.
2. Form to dimensions indicated or construct full width of trench.
3. Start and terminate encasement at a pipe joint:
  - a. Exclude joints from encasement:
    - (1) Applies only to joints at either end of encasement.

SECTION 312333 - TRENCHING AND BACKFILLING FOR UTILITIES: continued

4. Install keyed construction joints coincident with pipe joints at 30- to 36-foot intervals. Provide separation of at least 75% of cross-section area at construction joints. Do not run horizontal steel through joint.
  5. Suitably support and block pipe to maintain position and prevent flotation.
  6. Place arch encasement promptly after installation of granular embedment.
  7. Protect against damage from heavy equipment with layer of earth. Use hand methods to a horizontal plane 12 inches above top of encasement.
- C. Concrete Cradle:
1. Include in locations indicated and where designated by Engineer to reinforce unstable trench bottom.
  2. Place on undisturbed trench bottom or on stabilized subbase.
  3. Form to dimensions indicated or construct full width of trench.
  4. Start and terminate concrete cradle at a pipe joint:
    - a. Exclude joints from cradle:
      - (1) Applies only to joints at either end of cradle.
  5. Place without horizontal construction joints other than indicated.
  6. Suitably support and block pipe to maintain position and prevent flotation.
  7. Provide anchorage where indicated.
- D. Cut-Off Walls: Include (concrete) (clay) cut-off walls as indicated.
1. Compact to 95% of maximum density at optimum moisture content as determined by AASHTO T99.
- E. Earth Pipe Embedment:
1. Include earth pipe embedment as indicated.
  2. Use at impervious trench checks.
  3. Shape trench bottom to fit the pipe and backfill throughout depth of trench with compacted impervious materials.

3.03 BACKFILLING:

- A. Placement:
1. Complete promptly after approval to proceed:
    - a. Upon completion of pipe embedment.

SECTION 312333 - TRENCHING AND BACKFILLING FOR UTILITIES: continued

- b. Only after concrete encasement has obtained 70% of design strength. Determination of design-strength percentage obtained shall be as specified in DIVISION 3.
  - 2. Use hand methods to a horizontal plane 12 inches above top of pipe- bell conduit or duct banks.
  - 3. Use approved mechanical methods where hand backfill is not required.
  - 4. Place in layers of thickness within compacting ability of equipment used.
  - 5. Until compacted depth over conduit exceeds 3 feet, do not drop fill material over 5 feet. Then distance may be increased 2 feet for each additional 1 foot of cover. Backfill conduit trenches in layers of 100 to 4 to 8 inches.
- B. Compaction:
  - 1. Perform at moisture content necessary to achieve required results with equipment used.
  - 2. Perform with spreading equipment supplemented by hand-operated equipment and rollers as required to obtain density specified.
  - 3. Accomplish without inundation or flooding.
  - 4. Achieve following densities:
    - a. Unless otherwise specified, adequate to prevent significant future settlement.
    - b. Under pavements and shoulders:

	<u>Cohesive</u> <u>Soils</u>	<u>Cohesionless</u> <u>Soils</u>
Entire depth .....	95%	95%

- c. Boulevards, berms, median strips, etc.:
          - Entire depth - 95%.
      - 5. Backfill failing to meet required densities shall be removed or scarified and recompactd as necessary to achieve specified results.

3.04 FIELD QUALITY CONTROL:

- A. Compaction: Owner will, through services of an independent laboratory, test all trench-stabilization material, granular pipe embedment, earth-pipe embedment, clay cut-off walls, and trench backfill to determine conformance with specified moisture- density relationships:

SECTION 312333 - TRENCHING AND BACKFILLING FOR UTILITIES: continued

- B. Concrete: Contractor shall test all concrete for use in encasements, cradles, and concrete cut-off walls to determine conformance with Specifications. Method of test shall be as specified in DIVISION 3.

END OF SECTION 312333

**NOT FOR BID**

**SECTION 329200**  
**SODDING**

**PART 1 GENERAL**

**1.01 SUMMARY:**

- A. This Section includes site preparation, fertilizing, and sodding of areas indicated and/or disturbed by Contractor's construction activities.

**1.02 REFERENCES:**

- A. Applicable Standards:
  - 1. Illinois Department of Transportation (IDOT) "Standard Specifications for Road and Bridge Construction." Adopted January 1, 2002.
    - a. Section 252: Sodding

**1.03 SUBMITTALS:**

- A. Certificates: Includes, but not limited to, the following:
  - 1. Fertilizer shall be accompanied by certificate from vendor that fertilizer meets requirements of these Specifications.

**PART 2 PRODUCTS**

**2.01 FERTILIZER:**

- A. Use fertilizer as specified in IDOT SECTION 252.
  - 1. Uniform in composition.
  - 2. Free flowing and suitable for application with approved equipment.
- B. Deliver to Site in labeled bags or containers.

**2.02 SOD:**

- A. Sod shall be at least three years old and densely rooted.
- B. Sod shall be relatively free of weeds or other undesirable plants.
- C. Cut sod in strips of uniform thickness with a minimum thickness of one and 1/2-inch.
  - 1. Each strip shall contain at least one-half (1/2) but not more than one square yard.
  - 2. Strips shall be not less than 12 inches in width.
- D. At the time of sodlifting, the top growth shall not exceed 3 inches in length.
- E. Moisten sod to depth at which it is to be cut when stripped during dry periods.

PART 3 EXECUTION

3.01 SOD BED PREPARATION:

- A. Dispose of any growth, rocks, or other obstructions which might interfere with tilling, seeding, sodding, or later maintenance operations.
- B. Thoroughly loosen and pulverize topsoil to a depth of at least 3 inches. Minimum depth of topsoil at sodded areas shall be 4 inches.
- C. Maintain tilled areas until sodded to provide a smooth area with no gullies or depressions.

3.02 APPLICATION - FERTILIZER:

- A. Apply fertilizer at the rate of 180 pounds per acre (1:1:1 ratio [nitrogen at 60 lbs/acre; phosphorus at 60lbs/ac; potassium at 60 lbs/acre]) to properly prepared areas that are to receive sod.
- B. Incorporate fertilizer into the soil by discing, harrowing or raking.

3.03 APPLICATION - SOD:

- A. Prior to placing sod, the soil surface shall be worked until it is relatively free from debris, washes, gullies, clods, and stones. Surface shall be worked to a depth of not less than 3 inches with a disk, tiller, or other equipment approved by the Engineer.
- B. Fertilizer shall be placed prior to placement of sod.
- C. Handle sod with care to prevent loss of native soil from roots.
- D. Do not use frozen sod.
- E. Place sod when the ground is in a workable condition and temperatures are less than 80°F. Sod shall not be placed when the sod or ground surface is frozen.
- F. Sod shall be moist at the time it is placed.
- G. Lay sod strips along contour lines, by hand, commencing at the base of the area to be sodded and working upward.
  - 1. Carefully lay sod to produce tight joints.
  - 2. Stagger transverse joints of sod strips.
- H. Firm, water, and refirm sod immediately after it is placed.
  - 1. Accomplish firming by application of a smooth-wheel roller weighing not less than 60 or more than 90 pounds per linear foot of roller.
  - 2. Immediately following the installation of the sod, water the area in one watering, at a rate of 5 gallons per square yard. Perform so as not to cause erosion or damage to the sodded area.

- I. On slopes of 3 horizontal to 1 vertical and steeper, anchor sod by wooden pegs after sod has been firmed.
  - 1. Pegs shall be 1/2-inch by 12 inches, driven into the ground on about 2-foot centers.
  - 2. Top of peg after driving shall be not less than 1/2-inch but not more than 1 inch above top of sod.

3.04 MAINTENANCE:

- A. Mow grass to a height of 2 inches whenever average height of grass exceeds 5 inches.
- B. Remove weeds by approved chemical treatment.
- C. Erect and maintain signs or barricades to exclude traffic from sodded areas.
- D. Sodded Areas: Perform maintenance for a period of three months after planting unless the desired cover is obtained in a shorter time and the shorter period of Contractor's responsibility is authorized by Engineer.
  - 1. Thoroughly water sodded areas daily for a period of 15 days after placing.
  - 2. Maintain sod in good live condition. Prior to acceptance, replace any sod not in good growing condition with fresh live sod.
  - 3. Water thoroughly whenever sod shows evidence of excessive drying until sod is accepted.
  - 4. To be acceptable, sodded areas shall have a good, uniform color and sturdy growth with no bare soil spots, over a minimum of 98 percent of the area sodded.

**\*\*\* END OF SECTION \*\*\***

**NOT FOR BID**

**SECTION 333222**  
**SUBMERSIBLE PUMPS**

**PART 1 GENERAL**

**1.01 SUMMARY:**

- A. This Section covers furnishing and installing two (2) variable speed submersible pumps as indicated and specified.
- B. Submersible pumps shall be furnished complete with pump casings, shafts, bearings, seals, lubrication, piping assemblies, guide rails, anchor bolts, motors, controls, power cable, and all other parts and accessories indicated, specified, or required for proper installation, operation, and maintenance.
- C. Pumps shall be capable of pumping the following fluids:
  - 1. Domestic sanitary sewage.

**1.02 REFERENCES:**

- A. Applicable Standards:
  - 1. American National Standards Institute (ANSI):
    - a. B16.1 - Cast-Iron Pipe Flanges and Flanged Fittings.
  - 2. American Society for Testing and Materials (ASTM):
    - a. A48 – Gray Iron Castings.
  - 3. American Iron and Steel Institute (AISI).
  - 4. Anti-Friction Bearing Manufacturer's Association (AFBMA).
  - 5. Hydraulic Institute Standards (HIS).
  - 6. National Electrical Manufacturer's Association (NEMA).
  - 7. Institute of Electrical and Electronics Engineers (IEEE).
  - 8. National Fire Protection Association (NFPA):
    - a. 70 - National Electrical Code (NEC).

**1.03 SUBMITTALS:**

- A. Submit as specified in DIVISION 1.
- B. Submittals shall include, but not be limited to, the following:
  - 1. Equipment Submittals as specified in DIVISION 1.
  - 2. Standard performance curves for each pump model furnished. Curves shall cover range from shutoff to 120 percent of design flow rate at the conditions specified, and shall be submitted for the following parameters as a function of pump capacity and speed at design temperature:

- a. Total developed head.
  - b. Required brake horsepower.
  - c. Pump efficiency.
  - d. Required NPSH.
  - e. Minimum recommended submergence.
- C. Submit test curves run at the actual test temperature and test speed and the calculations for corrected curves shown at the specified temperatures, viscosity, density, and rated speeds.
  - D. Report of factory tests.

1.04 QUALITY ASSURANCE:

- A. Factory Tests and Reports:
  - 1. Perform tests on each pump in accordance with Hydraulic Institute Standards except as otherwise specified.
  - 2. Statically balance pump impellers and dynamically balance all pump/motor units such that equipment vibration velocity is less than 0.12-inch per second.
  - 3. Submit results of factory tests in accordance with DIVISION 1.
  - 4. Perform standard tests on all motors in accordance with IEEE.

1.05 FACTORY ASSEMBLY:

- A. Pump/motor units shall be completely shop assembled and aligned prior to shipping.
- B. After completion of the specified factory tests, pumps shall be prepared for shipment with the minimum amount of disassembly, and such that no field disassembly, cleaning, or flushing is required.
- C. Any components removed for shipping shall be match-marked prior to removal and shipment.
- D. Prepare surfaces and provide paint system standard of the manufacturer and suitable for service intended. Submit paint type and manufacturer's specification with Submittals.

1.06 DELIVERY, STORAGE, AND HANDLING: Shall be as specified in DIVISION 1.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

- A. Sulzer Model No. XFP100C CB1 Submersible Pump (ABS)
- B. Engineer – approved equal.

2.02 GENERAL REQUIREMENTS:

- A. Provide totally sealed submersible electrically operated pump capable of pumping raw unscreened sewage, and other similar solids-laden fluids without clogging.
- B. Provide pump capable of operating continuously for extended periods of time without damage.
- C. The pump shall be supplied with a mating cast iron four inch discharge connection.
- D. Pumps intended for wet pit installation shall be supplied with a cast iron guide rail system with an integrated four inch discharge elbow.
- E. Each pump unit shall be fitted with 25' of stainless steel chain for lifting the pump. The working load rating of the lifting system shall be a minimum of 50% greater than the pump weight.
- F. Pump controls shall be supplied by the pump manufacturer..
- G. Pump shall operate at or near maximum efficiency at operating conditions.
- H. Pump head-capacity curve shall be continuously falling from shutoff head.
- I. Pump discharge connection elbow and discharge piping shall be installed such that pump will automatically connect and seal to discharge connection elbow when lowered into place.
- J. Pump shall be easily removable for inspection or service.
- K. Provide guide rail system and pump rail guide bracket to raise or lower pump unit by cable.
- L. Guide entire weight of pump unit with a minimum of two guide bars.
- M. Seal interface of the pump and discharge elbow as shown on the plans.
- N. The motor shall be an integral part of the pump unit. The motor shall be 2.7 HP connected for operation on a 230 volt, 3 phase, 60 hertz electrical supply service Motor shall be high efficiency with variable speed. Each pump motor shall be equipped with 49 feet of power and control cable sized in accordance with NEC and CSA standards.
- O. Pump(s) shall be able to pump 3-inch diameter solids.

2.03 DESIGN REQUIREMENTS: Each submersible pump shall be designed for the following:

- A. Design Capacity        275 gpm

- B. Design Heads:
- |    |                            |         |
|----|----------------------------|---------|
| 1  | Rated (at Design Capacity) | 17 feet |
| 2. | Shutoff (minimum)          | 24 feet |

- C. Pump Setting As indicated

The Contractor shall still be responsible for providing all electrical components with sufficient capacity to met the specifications and appropriate codes.

#### 2.04 MATERIALS AND CONSTRUCTION:

- A. Construct motor housing, pump casing, and major pump components of cast iron conforming to ASTM A48.
- B. Provide bolts, nuts, and washers of AISI Series 300 stainless steel.
- C. All metal surfaces coming into contact with the pumped media (other than the stainless steel components) shall be protected by a factory applied spray coating of zinc phosphate primer followed by a high solids two part epoxy paint finish on the exterior of the pump.
- D. Hoop:
1. The pump shall be equipped with an open lifting hoop suitable for attachment of standard chain fittings, or for hooking from the wet well surface.
  2. Stainless steel 1.4401 (AISI 316).
  3. Shall be rated to lift a minimum of four times the pump weight.
- E. Impeller:
1. ABS Contra Block Plus or approved equal.
  2. Meet Ten State Standards requirement for minimum solids passage size of 3 inches.
  3. Cast iron conforming to ASTM A-48, Class 35B.
  4. Nonclog, semi-open, single vane design.
  5. Secured to shaft with key and self-locking device to prevent slipping in either direction.
  6. Balanced statically and dynamically to eliminate vibration and minimize hydraulic end thrust.
  7. Castings shall not have been repaired by plugging, welding, or other means.
- F. Shaft:
1. Ample diameter to assure first critical speed will occur at not less than 150 percent of rated pump speed.
  2. Adequately designed to meet the maximum torque required at any normal start-up condition or operating point in the system.
  3. The shaft shall have a full shutoff head design safety factor of 1.7, and the maximum shaft deflection shall not exceed .05 mm (.002 inch) at the lower seal during normal pump operation.
  4. Stainless steel 1.4021 (AISI 420) material with a polished finish with accurately machined shoulders to accommodate bearings, seals and impeller.
  5. Carbon steel, chrome plated, or multi piece welded shafts shall not be considered

adequate or equal.

G. Bearings:

1. Minimum B-10 life of 50,000 hours.
2. Pump shaft to rotate on two (upper and lower) permanently lubricated bearings without end movement.
3. The upper bearing shall be a deep grooved ball bearing and the lower bearings shall be a heavy duty double row angular contact ball bearing.
4. Bearings shall be of sufficient size and properly spaced to transfer all radial and axial loads to the pump housing and minimize shaft deflection.
5. Generic or unbranded bearings from other than major bearing manufacturers shall not be considered acceptable.

H. Shaft Seal:

1. Each pump shall be equipped with a tandem mechanical shaft seal system consisting of two totally independent seal assemblies. The seals shall operate in a lubricant reservoir that hydro-dynamically lubricates the lapped seal faces at a constant rate.
2. The lower, primary seal unit, located between the pump and the lubricant chamber, shall contain one stationary industrial duty silicon-carbide seal ring and one rotating industrial duty silicon-carbide seal ring. The stationary ring of the primary seal shall be installed in a seal holding plate of gray cast iron EN-GJL-250 (ASTM A-48, Class 35B). The seal holding plate shall be equipped with swirl disruption ribs to prevent abrasive material from prematurely wearing the seal plate. The upper, secondary seal unit, located between the lubricant chamber and motor housing, shall contain one stationary industrial duty silicon-carbide seal ring, and one rotating one rotating industrial duty silicon-carbide seal ring. Each seal interface shall be held in contact by its own spring system.
3. Each pump shall be provided with a lubricant chamber for the shaft sealing system which shall provide superior heat transfer and maximum seal cooling. The lubricant chamber shall be designed to prevent overfilling, and to provide lubricant expansion capacity. The drain and inspection plug shall have a positive anti-leak seal, and shall be easily accessible from the outside of the pump. The seal system shall not rely upon the pumped media for lubrication and shall not be damaged when the pump is run dry. Lubricant in the chamber shall be environmentally safe nontoxic material.
4. Mechanical Seal Protection System: The back side of the impeller shall be equipped with a sinusoidal cutting ring, forming a close clearance cutting system with the lower submersible motor housing or seal plate. This sinusoidal cutting ring shall spin with the pump impeller providing a minimum of 75 shearing actions per pump revolution. Large particles or fibrous material which attempt to lodge behind the impeller, or wrap around the mechanical seal shall be effectively sheared by the active cutting system into particles small enough the prevent interference with the mechanical seal.
5. Seal Failure Early Warning Sytem: Moisture detector shall be installed in oil seal chamber and connected to pump controls. A solid-state relay mounted in the pump control panel or in a separate enclosure shall send a low voltage, low amperage signal to the probe, continuously monitoring the conductivity of the liquid in the sensing chamber. If sufficient water enters the sensing chamber

through the primary mechanical seal, the probe shall sense the increase in conductivity and signal the solid state relay in the control panel. The relay shall then energize a warning light on the control panel, or optionally, cause the pump shut down.

6. Seal faces shall be made of tungsten carbide, carbon, ceramic, or tungsten titanium carbide.

I. Self-Cleaning Wear Plate:

1. Gray cast iron, EN-GJL-250 (ASTM A-48, Class 35B).
2. Shall be designed with an inlet incorporating strategically placed cutting grooves and an outward spiral V-shaped groove on the side facing the impeller, to shred and force stringy solids outward from the impeller and through the pump discharge.
3. Shall be mounted to the volute with three stainless steel securing screws and three stainless steel adjusting screws to permit close tolerance adjustment between the wear plate and impeller for maximum pump efficiency.
4. Adjustment to allow for wear and restore peak pumping performance shall then be accomplished using standard tools, and without requiring disassembly of the pump.
5. The suction flange shall be integrated into the wear plate and its bolt holes shall be drilled and threaded to accept standard 4 inch ANSI class 125 flanged fittings.

J. Pump Volute:

1. Single piece gray cast iron, EN-GJL-250 (ASTM A-48, Class 35B) non-concentric design with centerline discharge.
2. Passages shall be smooth and large enough to pass any solids which may enter the impeller.
3. Discharge size shall be 4 inch.
4. The discharge flange design shall permit attachment to standard ANSI or metric flanges/appurtenances. The discharge flange shall be slotted to accept both 4 inch ANSI class 125 and metric DN100 (PN 10) metric flanged fittings.
5. The minimum working pressure of the volute and pump assembly shall be 10 bar (145 psi).

2.05

ACCESSORIES:

A. Pump Discharge Connection:

1. Connected to discharge piping and anchored to sump floor with stainless-steel anchor bolts.
2. Designed to receive pump discharge connection without bolts.
3. Integral with guide rail.
4. Cast or ductile iron.
5. Flanges shall conform to ANSI B16.1.

B. Rail Guides:

1. Fasten steel guide supports to pump so that no lifting loads are applied to pump or motor housing.

- C. Lifting Cable:
1. Provide two stainless steel cables for each pump.
  2. Design to raise and lower pump with additional safety factor for overcoming force of pump hang-ups.
  3. Provide hook for cable when not in use.
  4. Provide one portable hoist assembly for removal of pumps.
- D. Guide Rails:
1. Stainless-steel pipe.
  2. All 316 stainless steel, including rails, brackets, and anchor bolts.
    - a. Standard weight or heavier.
  3. Size as recommended by pump manufacturer.
  4. Shall not support any portion of the pump weight.
  5. Provide a minimum of two guide rails.
  6. Pumps shall connect to the guide rail base automatically and firmly, guided by one 2 inch guide pipe extending from the base elbow to the top of the station.
  7. A field replaceable Nitrile (Buna-N) rubber profile gasket or o-ring shall accomplish positive sealing of the pump flange/guide rail bracket to the discharge elbow.
- E. Cable Holder:
1. Provide grip holders for pump and control cables.
  2. Cables shall be easily adjusted to pumping level without splices.
  3. Provide continuous cables from control panel to pumps and level controls.
- F. Lift Station Structure Top
1. Provide precast concrete structure top.
  2. Top opening shall be sized to allow for:
    - a. New Lift Station Access Cover.
    - b. Removal of pumps for maintenance and/or replacement.
    - c. Operation of Multiport Plug Valve with Manual Operator.
- G. Lift Station Access Cover:
1. Provide access cover with H20 Load Rating.
  2. Acceptable Products:
    - a. Halliday H1W or H2W Series or equal.
  3. Cover shall be sized to allow for:
    - a. Removal of pumps for maintenance and/or replacement.
    - b. Operation of Multiport Plug Valve with Manual Operator.

## 2.06 ELECTRICAL EQUIPMENT:

- A. Conform to NEC, NEMA, and IEEE
- B. Submersible Pumps
1. Pump motor shall be sealed submersible explosion proof air filled or oil filled motor. Motor starter shall be held in place with a removable end ring so that it

may be removed for repair without heating outer shell or using a press. Motor housing shall be filled with high-dielectric oil and no pressure balancing devices shall be used. Pump motor shaft shall be of 303-stainless steel or 420-stainless steel. Each pump motor will be provided with heat sensing units which shall trip the starter if the motor overheats. Motor shall have a minimum service factor of 1.3 and minimum efficiency of 79 percent.

2. The power cable entry into the cord cap assembly shall first be made with a compression fitting. Each individual lead shall be stripped down to bare wire, at staggered intervals, and each strand shall be individually separated. This area of the cord cap shall then be fitted with an epoxy compound potting to prevent water contamination in the event of wicking or capillary attraction. If necessary, there shall be an additional epoxy compound potting area separating the motor housing from the cord cap assembly for added protection. If the pump manufacturer does not use epoxy compound in their motor junction chamber, then provisions shall be made in the terminal board connection to seal both the top and bottom on the connection chamber to prevent water from entering the motor housing.

C. Power Cable

1. The power cables shall be sized according to NEC and CSA standards and shall be of sufficient length to reach the junction box without requiring splices. The outer jacket of the cable shall be oil and water resistant, and shall be capable of continuous submerged operation underwater to a depth of 65 feet.

D. Cable Entry System

1. The cable entry system shall consist of submersible plug assembly which allows the cable be easily disconnected from the pump for service or replacement. Cable sealing shall be accomplished by a Nitrile compression grommet with both cylindrical and conical sealing surfaces, flanked by a stainless steel washer and an integrated strain relief. A brass (C3604) compression nut shall be threaded into to the cast iron EN-GJL-250 (ASTM A-48, Class 35B) cable plug housing, compressing the grommet ID to the cable while the grommet OD seals against the bore of the cable entry housing. Cable conductors shall be terminated in copper pin connectors which are separated and retained by a circular pin retainer fabricated from high dielectric strength Polyamid (30% GF). Each pin shall pass through its own hole in the pin retainer, maintaining perfect alignment with the mating pins in the motor body. The corresponding motor body pin assembly shall be manufactured from high dielectric strength Polyamid (30% GF), with copper connector pins. The pin assembly shall be sealed with an o-ring to prevent water entry into the motor, and retained in the motor housing bore via a retaining ring. Attachment of the plug assembly to the motor shall engage the corresponding copper pins, creating a complete circuit between the motor and cable. The plug assembly shall be fastened with stainless steel fasteners, and shall be sealed by an o-ring.
2. The cable plug and sealed entry system as part of the motor shall be FM and CSA approved for use in NEC Class I, Division I, Groups C & D hazardous locations. The system shall be anti-wicking by design, and shall prevent any water that enters the cable through damage to the jacket from entering the motor. Cable entry designs which utilize potting compounds to provide a water tight seal, or those which do not allow the cable to be easily changed in the field shall not be considered equal

E. Control Equipment

1. The duplex pump control panel shall have a NEMA-3R enclosure and shall be dead-front with separate removable inside sub panel to protect electrical equipment. A lock hasp shall be provided on outside door. Panel shall be provided with a door interlock switch so that the power must be de-energized before opening the door. The panel shall be provided with 12" floor stands with ventilated skirts for front and rear.
2. A 30A, 3 pole breaker and NEMA rated, full voltage, non-reversing starter shall be provided for each pump (IEC style starters are not acceptable). Starters shall be provided with H/O/A selector switch for manual/automatic control of pump, run pilot lights, and two NO/NC reversible auxiliary contacts. Minimum starter size shall be NEMA size 0. Provide starters with overload relays and thermal units sized from motor nameplate ratings. An interlock relay shall be provided to automatically reconnect the control circuit in case of circuit breaker trip on one pump. Terminal strip shall be provided for connecting pump and control wires. Elapsed Time Meters shall be furnished for each pump and installed in panel. The panel shall include: a service rated main breaker, a GFI convenience outlet, battery back-up system, a battery charger that shall be incorporated to maintain alarm indication during power outages, and a heater to prevent condensation from forming in the panel. A 2KVA control transformer sized as required to provide 120 volt power. The control panel shall incorporate a level control system as described below.
3. Pumping operation shall be controlled by an Allen Bradley Micrologix 1400 PLC with a C-more OIT pump controller set to sequence the operation of two pumps in response to KPSI model 700 submersible pressure transducer installed in the wet well. The controller shall automatically determine pump availability for service, alternate pumps, provide start delays, detect high level conditions, recognize float malfunctions, and generate alarms. Installation connections shall be made to screw type compression terminal strips, capable of accepting 14-awg wire. A separate terminal strip shall be dedicated to the field wiring of the float switches and alarm contacts. Individual terminals shall be provided for each wire. The terminal strips shall plug into the controller for ease of maintenance.
4. The pump controller shall be provided with individually fused control circuits for each pump. The controller shall provide a circuit for the pump control floats and a separate circuit for the high level alarm float. The controller shall be provided with LED's to indicate float switch and pump activity. The "off" float, "lead" pump start float and "lag" pump start float shall illuminate an individual green LED when the float switch is closed. The "high" level alarm float switch shall have a red LED indicator. Pump running indicators shall be green LED's. Green LED shall indicate, control power "on". The pump controller shall monitor the float switching sequences. Pumps shall continue to cycle with faulted floats to maintain pumping activity. Failure of the "off" float to close will cause the lead pump start float to maintain pumping activity. The pump controller shall detect individual pump failure. Terminals shall be furnished for the connection of a pump operation feedback switch. On the start of a pumping cycle, a built in delay shall operate while pumping operation is established. After the initial delay, if the feedback switch is not closed, the controller shall light an alarm LED to indicate failure of the specific pump. Relay contacts shall be provided for external pump

- failure indication. An amber LED shall indicate the closure of each feedback switch. Failure of a pump will cause the second pump to operate automatically.
5. The controls shall be set to prevent both pumps from starting at the same time. The pumps could run at same time, but start times are to be staggered.
  6. Sealed float type mercury free switches shall be supplied as the back-up level control system. The float back up controller shall be an intrinsically safe Symcom ISS-105-UCO controller. An intrinsically safe barrier is to be provided for the float switches. The mercury free tube switches shall be sealed in solid polypropylene floats for corrosion and shock resistance. The support wire shall have a heavy neoprene jacket and a weight shall be attached to the cord above the float to hold the switch in place in the sump. The float switches shall hang in the sump supported only by the cords that are held to the wiring channel. Four (4) float switches shall be used to control level. One for pump turn-on and high water alarm, and one for pump turn-off, and one for both pumps turn-on. Float switch levels shall be adjustable from the surface.
  7. A caged high water alarm light shall be mounted on the control panel. The alarm light shall glow dim at all time, except under alarm conditions when the light shall glow bright and flash. Alarm light shall have reset button.
  8. Provide a new Yagi antenna and aluminum pole as described in the Plans for the SCADA system. A 5-port Ethernet switch shall be installed in the control panel for communication interface with the existing system. The CONTRACTOR shall ensure the new SCADA system interfaces correctly with the new controller and that a clear signal is communicated to the base antenna.
  9. Provide NEMA 7 rated disconnect switches and a junction box mounted on steel channel beside the wet well (the disconnects for pump power and the junction box for control wiring). Size junction box as required. Provide conduit seal off fittings on all conduits running to the wet well. Manufacturer provided cables shall be landed on terminal blocks in disconnects and junction box to facilitate the removal of equipment.
  10. Provide a manual transfer switch rated at 100 amps, 60 Hz, 240 volts, 3-phase, 3-pole, 4-wire (un-switched neutral). The Manual Transfer Switch shall have a NEMA 3R enclosure. Provide the manual transfer switch with an electrical interlock kit to provide a signal to the control panel that the switch is operating in the emergency position. Wire the normal side of the manual transfer switch to the load side of the main breaker in the control panel. Wire the load side of the manual transfer switch to the control panel. The manual transfer switch shall be manufactured by Square D.
  11. Provide a receptacle for the connection of the OWNER's existing portable generator. Receptacle shall be pin & sleeve type in a cast box. Receptacle shall be Appleton #ACJA1034-150, 150amp, 3-phase, 4-wire, style 2. Confirm exact configuration with OWNER's plug in field. Receptacle shall be rain-tight with a screw cap. Wire receptacle to emergency side of manual transfer switch.

F. High Efficiency Motor

1. The High Efficiency motor shall meet efficiency standards in accordance with IEC 60034-30, level IE1. Motor rating tests shall be conducted in accordance with IEC 60034-2-1 requirements and shall be certified accurate and correct by a third party certifying agency. A certificate shall be available upon request.
2. The High Efficiency motor shall be housed in a water tight gray cast iron, EN-GJL-

250 (ASTM A-48, Class 35B) enclosure capable of continuous submerged operation underwater to a depth of 20 meters (65 feet), and shall have an IP68 protection rating. The motor shall be of the squirrel-cage induction design, NEMA type B High Efficiency. The copper stator windings shall be insulated with moisture resistant Class H insulation materials, rated for 180°C (356°F). The stator shall be press fitted into the stator housing. The use of bolts, pins or other fastening devices requiring penetration of the stator housing is unacceptable. The rotor bars and short circuit rings shall be made of cast aluminum.

3. The motor shall be designed for continuous duty. The maximum continuous temperature of the pumped liquid shall be 40°C (104°F), and intermittently up to 50°C (122°F). The motor shall be capable of handling up to 15 evenly spaced starts per hour without overheating. The service factor (as defined by the NEMA MG1 standard) shall be **1.3** in wet pit service and 1.15 in dry pit service. The motor shall have a voltage tolerance of +/- 10% from nominal, and a phase to phase voltage imbalance tolerance of 1%. The motor shall be FM and CSA approved for use in NEC Class I, Division I, Groups C & D hazardous locations. The surface temperature rating shall be T3C. The motor shall meet the requirements of NEMA MG1 Part 30 and 31 for operation on PWM type Variable Frequency Drives.
4. The motor shall be capable of operating, completely submerged, partially submerged, or unsubmerged. For submerged (wet pit) applications, the motor shall be self-cooling via the process fluid surrounding the motor. For unsubmerged (dry pit) applications, an integrated oil cooling system shall be utilized to enhance heat transfer, and allow the motor to operate at full rated power continuously without the need for de-rating or reduced duty cycle. No external coolant supply or external cooling jacket shall be required for dry pit applications. The motor shall have a NEMA Class A temperature rise for submerged service, and class B rise for dry pit service, providing cool operation under all operating conditions.
5. Thermal Protection: Each phase of the motor shall contain a normally closed bi-metallic temperature monitor switch imbedded in the motor windings. These thermal switches shall be connected in series and set to open at 140°C +/- 5°C (284°F). They shall be connected to the control panel, and used in conjunction with, and supplemental to, external motor overload protection.

### PART 3 EXECUTION

- 3.01 INSTALLATION, START-UP, AND TESTING: All Work shall conform to manufacturer's recommendations and the requirements of DIVISION 1.
- 3.02 MANUFACTURER'S FIELD SERVICE: Provide installation, start-up, and testing services for all Equipment as specified in DIVISION 1.
- 3.03 INSTALLATION:
  - A. Make all electrical and control connections.
  - B. Provide all necessary lubrication for initial start-up, testing and as required for final acceptance.

- C. Provide a complete unit with all materials, components and adjustments as required for successful operation.
- D. Installation, start-up and testing of all equipment and associated construction shall conform to manufacturer's recommendations.
- E. Do not place grout for pump pedestal bases until pumps are completely aligned.
- F. Install pipe and pipe appurtenance supports to minimize stresses being placed on pump nozzles.

3.04 PERFORMANCE TESTS:

- A. As specified in DIVISION 1.
- B. Conduct in the presence of General Contractor, Owner, and/or Engineer.
- C. Equipment Tests:
  - 1. Check performance of all components as a functioning unit.
  - 2. Check alignment of each unit.
- D. Operational Tests:
  - 1. Conduct such operational tests as necessary to determine that the performance of Equipment and controls is as specified.
  - 2. Tests will generally consist of placing Equipment in operation under varying conditions and observing performance.
- E. Make all necessary Equipment adjustments and corrective work indicated by tests.
- F. Submit a written test report to Owner (with one copy to Engineer) in a letter form stating operations performed and results obtained for each unit.

3.05 END OF WARRANTY INSPECTION:

- A. Inspection:
  - 1. Perform on Equipment unit by manufacturer's representative.
  - 2. Perform within 60 days prior to date of warranty expiration.
  - 3. Ascertain or appraise the following:
    - a. Status of Equipment and installation after normal usage.
    - b. Adherence to manufacturer's recommended maintenance and operation of Equipment.
  - 4. Include the following:
    - a. Alignment checks.
- B. Make adjustments necessary to restore Equipment within original tolerances.
- C. Submit a written letter report to Owner (with copy to Engineer) covering the inspection items and including recommendations where applicable.

3.06

**PAINTING:** Prepare surface of damaged and uncoated areas and touch-up as required for complete protection.

**\*\*\* END OF SECTION \*\*\***

NOT FOR BID

**NOT FOR BID**